APPENDIX B

Summary Phase 1 Reports of Each Region (Regions 1 - 5)

Nationwide Superfund Reform Initiative
Phase 1– Data Collection and System Screening
Region 1

July 3, 2001

In the *OSWER Directive No. 9200.0-33, Transmittal of Final FY00 - FY01 Superfund Reforms Strategy, dated July 7,2000*, the Office of Solid Waste and Emergency Response outlined a commitment to optimize our Fund-lead, pump-and-treat (P&T) systems. To fulfill this commitment, Headquarters is assisting Regions in evaluating their Fund-lead operating P&T systems. Phase 1 of this initiative involves identifying all Fund-lead P&T system, collecting baseline cost and performance data on them, and selecting up to two sites in each Region for a Remediation System Evaluation (RSE).

This report summarizes the screening process for Region 1 which was conducted during January 2001. The first section of this report presents the cost and performance data for the Region while the second describes the screening process and system selection.

The data presented in this report reflect estimates provided by the site Remedial Project Managers between January and May 2001. These estimates may vary from actuality. The data– including the number, status, cost, specifications, and projections of systems– may change over time.

Cost and Performance Data

A total of eight pre-operational and operational Fund-lead P&T systems were identified in Region 1. Of this eight, seven are operational and one is pre-operational (i.e., pre-design, design, being installed, installed but not yet operating)

In addition, the remedial action for one Fund-lead P&T system has been completed and two Fund-lead P&T systems are no longer operating. One of the two systems that are no longer operating, Norwood PCBs, has been shut down to determine if new groundwater standards set by the state are being met. Pinette's Salvage Yard is also no longer operating. The system has been shut down and the site managers are monitoring concentrations to determine if contamination is contained. An Explanation of Significant Differences will be filed in the near future.

Cost and performance data and other information pertaining to the identified Fund-lead P&T systems (estimates for the pre-operational system) were collected with a web-based questionnaire accessed from http://www.cluin.org/optimization and stored in a database. This information is summarized in Table 1 and provided in detail in five additional tables:

- Table 2 provides overviews of the systems by providing items such as annual costs, lead, status, goals, and progress of each system.

- Table 3 includes the dates marking the signing of the ROD, construction completion, system operation and function, turnover to the state, and expected close-out.

- Table 4 lists for each system the contact information for the site Remedial Project Manager, the State Regulator, and the Contractor.

- Table 5 notes for each system and the associated site if NAPLS are present, the top contaminants of concern, and the above-ground treatment processes.

- Table 6 lists system specifications such as the pumping rate, number of wells, number of monitoring events per year, and other items used to determine the complexity of a system and its potential for optimization.

Projected dates for turnover to the States and for system completion are depicted in Figure 1, and annual costs for each system are depicted in Figure 2.

RSE Site Selection

Evaluation of Sites for Optimization Potential

Once the information is gathered from each of the Fund-lead P&T systems in a given Region, it becomes input for a screening methodology that attempts to determine the optimization potential for each system. This, in turn, provides a basis for selecting two systems where RSEs will be performed. Because some EPA Regions do not have two Fund-lead P&T systems, an additional RSE may be allocated to Region 1 allowing a total of three RSEs to be conducted in this Region as part of this project.

The factors affecting the optimization potential of a system are

- the overall cost of a given system,
- the expected duration of the system,
- the number of above-ground treatment processes,
- the number of extraction wells,
- the number of monitoring events per year,
- the system downtime per year,

- the pumping rate,
- the results (if any) of a previous performance and effectiveness evaluation, and
- any social or political obstacles to implementing modifications to the system.

Table 6 summarizes the results of the screening process including the estimated life-cycle cost savings that may result from performing an RSE.

Selecting Sites for RSEs

The following is a list of the identified Fund-lead P&T systems in Region 1 classified as completed, operational, planned, and no-longer operating. Those in bold were selected or are being considered for RSEs.

Completed
Sylvester/Gilson Road
Operational
Baird and McGuire
Charles George Landfill
Groveland Wells
Kearsarge Metallurgical Corp.
Keefe Environmental Systems
Savage Well Municipal Water Supply
Silresim Chemical Corp.
Pre-Operational
Eastern Surplus Company Superfund Site
No-longer Operating
Norwood PCBs
Pinette's

Only operational systems were considered in selecting the three systems to receive RSEs. Based on the screening methodology employed in this project, Baird and McGuire, Savage Well Municipal Water Supply, and Silresim Chemical Corp. were the sites with sufficient operating histories where optimization would yield the greatest percentage reduction in life-cycle costs. In addition, the Remedial Project Manager (RPM) of the Savage site expressed interest in having an RSE conducted at the site, and the 5-year review of the Silresim site noted that the system performance and effectiveness were insufficient. Collectively, the life-cycle savings, RPM interest, and effectiveness issues provided the criteria for selecting Baird and McGuire, Savage Well Municipal Water Supply, and Silresim Chemical Corp. for receiving RSEs.

Region 1, Table 1 -- Summary

July 3, 2001

Completed Fund-lead P&T Systems
Sylvester/Gilson Road

Operational and Pre-operational Fund-lead P&T Systems	
Number of systems	**8**
Number that are EPA lead	**5 of 8**
Number that are State lead	**3 of 8**
System Status	
Number that are operational	**7**
Number that are pre-operational	**1**
Number where restoration is a goal	**8 of 8**
Number where the plume is controlled*	**4 of 7**
Number that are estimated to be more than 80% complete*	**2 of 7**
Number previously evaluated and effectiveness found sufficient*	**4 of 7**
Number previously evaluated and effectiveness found not sufficient*	**1 of 7**
Extent of Contamination	
Number where NAPLs are observed	**3 of 8**
Number with more than 1 major contaminant identified	**7 of 8**
Number with 3 or more treatment processes	**6 of 8**
Average Costs and Time Frames	
Average estimated annual O&M cost (including monitoring)	**$875,000**
Average estimated annual monitoring cost	**$84,375**
Average number of years until turnover to the States	**6.1**
Average number of years until completion	**14.4**

*Operational sites only

No-Longer-Operating Fund-lead P&T Systems
Pinette's Salvage Yard
Norwood PCBs

Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Region 1, Table 2 -- System Overviews

July 3, 2001

System	Estimated Annual Cost	Lead	Type of ROD	System Status	System Goals	Plume Under Control?	Estimated Progress of Restoration	Previous Evaluation of Effectiveness
Baird & McGuire Superfund Site	$3,500,000	EPA	Final	Operational	Containment & Restoration	Yes	20% - 80%	Sufficient
Charles George Landfill Superfund Site	$450,000	EPA	Final	Operational	Containment & Restoration	Yes	less than 20%	Not evaluated
Eastern Surplus Company Superfund Site	$200,000	EPA	Final	Being Installed	Containment & Restoration	N/A	N/A	Not evaluated
Groveland Wells Superfund Site	$500,000	EPA	Final	Operational	Containment & Restoration	Unknown	Unknown	Sufficient
Kearsarge Metallurgical Corp.	$250,000	State with Fund Money	Final	Operational	Restoration	Yes	more than 80%	Sufficient
Keefe Environmental Systems	$200,000	State with Fund Money	Final	Operational	Containment & Restoration	Yes	more than 80%	Sufficient
Savage Well Municipal Water System	$500,000	State with Fund Money	Final	Operational	Containment & Restoration	No	less than 20%	Not evaluated
Silresim Chemical Corp.	$1,400,000	EPA	Final	Operational	Containment & Restoration	No	less than 20%	Not Sufficient

Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Notes:

1. Easter Surplus Company Superfund Site is pre-operational; therefore, the associated data are estimates and some items are unknown.
2. "Estimated Progress of Restoration" refers to the estimated portion of the plume that has been restored to cleanup levels.
3. Previous evaluations of effectiveness may include 5-year reviews but do not include Remediation Systems Evaluations.

Region 1, Table 3 -- P&T System Histories and Projections

July 3, 2001

	Date							
System	Original ROD	Last ROD Modification	Construction Completed	Operational and Functional	Turnover to State	Years Until Turnover	Expected Completion	Years Until Completion
Baird & McGuire Superfund Site	9/30/86		4/1993	4/1994	4/2004	2.7	4/2023	21.8
Charles George Landfill Superfund Site	3/23/88	9/26/98	9/1998	9/1999	9/2009	8.2	9/2028	27.2
Eastern Surplus Company Superfund Site	9/28/00		8/2001	10/2001	9/2011	10.2	9/2007	6.2
Groveland Wells Superfund Site	9/9/91	11/15/96	4/2000	5/2001	4/2011	9.8	4/2031	29.8
Kearsarge Metallurgical Corp.	9/28/90		9/1993	9/1993	9/2003	2.2	9/2005	4.2
Keefe Environmental Systems	3/21/88	6/8/90	9/1993	9/1994	9/2003	2.2	9/2003	2.2
Savage Well Municipal Water System	9/27/91	12/19/96	3/1998	4/1999	3/2009	7.7	3/2009	7.7
Silresim Chemical Corp.	9/19/91		11/1995	9/1997	9/2007	6.2	12/2017	16.4

Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Region 1, Table 4 -- System Contact Information

July 3, 2001

System	RPM	State Regulator	Primary Contractor
Baird & McGuire Superfund Site	Taylor Melissa EPA Region 1 One Congress Street 11th floor Boston, MA 02114 617-918-1310 617-918-1291 (fax) Taylor.MelissaG@epa.gov	Dorothy Allen MADEP One Winter Street Boston, MA 02108 617-292-5795 617-292-5530 (fax) Dorothy.Allen@state.ma.us	Don Dwight Metcalf & Eddy 30 Harvard Mill Sq. Wakefield, MA 01880 781-224-6286 781-224-6880 (fax) Don_Dwight@metcalfeddy.com
Charles George Landfill Superfund Site	Stanley Elaine EPA Region 1 One Congress Street, Suite 1100 Boston, MA 02114-2023 617-918-1332 617-918-1291 (fax) stanley.elainet@epa.gov	David Buckley Massachusetts Department of Environmental Protection One Winter Street Boston, MA 02108 617-556-1184 617-292-5530 (fax) buckley.david@state.ma.us	David O'Connor U.S. Army Corps of Engineers, North Central Residnet Office 50 McArthur Avenue, Box 689 Devens, MA 01432-4400 978-772-0148 978-772-3104 (fax) david.o'connor@nae02.usace.army.mil
Eastern Surplus Company Superfund Site	Hathaway Edward EPA Region 1 1 Congress Street, Suite 1100, mailcode: HBT Boston, MA 02114 617-918-1372 617-918-1291 (fax) hathaway.ed@epa.gov	Rebecca Hewett Maine DEP 17 State House Station Augusta, ME 04333-0017 207-287-8554 207-287-7826 (fax) rebecca.l.hewett@state.me.us	Gordon Bullard TTNUS 55 Jonspin Road Wilmington, MA 01887 978-658-7899 978-658-7870 (fax) bullardg@ttnus.com
Groveland Wells Superfund Site	Golden Derrick EPA Region 1 One Congress Street - Suite 1100 (HBO) Boston, MA 02114 617-918-1448 617-918-1291 (fax) golden.derrick@epa.gov	Janet Waldron Massachusetts Department of Environmental Protection One Winter Street Boston, MA 02108 617-556-1156 617-556-1118 (fax) janet.waldron@state.ma.us	Cinthia Mclane Metcalf & Eddy 30 Harvard Mill Square Wakefield, MA 01880 781-224-6377 781-245-6293 (fax) cindy_mclane@metcalfeddy.com

Region 1, Table 4 -- System Contact Information

July 3, 2001

System	RPM	State Regulator	Primary Contractor
Baird & McGuire Superfund Rearsarge Metallurgical Corp.	Goehlert Dick EPA Region 1 One Congress Street Boston, MA 02114-2023 617-918-1335 617-918-1291 (fax) goehlert.dick@epa.gov	Paul Lincoln NHDES 6 Hazen Drive Concord, NH 03301 603-271-2911 603-271-2456 (fax) p_andrews@des.state.nh.us	Bette Nowack Weston 1 Wall St. Manchester, NH 03101 603-656-5400
Keefe Environmental Systems	Sprague Cheryl EPA Region 1 One Congress Street, Suite 1100 Boston, MA 02114-2023 617 918-1244 617 918-1291 (fax) Sprague.cheryl@epa.gov	Thomas Andrews New Hampshire Department of Environmental Services 6 Hazen Drive Concord, NH 03301-6527 603 271-2910 601 271-2456 (fax) Tandrews@des.state.nh.us	Harvey King Woodard and Curran 41 Hutchins Drive Portland, ME 04102 207 774-2112 207 774-6635 (fax) hking@woodardcurren.com
Savage Well Municipal Water System	GOEHLERT RICHARD EPA Region 1 ONE CONGRESS STREET BOSTON, MA 02114-2023 617-918-1335 617-918-1291 (fax) GOEHLERT.DICK@EPA.GOV	THOMAS ANDREWS NHDES 6 HAZEN DRIVE CONCORD, NH 03301 603-271-2910 603-271-2456 (fax) t_andrews@des.state.nh.us	Joe Newton CDM Elm St Milford, NH 03055 603-249-9840 603-249-9851 (fax) jnewton@cdm.com
Silresim Chemical Corp.	Janowski Chester EPA Region 1 1 Congress Street, Suite 1100, HBO Boston, MA 02114-2023 617-918-1324 617-918-1291 (fax) janowski.chet@epa.gov	Janet Waldron MADEP One Winter Street, 7th Floor Boston, MA 02108 617-556-1156 617-292-5530 (fax) janet.waldron@state.ma.us	John Haley Foster Wheeler Environmental Corp. 133 Federal Street, 6th Floor Boston, MA 02110 617-457-8200 617-457-8498 (fax) jhaley@fwec.com

Region 1, Table 5 -- Top Contaminants Identified by RPMs

July 3, 2001

System	NAPLS Present?	# of Identified Contam.	Contaminants	Treatment Processes
Baird & McGuire Superfund Site	Observed	8	Heavy metals LNAPL Pesticides Semi-volatile organic compounds (SVOC) Volatile organic compounds (VOCs) Aresenic BTEX PAHs	Metals Precipitation Air Stripping Carbon Adsorption Filtration
Charles George Landfill Superfund Site	Don't know	6	Arsenic BTEX Chlorobenzene Mercury Tetrahydrofuran 1,4-Dioxane	Other/Not Sure
Eastern Surplus Company Superfund Site	Suspected	2	Methylene Chloride PCE	Carbon Adsorption Filtration Ion Exchange
Groveland Wells Superfund Site	Don't know	1	Trichlorethylene (TCE)/Tetrachloroelthylene (PCE)	Metals Precipitation UV oxidation Carbon Adsorption Filtration
Kearsarge Metallurgical	Suspected	2	1,1,1-Trichloroethane Trichloroethylene (TCE)	Air Stripping Off-Gas Treatment
Keefe Environmental Systems	Not present	4	1,2,3,4-Tetrachlorodibenzodioxin (TCDD) 1,2-Dichloroethene Benzo(a)pyrene Trans 1,2-Dichloroethylene	Air Stripping Carbon Adsorption Filtration
Savage Well Municipal Water System	Observed	4	1,1,1-Trichloroethane Chlorinated Solvents Cis-1,2-dichloroethene Trichlorethylene (TCE)/Tetrachloroelthylene (PCE)	Air Stripping Carbon Adsorption Off-Gas Treatment
Silresim Chemical Corp.	Observed	8	1,1,2,2-Tetrachloroethane 1,1-Dichloroethylene (DCE) Acids Benzo(b)fluoranthene Methylphenol Solid Propellants Trans 1,2-Dichloroethylene Volatile chlorinated organics	Metals Precipitation Air Stripping Filtration Off-Gas Treatment

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Region 1, Table 6 -- Screening Summary

July 3, 2001

System	Potential Reduction in Life-Cycle Costs	Potential Life-Cycle Savings	Expected Duration	Previous Evaluation of Effectiveness	Approximate Pumping Rate (gpm)	Number of Extraction Wells	Number of Treatment Processes	Groundwater Samples per Year	Obstacles to making (minor/major) changes
	Operational								
Baird & McGuire Superfund Site	27.5%	$12,402,549	21.8	Sufficient	150	7	4	80	Moderate Severe
Charles George Landfill Superfund Site	17.5%	$1,121,604	27.2	Not evaluated	30	9	1	40	Moderate Severe
Groveland Wells Superfund Site	27.5%	$2,065,504	29.8	Sufficient	140	10	4	21	Minor Minor
Kearsarge Metallurgical Corp.	10.0%	$56,941	4.2	Sufficient	42	14	2	60	Moderate Moderate
Keefe Environmental Systems	7.5%	($1,583)	2.2	Sufficient	20	4	3	82	Minor Minor

Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Notes:

1. "Potential Reduction in Life-cycle Costs" result from a screening methodology that incorporates system-specific information. The reductions do not include the cost of an RSE.
2. "Potential Life-cycle Savings" were estimated using using system-specific information and incorporate the cost of the RSE. Values in parentheses denote costs (negative savings).
3. "Groundwater Samples per Year" is calculated by multiplying the number of monitoring wells sampled by the number of monitoring events per year.
4. Previous evaluations of effectiveness may include 5-year reviews but do not include Remediation System Evaluations.

Region 1, Table 6 -- Screening Summary

July 3, 2001

System	Potential Reduction in Life-Cycle Costs	Potential Life-Cycle Savings	Expected Duration	Previous Evaluation of Effectiveness	Approximate Pumping Rate (gpm)	Number of Extraction Wells	Number of Treatment Processes	Groundwater Samples per Year	Obstacles to making (minor/major) changes
	Operational								
Savage Well Municipal Water System	32.5%	$934,042	7.7	Not evaluated	100	4	3	114	Minor Minor
Silresim Chemical Corp.	40.0%	$6,025,600	16.4	Not Sufficient	25	31	4	94	Minor Minor
	Pre-Operational								
Eastern Surplus Company Superfund Site	28.0%	$245,611	6.2	Not evaluated	20	12	3	60	Minor Moderate

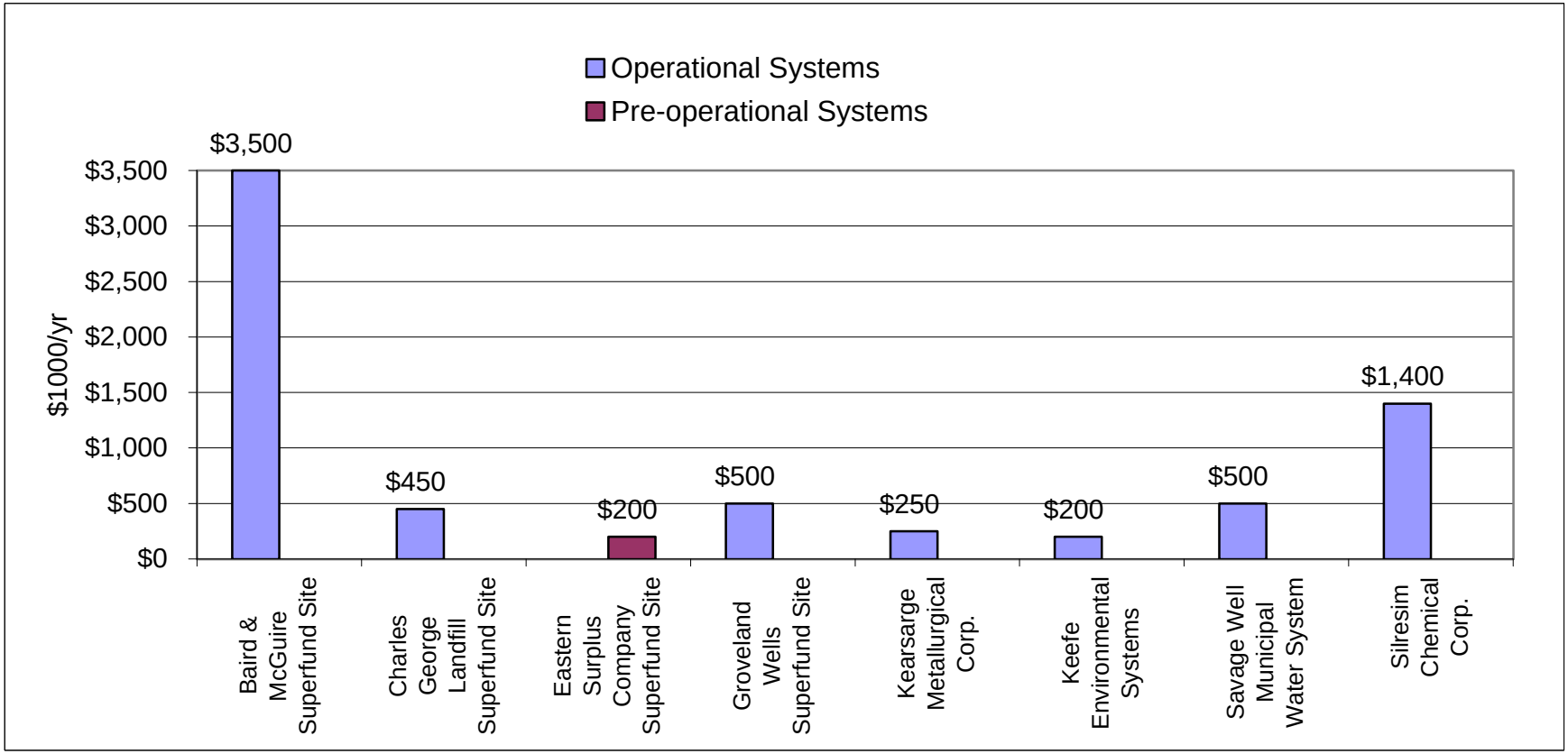
Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Notes:

1. "Potential Reduction in Life-cycle Costs" result from a screening methodology that incorporates system-specific information. The reductions do not include the cost of an RSE.
2. "Potential Life-cycle Savings" were estimated using using system-specific information and incorporate the cost of the RSE. Values in parentheses denote costs (negative savings).
3. "Groundwater Samples per Year" is calculated by multiplying the number of monitoring wells sampled by the number of monitoring events per year.
4. Previous evaluations of effectiveness may include 5-year reviews but do not include Remediation System Evaluations.

