



# ADVENTUS

Proven Soil, Sediment, and Groundwater  
Remediation Technologies

## STATEMENT OF QUALIFICATIONS (June 2010)

### DRY CLEANER SITES AND CHLORINATED SOLVENT REMEDIATION

The Adventus Group is an environmental biotechnology company that provides various remediation biotechnologies - including those exclusive to our patent portfolio (see below). We are NOT consultants – we support our clients' project team(s) by providing unbiased design support and selection of the most cost-effective remedial solution or strategy. As appropriate, our proven products may provide significant advantages. Implementation is subsequently provided by partnering with engineering and construction firms.

ADVENTUS' staff has over 150 cumulative years of experience in conducting remedial investigations/feasibility studies (RI/FS), remedial design, engineering and modeling (RD), remedial actions (RA) and implementation (support) at dry cleaner and other, related sites impacted by chlorinated volatile organic compounds (CVOCs), such as perchloroethylene (PCE), trichloroethylene (TCE), and various chloroethanes. These projects have included industrial clients, federal, state and local governments, as well as public organizations. Useful knowledge and experience has been gained working at dry cleaner sites, manufacturing facilities, military facilities, landfills, bulk chemicals storage facilities, active railroads and airports, Superfund sites, and as part of Brownfield site redevelopment efforts while offering the following technologies and services:

**For Groundwater** – *In situ* chemical reduction (ISCR) using EHC® or EHC-M® (for simultaneous treatment of heavy metals) or granular zero valent iron (ZVI), permeable reactive barriers (PRB) with EHC® and/or ZVI, and/or in-well stripping using modified groundwater circulation wells (mGCW).

**For DNAPL Stabilization** – *In situ* biogeochemical stabilization (ISGS™) of DNAPL to destroy CVOCs mass, rapidly reduce the flux of CVOCs from stabilized DNAPL into the groundwater, and facilitate enhanced remediation of dissolved plumes.

**For DNAPL Treatment** - Zero-valent iron-clay (ZVI-clay) is mixed *in situ* with suspected DNAPL and aqueous phase source areas to facilitate chemical reduction.

**For Soil Treatment** – *Ex situ*, or *in situ* treatment of soil and sediment using DARAMEND, which integrates controlled release carbon and reduced metals (e.g., ZVI).

We also have significant experience in the area of fate and transport modeling and litigation support.

## Representative Project Experience

Adventus Group staff have been involved in over 600 applications of ZVI and EHC technologies for chlorinated solvent remediation, both in traditional PRB configurations for plume cut-off and more innovative injection based applications for CVOC mass reduction. The following list represents some of our project experiences.

