



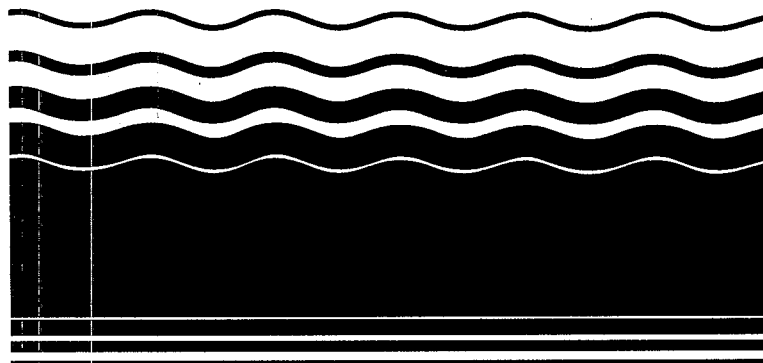
Superfund Innovative Technology Evaluation Program

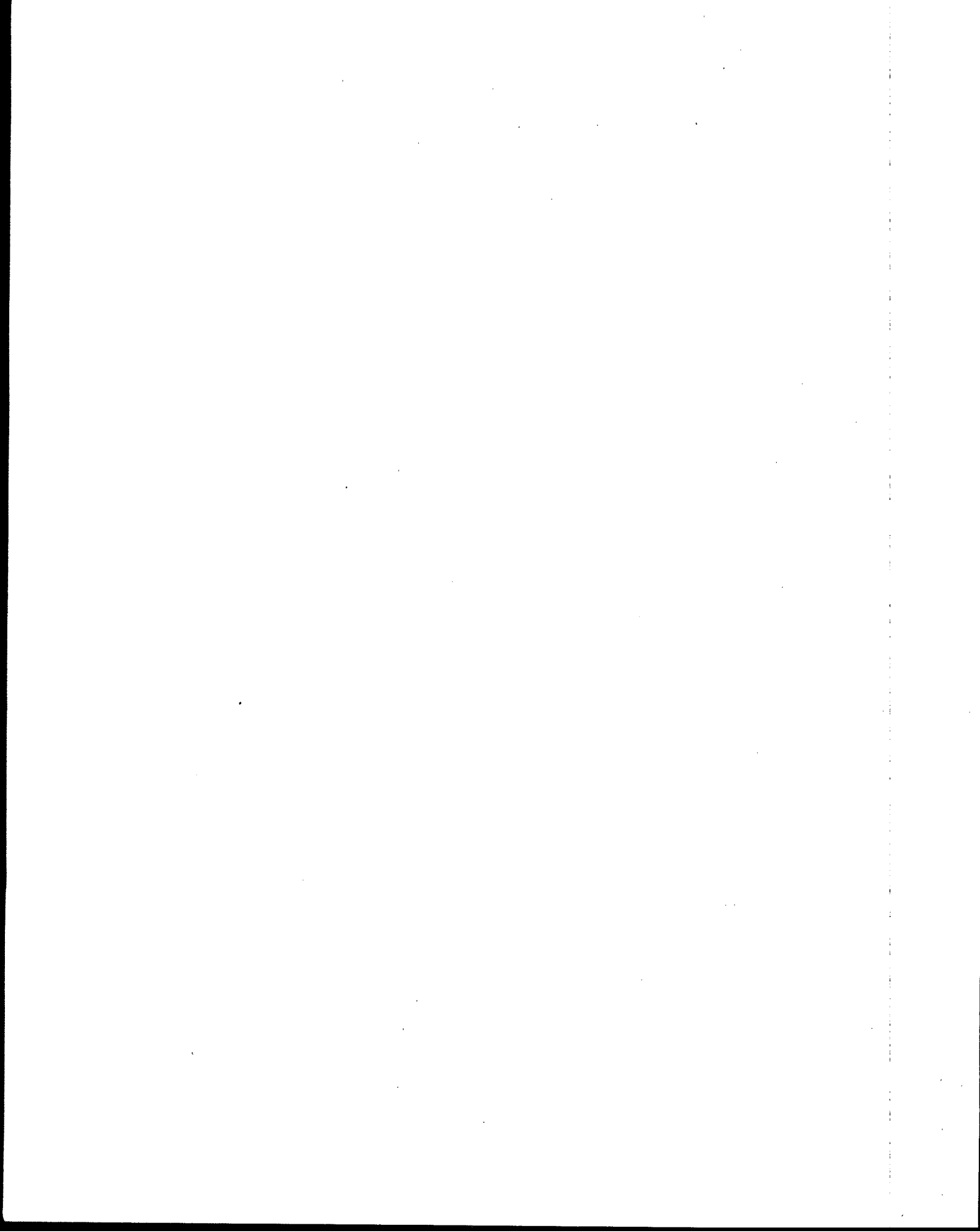
Technology Profiles Tenth Edition

Volume 3 Monitoring and Measurement Program

SITE

**SUPERFUND INNOVATIVE
TECHNOLOGY EVALUATION**





EPA/540/R-99/500c
February 1999



Technology Profiles Tenth Edition

Volume 3 Monitoring and Measurement Program

National Risk Management Research Laboratory
Office of Research and Development
U.S. Environmental Protection Agency
Cincinnati, Ohio 45268



Printed on Recycled Paper

NOTICE

The development of this document was funded by the U.S. Environmental Protection Agency (EPA) under Contract No. 68-C5-0037, Work Assignment No. 0-32, to Tetra Tech EM Inc. The document was subjected to the Agency's administrative and peer review and was approved for publication as an EPA document. Mention of trade names or commercial products does not constitute endorsement or recommendation for use at any particular hazardous waste site.

FOREWORD

The U.S. Environmental Protection Agency (EPA) is charged by Congress with protecting the Nation's land, air, and water resources. Under a mandate of national environmental laws, EPA strives to formulate and implement actions leading to a compatible balance between human activities and the ability of the natural systems to support and nurture life. To meet these mandates, EPA's research program is providing data and technical support for solving environmental problems today and building a science knowledge base necessary to manage our ecological resources wisely, understand how pollutants affect our health, and prevent or reduce environmental risks in the future.

The National Risk Management Research Laboratory (NRMRL) is EPA's center for investigating technological and management approaches for reducing risks from threats to human health and the environment. The focus of NRMRL's research program is on methods for preventing and controlling pollution to air, land, water, and subsurface resources; protecting water quality in public water systems; remediating contaminated sites and groundwater; and preventing and controlling indoor air pollution. The goal of this research effort is to catalyze development and implementation of innovative, cost-effective environmental technologies; develop scientific and engineering information needed by EPA to support regulatory and policy decisions; and provide technical support and information transfer to ensure effective implementation of environmental regulations and strategies.

This document has been produced as part of NRMRL's strategic long-term research plan. It is published and made available by EPA's Office of Research and Development to assist the user community and to link researchers with their clients.

E. Timothy Oppelt, Director
National Risk Management Research Laboratory

ABSTRACT

The Superfund Innovative Technology Evaluation (SITE) Program, now in its thirteenth year, is an integral part of EPA's research into alternative cleanup methods for hazardous waste sites around the nation. The SITE Program was created to encourage the development and routine use of innovative treatment and monitoring and measurement technologies. Under the program, EPA enters into cooperative agreements with technology developers. These developers research and refine their innovative technologies at bench- or pilot-scale and then, with EPA's support, demonstrate them at hazardous waste sites. As a result, the SITE Program provides environmental decision-makers with data on new, viable treatment technologies that may have performance or cost advantages compared to traditional treatment technologies.

The SITE profiles documents, prepared between July 1998 and October 1998, are intended as reference guides for those interested in technologies participating in the SITE Demonstration Program (Volume 1), Emerging Technology Program (Volume 2), and Monitoring and Measurement Technologies (MMT) Program (Volume 3). The two-page profiles are organized into two sections for each program (except for the MMT Program) for completed and ongoing projects, and are presented in alphabetical order by developer name. Reference tables for SITE Program participants precede the sections and contain EPA and developer contacts. Inquiries about a SITE technology evaluation or the SITE Program should be directed to the specific EPA project manager; inquiries on the technology process should be directed to the specific technology developer.

Each technology profile contains (1) a technology developer and process name, (2) a technology description, including a schematic diagram or photograph of the process (if available), (3) a discussion of waste applicability, (4) a project status report, and (5) EPA project manager and technology developer contacts. The profiles also include summaries of demonstration results, if available. The technology description and waste applicability sections are written by the developer. EPA prepares the status and demonstration results sections.

A Trade Name Index and Applicability Index are also included in the back of each volume. The Trade Name Index allows the reader to identify a technology based on trade name, current company name, and former company name. The Applicability Index is organized by 11 media categories, 19 waste categories, and 14 technology type categories.

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ACKNOWLEDGEMENTS

The project manager responsible for the preparation of this document is Teri Richardson of EPA's National Risk Management Research Laboratory in Cincinnati, Ohio. This document was prepared under the direction of Robert Olexey, Director of the Land Remediation and Pollution Control Division. Key program area contributors for EPA include Stephen Billets, Annette Gatchett, and Randy Parker. Special acknowledgement is given to the individual EPA SITE project managers and technology developers who provided guidance and technical support.

Tetra Tech EM, Inc. prepared this document under the direction and coordination of Teri Richardson and Annette Gatchett.

SITE PROGRAM DESCRIPTION

The U.S. Environmental Protection Agency's (EPA) Superfund Innovative Technology Evaluation (SITE) Program, now in its thirteenth year, encourages the development and implementation of (1) innovative treatment technologies for hazardous waste site remediation, and (2) characterization and monitoring technologies for evaluating the nature and extent of hazardous waste site contamination.

The SITE Program was established by EPA's Office of Solid Waste and Emergency Response (OSWER) and the Office of Research and Development (ORD) in response to the 1986 Superfund Amendments and Reauthorization Act (SARA), which recognized a need for an "Alternative or Innovative Treatment Technology Research and Demonstration Program." The SITE Program is administered by ORD's National Risk Management Research Laboratory (NRMRL), headquartered in Cincinnati, Ohio.

The SITE Program includes the following component programs:

- **Demonstration Program** - Evaluates and verifies cost and performance of promising innovative technologies at selected hazardous waste sites to provide reliable performance, cost, and applicability information for site clean-up decision making
- **Emerging Technology Program** - Provides funding to developers to continue research efforts from the bench- and pilot-scale levels to promote the development of innovative technologies
- **Monitoring and Measurement Technologies Program** - Evaluates technologies that detect, monitor, and measure hazardous and toxic substances to provide more cost-effective methods for producing real-time data during site characterization and remediation
- **Technology Transfer Program** - Disseminates technical information, including engineering, performance, and cost data, on innovative technologies to remove impediments for using innovative technologies

This Technology Profiles document, a product of the Technology Transfer Program, describes completed and ongoing projects in the Demonstration, Emerging Technology, and Monitoring and Measurement Programs. Figure 1 shows the relationship among the programs and depicts the process of technology development from initial concept to commercial use.

In the Demonstration Program, the technology is field-tested on hazardous waste materials. Engineering and cost data are gathered on the innovative technology so that potential users can assess the technology's applicability to a particular site. Data collected during the field demonstration are used to assess the performance of the technology, the potential need for pre- and post-processing of the waste, applicable types of wastes and waste matrices, potential operating problems, and approximate capital and operating costs.

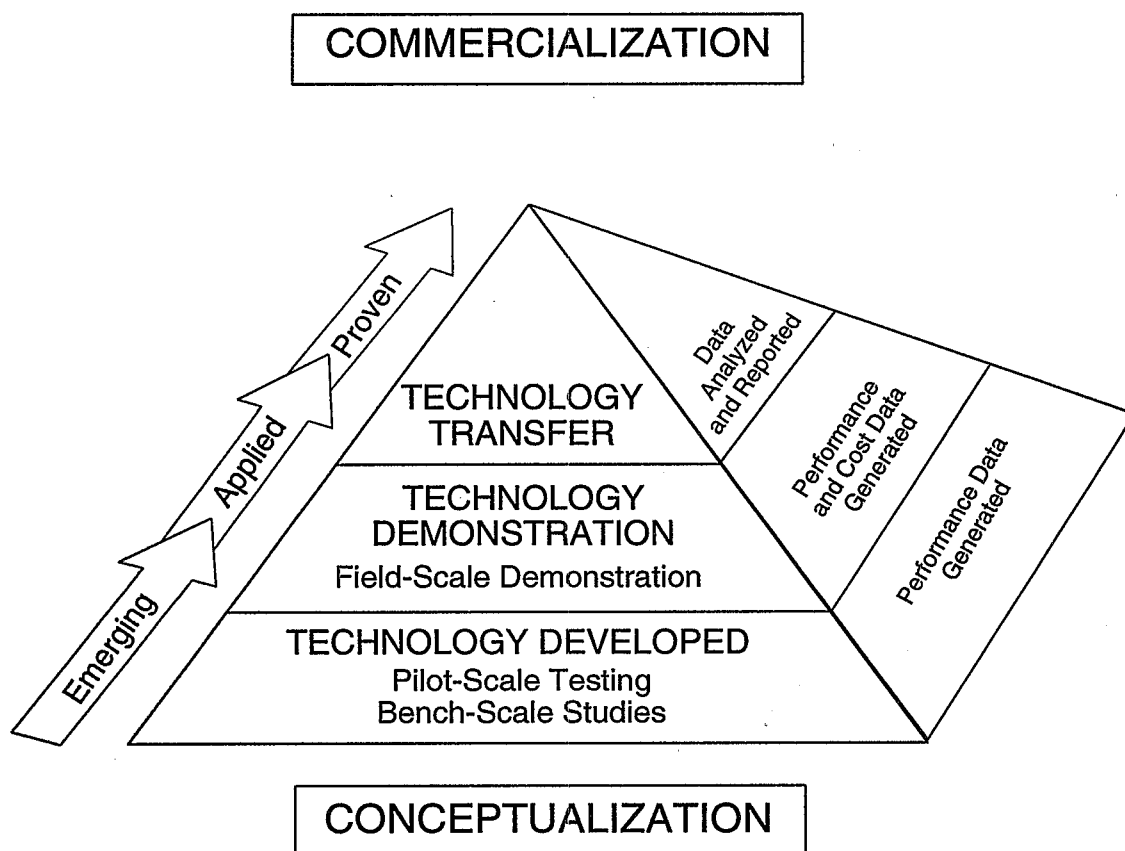


Figure 1: Development of Innovative Technologies

At the conclusion of a SITE demonstration, EPA prepares an Innovative Technology Evaluation Report (ITER), a Technology Evaluation Report (TER), a Technology Capsule, and a Demonstration Bulletin. Often, a videotape of the demonstration is also prepared. These reports evaluate all available information on the technology and analyze its overall applicability to other site characteristics, waste types, and waste matrices. Testing procedures, performance and cost data, and quality assurance and quality control standards are also presented. These demonstration documents are distributed by EPA to provide reliable technical data for environmental decision-making and to promote the technology's commercial use.

The Demonstration Program currently has 106 developers conducting 116 demonstrations. Of these projects, 85 demonstrations are complete and 28 are ongoing. The projects are divided into the following categories: thermal destruction (10), biological degradation (21), physical/chemical treatment (45), solidification/stabilization (10), physical/chemical radioactive waste treatment (2), physical/chemical thermal desorption (19), physical/chemical biological degradation (1), materials handling (3), and other (2). Several technologies represent more than one treatment category. Figure 2 shows the breakdown of technologies in the Demonstration Program. Profiles for technologies demonstrated under the Demonstration Program are located in Volume 1.

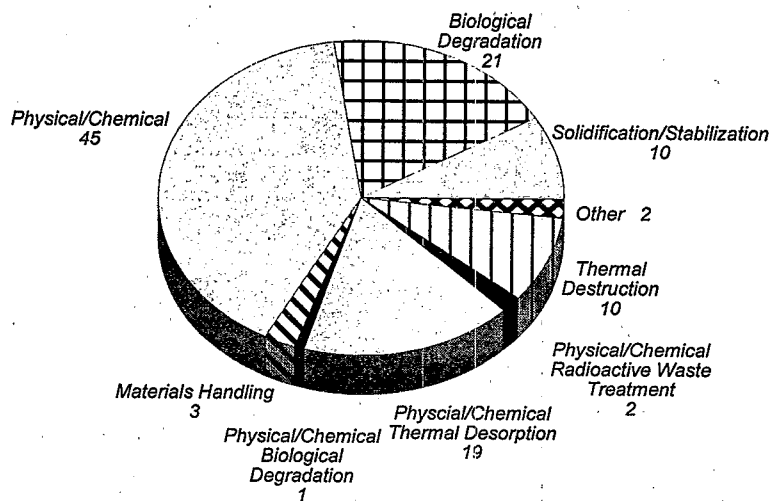


Figure 2: Innovative Technologies in the Demonstration Program

Under the Emerging Technology Program, EPA provides technical and financial support to developers for bench- and pilot-scale testing and evaluation of innovative technologies that are at a minimum proven on the conceptual and bench-scale levels. The program provides an opportunity for a private developer to research and develop a technology for field application and possible evaluation under the Demonstration Program. A technology's performance is documented in a Final Report, journal article, Summary, and Bulletin.

EPA has provided technical and financial support to 77 projects in the Emerging Technology Program. Of these projects, 66 are completed, 7 are continuing in the program, and 4 have exited the program. Eighteen Emerging Technology Program projects are participating in the Demonstration Program, and 7 of these demonstration projects are completed. The 73 active technologies are divided into the following categories: thermal destruction (9), physical/chemical treatment (38), biological degradation (19), solidification/stabilization (2), and materials handling (5). Figure 3 displays the breakdown of technologies in the Emerging Technology Program. Profiles for technologies demonstrated under the Emerging Technology program are located in Volume 2.

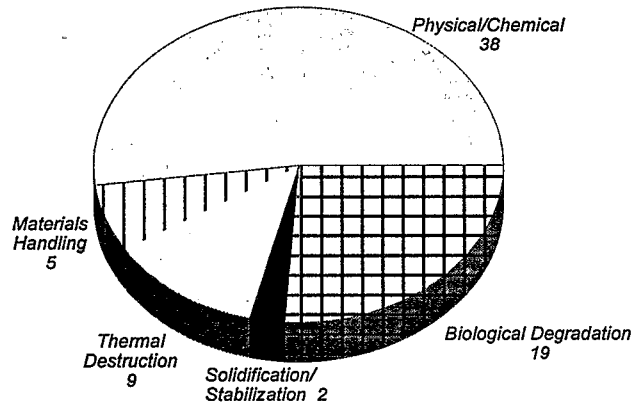


Figure 3: Innovative Technologies in the Emerging Technology Program

The Monitoring and Measurement Technologies (MMT) Program's goal is to assess innovative and alternative monitoring, measurement, and site characterization technologies. To date, 38 technology demonstrations have occurred under the MMT Program. These demonstrations have included four cone penetrometers, 6 field portable X-ray fluorescence units, 6 portable gas chromatographs, 4 spectrophotometers, 12 field test kits, and 6 soil samplers. Profiles for technologies demonstrated under the MMT Program are located in Volume 3.

In the Technology Transfer Program, technical information on innovative technologies in the Demonstration Program, Emerging Technology Program, and MMT Program is disseminated to increase the awareness and promote the use of innovative technologies for assessment and remediation at Superfund sites. The goal of technology transfer activities is to promote communication among individuals requiring current technical information for conducting site investigations and cleanups.

The Technology Transfer Program reaches the environmental community through many media, including:

- Program-specific regional, state, and industry brochures
- On-site Visitors' Days during SITE demonstrations
- Demonstration videotapes
- Project-specific fact sheets to comply with site community relations plans
- ITERs, Demonstration Bulletins, Technology Capsules, and Project Summaries
- The SITE Exhibit, displayed nationwide and internationally at conferences
- Networking through forums, associations, regions, and states
- Technical assistance to regions, states, and remediation cleanup contractors

SITE information, including an electronic version of this document, is available through the following on-line information clearinghouses:

SITE Program Home Page: <http://www.epa.gov/ORD/SITE>

Alternative Treatment Technology Information Center (ATTIC)

Internet Access: <http://www.epa.gov/attic>

Cleanup Information Bulletin Board System (CLU-IN)

Help Desk: 301-589-8368; Internet Access: <http://www.clu-in.org>

EPA Remediation and Characterization Innovative Technologies

Internet Access: <http://www.epa.reachit.org>

Groundwater Remediation Technologies Center

Internet Access: <http://www.gwrtac.org>

Technical reports may be obtained by calling the National Service Center for Environmental Publications in Cincinnati, Ohio. To find out about newly published documents or to be placed on the SITE mailing list, call or write to:

USEPA/NSCEP
P.O. Box 42419
Cincinnati, OH 45242-2419
1-800-490-9198

SITE PROGRAM CONTACTS

The SITE Program is administered by EPA's Office of Research and Development (ORD), specifically the National Risk Management Research Laboratory (NRMRL). For further information on the SITE Program or its component programs contact:

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513-569-7884
Fax: 513-569-7676

MONITORING AND MEASUREMENT TECHNOLOGIES PROGRAM

The purpose of the Monitoring and Measurement Technologies (MMT) Program, is to accelerate the development, demonstration, and use of innovative monitoring, measurement, and characterization technologies at Superfund sites. These technologies are used to assess the nature and extent of contamination and evaluate the progress and effectiveness of remedial actions. The MMT Program places high priority on technologies that provide cost-effective, faster, and safer methods than conventional technologies for producing real-time or near-real-time data.

The MMT Program is interested in new or modified technologies that can detect, monitor, and measure hazardous and toxic substances in the surface (soil and sediment), subsurface (saturated and vadose zones), air, biological tissues, wastes, and surface waters, as well as technologies that characterize the physical properties of sites. Technologies of interest include chemical sensors for in situ measurements; groundwater sampling devices; soil and core sampling devices; soil gas sampling devices; fluid sampling devices for the vadose zone; in situ and field-portable analytical methods; and other systems that support field sampling or data acquisition and analysis.

The identification of candidate technologies is ongoing; therefore, technology developers are encouraged to submit new and updated information at any time. This information is reviewed, cataloged, and incorporated into a technology matrix, from which EPA makes a preliminary determination of possible candidates for participation. Developers interested in participating should contact Stephen Billets at 702-798-2232.

Evaluations or demonstrations have been completed for 38 projects in the MMT Program. These technologies are presented in alphabetical order in Table 4 and are included in the technology profiles that follow.

TABLE 1

Completed SITE Monitoring and Measurement Technologies Program Projects as of October 1998

Developer	Technology	Technology Contact	EPA Project Manager	Applicable Media	Applicable Waste	
					Inorganic	Organic
Analytical and Remedial Technology, Inc., Milpitas, CA	Automated Sampling and Analytical Platform	Gary Hopkins 408-263-8931	Stephen Billets 702-798-2232	Aqueous Samples	Nonspecific Inorganics	VOCs, PAHs, Ionizable Organics
Art's Manufacturing and Supply, American Falls, ID	AMST TM Dual-Tube Liner Soil Sampler	Brian Anderson 800-635-7330	Stephen Billets 702-798-2232	Soil	Not Applicable	VOCs
Bionebraska, Inc., Lincoln, NE	BiMelze® Mercury Immunoassay	Craig Schweitzer 800-786-2580	Stephen Billets 702-798-2232	Soil, Sediment	Mercury	Not Applicable
Bruker Analytical Systems, Inc., Billerica, MA	Mobile Environmental Monitor	Dr. Brian Abraham 508-667-9580	Stephen Billets 702-798-2232	Air Streams, Water, Soil, Sludge, Sediment	Not Applicable	VOCs, SVOCs, PCBs, PAHs
Clements, Inc., Newton, IA	JMC Environmentalist's Subsoil Probe	Jim Clements 515-792-8285	Stephen Billets 702-798-2232	Soil	Metals	VOCs, PCBs, PAHs, Pesticides
C-THRU Technologies Corporation (formerly SCITEC Corporation), Kennewick, WA	Metal Analysis Probe (MAP®) Spectrum Assayer	Steve Price 800-466-5323	Stephen Billets 702-798-2232	Soil, Sediment, Filter and Wipe Samples	Metals	Not Applicable
Dexsil Corporation, Hamden, CT (Two Demonstrations)	Environmental Test Kits	Jack Mahon 203-288-3509	Stephen Billets 702-798-2232	Soil, Sediment, Transformer Oils	Not Applicable	PCBs
Environmental Technologies Group, Inc., Research Triangle Park, NC	AirSentry Fourier Transform Infrared Spectrometer	Not Available	William McClenny 919-541-3158	Air Streams	Nonspecific Inorganics	Nonspecific Organics
Fugro Geosciences, Inc., (formerly Loral Corporation), Houston, TX	Rapid Optical Screening Tool	Andrew Taer 713-778-5580	Eric Koglin 702-798-2432	Soil	Not Applicable	Petroleum, PAHs, VOCs

TABLE 1 (Continued)

Completed SITE Monitoring and Measurement Technologies Program Projects as of October 1998

Developer	Technology	Technology Contact	EPA Project Manager	Applicable Media	Applicable Waste	
					Inorganic	Organic
Geoprobe Systems, Salina, KS	Geoprobe Soil Conductivity Sensor	Colin Christy Troy Schmidt 785-825-1842	Stephen Billets 702-798-2232	Soil, Rock, Hydrogeologic Fluids	Nonspecific Inorganics	Nonspecific Organics
Geoprobe Systems, Salina, KS	Large Bore Soil Sampler	Wesley McCall Tom Omli 800-436-7762	Stephen Billets 702-798-2232	Soil	Metals, Nitrates, Dioxins, Furans	Herbicides, Pesticides, PCBs, SVOCs, Aromatic and Halogenated VOCs, Petroleum Fuels
Graseby Ionics, Ltd., and PCP, Inc., Watford, Hertsfordshire, England/West Palm Beach, FL (Two Demonstrations)	Ion Mobility Spectrometry	John Brokenshire 011-44-1923-816166 Martin Cohen 561-683-0507	Eric Koglin 702-798-2432	Air Streams, Vapor, Soil, Water	Not Applicable	VOCs
Hanby Environmental Laboratory Procedures, Inc., Wimberley, TX	Test Kits for Organic Contaminants in Soil and Water	John Hanby 512-847-1212	Eric Koglin 702-798-2432	Soil, Water	Not Applicable	PCP, PAHs, Other Various Organics
Hewlett-Packard Company (formerly offered by MTI Analytical Instruments, Inc.) Wilmington, DE	Portable Gas Analyzer/HP Micro GC	Hewlett-Packard 800-227-9770 Bob Belair 302-633-8487	Richard Berkley 919-541-2439	Soil Gases, Groundwater, Air	Not Applicable	VOCs
HNU Systems, Inc., Newton, MA	HNU Source Excited Fluorescence Analyzer-Portable (SEFA-P) X-Ray Fluorescence Analyzer	Jack Driscoll 800-724-6690 617-964-6690	Stephen Billets 702-798-2232	Solids, Liquids, Slurries, Powders	Metals	Not Applicable
HNU Systems, Inc., Newton, MA	HNU GC 311D Portable Gas Chromatograph	Jack Driscoll 800-724-6690 617-964-6690	Richard Berkley 919-541-2439	Air Streams	Not Applicable	VOCs, Aromatic Compounds, Halocarbons, PCBs

TABLE 1 (Continued)

Completed SITE Monitoring and Measurement Technologies Program Projects as of October 1998

Developer	Technology	Technology Contact	EPA Project Manager	Applicable Media	Applicable Waste	
					Inorganic	Organic
Idetek, Inc. (formerly Binax Corporation, Antox Division), Sunnyvale, CA	Equate® Immunoassay	Richard Lankow 408-752-1353	Jeanette Van Emon 702-798-2154	Water	Not Applicable	Benzene, Toluene, Xylene
Metorex, Inc., Bend, OR	Field Portable X-Ray Fluorescence Analyzers	James Pasmore 800-229-9209 541-385-6748	Stephen Billets 702-798-2232	Soil, Water	Metals	Not Applicable
Microsensor Systems, Incorporated, Bowling Green, KY	MSI-301A Vapor Monitor	Norman Davis 502-745-0095	Richard Berkley 919-541-2439	Air Streams	Not Applicable	VOCs
NITON Corporation, Bedford, MA	XL Spectrum Analyzer	Don Sackett 781-275-9275	Stephen Billets 702-798-2232	Soil	Metals	Not Applicable
Photovac Monitoring Instruments (formerly Photovac International, Inc.) Wilton, CT	PE Photovac Voyager Portable Gas Chromatograph	Kevin Scully 203-761-2867	Richard Berkley 919-541-2439	Air Streams	Not Applicable	VOCs
Quadrel Services, Inc., Clarksburg, MD	Emflux® Soil-Gas Survey System	Bruce Tucker Paul Henning 301-874-5510	Stephen Billets 702-798-2232	Soil, Groundwater, Air	Mercury	VOCs, SVOCs
Radiometer Analytical Group, Westlake, OH	Anodic Stripping Voltammetry for Mercury in Soil	Mark Nighman 800-998-8110, ext. 213	Stephen Billets 702-798-2232	Soil, Sediment	Mercury	Not Applicable
Sentex Systems, Inc., Ridgefield, NJ	Scentograph Plus II Portable Gas Chromatograph	Amos Linenberg 201-945-3694	Richard Berkley 919-541-2439	Air Streams	Not Applicable	VOCs
Simulprobe® Technologies, Inc. Novato, CA	Core Barrel Soil Sampler	Steve Santy 800-466-5323 509-783-9696	Stephen Billets 702-798-2232	Soil, Sediment, Filter and Wipe Samples	Metals	Not Applicable

TABLE 1 (Continued)

Completed SITE Monitoring and Measurement Technologies Program Projects as of October 1998

Developer	Technology	Technology Contact	EPA Project Manager	Applicable Media	Applicable Waste	
					Inorganic	Organic
Space and Naval Warfare Systems Center, Las Vegas, NV	SCAPS Cone Penetrometer	Stephen Lieberman, 619-553-2778	Bob Lien, 619-553-2778	Soil	Not Applicable	Petroleum Hydrocarbons
SRI Instruments, Torrance, CA	Compact Gas Chromatograph	Douglas Gavilanes 310-214-5092	Richard Berkley 919-541-2439	Air Streams, Soil, Water	Not Applicable	VOCs, BTEX, PCBs, Pesticides
Strategic Diagnostics, Inc., (formerly EnSys Environmental Products, Inc., Newark, DE (Two Demonstrations)	Ensys Penta Test System	Tim Lawruk 800-544-8881 302-456-6782	Jeanette Van Emon 702-798-2154	Soil, Water	Not Applicable	PCP
Strategic Diagnostics, Inc., (formerly EnviroGard Corporation), Bedford, MA	EnviroGard™ PCB Immunoassay Test Kit	Barbara Young 781-533-6000	Stephen Billets 702-798-2232 Jeanette Van Emon 702-798-2154	Soil, Sediment	Not Applicable	PCB
Strategic Diagnostics, Inc., (formerly Ohmicron Corporation), Newtown, PA	RaPID Assay®	Craig Kostyshyn 215-860-5115, ext. 634	Jeanette Van Emon 702-798-2154	Soil, Water	Not Applicable	PCP
TN Spectrace Round Rock, TX	TN 9000 and TN Pb X-Ray Fluorescence Analyzers	Peter Berry 512-388-9100	Stephen Billets 702-798-2232	Soil, Sediment, Filter and Wipe Samples	Metals, Lead	Not Applicable
Tri-Services, Aberdeen Proving Ground, MD	Site Characterization and Analysis Penetrometer System (SCAPS)	George Robitaille 410-612-6865 John Ballard 601-634-2446	Stephen Billets 702-798-2232	Soil	Not Applicable	Petroleum, PAHs, VOCs
United States Environmental Protection Agency, Washington, D.C.	Field Analytical Screening Program PCB Method	Howard Fribush 703-603-8831	Eric Koglin 702-798-2432	Soil, Water	Not Applicable	PCBs

TABLE 1 (Continued)

Completed SITE Monitoring and Measurement Technologies Program Projects as of October 1998

Developer	Technology	Technology Contact	EPA Project Manager	Applicable Media	Applicable Waste	
					Inorganic	Organic
United States Environmental Protection Agency, Washington, D.C.	Field Analytical Screening Program PCP Method	Larry Jack 702-798-2373	Jeanette Van Emon 702-798-2154	Soil, Water	Not Applicable	PCPs
W. L. Gore and Associates, Inc. Elkton, MD	GORE-SORBER® Screening Survey	Ray Fenstermacher 410-506-4780	Stephen Billets 702-798-2232	Soil Vapor	Not Applicable	VOCs, SVOCs, PAHs Halogenated solvents, Aliphatics, Aromatics,
XonTech Incorporated, Van Nuys, CA	XonTech Sector Sampler	Matt Yoong 818-787-7380	Joachim Pleil 919-541-4680	Air Streams	Not Applicable	VOCs

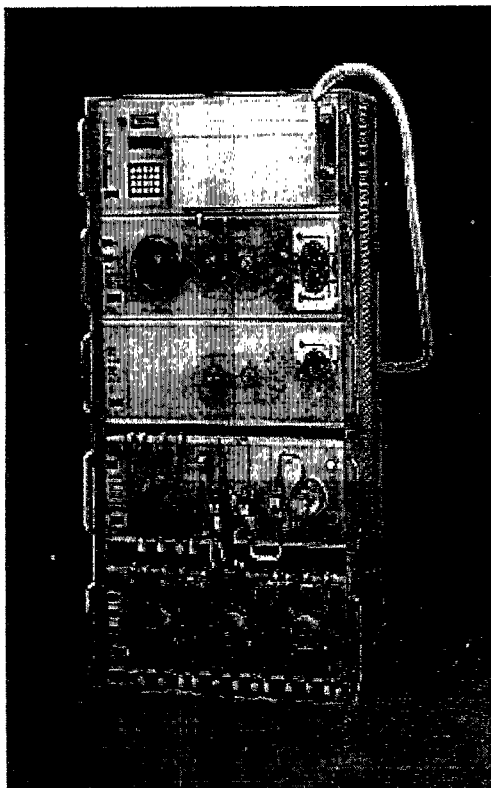
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**ANALYTICAL AND REMEDIAL
TECHNOLOGY, INC.**
(Automated Sampling and Analytical Platform)

TECHNOLOGY DESCRIPTION:

Analytical and Remedial Technology, Inc. (A⁺RT), produces components that can be assembled in various configurations to allow automated sampling and analysis of water streams. The A⁺RT components are mounted in a custom case to produce an automated sampling and analytical platform (ASAP). A complete ASAP system consists of the following basic components:

- An ASAP sampling manifold module with internal pump
- An optional module to allow the ASAP to control up to 48 Grundfos 2-inch submersible pumps



Sampling and Analytical Platform

- One or more ASAP sample preparation modules
- One or more third-party gas or liquid chromatographs with appropriate detectors
- One or more third-party integrators for processing raw data and producing hard copies of chromatograms
- A Windows 3.X-compatible microcomputer running A⁺RT software to control the system, store results in a database, and provide telecommunication capabilities

The photograph below illustrates an ASAP configured for automated sampling of 29 points using 0.25-inch stainless steel tubing. The A⁺RT purge-and-trap concentrator draws a precise volume of water (selectable from 0.2 to 10 milliliters) from the selected sample stream and prepares it for volatile organic compound (VOC) analysis using a gas chromatograph. The A⁺RT concentrator differs from the customary batch purging approach in that it uses a flow-through, countercurrent stripping cell.

The A⁺RT high performance liquid chromatograph (HPLC) sample preparation module collects a sample in a fixed volume loop and delivers it to the HPLC. With additional components, the module can support a second channel for HPLC analysis along with either automated or manual sample selection. The module can also be configured to process the samples using solid-phase extraction. This process concentrates analytes, which are then backflushed with solvent and extracted for subsequent HPLC analysis.

An optional Grundfos pump interface module (GPIM) allows the ASAP, for a given sample, to select and operate one of up to 48 Grundfos RediFlo-2™ 2-inch submersible pumps connected to the ASAP. Thus, this module allows automatic sampling of groundwater for groundwater depths greater than 15 to 20 feet

below surface. Control of up to 48 pumps requires only one Grundfos MP1 controller interfaced with the GPIM.

The A⁺RT components and software are designed to allow continuous (24-hour) monitoring for long periods of time (months to years) with automated continuing calibration checks and recalibration when necessary. The ASAP is designed to be installed with the other system components permanently or semipermanently in a secure, temperature-controlled space on site.

WASTE APPLICABILITY:

The ASAP is designed for automated sampling and analysis of aqueous samples, such as those obtained from a treatment or process stream or from wells emplaced in a groundwater contaminant plume. The ASAP can be configured for a wide variety of contaminants, including VOCs, polynuclear aromatic hydrocarbons, ionizable organic chemicals, and a range of inorganic substances.

STATUS:

Several commercial ASAP systems have been purchased by universities for use in groundwater remediation research at U.S. Department of

Defense facilities. The ASAP has considerably broader capabilities than the prototype system (the Automated Volatile Organics Analytical System, or AVOAS) evaluated under the SITE Program. The AVOAS was demonstrated in May 1991 at the Wells G and H Superfund site in EPA Region 1. The results of the demonstration have been published by EPA ("Automated On-Site Measurement of Volatile Organics in Water, EPA/600/R-93/109, June 1993").

FOR FURTHER INFORMATION:

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TECHNOLOGY DEVELOPER CONTACT:

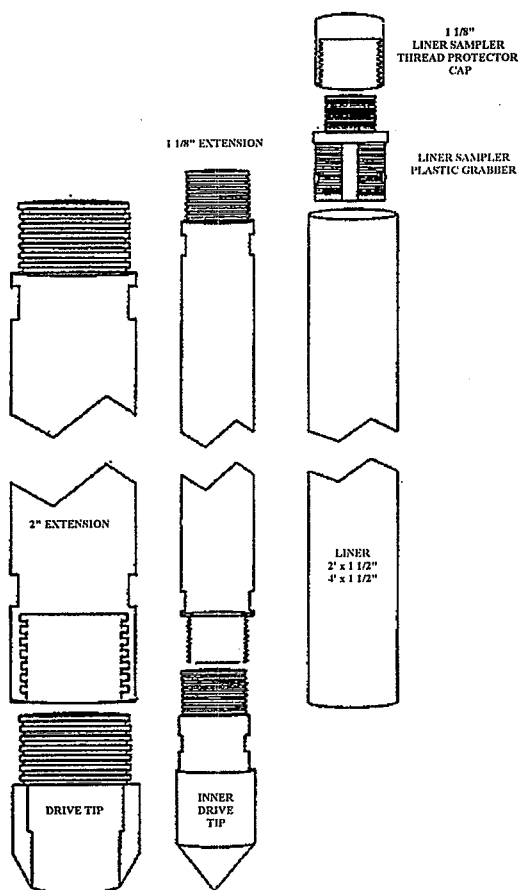
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**ART'S MANUFACTURING AND SUPPLY
(AMSTTM Dual-Tube Liner Soil Sampler)**

TECHNOLOGY DESCRIPTION:

The Art's Manufacturing and Supply (AMSTTM) dual tube soil sampler, shown in the figure below, is designed to work with direct-push sampling rigs. The sampler consists of two steel tubes of differing diameters designed so that the two tubes fit within one another. The outer tube is equipped with a metal drive tip at the lower end and threaded at the upper end to allow additional metal extensions with increasing sampling depth and the addition of a drive head adaptor. The lower end of the inner tube is threaded with a plastic grabber

to allow attachment of a polybutyrate liner during sampling or a solid-point metal inner drive tip during sampler advancement. The inner drive tip fits snugly within the outer drive tip, and both extensions and drive tips are held firmly in place by the drive head. Dual tube sampler extensions are available in 1-, 2-, 3-, and 4-foot lengths with wall thicknesses of 0.25 or 0.375 inch. The outer extension serves as a temporary casing so that continuous or discrete soil samples can be collected using the inner extension liner and drive tip assembly. The inner extension by itself can also be used for sampling.



Dual-Tube Liner Soil Sampler

The direct-push drill rig used to mount the dual tube liner sampler must be a 0.75-ton or heavier pickup truck supplied by the buyer or a custom-made truck assembled by AMS.

The dual tube liner sampler decreases the likelihood of cross-contamination, preserves sample integrity, collects samples chemically representative of the target sampling interval, can collect either discrete or continuous soil samples of unconsolidated materials, and does not generate drill cuttings.

WASTE APPLICABILITY:

The AMS™ dual tube liner sampler can be used to collect unconsolidated, subsurface soil samples at depths that depend on the capability of the direct-push advancement platform. The sampler has been used to collect samples of sandy and clayey soil contaminated with high concentrations of volatile organic compounds (VOC). It can also be used to collect samples for semivolatile organic compound, metals, general minerals, and pesticides analyses.

STATUS:

The AMS™ dual tube soil sampler was demonstrated under the Superfund Innovative Technology Evaluation (SITE) program in May and June 1997 at two sites: the Small Business Administration (SBA) site in Albert City, Iowa, and the Chemical Sales Company (CSC) site in Denver, Colorado. Samples collected during the demonstrations were analyzed for VOCs to evaluate the performance of the samplers.

Demonstration results indicate that the dual tube liner sampler had higher sample recoveries in the clayey soil present at the SBA site than the standard methods. Conversely, the sampler had lower recoveries than the standard methods in the sandy soil present at the CSC site. VOC concentrations in samples collected with the dual tube liner sampler did not significantly differ statistically from concentrations in samples collected using the standard methods. Sample integrity using the dual tube liner sampler was

preserved in highly contaminated soil. The sampler's reliability and throughput were generally as good as those of the standard methods. Costs for the dual tube liner sampler were lower than costs related to the standard sampling methods. According to the developer, all sampler decontamination was done using the on-board wash station on the AMS direct push platform (the AMS Powerprobe 9600). This significantly reduced the overall time to sample and decontaminate its equipment.

Demonstration results are documented in the "Environmental Technology Verification" report for the sampler dated August 1998 (EPA/600/R-98/093).

Organics were the primary groundwater contaminant at the site, and trichloroethene (TCE) was selected as the contaminant of concern for the demonstration. The Demonstration Bulletin (EPA/540/MR-95/511) and Demonstration Capsule (EPA/540/R-95/511a) are available from EPA.

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**BIONEBRASKA, INC.
(BiMelyze® Mercury Immunoassay)**

TECHNOLOGY DESCRIPTION:

The BioNebraska, Inc., BiMelyze® Mercury Immunoassay technology measures mercury concentrations in solid matrix samples. The field-portable immunoassay technology provides semiquantitative results based on the activity of mercury-specific monoclonal antibodies. The technology consists of two kits: an extraction kit and an assay tube kit. The kits together can process 16 samples.

The solid matrix samples are first extracted using a 2:1:1 mixture of hydrochloric acid, nitric acid, and deionized water. A buffer solution provided in the extraction kit is then added to the sample pH to 6 to 8, and the samples are filtered.

The extracted and filtered samples are then transferred to mercury assay tubes supplied in the assay tube kit. These tubes are coated with sulfhydryl-rich proteins that trap the mercury ions. After the addition of kit-supplied antibodies, conjugate, and substrate, the presence of mercury can be semiquantitatively determined by comparing the color of the sample tubes to the color of tubes of the mercury standards supplied in the kit. The standards are determined, within limits, by the customer. The limit of detection is 0.5 parts per million (ppm) and the analytical range is 0.5 to 40 ppm. The absorbance of the sample tubes can be measured using a spectrophotometer. The BiMelyze® Mercury Immunoassay technology has been used to analyze soil and sediment samples containing

mercury. The technology works best on fine-grained material because of the larger surface-to-volume ratio. The effect of moisture content on the technology's applicability is unknown. The technology can provide semiquantitative or sample screening information and has been found to have a good potential as a Level I analytical method.

STATUS:

The BiMelyze® Mercury Immunoassay technology was accepted into the Superfund Innovative Technology Evaluation (SITE) program in 1994 and was demonstrated in August 1995 at two sites: the Carson River Mercury (CRM) site in Reno, Nevada, and the Sulfur

Bank Mercury Mine (SBMM) site in Clear Lake, California. Samples collected during the demonstrations were split for analysis in the field using the BiMelyze® Mercury Immunoassay technology and for later confirmatory analysis using standard inductively coupled plasma (ICP) mass spectrometry (MS). A total of 110 soil and sediment samples were collected from the CRM and SBMM sites (55 samples from each site) and split. The demonstration results indicate that the BiMelyze® Mercury Immunoassay technology agreed with ICP MS results for 66 percent of the samples analyzed. Demonstration results are documented in the "Innovative Technology Evaluation Report" from July 1998.

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BRUKER ANALYTICAL SYSTEMS, INC.
(Mobile Environmental Monitor)

TECHNOLOGY DESCRIPTION:

The Bruker Analytical Systems, Inc. (Bruker), mobile environmental monitor (see photograph below) is a field-transportable, gas chromatography/mass spectrometer (GC/MS) designed to identify and measure organic pollutants in various environmental media. The MS uses a quadrupole mass analyzer similar to most conventional instruments. Like conventional MSs, this instrument can identify and quantify organic compounds on the basis of their retention time, molecular weight, and characteristic fragment pattern. The integrated GC allows introduction of complex extracts for separation into individual components and subsequent analysis in the MS.

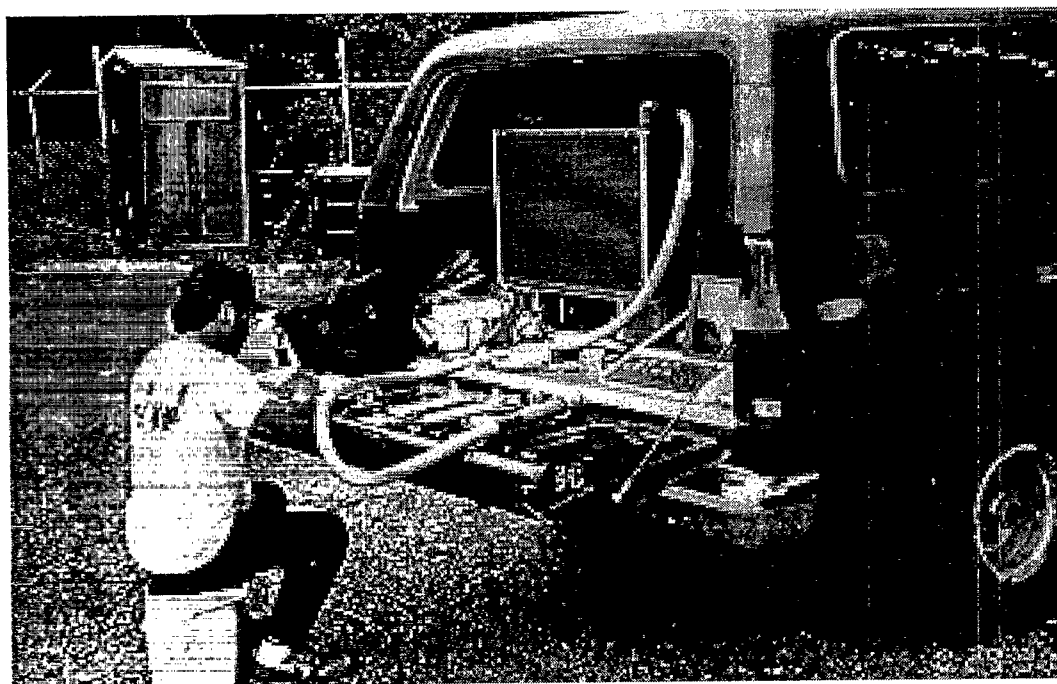
The Bruker instrument's design and electronics are specially designed for field use. The instrument is designed to operate with battery

power and can be used in various environmental situations with minimum support requirements.

The mobile environmental monitor was originally designed for the military to detect and monitor chemical warfare agents. Environmental samples may be introduced to the MS through the direct air sampler or the GC. Results are collected and stored in a computer, where data is reduced and analyzed. The computer provides reports within minutes of final data acquisition.

WASTE APPLICABILITY:

The Bruker mobile environmental monitor is designed to detect the full range of volatile and semivolatile organic compounds directly in air and in water, soil, sediment, sludge, and hazardous waste extracts. It provides in-field, real-time support during the characterization and



Bruker Mobile Environmental Laboratory

remediation phases of cleanup at a hazardous waste site.

STATUS:

This technology was demonstrated at the Re-Solve, Inc., and Westborough Superfund sites in EPA Region 1. The technology was used to analyze polychlorinated biphenyls and polynuclear aromatics in soil and the full range of Superfund-targeted volatile organic compounds in water. Splits of all samples analyzed in the field were shipped to a laboratory for confirmatory analysis using standard EPA analytical methods.

The SITE demonstration was completed in September 1990, and the final report (EPA/600/X-91/079) is available from EPA. The results of this study were presented at the American Society for Mass Spectrometry Conference in May 1991 and at the Superfund Hazardous Waste Conference in July 1991. A recent survey of regional laboratories identified additional testing of this technology as a priority need.

Bruker has developed an additional system that addresses recommendations made in the project report. This system, designated the EM640, has increased mass range, decreased power consumption, faster sample analysis, and automated report generation. The EM640 was

evaluated in July and September 1995 through the U.S. EPA Environmental Technology Verification Program (ETV). The evaluation showed that the EM640 provides "useful, cost-effective data for environmental problem-solving and decision-making." The Environmental Monitoring Systems Laboratory-Las Vegas purchased a Bruker mobile environmental monitor in fiscal year 1992 to pursue other applications and to expand the scope of this project.

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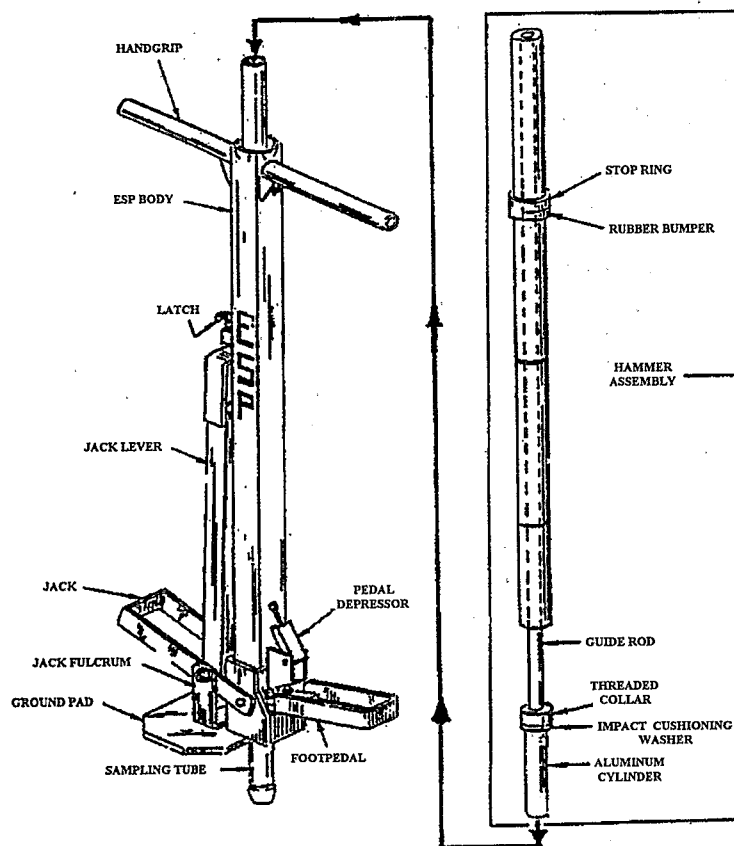
CLEMENTS, INC.
(JMC Environmentalist's Subsoil Probe)

TECHNOLOGY DESCRIPTION:

JMC Environmentalist's Subsoil Probe (ESP) developed by Clements Associates, Inc., consists of a sampling tube assembly, the ESP body, and a jack used to assist in sample retrieval (see figure below). The sampler can be advanced using manual or direct-push methods. The primary component of the ESP body is a heat-treated, 4130 alloy steel, nickel-plated sampling tube. The tube has a uniform 1.125-inch outer diameter and is 36 inches long. The ESP tube comes with three interchangeable stainless-steel tips (a solid drive point, a standard cutting tip, and a wet cutting tip) and inner sample liners that can also be used for sample storage.

The ESP body serves as a base and guide for the sampling tube as it is driven into or retrieved from a borehole. The jack used to retrieve the sample also allows operators to smoothly lower the sampler and tool string into the borehole at a controlled rate, thereby minimizing borehole disturbance.

According to the developer, the ESP sampler is simple to operate and requires no special training to use, is unaffected by variable field conditions, can collect either discrete or continuous soil samples of unconsolidated materials, can be used to characterize subsurface soil contamination, is easily transportable, and does not generate drill cuttings.



Clements' ESP

WASTE APPLICABILITY:

The ESP sampler can be used to collect unconsolidated, subsurface soil samples at depths of 4 feet below ground surface (bgs); however, through the use of extensions, samples from depths of up to 25 feet bgs can be collected. Physical limitations of ESP sampler operation depend on the method of sampler advancement and the nature of the subsurface matrix. The technology is primarily restricted to unconsolidated soil free of large cobbles or boulders. The sampler can also be used in sediment containing gravel-sized material supported by a finer-grained matrix. Originally, the sampler was designed for sampling agricultural residues containing radioactive trace elements. The sampler has been used to collect samples of sandy and clayey soil contaminated with high concentrations of volatile organic compounds (VOC). The sampler can also collect samples for polychlorinated biphenyl, polynuclear aromatic hydrocarbon, pesticides, and metals analyses. The ESP sampler was accepted into the Superfund Innovative Technology Evaluation (SITE) program in May 1997 and was demonstrated in May and June 1997 at two sites: the Small Business Administration (SBA) site in Albert City, Iowa, and the Chemical Sales Company (CSC) site in Denver, Colorado. Samples collected during the demonstrations were analyzed for VOCs to evaluate the performance of the samplers.

Demonstration results indicate that the ESP sampler had higher sample recoveries in both the clayey soil present at the SBA site and in the sandy soil present at the CSC site than the standard methods. VOC concentrations in samples collected with the ESP sampler from the SBA site significantly differed statistically from

concentrations in samples collected using the standard methods; however, this difference was not observed for samples collected from the CSC site. Sample integrity using the ESP sampler was preserved in highly contaminated soil. The sampler's reliability and throughput were generally better than those of the standard methods. Costs for the ESP sampler were much lower than costs related to the standard sampling methods.

Demonstration results are documented in the "Environmental Technology Verification" report for the sampler dated August 1998 (EPA/600/R-98/091).

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C-THRU TECHNOLOGIES CORPORATION
(Formerly SCITEC CORPORATION)
(Metal Analysis Probe [MAP®] Spectrum Assayer)

TECHNOLOGY DESCRIPTION:

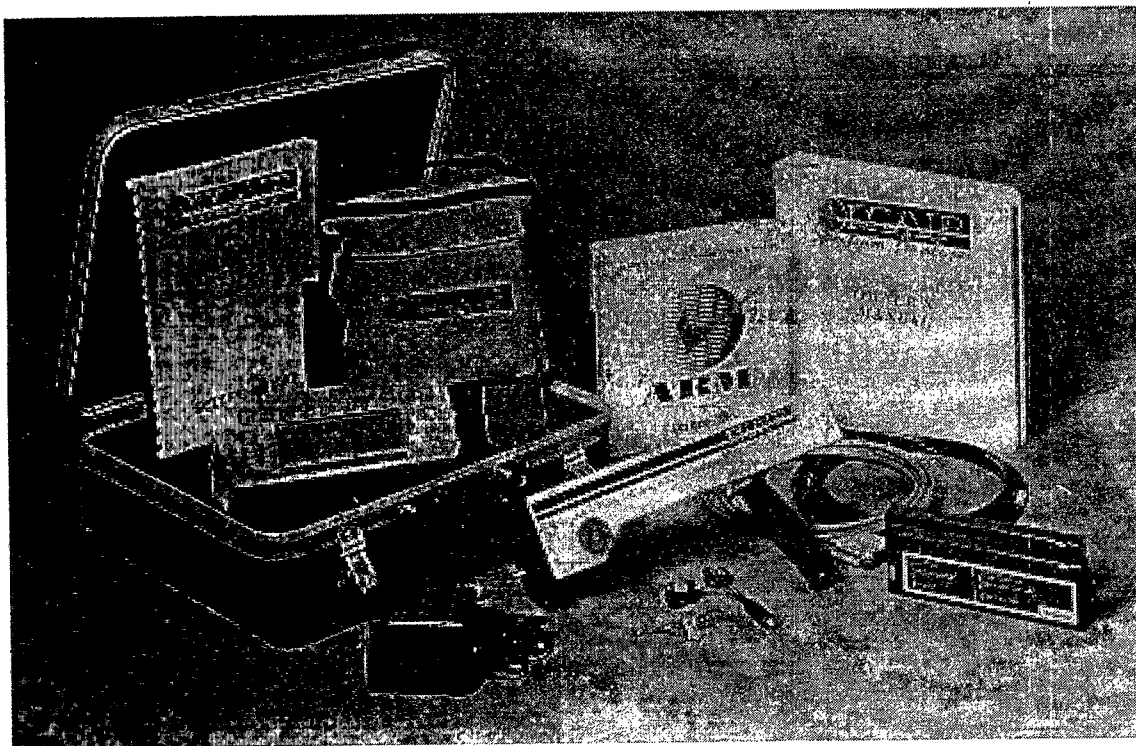
The C-Thru Technologies Corporation (C-Thru) Metal Analysis Probe Spectrum Assayer (see photograph below) is a field portable X-ray fluorescence (FPXRF) analyzer. This FPXRF analyzer can simultaneously analyze for select metals. It is compact, lightweight, and does not require liquid nitrogen. A rechargeable battery allows the FPXRF analyzer to be used at remote sites where electricity is unavailable.

The instrument is composed of a control console connected to an ambient scanner with a cable. The basic MAP® system also includes a carry pack, rechargeable batteries, operator's manual, target metal standard, and a shipping case. The control console contains a 256-multichannel analyzer with a storage capacity of 325 spectra and analyses. The control console with batteries weighs 11 pounds and the ambient scanner weighs about 2.5 pounds.

The MAP® Spectrum Assayer uses a silicon X-ray detector to provide elemental resolution. The unit demonstrated under the SITE Program used a Cadmium-109 radioisotope as the excitation source. Cobalt-57 and Americium-241 sources are also available.

The MAP® Spectrum Assayer is capable of analyzing 9 to 12 samples per hour based on a 240-second analysis time. The instrument is empirically calibrated by the developer. C-Thru requires a 1-day operator training and radiation safety course prior to obtaining a specific license to operate the instrument. The standard MAP® 3 Portable Assayer package used in the demonstration sold for \$32,000.

The MAP® Spectrum Assayer provides high sample throughput and is reportedly easy to operate. Analytical results obtained by this instrument may be comparable to the results obtained by EPA-approved methods.



MAP® Assayer

WASTE APPLICABILITY:

The MAP® Spectrum Assayer can detect select metals in soil and sediment samples and in filter and wipe samples. It can also detect lead in paint. The MAP® Portable Assayer reportedly can quantitate metals at concentrations ranging from parts per million to percentage levels.

STATUS:

The MAP® Spectrum Assayer has been used at a number of Superfund sites across the country. It was evaluated in April 1995 as part of a SITE demonstration of FPXRF instruments. The results are summarized in Technical Report No. EPA/600/R-97/147, dated March 1998. The instrument was used to identify and quantify concentrations of metals in soils. Evaluation of the results yielded field-based method detection limits, accuracy, and precision data from the analysis of standard reference materials and performance evaluation samples.

Comparability of the FPXRF results to an EPA-approved reference analytical method was also assessed during the demonstration. The Draft Fourth Update to SW-846 includes Method 6200, dated January 1998, which is based on this work.

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DEXSIL CORPORATION (Environmental Test Kits)

TECHNOLOGY DESCRIPTION:

The DEXSIL Corporation (Dexsil) produces two test kits that detect polychlorinated biphenyls (PCB) in soil: the Dexsil Clor-N-Soil PCB Screening Kit, and the Dexsil L2000 PCB/Chloride Analyzer. The Dexsil Clor-N-Soil PCB Screening Kit, (see photograph below) extracts PCBs from soil and dissociates the PCBs with a sodium reagent, freeing chloride ions. These ions then react with mercuric ions to form mercuric chloride. The extract is then treated with diphenylcarbazone, which reacts with free mercuric ions to form a purple color. The less purple the color, the greater the concentration of PCBs in the sample.

