Department of Energy

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OCT 29 2018

Mr. Brian Begley
Federal Facility Agreement Manager
Division of Waste Management
Kentucky Department for Environmental Protection
300 Sower Boulevard, 2nd Floor
Frankfort, Kentucky 40601

PPPO-02-5197076-19B

Ms. Julie Corkran
Federal Facility Agreement Manager
U.S. Environmental Protection Agency, Region 4
61 Forsyth Street
Atlanta, Georgia 30303

Ms. April Webb
Hazardous Waste Branch Manager
Division of Waste Management
Kentucky Department for Environmental Protection
300 Sower Boulevard, 2nd Floor
Frankfort, Kentucky 40601

Dear Mr. Begley, Ms. Corkran, and Ms. Webb:

U.S. DEPARTMENT OF ENERGY PADUCAH GASEOUS DIFFUSION PLANT FEDERAL FACILITY AGREEMENT SEMIANNUAL PROGRESS REPORT FOR THE SECOND HALF OF FISCAL YEAR 2018, PADUCAH, KENTUCKY (DOE/LX/07-2428/V2)

Enclosed are the *U.S. Department of Energy Paducah Gaseous Diffusion Plant Federal Facility Agreement Semiannual Progress Report for the Second Half of Fiscal Year 2018, Paducah, Kentucky*, DOE/LX/07-2428/V2, and the associated certification page. This report is required by Sections XXIII and XXXII.F of the Federal Facility Agreement and Part IV, *Corrective Action*, of the Hazardous Waste Management Facility Permit.

This progress report reflects reassignment of upgradient and downgradient monitoring wells relative to the two new extraction wells installed for the Northeast Plume Interim Remedial Action. The "Northeast Plume Optimization Hydraulic Monitoring Pumping Test" is included in this report as Appendix G.

If you have any questions or require additional information, please contact me at (270) 441-6862.

Sincerely,

Tracey Duncan
Federal Facility Agreement Manager
Portsmouth/Paducah Project Office

Enclosures:
1. Certification Page
2. FFA Semiannual Progress Report for the Second Half of Fiscal Year 2018

General Reference Compendium

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CERTIFICATION

Document Identification: ***U.S. Department of Energy Paducah Gaseous Diffusion Plant Federal Facility Agreement Semiannual Progress Report for the Second Half of Fiscal Year 2018, Paducah, Kentucky,*** **DOE/LX/07-2428/V2, dated October 2018**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Four Rivers Nuclear Partnership, LLC

Myrna E. Redfield, Deputy Program Manager
Four Rivers Nuclear Partnership, LLC

10/29/18
Date Signed

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

U.S. Department of Energy

Jennifer Woodard, Paducah Site Lead
Portsmouth/Paducah Project Office

10/29/18
Date Signed

DOE/LX/07-2428/V2
Secondary Document

U.S. Department of Energy
Paducah Gaseous Diffusion Plant
Federal Facility Agreement
Semiannual Progress Report for the
Second Half of Fiscal Year 2018
Paducah, Kentucky

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DOE/LX/07-2428/V2
Secondary Document

U.S. Department of Energy Paducah Gaseous Diffusion Plant Federal Facility Agreement Semiannual Progress Report for the Second Half of Fiscal Year 2018 Paducah, Kentucky

Date Issued—October 2018

U.S. DEPARTMENT OF ENERGY
Office of Environmental Management

Prepared by
FOUR RIVERS NUCLEAR PARTNERSHIP, LLC,
managing the
Deactivation and Remediation Project at the
Paducah Gaseous Diffusion Plant
under Contract DE-EM0004895

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CONTENTS

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TABLES

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ACRONYMS

AR	Administrative Record
BGOU	Burial Grounds Operable Unit
CAB	Citizens Advisory Board
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CRP	Community Relations Plan
DOE	U.S. Department of Energy
DRC	Dispute Resolution Committee
EIC	Environmental Information Center
EPA	U.S. Environmental Protection Agency
EW	extraction well
FFA	Federal Facility Agreement
FRNP	Four Rivers Nuclear Partnership, LLC
FS	feasibility study
FY	fiscal year
GDP	gaseous diffusion plant
GWOU	Groundwater Operable Unit
IRA	interim remedial action
KDEP	Kentucky Department for Environmental Protection
MOA	memorandum of agreement
MW	monitoring well
NEPCS	Northeast Plume Containment System
NTU	nephelometric turbidity unit
NWPGS	Northwest Plume Groundwater System
O&M	operation and maintenance
OU	operable unit
PGDP	Paducah Gaseous Diffusion Plant
RI	remedial investigation
ROD	record of decision
SEC	Senior Executive Committee
SMP	Site Management Plan
SOU	Soils Operable Unit
SST	Swift & Staley Team
SWMU	solid waste management unit
SWOU	Surface Water Operable Unit
TVA	Tennessee Valley Authority
VOC	volatile organic compound
WAG	waste area group

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FEDERAL FACILITY AGREEMENT
SEMIANNUAL REPORT
SECOND HALF OF FISCAL YEAR 2018

Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 4/1/2018–9/30/2018

INTRODUCTION

The Paducah Gaseous Diffusion Plant (PGDP) was placed on the National Priorities List on May 31, 1994. In accordance with Section 120 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the U.S. Department of Energy (DOE) entered into a Federal Facility Agreement (FFA) with the U.S. Environmental Protection Agency (EPA) and Kentucky on February 13, 1998. The FFA established one set of consistent requirements for achieving comprehensive site remediation in accordance with the Resource Conservation and Recovery Act and CERCLA, including stakeholder involvement.

In past Site Management Plans (SMPs), site cleanup activities were divided into (1) pre-gaseous diffusion plant (GDP) shutdown scope, (2) post-GDP shutdown scope, and (3) Comprehensive Site Operable Unit scope. The pre-GDP shutdown scope was associated with media-specific operable units (OUs) initiated prior to shutdown of the operating GDP (i.e., Pre-GDP shutdown Activities). Site cleanup activities in the D2 fiscal year (FY) 2018 SMP are integrated and no longer distinguish between pre-GDP and post-GDP scope. The following are the current OUs.

- C-400 Complex OU
- Groundwater OU (GWOU)
- Surface Water OU (SWOU)
- Soils OU (SOU)
- Burial Grounds OU (BGOU)
- Facility Decontamination and Decommissioning OU
- Lagoons OU
- Depleted Uranium Hexafluoride (DUF_6) Footprint Underlying Soils
- Soils and Slabs OU
- Comprehensive Site OU

Section XXIII of the FFA requires that DOE prepare a regulatory progress report that describes the actions that DOE has taken during the previous six months to implement FFA requirements, as well as the schedules[1] of activities to be taken during the upcoming six months. Activities that have taken place after the reporting period end date are not included in this report, but will be included in the reporting period in which they occur. Projects and activities reported in this update are grouped by the OUs listed in Table 1.

[1] Schedules are included for information and planning purposes only; enforceable schedules are established in the SMP.

Table 1. Operable Units and Corresponding Report Topics

Operable Unit	Project/Activities
C-400 Complex Operable Unit	• C-400 Demolition Removal Action • C-400 Final Remedial Action
Groundwater Operable Unit	• C-400 Interim Remedial Action (IRA) • Southwest Plume Sources Remedial Action • Dissolved-Phase Plumes Remedial Action • Northeast Plume IRA • Northwest Plume IRA
Burial Grounds Operable Unit	• Burial Grounds Operable Unit • C-749 Uranium Burial Ground Solid Waste Management Unit (SWMU) 2
Surface Water Operable Unit	• Remedial Action
Soils Operable Unit	• Remedial Action
Additional Reporting	• Waste Area Groups (WAGs) 1 and 7 • Community Relations Plan (CRP) • SMP • CERCLA Waste Disposal Alternatives Evaluation • CERCLA Five-Year Review

Each section of this update has been divided into nine sections as follows:

I. Work performed during the reporting period (including summaries of findings and any deviations from the work plan)

II. Schedules of activities to be performed during next reporting period (including projected work/crucial phases of construction)

III. Identity and assigned tasks of DOE contractors for work to be performed during this reporting period

IV. Statement of the manner and extent to which the requirements and time schedules are being met

V. Primary/Secondary Document Tracking System

A) Documents under review and/or preparation for this reporting period
B) Due dates for completion of review/modification tasks

VI. Anticipated problems/delays (provide summary of problems, schedule, reason for delay, and actions taken to prevent or mitigate delay)

VII. Summary of all contacts with local community, public interest groups, or state government

VIII. Changes in relevant personnel

IX. Actual cost for operation and maintenance (O&M), if appropriate

Each section satisfies a reporting requirement for the FFA semiannual report or the Hazardous Waste Facility Permit and has been formatted in accordance with the template found in Appendix D of the FFA.

This report includes seven appendices as follows.

- Appendix A contains Northeast and Northwest Plumes Water Withdrawal Reports for this reporting period.

- Appendix B contains Figures B.1 through B.29, as referenced in the Northeast and Northwest Plume updates. Appendix B also contains a summary of data through June 30, 2018, associated with the CERCLA outfall for Northeast Plume and data associated with the Northeast Plume Optimization transect monitoring wells (MWs).

- Appendix C contains a map depicting MW locations for the C-746-K Landfill; a figure summarizing the trichloroethene (TCE) concentrations in these wells over time; and a summary of the C-746-K Landfill groundwater monitoring data from May 1994 through June 30, 2018. These data currently are collected semiannually. Sampling of these monitoring wells is outlined in the Record of Decision (ROD) for WAGs 1 and 7.

- Appendix D contains updates to the Administrative Record (AR) index since the last progress report. This is required by the Paducah FFA (Section XXXII.F).

- Appendix E contains a map depicting the C-400 MW locations and a summary of the C-400 groundwater MW data trending TCE and technetium-99 (Tc-99) from June 2009 through June 30, 2018.

- Appendix F contains a map depicting the C-749 Uranium Burial Ground (SWMU 2) groundwater monitoring wells and a summary of the SWMU 2 trends for TCE and Tc-99 for reporting dates 1993 through June 30, 2018.

- Appendix G contains the *Northeast Plume Optimization Hydraulic Monitoring Pumping Test*.

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FEDERAL FACILITY AGREEMENT
SEMIANNUAL REPORT
SECOND HALF OF FISCAL YEAR 2018

Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 4/1/2018–9/30/2018

C-400 COMPLEX OPERABLE UNIT

The C-400 Complex OU was established in a *Memorandum of Agreement on the C-400 Complex under the Federal Facility Agreement for the Paducah Gaseous Diffusion Plant, Paducah, Kentucky,* signed August 8, 2018 (MOA); the agreement then was incorporated into the *Site Management Plan, Paducah Gaseous Diffusion Plant, Paducah, Kentucky, Annual Revision—FY 2018,* DOE/LX/07-2418&D2. The following two projects are included in the C-400 Complex OU.

- C-400 Demolition Removal Action
- C-400 Final Remedial Action

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FEDERAL FACILITY AGREEMENT
SEMIANNUAL REPORT
SECOND HALF OF FISCAL YEAR 2018

Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 4/1/2018–9/30/2018

C-400 COMPLEX OPERABLE UNIT: C-400 Demolition Removal Action

There are two projects that make up the scope of the OU. This C-400 Demolition Removal Action is a CERCLA non-time critical removal action that will result in the demolition and disposal of the C-400 Cleaning Building structure down to the building slab. The building's foundation and concrete slab floor will remain in place at the end of the removal action.

I. Work performed during the reporting period (including summaries of findings and any deviations from the work plan):

- Invoked informal dispute on the *Removal Notification for Demolition of the C-400 Cleaning Building in the C-400 Complex Operable Unit at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky* DOE/LX/07-2420&D2, on June 4, 2018.

- Elevated the *Removal Notification for Demolition of the C-400 Cleaning Building in the C-400 Complex Operable Unit at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2420&D2, to the Dispute Resolution Committee (DRC) on July 6, 2018.

- Elevated the *Removal Notification for Demolition of the C-400 Cleaning Building in the C-400 Complex Operable Unit at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2420&D2, to the Senior Executive Committee (SEC) on August 15, 2018.

- Developed and submitted the *Engineering Evaluation/Cost Analysis for Demolition of the C-400 Cleaning Building in the C-400 Complex Operable Unit at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2425&D1, to EPA and Kentucky Department for Environmental Protection (KDEP) on May 2, 2018.

- Developed and submitted the *Engineering Evaluation/Cost Analysis for Demolition of the C-400 Cleaning Building in the C-400 Complex Operable Unit at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2425&D2, to EPA and KDEP on July 26, 2018.

- Invoked informal dispute on the *Engineering Evaluation/Cost Analysis for Demolition of the C-400 Cleaning Building in the C-400 Complex Operable Unit at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2425&D2, on September 21, 2018.

- Developed and submitted the *Action Memorandum for the C-400 Cleaning Building Non-Time-Critical Removal Action at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2427&D1, to EPA and KDEP on June 21, 2018.

- Notified EPA and KDEP on September 19, 2018, that the *Action Memorandum for the C-400 Cleaning Building Non-Time-Critical Removal Action at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky,* DOE/LX/07-2427&D2, cannot be finalized until the dispute

associated with the Removal Notification and conditions on the Engineering Evaluation/Cost Analysis are resolved (allowing for public comment).

- Developed and submitted the *Removal Action Work Plan for Demolition of the C-400 Cleaning Building in the C-400 Complex Operable Unit at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky* DOE/LX/07-2432&D1, to EPA and KDEP on June 16, 2018.

II. Schedules of activities to be performed during the next reporting period (including projected work/crucial phases of construction):

- Resolve dispute on the *Removal Notification for Demolition of the C-400 Cleaning Building in the C-400 Complex Operable Unit at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2420&D2.

- Resolve dispute on the *Engineering Evaluation/Cost Analysis for Demolition of the C-400 Cleaning Building in the C-400 Complex Operable Unit at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2425&D2.

- Facilitate public comment and resolution of public comments on the *Engineering Evaluation/Cost Analysis for Demolition of the C-400 Cleaning Building in the C-400 Complex Operable Unit at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2425&D2.

- Develop and submit the *Action Memorandum for the C-400 Cleaning Building Non-Time-Critical Removal Action at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2427&D2, to EPA and KDEP.

- Develop and submit the *Removal Action Work Plan for Demolition of the C-400 Cleaning Building in the C-400 Complex Operable Unit at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky* DOE/LX/07-2432&D2, to EPA and KDEP.

- Initiate field activities associated with the Removal Action (i.e., Demolition of the C-400 Cleaning Building) pending approval of the four CERCLA documents listed above.

III. Identity and assigned tasks of DOE contractors for work to be performed for this project:

Reporting responsibility for the work to be performed in support of the C-400 Complex OU belongs to Four Rivers Nuclear Partnership, LLC (FRNP). FRNP also provides programmatic and technical support, analytical services, and business management services. Swift & Staley Team (SST) manages the AR and the Environmental Information Center (EIC) for DOE.

IV. Statement of the manner and extent to which the requirements and time schedules are being met:

The requirements for the Removal Action for the Demolition of the C-400 Cleaning Building in the C-400 Complex OU subproject are being met consistent with the *Memorandum of Agreement on the C-400 Complex under the Federal Facility Agreement for the Paducah Gaseous Diffusion Plant, Paducah, Kentucky.* The schedule, however, for approval of CERCLA documents (i.e., *Removal Notification for Demolition of the C-400 Cleaning Building in the C-400 Complex Operable Unit at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky,* DOE/LX/07-2420&D2; *Engineering Evaluation/Cost Analysis for Demolition of the C-400*

Cleaning Building in the C-400 Complex Operable Unit at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, DOE/LX/07-2425&D2; *Action Memorandum for the C-400 Cleaning Building Non-Time-Critical Removal Action at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2427&D2; and *Removal Action Work Plan for Demolition of the C-400 Cleaning Building in the C-400 Complex Operable Unit at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2432&D2) has been delayed as a result of disputed conditions of approval on the *Removal Notification for Demolition of the C-400 Cleaning Building in the C-400 Complex Operable Unit at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky,* DOE/LX/07-2420&D2, and the *Engineering Evaluation/Cost Analysis for Demolition of the C-400 Cleaning Building in the C-400 Complex Operable Unit at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2425&D2.

V. Primary/Secondary Document Tracking System:

A) Documents under review and/or preparation for this reporting period:

- The *Removal Action Work Plan for Demolition of the C-400 Cleaning Building in the C-400 Complex Operable Unit at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2432&D1, is under review by EPA at the conclusion of this reporting period.

B) Due dates for completion of review/modification tasks:

- Not applicable.

VI. Anticipated problems/delays (provide summary of problems, schedule, reason for delay, and actions taken to prevent or mitigate delay):

The schedule for approval of CERCLA documents likely will be delayed as a result of disputed conditions of approval on the *Removal Notification for Demolition of the C-400 Cleaning Building in the C-400 Complex Operable Unit at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky,* DOE/LX/07-2420&D2, and *Engineering Evaluation/Cost Analysis for Demolition of the C-400 Cleaning Building in the C-400 Complex Operable Unit at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2425&D2. The length of delay is dependent on the duration of the disputes. FFA parties are meeting regularly to accelerate the FFA dispute process.

VII. Summary of all contacts with local community, public interest groups, or state government:

DOE provided routine updates on the subproject to the Paducah Site Citizens Advisory Board (CAB), FFA project managers, FFA senior managers, local elected officials, and/or congressional staff. During the next reporting period it is anticipated that the *Engineering Evaluation/Cost Analysis for Demolition of the C 400 Cleaning Building in the C-400 Complex Operable Unit at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2425&D2, will be issued for public review and comment.

VIII. Changes in relevant personnel:

During this reporting period, Jeff Bradford became the FRNP Paducah Program Manager.

IX. Actual cost for O&M, if appropriate:

None.

FEDERAL FACILITY AGREEMENT
SEMIANNUAL REPORT
SECOND HALF OF FISCAL YEAR 2018

Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 4/1/2018–9/30/2018

C-400 COMPLEX OPERABLE UNIT: C-400 Final Remedial Action

There are two projects that make up the scope of the OU. This project, the C-400 Final Remedial Action, will investigate the C-400 Complex OU and associated SWMUs, evaluate potential remedial alternatives, develop decision documents selecting an alternative(s), and design and implement the remedial alternative(s).

I. Work performed during the reporting period (including summaries of findings and any deviations from the work plan):

- EPA and KDEP review of the *Scoping Document for the C-400 Complex Remedial Investigation/Feasibility Study at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2424&D1.

- Completed scoping for the remedial investigation (RI)/feasibility study (FS) of the C-400 Complex OU with the FFA parties.

- Initiated development of the *Remedial Investigation/Feasibility Study Work Plan for the C-400 Complex Operable Unit at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2433&D1.

II. Schedules of activities to be performed during the next reporting period (including projected work/crucial phases of construction):

- Complete development and submittal of the D1 version of the *Remedial Investigation/Feasibility Study Work Plan for the C-400 Complex Operable Unit at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2433&D1, to EPA and KDEP for review by November 28, 2018.

- Receive EPA and KDEP comments on the D1 version of the *Remedial Investigation/Feasibility Study Work Plan for the C-400 Complex Operable Unit at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2433&D1.

- Initiate development of the D2 version of the *Remedial Investigation/Feasibility Study Work Plan for the C-400 Complex Operable Unit at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2433&D2.

III. Identity and assigned tasks of DOE contractors for work to be performed for this project:

Reporting responsibility for the work to be performed in support of the C-400 Complex OU belongs to FRNP. FRNP also provides programmatic and technical support, analytical services, and business management services. SST manages the AR and the EIC for DOE.

IV. Statement of the manner and extent to which the requirements and time schedules are being met:

Requirements for the C-400 Complex Remedial Action are being met consistent with the *Memorandum of Agreement on the C-400 Complex under the Federal Facility Agreement for the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, signed August 8, 2017, and the *Memorandum of Agreement for Resolution of Formal Dispute Regarding the Non-Concurrence by EPA and KDEP on the DOE Milestone Modification Request for Submittal of the Revised Proposed Plan for the Volatile Organic Compound Contamination at the C-400 Cleaning Building at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, (DOE/LX/07-2407&D1)*, signed September 28, 2017.

V. Primary/Secondary Document Tracking System:

A) Documents under review and/or preparation for this reporting period:

- *Scoping Document for the C-400 Complex Remedial Investigation/Feasibility Study at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2424&D1.

- Initiated development of the *Remedial Investigation/Feasibility Study Work Plan for the C-400 Complex Operable Unit at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2433&D1.

B) Due dates for completion of review/modification tasks:

- Complete development and submittal of the D1 version of the Remedial Investigation/Feasibility Study Work Plan for the C-400 Complex Operable Unit at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, DOE/LX/07-2433&D1, to EPA and KDEP for review by November 28, 2018.

- Receive EPA and KDEP comments on the *Remedial Investigation/Feasibility Study Work Plan for the C-400 Complex Operable Unit at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2433&D1, on February 26, 2019.

VI. Anticipated problems/delays (provide summary of problems, schedule, reason for delay, and actions taken to prevent or mitigate delay):

None.

VII. Summary of all contacts with local community, public interest groups, or state government:

DOE provided routine updates on the subproject to the Paducah Site CAB, FFA project managers, FFA senior managers, local elected officials, and congressional staff.

VIII. Changes in relevant personnel:

During this reporting period, Jeff Bradford became the FRNP Paducah Program Manager.

IX. Actual cost for O&M, if appropriate:

None.

FEDERAL FACILITY AGREEMENT
SEMIANNUAL REPORT
SECOND HALF OF FISCAL YEAR 2018

Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 4/1/2018–9/30/2018

GROUNDWATER OPERABLE UNIT

The scope of the GWOU includes performing investigations, conducting baseline risk assessments, evaluating removal/remedial alternatives, and selecting and implementing actions necessary to achieve protection of human health and the environment from exposure to groundwater contamination that could result in an unacceptable risk.

Within the GWOU are these projects: C-400 IRA, Southwest Plume Sources Remediation, Dissolved-Phase Plumes, Northeast Plume IRA, and Northwest Plume IRA.

The overall objective of the GWOU is to remove/mitigate ongoing sources and to remediate the groundwater to target contaminant concentrations. The predominant contaminant of concern in the groundwater of all three plumes is TCE. Table 2 provides an overall picture of the TCE mass removed [TCE values may contain other volatile organic compounds (VOCs)] by various actions.

Table 2. Cumulative TCE Removed at Paducah

Source Area	Cumulative TCE Removed (gal)*
Northwest Plume Pump-and-Treat	3,623.9**
Northeast Plume Pump-and-Treat	324.3**
C-400 Six-Phase Treatability Study	1,900
C-400 Phase I	535
C-400 Phase IIa	1,137
Southwest Plume (SWMU 1)	24***
Other sources (i.e., SWMU 91–LASAGNA™)	246
Total	7790.2

*TCE values may contain other VOCs.
**Cumulative through June 30, 2018.
***Removed during deep soil mixing operations.

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FEDERAL FACILITY AGREEMENT
SEMIANNUAL REPORT
SECOND HALF OF FISCAL YEAR 2018

Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 4/1/2018–9/30/2018

GROUNDWATER OPERABLE UNIT PROJECT: C-400 IRA

I. Work performed during the reporting period (including summaries of findings and any deviations from the work plan):

- Received EPA and KDEP comments on the D1 version of the *Remedial Action Completion Report for the Interim Remedial Action for the Groundwater Operable Unit for the Volatile Organic Compound Contamination at the C-400 Cleaning Building at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2417&D1, on April 27, 2018, and May 7, 2018, respectively.

- Developed and submitted the D2 version of the *Remedial Action Completion Report for the Interim Remedial Action for the Groundwater Operable Unit for the Volatile Organic Compound Contamination at the C-400 Cleaning Building at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2417&D2, to EPA and KDEP for review and approval on July 2, 2018.

- Received EPA and KDEP approval on the D2 version of the *Remedial Action Completion Report for the Interim Remedial Action for the Groundwater Operable Unit for the Volatile Organic Compound Contamination at the C-400 Cleaning Building at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2417&D2, on July 30, 2018, and July 18, 2018, respectively.

II. Schedules of activities to be performed during the next reporting period (including projected work/crucial phases of construction):

Continue long-term monitoring per the C-400 IRA and annual inspections.

III. Identity and assigned tasks of DOE contractors for work to be performed for this project:

Reporting responsibility for the work to be performed in support of the C-400 IRA belongs to FRNP. FRNP also provides programmatic and technical support, analytical services, and business management services. SST manages the AR and the EIC for DOE.

IV. Statement of the manner and extent to which the requirements and time schedules are being met:

The requirements for the C-400 IRA are being met consistent with the *Memorandum of Agreement on the C-400 Complex under the Federal Facility Agreement for the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, signed August 8, 2017, and the *Memorandum of Agreement for Resolution of Formal Dispute Regarding the Non-Concurrence by EPA and KDEP on the DOE Milestone Modification Request for Submittal of the Revised Proposed Plan for the*

Volatile Organic Compound Contamination at the C-400 Cleaning Building at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, (DOE/LX/07-2407&D1), signed September 28, 2017.

V. Primary/Secondary Document Tracking System:

A) Documents under review and/or preparation for this reporting period:

- Received EPA and KDEP comments on the D1 version of the *Remedial Action Completion Report for the Interim Remedial Action for the Groundwater Operable Unit for the Volatile Organic Compound Contamination at the C-400 Cleaning Building at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2417&D1, on April 27, 2018, and May 7, 2018, respectively.

- Developed and submitted the D2 version of the *Remedial Action Completion Report for the Interim Remedial Action for the Groundwater Operable Unit for the Volatile Organic Compound Contamination at the C-400 Cleaning Building at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2417&D2, to EPA and KDEP for review and approval on July 2, 2018.

- Received EPA and KDEP approval on the D2 version of the *Remedial Action Completion Report for the Interim Remedial Action for the Groundwater Operable Unit for the Volatile Organic Compound Contamination at the C-400 Cleaning Building at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2417&D2, on July 30, 2018, and July 18, 2018, respectively.

B) Due dates for completion of review/modification tasks:

None.

VI. Anticipated problems/delays (provide summary of problems, schedule, reason for delay, and actions taken to prevent or mitigate delay):

None.

VII. Summary of all contacts with local community, public interest groups, or state government:

DOE provided routine updates on the subproject to the Paducah Site CAB, FFA project managers, FFA senior managers, local elected officials, and/or congressional staff.

VIII. Changes in relevant personnel:

During this reporting period, Jeff Bradford became the FRNP Paducah Program Manager.

IX. Actual cost for O&M, if appropriate:

Sampling of the C-400 wells has been incorporated into the Environmental Monitoring Program. O&M cost is not tracked separately.

FEDERAL FACILITY AGREEMENT
SEMIANNUAL REPORT
SECOND HALF OF FISCAL YEAR 2018

Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 4/1/2018–9/30/2018

GROUNDWATER OPERABLE UNIT PROJECT: Southwest Plume Sources

I. Work performed during the reporting period (including summaries of findings and any deviations from the work plan):

SWMU 1

- Performed semiannual sampling of SWMU 1 monitoring well network as included in the *Environmental Monitoring Plan for Fiscal Year 2018, Paducah Gaseous Diffusion Plant, Paducah, Kentucky.*

SWMUs 211-A and 211-B

- FFA parties met during this reporting period on May 23, 2018, and established the following path forward for each SWMU.

  — SWMU 211-A—Implement Enhanced *In Situ* Bioremediation and Long-term Monitoring[2]

  — SWMU 211-B—Implement Long-Term Monitoring[2]

- Initiated development of the *30% Remedial Design Report for SWMU 211-A and SWMU 211-B for Volatile Organic Compound Sources to the Southwest Groundwater Plume at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2435&D1.

II. Schedules of activities to be performed during the next reporting period (including projected work/crucial phases of construction):

SWMU 1

- Continue with SWMU 1 semiannual sampling of monitoring wells and annual inspections.

SWMUs 211-A and 211-B

- Issue for review the *30% Remedial Design Report for SWMU 211-A and SWMU 211-B for Volatile Organic Compound Sources to the Southwest Groundwater Plume at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2435&D1.

[2] SWMU 211-A and SWMU 211-B remedies both include interim land use controls that were placed in 2012.

- Initiate development of the *30% Remedial Design Report for SWMU 211-A and SWMU 211-B for Volatile Organic Compound Sources to the Southwest Groundwater Plume at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2435&D1.

III. Identity and assigned tasks of DOE contractors for work to be performed for this project:

Reporting responsibility for the work to be performed in support of the Southwest Plume Sources belongs to FRNP. FRNP also provides programmatic and technical support, analytical services, and business management services. SST manages the AR and the EIC for DOE.

IV. Statement of the manner and extent to which the requirements and time schedules are being met:

- The requirements for the SWMU 1 portion of the Southwest Plume sources remedial action subproject have been met consistent with the SMP and as agreed to by the FFA parties.

- The requirements for the SWMUs 211-A and 211-B portion of the Southwest Plume subproject are being met consistent with the SMP and as agreed to by the FFA parties.

V. Primary/Secondary Document Tracking System:

A) Documents under review and/or preparation for this reporting period:

Initiate development of the *30% Remedial Design Report for SWMU 211-A and SWMU 211-B for Volatile Organic Compound Sources to the Southwest Groundwater Plume at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2435&D1.

B) Due dates for completion of review/modification tasks:

None.

VI. Anticipated problems/delays (provide summary of problems, schedule, reason for delay, and actions taken to prevent or mitigate delay):

None.

VII. Summary of all contacts with local community, public interest groups, or state government:

DOE provided routine updates on the subproject to the Paducah Site CAB, FFA project managers, FFA senior managers, local elected officials, and/or congressional staff.

VIII. Changes in relevant personnel:

During this reporting period, Jeff Bradford became the FRNP Paducah Program Manager.

IX. Actual cost for O&M, if appropriate:

None.