Region 1, Figure 1 -- Estimated Annual Costs of Systems

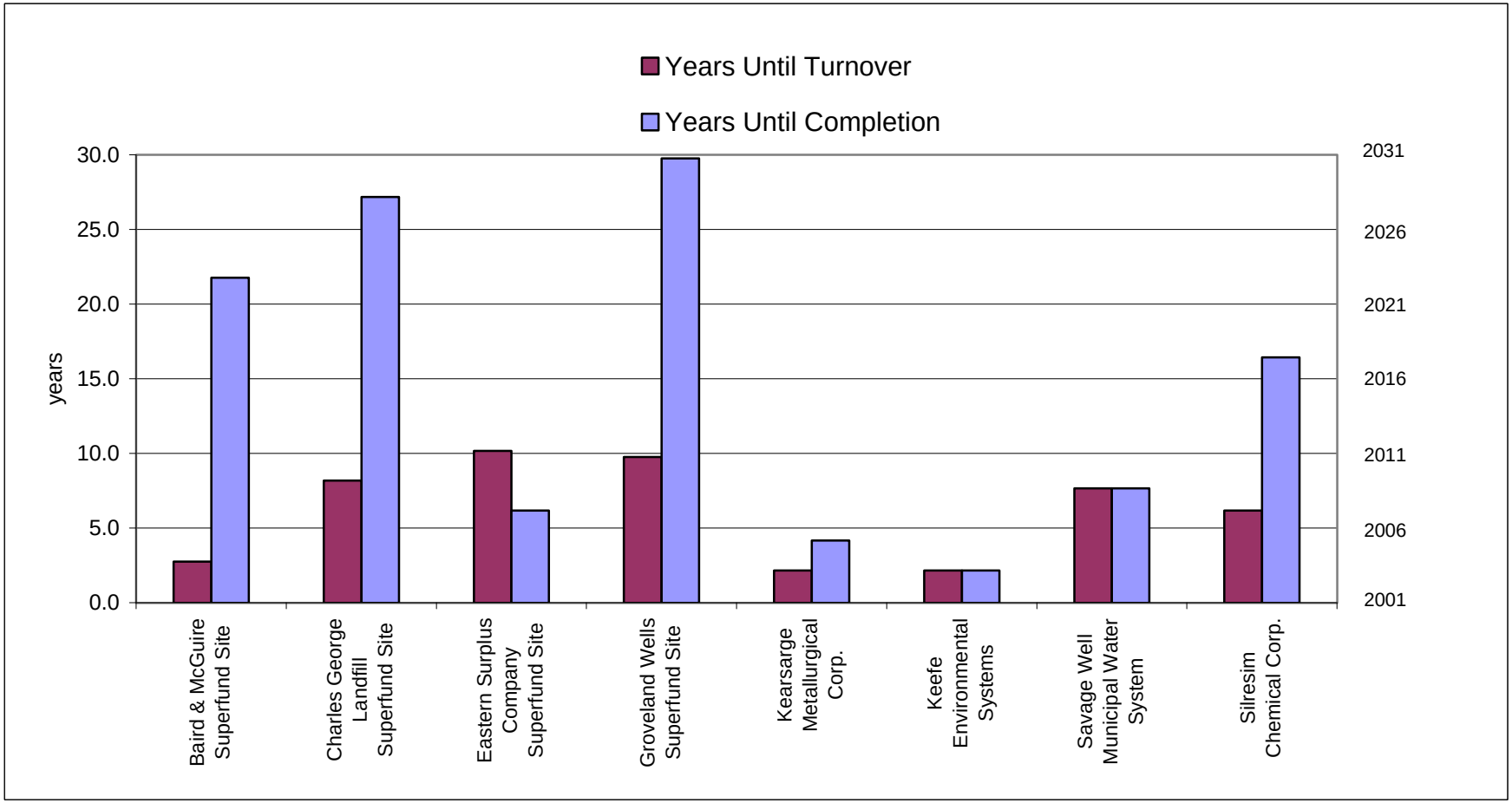
July 3, 2001



Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Region 1, Figure 2 -- System Projections

July 3, 2001



Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Nationwide Superfund Reform Initiative
Phase 1– Data Collection and System Screening
Region 2

July 3, 2001

In the *OSWER Directive No. 9200.0-33, Transmittal of Final FY00 - FY01 Superfund Reforms Strategy, dated July 7,2000*, the Office of Solid Waste and Emergency Response outlined a commitment to optimize our Fund-lead, pump-and-treat (P&T) systems. To fulfill this commitment, Headquarters is assisting Regions in evaluating their Fund-lead operating P&T systems. Phase 1 of this initiative involves identifying all Fund-lead P&T system, collecting baseline cost and performance data on them, and selecting up to two sites in each Region for a Remediation System Evaluation (RSE).

This report summarizes the screening process for Region 2 which began in January 2001. The first section of this report presents the cost and performance data for the Region while the second describes the screening process and system selection.

The data presented in this report reflect estimates provided by the site Remedial Project Managers between January and May 2001. These estimates may vary from actuality. The data– including the number, status, cost, specifications, and projections of systems– may change over time.

Cost and Performance Data

Twenty-two Fund-lead P&T systems were identified in Region 2. Of these twenty-two systems, 18 are operational and four are pre-operational (i.e., pre-design, design, being installed, installed but not yet operating). In addition, pump-and-treat may be selected as a remedy for one Fund-lead site when the Record of Decision is completed.

Cost and performance data and other information pertaining to the identified Fund-lead P&T systems (estimates for the pre-operational system) were collected with a web-based questionnaire accessed from http://www.cluin.org/optimization and stored in a database. This information is summarized in Table 1 and provided in detail in five additional tables (Note: two of the pre-operational systems, Dover Municipal Well 4 and Metal TEC/Aerosystems, may ultimately use a remedy other than P&T):

- Table 2 provides overviews of the systems by providing items such as annual costs, lead, status, goals, and progress of each system.

- Table 3 includes the dates marking the signing of the ROD, construction completion, system operation and function, turnover to the state, and expected close-out.

- Table 4 lists for each system the contact information for the site Remedial Project Manager, the State Regulator, and the Contractor.

- Table 5 notes for each system and the associated site if NAPLS are present, the top contaminants of concern, and the above-ground treatment processes.

- Table 6 lists system specifications such as the pumping rate, number of wells, number of monitoring events per year, and other items used to determine the complexity of a system and its potential for optimization.

Projected dates for turnover to the States and for system completion are depicted in Figure 1, and annual costs for each system are depicted in Figure 2.

RSE Site Selection

Evaluation of Sites for Optimization Potential

Once the information is gathered from each of the Fund-lead P&T systems in a given Region, it becomes input for a screening methodology that attempts to determine the optimization potential for each system. This, in turn, provides a basis for selecting two systems where RSEs will be performed. The factors affecting the optimization potential of a system are

- the overall cost of a given system,
- the expected duration of the system,
- the number of above-ground treatment processes,
- the number of extraction wells,
- the number of monitoring events per year,
- the system downtime per year,
- the pumping rate,
- the results (if any) of a previous performance and effectiveness evaluation, and
- any social or political obstacles to implementing modifications to the system.

To estimate potential life-cycle savings from optimization, a default reduction in life-cycle costs of 20% is assumed and is adjusted based on the above factors. For example, according to the screening methodology, a system with many above-ground treatment processes and a high pumping rate may exhibit greater than a 20% reduction in life-cycle costs whereas a system with few extraction wells and one treatment process may exhibit less than a 20% reduction in life-cycle costs.

Table 6 summarizes the results of the screening process including the estimated life-cycle cost savings that may result from performing an RSE. Because some EPA Regions do not have two Fund-lead P&T systems, an additional RSE may be allocated to Region 2 allowing a total of three RSEs to be conducted in this Region as part of this project.

Selecting Sites for RSEs

The following is a list of the identified Fund-lead P&T systems in Region 2 classified as operational, pre-operational, or potential. Those in bold were selected or are being considered for RSEs.

Operational
- American Thermostat
- Bog Creek Farm
- **Brewster Wellfield**
- Circuitron
- **Claremont Polychemical Corp.**
- Combe Fill South
- Garden State Cleaners/South
- Higgins Farm
- Islip Municipal Landfill
- Lang Property
- Lipari Landfill
- **Mattiace Petrochemical**
- Mohonk Road Industrial Plant
- SMS Instruments
- Syncon Resins
- Vestal Water Supply Well 1-1
- Vineland Chemical Company
- Williams Property

Pre-operational
- Dover Municipal Well 4
- Metal TEC/Aerosystems
- Montgomery Township/Rocky Hill*
- Stanton Cleaners Area

Potential
- Lehigh Valley

* Montgomery Township/Rocky Hill actually consists of two sites that will share a single P&T system.

Only operational systems are considered in selecting the systems in Region 2 to receive RSEs. Due to the absence of Fund-lead P&T systems in other Regions, additional resources are available to conduct

an additional RSE in Region 2, bringing the total number of RSEs conducted in this Region to three. The Mattiace Petrochemical and Claremont Polychemical Sites already have been selected for an RSEs due to their relatively high potential savings indicated by the screening process. The selection of Brewster Wellfield is based on recommendations from within the Region.

Although Vineland, American Thermostat, Combe Fill South, and Higgins Farm also have relatively high potential savings as determined by the screening process, these sites were deemed inappropriate by the Region for receiving RSEs. At the time of the screening process, Vineland was undergoing an external evaluation for optimization, American Thermostat was undergoing evaluation by the Region and the Army Corps of Engineers for optimization, and Combe Fill South and Higgins Farm were the subjects of litigation.

Region 2, Table 1 -- Summary

July 3, 2001

Completed Fund-lead P&T Systems

Operational and Pre-operational Fund-lead P&T Systems	
Number of systems	**22**
Number that are EPA lead	**18 of 22**
Number that are State lead	**4 of 22**
System Status	
Number that are operational	**18**
Number that are pre-operational	**4**
Number where restoration is a goal	**21 of 22**
Number where the plume is controlled*	**15 of 18**
Number that are estimated to be more than 80% complete*	**1 of 18**
Number previously evaluated and effectiveness found sufficient*	**10 of 18**
Number previously evaluated and effectiveness found not sufficient*	**2 of 18**
Extent of Contamination	
Number where NAPLs are observed	**4 of 22**
Number with more than 1 major contaminant identified	**17 of 22**
Number with 3 or more treatment processes	**13 of 22**
Average Costs and Time Frames	
Average estimated annual O&M cost (including monitoring)	**$828,947**
Average estimated annual monitoring cost	**$190,900**
Average number of years until turnover to the States	**7.9**
Average number of years until completion	**17.7**

*Operational sites only

Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Region 2, Table 2 -- System Overviews

July 3, 2001

System	Estimated Annual Cost	Lead	Type of ROD	System Status	System Goals	Plume Under Control?	Estimated Progress of Restoration	Previous Evaluation of Effectiveness
American Thermostat	$1,175,000	EPA	Final	Operational	Containment & Restoration	Yes	less than 20%	Sufficient
Bog Creek Farm LTRA	$460,000	EPA	Final	Operational	Containment & Restoration	Yes	20% - 80%	Sufficient
Brewster Wellfield	$400,000	EPA	Final	Operational	Containment & Restoration	Yes	Unknown	Not evaluated
Circuitron	$480,000	EPA	Final	Operational	Restoration	Yes	less than 20%	Sufficient
Claremont Polychemical	$740,000	EPA	Final	Operational	Containment & Restoration	Yes	Unknown	Not evaluated
Combe Fill South Landfill	$920,000	State with Fund Money	Final	Operational	Containment & Restoration	No	Unknown	Not Sufficient
Dover Municipal Well 4	unknown	EPA	Final	Predesign	Restoration	N/A	N/A	N/A

Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Notes:

1. Montgomery Township/Rocky Hill are two separate Fund-lead sites that will share a single P&T system.
2. The following systems are pre-operational; therefore, the associated data are estimates and some items are unknown: Dover Municipal Well 4, MetalTec/Aerosystems, Montgomery Township/Rocky Hill, and Stanton Cleaners.
3. Estimated progress toward restoration refers to the estimated portion of the plume that has been restored to cleanup levels.
4. Previous evaluations of effectiveness may include 5-year reviews but do not include Remediation System Evaluations.

Region 2, Table 2 -- System Overviews

July 3, 2001

System	Estimated Annual Cost	Lead	Type of ROD	System Status	System Goals	Plume Under Control?	Estimated Progress of Restoration	Previous Evaluation of Effectiveness
Garden State Cleaners/South Jersey Clothing Company	$500,000	EPA	Final	Operational	Containment & Restoration	No	Unknown	Currently being evaluated
Higgins Farm	$1,000,000	EPA	Final	Operational	Containment & Restoration	Yes	less than 20%	Not evaluated
Islip Municipal Landfill	$225,000	State with Fund Money	Final	Operational	Containment & Restoration	Yes	20% - 80%	Sufficient
Lang Property	$700,000	EPA	Final	Operational	Containment & Restoration	Yes	20% - 80%	Sufficient
Lipari Landfill site	$2,500,000	EPA	Final	Operational	Containment & Restoration	Yes	20% - 80%	Sufficient
Mattiace Petrochemical	$700,000	EPA	Final	Operational	Containment & Restoration	Yes	less than 20%	Sufficient
Metal TEC/Aerosystems	unknown	EPA	Final	Predesign	N/A	N/A	N/A	N/A

Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Notes:

1. Montgomery Township/Rocky Hill are two separate Fund-lead sites that will share a single P&T system.
2. The following systems are pre-operational; therefore, the associated data are estimates and some items are unknown: Dover Municipal Well 4, MetalTec/Aerosystems, Montgomery Township/Rocky Hill, and Stanton Cleaners.
3. Estimated progress toward restoration refers to the estimated portion of the plume that has been restored to cleanup levels.
4. Previous evaluations of effectiveness may include 5-year reviews but do not include Remediation System Evaluations.

Region 2, Table 2 -- System Overviews

July 3, 2001

System	Estimated Annual Cost	Lead	Type of ROD	System Status	System Goals	Plume Under Control?	Estimated Progress of Restoration	Previous Evaluation of Effectiveness
Mohonk Road Industrial Plant	unknown	EPA	Final	Operational	Containment & Restoration	Unknown	Unknown	Currently being evaluated
Montgomery Township/Rocky Hill	$400,000	EPA	Final	Design	Restoration	N/A	N/A	N/A
SMS Instruments	$400,000	EPA	Final	Operational	Containment & Restoration	Yes	20% - 80%	Sufficient
Stanton Cleaners Area Groundwater Contamination Site	$270,000	EPA	Final	Being Installed	Containment & Restoration	N/A	N/A	N/A
Syncon Resins	$350,000	State with Fund Money	Final	Operational	Containment & Restoration	Yes	less than 20%	Not Sufficient
Vestal Water Supply Well 1-1	$180,000	EPA	Final	Operational	Containment & Restoration	Yes	less than 20%	Sufficient
Vineland Chemical Co. Groundwater Treatment	$4,000,000	EPA	Final	Operational	Containment & Restoration	Yes	Unknown	Currently being evaluated
Williams Property	$350,000	State with Fund Money	Final	Operational	Restoration	Yes	more than 80%	Sufficient

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Notes:

1. Montgomery Township/Rocky Hill are two separate Fund-lead sites that will share a single P&T system.
2. The following systems are pre-operational; therefore, the associated data are estimates and some items are unknown: Dover Municipal Well 4, MetalTec/Aerosystems, Montgomery Township/Rocky Hill, and Stanton Cleaners.
3. Estimated progress toward restoration refers to the estimated portion of the plume that has been restored to cleanup levels.
4. Previous evaluations of effectiveness may include 5-year reviews but do not include Remediation System Evaluations.

Region 2, Table 3 -- P&T System Histories and Projections

July 3, 2001

	Date							
System	Original ROD	Last ROD Modification	Construction Completed	Operational and Functional	Turnover to State	Years Until Turnover	Expected Completion	Years Until Completion
American Thermostat	6/29/90		9/1998	9/1998	10/2008	7.3	9/2028	27.2
Bog Creek Farm LTRA	6/28/89		5/1994	8/1994	9/2004	3.2	12/2024	23.4
Brewster Wellfield	9/30/86	12/2/96	4/1997	9/1997	10/2007	6.2	10/2007	6.2
Circuitron	9/30/94		6/2000	5/15/2001	6/2010	8.9	6/2003	1.9
Claremont Polychemical	9/28/90		12/1998	2/2000	2/2010	8.6	2/2020	18.6
Combe Fill South Landfill	9/23/86		6/1998	9/1998	9/2008	7.2	9/2028	27.2
Dover Municipal Well 4	9/30/92		Unknown	Unknown	Unknown	Unknown	Unknown	Unknown

Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Notes:

1. Montgomery Township/Rocky Hill are two separate Fund-lead sites that will share a single P&T system.
2. The following systems are pre-operational; therefore, the associated data are estimates and some items are unknown: Dover Municipal Well 4, MetalTec/Aerosystems, Montgomery Township/Rocky Hill, and Stanton Cleaners.

Region 2, Table 3 -- P&T System Histories and Projections

July 3, 2001

	Date							
System	**Original ROD**	**Last ROD Modification**	**Construction Completed**	**Operational and Functional**	**Turnover to State**	**Years Until Turnover**	**Expected Completion**	**Years Until Completion**
Garden State Cleaners/South Jersey Clothing Company	9/26/91		3/1999	9/2000	10/2009	8.3	9/2029	28.2
Higgins Farm	9/30/92		5/1998	1/1999	1/2009	7.5	9/2028	27.2
Islip Municipal Landfill	9/19/92		9/1996	9/1997	9/2006	5.2	1/2003	1.5
Lang Property	9/29/86		9/1995	10/1995	10/2005	4.2	1/2005	3.5
Lipari Landfill site	9/30/85		12/1992	6/1993	10/2019	18.3	12/2004	3.4
Mattiace Petrochemical	6/27/91		8/1998	9/1999	3/2009	7.7	8/2029	28.1
Metal TEC/Aerosystems	9/27/90		Unknown	Unknown	Unknown	Unknown	Unknown	Unknown

Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Notes:

1. Montgomery Township/Rocky Hill are two separate Fund-lead sites that will share a single P&T system.
2. The following systems are pre-operational; therefore, the associated data are estimates and some items are unknown: Dover Municipal Well 4, MetalTec/Aerosystems, Montgomery Township/Rocky Hill, and Stanton Cleaners.