1. **ISCR of PCE and catabolites** (Dry Cleaner Site, Oregon) Groundwater at a former dry cleaner site was impacted with PCE, TCE, DCE, and VC, as high as 22,000, 1,700, 3,100, and 7 ppb, respectively. Field scale pilot tests were performed for the Oregon DEQ's Dry Cleaner Program to evaluate the performance of EHC<sup>®</sup> and also evaluate the effectiveness of the injection method in distributing EHC, given the low permeability of soils at the site (sandy silt and silty clay). Subsequent field monitoring has shown greater than 99.6% removal of total CVOC concentrations one year after the injections. No accumulation of VC or other daughter products was observed. The material cost for treatment of hot-spots was \$33/yd<sup>3</sup>.
2. **ISCR of PCE and catabolites** (Dry Cleaner Site, Boulder, Colorado) Groundwater downgradient of a former dry cleaner showed PCE concentrations up to 1,400 ppb. A total of 1,700 lbs of EHC was injected into 18 points with a goal to remove the PCE mass in the distributed plume and treat any residual PCE potentially migrating from beneath the former drycleaner. An application rate of 0.4% and 0.1% EHC to soil mass was applied using direct push technology; the higher application rate nearest the source serves as a PRB to intercept potential residual contamination from the former dry cleaner. Subsequent field monitoring showed PCE at or below protection standards (5ppb) at all wells after 9 months with no accumulation of catabolites. Site closure has been requested. The material cost of using EHC for plume treatment was \$11.80/yd<sup>3</sup>.
3. **ISCR of TCE, TCA and catabolites** (United States Marine Corps Site, North Carolina) Working beneath a highly sensitive military building, 24,100 lbs of EHC was injected into areas of elevated CVOCs, as high as 80,000 ppb. Substantial efforts were undertaken to monitor indoor vapor, subsurface temperatures, and the production of catabolites (i.e., VC). Six months following the EHC injection, TCA levels had decreased by 94% and TCE levels had decreased by 84% to 90% at the target areas without the accumulation of problematic catabolites. No air issues were identified. With an estimated life of greater than 36 months, EHC is expected to continue stimulating reductive dechlorination at this site. The material cost of using EHC for plume treatment was \$3.65/yd<sup>3</sup>.
4. **ISCR of PCE and catabolites** (Dry Cleaner Site, Colorado) Adventus teamed with Vironex to inject 3,700 lbs of EHC into a PCE source area in weathered shale. Three months following the pilot injection of EHC, PCE concentrations were reduced up to 96% and TCE concentrations dropped in half. Full scale injection is planned for summer 2010. The EHC product cost for plume treatment was \$19.64/yd<sup>3</sup>.
5. **ISCR of PCE and daughter products** (Confidential Client, Texas) 1 ton of EHC was placed into a trench yielding a PRB to intercept and treat a dissolved CVOC plume; in addition, 3 tons of EHC was placed into an open excavation containing groundwater (contaminated soil was removed). EHC installations were completed in two days. Complete CVOC removal was observed within one month in the open excavation, and 90% removal of PCE and daughter products was observed at locations downgradient of the PRB, after 11 months. Catabolites such as DCE or VC were not produced.

6. **ISCR of TCE and hexavalent chromium** (Confidential Client, Washington) Adventus injected 9,600 lbs of EHC-M into suspected hot-spot areas not amenable by an existing extraction system. One month following the injection, TCE was below the detection limit, and chromium was reduced by greater than 90%. Four months following injection, chromium was also below the detection limit. The EHC product cost for treatment of hot-spots was \$8.64/yd<sup>3</sup>.