FEDERAL FACILITY AGREEMENT
SEMIANNUAL REPORT
SECOND HALF OF FISCAL YEAR 2018

Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 4/1/2018–9/30/2018

GROUNDWATER OPERABLE UNIT PROJECT: Dissolved-Phase Plumes

I. Work performed during the reporting period (including summaries of findings and any deviations from the work plan):

- The Modeling Working Group met during this reporting period on April 12, 2018, July 10, 2018, and September 18, 2018.

- The Modeling Working Group determined at the April 12, 2018, Quarterly Meeting that the white paper *Site-Specific Soil Screening Levels and Site-Specific Dilution Attenuation Factors at the Paducah* Site, generated by the Modeling Working Group in the previous reporting period would be issued as part of the Risk Methods Document. (*Methods for Conduction Risk Assessments and Risk Evaluations at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, Volume 1. Human Health*, DOE/LX/07-0107&D2/R9/V1, was issued by DOE to EPA/KY on July 30, 2018.)

- Initiated abandonment and replacement of monitoring wells, MW152 and MW153, located near the Tennessee Valley Authority (TVA) Shawnee Fossil Plant, at the end of this reporting period. The activity will be completed during the next reporting period. TVA required that the wells be removed to allow Shawnee Fossil Plant infrastructure additions. The MW152/MW153 well cluster is being replaced with a single Regional Gravel Aquifer well, MW152A, to be located approximately 450 ft to the south of the original MW152 location.

II. Schedule of activities to be performed during upcoming reporting period (including projected work/crucial phases of construction):

- Additional meetings of the Modeling Working Group are being planned for the next reporting period.

- Installation of replacement well MW152A will be completed during the upcoming reporting period.

III. Identity and assigned tasks of DOE contractors for work to be performed for this project:

Reporting responsibility for the work to be performed in support of the Dissolved-Phase Plume belongs to FRNP. FRNP also provides programmatic and technical support, analytical services, and business management services. SST manages the AR and the EIC for DOE.

IV. Statement of the manner and extent to which the requirements and time schedules are being met:

No requirements are scheduled for this project during the upcoming reporting period. The Modeling Working Group will continue to support Paducah Site projects.

V. Primary/Secondary Document Tracking System:

A) Documents under review and/or preparation for this reporting period:

None.

B) Due dates for completion of review/modification tasks:

None.

VI. Anticipated problems/delays (provide summary of problems, schedule, reason for delay, and actions taken to prevent or mitigate delay):

None.

VII. Summary of all contacts with local community, public interest groups, or state government:

DOE provided routine updates on the subproject to the Paducah Site CAB, FFA project managers, FFA senior managers, local elected officials, and/or congressional staff, as applicable.

VIII. Changes in relevant personnel:

During this reporting period, Jeff Bradford became the FRNP Paducah Program Manager.

IX. Actual cost for O&M, if appropriate:

Not applicable.

FEDERAL FACILITY AGREEMENT
SEMIANNUAL REPORT
SECOND HALF OF FISCAL YEAR 2018

Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 4/1/2018–9/30/2018

GROUNDWATER OPERABLE UNIT PROJECT: Northeast Plume IRA

I. Work performed during the reporting period (including summaries of findings and any deviations from the work plan):

- During this reporting period, the Northeast Plume Containment System (NEPCS) treated 52,851,821 gal of contaminated groundwater and achieved an average operational efficiency of 96.4%. The average system treatment rate for the reporting period was 201 gal/min. Operational online efficiencies for the reporting period for C-765 were as follows: April 2018, 99.7%; May 2018, 99%; June 2018, 97.8%; July 2018, 99.1%; August 2018, 72.9%; September 2018, 98.6%. Operational online efficiencies for the reporting period for C-765-A were as follows: April 2018, 97.5%; May 2018, 97.6%; June 2018, 98.5%; July 2018, 97.8%; August 2018, 98.8%; September 2018, 99.3%.

- Received KDEP and EPA comments on the D1 version of the *Postconstruction Report for the Northeast Plume Optimization at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2419&D1, on April 2, 2018, and March 21, 2018, respectively.

- Developed and submitted the D2 version of the *Postconstruction Report for the Northeast Plume Optimization at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2419&D2, to EPA and KDEP for review and approval on May 15, 2018.

- Received KDEP approval on the D2 version of the *Postconstruction Report for the Northeast Plume Optimization at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2419&D2, on May 22, 2018.

- Received EPA acknowledgement and comments on the D2 version of the *Postconstruction Report for the Northeast Plume Optimization at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2419&D2, on June 1, 2018.

- Developed and submitted the D2/R1 version of the *Postconstruction Report for the Northeast Plume Optimization at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2419&D2/R1, to EPA and KDEP for review and approval on June 28, 2018.

- Received KDEP and EPA approval on the D2/R1 version of the *Postconstruction Report for the Northeast Plume Optimization at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2419&D2/R1, on July 2, 2018, and July 3, 2018, respectively.

- Developed and submitted the Transect Well Baseline Concentrations Addendum (Appendix E) to the *Remedial Action Work Plan for Optimization of the Northeast Plume Interim Remedial Action at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*,

DOE/LX/07-1280&D2/R3/A1, to EPA and KDEP for review and approval on August 6, 2018.

- Received EPA and KDEP approval of the Transect Well Baseline Concentrations Addendum (Appendix E) to the *Remedial Action Work Plan for Optimization of the Northeast Plume Interim Remedial Action at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-1280&D2/R3/A1, on August 8, 2018.

- Submitted a complete copy of the *Remedial Action Work Plan for Optimization of the Northeast Plume Interim Remedial Action at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-1280&D2/R3/A1, (this included the Transect Well Baseline Concentrations Addendum for records purposes) to EPA and KDEP on September 5, 2018.

- Completed hydraulic monitoring testing of the Northeast Plume optimization as outlined in the *Operation and Maintenance Plan for the Northeast Plume Containment System, Interim Remedial Acton at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/OR/07-1535&D3/R6, on April 2, 2018. Based on the preliminary results of the hydraulic monitoring, additional hydraulic monitoring was performed to assess the impacts of reduced extraction well pumping rates from April 19, 2018, through May 10, 2018. Following the additional hydraulic monitoring, briefed EPA and KDEP on the preliminary results, and an agreement was reached on June 14, 2018, to reduce the extraction well pumping rates until an assessment of the hydraulic monitoring tests was completed to determine if changes to the extraction rates are warranted to optimize remediation and containment.

- Evaluated and developed a summary of the hydraulic monitoring testing that is included as Appendix G of this report.

A) Process Operations:

The NEPCS consists of two extraction wells (EWs) (EW234 and EW235), transfer piping, two treatment units for air stripping and suspended solids removal, and monitoring well network. The old extraction wells, EW331 and EW332, equalization tank, and old transfer piping have been placed in standby mode.

B) Process Testing:

Operation of the NEPCS began February 28, 1997. As of September 30, 2018, the NEPCS has processed a total of approximately 1,822,275,323 gal of water. The monthly withdrawal volumes this reporting period are presented in Appendix A, Table A.1, of this report. This table includes a summary of the withdrawn water volumes and average daily rates.

C) NEPCS Influent, Effluent, and Extraction Well Testing:

Due to sample analysis time and the data assessment process, the analytical data included in this report lags operational data by three months. This report presents analytical data from January through June 2018.

The influent flow is a composite from two extraction wells. Influent TCE analytical data from 1997 through the end of June 2018 are presented in Appendix B. Environmental samples were collected monthly from the treatment system influent and weekly from the treatment

system effluent for the period of January through June 2018. High, low, and average influent and effluent TCE concentrations for these months are presented in Table 3.

Table 3. TCE Concentrations for Northeast Plume

	TCE (µg/L)		
	High	**Low**	**Average**
Influent C-765 (EW234)	200	149	168
Influent C-765-A (EW235)	166	133	148
Effluent from C-765	1.1	< 1	< 1
Effluent from C-765-A	< 1	< 1	< 1
Combined Effluent (CERCLA Outfall—after 10/10/2017)	< 1	< 1	< 1

As presented in Table 3, the NEPCS continued to remove TCE effectively. The systems operated with an average removal efficiency of > 99% for EW234 and EW235 for TCE.

The extraction wells were sampled monthly during this reporting period. For the period January through June 2018, EW234 had an average TCE concentration of 168 µg/L, while EW235 had an average concentration of 148 µg/L.

Treated groundwater for the Northeast Plume is discharged to a CERCLA outfall, and data associated with the CERCLA outfall are included as part of Appendix B of this report.

D) Maintenance Activities:

Routine Maintenance Activities:

Daily, monthly, quarterly, and annual routine maintenance activities were conducted in accordance with the *Northwest/Northeast Plume Daily Operational Data Collection and Maintenance*, CP4-ER-0017.

- On May 24, 2018, C-765-A system shut down for 1 hour, and C-765 system was shut down for 1 hour for maintenance at both locations.

- On July 13, 2018, C-765-A system was shut down for 15 hours for power outage to work on ER1 line.

- Between August 6, 2018, and August 14, 2018, C-765 system was shut down for 200 hours due to power outage to support deactivation of the C-535 and C-537 Switchyards.

- On August 9, 2018, C-765-A system was shut down for 2 hours to troubleshoot issues on the programmable logic controller and for planned maintenance.

Non-routine Maintenance Activities:

- On April 1-2, 2018, C-765-A shut down for 16.25 hours due to high level in well vault and alarm on auto dialer that did not allow it to call out.

- On April 9, 2018, C-765 system shut down for 1 hour due to leak in hose line that was repaired.

- On April 13, 2018, C-765 system shut down for 1 hour due to a communication failure.

- On April 23, 2018, C-765-A system shut down for 1.5 hours due to high level in the sump.

- On May 6-7, 2018, C-765-A system shut down for 11.5 hours due to communication failure at EW235, likely due to storms.

- On May 14, 2018, C-765-A system shut down for 1.5 hours due to communication failure and variable frequency drive fault.

- On May 15, 2018, C-765-A system shut down for 0.75 hours due to communication failure.

- On May 19, 2018, and May 20, 2018, the C-765-A system shut down for 0.75 hours each day, for a total of 1.5 hours, due to communication failure.

- On May 26, 2018, C-765 system shut down for 2 hours due to communication failure.

- On May 27, 2018, C-765 system shut down for 3.5 hours due to communication failure.

- On May 28, 2018, C-765-A system shut down for 0.5 hours due to low pressure on air compressor.

- On May 30, 2018, C-765-A system shut down for 0.75 hours due to high level in trailer sump.

- On May 31, 2018, C-765 system shut down for 0.75 hours due to high level in extraction well vault, and C-765-A system shut down for 0.5 hours due to extraction well communication failure.

- On June 1, 2018, both Northeast systems shut down for 1 hour due to power failure.

- On June 12, 2018, C-765 system shut down for 0.75 hours due to communication failure.

- On June 17, 2018, C-765 system shut down for 0.5 hours, and C-765-A system shut down for 2.5 hours due to communication failure.

- On June 24-25, 2018, C-765 system shut down for 0.75 hours due to communication failure.

- On June 26-27, 2018, C-765 system shut down for 0.5 hours and then again for 6 hours due to communication failures.

- On June 28-29, 2018, C-765 system shut down for 6.5 hours, and C-765-A system shut down for 7.25 hours due to power failure from storms.

- On July 1, 2018, C-765 system shut down for 2.5 hours due to communication failure.

- On July 2, 2018, C-765 system shut down for 0.75 hours due to communication failure.

- On July 6, 2018, C-765 system shut down for 2 hours due to communication failure.

- On July 15, 2018, both Northeast systems shut down for 1.25 hours due to communication failure and high level in sump from heavy storms.

- On August 5, 2018, C-765 system shut down for 2 hours due to communication failure.

- On August 8, 2018, C-765-A system shut down for 5 hours due to extraction well sump pump run fault.

- On August 10, 2018, C-765-A system shut down for 1.75 hours due to extraction well communication failure.

- On September 8, 2018, C-765 system shut down for 0.75 hours due to communication failure.

- On September 15, 2018, C-765 system shut down for 9.5 hours, and C-765-A system shut down for 5 hours due to TVA having a power line down that caused plant wide power outage.

Note: Efforts are underway to upgrade the system to mitigate and reduce unplanned outages.

E) Effectiveness Monitoring—Monitoring Well Results:

Figure B.1, included in Appendix B, shows locations of the monitoring wells and extraction wells. Figure B.2 shows the location of the monitoring wells and extraction wells with the top of McNairy topography. Figure B.3 shows system influent TCE concentrations, and Figures B.4 and B.5 includes a summary of the TCE concentration and Tc-99 activities in the Northeast Plume extraction wells. Figure B.6 shows the estimated cumulative amount of TCE removed since the NEPCS began operations in 1997. Figures B.7 through B.14 presented in Appendix B, show TCE concentrations and Tc-99 activities in upgradient transect wells, monitoring wells near the extraction wells (including extraction well data), downgradient wells, and distal downgradient wells.

MW292 is located approximately 1,200 ft upgradient of the old pumping wells (now in standby mode) to provide an early detection point for Tc-99 migration. During the first and second quarters of calendar year 2018, Tc-99 maximum activity at MW292 was 41.8 and 18.5 pCi/L, respectively. MW531 concentrations have remained stable indicating no northward migration of the plume. The extraction wells are working well both to increase TCE mass removal (as shown on Figure B.6 in Appendix B) and to enhance control of the plume.

As discussed with EPA and KDEP on August 22, 2018, groundwater samples for chemical monitoring were not collected from two monitoring wells (MW163 and MW260) during the

fourth quarter of FY 2017 and first through third quarters of FY 2018. In addition, water levels were not collected from eight piezometers and four monitoring wells during first quarter of FY 2018. Preliminary results of the hydraulic assessment indicate the NEPCS capture zone while operating at the design flowrates extended beyond the wells missed for both chemical monitoring and a vast majority of the hydraulic monitoring locations. Contaminant concentrations obtained in the vicinity of the MW163 and MW260 can be used as surrogates (e.g., indicative of maximum concentrations) to evaluate trends and meet the objective of the monitoring network. Monthly groundwater samples from extraction wells and upgradient/downgradient wells also can be used to ensure the goals of monitoring network are being met, as summarized in Table 5 of the *Remedial Action Work Plan for Optimization of the Northeast Plume Interim Remedial Action at the at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky,* DOE/LX/07-1280&D2/R3/A1. Data from fourth quarter of FY 2017 and first through third quarters of FY 2018 are not indicative of current and/or future operational flowrates (e.g., still optimizing flowrates during this time frame). Based on preliminary results of the hydraulic assessment and transect well data, reduced extraction well flow rates were recommended to FFA parties, and flow rates were reduced starting June 14, 2018. All required chemical and hydraulic monitoring data have been collected since the operational flowrates were reduced on June 14, 2018. Additional information regarding TCE and Tc-99 concentrations for upgradient, downgradient, and extraction wells can be found in Appendix B. Appendix G provides additional information on the hydraulic assessment and chemical monitoring network.

F) Modification of the NEPCS Operations or Configuration:

Based on the preliminary results of the hydraulic assessment, an additional hydraulic monitoring test was performed to assess the impacts of reduced extraction well pumping rates from April 23, 2018, through May 10, 2018. Following the second hydraulic monitoring testing, EPA and KDEP were briefed on the preliminary results, and an agreement was reached on June 14, 2018, to reduce the extraction well pumping rates until an assessment of both hydraulic monitoring tests was completed to determine if changes to the extraction rates are warranted to optimize remediation and containment.

II. Schedule of activities to be performed during the upcoming reporting period (including projected work/crucial phases of construction):

- Based on the summary of the hydraulic monitoring testing (Appendix G), enable changes to be made in extraction rates that will optimize remediation and containment.

- Continue monitoring TCE and Tc-99 transect monitoring well sampling results in conjunction with other Northeast Plume monitoring wells results, comprehensively.

III. Identity and assigned tasks of DOE contractors for work to be performed for this project:

Reporting responsibility for the work to be performed in support of the Northeast Plume IRA belongs to FRNP. FRNP also provides programmatic and technical support, analytical services, and business management services. SST manages the AR and the EIC for DOE.

IV. Statement of the manner and extent to which the requirements and time schedules are being met:

The effluent concentration goal of 30 µg/L for TCE was met during the reporting period. The NEPCS remained operational 96.4% of the time during this reporting period.

V. Primary/Secondary Document Tracking System:

A) Documents under review and/or preparation for this reporting period:

- *Postconstruction Report for the Northeast Plume Optimization at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2419&D2, was under development during this reporting period.

- *Postconstruction Report for the Northeast Plume Optimization at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2419&D2/R1, was under development during this reporting period.

- *Remedial Action Work Plan for Optimization of the Northeast Plume Interim Remedial Action at the at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-1280&D2/R3/A1, was under development during this reporting period.

- Summary of the hydraulic monitoring testing (that is included as Appendix G of this report) was under development during this reporting period.

B) Due dates for completion of review/modification tasks:

None.

VI. Anticipated problems/delays (provide summary of problems, schedule, reason for delay, and actions taken to prevent or mitigate delay):

None.

VII. Summary of all contacts with local community, public interest groups, or state government:

DOE provided routine updates on the subproject to the Paducah Site CAB, FFA project managers, FFA senior managers, local elected officials, and/or congressional staff.

VIII. Changes in relevant personnel:

During this reporting period, Jeff Bradford became the FRNP Paducah Program Manager.

IX. Actual cost for O&M, if appropriate:

Actual costs for O&M of the Northwest/Northeast Plume facilities are tracked jointly. The total operating cost for the reporting period was $421,000.

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FEDERAL FACILITY AGREEMENT
SEMIANNUAL REPORT
SECOND HALF OF FISCAL YEAR 2018

Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 4/1/2018–9/30/2018

GROUNDWATER OPERABLE UNIT PROJECT: Northwest Plume IRA

I. Work performed during the reporting period (including summaries of findings and any deviations from the work plan):

During this reporting period, the Northwest Plume Groundwater System (NWPGS) treated 51,628,022 gal of contaminated groundwater with an average monthly operational efficiency of 98.8%. The average system treatment rate for the reporting period was approximately 196 gal/min. Operational efficiencies for the reporting period were as follows: April 2018, 98.8%; May 2018, 99.2%; June 2018, 97.8%; July 2018, 98.8%; August 2018, 99.7%; September 2018, 98.8%.

A) Process Operations:

The NWPGS consists of two extraction wells (EW232 and EW233) located just north of the Paducah Site and underground transfer pipeline for moving contaminated groundwater. The treatment facility has an operational capacity of 220 gal/min and utilizes air stripping for removal of TCE in groundwater, ion exchange for removal of Tc-99 in groundwater, and vapor phase carbon for capturing TCE from exhaust of the air stripper. Treated groundwater from the transfer pipeline is released to a tributary flowing to Outfall 001. A MW network is used to evaluate performance and effectiveness of the optimized extraction wells.

B) Process Testing:

Operation of the NWPGS began on August 28, 1995. As of September 30, 2018, the NWPGS has processed a total of approximately 2,299,167,675 gal of water. The monthly withdrawal volumes for the reporting period are presented in Appendix A, Table A.2, of this report. This table includes a summary of the withdrawn water volumes and average daily rates.

C) NWPGS Influent, Effluent, and Extraction Well Testing:

Due to sample analysis time and the data assessment process, the analytical data included in this report lags operational data by three months. This report presents analytical data from January through June 2018.

Figure B.15, included in Appendix B, shows locations of the Northwest Plume monitoring wells. Figure B.16 shows the location of the monitoring wells with the top of McNairy topography. Influent TCE and Tc-99 analytical data are presented in Appendix B on Figures B.17 and B.18. Figures B.19 and B.20 include a summary of the TCE and Tc-99 concentrations of the effluent versus time at the Northwest Treatment System. Figure B.21 shows the cumulative estimated amount of TCE removed since the NWPGS began operations

in 1995. The influent sample results, compared to the NWPGS effluent results, indicated that the NWPGS continues to remove TCE and Tc-99 effectively.

For radionuclides, all reported values, including negative values, are used to derive averages. Negative Tc-99 results may be reported due to a statistical determination of the counts seen by a detector, minus a background count. High, low, and average influent and effluent TCE and Tc-99 concentrations from January 1, 2018, through June 30, 2018, are presented in Table 4.

Table 4. TCE and Tc-99 Concentrations for Northwest Plume (January 1, 2018, through June 30, 2018)

	TCE (µg/L)			Tc-99 (pCi/L)		
	High	**Low**	**Average**	**High**	**Low**	**Average**
Influent	2,070	1,320	1,730	282	200	243
Effluent	3.40	< 1	2.30	11.5	< 1	1.15

The treatment system influent was sampled monthly. The effluent was sampled weekly. These sampling frequencies were conducted in accordance with the *Operations and Maintenance Plan for the Northwest Plume Groundwater System Interim Remedial Action at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/OR/07-1253&D4/R5. As presented in Table 4, the NWPGS continued to remove TCE and Tc-99 effectively. The system operated with an average removal efficiency of 99.9% for TCE and 99.5% for Tc-99.

The average TCE effluent concentration for this reporting period was 2.30 µg/L, which is less than the treatment goal of 5 µg/L. The average Tc-99 effluent value was 1.15 pCi/L, which is less than the operational goal of 900 pCi/L, during the reporting period.

High, low, and average sample results for this reporting period at the extraction wells are shown in Table 5. EW232 and EW233 were sampled quarterly in accordance with the *Operations and Maintenance Plan for the Northwest Plume Groundwater System Interim Remedial Action at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/OR/07-1253&D4/R5.

Table 5. TCE and Tc-99 Concentrations for Northwest Plume Extraction Wells (January 1, 2018, through June 30, 2018)

	TCE (µg/L)			Tc-99 (pCi/L)		
	High	**Low**	**Average**	**High**	**Low**	**Average**
EW232	550	125	338	150	58.3	104
EW233	3,350	2,810	3,010	434	359	386

D) Treatment Media:

Ion Exchange Resins:

NWPGS is equipped with four ion exchange columns used for Tc-99 removal. Purolite A-520-E resin is used in the columns, which are arranged in a lead/lag configuration in a trailer. No resin changes were required during this reporting period.

Activated Carbon Media:

NWPGS is equipped with two carbon columns containing granular activated carbon for adsorption of VOCs from the vapor-phase effluent of the air stripper unit. The *Operations and Maintenance Plan for the Northwest Plume Groundwater System Interim Remedial Action at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/OR/07-1253&D4/R5 requires that spent carbon be replaced every 6 months. The last carbon changeout was completed on September 19, 2018. The next carbon changeout is projected for the end of March 2019.

E) Maintenance Activities:

Routine Maintenance Activities:

Daily, monthly, quarterly, and annual routine maintenance activities were conducted in accordance with the *Northwest/Northeast Plume Daily Operational Data Collection and Maintenance*, CP4-ER-0017, and *Monthly, Quarterly, and Annual Maintenance at the C-612 Northwest Plume Groundwater System*, CP4-ER-0016.

- On April 2, 2018, the Northwest Plume system was shut down for 3.25 hours to replace pressure relief valves and perform maintenance.
- On April 18, 2018, the Northwest Plume system shut down for 0.5 hour for planned plant electrical maintenance.
- On April 19, 2018, the Northwest Plume system shut down for 0.5 hour for planned electrical maintenance.
- On May 24, 2018, the Northwest Plume system shut down for 2 hours for planned maintenance.
- On May 30, 2018, the Northwest Plume system shut down for 3 hours for planned maintenance.
- On June 13, 2018, the Northwest Plume system shut down for 1 hour for planned maintenance.
- On June 18, 2018, the Northwest Plume system shut down for 2.5 hours for planned maintenance.
- On August 1, 2018, the Northwest Plume system shut down for 0.25 hour for planned maintenance.

- On September 3, 2018, the Northwest Plume system shut down for 0.75 hours for planned quarterly maintenance.

- On September 19, 2018, the Northwest Plume system shut down for 1.5 hours for planned carbon changeout.

Non-routine Maintenance Activities:

- On April 22–23, 2018, the Northwest Plume system shut down for 3.5 hours due to high water levels in manholes.

- On April 23, 2018, the Northwest Plume system shut down for 4.5 hours due to high water levels in manholes.

- On May 18, 2018, the Northwest Plume system shut down for 0.75 hour due to power surge from lightning.

- On June 26–27, 2018, the Northwest Plume system shut down for 12.5 hours due to blower pump failure.

- On July 11–12, 2018, the Northwest Plume system shut down for 5.75 hours due to high level in trailer sump.

- On July 13, 2018, the Northwest Plume system shut down for 0.5 hour.

- On July 15, 2018, the Northwest Plume system shut down for 1.75 hours due to high level in manhole/vaults form heavy rain and storms.

- On July 18, 2018, the Northwest Plume system shut down for 0.75 hour due to blower motor fault.

- On August 1, 2018, the Northwest Plume system shut down for 2 hours due to blower motor fault.

- On September 15, 2018, the Northwest Plume system shut down for 6.5 hours due to a power line down at TVA, which caused plantwide power outage.

F) Effectiveness Monitoring—Monitoring Well Results:

Figures B.22 through B.29 presented in Appendix B, show TCE and Tc-99 concentrations in monitoring wells at the south and north fields of the Northwest Plume and the extraction wells, respectively. These graphs show all data since monitoring began in 1995 and indicate the position of the monitoring wells relative to the extraction.

G) Modification of the NWPGS Operations or Configuration:

None.

II. Schedules of activities to be performed during the upcoming reporting period (including projected work/crucial phases of construction):

The project team will continue to conduct and document the necessary tasks required for equipment maintenance, calibration, and operation, as specified in the *Operations and Maintenance Plan for the Northwest Plume Groundwater System Interim Remedial Action at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/OR/07-1253&D4/R5.

III. Identity and assigned tasks of DOE contractors for work to be performed for this project:

Reporting responsibility for the work to be performed in support of the Northwest Plume IRA belongs to FRNP. FRNP also provides programmatic and technical support, analytical services, and business management services. SST manages the AR and the EIC for DOE.

IV. Statement of the manner and extent to which the requirements and time schedules are being met:

The average NWPGS water effluent concentrations met the operational goals of 5 µg/L for TCE and 900 pCi/L for Tc-99, during the reporting period. The NWPGS has remained 98.8% operational during this reporting period.

V. Primary/Secondary Document Tracking System:

A) Documents under review and/or preparation for this reporting period:

None.

B) Due dates for completion of review/modification tasks:

None.

VI. Anticipated problems/delays (provide summary of problems, schedule, and reason for delay, and actions taken to prevent or mitigate delay):

None.

VII. Summary of all contacts with local community, public interest groups, or state government:

DOE provided routine updates on the subproject to the Paducah Site CAB, FFA project managers, FFA senior managers, local elected officials, and/or congressional staff.

VIII. Changes in relevant personnel:

During this reporting period, Jeff Bradford became the FRNP Paducah Program Manager.

IX. Actual cost for O&M, if appropriate:

Actual costs for O&M of the Northwest/Northeast Plume facilities are tracked jointly. The total operating cost for the reporting period was $421,000.

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FEDERAL FACILITY AGREEMENT
SEMIANNUAL REPORT
SECOND HALF OF FISCAL YEAR 2018

Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 4/1/2018–9/30/2018

BURIAL GROUNDS OPERABLE UNIT

The scope of the BGOU includes an RI, baseline human health risk assessment, evaluation of remedial alternatives, remedy selection, and implementation of actions, as necessary, for protection of human health and the environment for the following burial grounds: C-749 (SWMU 2); C-404 (SWMU 3); C-747/C-748-B (SWMU 4); C-746-F (SWMU 5); C-747-B (SWMU 6); C-747-A (SWMUs 7 and 30), which includes the area beneath C-747-A (SWMU 12); the residential/inert borrow area (SWMU 145); and the C-746-S&T Landfills (SWMUs 9 and 10, respectively).

This section also includes information on the sampling activities being conducted at the C-749 Uranium Burial Ground, as required in the *Record of Decision for Interim Remedial Action at Solid Waste Management Units 2 and 3 of Waste Area Group 22 at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/OR/06-1351&D1, signed in 1995.

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FEDERAL FACILITY AGREEMENT
SEMIANNUAL REPORT
SECOND HALF OF FISCAL YEAR 2018

Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 4/1/2018–9/30/2018

BURIAL GROUNDS OPERABLE UNIT PROJECT: C-749 (SWMU 2); C-404 (SWMU 3); C-747/C-748-B (SWMU 4); C-746-F (SWMU 5); C-747-B (SWMU 6); C-747-A (SWMUs 7 and 30), which includes the area beneath C-747-A (SWMU 12); the Residential/Inert Borrow Area (SWMU 145); and the C-746-S&T Landfills (SWMUs 9 and 10)

I. Work performed during the reporting period (including summaries of findings and any deviations from the work plan):

No activities were scheduled for this reporting period.

II. Schedules of activities to be performed during the next reporting period (including projected work/crucial phases of construction):

No activities are scheduled for this reporting period.

III. Identity and assigned tasks of DOE contractors for work to be performed for this project:

No activities were scheduled for this reporting period.

IV. Statement of the manner and extent to which the requirements and time schedules are being met:

The requirements and time schedules are being met for the BGOU consistent with the SMP and as agreed to by the FFA parties.

V. Primary/Secondary Document Tracking System:

A) Documents under review and/or preparation during this reporting period:

None.

B) Due dates for completion of review/modification tasks:

None.

VI. Anticipated problems/delays (provide summary of problems, schedule, reason for delay, and actions taken to prevent or mitigate delay):

None.

VII. Summary of all contacts with local community, public interest groups, or state government:

DOE provided routine updates on the subproject to the Paducah Site CAB, FFA project managers, FFA senior managers, local elected officials, and/or congressional staff.

VIII. Changes in relevant personnel:

During this reporting period, Jeff Bradford became the FRNP Paducah Program Manager.