Region 2, Table 3 -- P&T System Histories and Projections

July 3, 2001

	Date							
System	Original ROD	Last ROD Modification	Construction Completed	Operational and Functional	Turnover to State	Years Until Turnover	Expected Completion	Years Until Completion
Mohonk Road Industrial Plant	3/31/00		5/2000	7/2001	7/2011	10.0	7/2031	30.0
Montgomery Township/Rocky Hill	6/27/88		9/2003	9/2003	9/2013	12.2	9/2033	32.2
SMS Instruments	9/29/89		6/1994	6/1995	6/2005	3.9	3/2004	2.7
Stanton Cleaners Area Groundwater Contamination Site	3/31/99		6/2001	9/2001	9/2011	10.2	9/2021	20.2
Syncon Resins	9/29/86	9/27/00	4/1991	4/1991	4/2001	0.0	9/2028	27.2
Vestal Water Supply Well 1-1	6/27/86		12/1993	3/1995	3/2005	3.7	3/2015	13.7
Vineland Chemical Co. Groundwater Treatment	9/28/89		4/2000	6/2000	6/2011	9.9	6/2031	29.9
Williams Property	9/29/87		1/1995	1/1995	1/2001	0.0	12/2002	1.4

Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Notes:

1. Montgomery Township/Rocky Hill are two separate Fund-lead sites that will share a single P&T system.
2. The following systems are pre-operational; therefore, the associated data are estimates and some items are unknown: Dover Municipal Well 4, MetalTec/Aerosystems, Montgomery Township/Rocky Hill, and Stanton Cleaners.

Region 2, Table 4 -- System Contact Information

July 3, 2001

System	RPM	State Regulator	Primary Contractor
American Thermostat	Christos Tsiamis EPA Region 2 290 Broadway New York, NY 12233 212-637-4257 212-637-3966 (fax) tsiamis.christos@epa.gov	Joseph Yavonditte New York State Department of Environmental Conservation 50 Wolf Road Albany, NY 12233 518-457-9285 518-457-7743 (fax) jayavond@gw.dec.state.ny.us	Feeney Richard Foster Wheeler Environmental Corporation 1000 The American Road Morris Plains, NJ 07950 973-630-8092 973-630-8111 (fax) RFeeney@fwenc.com
Bog Creek Farm LTRA	Edward Finnerty EPA Region 2 290 Broadway New York, NY 10007 212 637 4367 212-637-4393 (fax) Finnerty.Ed@EPA.GOV	Craig Wallace NJDEP 401 E State St. Trenton, NJ 08625 609 984 2990 609 633 2360 (fax) Cwallace@DEP.STATE.NJ.US	George Paprocki USACE Ft. Monmouth Eatontown, NJ 07703 732 389 3040 732 389 1564 (fax) George.B.Paprocki@nan02.USACE.army.mil
Brewster Wellfield	Lisa Wong EPA Region 2 290 Broadway New York, NY 10007 212-637-4267 212-637-3966 (fax) wong.lisa@epa.gov	George Momberger New York State Department of Environmental Conservation 50 Wolf Road Albany, NY 12233 518-457-0927 518-457-8989 (fax) gfmomber@gw.dec.state.ny.us	Dawn Cermak Sevenson Environmental Services, Inc Box 71A Route 518, Franklin Twsp Princeton, NJ 08540 732-297-0432 732-297-0441 (fax) hawksister@earthlink.net
Circuitron	Sharon Trocher EPA Region 2 290 Broadway New York, NY 10007-1866 212-637-3965 212-637-3966 (fax) trocher.sharon@epa.gov	Jeffrey Trad New York State Department of Environmental Conservation 50 Wolf Road Albany, NY 12233-7010 518-457-9285 518-457-7743 (fax) jetrad@gw.dec.state.ny.us	Shewen Bian USACE, New York District 1900 Hempstead Turnpike, Suite 16 East Meadow, NY 11554 516-794-2913 516-794-2975 (fax)

Region 2, Table 4 -- System Contact Information

July 3, 2001

System	RPM	State Regulator	Primary Contractor
Claremont Polychemical	Maria Jon EPA Region 2 290 Broadway, 20th Floor New York, NY 10007 212-637-3967 212-637-4284 (fax) Jon.Maria@epamail.epa.gov	Jeff Trad New York State Department of Environmental Conservation 50 Wolf Road Albany, NY 12218 518-457-9285 518-457-7743 (fax) jetrad@gw.dec.state.ny.us	Mark Kucera U.S. Army Corps of Engineers 501 Winding Road Old Bethpage, NY 11804 516-249-8912 516-249-8928 (fax)
Combe Fill South Landfill	Pamela J. Baxter EPA Region 2 290 Broadway New York, NY 10007-1866 212-637-4416 212-637-4393 (fax) baxter.pam@epamail.gov	Paula Walshe NJDEP 401 East State St. Trenton, NJ 08625 609-633-1119 609-292-1975 (fax) pwalshe@dep.state.nj.us	James Nash Chapman, Inc. 25 West Highand Avenue Atlantic Highlands, NJ 07716 732-291-7773 732-291-7776 (fax)
Dover Municipal Well 4	Diego Garcia EPA Region 2 290 Broadway New York, NY 10007-1866 212-637-4947 garcia.diego@epa.gov	Mary Lou Parra NJDEP 401 East State St. Trenton, NJ 08625 609-633-3618	Kamala Morgan USACE, Kansas City District 601 East 12th St. Kansas City,, MO 64106 816-983-3377
Garden State Cleaners/South Jersey	Brian Quinn EPA Region 2 290 Broadway, 19th Floor New York, NY 10007 212-637-4381 212-637-4393 (fax) quinn.brian@epa.gov	Akshay Parikh N.J.D.E.P. 401 E. State Street, P.O. Box 413 Trenton, NJ 08625 609-777-0693 609-633-2360 (fax) APARIKH@dep.state.nj.us	Steven Gillespie Sevenson Environmental Services, Inc. 2749 Lockport Road Niagara Falls, NY 14305 856-905-0782 856-697-9187 (fax) sevenson@voicenet.com

Region 2, Table 4 -- System Contact Information

July 3, 2001

System	RPM	State Regulator	Primary Contractor
Higgins Farm	Pamela J. Baxter EPA Region 2 290 Broadway New York, NY 10007-1866 212-637-4416 212-637-4393 (fax) baxter.pam@epamail.gov	Unknown NJDEP 401 East State St. Trenton, NJ 08625	Dawn Cermail Sevenson Environmental Service, Inc. 71A Route 518 Princeton, NJ 08540 732-297-0432 732-297-0441 (fax) hawksiyseter@earthlink.com
Islip Municipal Landfill	Mark Dannenberg EPA Region 2 290 Broadway New York, NY 10007 212-637-4251 212-637-3966 (fax) dannenberg.mark@epa.gov	Carl Hoffman New York State Department of Environmental Conservation 50 Wolf Road Albany, NY 12233 518-457-9538 518-457-4198 (fax) crhoffma@gw.dec.state.ny.us	Paul DiMaria Islip Resource Recovery Agency 401 Main Street Islip, NY 11751 631-224-5644 631-224-5645 (fax) wfgraner@hotmail.com
Lang Property	Lawrence Granite EPA Region 2 290 Broadway - 19th floor New York, New York, NY 10007-1866 212-637-4423 212-637-4393 (fax) granite.larry@epamail.epa.gov	Thomas Ferrara NJDEP 401 East State Street Trenton, NJ 08625 609-292-4095 609-633-2360 (fax)	Thomas Roche U.S. Army Corps of Engineers 192 City Line Road Browns Mills, NJ 08015 609-893-0983 609-893-5415 (fax) thomas.p.roche@usace.army.mil
Lipari Landfill site	Ferdinand Cataneo EPA Region 2 290 Broadway New York City, NY 10007-1866 212-637-4428 212-637-4393 (fax) cataneo.fred@epa.gov	Michael Burlingame NJDEP P.O. Box 413 Trenton, NJ 08625-0413 609-292-1424 609-292-1975 (fax) mburling@dep.state.nj.us	Lee Anne Simmler URS/Radian International 743 Mullica Hill Road Glassboro, NJ 08028 856-582-6000 856-582-6946 (fax) lee_anne_simmler@urscorp.com

Region 2, Table 4 -- System Contact Information

July 3, 2001

System	RPM	State Regulator	Primary Contractor
Mattiace Petrochemical	Edward Als EPA Region 2 290 Broadway NYC, NY 10007-1866 212-637-4272 212-637-3966 (fax) als.ed@epa.gov	Michael Mason NY State Department of Environmental Conservation 50 Wolf Road Albany, NY 12233 518-457-9285 518-457-7743 (fax) mamason@gw.dec.state.ny.us	Karuppenan Subburamu Foster Wheeler Environmental Corp. 1000 the American Road Morris Plains, NJ 07950 973-630-8518 973-630-8111 (fax) ksubburamu@fwenc.com
Metal TEC/Aerosystems	Dan Weissman EPA Region 2 290 Broadway New York, NY 10007-1866 212-637-4384 weissman.dan@epa.gov	Anton Navaragah NJDEP 401 East State St. Trenton, NJ 08625 609-777-0340	N/A
Mohonk Road Industrial Plant	Patrick Hamblin EPA Region 2 290 Broadway, 20th Floor New York, NY 10007-1866 212-637-3314 212-637-3966 (fax) hamblin.patrick@epa.gov	Michael Komoroske NYSDEC 50 Wolf Road, Room 242 Albany, NY 12233-7010 518-457-3395 518-457-4198 (fax) mjkomoro@gw.dec.state.ny.us	Eric Hamilton EarthTech 7870 Villa Park Drive, Suite 400 Richmond, VA 23228 804-515-8300 804-515-8414 (fax) e_hamilton@earthtech.com
Montgomery Township/Rocky Hill	Monica Mahar EPA Region 2 290 Broadway New York, NY 10007-1866 212-637-3942 mahar.monica@epa.gov	Larry Quinn NJDEP 401 East State St. Trenton, NJ 08625 609-633-0766 lquinn@dep.state.nj.us	Geoffrey McKenzie CDM 107-F Corporate Blvd. South Plainsfield, NJ 07080 908-757-9500 mckenziegm@cdm.com

Region 2, Table 4 -- System Contact Information

July 3, 2001

System	RPM	State Regulator	Primary Contractor
SMS Instruments	Mark Dannenberg EPA Region 2 290 Broadway New York, NY 10007 212-637-4251 212-637-3966 (fax) dannenberg.mark@epa.gov	Joseph Yavonditte New York State Department of Environmental Conservation 50 Wolf Road Albany, NY 12233 518-457-9280 518-457-4198 (fax) jayovond@gw.dec.state.ny.us	Paul Hagerman CDM Federal 125 Maiden Lane New York, NY 10038 212-785-9123 212-785-6114 (fax) hagermanpr@cdm.com
Stanton Cleaners Area Groundwater Contamination Site	Damian Duda EPA Region 2 290 Broadway - 20th Floor New York, NY 10007-1866 212-637-4269 212-637-3966 (fax) duda.damian@epa.gov	Thomas Gibbons New York State Department of Environmental Conservation 50 Wolf Road Albany, NY 12233 518-457-3960 518-457-4158 (fax) tlgibbon@gw.dec.state.ny.us	Thomas Williams Earth Tech 7870 Villa Park Drive - Suite 400 Richmond, VA 23228 516-482-7162 516-466-8396 (fax) twilliams@earthtech.com
Syncon Resins	Pamela J. Baxter EPA Region 2 290 Broadway New York, NY 10007-1866 212-637-4416 212-637-4393 (fax) baxter.pam@epamail.gov	Jeanette Abels NJDEP 401 East State St. Trenton, NJ 08625 609-292-4873 609-633-2360 (fax) jabels@dep.state.nj.us	John Sperber LSR Levine and Fricke P.O. Box 316 Closter, NJ 07624 201-750-6880 201-750-6890 (fax) spurber@webstan.net
Vestal Water Supply Well 1-1	Sharon Trocher EPA Region 2 290 Broadway New York, NY 10007-1866 212-637-3965 212-637-3966 (fax) trocher.sharon@epa.gov	Jeffrey Trad New York State Department of Environmental Conservation 50 Wolf Road Albany, NY 12233-7010 518-457-9285 518-457-7743 (fax) jetrad@gw.dec.state.ny.us	Heidemarie Adenau Foster Wheeler Environmental Corporation 1000 The American Road Morris Plains, NJ 07950 973-630-7197 973-630-8025 (fax) hadenau@fwenc.com

Region 2, Table 4 -- System Contact Information

July 3, 2001

System	RPM	State Regulator	Primary Contractor
Vineland Chemical Co. Groundwater Treatment	Matthew Westgate EPA Region 2 290 Broadway 19th floor New York City, NY 10007-1866 212 637-4422 212 637-4429 (fax) westgate.matthew@epamail.epa.gov	Craig Wallace N.J. Dept. of Environmental Protection 401 East State Street CN413 Trenton, NJ 08625-0413 609 984-3727 609 633-2360 (fax) cwallac2@dep.state.nj.us	Gillespie Steve Sevenson Environmental Services 1405A North Mill Road Vineland, NJ 08360 856 690-1758 856 690-1759 (fax) vineland@voicenet.com
Williams Property	Ferdinand Cataneo EPA Region 2 290 Broadway New York City, NY 10007-1866 212-637-4428 212-637-4393 (fax) cataneo.fred@epa.gov	Steve Wohleb NJDEP P.O. Box 413 Trenton, NJ 08625-0413 609-633-3970 609-292-1975 (fax) swohleb@dep.state.nj.us	Richard Talbot TurnKey Environmental Services, Inc 24 South Newton Street Road, Suite 1B Newton Square, PA 19073 610-356-3790 610-356-4780 (fax) TurnKeyEnv@aol.com

Region 2 Table 5 -- Top Contaminants Identified by RPMs

July 3, 2001

System	NAPLS Present?	# of Identified Contam.	Contaminants	Treatment Processes
American Thermostat	Suspected	3	1,2-Dichloropropane Trichlorobenzene Tetrachloroethylene (PCE)	Metals Precipitation Air Stripping Carbon Adsorption Filtration
Bog Creek Farm LTRA	Observed	9	1,1,1-Trichloroethane 1,2-Dichloroethylene (DCE) 2,4-Dimethylphenol Benzene Phenol Toluene copper lead zinc	Metals Precipitation Air Stripping Carbon Adsorption Filtration
Brewster Wellfield	Suspected	2	1,2-Dichloroethylene (DCE) Trichlorethylene (TCE)/Tetrachloroelthylene (PCE)	Air Stripping
Circuitron	Not present	4	1,1,1-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethylene (DCE) Trichloroethylene (TCE)	Air Stripping Carbon Adsorption Filtration
Claremont Polychemical	Don't know	4	1,1,1-Trichloroethane Toluene Xylene PCE	Metals Precipitation Air Stripping Carbon Adsorption
Combe Fill South Landfill	Not present	8	1,4-Dichlorobenzene Benzene Carbon tetrachloride Chlorobenzene Chloroform Ethylbenzene Methylene Chloride Toluene	Metals Precipitation Biological Treatment Carbon Adsorption Filtration
Dover Municipal Well 4	Not present	2	TCE PCE	Not Determined
Garden State Cleaners/South	Not present	2	Trans 1,2-Dichloroethylene Trichlorethylene (TCE)/Tetrachloroelthylene (PCE)	Air Stripping Carbon Adsorption

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Notes:

1. Montgomery Township/Rocky Hill are two separate Fund-lead sites that will share a single P&T system.
2. The following systems are pre-operational; therefore, the associated data are estimates and some items are unknown: Dover Municipal Well 4, MetalTec/Aerosystems, Montgomery Township/Rocky Hill, and Stanton Cleaners.

Region 2 Table 5 -- Top Contaminants Identified by RPMs

July 3, 2001

System	NAPLS Present?	# of Identified Contam.	Contaminants	Treatment Processes
American Anaconda Higgins Farm	Not present	6	Acetone Arsenic Chloride Chlorobenzene Toluene Xylene	Metals Precipitation Air Stripping Filtration Ion Exchange
Islip Municipal Landfill	Not present	1	Volatile organic compounds (VOCs)	Metals Precipitation Air Stripping
Lang Property	Suspected	5	tetrachlorethylene 1,1-dichloroethene 1,1-dichloroethane trichloroethene chromium	Carbon Adsorption Filtration Off-Gas Treatment
Lipari Landfill site	Suspected	9	Benzene and Toluene Bis(2-chloroethyl) ether Xylene 1,2-Dichloroethane Methylene Chloride Phenol Chromium Lead Zinc	Metals Precipitation Carbon Adsorption Off-Gas Treatment Other/Not Sure
Mattiace Petrochemical	Observed	12	Aromatic VOCs Chlorinated Aliphatics Chlorinated Solvents Ethylbenzene Tetrachloroethylene Trichloroethylene Ethylbenzene Toluene Xylenes Methylene Chloride Dichlorobenzene Acetone	Metals Precipitation Air Stripping Carbon Adsorption Filtration Off-Gas Treatment

Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Notes:

1. Montgomery Township/Rocky Hill are two separate Fund-lead sites that will share a single P&T system.
2. The following systems are pre-operational; therefore, the associated data are estimates and some items are unknown: Dover Municipal Well 4, MetalTec/Aerosystems, Montgomery Township/Rocky Hill, and Stanton Cleaners.

Region 2 Table 5 -- Top Contaminants Identified by RPMs

July 3, 2001

System	NAPLS Present?	# of Identified Contam.	Contaminants	Treatment Processes
American Metal TEC/Aerosystems	Observed	2	TCE PCE	Not determined
Mohonk Road Industrial Plant	Not present	4	1,1,1-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethylene (DCE) Trichloroethylene (TCE)	Air Stripping Carbon Adsorption Filtration Off-Gas Treatment
Montgomery Township/Rocky	Don't know	1	TCE	Air Stripping Carbon Adsorption
SMS Instruments	Not present	1	Xylene	Air Stripping Carbon Adsorption
Stanton Cleaners Area Groundwater	Suspected	4	Trichlorethylene (TCE)/Tetrachloroelthylene (PCE) DCE BTX MTBE	Metals Precipitation Air Stripping Carbon Adsorption Filtration Off-Gas Treatment
Syncon Resins	Observed	6	Acetone Benzene Chlorobenzene Ethylbenzene Toluene Xylene	Metals Precipitation Air Stripping Biological Treatment Carbon Adsorption Filtration Off-Gas Treatment
Vestal Water Supply Well 1-1	Not present	5	1,1,1-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethylene (DCE) 1,2-Dichloroethylene (DCE) Trichloroethylene (TCE)	Air Stripping
Vineland Chemical Co.	Not present	1	Arsenic	Metals Precipitation Filtration
Williams Property	Not present	7	Bis(2-chloroethyl) ether Trichlorethylene (TCE)/Tetrachloroelthylene (PCE) Acetone Isophorone Methyl ethyl ketone (MEK) Methyl isobutyl ketone (MIBK) Xylene	Biological Treatment UV oxidation Carbon Adsorption

Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Notes:

1. Montgomery Township/Rocky Hill are two separate Fund-lead sites that will share a single P&T system.
2. The following systems are pre-operational; therefore, the associated data are estimates and some items are unknown: Dover Municipal Well 4, MetalTec/Aerosystems, Montgomery Township/Rocky Hill, and Stanton Cleaners.