The Dexsil L2000 PCB/Chloride Analyzer (see photograph on next page) also extracts PCBs

from soil and dissociates the PCBs with a sodium reagent, freeing chloride ions. The extract is then analyzed with a calibrated, chloride-specific electrode. The L2000 instrument then translates the output from the electrode into parts per million (ppm) PCB.

These kits produce analytical results at different data quality levels. The Dexsil Clor-N-Soil PCB Screening Kit identifies samples above or below a single concentration, which is generally tied to regulatory action levels. The Dexsil L2000 PCB/Chloride Analyzer quantifies specific concentrations of PCBs, from 2 to 2,000 ppm, in a sample. The applicability of these methods depends on the data quality needs of a specific project. Both technologies can be used on site for site characterization or a removal action.



Dexsil Clor-N-Soil PCB Screening Kit

WASTE APPLICABILITY:

The Dexsil Clor-N-Soil PCB Screening Kit and the Dexsil L2000 PCB/Chloride Analyzer can detect PCBs in soil, sediment, transformer oils, and water.

STATUS:

These test kits were demonstrated at a PCB-contaminated facility in EPA Region 7. About 200 soil samples were collected and analyzed on site using the Dexsil test kits. Soil samples were not dried prior to analysis. Split samples were submitted to an off-site laboratory for confirmatory analysis by SW-846 Method 8080. Demonstration data were used to evaluate the accuracy and precision of the test kits relative to internal quality control samples and to formal laboratory data. These data were also used to determine operating costs.

The sampling and field analyses for this technology demonstration were completed in August 1992. The Innovative Technology Evaluation Report (EPA/540/R-95/518) is

available from EPA. The Office of Solid Waste has designated the L2000 Method for PCB screening of soil as Method 9078, to be included in the third update to the third edition of SW-846.

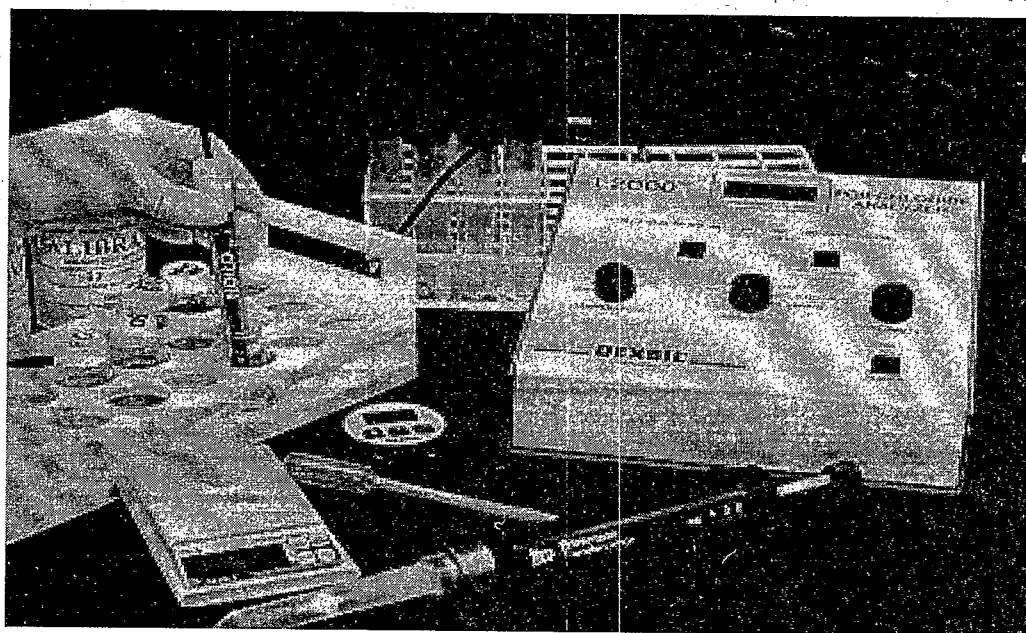
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Dexsil L2000 PCB/Chloride Analyzer

ENVIRONMENTAL TECHNOLOGIES GROUP, INC.
(AirSentry Fourier Transform Infrared Spectrometer)

TECHNOLOGY DESCRIPTION:

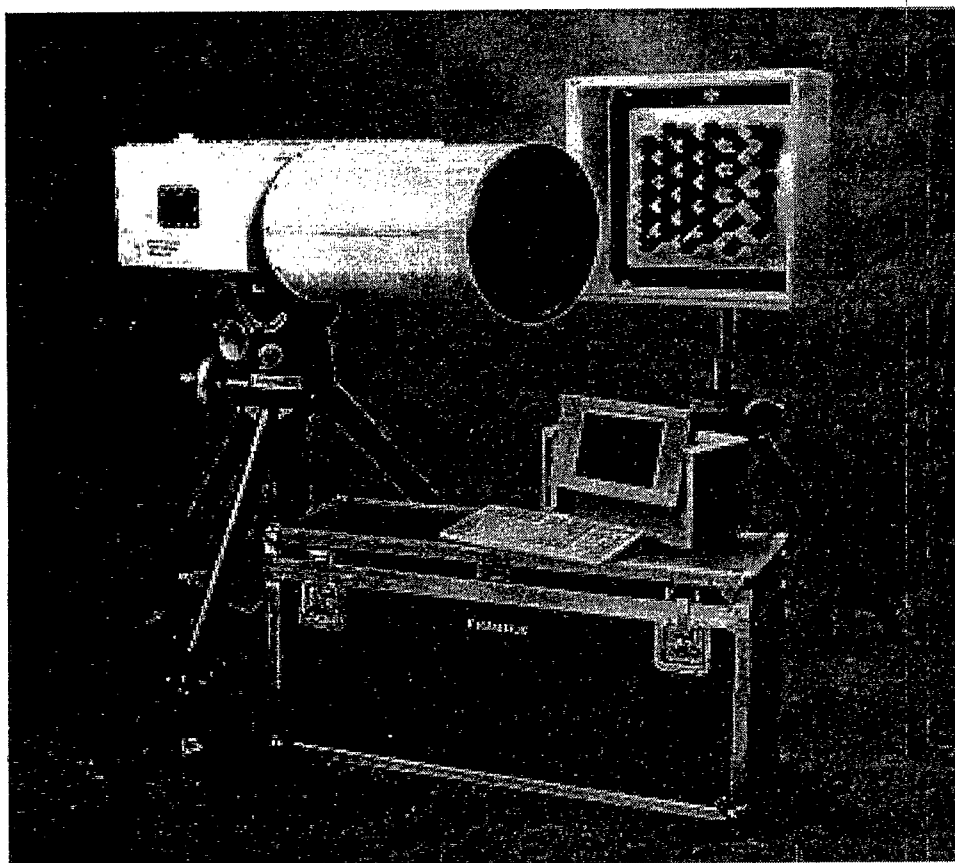
This air monitoring system (see photograph below) is a field-deployable, open-path Fourier transform infrared (FTIR) spectrometer that measures infrared absorption by infrared-active molecules. The spectrometer system transmits an infrared beam along an open air path to a retroreflector target that returns it to the spectrometer. The total air path can be up to 1 kilometer long. Analysis is performed using a quantitative reference spectrum of known concentration, together with classical least squares data fitting software routines. The system does not require acquisition of an air sample; this factor assures that sample integrity

is not compromised by interaction between the sample and the collection and storage system.

A measurement over several hundred meters requires only a few minutes, which allows determination of temporal profiles for pollutant gas concentrations. The spectrometer requires performance verification procedures, but does not require calibration.

WASTE APPLICABILITY:

The AirSentry FTIR spectrometer can collect information on spectral absorption from a number of airborne vapors at one time, including both organic and inorganic compounds. This



AirSentry Fourier Transform Infrared Spectrometer

information is processed to obtain the average concentration over the entire pathlength. The system has been used to monitor fugitive emissions from industrial plants and from hazardous waste sites. By combining these measurements with measurements of wind speed, emission rates can be estimated. It can be used to monitor emissions from hazardous waste sites during remediation and removal.

STATUS:

The AirSentry FTIR spectrometer was demonstrated during a 1990 SITE study at Shaver's Farm, a Superfund site in northwest Georgia. The purpose of this demonstration was to test performance during remedial activities and to develop and test on-site quality assurance procedures. Results of this study were published in a paper titled "Use of a Fourier Transform Spectrometer As a Remote Sensor at Superfund Sites: Proceedings of the International Society for Optical Engineering" --SPIE Vol. 1433, p. 302, Measurement of Atmospheric Gases, Los Angeles, CA, 21-23 January 1991, presented at a 1991 conference.

The AirSentry FTIR spectrometer has been evaluated in several other field studies and has been proven capable of detecting various airborne atmospheric vapors. The AirSentry FTIR gas analysis software, which automatically identifies and quantifies compounds in the presence of background interferences, was evaluated in a 1991 field study sponsored by EPA Region 7. Results of this field evaluation are published in an EPA report entitled "A Field-Based Intercomparison of the Qualitative and Quantitative Performance of Multiple Open-Path FTIR Systems for Measurement of Selected Toxic Air Pollutants."

Another field evaluation of the AirSentry FTIR spectrometer was conducted at a Superfund site in January 1992. During the field evaluation, the FTIR spectrometer was compared with gas chromatography/mass spectrometry techniques using air samples collected in canisters. Results from this field evaluation are published in an EPA report titled "Superfund Innovative Technology Evaluation, The Delaware SITE Study, 1992" (EPA/600/A3-91/071).

A guidance document detailing the steps required for successful field operation of the FTIR-based open path monitoring systems is available from EPA and is referred to as Method TO-16 in the "EPA Compendium of Methods for Determination of Toxic Organic Compounds in the Ambient Air". For a copy of the draft document, contact the EPA Project Manager listed below.

This technology remains available from the Environmental Technologies Group, Inc. as well as other commercial companies. For further information about the technology, contact the EPA, contact the EPA Project Manager.

FOR FURTHER INFORMATION:

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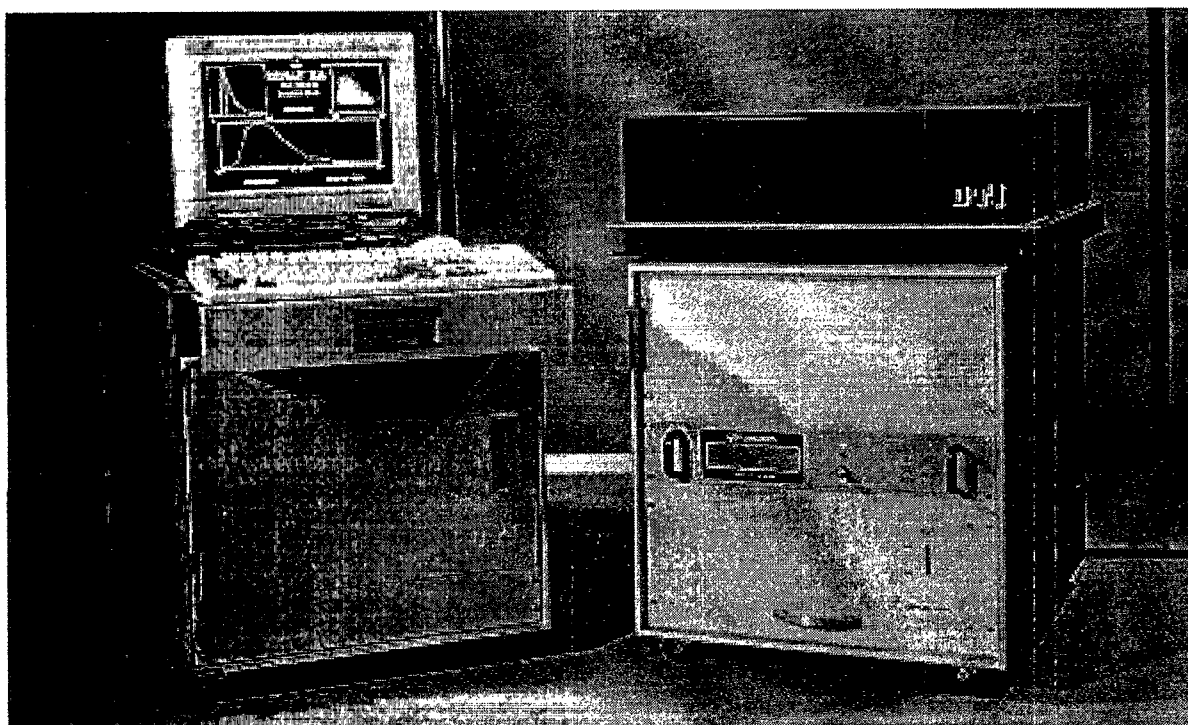
FUGRO GEOSCIENCES, INC.
(formerly LORAL CORPORATION)
(Rapid Optical Screening Tool)

TECHNOLOGY DESCRIPTION:

The Fugro Rapid Optical Screening Tool (ROST™), shown in the figure below, is an insitu screening sensor used in conjunction with Cone opetration Testing (CPT) systems that provides rapid delineation of petroleum hydrocarbons (PHC). ROST™ characterizes the PHCs from the fluorescence response induced in the polycyclic aromatic hydrocarbon (PAH) compounds contained within the contaminant material. ROST™ continuously detects separate phase PHCs in the bulk soil matrix in the vadose, capillary fringe, and saturated zones and provides a screening of the relative concentration present. ROST™ also presents the spectral signature of the detected PHC, which often allows identification of the contaminant type (such as

gas, diesel, coal tar, creosote, etc.). CPT testing is conducted simultaneously with ROST™ testing and provides real-time, in situ lithologic data. Fugro can also deploy ROST™ from percussion-type Direct Push Technology equipment.

The measurements are performed in situ and physical sampling during the delineation phase is not required. However, since ROST™ is a screening tool, a limited amount of confirmation soil sampling is recommended. The list of petroleum products for which this method is appropriate includes, but is not limited to: gasoline, diesel fuel, crude oil, jet fuel, heating oil, coal tar, kerosene, lubricating oils, and creosote.



Rapid Optical Screening Tool

The ROST™ methodology utilizes laser-induced fluorescence spectroscopy for PHC screening. Pulsed laser light is used to excite PAHs and is delivered via a fiber optic cable to a sub-unit mounted directly behind the CPT penetrometer probe (cone). The light is directed through a sapphire window on the side of the sub-unit and onto the surface of the soil. PAHs present within the soil absorb the excitation light and emit the absorbed energy as fluorescence. A portion of this fluorescence is returned by a collection fiber to the surface and is analyzed by the ROST™ unit. ROST™ measures and reports the following three fluorescence parameters in real time:

- Intensity of the fluorescence emitted by the PHC.
- Spectrum of wavelengths of light emitted by the PHC.
- Lifetime of duration of the fluorescence emitted by the PHC.

The fluorescence intensity is generally proportional to concentration and identifies the relative PHC concentration present. The fluorescence intensity is plotted continuously with depth on a computer monitor in the CPT rig as testing proceeds and allows immediate identification of affected soils. The spectral and temporal data are also presented on the computer monitor in real-time and comprise the spectral signature of the contaminant which often allows identification of product type. A log of the fluorescence intensity with depth and contaminant signatures is plotted on a printer in the CPT rig immediately following each test.

WASTE APPLICABILITY:

The Fugro ROST™ system is designed to qualitatively detect contaminant materials containing PAH constituents, including, but not limited to gasoline, diesel fuel, crude oil, jet fuel, heating oil, coal tar, kerosene, lubricating oils, and creosote.

STATUS:

ROST™ has been commercially available since September 1994 and was evaluated under the U.S. EPA's Environmental Technology Verification (ETV) program. The final report (EPA/600/R-97/020), dated February 1997 is available from EPA or may be downloaded from the EPA's web site (<http://clu-in.com/csct/verstate.htm>).

FOR FURTHER INFORMATION:

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GEOPROBE SYSTEMS (Large Bore Soil Sampler)

TECHNOLOGY DESCRIPTION:

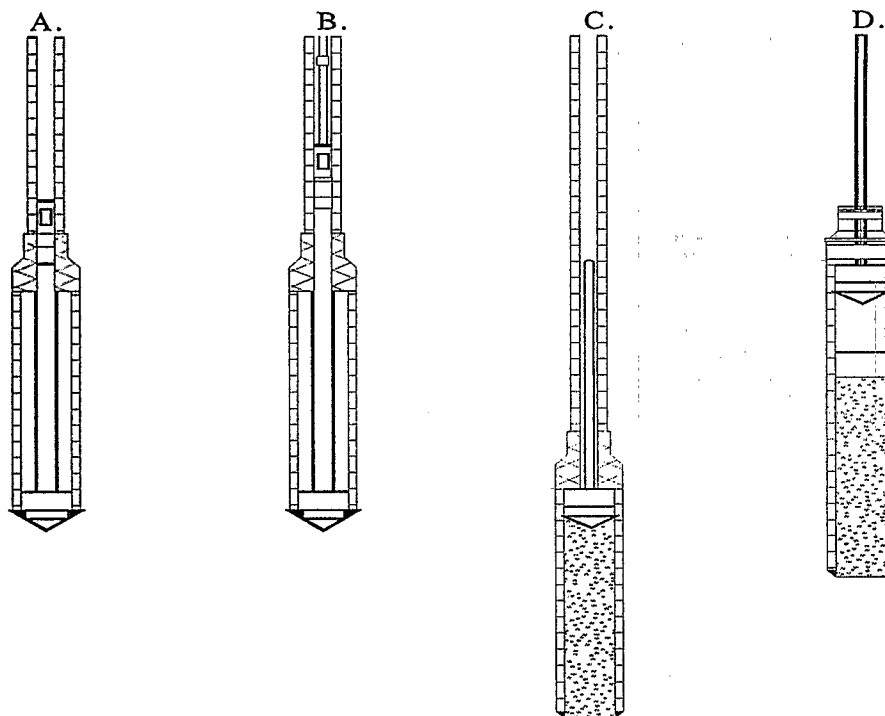
The Large Bore Soil Sampler is a single tube-type, solid barrel, closed-piston sampler (see figure below). It is designed to be driven by the Geoprobe percussion probing machine to collect discrete interval soil samples but can be used for continuous coring if needed. This direct push type sampler is for use in unconsolidated soils. It is capable of recovering a soil core 22 inches long by 1-1/16 inches in diameter (320 milliliter (mL) volume). A liner is inserted inside the sampler body to retain the sample after collection and to facilitate removal from the sampler body. Liner materials are available in brass, stainless steel, teflon, and clear plastic (cellulose acetate butyrate).

WASTE APPLICABILITY:

The Large Bore Soil Sampler can be used to collect soil samples for both organic and inorganic analytes when appropriate liner materials are used. The sampler has been used to collect samples to be analyzed for herbicides, pesticides, polychlorinated biphenyls (PCBs), semivolatile organic compounds, aromatic and halogenated volatile organic compounds (VOCs), petroleum fuels, metals, nitrates, dioxins and furans.

STATUS:

Geoprobe's Large Bore Soil Sampler was demonstrated under the SITE program during the



A. Driving the sealed Sampler
B. Removing the stop pin

C. Collecting a sample
D. Recovering the sample liner

early summer of 1997. The demonstration results indicate that the Large-Bore Soil Sampler can provide useful, cost-effective samples for environmental problem solving. However, in some cases, VOC data collected using the Large Bore Soil Sampler may be statistically different from VOC data collected using the reference sampling method. Also, the integrity of a lined sample chamber may not be preserved when the sampler is advanced through highly contaminated zones in clay soils. Demonstration results are documented in the "Environmental Technology Verification" report for the sampler dated August 1998 (EPA/600/R-98/092).

There are several hundred Geoprobe owner/operators who use the Large Bore Soil Sampler for geo-environmental investigations. This soil sampler has been used in all 50 states and several foreign countries to complete thousands of projects. It is used primarily for geo-environmental investigations to define soil types and delineate contaminant distribution. The Large Bore Soil Sampler is available in stock from Geoprobe Systems. Geoprobe has developed other soil and groundwater sampling tools that are also widely used in the geo-environmental field.

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E-mail: geoprobe@midusa.net
Internet: www.geoprobesystems.com

GEOPROBE SYSTEMS (Geoprobe Soil Conductivity Sensor)

TECHNOLOGY DESCRIPTION:

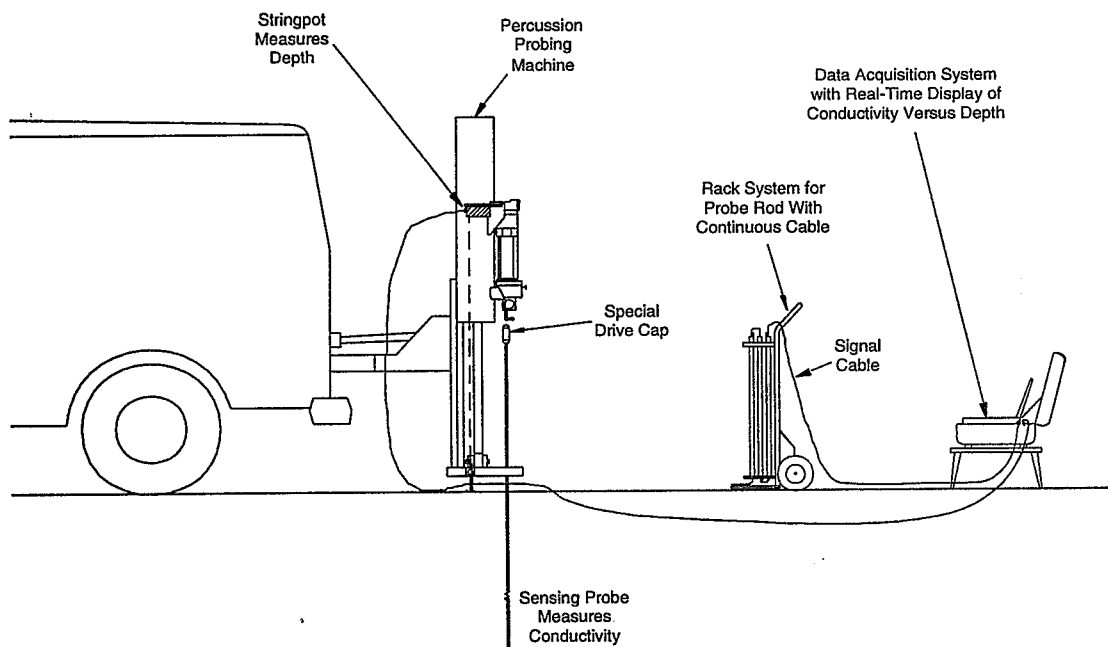
The Geoprobe soil conductivity sensor, shown in the figure below, identifies lithology and potential contamination by measuring the electrical conductivity of soil and hydrogeologic fluids. Soils vary in their electrical conductivity depending on particle size; for example, clays and silts generally have high conductivities, while sand and gravels exhibit low conductivities. Overall, soil and rock are resistant to current. Pore fluids and the amount of dissolved solids in these fluids also influence soil conductivity.

The Geoprobe conductivity sensor uses an isolated array of sensing rings to measure this conductivity. The sensor is principally designed to help determine subsurface stratigraphy. The sensor may also help characterize subsurface contamination, especially where high conductivity leachates or brines are involved.

The principal components of the complete Geoprobe system are as follows:

- A Geoprobe hydraulic soil probing machine
- Standard sampling rods supplied with the system
- A cable, threaded through the sampling rod that introduces the current
- The conductivity sensor
- A data receiver connected to a personal computer to record the sensor's measurements

The hydraulic probing machine uses a combination of pushing and hammering to advance 3-foot-long segments of 2.54-centimeter-diameter hollow steel sampling rods. The conductivity sensor is attached to the lead section of the sampling rod.



Schematic Diagram of the Geoprobe Soil Conductivity Sensor

The conductivity sensor consists of four stainless-steel contact rings fitted around a central steel shaft. Plastic electronically isolates the contact rings from the steel shaft. A hollow steel rod extends above the uppermost stainless steel ring, housing a shielded signal cable that connects the contact rings with an external power source, measurement system, and data logging system. The soil conductivity sensor can be used in a dipole array or a Schlumberger array. The dipole array is used when greater resolution is required. The Schlumberger array is generally used when optimal soil-to-probe contact cannot be maintained.

WASTE APPLICABILITY:

The Geoprobe conductivity sensor is designed to determine subsurface stratigraphy. Only highly conductive contaminants such as oil field brine can be directly measured by the sensor.

STATUS:

The Geoprobe conductivity sensor field demonstration was conducted in September 1994. The report is available.

Improvements to the unit include the availability of stronger 1.25-inch diameter probe rods, more durable probes, dipole-type probes used for dipole measurements, and expendable probes for use when grouting is required.

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GRASEBY IONICS, LTD., and PCP, INC.
(Ion Mobility Spectrometry)

TECHNOLOGY DESCRIPTION:

Ion mobility spectrometry (IMS) is a technique used to detect and characterize organic vapors in air. IMS involves the ionization of molecules and their subsequent temporal drift through an electric field. Analysis and characterization are based on analyte separations resulting from ionic mobilities rather than ionic masses; this difference distinguishes IMS from mass spectrometry. IMS operates at atmospheric pressure, a characteristic that has practical advantages over mass spectrometry, allowing a smaller analytical unit, lower power requirements, lighter weight, and easier use. These factors may facilitate use of IMS for mobile, field applications.

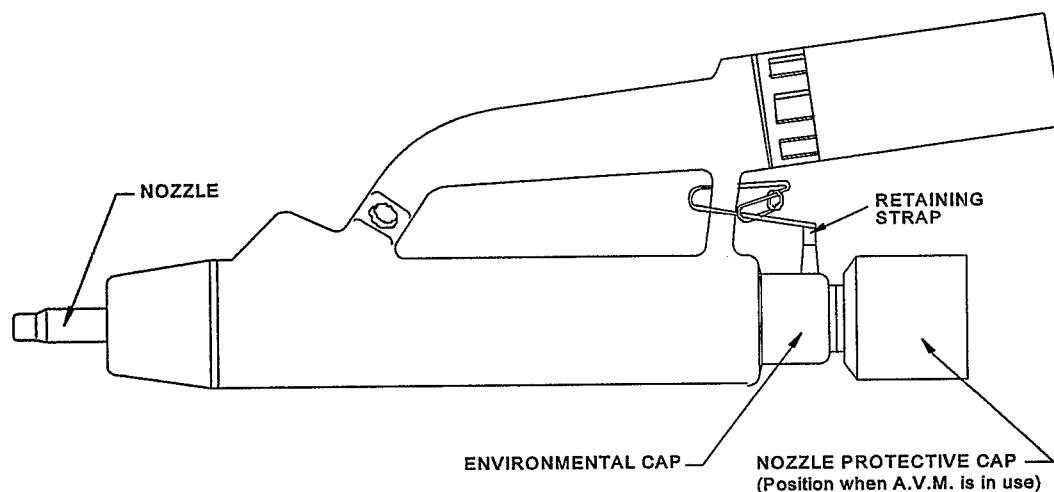
WASTE APPLICABILITY:

The IMS units, which are intended to be used in a preprogrammed fashion, can monitor chloroform, ethylbenzene, and other volatile

organic compounds in a defined situation. IMS units can analyze air, vapor, soil, and water samples. However, for analysis of liquid and solid materials, the contaminants must be introduced to the instrument in the gas phase, requiring some sample preparation.

STATUS:

Graseby Ionics, Ltd. (Graseby), and PCP, Inc. (PCP), participated in a laboratory demonstration in 1990. Graseby used a commercially available, self-contained instrument that weighs about 2 kilograms (kg) (see figure below). PCP used a larger (12 kg) transportable IMS. This laboratory demonstration was the first opportunity to test the instruments on environmental samples. The demonstration results highlighted that the following needs must be satisfied before IMS is ready for field applications:



Airborne Vapor Monitor for IMS

- Additional development of sampling or sample preparation strategies for soil and water analysis.
- Improvements in the design and performance of IMS inlets, in conjunction with the development of sampling and presentation procedures.

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**HANBY ENVIRONMENTAL
LABORATORY PROCEDURES, INC.**
(Test Kits for Organic Contaminants in Soil and Water)

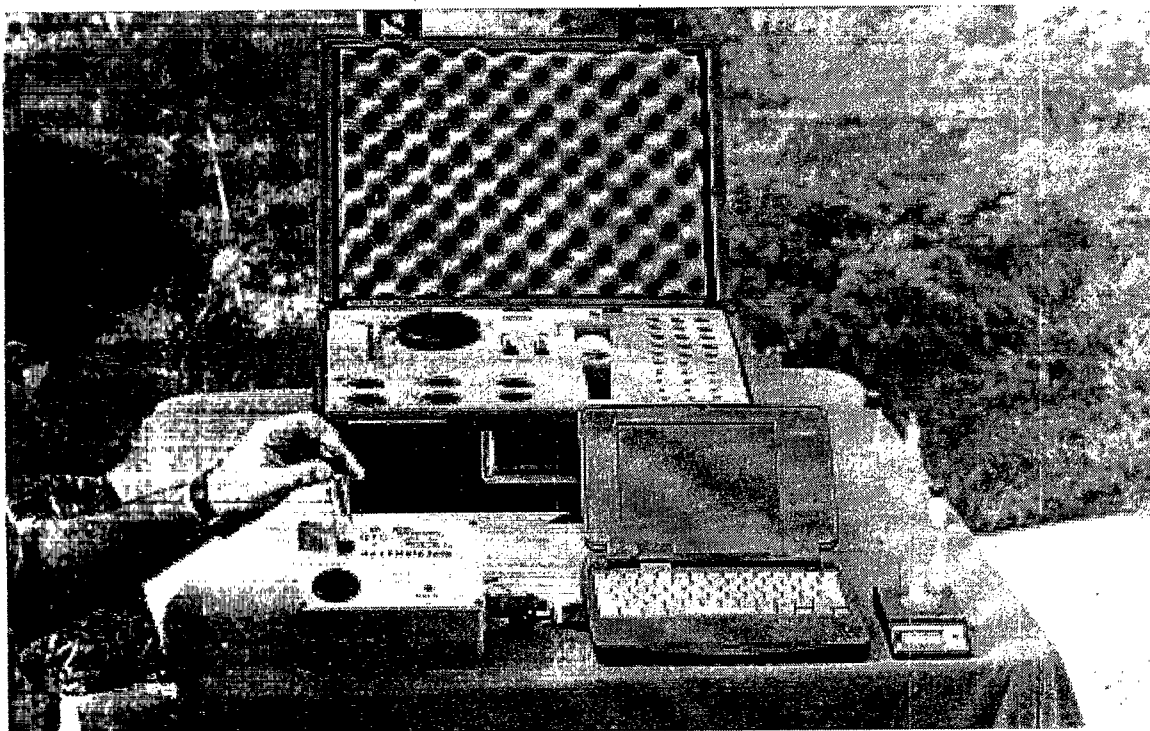
TECHNOLOGY DESCRIPTION:

Hanby Environmental Laboratory Procedures, Inc. (H.E.L.P.), field test kits for soil and water (as shown in the figure below) provide rapid, sensitive analyses for a broad range of organic contaminants. The kits have been used at spill and leak sites for petroleum substances including fuels, solvents, oils, pesticides, herbicides, and indirectly wood preservatives such as pentachlorophenols (PCP). The test kit methods are based on simple extraction and colorimetric procedures using Friedel-Crafts (F-C) chemical reactions. During analyses for PCPs suspended in diesel fuel carrier solvent, where the actual analyte does not undergo F-C reactions, it is necessary to perform other analyses to determine the ratio of the target compound to the detected carrier solvent. At locations where the type of

contaminant is known, such as gasoline or diesel fuel sites, the appropriate calibration photograph for the substance is used which provides precise quantitative analytical information. Alternatively, H.E.L.P. provides a portable spectrophotometer which reads the sample results, identifying a wider variety of chemicals.

The test kits provide the equipment and reagents to perform 15 soil or water samples. Soil tests are performed using the following steps:

- Using the electronic balance, weigh 5 grams of soil into a beaker.
- Empty one solvent ampule into the beaker.
- Stir the sample for 2 minutes (extraction).
- Pour extract from the beaker into one of the sample test tubes.



Hanby Test Kit

- Empty one catalyst powder vial into the test tube, cap and shake for 3 minutes.
- Compare the developed color of the sample to the appropriate calibration photograph, or insert the test tube into the spectrophotometer for readout.

Water testing is performed in a similar manner, except that the extraction procedure is performed on a 500-milliliter water sample in a separatory funnel which comes with the water test kit.

WASTE APPLICABILITY:

H.E.L.P. field test kits analyze aromatic, halogenated, and other compounds which participate in F-C reactions. These compounds include the complete range of fuel types such as gasoline, diesel fuel, and jet fuel, as well as all types of crude oils. The test kits are also used for the measurement of many other types of substances such as new and used motor oils, transformer oils, hydraulic fluids, and other types of organic liquids which contain only small amounts of F-C reacting compounds. The intense color of these reactions allows sensitivities of detection from 1 to 25 parts per million (ppm).

The availability of two solvent types for the kits provides a range from 1 ppm (with the lower range solvent) to 100,00 ppm (with the high range solvent).

STATUS:

The H.E.L.P. test kit was used to indirectly screen and quantify PCP contamination in soils for a SITE demonstration in Morrisville, North Carolina in August 1993, using samples collected from a wood preserving site in Winona, Missouri. These samples contained PCP in a diesel carrier solvent. When the ratio of carrier

solvent to PCP was constant, the PCP concentration data obtained using the H.E.L.P. test kit correlated well with sample splits analyzed at an off-site laboratory. Results from the demonstration have been published in an Innovative Technology Evaluation Report (EPA/540/R-95/514), which is available from EPA.

The field test kits and the associated spectrophotometer, the H.E.L.P. MATE 2000, were selected by the U.S. Department of Commerce and EPA Rapid Commercialization Initiative (RCI) as representative of "best available demonstrated technology" in March 1996. The technologies selected for RCI was demonstrated and assessed by EPA, the U.S. Departments of Energy, Commerce, and Defense, the California EPA, the Western Governor's Association, and the Southern States Energy Board throughout 1996 and 1997.

FOR FURTHER INFORMATION:

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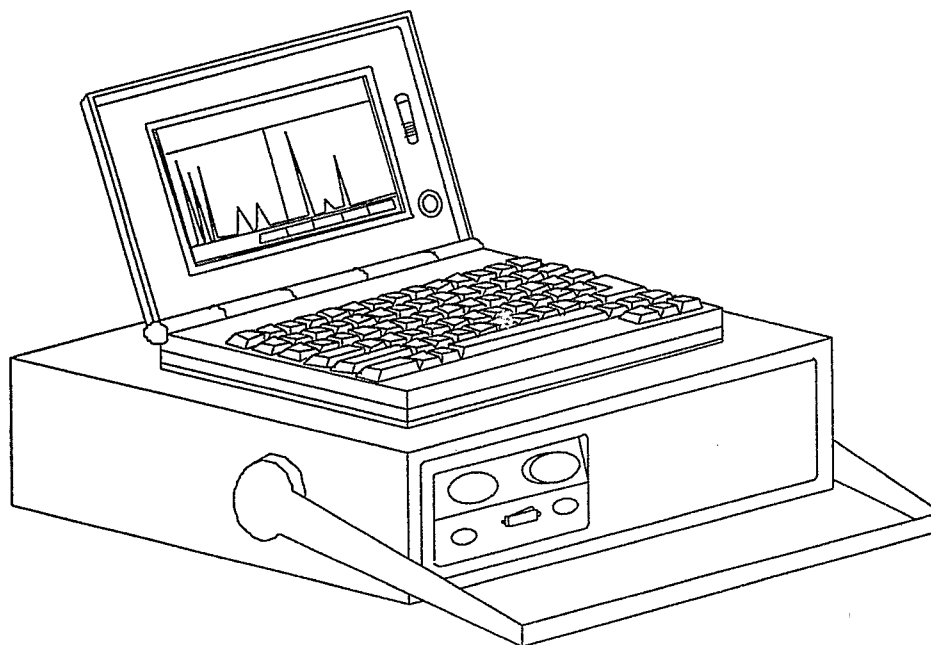
HEWLETT-PACKARD COMPANY
(via acquisition of MTI Analytical Instruments, Inc.)
(Portable Gas Analyzer/HP Micro GC)

TECHNOLOGY DESCRIPTION:

The Hewlett-Packard (HP) portable gas analyzer, shown below, is a multi-channel, high-speed, portable micro gas chromatograph (GC) that provides isothermal analysis of gas-phase samples. The injector and thermal conductivity detector (TCD) are micro-electromechanical systems (MEMS). That is, they are fabricated from silicon using micro-machining techniques similar to that used to produce microprocessors, microcircuits, etc. As a result these chromatographic components are extremely small and exhibit extremely high reliability and performance. Depending on the analysis requirements, these two components are combined with one of a series of high

performance/microbore capillary columns (ranging from 0.25 to 14 meters in length and 0.150-0.32 mm inside diameter [ID]) into an individually programmable analysis channel. Up to four independent, optimized analyses (separations) of a single gas sample can be performed simultaneously in a single instrument.

A gas sample is drawn into a sample loop with an internal vacuum pump. An aliquot of the sample is then introduced into the capillary column using the microvalves contained within the micro-machine injector. The maximum analysis time for components up to C10 is 160 seconds or less, making the HP Micro kGC one of the fastest commercially available gas chromatographs.



P200 Gas Analyzer

The HP portable gas analyzer houses an internal sealed lead acid battery and small refillable carrier gas cylinder providing providing up to 8 hours of continuous operation. When combined with a laptop computer and instrument control/data analysis software, the HP portable gas analyzer is fully capable of field operation.

WASTE APPLICABILITY:

The HP portable gas analyzer can detect many volatile organic compounds (VOC) at concentrations as low as 1 ppm. A heated sample inlet system enables the gas analyzer to detect higher boiling compounds like naphthalene and hexachlorobutadiene. When combined with an air sampler/pre-concentrator (ex. Entech, Tekmar/Dohrmann) detection limits in the range of 1 to 10 parts per billion for EPA Method TO-14 compounds can be obtained.

The HP portable gas analyzer can be employed for the analysis of soil gases, VOC contaminants in groundwater, and, with the use of an air sampler/pre-concentrator device, VOCs in ambient air. The micro TCD is suitable for analyzing many types of organic and inorganic vapor-phase compounds. The HP portable gas analyzer can be used as part of a system to monitor VOC emissions from hazardous waste sites as part of first site assessment activities and as part of a remediation program. Because of its portability, high analytical speed, and relatively low detection limit, the gas analyzer provides results of comparable quality to laboratory based analysis instruments, including gas chromatography/mass spectrometry (GC/MS).

STATUS:

The P200 gas analyzer was evaluated during a field study in August 1995. During the study, downwind vapors from an artificial source generator were analyzed. Preliminary results of the demonstration were presented in an article titled "Performance Comparison of Field-Deployable Gas Chromatographs with Canister TO-14 Analyses" in the *Proceeding of the 1996 U.S. EPA/Air and Waste Management Association International Symposium*, VIP-64, 1996.

FOR FURTHER INFORMATION:

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HNU SYSTEMS, INC.
(HNU Source Excited Fluorescence
Analyzer-Portable [SEFA-P] X-Ray Fluorescence Analyzer)

TECHNOLOGY DESCRIPTION:

HNU Systems, Inc. developed the Source Excited Fluorescence Analyzer - Portable (SEFA-P), a portable X-ray technology, to selectively determine metals concentrations in soils and other media at hazardous waste sites or industrial locations. Three excitation sources are offered with the SEFA-P X-ray fluorescence (XRF) Analyzer: Iron-55, Cadmium-109, and Americium-241. The SEFA-P is shown in the photograph below.

The SEFA-P in its most basic form consists of the following components: one main cabinet that encloses the sample chamber; the excitation sources; a liquid nitrogen-cooled Si(Li) detector; a preamplifier; spectrometer electronics; a multi-channel analyzer (MCA); and a battery charger.

The internal battery can power the MCA for 8 hours. The MCA has an RS-232 interface that allows the SEFA-P to be externally controlled through a PC or laptop computer. The SEFA-P weighs approximately 50 pounds.



Source Excited Fluorescence Analyzer-Portable (SEFA-P) XRF Analyzer

The SEFA-P can be calibrated empirically or using the Compton ratio. Quantitative results for samples are displayed on the PC screen in units of parts per million. The SEFA-P only analyzes soil samples in the intrusive mode; soil samples are placed in sample cups prior to analysis. After calibrating the unit, analyzing quality control samples, and preparing samples, it is possible to analyze 30 to 50 samples in an 8- to 10-hour day.

The SEFA-P is sold with a general license, so the operator does not have to be specifically licensed in each state in which it is used. As of 1995, the SEFA-P retailed for approximately \$45,000, depending on the options included. This price includes one in-house operational training course.

WASTE APPLICABILITY:

The SEFA-P can detect elements from aluminum through uranium in soil or other media, such as those elements at mining and smelting sites, drum recycling facilities, or plating facilities. The instrument can provide real-time, on-site analytical results during field screening and remedial operations. XRF analysis is faster and more cost-effective compared to conventional laboratory analysis.

WASTE APPLICABILITY:

The SEPA-A has been used at a number of Superfund sites across the country. A SITE demonstration of the SEFA-P was conducted in February 1995 and summarized in Technical Report No. EPA/600/R-97/144, dated March 1998. The instrument was used to identify and quantify concentrations of metals in soils. The report gives field-based method detection limits, accuracy, and precision data from the analysis of standard reference materials and performance

evaluation samples. Comparability of the XRF results to an EPA-approved reference laboratory method was also assessed. The draft fourth update to SW-846 includes Method 6200, dated January 1998, which incorporates the results of the SITE demonstration.

FOR FURTHER INFORMATION:

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HNU SYSTEMS, INC.
(HNU GC 311D Portable Gas Chromatograph)

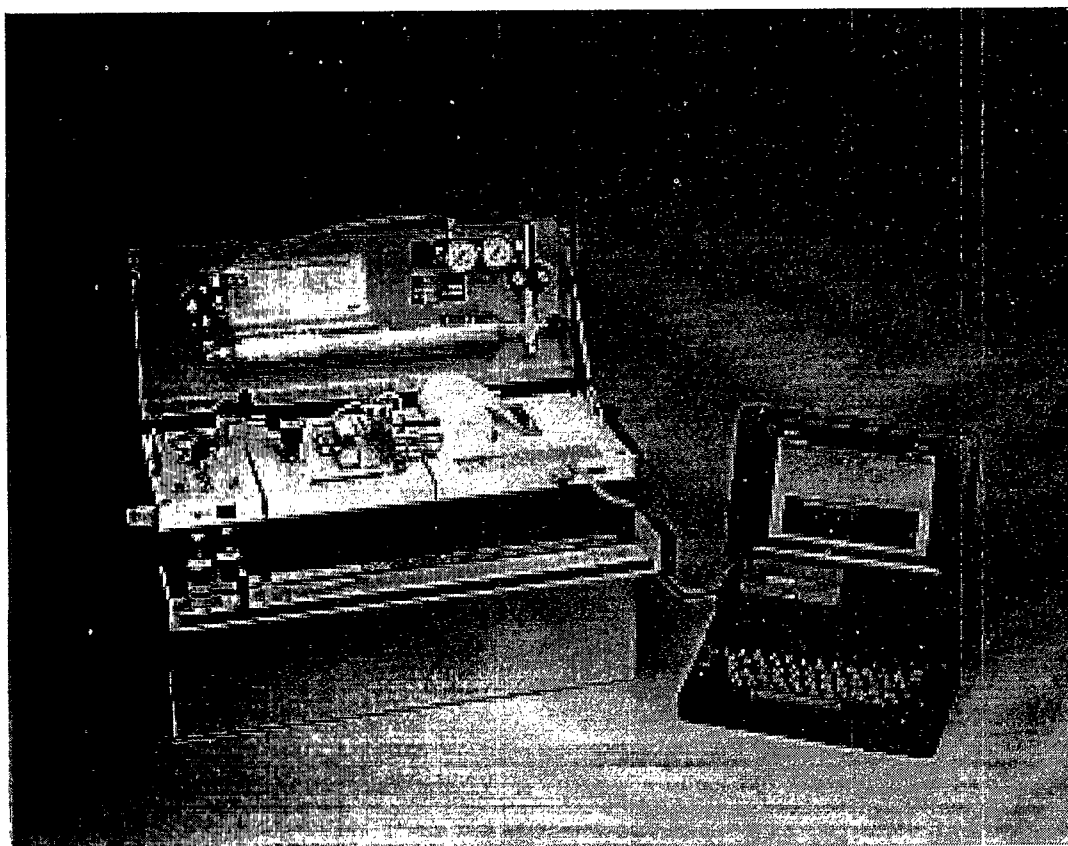
TECHNOLOGY DESCRIPTION:

The field-deployable HNU GC 311D portable gas chromatograph monitors a wide range of compound emissions from hazardous waste sites and other emissions sources before and during remediation (see photograph below). It has an internal carrier gas supply, operates on 110-volt line power, is microprocessor-controlled, and is temperature programmable. An internal printer plots chromatograms and prints data. Data can also be reported to an external computer, which is connected through an RS-232 outlet.

The instrument has simultaneous dual-detector capability and allows the user to choose from four interchangeable detectors: photoionization, flame ionization, electron-capture, and far ultraviolet absorbance. Capillary columns of all sizes can be installed. The instrument is capable of autosampling.

WASTE APPLICABILITY:

The HNU GC 311D is applicable to a wide variety of vapor-phase pollutants. The photoionization detector is sensitive to



HNU GC 311D Portable Gas Chromatograph

compounds that ionize below 11.7 electron volts, such as aromatic compounds and unsaturated halocarbons. The flame ionization detector is sensitive to hydrocarbons. The electron-capture detector is sensitive to halocarbons and polychlorinated biphenyls. The far ultraviolet absorbance is a universal detector with characteristics similar to that of a thermal conductivity detector (TCD).

STATUS:

The instrument was evaluated in January 1992 at a Superfund site under remediation. Results from the demonstration are presented in a peer-reviewed article entitled "Evaluation of Portable Gas Chromatographs" in the *Proceedings of the 1993 U.S. EPA/Air and Waste Management Association International Symposium*, VIP-33, Volume 2, 1993. A final report will not be prepared.

FOR FURTHER INFORMATION:

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IDETEK, INC.
(formerly BINAX CORPORATION, ANTOX DIVISION)
(Equate® Immunoassay)

TECHNOLOGY DESCRIPTION:

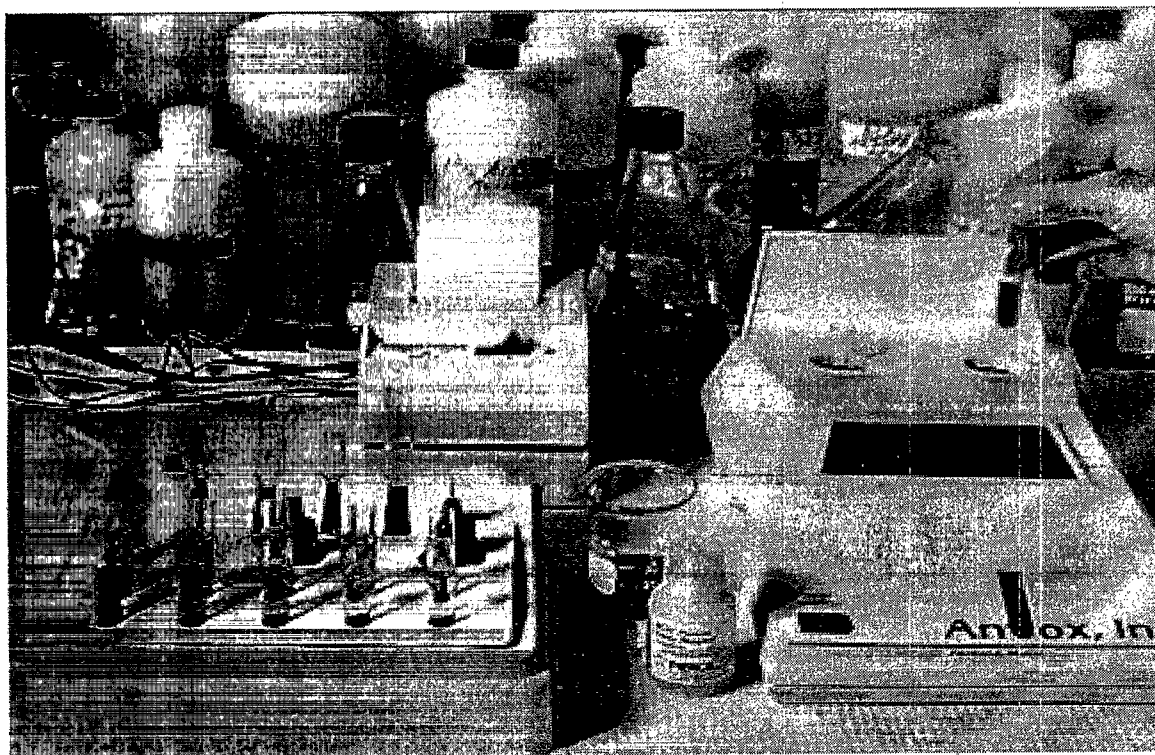
The Equate® immunoassay (see photograph below) uses an anti-benzene, toluene, and xylene (BTX) polyclonal antibody to facilitate analysis of BTX in water. A hapten-enzyme conjugate mimics free BTX hydrocarbons and competes for binding to the polyclonal antibody immobilized on a test tube. After the test tube is washed to remove unbound conjugate, a substrate chromogen mixture is added and a colored enzymatic reaction product forms. The enzymatic reaction is stopped by adding a few drops of sulfuric acid, which colors the enzymatic product yellow.

As with other competitive enzyme-linked immunosorbent assays, the color intensity of the

enzymatic product is inversely proportional to the sample analyte concentration. Each sample is run with a reference sample of deionized water. The optical density of the colored enzymatic product is read on a portable digital colorimeter equipped with a filter that passes light at a peak wavelength of 450 nanometers. The ratio of the sample to the reference optical density values is used to estimate the aromatic hydrocarbon level in the low parts per million (ppm) range. The test is sensitive to about 1 ppm and requires 5 to 10 minutes per analysis.

WASTE APPLICABILITY:

The Equate® immunoassay is designed to measure BTX in water.



Equate® Immunoassay Kit

STATUS:

The National Exposure Research Laboratory-Las Vegas evaluated several versions of the Equate® immunoassay. The evaluation focused on cross-reactivity and interference testing and on analysis of benzene, toluene, ethylbenzene, and xylene and gasoline standard curves.

As a preliminary field evaluation, the Equate® immunoassay was used to analyze in duplicate five well samples and a creek sample, both in the field and the laboratory. Confirmatory analysis was conducted using purge-and-trap gas chromatography with an electron-capture detector, in parallel with a photoionization detector.

A SITE demonstration of the Equate® immunoassay was conducted in 1992. Results from this demonstration were published in June 1994 in an EPA report entitled "Superfund Innovative Technology Evaluation (SITE) Program Evaluation Report for Antox BTX Water Screen (BTX Immunoassay)" (EPA/540/R-93/518).

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METOREX, INC.
(Field Portable X-Ray Fluorescence Analyzers)

TECHNOLOGY DESCRIPTION:

Metorex, Inc. (Metorex), manufactures, sells, leases, and provides analytical and repair services for its X-MET line of field portable X-ray fluorescence (FPXRF) analyzers. The latest X-MET models in this series of instruments are the X-MET 920 and X-MET 2000 systems. The X-MET 920 series includes the X-MET 920-P and 920-MP. The X-MET analyzers are specifically calibrated for on-site or in situ hazardous waste analysis. These analyzers provide rapid, nondestructive measurements of inorganic contaminants in soil, thin film such as lead in paint, or water matrices.

Each X-MET 920 series analyzer is built from modules into systems based on customers' analytical and logistical needs. The X-MET PC System (XPCS) can either be built into the expansion slot of the computer or is provided as a standalone, battery-operated XPCS module for direct interface to a computer's RS-232 port.

The X-MET 920-P is equipped with either a solid state Si(Li) gas-filled proportional counter detector or the other new SIPS detector contained in a hand-held probe. The X-MET 920 MP is equipped with a gas-filled proportional counter detector contained in a hand-held probe.

The 920 X-MET, equipped with a Si(Li) detector, dual radioisotope sources, and a portable sealed computer, sells for \$47,950. The X-MET 920 MP sells for \$36,325 and the X-MET 2000 sells for \$62,430. These prices include factory training for two people at the Metorex facility. The X-MET can also be leased from Metorex.

The basic analyzer configuration includes the PC, XRF software, XPCS, and the analysis probe with excitation source. The XPCS contains a 2,048-channel multichannel analyzer that collects, analyzes, and displays the X-ray pulse-height spectrum. The high-resolution Si(Li) detector is liquid-nitrogen cooled by a 0.5-liter dewar built into the probe. The gas-filled proportional detector and SIPS intrinsic silicon pin diode detector operates at ambient temperatures. Metorex offers iron-55, cadmium-109, and americium-241 radioisotope excitation sources. Dual source configurations are available.

The X-MET 940 was tested as a prototype, which evolved into the X-MET 2000. It is essentially the same instrument as the X-MET 920-P but has a smaller, lighter physical configuration.

The X-MET 2000 is a custom, miniaturized, field-hardened, battery-operated, DOS-based computer that is dedicated to field XRF application. The system uses a flash or electronic hard disk to provide extreme durability under field operating conditions. It is among the smallest, lightest commercially available FPXRF with the full range of analytical capabilities.

All software is menu driven. These instruments are factory-calibrated and can be field-calibrated using either empirical calibration (all probes) or standardless-fundamental parameters (FP). For the Si(Li) probe, empirical calibration requires a set of site-typical or analyzed site-specific samples for the initial calibration. FP calibration requires one certified standard. Metorex claims that 50 or more soil samples can be analyzed in

an 8- to 10-hour day with intrusive sampling, rigorous sample preparation, and long measurement times (200 to 300 seconds per sample) and up to 200 samples per day with in situ screening and short (10 to 100 seconds per sample) measurement times. The 920 X-MET, equipped with a Si(Li) detector, dual radioisotope sources, and a portable sealed computer, sells for \$47,950. The X-MET 920 MP sells for \$36,325 and the X-MET 2000 sells for \$62,430. These prices include factory training for two people at the Metorex facility. The X-MET can also be leased from Metorex.

WASTE APPLICABILITY:

The X-MET 2000 technology is designed to identify more than 60 elements in soil or other matrices, such as those at mining and smelting sites, drum recycling facilities, or plating facilities. The instrument can provide real-time, on-site analytical results during field screening and remediation operations. FPXRF analysis is faster and more cost-effective compared to conventional laboratory analysis.

STATUS:

The X-MET 920-P, 920-MP, and 940 were evaluated under the SITE Program in April 1995. The evaluation is summarized in technical reports EPA/600/R-97/146 for the 920-P and 940 and EPA/600/R-97/151 for the 920-MP, both dated March 1998. The instruments were used to identify and quantify concentrations of metals in soils. Evaluation of the results yielded field-based method detection limits, accuracy, and precision data from the analysis of standard reference materials and performance evaluation samples. Comparability of the FPXRF results to an EPA-approved reference laboratory method was also assessed. The draft fourth update to SW-846 includes Method 6200, dated January 1998, which incorporates the results of the SITE study.

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MICROSENSOR SYSTEMS, INCORPORATED (MSI-301A Vapor Monitor)

TECHNOLOGY DESCRIPTION:

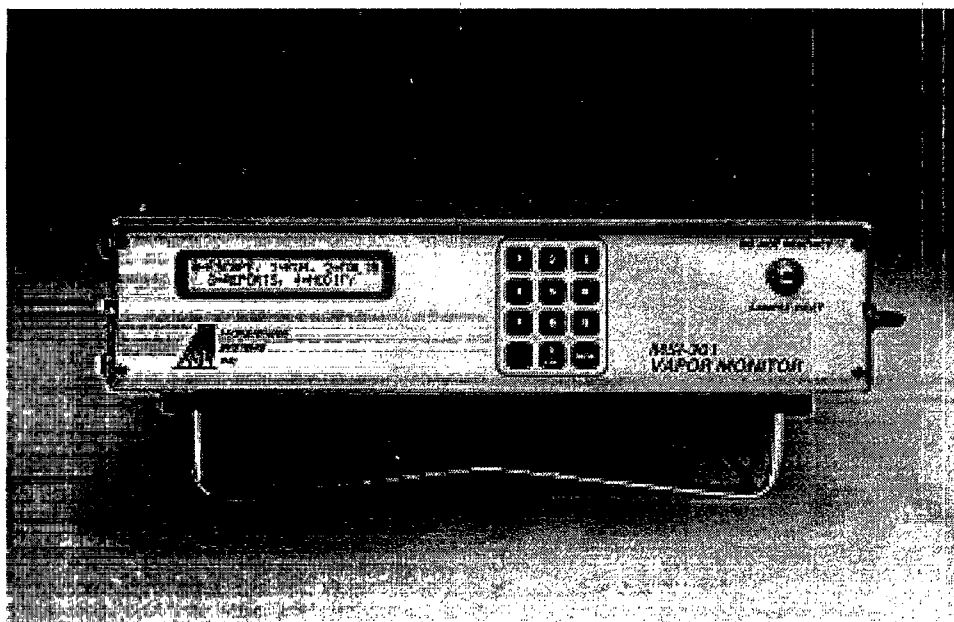
The MSI-301A vapor monitor is a portable, temperature-controlled gas chromatograph with a highly selective surface acoustic wave detector and an on-board computer (see photograph below). The MSI-301A vapor monitor performs the following functions:

- Preconcentrates samples and uses scrubbed ambient air as a carrier gas
- Analyzes a limited group of preselected compounds, such as benzene, toluene, and xylenes, at part per billion levels
- Operates by battery and includes an RS-232 interface

- Operates automatically as a stationary sampler or manually as a mobile unit

WASTE APPLICABILITY:

The MSI-301A vapor monitor can monitor many volatile organic compound emissions from hazardous waste sites and other sources before and during remediation. Some specific applications of the microsensor technology include OSHA compliance monitoring, environmental ambient air analysis, carbon bed breakthrough analysis, and industrial manufacturing area emission monitoring.



MSI-301A Vapor Monitor

STATUS:

In January 1992, the MSI-301A vapor monitor was evaluated in the field at a Superfund site. Results from the demonstration are presented in a peer-reviewed article entitled "Evaluation of Portable Gas Chromatographs" in the *Proceedings of the 1993 U.S. EPA/Air and Waste Management Association International Symposium*, VIP-33, Volume 2, 1993.

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NITON CORPORATION (XL Spectrum Analyzer)

TECHNOLOGY DESCRIPTION:

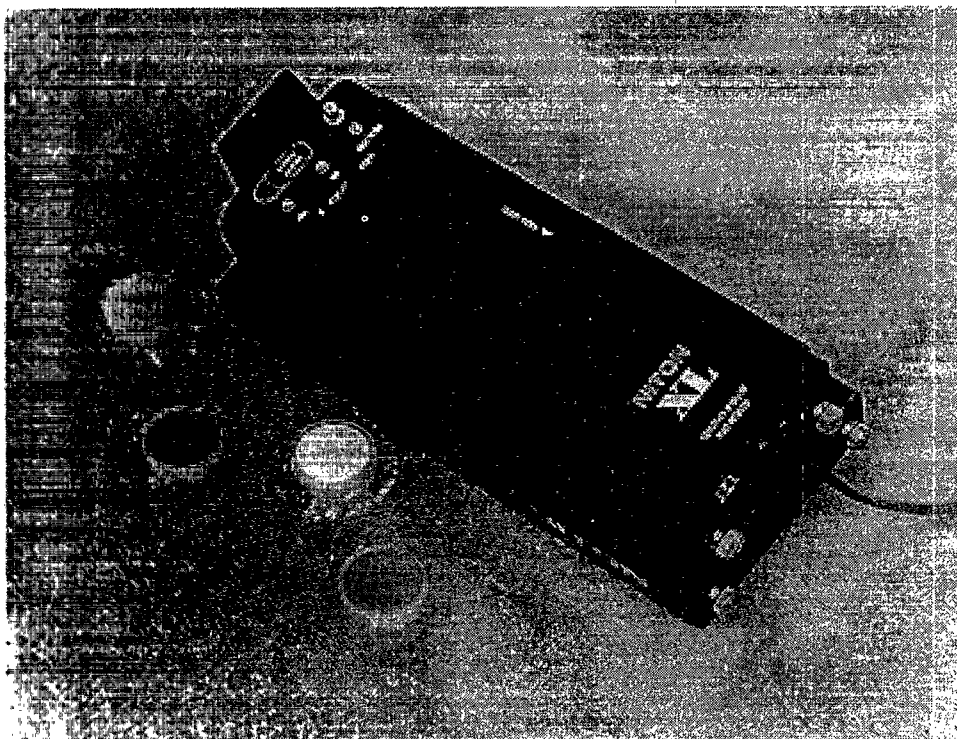
NITON Corporation (Niton) manufactures and services the XL Spectrum Analyzer, the XL-309 Lead Detector, the 700Series multi-element analyzers, and the 800Series alloy analyzers. All are hand-held, field portable X-ray fluorescence (FPXRF) instruments.