IX. Actual cost for O&M, if appropriate:

None. [Refer to the following section of this report for information regarding O&M costs for the IRA at the C-749 Uranium Burial Ground (SWMU 2).]

FEDERAL FACILITY AGREEMENT
SEMIANNUAL REPORT
SECOND HALF OF FISCAL YEAR 2018

Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 4/1/2018–9/30/2018

BURIAL GROUNDS OPERABLE UNIT PROJECT: C-749 Uranium Burial Ground (SWMU 2)

I. Work performed during the reporting period (including summaries of findings and any deviations from the work plan):

Continued groundwater monitoring at the C-749 Uranium Burial Ground, as required by the *Record of Decision for Interim Remedial Action at Solid Waste Management Unit 2 and 3 of Waste Area Group 22 at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/OR/06-1351&D1. The results for the groundwater monitoring from May 1993, through June 30, 2018, have been included as part of this report. The results of the groundwater monitoring trends from 1996 through June 30, 2018, are presented in Appendix F.

II. Schedules of activities to be performed during the next reporting period (including projected work/crucial phases of construction):

Groundwater monitoring will continue at the C-749 Uranium Burial Ground, as required by the ROD.

III. Identity and assigned tasks of DOE contractors for work to be performed for this project:

Reporting responsibility for the work to be performed in support of C-749 Uranium Burial Ground belongs to FRNP. FRNP also provides programmatic and technical support, analytical services, and business management services. SST manages the AR and the EIC for DOE and maintains existing burial ground cover.

IV. Statement of the manner and extent to which the requirements and time schedules are being met:

The requirements and time schedules are being met.

V. Primary/Secondary Document Tracking System:

A) Documents under review and/or preparation during this reporting period:

None.

B) Due dates for completion of review/modification tasks:

None.

VI. Anticipated problems/delays (provide summary of problems, schedule, reason for delay, and actions taken to prevent or mitigate delay):

None.

VII. Summary of all contacts with local community, public interest groups, or state government:

None.

VIII. Changes in relevant personnel:

During this reporting period, Jeff Bradford became the FRNP Paducah Program Manager.

IX. Actual cost for O&M, if appropriate:

Sampling of the C-749 Uranium Burial Ground has been incorporated into the Environmental Monitoring Program. O&M cost is not tracked separately.

FEDERAL FACILITY AGREEMENT
SEMIANNUAL REPORT
SECOND HALF OF FISCAL YEAR 2018

Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 4/1/2018–9/30/2018

SURFACE WATER OPERABLE UNIT

The SWOU includes the Surface Water Removal Action and Surface Water Remedial Action projects. Additionally, O&M is performed on North-South Diversion Ditch Sections 1 and 2 and institutional controls, as required by the *Operations and Maintenance Plan for Sections 1 and 2 of the North-South Diversion Ditch*, DOE/OR/07-2057&D2, and *Operations and Maintenance Plan for the Surface Water Operable Unit at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/OR/07-1904&D1; and O&M activities for the C-613 Basin are maintained in accordance with the *Operations and Maintenance Plan for the Northwest Storm Water Control Facility at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/OR/07-2044&D1/R4, respectively.

Per the *Operations and Maintenance Plan for the Northwest Storm Water Control Facility at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/OR/07-2044&D1/R4, the relationship of turbidity to total suspended solids is compared on a quarterly basis. An update to the existing linear regression model was performed in July 2018, and the current maximum discharge limit for turbidity is 91 nephelometric turbidity units (NTUs), with a 30-day average not to exceed 43 NTU.

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FEDERAL FACILITY AGREEMENT
SEMIANNUAL REPORT
SECOND HALF OF FISCAL YEAR 2018

Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 4/1/2018–9/30/2018

SURFACE WATER OPERABLE UNIT PROJECT: Remedial Action

I. Work performed during the reporting period (including summaries of findings and any deviations from the work plan):

No activities were scheduled for this project during this reporting period.

II. Schedules of activities to be performed during the next reporting period (including projected work/crucial phases of construction):

No activities are scheduled for this project during the upcoming reporting period.

III. Identity and assigned tasks of DOE contractors for work to be performed for this project:

Reporting responsibility for the work to be performed in support of the SWOU Remedial Action belongs to FRNP. FRNP also provides programmatic and technical support, analytical services, and business management services. SST manages the AR and the EIC for DOE.

IV. Statement of the manner and extent to which the requirements and time schedules are being met:

No activities are scheduled for this project during the upcoming reporting period. The requirements and schedules are being met for the SWOU consistent with the SMP and as agreed to by the FFA parties.

V. Primary/Secondary Document Tracking System:

A) Documents under review and/or preparation for this reporting period:

None.

B) Due dates for completion of review/modification tasks:

None.

VI. Anticipated problems/delays (provide summary of problems, schedule, reason for delay, and actions taken to prevent or mitigate delay):

None.

VII. Summary of all contacts with local community, public interest groups, or state government:

DOE provided routine updates on the subproject to the Paducah Site CAB, FFA project managers, FFA senior managers, local elected officials, and/or congressional staff.

VIII. Changes in relevant personnel:

During this reporting period, Jeff Bradford became the FRNP Paducah Program Manager.

IX. Actual cost for O&M, if appropriate:

O&M activities have been incorporated into the Environmental Monitoring Program. O&M cost is not tracked separately.

FEDERAL FACILITY AGREEMENT
SEMIANNUAL REPORT
SECOND HALF OF FISCAL YEAR 2018

Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 4/1/2018–9/30/2018

SOILS OPERABLE UNIT

The Soils OU has been implemented in a phased approach consisting of remedial and removal actions.

The original scope of the Soils OU consisted of 86 SWMUs/AOCs; three inactive facilities (SWMUs 181, SWMU 40, and SWMU 19); and the soil/rubble areas that have been identified to date. The scope of the removal action for two of the three inactive facilities has been completed, except excavation of contaminated soil at the C-403 Neutralization Tank (SWMU 40). SWMU 40 will be addressed as part of the C-400 Complex OU. The scope for the soil/rubble areas also has been completed. During the development of the RI/FS Work Plan/Report, it was determined that only 63 of the 86 SWMUs/AOCs included within the original scope could be addressed under this OU, based upon accessibility. Those SWMUs/AOCs identified as inaccessible will be addressed as part of the Soils and Slabs OU scope. The Soils OU scope focuses on accessible plant surface soils (ground surface to 10 ft bgs and 16 ft bgs in the vicinity of pipelines) not associated with PGDP operations. Sequencing of the work will be determined based on OU-specific circumstances, as mutually agreed upon by the FFA parties.

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FEDERAL FACILITY AGREEMENT
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SECOND HALF OF FISCAL YEAR 2018

Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 4/1/2018–9/30/2018

SOILS OPERABLE UNIT PROJECT: Remedial Action

I. Work performed during this reporting period (including summaries of findings and any deviations from the work plan):

No activities were scheduled for this project during this reporting period.

II. Schedules of activities to be performed during the next reporting period (including projected work/crucial phases of construction):

No activities are scheduled for this project during the upcoming reporting period.

III. Identity and assigned tasks of DOE contractors for work to be performed for this project:

Reporting responsibility for the work to be performed in support of the SOU belongs to FRNP. FRNP also provides programmatic and technical support, analytical services, and business management services. SST manages the AR and the EIC for DOE.

IV. Statement of the manner and extent to which the requirements and time schedules are being met:

The requirements and schedules are being met for the SOU consistent with the SMP and as agreed to by the FFA parties.

V. Primary/Secondary Document Tracking System:

A) Documents under review and/or preparation for this reporting period:

None.

B) Due dates for completion of review/modification tasks:

None.

VI. Anticipated problems/delays (provide summary of problems, schedule, reason for delay, and actions taken to prevent or mitigate delay):

None.

VII. Summary of all contacts with local community, public interest groups, or state government:

DOE provided routine updates on the subproject to the Paducah Site CAB, FFA project managers, FFA senior managers, local elected officials, and/or congressional staff.

VIII. Changes in relevant personnel:

During this reporting period, Jeff Bradford became the FRNP Paducah Program Manager.

IX. Actual cost for O&M, if appropriate:

None.

FEDERAL FACILITY AGREEMENT
SEMIANNUAL REPORT
SECOND HALF OF FISCAL YEAR 2018

Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 4/1/2018–9/30/2018

ADDITIONAL REPORTING

Presented in this Additional Reporting section are updates for the following:

- WAGs 1 and 7 (C-746-K Landfill, TCE Spill Sites, Underground Storage Tanks, and Kentucky Ordnance Works sites);
- CRP;
- SMP;
- CERCLA Waste Disposal Alternatives Evaluation; and
- CERCLA Five-Year Review.

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FEDERAL FACILITY AGREEMENT
SEMIANNUAL REPORT
SECOND HALF OF FISCAL YEAR 2018

Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 4/1/2018–9/30/2018

PROJECT: WAGs 1 and 7 (C-746-K Landfill, TCE Spill Sites, Underground Storage Tanks, and Kentucky Ordnance Works Sites)

I. Work performed during this reporting period (including summaries of findings and any deviations from the work plan):

Continued monitoring around the C-746-K Landfill, as required by the *Record of Decision for Waste Area Groups 1 and 7 at PGDP, Paducah, Kentucky,* DOE/OR/06-1470&D3. WAGs 1 and 7 ROD requires these data to be submitted semiannually. The results of the groundwater monitoring data from May 1994 through June 30, 2018, are presented graphically in Appendix C. In April 2018, routine sampling at MW302 resulted in a TCE concentration of 5.1 ug/L, which was greater than any previous sampling results. A resample of MW302 was conducted in May 2018, and the result was undetected at the laboratory reporting limit of 1.0 ug/L. Both concentrations are included in graphs presented in Appendix C.

II. Schedules of activities to be performed during the next reporting period (including projected work/crucial phases of construction):

Monitoring will continue around C-746-K Landfill, as required by the ROD. This monitoring is conducted and reported in accordance with other site programs, such as the Environmental Monitoring Program.

III. Identity and assigned tasks of DOE contractors for work to be performed for this project:

Reporting responsibility for the work to be performed in support of WAGs 1 and 7 belongs to FRNP. FRNP also provides programmatic and technical support, analytical services, and business management services. SST manages the AR and the EIC for DOE.

IV. Statement of the manner and extent to which the requirements and time schedules are being met:

The requirements and time schedules are being met.

V. Primary/Secondary Document Tracking System:

A) Documents under review and/or preparation for this reporting period:

None.

B) Due dates for completion of review/modification tasks:

None.

VI. Anticipated problems/delays (provide summary of problems, schedule, reason for delay, and actions taken to prevent or mitigate delay):

None.

VII. Summary of all contacts with local community, public interest groups, or state government:

None.

VIII. Changes in relevant personnel:

During this reporting period, Jeff Bradford became the FRNP Paducah Program Manager.

IX. Actual cost for O&M, if appropriate:

Sampling activities for the C-746-K Landfill has been incorporated into the Environmental Monitoring Program. O&M cost is not tracked separately.

FEDERAL FACILITY AGREEMENT
SEMIANNUAL REPORT
SECOND HALF OF FISCAL YEAR 2018

Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 4/1/2018–9/30/2018

PROJECT: Community Relations Plan

I. Work performed during this reporting period (including summaries of findings and any deviations from the work plan):

Submitted on June 26, 2018, to EPA and KDEP, the 2018 revision of the Community Relations Plan under the Federal Facility Agreement at the U.S. Department of Energy Paducah Gaseous Diffusion Plant, DOE/LX/07-2413&D1. This was ahead of the June 30, 2018, deadline. This report contained the 2017 Community Survey Report conducted in September 2017.

II. Schedules of activities to be performed during the next reporting period (including projected work/crucial phases of construction):

Respond to comments received from EPA and KDEP on September 20, 2018, and September 25, 2018, respectively.

III. Identity and assigned tasks of DOE contractors for work to be performed for this project:

Reporting responsibility for the work to be performed in support of the CRP belongs to FRNP. FRNP also provides programmatic and technical support, analytical services, and business management services. SST manages the AR and the EIC for DOE.

IV. Statement of the manner and extent to which the requirements and time schedules are being met:

The requirements and time schedules are being met.

V. Primary/Secondary Document Tracking System:

A) Documents under review and/or preparation for this reporting period:

Development of the D2 *Community Relations Plan under the Federal Facility Agreement at the U.S. Department of Energy Paducah Gaseous Diffusion Plant*, DOE/LX/07-2413&D2.

B) Due dates for completion of review/modification tasks:

The D2 *Community Relations Plan under the Federal Facility Agreement at the U.S. Department of Energy Paducah Gaseous Diffusion Plant*, DOE/LX/07-2413&D2, is due to EPA and KDEP no later than November 24, 2018.

VI. Anticipated problems/delays (provide summary of problems, schedule, reason for delay, and actions taken to prevent or mitigate delay):

None.

VII. Summary of all contacts with local community, public interest groups, or state government:

DOE provided routine updates on the subproject to the Paducah Site CAB, FFA project managers, local elected officials, and/or congressional staff.

VIII. Changes in relevant personnel:

During this reporting period, Jeff Bradford became the FRNP Paducah Program Manager.

IX. Actual cost for O&M, if appropriate:

Not applicable.

FEDERAL FACILITY AGREEMENT
SEMIANNUAL REPORT
SECOND HALF OF FISCAL YEAR 2018

Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 4/1/2018–9/30/2018

PROJECT: Site Management Plan

I. Work performed during this reporting period (including summaries of findings and any deviations from the work plan):

- Held a second comment resolution meeting with EPA and KDEP on April 4, 2018, to prepare for submittal of the D2 *Site Management Plan, Paducah Gaseous Diffusion Plant, Paducah, Kentucky, Annual Revision—FY 2018*, DOE/LX/07-2418&D2, to EPA and KDEP by April 16, 2018.

- Submitted the D2 *Site Management Plan, Paducah Gaseous Diffusion Plant, Paducah, Kentucky, Annual Revision—FY 2018*, DOE/LX/07-2418&D2, to EPA and KDEP on April 16, 2018.

- Received KDEP nonconcurrence and EPA conditional concurrence on the D2 *Site Management Plan, Paducah Gaseous Diffusion Plant, Paducah, Kentucky, Annual Revision—FY 2018*, DOE/LX/07-2418&D2, on May 16, 2018. KDEP's letter of nonconcurrence served to invoke informal dispute resolution on the D2 FY 2018 SMP.

- Issued a notification of invocation of informal dispute resolution concerning 35 of the 37 EPA conditions on June 15, 2018. The FFA parties met on multiple dates during the informal dispute resolution period and were able to reach resolution on 14 of the 35 conditions that were elevated for informal dispute resolution.

- Received KDEP's letter elevating the informal dispute to the DRC on July 30, 2018. DOE issued its written statement of formal dispute resolution elevating 21 of the 35 EPA conditions to the DRC for resolution on August 10, 2018.

- Received KDEP's letter formalizing the verbal agreement among the FFA parties to align the period of formal dispute (at the DRC level) on August 27, 2018.

- Processed a minor modification to the FFA, documenting the FFA parties September 7, 2018, verbal agreement to extend the time period for consultation among the members of the DRC by 7 days from September 7, 2018, to September 14, 2018, to resolve the dispute and issue a written decision (formal letter providing the signed modification form was issued on September 24, 2018).

- Received e-mail notification on September 17, 2018, that EPA and KDEP DRC members would not be issuing a joint written decision.

- DOE, as the disputing party, transmitted DOE's August 10, 2018, "Written Statement Initiating Formal Dispute Resolution," to the SEC for resolution on September 20, 2018.

- Received KDEP's letter elevating the formal dispute to the SEC on September 20, 2018.

II. Schedules of activities to be performed during the next reporting period (including projected work/crucial phases of construction):

- Develop and finalize an MOA for resolution of the formal dispute for the D2 *Site Management Plan, Paducah Gaseous Diffusion Plant, Paducah, Kentucky, Annual Revision—FY 2018*, DOE/LX/07-2418&D2, for SEC review, approval, and signature.

- Finalize and submit the D2/R1 *Site Management Plan, Paducah Gaseous Diffusion Plant, Paducah, Kentucky, Annual Revision—FY 2018*, DOE/LX/07-2418&D2/R1, to EPA and KDEP for approval, consistent with the terms of the MOA for resolution of formal dispute.

- Develop and submit the D1 *Site Management Plan, Paducah Gaseous Diffusion Plant, Paducah, Kentucky, Annual Revision—FY 2019* to EPA and KDEP, consistent with terms of the MOA for resolution of formal dispute.

III. Identity and assigned tasks of DOE contractors for work to be performed for this project:

Reporting responsibility for the work to be performed in support of the SMP belongs to FRNP. FRNP also provides programmatic and technical support, analytical services, and business management services. SST manages the AR and the EIC for DOE.

IV. Statement of the manner and extent to which the requirements and time schedules are being met:

FFA Section XVIII requires issuance of the SMP by November 15 of each year. (Note: the submittal of the FY 2019 SMP has been impacted by the dispute of the D2 FY 2018 SMP and will be issued in accordance with the terms of the MOA).

V. Primary/Secondary Document Tracking System:

A) Documents under review and/or preparation for this reporting period:

- The D2 *Site Management Plan, Paducah Gaseous Diffusion Plant, Paducah, Kentucky, Annual Revision—FY 2018*, DOE/LX/07-2418&D1, has been under development and review during this reporting period.

- The D2/R1 *Site Management Plan, Paducah Gaseous Diffusion Plant, Paducah, Kentucky, Annual Revision—FY 2018*, DOE/LX/07-2418&D2/R1, has been under development during this reporting period.

- The MOA for resolution of the formal dispute for the D2 *Site Management Plan, Paducah Gaseous Diffusion Plant, Paducah, Kentucky, Annual Revision—FY 2018*, DOE/LX/07-2418&D2, has been under development during this reporting period.

B) Due dates for completion of review/modification tasks:

- D2/R1 *Site Management Plan, Paducah Gaseous Diffusion Plant, Paducah, Kentucky, Annual Revision—FY 2018*, DOE/LX/07-2418&D2/R1, is due to EPA and KDEP consistent with the terms of the MOA for resolution of formal dispute.

- D1 *Site Management Plan, Paducah Gaseous Diffusion Plant, Paducah, Kentucky, Annual Revision—FY 2019* is due to EPA and KDEP consistent with terms of the MOA for resolution of formal dispute.

VI. Anticipated problems/delays (provide summary of problems, schedule, reason for delay, and actions taken to prevent or mitigate delay):

The project is experiencing significant cost and schedule delays as a result of informal and formal dispute resolution. To date the FFA parties have not reached resolution, and the FY 2018 SMP has not been finalized. In addition, because development of the FY 2019 SMP is work affected by the dispute subject to Section XXV.B.7 of the FFA, the D1 FY 2019 SMP will not be submitted by November 15, 2018, as required by FFA Section XVIII. Rather, the D1 FY 2019 SMP will be issued consistent with the terms of the MOA for resolution of formal dispute on the D2 FY 2018 SMP.

VII. Summary of all contacts with local community, public interest groups, or state government:

DOE provided routine updates on the subproject to the Paducah Site CAB, FFA project managers, FFA senior managers, local elected officials, and/or congressional staff.

VIII. Changes in relevant personnel:

During this reporting period, Jeff Bradford became the FRNP Paducah Program Manager.

IX. Actual cost for O&M, if appropriate:

Not applicable.

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FEDERAL FACILITY AGREEMENT
SEMIANNUAL REPORT
SECOND HALF OF FISCAL YEAR 2018

Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 4/1/2018–9/30/2018

PROJECT: CERCLA Waste Disposal Alternatives Evaluation

I. Work performed during the reporting period (including summaries of findings and any deviations from the work plan):

- Following resolution of the dispute on February 7, 2018, the *Remedial Investigation/Feasibility Study Report for CERCLA Waste Disposal Alternatives Evaluation at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-0244&D2/R1, was issued to EPA and KDEP on May 7, 2018, for review and approval.

- EPA issued conditions on the *Remedial Investigation/Feasibility Study Report for CERCLA Waste Disposal Alternatives Evaluation at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-0244&D2/R1 version on June 6, 2018. KDEP issued conditional approval of the D2/R1 version on June 7, 2018.

- Incorporated the conditions and issued the revised *Remedial Investigation/Feasibility Study Report for CERCLA Waste Disposal Alternatives Evaluation at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-0244&D2/R2, to EPA and KDEP on July 2, 2018, for review and approval.

- KDEP issued approval of the *Remedial Investigation/Feasibility Study Report for CERCLA Waste Disposal Alternatives Evaluation at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-0244&D2/R2 version on July 6, 2018. EPA issued approval of the *Remedial Investigation/Feasibility Study Report for CERCLA Waste Disposal Alternatives Evaluation at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-0244&D2/R2 version on July 10, 2018.

II. Schedules of activities to be performed during the next reporting period (including projected work/crucial phases of construction):

No activities are scheduled for this project during the upcoming reporting period.

III. Identity and assigned tasks of DOE contractors for work to be performed for this project:

Reporting responsibility for the work to be performed in support of CERCLA waste disposal belongs to FRNP. FRNP also provides programmatic and technical support, analytical services, and business management services. SST manages the AR and the EIC for DOE.

IV. Statement of the manner and extent to which the requirements and time schedules are being met:

The requirements and schedules are being met.

V. Primary/Secondary Document Tracking System:

A) Documents under review and/or preparation for this reporting period:

- The *Remedial Investigation/Feasibility Study Report for CERCLA Waste Disposal Alternatives Evaluation at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-0244&D2/R1, was issued and reviewed by EPA and KDEP during this reporting period.

- The *Remedial Investigation/Feasibility Study Report for CERCLA Waste Disposal Alternatives Evaluation at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-0244&D2/R2, was issued and reviewed/approved by EPA and KDEP during this reporting period.

B) Due dates for completion of review/modification tasks:

None.

VI. Anticipated problems/delays (provide summary of problems, schedule, reason for delay, and actions taken to prevent or mitigate delay):

None.

VII. Summary of all contacts with local community, public interest groups, or state government:

DOE has provided routine updates on the subproject to the Paducah Site CAB, FFA project managers, FFA senior managers, local elected officials, and/or congressional staff.

VIII. Changes in relevant personnel:

During this reporting period, Jeff Bradford became the FRNP Paducah Program Manager.

IX. Actual cost for O&M, if appropriate:

Not applicable.

FEDERAL FACILITY AGREEMENT
SEMIANNUAL REPORT
SECOND HALF OF FISCAL YEAR 2018

Facility: Paducah Gaseous Diffusion Plant
Plant EPA I.D. No.: KY8-890-008-982
Reporting Period: 4/1/2018–9/30/2018

PROJECT: CERCLA Five-Year Review

I. Work performed during this reporting period (including summaries of findings and any deviations from the work plan):

C-400 Vapor Intrusion

- Issued the C-400 Vapor Intrusion Study Addendum to the *Five-Year Review for Remedial Actions at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky,* DOE/LX/07-1289&D2/R1/A3 to EPA and KDEP on May 29, 2018. EPA requested a 30-day extension, making comments due on September 26, 2018. Received comments from both agencies on September 26, 2018.

- Developed and submitted the *2018 Five-Year Review for Remedial Actions at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2426&D1, on July 25, 2018.

II. Schedules of activities to be performed during the next reporting period (including projected work/crucial phases of construction):

- Develop and submit the *C-400 Vapor Intrusion Study Work Plan to Support the Additional Actions for the CERCLA Five-Year Review at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2403&D2/R2/A3/R1.

- Develop and submit the *2018 Five-Year Review for Remedial Actions at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2426&D2.

III. Identity and assigned tasks of DOE contractors for work to be performed for this project:

Reporting responsibility for the work to be performed in support of the Five-Year Review belongs to FRNP. FRNP also provides programmatic and technical support, analytical services, and business management services. SST manages the AR and the EIC for DOE.

IV. Statement of the manner and extent to which the requirements and time schedules are being met:

The requirements and time schedules are being met; however, extensions related to the *Five-Year Review for Remedial Actions at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky,* DOE/LX/07-1289&D2/R1/A2/R1, and the *C-400 Vapor Intrusion Study Work Plan to Support the Additional Actions for the CERCLA Five-Year Review at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-2403&D2, have resulted in an overall impact to the schedule for the Five-Year Review.

V. Primary/Secondary Document Tracking System:

A) Documents under review and/or preparation for this reporting period:

- Developed and submitted the C-400 Vapor Intrusion Study Addendum to the Five-Year Review for Remedial Actions at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky DOE/LX/07-2403&D2/R1/A3.

- Developed and submitted the 2018 Five-Year Review for Remedial Actions at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky, DOE/LX/07-2426&D1.

B) Due dates for completion of review/modification tasks:

- The C-400 Vapor Intrusion Study Addendum to the *Five-Year Review for Remedial Actions at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky,* DOE/LX/07-1289&D2/R1/A3/R1, is due to EPA and Kentucky no later than November 10, 2018.

- Comments on the 2018 *Five-Year Review for Remedial Actions at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky,* DOE/LX/07-2426&D1, are due within 90 days of issuance or October 23, 2018.

VI. Anticipated problems/delays (provide summary of problems, schedule, reason for delay, and actions taken to prevent or mitigate delay):

None.

VII. Summary of all contacts with local community, public interest groups, or state government:

DOE provided routine updates on the subproject to the Paducah Site CAB, FFA project managers, FFA senior managers, local elected officials, and/or congressional staff.

VIII. Changes in relevant personnel:

During this reporting period, Jeff Bradford became the FRNP Paducah Program Manager.

IX. Actual cost for O&M, if appropriate:

Not applicable.