Region 2 Table 6 -- Screening Summary

July 3, 2001

System	Potential Reduction in Life-Cycle Costs	Potential Life-Cycle Savings	Expected Duration	Previous Evaluation of Effectiveness	Approximate Pumping Rate (gpm)	Number of Extraction Wells	Number of Treatment Processes	Groundwater Samples per Year	Obstacles to making (minor/major) changes
Operational									
American Thermostat	29.5%	$5,021,877	27.2	Sufficient	70	14	4	228	Minor Severe
Bog Creek Farm LTRA	30.0%	$1,833,415	23.4	Sufficient	30	33	4	9	Minor Minor
Brewster Wellfield	17.5%	$317,513	6.2	Not evaluated	50	4	1	64	Minor Minor
Circuitron	8.0%	$26,187	1.9	Sufficient	80	3	3	76	Minor Moderate
Claremont Polychemical	30.0%	$2,578,700	18.6	Not evaluated	420	3	3	56	Minor Minor
Combe Fill South Landfill	38.0%	$5,065,193	27.2	Not Sufficient	121	19	4	72	Minor Moderate
Garden State Cleaners/South	32.5%	$2,383,103	28.2	Currently being evaluated	300	15	2	54	Minor Minor

Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Notes:

1. Montgomery Township/Rocky Hill are two separate Fund-lead sites that will share a single P&T system.
2. "Potential Reduction in Life-cycle Costs" result from a screening methodology that incorporates system-specific information. The reductions do not include the cost of an RSE.
3. "Potential Life-cycle Savings" were estimated using using system-specific information and incorporate the cost of the RSE. Values in parentheses denote costs (negative savings).
4. "Groundwater Samples per Year" is calculated by multiplying the number of monitoring wells sampled by the number of monitoring events per year.
5. Previous evaluations of effectiveness may include 5-year reviews but do not include Remediation System Evaluations.

Region 2 Table 6 -- Screening Summary

July 3, 2001

System	Potential Reduction in Life-Cycle Costs	Potential Life-Cycle Savings	Expected Duration	Previous Evaluation of Effectiveness	Approximate Pumping Rate (gpm)	Number of Extraction Wells	Number of Treatment Processes	Groundwater Samples per Year	Obstacles to making (minor/major) changes
Operational									
Higgins Farm	40.0%	$5,799,020	27.2	Not evaluated	30	20	4	102	Minor Moderate
Islip Municipal Landfill	7.5%	($8,929)	1.5	Sufficient	300	6	2	96	Minor Minor
Lang Property	5.0%	$70,395	3.5	Sufficient	30	1	3	32	Minor Minor
Lipari Landfill site	17.5%	$1,136,049	3.4	Sufficient	125	25	4	39	Minor Minor
Mattiace Petrochemical	23.0%	$2,357,411	28.1	Sufficient	10	9	5	15	Minor Moderate
Mohonk Road Industrial Plant	unknown	unknown	30.0	Currently being evaluated	40	3	4	34	Minor Moderate
SMS Instruments	7.5%	$35,130	2.7	Sufficient	100	2	2	72	Minor Minor

Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Notes:

1. Montgomery Township/Rocky Hill are two separate Fund-lead sites that will share a single P&T system.
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4. "Groundwater Samples per Year" is calculated by multiplying the number of monitoring wells sampled by the number of monitoring events per year.
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Region 2 Table 6 -- Screening Summary

July 3, 2001

System	Potential Reduction in Life-Cycle Costs	Potential Life-Cycle Savings	Expected Duration	Previous Evaluation of Effectiveness	Approximate Pumping Rate (gpm)	Number of Extraction Wells	Number of Treatment Processes	Groundwater Samples per Year	Obstacles to making (minor/major) changes
Operational									
Syncon Resins	28.0%	$1,401,885	27.2	Not Sufficient	20	3	6	0	Minor Moderate
Vestal Water Supply Well 1-1	10.0%	$145,660	13.7	Sufficient	450	1	1	12	Minor Minor
Vineland Chemical Co. Groundwater	30.0%	$18,266,142	29.9	Currently being evaluated	1400	13	2	2080	Moderate Severe
Williams Property	5.0%	($9,717)	1.4	Sufficient	80	2	3	36	Minor Minor

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Notes:

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Region 2 Table 6 -- Screening Summary

July 3, 2001

System	Potential Reduction in Life-Cycle Costs	Potential Life-Cycle Savings	Expected Duration	Previous Evaluation of Effectiveness	Approximate Pumping Rate (gpm)	Number of Extraction Wells	Number of Treatment Processes	Groundwater Samples per Year	Obstacles to making (minor/major) changes
Pre-Operational									
Dover Municipal Well 4	unknown	unknown	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Metal TEC/Aerosystems	unknown	unknown	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Montgomery Township/Rocky Hill	28.0%	$1,696,715	32.2	N/A	250	3	2	80	Minor Moderate
Stanton Cleaners Area Groundwater	28.0%	$908,161	20.2	N/A	90	3	5	120	Minor Moderate

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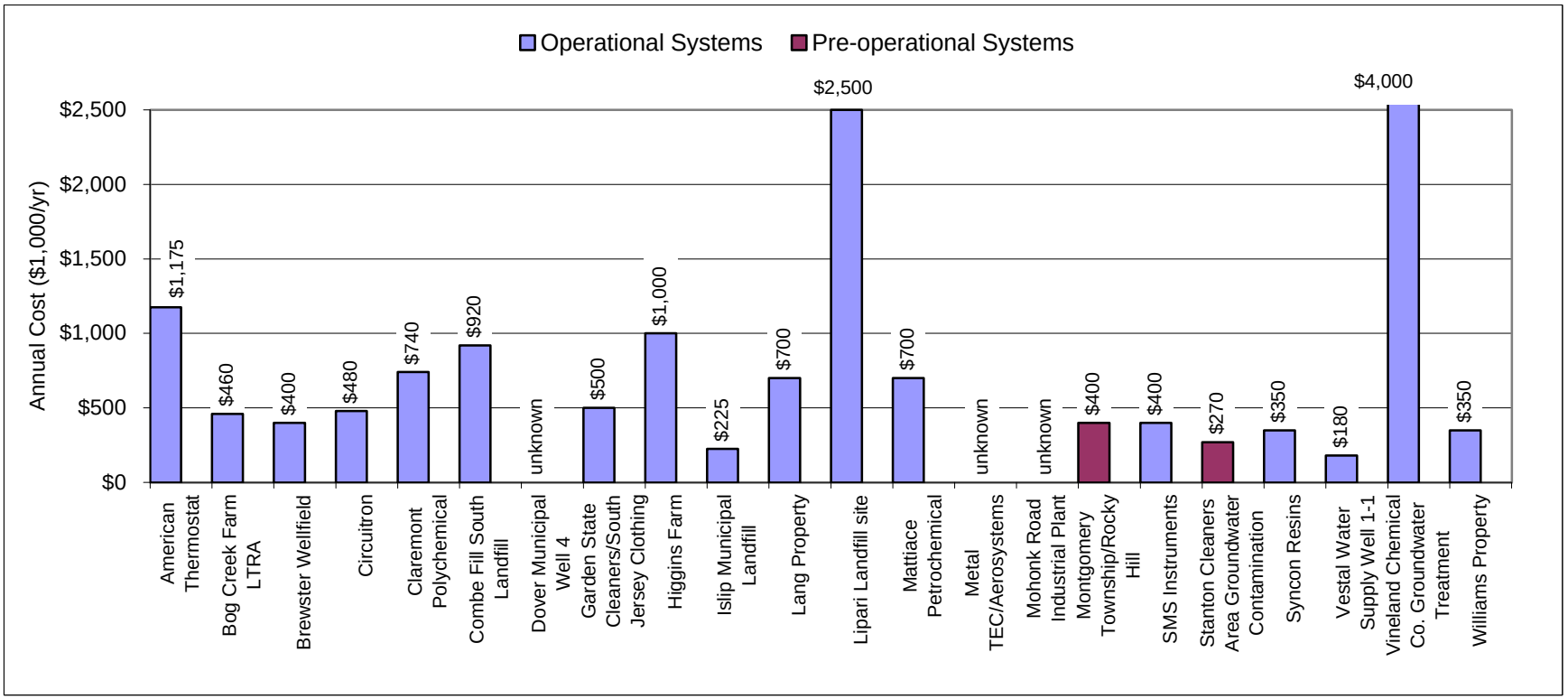
Notes:

1. Montgomery Township/Rocky Hill are two separate Fund-lead sites that will share a single P&T system.
2. "Potential Reduction in Life-cycle Costs" result from a screening methodology that incorporates system-specific information. The reductions do not include the cost of an RSE.
3. "Potential Life-cycle Savings" were estimated using using system-specific information and incorporate the cost of the RSE. Values in parentheses denote costs (negative savings).
4. "Groundwater Samples per Year" is calculated by multiplying the number of monitoring wells sampled by the number of monitoring events per
5. Previous evaluations of effectiveness may include 5-year reviews but do not include Remediation System Evaluations.

Region 2, Figure 1 -- Estimated Annual Costs of Systems

July 3, 2001



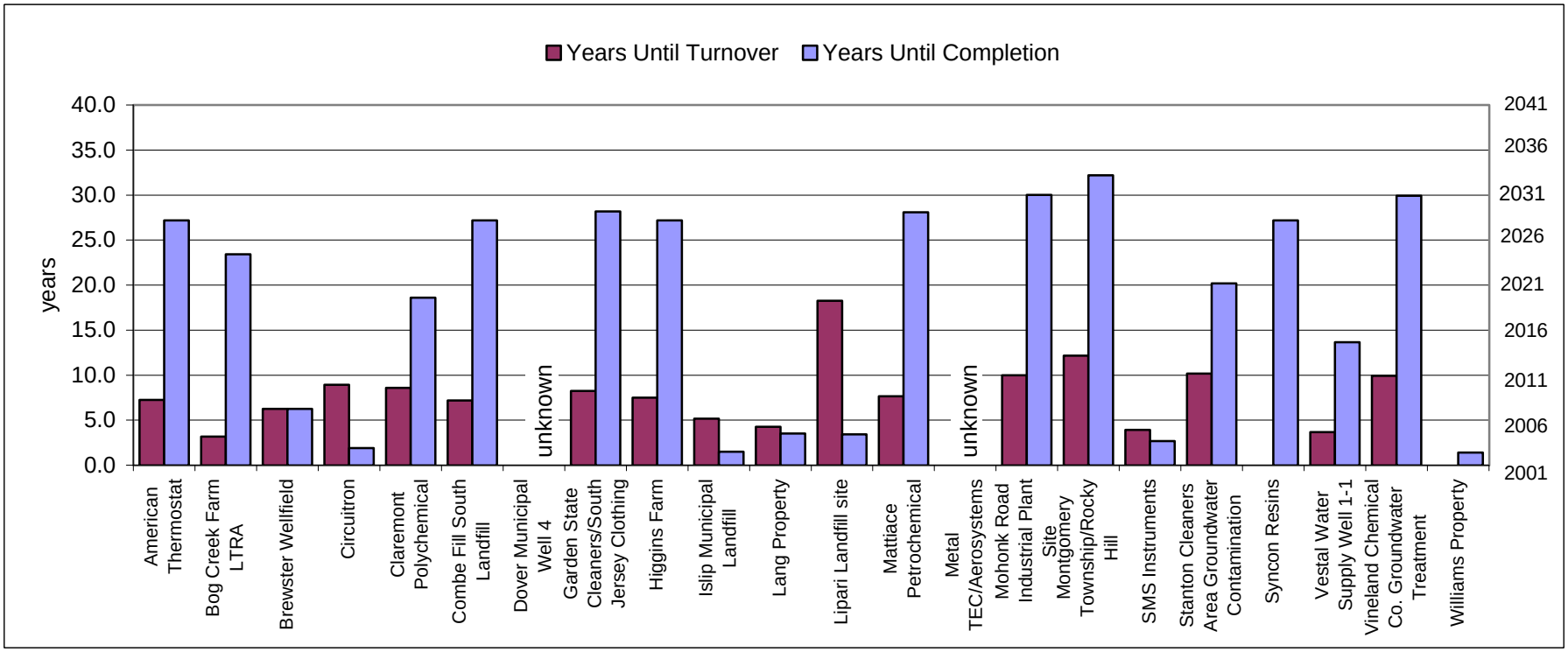
Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Notes:

1. Montgomery Township/Rocky Hill are two separate Fund-lead sites that will share a single P&T system.
2. The following systems are pre-operational; therefore, the associated data are estimates and some items are unknown: Dover Municipal Well 4, MetalTec/Aerosystems, Montgomery Township/Rocky Hill, and Stanton Cleaners.
3. Cost data is not yet available for the Mohonk Road Industrial Plant Site

Region 2, Figure 2 -- System Projections

July 3, 2001



Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Notes:

1. Montgomery Township/Rocky Hill are two separate Fund-lead sites that will share a single P&T system.
2. The following systems are pre-operational; therefore, the associated data are estimates and some items are unknown: Dover Municipal Well 4, MetalTec/Aerosystems, Montgomery Township/Rocky Hill, and Stanton Cleaners.

Nationwide Superfund Reform Initiative
Phase 1– Data Collection and System Screening
Region 3

July 3, 2001

In the *OSWER Directive No. 9200.0-33, Transmittal of Final FY00 - FY01 Superfund Reforms Strategy, dated July 7,2000*, the Office of Solid Waste and Emergency Response outlined a commitment to optimize our Fund-lead, pump-and-treat (P&T) systems. To fulfill this commitment, Headquarters is assisting Regions in evaluating their Fund-lead operating P&T systems. Phase 1 of this initiative involves identifying all Fund-lead P&T system, collecting baseline cost and performance data on them, and selecting up to two sites in each Region for a Remediation System Evaluation (RSE).

This report summarizes the screening process for Region 3 which began in January 2001 and is an ongoing process. The first section of this report presents the cost and performance data for the Region while the second describes the screening process and system selection.

The data presented in this report reflect estimates provided by the site Remedial Project Managers between January and May 2001. These estimates may vary from actuality. The data– including the number, status, cost, specifications, and projections of systems– may change over time.

Cost and Performance Data

Twelve Fund-lead P&T systems were identified in Region 3. Of this twelve, ten are operational and two are pre-operational (i.e., pre-design, design, being installed, or installed but not operating). In addition, two Fund-lead sites have been identified that will likely involve P&T technology.

Cost and performance data and other information pertaining to the identified Fund-lead P&T systems (estimates for the pre-operational systems) were collected with a web-based questionnaire accessed from http://www.cluin.org/optimization and stored in a database. This information is summarized in Table 1 and provided in detail in five additional tables:

- Table 2 provides overviews of the systems by providing items such as annual costs, lead, status, goals, and progress of each system.
- Table 3 includes the dates marking the signing of the ROD, construction completion, system operation and function, turnover to the state, and expected close-out.
- Table 4 lists for each system the contact information for the site Remedial Project Manager, the State Regulator, and the Contractor.

- Table 5 notes for each system and the associated site if NAPLS are present, the top contaminants of concern, and the above-ground treatment processes.

- Table 6 lists system specifications such as the pumping rate, number of wells, number of monitoring events per year, and other items used to determine the complexity of a system and its potential for optimization.

Projected dates for turnover to the States and for system completion are depicted in Figure 1, and annual costs for each system are depicted in Figure 2.

RSE Site Selection

Evaluation of Sites for Optimization Potential

Once the information is gathered from each of the Fund-lead P&T systems in a given Region, it becomes input for a screening methodology that attempts to determine the optimization potential for each system. This, in turn, provides a basis for selecting two systems where RSEs will be performed. Because some Regions do not have two Fund-lead P&T systems, the allotted but unused RSEs for those Regions are allocated to other Regions.

The factors affecting the optimization potential of a system are

- the overall cost of a given system,
- the expected duration of the system,
- the number of above-ground treatment processes,
- the number of extraction wells,
- the number of monitoring events per year,
- the system downtime per year,
- the pumping rate,
- the results (if any) of a previous performance and effectiveness evaluation, and
- any social or political obstacles to implementing modifications to the system.

Table 6 summarizes the results of the screening process including the estimated life-cycle cost savings that may result from performing an RSE.

Selecting Sites for RSEs

The following is a list of the identified Fund-lead P&T systems in Region 3 classified as completed, operational, planned, and no-longer operating. Those in bold were selected for RSEs.

Operational
- AIW Frank
- Berks Sand Pit
- Butz Landfill
- Croydon TCE
- Cryo-Chem
- Greenwood Chemical
- **Hellertown Manufacturing**
- North Penn Area 1
- **Raymark**
- Saunders Supply

Pre-Operational
- Havertown PCP
- North Penn Area 6

Potential
- Crossley Fram
- Vienna PCE

Typically, only systems with operational histories are chosen to receive RSEs, and the status of P&T systems in Region 3 at the time of site screening complicates site selection. During the screening, many of the P&T systems transitioned from pre-operational to operational systems. Specifically, at the time of the screening, AIW Frank, Butz Landfill, and Greenwood Chemical were considered pre-operational.

After these transitioning systems, Croydon TCE, Hellertown Manufacturing, and Raymark represented the next largest estimated life-cycle cost savings based on the screening methodology employed for the project. Croydon TCE was eliminated from consideration as it represented a conflict of interest for many of the RSE team members. Hellertown Manufacturing, although scheduled for transition to the responsible parties in late 2001, was still recommended for an RSE based on the support of Region 3. Finally, the selection of Raymark was encouraged by the Remedial Project Manager. Thus, Hellertown Manufacturing and Raymark are both selected for RSEs in Region 3.

Region 3, Table 1 -- Summary

July 3, 2001

Completed Fund-lead P&T Systems

Operational and Pre-operational Fund-lead P&T Systems	
Number of systems	**12**
Number that are EPA lead	**12 of 12**
Number that are State lead	**0 of 12**
System Status	
Number that are operational	**10**
Number that are pre-operational	**2**
Number where restoration is a goal	**12 of 12**
Number where the plume is controlled*	**5 of 10**
Number that are estimated to be more than 80% complete*	**0 of 10**
Number previously evaluated and effectiveness found sufficient*	**4 of 10**
Number previously evaluated and effectiveness found not sufficient*	**1 of 10**
Extent of Contamination	
Number where NAPLs are observed	**1 of 12**
Number with more than 1 major contaminant identified	**12 of 12**
Number with 3 or more treatment processes	**5 of 12**
Average Costs and Time Frames	
Average estimated annual O&M cost (including monitoring)	**$298,634**
Average estimated annual monitoring cost	**$102,442**
Average number of years until turnover to the States	**7.6**
Average number of years until completion	**20.0**

*Operational sites only

Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Region 3, Table 2 -- System Overviews

July 3, 2001

System	Estimated Annual Cost	Lead	Type of ROD	System Status	System Goals	Plume Under Control?	Estimated Progress of Restoration	Previous Evaluation of Effectiveness
AIW Frank/Mid-County Mustang Site, OU#1	$180,000	EPA	Final	Operational	Restoration	Unknown	Unknown	Sufficient
Berks Sand Pit	$150,000	EPA	Final	Operational	Restoration	Yes	20% - 80%	Sufficient
Butz Landfill	$250,000	EPA	Final	Operational	Restoration	Unknown	less than 20%	Not evaluated
Croydon TCE	$200,000	EPA	Final	Operational	Containment & Restoration	Yes	less than 20%	Sufficient
CryoChem	$125,000	EPA	Final	Operational	Containment & Restoration	Yes	Unknown	Sufficient
Greenwood Chemical Site	$400,000	EPA	Interim	Operational	Containment & Restoration	Control is not a goal	Unknown	Not evaluated
Havertown PCP OU2	$1,000,000	EPA	Interim	Being Installed	Containment & Restoration	N/A	N/A	Not evaluated
Hellertown Manufacturing	$350,000	EPA	Final	Operational	Containment & Restoration	Yes	Unknown	Not Sufficient
North Penn Area 1	$100,000	EPA	Final	Operational	Containment & Restoration	Unknown	Unknown	Not evaluated

Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Notes:

1. Havertown PCP and North Penn Area 6 are pre-operational; therefore, the associated data are estimates and some items are unknown.
2. "Estimated Progress of Restoration" refers to the estimated portion of the plume that has been restored to cleanup levels.
3. Previous evaluations of effectiveness may include 5-year reviews but do not include Remediation Systems Evaluations.