The XL Spectrum Analyzer allows in situ and prepared-sample, on-site measurement of lead in paint, soils, dust wipes, coatings and air. Lead paint analysis is accepted by EPA, and NIOSH Method 7702 is in place for airborne lead analysis. The 700Series is the multi-element analyzer. This instrument analyzes many elements, including all eight RCRA metals, in soils, filter media, and coatings (see photograph below).

The NITON XL-309 lead detector includes a cadmium-109 radioactive source (10 millicurie)

that provides the excitation energy that produces characteristic fluorescent X-rays from a sample. The 700Series can be equipped with a cadmium-109 source, americium-241 source, or both. Future releases will also provide an iron-55 source or curium-244 source. All XL-309 instruments can be upgraded to any 700Series instrument at any time. The 800Series alloy analyzers are designed for rapid sorting and identification of metal alloys and scrap metals.

The instrument includes a silicon Pin-diode detector (or a silicon diode plus cadmium-zinc-telluride detector for lead paint analysis), cooled by the thermoelectric Peltier effect. The instrument also includes (1) a multichannel analyzer of 1,024 channels, (2) an RS-232 serial port for data transfer and printing, (3) an internal memory for storing up to 3000 readings with spectra, and (4) a back-lit graphic liquid crystal display.



XL Spectrum Analyzer

The instrument self-calibrates its energy scale and uses a Compton backscatter calibration technique for soil testing. Alloy analysis is performed using fundamental parameters. The backscatter calibration compensates for X-ray absorption in the soil matrix. The instrument is equipped with a removable battery pack that provides up to 8 hours of continuous use. It can analyze 20 to 25 samples per hour, based on a 60-second analysis time and minimal sample preparation.

The complete instrument, shown in the photograph above, weighs less than 3 pounds. NITON requires a 1-day operator training and radiation safety at no charge. The course awards a certification maintenance point to Certified Industrial Hygienists who attend. NITON manufactures the Spectrum Analyzers under both general and specific licenses with the State of Rhode Island.

Instrument costs range between \$14,000 and \$37,000, depending on number of applications and radioactive sources. Prices include two battery packs and charger, automotive power adapter, cable for serial data downloading, waterproof carrying case, operating and safety manual, barcode wand, personal computer software, all necessary hardware accessories and calibration check standards, and a 15-month warranty.

WASTE APPLICABILITY:

The NITON Spectrum Analyzer can detect more than 20 elements in soil samples, such as those obtained from lead-contaminated residences, mining and smelting sites, drum recycling facilities, and plating facilities.

The instrument can provide real-time, on-site analytical results during field screening and remediation operations. FPXRF analysis is faster and more cost effective compared to laboratory analysis.

STATUS:

The NITON Spectrum Analyzer was demonstrated under the SITE Program in April 1995. The results are summarized in Technical Report No. EPA/600/R-97/150, dated March 1998. The instrument was used to identify and quantify concentrations of metals in soils. A preliminary evaluation of the results yielded field-based method detection limits, accuracy, and precision data from the analysis of standard reference materials and performance evaluation samples. Comparability of the FPXRF results to an EPA-approved reference laboratory method was also assessed. The Draft Fourth Update to SW-846 includes Method 6200, dated January 1998, which is based on this work.

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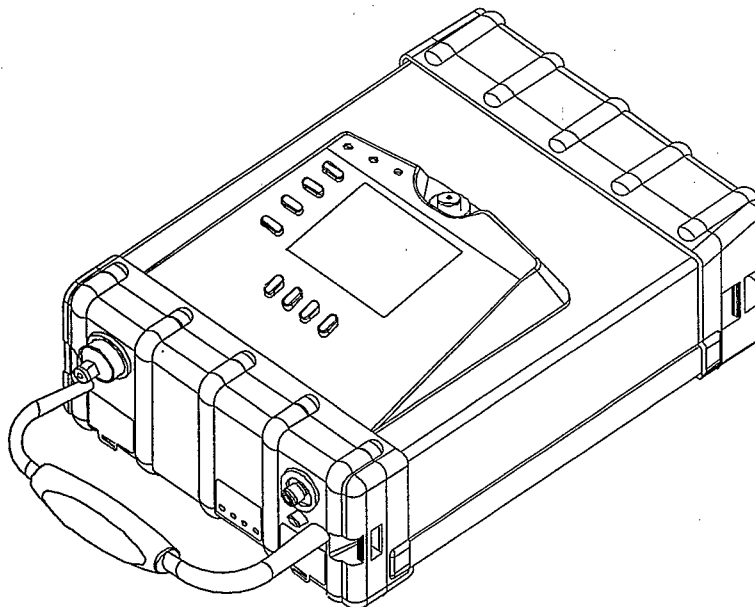
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PHOTOVAC MONITORING INSTRUMENTS
(formerly PHOTOVAC INTERNATIONAL, INC.)
(PE Photovac Voyager Portable Gas Chromatograph)

TECHNOLOGY DESCRIPTION:

The PE Photovac Voyager Portable Gas Chromatograph (GC) is a lightweight, battery powered, isothermal GC (see figure below). The Voyager GC is designed to replace the Photovac 10S Plus GC and incorporates the following advanced features:

- A miniature analytical engine containing a precolumn with backflush capability; three analytical columns dedicated for "light", "middle", and "heavy" compounds; an isothermal oven with an operating temperature range of 30-80 °C; a miniature all-stainless steel valve array; and a syringe/valve injection port. The whole engine is maintained at the set isothermal temperature.
- The Voyager photoionization detector (PID) provides superior sensitivity to volatile organic compounds (VOC) such as benzene, toluene, xylenes, and chlorinated ethylenes.
- High sensitivity to chlorinated compounds is achieved using a Voyager equipped with an electron capture detector (ECD).
- A VOC function acts as a fast screening tool for pre-GC analysis; the VOC mode supports either syringe or automatic "sample injections."
- A factory-programmed assay for analysis of up to 40 VOCs listed in EPA Method 601, 602, 624, and 8260.
- A "simplified" operating mode designed to detect a subset of VOCs selected from the preprogrammed assay.
- A user mode, simple point-and-press operation, to analyze preselected compounds from the factory programmed assay.
- Total weight with PID is 15 pounds.



PE-Photovac Portable Gas Chromatograph

WASTE APPLICABILITY:

The Voyager GC can monitor VOC emissions from hazardous waste sites and other emission sources before, during, and after remediation. PC Sitechart LX software provides the user with data downloading, integration and GC customization capabilities. This enables a user to generate data onsite, with confidence.

STATUS:

The Photovac 10S PLUS GC was evaluated in January 1992 at a Superfund site under remediation. Results from this demonstration are presented in a peer-reviewed article entitled "Evaluation of Portable Gas Chromatographs" in the *Proceedings of the 1993 U.S. EPA/Air and Waste Management Association International Symposium*, VIP-33, Volume 2, 1993.

The Voyager GC was evaluated during a field study in August 1995. During the study, downwind vapors from an artificial source generator were analyzed. Preliminary results of the demonstration were presented in an article titled "Performance Comparison of Field-Deployable Gas Chromatographs with Canister TO-14 Analyses" in the *Proceeding of the 1996 U.S. EPA/Air and Waste Management Association International Symposium*, VIP-64, 1996.

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QUADREL SERVICES, INC.
(Emflux® Soil-Gas Survey System)

TECHNOLOGY DESCRIPTION:

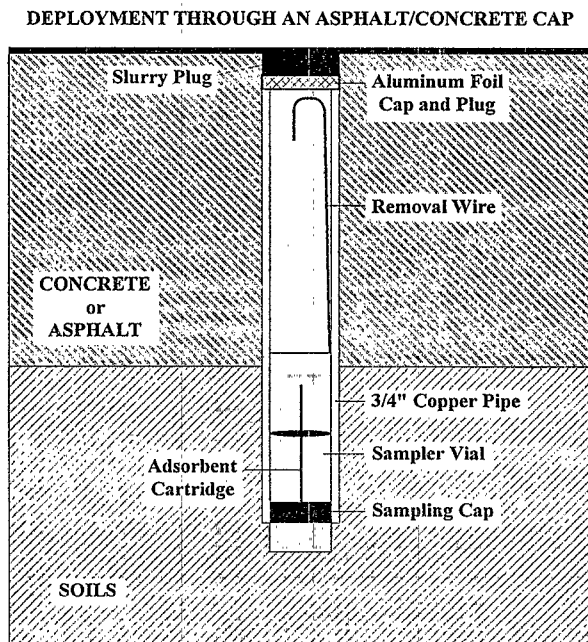
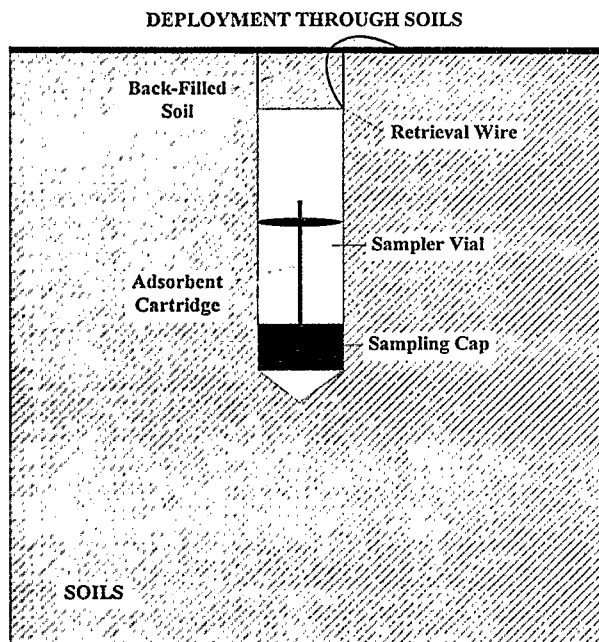
Quadrel's EMFLUX® System is a fully operational, passive, near-surface investigative technology capable of identifying buried VOCs and SVOCs at concentrations in the low parts-per-billion range.

EMFLUX® exploits the crustal effects of gravity (generally referred to as "earth tides") through a predictive computer model. These geophysical forces dominate vertical soil-gas velocities, increasing them by three to five orders of magnitude. The ability to predict such velocity changes (which dwarf influences of barometric pressure, temperature, moisture, and other phenomena) allows EMFLUX® to take advantage of maximum gas emissions at ground surface through simultaneous, cumulative sampling, thereby enhancing detection accuracy and

survey reliability. As a result, EMFLUX® survey results are reproducible in excess of 90 percent of the time in terms of both correct identification of individual VOCs and SVOCs and proportional duplication at ground surface of changes in subsurface concentrations of targeted compounds.

Deployment, by individuals or two-person teams, takes less than two minutes per point (exclusive of initial sample location surveying); retrieval requires half that time; and collectors remain in the field for 72 hours. Field components of the system (9-inch stainless steel shells used above ground, or 3.5-inch glass vials for shallow subsurface placement) are completely portable. Available analytical methods range from EPA Methods 8020 and 8021, using gas chromatography and a variety of detectors, to Methods 8260 and 8270, using mass spectrometry.

EMFLUX® COLLECTOR



WASTE APPLICABILITY:

The EMFLUX® System has been employed with great effectiveness in detecting a broad range of VOCs and SVOCs (from vinyl chloride through hexachlorobutadiene) in soil, groundwater and air. The technology has also been successful in identifying and mapping methane, non-methane landfill gases, mercury, certain types of high explosives, and chemical surety materials.

STATUS:

Quadrel participated in the SITE Program (Environmental Technology Verification Program) in May and June 1997, when EMFLUX® was deployed at two sites (one in Colorado, the other in Iowa) to detect, among other VOCs, vinyl chloride, 1,2-DCE, 1,1-DCA, 1,1,1-TCA, TCE and PCE. The demonstration results indicate that the EMFLUX® system can provide useful, cost-effective data for environmental problem-solving. The EMFLUX® system successfully collected soil gas samples in clay and sandy soils. The sampler provided positive identification of target VOCs and may be able to detect lower concentrations of VOCs in the soil gas than the reference method. The results of the demonstration did not indicate consistent proportional comparability between the EMFLUX® data and the reference method's data. Currently, the final report and verification statement is being completed by the National Risk Management Research Laboratory in Las Vegas, Nevada. The EMFLUX® system has been commercially operational since 1990. EMFLUX® has been used on 350 major projects in 46 U.S. states, in Guam, Canada, Great Britain, South America, Poland, and the Czech Republic.

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RADIOMETER ANALYTICAL GROUP
(Anodic Stripping Voltammetry for Mercury in Soil)

TECHNOLOGY DESCRIPTION:

The Radiometer Analytical Group (Radiometer) anodic stripping voltammetry (ASV) method is a field-portable technique that uses a programmed electrochemical apparatus to measure total mercury in soil and sediment. The Radiometer method is more complex than immunoassay methods, but it can generate quantitative results, while immunoassay methods generate only semiquantitative or screening level results. Each Radiometer ASV apparatus can analyze up to about 40 samples per day for mercury.

Mercury in soil or sediment samples is first extracted using a heated 1:6:17 mixture of hydrochloric acid, nitric acid, and deionized water. The extract is then cooled, buffered, and centrifuged. The extracted samples are then analyzed by ASV using a Radiometer PSU 20 unit.

The ASV method has two steps. In the first step, mercury ions are plated out of solution onto a glassy carbon electrode that is coated with a gold film and placed under a negative potential. In the second step, the negative potential is removed and the mercury is stripped off the electrode. The change in electrode potential is measured with a high impedance voltmeter and is proportional to the mercury concentration.

WASTE APPLICABILITY:

The Radiometer method has been used to analyze soil and sediment samples containing mercury. The effect of soil texture on this method's performance is unknown. Soil moisture content of up to 31 percent had minimal to no effect on performance. The ASV method can measure mercury in soil or sediment at the parts per million (ppm) level.

STATUS:

The Radiometer ASV method was field demonstrated in August 1995 at two southwestern state sites: the Carson River Mercury site in Reno, Nevada; and the Sulphur Bank Mercury Mine site in Clear Lake, California. During the demonstration, the method was used to analyze 145 samples (55 samples from each site and 35 archived samples), 20 field duplicate samples, 17 weak digestion samples, and 13 performance evaluation samples. Duplicate samples underwent confirmatory analysis using inductively coupled plasma with mass spectrometry (ICP-MS) at an off-site laboratory. The ASV method provided reproducible quantitative results comparable to those generated by ICP-MS down to 2 ppm. Additional results from the field demonstration will be available in the Innovative Technology Evaluation Report. According to Radiometer, the PSU 20 unit has been improved to achieve detection limits at the parts per billion level (Radiometer PSU 22 unit).

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SENTEX SYSTEMS, INC.
(Scentograph Plus II Portable Gas Chromatograph)

TECHNOLOGY DESCRIPTION:

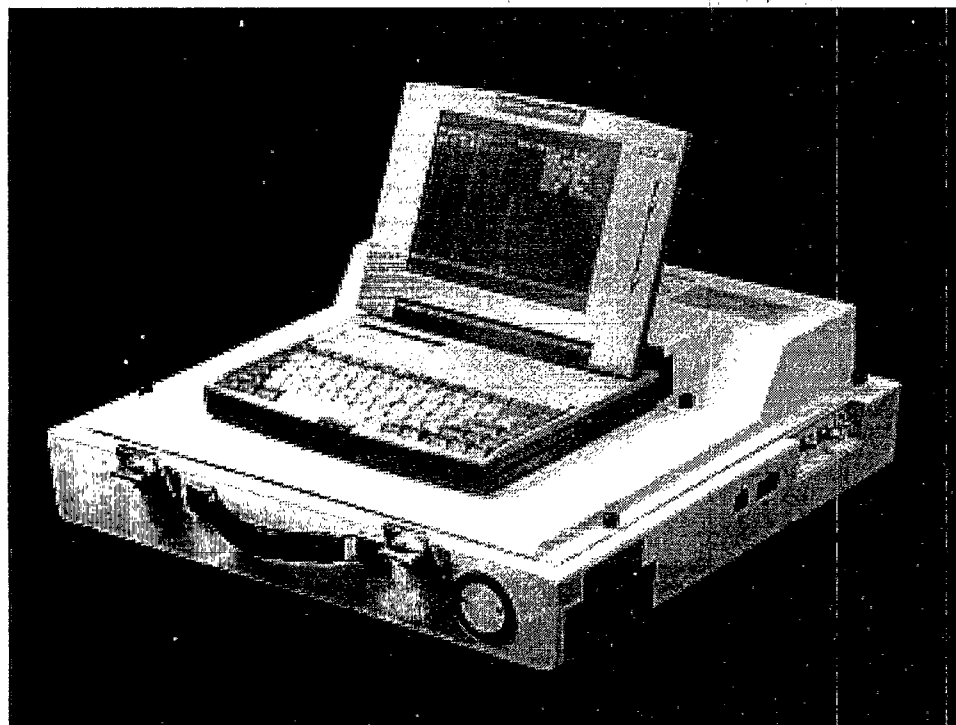
The Scentograph Plus II Portable Gas Chromatograph is designed to monitor volatile organic compound (VOC) emissions from hazardous waste sites and other emission sources. It operates by drawing air through a sorbent bed, followed by rapid thermal desorption into the carrier stream. The instrument operates in either Micro Argon Ionization or Micro Electron Capture modes.

The Scentograph Plus II Portable Gas Chromatograph can operate for several hours on internal batteries and has internal carrier gas and calibration tanks. It can be fitted with capillary columns (30 meters, 0.32 or 0.53 millimeter) or

packed columns. The instrument can be operated isothermally at temperatures ranging from ambient to 179 °C. Oven temperatures can be programmed at a desired rate. The 11.7-electron-volt ionization energy allows a detection limit of about 1 part per billion. The instrument is controlled by a detachable IBM compatible laptop computer (see photograph below). Purge and Trap Accessories enable on-site, on-line determinations of various VOCs in water.

WASTE APPLICABILITY:

The Scentograph Plus II portable gas chromatograph can monitor VOC emissions from hazardous waste sites and other emission sources.



Scentograph Plus II Portable Gas Chromatograph

STATUS:

The Scentograph Plus II portable gas chromatograph was evaluated in January 1992 at a Superfund site under remediation. Results from this demonstration are presented in a peer-reviewed article titled "Evaluation of Portable Gas Chromatographs" in the *Proceedings of the 1993 U.S. EPA/Air and Waste Management Association International Symposium*, VIP-33, Volume 2, 1993.

The technology was also evaluated in June 1994 at a landfill adjacent to a residential area. Results from this demonstration are presented in a peer-reviewed article titled "On-Site Monitoring of Vinyl Chloride at Parts Per Trillion Levels in Air" in the *Proceedings of the 1995 U.S. EPA/Air and Waste Management Association International Symposium*, VIP-47, Volume 1, 1995.

The Scentograph Plus II portable gas chromatograph was also evaluated during a field study in August 1995. During the study, downwind vapors from an artificial source generator were analyzed. Preliminary results of the demonstration were presented in an article titled "Performance Comparison of Field-Deployable Gas Chromatographs with Canister TO-14 Analyses" in the *Proceeding of the 1996 U.S. EPA/Air and Waste Management Association International Symposium*, VIP-64, 1996.

FOR FURTHER INFORMATION:

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SIMULPROBE® TECHNOLOGIES, INC.
(Core Barrel Soil Sampler)

TECHNOLOGY DESCRIPTION:

The SimulProbe® Technologies, Inc. (SimulProbe®), core barrel sampler consists of a split core barrel similar to a split-spoon sampler, a drive shoe, and a core barrel head.

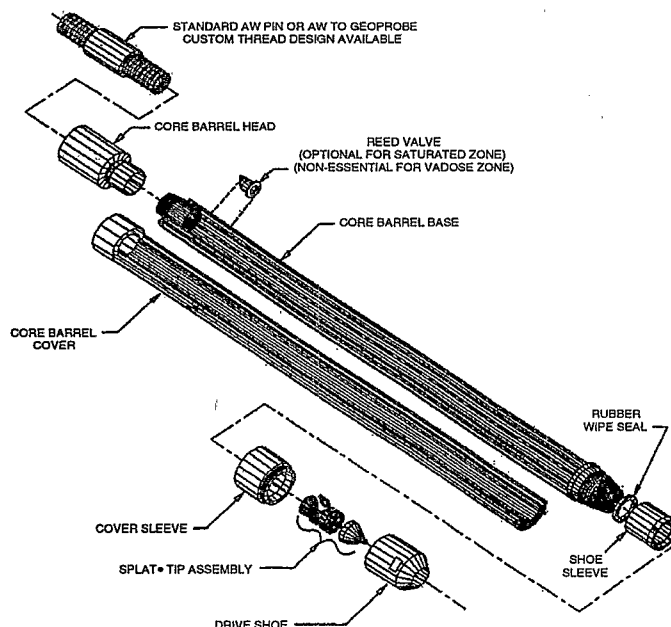
The sampler is constructed of steel, has a uniform 2-inch outer diameter, and is 27 inches long. It is capable of recovering a discrete sample 1.25 inches in diameter and 27 inches long. Multiple 5.25-inch-long stainless-steel liners or a single full-length plastic liner can be used inside the sampler to contain the soil core. The drive shoe of the sampler is equipped with a slide mechanism and has an optional drive tip for direct-push, discrete sampling applications.

The drive tip, known as the SimulProbe® Latch Activated Tip (SPLAT™), seals the sample chamber until the target depth is reached. The SPLAT™ is then released at the target depth to collect the sample.

The core barrel sampler decreases the likelihood of cross-contamination, preserves sample integrity when used with a liner, can collect either discrete or continuous soil samples of unconsolidated materials, does not need specialized training to use, and does not generate drill cuttings.

WASTE APPLICABILITY:

The SimulProbe® core barrel sampler can be used to collect unconsolidated, subsurface soil samples at depths that depend on the capability of the advancement platform. The sampler can be advanced into the subsurface using a direct-push platform, drill rig, or manual methods. The sampler has been used to collect samples of sandy and clayey soil contaminated with high concentrations of volatile organic compounds (VOC). It can also be used to collect samples for semivolatile organic compounds, metals, general minerals, and pesticides analyses.



Simulprobe Core Barrel Sampler

STATUS:

The SimulProbe® core barrel sampler was demonstrated under the Superfund Innovative Technology Evaluation (SITE) program in May and June 1997 at two sites: the Small Business Administration (SBA) site in Albert City, Iowa, and the Chemical Sales Company (CSC) site in Denver, Colorado. Samples collected during the demonstrations were analyzed for VOCs to evaluate the performance of the samplers.

Demonstration results indicate that the core barrel sampler had higher sample recoveries and yielded samples with higher VOC concentrations in the clayey soil present at the SBA site than the standard methods. Conversely, the sampler had lower recoveries and yielded samples with lower VOC concentrations than the standard methods in the sandy soil present at the CSC site. Sample integrity using the core barrel sampler was not preserved in highly contaminated soil, and the use of sample liners was found to be required to preserve sample integrity. The core barrel sampler's reliability and throughput were not as good as those of the standard methods; however, the developer claims that the sampler used during the demonstrations was incorrectly manufactured. Costs for the core barrel sampler were lower than costs related to the standard sampling method. Demonstration results are documented in the "Environmental Technology Verification" report for the sampler dated August 1998 (EPA/600/R-98/094).

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SPACE AND NAVAL WARFARE SYSTEMS CENTER
(formerly Naval Command, Control and Ocean Surveillance Center)
(SCAPS Cone Penetrometer)

TECHNOLOGY DESCRIPTION:

The Site Characterization and Analysis Penetrometer System (SCAPS) was developed by the space and naval warfare systems center. SCAPS is mounted on a cone penetrometer testing (CPT) platform for field use; it can be fitted with a laser-induced fluorescence (LIF) sensor to provide in situ field screening of petroleum hydrocarbons in subsurface soils. CPT technology has been widely used in the geotechnical industry for determining soil strength and soil type from measurements of tip resistance and sleeve friction on an instrumented probe. The SCAPS CPT platform equipped with LIF sensors can provide real-time field screening of the physical characteristics of soil and chemical characteristics of petroleum hydrocarbon contamination at hazardous waste sites.

SCAPS is primarily designed to quickly and cost-effectively distinguish hydrocarbon-contaminated areas from uncontaminated areas. SCAPS also provides geologic information and reduces the amount of investigation-derived waste. This capability allows further investigation and remediation decisions to be made more efficiently and reduces the number of samples that must be submitted for laboratory analysis.

The LIF system uses a pulsed laser coupled with an optical detector to measure fluorescence through optical fibers. Fluorescence is measured through a sapphire window on a probe that is pushed into the ground with a truck-mounted CPT. LIF provides data on the in situ distribution of petroleum hydrocarbons, measured

by the fluorescence response induced in the polynuclear aromatic hydrocarbons (PAH) that comprise the petroleum hydrocarbon. LIF detects PAHs in the bulk soil matrix throughout the vadose, capillary fringe, and saturated zones. LIF also provides a detect-nondetect field screening capability relative to a specified detection limit derived for a specific fuel product on a site-specific soil matrix. In addition, LIF provides qualitative data derived from spectrographic data at depths up to 150 feet.

WASTE APPLICABILITY:

SCAPS CPT technology equipped with LIF sensors can provide real-time qualitative analysis of subsurface soils. This technology may be useful in screening soils at oil refineries, tank farms, and shipyards. The combined technologies provide substantial cost savings and quicker analyses compared to conventional laboratories.

STATUS:

The SCAPS CPT and LIF technologies were demonstrated at two hydrogeologically distinct field sites under the SITE Characterization and Monitoring Program. The demonstrations were conducted at the Hydrocarbon National Test Site at the Naval Construction Battalion Center in Port Hueneme, California in May 1995, and the Steam Plant Tank Farm, Sandia National Laboratories in Albuquerque, New Mexico in November 1995. An Innovative Technology Evaluation Report (ITER) (EPA/540/R-95/520) was published by EPA.

The SCAPS project is meeting the Navy's goals of (1) expedited development and regulatory acceptance, (2) performance of urgently needed petroleum, oil, and lubricant (POL) field screening at Navy facilities, and (3) technology transfer to industry for widespread use. The SCAPS LIF technology is certified and verified. The technology has matured to become a platform with state-of-the-art sensor technology and a suite of the latest CPT tools for sampling and direct push well installations. On August 5, 1996, the California EPA Department of Toxic Substance Control certified the SCAPS LIF as a site characterization technology for real-time, in situ subsurface field screening for POL contaminants, pursuant to California Health and Safety Code, Section 25200.1.5.

Three SCAPS units are performing POL field screenings at Navy facilities on a prioritized basis. These screenings include plume chasing and plume edge delineation on a finer scale than has been feasible in the past.

DEMONSTRATION RESULTS:

The results of the SCAPS demonstrations at Port Hueneme and Sandia National Laboratories were presented in the ITER and are summarized below:

- SCAPS met the demonstration objective of providing real-time screening of the physical characteristics of soil and chemical characteristics of petroleum hydrocarbon contamination.
- SCAPS achieved better than 90 percent agreement with the discrete soil samples and analytical results.
- SCAPS is capable of mapping the relative magnitude and the vertical and horizontal extent of subsurface fluorescent petroleum hydrocarbon contaminant plumes in soil and groundwater.

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**SRI INSTRUMENTS
(Compact Gas Chromatograph)**

TECHNOLOGY DESCRIPTION:

The SRI Instruments (SRI) line of compact single- and dual-oven portable gas chromatographs (GC) are designed for on-site and laboratory analysis of organic compounds in soil, water, air, and other matrices. SRI GCs are equipped with ambient-to-400 °C programmable column ovens and electronic pressure/pneumatic control (EPC) of all system gases. These GCs include built-in, serially interfaced (RS-232) data acquisition unit that permits use of desktop, notebook, and palmtop PCs and software versions for Windows 3.11/Windows NT 4.00, and Windows '95/'98 (Y2K compliant). SRI GCs are equipped with a standard on-column injection port that accepts packed and capillary columns, and systems may be equipped with multiple injectors and detectors for series or independent operation, as required by the application. Automated gas sampling, split/splitless injection, Method 5035/5030

compliant purge-and-trap concentration, and liquid autosampling carousels are available as options. SRI also manufactures external detector units that may be connected to other host GCs by means of a heated transfer line (provided), or used in stand-alone monitoring applications such as continuous monitoring of stack THC emissions and chlorinated compounds.

WASTE APPLICABILITY:

The SRI GCs can monitor airborne emissions from hazardous waste sites and other emission sources before, during, and after remediation. They can also analyze soil, water, and gas samples for organic contaminants such as benzene, toluene, ethylbenzene, xylene, polychlorinated biphenyls, and pesticides. Their performance characteristics in the field have been proven by a large private, commercial, and government user base.



Compact Gas Chromatograph

STATUS:

The SRI model 8610 GC was evaluated in January 1992 at a Superfund site under remediation. Results from this demonstration are presented in a peer-reviewed article entitled "Evaluation of Portable Gas Chromatographs" in the *Proceedings of the 1993 U.S. EPA/Air and Waste Management Association International Symposium*, VIP-33, Volume 2, 1993.

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STRATEGIC DIAGNOSTICS, INC.
(formerly ENSYS ENVIRONMENTAL PRODUCTS, INC.)
(EnSys Penta Test System)

TECHNOLOGY DESCRIPTION:

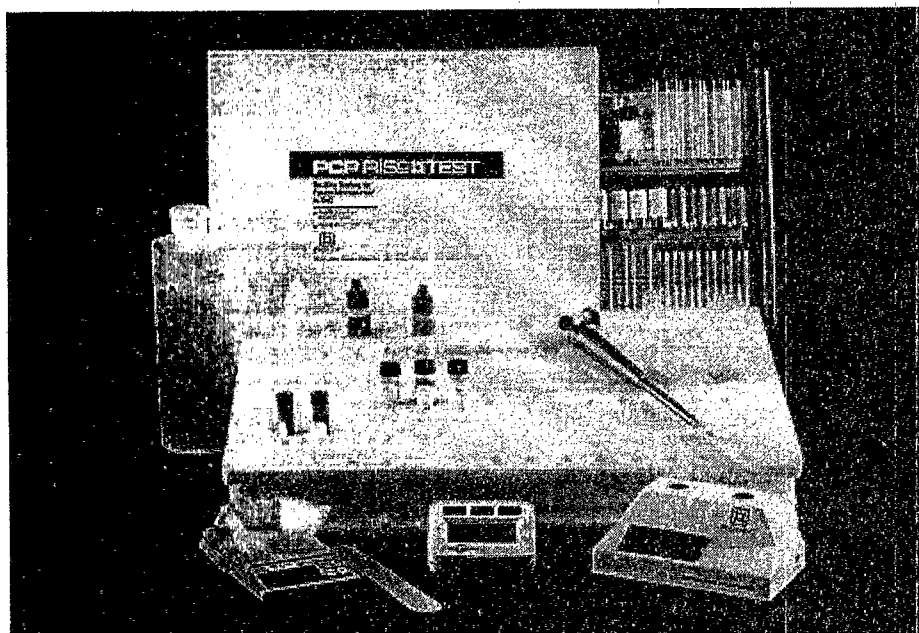
The Ensys Penta Test System is designed to quickly provide semiquantitative results for pentachlorophenol (PCP) in soil and water samples. The system is shown in the photograph below. The technology uses immunoassay chemistry to produce compound-specific reactions that detect and quantify PCP. Polyclonal antibodies are fixed to the inside wall of a test tube, where they offer binding sites for PCP. An enzyme conjugate containing a PCP derivative is added to the test tube to compete with sample PCP for antibody binding sites. Excess sample and enzyme conjugate are washed from the test tube. Reagents are then added to the test tube to react with the enzyme conjugate, forming a color. After a designated time period, a solution is added to the test tube to stop color formation. The sample color is compared to the color formed by a PCP standard. A differential

photometer compares the colors. The results obtained from soil samples are compared against a standard to determine the detection levels.

The system can be affected by extremes of naturally occurring matrix effects such as humic acids, pH, or salinity. Site-specific matrix effects that can affect the system include PCP carriers such as petroleum hydrocarbons or solvents; and other chemicals used in conjunction with PCP, including creosote, copper-chromium-arsenate, or herbicides. Specific chemicals similar in structure to PCP can provide positive results, or cross reactivity.

WASTE APPLICABILITY:

The PCP immunoassay measures PCP concentrations in soil and water. For semiquantitative soil analysis, the concentration ranges are as follows: greater than 50 parts per million (ppm),



EnSys Penta Test System

between 50 and 5 ppm, between 5 and 0.5 ppm, and less than 0.5 ppm. For water analysis, the concentration ranges are as follows: greater than 5,000 parts per billion (ppb), between 5,000 and 500 ppb, between 500 and 5 ppb, and less than 5 ppb. These ranges can be customized to a user's needs.

STATUS:

The SITE demonstration occurred in summer 1993 at Morrisville, North Carolina. Samples collected from Winona, Missouri were transported to the demonstration location for testing. Samples from both sites were analyzed to evaluate the effects of different sample matrices and of different PCP carriers such as diesel fuel and isopropyl ether-butane. During the demonstration, the PENTA RISC Test System analyzed 112 soil samples and 16 water samples. The Innovative Technology Evaluation Report (EPA/540/R-95/514), which details results from the demonstration, is available from EPA.

The PENTA RISC Test System has been accepted under Solid Waste Method 4010 (SW-846, third edition, second update). In the 4 years that it has been available, more than 12,000 immunoassay-based tests have been used on wood preserving sites.

FOR FURTHER INFORMATION:

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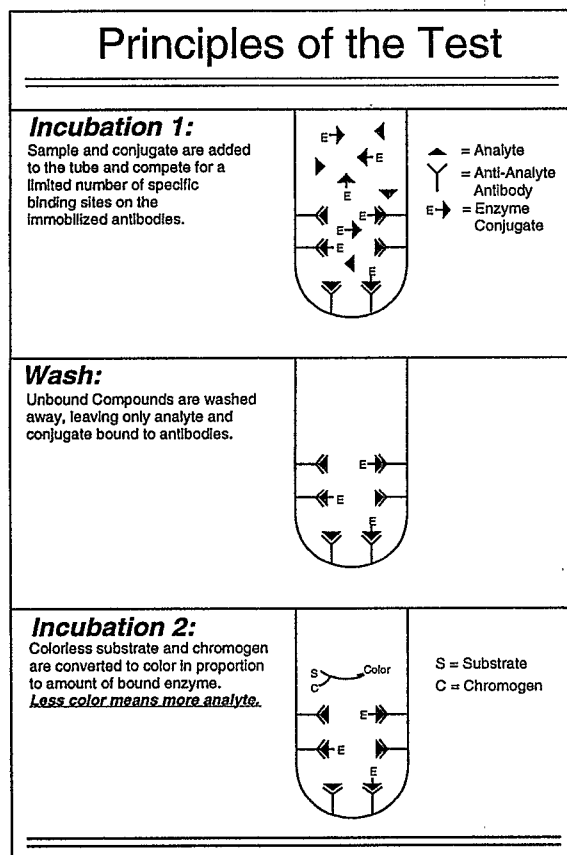
STRATEGIC DIAGNOSTICS INC.
(Formerly EnviroGard Corporation)
(EnviroGard™ PCB Immunoassay Test Kit)

TECHNOLOGY DESCRIPTION:

The EnviroGard™ polychlorinated biphenyl (PCB) immunoassay test kit rapidly analyzes for PCB concentrations in samples of soil or sediment. The operating procedure for this competitive enzyme-linked immunoassay kit is shown in the figure below.

Soil sample extracts are prepared using the EnviroGard™ Soil Extraction Kit and methanol. These extracts and assay calibration solutions are added to plastic test tubes coated with antibodies. PCB-enzyme conjugate is added to each test tube.

The test tubes then stand for 15 minutes. The antibodies in each test tube bind with either PCB molecules or enzyme conjugate. Next, the tubes are washed to remove any material not bound to the antibodies. A clear substrate/chromogen solution is then added to each tube, and the tubes are allowed to stand for 5 minutes. Any enzyme conjugate bound to the tubes colors the clear substrate blue. A deeper shade of blue in the test tube indicates a lower PCB concentration. The color intensity in the test tubes is measured at 450 nanometers using a small portable photometer. The color intensity is compared to one or more of the four calibrator solutions included in the kit



Test Kit Procedure

to yield data allowing classification above or below 1, 5, 10, or 50 parts per million (ppm). Up to 18 sample extracts can be analyzed in less than 30 minutes. Millipore Corporation (Millipore) can provide optional protocols for quantitative analysis of specific Aroclors or for testing sediment, water, or soil samples.

WASTE APPLICABILITY:

The EnviroGard™ PCB test kit measures PCB concentrations in soil or sediment. The test is calibrated to screen for Aroclors 1016, 1232, 1242, 1248, 1254, and 1260 at greater than 95 percent confidence interval.

STATUS:

In 1991, the EnviroGard™ PCB test kit was used to screen and quantify PCB contamination in soils at a SITE demonstration of a solvent extraction system in Washburn, Maine. Soil containing over 50 ppm PCB was required for the demonstration at the Washburn, Maine site. Calibrators at the 5 and 50 ppm level were used to evaluate the kit's potential for segregating soils. Additional tests were performed on dilutions of the soil extracts to evaluate quantitative performance. Highly contaminated soils were easily identified, and quantitative tests provided correlation to contaminant levels obtained by off-site laboratory analysis using EPA Method 8080.

The Innovative Technology Evaluation Report (EPA/540/R-95/517) is available from EPA. The kit was also demonstrated at a U.S. Department of Energy (DOE) site in Kansas City, Missouri.

Soils contaminated with Aroclor 1242 in ranges from nondetectable to greater than 1,000 ppm were analyzed with the test kit at the DOE facility. Over 200 assays of environmental samples and calibrators were performed to evaluate correlation with both on-site and off-site laboratory gas chromatograph data. Final evaluation of the data is presented in the Technology Evaluation Report.

The EnviroGard™ PCB test kit has been accepted by the EPA Office of Solid Waste for inclusion in SW-846 as Method 4020.

FOR FURTHER INFORMATION:

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STRATEGIC DIAGNOSTICS, INC.
(formerly OHMICRON CORPORATION)
(RaPID Assay®)






TECHNOLOGY DESCRIPTION:

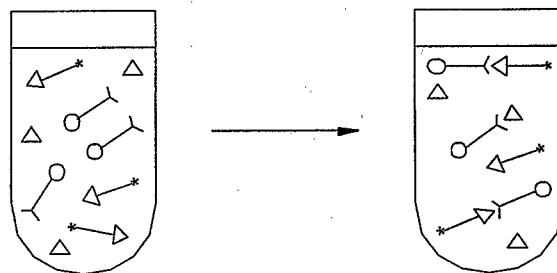
The RaPID Assay® kit is designed to quickly provide quantitative results for pentachlorophenol (PCP) concentrations in soil and water samples. The kit uses immunoassay chemistry to produce detectable and quantifiable compound-specific reactions for PCP, as shown in the figure below. Polyclonal antibodies bound to paramagnetic particles are introduced into a test tube where they offer binding sites for PCP. An enzyme conjugate containing a PCP derivative is added to the test tube, where it competes with PCP from samples for antibody binding sites. A magnetic field is applied to each test tube to hold the paramagnetic particles containing PCP and enzyme conjugate, while excess sample and enzyme conjugate are washed from the test tube.

Reagents are then added to the test tube, where they react with the enzyme conjugate and form a color. The color formed in the sample is compared to the color formed by PCP calibration standards. The comparison is made with a spectrophotometer. Samples with PCP concentrations above the calibration range can be diluted and reanalyzed.

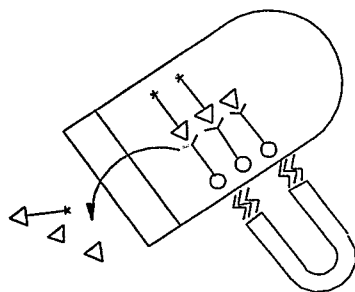
The RaPID Assay® kit has several advantages and limitations when used under field conditions. The method is field portable, easy and fast to operate, and inexpensive. The RaPID Assay® kit is limited in that (1) electricity is required to operate the spectrophotometer, (2) the immunoassay method may be affected by temperature fluctuations, and (3) cross-reactivity may occur for compounds similar to PCP.

Legend

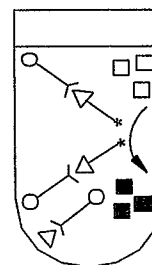
-  Magnetic Particle with Antibody Attached
-  Pentachlorophenol Enzyme Conjugate
-  Pentachlorophenol
-  Chromogen/Substrate
-  Colored Product



1. Immunological Reaction



2. Separation



3. Color Development

RaPID Assay®

WASTE APPLICABILITY:

The RaPID Assay® kit can be used to identify and quantify PCP in soil and water samples. The developer reports the detection limit for soils at 0.1 part per million and water samples at 0.06 part per billion.

STATUS:

The RaPID Assay® kit was evaluated during a SITE field demonstration in Morrisville, North Carolina in August 1993. A photograph of the kit is shown below. In addition, samples collected from a location in Winona, Missouri were analyzed to evaluate the effects of different matrices and PCP carriers. The Innovative Technology Evaluation Report (EPA/540/R-95/514), which details results from the demonstration, is available from EPA.

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RaPID Assay Used During the SITE Demonstration

TN SPECTRACE (TN 9000 and TN Pb X-Ray Fluorescence Analyzers)

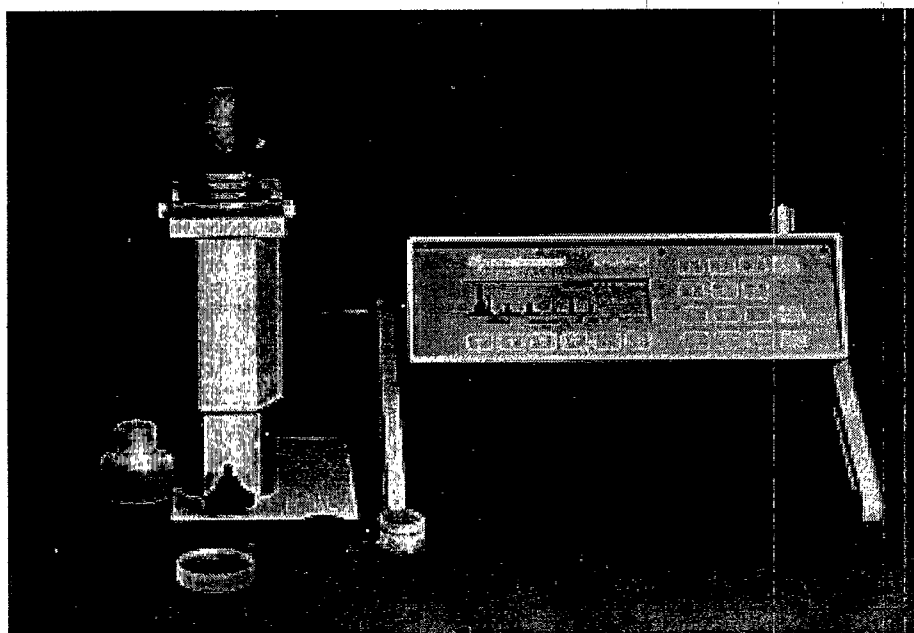
TECHNOLOGY DESCRIPTION:

The TN 9000 X-ray Fluorescence (XRF) Analyzer (see photograph below) is a field portable unit that simultaneously analyzes elements ranging from sulfur to uranium. The TN Pb Analyzer was designed to analyze for lead in soil, paint and paint chips, and other matrices. It can also measure arsenic, chromium, iron, copper, manganese, and zinc in soils. Both instruments are compact, lightweight, and do not require liquid nitrogen. A rechargeable battery allows the XRF analyzers to be used at remote sites where electricity is unavailable.

The TN 9000 Analyzer and the TN Pb Analyzer both use a high-resolution mercuric iodide detector to provide elemental resolution and low detection limits. The TN 9000 Analyzer is

equipped with the radioisotope sources iron-55, cadmium-109, and americium-241, which allow for identification and quantification of 26 elements. The TN Pb Analyzer is equipped only with the cadmium-109 source, which allows for the quantification and identification of the seven elements listed above.

The TN 9000 Analyzer and TN Pb Analyzer consist of two main components: a probe and an electronics unit. The probe is connected to the electronics unit by a flexible cable that allows analysis of soil samples in the in situ or intrusive modes. The probe contains the detector and excitation sources and weighs approximately 4 pounds. The electronics unit contains a 2,048-multichannel analyzer for spectral analysis. A maximum of 300 sets of results and 120 spectra can be stored in the TN 9000 before downloading



TN 9000 X-Ray Fluorescence Analyzer

to a personal computer (PC). A maximum of 600 sets of results and 100 spectra can be stored in the TN Pb Analyzer before downloading to a PC.

All elemental concentrations are displayed in parts per million on the liquid crystal display (LCD) of the electronic console. The electronics unit weighs approximately 15 pounds and can be carried in the field in a water-repellant carrying case. The electronic unit is battery-powered and can run up to 8 hours on a full charge.

Both instruments incorporate user-friendly, menu-driven software to operate the instrument. The TN 9000 Analyzer and TN Pb Analyzer are calibrated using fundamental parameters, which is a standardless calibration technique. At the time of the SITE demonstration, the TN 9000 and TN Pb Analyzers cost \$58,000 and \$39,500, respectively. These costs included all equipment necessary to operate the instrument. Leasing and rental options are also available. The TN 9000 Analyzer, using all three excitation sources, is capable of analyzing 100 samples per day. The TN Pb Analyzer is capable of analyzing 20 to 25 samples per hour using a 60-second count time for the cadmium-109 source.

WASTE APPLICABILITY:

The TN 9000 and TN Pb Analyzers can detect select elements in soil, sediment, filter, and wipe samples. The TN Pb Analyzer can also detect lead in paint. Both units can identify select elements at concentrations ranging from parts per million to percentage levels in soil samples obtained from mining and smelting sites, drum recycling facilities, and plating facilities. These instruments can provide real-time, on-site analytical results during field screening and remediation operations. XRF analysis is faster and more cost-effective compared to conventional laboratory analysis.

STATUS:

The TN 9000 and TN Pb Analyzers were demonstrated under the SITE Program in April 1995. The results were summarized in Technical Report No. EPA/600/R-97/145, dated March 1998. The instruments were used to identify and quantify concentrations of metals in soils. Evaluation of the results yielded field-based method detection limits, accuracy, and precision data from the analysis of standard reference materials and performance evaluation samples.

Comparability of the XRF results to an EPA-approved reference laboratory method was also assessed. The draft fourth update to SW-846 includes Method 6200, dated January 1998, which is based on this demonstration.

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TRI-SERVICES

(Site Characterization and Analysis Penetrometer System [SCAPS])

TECHNOLOGY DESCRIPTION:

The Tri-Services Site Characterization and Analysis Penetrometer System (SCAPS) was developed by the U.S. Army (U.S. Army Corps of Engineers, Waterways Experiment Station [WES] and the Army Environmental Center [AEC]), Navy (Naval Command, Control and Ocean Surveillance Center), and the Air Force (Armstrong Laboratory). The U.S. Army holds a patent for the application of laser sensors combined with cone penetrometry. The laser-induced fluorescence (LIF) system used in the SCAPS was modified from a design developed by the Navy to detect petroleum, oil, and lubricant fluorescence in seawater.

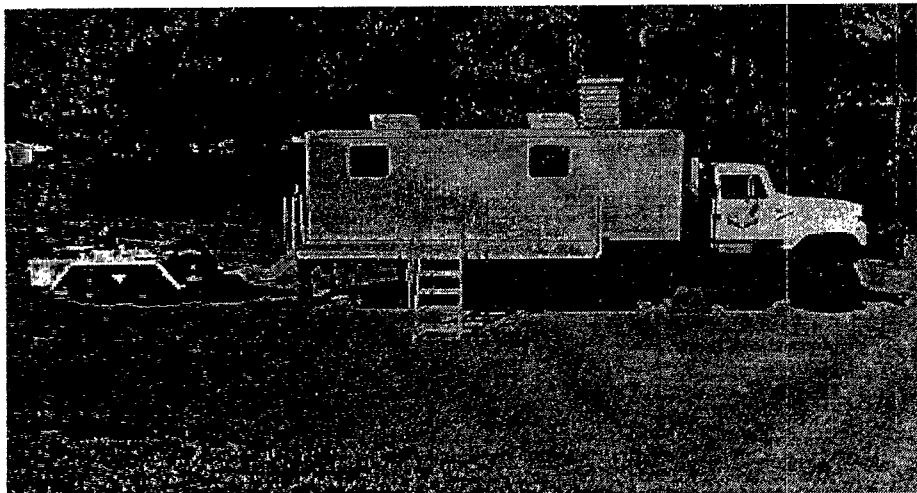
A complete cone penetrometer (CPT) truck system consists of a truck, hydraulic rams and associated controllers, and the CPT itself (see photograph below). The weight of the truck provides a static reaction force, typically 20 tons, to advance the CPT. The hydraulic system, working against the static reaction force, advances 1-meter-long, 3.57-centimeter-diameter threaded push rod segments into the ground. The CPT, which is mounted on the end of the series of push rods, contains LIF sensors that continuously log tip stress and sleeve friction.

The data from these sensors are used to map subsurface stratigraphy. Conductivity or pore pressure sensors can be driven into the ground simultaneously. The 20-ton truck is designed with protected work spaces.

The SCAPS has been modified to provide automatic grouting of the penetrometer hole during retraction of the CPT. It can also decontaminate the push rods as they are retracted from the soil. The 20-ton CPT system is capable of pushing standard push rods to depths of approximately 50 meters.

The main LIF sensor components are as follows:

- Nitrogen (N_2) laser
- Fiber optic cable
- Monochromator to resolve the fluorescence emission as a function of wavelength
- Photodiode array (PDA) to detect the fluorescence emission spectrum and transduce the optical signal into an electrical signal
- optical multichannel analyzer (OMA) to interface between the optic system and the computer system
- Computer system



Site Characterization and Analysis Penetrometer System (SCAPS)

To operate the SCAPS LIF sensor, the CPT is positioned over a designated penetration point. The LIF sensor response is checked using a standard rhodamine solution held against the sapphire window; sensor response is checked before and after each penetration. The CPT is then advanced into the soil.

The SCAPS LIF system is operated with a N₂ laser. The PDA accumulates the fluorescence emission response over 10 laser shots, and the PDA retrieves an emission spectrum of the soil fluorescence and returns this information to the OMA and computer system. The LIF sensor and stratigraphy data collection are interpreted by the on-board computer system.

The spectral resolution of the LIF system under these operating conditions is 2 centimeters. The fluorescence intensity at peak emission wavelength for each stored spectrum is displayed along with the soil classification data.

WASTE APPLICABILITY:

The Tri-Services SCAPS was designed to qualitatively and quantitatively identify classes of petroleum, polynuclear aromatic hydrocarbon, and volatile organic compound contamination in subsurface soil samples.

STATUS:

The technology field demonstration was held in EPA Region 7 during September 1994. The Innovative Technology Evaluation Report (EPA/540/R-95/520) is available from EPA. Since the SITE demonstration in 1994, the U.S. Army has developed the SCAPS Petroleum

Sensor (for detection of fluorescing petroleum, oil and lubricant contaminants in groundwater and soil), SCAPS Explosives Sensor (for detection of nitrogen-based explosive compounds), SCAPS Hybrid VOC Sensor/Sampler (for detection of VOCs in soil), SCAPS Metals Sensor (for in situ detection of metal contaminants in subsurface media), and a SCAPS Radionuclide Sensor (for detection of gamma emitting radionuclides in groundwater, mixed tank wastes, and soil). These technologies have not been demonstrated in the SITE Program.

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**UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY**
(Field Analytical Screening Program - PCB method)

TECHNOLOGY DESCRIPTION:

The field analytical screening program (FASP) polychlorinated biphenyl (PCB) method uses a temperature-programmable gas chromatograph (GC) equipped with an electron-capture detector (ECD) to identify and quantify PCBs in soil and water. Gas chromatography is an EPA-approved method for determining PCB concentrations. The FASP PCB method is a modified version of EPA SW-846 Method 8080.

In the FASP PCB method for soil samples, PCBs are extracted from the samples, injected into a GC, and identified and quantified with an ECD.

Soil samples must be extracted before analysis begins. Hexane and sulfuric acid are used during the extraction process, which removes potential interferences from the soil sample. Chromatograms for each sample are compared to the chromatograms for PCB standards. Peak patterns and retention times from the chromatograms are used to identify and quantify PCBs in the soil sample extract. In addition to the GC, the operator may use an autosampler that automatically injects equal amounts of the sample extract into the GC column. The autosampler ensures that the correct amount of extract is used for each analysis and allows continual analysis without an operator. The FASP PCB method quickly provides results with statistical accuracy and detection limits comparable to those achieved by formal laboratories. The method can also identify individual Aroclors.

Instrumentation and equipment required for the FASP PCB method are not highly portable. When mounted in a mobile laboratory trailer, however, the method can operate on or near most sites relatively easily. Use of this method requires electricity, and Aroclor standards require refrigeration. An exhaust hood and carrier gases also are needed.

WASTE APPLICABILITY:

The FASP PCB method can identify and quantify PCBs in soil and water samples.

STATUS:

The FASP PCB method was demonstrated under the SITE Program at a well-characterized, PCB-contaminated site. During the demonstration, the method was used to analyze 112 soil samples, 32 field duplicates, and two performance evaluation samples. Split samples were submitted to an off-site laboratory for confirmatory analysis by SW-846 Method 8080. Data generated by the FASP PCB method were directly compared with the data from the off-site laboratory to evaluate the method's accuracy and precision. In addition, the operational characteristics and performance factors of the FASP PCB method were evaluated.

The stated detection limit for the FASB PCB method is 0.4 parts per million (ppm). During the demonstration, the method achieved a detection limit as low as 0.1 ppm. In addition, up to 21 samples were analyzed by the method in an 8-hour period. The Innovative Technology Evaluation Report (EPA/540/R-95/516) contains additional details on the method's demonstration and evaluation and is available from EPA.

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**UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY**
(Field Analytical Screening Program - PCP method)

TECHNOLOGY DESCRIPTION:

The field analytical screening program (FASP) pentachlorophenol (PCP) method uses a gas chromatograph (GC) equipped with a megabore capillary column and either a flame ionization detector (FID) or an electron-capture detector (ECD) to identify and quantify PCPs. Gas chromatography is an EPA-approved method for determining PCP concentrations in soil, water, and waste samples. The FASP PCP method is an abbreviated, modified version of these methods.

Soil and water samples require extraction before GC analysis. To remove interferences caused by petroleum hydrocarbons, including PCP carriers such as mineral spirits, kerosene, diesel fuel, and fuel oil, an acid-base partition clean-up step is used. In this step, the method includes petroleum hydrocarbons that are removed from the reagent water, while potassium phenates remain in the reagent water. Sample extracts are injected onto a GC, separated with a DB-5 megabore capillary column, and the PCP is identified and quantified using a FID. The sample extracts are then compared to standards to determine whether PCP is present in the sample and, if so, at what concentration. The FASP PCP method will only provide high parts per billion detection levels of PCP in water when an FID is used. To achieve a lower detection limit, the sample extracts are reanalyzed using an ECD.

The FASP PCP method is field-portable only in a mobile laboratory. It should be used indoors in a temperature-controlled environment. Reagents required for soil and water sample analyses require refrigeration and the GC extraction fume hood requires electricity.

WASTE APPLICABILITY:

The FASP PCP method is designed to provide quantitative screening results for PCP in water and soil samples. The FASP PCP method is best used at sites where PCP is a known contaminant, where petroleum products are not the carrier solvents, and where large concentrations of other organic chemicals are not present in the sample.

STATUS:

The FASP PCP method was demonstrated under the SITE Program at a well-characterized PCP-contaminated site. During the demonstration, the method was used to analyze 98 soil samples, 14 soil field duplicates, 10 water samples, and six water sample field duplicates. Split samples were submitted to an on-site laboratory for confirmatory analysis by the standard EPA-approved analytical methods. Data generated by the FASP PCP method were directly compared with the data from the off-site laboratory to evaluate the method's accuracy and precision. In addition, the specificity of the technology was evaluated.

The demonstration results indicate that the FASP PCP method requires experienced GC operators to produce reliable results. The average number of demonstration samples extracted, concentrated, and analyzed in one 10-hour day during the demonstration was 14. The detection limit reported by this method for soil samples is 0.8 parts per million and 1.0 ppb for water samples. Generally, if 10 to 20 percent of the soil samples (not contaminated with petroleum) are sent to a confirmatory laboratory, the results from the other 80 to 90 percent can be corrected. This approach could yield significant savings in analytical costs. The water analysis portion of this demonstration produced similar results.

The FASP PCP method was found to be most affected by the diesel fuel used as a PCP carrier solvent. A specificity study performed during the demonstration showed that diesel fuel would provide a positive response when present at a concentration of 10 ppm. The Innovative Technology Evaluation report (EPA/540/R-95/528) contains additional details on the method's demonstration and evaluation and is available from EPA.

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W.L. GORE AND ASSOCIATES, INC.
(GORE-SORBER® Screening Survey)

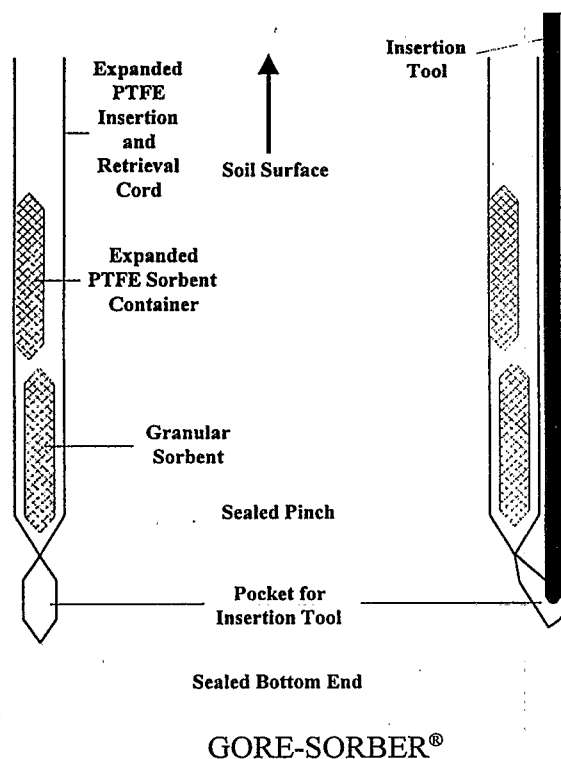
TECHNOLOGY DESCRIPTION:

The GORE-SORBER® Screening Survey employs the use of patented passive soil vapor sampling devices (GORE-SORBER Modules), which are made of an inert, hydrophobic, microporous expanded polytetrafluoroethylene (ePTFE, similar to Teflon® brand PTFE) membrane. The membrane transfer of soil and liquid, but allows the soil gases to move across the membrane for collection onto engineered sorbents. These sorbents are designed to minimize the affects of water vapor and to detect a broad range of VOCs and SVOCs.