7. **ZVI PRB for PCE and catabolites** (Dry Cleaner Site, Geneva, New York) Adventus installed a 200 foot ZVI PRB in a significant CVOC plume in a shallow aquifer. The removal of the source zone (excavation of impacted soils and free phase PCE), and installation of the ZVI PRB, has successfully prevented off-site migration. Catabolites such as DCE or VC were not produced.
8. **ISCR of TCE and CT** (Confidential Client, Southeastern USA) Adventus injected 45,000 lbs of EHC<sup>®</sup> into three treatment barriers across a groundwater plume contaminated with CT and TCE. EHC injection was completed in twenty days. Three months following EHC additions, the concentration of chlorinated solvents decreased by as much as 97% throughout the plume without the accumulation of catabolic intermediates, such as VC. The EHC product cost for plume treatment was \$4.60/yd<sup>3</sup>.
9. **ISCR of TCE and daughter products** (Former Unregulated Solid Waste Management Unit, Ohio) A total of 11, 850 lbs of EHC was injected into existing gravel groundwater collection trenches positioned downgradient of suspected source areas. A microbial culture of *Dehalococcoides* species (KB-1 SiREM) was also applied to further enhance biological degradation. Subsequent monitoring showed that TCE and *cis* 1,2-DCE decreased below the detection limit within the trenches after six months, without the accumulation of catabolic intermediates. CVOCs have decreased by 99% downgradient of the PRBs after nine months. The EHC product cost was \$12/ft<sup>2</sup> of PRB cross-section.
10. **ISCR of TCE and catabolites** (Industrial manufacturing facility, NW USA) Groundwater on site was impacted by TCE and its conventional anaerobic degradation products (primarily *cis*-1,2-DCE and VC) up to a level of 290,000 ppb total CVOCs. Groundwater discharges to a river approximately 450 ft downgradient of a suspected source area. A total of 21 tons of EHC was injected to yield a PRB upgradient of the riverbank. An additional 13.5 tons of EHC was injected into the suspected source area. Post treatment monitoring showed between 97 and >99.9% CVOC removal downgradient of the riverbank PRB without the accumulation of problematic catabolites. TCE has decreased from 92,900 to 62 ppb within the source area 9 months following the injections.
11. **mGCW for TCE removal (U.S. EPA's Superfund Innovative Technology (SITE) Program, Sweden-3 Chapman Site, Sweden, NY)**. Staff now at Adventus provided Lead Project Scientists to field demonstrate the effectiveness of microbiologically enhanced *in situ* bioremediation technology for the treatment of chlorinated solvents. Employed UVB-type vertical groundwater circulation well technology integrating *in situ* and *ex situ* bioreactors housing a constitutive TCE-degrading bacterium (*Burkholderia cepacia* strain G4).
12. **ZVI-Clay for removal of source area CT and CF** (Industrial manufacturing facility, Martinsville, Virginia) Former waste pits were identified as source areas of chlorinated solvents, with a maximum CT concentration of 30,000,000 µg/kg. ZVI-Clay technology was used to treat the source area. Seventy-six columns of soil, 8 ft in diameter, were mixed with concurrent injection of a clay-granular iron slurry to a depth of 35 feet. One year following treatment, 20 soil cores from the injected zone showed that CT has decreased by 99.99%, and total chlorinated solvents,