APPENDIX A

NORTHEAST AND NORTHWEST PLUME WATER WITHDRAWAL REPORTS

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Table A.1. Northeast Plume Containment System Water Withdrawal Reporting Form (Gallons of Water Pumped)

Day	April 2018	May 2018	June 2018	July 2018	August 2018	September 2018
1	375,021	300,614	382,808	229,536	276,357	253,273
2	375,022	285,024	382,808	229,533	226,167	253,273
3	392,364	304,410	382,808	246,939	246,908	253,273
4	379,952	245,827	382,804	251,441	246,908	253,270
5	387,921	245,827	378,326	251,440	246,908	242,903
6	400,326	245,827	389,450	250,889	246,906	259,235
7	400,326	245,826	388,423	250,889	109,748	249,940
8	400,326	214,837	389,021	250,889	88,195	249,940
9	400,326	254,047	389,021	250,887	102,347	249,940
10	376,408	258,583	389,021	246,853	100,846	249,939
11	385,833	376,961	389,023	256,283	100,846	250,940
12	407,491	376,961	486,491	256,295	100,846	259,499
13	390,519	376,961	280,936	230,945	100,846	249,211
14	390,519	376,957	397,603	230,945	113,296	230,626
15	390,519	383,862	253,198	230,945	201,008	230,626
16	390,519	388,208	253,198	230,941	251,348	230,626
17	401,990	389,894	253,198	246,758	252,043	230,624
18	389,695	386,056	253,196	252,099	252,043	259,836
19	406,443	386,056	263,543	257,233	252,043	231,007
20	398,576	386,056	251,919	251,869	252,039	272,201
21	398,576	386,056	252,617	251,869	253,353	252,378
22	398,576	378,016	253,417	251,869	258,067	252,378
23	398,574	392,067	253,417	251,867	244,940	252,378
24	262,224	383,922	253,417	250,009	253,712	252,374
25	283,593	379,726	253,413	247,776	253,712	244,584
26	284,973	379,726	244,017	252,918	253,712	253,041
27	320,254	379,726	223,524	252,743	253,708	253,691
28	320,254	379,726	237,617	252,743	246,477	252,611
29	320,254	379,723	229,536	252,743	256,370	252,611
30	320,252	356,128	229,536	252,742	249,332	252,611
31		416,500		252,748	253,273	
Monthly Total	11,147,626	10,640,110	9,367,306	7,673,636	6,544,304	7,478,839
Daily Average	371,588	343,229	312,244	247,537	211,107	249,294

Total =	52,851,821
Average =	288,808

Table A.2. Northwest Plume Groundwater System Water Withdrawal Reporting Form (Gallons of Water Pumped)

Day	April 2018	May 2018	June 2018	July 2018	August 2018	September 2018
1	286,874	290,580	288,753	285,123	282,440	284,654
2	286,874	285,050	288,753	285,121	265,070	284,654
3	250,620	303,030	288,753	289,220	288,630	284,654
4	273,740	283,538	288,751	286,615	288,630	284,654
5	284,710	283,538	286,490	286,615	288,630	277,830
6	288,601	283,538	288,070	288,986	288,630	293,270
7	288,601	283,536	288,290	288,986	277,810	283,205
8	288,601	287,900	288,173	288,986	304,770	283,205
9	288,597	287,470	288,173	288,982	270,210	283,205
10	272,750	287,620	288,173	280,390	286,026	283,205
11	286,420	290,100	288,171	293,010	286,026	283,430
12	284,770	290,100	360,440	239,650	286,026	290,230
13	286,416	290,100	212,330	270,240	286,022	287,200
14	286,416	290,100	273,560	270,240	295,770	263,573
15	286,416	277,310	287,613	270,240	274,050	263,573
16	286,412	297,520	287,613	270,240	286,160	263,573
17	291,860	287,910	287,613	284,050	286,488	263,571
18	284,040	284,540	287,611	286,140	286,488	285,800
19	276,890	284,540	255,150	283,070	286,488	281,780
20	258,768	284,540	288,840	286,068	286,486	268,260
21	258,768	284,540	284,820	286,068	285,500	267,603
22	258,768	299,980	290,775	286,068	293,460	267,603
23	258,766	276,060	290,775	286,066	275,530	267,603
24	268,130	278,640	290,775	289,190	287,118	267,601
25	289,290	286,596	290,775	283,610	287,118	247,340
26	280,320	286,596	280,180	287,620	287,118	283,280
27	286,838	286,596	132,770	287,805	287,116	290,370
28	286,838	286,596	272,300	287,805	282,720	283,808
29	286,838	286,596	285,123	287,805	288,150	283,808
30	286,836	276,000	285,123	287,805	283,940	283,808
31		255,380		285,940	284,654	
Monthly Total	8,399,768	8,856,140	8,414,736	8,777,754	8,843,274	8,336,350
Daily Average	279,992	285,682	280,491	283,153	285,267	277,787

Total =	51,628,022
Average =	282,120

APPENDIX B

NORTHEAST PLUME AND NORTHWEST PLUME GRAPHS, DATA, AND MAPS (FIGURES B.1 THROUGH B.29)

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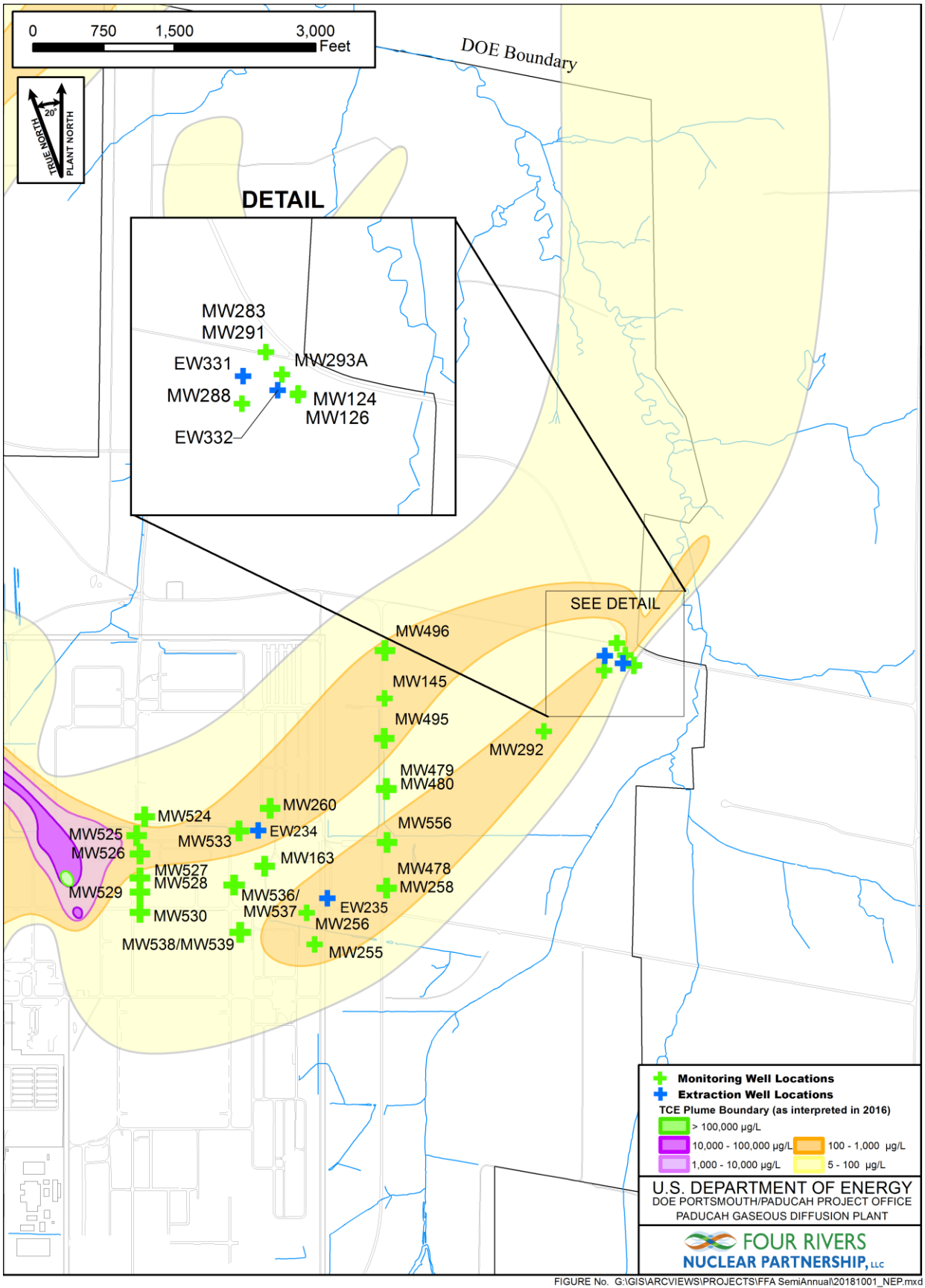


Figure B.1. Northeast Plume Groundwater Wells and Extraction Wells

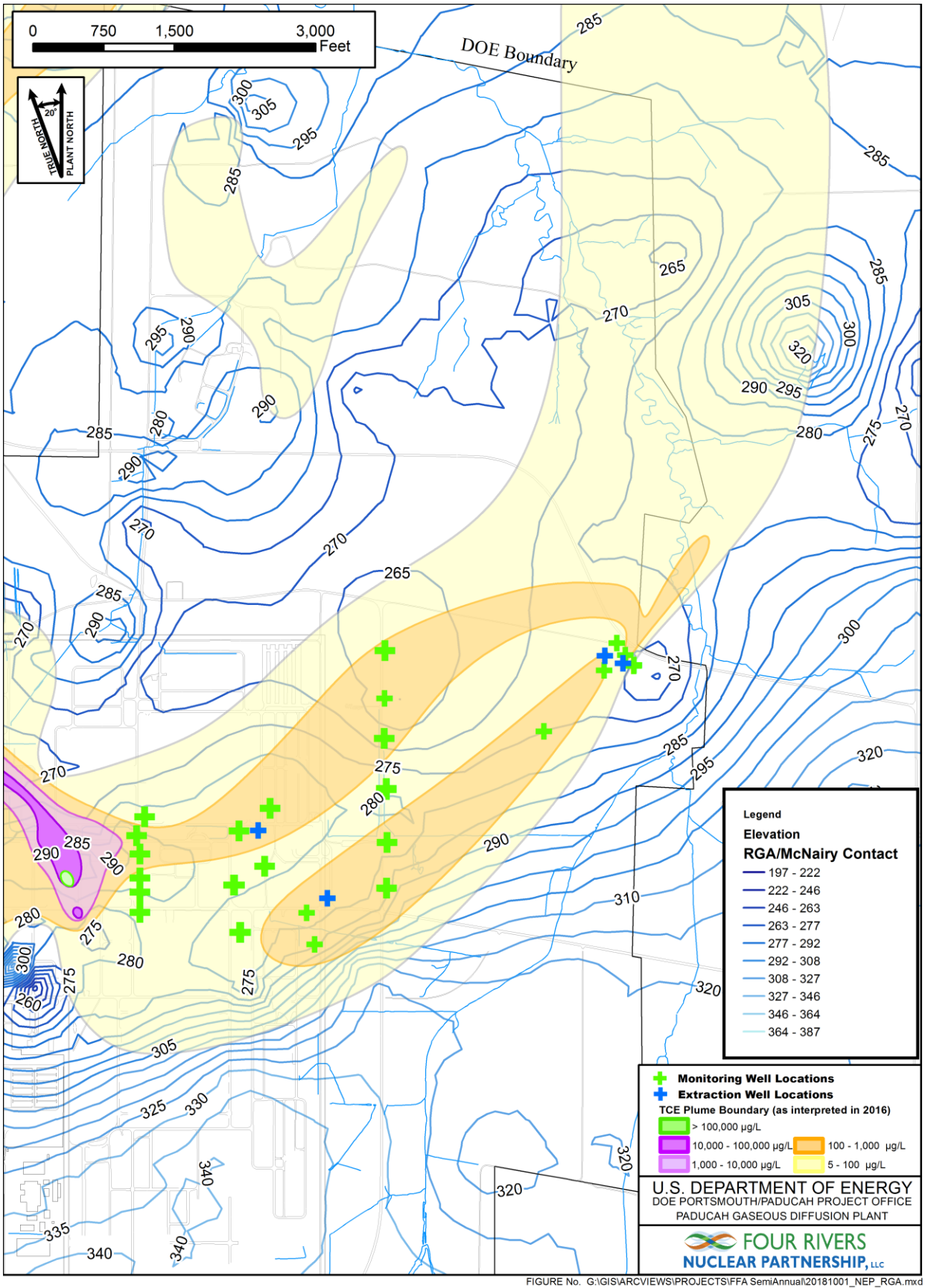
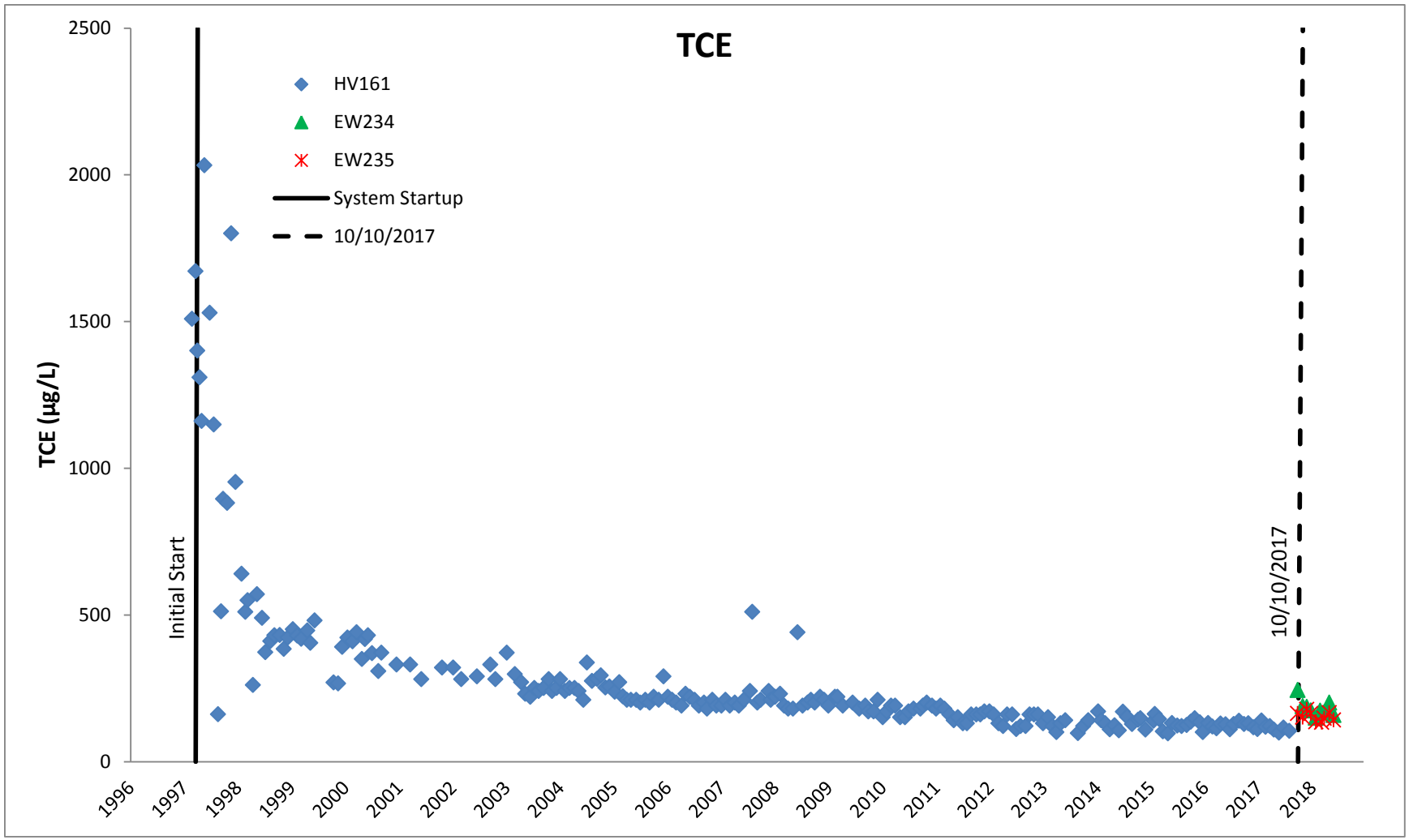
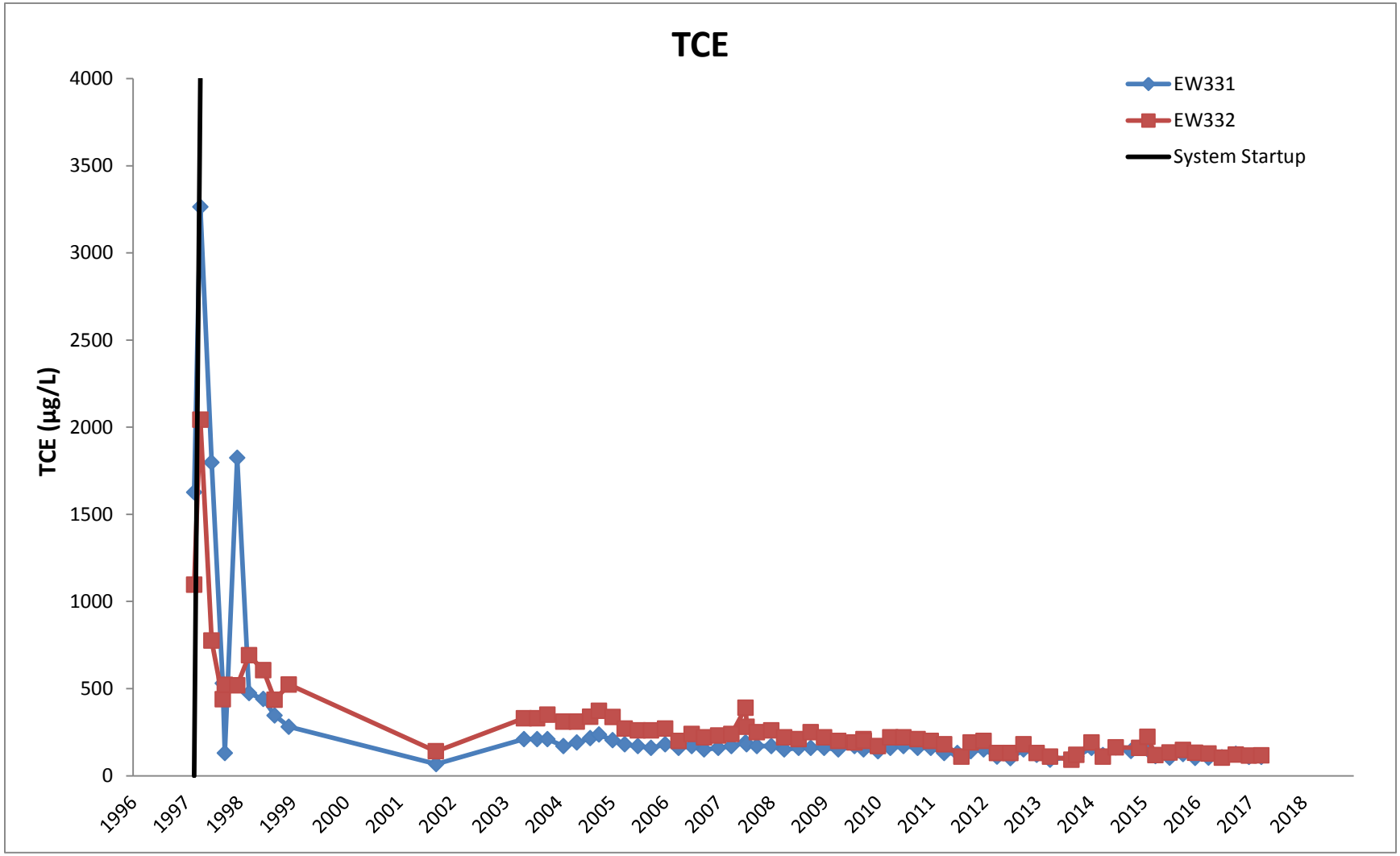


Figure B.2. Northeast Plume with McNairy Topography



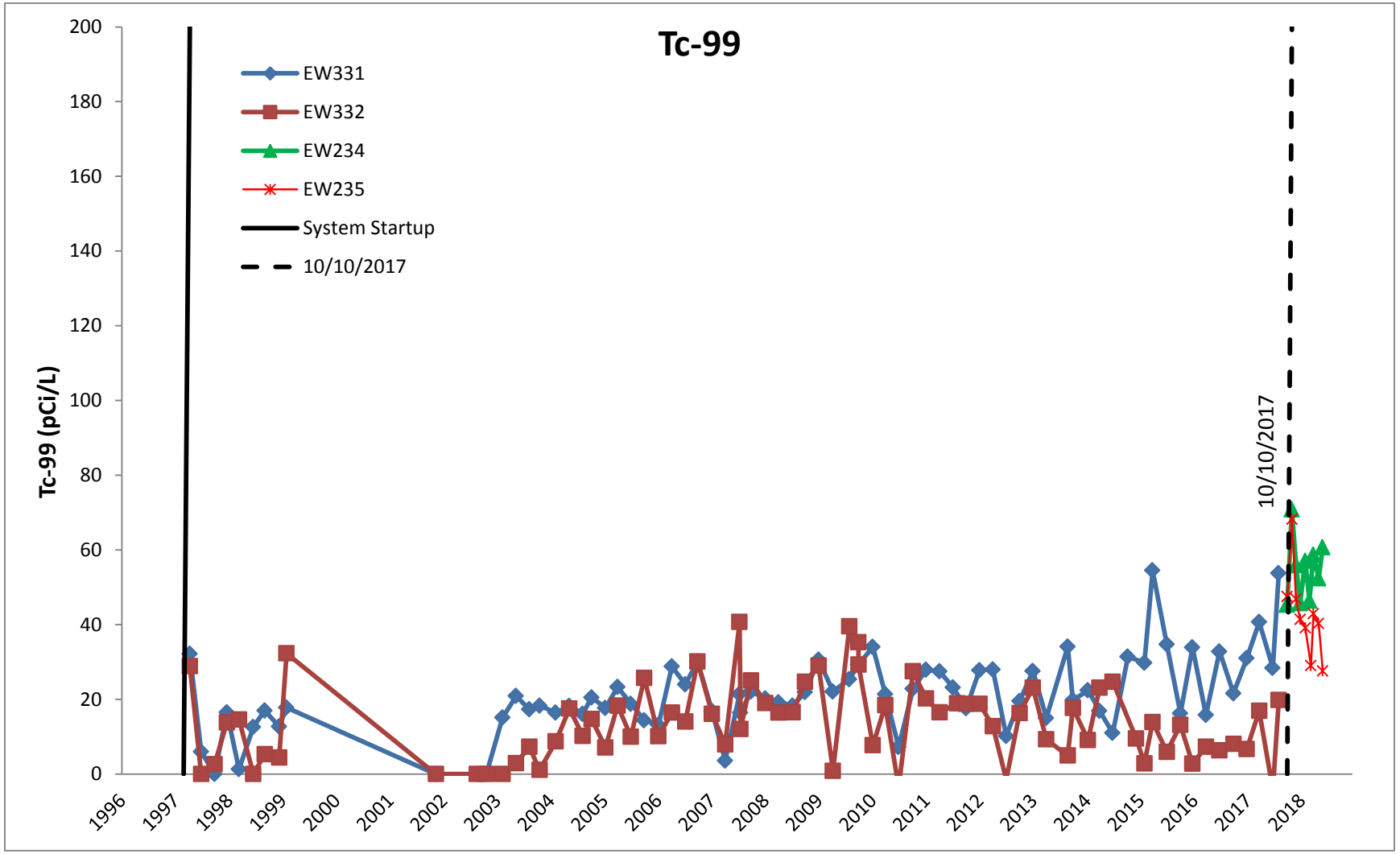
NOTE: Data rejected by validation or assessment have not been graphed.

Figure B.3. Northeast Plume Containment System Influent TCE Concentrations



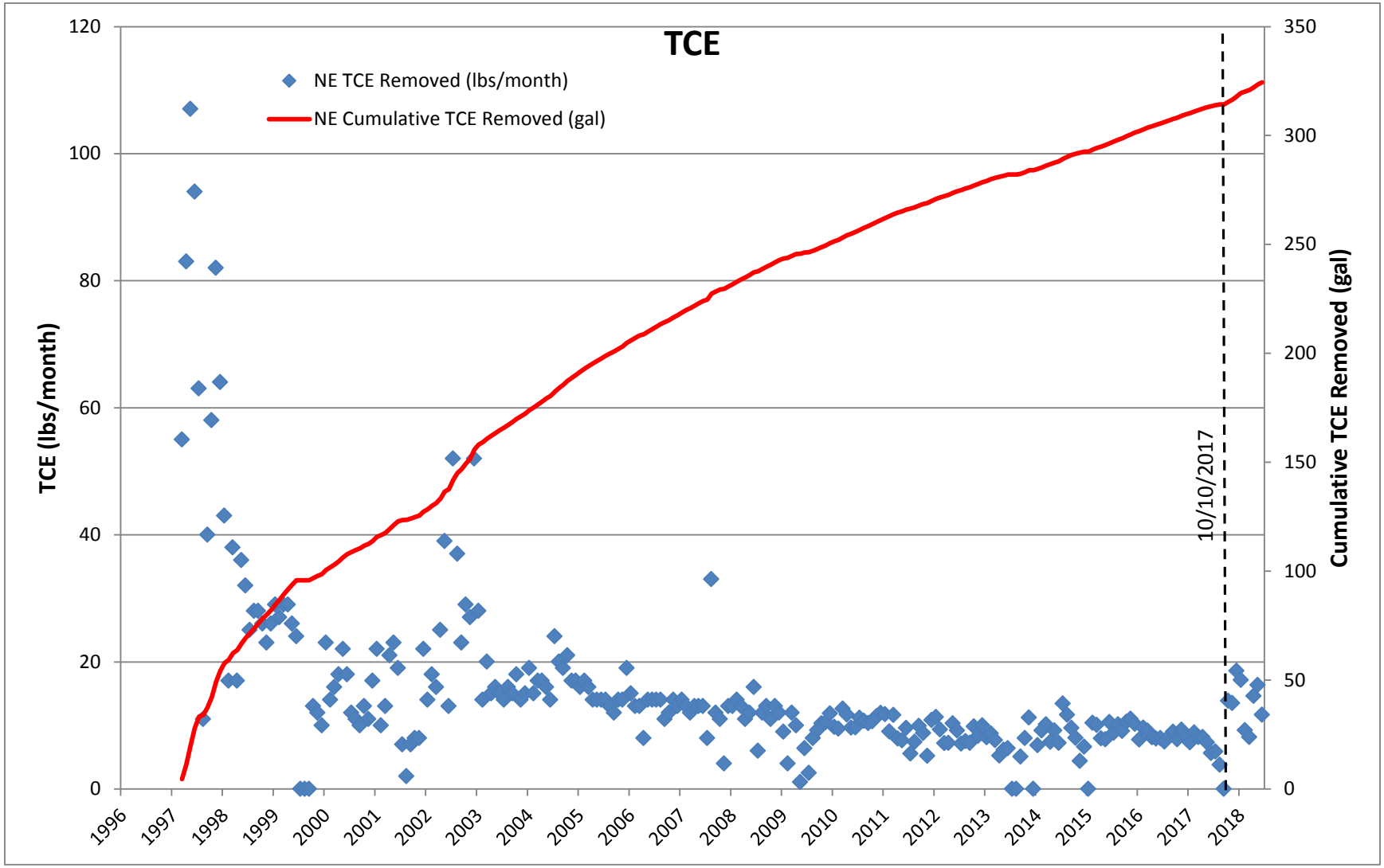
NOTE: Data rejected by validation or assessment have not been graphed.

Figure B.4. Northeast Plume—TCE Concentrations in Extraction Wells (before 10/10/2017)



NOTE: Data rejected by validation or assessment have not been graphed.

Figure B.5. Northeast Plume—Tc-99 Activities in Extraction Wells



NOTE: Data rejected by validation or assessment are not included on the graph.