GORE-SORBER® Screening Surveys have been used successfully at thousands of sites for determining subsurface areas impacted by VOCs and SVOCs. Organic compounds commonly

detected include halogenated solvents, straight- and branched-chain aliphatics, aromatics, and polycyclic aromatic hydrocarbons (PAH). Many of these compounds are associated with a wide range of petroleum products, including gasoline, mineral spirits, heating oils, creosotes, and coal tars. GORE-SORBER® Screening Surveys have also been used successfully to screen for nitroaromatic explosives, chemical warfare agents, precursors, breakdown products, and pesticides.

The GORE-SORBER® Screening Survey is a service that includes the manufacturing of the samplers, the analysis of the samplers (through thermal desorption, gas chromatography, and mass selective detection), and a final report that includes color contour plots of the compounds detected.



STATUS:

Common applications of the GORE-SORBER® Screening Surveys include detection of compounds to (1) trace soil and groundwater plumes in porous and fractured media, (2) monitor progress of subsurface in situ remedial actions, (3) provide baseline data for real estate transfer assessments, and (4) reduce groundwater monitoring costs. Prudent use of this technology can optimize and reduce soil and groundwater sampling efforts, resulting in significant cost savings over the life of site assessment and remedial action programs.

The GORE-SORBER® Screening Survey was accepted into the SITE Demonstration Program in November 1996. The SITE field demonstration was completed in May 1997. Since this technology has been accepted into the SITE program, water quality monitoring and the design of the GORE-SORBER Module have been improved.

The SITE demonstration showed that the GORE-SORBER® Screening Survey is more sensitive than active soil gas sampling, and therefore more accurate in terms of detecting and reporting low concentrations of some compounds. The technology demonstration also revealed that this survey is more accurate when the soil conditions would otherwise restrict the use of active soil gas methods, for example, where the soil is very dense or nearly saturated. Additionally, this sorbent based method provides a more robust system for sample collection and analysis for those projects that have more stringent data quality objectives.

Demonstration results are documented in the "Environmental Technology Verification" report for the sampler dated August 1998 (EPA/600/R-98/095).

FOR FURTHER INFORMATION:

EPA PROJECT MANAGER:

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U.S. Environmental Protection Agency
National Exposure Research Laboratory
Characterization Research Division
P.O. Box 93478
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Fax: 702-798-2261
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TECHNOLOGY DEVELOPER CONTACT:

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W.L. Gore & Associates, Inc.
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Telephone No.: 410-392-7600
Fax: 410-506-4780
E-mail: rfenster@wlgore.com

XONTECH INCORPORATED (XonTech Sector Sampler)

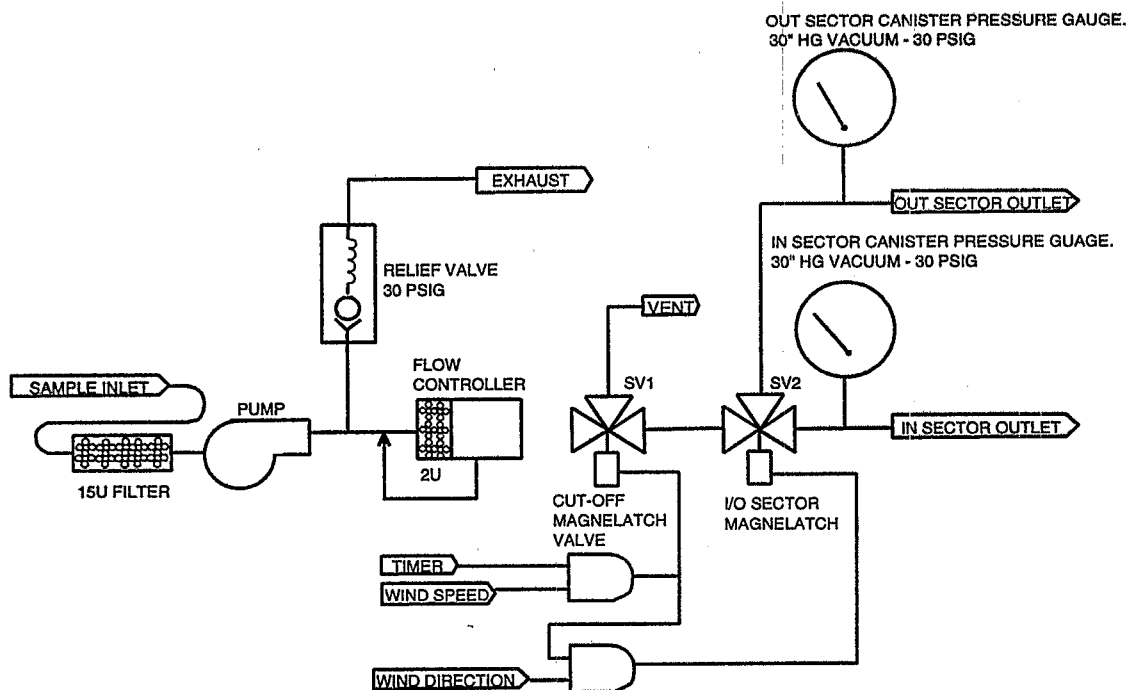
TECHNOLOGY DESCRIPTION:

The XonTech Incorporated (XonTech) sector sampler collects time-integrated whole air samples in Summa™-polished canisters (see diagram below). The wind sensor directs whole air, sampled at a constant rate, into either an "in" sector canister or an "out" sector canister. When wind velocity exceeds 0.37 meter per second (m/s) from the direction of the suspected emissions area (the target), the first canister is filled. When the wind velocity exceeds 0.37 m/s from any other direction, the other canister is filled. When the wind velocity falls below 0.37 m/s, either canister or neither canister may receive the sample. Over an extended period of time, a target sample and a background sample are collected. This method is analogous to upwind-downwind sampling but does not require two distinct sites or manual sampler control.

The sampler is portable and can be battery- or AC-powered. The air samples are analyzed by gas chromatograph (EPA Method TO-14) for volatile organic compounds (VOC). The use of sector samplers enables identification of VOCs originating from the source and differentiation between other sources in the vicinity.

WASTE APPLICABILITY:

The XonTech sector sampler can monitor VOC emissions from hazardous waste sites and other emission sources before and during remediation. Short-term sampling can determine which high concentration compounds are emitted from a site. Long-term monitoring can assess an emission source's potential effects on the local population, providing data to support risk analyses.



Schematic Diagram of the XonTech Sector Sampler

STATUS:

The XonTech sector sampler's usability has been demonstrated in two short-term field studies. This technology has been applied to industrial emissions as well as emissions from landfill sites. Mathematical methods for processing data have been developed and shown to be appropriate. The sampler is now commercially available.

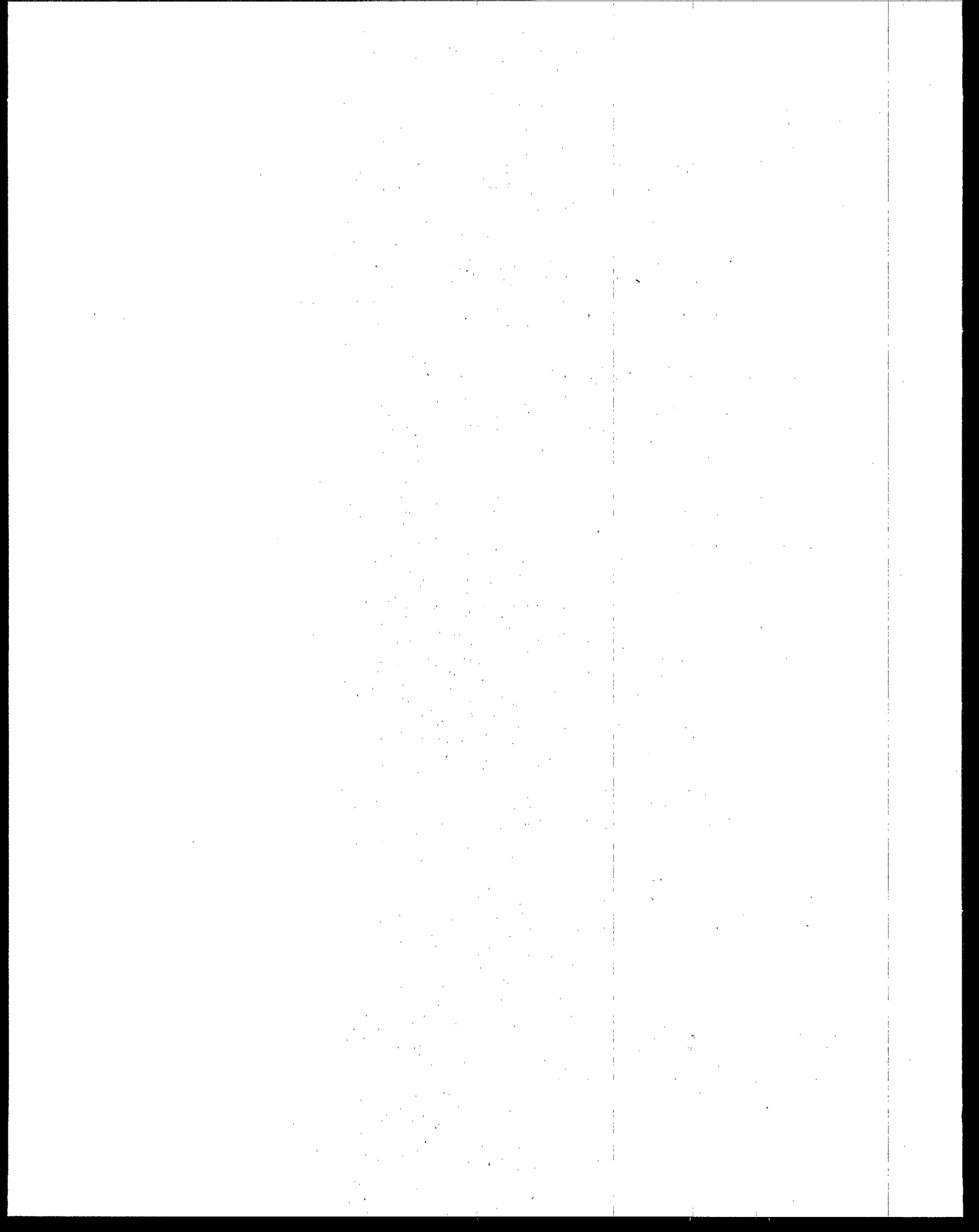
FOR FURTHER INFORMATION:

EPA PROJECT MANAGER:

Joachim Pleil
U.S. Environmental Protection Agency
National Exposure Research Laboratory
MD-44
Research Triangle Park, NC 27711
Telephone No.: 919-541-4680
Fax: 919-541-3527

TECHNOLOGY DEVELOPER CONTACT:

Matt Yoong
XonTech Incorporated
6862 Hayvenhurst Avenue
Van Nuys, CA 91406
Telephone No.: 818-787-7380
Fax: 818-787-8132





Documents Available from the
US EPA National Risk Management Research Laboratory
Superfund Technology Demonstration Division
General Publications

- SITE Program: Annual Report to Congress 1994 (EPA/540/R-95/522)
- SITE Profiles, Seventh Edition (EPA/540/r-94/526)
- Survey of Materials Handling Technologies Used at Hazardous Waste Sites (EPA/540/2-91/010)
- Interim Status Report U.S. and German bilateral Agreement on Remediation of Hazardous Waste Sites (EPA/540/R-94/500)

Demonstration Project Results

Accutech Remedial Systems, Inc.--Pneumatic Fracturing Extraction and Hot Gas Injection, Phase 1

- Technology Evaluation (EPA/540/R-93/509) PB93-216596
- Technology Demo. Summary (EPA/540/SR-93/509)³
- Demonstration Bulletin (EPA/540/MR-93/509)³
- Applications Analysis (EPA/540/AR-93/509)³ PB94-117439

Advanced Remediation Mixing, Inc. (formerly Chemfix)-Chemical Fixation/Stabilization

- Technology Evaluation Vol. 1 (EPA/540/5-89/011a)³ PB91-127696
- Technology Evaluation Vol. 11 (EPA/540/5-89/011b)³ PB90-274127
- Applications Analysis (EPA/540/A5-89/011)
- Technology Demo. Summary (EPA/540/S5-89/011)³
- Demonstration Bulletin (EPA/540/M5-89/011)³

American Combustion, Inc.-Oxygen Enhanced Incineration

- Technology Evaluation (EPA/540/5-89/008)
- Applications Analysis (EPA/540/A5-89/008)
- Technology Demo. Summary (EPA/540/S5-89/008)³
- Demonstration Bulletin (EPA/540/M5-89/008)³

AWD Technologies, Inc.- Integrated Vapor Extraction and Steam Vacuum Stripping

- Applications Analysis (EPA/540/A5-91/002) PB92-218379
- Demonstration Bulletin (EPA/540/M5-91/002)³

Babcock & Wilcox Co-Cyclone Furnace Vitrification

- Technology Evaluation Vol. 1 (EPA/540/R-92/017A)³ PB92-222215
- Technology Evaluation Vol. 11 (EPA/540/R-92/017B)³ PB92-222223
- Applications Analysis (EPA/540/AR-92/017) PB93-122315
- Technology Demo. Summary (EPA/540/SR-92/017)³
- Demonstration Bulletin (EPA/540/MR-92/011)

Bergman USA-Soil and Sediment Washing System

- Demonstration Bulletin (EPA/540/MR-92/075)
- Applications Analysis (EPA/540/AR-92/075)

Biogenesis Enterprises, Inc.-Soil and Sediment Washing Processes

- Demonstration Bulletin (EPA/540/MR-93/510)
- Innovative Technology Evaluation Report (EPA/540/R-93/510)
- SITE Technology Capsule (EPA/540/SR-93/510)³

Bio-Rem, Inc. - Augmented In-Situ Subsurface Bioremediation Process

- Demonstration Bulletin (EPA/540/MR-93/527)

BioTrol - Biological Aqueous Treatment System

- Technology Evaluation (EPA/540/5-91/001)³ PB92-110048
- Applications Analysis (EPA/540/A5-91/001) PB91-227983
- Technology Demo. Summary (EPA/540/S5-91/001)
- Demonstration Bulletin (EPA/540/M5-91/001)

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Demonstration Project Results (Continued)

BioTrol - Soil Washing System

- Technology Evaluation Vol. 1 (EPA/540/5-91/003a)³ PB92-115310
- Technology Evaluation Vol. 11 Part A (EPA/540/5-91/003b)³ PB92-115328
- Technology Evaluation Vol. 11 Part B (EPA/540/5-91/003c)³ PB92-115336
- Applications Analysis (EPA/540/A5-91/003)
- Technology Demo. Summary (EPA/540/S5-91/003)
- Demonstration Bulletin (EPA/540/M5-91/003)

Brice Environmental Services Corporation-Bescorp Soil Washing System Battery Enterprises Site

- Demonstration Bulletin (EPA/540/MR-93/503)
- Applications Analysis (EPA/540/A5-93/503)

Brown and Root Environmental-Subsurface Volatilization and Ventilation System

- Demonstration Bulletin (EPA/540/MR-94/529)
- Capsule (EPA/540/R-94/529a)
- Innovative Tech. Eval. Report (EPA/540/R-94/529)

Canonie Environmental Services Corporation-Low Temperature Thermal Aeration (LTTA)

- Demonstration Bulletin (EPA/540/MR-93/504)
- Applications Analysis (EPA/540/AR-93/504)

CeTech Resources, Inc., formerly Chemfix Technologies, Inc. - Chemical Fixation/Stabilization

- Technology Evaluation Vol. 1 (EPA/540/5-89/011a) PB91-127696
- Technology Evaluation Vol. 11 (EPA/540/5-89/011b) PB90-274127
- Applications Analysis (EPA/540/A5-89/011)
- Technology Demo. Summary (EPA/540/S5-89/011)³ PB91-921373
- Demonstration Bulletin (EPA/540/M5-89/011)³

CF Systems Corporation-Liquified Gas Solvent Extraction

- Technology Evaluation Vol. 1 (EPA/540/5-90/002)
- Technology Evaluation Vol. 11 (EPA/540/5-90/002a)³ PB90-186503
- Applications Analysis (EPA/540/A5-90/002)
- Technology Demo. Summary (EPA/540/S5-90/002)

Chemfix Technologies, Inc. (Now Advanced Remediation Mixing, Inc.) - Chemical Fixation/Stabilization

- Technology Evaluation Vol. 1 (EPA/540/5-89/011a) PB91-127696²
- Technology Evaluation Vol. 11 (EPA/540/5-89/011b) PB90-274127²
- Applications Analysis (EPA/540/A5-89/011)
- Technology Demo. Summary (EPA/540/S5-89/011) PB91-921373²
- Demonstration Bulletin (EPA/540/M5-89/011)³

Chemical Waste Management, Inc.-X-TRAX Thermal Desorption System

- Demonstration Bulletin (EPA/540/MR-93/502)

Clean Berkshires, Inc. (Now Maxymillian Technologies)-Thermal Desorption System

- Demonstration Bulletin (EPA/540/MR-94/507)
- Capsule (EPA/540/R-94/507a)³

Cognis, Inc. Removal of Lead from Soils

- Demonstration Bulletin (EPA/540/MR-95/535)

Dehydro-Tech Corporation-Carver-Greenfield Process

- Technology Evaluation (EPA/540/R-92/002)³ PB92-217462
- Applications Analysis (EPA/540/AR-92/002)
- Technology Demo. Summary (EPA/540/SR-92/002)
- Demonstration Bulletin (EPA/540/MR-92/002)

Dupont/Oberlin-Membrane Microfiltration System

- Technology Evaluation (EPA/540/5-90/007)³ PB92-153410
- Applications Analysis (EPA/540/A5-90/007)
- Technology Demo. Summary (EPA/540/S5-90/007)
- Demonstration Bulletin (EPA/540/M5-90/007)

Dynaphore, Inc.- Forager Sponge Technology

- Demonstration Bulletin (EPA/540/MR-94/522)
- Capsule (EPA/540/R-94/522a)
- Innovative Tech. Eval. Rept. (EPA/540/R-94/522)

ECOVA Corporation - Bioslurry Reactor [Pilot-Scale Demonstration of Slurry-Phase Biological Reactor for Creosote-Contaminated Wastewater]

- Technology Evaluation Vol. 1 (EPA/540/5-91/009)³ PB93-205532
- Applications Analysis (EPA/540/A5-91/009)
- Technology Demo. Summary (EPA/540/S5-91/009)
- Demonstration Bulletin (EPA/540/M5-91/009)

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Demonstration Project Results (Continued)

ELI Eco Logic International, Inc.

- GasPhase Chemical Reduction

- Demonstration Bulletin (EPA/540/MR-93/522)
- Technology Evaluation Vol. 1 (EPA/540/R-93/522a) PB95-100251
- Technology Evaluation Appendices (EPA/540/R-93/522b)³ PB95-100251
- Applications Analysis (EPA/540/AR-93/522)
- Technology Demo. Summary (EPA/540/SR-93/522)

- Thermal Desorption Unit

- Demonstration Bulletin (EPA/540/MR94/504)
- Applications Analysis (EPA/540/AR-94/504)

EnviroMetal Technologies, Inc.-Metal-Enhanced Abiotic Degradation Technology

- Demonstration Bulletin (EPA/540/MR95/510)

EPOC Water, Inc. - Microfiltration Technology

- Demonstration Bulletin (EPA/540/MR93/513)
- Applications Analysis (EPA/540/AR-93/513)

Filter Flow Technology, Inc. - Colloid Polishing Filter Method

- Demonstration Bulletin (EPA/540/MR95/501)
- Capsule (EPA/540/R-94/501a) PB95-122792
- Innovative Tech. Eval. Rept. (EPA/540/R-94/501) B95-122792

Geo-Con, Inc.-In-Situ Solidification and Stabilization Process

- Technology Evaluation Vol. 1 (EPA/540/5-89/004a)
- Technology Evaluation Appendices (EPA/540/R-93/522b)³ PB95-100251
- Technology Evaluation Vol. 11 (EPA/540/5-89/004b)³ PB89-194179
- Technology Evaluation Vol. 111 (EPA/540/5-89/004c)³ PB90-269069
- Technology Evaluation Vol. 1V (EPA/540/5-89/004d)³ PB90-269077
- Applications Analysis (EPA/540/A5-89/004)
- Technology Demo. Summary (EPA/540/S5-89/004)
- Technology Demo. Summary, Update Report (EPA/540/S5-89/004a)
- Demonstration Bulletin (EPA/540/M5-89/004)³

Geosafe Corporation - In-Situ Vitrification

- Demonstration Bulletin (EPA/540/MR94/520)
- Capsule (EPA/540/R-94/520a)³ PB95-177101
- Innovative Tech. Eval. Rept. (EPA/540/R-94/520)

GeoTech Development Corporation - Cold Top Vitrification

- Demonstration Bulletin (EPA/540/MR-97/506)

GIS/Solutions, Inc. - GIS/KEY Environmental Data Management System

- Demonstration Bulletin (EPA/540/MR94/505)
- Capsule (EPA/540/SR-94/505)
- Innovative Tech. Eval. Rept. (EPA/540/R-94/505) PB95-138319

Grace Dearborn Bioremediation Technology

- Demonstration Bulletin (EPA/540/MR-95/536)
- Capsule (EPA/540/R-95/536a)
- Innovative Tech. Eval. Rept. (EPA/540/R-95/536)

Gruppa Italimpresse (developed by Shirco Infrared Systems, Inc.) - Infrared Incineration

- Technology Evaluation -Peake Oil (EPA/540/5-88/002a)
- Technology Evaluation Report - Peake Oil Vol. 11 (EPA/540/5-88/002b) PB89-116024
- Technology Evaluation - Rose Township (EPA/540/5-89/007a) PB89-125991
- Technology Evaluation- Rose Township Vol. 11 (EPA/540/5-89/007b) PB89-167910
- Applications Analysis (EPA/540/A5-89/010) PB89-233423
- Technology Demo Summary (EPA/540/S5-89/007)³
- Demonstration Bulletin (EPA/540/M5-88/002)³

Hazcon, Inc. (now Funderburk and Assoc.) - Solidification Process

- Technology Evaluation Vol. 1 (EPA/540/5-89/001a) PB89-158810³
- Technology Evaluation Vol. 11 (EPA/540/5-89/001b) PB89-158828³
- Applications Analysis (EPA/540/A5-89/001)
- Technology Demo Summary (EPA/540/S5-89/001)³
- Demonstration Bulletin (EPA/540/M5-89/001)³

High Voltage Environmental Applications, Inc.

- Demonstration Bulletin (EPA/540/MR-96/504)
- Innovative Tech. Eval. Rept. (EPA/540/R-96/504)

Horsehead Resource Development Co., Inc. - Flame Reactor

- Technology Evaluation Vol. 1 (EPA/540/5-91/005) PB92-205855
- Applications Analysis (EPA/540/A5-91/005)
- Technology Demo Summary (EPA/540/S5-91/005)
- Demonstration Bulletin (EPA/540/M5-91/005)

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Demonstration Project Results (Continued)

Hrubetz Environmental Services, Inc. - HRUBOUT Process

- Demonstration Bulletin (EPA/540/MR-93/524)

Huges Environmental Systems, Inc. - Steam Enhanced Recovery Process

- Demonstration Bulletin (EPA/540/MR94/510)
- Capsule (EPA/540R-94/510a)
- Innovative Tech. Eval. Rept. (EPA/540/R-94/510)

IT Research Institute (Brown and Root Environmental, Inc.) - Radio Frequency Heating

- Demonstration Bulletin (EPA/540/MR94/527)
- Capsule (EPA/540/R-94/527a)
- Innovative Tech. Eval. Rept. (EPA/540/R-94/527)

International Waste Technologies/Geo-Con, Inc. - In-Situ Solidification and Stabilization Process

- Technology Evaluation Vol. 1 (EPA/540/5-89/004a) PB90-194161²
- Technology Evaluation Appendices (EPA/540/R-93/522b) PB95-100251²
- Technology Evaluation Vol. 11 (EPA/540/5-89/004b) PB89-194179²
- Technology Evaluation Vol. 111 (EPA/540/5-89/004c) PB90-269069²
- Technology Evaluation Vol. 1V (EPA/540/5-89/004d) PB90-269077²
- Applications Analysis (EPA/540/A5-89/004) PB90-269085²
- Technology Demo. Summary (EPA/540/S5-89/004)³
- Technology Demo. Summary, Update Report (EPA/540/S5-89/004a)³
- Demonstration Bulletin (EPA/540/M5-89/004)³

KAI Technologies Inc./Brown and Root Environmental Radio Frequency Heating

- Demonstration Bulletin (EPA/540/MR-94/528)
- Capsule (EPA/540/R-94/528a)
- Innovative Tech. Eval. Report (EPA/540/R-94/528)1

Magnum Water Technology - CAV-OX Ultraviolet Oxidation Process

- Demonstration Bulletin (EPA/540/MR-93/520)
 - Applications Analysis (EPA/540/AR-93/520) PB94-189438
 - Technology Evaluation Rep. (EPA/540/R-93/520)³ PB95-166161
 - Technology Demo Summary (EPA/540/SR-93/520)
- ### Matrix Photocatalytic Ltd. - Photocatalytic Aqueous Phase Organics Destruction Process
- Innovative Tech. Eval. Report (EPA/540/R-97/503)

Maxymillian Technologies (formerly Clean Berkshires, Inc.) - Thermal Desorption System

- Demonstration Bulletin (EPA/540/MR-94/507)
- Capsule (EPA/540/R-94/507a) PB95-122800²

New Jersey Institute of Technology - Cold Top Vitrification Process

- Demonstration Bulletin (EPA/540/MR-97/506)

New York State Multi-Vendor Bioremediation:

- ENSR Consulting & Engineering/Larson Engineers - Ex-Situ Biovault
- Demonstration Bulletin (EPA/540/MR-95/524)
- R.E. Wright Environmental Inc. - In-Situ Bioremediation System
- Demonstration Bulletin (EPA/540/MR-95/525)

-SBP Technologies, Inc. And Env. Laboratories, Inc. - Vacuum-Vaporized Well (UVB) System

- Demonstration Bulletin (EPA/540/MR-96/506)

North American Technologies Group, Inc. - SFC Oleofiltration System

- Demonstration Bulletin (EPA/540/MR-94/525)
- Capsule (EPA/540/R-94/525a)³ PB95-167227
- Innovative Tech. Eval. Rept. (EPA/540/R-94/525)

Ogden Environmental Services, Inc. (now General Atomics) - Ogden Circulating Bed Combustor

- Demonstration Bulletin (EPA/540/MR-92/001)
- Technology Evaluation Rep. (EPA/540/MR-92/001)

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Demonstration Project Results (Continued)

Peroxidation Systems, Inc. (now Vulcan) - Perox-Pure™ Chemical Oxidation

- Demonstration Bulletin (EPA/540/MR-93/501)
- Applications Analysis (EPA/540/AR-93/501)
- Technology Evaluation Rep. (EPA/540/R-93/501)³ PB93-213528
- Technology Demo Summary (EPA/540/SR-93/501)

Resources Conservation Company - The Basic Extractive Sludge Treatment (B.E.S.T.) - Solvent Extraction

- Demonstration Bulletin (EPA/540/MR-92/079)
- Applications Analysis (EPA/540/AR-92/079)
- Technology Evaluation -Vol. 1 (EPA/540/R-92/079a) PB93-227122
- Technology Evaluation Vol. 11, Part 1 (EPA/540/R-92/079b)³ PB93-227130
- Technology Evaluation Vol. 11, Part 2 (EPA/540/R-92/079c)³ PB93-227148
- Technology Evaluation Vol. 11, Part 3 (EPA/540/R-92/079d)³ PB93-227155
- Technology Demo Summary (EPA/540/SR-92/079)

Retech, Inc. - Plasma Centrifugal Furnace (Plasma Arc Vitrification)

- Demonstration Bulletin (EPA/540/M5-91/007)
- Technology Evaluation -Vol. 1 (EPA/540/5-91/007a)³ PB92-216035
- Technology Evaluation Vol. 11 (EPA/540/5-91/007b)³ PB92-216043
- Applications Analysis (EPA/540/A5-91/007) PB92-218791
- Technology Demo Summary (EPA/540/S5-91/007)

Risk Reduction Engineering Laboratory

- and IT Corporation - Debris Washing System

- Technology Evaluation -Vol. 1 (EPA/540/5-91/006a)
- Technology Evaluation Vol. 11 (EPA/540/5-91/006b)³ PB91-231464
- Technology Demo Summary (EPA/540/S5-91/006)

- and University of Cincinnati-Hydraulic Fracturing of Contaminated Soil

- Demonstration Bulletin (EPA/540/MR-93/505)
- Technology Evaluation and Applications Analysis Combined (EPA/540/R-93/505)
- Technology Demo Summary (EPA/540/SR-93/505)

-and USDA-Forest Products Technology - Fungal Treatment Technology

- Demonstration Bulletin (EPA/540/MR-93/514)

-Mobile Volume Reduction Unit at the Sand Creek Superfund Site

- Treatability Study Bulletin (EPA/540/MR-93/512)
- Mobile Volume Reduction Unit at the Escambia Superfund Site
- Treatability Study Bulletin (EPA/540/MR-93/511)

-Volume Reduction Unit

- Demonstration Bulletin (EPA/540/MR-93/508)
- Applications Analysis (EPA/540/AR-93/508)
- Technology Evaluation (EPA/540/R-93/508)³ PB94-136264
- Technology Demo Summary (EPA/540/SR-93/508)

Rochem Separations Systems, Inc. - Disc Tube Module Technology

- Demonstration Bulletin (EPA/540/MR-96/507)
- Capsule (EPA/540/R-96/507a)
- Innovative Tech. Eval. Report (EPA/540/R-96/507)

Roy F. Weston, Inc.

-and IEG Technologies-Unterdruck-Verdampfer-Brunner Technology (UVB) Vacuum Vaporizing Well

- Demonstration Bulletin (EPA/540/MR-95/500)
- Capsule (EPA/540/R-95/500a)

-Low Temperature Thermal Treatment (LT3) System

- Demonstration Bulletin (EPA/540/MR-92/019)
- Applications Analysis (EPA/540/AR-92/019)

Sandia National Labs - In Situ Electrokinetic Extraction System

- Demonstration Bulletin (EPA/540/MR-97/509)

SBP Technologies, Inc.-Membrant Filtration and Bioremediation

- Demonstration Bulletin (EPA/540/MR-92/014)
- Applications Analysis (EPA/540/AR-92/014)

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Demonstration Project Results (Continued)

Silicate Technology Corporation - Solidification/Stabilization of Organic/Inorganic Contaminants

- Demonstration Bulletin (EPA/540/MR-92/010)
- Applications Analysis (EPA/540/AR-92/010)³ PB93-172948
- Technology Evaluation (EPA/540/R-92/010)³ PB95-255709
- Technology Demo Summary (EPA/540/SR-92/010)

Simplot, J.R. - Ex Situ Anaerobic Bioremediation Technology: TNT

- Demonstration Bulletin (EPA/540/MR-95/529)
- Capsule (EPA/540/MR-95/529a)
- Innovative Tech. Eval. Report (EPA/540/R-95/529)

Simplot, J.R. - Ex-Situ Anaerobic Bioremediation System (The SABRE Process)

- Demonstration Bulletin (EPA/540/MR-94/508)
- Capsule (EPA/540/R-94/508a)
- Innovative Tech. Eval. Report (EPA/540/R-94/508)

Soiltech ATP Systems, Inc.

- Astra-SoilTech Anaerobic Thermal Process
- Demonstration Bulletin (EPA/540/MR-92/008)

-SoilTech Anaerobic Thermal Processor

- Demonstration Bulletin (EPA/540/MR-92/078)

Soliditech, Inc. - Solidification and Stabilization

- Technology Evaluation -Vol. 1 (EPA/540/5-89/005a)³ PB90-191750
- Technology Evaluation Vol. 11 EPA/540/5-89/005b)³ PB90-191768
- Applications Analysis (EPA/540/A5-89/005)
- Technology Demo Summary (EPA/540/S5-89/005)³
- Demonstration Bulletin (EPA/540/M5-89/005)³

Solucorp - Molecular Bonding System

- Innovative Tech. Eval. Report (EPA/540/R-97/507)

Sonotech, Inc. - Cello Pulse Combustion Burner System

- Demonstration Bulletin (EPA/540/MR-95/502)
- Capsule (EPA/540/R-95/502a)

TerraKleen Response Group, Inc. - Solvent Extraction Treatment System

- Demonstration Bulletin (EPA/540/MR-94/521)³
- Capsule (EPA/540/R-94/521a)

Terra Vac, Inc. - In Situ Vacuum Extraction

- Demonstration Bulletin (EPA/540/M5-89/003)³
- Technology Evaluation -Vol. 1 (EPA/540/5-89/003a)³ PB89-192025
- Technology Evaluation Vol. 11 (EPA/540/5-89/003b)³ PB89-192033
- Applications Analysis (EPA/540/A5-89/003)
- Technology Demo Summary (EPA/540/S5-89/003)

Texaco, Inc. - Entrained-Bed Gasification Process

- Demonstration Bulletin (EPA/540/MR-94/514)
- Capsule (EPA/540/R-94/514a)
- Innovative Tech. Eval. Report (EPA/540/R-94/514)

Thorneco, Inc. - Enzyme - Activated Cellulose Technology

- Treatability Study Bulletin (EPA/540/MR-92/018)³

Toronto Harbour Commission - Soil Recycling Treatment Train

- Demonstration Bulletin (EPA/540/MR-92/015)
- Applications Analysis (EPA/540/AR-93/517)
- Technology Evaluation (EPA/540/R-93/517)³ PB93-216067
- Technology Demo Summary (EPA/540/SR-93/517)

Toxic Treatments USA, Inc. (Now NOVATERRA, Inc.) - In-Situ Steam/Hot Air Stripping

- Demonstration Bulletin (EPA/540/M5-90/003)
- Applications Analysis (EPA/540/A5-90/008)

Ultrox, a Division of Zimpro Environmental, Inc. - UV Ozone Treatment for Liquids

- Demonstration Bulletin (EPA/540/M5-89/012)
- Applications Analysis (EPA/540/A5-89/012)
- Technology Evaluation (EPA/540/5-89/012)³ PB90-198177
- Technology Demo Summary (EPA/540/S5-89/012)

U.S. EPA - McColl Superfund Site - Demonstration of a Trial Excavation

- Technology Evaluation (EPA/540/5-92/015)³ PB92-226448
- Applications Analysis (EPA/540/AR-92/015)
- Technology Demo Summary (EPA/540/SR-92/015)

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Demonstration Project Results (Continued)

Wheelabrator Clean Air Systems, Inc. (formerly Chemical Waste Management, Inc.) -PO*WW*ER™

Technology

- Demonstration Bulletin (EPA/540/MR-93/506)
- Applications Analysis (EPA/540/AR-93/506)
- Technology Evaluation -Vol. 1
(EPA/540/R-93/506a)³ PB94-160637
- Technology Evaluation Vol. 11
(EPA/540/R-93506b)³ PB94-160660
- Technology Demo Summary (EPA/540/SR-93/506)

Zenon Environmental, Inc. - Zenon Cross-Flow Pervaporation Technology

- Demonstration Bulletin (EPA/540/MR-95/511)
- Capsule (EPA/540/R-95/511a)

Zenon Environmental Systems - Zenogem Wastewater Treatment Process

- Demonstration Bulletin (EPA/540/MR-95/503)
- Capsule (EPA/540/R-95/503a)

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Emerging Technologies Program Reports

General Publications

- Superfund Innovative Technology Evaluation Program: - Innovation Making a Difference Emerging Tech. Brochure (EPA/540/F-94/505)
- Superfund Innovative Technology Evaluation Program: - Technology with an Impact Emerging Tech. Brochure (EPA/540/F-93/500)
- SITE Emerging Technology Program (Brochure) (EPA/540/F-95/502)
- ABB Environmental Services, Inc. - Two Zone PCE Bioremediation System
- Emerging Tech. Bulletin (EPA/540/F-95/510)

Aluminum Company of America (Now Media & Process Technology) - Bioscrubber for Removing Hazardous Organic Emission from Soil, Water, and Air Decontamination Process

- EmergingTech. Report (EPA/540/R- 93/521)³ PB93-227025
- Emerging Tech. Bulletin (EPA/540/F-93/507)
- Emerging Tech. Summary (EPA/540/SR-93/521)
- Journal Article AWMA Vol. 44, No. 3, March 1994

Atomic Energy of Canada, Limited - Chemical Treatment and Ultrafiltration

- Emerging Tech. Bulletin (EPA/540/F-92/002)

Babcock & Wilcox Co. - Cyclone Furnace (Soil Vitrification)

- EmergingTech. Report (EPA/540/R- 93/507) PB93-163038
- Emerging Tech. Bulletin (EPA/540/F-92/010)
- Emerging Tech. Summary (EPA/540/SR-93/507)

Batelle Memorial Institute - In Situ Electroacoustic Soil Decontamination

- Emerging Technology (EPA/540/5-90/004)³ PB90-204728
- Emerging Tech. Summary (EPA/540/S5-90/004)³

Bio-Recovery Systems, Inc. - Removal and Recovery of Metal Ions from Groundwater (AlgaSORB)

- Emerging Technology (EPA/540/5-90/005a)
- Emerging Tech. - Appendices (EPA/540/5-90/005b)³ PB90-252602
- Emerging Tech. Summary (EPA/540/S5-90/005)
- Emerging Tech. Bulletin (EPA/540/F-92/003)

Biotrol, Inc. - Mechanotrophic Bioreactor System

- Emerging Tech. Bulletin (EPA/540/F-93/506)
- Emerging Tech. Summary (EPA/540/SR-93/505)
- Journal Article AWMA Vol. 45, No.1, Jan. 1995

Center for Hazardous Materials Research - Acid

Extraction Treatment System for Treatment of Metal Contaminated Soils

- Emerging Tech. Report (EPA/540/R-94/513)³ PB94-188109
- Emerging Tech. Summary (EPA/540/SR-94/513)

- Reclamation of Lead from Superfund Waste Material Using Secondary Lead Smelters

- Emerging Tech. Bulletin (EPA/540/F-94/510)
- Emerging Tech. Summary (EPA/540/SR-95/504)
- Emerging Tech. Report (EPA/540/R-95/504)³ PB9-199022

-Simultaneous Destruction of Organics and Stabilization of Metals in Soils

- Emerging Tech. Summary (EPA/540/SR-98/500)
- Emerging Tech. Report (EPA/540/R-98/500) PB98-133150

Colorado School of Mines - Constructed Wetlands-Based Treatment

- Emerging Tech. Bulletin (EPA/540/F-92/001)
- Emerging Tech. Summary (EPA/540/SR-93/523)
- Emerging Tech. Report (EPA/540/R-93/523)³ PB93-233914

University of Dayton Research Institute - Development of a Photothermal Detoxification Unit

- Emerging Tech. Bulletin (EPA/540/F-95/505)
- Emerging Tech. Summary (EPA/540/SR-95/526)
- Emerging Tech. Report (EPA/540/R-95/526)³ PB95-255733

Electro-Pure Systems, Inc. - Alternating Current Electrocoagulation Technology

- Emerging Tech. Bulletin (EPA/540/F-92/011)
- Emerging Tech. Summary (EPA/540/S-93/504)
- Journal Article AWMA V43, No. 43, May 1993

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Electokinetics Inc. -Theoretical and Experimental Modeling of Multispecies...Electrokinetic Soil Processing

- Emerging Tech. Bulletin (EPA/540/F-95/504)
- Emerging Tech. Summary (EPA/600/SR-97/054)
- Emerging Tech. Report (EPA/600/R-97/054)
PB97-193056²

Energy and Environmental Engineering - Laser-Induced Photochemical Oxidative Destruction

- Emerging Tech. Bulletin (EPA/540/F-92/004)
- Emerging Tech. Summary (EPA/540/SR-92/080)
- Emerging Tech. Report (EPA/540/R-92/080)³
PB93-131431

Energy and Environmental Research Corporation - Hybrid Fluidized Bed System

- Emerging Tech. Bulletin (EPA/540/F-93/508)

FERRO Corporation - Waste Vitrification Through Electric Melting

- Emerging Tech. Bulletin (EPA/540/F-95/503)

Florida International University (or Electron Beam Research Facility)

- Electron Beam Treatment for Removal of Benzene and Toluene from Aqueous Streams and Sludge

- Emerging Tech. Bulletin (EPA/540/F-93/502)

- Electron Beam Treatment for the Trichloroethylene and Tetrachloroethylene from Aqueous Stream

- Emerging Tech. Bulletin (EPA/540/F-92/009)

-Removal of Phenol from Aqueous Solutions Using High Energy Electron Beam Irradiation

- Emerging Tech. Bulletin (EPA/540/F-93/509)

Institute of Gas technology

-Chemical and Biological Treatment (CBT)

- Emerging Tech. Bulletin (EPA/540/F-94/504)

-Fluid Extraction-Biological Degradation Process

- Emerging Tech. Bulletin (EPA/540/F-94/501)

IT Corporation - Innovative Methods for Bioslurry Treatment

- Emerging Tech. Bulletin (EPA/540/F-96/505)
- Emerging Tech. Summary (EPA/540/SR-96/505)
- Emerging Tech. Report (EPA/540/R-96/505)
PB97-176820²

IT Corporation - Photolysis/Biodegradation of PCB and PCDD/PCDF Contaminated Soils

- Emerging Tech. Bulletin (EPA/540/F-94/502)
- Emerging Tech. Summary (EPA/540/SR-94/531)
- Emerging Tech. Report (EPA/540/R-94/531)³
PB95-159992

IT Corporation - Process for the Treatment of Volatile Organic Carbon & Heavy-Metal Contaminated Soil

- Emerging Tech. Bulletin (EPA/540/F-95/509)

J.R. Simplot - Anaerobic Destruction of Nitroaromatics (the SABRE Process)

- Journal Article App.Env.Micro, Vol. 58, pp. 1683-89

Matrix Photocatalytic, Inc. - Photocatalytic Water Treatment

- Journal Article (EPA/600/A-93/282)³
PB94-130184

Membrane Technology and Research, Inc. - Volatile Organic Compound Removal from Air Streams by Membrane Separation

- Emerging Tech. Bulletin (EPA/540/F-94/503)

M.L. Energia- Reductive Photo-Dechlorination Process for Safe Conversion of Hazardous Chlorocarbon Waste Streams

- Emerging Tech. Bulletin (EPA/540/F-94/508)

New Jersey Institute of Technology - GHEA Associates Process for Soil Washing and Wastewater Treatment

- Emerging Tech. Bulletin (EPA/540/F-94/509)

PURUS, Inc. - Photolytic Oxidation Process [Destruction of Organic Contaminants in Air Using Advanced Ultraviolet Flashlamps]

- Emerging Tech. Bulletin (EPA/540/F-93/501)
- Emerging Tech. Summary (EPA/540/SR-93/516)
- Emerging Tech. Report (EPA/540/R-93/516)
PB93-205383

Roy F. Weston, Inc. - Ambersorb 563 Adsorbent

- Emerging Tech. Bulletin (EPA/540/F-95/500)
- Emerging Tech. Summary (EPA/540/SR-95/516)
- Emerging Tech. Report (EPA/540/R-95/516)³
PB95-264164

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University of Washington - Metals Treatment at Superfund Sites by Adsorptive Filtration

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- Emerging Tech. Summary (EPA/540/SR-93/515)
- Emerging Tech. Report (EPA/540/R-93/515)³
PB94-170230

Vortec Corporation - Vitrification

- Published Paper, Glass Production Technol International, 1994, p. 103 - 106
- Emerging Tech. Summary (EPA/540/S-97/501)⁴

Wastewater Technology Centre - [A] Cross-Flow Pervaporation System [for Removal of VOC's from Contaminated Water]

- Emerging Tech. Bulletin (EPA/540/F-93/503)
- Emerging Tech. Summary (EPA/540/SR-94/512)
- Emerging Tech. Report (EPA/540/R-94/512)³
PB95-170230

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Cone Penetrometers

Loral Rapid Optical Screening Tool (ROST)

- Demonstration Bulletin (EPA/540/MR-95/519)
- Innovative Tech. Eval. Report (EPA/540/R-95/519)

Site Characterization Analysis Penetrometer System (SCAPS)

- Demonstration Bulletin (EPA/540/MR-95/520)
- Innovative Tech. Eval. Report (EPA/540/R-95/520)

Field Portable X-Ray Fluorescence

HNU Systems SEFA-P Field Portable X-ray Fluorescence

- Innovative Tech. Eval. Report (EPA/600/R-97/144)

Metorex X-Met 920P and 940 Field Portable X-ray Fluorescence

- Innovative Tech. Eval. Report (EPA/600/R-97/146)

Metorex X-Met 920MP Field Portable X-ray Fluorescence

- Innovative Tech. Eval. Report (EPA/600/R-97/151)

Niton XL Spectrum Field Portable X-ray Fluorescence

- Innovative Tech. Eval. Report (EPA/600/R-97/150)

SciTec MAP Spectrum Field Portable X-ray Fluorescence

- Innovative Tech. Eval. Report (EPA/600/R-97/147)

TN Spectrace TN9000 and TN Pb Field Portable X-ray Fluorescence Analyzers

- Innovative Tech. Eval. Report (EPA/600/R-97/145)

Portable Gas Chromatographs

Analytical & Remedial Technology Purge and Trap Gas Chromatographic Manifold System (AVOS)

- Technology Evaluation Report (EPA/600/R-93/109)

Bruker Mobiel Environmental Monitor

- Technology Evaluation Report (EPA/600/X-91/079)

Field Analytical Screening Program (FASP) Method for PCP

- Demonstration Bulletin (EPA/540/R-95/528)
- Innovative Tech. Eval. Report (EPA/540/MR-95/528)

Field Analytical Screening Program (FASP) Method for PCB

- Demonstration Bulletin (EPA/540/R-95/521)
- Innovative Tech. Eval. Report (EPA/540/MR-95/521)

HNU Portable Gas Chromatograph

- Results reported in the Proceedings of the U.S. EPA Third International Field Screening Symposium Volume 2, Pages 682-693 (1993)

Photovac Portable Gas Chromatograph

- Results reported in the Proceedings of the U.S. EPA Third International Field Screening Symposium Volume 2, Pages 682-693 (1993)

Sentex Portable Gas Chromatograph

- Results reported in the Proceedings of the U.S. EPA Third International Field Screening Symposium Volume 2, Pages 682-693 (1993)

SRI Instruments Low Temperature Thermal Desorption System

- Results reported in the Proceedings of the U.S. EPA Third International Field Screening Symposium Volume 2, Pages 682-693 (1993)

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Measuring and Monitoring Program Reports

Spectrometers

MDA Scientific Long-Path Fourier Transform Infrared Spectrometer

- Technology Evaluation Report (EPA/600/S3-91/071)

Xontech, Inc. Canister-based Sector Sample

- Report (EPA/600/S3-91/071)

PCP/PCB Immunoassay Test Kits

Char-N-Soil PCB Test Kit - Dixel

- Demonstration Bulletin (EPA/540/MR-95/518)
- Innovative Tech. Eval. Report (EPA/540/ R-95/518)

EnviroGard PCB Test Kit - Millipore Inc.

- Demonstration Bulletin (EPA/540/MR-95/517)
- Innovative Tech. Eval. Report (EPA/540/ R-95/517)

Millipore Immunoasay Test Kit for PCB

- Demonstration Bulletin (EPA/540/MR-95/517)
- Innovative Tech. Eval. Report (EPA/540/ R-95/517)

PCP Immunoassay Technologies: Enslys Inc. - PENTA

Risc: Ohmicron Corp., - Penta RaPid; Millipore Inc. -

- Demonstration Bulletin (EPA/540/MR-95/514)
- Innovative Tech. Eval. Report (EPA/540/R-95/514)

Envirogard

- Demonstration Bulletin (EPA/540/MR-95/515)
- Innovative Tech. Eval. Report (EPA/540/ R-95/514)

U-Hanby PCP Test Kit

- Demonstration Bulletin (EPA/540/MR-95/515)
- Innovative Tech. Eval. Report (EPA/540/ R-95/515)

Westinghouse PCP Test Kit

Technology Evaluation Report (EPA/600/X-90/146)

Soil & Soil Gas Samples

Art's Manufacturing Soil Sampler

- Innovative Tech. Eval. Report (EPA/600/R-98/093)

Clements & Associates Soil Sampler

- Innovative Tech. Eval. Report (EPA/600/R-98/097)

Geoprobe® Soil Sampler

- Innovative Tech. Eval. Report (EPA/600/R-98/092)

Simulprobe® Soil Sampler

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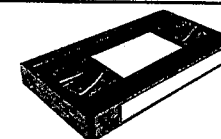
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SITE VIDEOTAPES

These composite videotapes contain a number of EPA-produced documentaries on specific Superfund Innovative Technology Evaluation (SITE) Program demonstrations.

S1 Site Program (6 Technology Demonstrations):

ECOVA (SHIRCO) Infrared Incineration System, Brandon, FL - 6/87

ECOVA (SHIRCO) Infrared Incineration System, Rose Twp., MI - 3/89

EMTECH (HAZCON) Solidification Process, Douglassville, PA - 10/87

IWT/GEO-CON In-Situ Stabilization and Solidification, Hialeah, FL - 4/88

TERRA VAC Vacuum Extraction System, Groveland, MA - 1/88

CF SYSTEMS Solvent Extraction Unit, New Bedford, MA - 3/89

S2 Site Program (4 Technology Demonstrations):

ULTROX Ultraviolet Radiation and Oxidation, San Jose, CA - 3/89

BIOTROL Biological Aqueous Treatment, New Brighton, MN - 9/89

BIOTROL Soil Washing System, New Brighton, MN - 9/89

IT/RREL Debris Washing System, Hopkinsville, KY - 12/89

S3 Site Program (4 Technology Demonstrations):

SOLIDTECH Solidification and Stabilization, Morganville, NJ - 12/88

CHEMFIX Solidification and Stabilization, Clackamas, OR - 3/89

NOVATERRA (TTUSA) In Situ Steam and Air Stripping, San Pedro, CA - 9/89

AWD Integrated Vapor Extraction/Steam Vacuum Stripping, Burbank, CA - 9/90

S4 Site Program**(4 Technology Demonstrations):****E.I. DUPONT/OBERLIN FILER**

Membrane Microfiltration, Palmerton,
PA - 5/90

HORSEHEAD Flame Reactor, Atlanta,
GA - 3/91

RETECH Plasma Centrifugal Fur-
nace, Butte, MT - 7/91

BABCOCK & WILCOX Cyclone Fur-
nace, Alliance, OH - 11/91

S5 Site Program**(4 Technology Demonstrations):**

STC Immobilization of Organic/ Inor-
ganic Contaminants in Soils, Selma, CA
- 11/90

THC Soil Recycle Treatment Train at
Toronto Harbor, Toronto, Ont., Canada -
5/92

R.C.C. Basic Extractive Sludge Treat-
ment (B.E.S.T.), Grand Calumet River,
Gary, IN - 7/92

PEROXIDATION SYSTEMS INC.

Purox-Pure Chemical Oxidation Treat-
ment, Altamont Hills, CA - 9/92

S6 Site Program**(4 Technology Demonstrations):**

BERGMANN Soil/Sediment Washing
Technology, Saginaw Bay, MI - 2/93

BESCORP Soil Washing System,
Fairbanks, AK - 8/92

ELI Eco Logic International Inc., Hy-
drogen Reduction Gas-Phase Chemical
Reduction Process, Bay City, MI - 11/93
MAGNUM Water Technology CAV-OX
Ultraviolet Oxidation Process, Edwards
AFB, CA - 1/94

S7 Site Program**(4 Technology Demonstrations):**

TEXACO Gasification Process, South El
Monte, CA - 6/95

SFC 0.5 Oleofiltration System, Pem-
broke, FL - 1/95

ITT Radio Frequency Heating Process,
Kelly AFB, San Antonio, TX - 3/95

KAI Radio Frequency Heating Process,
Kelly Air Force Base, San Antonio, TX -
4/95

R1 RREL/RCB Research Programs

This composite videotape contains five
documentaries conducted under the
auspices of the Risk Reduction Engi-
neering Laboratory's Releases Control
Branch:

- ↳ Synthetic Soils Matrix (SSM) Pro-
gram
- ↳ Dioxin and the Mobile Incineration
System
- ↳ Mobile Carbon Regeneration System
- ↳ Mobile Soils Washing System
- ↳ Mobile In Situ Containment/ Treat-
ment Unit

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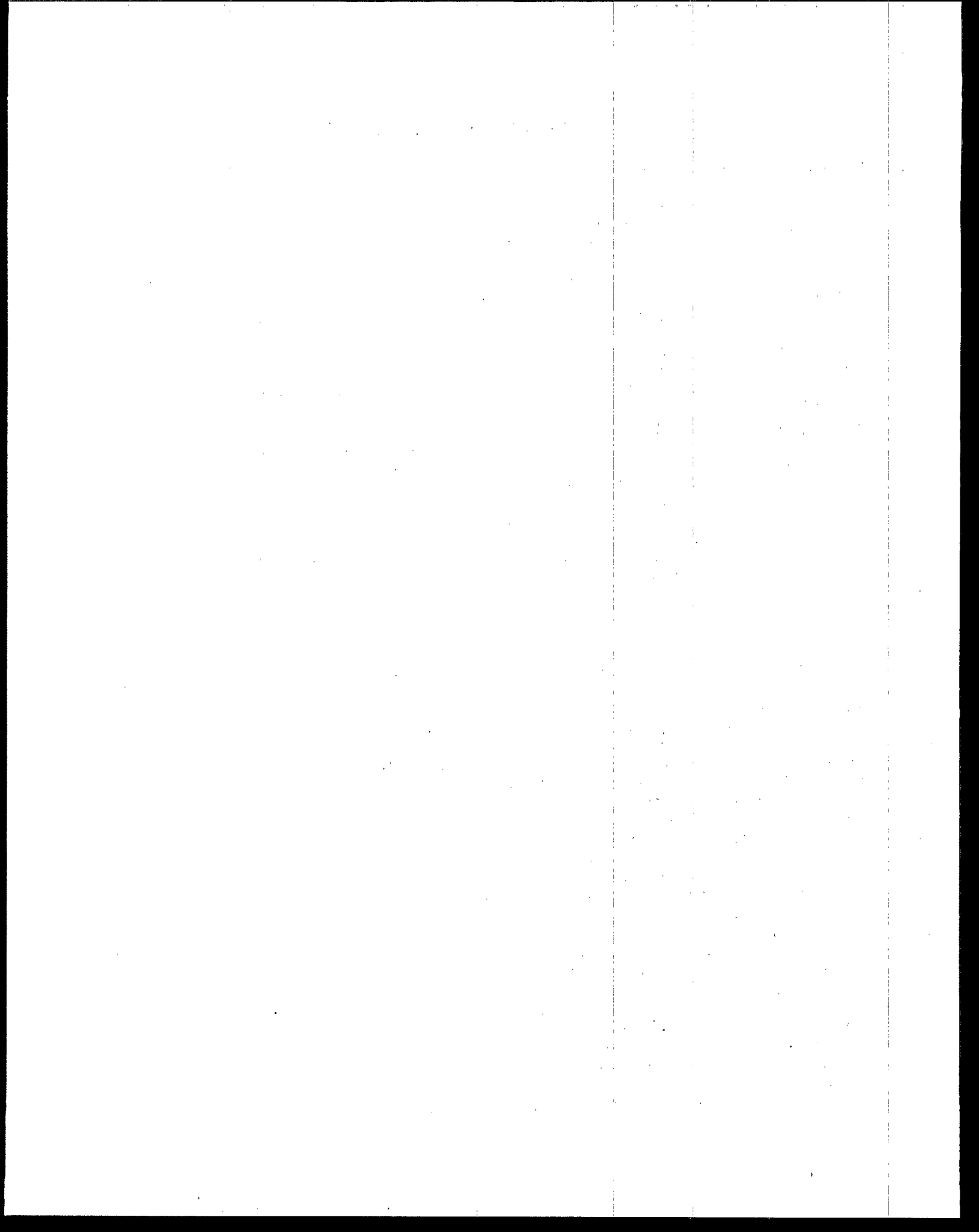
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Trade Name Index and Applicability Index

The following pages contain the Trade Name Index and the Applicability Index. The Trade Name Index cross-references all technologies that are registered or have a copyright, registered trademark, or service mark. Former company names and former technology names are also cross-referenced in the index. The volume number is given for each entry, followed by the page number. In addition, all former technology names are shown with their current names in parentheses.

The Applicability Index is organized by three different levels. The first level is media, the second is waste, and the third is technology type. The 12 media categories include the following: (1) air, (2) gas, (3) leachate, (4) liquid, (5) mine tailings, (6) other, (7) sediment, (8) sludge, (9) soil, (10) solids, (11) water, and (12) wastewater. The 19 contaminant categories include the following: (1) aromatic VOCs, (2) cyanide, (3) dioxins, (4) explosives, (5) furans, (6) halogenated VOCs, (7) heavy metals, (8) herbicides, (9) hydrocarbons, (10) metals, (11) other, (12) PAHs, (13) PCBs, (14) PCPs, (15) pesticides, (16) petroleum hydrocarbons, (17) radionuclides, (18) SVOCs, and (19) VOCs. The 14 technology type categories include the following: (1) biological degradation, (2) cone penetrometers, (3) field portable x-ray fluorescence, (4) materials handling, (5) other, (6) physical/chemical, (7) physical/chemical biological degradation, (8) physical/chemical radioactive waste treatment, (9) physical/chemical thermal desorption, (10) portable gas chromatographs, (11) solidification/stabilization, (12) spectrometers, (13) test kits, and (14) thermal destruction.

To use the Applicability Index, a three-step search must be completed. For example, to search for thermal desorption technologies that clean up soil contaminated with polychlorinated biphenyls (PCB), first look under soil, then PCBs, and finally physical/chemical thermal desorption.