including byproducts of dechlorination, have decreased by 99%. Continued degradation is expected with time.

13. **ISCR of CF and CT** (Grain silo facility, KS) Groundwater was impacted with CT up to 2,700 ppb in the source area of a plume extending 2,500 ft, which finally discharges into a creek. 24 tons of EHC was injected into a 270 ft long PRB in March, 2005. After 36 months, the PRB continues to remove greater than 98% of the CT from influent concentrations without the accumulation of catabolites. The decreasing trend in CT concentrations has migrated a significant distance downgradient of the PRB and MCLS have been met in some downgradient wells.

A summary of experience at chlorinated solvent sites is provided in **Table 1**. Detailed project descriptions are available at [www.adventusgroup.com/projects/proj\\_ehc.shtml](http://www.adventusgroup.com/projects/proj_ehc.shtml).

Table 1: Representative Experience in Remediation of Chlorinated Solvents by the Adventus Group

Site #	Site Location	State or Country	Chemicals Treated (maximum concentration- µg/L)	Remedial System	Duration of Clean up*/ Date of PRB installation**	Results
1	Dry Cleaner, Portland	OR	PCE (22,000), TCE (1,700), DCE (3,100) and VC (7)	EHC plume injection	1 year	<b>&gt;99.6% removal of total CVOCs without the accumulation of catabolites</b>
2	Former Delta Metals Site	UK	TCE (103,000), 1,2-DCE, VC	EHC plume injection	1 year	<b>TCE, DCE, VC reduced to non-detect in all monitoring wells, well below remedial goal</b>
3	Dry Cleaner, Boulder	CO	PCE (up to 6,500), cis 1,2-DCE and catabolites	EHC pilot plume injection	Remediation continuing	<b>Up to 96% reduction in PCE in 3 months. Full scale planned summer 2010</b>
4	Manufacturing facility	Portugal	PCE (21,000), TCE (2,000), DCE (8,600) and VC (15) in fractured granite	EHC pilot scale injection in hot spot area	18 months to reach treatment goal; full scale remediation planned	<b>Despite fact that results were tempered by the presence of DNAPL, cleanup goals were met and full scale EHC planned. PD available</b>
5	Industrial Facility	TX	PCE (23,000) and catabolites	EHC in a PRB; EHC in open excavation	11 months and continuing	<b>Below detection limits in open excavation; 90% removal downgradient of PRB</b>
6	Dry Cleaner, Boulder	CO	PCE (1,400), minor catabolites	EHC direct injection-PRB and plume treatment	9 months; Installed 6/09	<b>Goals met in all wells but one downgradient well after 9 months; 99.8% reduction of PCE in hot spot; no accumulation of catabolites; product cost = \$11.80/yd<sup>3</sup>. PD available</b>
7	US Marine Corps Site	NC	TCE (73,000), TCA (24,000) and catabolites	EHC plume injection	6 months and continuing	<b>84% to 90% removal in target areas</b>
8	Confidential, Kansas	KS	CT (4000) and CF	EHC in a PRB	Installed March 2005/continued performance	<b>After 54 months, PRB continues to remove &gt;98% CT and CF without catabolites. MCLs met in some downgradient wells</b>
9	Confidential	Southeastern USA	CT (260) and TCE (44)	EHC plume injection	3 months	<b>97% removal of CT; non-detect TCE</b>
10	Former SWMU	OH	TCE (750) and cis- 1,2-DCE (5,200), VC (630), and catabolites	EHC in a PRB	9 months and continuing	<b>99% removal of CVOCs downgradient of PRB. PD available</b>

11	Industrial Facility, Portland	OR	TCE and catabolites (up to 13 mg/L total CVOCs in PRB area and 232 mg/L total CVOCs in source area)	EHC in a PRB; EHC for source area treatment .	Installed May 2006/continued performance	<b>&gt;99.9% within PRB and &gt;99.4% within source area.</b>
12	Manufacturing Facility	Western NC	TeCA (390), TCE (1,100), CF (1,200) in saprolite and fractured rock	EHC plume injection	26 months (due to low permeability soils and fractured bedrock)	<b>95% removal of key CAHs; continued dechlorination expected due to organic carbon still remaining</b>
13	Manufacturing Facility	Belgium	TCE (1000), cis-1,2-DCE (450)	EHC in a PRB (160 ft)	Installed 11/06	<b>TCE below groundwater standard and DCE reduced by 50% in PRB after 7 months. No accumulation of VC.</b>
14	Confidential, Vancouver	WA	TCE (6.2) and hexavalent chromium (165)	EHC-M in a PRB	4 months and continuing	<b>Non-detect hexavalent chromium and TCE (after 1 month) downgradient of PRB</b>
15	Industrial Manufacturing Site	Northwest USA	TCE (592) and cis- 1,2-DCE (90), VC (5)	EHC in a PRB and source area injection	6 months and continuing	<b>&gt;90% CVOC removal</b>
16	Dry Cleaner, Tubingen,	Germany	TCE and cis 1,2-DCE	funnel and gate - ZVI in a PRB	10/98	<b>CVOCs decreased below detection limits in PRB</b>
17	Dry Cleaner, Sudbury	MA	PCE and catabolites	ZVI in a PRB	8/99	<b>CVOCs degraded below MCLs in PRB</b>
18	Geneva	NY	PCE and catabolites	ZVI in a PRB and source zone removal	9/00	<b>PRB successfully prevents off-site migration of CVOCs</b>
19	Dry cleaner, Burlington	VT	PCE, TCE and cis 1,2-DCE	ZVI in a PRB	9/01	<b>Successful removal of CVOCs</b>
20	Dry Cleaner, Amersfoort	Netherlands	PCE (2,200) and TCE aqueous and free phase	funnel and gate - ZVI in a PRB	9/02	<b>&gt;99.9% removal of PCE and TCE, some metabolite formation</b>
21	Rheine-Westphalia	Germany	PCE (20,000), TCE, cis 1,2-DCE	ZVI and iron sponge in a PRB	6/98	<b>99% removal of PCE downgradient of PRB</b>
22	Naval Weapons Station, Yorktown	VA	TNT, RDX, DNT and CVOCs	DARAMEND applied ex-situ	3 months	<b>99% to 99.9% removal of organic explosive compounds; well below cleanup criteria for CVOCs</b>
23	Sweden-3 Chapman Site, Sweden	NY	PCE, TCE, cis 1,2-DCE, and VC	UVB-type vertical groundwater circulation well (mGCW)	1 year	<b>US EPA SITE Demo; &gt;90% removal achieved</b>
24	Nellis Air Force Base, Las Vegas	NV	TCE and catabolites	mGCW	6 months	<b>&gt;90% removal achieved; project award recipient (main consultant)</b>