Figure B.6. Northeast Plume Containment System TCE Removed

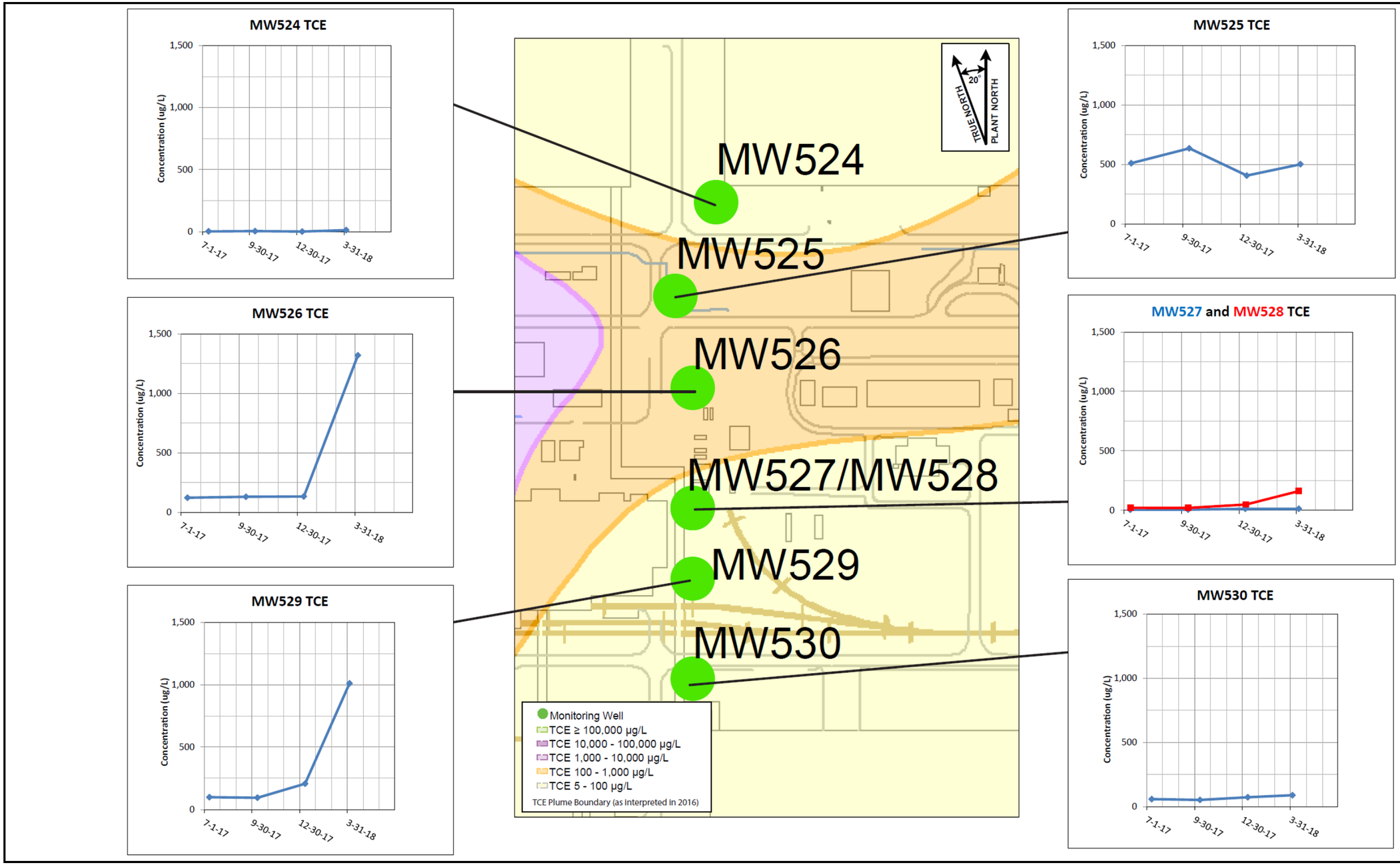


Figure B.7. Northeast Plume – Upgradient Transect Wells – TCE Trends

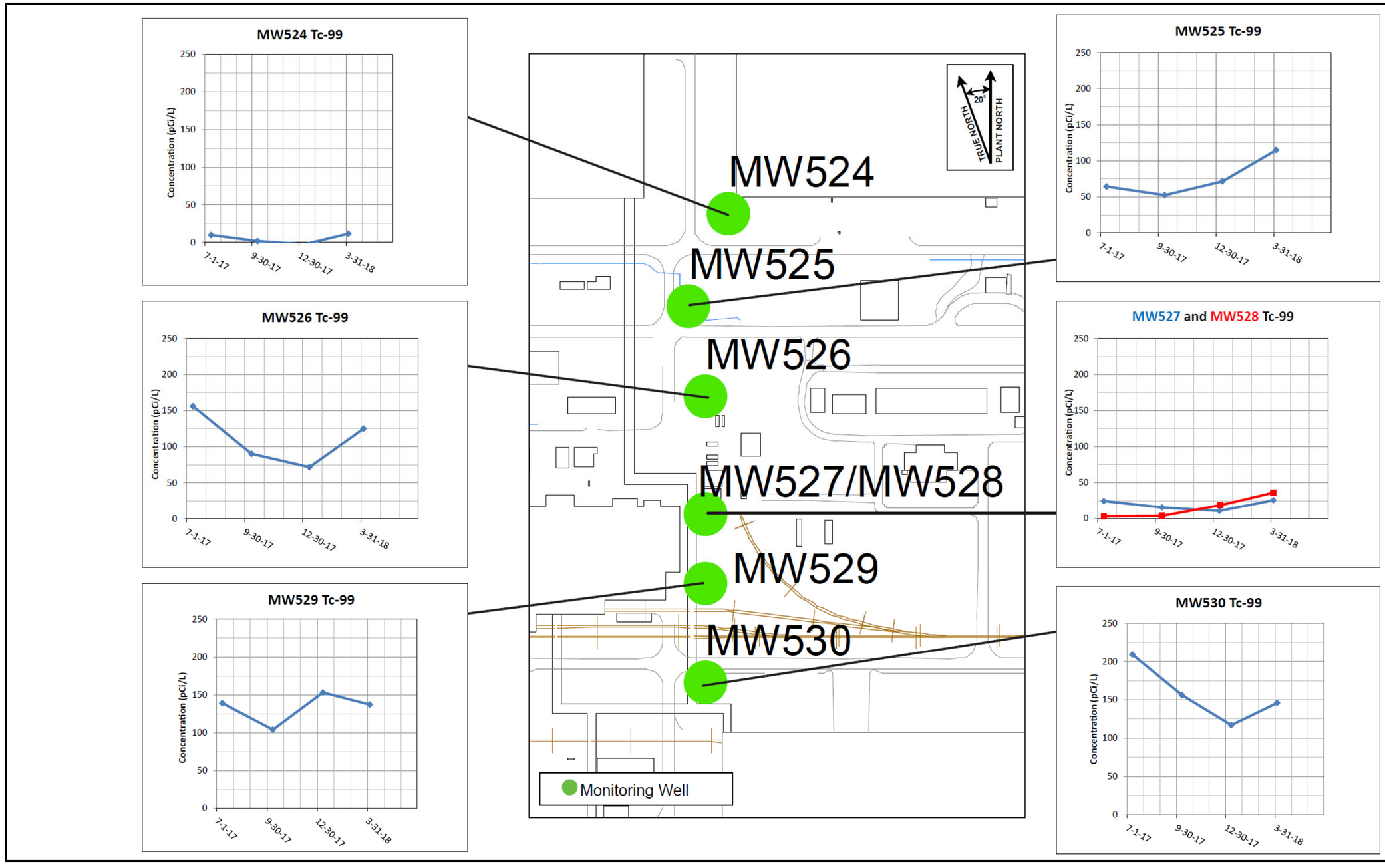


Figure B.8. Northeast Plume - Upgradient Transect Wells – Tc-99 Trends

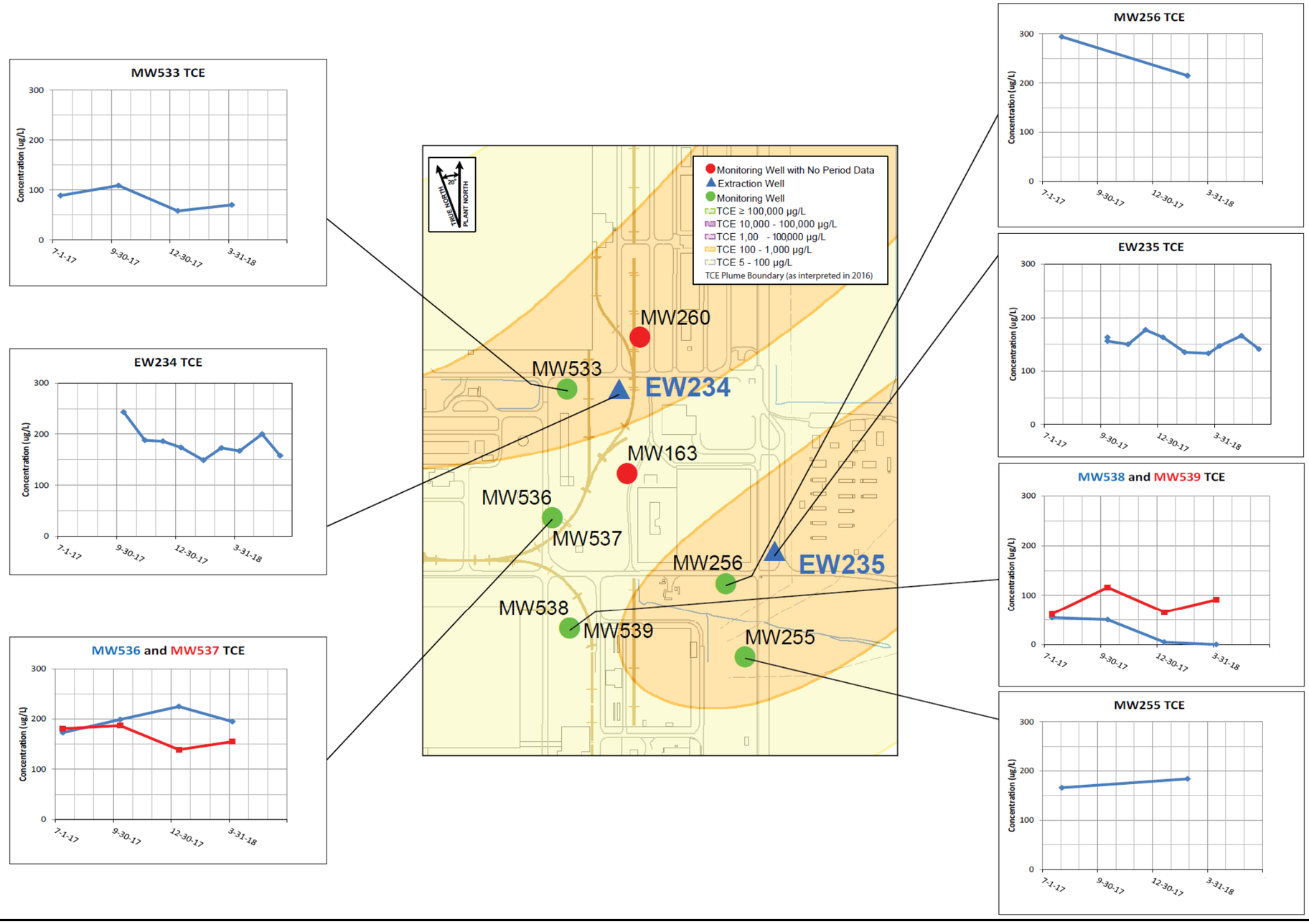


Figure B.9. Northeast Plume – Monitoring Wells near Extraction Wells – TCE Trends

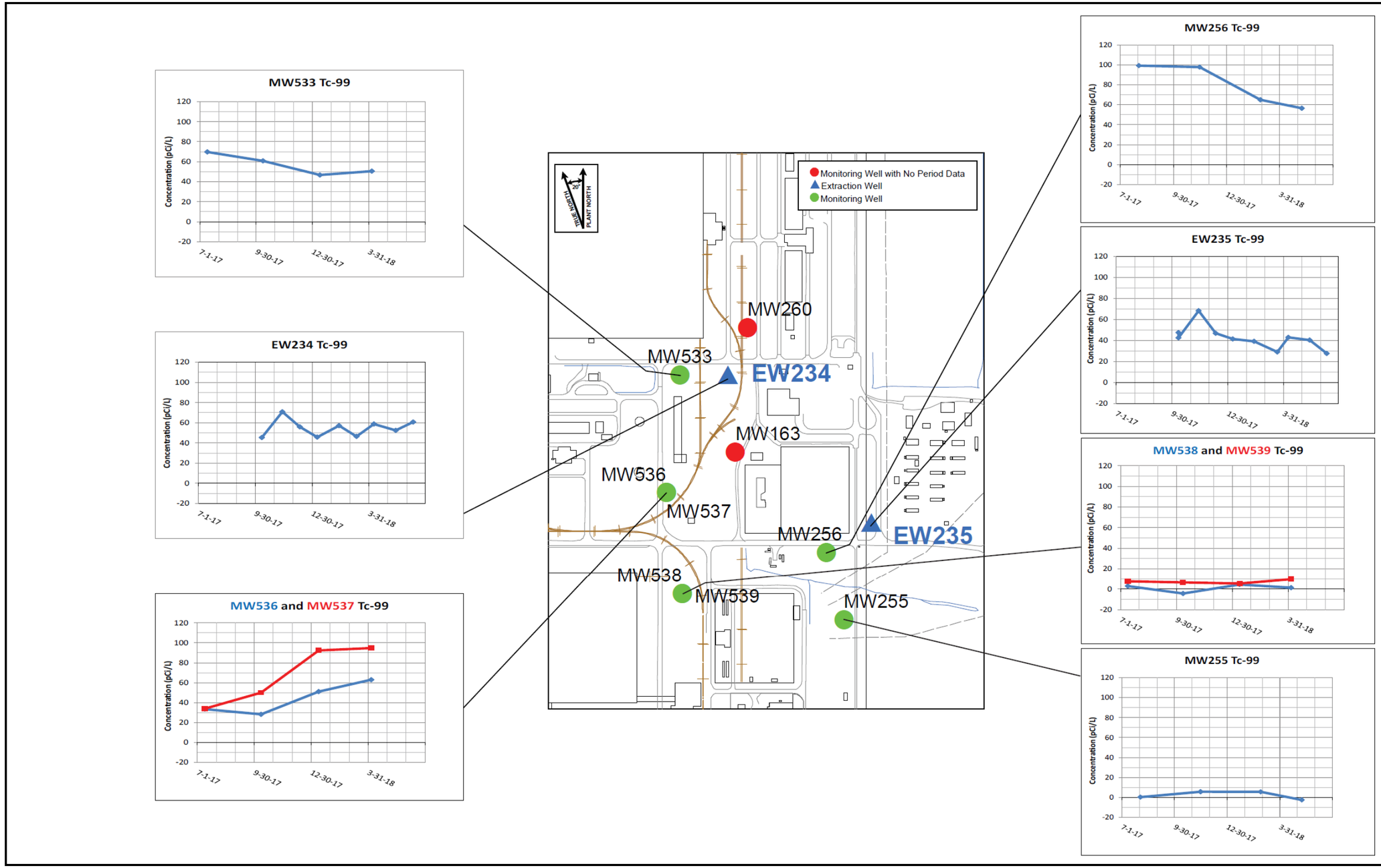
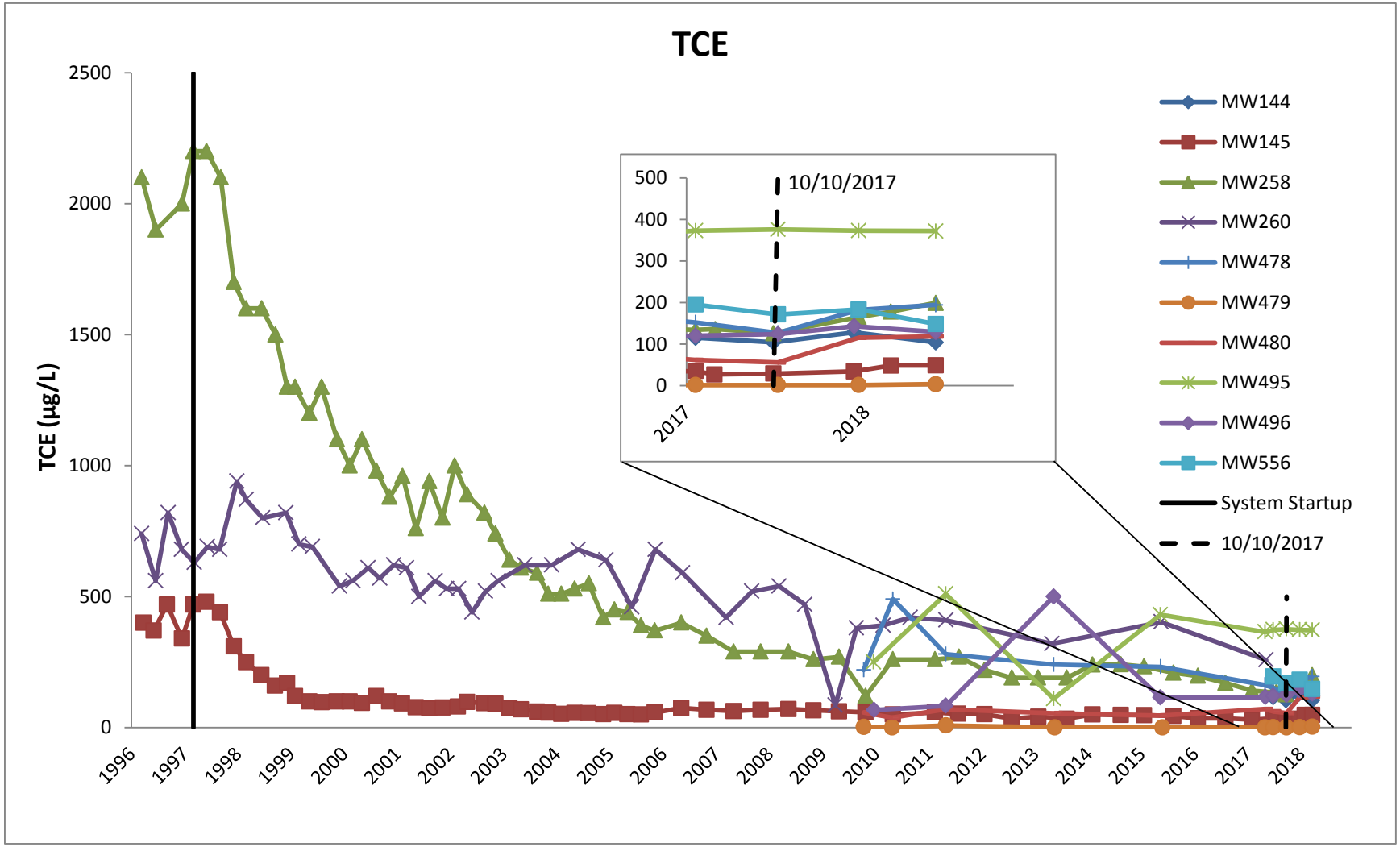
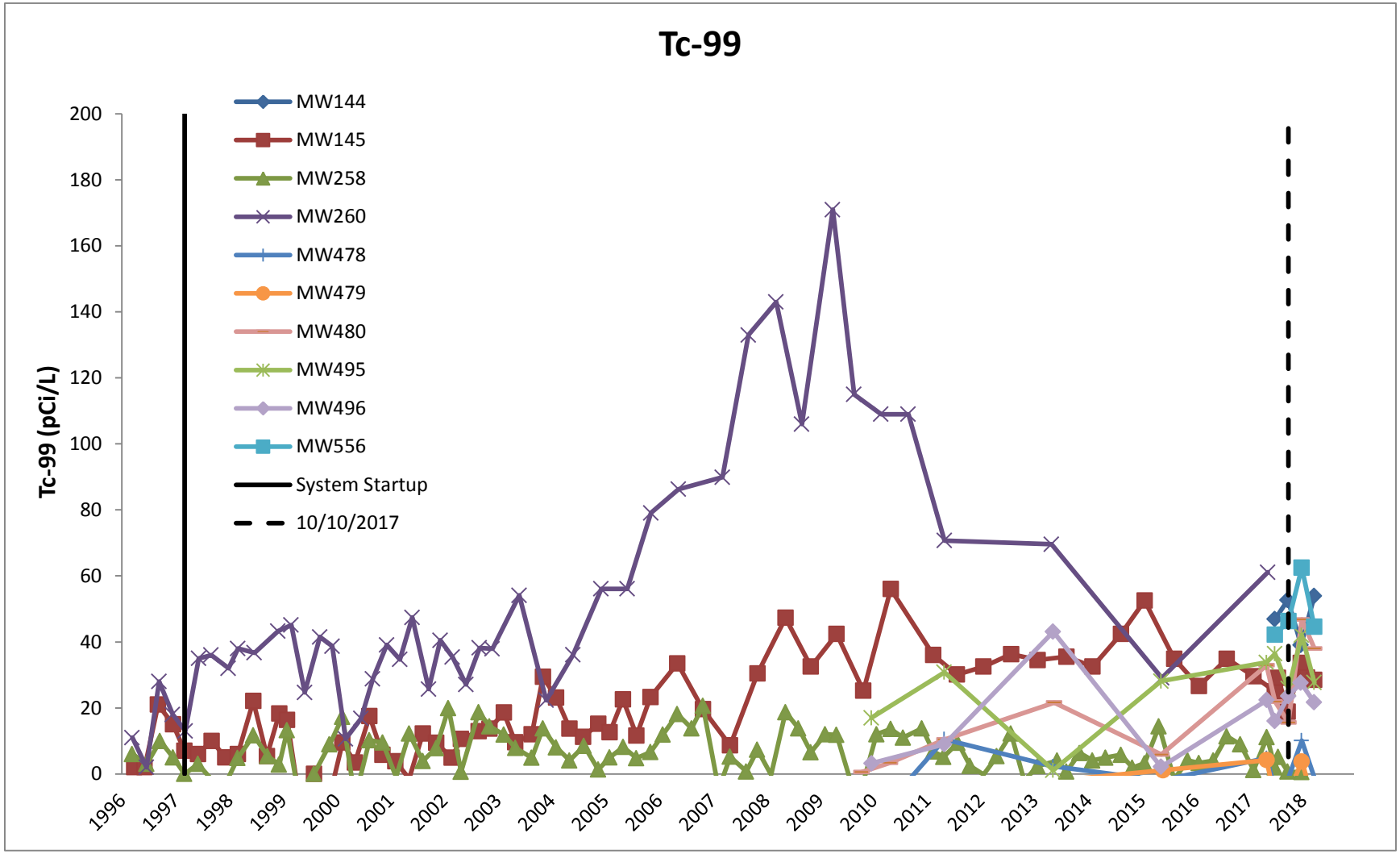


Figure B.10. Northeast Plume - Monitoring Wells near Extraction Wells – Tc-99 Trends



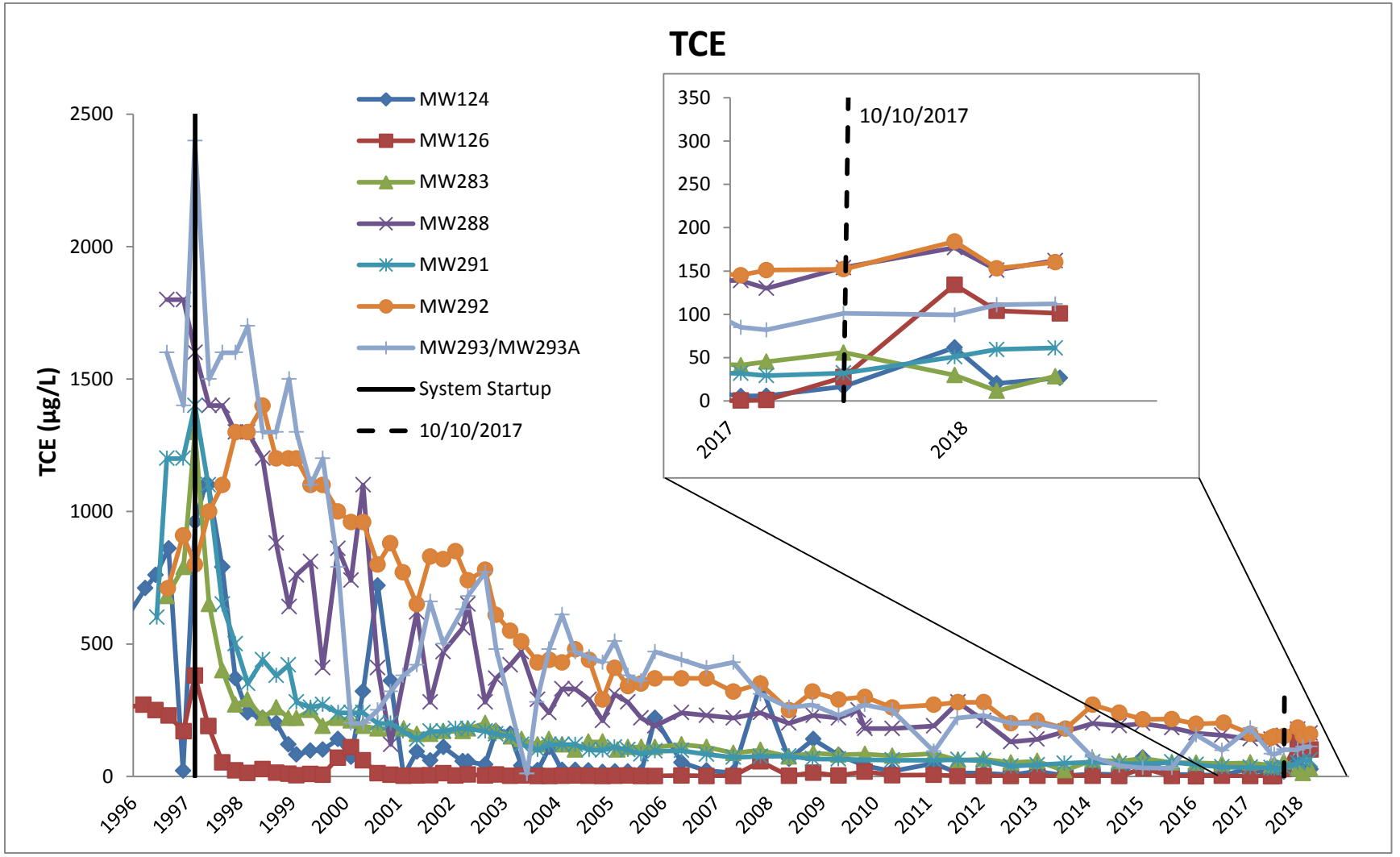
NOTE: Data rejected by validation or assessment have not been graphed.

Figure B.11. Northeast Plume—TCE Concentrations in Downgradient Wells



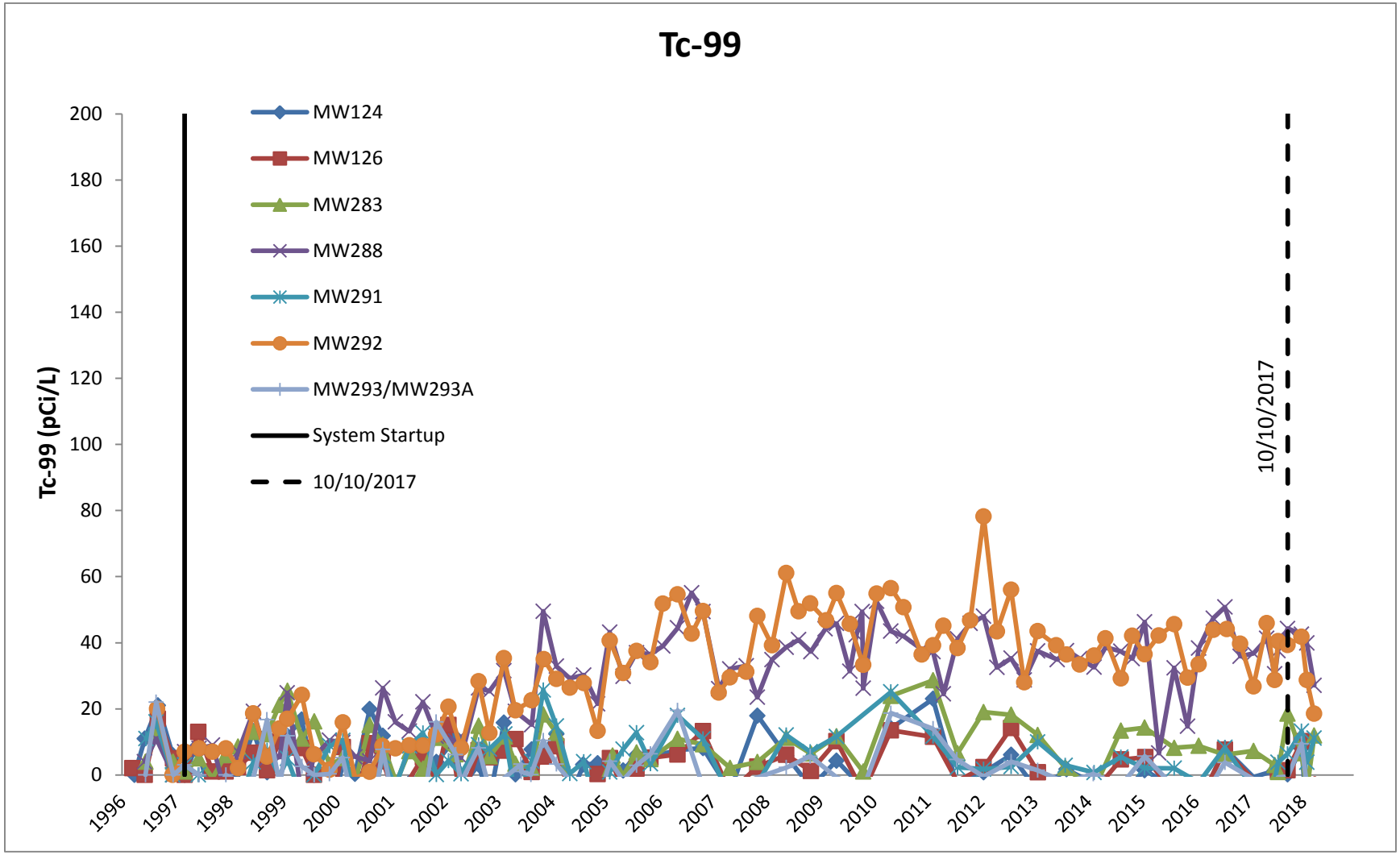
NOTE: Data rejected by validation or assessment have not been graphed.

Figure B.12. Northeast Plume—Tc-99 Activities in Downgradient Wells



NOTE: Data rejected by validation or assessment have not been graphed.

Figure B.13. Northeast Plume—TCE Concentrations in Distal Downgradient Wells



NOTE: Data rejected by validation or assessment have not been graphed.