TRADE NAME INDEX

<u>Company/Technology Name</u>	<u>Volume, Page Number</u>
2-PHASE™ EXTRACTION Process	V1, 180
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Accutech Remedial Systems, Inc. (see ARS Technologies).	V1, 24
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Acoustic Barrier Particulate Separator.	V2, 48
Active Environmental, Inc..	V1, 20
Adsorption-Integrated-Reaction Process.	V2, 74
Adsorptive Filtration.	V2, 110
AEA Technology Environment..	V2, 16
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			Energia, Inc.	Reductive Thermal and Photo-Thermal Oxidation for Enhanced Conversion of Chlorocarbons	V2,122
			KSE, Inc.	Adsorption-Integrated-Reaction Process	V1,200/ V2,24
			Matrix Photocatalytic Inc.	Photocatalytic Air Treatment	V1,206
			Membrane Technology and Research, Inc.	VaporSep® Membrane Process	V2,80
			Xerox Corporation	2-PHASE™ EXTRACTION Process	V1,180
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			HNU Systems, Inc.	HNU GC 311D Portable Gas Chromatograph	V3,42
			Microsensor Systems, Incorporated	MSI-301A Vapor Monitor	V3,50
			Hewlett-Packard Company Analytical Instruments	Portable Gas Analyzer	V3,40
			Photovac Monitoring Instruments	PE Photovac Voyager Portable Gas Chromatograph	V3,56
			Sentex Sensing Technology, Inc.	Scentograph Plus II Portable Gas Chromatograph	V3,60
			SRI Instruments	Compact Gas Chromatograph	V3,66
		Spectrometers	Graseby Ionics, Ltd. and PCP Inc.	Ion Mobility Spectrometry	V3,36
			XonTech, Inc.	XonTech Sector Sampler	V3,84
		Thermal Destruction	Sonotech, Inc.	Frequency-Tunable Pulse Combustion System	V1,154
			U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
	Dioxins	Materials Handling	U.S. EPA	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical/ Chemical Treatment	Matrix Photocatalytic Inc.	Photocatalytic Air Treatment	V1,206
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
		Spectrometers	Graseby Ionics Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Air (continued)	Dioxins (continued)	Thermal Destruction	Energy and Environmental Research Corp.	Reactor Filter System	V2,42
			U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
	Furans	Materials Handling	U.S. EPA	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical/ Chemical Treatment	Matrix Photocatalytic Inc.	Photocatalytic Air Treatment	V1,206
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Thermal Destruction	Energy and Environmental Research Corp.	Reactor Filter System	V2,42
			U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
	Halogenated VOCs	Biological Degradation	Remediation Technologies, Inc.	Biofilm Reactor for Chlorinated Gas Treatment	V2,94
		Materials Handling	U.S. EPA	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical/ Chemical Thermal Desorption	Process Technologies, Inc.	Photolytic Destruction of Vapor-Phase Halogens	V1,218
		Physical/ Chemical Treatment	ARS Technologies, Inc.	Pneumatic Fracturing Extraction™ and Catalytic Oxidation	V1,24
			Arizona State U./ Zentox Corp.	Photocatalytic Oxidation with Air Stripping	V2,18
			Energia, Inc.	Reductive Photo-Dechlorination Treatment	V2,38
			Energia, Inc.	Reductive Thermal and Photo-Thermal Oxidation Processes for Enhanced Conversion of Chlorocarbons	V2,122
			KSE, Inc.	Adsorption-Integrated-Reaction Process	V1,200/ V2,24
			Matrix Photocatalytic Inc.	Photocatalytic Air Treatment	V1,206
			Membrane Technology and Research, Inc.	VaporSep® Membrane Process	V2,80
			Thermatrix, Inc.	Photolytic Oxidation Process	V2,102
			Roy F. Weston, Inc.	Amborsorb® 563 Adsorbent	V2,116
			Xerox Corp.	2-PHASE™ EXTRACTION Process	V1,180
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			Photovac Monitoring Instruments	PE Photovac Voyager Portable Gas Chromatograph	V3,56
			Sentex Sensing Technology, Inc.	Scentograph Plus II Portable Gas Chromatograph	V3,60

APPLICABILITY INDEX (continued)

Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Air (continued)	Halogenated VOCs (continued)	Portable Gas Chromatographs (continued)	SRI Instruments	Compact Gas Chromatograph	V3,66
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
			XonTech, Inc.	XonTech Sector Sampler	V3,84
		Thermal Destruction	U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
	Herbicides	Materials Handling	U.S. EPA	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical/ Chemical Treatment	Matrix Photocatalytic Inc.	Photocatalytic Air Treatment	V1,206
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Thermal Destruction	U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
	Mercury	Contaminant Survey systems	Quadrel Svices, Inc.	Emflux® Soil-Gas Survey System	V3,54
	Metals	Materials Handling	U.S. EPA	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical/ Chemical Treatment	General Atomics, Nuclear Remediation Technologies Division	Acoustic Barrier Particulate Separator	V2,48
			Matrix Photocatalytic Inc.	Photocatalytic Air Treatment	V1,206
		Portable Gas Chromatographs	HNU Systems, Inc.	HNU GC 311D Portable Gas Chromatograph	V3,42
			Microsensor Systems, Incorporated	MSI-301A Vapor Monitor	V3,50
			Hewlett-Packard Company	Portable Gas Analyzer	V3,40
		Thermal Destruction	American Combustion, Inc.	PYRETRON® Thermal Destruction	V1,22
			Energy and Environmental Research Corporation	Reactor Filter Systems	V2,42
	PAHs	Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			SRI Instruments	Compact Gas Chromatograph	V3,66
	PCBs	Materials Handling	U.S. EPA	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical/ Chemical Treatment	Matrix Photocatalytic Inc.	Photocatalytic Air Treatment	V1,206
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			HNU Systems, Inc.	HNU GC 311D Portable Gas Chromatograph	V3,42

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Air (continued)	PCBs (continued)	Portable Gas Chromatographs (continued)	Microsensor Systems, Incorporated	MSI-301A Vapor Monitor	V3,50
			Hewlett-Packard Company	Portable Gas Analyzer	V3,40
			Sentex Technology, Inc.	Scentograph Plus II Portable Gas Chromatograph	V3,60
			SRI Instruments	Compact Gas Chromatograph	V3,66
		Spectrometers	Graseby Ionics, Ltd., and PCP Inc.	Ion Mobility Spectrometry	V3,36
		Thermal Destruction	U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
	Pesticides	Materials Handling	U.S. EPA	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical/ Chemical Treatment	Matrix Photocatalytic Inc.	Photocatalytic Air Treatment	V1,206
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			Sentex Sensing Technology, Inc.	Scentograph Plus II Portable Gas Chromatograph	V3,60
			SRI Instruments	Compact Gas Chromatograph	V3,66
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Thermal Destruction	U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
	Petroleum Hydrocarbons	Portable Gas Chromatographs	SRI Instruments	Compact Gas Chromatographs	V3,66
	SVOCs	Contaminant Survey Systems	Quadrel Svices, Inc.	Emflux® Soil-Gas Survey System	V3,54
		Materials Handling	U.S. EPA	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical/ Chemical Thermal Desorption	Process Technologies, Inc.	Photolytic Destruction of Vapor-Phase Halogens	V1,218
		Physical/ Chemical Treatment	ARS Technologies, Inc.	Pneumatic Fracturing Extraction™ and Catalytic Oxidation	V1,24
			Energia, Inc.	Reductive Thermal and Photo-Thermal Oxidation Processes for Enhanced Conversion of Chlorocarbons	V2,122
			Xerox Corp.	2-PHASE™ EXTRACTION Process	V1,180
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
			XonTech, Inc.	XonTech Sector Sampler	V3,84
		Thermal Destruction	Sonotech, Inc.	Frequency-Tunable Pulse Combustion System	V1,154
			U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Air (continued)	SVOCs (continued)	Biological Degradation	Media & Process Technology	Bioscrubber	V2,78
		Contaminant Survey systems	Quadrel Srvices, Inc.	Emflux® Soil-Gas Survey System	V3,54
		Materials Handling	U.S. EPA	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical/ Chemical Thermal Desorption	Process Technologies, Inc.	Photolytic Destruction of Vapor-Phase Halogens	V1,218
		Physical/ Chemical Treatment	ARS Technologies, Inc.	Pneumatic Fracturing Extraction™ and Catalytic Oxidation	V1,24
			Arizona State U./ Zentox Corp.	Photocatalytic Oxidation with Air Stripping	V2,18
			Energia, Inc.	Reductive Photo-Dechlorination Treatment	V2,38
			Energia, Inc.	Reductive Thermal and Photo-Thermal Oxidation Processes for Enhanced Conversion of Chlorocarbons	V2,122
			KSE, Inc.	Adsorption-Integrated-Reaction Process	V1,200/ V2,24
			Matrix Photocatalytic Inc.	Photocatalytic Air Treatment	V1,206
			Membrane Technology and Research, Inc.	VaporSep® Membrane Process	V2,80
			Thermatrix, Inc.	Photolytic Oxidation Process	V2,102
			Roy F. Weston, Inc.	Amborsorb® 563 Adsorbent	V2,116
			Xerox Corp.	2-PHASE™ EXTRACTION Process	V1,180
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			HNU Systems, Inc.	HNU GC 311D Portable Gas Chromatograph	V3,42
			Microsensor Systems, Incorporated	MSI-301A Vapor Monitor	V3,50
			Hewlett-Packard Company	Portable Gas Analyzer	V3,40
			Photovac Monitoring Instruments	PE Photovac Voyager Portable Gas Chromatograph	V3,56
			Sentex Sensing Technology, Inc.	Scentograph Plus II Portable Gas Chromatograph	V3,60
			SRI Instruments	Compact Gas Chromatograph	V3,66
		Spectrometers	Environmental Technologies Group, Inc.	AirSentry Fourier Transform Infrared Spectrometer	V3,28
			Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
			XonTech, Inc.	XonTech Sector Sampler	V3,84
		Thermal Destruction	Sonotech, Inc.	Frequency-Tunable Pulse Combustion System	V1,154

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Gas	Aromatic VOCs	Biological Degradation	Media & Process Technology	Bioscrubber	V2,78
			Remediation Technologies, Inc.	Biofilm Reactor for Chlorinated Gas Treatment	V2,94
		Materials Handling	U.S. EPA	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical/ Chemical Treatment	ARS Technologies, Inc.	Pneumatic Fracturing Extraction™ and Catalytic Oxidation	V1,24
			Energia, Inc.	Reductive Thermal and Photo-Thermal Oxidation Processes for Enhanced Conversion of Chlorocarbons	V2,122
			KSE, Inc.	Adsorption-Integrated-Reaction process	V1,200/ V2,24
			Matrix Photocatalytic Inc.	Photocatalytic Air Treatment	V1,206
			Membrane Technology and Research, Inc.	VaporSep® Membrane Process	V2,80
			Xerox Corp.	2-PHASE™ EXTRACTION Process	V1,180
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			HNU Systems, Inc.	HNU GC 311D Portable Gas Chromatograph	V3,42
			Microsensor Systems, Incorporated	MSI-301A Vapor Monitor	V3,50
			Hewlett-Packard Company	Portable Gas Analyzer	V3,40
			Photovac Monitoring Instruments	PE Photovac Voyager Portable Gas Chromatograph	V3,56
			Sentex Sensing Technology, Inc.	Scentograph Plus II Portable Gas Chromatograph	V3,60
			SRI Instruments	Compact Gas Chromatograph	V3,66
		Spectrometers	Graseby Ionics, Ltd.	Ion Mobility Spectrometry	V3,36
			XonTech, Inc.	XonTech Sector Sampler	V3,84
		Thermal Destruction	Sonotech, Inc.	Frequency-Tunable Pulse Combustion System	V1,154
			U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
	Dioxins	Materials Handling	U.S. EPA	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical/ Chemical Treatment	Matrix Photocatalytic Inc.	Photocatalytic Air Treatment	V1,206
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Thermal Destruction	Energy and Environmental Research Corp.	Reactor Filter System	V2,42

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Gas (continued)	Dioxins (continued)	Thermal Destruction (continued)	U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
	Furans	Materials Handling	U.S. EPA	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical/ Chemical Treatment	Matrix Photocatalytic Inc.	Photocatalytic Air Treatment	V1,206
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Thermal Destruction	Energy and Environmental Research Corp.	Reactor Filter System	V2,42
	Halogenated VOCs	Biological Degradation	U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
			Remediation Technologies, Inc.	Biofilm Reactor for Chlorinated Gas Treatment	V2,94
		Materials Handling	U.S. EPA	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical/ Chemical Thermal Desorption	Process Technologies, Inc.	Photolytic Destruction of Vapor-Phase Halogens	V1,218
		Physical/ Chemical Treatment	ARS Technologies, Inc.	Pneumatic Fracturing Extraction™ and Catalytic Oxidation	V1,24
			Arizona State U./ Zentox Corp.	Photocatalytic Oxidation with Air Stripping	V2,18
			Energia, Inc.	Reductive Photo-Dechlorination Treatment	V2,38
			Energia, Inc.	Reductive Thermal and Photo-Thermal Oxidation process for Enhanced Conversion of Chlorocarbons	V2,122
			KSE, Inc.	Adsorption-Integrated-Reaction Process	V1,200/ V2,24
			Matrix Photocatalytic Inc.	Photocatalytic Air Treatment	V1,206
			Membrane Technology and Research, Inc.	VaporSep® Membrane Process	V2,80
			Thermatrix, Inc.	Photolytic Oxidation Process	V2,102
			Roy F. Weston, Inc.	Ambersorb® 563 Adsorbent	V2,116
			Xerox Corp.	2-PHASE™ EXTRACTION Process	V1,180
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			Photovac Monitoring Instruments	PE Photovac Voyager Portable Gas Chromatograph	V3,56
			Sentex Sensing Technology, Inc.	Scentograph Plus II Portable Gas Chromatograph	V3,60
			SRI Instruments	Compact Gas Chromatograph	V3,66
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Gas (continued)	Halogenated VOCs (continued)	Spectrometers (continued)	XonTech, Inc.	XonTech Sector Sampler	V3,84
		Thermal Destruction	U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
	Heavy Metals	Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
	Herbicides	Materials Handling	U.S. EPA	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical/ Chemical Treatment	Matrix Photocatalytic Inc.	Photocatalytic Air Treatment	V1,206
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Thermal Destruction	U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
	Metals	Materials Handling	U.S. EPA	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical/ Chemical Treatment	General Atomics, Nuclear Remediation Technologies Div.	Acoustic Barrier Particulate Separator	V2,48
			Matrix Photocatalytic Inc.	Photocatalytic Air Treatment	V1,206
		Portable Gas Chromatographs	HNU Systems, Inc.	HNU GC 311D Portable Gas Chromatograph	V3,42
			Microsensor Systems, Incorporated	MSI-301A Vapor Monitor	V3,50
			Hewlett-Packard Company	Portable Gas Analyzer	V3,40
		Thermal Destruction	American Combustion, Inc.	PYRETRON® Thermal Destruction	V1,22
			Energy and Environmental Research Corp.	Reactor Filter System	V2,42
	PAHs	Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			SRI Instruments	Compact Gas Chromatograph	V3,66
	PCBs	Materials Handling	U.S. EPA	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical/ Chemical Treatment	Matrix Photocatalytic, Inc.	Photocatalytic Air Treatment	V1,206
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			HNU Systems, Inc.	HNU GC 311D Portable Gas Chromatograph	V3,42
			Microsensor Systems, Incorporated	MSI-301A Vapor Monitor	V3,50
			Hewlett-Packard Company	Portable Gas Analyzer	V3,40

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Gas (continued)	PCBs (continued)	Portable Gas Chromatographs (continued)	Sentex Sensing Technology, Inc.	Scentograph Plus II Portable Gas Chromatograph	V3,60
			SRI Instruments	Compact Gas Chromatograph	V3,66
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Thermal Destruction	U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
	Pesticides	Material Handling	U.S. EPA	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical/ Chemical Treatment	Matrix Photocatalytic, Inc.	Photocatalytic Air Treatment	V1,206
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			Sentex Sensing Technology, Inc.	Scentograph Plus II Portable Gas Chromatograph	V3,60
			SRI Instruments	Compact Gas Chromatograph	V3,66
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
	Petroleum Hydrocarbons	Thermal Destruction	U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
		Portable Gas Chromatograph	SRI Instruments	Compact Gas Chromatograph	V3,66
	SVOCs	Material Handling	U.S. EPA	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical/ Chemical Thermal Desorption	Process Technologies, Inc.	Photolytic Destruction of Vapor-Phase Halogens	V1,218
		Physical/ Chemical Treatment	ARS Technologies, Inc.	Pneumatic Fracturing Extraction™ and Catalytic Oxidation	V1,24
			Energia, Inc.	Reductive Thermal and Photo-Thermal Oxidation Processes for Enhanced Conversion of Chlorocarbons	V2,122
			Xerox Corp.	2-PHASE™ EXTRACTION Process	V1,180
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
			XonTech, Inc.	XonTech Sector Sampler	V3,84
		Thermal Destruction	Sonotech, Inc.	Frequency-Tunable Pulse Combustion System	V1,154
			U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
	VOCs	Biological Degradation	Media & Process Technology	Bioscrubber	V2,78
		Materials Handling	U.S. EPA	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical/ Chemical Thermal Desorption	Process Technologies, Inc.	Photolytic Destruction of Vapor-Phase Halogens	V1,218

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Gas (continued)	VOCs (continued)	Physical/ Chemical Treatment	ARS Technologies, Inc.	Pneumatic Fracturing Extraction™ and Catalytic Oxidation	V1,24
			Arizona State U/ Zentox Corp.	Photocatalytic Oxidation with Air Stripping	V2,18
			Energia, Inc.	Reductive Photo-Dechlorination Treatment	V2,38
			Energia, Inc.	Reductive Thermal and Photo-Thermal Oxidation Processes for Enhanced Conversion of Chlorocarbons	V2,122
			KSE, Inc.	Adsorption-Integrated-Reaction Process	V1,200/ V2,24
			Matrix Photocatalytic Inc.	Photocatalytic Air Treatment	V1,206
			Membrane Technology and Research, Inc.	VaporSep® membrane Process	V2,80
			Thermatrix, Inc.	Photolytic Oxidation Process	V2,102
			Roy F. Weston, Inc.	Ambersorb® 563 Adsorbent	V2,116
			Xerox Corp.	2-PHASE™ EXTRACTION Process	V1,180
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			HNU Systems, Inc.,	HNU GC 311D Portable Gas Chromatograph	V3,42
			Microsensor Systems, Incorporated	MSI-301A Vapor Monitor	V3,50
			Hewlett-Packard Company	Portable Gas Analyzer	V3,40
			Photovac Monitoring Instruments	PE Photovac Voyager Portable Gas Chromatograph	V3,56
			Sentex Sensing Technology, Inc.	Scentograph Plus II Portable Gas Chromatograph	V3,60
			SRI Instruments	Compact Gas Chromatograph	V3,66
		Spectrometers	Environmental Technologies Group, Inc.	AirSentry Fourier Transform Infrared Spectrometer	V3,28
			Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
			XonTech, Inc.	XonTech Sector Sampler	V3,84
		Thermal Destruction	Sonotech, Inc.	Frequency-Turnable Pulse Combustion System	V1,154
Ground water	Aromatic VOCs	Biological Degradation	Harding Lawson Associates	Two-Zone, Plume Interception, In Situ Treatment Technology	V2,48
			Billings and Associates, Inc.	Subsurface Volatilization and Ventilation Systems (SVVS®)	V1,30
			Bio-Rem, Inc.	Augmented in Situ Subsurface Bioremediation Process	V1,34
			Biotrol®	Biological Aqueous Treatment System	V1,38

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Ground water (continued)	Aromatic VOCs (continued)	Biological Degradation (continued)	Electrokinetics, Inc.	In Situ Bioremediation by Electrokinetic Injection	V2,120
			New York State Department of Environmental Conservation/R.E. Wright Environmental Inc.	In Situ Bioventing Treatment System	V1,130
			IT Corp.	Oxygen Microbubble In Situ Bioremediation	V2,126
			ZENON Environmental Inc.	ZenoGem™ Process	V1,184
		Contaminant Survey Systems	W.L. Gore and Associates, Inc.	GORE-SORBER Screening Survey	V3,82
		Materials Handling	National Risk Management Research Laboratory, The U. of Cincinnati, and FRX, Inc.	Hydraulic Fracturing	V1,124
		Physical/ Chemical Thermal Desorption	Hughes Environmental Systems, Inc.	Steam Enhanced Recovery Process	V1,100
			NOVATERRA, Inc.	In Situ Soil Treatments (Steam/Air Stripping)	V1,134
			Rochem Separation Systems, Inc.	Rochem Disc Tube™ Module System	V1,142
			SoilTech ATP Systems, Inc.	Anaerobic Thermal Processor	V1,150
		Physical/ Chemical Treatment	ARS Technologies, Inc.	Pneumatic Fracturing Extraction™ and Catalytic Oxidation	V1,24
			CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48
			High Voltage Environmental Applications, Inc.	High Energy Electron Beam Irradiation	V2,54
			High Voltage Environmental Applications, Inc.	High Energy Electron Irradiation	V1,94
			KSE, Inc.	Adsorption-Integrated-Reaction Process	V1,200/ V2,24
			Matrix Photocatalytic Inc.	Photocatalytic Water Treatment	V1,110
			Pulse Sciences, Inc.	X-ray Treatment of Aqueous Solutions	V2,90
			SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
			Terra Vac, Inc.	In Situ and Ex Situ Vacuum Extraction	V1,160
			U. of Nebraska - Lincoln	Center Pivot Spray Irrigation System	V1,170
			Roy F. Weston, Inc./IEG Technologies	UVB - Vacuum Vaporizing Well	V1,176

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Ground water (continued)	Aromatic VOCs (continued)	Physical/Chemical Treatment (continued)	Xerox Corp.	2-PHASE™ EXTRACTION Process	V1,180
			ZENON Environmental Inc.	Cross-Flow Pervaporation System	V1,182
		Portable Gas Chromatographs	Analytical and Remedial Technology, Inc.	Automated Sampling and Analytical Platform	V3,14
			Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			HNU Systems, Inc.,	HNU GC 311D Portable Gas Chromatograph	V3,42
			Hewlett-Packard Company	Portable Gas Analyzer	V3,40
			Photovac Monitoring Instruments	PE Photovac Voyager Portable Gas Chromatograph	V3,56
			Sentex Sensing Technology, Inc.	Scentograph Plus II Portable Gas Chromatograph	V3,60
			SRI Instruments	Compact Gas Chromatograph	V3,66
			U.S. EPA	Field Analytical Screening Program - PCB Method	V3,78
		Solidification/Stabilization	Wheelabrator Clean Air Systems, Inc.	PO*WW*ER™ Technology	V1,178
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Hanby Environmental Laboratory Procedure, Inc.	Test Kits for Organic Contaminants in Soil and Water	V3,38
		Thermal Destruction	Texaco Inc.	Texaco Gasification Process	V1,162
			U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
	Cyanide	Biological Degradation	Pintail Systems, Inc.	Spent ore Bioremediation process	V1,214
	Diesel	Materials Handling	National Risk Management Research Laboratory, The U. of Cincinnati, and FRX, Inc.	Hydraulic Fracturing	V1,124
		Physical/ Chemical Thermal Desorption	Geokinetics International, Inc.	Electroheat-Enhanced Nonaqueous Phase Liquids Removal	V1,196
			SIVE Services	Steam Injection and Vacuum Extraction	V1,230
	Dioxins	Physical/ Chemical Thermal Desorption	ELI Eco Logic Inc.	GAS-Phase Chemical Reduction Process	V1,68
			SoilTech ATP Systems, Inc.	Anaerobic Thermal Processor	V1,150
		Physical/ Chemical Treatment	CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48
			High Voltage Environmental Applications, Inc.	High-Energy Electron Irradiation	V1,94

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Ground water (continued)	Dioxins (continued)	Physical/Chemical Treatment (continued)	Matrix Photocatalytic Inc.	Photocatalytic Water Treatment	V1,110
			SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
		Solidification/Stabilization	Wheelabrator Clean Air Systems, Inc.	PO*WW*ER™ Technology	V1,178
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Strategic Diagnostic, Inc. Corp.	RaPID Assay®	V3,72
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
			U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
	Explosives	Contaminant Survey Systems	W.L. Gore and Associates, Inc.	GORE-SORBER Screening Survey	V3,82
		Physical/ Chemical Thermal Desorption	New Jersey Institute of Technology	GHEA Associates Process	V2,86
		Physical/ Chemical Treatment	U.S. Filter/WTS Ultrox	Ultraviolet Radiation and Oxidation	V1,168
	Furans	Physical/ Chemical Thermal Desorption	Eli Eco Logic Inc.	Gas-Phase Chemical Reduction Process	V1,68
			SoilTech ATP Systems, Inc.	Anaerobic Thermal Processor	V1,150
		Physical/ Chemical Treatment	CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48
			High Voltage Environmental Applications, Inc.	High-Energy Electron Irradiation	V1,94
			Matrix Photocatalytic Inc.	Photocatalytic Water Treatment	V1,110
			SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
		Solidification/Stabilization	Wheelabrator Clean Air Systems, Inc.	PO*WW*ER™ Technology	V1,178
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Strategic Diagnostic, Inc. Corp.	RaPID Assay®	V3,72
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
			U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
	Gasoline	Contaminant Survey Systems	W.L. Gore and Associates, Inc.	GORE-SORBER Screening Survey	V3,82

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Ground water (continued)	Gasoline (continued)	Materials Handling	National Risk Management Research Laboratory, The U. of Cincinnati, and FRX, Inc.	Hydraulic Fracturing	V1,124
		Physical/ Chemical Thermal Desorption	SIVE Services	Steam Injection and Vacuum Extraction	V1,230
	Halogenated VOCs	Biological Degradation	ABB Environmental Services, Inc.	Anaerobic-Aerobic Sequential Bioremediation of PCE	V2,50
			Harding Lawson Associates	Two-Zone, Plume Interception, Inc Situ Treatment Technology	V2,48
			Bio-Rem, Inc.	Augmented in Situ Subsurface Bioremediation Process	V1,34
			Biotrol®, Inc.	Methanotrophic Bioreactor System	V2,28
			Electrokinetics, Inc.	In Situ Bioremediation by Electrokinetic Injection	V2,120
			New York State Department of Environmental Conservation/R.E. Wright Environmental Inc.	In Situ Bioventing Treatment System	V1,130
			IT Corp.	Oxygen Microbubble In Situ Bioremediation	V2,126
			U.S. Air Force	Phytoremediation of TCE-Contaminated Shallow Groundwater	V1,234
			ZENON Environmental Inc.	ZenoGem™ Process	V1,184
		Contaminant Survey Systems	W.L. Gore and Associates, Inc.	GORE-SORBER Screening Survey	V3,82
		Materials Handling	National Risk Management Research Laboratory, The U. of Cincinnati, and FRX, Inc.	Hydraulic Fracturing	V1,124
		Physical Chemical Treatment - Biological Degradation	Lasagna™ Public-Private Partnership	Lasagna™ In Situ Soil Remediation	V1,202
		Physical/ Chemical Thermal Desorption	Hughes Environmental Systems, Inc.	Steam Enhanced Recovery Process	V1,100
			KAI Technologies, Inc./Brown and Root Environmental	Radio Frequency Heating	V1,106
			New Jersey Institute of Technology	GHEA Associates Process	V2,86
			NOVATERRA, Inc.	In Situ Soil Treatments (Steam/Air Stripping)	V1,134
			SoilTech ATP Systems, Inc.	Anaerobic Thermal Processor	V1,150

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Ground water (continued)	Halogenated VOCs (continued)	Physical/ Chemical Treatment	ARS Technologies, Inc.	Pneumatic Fracturing Extraction™ and Catalytic Oxidation	V1,24
			Arizona State U./ Zentox Corp.	Photocatalytic Oxidation with Air Stripping	V2,18
			CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48
			EnviroMetal Technologies, Inc.	In Situ and Ex Situ Metal Enhanced Abiotic Degradation of Dissolved Halogenated Organic Compounds in Groundwater	V1,72
			High Voltage Environmental Applications, Inc.	High Energy Electron Beam Irradiation	V2,54
			High Voltage Environmental Applications, Inc.	High Energy Electron Irradiation	V1,94
			KSE, Inc.	Adsorption-Integrated-Reaction Process	V1,200/ V2,24
			Matrix Photocatalytic Inc.	Photocatalytic Water Treatment	V1,110
			Pulse Sciences, Inc.	X-ray Treatment of Aqueous Solutions	V2,90
			SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
			Terra Vac, Inc.	In Situ and Ex Situ Vacuum Extraction	V1,160
			U.S. Filter/WTS Ultrox	Ultraviolet Radiation and Oxidation	V1,168
			U. of Nebraska - Lincoln	Center Pivot Spray Irrigation System	V1,170
			UV Technologies, Inc.	PhotoCAT™ Process	V2,112
			Roy F. Weston, Inc.	Ambersorb® 563 Adsorbent	V2,116
			Roy F. Weston, Inc./IEG Technologies	UVB - Vacuum Vaporizing Well	V1,176
			Xerox Corp.	2-PHASE™ EXTRACTION Process	V1,180
			ZENON Environmental Inc.	Cross-Flow Pervaporation System	V1,182
	Portable Gas Chromatographs		Analytical and Remedial Technology, Inc.	Automated Sampling and Analytical Platform	V3,14
			Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			Photovac Monitoring Instruments	PE Photovac Voyager Portable Gas Chromatograph	V3,56
			Sentex Sensing Technology, Inc.	Scentograph Plus II Portable Gas Chromatograph	V3,60
			SRI Instruments	Compact Gas Chromatograph	V3,66
			U.S. EPA	Field Analytical Screening Program - PCB Method	V3,78
	Solidification/Stabilization		Wheelabrator Clean Air Systems, Inc.	PO*WW*ER™ Technology	V1,178

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Ground water (continued)	Halogenated VOCs (continued)	Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Strategic Diagnostic, Inc. Corp.	RaPID Assay®	V3,72
		Thermal Destruction	Texaco Inc.	Texaco Gasification Process	V1,162
			U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
	Heavy Metals	Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
	Herbicides	Biological Degradation	Biotrol®	Biological Aqueous Treatment System	V1,38
			Electrokinetics, Inc.	In Situ Bioremediation by Electrokinetic Injection	V2,120
			Phytokinetics, Inc.	Phytoremediation of Contaminated Soils	V2,128
			ZENON Environmental Inc.	ZenoGem™ Process	V1,184
		Physical Chemical Treatment - Biological Degradation	Lasagna™ Public-Private Partnership	Lasagna™ in Situ Soil Remediation	V1,202
		Physical/ Chemical Thermal Desorption	ELI Eco Logic Inc.	Gas-Phase Chemical Reduction Process	V1,68
			SoilTech ATP Systems, Inc.	Anaerobic Thermal Processor	V1,150
		Physical/ Chemical Treatment	CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48
			High Voltage Environmental Applications, Inc.	High Energy Electron Irradiation	V1,94
			Matrix Photocatalytic Inc.	Photocatalytic Water Treatment	V1,110
			SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
		Solidification/ Stabilization	Wheelabrator Clean Air Systems, Inc.	PO*WW*ER™ Technology	V1,178
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Strategic Diagnostic, Inc.	RaPID Assay®	V3,72
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
			U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
	Mercury	Contaminant Survey systems	Quadrel Svices, Inc.	Emflux® Soil-Gas Survey System	V3,54
	Metals	Biological Degradation	Colorado Dept. of Public Health and Environment	Constructed Wetlands-Based Treatment	V1,54

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Ground water (continued)	Metals (continued)	Biological Degradation (continued)	Pintail Systems, Inc.	Biomineralization of Metals	V2,130
			Pintail Systems, Inc.	Spent Ore Bioremediation Process	V1,214
			Resource Management & Recovery	AlgaSORB® Biological Sorption	V2,96
		Field Portable X-ray Fluorescence	Metorex, Inc.	Field Portable X-ray Fluorescence Analysis	V3,48
		Physical Chemical Treatment - Biological Degradation	Lasagna™ Public-Private Partnership	Lasagna™ In Situ Soil Remediation	V1,202
		Physical/ Chemical Radioactive Waste Treatment	Filter Flow Technology, Inc.	Colloid Polishing Filter Method®	V1,76
		Physical/ Chemical Thermal Desorption	New Jersey Institute of Technology	GHEA Associates Process	V2,86
			Rochem Separation Systems, Inc.	Rochem Disc Tube™ Module System	V1,142
		Physical/ Chemical Treatment	Atomic Energy of Canada, Limited	Chemical Treatment and Ultrafiltration	V2,22
			E.I. DuPont de Nemours and Co. and Oberlin Filter Co.	Membrane Microfiltration	V1,60
			Dynaphore, inc.	FORAGER® Sponge	V1,62
			EnviroMetal Technologies, Inc.	Reactive Barrier	V1,194
			EPOC Water, Inc.	Precipitation, Microfiltration, and Sludge Dewatering	V1,74
			Cure International, Inc.	CURE® Electrocoagulation Wastewater Treatment System	V1,58
			Lewis Environmental Services, Inc./ Hickson Corp.	Chromated Copper Arsenate Soil Leaching Process	V2,76
			Matrix Photocatalytic Inc.	Photocatalytic Water Treatment	V1,110
			Morrison Knudsen Corp./Spetstamonazhge ologia Enterprises/STG Technologies	Clay-Base Grouting Technology	V1,114
			RECRA Environmental, Inc.	Alternating Current Electrocoagulation Technology	V2,92
			Selentec Environmental Technologies, Inc.	Selentec MAG*SEP Technology	V1,226
			U. of Washington	Adsorptive Filtration	V2,110
			U. of Wisconsin - Madison	Photoelectrocatalytic Degradation and Removal	V2,138
		Portable Gas Chromatographs	HNU Systems, Inc.	HNU GC 311D Portable Gas Chromatograph	V3,42
			Hewlett-Packard Company	Portable Gas Analyzer	V3,40

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Ground water (continued)	Metals (continued)	Solidification/ Stabilization	Wheelabrator Clean Air Systems, Inc.	PO*WW*ER™ Technology	V1,178
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
	Organics	Physical/Chemical Treatment	Duke Engineering and Services, Inc.	Surfactant Enhanced Aquifer Remediation of Nonaqueous Phase Liquids	V1,192
	PAHs	Contaminant Survey Systems	W.L. Gore and Associates, Inc.	GORE-SORBER Screening Survey	V3,82
		Physical/ Chemical Thermal Desorption	Geokinetics International, Inc.	Electroheat-Enhanced Nonaqueous Phase Liquids Removal	V1,196
			SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			SRI Instruments	Compact Gas Chromatograph	V3,66
		Biological Degradation	Institute of Gas Technology	Chemical and Biological Treatment	V2,56
			Phytokinetics, Inc.	Phytoremediation of Contaminated Soils	V2,128
			Phytokinetics, Inc.	Phytoremediation Process	V1,210
			ZENON Environmental Inc.	ZenoGem™ Process	V1,184
	PCBs	Field Portable X-ray Fluorescence	Metorex, Inc.	Field portable X-ray Fluorescence Analysis	V3,48
		Physical/ Chemical Thermal Desorption	ELI Eco Logic Inc.	Gas-Phase Chemical Reduction Process	V1,68
			KAI Technologies, Inc./Brown and Root Environmental	Radio Frequency Heating	V1,106
			New Jersey Institute of Technology	GHEA Associates Process	V2,86
			SoilTech ATP Systems, Inc.	Anaerobic Thermal Processor	V1,150
		Physical/ Chemical Treatment	Calgon Carbon Oxidation Technologies	perox-pure™ Chemical Oxidation Technology	V1,46
			CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48
			High Voltage Environmental Applications, Inc.	High-Energy Electron Beam Irradiation	V2,54
			High Voltage Environmental Applications, Inc.	High-Energy Electron Irradiation	V1,94
			Matrix Photocatalytic Inc.	Photocatalytic Water Treatment	V1,110
			Morrison Knudsen Corp./Spetstamonazhge ologia Enterprises/STG Technologies	Clay-Base Grouting Technology	V1,114

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Ground water (continued)	PCBs (continued)	Physical/Chemical Treatment (continued)	SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
			U.S. Filter/WTS Ultrox	Ultraviolet Radiation and Oxidations	V1,168
			U. of Wisconsin - Madison	Photoelectrocatalytic Degradation and Removal	V2,138
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			HNU Systems, Inc.	HNU GC 311D Portable Gas Chromatograph	V3,42
			Hewlett-Packard Company	Portable Gas Analyzer	V3,40
			Sentex Sensing Technology, inc.	Scentograph Plus II Portable Gas Chromatograph	V3,60
			SRI Instruments	Compact Gas Chromatograph	V3,66
			U.S. EPA	Field Analytical Screening Program - PCB Method	V3,78
		Solidification/Stabilization	Wheelabrator Clean Air Systems, Inc.	PO*WW*ER™ Technology	V1,178
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Hanby Environmental Laboratory Procedures, Inc.	Test Kits for Organic Contaminants in Soil and Water	V3,38
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
			U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
	PCP	Physical/ Chemical Treatment	SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
			U.S. Filter/WTS Ultrox	Ultraviolet Radiation and Oxidation	V1,168
		Portable Gas Chromatographs	U.S. EPA	Field Analytical Screening Program - PCP Method	V3,80
		Test Kits	Strategic Diagnostic, Inc.	Ensys Penta Test System	V3,68
			Strategic Diagnostic, Inc. Corp.	RaPID Assay®	V3,72
	Pesticides	Biological Degradation	Biotrol®	Biological Aqueous Treatment System	V1,38
			Electrokinetics, Inc.	In Situ Bioremediation by Electrokinetic Injections	V2,120
			Institute of Gas Technology	Chemical and Biological Treatment	V2,56
			Phytokinetics, Inc.	Phytoremediation of Contaminated Soils	V2,128
			Phytokinetics, Inc.	Phytoremediation Process	V1,210
			ZENON Environmental Inc.	ZenoGem™ Process	V1,184
		Contaminant Survey Systems	W.L. Gore and Associates, Inc.	GORE-SORBER Screening Survey	V3,82

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Ground water (continued)	Pesticides (continued)	Physical/ Chemical Thermal Desorption	ELI Eco Logic Inc.	Gas-Phase Chemical Reduction Process	V1,68
			KAI Technologies, Inc./Brown and Root Environmental	Radio Frequency heating	V1,106
			SoilTech ATP Systems, Inc.	Anaerobic Thermal Process	V1,150
		Physical/ Chemical Treatment	Calgon Carbon Oxidation Technologies	perox-pure™ Chemical Oxidation Technology	V1,46
			CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48
			High Voltage Environmental Applications, Inc.	High-Energy Electron Beam Irradiation	V2,54
			High Voltage Environmental Applications, Inc.	High-Energy Electron Irradiation	V1,94
			Matrix Photocatalytic Inc.	Photocatalytic Water Treatment	V1,110
			Morrison Knudsen Corp./Spetstamonazhge ologia Enterprises/STG Technologies	Clay-Base Grouting Technology	V1,114
			SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
			U.S. Filter/WTS Ultrox	Ultraviolet Radiation and Oxidation	V1,168
			U. of Wisconsin - Madison	Photoelectrocatalytic Degradation and Removal	V2,138
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			Sentex Sensing Technology, Inc.	Scentograph Plus II Portable Gas Chromatograph	V3,60
			SRI Instruments	Compact Gas Chromatograph	V3,66
			U.S. EPA	Field Analytical Screening Program - PCB Method	V3,78
		Solidification/ Stabilization	Wheelabrator Clean Air Systems, Inc.	PO*WW*ER™ Technology	V1,178
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Strategic Diagnostic, Inc.	Ensys Penta Test System	V3,68
			Hanby Environmental Laboratory Procedure, Inc.	Test Kits for Organic Contaminants in Soil and Water	V3,38
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
			U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
	Petroleum Hydrocarbons	Contaminant Survey Systems	W.L. Gore and Associates, Inc.	GORE-SORBER Screening Survey	V3,82

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Ground water (continued)	Petroleum Hydrocarbons (continued)	Materials Handling	National Risk Management Research Laboratory, the U. of Cincinnati, and FRX, Inc.	Hydraulic Fracturing	V1,124
		Physical/ Chemical Thermal Desorption	New Jersey Institute of Technology	GHEA Associates Process	V2,86
		Physical/ Chemical Treatment	Calgon Carbon Oxidation Technologies	perox-pure™ Chemical Oxidation Technology	V1,46
			Geokinetics International, Inc.	Electroheat-Enhanced Nonaqueous Phase Liquids Removal	V1,196
			SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
			SIVE Services	Steam Injection and Vacuum Extraction	V1,230
		Portable Gas Chromatographs	SRI Instruments	Compact Gas Chromatograph	V3,66
		Test Kits	Idetek, Inc.	Equate® Immunoassay	V3,46
	Radionuclides	Physical/ Chemical Radioactive Waste Treatment	Filter Flow Technology, Inc.	Colloid Polishing Filter Method	V1,76
		Physical/ Chemical Treatment	Atomic Energy of Canada, Limited	Chemical Treatment and Ultrafiltration	V2,22
			Selentec Environmental Technologies, Inc.	Selentec MAG* SEP Technology	V1,226
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
	SVOCs	Biological Degradation	Harding Lawson Associates	Two-Zone, Plume Interception, In Situ Treatment Technology	V2,48
			Biotrol®	Biological Aqueous Treatment System	V1,38
			Institute of Gas Technology	Chemical and Biological Treatment	V2,56
			New York State Dept. Of Environmental Conservation/R.E. Wright Environmental Inc.	In Situ Bioventing Treatment System	V1,130
			IT Corp.	Oxygen Microbubble In Situ Bioremediation	V2,126
			ZENON Environmental Inc.	ZenoGem™ Process	V1,184
		Contaminant Survey Systems	Quadrel Svices, Inc.	Emflux Soil-Gas Survey System	V3,54
			W.L. Gore and Associates, Inc.	GORE-SORBER Screening Survey	V3,82
		Physical/ Chemical Thermal Desorption	ELI Eco Logic Inc.	Gas-Phase Chemical Reduction Process	V1,68
			KAI Technologies, Inc./Brown and Root Environmental	Radio Frequency Heating	V1,106

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Ground water (continued)	SVOCs (continued)	Physical/Chemical Thermal Desorption (continued)	New Jersey Institute of Technology	GHEA Associates Process	V2,86
			NOVATERRA, Inc.	In Situ Soil Treatments (Steam/ Air Stripping)	V1,134
			SIVE Services	Steam Injection and Vacuum Extraction	V1,230
			SoilTech ATP Systems, Inc.	Anaerobic Thermal Processor	V1,150
		Physical/ Chemical Treatment	ARS Technologies, Inc.	Pneumatic Fracturing Extraction™ and Catalytic Oxidation	V1,24
			Calgon Carbon Oxidation Technologies	perox-pure™ Chemical Oxidation Technology	V1,46
			CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48
			High Voltage Environmental Applications, Inc.	High-Energy Electron Beam Irradiation	V2,54
			High Voltage Environmental Applications, Inc.	High-Energy Electron Irradiation	V1,94
			Pulse Sciences, Inc.	X-ray Treatment of Aqueous Solutions	V2,90
			SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
			Terra Vac, Inc.	In Situ and Ex Situ Vacuum Extraction	V1,160
			U. of Wisconsin - Madison	Photoelectrocatalytic Degradation and Removal	V2,138
			Roy F. Weston, Inc./IEG Technologies	UVB - Vacuum Vaporizing Well	V1,176
			Xerox Corp.	2-PHASE™ EXTRACTION Process	V1,180
		Portable Gas Chromatographs	Analytical and Remedial Technology, Inc.	Automated Sampling and Analytical Platform	V3,14
			Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			U.S. EPA	Field Analytical Screening Program - PCB Method	V3,78
		Solidification/ Stabilization	Wheelabrator Clean Air Systems, Inc.	PO*WW*ER™ Technology	V1,178
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Strategic Diagnostic, Inc. Corp.	RaPID Assay®	V3,72
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
			Texaco Inc.	Texaco Gasification process	V1,162
			U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
		Other	Berkeley Environmental Restoration Center	In Situ Steam Enhanced Extraction Process	V1,28

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Ground water (continued)	VOCs	Biological Degradation	Billings and Associates, Inc.	Subsurface Volatilization and Ventilation System (SVVS®)	V1,30
			Bio-Rem, Inc.	Augmented In Situ Subsurface Bioremediation Process	V1,34
			Biotrol®	Biological Aqueous Treatment System	V1,38
			Electrokinetics, Inc.	In Situ Bioremediation by Electrokinetic Injection	V2,120
			New York State Dept. of Environmental Conservation/R.E. Wright Environmental, Inc.	In Situ Bioventing Treatment System	V1,130
			New York State Department of Environmental Conservation/SBP Technologies	Vacuum-Vaporized Well System	V1,128
			IT Corp.	Oxygen Microbubble In Situ Bioremediation	V2,126
			ITT Night Vision	In Situ Enhanced Bioremediation of Groundwater	V1,198
			Phytokinetics, Inc.	Phytoremediation of Contaminated Soils	V2,128
			Phytokinetics, Inc.	Phytoremediation Process	V1,210
			U.S. Air Force	Phytoremediation of TCE-Contaminated Shallow Groundwater	V1,234
			ZENON Environmental Inc.	ZenoGem™ Process	V1,184
		Contaminant Survey systems	Quadrel Svices, Inc.	Emflux Soil-Gas Survey System	V3,54
			W.L. Gore and Associates, Inc.	GORE-SORBER Screening Survey	V3,82
		Materials Handling	National Risk Management Research Laboratory, The U. of Cincinnati, and FRX, Inc.	Hydraulic Fracturing	V1,124
		Physical/ Chemical Thermal Desorption	Hughes Environmental Systems, Inc.	Steam Enhanced Recovery Process	V1,100
			KAI Technologies, Inc./Brown and Root Environmental	Radio Frequency Heating	V1,106
			New Jersey Institute of Technology	GHEA Associates Process	V2,86
			NOVATERRA, Inc.	In Situ Soil Treatments (Steam/ Air Stripping)	V1,134
			Rochem Separation Systems, Inc.	Rochem Disc Tube™ Module System	V1,142

APPLICABILITY INDEX (continued)

Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Ground water (continued)	VOCs (continued)	Physical/Chemical Thermal Desorption (continued)	SIVE Services	Steam Injection and Vacuum Extraction	V1,230
			SoilTech ATP Systems, Inc.	Anaerobic Thermal Processor	V1,150
		Physical/ Chemical Treatment	ARS Technologies, Inc.	Pneumatic Fracturing Extraction™ and Catalytic Oxidation	V1,24
			Arizona State U./ Zentox Corp.	Photocatalytic Oxidation with Air Stripping	V2,18
			Calgon Carbon Oxidation Technologies	perox-pure™ Chemical Oxidation Technology	V1,46
			CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48
			EnviroMetal Technologies, Inc.	Reactive Barrier	V1,194
			MACTEC-SBP Technologies Company, L.L.C.	NoVOCs™ In-Well Stripping Technology	V1,204
			EnviroMetal Technologies, Inc.	In Situ and Ex Situ Metal Enhanced Abiotic Degradation of Dissolved Halogenated Organic Compounds in Groundwater	V1,72
			Geokinetics International, Inc.	Electroheat-Enhanced Nonaqueous Phase Liquids Removal	V1,196
			High Voltage Environmental Applications, Inc.	High Energy Electron Irradiation	V1,94
			KSE, Inc.	Adsorption-Integrated-Reaction Process	V1,200/ V2,24
			Matrix Photocatalytic Inc.	Photocatalytic Water Treatment	V1,110
			Morrison Knudsen Corp./Spetstamonazhge ologia Enterprises/STG Technologies	Clay-Base Grouting Technology	V1,114
			Pulse Sciences, Inc.	X-ray Treatment of Aqueous Solutions	V2,90
			Radian International LCC	Integrated Vapor Extraction and Steam Vacuum Stripping and Soil Vapor Extraction/Reinjection	V1,138
			SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
			Terra Vac, Inc.	In Situ and Ex Situ Vacuum Extraction	V1,160
			U.S. Filter/WTS Ultrox	Ultraviolet Radiation and Oxidation	V1,168
			U. of Nebraska - Lincoln	Center Pivot Spray Irrigation System	V1,170
			UV Technologies, Inc.	PhotoCAT™ Process	V2,112
			Roy F. Weston, Inc.	Ambersorb® 563 Adsorbent	V2,116
			Roy F. Weston, Inc./IEG Technologies	UVB - Vacuum Vaporizing Well	V1,176
			Xerox Corp.	2-PHASE™ EXTRACTION Process	V1,180

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Ground water (continued)	VOCs (continued)	Physical/Chemical Treatment (continued)	ZENON Environmental Inc.	Cross-Flow Pervaporation System	V1,182
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			HNU Systems, Inc.	HNU GC 311D Portable Gas Chromatograph	V3,42
			Hewlett-Packard Company	Portable Gas Analyzer	V3,40
			Photovac Monitoring Instruments	PE Photovac Voyager Portable Gas Chromatograph	V3,56
			Sentex Sensing Technology, inc.	Scentograph Plus II Portable Gas Chromatograph	V3,60
			SRI Instruments	Compact Gas Chromatograph	V3,66
			U.S. EPA	Field Analytical Screening Program - PCB Method	V3,78
		Solidification/Stabilization	Wheelabrator Clean Air Systems, Inc.	PO*WW*ER™ Technology	V1,178
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Hanby Environmental Laboratory Procedure, Inc.	Test Kits for Organic Contaminants in Soil and Water	V3,38
			Strategic Diagnostic, Inc. Corp.	RaPID Assay®	V3,72
		Thermal Destruction	Texaco Inc.	Texaco Gasification Process	V1,162
	Other	Physical/ Chemical Treatment	North American Technologies Group, Inc.	Oleophilic Amine-Coated Ceramic Chip	V1,132
			RECRA Environmental, Inc.	Alternating Electrocoagulation Technology	V2,92
Leachate	Aromatic VOCs	Biological Degradation	Biotrol®	Biological Aqueous Treatment System	V1,38
			Electrokinetics, Inc.	In Situ Bioremediation by Electrokinetic Injection	V2,120
			ZENON Environmental Inc.	ZenoGem™ Process	V1,184
		Physical/ Chemical Thermal Desorption	NOVATERRA, Inc.	In Situ Soil Treatments (Steam/Air Stripping)	V1,134
			Rochem Separation Systems, Inc.	Rochem Disc Tube™ Module System	V1,142
		Physical/ Chemical Treatment	CF Systems, Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48
			High Voltage Environmental Applications, Inc.	High Energy Electron Beam Irradiation	V2,54
			High Voltage Environmental Applications, Inc.	High Energy Electron Irradiation	V1,94

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Leachate (continued)	Aromatic VOCs (continued)	Physical/ Chemical Treatment (continued)	Magnum Water Technology	CA-OX® Process	V1,108
			Matrix Photocatalytic Inc.	Photocatalytic Water Treatment	V1,110
			Pulse Sciences, Inc.	X-ray Treatment of Aqueous Solutions	V2,90
			SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
			ZENON Environmental Inc.	Cross-Flow Pervaporation System	V1,182
		Portable Gas Chromatographs	Analytical and Remedial Technology, inc.	Automated Sampling and Analytical Platform	V3,14
			Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			HNU Systems, Inc.	HNU GC 311D Portable Gas Chromatograph	V3,42
			Sentex Sensing Technology, Inc.	Scentograph Plus II Portable Gas Chromatograph	V3,60
			SRI Instruments	Compact Gas Chromatograph	V3,66
			U.S. EPA	Field Analytical Screening Program - PCB Method	V3,78
		Solidification/ Stabilization	Wheelabrator Clean Air Systems, Inc.	PO*WW*ER™ Technology	V1,178
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Hanby Environmental Laboratory procedure, inc.	Test Kits for Organic Contaminants in Soil and Water	V3,38
	Cyanide	Biological Degradation	Pintail Systems, Inc.	Spent Ore Bioremediation process	V1,214
	Dioxins	Physical/ Chemical Thermal Desorption	ELI Eco Logic Inc.	Gas-Phase Chemical Reduction Process	V1,68
		Physical/ Chemical Treatment	CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48
			High Voltage Environmental Applications, Inc.	High-Energy Electron Irradiation	V1,94
			Matrix Photocatalytic Inc.	Photocatalytic Water Treatment	V1,110
			SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
		Portable Gas Chromatographs	Bruker Analytical Systems, inc.	Mobile Environmental Monitor	V3,20
		Solidification/ Stabilization	Wheelabrator Clean Air Systems, Inc.	PO*WW*ER™ Technology	V1,178
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Strategic Diagnostic, Inc. Corp.	RaPID Assay®	V3,72
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Leachate (continued)	Explosives	Physical/ Chemical Thermal Desorption	New Jersey Institute of Technology	GHEA Associates Process	V2,86
		Physical/ Chemical Treatment	U.S. Filter/WTS Ultrox	Ultraviolet Radiation and Oxidation	V1,168
	Furans	Physical/ Chemical Thermal Desorption	ELI Eco Logic Inc.	Gas-Phase Chemical Reduction Process	V1,68
		Physical/ Chemical Treatment	CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48
			High Voltage Environmental Applications, Inc.	High-Energy Electron Irradiation	V1,94
			Matrix Photocatalytic Inc.	Photocatalytic Water Treatment	V1,110
			SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
		Portable Gas Chromatographs	Bruker Analytical Systems, inc.	Mobile Environmental Monitor	V3,20
		Solidification/ Stabilization	Wheelabrator Clean Air Systems, Inc.	PO*WW*ER™ Technology	V1,178
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Strategic Diagnostic, Inc. Corp.	RaPID Assay®	V3,72
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
	Halogenated VOCs	Biological Degradation	Biotrol®	Methanotrophic Bioreactor System	V2,28
			ZENON Environmental Inc.	ZenoGem™ Process	V1,184
		Physical/ Chemical Thermal Desorption	New Jersey Institute of Technology	GHEA Associates process	V2,86
			NOVATERRA, Inc.	In-Situ Soil Treatments (Steam/Sir Stripping)	V1,134
		Physical/ Chemical Treatment	CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48
			EnviroMetal Technologies Inc.	In Situ and Ex Situ Metal Enhanced Abiotic Degradation of Dissolved Halogenated Organic Compounds in Groundwater	V1,72
			High Voltage Environmental Applications, Inc.	High Energy Electron Beam Irradiation	V2,54
			High Voltage Environmental Applications, Inc.	High Energy Electron Irradiation	V1,94
			Magnum Water Technology	CAV-OX® Process	V1,108
			Matrix Photocatalytic Inc.	Photocatalytic Water Treatment	V1,110
			Pulse Sciences, Inc.	X-ray Treatment of Aqueous Solutions	V2,90

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Leachate (continued)	Halogenated VOCs (continued)	Physical/ Chemical Treatment (continued)	SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
			U.S. Filter/WTS Ultrox	Ultraviolet Radiation and Oxidation	V1,168
			UV Technologies, Inc.	PhotoCAT™ Process	V2,112
			Roy F. Weston, Inc.	Ambersorb® 563 Adsorbent	V2,116
			ZENON Environmental Inc.	Cross-Flow Pervaporation System	V1,182
		Portable Gas Chromatographs	Analytical and Remedial Technology, Inc.	Automated Sampling and Analytical Platform	V3,14
			Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			Sentex Sensing Technology, Inc.	Scentograph plus II Portable Gas Chromatograph	V3,60
			SRI Instruments	Compact Gas Chromatograph	V3,66
			U.S. EPA	Field Analytical Screening Program - PCB Method	V3,78
		Solidification/ Stabilization	Wheelabrator Clean Air Systems, inc.	PO*WW*ER™ Technology	V1,178
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Strategic Diagnostic, Inc. Corp.	RaPID Assay®	V3,72
		Thermal Destruction	Energy and Environmental Research Corp.	Hybrid Fluidized Bed System	V2,42
	Herbicides	Biological Degradation	Biotrol®	Biological Aqueous Treatment System	V1,38
			Electrokinetics, Inc.	In Situ Bioremediation by Electrokinetic Injection	V2,120
			ZENON Environmental Inc.	ZenoGem™ Process	V1,184
		Physical/ Chemical Thermal Desorption	ELI Eco Logic Inc.	Gas-Phase Chemical Reduction Process	V1,68
		Physical/ Chemical Treatment	CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48
			High Voltage Environmental Applications, Inc.	High-Energy Electron Irradiation	V1,94
			Magnum Water Technology	CAV-OX® Process	V1,108
			Matrix Photocatalytic Inc.	Photocatalytic Water Treatment	V1,110
			SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
		Solidification/ Stabilization	Wheelabrator Clean Air Systems, inc.	PO*WW*ER™ Technology	V1,178
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Leachate (continued)	Herbicides (continued)	Test Kits	Strategic Diagnostic, Inc. Corp.	RaPID Assay®	V3,72
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
	Metals	Biological Degradation	Colorado Dept. Of Public Health and Environment	Constructed Wetlands-Based Treatment	V1,54
			Pintail Systems, Inc.	Biominalization of Metals	V2,130
			Pintail Systems, Inc.	Spent ore Bioremediation Process	V1,214
		Field Portable X-ray Fluorescence	Metorex, Inc.	Field Portable X-ray Fluorescence Analysis	V3,48
		Physical/ Chemical Radioactive Waste Treatment	Filter Flow Technology, Inc.	Colloid Polishing Filter Method	V1,76
		Physical/ Chemical Thermal Desorption	New Jersey Institute of Technology	GHEA Associates Process	V2,86
			Rochem Separation Systems, Inc.	Rochem Disc Tube™ Module System	V1,142
		Physical/ Chemical Treatment	Atomic Energy of Canada, Limited	Chemical Treatment and Ultrafiltration	V2,22
			Atomic Energy of Canada, Limited	Ultrasonic-Aided Leachate Treatment	V2,24
			E.I. DuPont de Nemours and Co., and Oberlin Filter Co.	Membrane Microfiltration	V1,60
			Dynaphore, Inc.	FORAGER® Sponge	V1,62
			EPOC Water, Inc.	Precipitation, Microfiltration, and Sludge Dewatering	V1,74
			Cure International, Inc.	CURE® Electrocoagulation Wastewater Treatment System	V1,58
			Lewis Environmental Services, Inc./ Hickson Corp.	Chromated Copper Arsenate Soil Leaching Process	V2,76
			Matrix Photocatalytic Inc.	Photocatalytic Water Treatment	V1,110
			Morrison Knudsen Corp./Spetstamonazhge ologia Enterprises/ STG Technologies	Clay-Base Grouting Technology	V1,114
			RECRA Environmental, Inc.	Alternating Current Electrocoagulation Technology	V2,92
			Selentec Environmental Technologies, Inc.	Selentec MAG*SEP Technology	V1,226
			U. of Washington	Adsorption Filtration	V2,110
		Portable Gas Chromatographs	HNU Systems, Inc.	HNU GC 311D Portable Gas Chromatograph	V3,42
		Solidification/ Stabilization	Wheelabrator Clean Air System, Inc.	PO*WW*ER™ Technology	V1,178
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Leachate (continued)	Metals (continued)	Thermal Destruction (continued)	Energy and Environmental Research Corp.	Hybrid Fluidized Bed System	V2,42
	PAHs	Physical/ Chemical Treatment	SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
			Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			SRI Instruments	Compact Gas Chromatograph	V3,66
	PCBs	Biological Degradation	ZENON Environmental Inc.	ZenoGem™ Process	V1,184
		Field Portable X-ray Fluorescence	Metorex, Inc.	Field Portable X-ray Fluorescence Analysis	V3,48
		Physical/ Chemical Thermal Desorption	ELI Eco Logic Inc.	Gas-Phase Chemical Reduction Process	V1,68
		Physical/ Chemical Treatment	Calgon Carbon Oxidation Technologies	perox-pure™ Chemical Oxidation Technology	V1,46
			CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48
			High Voltage Environmental Applications, Inc.	High-Energy Electron Beam Irradiation	V2,54
			High Voltage Environmental Applications, Inc.	High-Energy Electron Irradiation	V1,94
			Magnum Water Technology	CAV-OX® Process	V1,108
			Matrix Photocatalytic Inc.	Photocatalytic Water Treatment	V1,110
			Morrison Knudsen Corp./Spetstamonazhge ologia Enterprises/ STG Technologies	Clay-Base Grouting Technology	V1,114
			SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
			U.S. Filter/WTS Ultrox	Ultraviolet Radiation and Oxidation	V1,168
		Portable Gas Chromatographs	Bruker Analytical Systems, inc.	Mobile Environmental Monitor	V3,20
			HNU Systems, Inc.	HNU GC 311D Portable Gas Chromatograph	V3,42
			Sentex Sensing Technology, Inc.	Scentograph Plus II Portable Gas Chromatograph	V3,60
			SRI Instruments	Compact Gas Chromatograph	V3,66
			U.S. EPA	Field Analytical Screening Program - PCB Method	V3,78
		Solidification/ Stabilization	Wheelabrator Clean Air Systems, Inc.	PO*WW*ER™ Technology	V1,178
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Strategic Diagnostic, Inc.	Ensys Penta Test Systems	V3,68

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Leachate (continued)	PCBs (continued)	Test Kits (continued)	Hanby Environmental Laboratory Procedure, Inc.	Test Kits for Organic Contaminants in Soil and Water	V3,38
			Energy and Environmental Research Corp.	Hybrid Fluidized Bed System	V2,42
	PCP	Physical/ Chemical Treatment	SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
			U.S. Filter/WTS Ultrox	Ultraviolet Radiation and Oxidation	V1,168
		Test Kits	Strategic Diagnostic, Inc.	Enslys Penta Test System	V3,68
			Strategic Diagnostic, Inc. Corp.	RaPID Assay®	V3,72
	Pesticides	Biological Degradation	Biotrol®	Biological Aqueous Treatment System	V1,38
			Electrokinetics, Inc.	In Situ Bioremediation by Electrokinetic Injection	V2,120
			ZENON Environmental Inc.	ZenoGem™ Process	V1,184
		Physical/ Chemical Thermal Desorption	ELI Eco Logic Inc.	Gas-Phase Chemical Reduction Process	V1,68
		Physical/ Chemical Treatment	Calgon Carbon Oxidation Technologies	perox-pure™ Chemical Oxidation Technology	V1,46
			CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48
			High Voltage Environmental Applications, Inc.	High-Energy Electron Beam Irradiation	V2,54
			High Voltage Environmental Applications, Inc.	High-Energy Electron Irradiation	V1,94
			Magnum Water Technology	CAV-OX® Process	V1,108
			Matrix Photocatalytic Inc.	Photocatalytic Water Treatment	V1,110
			Morrison Knudsen Corp./Spetstamonazhge ologia Enterprises/ STG Technologies	Clay-Base Grouting Technology	V1,114
			SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
			U.S. Filter/WTS Ultrox	Ultraviolet Radiation and Oxidation	V1,168
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			Sentex Sensing Technology, Inc.	Scentograph Plus II Portable Gas Chromatograph	V3,60
			SRI Instruments	Compact Gas Chromatograph	V3,66
			U.S. EPA	Field Analytical Screening Program - PCB Method	V3,78