25	Industrial Client	Netherlands	TCE and catabolites	mGCW coupled with advanced oxidation (ozone sparging) and NAPL recovery	Continued performance	mGCW replaced existing pump-and-treat resulting in significant cost savings.
26	Confidential, Detroit	MI	TCE and catabolites	Phytoremediation system	Installed 1998	Not available
27	Manufacturing Facility, Martinsville	VA	CT (30 million), CF (150,000), MC, PCE, TCE	ZVI-Clay	1 year and continuing	<b>99.99% removal of CT; 99% total CVOC removal</b>
28	Oxnard	CA	1,2-DCA/DCE/VC	DARAMEND direct placement	Installed 2007	<b>Goals met to minimize CVOC vapors in new residential development - no vapor barriers required in new housing development resulting in \$\$\$ savings</b>
29	Sunnyvale	CA		EHC in a PRB extension of existing ZVI PRB	Installed 3/07	No results to date
30	Dry Cleaner, Broomfield	CO	PCE (170)	EHC plume injection pilot test	Injected 6/07	No results provided
31	Dry Cleaner, Memphis	TN	PCE (up to 11,200), cis 1,2-DCE and catabolites	EHC plume injection pilot test	Injected 6/07	Injection equipment on site not compatible with regional geology; reapplication pending
32	Former Industrial Site, Anaheim	CA	PCE	EHC direct injection	Installed 10/07	
33	Industrial Site, Calvert City	KY	TCA, CHCs	EHC direct injection	Installed 10/07	Downward trend after 6 months.
34	Grain Silo, Ogden	UT	CT	EHC direct injection	8 months	<b>Remedial objectives met within 8 months, no catabolites accumulated and site is in closure process.</b>
35	Industrial Facility, Santa Clara	CA	PCE	EHC pilot	Installed 8/07	3 point pilot → results inconclusive
36	Industrial Site, Sanford	FL	CHC	EHC backfill UST	Installed 8/07	Data not available
37	Industrial Site, Dallas	TX	PCE/TCE (total chlorinated ethenes 1,800)	EHC in a PRB next to a canal (ISCO applied at upgradient source)	Installed 10/07	<b>&gt; 98% removal of total chlorinated ethenes directly downgradient from EHC PRB; site closure expected 2010</b>
38	Industrial Site, Indianapolis	IN	CHC	EHC pilot direct soil mixing	Installed 10/07	Data not available
39	Grain Silo, Centralia	KS	CT	EHC direct injection	Installed 11/07	<b>Greater than 90% decline in total chloromethanes within injection grid.</b>