Figure B.14. Northeast Plume—Tc-99 Activities in Distal Downgradient Wells

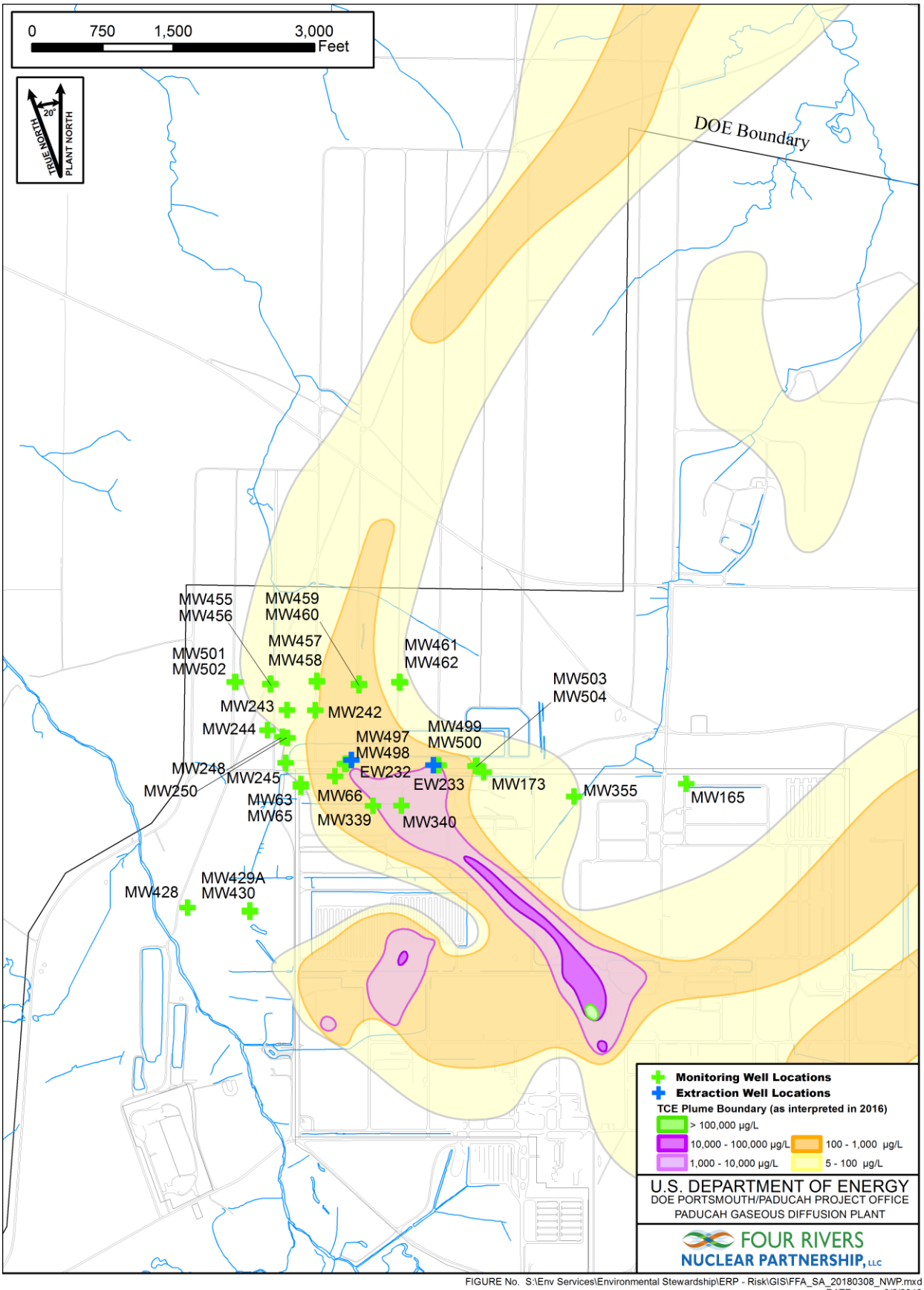


Figure B.15. Northwest Plume Groundwater Wells

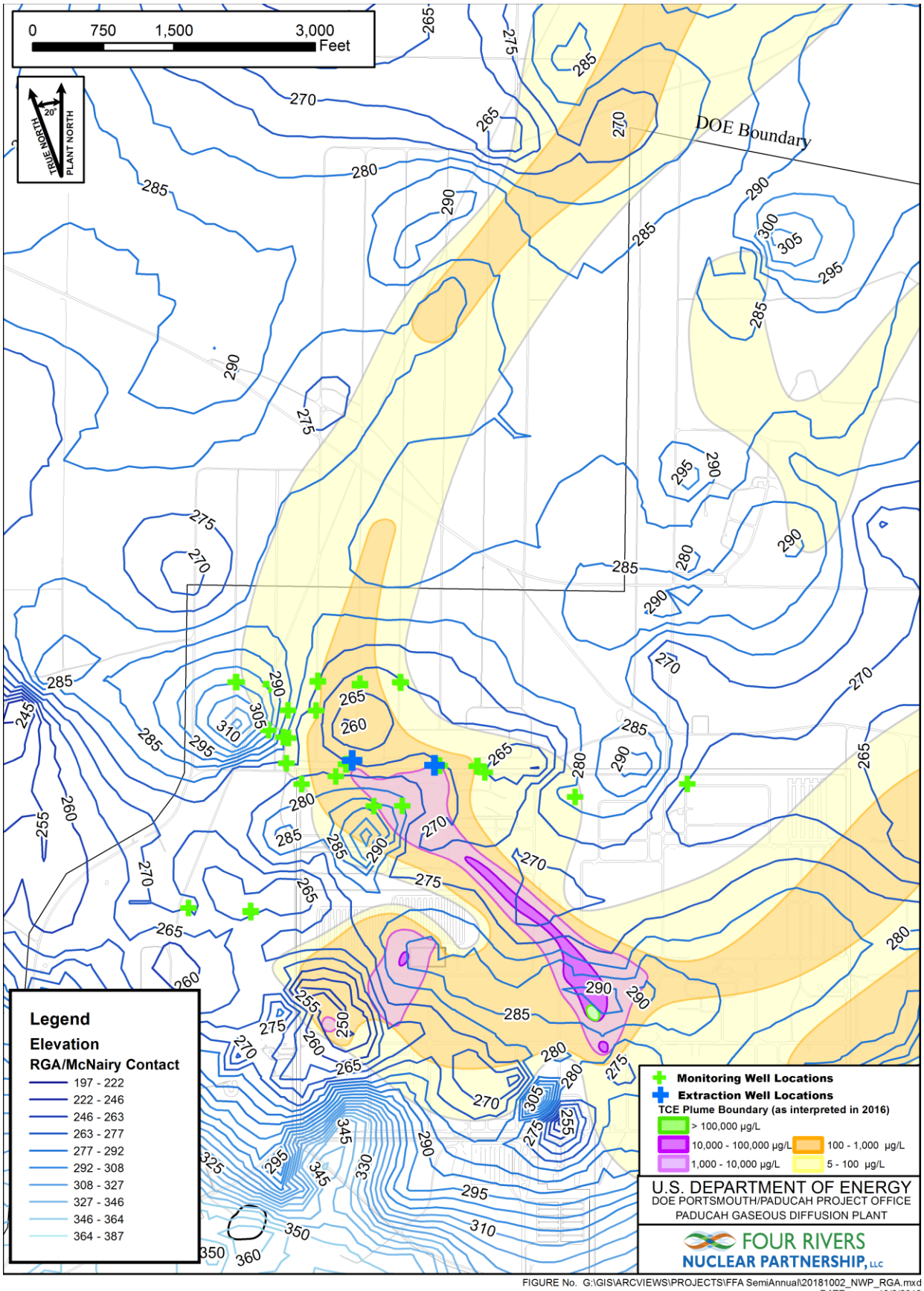
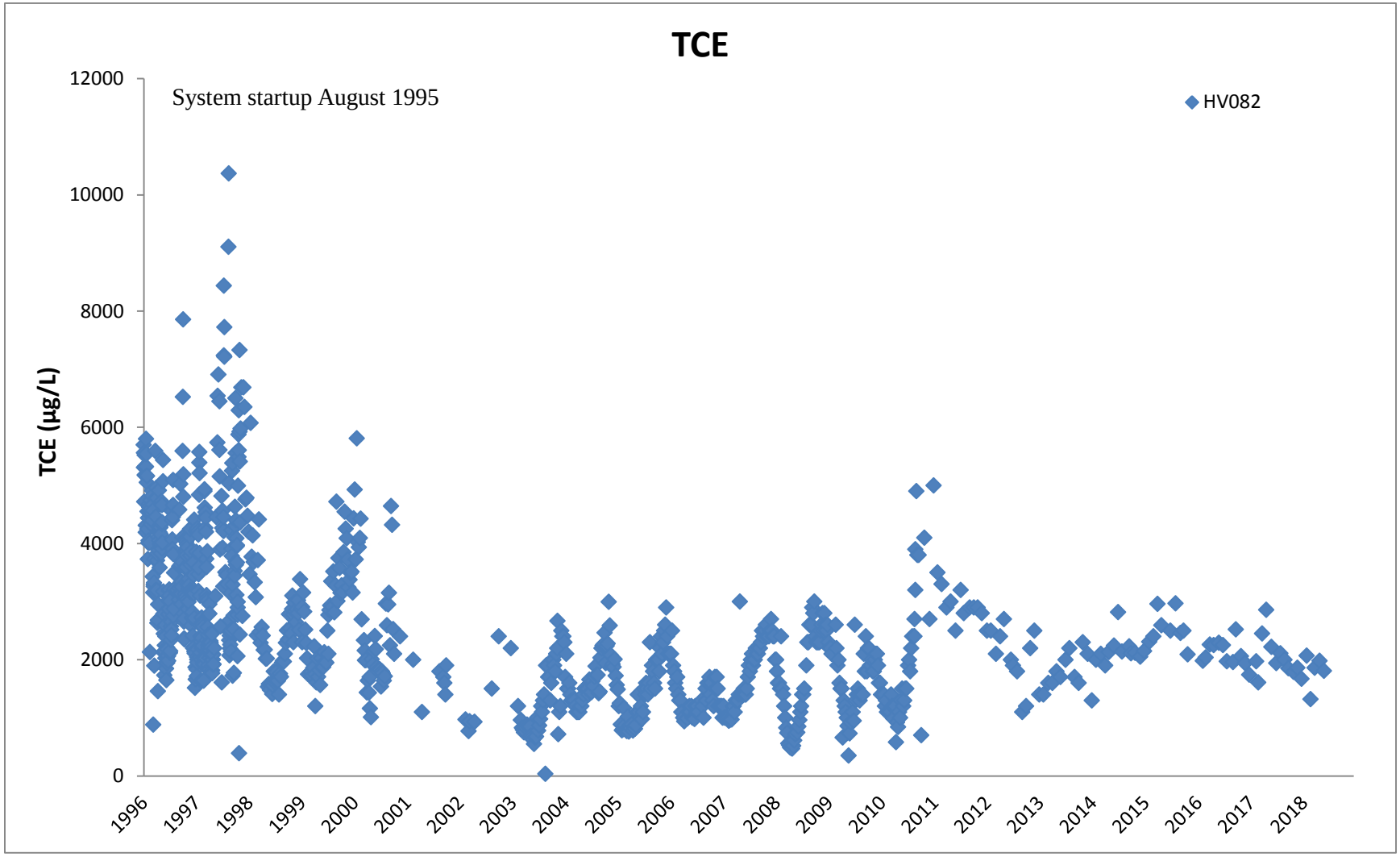
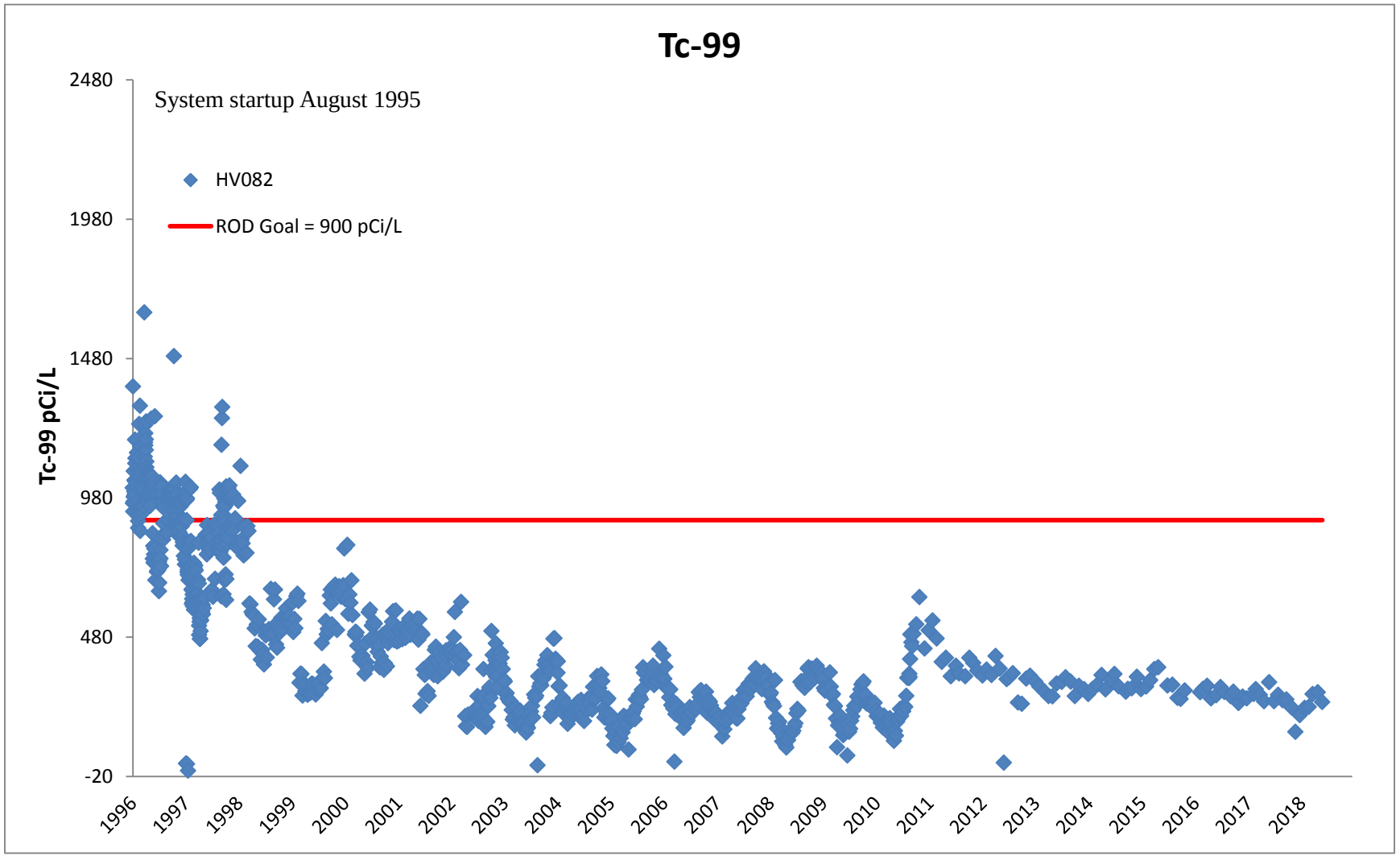


Figure B.16. Northwest Plume with Top of McNairy Topography



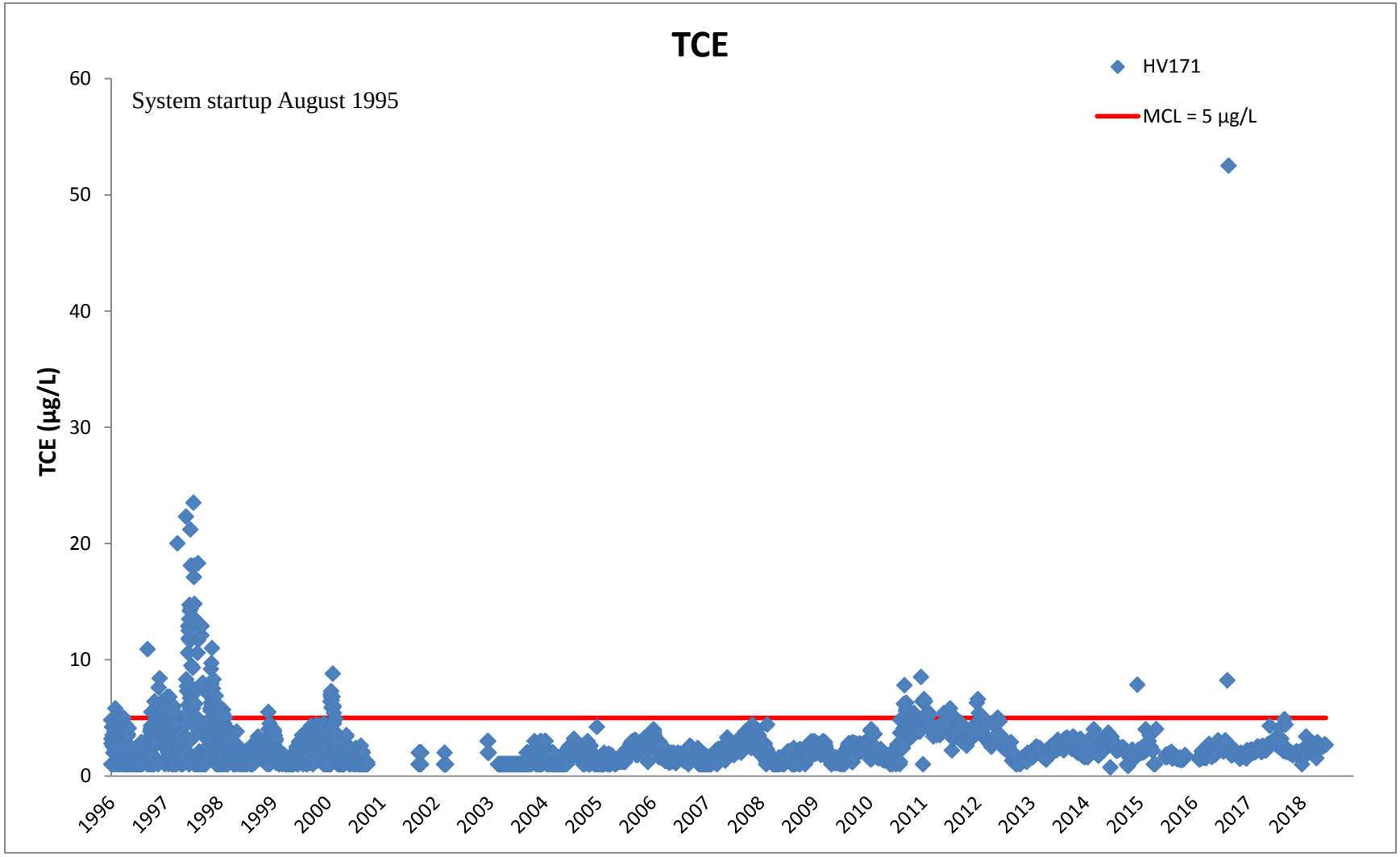
NOTE: Data rejected by validation or assessment have not been graphed.

Figure B.17. Northwest Plume Groundwater System Influent TCE Concentrations



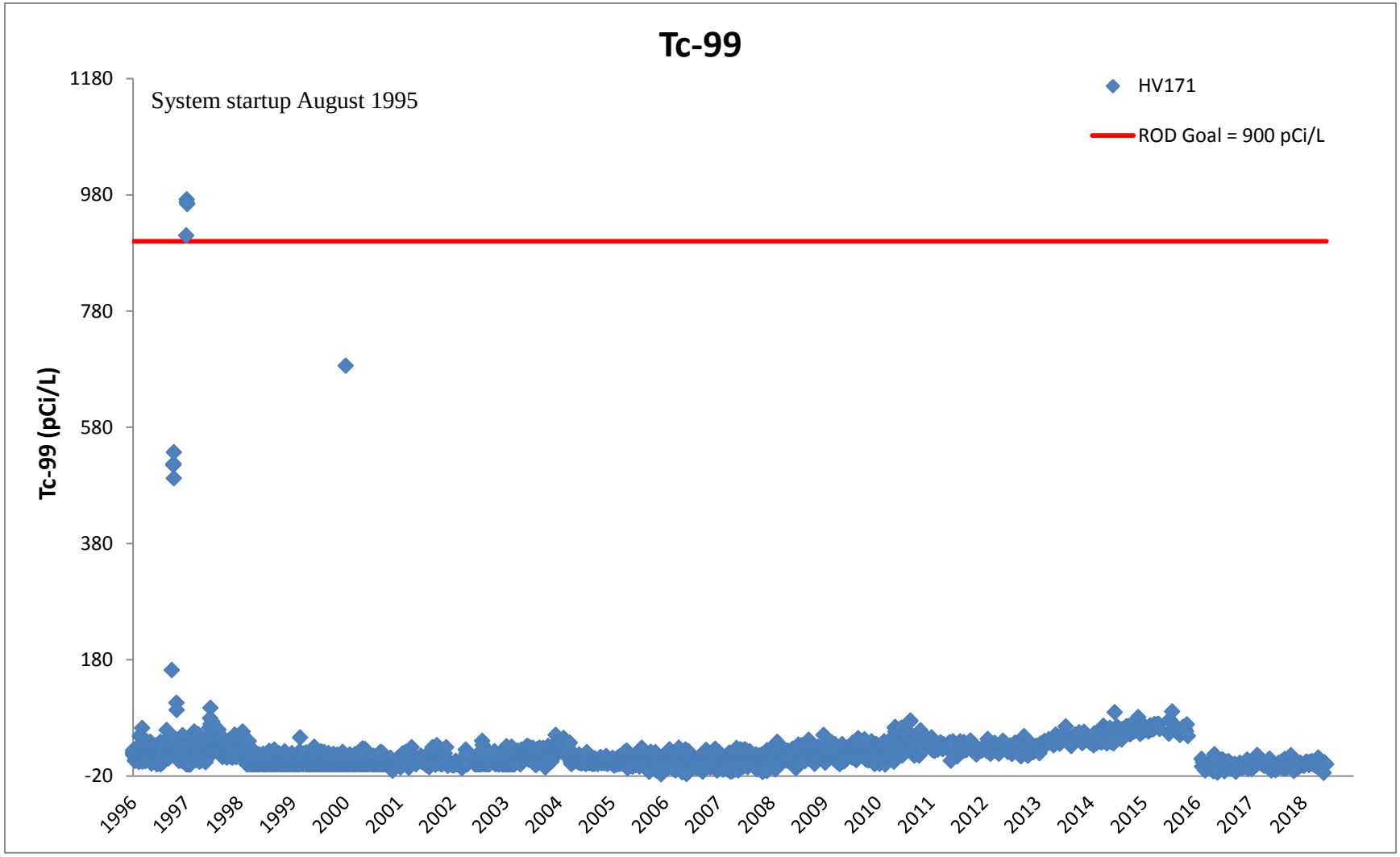
NOTE: Data rejected by validation or assessment have not been graphed.

Figure B.18. Northwest Plume Groundwater System Influent Tc-99 Activities



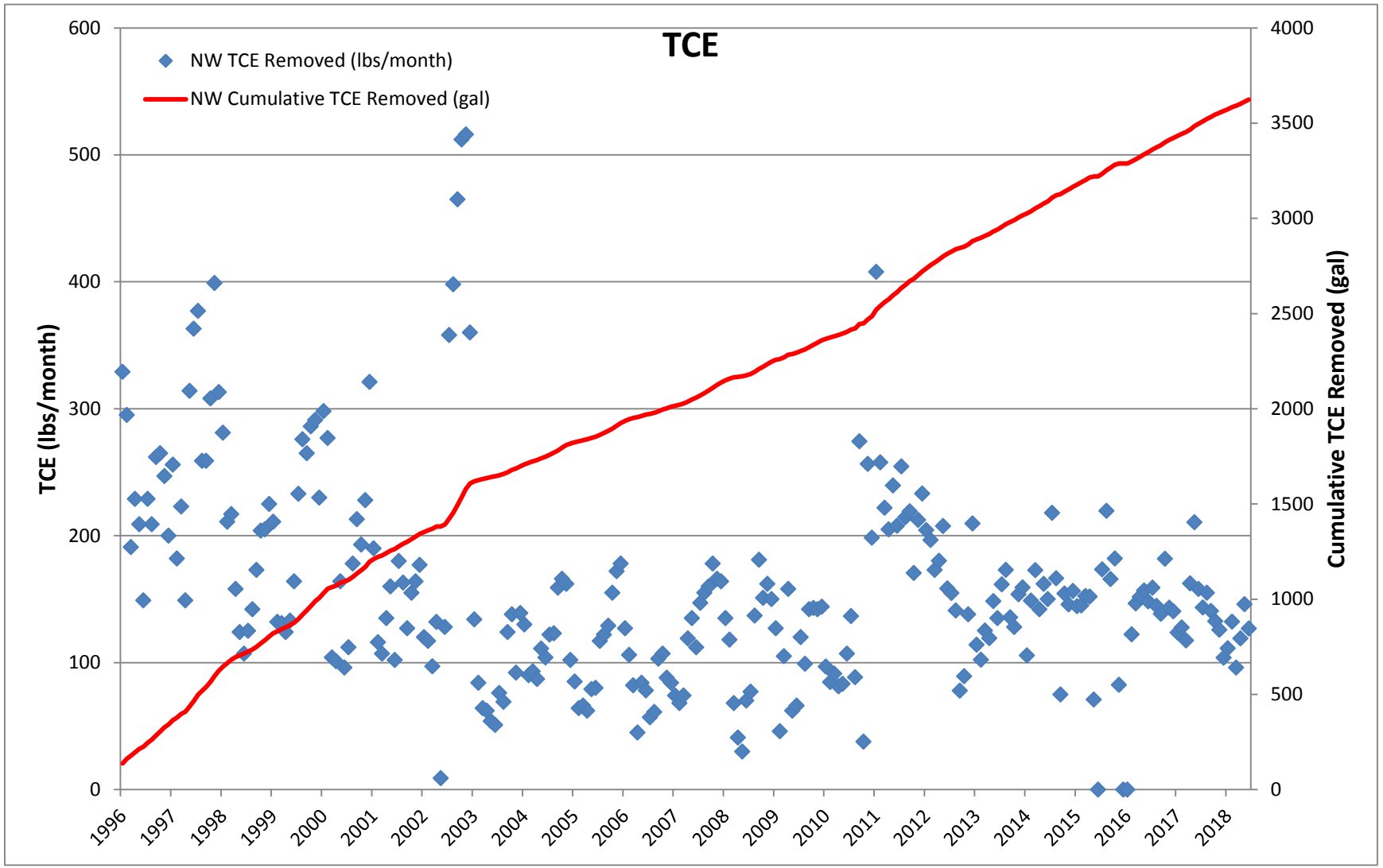
NOTE: Data rejected by validation or assessment have not been graphed.

Figure B.19. Northwest Plume Groundwater System Effluent TCE Concentrations



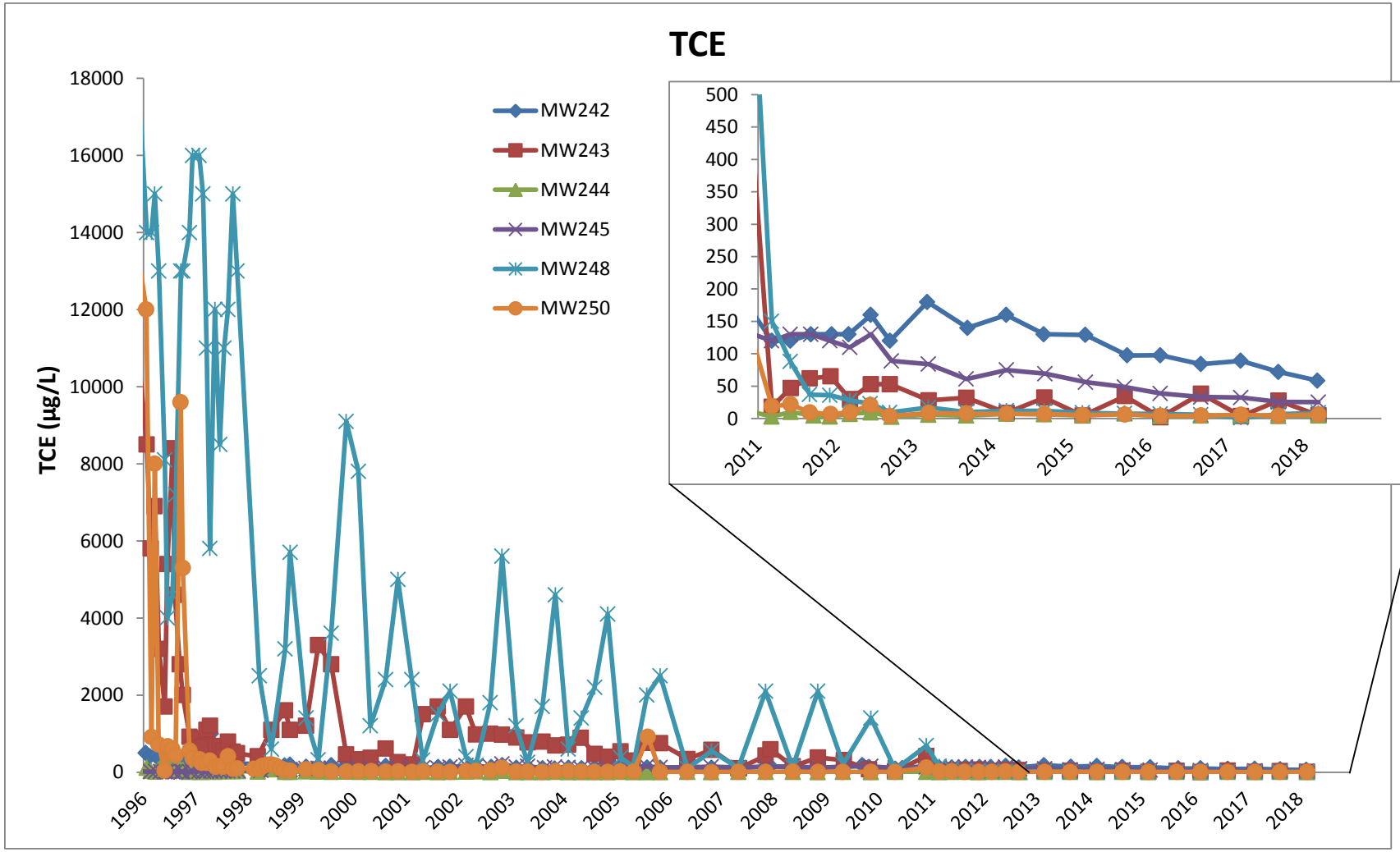
NOTE: Data rejected by validation or assessment have not been graphed.

Figure B.20. Northwest Plume Groundwater System Effluent Tc-99 Activities



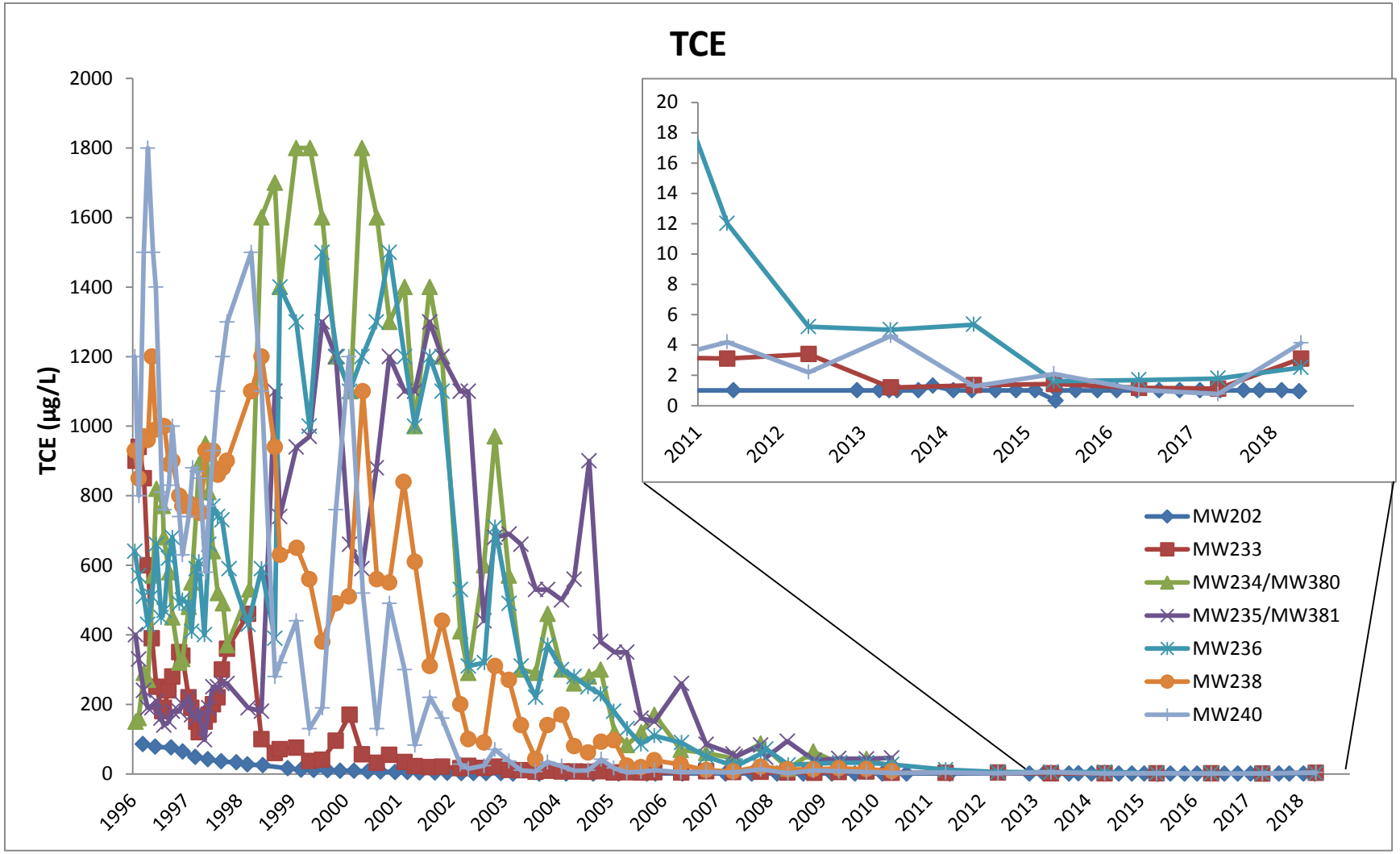
NOTE: Data rejected by validation or assessment are not included on the graph.