Region 3, Table 2 -- System Overviews

July 3, 2001

System	Estimated Annual Cost	Lead	Type of ROD	System Status	System Goals	Plume Under Control?	Estimated Progress of Restoration	Previous Evaluation of Effectiveness
North Penn Area 6	$592,900	EPA	Final	Design	Containment & Restoration	N/A	N/A	Not evaluated
Raymark	$155,711	EPA	Final	Operational	Containment & Restoration	Unknown	Unknown	Not evaluated
Saunders Supply Company	$80,000	EPA	Final	Operational	Containment & Restoration	Yes	Unknown	Not evaluated

Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Notes:

1. Havertown PCP and North Penn Area 6 are pre-operational; therefore, the associated data are estimates and some items are unknown.
2. "Estimated Progress of Restoration" refers to the estimated portion of the plume that has been restored to cleanup levels.
3. Previous evaluations of effectiveness may include 5-year reviews but do not include Remediation Systems Evaluations.

Region 3, Table 3 -- P&T System Histories and Projections

July 3, 2001

System	Date							
	Original ROD	Last ROD Modification	Construction Completed	Operational and Functional	Turnover to State	Years Until Turnover	Expected Completion	Years Until Completion
AIW Frank/Mid-County Mustang Site, OU#1	9/29/95		11/2000	9/2001	9/2011	10.2	9/2031	30.2
Berks Sand Pit	9/29/88	2/2/94	2/1995	2/1995	2/2005	3.6	2/2003	1.6
Butz Landfill	6/30/92	8/27/99	4/2001	4/2001	4/2011	9.8	4/2031	29.8
Croydon TCE	6/29/90		3/1995	3/1995	3/2005	3.7	3/2025	23.7
CryoChem	9/30/91		2/1998	6/1998	6/2008	6.9	6/2010	8.9
Greenwood Chemical Site	12/30/90		11/2000	11/2001	11/2011	10.3	11/2020	19.3
Havertown PCP OU2	9/30/91		5/2001	4/2002	4/2012	10.8	4/2033	31.8
Hellertown Manufacturing	9/3/91		9/1996	3/1996	9/2006	5.2	9/2026	25.2
North Penn Area 1	9/30/94	9/24/98	7/1998	9/1998	9/2008	7.2	9/2018	17.2
North Penn Area 6	8/10/00		9/2002	6/2003	6/2013	11.9	6/2033	31.9
Raymark	9/28/90		1/1994	6/1995	1/2004	2.5	1/2014	12.5
Saunders Supply Company	9/27/96		4/1998	5/1999	5/2009	7.8	4/2008	6.8

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Region 3, Table 4 -- System Contact Information

July 3, 2001

System	RPM	State Regulator	Primary Contractor
AIW Frank/Mid-County Mustang Site, OU#1	Charlie Root EPA Region 3 1650 Arch Street (3HS21) Philadelphia, PA 19103 215-814-3193 215-814-3002 (fax) root.charlie@epa.gov	Ragesh Patel Pennsylvania Department of Environmental Protection Lee Park, Suite 6010 555 North Lane Conshohocken, PA 19428 610-832-6161 610-832-6260 (fax) patel.ragesh@state.pa.us	Neil Teamerson TetraTech NUS 600 Clark Avenue, Suite 3 King of Prussia, PA 19406 610-491-9688 610-491-9645 (fax) teamersonn@ttnus.com
Berks Sand Pit	Bruce Rundell EPA Region 3 1650 Arch Street Philadephia, PA 19103-2087 215-814-3317 215-814-3015 (fax) rundell.bruce@epa.gov	Elise Juers PADEP 909 Elmerton Av. Harrisburg, PA 17110-8200 717-705-4852 717-705-4830 (fax) juers.elise@a1.dep.state.pa.45	Ed Kashdan Gannett Fleming PO Box 80794 Valley Forge, PA 19484 610-650-8101 610-650-8190 (fax) ekashdan@GFnet.com
Butz Landfill	Rom Roman EPA Region 3 1650 Arch Street Philadelphia, PA 19103-2087 215-814-3212 215-814-3015 (fax) roman.romuald@epa.gov	PADEP Paul Panek PADEP 4530 Bath Pike Bethlehem, PA 18017 610-861-2070 610-861-2072 (fax) panek.paul@dep.state.pa.us	Charles Huval Koester Environmental Services 14649 Highway 41 N Evansville, IN 47725 812-483-4516
Croydon TCE	Cesar Lee EPA Region 3 1650 Arch St Philadelphia, PA 19103 215-814-3205 215-814-3205 (fax) lee.cesar@epa.gov	Ewald Dave PADEP Lee Park, Suite 6010 Conshohocken, PA 19428 610-832-6200 610-832-5950 (fax) Ewald.David@dep.state.pa.us	Harish Mital Tetra Tech, Inc. Plaza 273, 56 West Main Street Christiana, DE 19702 302-738-7551 302-454-5988 (fax) harish.mital@tetratech.com

Region 3, Table 4 -- System Contact Information

July 3, 2001

System	RPM	State Regulator	Primary Contractor
CryoChem	Joseph McDowell EPA Region 3 1650 Arch Street Phila, PA 19103 215-814-3192 215-814-3002 (fax) mcdowell.joseph@epa.gov	Rich Morgan PADEP 909 Elmerton Ave Harrisburg, PA 17110 610-916-0122 610-916-0100 (fax) MORGAN.RICHARD@DEP.STATE.PA.US	Don Koch ETA 9115 Guilford Road Suite 100 Columbia, MD 21046 410-461-9920 410-750-8565 (fax) dkoch@md.ccjm.com
Greenwood Chemical Site	Philip Rotstein EPA Region 3 1650 Arch Street Philadelphia, PA 19103 215-814-3232 215-814-3002 (fax) rotstein.phil@epa.gov	Berry Wright Department of Environmental Quality 629 E. Main Street Richmond, VA 23219 804-698-4012 804-698-4234 (fax) bfwright@deq.state.va.us	Jeff Waters CH2M Hill 1700 Market Street, Suite 1600 Philadelphia, PA 19103 215-563-4220 215-563-3828 (fax) jwaters@ch2m.com
Havertown PCP OU2	Gregory Ham EPA Region 3 1650 Arch Street (3HS21) Philadelphia, PA 19103-2029 215-814-3194 215-814-3002 (fax) ham.greg@epa.gov	April Flipse Pennsylvania Dept. of Environmental Protection 555 North Lane, Suite 6010 Conshohocken, PA 19428 610-832-5937 610-832-6143 (fax) Flipse.April@dep.state.pa.us	Lori Stoll URS Corporation 200 Orchard Ridge Drive, Suite 101 Gaithersburg, MD 20878-1978 301-258-9780 301-869-2043 (fax) lori_stoll@urscorp.com
Hellertown Manufacturing	Cesar Lee EPA Region 3 1650 Arch Street Philadelphia, PA 19103 215-814-3205 215-814-3205 (fax) lee.cesar@epa.gov	Meg Mustard PADEP 4530 Bath Pike Bethlehem, PA 18017 610-861-2076 610-861-2072 (fax) boyer.margaret@dep.state.pa.us	Jim Romig CDM Federal Corporation 993 Old Eagle School Road, Suite 408 Wayne, PA 19087 610-293-0450 610-293-1920 (fax) romigjm@cdm.com

Region 3, Table 4 -- System Contact Information

July 3, 2001

System	RPM	State Regulator	Primary Contractor
North Penn Area 1	Maria de los A. Garcia EPA Region 3 1650 Arch Street Philadelphia, PA 19103 215-814-3199 215-814-3002 (fax) garcia.maria@epa.gov	April Flipse Pennsylvania Department of Environmental Protection Lee Park, Suite 6010 555 North Lane Conshohocken, PA 19428 610-832-5937 610-832-6143 (fax)	Policarpio Mijares U.S. Army Corps of Engineers P.O. Box 1715 Baltimore, PA 21203 410-962-2782 410-962-2318 (fax)
North Penn Area 6	Gregory Ham EPA Region 3 1650 Arch Street (3HS21) Philadelphia, PA 19103-2029 215-814-3194 215-814-3002 (fax) ham.greg@epa.gov	Robert Zang Pennsylvania Dept. of Environmental Protection 555 North Lane, Suite 6010 Conshohocken, PA 19428 610-832-6152 610-832-6259 (fax) Zang.Robert@state.pa.us	Ray Lees It Corporation 1220 Ward Avenue, Suite 300 West Chester, PA 19380-3409 610-241-5000 610-241-5050 (fax) rlees@theitgroup.com
Raymark	Deanna Moultrie EPA Region 3 1650 Arch Street Philadelphia, PA 19103 215-814-5125 215-814-3002 (fax) moultrie.deanna@epa.gov	David Minsker PADEP Lee Park Suite 6010 555 North Lane Conshohocken, PA 19428 610-832-6193 610-832-6143 (fax) Minsker.David@dep.state.pa.us	Andy Hopton CDM Federal Programs 993 Old Eagle School Road Wayne, PA 19083 610-293-0450 610-293-1920 (fax) HoptonAP@cdm.com
Saunders Supply Company	Andrew Palestini EPA Region 3 1650 Arch Street Philadelphia, PA 19103 215-814-3233 215-814-3002 (fax) palestini.andy@epa.gov	Thomas Modena Virginia Department of Environmental Quality 629 East Main Street Richmond, VA 23219 804-698-4183 804-698-4500 (fax) tdmodena@deq.state.va.us	Marc Gutterman U.S. Army Corps of Engineers 803 Front Street Norfolk, VA 23510 757-441-7669 757-441-7478 (fax) Marc.D.Gutterman@nao02.usace.army.mil

Region 3, Table 5 -- Top Contaminants Identified by RPMs

July 3, 2001

System	NAPLS Present?	# of Identified Contam.	Contaminants	Treatment Processes
AIW Frank/Mid-County Mustang Site, OU#1	Not present	2	1,1,2,2-Tetrachloroethane Trans 1,2-Dichloroethylene	Air Stripping Carbon Adsorption Filtration Off-Gas Treatment
Berks Sand Pit	Not present	2	1,1,1-Trichloroethane 1,1-Dichloroethylene (DCE)	Air Stripping
Butz Landfill	Not present	3	Diesel fuel Trichlorobenzene Vinyl Chloride	Air Stripping Off-Gas Treatment
Croydon TCE	Suspected	4	1,1,2-Trichloroethane 1,1-Dichloroethylene (DCE) Trichlorethylene (TCE)/Tetrachloroelthylene (PCE) Trichloroethylene (TCE)	Air Stripping Carbon Adsorption
CryoChem	Don't know	3	1,1,1-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethylene (DCE)	Air Stripping
Greenwood Chemical Site	Don't know	5	1,1-Dichloroethane Acetone Arsenic Benzene and Toluene Naphthalene Acetic Acid, 1,2-Dichloroethane, SVOC TICs, Dibutyl phthalate, 2,4,6,-Trichlorophenol	Metals Precipitation UV oxidation Carbon Adsorption Filtration Off-Gas Treatment
Havertown PCP OU2	Observed	4	Benzene and Toluene Dioxin (TCDD equivalents) Pentachlorophenol (PCP) Trichloroethylene (TCE)	Metals Precipitation UV oxidation Carbon Adsorption Filtration
Hellertown Manufacturing	Not present	5	Benzene Cis-1,2-dichloroethene TCE and Vinyl chloride Trans 1,2-Dichloroethylene Trichlorethylene (TCE)/Tetrachloroelthylene (PCE)	Air Stripping Carbon Adsorption

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Region 3, Table 5 -- Top Contaminants Identified by RPMs

July 3, 2001

System	NAPLS Present?	# of Identified Contam.	Contaminants	Treatment Processes
AWI Frank/Mid-North Penn Area 1	Not present	7	1,1,1-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethylene (DCE) Cis-1,2-dichloroethene Trans 1,2-Dichloroethylene Trichlorethylene (TCE)/Tetrachloroelthylene (PCE) Volatile organic compounds (VOCs)	Other/Not Sure
North Penn Area 6	Suspected	3	Carbon tetrachloride TCE and Vinyl chloride Trichlorethylene (TCE)/Tetrachloroelthylene (PCE)	Metals Precipitation Air Stripping Off-Gas Treatment
Raymark	Not present	2	Carbozol Trichlorobenzene	Carbon Adsorption Off-Gas Treatment
Saunders Supply Company	Suspected	2	Arsenic Pentachlorophenol (PCP)	Metals Precipitation Carbon Adsorption Filtration

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Region 3 Table 6 -- Screening Summary

July 3, 2001

System	Potential Reduction in Life-Cycle Costs	Potential Life-Cycle Savings	Expected Duration	Previous Evaluation of Effectiveness	Approximate Pumping Rate (gpm)	Number of Extraction Wells	Number of Treatment Processes	Groundwater Samples per Year	Obstacles to making (minor/major) changes
	Operational								
AIW Frank/Mid-County Mustang Site, OU#1	28.0%	$746,159	30.2	Sufficient	118	5	4	60	Minor Moderate
Berks Sand Pit	5.0%	($17,266)	1.6	Sufficient	90	1	1	48	Minor Minor
Butz Landfill	25.0%	$925,229	29.8	Not evaluated	90	3	2	68	Minor Minor
Croydon TCE	20.0%	$516,796	23.7	Sufficient	25	6	2	28	Minor Minor
CryoChem	8.0%	$42,373	8.9	Sufficient	60	9	1	4	Minor Moderate
Greenwood Chemical Site	32.5%	$1,538,361	19.3	Not evaluated	45	5	5	136	Minor Minor

Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Notes:

1. "Potential Reduction in Life-cycle Costs" result from a screening methodology that incorporates system-specific information. The reductions do not include the cost of an RSE.
2. "Potential Life-cycle Savings" were estimated using using system-specific information and incorporate the cost of the RSE. Values in parentheses denote costs (negative savings).
3. "Groundwater Samples per Year" is calculated by multiplying the number of monitoring wells sampled by the number of monitoring events per year.
4. Previous evaluations of effectiveness may include 5-year reviews but do not include Remediation System Evaluations.

Region 3 Table 6 -- Screening Summary

July 3, 2001

System	Potential Reduction in Life-Cycle Costs	Potential Life-Cycle Savings	Expected Duration	Previous Evaluation of Effectiveness	Approximate Pumping Rate (gpm)	Number of Extraction Wells	Number of Treatment Processes	Groundwater Samples per Year	Obstacles to making (minor/major) changes
	Operational								
Hellertown Manufacturing	20.5%	$979,619	25.2	Not Sufficient	50	1	2	48	Minor Moderate
North Penn Area 1	10.0%	$86,353	17.2	Not evaluated	2	1	1	8	Minor Minor
Raymark	17.5%	$216,640	12.5	Not evaluated	62	2	2	0	Minor Minor
Saunders Supply Company	17.0%	$46,510	6.8	Not evaluated	2	4	3	40	Minor Severe
	Pre-Operational								
Havertown PCP OU2	25.5%	$3,894,975	31.8	Not evaluated	45	4	4	30	Minor Moderate
North Penn Area 6	35.5%	$3,210,586	31.9	Not evaluated	300	10	3	120	Minor Moderate

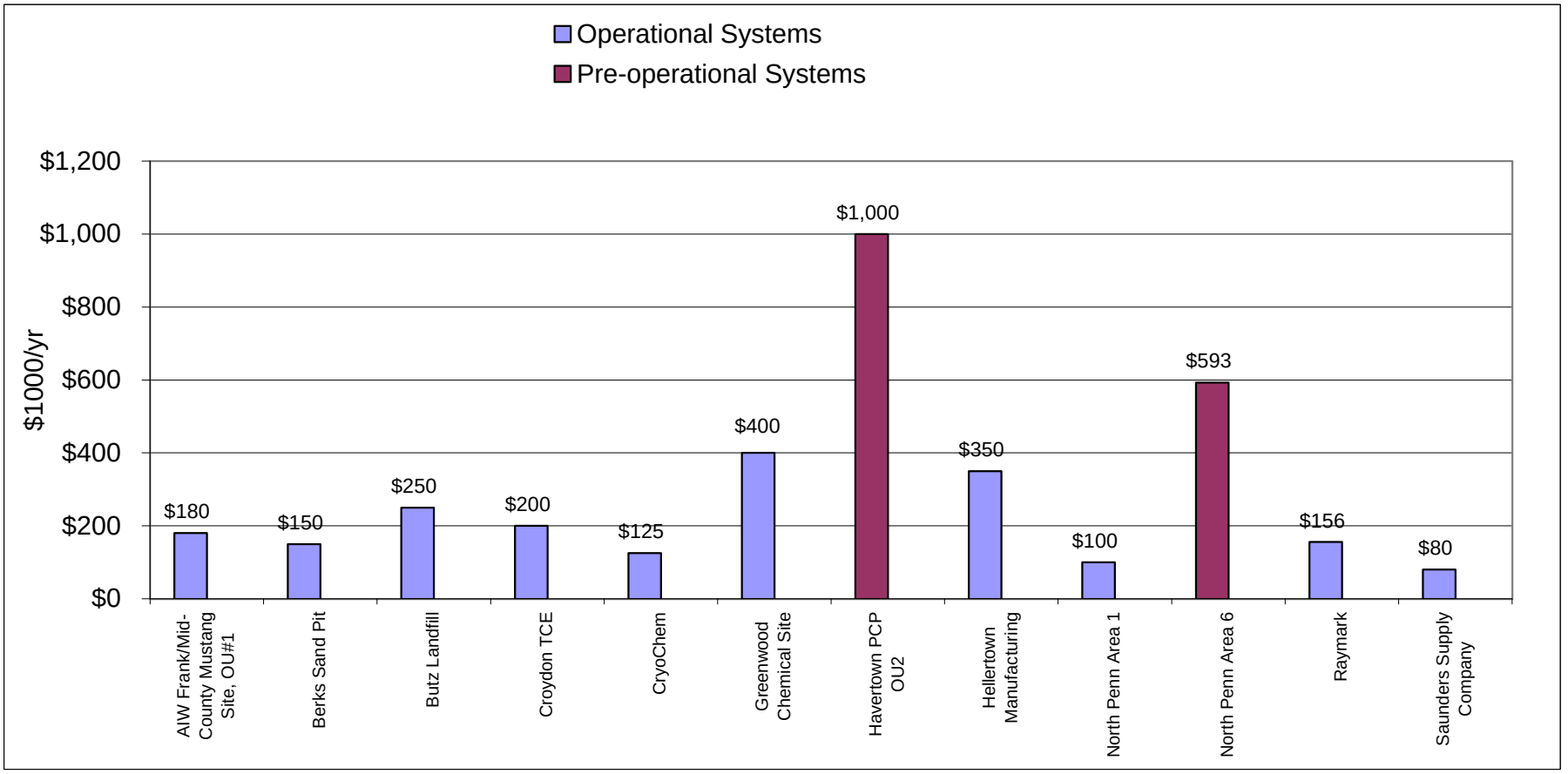
Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Notes:

1. "Potential Reduction in Life-cycle Costs" result from a screening methodology that incorporates system-specific information. The reductions do not include the cost of an RSE.
2. "Potential Life-cycle Savings" were estimated using using system-specific information and incorporate the cost of the RSE. Values in parentheses denote costs (negative savings).
3. "Groundwater Samples per Year" is calculated by multiplying the number of monitoring wells sampled by the number of monitoring events per year.
4. Previous evaluations of effectiveness may include 5-year reviews but do not include Remediation System Evaluations.