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Leachate (continued)	Pesticides (continued)	Solidification/ Stabilization	Wheelabrator Clean Air Systems, Inc.	PO*WW*ER Technology	V1,178
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Strategic Diagnostic, Inc.	Ensys Penta Test System	V3,68
			Hanby Environmental Laboratory Procedure, inc.	Test Kits for Organic Contaminants in Soil and Water	V3,38
			Strategic Diagnostic, Inc. Corp.	RaPID Assay®	V3,72
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
			Energy and Environmental Research Corp.	Hybrid Fluidized Bed System	V2,40
	Petroleum Hydrocarbons	Physical/ Chemical Thermal Desorption	New Jersey Institute of Technology	GHEA Associates Process	V2,86
		Physical/ Chemical Treatments	Calgon Carbon Oxidation Technologies	perox-pure™ Chemical Oxidation Technology	V1,46
			SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
		Portable Gas Chromatographs	SRI Instruments	Compact Gas Chromatograph	V3,66
	Radionuclides	Physical/ Chemical Radioactive Waste Treatment	Filter Flow Technology, Inc.	Colloid Polishing Filter Method	V1,76
		Physical/ Chemical Treatment	Atomic Energy of Canada, Limited	Chemical Treatment and Ultrafiltration	V2,22
			Atomic Energy of Canada, Limited	Ultrasonic-Aided Leachate Treatment and Ultrafiltration	V2,24
			Selentec Environmental Technologies, Inc.	Selentec MAG*SEP Technology	V1,226
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
	SVOCs	Biological Degradation	Biotrol®	Biological Aqueous Treatment System	V1,38
			ZENON Environmental Inc.	ZenoGem™ Process	V1,184
		Physical/ Chemical Thermal Desorption	ELI Eco Logic Inc.	Gas-Phase Chemical Reduction Process	V1,68
			New Jersey Institute of Technology	GHEA Associates Process	V2,86
			NOVATERRA, Inc.	In Situ Soil Treatments (Steam/ Air Stripping)	V1,134
		Physical/ Chemical Treatment	Calgon Carbon Oxidation Technologies	perox-pure™ Chemical Oxidation Technology	V1,46
			CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48
			High Voltage Environmental Applications, Inc.	High-Energy Electron Beam Irradiation	V2,54

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Leachate (continued)	SVOCs (continued)	Physical/Chemical Treatment (continued)	High Voltage Environmental Applications, Inc.	High-Energy Electron Irradiation	V1,94
			Pulse Sciences, Inc.	X-ray Treatment of Aqueous Solutions	V2,90
			SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
		Portable Gas Chromatographs	Analytical and Remedial Technology, Inc.	Automated Sampling and Analytical Platform	V3,14
			Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			U.S. EPA	Field Analytical Screening Program - PCB Method	V3,78
		Solidification/Stabilization	Wheelabrator Clean Air Systems, Inc.	PO*WW*ER™ Technology	V1,178
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Strategic Diagnostic, Inc. Corp.	RaPID Assay®	V3,72
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
	VOCs	Biological Degradation	Biotrol®	Biological Aqueous Treatment System	V1,38
			Electrokinetics, Inc.	In Situ Bioremediation by Electrokinetic Injection	V2,120
			ZENON Environmental Inc.	ZenoGem™ Process	V1,184
		Physical/ Chemical Thermal Desorption	New Jersey Institute of Technology	GHEA Associates Process	V2,86
			NOVATERRA, Inc.	In Situ Soil Treatment (Steam/ Air Stripping)	V1,134
			Rochem Separation Systems, Inc.	Rochem Disc Tube™ Module System	V1,142
		Physical/ Chemical Treatment	Calgon Carbon Oxidation Technologies	perox-pure™ Chemical Oxidation Technology	V1,46
			CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48
			EnviroMetal Technologies Inc.	In Situ and Ex Situ Metal Enhanced Abiotic Degradation of Dissolved Halogenated Organic Compounds in Groundwater	V1,72
			High Voltage Environmental Applications, Inc.	High-Energy Electron Irradiation	V1,94
			Matrix Photocatalytic Inc.	Photocatalytic Water Treatment	V1,110
			Morrison Knudsen Corp./Spetstamonazhge ologia Enterprises/ STG Technologies	Clay-Base Grouting Technology	V1,114

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Leachate (continued)	VOCs (continued)	Physical/Chemical Treatment (continued)	Pulse Sciences, Inc.	X-ray Treatment of Aqueous Solutions	V2,90
			SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
			U.S. Filter/WTS Ultrox	Ultraviolet Radiation and Oxidation	V1,168
			UV Technologies, Inc.	PhotoCAT™ Process	V2,112
			Roy F. Weston, Inc.	Ambersorb® 563 Adsorbent	V2,116
			ZENON Environmental, Inc.	Cross-Flow Pervaporation System	V1,184
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			HNU Systems, Inc.	HNU GC 311D Portable Gas Chromatograph	V3,42
			Sentex Sensing Technology, Inc.	Scentograph Plus II Portable Gas Chromatograph	V3,60
			SRI Instruments	Compact Gas Chromatograph	V3,66
			U.S. EPA	Field Analytical Screening Program - PCB Method	V3,78
		Solidification/Stabilization	Wheelabrator Clean Air Systems, Inc.	PO*WW*ERT™ Technology	V1,178
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Hanby Environmental Laboratory Procedure, Inc.	Test Kits for Organic Contaminants in Soil and Water	V3,38
			Strategic Diagnostic, Inc. Corp.	RaPID Assay®	V3,72
		Thermal Destruction	Energy and Environmental Research Corp.	Hybrid Fluidized Bed System	V2,40
	Other	Physical/ Chemical Treatment	North American Technologies Group, Inc.	Oleophilic Amine-Coated Ceramic Chip	V1,132
			RECRA Environmental, inc.	Alternating Current Electrocoagulation Technology	V2,92
Liquid	Aromatic VOCs	Biological Degradation	Harding Lawson Associates	Two-Zone Plume Interception, In Situ Treatment Technology	V2,48
			Billings and Associates, Inc.	Subsurface Volatilization and Ventilation System (SVVS®)	V1,30
			Bio-Rem, Inc.	Augmented In Situ Subsurface Bioremediation Process	V1,34
			Biotrol®	Biological Aqueous Treatment System	V1,38
			Electrokinetics, Inc.	In Situ Bioremediation by Electrokinetic Injection	V2,120
			New York State Dept. Of Environmental Conservation/R.E. Wright Environmental, Inc.	In Situ Bioventing Treatment System	V1,130

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Liquids (continued)	Aromatic VOCs (continued)	Biological Degradation (continued)	IT Corp.	Oxygen Microbubble In Situ Bioremediation	V2,126
			ZENON Environmental Inc.	ZenoGem™ Process	V1,184
		Materials Handling	National Risk Management Research Laboratory, The U. of Cincinnati, and FRX, Inc.	Hydraulic Fracturing	V1,124
		Physical/ Chemical Thermal Desorption	Hughes Environmental Systems, Inc.	Steam Enhanced Recovery Process	V1,100
			Rochem Separation Systems, Inc.	Rochem Disc Tube™ Module System	V1,142
			SoilTech ATP Systems, Inc.	Anaerobic Thermal Processor	V1,150
		Physical/ Chemical Treatment	ARS Technologies, Inc.	Pneumatic Fracturing Extraction™ and Catalytic Oxidation	V1,24
			CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48
			High Voltage Environmental Applications, Inc.	High Energy Electron Beam Irradiation	V2,54
			High Voltage Environmental Applications, Inc.	High Energy Electron Irradiation	V1,94
			KSE, Inc.	Adsorption-Integrated-Reaction Process	V1,200/ V2,24
			Matrix Photocatalytic Inc.	Photocatalytic Water Treatment	V1,110
			Pulse Sciences, Inc.	X-ray Treatment of Aqueous Solutions	V2,90
			SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
			Terra Vac, Inc.	In Situ and Ex Situ Vacuum Extraction	V1,160
			U. of Nebraska - Lincoln	Center Pivot Spray Irrigation System	V1,170
			Roy F. Weston, Inc./IEG Technologies	UVB - Vacuum Vaporizing Well	V1,176
			Xerox Corp.	2-PHASE™ EXTRACTION Process	V1,180
			ZENON Environmental Inc.	Cross-Flow Pervaporation System	V1,182
		Portable Gas Chromatographs	Analytical and Remedial Technology, Inc.	Automated Sampling and Analytical Platform	V3,14
			Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			HNU Systems, Inc.	HNU GC 311D Portable Gas Chromatograph	V3,42
			Photovac Monitoring Instruments	PE Photovac Voyager Portable Gas Chromatograph	V3,56

APPLICABILITY INDEX (continued)

Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Liquids (continued)	Aromatic VOCs (continued)	Portable Gas Chromatograph (continued)	Sentex Sensing Technology, Inc.	Scentograph Plus II Portable Gas Chromatograph	V3,60
			SRI Instruments	Compact Gas Chromatograph	V3,66
			U.S. EPA	Field Analytical Screening Program - PCB Method	V3,78
		Solidification/ Stabilization	Wheelabrator Clean Air Systems, Inc.	PO*WW*ER™ Technology	V1,178
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Hanby Environmental Laboratory Procedure, Inc.	Test Kits for Organic Contaminants in Soil and Water	V3,38
		Thermal Destruction	Texaco Inc.	Texaco Gasification Process	V1,162
			U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
	Cyanide	Biological Degradation	Pintail Systems, Inc.	Spent Ore Bioremediation Process	V1,214
	Diesel	Materials Handling	National Risk Management Research Laboratory, The U. of Cincinnati, and FRX, Inc.	Hydraulic Fracturing	V1,124
	Dioxins	Physical/ Chemical Thermal Desorption	ELI Eco Logic Inc.	Gas-Phase Chemical Reduction Process	V1,68
			SoilTech ATP Systems, Inc.	Anaerobic Thermal Processor	V1,150
		Physical/ Chemical Treatment	CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48
			High Voltage Environmental Applications, Inc.	High Energy Electron Irradiation	V1,94
			Matrix Photocatalytic Inc.	Photocatalytic Water Treatment	V1,110
			SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
		Solidification/ Stabilization	Wheelabrator Clean Air Systems, Inc.	PO*WW*ER™ Technology	V1,178
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Strategic Diagnostic, Inc. Corp.	RaPID Assay®	V3,72
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
			U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
	Explosives	Physical/ Chemical Thermal Desorption	New Jersey Institute of Technology	GHEA Associates Process	V2,86
		Physical/ Chemical Treatment	U.S. Filter/WTS Ultrox	Ultraviolet Radiation and Oxidation	V1,168

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Liquids (continued)	Furans	Physical/ Chemical Thermal Desorption	ELI Eco Logic Inc.	Gas-Phase Chemical Reduction Process	V1,68
			SoilTech ATP Systems, Inc.	Anaerobic Thermal Processor	V1,150
		Physical/ Chemical Treatment	CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48
			High Voltage Environmental Applications, Inc.	High Energy Electron Irradiation	V1,94
			Matrix Photocatalytic Inc.	Photocatalytic Water Treatment	V1,110
			SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
		Solidification/ Stabilization	Wheelabrator Clean Air Systems, Inc.	PO*WW*ER™ Technology	V1,178
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Strategic Diagnostic, Inc. Corp.	RaPID Assay®	V3,72
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
			U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
	Gasoline	Materials Handling	National Risk Management Research Laboratory, The U. of Cincinnati, and FRX, Inc.	Hydraulic Fracturing	V1,124
	Halogenated VOCs	Biological Degradation	ABB Environmental Services, Inc.	Anaerobic-Aerobic Sequential Bioremediation of PCE	V2,50
			Harding Lawson Associates	Two-Zone Plume Interception, In Situ Treatment Technology	V2,48
			Bio-Rem, Inc.	Augmented In Situ Subsurface Bioremediation Process	V1,34
			Biotrol®	Methanotrophic Bioreactor System	V2,28
			New York State Dept. Of Environmental Conservation/R.E. Wright Environmental, Inc.	In Situ Bioventing Treatment System	V1,130
			IT Corp.	Oxygen Microbubble In Situ Bioremediation	V2,126
			U.S. Air Force	Phytoremediation of TCE-Contaminated Shallow Groundwater	V1,234
			ZENON Environmental Inc.	ZenoGem™ Process	V1,184

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Liquids (continued)	Halogenated VOCs (continued)	Materials Handling	National Risk Management Research Laboratory, The U. of Cincinnati, and FRX, Inc.	Hydraulic Fracturing	V1,124
		Physical Chemical Treatment - Biological Degradation	Lasagna™ Public-Private Partnership	Lasagna™ In Situ Soil Remediation	V1,202
		Physical/ Chemical Thermal Desorption	Hughes Environmental Systems, Inc.	Steam Enhanced Recovery Process	V1,100
			KAI Technologies, Inc./Brown and Root Environmental	Radio Frequency Heating	V1,106
			New Jersey Institute of Technology	GHEA Associates Process	V2,86
			SoilTech ATP Systems, Inc.	Anaerobic Thermal Process	V1,150
		Physical/ Chemical Treatment	ARS Technologies, Inc.	Pneumatic Fracturing Extraction™ and Catalytic Oxidation	V1,24
			Arizona State U/Zentox Corp.	Photocatalytic Oxidation with Air Stripping	V2,18
			CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48
			High Voltage Environmental Applications, Inc.	High Energy Electron Beam Irradiation	V2,54
			High Voltage Environmental Applications, Inc.	High Energy Electron Irradiation	V1,94
			KSE, Inc.	Adsorption-Integrated-Reaction Process	V1,200/ V2,24
			Matrix Photocatalytic Inc.	Photocatalytic Water Treatment	V1,110
			Pulse Sciences, Inc.	X-ray Treatment of Aqueous Solutions	V2,90
			SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
			Terra Vac, Inc.	In Situ and Ex Situ Vacuum Extraction	V1,160
			U.S. Filter/WTS Ultrox	Ultraviolet Radiation and Oxidation	V1,168
			U. of Nebraska - Lincoln	Center Pivot Spray Irrigation System	V1,170
			UV Technologies, Inc.	PhotoCAT™ Process	V2,112
			Roy F. Weston, Inc./IEG Technologies	Amborsorb 563 Adsorbent	V2,116
			Roy F. Weston, Inc./IEG Technologies	UVB - Vacuum Vaporizing Well	V1,176
			Xerox Corp.	2-PHASE™ EXTRACTION Process	V1,180
			ZENON Environmental Inc.	Cross-Flow Pervaporation System	V1,182

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Liquids (continued)	Halogenated VOCs (continued)	Portable Gas Chromatographs	Analytical and Remedial Technology, Inc.	Automated Sampling and Analytical Platform	V3,14
			Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			Photovac Monitoring Instruments	PE Photovac Voyager Portable Gas Chromatograph	V3,56
			Sentex Sensing Technology, Inc.	Scentograph Plus II Portable Gas Chromatograph	V3,60
			SRI Instruments	Compact Gas Chromatograph	V3,66
			U.S. EPA	Field Analytical Screening Program - PCB Method	V3,78
		Solidification/Stabilization	Wheelabrator Clean Air Systems, Inc.	PO*WW*ER™ Technology	V1,178
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Strategic Diagnostic, Inc. Corp.	RaPID Assay®	V3,72
		Thermal Destruction	Texaco Inc.	Texaco Gasification Process	V1,162
			U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
	Heavy Metals	Field Portable X-ray Fluorescence	HNU Systems, Inc.	HNU Source Excited Fluorescence Analyzer-Portable (SEFA-P) X-ray Fluorescence Analyzer	V3,44
	Herbicides	Biological Degradation	Biotrol®	Biological Aqueous Treatment System	V1,38
			Electrokinetics, Inc.	In Situ Bioremediation by Electrokinetic Injection	V2,120
			ZENON Environmental Inc.	ZenoGem™ Process	V1,184
		Physical Chemical Treatment - Biological Degradation	Lasagna™ Public - Private Partnership	Lasagna™ In Situ Soil Remediation	V1,202
		Physical/ Chemical Thermal Desorption	ELI Eco Logic Inc.	Gas-Phase Chemical Reduction Process	V1,68
			SoilTech ATP Systems, Inc.	Anaerobic Thermal Processor	V1,150
		Physical/ Chemical Treatment	CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48
			High Voltage Environmental Applications, Inc.	High Energy Electron Irradiation	V1,94
			Matrix Photocatalytic Inc.	Photocatalytic Water Treatment	V1,110
			SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
		Solidification/Stabilization	Wheelabrator Clean Air Systems, Inc.	PO*WW*ER™ Technology	V1,178

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Liquids (continued)	Herbicides (continued)	Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Strategic Diagnostic, Inc. Corp.	RaPID Assay®	V3,72
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
			U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
	Inorganics	Field Portable X-ray Fluorescence	HNU Systems, Inc.	HNU Source Excited Fluorescence Analyzer-Portable (SEFA-P) X-ray Fluorescence Analyzer	V3,44
	Metals	Biological Degradation	Colorado Dept. of Public Health and Environment	Constructed Wetlands-Based Treatment	V1,54
			Pintail Systems, Inc.	Biominalization of Metals	V2,130
			Pintail Systems, Inc.	Spent ore Bioremediation Process	V1,214
			Resource Management & Recovery	AlgaSORB® Biological Sorption	V2,96
		Field Portable X-ray Fluorescence	HNU Systems, Inc.	HNU Source Excited Fluorescence Analyzer-Portable (SEFA-P) X-ray Fluorescence Analyzer	V3,44
			Metorex, Inc.	Field Portable X-ray Fluorescence Analysis	V3,48
		Physical/ Chemical Treatment - Biological Degradation	Lasagna™ Public - Private Partnership	Lasagna™ In Situ Soil Remediation	V1,202
		Physical/ Chemical Radioactive Waste Treatment	Filter Flow Technology, Inc.	Colloid Polishing Filter Method	V1,76
		Physical/ Chemical Thermal Desorption	New Jersey Institute of Technology	GHEA Associates Process	V2,86
			Rochem Separation Systems, Inc.	Rochem Disc TUBE™ Module System	V1,142
		Physical/ Chemical Treatment	Atomic Energy of Canada, Limited	Chemical Treatment and Ultrafiltration	V2,22
			E.I. DuPont de Nemours and Co., and Oberlin Filter Co.	Membrane Microfiltration	V1,60
			Dynaphore, Inc.	FORAGER® Sponge	V1,62
			EPOC Water, Inc.	Precipitation, Microfiltration, and Sludge Dewatering	V1,74
			Cure International, Inc.	CURE® Electrocoagulation Wastewater Treatment System	V1,58
			Lewis Environmental Services, Inc./ Hickson Corp.	Chromated Copper Arsenate Soil Leaching Process	V2,76
			Matrix Photocatalytic Inc.	Photocatalytic Water Treatment	V1,110

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Liquids (continued)	Metals (continued)	Physical/ Chemical Treatment (continued)	Morrison Knudsen Corp./Spetstamonazhge ologia Enterprises/STG Technologies	Clay-Base Grouting Technology	V1,114
			RECRA Environmental, Inc.	Alternating Current Electrocoagulation Technology	V2,92
			Selentec Environmental Technologies, Inc.	Selentec MAG*SEP Technology	V1,226
			U. of Washington	Adsorptive Filtration	V2,110
			U. of Wisconsin - Madison	Photoelectrocatalytic Degradation and Removal	V2,138
		Portable Gas Chromatographs	HUN Systems, Inc.	HNU GC 311D Portable Gas Chromatograph	V3,42
		Solidification/Stabilization	Wheelabrator Clean Air Systems, Inc.	PO*WW*ER™ Technology	V1,178
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
	PAHs	Physical/ Chemical Treatment	SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
		Portable Gas Chromatograph	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			SRI Instruments	Compact Gas Chromatograph	V3,66
	PCBs	Biological Degradation	ZENON Environmental Inc.	ZenoGem™ Process	V1,184
		Field Portable X-ray Fluorescence	Metorex, Inc.	Field portable X-ray Fluorescence Analysis	V3,48
		Physical/ Chemical Thermal Desorption	ELI Eco Logic Inc.	Gas-Phase Chemical Reduction Process	V1,68
			KAI Technologies, Inc./Brown and Root Environmental	Radio Frequency Heating	V1,106
			New Jersey Institute of Technology	GHEA Associates Process	V2,86
			SoilTech ATP Systems, Inc.	Anaerobic Thermal Processor	V1,150
		Physical/ Chemical Treatment	Calgon Carbon Oxidation Technologies	perox-pure™ Chemical Oxidation Technology	V1,46
			CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48
			High Voltage Environmental Applications, Inc.	High Energy Electron Beam Irradiation	V2,54
			High Voltage Environmental Applications, Inc.	High Energy Beam Irradiation	V1,94
			Matrix Photocatalytic Inc.	Photocatalytic Water Treatment	V1,110
			Morrison Knudsen Corp./Spetstamonazhge ologia Enterprises/STG Technologies	Clay-Base Grouting Technology	V1,114

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Liquids (continued)	PCBs (continued)	Physical/Chemical Treatment (continued)	SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
			U.S. Filter/WTS Ultrox	Ultraviolet Radiation and Oxidations	V1,168
			U. of Wisconsin - Madison	Photoelectrocatalytic Degradation and Removal	V2,138
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			HNU Systems, Inc.	HNU GC 311D Portable Gas Chromatograph	V3,42
			Sentex Sensing Technology, inc.	Scentograph Plus II Portable Gas Chromatograph	V3,60
			SRI Instruments	Compact Gas Chromatograph	V3,66
			U.S. EPA	Field Analytical Screening Program - PCB Method	V3,78
		Solidification/Stabilization	Wheelabrator Clean Air Systems, Inc.	PO*WW*ER™ Technology	V1,178
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Strategic Diagnostic, Inc.	Ensys Penta Test System	V3,68
			Hanby Environmental Laboratory Procedures, Inc.	Test Kits for Organic Contaminants in Soil and Water	V3,38
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
			U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
	PCP	Physical/ Chemical Treatment	SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
			U.S. Filter/WTS Ultrox	Ultraviolet Radiation and Oxidation	V1,168
		Test Kits	Strategic Diagnostic, Inc.	Ensys Penta Test System	V3,68
			Strategic Diagnostic, Inc. Corp.	RaPID Assay®	V3,72
	Pesticides	Biological Degradation	Biotrol®	Biological Aqueous Treatment System	V1,38
			Electrokinetics, Inc.	In Situ Bioremediation by Electrokinetic Injections	V2,120
			ZENON Environmental Inc.	ZenoGem™ Process	V1,184
		Physical/ Chemical Thermal Desorption	ELI Eco Logic Inc.	Gas-Phase Chemical Reduction Process	V1,68
			KAI Technologies, Inc./Brown and Root Environmental	Radio Frequency heating	V1,106
			SoilTech ATP Systems, Inc.	Anaerobic Thermal Process	V1,150
		Physical/ Chemical Treatment	Calgon Carbon Oxidation Technologies	perox-pure™ Chemical Oxidation Technology	V1,46
			CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Liquids (continued)	Pesticides (continued)	Physical/ Chemical Treatment (continued)	High Voltage Environmental Applications, Inc.	High-Energy Electron Beam Irradiation	V2,54
			High Voltage Environmental Applications, Inc.	High-Energy Electron Irradiation	V1,94
			Matrix Photocatalytic Inc.	Photocatalytic Water Treatment	V1,110
			Morrison Knudsen Corp./Spetstamonazhge ologia Enterprises/STG Technologies	Clay-Base Grouting Technology	V1,114
			SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
			U.S. Filter/WTS Ultrox	Ultraviolet Radiation and Oxidation	V1,168
			U. of Wisconsin - Madison	Photoelectrocatalytic Degradation and Removal	V2,138
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			Sentex Sensing Technology, Inc.	Scentograph Plus II Portable Gas Chromatograph	V3,60
			SRI Instruments	Compact Gas Chromatograph	V3,66
			U.S. EPA	Field Analytical Screening Program - PCB Method	V3,78
		Solidification/ Stabilization	Wheelabrator Clean Air Systems, Inc.	PO*WW*ER™ Technology	V1,178
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Strategic Diagnostic, Inc.	Ensys Penta Test System	V3,68
			Hanby Environmental Laboratory Procedure, Inc.	Test Kits for Organic Contaminants in Soil and Water	V3,38
			Strategic Diagnostic, Inc. Corp.	RaPID Assay®	V3,72
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
			U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
	Petroleum Hydrocarbons	Materials Handling	National Risk Management Research Laboratory, The U. of Cincinnati, and FRX, Inc.	Hydraulic Fracturing	V1,124
		Physical/ Chemical Thermal Desorption	New Jersey Institute of Technology	GHEA Associates Process	V2,86
		Physical/ Chemical Treatment	Calgon Carbon Oxidation Technologies	perox-pure™ Chemical Oxidation Technology	V1,46
			SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Liquids (continued)	Petroleum Hydrocarbons (continued)	Portable Gas Chromatographs	SRI Instruments	Compact Gas Chromatograph	V3,66
	Radionuclides	Physical/ Chemical Radioactive Waste Treatment	Filter Flow Technology, Inc.	Colloid Polishing Filter Method	V1,76
	Radionuclides	Physical/ Chemical Treatment	Atomic Energy of Canada, Limited	Chemical Treatment and Ultrafiltration	V2,22
			Selentec Environmental Technologies, Inc.	Selentec MAG*SEP Technology	V1,226
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
	SVOCs	Biological Degradation	Harding Lawson Associates	Two-Zone, Plume Interception, In Situ Treatment Technology	V2,48
			Biotrol®	Biological Aqueous Treatment System	V1,38
			New York State Dept. Of Environmental Conservation/R.E. Wright Environmental Inc.	In Situ Bioventing Treatment System	V1,130
			IT Corp.	Oxygen Microbubble In Situ Bioremediation	V2,126
			ZENON Environmental Inc.	ZenoGem™ Process	V1,184
		Physical/ Chemical Thermal Desorption	ELI Eco Logic Inc.	Gas-Phase Chemical Reduction Process	V1,68
			KAI Technologies, Inc./Brown and Root Environmental	Radio Frequency Heating	V1,106
			New Jersey Institute of Technology	GHEA Associates Process	V2,86
			SoilTech ATP Systems, Inc.	Anaerobic Thermal Processor	V1,150
		Physical/ Chemical Treatment	ARS Technologies, Inc.	Pneumatic Fracturing Extraction™ and Catalytic Oxidation	V1,24
			Calgon Carbon Oxidation Technologies	perox-pure™ Chemical Oxidation Technology	V1,46
			CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48
			High Voltage Environmental Applications, Inc.	High-Energy Electron Beam Irradiation	V2,54
			High Voltage Environmental Applications, Inc.	High-Energy Electron Irradiation	V1,94
			Pulse Sciences, Inc.	X-ray Treatment of Aqueous Solutions	V2,90
			SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Liquids (continue)	SVOCs (continued)	Physical/Chemical Treatment (continued)	Terra Vac, Inc.	In Situ and Ex Situ Vacuum Extraction	V1,160
			U. of Wisconsin - Madison	Photoelectrocatalytic Degradation and Removal	V2,138
			Roy F. Weston, Inc./IEG Technologies	UVB - Vacuum Vaporizing Well	V1,176
			Xerox Corp.	2-PHASE™ EXTRACTION Process	V1,180
		Portable Gas Chromatographs	Analytical and Remedial Technology, Inc.	Automated Sampling and Analytical Platform	V3,14
			Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			U.S. EPA	Field Analytical Screening Program - PCB Method	V3,78
		Solidification/Stabilization	Wheelabrator Clean Air Systems, Inc.	PO*WW*ER™ Technology	V1,178
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Strategic Diagnostic, Inc. Corp.	RaPID Assay®	V3,72
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
			Texaco Inc.	Texaco Gasification process	V1,162
		Other	U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
			Berkeley Environmental Restoration Center	In Situ Steam Enhanced Extraction Process	V1,28
	VOCs	Biological Degradation	Billings and Associates, Inc.	Subsurface Volatilization and Ventilation System (SVVS®)	V1,30
			Bio-Rem, Inc.	Augmented In Situ Subsurface Bioremediation Process	V1,34
			Biotrol®	Biological Aqueous Treatment System	V1,38
			Electrokinetics, Inc.	In Situ Bioremediation by Electrokinetic Injection	V2,120
			New York State Dept. of Environmental Conservation/R.E. Wright Environmental, Inc.	In Situ Bioventing Treatment System	V1,130
			IT Corp.	Oxygen Microbubble In Situ Bioremediation	V2,126
			U.S. Air Force	Phytoremediation of TCE-Contaminated Shallow Groundwater	V1,234
			ZENON Environmental inc.	ZenoGem™ Process	V1,184
		Materials Handling	National Risk Management Research Laboratory, The U. of Cincinnati, and FRX, Inc.	Hydraulic Fracturing	V1,124

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Liquids (continued)	VOCs (continued)	Physical/ Chemical Thermal Desorption	Hughes Environmental Systems, Inc.	Steam Enhanced Recovery Process	V1,100
			KAI Technologies, Inc./Brown and Root Environmental	Radio Frequency Heating	V1,106
			New Jersey Institute of Technology	GHEA Associates Process	V2,86
			Rochem Separation Systems, Inc.	Rochem Disc Tube™ Module System	V1,142
			SoilTech ATP Systems, Inc.	Anaerobic Thermal Processor	V1,150
		Physical/ Chemical Treatment	ARS Technologies, Inc.	Pneumatic Fracturing Extraction™ and Catalytic Oxidation	V1,24
			Arizona State U./ Zentox Corp.	Photocatalytic Oxidation with Air Stripping	V2,18
			Calgon Carbon Oxidation Technologies	perox-pure™ Chemical Oxidation Technology	V1,46
			CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48
			Radian International LCC	Integrated Vapor Extraction and Steam Vacuum Stripping and Soil Vapor Extraction/Reinjection	V1,138
			High Voltage Environmental Applications, Inc.	High Energy Electron Irradiation	V1,94
			KSE, Inc.	Adsorption-Integrated-Reaction Process	V1,200/ V2,24
			Matrix Photocatalytic Inc.	Photocatalytic Water Treatment	V1,110
			Morrison Knudsen Corp./Spetstamonazhge ologia Enterprises/STG Technologies	Clay-Base Grouting Technology	V1,114
			Pulse Sciences, Inc.	X-ray Treatment of Aqueous Solutions	V2,90
			SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
			Terra Vac, Inc.	In Situ and Ex Situ Vacuum Extraction	V1,160
			U.S. Filter/WTS Ultrox	Ultraviolet Radiation and Oxidation	V1,168
			U. of Nebraska - Lincoln	Center Pivot Spray Irrigation System	V1,170
			UV Technologies, Inc.	PhotoCAT™ Process	V2,112
			Roy F. Weston, Inc.	Ambersorb® 563 Adsorbent	V2,116
			Roy F. Weston, Inc./IEG Technologies	UVB - Vacuum Vaporizing Well	V1,176
			Xerox Corp.	2-PHASE™ EXTRACTION Process	V1,180
			ZENON Environmental Inc.	Cross-Flow Pervaporation System	V1,182
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Liquids (continued)	VOCs (continued)	Portable Gas Chromatographs (continued)	HNU Systems, Inc.	HNU GC 311D Portable Gas Chromatograph	V3,42
			Photovac Monitoring Instruments	PE Photovac Voyager Portable Gas Chromatograph	V3,56
			Sentex Sensing Technology, inc.	Scentograph Plus II Portable Gas Chromatograph	V3,60
			SRI Instruments	Compact Gas Chromatograph	V3,66
			U.S. EPA	Field Analytical Screening Program - PCB Method	V3,78
		Solidification/Stabilization	Wheelabrator Clean Air Systems, Inc.	PO*WW*ER™ Technology	V1,178
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Hanby Environmental Laboratory Procedure, Inc.	Test Kits for Organic Contaminants in Soil and Water	V3,38
			Strategic Diagnostic, Inc. Corp.	RaPID Assay®	V3,72
		Thermal Destruction	Texaco Inc.	Texaco Gasification Process	V1,162
		Other	Berkeley Environmental Restoration Center	In Situ Steam Enhanced Extraction Process	V1,28
	Other	Physical/ Chemical Treatment	North American Technologies Group, Inc.	Oleophilic Amine-Coated Ceramic Chip	V1,132
			RECRA Environmental, Inc.	Alternating Electrocoagulation Technology	V2,92
Mine Tailings	Metals	Materials Handling Solidification/Stabilization	U. of South Carolina	In Situ Mitigation of Acid Water	V2,108
			Rocky Mountain Remediation Services, L.L.C.	Envirobond Solution	V1,222
			Star Organics, L.L.C.	Soil Rescue Remediation Fluid	V1,232
Sediment	Aromatic VOCs	Biological Degradation	Bio-Rem Inc.	Augmented In Situ Subsurface Bioremediation Process	
			Electrokinetics, Inc.	In Situ Bioremediation by Electrokinetic Injection	V2,120
			GRACE Bioremediation Technologies	DARAMEND™ Bioremediation Technology	V1,90
			Institute of Gas Technology	Fluid Extraction - Biological Degradation Process	V2,58
			New York State Dept. Of Environmental Conservation/ENSR Consulting and Larsen Engineers	Ex Situ Biovault	V1,126
			New York State Dept. Of Environmental Conservation/R.E. Wright Environmental, Inc.	In Situ Bioventing Treatment System	V1,130

APPLICABILITY INDEX (continued)

Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Sediment (continued)	Aromatic VOCs (continued)	Biological Degradation (continued)	IT Corp.	Oxygen Microbubble In Situ Bioremediation	V2,126
		Materials Handling	U.S. EPA	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical/ Chemical Thermal Desorption	Biotherm, LCC	Biotherm Process	V1,36
			Maxymillian Technologies, Inc.	Thermal Desorption System	V1,112
			NOVATERRA, Inc.	In-Situ Soil Treatments (Steam/ Air Stripping)	V1,134
			Recycling Sciences International, Inc.	Desorption and Vapor Extraction System	V1,220
			Roy F. Weston, Inc.	Low Temperature Thermal Treatment (LT3®) System	V1,174
		Physical/ Chemical Treatment	Bergmann, A Division of Linatex, Inc.	Soil and Sediment Washing	V1,26
			CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48
			Electrokinetics, Inc.	Electrokinetic Soil Processing	V1,66
			High Voltage Environmental Applications, Inc.	High Energy Electron Beam Irradiation	V2,54
			High Voltage Environmental Applications, Inc.	High Energy Electron Irradiation	V1,94
			Institute of Gas Technology	Supercritical Extraction/Liquid Phase Oxidation	V2,62
			Ionics RCC	B.E.S.T. Solvent Extraction Technology	V1,104
			IT Corp.	Mixed Waste Treatment Process	V2,68
			Terra Vac, Inc.	In Situ and Ex Situ Vacuum Extraction	V1,160
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			U.S. EPA	Field Analytical Screening Program - PCB Method	V3,78
		Solidification/ Stabilization	Geo-Con, Inc.	In Situ Solidification and Stabilization Process	V1,82
			Rocky Mountain Remediation Services, L.L.C.	Envirobond Solution	V1,222
			Star Organics, L.L.C.	Soil Rescue Remediation Fluid	V1,232
			WASTECH, Inc.	Solidification and Stabilization	V1,172
			Western Product Recovery Group, Inc.	Coordinate, Chemical Bonding, and Adsorption Treatment	V2,114
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Thermal Destruction	Sonotech, Inc.	Frequency-Tunable Pulse Combustion System	V1,154
			Texaco Inc.	Texaco Gasification Process	V1,162

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Sediment (continued)	Aromatic VOCs (continued)	Thermal Destruction (continued)	U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
			Vortec Corp.	Vitrification Process	V1,236
	Cyanide	Biological Degradation	Pintail Systems, Inc.	Spent Ore Bioremediation Process	V1,214
	Dioxins	Biological Degradation	Biotrol®	Soil Washing System	V1,40
			Institute of Gas Technology	Fluid Extraction - Biological Degradation Process	V2,58
		Materials Handling	U.S. EPA	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical/ Chemical Thermal Desorption	ELI Eco Logic Inc.	Gas-Phase Chemical Reduction Process	V1,68
			ELI Eco Logic International Inc.	Thermal Desorption Unit	V1,70
			Recycling Sciences International, Inc.	Desorption and Vapor Extraction System	V1,220
			Roy F. Weston, Inc.	Low Temperature Thermal Treatment (LT3®) System	V1,174
		Physical/ Chemical Treatment	ART International, Inc.	Low-Energy Extraction Process (LEEP)	V2,20
			CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48
			High Voltage Environmental Applications, Inc.	High Energy Electron Irradiation	V1,94
			Ionics RCC	B.E.S.T. Solvent Extraction Technology	V1,104
			IT Corp.	Mixed Waste Treatment Process	V2,68
			National Risk Management Research Laboratory and IT Corp.	Base-Catalyzed Decomposition Process	V1,116
			National Risk Management Research Laboratory and IT Corp.	Debris Washing System	V1,122
			Terra-Kleen Response Group	Solvent Extraction Treatment System	V1,158
			Trinity Environmental Technologies, Inc.	PCB- and Organochlorine-Contaminated Soil Detoxification	V2,104
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
		Solidification/ Stabilization	Geosafe Corp.	GeoMelt Vitrification	V1,84
			WASTECH, Inc.	Solidification and Stabilization	V1,172
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Strategic Diagnostic, Inc. Corp.	RaPID Assay®	V3,72
		Thermal Desorption	BWX Technologies, Inc.	Cyclone Furnace	V1,44

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Sediment (continued)	Dioxins (continued)	Thermal Desorption (continued)	Energy and Environmental Research Corp.	Reactor Filter system	V2,42
			Institute of Gas Technology	Fluidized-Bed/Cyclonic Agglomerating Combustor	V2,60
			U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
			Vortec Corp.	Vitrification Process	V1,236
	Explosives	Biological Degradation	J.R. Simplot Co.	The SABRE™ Process	V1,66
		Physical/ Chemical Thermal Desorption	New Jersey Institute of Technology	GHEA Associates Process	V2,86
	Furans	Biological Degradation	Biotrol®	Soil Washing System	V1,40
			Institute of Gas Technology	Fluid Extraction - Biological Degradation Process	V2,58
		Materials Handling	U.S. EPA	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical/ Chemical Thermal Desorption	ELI Eco Logic Inc.	Gas-Phase Chemical Reduction Process	V1,68
			ELI Eco Logic International Inc.	Thermal Desorption Unit	V1,70
			Recycling Sciences International, Inc.	Desorption and Vapor Extraction System	V1,220
			Roy F. Weston, Inc.	Low Temperature Thermal Treatment (LT3®) System	V1,174
		Physical/ Chemical Treatment	ART International, Inc.	Low-Energy Extraction Process (LEEP)	V2,20
			CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48
			High Voltage Environmental Applications, Inc.	High Energy Electron Irradiation	V1,94
			Ionics RCC	B.E.S.T. Solvent Extraction Technology	V1,104
			IT Corp.	Mixed Waste Treatment Process	V2,68
			National Risk Management Research Laboratory and IT Corp.	Base-Catalyzed Decomposition Process	V1,116
			National Risk Management Research Laboratory and IT Corp.	Debris Washing System	V1,122
			Terra-Kleen Response Group	Solvent Extraction Treatment System	V1,158
			Trinity Environmental Technologies, Inc.	PCB- and Organochlorine-Contaminated Soil Detoxification	V2,104
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
		Solidification/ Stabilization	Geosafe Corp.	GeoMelt Vitrification	V1,84
			WASTECH, Inc.	Solidification and Stabilization	V1,172

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Sediment (continued)	Furans (continued)	Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Strategic Diagnostic, Inc. Corp.	RaPID Assay®	V3,72
		Thermal Desorption	BWX Technologies, Inc.	Cyclone Furnace	V1,44
			Energy and Environmental Research Corp.	Reactor Filter system	V2,42
			Institute of Gas Technology	Fluidized-Bed/Cyclonic Agglomerating Combustor	V2,60
			U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
			Vortec Corp.	Vitrification Process	V1,236
	Halogenated VOCs	Biological Degradation	Biotrol®	Soil Washing System	V1,40
			Electrokinetics, Inc.	In Situ Bioremediation by Electrokinetic Injection	V2,120
			GRACE Bioremediation Technologies	DARAMEND™ Bioremediation Technology	V1,90
			Institute of Gas Technology	Fluid Extraction - Biological Degradation Process	V2,58
			J.R. Simplot Co.	The SABRE™ Process	V1,66
		Materials Handling	U.S. EPA	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical Chemical Treatment - Biological Degradation	Lasagna™ Public - Private Partnership	Lasagna™ In Situ Remediation	V1,202
		Physical/ Chemical Thermal Desorption	ELI Eco Logic Inc.	Gas-Phase Chemical Reduction Process	V1,68
			ELI Eco Logic International Inc.	Thermal Desorption Unit	V1,70
			Maxymillian Technologies, Inc.	Thermal Desorption System	V1,112
			OHM Remediation Services Corp.	X*TRAX™ Thermal Desorption	V1,136
			Recycling Sciences International, Inc.	Desorption and Vapor Extraction System	V1,220
			Smith Environmental Technologies Corp.	Low Temperature Thermal Aeration (LT3A®)	V1,148
			Roy F. Weston, Inc.	Low Temperature Thermal Treatment (LT3®) System	V1,174
		Physical/ Chemical Treatment	ART International, Inc.	Low-Energy Extraction Process (LEEP)	V2,20
			Bergmann, A Division of Linatex, Inc.	Soil and Sediment Washing	V1,26
			CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48
			High Voltage Environmental Applications, Inc.	High Energy Electron Irradiation	V1,94

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Sediment (continued)	Halogenated VOCs (continued)	Physical/Chemical Treatment (continued)	Ionics RCC	B.E.S.T. Solvent Extraction Technology	V1,104
			IT Corp.	Mixed Waste Treatment Process	V2,68
			National Risk Management Research Laboratory	Base-Catalyzed Decomposition Process	V1,116
			National Risk Management Research Laboratory and IT Corp.	Debris Washing System	V1,122
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
		Solidification/ Stabilization	Chemfix Technologies, Inc.	Solidification and Stabilization	V1,50
			WASTECH, Inc.	Solidification and Stabilization	V1,172
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Strategic Diagnostic, Inc. Corp.	RaPID Assay®	V3,72
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
			U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
			Vortec Corp.	Vitrification Process	V1,236
	Mercury	Contaminant Survey systems	Quadrel Svices, Inc.	Emflux Soil-Gas Survey System	V3,54
			Radiometer Analytical Group	Anodic Stripping Voltammetry for Mercury in Soil	V3,58
		Physical/ Chemical Treatment	Bionebraska, Inc.	BiMelyze® Mercury Immunoassay	V3,18
	Metals	Biological Degradation	Geo-Microbial Technologies, inc.	Metals Release and Removal from Wastes	V2,124
			Phytotech	Phytoremediation Technology	V1,212
			Pintail Systems, Inc.	Biomining of Metals	V2,130
			Pintail Systems, Inc.	Spent ore Bioremediation Process	V1,214
		Field Portable X-ray Fluorescence	NITON Corp.	XL Spectrum Analyzer	V3,52
			C-THRU Technologies Corporation	Metal Analysis Probe (MAP®) Portable Assayer	V3,22
			TN Spectrace	9000 X-Ray Fluorescence Analyzer and Lead X-Ray Fluorescence Analyzer	V3,74
		Materials Handling	AEA Technology Environment	Soil Separation and Washing Process	V2,16
			Montana College of Mineral Science and Technology	Campbell Centrifugal Jig	V2,84
			U.S. EPA	Excavation Techniques and Foam Suppression Methods	V1,166
			U. of South Carolina	In Situ Mitigation of Acid Water	V2,108

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Sediment (continued)	Metals (continued)	Physical Chemical Treatment - Biological Degradation	Lasagna™ Public - Private Partnership	Lasagna™ In Situ Soil Remediation	V1,202
		Physical/ Chemical Thermal Desorption	New Jersey Institute of Technology	GHEA Associates Process	V2,86
		Physical/ Chemical Treatment	Bergmann, A Division of Linatex, Inc.	Soil and Sediment Washing	V1,26
			BioGenesis Enterprises, Inc.	BioGenesisSM Soil and Sediment Washing	V1,32
			Center for Hazardous Materials Research	Acid Extraction Treatment System	V2,30
			COGNIS, Inc.	TERRAMET Soil Remediation System	V1,52
			Dynaphore, Inc.	FORAGER® Sponge	V1,62
			Electrokinetics, Inc.	Electrokinetic Soil Processing	V1,66
			General Atomics, Nuclear Remediation Technologies Div.	Acoustic Barrier Particulate Separator	V2,48
			IT Corp.	Batch Steam Distillation and Metal Extraction	V2,64
			IT Corp.	Chelation/Electrodeposition of Toxic Metals from Soils	V2,66
			IT Corp.	Mixed Waste Treatment Process	V2,68
			National Risk Management Research Laboratory and IT Corp.	Debris Washing System	V1,122
			Selentec Environmental Technologies, Inc.	Selentec MAG*SEP Technology	V1,226
			Toronto Harbour Commission	Soil Recycling	V1,162
		Solidification/ Stabilization	Chemfix Technologies, Inc.	Solidification and Stabilization	V1,50
			Ferro Corp.	Waste Vitrification Through Electric Melting	V2,46
			Funderburk & Associates	Dechlorination and Immobilization	V1,78
			Geo-Con, Inc.	In Situ Solidification and Stabilization Process	V1,82
			Geosafe Corp.	GeoMelt Vitrification	V1,84
			Sevenson Environmental Services, Inc.	MAECTITE® Chemical Treatment Process	V3,60
			Soliditech, inc.	Solidification and Stabilization	V1,152
			STC Remediation, A Division of Omega Environmental, Inc.	Organic Stabilization and Chemical Fixation/ Solidification	V1,156
			WASTECH, Inc.	Solidification and Stabilization	V1,172
			Western Product Recovery Group, Inc.	Coordinate, Chemical Bonding, and Adsorption Treatment	V2,114

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Sediment (continued)	Metals (continued)	Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
			Energy and Environmental Research Corp.	Hybrid Fluidized Bed System	V2,40
			Energy and Environmental Research Corp.	Reactor Filter System	V2,42
			Horsehead Resource Development Co., Inc.	Flame Reactor	V1,96
			Institute of Gas Technology	Fluidized-Bed/Cyclonic Agglomerating Combustor	V2,60
			Vortec Corp.	Vitrification Process	V1,236
	Organics	Thermal Destruction	Gruppo Italmipresse	Infrared Thermal Destruction	V1,92
	PAHs	Biological Degradation	ECOVA Corp.	Bioslurry Reactor	V1,64
			Environmental BioTechnologies, Inc.	Fungal Degradation Process	V2,44
			Institute of Gas Technology	Fluid Extraction - Biological Degradation Process	V2,58
			Remediation Technologies, Inc.	Liquid and Solids Biological Treatment	V1,140
		Physical/ Chemical Thermal Desorption	Maxymillian Technologies, inc.	Thermal Desorption and Vapor Extraction System	V1,112
			Recycling Sciences International, Inc.	Desorption and Vapor Extraction System	V1,220
		Physical/ Chemical Treatment	Bergmann, A Division of Linatex, Inc.	Soil and Sediment Washing	V1,26
			BioGenesis Enterprises, Inc.	BioGenesisSM Soil and Sediment Washing Process	V1,32
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
	PCBs	Biological Degradation	Institute of Gas Technology	Chemical and Biological Treatment	V2,56
			Institute of Gas Technology	Fluid Extraction - Biological Degradation Process	V2,58
			Phytokinetics, Inc.	Phytoremediation Process	V1,210
		Materials Handling	U.S. EPA	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical/ Chemical Thermal Desorption	Biotherm, LCC	Biotherm Process	V1,36
			ELI Eco Logic International Inc.	Gas-Phase Chemical Reduction Process	V1,68
			ELI Eco Logic International Inc.	Thermal Desorption Unit	V1,70
			KAI Technologies, Inc./ Brown and Root Environmental	Radio Frequency Heating	V1,106
			New Jersey Institute of Technology	GHEA Associates Process	V2,86

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Sediment (continued)	PCBs (continued)	Physical/ Chemical Thermal Desorption (continued)	OHM Remediation Services Corp.	X*TRAX™ Thermal Desorption	V1,136
			Recycling Sciences International, Inc.	Desorption and Vapor Extraction System	V1,220
			Roy F. Weston, Inc.	Low Temperature Thermal Treatment (LT3®) System	V1,174
		Physical/ Chemical Treatment	ART International, Inc.	Low-Energy Extraction Process (LEEP)	V2,20
			Bergmann, A Division of Linatex, Inc.	Soil and Sediment Washing	V1,26
			BioGenesis Enterprises, Inc.	BioGenesisSM Soil and Sediment Washing Process	V1,32
			CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48
			Commodore Environmental Services, Inc.	Solvated Electron Remediation System	V1,56
			General Atomics	Circulating Bed Combustor	V1,80
			High Voltage Environmental Applications, Inc.	High Energy Electron Beam Irradiation	V2,54
			High Voltage Environmental Applications, Inc.	High Energy Electron Irradiation	V1,94
			Ionics RCC	B.E.S.T. Solvent Extraction Technology	V1,104
			IT Corp.	Mixed Waste Treatment Process	V2,68
			National Risk Management Research Laboratory	Base-Catalyzed Decomposition Process	V1,116
			National Risk Management Research Laboratory and IT Corp.	Debris Washing System	V1,122
			State U. of New York at Oswego, Environmental Research Center	Electrochemical Peroxidation of PCB-Contaminated Sediments and Waters	V2,98
			Terra-Kleen Response Group, Inc.	Solvent Extraction Treatment System	V1,158
			Trinity Environmental Technologies, Inc.	PCB- and Organochlorine- Contaminated Soil Detoxification	V2,104
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			U.S. EPA	Field Analytical Screening Program - PCB Method	V3,78
		Solidification/ Stabilization	Chemfix Technologies, Inc.	Solidification and Stabilization	V1,50
			Funderburk & Associates	Dechlorination and Immobilization	V1,78
			Geo-Con, Inc.	In Situ Solidification and Stabilization Process	V1,82

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Sediment (continued)	PCBs (continued)	Solidification/ Stabilization (continued)	Geosafe Corp.	GeoMelt Vitrification	V1,84
			Soliditech, inc.	Solidification and Stabilization	V1,152
			WASTECH, Inc.	Solidification and Stabilization	V1,172
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Strategic Diagnostic, Inc.	Ensysis Penta Test System	V3,68
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
			Energy and Environmental Research Corp.	Hybrid Fluidized Bed System	V2,40
			Institute of Gas Technology	Fluidized-Bed/Cyclonic Agglomerating Combustor	V2,60
			U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
			Vortec Corp.	Vitrification Process	V1,236
	PCP	Biological Degradation	Remediation Technologies, Inc.	Liquid and Solids Biological Treatment	V1,140
		Physical/ Chemical Thermal Desorption	Recycling Sciences International, Inc.	Desorption and Vapor Extraction System	V1,220
		Physical/ Chemical Treatment	Trinity Environmental Technologies, Inc.	PCB- and Organochlorine- Contaminated Soil Detoxification	V2,104
		Test Kits	Strategic Diagnostic, Inc.	Ensysis Penta Test System	V3,68
			Strategic Diagnostic, Inc. Corp.	RaPID Assay®	V3,72
	Pesticides	Biological Degradation	Biotrol®	Soil Washing System	V1,40
			Electrokinetics, Inc.	In Situ Bioremediation by Electrokinetic Injection	V2,120
			GRACE Bioremediation Technologies	DARAMEND™ Bioremediation Technology	V1,90
			Institute of Gas Technology	Chemical and Biological Treatment	V2,56
			Institute of Gas Technology	Fluid Extraction - Biological Degradation Process	V2,58
			Phytokinetics, Inc.	Phytoremediation Process	V1,210
		Materials Handling	U.S. EPA	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical/ Chemical Thermal Desorption	Biotherm, LCC	Biotherm Process	V1,36
			ELI Eco Logic Inc.	Gas-Phase Chemical Reduction Process	V1,68
			ELI Eco Logic International Inc.	Thermal Desorption Unit	V1,70
			KAI Technologies, Inc./ Brown and Root Environmental	Radio Frequency Heating	V1,106
			OHM Remediation Services Corp.	X*TRAX™ Thermal Desorption	V1,136

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Sediment (continued)	Pesticides (continued)	Physical/Chemical Thermal Desorption (continued)	Recycling Sciences International, Inc.	Desorption and Vapor Extraction System	V1,220
			Smith Environmental Technologies Corp.	Low Temperature Thermal Aeration (LTTA®)	V1,148
			Roy F. Weston, Inc.	Low Temperature Thermal Treatment (LT3®) System	V1,174
		Physical/ Chemical Treatment	ART International, Inc.	Low-Energy Extraction Process (LEEP)	V2,20
			Bergmann, A Division of Linatex, Inc.	Soil and Sediment Washing	V1,26
			CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48
			Commodore Environmental Services, Inc.	Solvated Electron Remediation System	V1,56
			Electrokinetics, Inc.	Electrokinetic Soil Processing	V1,66
			General Atomics	Circulating Bed Combustor	V1,80
			High Voltage Environmental Applications, Inc.	High Energy Electron Beam Irradiation	V2,54
			High Voltage Environmental Applications, Inc.	High Energy Electron Irradiation	V1,94
			Ionics RCC	B.E.S.T. Solvent Extraction Technology	V1,104
			IT Corp.	Mixed Waste Treatment Process	V2,68
			National Risk Management Research Laboratory	Base-Catalyzed Decomposition Process	V1,116
			National Risk Management Research Laboratory and IT Corp.	Debris Washing System	V1,122
			State U. of New York at Oswego, Environmental Research Center	Electrochemical Peroxidation of PCB-Contaminated Sediments and Waters	V2,98
			Terra-Kleen Response Group, Inc.	Solvent Extraction Treatment System	V1,158
			Trinity Environmental Technologies, Inc.	PCB- and Organochlorine- Contaminated Soil Detoxification	V2,104
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			U.S. EPA	Field Analytical Screening Program - PCB Method	V3,78
		Solidification/ Stabilization	Chemfix Technologies, Inc.	Solidification and Stabilization	V1,50
			Funderburk & Associates	Dechlorination and Immobilization	V1,78
			Geo-Con, Inc.	In Situ Solidification and Stabilization Process	V1,82
			Geosafe Corp.	GeoMelt Vitrification	V1,84

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Sediment (continued)	Pesticides (continued)	Solidification/ Stabilization (continued)	Soliditech, Inc.	Solidification and Stabilization	V1,152
			WASTECH, Inc.	Solidification and Stabilization	V1,172
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Strategic Diagnostic, Inc.	Ensys Penta Test System	V3,68
			Strategic Diagnostic, Inc. Corp.	RaPID Assay®	V3,72
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
			Energy and Environmental Research Corp.	Hybrid Fluidized Bed System	V2,40
			Institute of Gas Technology	Fluidized-Bed/Cyclonic Agglomerating Combustor	V2,60
			U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
			Vortec Corp.	Vitrification Process	V1,236
	Petroleum Hydrocarbons	Biological Degradation	ECOVA Corp.	Bioslurry Reactor	V1,64
			Remediation Technologies, Inc.	Liquid and Solids Biological Treatment	V1,140
		Physical/ Chemical Thermal Desorption	New Jersey Institute of Technology	GHEA Association process	V2,86
			Smith Environmental Technologies Corp.	Low Temperature Thermal Aeration (LTTA®)	V1,148
		Solidification/ Stabilization	Soliditech, Inc.	Solidification and Stabilization	V1,152
	Radionuclides	Materials Handling	Thermo Nutech, Inc.	Segmented Gate System	V2,134
		Physical/ Chemical Treatment	Bergmann, A Division of Linatex, Inc.	Soil and Sediment Washing	V1,26
			IT Corp.	Mixed Waste Treatment Process	V2,68
			Selentec Environmental Technologies, Inc.	Selentec MAG*SEP Technology	V1,226
		Solidification/ Stabilization	Sevenson Environmental Services, Inc.	MAECTITE® Chemical Treatment Process	V1,228
			WASTECH, Inc.	Solidification and Stabilization	V1,172
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
	SVOCs	Biological Degradation	Biotrol®	Soil Washing System	V1,40
			ECOVA Corp.	Bioslurry Reactor	V1,64
			GRACE Bioremediation Technologies	DARAMEND™ Bioremediation Technology	V1,90
			Institute of Gas Technology	Chemical and Biological Treatment	V2,56
			Institute of Gas Technology	Fluid Extraction - Biological Degradation Process	V2,58
			IT Corp.	Tekno Associates Bioslurry Reactor	V2,72

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Sediment (continued)	SVOCs (continued)	Biological Degradation (continued)	New York State Dept. Of Environmental Conservation/ENSR Consulting and Larsen Engineers	Ex Situ Biovault	V1,126
			New York State Dept. Of Environmental Conservation/R.E. Wright Environmental, Inc.	In Situ Bioventing Treatment System	V1,130
			IT Corp.	Oxygen Microbubble In Situ Bioremediation	V2,126
			Remediation Technologies, Inc.	Liquid and Solids Biological Treatment	V1,140
		Contaminant Survey systems	Quadrel Svices, Inc.	Emflux Soil-Gas Survey System	V3,54
		Materials Handling	U.S. EPA	Excavation Techniques and Foam Suppression methods	V1,166
		Physical/ Chemical Thermal Desorption	Biotherm, LCC	Biotherm Process	V1,36
			ELI Eco Logic Inc.	Gas-Phase Chemical Reduction Process	V1,68
			ELI Eco Logic International Inc.	Thermal Desorption Unit	V1,70
			KAI Technologies, Inc./Brown and Root Environmental	Radio Frequency Heating	V1,106
			Maxymillian Technologies, Inc.	Thermal Desorption System	V1,112
			New Jersey Institute of Technology	GHEA Association process	V2,86
			NOVATERRA, Inc.	In-Situ Soil Treatments (Steam/ Air Stripping)	V1,134
			OHM Remediation Services Corp.	X*TRAX™ Thermal Desorption	V1,136
			Recycling Sciences International, Inc.	Desorption and Vapor Extraction System	V1,220
			Smith Environmental Technologies Corp.	Low Temperature Thermal Aeration (LTTA®)	V1,148
			Roy F. Weston, Inc.	Low Temperature Thermal Treatment (LT3®) System	V1,174
		Physical/ Chemical Treatment	Bergmann, A Division of Linatex, Inc.	Soil and Sediment Washing	V1,26
			CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48
			Electrokinetics, Inc.	Electrokinetic Soil Processing	V1,66
			High Voltage Environmental Applications, Inc.	High Energy Electron Beam Irradiation	V2,54

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Sediment (continued)	SVOCs (continued)	Physical/ Chemical Treatment (continued)	High Voltage Environmental Applications, Inc.	High Energy Electron Irradiation	V1,94
			Ionics RCC	B.E.S.T. Solvent Extraction Technology	V1,104
			IT Corp.	Mixed Waste Treatment Process	V2,68
			National Risk Management Research Laboratory	Base-Catalyzed Decomposition Process	V1,116
			National Risk Management Research Laboratory and IT Corp.	Debris Washing System	V1,122
			Terra-Kleen Response Group, Inc.	Solvent Extraction Treatment System	V1,158
			Terra Vac, Inc.	In Situ and Ex Situ Vacuum Extraction	V1,160
			Toronto Harbour Commission	Soil Recycling.	V1,162
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			U.S. EPA	Field Analytical Screening Program - PCB Method	V3,78
		Solidification/ Stabilization	Chemfix Technologies, Inc.	Solidification and Stabilization	V1,50
			Geo-Con, Inc.	In Situ Solidification and Stabilization Process	V1,82
			STC Remediation, A Division of Omega Environmental, Inc.	Organic Stabilization and Chemical Fixation/ Solidification	V1,156
			WASTECH, Inc.	Solidification and Stabilization	V1,172
			Western Product Recovery Group, Inc.	Coordinate, Chemical Bonding, and Adsorption Treatment	V2,114
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Strategic Diagnostic, Inc. Corp.	RaPID Assay®	V3,72
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
			Institute of Gas Technology	Fluidized-Bed/Cyclonic Agglomerating Combustor	V2,60
			Sonotech, Inc.	Frequency-Tunable Pulse Combustion System	V1,154
			Texaco Inc.	Texaco Gasification Process	V1,162
			U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
			Vortec Corp.	Vitrification Process	V1,236
	VOCs	Biological Degradation	Bio-Rem, Inc.	Augmented In Situ Subsurface Bioremediation Process	V1,34
			ECOVA Corp.	Bioslurry Reactor	V1,64