Figure B.21. Northwest Plume Groundwater System TCE Removed



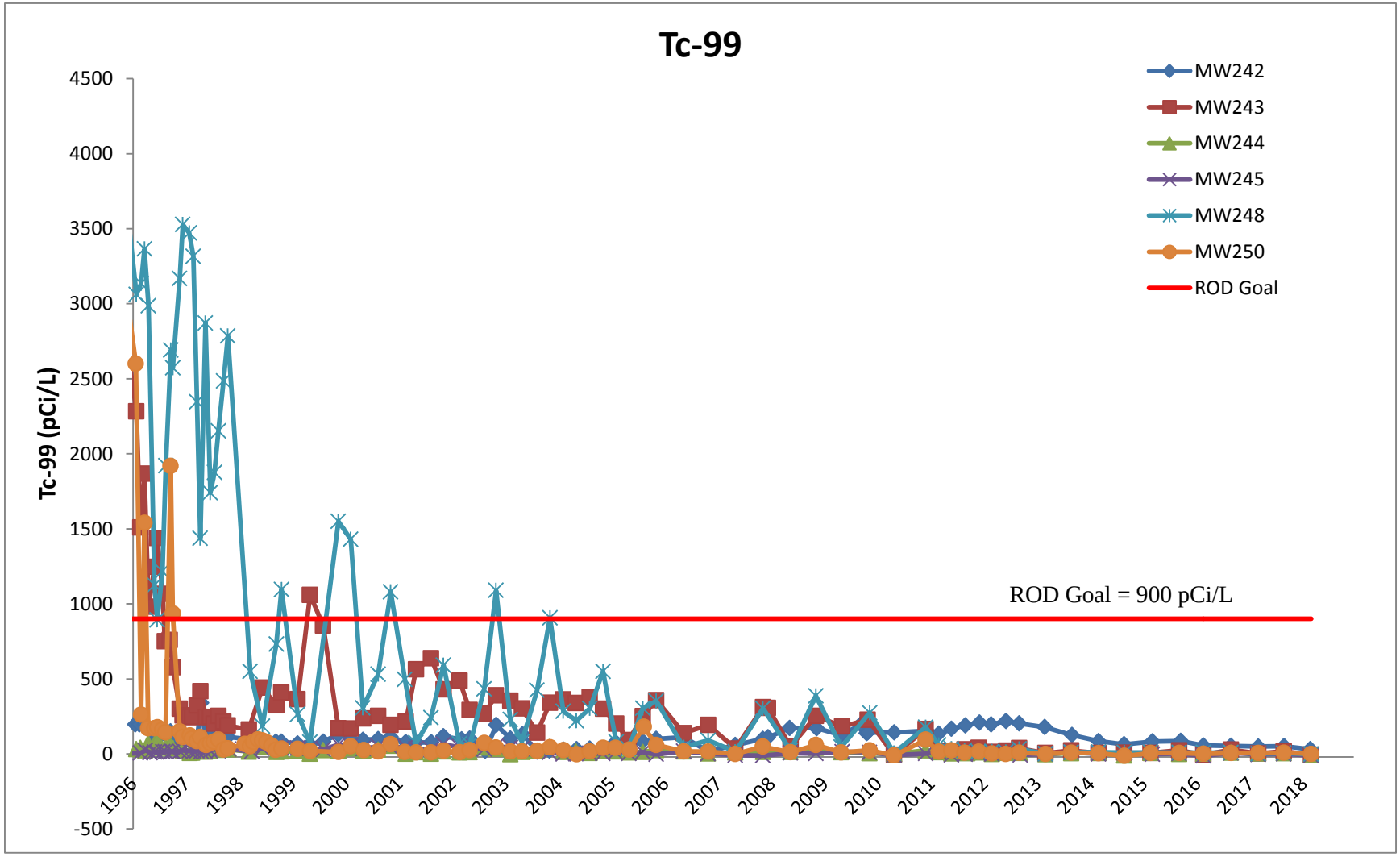
NOTE: Data rejected by validation or assessment have not been graphed.

Figure B.22. Northwest Plume—South Well Field TCE Concentrations



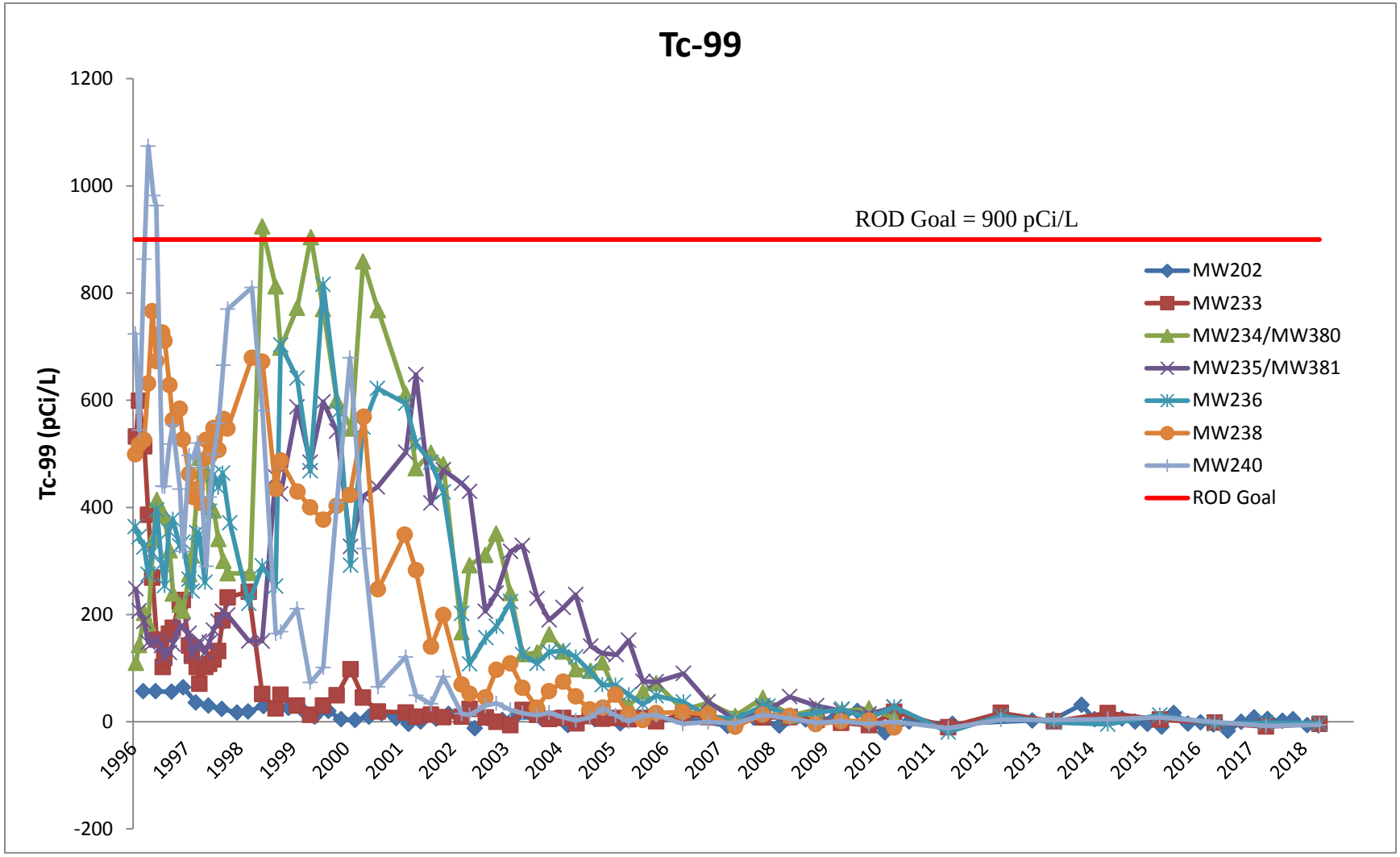
NOTE: Data rejected by validation or assessment have not been graphed.

Figure B.23. Northwest Plume—North Well Field TCE Concentrations



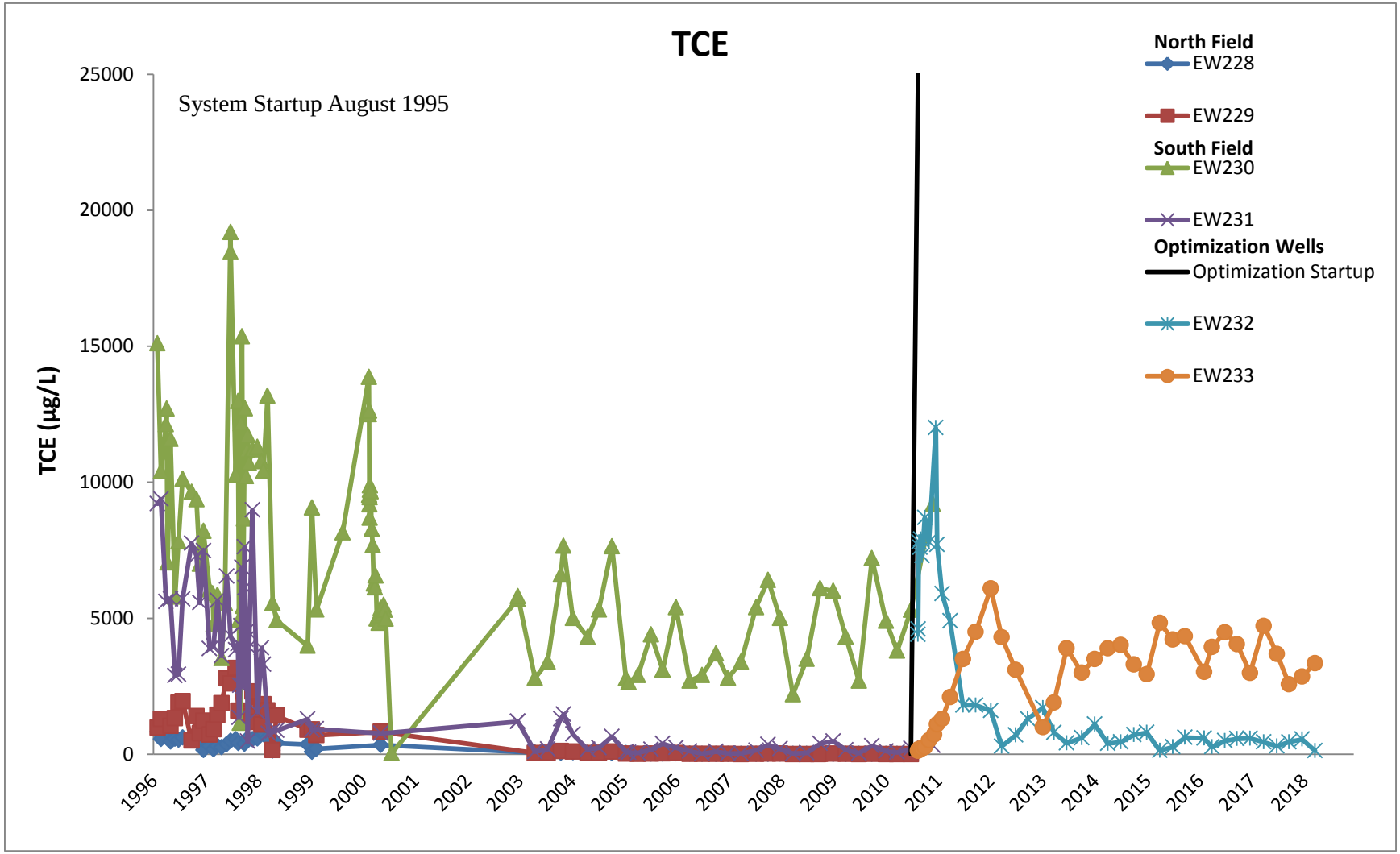
NOTE: Data rejected by validation or assessment have not been graphed.

Figure B.24. Northwest Plume—South Well Field Tc-99 Activities



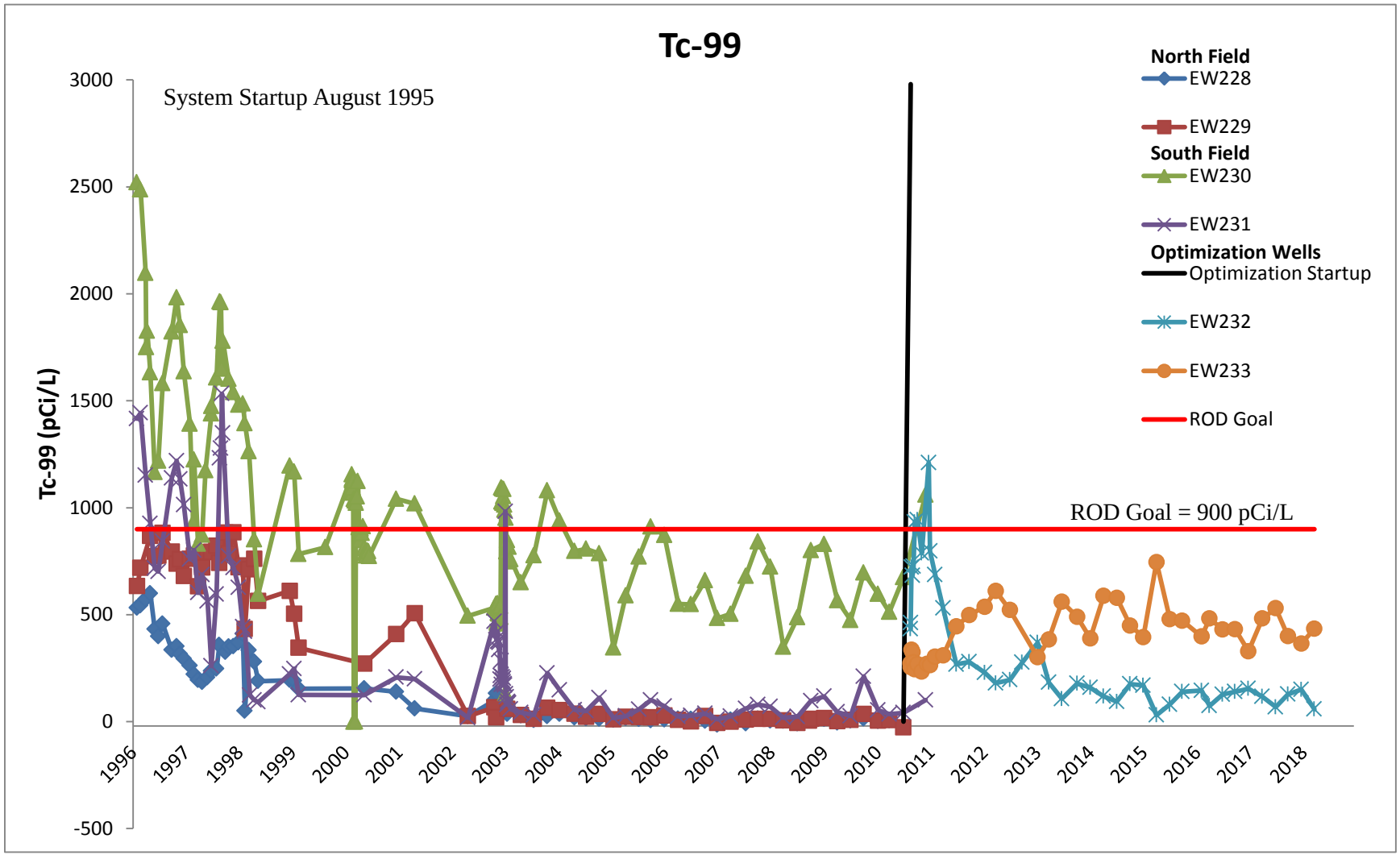
NOTE: Data rejected by validation or assessment have not been graphed.

Figure B.25. Northwest Plume—North Well Field Tc-99 Activities



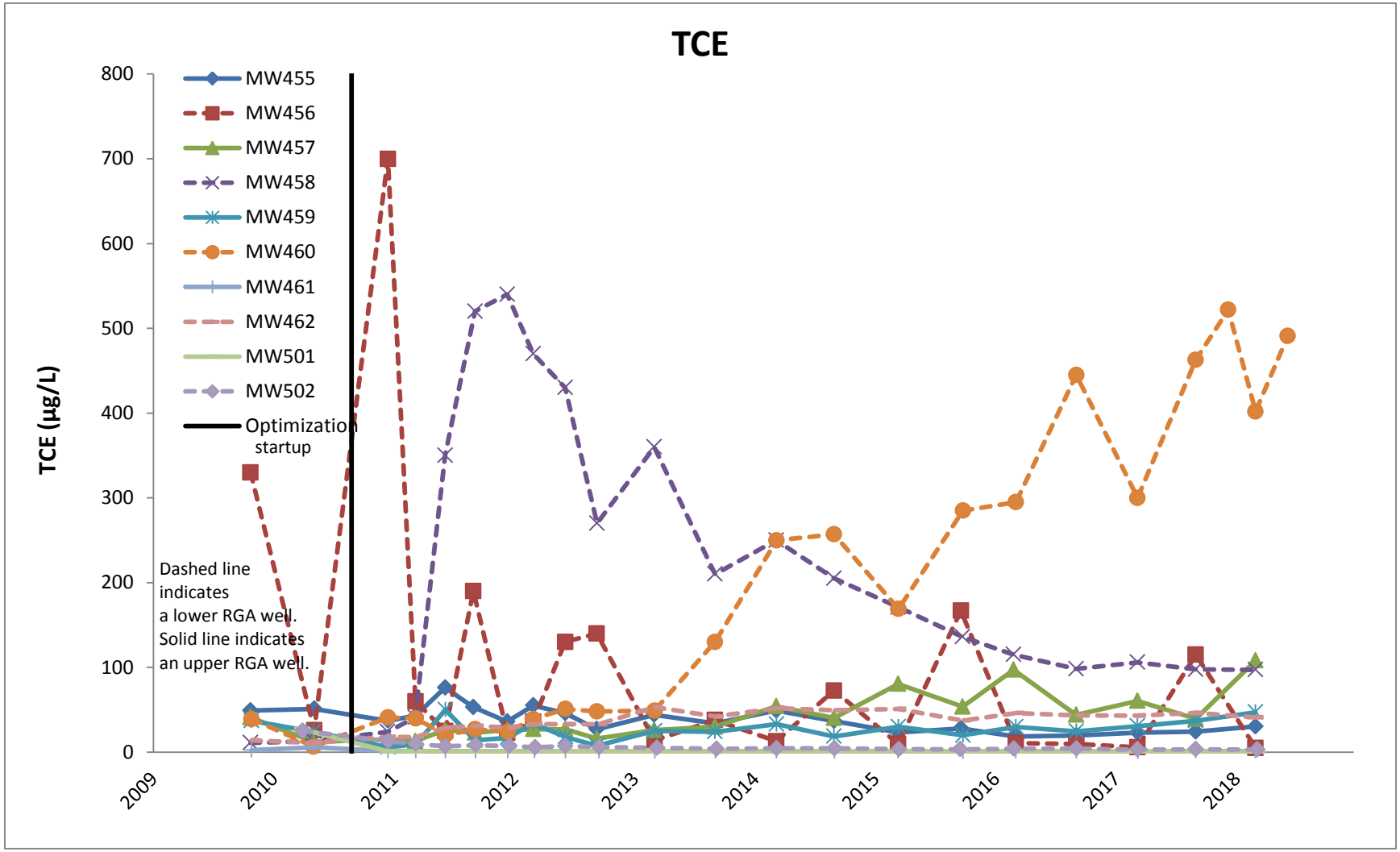
NOTE: Data rejected by validation or assessment have not been graphed.

Figure B.26. Northwest Plume—TCE Concentrations in Extraction Wells



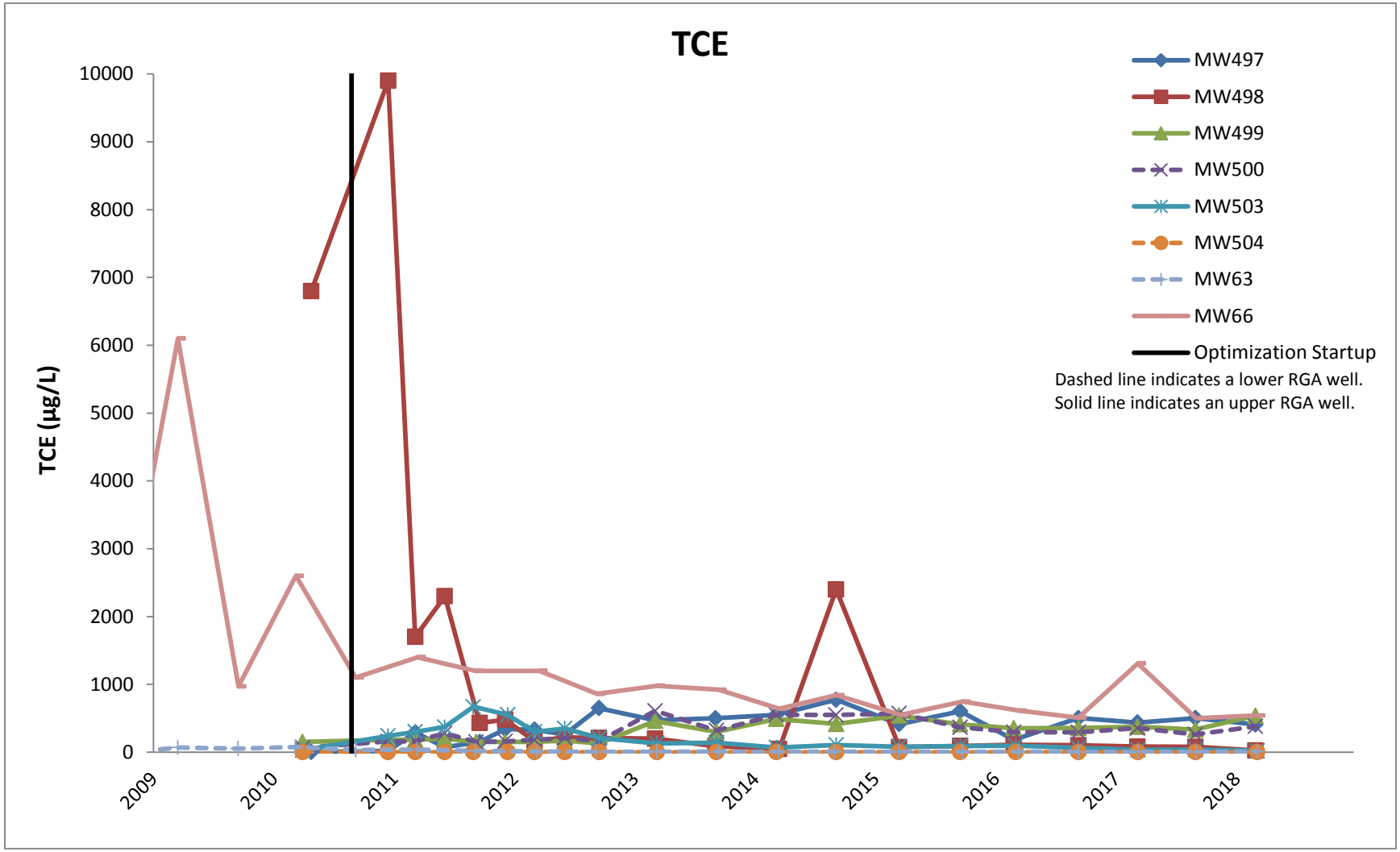
NOTE: Data rejected by validation or assessment have not been graphed.

Figure B.27. Northwest Plume—Tc-99 Activities in Extraction Wells



NOTE: Data rejected by validation or assessment have not been graphed.

Figure B.28. Northwest Plume—New Well Field TCE Concentrations



NOTE: Data rejected by validation or assessment have not been graphed.

Figure B.29. Northwest Plume—Additional Well Field TCE Concentrations

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Sample Date	Organic Laboratory Analysis Results		Radiological Laboratory Analysis Results	Chronic Toxicity Analysis Results			Lab Sample ID*
	TCE µg/L	1,1-DCE µg/L	Tc-99 pCi/L	Ceriodaphnia dubia TUc		Pimephales Promelas TUc	
9/3/2013	6.3	< 1					C13246018001
9/10/2013	10	< 5					C13253015001
9/10/2013	9.4	< 5					C13253015002
9/13/2013				< 1		< 1	QTXC0019-13
9/16/2013	9	< 5					C13259014001
9/23/2013	8.3	< 5					C13266024001
10/3/2013			16.2				C13276015001
10/3/2013	9.4	< 1					C13276032002
10/7/2013	6.6	< 1					C13280028001
10/14/2013	3.8	< 1					C13287017001
10/21/2013	< 1	< 1					C13294018001
10/25/2013				< 1		< 1	QTXC00110-13
10/28/2013	2.9	< 5					C13301021001
11/4/2013	3	< 5					C13308025001
11/4/2013			20.2				C13308024001
11/11/2013	3.3	< 5					C13315031001
11/11/2013	3.4	< 5					C13315031002
11/20/2013	3	< 5					C13324011001
11/25/2013	< 1	< 1					C13329036001
12/2/2013	< 1	< 1					C13336090001

* Project Sample ID is used if Lab Sample ID is not available.

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Sample Date	Organic Laboratory Analysis Results		Radiological Laboratory Analysis Results	Chronic Toxicity Analysis Results			Lab Sample ID*
	TCE µg/L	1,1-DCE µg/L	Tc-99 pCi/L	Ceriodaphnia dubia TUc		Pimephales Promelas TUc	
1/21/2014			21.2				C14021027001
1/21/2014			19.1				C14021027002
1/21/2014	3.7	< 1					C14021029001
1/27/2014	3.5	< 1					C14027014001
1/31/2014				< 1		< 1	QTXC0011-14
2/5/2014	< 1	< 1					C14036044001
2/10/2014	4.7	< 1					C14041021001
2/17/2014	5.4	< 1					C14048023001
2/17/2014	5.7	< 1					C14048023002
2/24/2014	4.8	< 1					C14055021001
3/4/2014	4.6	< 1					C14063020001
3/10/2014	5.2	< 1					C14069033001
3/17/2014	4.8	< 1					C14076022001
3/24/2014	2.5	< 1					C14083021001
4/1/2014	2.68	< 1					345636002
4/10/2014			< 10.5				346575006
4/10/2014	3.05	< 1					346575008
4/14/2014	3.42	< 1					346699001
4/23/2014	3.48	< 1					347434001
4/28/2014	3.63	< 1					347629001

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Sample Date	Organic Laboratory Analysis Results		Radiological Laboratory Analysis Results	Chronic Toxicity Analysis Results			Lab Sample ID*
	TCE µg/L	1,1-DCE µg/L	Tc-99 pCi/L	Ceriodaphnia dubia TUc		Pimephales Promelas TUc	
5/7/2014	4.29	< 1					348446001
5/7/2014	4.17	< 1					348446002
5/12/2014	5.02	< 1					348596001
5/19/2014	5.4	< 1					349038001
5/27/2014	11.1	< 1					349629001
6/2/2014	15	< 1					349858001
6/10/2014	4.1	< 1					350426001
6/16/2014	4.5	< 1					350780001
6/23/2014	5.79	< 1					351207001
6/29/2014				< 1		< 1	QTXC001-0614
6/30/2014	6.56	< 1					351615001
7/8/2014	5.68	< 1					352237001
7/14/2014	4.73	< 1					352624001
7/21/2014	3.73	< 1					353177001
7/21/2014			< 12.7				353177002
7/25/2014				< 1		< 1	QTXC001-0714
7/29/2014	4.95	< 1					353694001
8/5/2014	7.05	< 1					354137001
8/11/2014	4.35	< 1					354637001
8/18/2014	4.57	< 1					355052001

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Sample Date	Organic Laboratory Analysis Results		Radiological Laboratory Analysis Results	Chronic Toxicity Analysis Results			Lab Sample ID*
	TCE µg/L	1,1-DCE µg/L	Tc-99 pCi/L	Ceriodaphnia dubia TUc		Pimephales Promelas TUc	
8/25/2014	6.14	< 1					355488001
9/2/2014	5.39	< 1					355872001
9/8/2014	4.55	< 1					356338001
9/15/2014	4.6	< 1					356868001
9/23/2014	3.92	< 1					357338002
9/29/2014	4.44	< 1					357703001
10/7/2014	6.35	< 1					358590002
10/13/2014	0.52	< 1					358950002
10/13/2014			31.3				358950004
10/20/2014	0.51	< 1					359488004
10/27/2014	2.07	< 1					360011002
10/31/2014				< 1		< 1	QTXC001-1014
11/4/2014	< 1	< 1					360615002
11/11/2014	0.33	< 1					361080002
11/17/2014	< 1	< 1					361458002
11/17/2014	< 1	< 1					361458003
11/24/2014	< 1	< 1					361948003
12/1/2014	0.35	< 1					362225002
12/9/2014	< 1	< 1					362804003
12/15/2014	5.35	< 1					363245004

* Project Sample ID is used if Lab Sample ID is not available.