Region 3, Figure 1 -- Estimated Annual O&M Costs

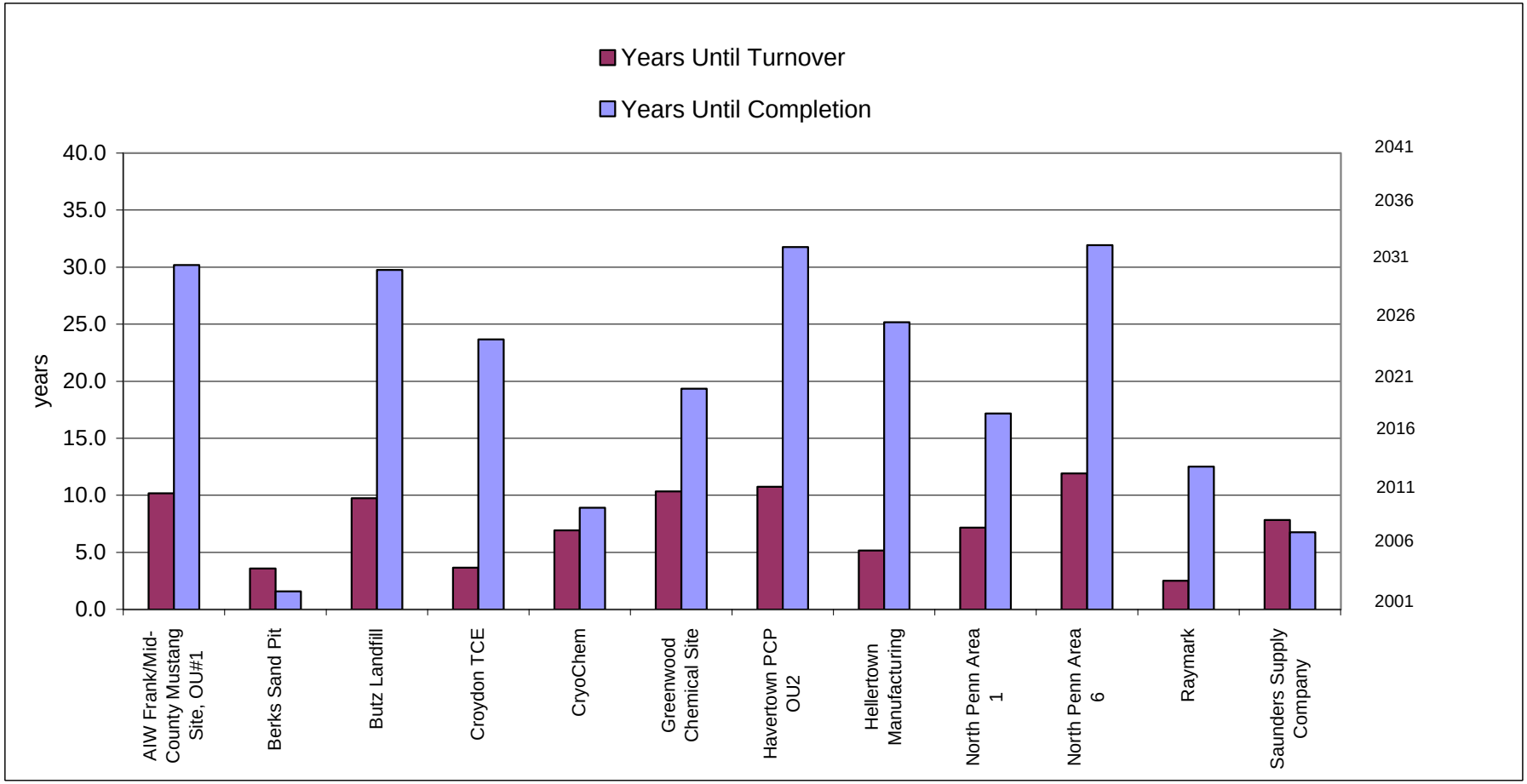
July 3, 2001



Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Region 3, Figure 2 -- System Projections

July 3, 2001



Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Nationwide Superfund Reform Initiative
Phase 1– Data Collection and System Screening
Region 4

July 3, 2001

In the *OSWER Directive No. 9200.0-33, Transmittal of Final FY00 - FY01 Superfund Reforms Strategy, dated July 7,2000*, the Office of Solid Waste and Emergency Response outlined a commitment to optimize our Fund-lead, pump-and-treat (P&T) systems. To fulfill this commitment, Headquarters is assisting Regions in evaluating their Fund-lead operating P&T systems. Phase 1 of this initiative involves identifying all Fund-lead P&T system, collecting baseline cost and performance data on them, and selecting up to two sites in each Region for a Remediation System Evaluation (RSE).

This report summarizes the screening process for Region 4 that began in July 2000 as part of a demonstration optimization project and was revisited in April and May 2001 as part of a nationwide optimization project. The Fund-lead P&T systems in Region 4 were identified during the demonstration project and baseline information was collected on each system. Two of the identified P&T systems were selected to receive RSEs and those two systems received their RSEs in 2000. This report includes information collected during the demonstration project as well as additional information collected during the nationwide project conducted in 2001. Where applicable, system information collected in 2000 has been updated by system information collected in 2001.

The data presented in this report reflect estimates updated by the site Remedial Project Managers between April and May 2001. These estimates may vary from actuality. The data– including the number, status, cost, specifications, and projections of systems– may change over time.

The first section of this report presents the cost and performance data for the Region while the second describes the screening process and system selection.

Cost and Performance Data

Ten Fund-lead P&T systems were identified in Region 4. Of this ten, seven are operational and three are pre-operational (i.e., pre-design, design, being installed, or installed but not operating). In addition, two Fund-lead P&T systems have been identified that have been transferred to the responsible parties and an additional Fund-lead P&T system is no longer operating.

Data collection is incomplete for the following three systems in Region 4 for the following reasons:

- EPA is currently in litigation with the system contractor for ABC Cleaners and details of the system could not be discussed.

- There is no Remedial Project Manager for the Miami Drum site. EPA provides funding to the local government for water supply but does not provide oversight.

- P&T is specified in the Record of Decision for Coleman Evans but that technology will likely not be used.

Cost and performance data and other information pertaining to the remaining identified Fund-lead P&T systems (estimates for the pre-operational systems) were collected with a web-based questionnaire accessed from http://www.cluin.org/optimization or from phone interviews and were stored in a database. This information is summarized in Table 1 and provided in detail in five additional tables:

- Table 2 provides overviews of the systems by providing items such as annual costs, lead, status, goals, and progress of each system.

- Table 3 includes the dates marking the signing of the ROD, construction completion, system operation and function, turnover to the state, and expected close-out.

- Table 4 lists for each system the contact information for the site Remedial Project Manager, the State Regulator, and the Contractor.

- Table 5 notes for each system and the associated site if NAPLs are present, the top contaminants of concern, and the above-ground treatment processes.

- Table 6 lists system specifications such as the pumping rate, number of wells, number of monitoring events per year, and other items used to determine the complexity of a system and its potential for optimization.

Projected dates for turnover to the States and for system completion are depicted in Figure 1, and annual costs for each system are depicted in Figure 2.

RSE Site Selection

Evaluation of Sites for Optimization Potential

Once the information is gathered from each of the Fund-lead P&T systems in a given Region, it becomes input for a screening methodology that attempts to determine the optimization potential for each system. This, in turn, provides a basis for selecting two systems where RSEs will be performed. Because some Regions do not have two Fund-lead P&T systems, the allotted but unused RSEs for those Regions are allocated to other Regions.

The factors affecting the optimization potential of a system are

- the overall cost of a given system,
- the expected duration of the system,
- the number of above-ground treatment processes,
- the number of extraction wells,
- the number of monitoring events per year,
- the system downtime per year,
- the pumping rate,
- the results (if any) of a previous performance and effectiveness evaluation, and
- any social or political obstacles to implementing modifications to the system.

Table 6 summarizes the results of the screening process including the estimated life-cycle cost savings that may result from performing an RSE.

Selecting Sites for RSEs

The following is a list of the identified Fund-lead P&T systems in Region 4 classified as operational, pre-operational, transferred to responsible parties, and no-longer operating. Those in bold were selected for RSEs.

Operational
- ABC Cleaners
- American Creosote (current)
- Benfield
- **Elmore Waste Disposal**
- **FCX Statesville**
- Miami Drum
- Palmetto Wood

Pre-Operational
- American Creosote (future)
- Cape Fear Wood Preserving
- Coleman Evans

Transferred to Responsible Parties
- Distler's Brickyard
- Distler's Farm

No Longer Operating
- Hollingsworth Solderless Terminals

Elmore Waste Disposal and FCX Statesville were selected for RSEs during the demonstration project based on the interest of the Remedial Project Managers and estimated potential savings as determined by screening calculations.

Region 4, Table 1 -- Summary

July 3, 2001

Completed Fund-lead P&T Systems

Operational and Pre-operational Fund-lead P&T Systems	
Number of systems	**10**
Number that are EPA lead	**9 of 10**
Number that are State lead	**1 of 10**
System Status	
Number that are operational	**7**
Number that are pre-operational	**3**
Number where restoration is a goal	**9 of 10**
Number where the plume is controlled*	**1 of 7**
Number that are estimated to be more than 80% complete*	**0 of 7**
Number previously evaluated and effectiveness found sufficient*	**3 of 7**
Number previously evaluated and effectiveness found not sufficient*	**0 of 7**
Extent of Contamination	
Number where NAPLs are observed	**4 of 10**
Number with more than 1 major contaminant identified	**7 of 10**
Number with 3 or more treatment processes	**1 of 10**
Average Costs and Time Frames	
Average estimated annual O&M cost (including monitoring)	**$306,500**
Average estimated annual monitoring cost	**$12,300**
Average number of years until turnover to the States	**7.2**
Average number of years until completion	**10.0**

*Operational sites only

No-Longer-Operating Fund-lead P&T Systems
Hollingsworth Solderless Terminals

Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Region 4, Table 2 -- System Overviews

July 3, 2001

System	Estimated Annual Cost	Lead	Type of ROD	System Status	System Goals	Plume Under Control?	Estimated Progress of Restoration	Previous Evaluation of Effectiveness
ABC Cleaners	Unknown	EPA	Final	Operational	Restoration	N/A	N/A	N/A
American Creosote Works (DNAPL)	$300,000	EPA	Final	Operational	Restoration	No	less than 20%	Not evaluated
American Creosote Works (solute)	$452,000	EPA	Final	Predesign	Containment & Restoration	N/A	N/A	Not evaluated
Benfield Industries	$30,000	EPA	Final	Operational	Containment & Restoration	Unknown	less than 20%	Not evaluated
Cape Fear Wood Preserving	$40,000	EPA	Final	Designed/ Not Installed	Containment & Restoration	N/A	N/A	Not evaluated
Coleman Evans Wood Preserving	Unknown	EPA	Interim	Predesign	Restoration	N/A	N/A	Not evaluated
Elmore Waste Disposal	$180,000	EPA	Final	Operational	Containment & Restoration	Unknown	Unknown	Sufficient
FCX Statesville	$150,000	EPA	Final	Operational	Containment & Restoration	Unknown	less than 20%	Sufficient
Miami Drum	$1,000,000	State with Fund Money	Final	Operational	Water supply	N/A	N/A	N/A
Palmetto Wood	$300,000	EPA	Final	Operational	Containment & Restoration	Yes	20% - 80%	Sufficient

Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Notes:

1. American Creosote Works (solute), Cape Fear Wood Preserving, and Coleman Evans Wood Preserving are pre-operational systems; therefore, the reported data are estimates and some information is unknown.
2. "Estimated Progress of Restoration" refers to the estimated portion of the plume that has been restored to cleanup levels.
3. Previous evaluations of effectiveness may include 5-year reviews but do not include Remediation Systems Evaluations.

Region 4, Table 3 -- P&T System Histories and Projections

July 3, 2001

	Date							
System	Original ROD	Last ROD Modification	Construction Completed	Operational and Functional	Turnover to State	Years Until Turnover	Expected Completion	Years Until Completion
ABC Cleaners	1/26/93							
American Creosote Works (DNAPL)	2/3/94		9/1998	9/1998	5/2003	1.8	5/2003	1.8
American Creosote Works (solute)	2/3/94		9/2004	9/2004	9/2014	13.2	9/2009	8.2
Benfield Industries	7/31/92		4/2001	5/2001	5/2011	9.8	5/2021	19.8
Cape Fear Wood Preserving	6/30/89	3/23/01	9/2001	9/2002	10/2011	10.3	12/2009	8.4
Coleman Evans Wood Preserving	9/25/86	9/25/97						
Elmore Waste Disposal	4/26/93		9/1998	9/1998	9/2008	7.2	9/2018	17.2
FCX Statesville	9/27/93	9/30/96		5/1998	5/2008	6.8	5/2008	6.8
Miami Drum	1/0/00		9/1992	9/1992	9/2002	1.2		
Palmetto Wood	9/30/87	8/4/93	5/1997	1/1998	5/2008	6.8	5/2008	6.8

Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Region 4, Table 4 -- System Contact Information

July 3, 2001

System	RPM	State Regulator	Primary Contractor
ABC Cleaners	Luis Flores EPA Region 4 61 Forsyth Street, SW Atlanta, GA 30303-8960 404-562-8807 (fax) flores.luis@epa.gov	Nile Testerman NCDENR 401 Oberlin Road Raleigh, NC 27605 919-733-2801 919-733-4811 (fax) nile.testerman@ncmail.net	
American Creosote Works (DNAPL)	Mark Fite EPA Region 4 61 Forsyth Street, SW Atlanta, GA 30303-8960 404-562-8927 (fax) fite.mark@epa.gov	John Sykes FDEP FL 850-488-019 850-488-0190 (fax)	Joe Findley USACE, Mobile District Mobile, AL 334-694-4012
American Creosote Works (solute)	Mark Fite EPA Region 4 61 Forsyth Street, SW Atlanta, GA 30303-8960 404-562-8927 (fax) fite.mark@epa.gov	John Sykes FDEP FL 850-488-0190 850-488-0190 (fax)	Joe Findley USACE, Mobile District Mobile, AL 334-694-4012
Benfield Industries	Jon Bornholm EPA Region 4 61 Forsyth Street, SW Atlanta, GA 30303-8960 404-562-8820 (fax) bornholm.jon@epa.gov	Nile Testerman NCDENR 401 Oberlin Road Raleigh, NC 27605 919-733-2801 919-733-4811 (fax) nile.testerman@ncmail.net	Chris Leggett CMC Newport, TN 423-625-0557

Region 4, Table 4 -- System Contact Information

July 3, 2001

System	RPM	State Regulator	Primary Contractor
Cape Fear Wood Preserving	Jon Bornholm EPA Region 4 61 Forsyth Street, SW Atlanta, GA 30303-3104 404-562-8820 404-562-8788 (fax) bornholm.jon@epa.gov	Nile Testerman NCDENR 401 Oberlin Road Raleigh, NC 27605 919-733-2901 919-733-4811 (fax) nile.testerman@ncmail.net	Ed Hicks Black & Veatch 1145 Sanctuary Parkway, Suite 475 Alpharetta, GA 30004 770-521-8141 770-751-8322 (fax) hicksec@bc.com
Coleman Evans Wood Preserving	Randall Chaffins EPA Region 4 61 Forsyth Street, SW Atlanta, GA 30303-8960 404-562-8929 chaffins.randall@epa.gov	John Sykes FDEP FL 850-413-0066 850-488-0190 (fax)	Todd Trulock USACE, Jacksonville District Jacksonville, FL 904-232-1110
Elmore Waste Disposal	Ralph Howard EPA Region 4 61 Forsyth Street, SW Atlanta, GA 30303-8960 404-562-8829 howard.ralph@epa.gov	Lucas Berresford SCDHEC 21 Bull Street Columbia, SC 29201	Ed Hicks Black and Veatch Atlanta, GA 770-751-7517
FCX Statesville	Ken Mallory EPA Region 4 61 Forsyth Street, SW Atlanta, GA 30303-8960 404-562-8802 mallory.ken@epa.gov	Nile Testerman NCDENR 401 Oberlin Road Raleigh, NC 27605 919-733-2801 919-733-4811 (fax) nile.testerman@ncmail.net	Ralph McKeen Roy F. Weston Atlanta, GA 770-263-5438

Region 4, Table 4 -- System Contact Information

July 3, 2001

System	RPM	State Regulator	Primary Contractor
Miami Drum	Jim McGuire EPA Region 4 61 Forsyth Street, SW Atlanta, GA 30303-8960 404-562-8911 mcguire.jim@epa.gov		
Palmetto Wood	Al Cherry EPA Region 4 61 Forsyth Street, SW Atlanta, GA 30303-8960 404-562-8807 cherry.al@epa.gov	Keisha Long SCDH 21 Bull Street Columbia, SC 29201 803-896-4073	Tim Eggert CDM 2030 Powers Ferry Road, Suite 325 Atlanta, GA 30339 678-202-8912 770-951-8910 (fax) eggerttj@cdm.com

Region 4, Table 5 -- Top Contaminants Identified by RPMs

July 3, 2001

System	NAPLS Present?	# of Identified Contam.	Contaminants	Treatment Processes
ABC Cleaners	Not present	3	1,1-Dichloroethylene (DCE) Trichlorethylene (TCE)/Tetrachloroelthylene (PCE) vinyl chloride	Air Stripping Filtration
American Creosote Works (DNAPL)	Observed	7	Acenaphthene Benzene Dibenzofuran Fluoranthene Naphthalene Pentachlorophenol (PCP) carcinogenic PAHs	Carbon Adsorption Filtration Other/Not Sure
American Creosote Works (solute)	Observed	7	Acenaphthene Benzene Dibenzofuran Fluoranthene Naphthalene Pentachlorophenol (PCP) carcinogenic PAHs	Biological Carbon Adsorption
Benfield Industries	Not present	1	Creosote and petroleum hydrocarbons	Other/Not Sure
Cape Fear Wood Preserving	Observed	5	Benzene Benzo(a)anthracene Benzo(a)pyrene Benzo(b)fluoranthene Benzo(g,h,i)perylene	Carbon Adsorption
Coleman Evans Wood Preserving	Observed	2	Dioxin Pentachlorophenol (PCP)	
Elmore Waste Disposal	Don't know	2	Trichlorethylene (TCE)/Tetrachloroelthylene (PCE) Volatile organic compounds (VOCs)	Carbon Adsorption Other/Not Sure
FCX Statesville	Don't know	3	Pesticides Volatile organic compounds (VOCs) PCE	Carbon Adsorption Filtration
Miami Drum	Not present	1	Trichloroethylene (TCE)	Air Stripping
Palmetto Wood	Not present	1	Chromium	Other/Not Sure

Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Region 4, Table 6 -- Screening Summary

July 3, 2001

System	Potential Reduction in Life-Cycle Costs	Potential Life-Cycle Savings	Expected Duration	Previous Evaluation of Effectiveness	Approximate Pumping Rate (gpm)	Number of Extraction Wells	Number of Treatment Processes	Groundwater Samples per Year	Obstacles to making (minor/major) changes
	Operational								
ABC Cleaners	unknown	unknown		N/A			2		N/A
American Creosote Works (DNAPL)	7.5%	$3,248	1.8	Not evaluated	0.1	8	3	8	Minor Minor
Benfield Industries	15.0%	$29,974	19.8	Not evaluated	16	2	1	32	Minor Minor
Elmore Waste Disposal	20.0%	$375,872	17.2	Sufficient	30	9	2	68	Minor Minor
FCX Statesville	20.0%	$134,513	6.8	Sufficient	20	10	2	72	Minor Minor
Miami Drum	unknown	unknown		N/A	104000	40	1		N/A
Palmetto Wood	18.0%	$262,124	6.8	Sufficient	130	10	1	16	Minor Moderate
	Pre-Operational								
American Creosote Works (solute)	17.5%	$468,926	8.2	Not evaluated	105	3	2	20	Minor Minor
Cape Fear Wood Preserving	22.5%	$32,696	8.4	Not evaluated	43	7	1	100	Minor Moderate
Coleman Evans Wood Preserving	unknown	unknown		Not evaluated					N/A