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Sediment (continued)	VOCs (continued)	Biological Degradation (continued)	Electrokinetics, Inc.	In Situ Bioremediation by Electrokinetic Injection	V2,120
			New York State Dept. Of Environmental Conservation/ENSR Consulting and Larsen Engineers	Ex Situ Biovault	V1,126
			New York State Dept. Of Environmental Conservation/R.E. Wright Environmental, Inc.	In Situ Bioventing Treatment System	V1,130
			IT Corp.	Oxygen Microbubble In Situ Bioremediation	V2,126
			Phytokinetics, Inc.	Phytoremediation Process	V1,210
		Contaminant Survey systems	Quadrel Srvices, Inc.	Emflux Soil-Gas Survey System	V3,54
		Materials Handling	AEA Technology Environment	Soil Separation and Washing Process	V2,16
			U.S. EPA	Excavation Techniques and Foam Suppression methods	V1,166
		Physical/ Chemical Thermal Desorption	Biotherm, LCC	Biotherm Process	V1,36
			KAI Technologies, Inc./Brown and Root Environmental	Radio Frequency Heating	V1,106
			Maxymillian Technologies, Inc.	Thermal Desorption System	V1,112
			New Jersey Institute of Technology	GHEA Association process	V2,86
			NOVATERRA, Inc.	In-Situ Soil Treatments (Steam/ Air Stripping)	V1,134
			Recycling Sciences International, Inc.	Desorption and Vapor Extraction System	V1,220
			Smith Environmental Technologies Corp.	Low Temperature Thermal Aeration (LTTA®)	V1,148
			Roy F. Weston, Inc.	Low Temperature Thermal Treatment (LT3®) System	V1,174
		Physical/ Chemical Treatment	CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48
			High Voltage Environmental Applications, Inc.	High Energy Electron Irradiation	V1,94
			Institute of Gas Technology	Supercritical Extraction/Liquid Phase Oxidation	V2,62
			Ionics RCC	B.E.S.T. Solvent Extraction Technology	V1,104
			IT Corp.	Batch Steam Distillation and Metal Extraction	V2,64
			IT Corp.	Mixed Waste Treatment Process	V2,68

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Sediment (continued)	VOCs (continued)	Physical/ Chemical Treatment (continued)	Terra-Kleen Response Group, Inc.	Solvent Extraction Treatment System	V1,158
			Terra Vac, Inc.	In Situ and Ex Situ Vacuum Extraction	V1,160
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			U.S. EPA	Field Analytical Screening Program - PCB Method	V3,78
		Solidification/ Stabilization	Geo-Con, Inc.	In Situ Solidification and Stabilization Process	V1,82
			WASTECH, Inc.	Solidification and Stabilization	V1,172
			Western Product Recovery Group, Inc.	Coordinate, Chemical Bonding, and Adsorption Treatment	V2,114
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Strategic Diagnostic, Inc. Corp.	RaPID Assay®	V3,72
		Thermal Destruction	Energy and Environmental Research Corp.	Hybrid Fluidized Bed System	V2,40
			Institute of Gas Technology	Fluidized-Bed/Cyclonic Agglomerating Combustor	V2,60
			Sonotech, Inc.	Frequency-Tunable Pulse Combustion System	V1,154
			Texaco Inc.	Texaco Gasification Process	V1,162
			Vortec Corp.	Vitrification Process	V1,236
	Other	Solidification/ Stabilization	STC Remediation, A Division of Omega Environmental, Inc.	Organic Stabilization and Chemical Fixation/ Solidification	V1,156
Sludge	Aromatic VOCs	Biological Degradation	Bio-Rem, Inc.	Augmented In Situ Subsurface Bioremediation Process	V1,34
			Electrokinetics, Inc.	In Situ Bioremediation By Electrokinetic Injection	V2,120
			GRACE Bioremediation Technologies	DARAMEND™ Bioremediation Technology	V1,90
			Institute of Gas Technology	Fluid Extraction - Biological Degradation process	V2,58
			New York State Dept. of Environmental Conservation/ ENSR Consulting and Larsen Engineers	Ex Situ Biovault	V1,126
			New York State Dept. of Environmental Conservation/ R.E. Wright Environmental, Inc.	In Situ Bioventing Treatment System	V1,130

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Sludge (continued)	Aromatic VOCs (continued)	Biological Degradation (Continued)	IT Corp.	Oxygen Microbubble In Situ Bioremediation	V2,126
		Materials Handling	United States Environmental Protection Agency	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical/ Chemical Thermal Desorption	Biotherm, LCC	Biotherm Process	V1,36
			Maxymillian Technologies, Inc.	Thermal Desorption System	V1,112
			NOVATERRA, Inc.	In-Situ Soil Treatments (Steam/Air Stripping)	V1,134
			Recycling Sciences International, Inc.	Desorption and Vapor Extraction System	V1,220
			Smith Environmental Technologies Corp.	Low Temperature Thermal Aeration [LTTA®]	V1,148
		Physical/ Chemical Treatment	CF Systems Corp.	Liquified Gas Solvent Extraction [LG-SX] Technology	V1,48
			Electrokinetics, inc.	Electrokinetic Soil Processing	V1,66
			High Voltage Environmental Applications, Inc.	High-Energy Electron Beam Irradiation	V2,54
			High Voltage Environmental Applications, Inc.	High-Energy Electron Irradiation	V1,94
			Institute of Gas Technology	Supercritical Extraction/Liquid Phase Oxidation	V2,62
			Ionics RCC	B.E.S.T. Solvent Extraction Technology	V1,104
			IT Corp.	Mixed Waste Treatment Process	V2,68
			Terra Vac, Inc.	In Situ and Ex Situ Vacuum Extraction	V1,160
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			United States Environmental Protection Agency	Field Analytical Screening Program - PCB Method	V3,78
		Solidification/ Stabilization	Geo-Con, Inc.	In Situ Solidification and Stabilization Process	V1,82
			WASTECH, Inc.	Solidification/ Stabilization	V1,172
			Western Product Recovery Group, Inc.	Coordinate, Chemical Bonding, and Adsorption Treatment	V2,114
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Thermal Destruction	Sonotech, Inc.	Frequency-Tunable Pulse Combustion System	V1,154
			Texaco, Inc.	Texaco Gasification Process	V1,162

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Sludge (continued)	Aromatic VOCs (continued)	Thermal Destruction (continued)	U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
			Vortec Corp.	Vitrification Process	V1,236
	Cyanide	Biological Degradation	Pintail Systems, Inc.	Spent ore Bioremediation Process	V1,214
	Dioxins	Biological Degradation	Institute of Gas Technology	Fluid Extraction - Biological Degradation Process	V2,58
			Materials Handling	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical/ Chemical Thermal Desorption	ELI Eco Logic Inc.	Gas-Phase Chemical Reduction Process	V1,68
			ELI Eco Logic International Inc.	Thermal Desorption unit	V1,70
			Recycling Sciences International, Inc.	Desorption and Vapor Extraction System	V1,220
			Roy F. Weston, Inc.	Low Temperature Thermal Treatment (LT3®) Systems	V1,174
		Physical/ Chemical Treatment	ART International, Inc.	Low-Energy Extraction Process (LEEP)	V2,20
			CF Systems Corp.	Liquified Gas Solvent Extraction [LG-SX] Technology	V1,48
			High Voltage Environmental Applications, Inc.	High-Energy Electron Irradiation	V1,94
			Ionics RCC	B.E.S.T. Solvent Extraction Technology	V1,104
			IT Corp.	Mixed Waste Treatment Process	V2,68
			National Risk Management Research laboratory	Base-Catalyzed Decomposition Process	V1,116
			National Risk Management Research laboratory	Debris Washing System	V1,122
			Terra-Kleen Response Group, Inc.	Solvent Extraction Treatment System	V1,158
			Trinity Environmental Technologies, Inc.	PCB- and Organochlorine- Contaminated Soil Detoxification	V2,104
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
		Solidification/ Stabilization	Geosafe Corp.	GeoMelt Vitrification	V1,84
			WASTECH, Inc.	Solidification/ Stabilization	V1,172
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
			Energy and Environmental Research Corp.	Reactor Filter System	V2,42

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Sludge (continued)	Dioxins (continued)	Thermal Destruction (continued)	Institute of Gas Technology	Fluidized-Bed/ Cyclonic Agglomerating Combustor	V2,60
			U. of Dayton Research Institute	Photothermal Detoxification unit	V2,106
			Vortec Corp.	Vitrification Process	V1,236
	Explosives	Biological Degradation	J.R. Simplot Co.	The SABRE™ Process	V1,66
		Physical/ Chemical Thermal Desorption	New Jersey Institute of Technology	GHEA Associates Process	V2,86
	Furans	Biological Degradation	Institute of Gas Technology	Fluid Extraction - Biological Degradation Process	V2,58
		Materials Handling	U.S. EPA	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical/ Chemical Thermal Desorption	ELI Eco Logic Inc.	Gas-Phase Chemical Reduction Process	V1,68
			ELI Eco Logic International Inc.	Thermal Desorption Unit	V1,70
			Recycling Sciences International, Inc.	Desorption and Vapor Extraction System	V1,220
			Roy F. Weston, Inc.	Low Temperature Thermal Treatment (LT3®) System	V1,174
		Physical/ Chemical Treatment	ART International, Inc.	Low-Energy Extraction Process (LEEP)	V2,20
			CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48
			High Voltage Environmental Applications, Inc.	High-Energy Electron Irradiation	V1,94
			Ionics RCC	B.E.S.T. Solvent Extraction Technology	V1,104
			IT Corp.	Mixed Waste Treatment Process	V2,68
			National Risk Management Research Laboratory	Base-Catalyzed Decomposition Process	V1,116
			National Risk Management Research Laboratory	Debris Washing System	V1,122
			Terra-Kleen Response Group, Inc.	Solvent Extraction Treatment Systems	V1,158
			Trinity Environmental Technologies, Inc.	PCB- and Organochlorine-Contaminated Soil Detoxification	V2,104
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
		Solidification/ Stabilization	Geosafe Corp.	GeoMelt Vitrification	V1,84
			WASTECH, Inc.	Solidification and Stabilization	V1,172
		Thermal Desorption	BWX Technologies, Inc.	Cyclone Furnace	V1,44

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Sludge (continued)	Furans (continued)	Thermal Desorption (continued)	Energy and Environmental Research Corp.	Reactor Filter System	V2,42
			Institute of Gas Technology	Fluidized-Bed/ Cyclonic Agglomerating Combustor	V2,60
			U. of Dayton Research Institute	Photothermal Detoxification unit	V2,106
			Vortec Corp.	Vitrification Process	V1,236
	Halogenated VOCs	Biological Degradation	Bio-Rem, Inc.	Augmented In Situ Subsurface Bioremediation Process	V1,34
			New York State Dept. of Environmental Conservation/ ENSR Consulting and Larsen Engineers	Ex Situ Biovault	V1,126
			New York State Dept. of Environmental Conservation/ R.E. Wright Environmental, Inc.	In Situ Bioventing Treatment System	V1,130
			IT Corp.	Oxygen Microbubble In Situ Bioremediation	V2,126
		Materials Handling	United States Environmental Protection Agency	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical/ Chemical Treatment - Biological Degradation	Lasagna™ Public-Private Partnership	Lasagna™ In Situ Soil Remediation	V1,202
		Physical/ Chemical Thermal Desorption	KAI Technologies, Inc./Brown and Root Environmental	Radio Frequency Heating	V1,106
			New Jersey Institute of Technology	GHEA Associates Process	V2,86
			NOVATERRA, Inc.	In-Situ Soil Treatments (Steam/Air Stripping)	V1,134
			OHM Remediation Services Corp.	X*TRAX™ Thermal Desorption	V1,136
			Recycling Sciences International, Inc.	Desorption and Vapor Extraction System	V1,220
			Roy F. Weston, Inc.	Low Temperature Thermal Treatment (LT3®) System	V1,174
			CF Systems Corp.	Liquified Gas Solvent Extraction [LG-SX] Technology	V1,48
			Commodore Environmental Services, Inc.	Solvated Electron Remediation System	V1,56
			Electrokinetics, inc.	Electrokinetic Soil Processing	V1,66

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Sludge (continued)	Halogenated VOCs (continued)	Physical/Chemical Treatment (continued)	High Voltage Environmental Applications, Inc.	High-Energy Electron Beam Irradiation	V2,54
			High Voltage Environmental Applications, Inc.	High-Energy Electron Irradiation	V1,94
			Institute of Gas Technology	Supercritical Extraction/Liquid Phase Oxidation	V2,62
			Ionics RCC	B.E.S.T. Solvent Extraction Technology	V1,104
			IT Corp.	Mixed Waste Treatment Process	V2,68
			Terra Vac, Inc.	In Situ and Ex Situ Vacuum Extraction	V1,160
			Trinity Environmental Technologies, Inc.	PCB- and Organochlorine- Contaminated Soil Detoxification	V2,104
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			United States Environmental Protection Agency	Field Analytical Screening Program - PCB Method	V3,78
		Solidification/ Stabilization	Geo-Con, Inc.	In Situ Solidification and Stabilization Process	V1,82
			WASTECH, Inc.	Solidification/ Stabilization	V1,172
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Thermal Destruction	Energy and Environmental Research Corp.	Hybrid Fluidized Bed System	V2,40
			Texaco, Inc.	Texaco Gasification Process	V1,162
			U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
			Vortec Corp.	Vitrification Process	V1,236
	Heavy Metals	Field Portable X-ray Fluorescence	HNU Systems, Inc.	HNU Source Excited Fluorescence Analyzer-Portable (SEFA-P) X-ray Fluorescence Analyzer	V3,44
	Heavy Minerals	Materials Handling	Montana College of Mineral Science and Technology	Campbell Centrifugal Jig	V2,84
	Herbicides	Biological Degradation	Electrokinetics, Inc.	In Situ Bioremediation by Electrokinetic Injection	V2,120
			GRACE Bioremediation Technologies	DARAMEND™ Bioremediation Technology	V1,90
			Institute of Gas Technology	Fluid Extraction - Biological Degradation Process	V2,58
			J.R. Simplot Co.	The SABRE™ Process	V1,66

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Sludge (continued)	Herbicides (continued)	Materials Handling	U.S. EPA	Excavation Techniques and Foam Suppression methods	V1,166
		Physical Chemical Treatment - Biological Degradation	Lasagna™ Public - Private Partnership	Lasagna™ In Situ Soil Remediation	V1,202
		Physical/ Chemical Thermal Desorption	ELI Eco Logic Inc.	Gas-Phase Chemical Reduction Process	V1,68
			ELI Eco Logic International Inc.	Thermal Desorption Unit	V1,70
			Maxymillian Technologies, Inc.	Thermal Desorption System	V1,112
			OHM Remediation Services Corp.	X*TRAX™ Thermal Desorption	V1,136
			Recycling Sciences International, Inc.	Desorption and Vapor Extraction System	V1,220
			Smith Environmental Technologies Corp.	Low Temperature Thermal Aeration (LTTA3)	V1,148
			Roy F. Weston, Inc.	Low Temperature Thermal Treatment (LT3®)	V1,174
		Physical/ Chemical Treatment	ART International, Inc.	Low-Energy Extraction Process (LEEP)	V2,20
			CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SC) Technology	V1,48
			High Voltage Environmental Applications, Inc.	High-Energy Electron Irradiation	V1,94
			Ionics RCC	B.E.S.T. Solvent Extraction Technology	V1,104
			IT Corp.	Mixed Waste Treatment Process	V2,68
			National Risk Management Research Laboratory	Base-Catalyzed Decomposition Process	V1,116
			National Risk Management Research Laboratory and IT Corp.	Debris Washing System	V1,122
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
		Solidification/ Stabilization	Chemfix Technologies, Inc.	Solidification and Stabilization	V1,50
			WASTECH, Inc.	Solidification and Stabilization	V1,172
		Test Kits	Strategic Diagnostic, Inc. Corp.	RaPID Assay®	V3,72
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
			U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Sludge (continued)	Herbicides (continued)	Thermal Destruction (continued)	Vortec Corp.	Vitrification Process	V1,236
	Inorganics	Field Portable X-ray Fluorescence	HNU Systems, Inc.	HNU Source Excited Fluorescence Analyzer-Portable (SEFA-P)	V3,44
	Metals	Biological Degradation	Geo-Microbial Technologies, Inc.	Metals Release & Remove from Waste	V2,124
			Phytotech	Phytoremediation Technology	V1,212
			Pintail Systems, Inc.	Biomining of Metals	V2,130
			Pintail Systems, Inc.	Spent Ore Bioremediation Process	V1,214
		Field Portable X-ray Fluorescence	HNU Systems, Inc.	HNU Source Excited Fluorescence Analyzer-Portable (SEFA-P) X-Ray Fluorescence Analyzer	V3,44
			NITON Corp.	XL Spectrum Analyzer	V3,52
			TN Spectrace	9000 X-Ray Fluorescence Analyzer and Lead X-Ray Fluorescence Analyzer	V3,74
		Materials Handling	AEA Technology Environment	Soil Separation and Washing Process	V2,16
			Montana College of Mineral Science and Technology	Campbell Centrifugal Jig	V2,84
			United States Environmental Protection Agency	Excavation Techniques and Foam Suppression Methods	V1,166
			U. of South Carolina	In Situ Mitigation of Acid Water	V2,108
		Physical Chemical Treatment - Biological Degradation	Lasagna™ Public-Private Partnership	Lasagna™ In Situ Soil Remediation	V1,202
		Physical/ Chemical Thermal Desorption	New Jersey Institute of Technology	GHEA Associates Process	V2,86
		Physical/ Chemical Treatment	BioGenesis Enterprises, Inc.	BioGenesisSM Soil & Sediment Washing Process	V1,32
			Center for Hazardous Materials Research	Acid Extraction Treatment System	V2,30
			COGNIS, Inc.	TERRAMET Soil Remediation System	V1,52
			Dynaphore, Inc.	FORAGER®Sponge	V1,62
			Electrokinetics, Inc.	Electrokinetic Soil Processing	V1,66
			General Atomics, Nuclear Remediation Technologies Division	Acoustic Barrier Particulate Separator	V2,48
			IT Corp.	Batch Steam Distillation and Metal Extraction	V2,64
		Physical/ Chemical Treatment	IT Corp.	Chelation/ Electrodeposition of Toxic Metals from Soils	V2,66
			IT Corp.	Mixed Waste Treatment Process	V2,68

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Sludge (continued)	Metals (continued)	Physical/chemical Treatment (continued)	National Risk Management Research Laboratory and IT Corp.	Debris Washing System	V1,122
			Selentec Environmental Technologies, Inc.	Selentec MAG*SEP Technology	V1,226
			Toronto Harbour Commission	Soil Recycling	V1,162
		Solidification / Stabilization	Chemfix Technologies, Inc.	Solidification and Stabilization	V1,50
			Ferro Corp.	Waste Vitrification Through Electric Melting	V2,46
			Funderburk & Associates	Dechlorination and Immobilization	V1,78
			Geo-Con, Inc.	In Situ Solidification and Stabilization Process	V1,82
			Geosafe Corp.	GeoMelt Vitrification	V1,84
			Rocky Mountain Remediation Services, L.L.C.	Envirobond Solution	V1,222
			Sevenson Environmental Services, Inc.	MAECTITE® Chemical Treatment Process	V1,228
			Soliditech, Inc.	Solidification and Stabilization	V1,152
			Star Organics, L.L.C.	Soil Rescue Remediation Fluid	V1,232
			STC Remediation, A Division of Omega Environmental, Inc.	Organic Stabilization and Chemical Fixation/Solidification	V1,156
			WASTECH, Inc.	Solidification and Stabilization	V1,172
			Western Product Recovery Group, Inc.	Coordinate, Chemical Bonding, and Adsorption Treatment	V2,114
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
			Energy and Environmental Research Corp.	Hybrid Fluidized Bed System	V2,40
			Energy and Environmental Research Corp.	Reactor Filter System	V2,42
			Horsehead Resource Development Co., Inc.	Flame Reactor	V1,96
			Institute of Gas Technology	Fluidized-Bed/ Cyclonic Agglomerating Combustor	V2,60
			PSI Technologies, A Division of Physical Sciences Inc.	Metals Immobilization and Decontamination of Aggregate Solids	V2,88
			Vortec Corp.	Vitrification Process	V1,236
	PAHs	Biological Degradation	ECOVA Corp.	Bioslurry Reactor	V1,64
			Institute of Gas Technology	Fluid Extraction - Biological Degradation Process	V2,58
			Remediation Technologies, Inc.	Liquid and Solids Biological Treatment	V1,140

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Sludge (continued)	PAHs (continued)	Physical/ Chemical Thermal Desorption	Maxymillian Technologies, Inc.	Thermal Desorption System	V1,112
			Recycling Sciences International, Inc.	Desorption and Vapor Extraction System	V1,220
		Physical/ Chemical Treatment	BioGenesis Enterprises, Inc.	BioGenesisSM Soil & Sediment Washing Process	V1,32
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
	PCBs	Biological Degradation	Institute of Gas Technology	Chemical and Biological Treatment	V2,56
			Institute of Gas Technology	Fluid Extraction - Biological Degradation Process	V2,58
		Materials Handling	United States Environmental Protection Agency	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical/ Chemical Thermal Desorption	Biotherm, LCC	Biotherm Process	V1,36
			ELI Eco Logic Inc.	Gas-Phase Chemical Reduction Process	V1,68
			ELI Eco Logic International Inc	Thermal Desorption Unit	V1,70
			KAI Technologies, Inc./ Brown and Root Environmental	Radio Frequency Heating	V1,106
			New Jersey Institute of Technology	GHEA Associates Process	V2,86
			OHM Remediation Services Corp.	X*TRAX™ Thermal Desorption	V1,136
			Recycling Sciences International, Inc.	Desorption and Vapor Extraction System	V1,220
			Roy F. Weston, Inc.	Low Temperature Thermal Treatment [LT3®] System	V1,174
		Physical/ Chemical Treatment	ART International, Inc.	Low-Energy Extraction Process [LEEP]	V2,20
			BioGenesis Enterprises, Inc.	BioGenesisSM Soil & Sediment Washing Process	V1,32
			CF Systems Corp.	Liquified Gas Solvent Extraction [LG-SX] Technology	V1,48
			Commodore Environmental Services, Inc.	Solvated Electron Remediation System	V1,56
			General Atomics	Circulating Bed Combustor	V1,80
			High Voltage Environmental Applications, Inc.	High Energy Electron Beam Irradiation	V2,54
			High Voltage Environmental Applications, Inc.	High-Energy Electron Irradiation	V1,94
			Ionics RCC	B.E.S.T. Solvent Extraction Technology	V1,104

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Sludge (continued)	PCBs (continued)	Physical/Chemical Treatment (continued)	IT Corp.	Mixed Waste Treatment Process	V2,68
			National Risk Management Research Laboratory	Base-Catalyzed Decomposition Process	V1,116
			National Risk Management Research Laboratory and IT Corp.	Debris Washing System	V1,122
			State U. of New York at Oswego, Environmental Research Center	Electrochemical Peroxidation of PCB-Contaminated Sediments and Waters	V2,98
			Terra-Kleen Response Group, Inc.	Solvent Extraction Treatment System	V1,158
			Trinity Environmental Technologies, Inc.	PCB- and Organochlorine-Contaminated Soil Detoxification	V2,104
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			United States Environmental Protection Agency	Field Analytical Screening Program - PCB Method	V3,78
		Solidification/ Stabilization	Chemfix Technologies, Inc.	Solidification and Stabilization	V1,50
			Funderburk & Associates	Dechlorination and Immobilization	V1,78
			Geo-Con, Inc.	In Situ Solidification and Stabilization Process	V1,82
			Geosafe Corp.	GeoMelt Vitrification	V1,84
			Soliditech, Inc.	Solidification and Stabilization	V1,152
			WASTECH, Inc.	Solidification and Stabilization	V1,172
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Strategic Diagnostic, Inc.	Ensys Penta Test System	V3,68
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
			Energy and Environmental Research Corp.	Hybrid Fluidized Bed System	V2,40
			Institute of Gas Technology	Fluidized-Bed/ Cyclonic Agglomerating Combustor	V2,60
			U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
			Vortec Corp.	Vitrification Process	V1,236
	PCP	Biological Degradation	Remediation Technologies, Inc.	Liquid and Solids Biological Treatment	V1,140
		Physical/ Chemical Thermal Desorption	Recycling Sciences International Inc.	Desorption and Vapor Extraction System	V1,220
		Physical/ Chemical Treatment	Trinity Environmental Technologies, Inc.	PCB- and Organochlorine- Contaminated Soil Detoxification	V2,104
		Test Kits	Strategic Diagnostic, Inc.	Ensys Penta Test System	V3,68

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Sludge (continued)	PCP (continued)	Test Kits (continued)	Strategic Diagnostic, Inc. Corp.	RaPID Assay®	V3,72
	Pesticides	Biological Degradation	Electrokinetics, Inc.	In Situ Bioremediation By Electrokinetic Injection	V2,120
			GRACE Bioremediation Technologies.	DARAMEND™ Bioremediation Technology	V1,90
			Institute of Gas Technology	Chemical and Biological Treatment	V2,56
			Institute of Gas Technology	Fluid Extraction - Biological Degradation Process	V2,58
		Materials Handling	United States Environmental Protection Agency	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical/ Chemical Thermal Desorption	Biotherm, LCC	Biotherm Process	V1,36
			ELI Eco Logic Inc.	Gas-Phase Chemical Reduction Process	V1,68
			ELI Eco Logic International Inc	Thermal Desorption Unit	V1,70
			KAI Technologies, Inc./Brown and Root Environmental	Radio Frequency Heating	V1,106
			OHM Remediation Services Corp.	X*TRAX™ Thermal Desorption	V1,136
			Recycling Sciences International, Inc.	Desorption and Vapor Extraction System	V1,220
			Smith Environmental Technologies Corp.	Low Temperature Thermal Aeration [LTTA®]	V1,148
			Roy F. Weston, Inc.	Low Temperature Thermal Treatment [LT3®] System	V1,174
		Physical/ Chemical Treatment	ART International, Inc.	Low-Energy Extraction Process [LEEP]	V2,20
			CF Systems Corp.	Liquified Gas Solvent Extraction [LG-SX] Technology	V1,48
			Commodore Environmental Services, Inc.	Solvated Electron Remediation System	V1,56
			Electrokinetics, Inc.	Electrokinetic Soil Processing	V1,66
			General Atomics	Circulating Bed Combustor	V1,80
			High Voltage Environmental Applications, Inc.	High Energy Electron Beam Irradiation	V2,54
			High Voltage Environmental Applications, Inc.	High Energy Electron Irradiation	V1,94
			Ionics RCC	B.E.S.T. Solvent Extraction Technology	V1,104
			IT Corp.	Mixed Waste Treatment Process	V2,68

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Sludge (continued)	Pesticides (continued)	Physical/ Chemical Treatment (continued)	National Risk Management Research Laboratory	Base-Catalyzed Decomposition Process	V1,116
			National Risk Management Research Laboratory and IT Corp.	Debris Washing System	V1,122
			State U. of New York at Oswego, Environmental Research Center	Electrochemical Peroxidation of PCB-Contaminated Sediments and Waters	V2,98
			Terra-Kleen Response Group, Inc.	Solvent Extraction Treatment System	V1,158
			Trinity Environmental Technologies, Inc.	PCB- and Organochlorine-Contaminated Soil Detoxification	V2,104
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			United States Environmental Protection Agency	Field Analytical Screening Program - PCB Method	V3,78
		Solidification/ Stabilization	Chemfix Technologies, Inc.	Solidification & Stabilization	V1,50
			Funderburk & Associates	Dechlorination and Immobilization	V1,78
			Geo-Con, Inc.	In Situ Solidification and Stabilization Process	V1,82
			Geosafe Corp.	GeoMelt Vittrification	V1,84
			Soliditech, Inc.	Solidification & Stabilization	V1,152
			WASTECH, Inc.	Solidification & Stabilization	V1,172
		Spectrometers	Graseby Ionics, Ltd. and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Strategic Diagnostic, Inc.	Ensys Penta Test System	V3,68
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
			Energy and Environmental Research Corp.	Hybrid Fluidized Bed System	V2,40
			Institute of Gas Technology	Fluidized-Bed/ Cyclonic Agglomerating Combustor	V2,60
			U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
			Vortec Corp.	Vitrification Process	V1,236
	PCP	Biological Degradation	Remediation Technologies, Inc.	Liquid and Solids Biological Treatment	V1,140
		Physical/ Chemical Thermal Desorption	Recycling Sciences International Inc	Desorption and Vapor Extraction System	V1,220
		Physical/ Chemical Treatment	Trinity Environmental Technologies, Inc.	PCB- and Organochlorine-Contaminated Soil Detoxification	V2,104
		Test Kits	Strategic Diagnostic, Inc.	Ensys Penta Test System	V3,68

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Sludge (continued)	PCP (continued)	Test Kits (continued)	Strategic Diagnostic, Inc. Corp.	RaPID Assay®	V3,72
	Pesticides	Biological Degradation	Electrokinetics, Inc.	In Situ Bioremediation By Electrokinetic Injection	V2,120
			GRACE Bioremediation Technologies	DARAMEND™ Bioremediation Technology	V1,90
			Institute of Gas Technology	Chemical and Biological Treatment	V2,56
			Institute of Gas Technology	Fluid Extraction - Biological Degradation Process	V2,58
		Materials Handling	United States Environmental Protection Agency	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical/ Chemical Thermal Desorption	Biotherm, LCC	Biotherm Process	V1,36
			ELI Eco Logic Inc.	Gas-Phase Chemical Reduction Process	V1,68
			ELI Eco Logic International Inc.	Thermal Desorption Unit	V1,70
			KAI Technologies, Inc./Brown and Root Environmental	Radio Frequency Heating	V1,106
			OHM Remediation Services Corp.	X*TRAX™ Thermal Desorption	V1,136
			Recycling Sciences International, Inc.	Desorption and Vapor Extraction System	V1,220
			Smith Environmental Technologies Corp.	Low Temperature Thermal Aeration [LTTA®]	V1,148
			Roy F. Weston, Inc.	Low Temperature Thermal Treatment [LT3®] System	V1,174
		Physical/ Chemical Treatment	ART International, Inc.	Low-Energy Extraction Process [LEBP]	V2,20
			CF Systems Corp.	Liquified Gas Solvent Extraction [LG-SX] Technology	V1,48
			Commodore Environmental Services, Inc.	Solvated Electron Remediation System	V1,56
			Electrokinetics, Inc.	Electrokinetic Soil Processing	V1,66
			General Atomics	Circulating Bed Combustor	V1,80
			High Voltage Environmental Applications, Inc.	High Energy Electron Beam Irradiation	V2,54
			High Voltage Environmental Applications, Inc.	High Energy Electron Irradiation	V1,94
			Ionics RCC	B.E.S.T. Solvent Extraction Technology	V1,104
			IT Corp.	Mixed Waste Treatment Process	V2,68

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Sludge (continued)	Pesticides (continued)	Physical/ Chemical Treatment (continued)	National Risk Management Research Laboratory	Base-Catalyzed Decomposition Process	V1,116
			National Risk Management Research Laboratory and IT Corp.	Debris Washing System	V1,122
			State U. of New York at Oswego, Environmental Research Center	Electrochemical Peroxidation of PCB-Contaminated Sediments and Waters	V2,98
			Terra-Kleen Response Group, Inc.	Solvent Extraction Treatment System	V1,158
			Trinity Environmental Technologies, Inc.	PCB- and Organochlorine-Contaminated Soil Detoxification	V2,104
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			United States Environmental Protection Agency	Field Analytical Screening Program - PCB Method	V3,78
		Solidification/ Stabilization	Chemfix Technologies, Inc.	Solidification/ Stabilization	V1,50
			Funderburk & Associates	Dechlorination and Immobilization	V1,78
			Geo-Con, Inc.	In Situ Solidification and Stabilization Process	V1,82
			Geosafe Corp.	GeoMelt Vitrification	V1,84
			Soliditech, Inc.	Solidification/ Stabilization	V1,152
			WASTECH, Inc.	Solidification/ Stabilization	V1,172
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Strategic Diagnostic, Inc.	Ensys Penta Test System	V3,68
			Strategic Diagnostic, Inc. Corp.	RaPID Assay®	V3,72
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
			Energy & Environmental Research Corp.	Hybrid Fluidized Bed System	V2,42
			Institute of Gas Technology	Fluidized-Bed/ Cyclonic Agglomerating Combustor	V2,60
			U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
			Vortec Corp.	Vitrification Process	V1,236
	Petroleum Hydrocarbons	Biological Degradation	ECOVA Corp.	Bioslurry Reactor	V1,64
			Remediation Technologies, Inc.	Liquid and Solids Biological Treatment	V1,140
		Physical/ Chemical Thermal Desorption	New Jersey Institute of Technology	GHEA Associates Process	V2,86
			Smith Environmental Technologies Corp.	Low Temperature Thermal Aeration [LTTA®]	V1,148

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Sludge (continued)	Petroleum Hydrocarbons (continued)	Solidification/ Stabilization	Soliditech, Inc.	Solidification/ Stabilization	V1,152
	Radio nuclides	Materials Handling	Thermo Nutech, Inc.	Segmented Gate System	V2,134
		Physical/ Chemical Treatment	IT Corp.	Mixed Waste Treatment Process	V2,68
			Selentec Environmental Technologies, Inc.	Selentec MAG*SEP Technology	V1,226
		Solidification/ Stabilization	Sevenson Environmental Services, Inc.	MAECTITE® Chemical Treatment Process	V1,228
			WASTECH, Inc.	Solidification/ Stabilization	V1,172
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
	SVOCs	Biological Degradation	ECOVA Corp.	Bioslurry Reactor	V1,64
			GRACE Bioremediation Technologies.	DARAMEND™ Bioremediation Technology	V1,90
			Institute of Gas Technology	Chemical and Biological Treatment	V2,56
			Institute of Gas Technology	Fluid Extraction - Biological Degradation Process	V2,58
			IT Corp.	Tekno Associates Bioslurry Reactor	V2,72
			New York State Dept. of Environmental Conservation/ ENSR Consulting and Larsen Engineers	EX Situ Biovault	V1,126
			New York State Dept. of Environmental Conservation/ R.E. Wright Environmental, Inc.	In Situ Bioventing Treatment System	V1,130
			IT Corp.	Oxygen Microbubble In Situ Bioremediation	V2,126
			Remediation Technologies, Inc.	Liquid and Solids Biological Treatment	V1,140
		Materials Handling	United States Environmental Protection Agency	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical/ Chemical Thermal Desorption	Biotherm, LCC	Biotherm Process	V1,36
			ELI Eco Logic Inc.	Gas-Phase Chemical Reduction Process	V1,68
			ELI Eco Logic International Inc.	Thermal Desorption Unit	V1,70
			KAI Technologies, Inc./Brown and Root Environmental	Radio Frequency Heating	V1,106
			Maxymillian Technologies, Inc.	Thermal Desorption System	V1,112
			New Jersey Institute of Technology	GHEA Associates Process	V2,86

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Sludge (continued)	SVOCs (continued)	Physical/ Chemical Thermal Desorption (continued)	NOVATERRA, Inc.	In-Situ Soil Treatments [Steam/Air Stripping]	V1,134
			OHM Remediation Services Corp.	X*TRAX™ Thermal Desorption	V1,136
			Recycling Sciences International, Inc.	Desorption and Vapor Extraction System	V1,220
			Smith Environmental Technologies Corp.	Low Temperature Thermal Aeration [LTTA®]	V1,148
			Roy F. Weston, Inc.	Low Temperature Thermal Treatment [LT3®] System	V1,174
		Physical/ Chemical Treatment	CF Systems Corp.	Liquified Gas Solvent Extraction [LG-SX] Technology	V1,48
			Electrokinetics, Inc.	Electrokinetic Soil Processing	V1,66
			High Voltage Environmental Applications, Inc.	High Energy Electron Beam Irradiation	V2,54
			High Voltage Environmental Applications, Inc.	High-Energy Electron Irradiation	V1,94
			Ionics RCC	B.E.S.T. Solvent Extraction Technology	V1,104
			IT Corp.	Mixed Waste Treatment Process	V2,68
			National Risk Management Research Laboratory	Base-Catalyzed Decomposition Process	V1,116
			National Risk Management Research Laboratory and IT Corp.	Debris Washing System	V1,122
			Terra-Kleen Response Group, Inc.	Solvent Extraction Treatment System	V1,158
			Terra Vac, Inc.	In Situ and Ex Situ Vacuum Extraction	V1,160
			Toronto Harbour Commission	Soil Recycling	V1,162
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			United States Environmental Protection Agency	Field Analytical Screening Program - PCB Method	V3,78
		Solidification/ Stabilization	Chemfix Technologies, Inc.	Solidification/ Stabilization	V1,50
			Geo-Con, Inc.	In Situ Solidification and Stabilization Process	V1,82
			STC Remediation, A Division of Omega Environmental, Inc.	Organic Stabilization and Chemical Fixation/Solidification	V1,156
			WASTECH, Inc.	Solidification/ Stabilization	V1,172
			Western Product Recovery Group, Inc.	Coordinate, Chemical Bonding, and Adsorption Treatment	V2,114

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Sludge (continued)	SVOCs (continued)	Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Strategic Diagnostic, Inc. Corp.	RaPID Assay®	V3,72
		Thermal Desorption	BWX Technologies, Inc.	Cyclone Furnace	V1,44
			Institute of Gas Technology	Fluidized-Bed/ Cyclonic Agglomerating Combustor	V2,60
			Sonotech, Inc.	Frequency-Tunable Pulse Combustion System	V1,154
			Texaco, Inc.	Texaco Gasification Process	V1,162
			U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
			Vortec Corp.	Vitrification Process	V1,236
	VOCs	Biological Degradation	Bio-Rem, Inc.	Augmented In Situ Subsurface Bioremediation Process	V1,34
			ECOVA Corp.	Bioslurry Reactor	V1,64
			Electrokinetics, Inc.	In Situ Bioremediation By Electrokinetic Injection	V2,120
			New York State Dept. of Environmental Conservation/ ENSR Consulting and Larsen Engineers	Ex Situ Biovault	V1,126
			New York State Dept. of Environmental Conservation/ R.E. Wright Environmental, Inc.	In Situ Bioventing Treatment System	V1,130
			IT Corp.	Oxygen Microbubble In Situ Bioremediation	V2,126
		Materials Handling	AEA Technology Environment	Soil Separation and Washing Process	V2,16
			United States Environmental Protection Agency	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical/ Chemical Thermal Desorption	Biotherm, LCC	Biotherm Process	V1,36
			KAI Technologies, Inc./Brown and Root Environmental	Radio Frequency Heating	V1,106
			Maxymillian Technologies, Inc.	Thermal Desorption System	V1,112
			New Jersey Institute of Technology	GHEA Associates Process	V2,86
			NOVATERRA, Inc.	In-Situ Soil Treatments (Steam/Air Stripping)	V1,134
			Recycling Sciences International, Inc.	Desorption and Vapor Extraction System	V1,220
			Smith Environmental Technologies Corp.	Low Temperature Thermal Aeration [LTTA®]	V1,148

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Sludge (continued)	VOCs (continued)	Physical/ Chemical Thermal Desorption (continued)	Roy F. Weston, Inc.	Low Temperature Thermal Treatment [LT3®] System	V1,174
		Physical/ Chemical Treatment	CF Systems Corp.	Liquified Gas Solvent Extraction [LG-SX] Technology	V1,48
			High Voltage Environmental Applications, Inc.	High-Energy Electron Irradiation	V1,94
			Institute of Gas Technology	Supercritical Extraction/Liquid Phase Oxidation	V2,62
			Ionics RCC	B.E.S.T. Solvent Extraction Technology	V1,104
			IT Corp.	Batch Steam Distillation and Metal Extraction	V2,64
			IT Corp.	Mixed Waste Treatment Process	V2,68
			Terra-Kleen Response Group, Inc.	Solvent Extraction Treatment System	V1,158
			Terra Vac, Inc.	In Situ and Ex Situ Vacuum Extraction	V1,160
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			United States Environmental Protection Agency	Field Analytical Screening Program - PCB Method	V3,78
		Solidification/ Stabilization	Geo-Con, Inc.	In Situ Solidification and Stabilization Process	V1,82
			WASTECH, Inc.	Solidification/ Stabilization	V1,172
			Western Product Recovery Group, Inc.	Coordinate, Chemical Bonding, and Adsorption Treatment	V2,114
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Strategic Diagnostic, Inc. Corp.	RaPID Assay®	V3,72
		Thermal Destruction	Energy and Environmental Research Corp.	Hybrid Fluidized Bed System	V2,40
			Institute of Gas Technology	Fluidized-Bed/ Cyclonic Agglomerating Combustor	V2,60
			Sonotech, Inc.	Frequency-Tunable Pulse Combustion System	V1,154
			Texaco, Inc.	Texaco Gasification Process	V1,162
			Vortec Corp.	Vitrification Process	V1,236
	Other	Solidification/ Stabilization	STC Remediation, A Division of Omega Environmental, Inc.	Organic Stabilization and Chemical Fixation/Solidification	V1,156
Soil	Aromatic VOCs	Biological Degradation	Billings and Associates, Inc.	Subsurface Volatilization and Ventilation System (SVVS)	V1,30

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Soil (continued)	Aromatic VOCs (continued)	Biological Degradation (continued)	Bio-Rem, Inc.	Augmented In Situ Subsurface Bioremediation Process	V1,34
			Electrokinetics, Inc.	In Situ Bioremediation by Electrokinetic Injection	V2,120
			GRACE Bioremediation Technologies	DARAMEND™ Bioremediation Technology	V1,90
			Harding Lawson Associates	Two Zone, Plume Interception. In Situ Treatment Technology	V2,48
			Hazardous Substance Management Research Center at New Jersey Institute of Technology, and Rutgers, the State U. of New Jersey	Pneumatic Fracturing and Bioremediation Process	V2,52
			Institute of Gas Technology	Fluid Extraction - Biological Degradation Process	V2,58
			National Risk Management Research Laboratory	Bioventing	V1,208
			New York State Dept. of Environment Conservation/ENSR Consulting and Larson Engineers	Ex Situ Biovault	V1,126
			New York State Dept. of Environmental Conservation/R.E. Wright Environmental, Inc.	In Situ Bioventing Treatment System	V1,130
			IT Corp.	Oxygen Microbubble In Situ Bioremediation	V2,126
		Contaminant Survey Systems	W.L. Gore and Associates, Inc.	GORE-SORBER Screening Survey	V3,82
		Materials Handling	National Risk Management Research Laboratory. The U. of Cincinnati and FRX, Inc.	Hydraulic Fracturing	V1,124
			U.S. EPA	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical/ Chemical Thermal Desorption	Biotherm, LCC	Biotherm Process	V1,36
			Hughes Environmental Systems, Inc.	Steam Enhanced Recovery Process	V1,100
			Maxymillian Technologies, Inc.	Thermal Desorption System	V1,112
			NOVATERRA, Inc.	In-Situ Soil Treatments, (Steam/Air Stripping)	V1,134
			Recycling Sciences International, Inc.	Desorption and Vapor Extraction System	V1,220
			SoilTech ATP Systems, Inc.	Anaerobic Thermal Processor	V1,150

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Soil (continued)	Aromatic VOCs (continued)	Physical/ Chemical Thermal Desorption (continued)	Roy F. Weston, Inc.	Low Temperature Thermal Treatment (LT3™) System	V1,174
		Physical/ Chemical Treatment	Arctic Foundations, Inc.	Cryogenic Barrier	V1,190
			ARS Technologies, Inc.	Pneumatic Fracturing Extraction™ and Catalytic Oxidation	V1,24
			Bergmann, A Division of Linatex, Inc.	Soil and Sediment Washing	V1,26
			CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48
			Electrokinetics, Inc.	Electrokinetic Soil Processing	V1,66
			Energia, Inc.	Reductive Thermal and Photo-Thermal Oxidation for Enhanced Conversion of Chlorocarbons	V2,122
			High Voltage Environmental Applications, Inc.	High-Energy Electron Irradiation	V1,94
			Institute of Gas Technology	Supercritical Extraction/Liquid Phase Oxidation	V2,62
			Ionics RCC	B.E.S.T. Solvent Extraction Technology	V1,104
			IT Corp.	Mixed Waste Treatment Process	V2,68
			KSE, Inc.	Adsorption-Integrated-Reaction Process	V1,200/ V2,24
			Pulse Sciences, Inc.	X-Ray Treatment of Organically Contaminated Soils	V2,132
			Terra Vac, Inc.	In Situ and Ex Situ Vacuum Extraction	V1,160
			Roy F. Weston, Inc./IEG Technologies	UVB - Vacuum Vaporizing Well	V1,176
			Xerox Corp.	2-PHASE™ EXTRACTION Process	V1,180
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			HNU Systems, Inc.	HNU GC 311D Portable Gas Chromatograph	V3,42
			Photovac Monitoring Instruments	PE Photovac Voyager Portable Gas Chromatograph	V3,56
			SRI Instruments	Compact Gas Chromatograph	V3,66
			U.S. EPA	Field Analytical Screening Program - PCB Method	V3,78
		Samplers	Geoprobe Systems	Large Bore Soil Sampler	V3,34
		Sensors	Fugro Geosciences, Inc.	Rapid Optical Screening Tool	V3,30
		Solidification/ Stabilization	Geo Con. Inc.	In Situ Solidification and Stabilization Process	V1,82
			WASTECH, Inc.	Solidification and Stabilization	V1,172
			Western Product Recovery Group, Inc.	Coordinate, Chemical Bonding, and Adsorption Treatment	V2,114

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Soil (continued)	Aromatic VOCs (continued)	Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Hanby Environmental Laboratory Procedures, Inc.	Test Kits for Organic Contaminants in Soil and Water	V3,38
		Thermal Destruction	Sonotech, Inc.	Frequency Tunable Pulse Combustion System	V1,154
			Texaco, Inc.	Texaco Gasification Process	V1,162
			U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
			Vortec Corp.	Vitrification Process	V1,236
	Cyanide	Biological Degradation	Pintail Systems, Inc.	Spent Ore Bioremediation Process	V1,214
		Physical/ Chemical Treatment	Arctic Foundations, Inc.	Cryogenic Barrier	V1,190
	Diesel	Materials Handling	National Risk Management Research Laboratory, The U. of Cincinnati, and FRX, Inc.	Hydraulic Fracturing	V1,124
		Physical/ Chemical Treatment	Arctic Foundations, Inc.	Cryogenic Barrier	V1,190
			Geokinetics International, Inc.	Electroheat-Enhanced Nonaqueous-Phase Liquids Removal	V1,196
	Dioxins	Biological Degradation	Biotrol®	Soil Washing System	V1,40
			Institute of Gas Technology	Fluid Extraction - Biological Degradation Process	V2,58
		Materials Handling	U.S. EPA	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical/ Chemical Thermal Desorption	ELI Eco Logic Inc.	Gas-Phase Chemical Reduction Process	V1,68
			ELI Eco Logic International Inc.	Thermal Desorption Unit	V1,70
			Recycling Sciences International, Inc.	Desorption and Vapor Extraction System	V1,220
			SoilTech ATP Systems, Inc.	Anaerobic Thermal Processor	V1,150
			Roy F. Weston, Inc.	Low Temperature Thermal Treatment (LT3™) System	V1,174
			Arctic Foundations, Inc.	Cryogenic Barrier	V1,190
		Physical/ Chemical Treatment	ART International, Inc.	Low-Energy Extraction Process (LEEP)	V2,20
			CF Systems Corp.	Liquified Gas Solvent Extraction (LG SX) Technology	V1,48
			High Voltage Environmental Applications, Inc.	High-Energy Electron Irradiation	V1,94

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Soil (continued)	Dioxins (continued)	Physical/ Chemical Treatment (continued)	Ionics RCC	B.E.S.T. Solvent Extraction Technology	V1,104
			IT Corp.	Mixed Waste Treatment Process	V2,68
			National Risk Management Research Laboratory	Base-Catalyzed Decomposition Process	V1,116
			Terra-Kleen Response Group, Inc.	Solvent Extraction Treatment System	V1,158
			Trinity Environmental Technologies, Inc.	PCB- and Organochlorine-Contaminated Soil Detoxification	V2,104
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
		Samplers	Geoprobe Systems	Large Bore Soil Sampler	V3,34
		Solidification/ Stabilization	Geosafe Corp.	GeoMelt Vitrification	V1,84
			WASTECH, Inc.	Solidification and Stabilization	V1,172
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
			Energy and Environmental Research Corp.	Reactor Filter System	V2,42
			Institute of Gas Technology	Fluidized-Bed/Cyclonic Agglomerating Combustor	V2,60
			U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
			Vortec Corp.	Oxidation and Verification Process	V1,236
	Explosives	Biological Degradation	J.R. Simplot Company	The SABRE™ Process	V1,66
		Contaminant Survey Systems	Quadrel Services, Inc.	Emflux Soil-Gas Survey System	V3,54
			W.L. Gore and Associates, Inc.	GORE-SORBER Screening Survey	V3,82
		Physical/ Chemical Thermal Desorption	New Jersey Institute of Technology	GHEA Associates Process	V2,86
	Furans	Biological Degradation	Biotrol®	Soil Washing System	V1,40
			Institute of Gas Technology	Fluid Extraction - Biological Degradation Process	V2,58
		Materials Handling	U.S. EPA	Field Analytical Screening Program - PCB Method	V3,78
		Physical/ Chemical Thermal Desorption	ELI Eco Logic Inc.	Gas-Phase Chemical Reduction Process	V1,68
			ELI Eco Logic International, Inc.	Thermal Desorption Unit	V1,70
			Recycling Sciences International, Inc.	Desorption and Vapor Extraction System	V1,220
			SoilTech ATP Systems, Inc.	Anaerobic Thermal Processors	V1,150
			Roy F. Weston, Inc.	Low Temperature Thermal Treatment (LT3™) System	V1,174

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Soil (continued)	Furans (continued)	Physical/ Chemical Treatment	Arctic Foundations, Inc.	Cryogenic Barrier	V1,190
			ART International, Inc.	Low-Energy Extraction Process (LEEP)	V2,20
			CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48
			High Voltage Environmental Applications, Inc.	High-Energy Electron Irradiation	V1,94
			Ionics RCC	B.E.S.T. Solvent Extraction Technology	V1,104
			IT Corp.	Mixed Waste Treatment Process	V2,68
			National Risk Management Research Laboratory	Base, Catalyzed Decomposition Process	
			Terra-Kleen Response Group, Inc.	Solvent Extraction Treatment System	V1,158
			Trinity Environmental Technologies, Inc.	PCB- and Organochlorine-Contaminated Soil Detoxification	V2,104
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
		Samplers	Geoprobe Systems	Large Bore Soil Sampler	V3,34
		Solidification/ Stabilization	Geosafe Corp.	GeoMelt Vitrification	V1,84
			WASTECH, Inc.	Solidification and Stabilization	V1,172
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
			Energy and Environmental Research Corp.	Reactor Filter System	V2,42
			Institute of Gas Technology	Fluidized-Bed/Cyclonic Agglomerating Combustor	V2,60
			U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
			Vortec Corp.	Vitrification Process	V1,236
	Gasoline	Contaminant Survey Systems	W.L. Gore and Associates, Inc.	GORE-SORBER Screening Survey	V3,82
		Materials Handling	National Risk Management Research Laboratory, The U. of Cincinnati, and FRX, Inc.	Hydraulic Fracturing	V1,124
		Physical/Chemical Thermal Desorption	SIVE Services	Steam Injection and Vacuum Extraction	V1,230
		Physical/ Chemical Treatment	Arctic Foundations, Inc.	Cryogenic Barrier	V1,190
		Samplers	Geoprobe Systems	Large Bore Soil Sampler	V3,34
	Halogenated VOCs	Biological Degradation	Harding Lawson Associates	Two Zone, Plume Interception. In Situ Treatment Technology	V2,48

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Soil (continued)	Halogenated VOCs (continued)	Biological Degradation (continued)	Bio-Rem, Inc.	Augmented In Situ Subsurface Bioremediation Process	V1,34
			New York State Dept. of Environmental Conservation/R.E. Wright Environmental, Inc.	In Situ Bioventing Treatment System	V1,130
			IT Corp.	Oxygen Microbubble In Situ Bioremediation	V2,126
		Contaminant Survey Systems	W.L. Gore and Associates, Inc.	GORE-SORBER Screening Survey	V3,82
		Materials Handling	National Risk Management Research Laboratory. The U. of Cincinnati and FRX, Inc.	Hydraulic Fracturing	V1,124
			U.S. EPA	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical/Chemical Treatment - Biological Degradation	Lasagna™ Public Private Partnership	Lasagna™ In Situ Soil Remediation	V1,202
		Physical/ Chemical Thermal Desorption	Hughes Environmental Systems, Inc.	Steam Enhanced Recovery Process	V1,100
			KAI Technologies, Inc./Brown and Root Environmental	Radio Frequency Heating	V1,106
			New Jersey Institute of Technology	GHEA Associates Process	V2,86
			NOVATERRA, Inc.	In-Situ Soil Treatments, (Steam/Air Stripping)	V1,134
			OHM Remediation Services Corp.	X*TAX™ Thermal Desorption	V1,136
			Recycling Sciences International, Inc.	Desorption and Vapor Extraction System	V1,220
			SoilTech ATP Systems, Inc.	Anaerobic Thermal Processor	V1,150
			Roy F. Weston, Inc.	Low Temperature Thermal Treatment (LT3™) System	V1,174
			Xerox Corp.	2-PHASE™ EXTRACTION Process	V1,180
			Arctic Foundations, Inc.	Cryogenic Barrier	V1,190
		Physical/ Chemical Treatment	Arctic Foundations, Inc.	Cryogenic Barrier	V1,190
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			Photovac Monitoring Instruments	PE Photovac Voyager Portable Gas Chromatograph	V3,56
			SRI Instruments	Compact Gas Chromatograph	V3,66
			U.S. EPA	Field Analytical Screening Program - PCB Method	V3,78
		Samplers	Geoprobe Systems	Large Bore Soil Sampler	V3,34

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Soil (continued)	Halogenated VOCs (continued)	Solidification/ Stabilization	Geo Con, Inc.	In Situ Solidification and Stabilization Process	V1,82
			Geosafe Corp.	GeoMelt Vitrification	V1,84
			WASTECH, Inc.	Solidification and Stabilization	V1,172
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Dexsil Corp.	Environmental Test Kits	V3,26
		Thermal Destruction	Energy and Environmental Research Corp.	Hybrid Fluidized Bed System	V2,40
			Svedala Industries, Inc.	PYROKILN THERMAL ENCAPSULATION Process	V2,100
			Texaco Inc.	Texaco Gasification Process	V1,162
			U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
			Vortec Corp.	Vitrification Process	V1,236
	Heavy Metals	Field Portable X-ray Fluorescence	C-THRU Technologies Corporation	Metal Analysis Probe (MAP®) Portable Assays	V3,22
		Solidification/Stabilization	Rocky Mountain Remediation Services, L.L.C.	Envirobond Solution	V1,222
			Star Organics, L.L.C.	Soil Rescue Remediation Fluid	V1,232
	Heavy Minerals	Materials Handling	Montana College of Mineral Science and Technology	Campbell Centrifugal Jig	V2,84
		Samplers	Art's Manufacturing and Supply	AMS™ Dual-Tube Liner Soil Sampler	V3,16
			Simulprobe Technologies, Inc.	Core Barrel Soil Sampler	V3,62
	Herbicides	Biological Degradation	Biotrol®	Soil Washing System	V1,40
			Electrokinetics, Inc.	In Situ Bioremediation by Electrokinetic Injection	V2,120
			GRACE Bioremediation Technologies	DARAMEND™ Bioremediation Technology	V1,90
			Institute of Gas Technology	Fluid Extraction - Biological Degradation Process	V2,58
			Phytokinetics, Inc.	Phytoremediation of Contaminated Soils	V2,128
			J.R. Simplot Company	The SABRE™ Process	V1,66
		Materials Handling	U.S. EPA	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical Chemical Treatment - Biological Degradation	Lasagna™ Public Private Partnership	Lasagna™ In Situ Soil Remediation	V1,202
		Physical/ Chemical Thermal Desorption	ELI Eco Logic Inc.	Gas-Phase Chemical Reduction Process	V1,68
			ELI Eco Logic International, Inc.	Thermal Desorption Unit	V1,70

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Soil (continued)	Herbicides (continued)	Physical/ Chemical Thermal Desorption (continued)	Maxymillian Technologies, Inc.	Thermal Desorption System	V1,112
			OHM Remediation Services Corp.	X*TAX™ Thermal Desorption	V1,136
			Recycling Sciences International, Inc.	Desorption and Vapor Extraction System	V1,220
			Smith Environmental Technologies Corp.	Low Temperature Thermal Aeration (LTTA®)	V1,148
			SoilTech ATP Systems, Inc.	Anaerobic Thermal Processors	V1,150
			Roy F. Weston, Inc.	Low Temperature Thermal Treatment (LT3™) System	V1,174
		Physical/ Chemical Treatment	Arctic Foundations, Inc.	Cryogenic Barrier	V1,190
			ART International, Inc.	Low-Energy Extraction Process (LEEP)	V2,20
			Bergmann, A Division of Linatex, Inc.	Soil and Sediment Washing	V1,26
			Center for Hazardous Materials Research	Organics Destruction and Metals Stabilization	V2,32
			CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48
			High Voltage Environmental Applications, Inc.	High-Energy Electron Irradiation	V1,94
			Ionics RCC	B.E.S.T. Solvent Extraction Technology	V1,104
			IT Corp.	Mixed Waste Treatment Process	V2,68
			National Risk Management Research Laboratory	Base-Catalyzed Decomposition Process	V1,116
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
		Samplers	Geoprobe Systems	Large Bore Soil Sampler	V3,34
		Solidification/ Stabilization	Chemfix Technologies, Inc.	Solidification and Stabilization	V1,50
			WASTECH, Inc.	Solidification and Stabilization	V1,172
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Strategic Diagnostic, Inc. Corp.	(RaPID Assay®)	V3,72
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
			U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
			Vortec Corp.	Vitrification Process	V1,236
	Mercury	Contaminant Survey Systems	Quadrel Services, Inc.	Emflux Soil-Gas Survey System	V3,54
			Radiometer Analytical Group	Anodic Voltammetry for Mercury in Soil	V3,58
		Physical/ Chemical Treatment	Bionebraska, Inc.	BiMelyze® Mercury Immunoassay	V3,18