40	Dry Cleaner Site	NC	CT (1,820)/PCE (275)	EHC pilot injection	Installed 2/08	Update pending
41	Industrial Site	Taiwan	1,2-DCA, VC, DCE (total CVOC 100,000)	EHC direct injection pilot PRB in two areas	Installed 3/2008	<b>Initial total CVOCs (~100 ppm) were reduced to treatment standards within 6 months. PD available</b>
42	Former Dry Cleaner	TX	PCE	EHC-M Pilot injection	Installed 2/08	
43	Irvine	CA	PCE	EHC one point comparative pilot	Installed 3/08	
44	Manchester	UK	PCE	EHC Direct injection	Installed 3/08	
45	Industrial Facility, Northern Italy	Italy	1,2-DCA (300,000) and VC (500)	EHC Pilot direct injection	10 months and continuing; installed 5/08	<b>After 300 days, almost all wells in pilot area reached the remedial goal (1.5mg/L). Full scale planned. PD available</b>
46	Metuchen	NJ	TCE	EHC pilot injection	Installed May 2008	
47	Blackley/ Manchester	UK	CHCs	EHC	Installed 5/08	
48	Canton	MA		EHC pilot PRB	Installed 7/08	
49	Toronto	ON, CAN	PCE (13,900) and all daughters	DARAMEND direct placement	Installed 07/08	No results provided
50	Millsboro	DE		Daramend + ZVI		No data or site details
51	US DoD, French Camp	CA		EHC	Installed 8/08	
52	Northern MI	MI	TCE, DCE, and VC (~700 µg/L total)	EHC	Installed 9/08	No data
53	Former Industrial Site, San Jose	CA	TCE and DCEs	EHC direct injection	Installed 9/08	
54	Victoria	Australia	TCE	EHC-A in well pilot, followed by DARAMEND installation in 'chimneys'	Installed 9/08 and 9/09	TCE decreased from 4000ug/L to 630ug/L in 1 week in the target well; later rebound resulted in DARAMEND application.
55	Victoria	Australia	PCE (23,000)	EHC-F	Installed 9/08	Best results where best distribution occurred after 6 months. Examples PCE - 23 ppm to 4 ppm, 8 ppm to 1 ppb, and 21 ppm to 3 ppb.

59	Dry Cleaner, Nashville	TN	1,2-DCE, VC	EHC plume injection	Installed 10/08	
60	DOD Facility, Fairbanks	AK	TCE	EHC source area injection	Installed 10/08	No data available yet
61	Rolling Meadows	IL	TCE/DCA/DCE	EHC source area injection	Installed 10/08	<b>TCE reduced 98% without catabolites after 4 months</b>
62	Sudbury	ON, CAN	EHC excavation backfill in source zone and PRB	EHC	Installed 10/08	EHC was mixed with fine gravel and backfilled into a source zone excavation. Boreholes installed downgradient, close together and filled with EHC and fine gravel mix
63	Vandenburg AFB	CA		EHC Pilot	12/08	Groundwater exiting PRB has not reached downgradient wells as of last monitoring event
64	Seattle	WA	cis 1,2-DCE (10), VC (30)	EHC applied in wells	2/09	<b>Cis1,2-DCE below regulatory levels; VC decreasing steadily based on quarterly monitoring.</b>
65	Mount Holly	NJ	TCE (50)	EHC pilot and full scale source area and PRB injection	3/09 pilot scale 5/10 full scale	Pilot test area achieved about 50% reduction in 4 months
66	Green Bay	WI	CHCs	EHC for CHCs	2/09	No data available
67	Spartanburg	SC		EHC	2/09	
68	Laurel	MS		EHC/EHC-A	2/09 and 6/09	
69	Mount Holly	NJ		EHC	2/09	
70	Wichita	KS	CT	EHC PRB	3/09	Variable, still assessing. Awaiting April 2010 results.
71	Escondido	CA		EHC Pilot	3/09	
72	Dry cleaner	Southeastern USA	PCE (8,000), TCE (226)	EHC source area injection	1 year and continuing - installed 4/09	<b>94% and 70% reduction of PCE and TCE, respectively, after 1yr</b>
73	Dry cleaner, Millington	TN	PCE	EHC	4/09	
74	Moffett Field	CA	PCE (46), TCE (38), cis-DCE (10)	EHC injected via DPT for plume treatment (large pilot)	5/09	<b>PCE decreased below detection limit (1 ppb) within treatment area; ~90% removal of total CVOCs after 7 months.</b>