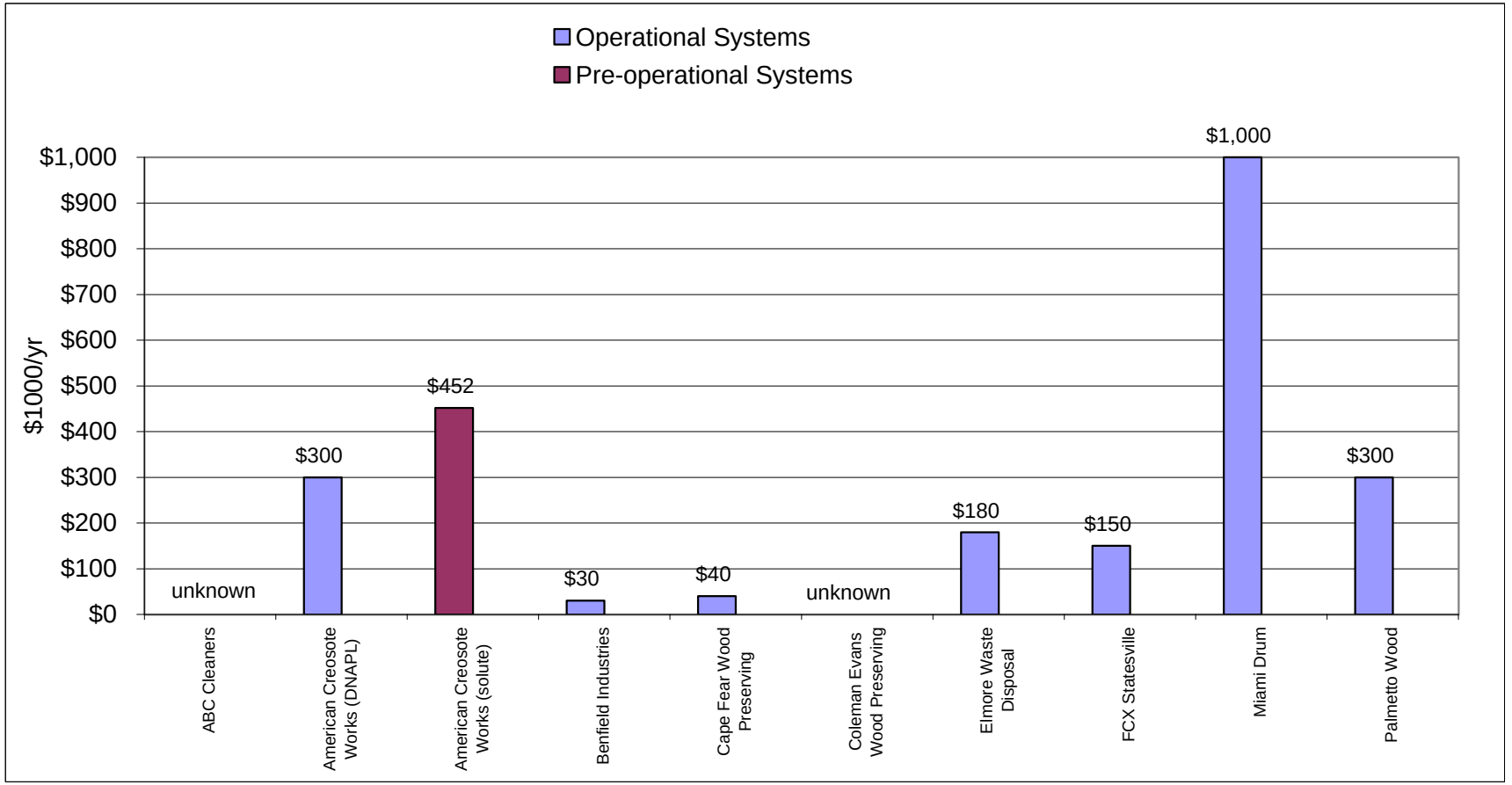
Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Notes:

1. "Potential Reduction in Life-cycle Costs" result from a screening methodology that incorporates system-specific information. The reductions do not include the cost of an RSE.
2. "Potential Life-cycle Savings" were estimated using using system-specific information and incorporate the cost of the RSE. Values in parentheses denote costs (negative savings).
3. "Groundwater Samples per Year" is calculated by multiplying the number of monitoring wells sampled by the number of monitoring events per year.
4. Previous evaluations of effectiveness may include 5-year reviews but do not include Remediation System Evaluations.

Region 4, Figure 1 -- Estimated Annual Costs of Systems

July 3, 2001



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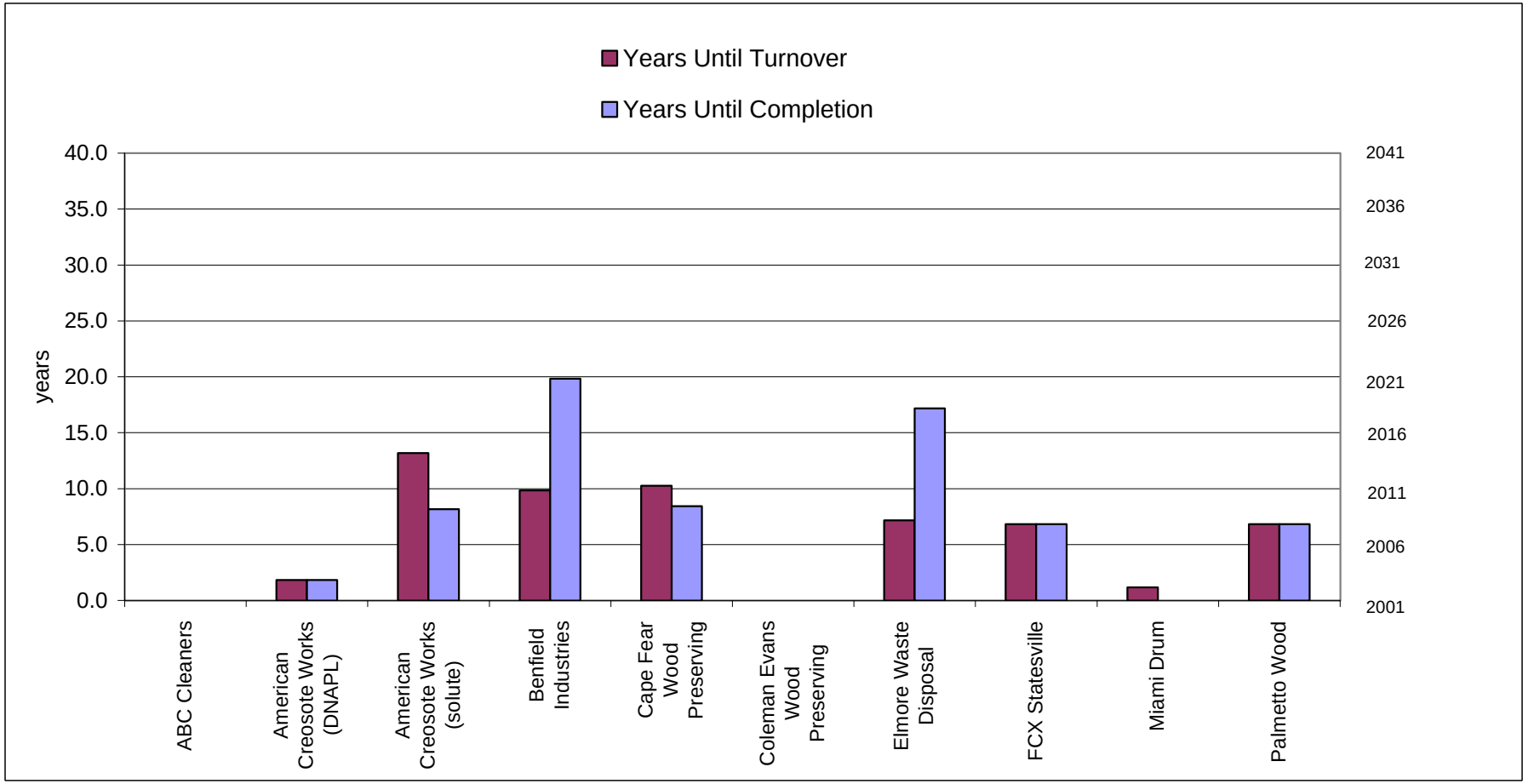
Region 4, Figure 2 -- System Projections

July 3, 2001



Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Nationwide Superfund Reform Initiative
Phase 1– Data Collection and System Screening
Region 5

July 3, 2001

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This report summarizes the screening process for Region 5 which began in April 2000 as part of a demonstration optimization project and was revisited in April and May 2001 as part of a nationwide optimization project. The Fund-lead P&T systems in Region 5 were identified during the demonstration project and baseline information was collected on each system. Two of the identified P&T systems were selected to receive RSEs and those two systems received their evaluations in 2000. This report includes information collected during the demonstration project as well as additional information collected during the nationwide project conducted in 2001. Where applicable, system information collected in 2000 has been updated by system information collected in 2001.

The first section of this report presents the cost and performance data for the Region while the second describes the screening process and system selection.

The data presented in this report reflect estimates provided by the site Remedial Project Managers between January and May 2001. These estimates may vary from actuality. The data– including the number, status, cost, specifications, and projections of systems– may change over time.

Cost and Performance Data

Fifteen Fund-lead P&T systems were identified in Region 5. Of this fifteen, twelve are operational and three are pre-operational (i.e., pre-design, design, being installed, or installed but not operating). In addition, two previous Fund-lead P&T systems have been transferred to the relevant states and another has been transferred to the responsible party.

Cost and performance data and other information pertaining to the identified Fund-lead P&T systems (estimates for the pre-operational systems) were collected during phone interviews with the Remedial Project Managers (RPMs) and were stored in a database. All RPMs were successfully contacted except for those associated with Eau Claire Well Field and Duell and Gardner. For these two systems,

information was obtained from the site Record of Decisions, fact sheets, and notes from previous interviews during the demonstration project. The collected information for all Fund-lead P&T systems in Region 5 is summarized in Table 1 and provided in detail in five additional tables:

- Table 2 provides overviews of the systems by providing items such as annual costs, lead, status, goals, and progress of each system.
- Table 3 includes the dates marking the signing of the ROD, construction completion, system operation and function, turnover to the state, and expected close-out.
- Table 4 lists for each system the contact information for the site Remedial Project Manager, the State Regulator, and the Contractor.
- Table 5 notes for each system and the associated site if NAPLs are present, the top contaminants of concern, and the above-ground treatment processes.
- Table 6 lists system specifications such as the pumping rate, number of wells, number of monitoring events per year, and other items used to determine the complexity of a system and its potential for optimization.

Projected dates for turnover to the States and for system completion are depicted in Figure 1, and annual costs for each system are depicted in Figure 2.

RSE Site Selection

Evaluation of Sites for Optimization Potential

Once the information is gathered from each of the Fund-lead P&T systems in a given Region, it becomes input for a screening methodology that attempts to determine the optimization potential for each system. This, in turn, provides a basis for selecting two systems where RSEs will be performed. Because some Regions do not have two Fund-lead P&T systems, the allotted but unused RSEs for those Regions are allocated to other Regions.

The factors affecting the optimization potential of a system are

- the overall cost of a given system,
- the expected duration of the system,
- the number of above-ground treatment processes,

- the number of extraction wells,
- the number of monitoring events per year,
- the system downtime per year,
- the pumping rate,
- the results (if any) of a previous performance and effectiveness evaluation, and
- any social or political obstacles to implementing modifications to the system.

Table 6 summarizes the results of the screening process including the estimated life-cycle cost savings that may result from performing an RSE.

Selecting Sites for RSEs

The following is a list of the identified Fund-lead P&T systems in Region 5 classified as operational, pre-operational, transferred to responsible parties, and no-longer operating. Those in bold were selected for RSEs.

Operational
- Arrowhead
- Better Brite
- Eau Claire
- La Salle
- Long Prairie
- **MacGillis and Gibbs**
- **Oconomowoc**
- Onalaska
- **Ott/Story/Cordova**
- U.S. Aviex
- Verona
- Wash King

Pre-Operational
- Douglass Road
- Duell and Gardner
- Peerless Plating

Transferred to States
- Old Mill
- Perham Arsenic

Transferred to Responsible Parties
- Bofors Nobel

MacGillis and Gibbs and Oconomowoc Electroplating were selected for RSEs during the demonstration project based on the interest of the Remedial Project Managers and estimated potential savings as determined by screening calculations. Ott/Story/Cordova was selected for an RSE as part of the nationwide project based on its high operational costs relative to other Fund-lead P&T systems and the relatively high potential savings from optimization as indicated by the screening process.

Region 5, Table 1 -- Summary

July 3, 2001

Completed Fund-lead P&T Systems

Operational and Pre-operational Fund-lead P&T Systems	
Number of systems	**15**
Number that are EPA lead	**7 of 15**
Number that are State lead	**7 of 15**
System Status	
Number that are operational	**12**
Number that are pre-operational	**3**
Number where restoration is a goal	**14 of 15**
Number where the plume is controlled*	**6 of 12**
Number that are estimated to be more than 80% complete*	**3 of 12**
Number previously evaluated and effectiveness found sufficient*	**7 of 12**
Number previously evaluated and effectiveness found not sufficient*	**0 of 12**
Extent of Contamination	
Number where NAPLs are observed	**3 of 15**
Number with more than 1 major contaminant identified	**13 of 15**
Number with 3 or more treatment processes	**4 of 15**
Average Costs and Time Frames	
Average estimated annual O&M cost (including monitoring)	**$378,714**
Average estimated annual monitoring cost	**$42,929**
Average number of years until turnover to the States	**5.9**
Average number of years until completion	**15.8**

*Operational sites only

Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Region 5, Table 2 -- System Overviews

July 3, 2001

System	Estimated Annual Cost	Lead	Type of ROD	System Status	System Goals	Plume Under Control?	Estimated Progress of Restoration	Previous Evaluation of Effectiveness
Arrowhead Refinery	$70,000	State with Fund Money	Final	Operational	Containment & Restoration	Yes	more than 80%	Sufficient
Better Brite Plating Co. Chrome and Zinc Shops	$36,000	State with Fund Money		Operational	Containment & Restoration	Yes	less than 20%	Sufficient
Douglass Road	$120,000	EPA	Final	Installed	Containment & Restoration	N/A	N/A	Not evaluated
Duell and Gardner	Unknown	EPA	Interim	Installed	Restoration	N/A	N/A	Not evaluated
Eau Claire Municipal Well Field	$175,000	State with Fund Money		Operational	Unknown	Unknown	Unknown	Sufficient
La Salle Electrical Utilities	$230,000	State with Fund Money	Final	Operational	Containment & Restoration	Yes	20% - 80%	Sufficient
Long Prairie	$300,000	State with Fund Money	Final	Operational	Restoration	Yes	20% - 80%	Not evaluated
MacGillis and Gibbs/Bell Lumber & Pole	$300,000	EPA	Final	Operational	Restoration	Unknown	less than 20%	Not evaluated

Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Notes:

1. Douglass Road, Duell and Gardner, and Peerless Plating are pre-operational systems; therefore, the associated data are estimates and some items are unknown.
2. "Estimated Progress of Restoration" refers to the estimated portion of the plume that has been restored to cleanup levels.
3. Previous evaluations of effectiveness may include 5-year reviews but do not include Remediation Systems Evaluations.

Region 5, Table 2 -- System Overviews

July 3, 2001

System	Estimated Annual Cost	Lead	Type of ROD	System Status	System Goals	Plume Under Control?	Estimated Progress of Restoration	Previous Evaluation of Effectiveness
Oconomowoc Electroplating	$471,000	EPA	Final	Operational	Containment & Restoration	Unknown	Unknown	Sufficient
Onalaska Municipal Landfill	$200,000	EPA	Final	Operational	Containment & Restoration	Yes	more than 80%	Sufficient
Ott/Story/Cordova Chem Co.	$2,400,000	EPA	Final	Operational	Containment & Restoration	Unknown	20% - 80%	Not evaluated
Peerless Plating	$400,000	Unknown	Final	Installed	Restoration	N/A	N/A	Sufficient
U.S. Aviex	$300,000	State with Fund Money	Final	Operational	Restoration	No	20% - 80%	Sufficient
Verona Well Field	$225,000	EPA	Final	Operational	Containment & Restoration	Yes	more than 80%	Not evaluated
Wash King Laundry	$75,000	State with Fund Money	Final	Operational	Restoration	Unknown	less than 20%	Not evaluated

Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Notes:

1. Douglass Road, Duell and Gardner, and Peerless Plating are pre-operational systems; therefore, the associated data are estimates and some items are unknown.
2. "Estimated Progress of Restoration" refers to the estimated portion of the plume that has been restored to cleanup levels.
3. Previous evaluations of effectiveness may include 5-year reviews but do not include Remediation Systems Evaluations.

Region 5, Table 3 -- P&T System Histories and Projections

July 3, 2001

System	Date							
	Original ROD	Last ROD Modification	Construction Completed	Operational and Functional	Turnover to State	Years Until Turnover	Expected Completion	Years Until Completion
Arrowhead Refinery	9/30/86	2/9/94	6/1993	7/1993	7/2003	2.0	4/2004	2.7
Better Brite Plating Co. Chrome and Zinc Shops	9/24/96		8/2000	4/1993	6/2006	4.9	4/2030	28.8
Douglass Road	5/3/96		9/2000	7/2001	9/2010	9.2	10/2030	29.3
Duell and Gardner	9/30/93	5/31/01	7/2001	7/2001	7/2011	10.0	7/2007	6.0
Eau Claire Municipal Well Field	3/31/88	8/1/90	6/1987	3/1991	unknown	unknown	unknown	unknown
La Salle Electrical Utilities	8/29/86	3/30/88	2/1998	3/1994	3/2004	2.7	3/2005	3.7
Long Prairie	6/14/88		11/1996	8/1996	10/2007	6.2	10/2015	14.3
MacGillis and Gibbs/Bell Lumber & Pole	9/30/91	9/22/94	10/1999	10/1999	10/2009	8.3	10/2029	28.3
Oconomowoc Electroplating	9/20/90		9/1996	9/1996	9/2006	5.2	9/2026	25.2
Onalaska Municipal Landfill	8/14/90		7/1994	8/1995	6/2004	2.9	7/2002	1.0

Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Notes:

1. Douglass Road, Duell and Gardner, and Peerless Plating are pre-operational systems; therefore, the associated data are estimates and some items are unknown.

Region 5, Table 3 -- P&T System Histories and Projections

July 3, 2001

System	Date							
	Original ROD	Last ROD Modification	Construction Completed	Operational and Functional	Turnover to State	Years Until Turnover	Expected Completion	Years Until Completion
Ott/Story/Cordova Chem Co.	9/29/89	9/29/90	2/1996	2/1996	8/2010	9.1	8/2030	29.1
Peerless Plating	9/21/92		11/2000	unknown	unknown	unknown	unknown	unknown
U.S. Aviex	9/7/88		9/1993	9/1993	9/2003	2.2	9/2003	2.2
Verona Well Field	8/12/85		6/1996	6/1996	6/2006	4.9	Indefinite	Indefinite
Wash King Laundry	3/31/93	7/31/96	4/2001	4/2001	4/2011	9.8	4/2021	19.8

Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Notes:

1. Douglass Road, Duell and Gardner, and Peerless Plating are pre-operational systems; therefore, the associated data are estimates and some items are unknown.