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Soil (continued)	Metals	Biological Degradation	COGNIS, Inc.	Biological/Chemical Treatment	V1,52
			Geo-Microbial Technologies, Inc.	Metals Release and Removal of Wastes	V2,124
			Phytotech	Phytoremediation Technology	V1,212
			Pintail Systems, Inc.	Biomining of Metals	V2,130
			Pintail Systems, Inc.	Spent Ore Bioremediation Process	V1,214
		Contaminant Survey Systems	W.L. Gore and Associates, Inc.	GORE-SORBER Screening Survey	V3,82
		Field Portable X-ray Fluorescence	Metorex, Inc.	Field Portable X-Ray Fluorescence Analysis	V3,48
			NITON Corp.	XL Spectrum Analyzer	V3,52
			C-THRU Technologies Corporation	Metal Analysis Probe (MAP®) Portable Assays	V3,22
			TN Spectrace	9000 X-Ray Fluorescence Analyzer and Lead X-Ray Fluorescence Analyzer	V3,74
		Materials Handling	AEA Technology Environment	Soil Separation and Washing Process	V2,16
			Montana College of Mineral Science and Technology	Air-Sparged Hydrocyclone	V2,82
			Montana College of Mineral Science and Technology	Campbell Centrifugal Jig	V2,84
			U.S. EPA	Excavation Techniques and Foam Suppression Methods	V1,166
			U. of South Carolina	In Situ Mitigation of Acid Water	V2,108
		Physical Chemical Treatment - Biological Degradation	Lasagna™ Public Private Partnership	Lasagna™ In Situ Soil Remediation	V1,202
		Physical/ Chemical Thermal Desorption	New Jersey Institute of Technology	GHEA Associates Process	V2,86
			Geotech Development Corp.	Cold Top Ex Situ Verification of Chromium-Contaminated Soils	V1,86
		Physical/ Chemical Treatment	Arctic Foundations, Inc.	Cryogenic Barrier	V1,190
			Battelle Memorial Institute	In Situ Electroacoustic Soil Decontamination	V2,26
			Bergmann. A Division of Linatex, Inc.	Soil and Sediment Washing	V1,26
			BioGenesis Enterprises, Inc.	BioGenesisSM Soil & Sediment Washing Process	V1,32
			Brice Environmental Services Corp.	Soil Washing Process	V1,42
			Center for Hazardous Materials Research	Acid Extraction Treatment System	V2,30
			COGNIS, Inc.	TERRAMET Soil Remediation System	V1,52
			Electrokinetics, Inc.	Electrokinetic Soil Processing	V1,66

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Soil (continued)	Metals (continued)	Physical/ Chemical Treatment (continued)	General Atomics, Nuclear Remediation Technologies Division	Acoustic Barrier Particulate Separator	V2,48
			IT Corp.	Batch Steam Distillation and Metal Extraction	V2,64
			IT Corp.	Chelation/Electrodeposition of Toxic Metals from Soils	V2,66
			IT Corp.	Mixed Waste Treatment Process	V2,68
			Lewis Environmental Services, Inc./Hickson Corp.	Chromated Copper Arsenate Soil Leaching Process	V2,76
			Morrison Knudsen Corp./Spetstamonazhge ologia Enterprises/STG Technologies	Clay-Base Grouting Technology	V1,114
			National Risk Management Research Laboratory	Volume Reduction Unit	V1,118
			Sandia National Laboratories	In Situ Electrokinetic Extraction System	V1,224
			Toronto Harbour Commission	Soil Recycling	V1,162
			U. of Houston	Concentrated Chlorine Extraction and Recovery of Lead	V2,136
		Portable Gas Chromatographs	HNU Systems, Inc.	HNU GC 311D Portable Gas Chromatograph	V3,42
		Samplers	Art's Manufacturing and Supply	AMS™ Dual-Tube Liner Soil Sampler	V3,16
			Geoprobe Systems	Large Bore Soil Sampler	V3,34
			Simulprobe Technologies, Inc.	Core Barrel Soil Sampler	V3,62
		Solidification/ Stabilization	Chemfix Technologies, Inc.	Solidification and Stabilization	V1,50
			Ferro Corp.	Waste Vitrification Through Electric Melting	V2,46
			Funderburk & Associates	Dechlorination and Immobilization	V1,78
			Geo-Con, Inc.	In Situ Solidification and Stabilization Process	V1,82
			Geosafe Corp.	GeoMelt Vitrification	V1,84
			Rocky Mountain Remediation Services, L.L.C.	Envirobond Solution	V1,222
			Sevenson Environmental Services, Inc.	MAECTITE® Chemical Treatment Process	V1,228
			Soliditech, Inc.	Solidification and Stabilization	V1,152
			Star Organics, L.L.C.	Soil Rescue Remediation Fluid	V1,232
			STC Remediation. A Division of Omega Environmental, Inc.	Organic Stabilization and Chemical Fixation/Solidification	V1,156

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Soil (continued)	Metals (continued)	Solidification/ Stabilization (continued)	WASTECH, Inc.	Solidification and Stabilization	V1,172
			Western Product Recovery Group, Inc.	Coordinate, Chemical Bonding, and Adsorption Treatment	V2,114
		Thermal Destruction	American Combustion, Inc.	PYRETRON® Thermal Destruction	V1,22
			BWX Technologies, Inc.	Cyclone Furnace	V1,44
			Concurrent Technologies	Smelting Lead-Containing Wastes	V2,34
			Energy and Environmental Research Corp.	Hybrid Fluidized Bed System	V2,40
			Energy and Environmental Research Corp.	Reactor Filter System	V2,42
			Horsehead Resource Development Co., Inc.	Flame Reactor	V1,96
			Institute of Gas Technology	Fluidized-Bed/Cyclonic Agglomerating Combustor	V2,60
			PSI Technologies, A Division of Physical Sciences Inc.	Metals Immobilization and Decontamination of Aggregate Solids	V2,88
			Svedala Industries, Inc.	PYROKILN THERMAL ENCAPSULATION Process	V2,100
			Vortec Corp.	Vitrification Process	V1,236
	Organics	Physical/ Chemical Treatment	Arctic Foundations, Inc.	Cryogenic Barrier	V1,190
		Sensors	Geoprobe Systems	Geoprobe Conductivity System	V3,32
		Thermal Destruction	Gruppo Italimprese	Infrared Thermal Destruction	V1,92
	PAHs	Biological Degradation	COGNIS, Inc.	Biological/Chemical Treatment	V2,36
			ECOVA Corp.	Bioslurry Reactor	V1,64
			Environmental BioTechnologies, Inc.	Fungal Degradation Process	V2,44
			Institute of Gas Technology	Fluid Extraction - Biological Degradation Process	V2,58
			Remediation Technologies, Inc.	Liquid and Solids Biological Treatment	V1,140
			Cone Penetrometers	Space and Naval Warfare Systems Center	V3,64
		Contaminant Survey Systems	W.L. Gore and Associates, Inc.	GORE-SORBER Screening Survey	V3,82
		Physical/ Chemical Thermal Desorption	Geokinetics International, Inc.	Electroheat-Enhanced Nonaqueous Phase Liquids Removal	V1,196
			Maxymillian Technologies, Inc.	Thermal Desorption System	V1,112
			Recycling Sciences International, Inc.	Desorption and Vapor Extraction System	V1,220
		Physical/ Chemical Treatment	Arctic Foundations, Inc.	Cryogenic Barrier	V1,190
			Bergmann. A Division of Linatex, Inc.	Soil and Sediment Washing	V1,26

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Soil (continued)	PAHs (continued)	Physical/ Chemical Treatment (continued)	BioGenesis Enterprises, Inc.	BioGenesis™ Soil & Sediment Washing Process	V1,32
		Portable Gas Chromatograph	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
		Samplers	Clements, Inc.	JMC Environmental Subsoil Probe	V3,24
		Sensors	Fugro Geosciences, Inc.	Rapid Optical Screening Tool	V3,30
	PCBs	Biological Degradation	Institute of Gas Technology	Chemical and Biological Treatment	V2,56
			Institute of Gas Technology	Fluid Extraction - Biological Degradation Process	V2,58
			Phytokinetics, Inc.	Phytoremediation of Contaminated Soils	V2,128
			Phytokinetics, Inc.	Phytoremediation Process	V1,210
		Field Portable X-ray Fluorescence	Metorex, Inc.	Field Portable X-Ray Fluorescence Analysis	V3,48
		Materials Handling	U.S. EPA	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical/ Chemical Thermal Desorption	Biotherm, LCC	Biotherm Process	V1,36
			ELI Eco Logic Inc.	Gas-Phase Chemical Reduction Process	V1,68
			ELI Eco Logic International, Inc.	Thermal Desorption Unit	V1,70
			KAI Technologies, Inc./Brown and Root Environmental	Radio Frequency Heating	V1,106
			New Jersey Institute of Technology	GHEA Associates Process	V2,86
			OHM Remediation Services Corp.	X*TAX™ Thermal Desorption	V1,136
			Recycling Sciences International, Inc.	Desorption and Vapor Extraction System	V1,220
			SoilTech ATP Systems, Inc.	Anaerobic Thermal Processors	V1,150
			Roy F. Weston, Inc.	Low Temperature Thermal Treatment (LT3™) System	V1,174
		Physical/ Chemical Treatment	Arctic Foundations, Inc.	Cryogenic Barrier	V1,190
			ART International, Inc.	Low-Energy Extraction Process (LEEP)	V2,20
			Bergmann, A Division of Linatex, Inc.	Soil and Sediment Washing	V1,26
			BioGenesis Enterprises, Inc.	BioGenesisSM Soil & Sediment Washing Process	V1,32
			Center for Hazardous Materials Research	Organics Destruction and Metals Stabilization	V2,32
			CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Soil (continued)	PCBs (continued)	Physical/Chemical Treatment (continued)	Commodore Environmental Services, Inc.	Solvated Electron Remediation System	V1,56
			General Atomics	Circulating Bed Combustor	V1,80
			High Voltage Environmental Applications, Inc.	High-Energy Electron Irradiation	V1,94
			Ionics RCC	B.E.S.T. Solvent Extraction Technology	V1,104
			IT Corp.	Mixed Waste Treatment Process	V2,68
			IT Corp.	Photolytic and Biological Soil Detoxification	V2,70
			Morrison Knudsen Corp./Spetstamponazhge ologia Enterprises/STG Technologies	Clay-Base Grouting Technology	V1,114
			National Risk Management Research Laboratory	Base-Catalyzed Decomposition Process	V1,116
			State U. of New York at Oswego, Environmental Research Center	Electrochemical Peroxidation of PCB-Contaminated Sediments and Waters	V2,98
			Terra-Kleen Response Group, Inc.	Solvent Extraction Treatment System	V1,158
			Trinity Environmental Technologies, Inc.	PCB- and Organochlorine-Contaminated Soil Detoxification	V2,104
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			HNU Systems, Inc.	HNU GC 311D Portable Gas Chromatograph	V3,42
			SRI Instruments	Compact Gas Chromatograph	V3,66
			U.S. EPA	Field Analytical Screening Program - PCB Method	V3,78
		Samplers	Clements, Inc.	JMC Environmental Subsoil Probe	V3,24
			Geoprobe Systems	Large Bore Soil Sampler	V3,34
		Solidification/Stabilization	Chemfix Technologies, Inc.	Solidification and Stabilization	V1,50
			Funderburk & Associates	Dechlorination and Immobilization	V1,78
			Geo-Con, Inc.	In Situ Solidification and Stabilization Process	V1,82
			Geosafe Corp.	GeoMelt Vitrification	V1,84
			Soliditech, Inc.	Solidification and Stabilization	V1,152
			WASTECH, Inc.	Solidification and Stabilization	V1,172
		Test Kits	Dexsil Corp.	Environmental Test Kits	V3,26
			Hanby Environmental Laboratory Procedure, Inc.	Test Kits for Organic Contaminants in Soil and Water	V3,38

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Soil (continued)	PCBs (continued)	Test Kits (continued)	Strategic Diagnostic, Inc.	EnviroGard™ PCB Immunoassay Test Kit	V3,70
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
			Energy and Environmental Research Corp.	Hybrid Fluidized Bed System	V2,40
			Institute of Gas Technology	Fluidized-Bed/Cyclonic Agglomerating Combustor	V2,60
			U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
			Vortec Corp.	Vitrification Process	V1,236
	PCP	Biological Degradation	Remediation Technologies, Inc.	Liquid and Solids Biological Treatment	V1,140
		Physical/ Chemical Treatment	Arctic Foundations, Inc.	Cryogenic Barrier	V1,190
		Portable Gas Chromatographs	U.S. EPA	Field Analytical Screening Program - PCP Method	V3,80
		Physical/ Chemical Thermal Desorption	Recycling Sciences International, Inc.	Desorption and Vapor Extraction System	V1,220
		Physical/ Chemical Treatment	National Risk Management Research Laboratory	Volume Reduction Unit	V1,118
			Trinity Environmental Technologies, Inc.	PCB- and Organochlorine-Contaminated Soil Detoxification	V2,104
		Test Kits	Strategic Diagnostic, Inc.	Ensys Penta Test System	V3,68
			Strategic Diagnostic, Inc.	EnviroGard™ PCB Immunoassay Test Kit	V3,70
			Strategic Diagnostic, Inc. Corp.	(RaPID Assay®)	V3,72
	Pesticides	Biological Degradation	Biotrol®	Soil Washing System	V1,40
			Electrokinetics, Inc.	In Situ Bioremediation by Electrokinetic Injection	V2,120
			GRACE Bioremediation Technologies	DARAMEND™ Bioremediation Technology	V1,90
			Institute of Gas Technology	Chemical and Biological Treatment	V2,56
			Institute of Gas Technology	Fluid Extraction - Biological Degradation Process	V2,58
			Phytokinetics, Inc.	Phytoremediation of Contaminated Soils	V2,128
			Phytokinetics, Inc.	Phytoremediation Process	V1,210
		Contaminant Survey Systems	W.L. Gore and Associates, Inc.	GORE-SORBER Screening Survey	V3,82
		Materials Handling	U.S. EPA	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical/ Chemical Thermal Desorption	Biotherm, LCC	Biotherm Process	V1,36

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Soil (continued)	Pesticides (continued)	Physical/ Chemical Thermal Desorption (continued)	ELI Eco Logic Inc.	Gas-Phase Chemical Reduction Process	V1,68
			ELI Eco Logic International, Inc.	Thermal Desorption Unit	V1,70
			KAI Technologies, Inc./Brown and Root Environmental	Radio Frequency Heating	V1,106
			OHM Remediation Services Corp.	X*TAX™ Thermal Desorption	V1,136
			Recycling Sciences International, Inc.	Desorption and Vapor Extraction System	V1,220
			Smith Environmental Technologies Corp.	Low, Temperature Thermal Aeration (LTTA)	V1,148
			SoilTech ATP Systems, Inc.	Anaerobic Thermal Processors	V1,150
			Roy F. Weston, Inc.	Low Temperature Thermal Treatment (LT3™) System	V1,174
		Physical/ Chemical Treatment	Arctic Foundations, Inc.	Cryogenic Barrier	V1,190
			ART International, Inc.	Low-Energy Extraction Process (LEEP)	V2,20
			Bergmann, A Division of Linatex, Inc.	Soil and Sediment Washing	V1,26
			Center for Hazardous Materials Research	Organics Destruction and Metals Stabilization	V2,32
			CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48
			Commodore Environmental Services, Inc.	Solvated Electron Remediation System	V1,56
			Electrokinetics, Inc.	Electrokinetic Soil Processing	V1,66
			General Atomics	Circulating Bed Combustor	V1,80
			High Voltage Environmental Applications, Inc.	High-Energy Electron Irradiation	V1,94
			Ionics RCC	B.E.S.T. Solvent Extraction Technology	V1,104
			IT Corp.	Mixed Waste Treatment Process	V2,68
			IT Corp.	Photolytic and Biological Soil Detoxification	V2,70
			Morrison Knudsen Corp./Spetstamonazhge ologia Enterprises/STG Technologies	Clay-Base Grouting Technology	V1,114
			National Risk Management Research Laboratory	Base-Catalyzed Decomposition Process	V1,116
			State U. of New York at Oswego, Environmental Research Center	Electrochemical Peroxidation of PCB-Contaminated Sediments and Waters	V2,98

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Soil (continued)	Pesticides (continued)	Physical/ Chemical Treatment (continued)	Terra-Kleen Response Group, Inc.	Solvent Extraction Treatment System	V1,158
			Trinity Environmental Technologies, Inc.	PCB- and Organochlorine-Contaminated Soil Detoxification	V2,104
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			SRI Instruments	Compact Gas Chromatograph	V3,66
			U.S. EPA	Field Analytical Screening Program - PCB Method	V3,78
		Samplers	Art's Manufacturing and Supply	AMST TM Dual-Tube Liner Soil Sampler	V3,16
			Clements, Inc.	JMC Environmental Subsoil Probe	V3,24
			Geoprobe Systems	Large Bore Soil Sampler	V3,34
			Simulprobe Technologies, Inc.	Core Barrel Soil Sampler	V3,62
		Solidification/ Stabilization	Chemfix Technologies, Inc.	Solidification and Stabilization	V1,50
			Funderburk & Associates	Dechlorination and Immobilization	V1,78
			Geo-Con, Inc.	In Situ Solidification and Stabilization Process	V1,82
			Geosafe Corp.	GeoMelt Vitrification	V1,84
			Soliditech, Inc.	Solidification and Stabilization	V1,152
			WASTECH, Inc.	Solidification and Stabilization	V1,172
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Dexsil Corp.	Environmental Test Kits	V3,26
			Strategic Diagnostic, Inc.	Ensys Penta Test System	V3,68
			Hanby Environmental Laboratory Procedure, Inc.	Test Kits for Organic Contaminants in Soil and Water	V3,38
			Strategic Diagnostic, Inc. Corp.	RaPID Assay [®]	V3,72
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
			Energy and Environmental Research Corp.	Hybrid Fluidized Bed System	V2,40
			Institute of Gas Technology	Fluidized-Bed/Cyclonic Agglomerating Combustor	V2,60
			U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
			Vortec Corp.	Vitrification Process	V1,236
	Petroleum Hydrocarbons	Biological Degradation	COGNIS, Inc.	Biological/Chemical Treatment	V2,36
			ECOVA Corp.	Bioslurry Reactor	V1,64

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Soil (continued)	Petroleum Hydrocarbons (continued)	Biological Degradation (continued)	Hazardous Substance Management Research Center at New Jersey Institute of Technology, and Rutgers, the State U. of New Jersey	Pneumatic Fracturing and Bioremediation Process	V2,52
			Remediation Technologies, Inc.	Liquid and Solids Biological Treatment	V1,140
		Cone Penetrometers	Space and Naval Warfare Systems Center	SCAPS Cone Penetrometer	V3,64
			Tri-Services	Site Characterization Analysis Penetrometer System (SCAPS)	V3,76
		Contaminant Survey Systems	W.L. Gore and Associates, Inc.	GORE-SORBER Screening Survey	V3,82
		Materials Handling	National Risk Management Research Laboratory. The U. of Cincinnati and FRX, Inc.	Hydraulic Fracturing	V1,124
		Physical/ Chemical Thermal Desorption	New Jersey Institute of Technology	GHEA Associates Process	V2,86
			SIVE Services	Steam Injection and Vacuum Extraction	V1,230
			Smith Environmental Technologies Corp.	Low, Temperature Thermal Aeration (LTTA®)	V1,148
		Physical/ Chemical Treatment	Arctic Foundations, Inc.	Cryogenic Barrier	V1,190
		Portable Gas Chromatographs	SRI Instruments	Compact Gas Chromatograph	V3,66
		Solidification/ Stabilization	Soliditech, Inc.	Solidification and Stabilization	V1,152
	Radionuclides	Materials Handling	Thermo Nutech, Inc.	Segmented Gate System	V2,134
		Physical/ Chemical Treatment	Arctic Foundations, Inc.	Cryogenic Barrier	V1,190
			Bergmann, A Division of Linatex, Inc.	Soil and Sediment Washing	V1,26
			IT Corp.	Mixed Waste Treatment Process	V2,68
		Solidification/ Stabilization	Sevenson Environmental Services, Inc.	MAECTITE® Chemical Treatment Process	V1,228
			WASTECH, Inc.	Solidification and Stabilization	V1,172
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
	SVOCs	Biological Degradation	Harding Lawson Associates	Two Zone, Plume Interception. In Situ Treatment Technology	V2,48
			Biotrol®	Soil Washing System	V1,40
			ECOVA Corp.	Bioslurry Reactor	V1,64
			GRACE Bioremediation Technologies	DARAMEND™ Bioremediation Technology	V1,90
			Institute of Gas Technology	Chemical and Biological Treatment	V2,56

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Soil (continued)	SVOCs (continued)	Biological Degradation (continued)	Institute of Gas Technology	Fluid Extraction - Biological Degradation Process	V2,58
			National Risk Management Research Laboratory	Bioventing	V1,208
			National Risk Management Research Laboratory and INTECH 180 Corp.	Fungal Treatment Technology	V1,120
			New York State Dept. of Environment Conservation/ENSR Consulting and Larson Engineers	Ex Situ Biovault	V1,126
			New York State Dept. of Environmental Conservation/R.E. Wright Environmental, Inc.	In Situ Bioventing Treatment System	V1,130
			IT Corp.	Oxygen Microbubble In Situ Bioremediation	V2,126
			Remediation Technologies, Inc.	Liquid and Solids Biological Treatment	V1,140
		Contaminant Survey Systems	Quadrel Services, Inc.	Emflux Soil-Gas Survey System	V3,54
			W.L. Gore and Associates, Inc.	GORE-SORBER Screening Survey	V3,82
		Materials Handling	U.S. EPA	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical/ Chemical Thermal Desorption	Biotherm, LCC	Biotherm Process	V1,36
			ELI Eco Logic Inc.	Gas-Phase Chemical Reduction Process	V1,68
			ELI Eco Logic International, Inc.	Thermal Desorption Unit	V1,70
			IIT Research Institute/Brown and Root Environmental	Radio Frequency Heating	V1,102
			KAI Technologies, Inc./Brown and Root Environmental	Radio Frequency Heating	V1,106
			Maxymillian Technologies, Inc.	Thermal Desorption System	V1,112
			New Jersey Institute of Technology	GHEA Associates Process	V2,86
			NOVATERRA, Inc.	In-Situ Soil Treatments, (Steam/Air Stripping)	V1,134
			OHM Remediation Services Corp.	X*TAX™ Thermal Desorption	V1,136
			Recycling Sciences International, Inc.	Desorption and Vapor Extraction System	V1,220

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Soil (continued)	SVOCs (continued)	Physical/ Chemical Thermal Desorption (continued)	SIVE Services	Steam Injection and Vacuum Extraction	V1,230
			Smith Environmental Technologies Corp.	Low, Temperature Thermal Aeration (LTTA®)	V1,148
			SoilTech ATP Systems, Inc.	Anaerobic Thermal Processors	V1,150
			Roy F. Weston, Inc.	Low Temperature Thermal Treatment (LT3™) System	V1,174
		Physical/ Chemical Treatment	Arctic Foundations, Inc.	Cryogenic Barrier	V1,190
			ARS Technologies, Inc.	Pneumatic Fracturing Extraction™ and Catalytic Oxidation	V1,24
			Bergmann, A Division of Linatex, Inc.	Soil and Sediment Washing	V1,26
			Center for Hazardous Materials Research	Organics Destruction and Metals Stabilization	V2,32
			CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48
			Electrokinetics, Inc.	Electrokinetic Soil Processing	V1,66
			Energia, Inc.	Reductive Thermal and Photo-Thermal Oxidation Processes for Enhanced Conversion of Chlorocarbons	V2,122
			High Voltage Environmental Applications, Inc.	High-Energy Electron Irradiation	V1,94
			Hrubetz Environmental Services, Inc.	HRUBOUT® Process	V1,98
			Ionics RCC	B.E.S.T. Solvent Extraction Technology	V1,104
			IT Corp.	Mixed Waste Treatment Process	V2,68
			National Risk Management Research Laboratory	Base-Catalyzed Decomposition Process	V1,116
			National Risk Management Research Laboratory	Volume Reduction Unit	V1,118
			Terra-Kleen Response Group, Inc.	Solvent Extraction Treatment System	V1,158
			Terra Vac, Inc.	In Situ and Ex Situ Vacuum Extraction	V1,160
			Toronto Harbour Commission	Soil Recycling	V1,162
			Roy F. Weston, Inc./IEG Technologies	UVB - Vacuum Vaporizing Well	V1,176
			Xerox Corp.	2-PHASE™ EXTRACTION Process	V1,180
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			U.S. EPA	Field Analytical Screening Program - PCB Method	V3,78

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Soil (continued)	SVOCs (continued)	Samplers	Art's Manufacturing and Supply	AMST™ Dual-Tube Liner Soil Sampler	V3,16
			Geoprobe Systems	Large Bore Soil Sampler	V3,34
			Simulprobe Technologies, Inc.	Core Barrel Soil Sampler	V3,62
		Solidification/ Stabilization	Chemfix Technologies, Inc.	Solidification and Stabilization	V1,50
			Geo-Con, Inc.	In Situ Solidification and Stabilization Process	V1,82
			STC Remediation. A Division of Omega Environmental, Inc.	Organic Stabilization and Chemical Fixation/Solidification	V1,156
			WASTECH, Inc.	Solidification and Stabilization	V1,172
			Western Product Recovery Group, Inc.	Coordinate, Chemical Bonding, and Adsorption Treatment	V2,114
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Strategic Diagnostic, Inc. Corp.	RaPID Assay®	V3,72
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
			Institute of Gas Technology	Fluidized-Bed/Cyclonic Agglomerating Combustor	V2,60
			Sonotech, Inc.	Frequency-Tunable Pulse Combustion System	V1,154
			Svedala Industries, Inc.	PYROKILN THERMAL ENCAPSULATION Process	V2,100
			Texaco Inc.	Texaco Gasification Process	V1,162
			U. of Dayton Research Institute	Photothermal Detoxification Unit	V2,106
			Vortec Corp.	Vitrification Process	V1,236
		Other	Berkeley Environmental Restoration Center	In Situ Stream Enhanced Extraction Process	V1,28
	VOCs	Biological Degradation	Billings and Associates, Inc.	Subsurface Volatilization and Ventilation System (SVVS®)	V1,30
			Bio-Rem, Inc.	Augmented In Situ Subsurface Bioremediation Process	V1,34
			ECOVA Corp.	Bioslurry Reactor	V1,64
			Electrokinetics, Inc.	In Situ Bioremediation by Electrokinetic Injection	V2,120
			National Risk Management Research Laboratory	Bioventing	V1,208
			New York State Dept. of Environment Conservation/ENSR Consulting and Larson Engineers	Ex Situ Biovault	V1,126

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Soil (continued)	VOCs (continued)	Biological Degradation (continued)	New York State Dept. of Environmental Conservation/R.E. Wright Environmental, Inc.	In Situ Bioventing Treatment System	V1,130
			New York State Dept. of Environmental Conservation/SBP Technologies, Inc.	Vacuum-Vaporized Well System	V1,128
			IT Corp.	Oxygen Microbubble In Situ Bioremediation	V2,126
			Phytokinetics, Inc.	Phytoremediation of Contaminated Soils	V2,128
			Phytokinetics, Inc.	Phytoremediation Process	V1,210
		Contaminant Survey Systems	Quadrel Services, Inc.	Emflux Soil-Gas Survey System	V3,54
			W.L. Gore and Associates, Inc.	GORE-SORBER Screening Survey	V3,82
		Materials Handling	AEA Technology Environment	Soil Separation and Washing Process	V2,16
			National Risk Management Research Laboratory. The U. of Cincinnati and FRX, Inc.	Hydraulic Fracturing	V1,124
			U.S. EPA	Excavation Techniques and Foam Suppression Methods	V1,166
		Physical/ Chemical Thermal Desorption	Biotherm, LCC	Biotherm Process	V1,36
			Geokinetics International, Inc.	Electroheat-Enhanced Nonaqueous Phase Liquids Removal	V1,196
			Hughes Environmental Systems, Inc.	Steam Enhanced Recovery Process	V1,100
			IIT Research Institute/Brown and Root Environmental	Radio Frequency Heating	V1,102
			KAI Technologies, Inc./Brown and Root Environmental	Radio Frequency Heating	V1,106
			Maxymillian Technologies, Inc.	Thermal Desorption System	V1,112
			New Jersey Institute of Technology	GHEA Associates Process	V2,86
			NOVATERRA, Inc.	In-Situ Soil Treatments, (Steam/Air Stripping)	V1,134
			Praxis Environmental Technologies, Inc.	In Situ thermally Enhanced Extraction (TEE) Process	V1,216
			Recycling Sciences International, Inc.	Desorption and Vapor Extraction System	V1,220
			SIVE Services	Steam Injection and Vacuum Extraction	V1,230

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Soil (continued)	VOCs (continued)	Physical/ Chemical Thermal Desorption (continued)	Smith Environmental Technologies Corp.	Low, Temperature Thermal Aeration (LTTA®)	V1,148
			SoilTech ATP Systems, Inc.	Anaerobic Thermal Processor	V1,150
			Roy F. Weston, Inc.	Low Temperature Thermal Treatment (LT3™) System	V1,174
		Physical/ Chemical Treatment	Arctic Foundations, Inc.	Cryogenic Barrier	V1,190
			ARS Technologies, Inc.	Pneumatic Fracturing Extraction™ and Catalytic Oxidation	V1,24
			Arizona State U./Zentox Corp.	Photocatalytic Oxidation with Air Stripping	V2,18
			Berkeley Environmental Restoration Center	In Situ Stream Enhanced Extraction Process	V1,28
			CF Systems Corp.	Liquified Gas Solvent Extraction (LG-SX) Technology	V1,48
			Radian International LCC	Integrated Vapor Extraction and Steam Vacuum Stripping and Soil Vapor Extraction/Reinjection	V1,138
			Energia, Inc.	Reductive Photo-Dechlorination Treatment	V2,38
			Energia, Inc.	Reductive Thermal and Photo-Thermal Oxidation Processes for Enhanced Conversion of Chlorocarbons	V2,122
			High Voltage Environmental Applications, Inc.	High-Energy Electron Irradiation	V1,94
			Hrubetz Environmental Services, Inc.	HRUBOUT® Process	V1,98
			Institute of Gas Technology	Supercritical Extraction/Liquid Phase Oxidation	V2,62
			Ionics RCC	B.E.S.T. Solvent Extraction Technology	V1,104
			IT Corp.	Batch Steam Distillation and Metal Extraction	V2,64
			IT Corp.	Mixed Waste Treatment Process	V2,68
			KSE, Inc.	Adsorption-Integrated-Reaction Process	V1,200/ V2,24
			Morrison Knudsen Corp./Spetstamonazhge ologia Enterprises/STG Technologies	Clay-Base Grouting Technology	V1,114
			National Risk Management Research Laboratory	Volume Reduction Unit	V1,118
			Pulse Sciences, Inc.	X Ray Treatment of Organically Contaminated Soils	V2,132
			Terra-Kleen Response Group, Inc.	Solvent Extraction Treatment System	V1,158

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Soil (continued)	VOCs (continued)	Physical/ Chemical Treatment (continued)	Terra Vac, Inc.	In Situ and Ex Situ Vacuum Extraction	V1,160
			Roy F. Weston, Inc./IEG Technologies	UVB - Vacuum Vaporizing Well	V1,176
			Xerox Corp.	2-PHASE™ EXTRACTION Process	V1,180
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			HNU Systems, Inc.	HNU GC 311D Portable Gas Chromatograph	V3,42
			Photovac Monitoring Instruments	PE Photovac Voyager Portable Gas Chromatograph	V3,56
			SRI Instruments	Compact Gas Chromatograph	V3,66
			U.S. EPA	Field Analytical Screening Program - PCB Method	V3,78
		Samplers	Clements, Inc.	JMC Environmentalist's Subsoil Probe	V3,24
			Simulprobe Technologies, Inc.	Core Barrel Soil Sampler	V3,62
		Sensors	Geoprobe Systems	Geoprobe Conductivity System	V3,32
			Fugro Geosciences, Inc.	Rapid Optical Screening Tool	V3,30
		Solidification/ Stabilization	Geo-Con, Inc.	In Situ Solidification and Stabilization Process	V1,82
			WASTECH, Inc.	Solidification and Stabilization	V1,172
			Western Product Recovery Group, Inc.	Coordinate, Chemical Bonding, and Adsorption Treatment	V2,114
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Hanby Environmental Laboratory Procedure, Inc.	Test Kits for Organic Contaminants in Soil and Water	V3,38
		Thermal Destruction	Energy and Environmental Research Corp.	Hybrid Fluidized Bed System	V2,40
			Institute of Gas Technology	Fluidized-Bed/Cyclonic Agglomerating Combustor	V2,60
			Sonotech, Inc.	Frequency-Tunable Pulse Combustion System	V1,154
			Svedala Industries, Inc.	PYROKILN THERMAL ENCAPSULATION Process	V2,100
			Texaco Inc.	Texaco Gasification Process	V1,162
			Vortec Corp.	Vitrification Process	V1,236
	Other	Cone Penetrometers	Tri-Services	Site Characterization Analysis Penetrometer System (SCAPS)	V3,76
		Solidification/ Stabilization	STC Remediation, A Division of Omega Environmental, inc.	Organic Stabilization and Chemical Fixation/Solidification	V1,156
Solids	Dioxins	Physical/ Chemical Treatment	Active Environmental, Inc.	TechXtract™ Process	V1,20
	Furans	Physical/ Chemical Treatment	Active Environmental, Inc.	TechXtract™ Process	V1,20

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Solid (continued)	Metals	Physical/ Chemical Treatment	Active Environmental, Inc.	TechXtract™ Process	V1,20
	Mercury	Physical/ Chemical Treatment	Bionebraska, Inc.	BiMelyze® Mercury Immunoassay	V3,18
	PCBs	Physical/ Chemical Treatment	Active Environmental, Inc.	TechXtract™ Process	V1,20
	Pesticides	Physical/ Chemical Treatment	Active Environmental, Inc.	TechXtract™ Process	V1,20
Waste water	Aromatic VOCs	Biological Degradation	Biotrol®	Biological Aqueous Treatment System	V1,38
			Electrokinetics, Inc.	In Situ Bioremediation by Electrokinetic Injection	V2,120
			ZENON Environmental, Inc.	ZenoGem™ Process	V1,184
		Physical/ Chemical Thermal Desorption	Rochem Separation Systems, Inc.	Rochem Disc Tube™ Module System	V1,142
		Physical/ Chemical Treatment	CF Systems Corp.	Liquified Gas Solvent Extraction [LG-SX] Technology	V1,48
			High Voltage Environmental Applications, Inc.	High Energy Electron Beam Irradiation	V2,54
			High Voltage Environmental Applications, Inc.	High Energy Electron Irradiation	V1,94
			Magnum Water Technology	CAV-OX® Process	V1,108
			Matrix Photocatalytic Inc.	Photocatalytic Water Treatment	V1,110
			Pulse Sciences, Inc.	X-ray Treatment of Aqueous Solutions	V2,90
			SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
			ZENON Environmental Inc.	Cross Flow Pervaporation System	V1,182
		Portable Gas Chromatographs	Analytical and Remedial Technology, Inc.	Automated Sampling and Analytical Platform	V3,14
			Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			HNU Systems, Inc.	HNU GC 311D Portable Gas Chromatograph	V3,42
			Sentex Sensing Technology, Inc.	Scentograph Plus II Portable Gas Chromatograph	V3,60
			SRI Instruments	Compact Gas Chromatograph	V3,66
			U.S. EPA	Field Analytical Screening Program - PCB Method	V3,78
		Solidification/ Stabilization	Wheelabrator Clean Air Systems, Inc.	PO*WW*ER™ Technology	V1,178
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Wastewater (continued)	Aromatic VOCs (continued)	Test Kits	Hanby Environmental Laboratory Procedure, Inc.	Test Kits for Organic Contaminants in Soil and Water	V3,38
	Cyanide	Biological Degradation	Pintail Systems, Inc.	Spent Ore Bioremediation Process	V1,214
	Dioxins	Physical/ Chemical Thermal Desorption	ELI Eco Logic Inc.	Gas-Phase Chemical Reduction Process	V1,68
		Physical/ Chemical Treatment	CF Systems Corp.	Liquified Gas Solvent Extraction [LG-SX] Technology	V1,48
			High Voltage Environmental Applications, Inc.	High Energy Electron Irradiation	V1,94
			Matrix Photocatalytic Inc.	Photocatalytic Water Treatment	V1,110
			SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
		Solidification/ Stabilization	Wheelabrator Clean Air Systems, Inc.	PO*WW*ER™ Technology	V1,178
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
	Explosives	Physical/ Chemical Thermal Desorption	New Jersey Institute of Technology	GHEA Associates Process	V2,86
		Physical/ Chemical Treatment	U.S. Filter/WTS Ultrox	Ultraviolet Radiation and Oxidation	V1,168
	Furans	Physical/ Chemical Thermal Desorption	ELI Eco Logic Inc.	Gas-Phase Chemical Reduction Process	V1,68
		Physical/ Chemical Treatment	CF Systems Corp.	Liquified Gas Solvent Extraction [LG-SX] Technology	V1,48
			High Voltage Environmental Applications, Inc.	High Energy Electron Irradiation	V1,94
			Matrix Photocatalytic Inc.	Photocatalytic Water Treatment	V1,110
			SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
		Solidification/ Stabilization	Wheelabrator Clean Air Systems, Inc.	PO*WW*ER™ Technology	V1,178
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
	Halogenated VOCs	Biological Degradation	Biotrol®	Biological Aqueous Treatment System	V1,38
			ZENON Environmental, Inc.	ZenoGem™ Process	V1,184

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Wastewater (continued)	Halogenated VOCs (continued)	Physical/ Chemical Thermal Desorption	New Jersey Institute of Technology	GHEA Associates Process	V2,86
		Physical/ Chemical Treatment	CF Systems Corp.	Liquified Gas Solvent Extraction [LG-SX] Technology	V1,48
			EnviroMetal Technologies, Inc.	In Situ and Ex Situ Metal Enhanced Abiotic Degradation of Dissolved Halogenated Organic Compounds in Groundwater	V1,72
			High Voltage Environmental Applications, Inc.	High Energy Electron Beam Irradiation	V2,54
			High Voltage Environmental Applications, Inc.	High Energy Electron Irradiation	V1,94
			Magnum Water Technology	CAV-OX® Process	V1,108
			Matrix Photocatalytic Inc.	Photocatalytic Water Treatment	V1,110
			Pulse Sciences, Inc.	X-ray Treatment of Aqueous Solutions	V2,90
			SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
			U.S. Filter/WTS Ultrox	Ultraviolet Radiation and Oxidation	V1,168
			UV Technologies, Inc.	PhotoCAT™ Process	V2,112
			Roy F. Weston, Inc.	Amborsorb™ 563 Adsorbent	V2,116
			ZENON Environmental Inc.	Cross Flow Pervaporation System	V1,182
		Portable Gas Chromatographs	Analytical and Remedial Technology, Inc.	Automated Sampling and Analytical Platform	V3,14
			Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			Sentex Sensing Technology, Inc.	Scentograph Plus II Portable Gas Chromatograph	V3,60
			SRI Instruments	Compact Gas Chromatograph	V3,66
			U.S. EPA	Field Analytical Screening Program - PCB Method	V3,78
		Solidification/ Stabilization	Wheelabrator Clean Air Systems, Inc.	PO*WW*ER™ Technology	V1,178
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Thermal Destruction	Energy and Environmental Research Corp.	Hybrid Fluidized Bed System	V2,40
	Heavy Metals	Field Portable X-ray Fluorescence	HNU Systems, Inc.	HNU Source Excited Fluorescence Analyzer-Portable (SEFA-P) X-Ray Fluorescence Analyzer	V3,44
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
	Herbicides	Biological Degradation	Biotrol®	Biological Aqueous Treatment System	V1,38

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Wastewater (continued)	Herbicides (continued)	Biological Degradation (continued)	Electrokinetics, Inc.	In Situ Bioremediation by Electrokinetic Injection	V2,120
			ZENON Environmental, Inc.	ZenoGem™ Process	V1,184
		Physical/ Chemical Thermal Desorption	ELI Eco Logic Inc.	Gas-Phase Chemical Reduction Process	V1,68
		Physical/ Chemical Treatment	CF Systems Corp.	Liquified Gas Solvent Extraction [LG-SX] Technology	V1,48
			High Voltage Environmental Applications, Inc.	High Energy Electron Irradiation	V1,94
			Magnum Water Technology	CAV-OX® Process	V1,108
			Matrix Photocatalytic Inc.	Photocatalytic Water Treatment	V1,110
			SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
		Solidification/ Stabilization	Wheelabrator Clean Air Systems, Inc.	PO*WW*ER™ Technology	V1,178
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Strategic Diagnostic, Inc. Corp.	RaPID Assay®	V3,72
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
	Inorganics	Field Portable X-ray Fluorescence	HNU Systems, Inc.	HNU Source Excited Fluorescence Analyzer-Portable (SEFA-P) X-Ray Fluorescence Analyzer	V3,44
	Metals	Biological Degradation	Colorado Dept. of Public Health and Environmental	Constructed Wetlands-Based Treatment	V1,54
			Pintail Systems, Inc.	Biominalization of Metals	V2,130
			Pintail Systems, Inc.	Spent Ore Bioremediation Process	V1,214
		Field Portable X-ray Fluorescence	HNU Systems, Inc.	HNU Source Excited Fluorescence Analyzer-Portable (SEFA-P) X-Ray Fluorescence Analyzer	V3,44
			Metorex, Inc.	Field Portable X-ray Fluorescence Analysis	V3,48
		Physical/ Chemical Radioactive Waste Treatment	Filter Flow Technology, Inc.	Colloid Polishing Filter Method	V1,76
		Physical/ Chemical Thermal Desorption	New Jersey Institute of Technology	GHEA Associates Process	V2,86
			Rochem Separation Systems, Inc.	Rochem Disc Tube™ Module System	V1,142
		Physical/ Chemical Treatment	Atomic Energy of Canada, Limited	Chemical Treatment and Ultrafiltration	V2,22

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Wastewater (continued)	Metals (continued)	Physical/ Chemical Treatment (continued)	Atomic Energy of Canada, Limited	Ultrasonic-Aided Leachate Treatment	V2,24
			E.I. DuPont de Nemours and Company, and Oberlin Filter Co.	Membrane Microfiltration	V1,60
			Dynaphore, Inc.	FORAGER® Sponge	V1,62
			EnviroMetal Technologies, Inc.	Reactive Barrier	V1,194
			EPOC Water, Inc.	Precipitation, Microfiltration, and Sludge Dewatering	V1,74
			Cure International, Inc.	CURE® Electrocoagulation Wastewater Treatment System	V1,58
			Lewis Environmental Services, Inc./Hickson Corp.	Chromated Copper Arsenic Soil Leaching Process	V2,76
			Matrix Photocatalytic Inc.	Photocatalytic Water Treatment	V1,110
			Morrison Knudsen Corporation/Spetstamon azhgeologia Enterprises/STG Technologies	Clay-Base Grouting Technology	V1,114
			RECRA Environmental, Inc.	Alternating Current Electrocoagulation Technology	V2,92
			Selentec Environmental, Inc.	Selentec MAG*SEP Technology	V1,226
			U. of Washington	Adsorptive Filtration	V2,110
		Portable Gas Chromatographs	HNU Systems, Inc.	HNU GC 311D Portable Gas Chromatograph	V3,42
		Solidification/ Stabilization	Wheelabrator Clean Air Systems, Inc.	PO*WW*ER™ Technology	V1,178
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
			Energy and Environmental Research Corp.	Hybrid Fluidized Bed System	V2,40
	PAHs	Physical/ Chemical Treatment	SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			SRI Instruments	Compact Gas Chromatograph	V3,66
	PCBs	Biological Degradation	ZENON Environmental, Inc.	ZenoGem™ Process	V1,184
		Field Portable X-ray Fluorescence	Metorex, Inc.	Field Portable X-ray Fluorescence Analysis	V3,48
		Physical/ Chemical Thermal Desorption	ELI Eco Logic Inc.	Gas-Phase Chemical Reduction Process	V1,68
			New Jersey Institute of Technology	GHEA Associates Process	V2,86
		Physical/ Chemical Treatment	Calgon Carbon Oxidation Technologies	perox-pure™ Chemical Oxidation Technology	V1,46

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Wastewater (continued)	PCBs (continued)	Physical/ Chemical Treatment (continued)	CF Systems Corp.	Liquified Gas Solvent Extraction [LG-SX] Technology	V1,48
			High Voltage Environmental Applications, Inc.	High Energy Electron Beam Irradiation	V2,54
			High Voltage Environmental Applications, Inc.	High Energy Electron Irradiation	V1,94
			Magnum Water Technology	CAV-OX® Process	V1,108
			Matrix Photocatalytic Inc.	Photocatalytic Water Treatment	V1,110
			Morrison Knudsen Corporation/Spetstampon azhgeologia Enterprises/STG Technologies	Clay-Base Grouting Technology	V1,114
			SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
			U.S. Filter/WTS Ultrox	Ultraviolet Radiation and Oxidation	V1,168
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			HNU Systems, Inc.	HNU Source Excited Fluorescence Analyzer-Portable (SEFA-P) X-Ray Fluorescence Analyzer	V3,42
			Sentex Sensing Technology, Inc.	Scentograph Plus II Portable Gas Chromatograph	V3,60
			SRI Instruments	Compact Gas Chromatograph	V3,66
			U.S. EPA	Field Analytical Screening Program - PCB Method	V3,78
		Solidification/ Stabilization	Wheelabrator Clean Air Systems, Inc.	PO*WW*ER™ Technology	V1,178
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Strategic Diagnostic, Inc.	Ensys Penta Test System	V3,68
			Hanby Environmental Laboratory Procedure, Inc.	Test Kits for Organic Contaminants in Soil and Water	V3,38
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
			Energy and Environmental Research Corp.	Hybrid Fluidized Bed System	V2,40
	PCP	Physical/ Chemical Treatment	SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
			U.S. Filter/WTS Ultrox	Ultraviolet Radiation and Oxidation	V1,168
		Test Kits	Strategic Diagnostic, Inc.	Ensys Penta Test System	V3,68
			Strategic Diagnostic, Inc.	EnviroGard™ PCP Immunoassay Test Kit	V3,70

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Wastewater (continued)	PCP (continued)	Test Kits (continued)	Strategic Diagnostic, Inc. Corp.	RaPID Assay®	V3,72
	Pesticides	Biological Degradation	Biotrol®	Biological Aqueous Treatment System	V1,38
			Electrokinetics, Inc.	In Situ Bioremediation by Electrokinetic Injection	V2,120
			ZENON Environmental, Inc.	ZenoGem™ Process	V1,184
		Physical/ Chemical Thermal Desorption	ELI Eco Logic Inc.	Gas-Phase Chemical Reduction Process	V1,68
		Physical/ Chemical Treatment	Calgon Carbon Oxidation Technologies	perox-pure™ Chemical Oxidation Technology	V1,46
			CF Systems Corp.	Liquified Gas Solvent Extraction [LG-SX] Technology	V1,48
			High Voltage Environmental Applications, Inc.	High Energy Electron Beam Irradiation	V2,54
			High Voltage Environmental Applications, Inc.	High Energy Electron Irradiation	V1,94
			Magnum Water Technology	CAV-OX® Process	V1,108
			Matrix Photocatalytic Inc.	Photocatalytic Water Treatment	V1,110
			Morrison Knudsen Corporation/Spetstampon azhgeologia Enterprises/STG Technologies	Clay-Base Grouting Technology	V1,114
			SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
			U.S. Filter/WTS Ultrox	Ultraviolet Radiation and Oxidation	V1,168
		Portable Gas Chromatographs	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			Sentex Sensing Technology, Inc.	Scentograph Plus II Portable Gas Chromatograph	V3,60
			SRI Instruments	Compact Gas Chromatograph	V3,66
			U.S. EPA	Field Analytical Screening Program - PCB Method	V3,78
		Solidification/ Stabilization	Wheelabrator Clean Air Systems, Inc.	PO*WW*ER™ Technology	V1,178
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Strategic Diagnostic, Inc.	Ensys Penta Test System	V3,68
			Hanby Environmental Laboratory Procedure, Inc.	Test Kits for Organic Contaminants in Soil and Water	V3,38
			Strategic Diagnostic, Inc. Corp.	RaPID Assay®	V3,72

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Wastewater (continued)	Pesticides (continued)	Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
			Energy and Environmental Research Corp.	Hybrid Fluidized Bed System	V2,40
	Petroleum Hydrocarbons	Physical/ Chemical Thermal Desorption	New Jersey Institute of Technology	GHEA Associates Process	V2,86
		Physical/ Chemical Treatment	Calgon Carbon Oxidation Technologies	perox-pure™ Chemical Oxidation Technology	V1,46
			SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
		Portable Gas Chromatographs	SRI Instruments	Compact Gas Chromatograph	V3,66
		Test Kits	Idetek, Inc.	Equate® Immunoassay	V3,46
	Radionuclides	Physical/ Chemical Radioactive Waste Treatments	Filter Flow Technology, Inc.	Colloid Polishing Filter Method	V1,76
		Physical/ Chemical Treatment	Atomic Energy of Canada, Limited	Chemical Treatment and Ultrafiltration	V2,22
			Atomic Energy of Canada, Limited	Ultrasonic-Aided Leachate Treatment	V2,24
			Selentec Environmental, Inc.	Selentec MAG*SEP Technology	V1,226
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
	SVOCs	Biological Degradation	Biotrol®	Biological Aqueous Treatment System	V1,38
			ZENON Environmental, Inc.	ZenoGem™ Process	V1,184
		Physical/ Chemical Thermal Desorption	ELI Eco Logic Inc.	Gas-Phase Chemical Reduction Process	V1,68
			New Jersey Institute of Technology	GHEA Associates Process	V2,86
		Physical/ Chemical Treatment	Calgon Carbon Oxidation Technologies	perox-pure™ Chemical Oxidation Technology	V1,46
			CF Systems Corp.	Liquified Gas Solvent Extraction [LG-SX] Technology	V1,48
			High Voltage Environmental Applications, Inc.	High Energy Electron Beam Irradiation	V2,54
			High Voltage Environmental Applications, Inc.	High Energy Electron Irradiation	V1,94
			Pulse Sciences, Inc.	X-ray Treatment of Aqueous Solutions	V2,90
			SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
		Portable Gas Chromatographs	Analytical and Remedial Technology, Inc.	Automated Sampling and Analytical Platform	V3,14
			Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20

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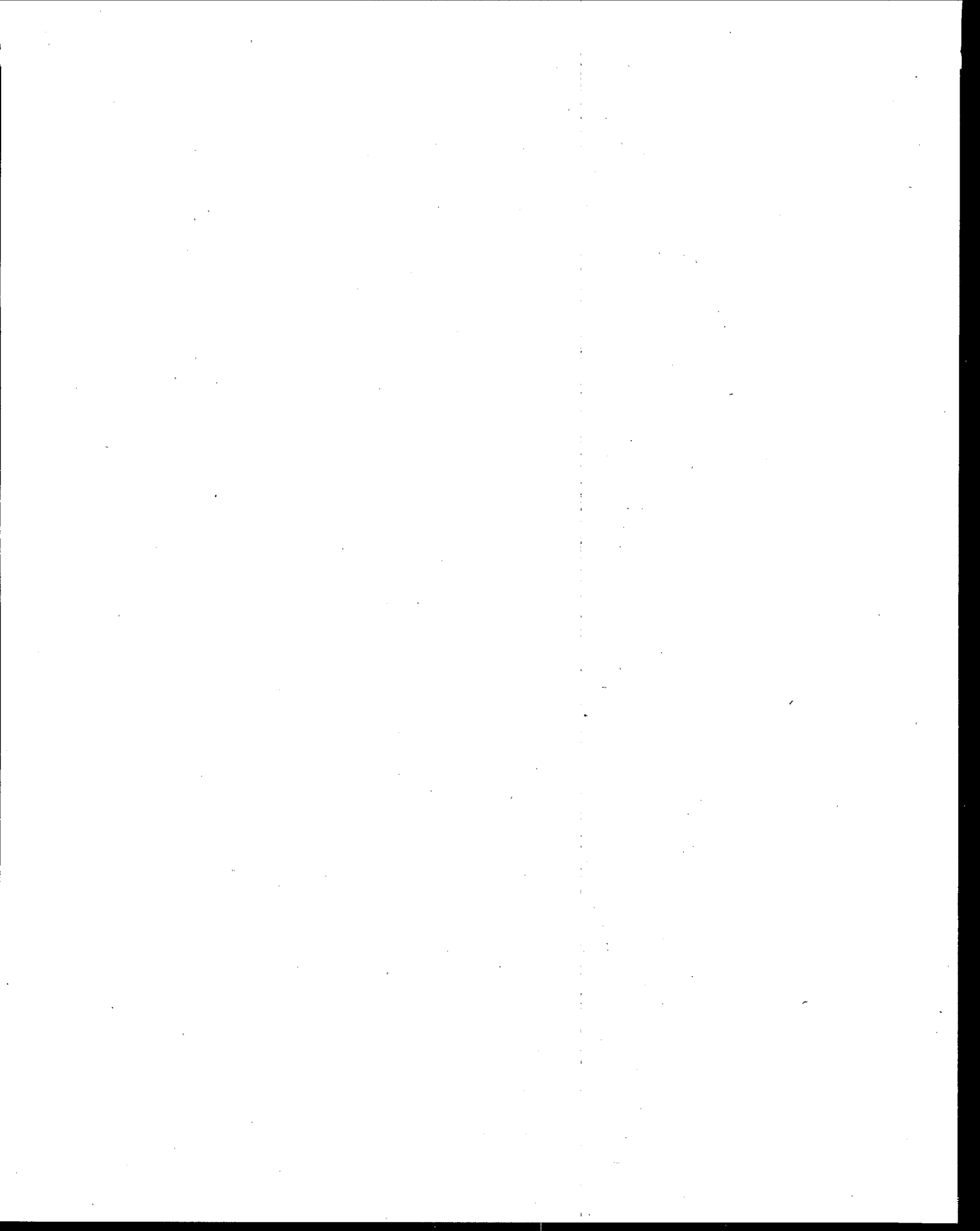
Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Wastewater (continued)	SVOCs (continued)	Portable Gas Chromatographs (continued)	U.S. EPA	Field Analytical Screening Program - PCB Method	V3,78
		Solidification/ Stabilization	Wheelabrator Clean Air Systems, Inc.	PO*WW*ER™ Technology	V1,178
		Test Kits	Strategic Diagnostic, Inc. Corp.	RaPID Assay®	V3,72
		Thermal Destruction	BWX Technologies, Inc.	Cyclone Furnace	V1,44
	VOCs	Biological Degradation	Biotrol®	Biological Aqueous Treatment System	V1,38
			Electrokinetics, Inc.	In Situ Bioremediation by Electrokinetic Injection	V2,120
			ZENON Environmental, Inc.	ZenoGem™ Process	V1,184
		Physical/ Chemical Thermal Desorption	New Jersey Institute of Technology	GHEA Associates Process	V2,86
			Rochem Separation Systems, Inc.	Rochem Disc Tube™ Module System	V1,142
		Physical/ Chemical Treatment	Calgon Carbon Oxidation Technologies	perox-pure™ Chemical Oxidation Technology	V1,46
			CF Systems Corp.	Liquified Gas Solvent Extraction [LG-SX] Technology	V1,48
			EnviroMetal Technologies, Inc.	In Situ and Ex Situ Metal Enhanced Abiotic Degradation of Dissolved Halogenated Organic Compounds in Groundwater	V1,72
			EnviroMetal Technologies, Inc.	Reactive Barrier	V1,194
			High Voltage Environmental Applications, Inc.	High Energy Electron Irradiation	V1,94
			Pulse Sciences, Inc.	X-ray Treatment of Aqueous Solutions	V2,90
			SBP Technologies, Inc.	Membrane Filtration and Bioremediation	V1,144
			U.S. Filter/WTS Ultrox	Ultraviolet Radiation and Oxidation	V1,168
			UV Technologies, Inc.	PhotoCAT™ Process	V2,112
			Roy F. Weston, Inc.	Ambersorb™ 563 Adsorbent	V2,116
			ZENON Environmental Inc.	Cross Flow Pervaporation System	V1,182
		Portable Gas Chromatograph	Bruker Analytical Systems, Inc.	Mobile Environmental Monitor	V3,20
			HNU Systems, Inc.	HNU Source Excited Fluorescence Analyzer-Portable (SEFA-P) X-Ray Fluorescence Analyzer	V3,42
			Sentex Sensing Technology, Inc.	Scentograph Plus II Portable Gas Chromatograph	V3,60
			SRI Instruments	Compact Gas Chromatograph	V3,66

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Wastewater (continued)	VOCs (continued)	Portable Gas Chromatograph (continued)	U.S. EPA	Field Analytical Screening Program - PCB Method	V3,78
		Solidification/Stabilization	Wheelabrator Clean Air Systems, Inc.	PO*WW*ER™ Technology	V1,178
		Spectrometers	Graseby Ionics, Ltd., and PCP, Inc.	Ion Mobility Spectrometry	V3,36
		Test Kits	Hanby Environmental Laboratory Procedure, Inc.	Test Kits for Organic Contaminants in Soil and Water	V3,38
		Thermal Destruction	Energy and Environmental Research Corp.	Hybrid Fluidized Bed System	V2,40
	Other	Physical/ Chemical Treatment	North American Technologies Group, Inc.	Oleophilic Amine-Coated Ceramic Chip	V1,132
			RECRA Environmental, Inc.	Alternating Current Electrocoagulation Technology	V2,92
Other	Aromatic VOCs	Solidification/Stabilization	Western Product Recovery Group, Inc.	Coordinate, Chemical Bonding, and Adsorption Treatment	V2,114
	Dioxins	Physical/ Chemical Treatment	Terra-Kleen Response Group, Inc.	Solvent Extraction Treatment System	V1,158
		Solidification/Stabilization	Geosafe Corp.	GeoMelt Vitrification	V1,84
	Furans	Physical/ Chemical Treatment	Terra-Kleen Response Group, Inc.	Solvent Extraction Treatment System	V1,158
		Solidification/Stabilization	Geosafe Corp.	GeoMelt Vitrification	V1,84
	Halogenated VOCs	Physical/ Chemical Treatment	Process Technologies, Inc.	Photolytic Destruction of Vapor-Phase Halogens	V1,218
		Solidification/Stabilization	Geosafe Corp.	GeoMelt Vitrification	V1,84
	Metals	Field Portable X-ray Fluorescence	NITON Corp.	XL Spectrum Analyzer	V3,52
			TN Spectrace	9000 X-ray Fluorescence Analyzer and Lead X-ray Fluorescence Analyzer	V3,74
		Materials Handling	AEA Technology Environment	Soil Separation and Washing Process	V2,16
		Solidification/Stabilization	Geosafe Corp.	GeoMelt Vitrification	V1,84
			Western Product Recovery Group, Inc.	Coordinate, Chemical Bonding, and Adsorption Treatment	V2,114
		Thermal Destruction	Concurrent Technologies	Smelting Lead-Containing Wastes	V2,34
	PCBs	Physical/ Chemical Treatment	Terra-Kleen Response Group, Inc.	Solvent Extraction Treatment System	V1,158
		Solidification/Stabilization	Geosafe Corp.	GeoMelt Vitrification	V1,84
	Pesticides	Physical/ Chemical Treatment	Terra-Kleen Response Group, Inc.	Solvent Extraction Treatment System	V1,158
		Solidification/Stabilization	Geosafe Corp.	GeoMelt Vitrification	V1,84

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Media	Contaminants	Treatment Type	Technology Vendor	Technology	Volume, Page Number
Other (continued)	SVOCs	Physical/ Chemical Thermal Desorption	Process Technologies, Inc.	Photolytic Destruction of Vapor-Phase Halogens	V1,218
		Physical/ Chemical Treatment	Terra-Kleen Response Group, Inc.	Solvent Extraction Treatment System	V1,158
		Solidification/ Stabilization	Western Product Recovery Group, Inc.	Coordinate, Chemical Bonding, and Adsorption Treatment	V2,114
	VOCs	Materials Handling	ABA Technology Environment	Soil Separation and Washing Process	V2,16
		Physical/ Chemical Thermal Desorption	Process Technologies, Inc.	Photolytic Destruction of Vapor-Phase Halogens	V1,218
		Physical/ Chemical Treatment	Terra-Kleen Response Group, Inc.	Solvent Extraction Treatment System	V1,158
		Solidification/ Stabilization	Western Product Recovery Group, Inc.	Coordinate, Chemical Bonding, and Adsorption Treatment	V2,114
	Not Applicable	Data Management Systems	GIS\Solutions, Inc.	GIS\Key™ Environmental Data Management System	V1,88



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