75	ANG, Salt Lake City	UT		EHC	5/09	
76	Former missile site, Windsor	CO	TCE (3,600) in deep bedrock	EHC-G hydrofac (60 ft radius of fracture emplacement)	Installed 4/09	
77	Netherlands	EU		EHC	Installed 5/09	
78	Former US Navy Station, Sunnyvale	CA		EHC	Installed 5/09	
79	The Hague	Netherlands		EHC-A	5/09	
80	Strathroy	ON, CAN	TCE (35), 1,1-DCA (65), chlorinated ethenes and ethanes	EHC	6/09	Groundwater exiting PRB has not reached downgradient wells
81	Pindamonhangaba	Brazil	PCE (1,760), TCE (2,800), cis-DCE (2,870)	EHC Pilot (direct injection)	9/09	No results available yet
82	Horsham	PA	TCE (24,000)	Direct injection of EHC, ZVI, nutrients and other carbon sources - Pilot	6/09	<b>TCE decreased from 24,000 ppb to below detection limit of 1 ppb in "Area C".</b>
83	Fort Wainwright	AK		EHC	6/09	
84	WY ANG, Cheyenne	WY	TCE (30), CT (10) in low permeability soil	EHC-G hydrofrac	Installed 5/09	
85	Chamblee	GA	TCE	EHC-G hydrofrac Pilot	Installed summer 09	Full scale planned
86	Framingham	MA	CVOCs	EHC-F	7/09	
87	Roxbury	MA		EHC	8/09	
88	Industrial facility, Newcastle	UK		EHC	8/09	
89	Toulouse	France	PCE, TCE	EHC	8/09	
90	Industrial Facility, São Paulo	Brazil	PCE (714), TCE (101), cis-DCE (240)	EHC PRBs for plume treatment (installed via DPT)	11/09	1-month data shows decreasing trend
91	Industrial Facility, São Paulo	Brazil	cis-DCE (951), VC (695)	EHC Pilot (installed via injection wells into PWR)	1/10	<b>cis-DCE decreased below detection limit of 5 ppb and VC decreased by 83% in 1 month</b>

92	Pipersville	PA		EHC	9/09	
93	El Toro, Irvine	CA		EHC	9/09	Results available soon; however, client reports EHC was successful
94	Vallejo	CA		EHC Pilot test	9/09	
95	Lisbon	ME	As, VOCs	EHC-M for As and VOCs	9/09	
96	Adel	GA		EHC	9/09	Requested data
97	Bournemouth	UK	CVOCs	EHC Pilot for CVOCs	9/09	
98	Messena	NY	DCE	EHC PRB for DCE	9/09	
100	Industrial Facility, Sao Paulo	Brazil	1,1-DCE (104), 1,1-DCA (18)	EHC Pilot	12/09	Data pending
101	Buffalo	NY		EHC	10/09	
102	Beijing	China	CT	EHC for CT Pilot	12/09	
103	Salt Lake City	UT	TCE (450)	DARAMEND excavation backfill for PRB	1/10	No results to date
104	Lacey	WA	Chlorinated ethenes	Complimentary EHC injection following oil injection.	2/10	Data pending.
106	Dorset	UK	CHC	EHC for CHC Pilot	2/10	
109	Dry Cleaner, Bartlett	TN	PCE	EHC for PCE	2/10	
110	Deland	FL		EHC	2/10	
111	Mississauga	ON, CAN	Chlorinated ethenes, ethanes, methanes cis-DCE (9,000)	ZVI EHC PRB	3/10	No results to date
112	Salt Lake City	UT	PCE (5,000); TCE (5,000)	DARAMEND excavation backfill for PRB	3/10	No results to date

\* Duration of cleanup represents the length of time to reach the remediation goals, however EHC continues to provide optimal conditions for chemical reduction and bio-stimulation for more than three years and in some cases up to six years.

\*\* ZVI - consistent PRB performance has been observed for over 10 years, with the expectation of total lifetimes in excess of 20 years.