Region 5, Table 4 -- System Contact Information

July 3, 2001

System	RPM	State Regulator	Primary Contractor
Arrowhead Refinery	Darryl Owens EPA Region 5 77 West Jackson Boulevard Chicago, IL 60604-3507 312-886-7089 owens.darryl@epa.gov	Maureen Johnson MPCA 520 Lafayette Road St. Paul, MN 55155-4194 651-296-7353 maureen.johnson@pca.state.mn.us	Gary Schroeher Delta Environmental 2770 Cleveland Ave Roseville, MN 55113-1127 651-639-9449
Better Brite Plating Co. Chrome and Zinc Shops	John Peterson EPA Region 5 77 West Jackson Boulevard Chicago, IL 60604-3507 312-353-1264 peterson.john@epa.gov	Keld Lauredsen WDNR 1125 Military Ave. Box 10448 Green Bay, WI 54307 920-492-5921 920-492-5913 (fax) lauredsenk@dnr.state.wi.us	
Douglass Road	Dion Novak EPA Region 5 77 West Jackson Blvd. Chicago, IL 60604-3507 312-886-4737 Novak.Dion@epa.gov	Kevin Herron IN 317-234-0354	Dan Plomb CH2MHILL 135 S. 84th Street Suite 325 Milwaukee, WI 53214 414-272-2426
Duell and Gardner	Kyle Rogers EPA Region 5 77 West Jackson Boulevard Chicago, IL 60604-3507 312-886-1995 rogers.kyle@epa.gov	Walelign Wagaw MDEQ P.O. Box 30426 Lansing, MI 48909 517-373-9896	Tim Gouger USACE, Rapid Response 12565 West Center Road Omaha, NE 68144-3869 402-293-2514 402-291-8177 (fax) Timothy.P.Gouger@nwo02.usace.army.mil

Region 5, Table 4 -- System Contact Information

July 3, 2001

System	RPM	State Regulator	Primary Contractor
Eau Claire Municipal Well Field	Sheri Bianchin EPA Region 5 77 West Jackson Boulevard Chicago, IL 60604-3507 312-886-4745 bianchin.sheri@epa.gov		
La Salle Electrical Utilities	Steve Padovani EPA Region 5 77 West Jackson Boulevard Chicago, IL 60604-3507 312-353-6755 padovani.steven@epa.gov	Rich Lang IEPA P.O. Box 1515 La Salle, IL 61301 815-223-6836 epa4137@epa.state.il.us	Neil Brown Ecology and Environment 33 N. Deerborne St. Chicago, IL 60602 312-578-9243
Long Prairie	Sheila Sullivan EPA Region 5 77 West Jackson Boulevard Chicago, IL 60604-3507 312-886-5251 sullivan.sheila@epa.gov	Mariam Horneff MPCA 520 Lafayette Road St. Paul, MN 55155-4194 651-296-7228	Bill Bangsund Barr Engineering 612-832-2738
MacGillis and Gibbs/Bell Lumber & Pole	Darryl Owens EPA Region 5 77 West Jackson Boulevard Chicago, IL 60604-3507 312-886-7089 owens.darryl@epa.gov	Nile Fellows MPCA 520 Lafayette Road St. Paul, MN 55155-4194 651-296-6300	Larry Campbell Black and Veatch Chicago, IL

Region 5, Table 4 -- System Contact Information

July 3, 2001

System	RPM	State Regulator	Primary Contractor
Oconomowoc Electroplating	Steve Padovani EPA Region 5 77 West Jackson Boulevard Chicago, IL 60604-3507 312-353-6755 padovani.steven@epa.gov	Paul Kozol WDNR 3911 Fish Hatchery Road Fitchburg, WI 53711 608-275-3301 608-275-3338 (fax) kozolp@dnr.state.wi.us	Craig Evans USACE, St. Paul District 190 Fifth Street East St. Paul, MN 55101-1638 651-290-5594 651-290-5800 (fax) Craig.O.Evans@mvp02.usace.army.mil
Onalaska Municipal Landfill	Timothy Prendiville EPA Region 5 77 West Jackson Boulevard Chicago, IL 60604-3507 312-886-5122 prendiville.timothy@epa.gov	Dave Carper WDNR 3550 Mormon Coulee Road La Crosse, WI 54601 608-785-9973 608-785-9990 (fax) carped@dnr.state.wi.us	Jim Fisher CH2MHill Milwaukee, WI 414-272-1052 jfisher1@ch2m.com
Ott/Story/Cordova Chem Co.	John Fagiolo EPA Region 5 77 West Jackson Blvd. Chicago, IL 60604-3507 312-886-0800 fagiolo.john@epa.gov	Lisa Summerfield Michigan Dept. of Environmental P.O. Box 30426 Lansing, MI 48909 517-335-3388 summerfl@state.mi.us	Brain Bouwhuis USACE-Detroit District PO Box 629 Grand Haven, MI 49417 231-766-2007 231-766-3287 (fax) Brian.j.Bouwhuis@usace.army.mil
Peerless Plating	Mike Ribordy EPA Region 5 77 West Jackson Boulevard Chicago, IL 60604-3507 312-886-4592 ribordy.mike@epa.gov		Mike Johnson Tetra Tech 312-856-8796

Region 5, Table 4 -- System Contact Information

July 3, 2001

System	RPM	State Regulator	Primary Contractor
U.S. Aviex	Ken Glatz EPA Region 5 77 West Jackson Boulevard Chicago, IL 60604-3507 312-886-1434 glatz.ken@epa.gov	Judy Gapp MDEQ P.O. Box 30426 Lansing, MI 48909 517-335-3391 517-335-4887 (fax) gappj@state.mi.us	Jack Brunner Tetra Tech 312-856-8788
Verona Well Field	Richard Boice EPA Region 5 77 West Jackson Boulevard Chicago, IL 60604-3507 312-886-4740 boice.richard@epa.gov	Beth O'Brien MDEQ P.O. Box 30426 Lansing, MI 48909 517-335-3908 obrienea@state.mi.us	
Wash King Laundry	Russell Hart EPA Region 5 77 West Jackson Boulevard Chicago, IL 60604-3507 312-886-4844 hart.russell@epa.gov	Sally Beebe MDEQ-ERD P.O. Box 30426 Lansing, MI 48909 517-373-4110 517-335-4887 (fax) beebes@state.mi.us	Malcolm Pirnie 517-337-0111

Region 5, Table 5 -- Top Contaminants Identified by RPMs

July 3, 2001

System	NAPLS Present?	# of Identified Contam.	Contaminants	Treatment Processes
Arrowhead Refinery	Not present	4	Pentachlorophenol (PCP) VOCs PNAs VC	Other/Not Sure
Better Brite Plating Co. Chrome and Zinc Shops	Not present	1	Chromium	Metals Precipitation
Douglass Road	Not present	4	Arsenic TCE and Vinyl chloride Tetrahydrofuran Trichlorethylene (TCE)/Tetrachloroelthylene (PCE)	Other/Not Sure
Duell and Gardner	Not present	5	Anthracene Carbozol Chloromethane N-N dimethylanaline Gentin Violet	Carbon Adsorption
Eau Claire Municipal Well Field	Don't know	2	Trans 1,2-Dichloroethylene Vernolate	Air Stripping
La Salle Electrical Utilities	Not present	3	Transuranic wastes PCB TCA	Carbon Adsorption Other/Not Sure
Long Prairie	Observed	3	Dichloroethylene Trichlorethylene (TCE)/Tetrachloroelthylene (PCE) VC	Carbon Adsorption
MacGillis and Gibbs/Bell Lumber & Pole	Observed	3	Chromium Pentachlorophenol (PCP) carcinogenic PAHs	Biological Treatment Carbon Adsorption Filtration Off-Gas Treatment
Oconomowoc Electroplating	Not present	3	Cadmium Cyanide Volatile organic compounds (VOCs)	Metals Precipitation Air Stripping Carbon Adsorption
Onalaska Municipal Landfill	Not present	3	Benzo(a)anthracene Trans 1,2-Dichloroethylene Volatile chlorinated organics	Metals Precipitation Air Stripping

Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Region 5, Table 5 -- Top Contaminants Identified by RPMs

July 3, 2001

System	NAPLS Present?	# of Identified Contam.	Contaminants	Treatment Processes
Arrowhead Refinery Ott Story/Cordova Chem Co.	Observed	5	1,2-Dichloroethane 1,2-Dichloroethylene (DCE) Organophosphorus pesticides (4,4'-DDT, lindane) Vapona vinyl chloride	Biological Treatment Carbon Adsorption Other/Not Sure
Peerless Plating	Don't know	2	Cadmium Trichloroethylene (TCE)	Metals Precipitation Air Stripping Off-Gas Treatment
U.S. Aviex	Not present	4	1,1,1-Trichloroethane 1,1-Dichloroethane 1,2-Dichloroethane diethylether	Air Stripping
Verona Well Field	Not present	4	1,2-Dichloropropane Tin Trans 1,2-Dichloroethylene Volatile chlorinated organics	Air Stripping Off-Gas Treatment
Wash King Laundry	Don't know	1	Trichlorethylene (TCE)/Tetrachloroelthylene (PCE)	Air Stripping Off-Gas Treatment

Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Region 5, Table 6 -- Screening Summary

July 3, 2001

System	Potential Reduction in Life-Cycle Costs	Potential Life-Cycle Savings	Expected Duration	Previous Evaluation of Effectiveness	Approximate Pumping Rate (gpm)	Number of Extraction Wells	Number of Treatment Processes	Groundwater Samples per Year	Obstacles to making (minor/major) changes
Operational									
Arrowhead Refinery	5.0%	($17,724)	2.7	Sufficient	25	0	1	36	Minor Moderate
Better Brite Plating Co. Chrome and Zinc Shops	12.0%	$39,644	28.8	Sufficient	0	0	1	28	Minor Severe
Eau Claire Municipal Well Field	unknown	unknown	unknown	Sufficient	4500	14	1	0	Severe Severe
La Salle Electrical Utilities	12.5%	$57,261	3.7	Sufficient	20	0	2	100	Minor Minor
Long Prairie	15.5%	$429,665	14.3	Not evaluated	227	9	1	22	Minor Moderate
MacGillis and Gibbs/Bell Lumber & Pole	32.0%	$1,399,624	28.3	Not evaluated	60	14	4	60	Minor Severe
Oconomowoc Electroplating	24.5%	$1,590,721	25.2	Sufficient	30	5	3	40	Minor Severe
Onalaska Municipal Landfill	5.0%	($20,219)	1.0	Sufficient	560	5	2	20	Minor Minor

Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Notes:

1. "Potential Reduction in Life-cycle Costs" result from a screening methodology that incorporates system-specific information. The reductions do not include the cost of an RSE.
2. "Potential Life-cycle Savings" were estimated using using system-specific information and incorporate the cost of the RSE. Values in parentheses denote costs (negative savings).
3. "Groundwater Samples per Year" is calculated by multiplying the number of monitoring wells sampled by the number of monitoring events per year.
4. Previous evaluations of effectiveness may include 5-year reviews but do not include Remediation System Evaluations.

Region 5, Table 6 -- Screening Summary

July 3, 2001

System	Potential Reduction in Life-Cycle Costs	Potential Life-Cycle Savings	Expected Duration	Previous Evaluation of Effectiveness	Approximate Pumping Rate (gpm)	Number of Extraction Wells	Number of Treatment Processes	Groundwater Samples per Year	Obstacles to making (minor/major) changes
Operational									
Ott/Story/Cordova Chem Co.	40.0%	$14,418,502	29.1	Not evaluated	700	10	3	120	Minor Minor
U.S. Aviex	5.0%	($1,583)	2.2	Sufficient	170	6	1	120	Minor Minor
Verona Well Field	25.5%	$856,994	Indefinite	Not evaluated	250	6	2	10	Minor Moderate
Wash King Laundry	23.0%	$185,195	19.8	Not evaluated	250	5	2	46	Minor Moderate
Pre-Operational									
Douglass Road	32.5%	$563,336	29.3	Not evaluated	1000	5	1	72	Minor Minor
Duell and Gardner	unknown	unknown	6.0	Not evaluated	80	2	1	50	Minor Minor
Peerless Plating	unknown	unknown	unknown	Sufficient	165	6	3	24	Minor Minor

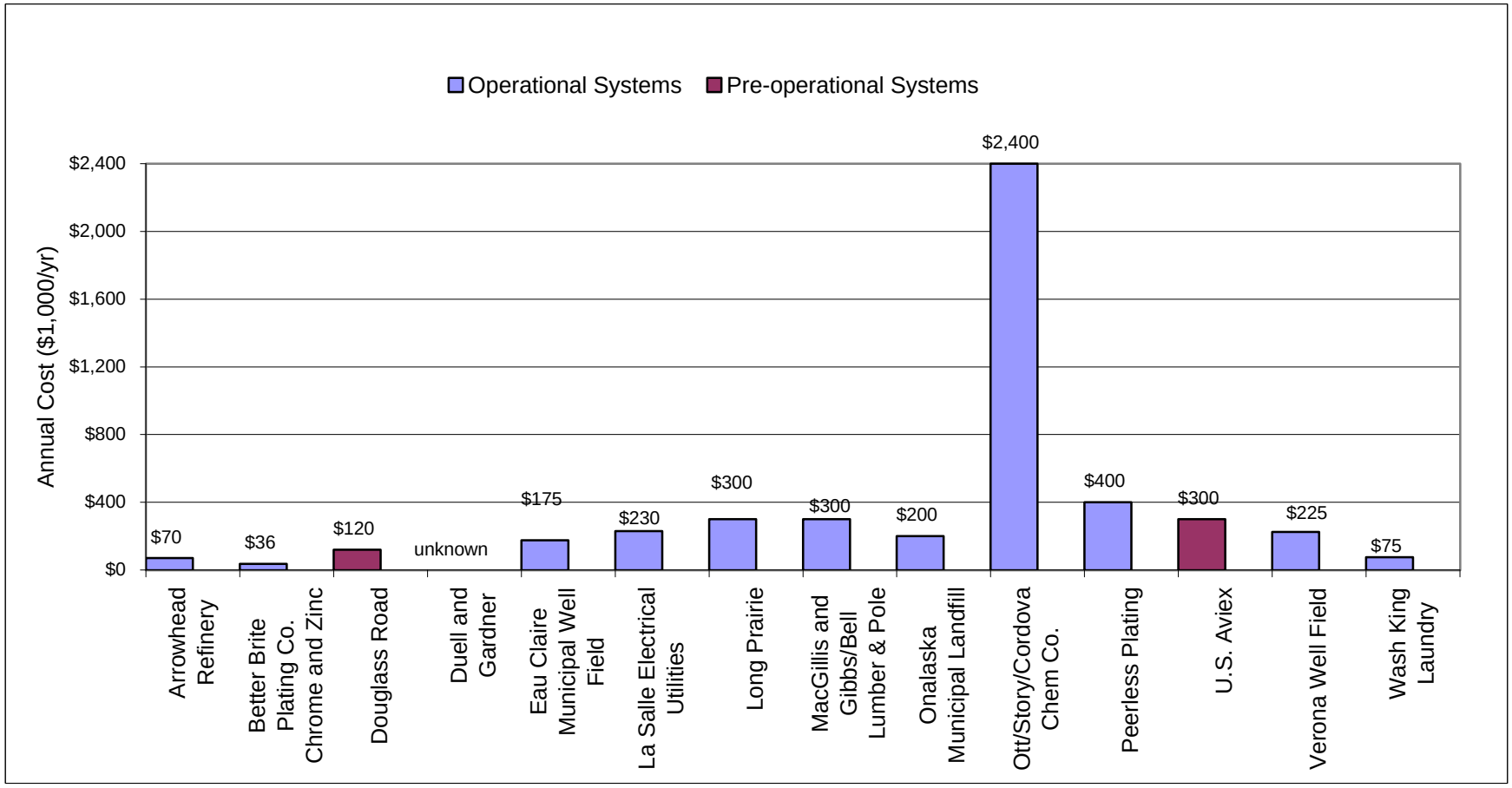
Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Notes:

1. "Potential Reduction in Life-cycle Costs" result from a screening methodology that incorporates system-specific information. The reductions do not include the cost of an RSE.
2. "Potential Life-cycle Savings" were estimated using using system-specific information and incorporate the cost of the RSE. Values in parentheses denote costs (negative savings).
3. "Groundwater Samples per Year" is calculated by multiplying the number of monitoring wells sampled by the number of monitoring events per year.
4. Previous evaluations of effectiveness may include 5-year reviews but do not include Remediation System Evaluations.

Region 5, Figure 1 -- Estimated Annual Costs of Systems

July 3, 2001



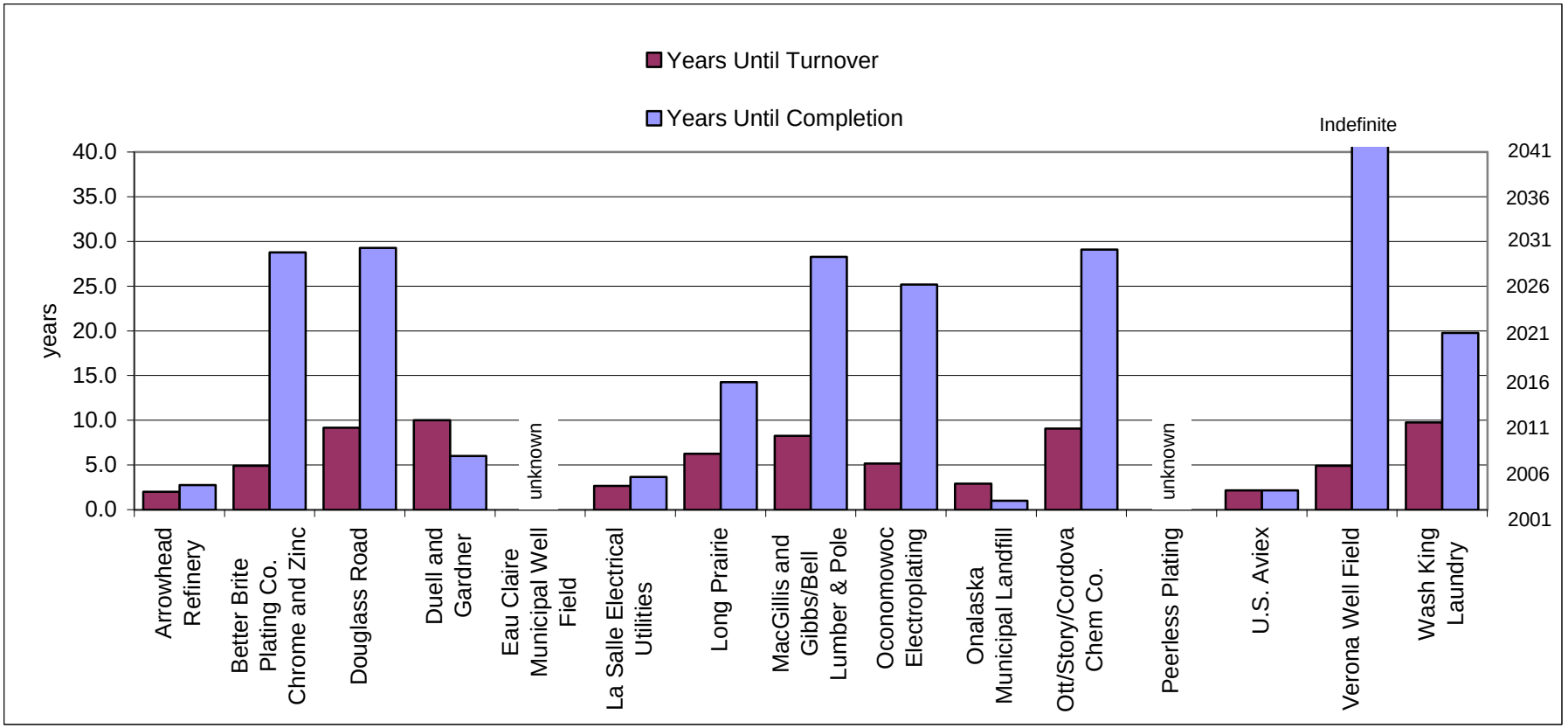
Data reflect estimates provided by site Remedial Project Managers between February and May 2001. These estimates may, in some cases, vary from actuality. Data-- including the number, status, cost, projections, and specifications of systems-- may change overtime.

Notes:

1. Douglass Road, Duell and Gardner, and Peerless Plating are pre-operational systems; therefore, the associated data are estimates and some items are unknown.

Region 5, Figure 2 -- System Projections

July 3, 2001



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Notes:

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