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Sample Date	Organic Laboratory Analysis Results		Radiological Laboratory Analysis Results	Chronic Toxicity Analysis Results			Lab Sample ID*
	TCE µg/L	1,1-DCE µg/L	Tc-99 pCi/L	Ceriodaphnia dubia TUc		Pimephales Promelas TUc	
12/22/2014	5.34	< 1					363660002
12/29/2014	3.26	< 1					363851002
1/29/2015	7.68	< 1					366169002
2/2/2015	5.58	< 1					366311002
2/4/2015			22.5				366545001
2/4/2015			23.4				366545002
2/6/2015				< 1		< 1	QTXC001-0215
2/10/2015	3.96	< 1					366969005
2/18/2015	3.45	< 1					367365002
2/18/2015	3.81	< 1					367365003
2/23/2015	3	< 1					367607002
3/2/2015	3.36	< 1					367959002
3/11/2015	4.63	< 1					368692003
3/16/2015	1.13	< 1					368893003
3/16/2015	1.19	< 1					368893002
3/23/2015	4.16	< 1					369408002
3/30/2015	4.45	< 1					369759002
4/7/2015	5.84	< 1					370571006
4/13/2015	5.78	< 1					370982003
4/20/2015			18.2				371423001

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Sample Date	Organic Laboratory Analysis Results		Radiological Laboratory Analysis Results	Chronic Toxicity Analysis Results			Lab Sample ID*
	TCE µg/L	1,1-DCE µg/L	Tc-99 pCi/L	Ceriodaphnia dubia TUc		Pimephales Promelas TUc	
4/20/2015	4.83	< 1					371423003
4/24/2015				< 1		< 1	QTXC001-0415
4/28/2015	4.26	< 1					371963002
5/5/2015	5.31	< 1					372605002
5/5/2015	4.94	< 1					372605003
5/11/2015	4.8	< 1					372848003
5/18/2015	4.1	< 1					373300002
5/26/2015	5.68	< 1					373775002
6/2/2015	5.36	< 1					374232002
6/8/2015	6.39	< 1					374647003
6/15/2015	7.27	< 1					375139002
6/22/2015	6.12	< 1					375551002
6/29/2015	6.74	< 1					375908003
7/6/2015	6.47	< 1					376221002
7/13/2015	7.59	< 1					377120006
7/13/2015			38				377120004
7/17/2015				< 1		< 1	QTXC001-0715
7/20/2015	7.72	< 1					377564002
7/30/2015	7.86	< 1					378414002
8/3/2015	7.15	< 1					378504001

* Project Sample ID is used if Lab Sample ID is not available.

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Sample Date Range: 9/3/2013 - 6/25/2018

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Sample Date	Organic Laboratory Analysis Results		Radiological Laboratory Analysis Results	Chronic Toxicity Analysis Results			Lab Sample ID*
	TCE µg/L	1,1-DCE µg/L	Tc-99 pCi/L	Ceriodaphnia dubia TUc		Pimephales Promelas TUc	
8/11/2015	7.6	< 1					379137003
8/17/2015	6.16	< 1					379518002
8/24/2015	5.1	< 1					379891004
8/31/2015	7.58	< 1					380316002
9/8/2015	8.55	< 1					380778002
9/15/2015	6.68	< 1					381232003
9/21/2015	5.86	< 1					381607002
9/28/2015	6.48	< 1					381967002
10/6/2015	6.11	< 1					382713002
10/13/2015	5.06	< 1					383173005
10/19/2015	3.12	< 1					383605003
10/19/2015			< 13.3				383605001
10/23/2015				< 1		< 1	QTXC001-1015
10/26/2015	3.34	< 1					384073001
11/3/2015	3.72	< 1					384687002
11/9/2015	3.29	< 1					385132003
11/16/2015	3.33	< 1					385708002
11/16/2015	3.23	< 1					385708003
11/23/2015	3.14	< 1					386250003
11/30/2015	3.52	< 1					386486002

* Project Sample ID is used if Lab Sample ID is not available.

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Sample Date	Organic Laboratory Analysis Results		Radiological Laboratory Analysis Results	Chronic Toxicity Analysis Results			Lab Sample ID*
	TCE µg/L	1,1-DCE µg/L	Tc-99 pCi/L	Ceriodaphnia dubia TUc		Pimephales Promelas TUc	
12/7/2015	3.62	< 1					386947002
12/14/2015	6.21	< 1					387486003
12/21/2015	3.44	< 1					387961002
12/28/2015	4.04	< 1					388160002
1/4/2016			< 16.3				388627005
1/4/2016	3.09	< 1					388627007
1/4/2016			< 18.3				388627004
1/11/2016	5.15	< 1					389075002
1/19/2016	2.9	< 1					389669002
1/25/2016	3.36	< 1					390034002
1/29/2016				< 1		< 1	QTXC001-0116
2/1/2016	3.33	< 1					390453002
2/8/2016	3.3	< 1					390933003
2/17/2016	3.24	< 1					391578003
2/17/2016	3.24	< 1					391578002
2/22/2016	3.04	< 1					391842002
2/29/2016	3.41	< 1					392231002
3/8/2016	4.14	< 1					392896004
3/14/2016	3.72	< 1					393230001
3/21/2016	2.82	< 1					393611002

* Project Sample ID is used if Lab Sample ID is not available.

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Water Quality Records for

Sample Date Range: 9/3/2013 - 6/25/2018

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Sample Date	Organic Laboratory Analysis Results		Radiological Laboratory Analysis Results	Chronic Toxicity Analysis Results			Lab Sample ID*
	TCE µg/L	1,1-DCE µg/L	Tc-99 pCi/L	Ceriodaphnia dubia TUc		Pimephales Promelas TUc	
3/28/2016	5.09	< 1					393963002
4/5/2016	2.66	< 1					394654001
4/5/2016	2.66	< 1					394654002
4/5/2016			< 16.5				394654006
4/11/2016	3.69	< 1					395009002
4/18/2016	3.84	< 1					395559002
4/22/2016				< 1		< 1	QTXC001-0416
4/26/2016	6.13	< 1					396121001
5/3/2016	2.55	< 1					396568003
5/9/2016	3.2	< 1					397075002
5/16/2016	2.42	< 1					397535002
5/23/2016	2.95	< 1					397984002
6/7/2016	3.2	< 1					398913002
6/13/2016	3.58	< 1					399291002
6/20/2016	3.68	< 1					399780002
6/27/2016	3.44	< 1					400228002
7/6/2016	3.33	< 1					401038007
7/6/2016			< 15				401038005
7/6/2016			20.1				401038004
7/11/2016	2.95	< 1					401330002

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Sample Date	Organic Laboratory Analysis Results		Radiological Laboratory Analysis Results	Chronic Toxicity Analysis Results			Lab Sample ID*
	TCE µg/L	1,1-DCE µg/L	Tc-99 pCi/L	Ceriodaphnia dubia TUc		Pimephales Promelas TUc	
7/18/2016	3.77	< 1					401899002
7/25/2016	3.18	< 1					402378002
7/29/2016				< 1		< 1	QTXC001-0716
8/1/2016	3.5	< 1					402874004
8/8/2016	3.15	< 1					403433002
8/15/2016	3.63	< 1					403928002
8/22/2016	1.83	< 1					404376002
8/29/2016	3.46	< 1					404871002
9/6/2016	< 3.13	< 1					405309003
9/13/2016	< 3.11	1					405843002
9/19/2016	3.46	< 1					406268002
9/26/2016	< 1	< 1					406761002
10/3/2016	< 1	< 1					407409002
10/10/2016			22				407689005
10/10/2016	< 1	< 1					407689007
10/14/2016				< 1		< 1	QTXC001-1016
10/17/2016	< 3.79	< 1					408434002
10/24/2016	< 3.01	< 1					409012002
10/31/2016	< 3.68	< 1					409492002
11/8/2016	3.41	< 1					410178004

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Sample Date Range: 9/3/2013 - 6/25/2018

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Sample Date	Organic Laboratory Analysis Results		Radiological Laboratory Analysis Results	Chronic Toxicity Analysis Results			Lab Sample ID*
	TCE µg/L	1,1-DCE µg/L	Tc-99 pCi/L	Ceriodaphnia dubia	TUc	Pimephales Promelas TUc	
11/8/2016	3.25	< 1					410178005
11/14/2016	3.09	< 1					410597002
11/21/2016	2.79	< 1					411177002
11/28/2016	3.39	< 1					411421002
12/6/2016	2.61	< 1					412013002
12/12/2016	2.41	< 1					412498003
12/19/2016	1.62	< 1					413001002
12/27/2016	2.28	< 1					413365001
1/4/2017	1.71	< 1					413711002
1/9/2017	4.16	< 1					413954007
1/9/2017			32.6				413954005
1/17/2017	2.78	< 1					414480002
1/23/2017	2.66	< 1					414875002
1/30/2017	2.22	< 1					415330002
2/6/2017	3.06	< 1					415797003
2/13/2017	2.32	< 1					416621002
2/21/2017	2.92	< 1					417084002
2/21/2017	2.92	< 1					417084003
2/27/2017	2.58	< 1					417486002
3/6/2017	2.81	< 1					417894004

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Sample Date Range: 9/3/2013 - 6/25/2018

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Sample Date	Organic Laboratory Analysis Results		Radiological Laboratory Analysis Results	Chronic Toxicity Analysis Results			Lab Sample ID*
	TCE µg/L	1,1-DCE µg/L	Tc-99 pCi/L	Ceriodaphnia dubia TUc		Pimephales Promelas TUc	
3/10/2017				< 1		< 1	QTXC001-0317
3/13/2017	2	< 1					418494002
3/20/2017	2.79	< 1					418903002
3/27/2017	2.92	< 1					419376002
4/4/2017	< 1	< 1					419842006
4/4/2017	2.73	< 1					419842005
4/10/2017	2.78	< 1					420352002
4/17/2017	3.12	< 1					420901002
4/24/2017	2.66	< 1					421403002
5/1/2017	2.62	< 1					422065003
5/8/2017			< 19.9				422691001
5/8/2017	3.04	< 1					422691003
5/12/2017				< 1		< 1	QTXC0015-17
5/12/2017				< 1		< 1	QTXC0015-17
5/15/2017	2.62	< 1					423225002
5/22/2017	1.92	< 1					423789002
5/30/2017	2.3	< 1					424351002
6/5/2017	2.9	< 1					424743004
6/19/2017	2.79	< 1					425832002
6/26/2017	2.24	< 1					426426001

* Project Sample ID is used if Lab Sample ID is not available.

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume CERCLA Outfall Monitoring

Water Quality Records for

Sample Date Range: 9/3/2013 - 6/25/2018

C001

Sample Date	Organic Laboratory Analysis Results		Radiological Laboratory Analysis Results	Chronic Toxicity Analysis Results			Lab Sample ID*
	TCE µg/L	1,1-DCE µg/L	Tc-99 pCi/L	Ceriodaphnia dubia TUc		Pimephales Promelas TUc	
7/5/2017			26.8				427251005
7/5/2017	2.59	< 1					427251001
7/5/2017			28.4				427251006
7/11/2017	3	< 1					427613002
7/17/2017	2.94	< 1					428085001
7/24/2017	3.14	< 1					428713002
8/14/2017	1.97	< 1					430615001
8/21/2017	3.42	< 1					431181002
8/25/2017				< 1		< 1	QTXC0018-17
8/28/2017	3.06	< 1					431681002
10/11/2017			45.5				434895003
10/11/2017	0.67	< 1					434895007
10/11/2017			59.4				439669001
10/16/2017	0.42	< 1					435322003
10/25/2017	< 1	< 1					436374003
10/30/2017	0.44	< 1					436651003
11/6/2017	0.63	< 1					437150004
11/10/2017				< 1		< 1	QTXC00111-17
11/13/2017	< 1	< 1					437793005
11/30/2017	0.55	< 1					439009002

* Project Sample ID is used if Lab Sample ID is not available.

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume CERCLA Outfall Monitoring

Water Quality Records for

Sample Date Range: 9/3/2013 - 6/25/2018

C001

Sample Date	Organic Laboratory Analysis Results		Radiological Laboratory Analysis Results	Chronic Toxicity Analysis Results			Lab Sample ID*
	TCE µg/L	1,1-DCE µg/L	Tc-99 pCi/L	Ceriodaphnia dubia TUc		Pimephales Promelas TUc	
12/5/2017	< 1	< 1					439319001
12/5/2017	< 1	< 1					439319004
12/11/2017	< 1	< 1					439844005
12/18/2017	< 1	< 1					440275003
12/27/2017	< 1	< 1					440755003
1/2/2018	< 1	< 1					440964004
1/8/2018	< 1	< 1					441177005
1/16/2018	< 1	< 1					441723003
1/22/2018	0.59	< 1					442150003
1/26/2018				< 1		< 1	QTXC001-0118
1/29/2018	< 1	< 1					442610003
2/5/2018	< 1	< 1					443103003
2/5/2018	< 1	< 1					443103004
2/12/2018			48.1				443651003
2/12/2018	< 1	< 1					443651006
2/26/2018	< 1	< 1					444677002
3/5/2018	< 1	< 1					445176002
3/12/2018	< 1	< 1					445734003
3/22/2018	0.49	< 1					446468005
3/26/2018	< 1	< 1					446833003

* Project Sample ID is used if Lab Sample ID is not available.

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume CERCLA Outfall Monitoring

Water Quality Records for

Sample Date Range: 9/3/2013 - 6/25/2018

C001

Sample Date	Organic Laboratory Analysis Results		Radiological Laboratory Analysis Results	Chronic Toxicity Analysis Results			Lab Sample ID*
	TCE µg/L	1,1-DCE µg/L	Tc-99 pCi/L	Ceriodaphnia dubia TUc		Pimephales Promelas TUc	
4/2/2018	< 1	< 1					447095004
4/2/2018	< 1	< 1					447095005
4/9/2018			55.5				447603003
4/9/2018	< 1	< 1					447603007
4/16/2018	< 1	< 1					448142003
4/20/2018				< 1		< 1	QTXC001-0418
4/23/2018	0.46	< 1					448638003
4/30/2018	< 1	< 1					449102003
5/7/2018	< 1	< 1					449583002
5/14/2018	0.76	< 1					450117006
5/21/2018	0.74	< 1					450656003
5/29/2018	0.76	< 1					451371004
6/4/2018	0.5	< 1					451691003
6/11/2018	0.77	< 1					452284006
6/18/2018	< 1	< 1					452744003
6/25/2018	< 1	< 1					453275003

* Project Sample ID is used if Lab Sample ID is not available.

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW124

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results: TCE µg/L	Organic Laboratory Analysis Results: 1,1-DCE µg/L	Radiological Laboratory Analysis Results: Tc-99 pCi/L	Lab Sample ID
2/21/1990	160	< 5		15481001
2/21/1990	160	< 5		15479002
2/22/1990	44		1	900223-025
3/1/1990	170			900301-296
4/30/1990			< 14	6683
4/30/1990	130	< 5		15883003
4/30/1990	98	< 5		15883002
4/30/1990			< 12	6682
4/30/1990	123		0	900503-082
6/29/1990			2	900629-165
8/20/1990			< 4	7333
8/20/1990	340	< 5		16644001
3/25/1991			< 2	21327
3/25/1991			< 3	21328
3/25/1991	720	< 5		9103L086-9
10/18/1991	480		8	911018-068
5/20/1993	670		119	930524-074
5/20/1993	730	< 100	2	930524-073
5/21/1993	760	< 50	9	930524-081
5/21/1993		< 25	84.1	930524-082
6/1/1993	850		17	930604-037

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW124

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results: TCE µg/L	Organic Laboratory Analysis Results: 1,1-DCE µg/L	Radiological Laboratory Analysis Results: Tc-99 pCi/L	Lab Sample ID
6/5/1995	260	< 100		950606-026
11/7/1995	590	< 50	6	951108-132
3/26/1996	710	< 10	0	960326-036
6/5/1996	760	< 50	11	960606-017
9/3/1996	860	< 50	21	960904-010
12/12/1996	20	< 50	6	961212-169
3/5/1997	960	< 100	0	970306-083
5/13/1997	1100	< 100	8	970515-049
6/5/1997	1100	< 100	7	970605-147
9/9/1997	790	< 100	-8	970909-072
12/8/1997	370	< 100	< -1	C973430023
3/2/1998	240	< 130	< -0.4	C980620038
6/15/1998	220	< 100	< 13.2	C981660106
9/17/1998	200	< 100	< 0.8	C982610006
12/10/1998	120	< 100	< 11.1	C983450000
2/2/1999	82	< 50	< 11.8	C990340069
5/10/1999	95	< 50	< 14.4	C991310032
5/10/1999	96	< 50	< 16.7	C991310033
8/3/1999	100	< 100	< 0	C992170039
11/16/1999	140	< 50	< -15.6	C993210012
2/15/2000	73	< 5	< 3.48	C000470004

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW124

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
5/8/2000	320	< 50	< 0.33	C001300044
8/17/2000	720	< 5	< 19.9	C002300082
11/15/2000	360	< 50	< 11.8	C003200062
2/12/2001	2	< 5	< -9.44	C010430092
5/14/2001	92	< 5	< -0.705	C011350007
8/15/2001	59	< 25	< -1.65	C012280037
11/14/2001	110	< 10	< 3.87	C013180045
3/27/2002	56	< 50	< 11.2	C020860180
5/2/2002	55	< 5	< -8.93	C021220089
5/2/2002	53	< 5	< -3.85	C021220090
8/29/2002	44	< 5	< 3.08	C022420102
11/11/2002	170	< 10	< -7.81	C023160005
2/18/2003	160	< 10	< 15.8	C030500032
5/7/2003	40	< 5	< 0.175	C031270172
8/27/2003	22	< 5	< 7.7	C032390098
11/17/2003	110	< 25	< 7.3	C033210103
2/11/2004	23	< 5	< 12.4	C040420077
5/12/2004	23	< 10	< -7.25	C041330034
8/12/2004	21	< 5	< 3.11	C042250117
11/18/2004	16	< 5	< 3.49	C043240003
2/10/2005	18	< 5	< 3.35	C050410062

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW124

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
5/11/2005	18	< 5	< 1.29	C051310089
8/10/2005	14	< 5	< 6	C052220134
11/14/2005	220	< 25	< 5.48	C053180044
5/17/2006	52	< 5	< 7.52	C061370046
11/6/2006	21	< 5	< 8.1	C063100054
5/9/2007	14	< 5	< -4.96	C071300009
11/13/2007	350	14	17.9	C073180004
5/28/2008	65	2	< 5.74	C081490029
11/11/2008	140	3.2	< -3.8	C08316042006
5/5/2009	80	2.7	< 4.29	C09125023007
11/2/2009	40	< 5	< -4.1	C09306041001
5/11/2010	19	< 1	< 14.1	C10131023006
2/22/2011	49	< 5	23	C11053015006
8/4/2011	13	< 5	< -3.33	C11216014003
2/2/2012	12	< 5	< 0.804	C12033015003
8/7/2012	5.4	< 5	< 6.07	C12220024004
2/4/2013	19	< 1	< -4.83	C13035045001
8/21/2013	2.4	< 1	< 1.7	C13233026005
2/24/2014	9.2	< 1	< -2.69	C14055028001
8/26/2014	6.18	< 1	< -6.23	355748001
2/4/2015	69.9	0.88	< 1.44	366647001

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW124

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results: TCE µg/L	Organic Laboratory Analysis Results: 1,1-DCE µg/L	Radiological Laboratory Analysis Results: Tc-99 pCi/L	Lab Sample ID
8/24/2015	7.12	< 1	< -4.04	379998002
2/8/2016	5.94	< 1	< -8.87	391039001
8/4/2016	3.1	< 1	< 7.97	403256001
2/15/2017	30.5	0.51	< -0.649	416791001
7/10/2017	5.65	< 1	< 1.27	427964002
8/1/2017	5.88	< 1	< -4.11	429710002
10/6/2017	16.6	< 1	< 0.124	434637002
1/9/2018	61.7	1.17	< 8.01	441537002
2/14/2018	20.4	< 1	< -12.6	443984002
4/9/2018	26.6	< 1	< -5.57	447628001

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW126

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results: TCE µg/L	Organic Laboratory Analysis Results: 1,1-DCE µg/L	Radiological Laboratory Analysis Results: Tc-99 pCi/L	Lab Sample ID
2/23/1990	140	< 5		15488001
2/23/1990	130		6	900226-054
2/23/1990			< 10	2267
3/1/1990	180			900301-297
4/27/1990	52	< 5		15867008
4/27/1990			< 6	4166
8/15/1990	180	< 5		16614004
8/15/1990			< 3	7334
3/11/1991	200	< 10		29076001
3/11/1991			< 4	21332
3/11/1991			< 4	21333
10/18/1991	180		2	911018-069
5/19/1993	140	< 5		930521-077
5/19/1993		< 20	57.5	930524-068
5/19/1993	600	< 20		930521-075
5/19/1993	600	< 50	9	930524-067
5/19/1993	160	< 25	2	930524-065
5/19/1993	140			930524-066
5/20/1993	170	< 25	14	930524-075
5/20/1993	150			930524-076
5/21/1993	180	< 25	10	930524-083

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW126

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
5/21/1993		< 10	40	930524-084
6/1/1993	200		2	930604-041
9/20/1993	200		38	930922-055
12/7/1993	230		9	931208-069
3/21/1994	270		0	940322-018
6/8/1994	220		15	940609-019
9/8/1994	230		3	940908-103
12/5/1994	310		2	941206-027
3/20/1995	270	< 50	1	950322-076
6/5/1995	130	< 100	12	950606-031
9/20/1995	240	< 50	11	950921-179
11/7/1995	260	< 50	5	951108-136
3/13/1996	270	< 50	2	960314-051
6/5/1996	250	< 50	0	960606-018
9/3/1996	230	< 50	17	960904-009
12/16/1996	170	< 50	5	961217-012
3/4/1997	380	< 50	0	970305-028
6/5/1997	190	< 50	13	970605-148
9/9/1997	53	< 50	1	970909-073
12/8/1997	22	< 5	< 1	C973430024
3/2/1998	13	< 5	< 2.3	C980620039

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW126

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
6/15/1998	27	< 5	< 6.7	C981660107
9/17/1998	14	< 5	< 1.4	C982610007
12/10/1998	10	< 50	< 10.1	C983450001
2/2/1999	4	< 5	< 8.27	C990340070
5/10/1999	9	< 5	< 8.11	C991310034
8/3/1999	6	< 5	< 0	C992170036
11/16/1999	70	< 25	< -13.8	C993210013
2/15/2000	110	< 5	< 8.42	C000470005
5/8/2000	60	< 25	< -8.91	C001300045
8/17/2000	12	< 5	< 9.56	C002300081
11/14/2000	6	< 5	< 4.12	C003190124
2/12/2001	2	< 5	< -7.37	C010430093
5/14/2001	3	< 5	< -1.35	C011350004
8/15/2001	4	< 5	< 5.31	C012280038
11/14/2001	12	< 5	< -1.8	C013180044
2/5/2002	3	< 5	< 15.1	C020370099
5/2/2002	7	< 5	< -8.34	C021220093
8/29/2002	3	< 5	< 7.47	C022420103
11/12/2002	7	< 5	< 5.26	C023170002
2/18/2003	2	< 5	< 7.34	C030500033
5/7/2003	3	< 5	< 10.8	C031270173

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW126

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
8/27/2003	1	< 5	< 0.875	C032390099
11/17/2003	< 1	< 5	< 5.52	C033210104
2/11/2004	2	< 5	< 8.66	C040420078
5/12/2004	3	< 5	< -5.99	C041330033
8/12/2004	2.2	< 5	< -10.4	C042250116
11/18/2004	< 1	< 5	< 0.261	C043240004
2/10/2005	2.4	< 5	< 5.05	C050410063
5/11/2005	2.5	< 5	< -4.42	C051310090
8/10/2005	< 1	< 5	< 1.88	C052220135
11/14/2005	1.1	< 5	< 5.18	C053180045
5/17/2006	3.4	< 5	< 6.15	C061370047
11/6/2006	< 1	< 5	< 13.2	C063100055
5/9/2007	1.3	< 5	< -5.35	C071300010
11/13/2007	56	< 1	< 2.51	C073180005
5/28/2008	1.8	< 1	< 6.06	C081490030
11/11/2008	14	< 1	< 1.18	C08316042008
5/5/2009	2.6	< 1	< 10.2	C09125023009
11/2/2009	18	< 5	< -5.34	C09306041002
5/11/2010	4	< 1	< 13.5	C10131023007
2/22/2011	5.5	< 5	< 11.5	C11053015007
8/4/2011	< 1	< 5	< -1.94	C11216014005

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW126

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
8/4/2011	< 1	< 5	< -2.16	C11216014004
2/2/2012	< 1	< 5	< 2.31	C12033015004
8/7/2012	< 1	< 5	< 14.2	C12220024007
8/7/2012	< 1	< 5	< 6.34	C12220024008
2/7/2013	1.5	< 1	< 0.787	C13038014001
8/21/2013	< 1	< 1	< -2.88	C13233026003
8/21/2013	< 1	< 1	< -4.75	C13233026004
2/24/2014	2.1	< 1	< -5	C14055028002
8/26/2014	0.71	< 1	< 4.67	355748003
8/26/2014	0.69	< 1	< -2.86	355748002
2/9/2015	30.4	< 1	< 5.34	366889001
8/24/2015	0.63	< 1	< -5.75	379998003
2/8/2016	0.51	< 1	< -8.34	391039002
8/4/2016	1.66	< 1	< 7.6	403256002
2/15/2017	1.42	< 1	< -1.5	416791002
7/10/2017	0.38	< 1	< -2.35	427964003
8/1/2017	1.07	< 1	< 1.2	429710003
10/6/2017	27.5	0.35	< 1.38	434637003
1/9/2018	134	4.94	< 10.2	441537003
2/14/2018	104	3.1	< -2.67	443984003
4/9/2018	101	3.26	< -1.07	447628002

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW144

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
4/24/1990	38		0	900503-084
4/24/1990			< 8	6278
4/24/1990	36	< 5		535-006
6/29/1990			5	900629-167
9/11/1990	95	< 5		9009L725-1
9/11/1990			< 8.7	7352
3/5/1991	260	< 5		29038008
3/5/1991			6.8	21370
3/5/1991			45	21371
5/19/1993		< 10	63.4	930524-064
5/19/1993	180	< 10		930521-079
5/19/1993	190	< 25	13	930524-063
5/20/1993	230	< 25	7	930524-071
5/20/1993	190		168	930524-072
5/21/1993	230	< 25	17	930524-079
5/21/1993	190		70.3	930524-080
6/7/1993			8	930608-153
6/17/1993	280			930617-145
7/27/1993	280		0	930729-168
8/26/1993	260	< 50	12	930830-026
9/22/1993	230		30	930923-068

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW144

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
10/19/1993	270		17	931020-069
12/8/1993	220		11	931209-097
1/24/1994	240		16	940125-041
2/23/1994	220		15	940223-130
3/3/1994	380		15	940304-026
4/7/1994	270		1	940408-065
5/4/1994	310		0	940505-027
6/2/1994	320		4	940602-089
7/1/1994	260		53	940701-058
7/1/1994	244	2.4		1110101-0235
8/30/1994	240		17	940830-069
9/20/1994	270		22	940921-085
10/10/1994	250		17	941011-100
11/2/1994	270		1	941103-095
12/1/1994	270		4	941201-125
7/11/2017	115	0.5	46.9	427964004
10/6/2017	104	< 2	52.7	434637004
1/4/2018	128	1.92	39.1	441199001
4/5/2018	104	1.26	53.9	447608002

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW145

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
4/24/1990			11	6280
4/24/1990	59		0	900503-087
4/24/1990	62	< 5		15849001
7/2/1990			4	900702-051
8/21/1990			< 6	7353
8/21/1990	210	< 5		9008L481-2
3/7/1991			5.6	21373
3/7/1991	300	< 5		29054004
3/7/1991			4.6	21374
6/7/1993			1	930608-157
6/7/1993	360			3077603
6/17/1993	480			930617-146
7/27/1993	480		0	930729-159
8/26/1993	460	< 50	1	930830-022
9/22/1993	460		24	930923-072
10/19/1993	510		10	931020-073
12/8/1993	480		12	931209-093
1/24/1994	490		0	940125-154
2/23/1994	450		12	940223-134
3/3/1994	470		15	940304-030
4/7/1994	380		5	940408-061

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW145

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
5/4/1994	410		0	940505-031
6/2/1994	490		0	940602-093
7/1/1994	460		1	940701-054
7/1/1994	450	1.6		1110101-0234
8/30/1994	450		17	940830-073
9/20/1994	510		13	940921-081
10/10/1994	490		10	941011-104
11/2/1994	530		5	941103-099
12/1/1994	530		12	941201-129
12/13/1995	440	< 50	1	951214-097
3/26/1996	400	< 10	2	960326-040
6/5/1996	370	< 50	2	960606-016
9/4/1996	470	< 50	21	960905-034
12/16/1996	340	< 50	15	961217-016
3/4/1997	470	< 25	7	970305-023
6/4/1997	480	< 50	6	970605-008
9/5/1997	440	< 50	10	970905-104
12/8/1997	< 310	< 50	< 5	C973430025
3/3/1998	250	< 50	< 6	C980630112
6/16/1998	200	< 50	22.1	C981670101
9/17/1998	160	< 50	< 5.4	C982610008

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW145

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
12/10/1998	170	< 50	< 18.3	C983450002
2/2/1999	120	< 50	< 16.33	C990340071
5/12/1999	100	< 50	< -12.4	C991320088
8/4/1999	97	< 50	< 0	C992170040
11/17/1999	100	< 50	< -7.11	C993210085
2/14/2000	100	< 5	< 9.53	C000460031
5/9/2000	94	< 10	< 3.41	C001300130
8/16/2000	120	< 25	< 17.5	C002290083
11/13/2000	100	< 10	< 5.77	C003190005
2/8/2001	92	< 5	< 3.82	C010390158
5/14/2001	78	< 10	< -1.41	C011350008
8/15/2001	74	< 10	< 12.2	C012280049
11/14/2001	77	< 10	< 9.43	C013180041
2/27/2002	80	< 10	< 4.87	C020590012
5/2/2002	98	< 5	< 10.6	C021220088
8/30/2002	93	< 5	< 12.9	C022420157
11/13/2002	91	< 5	< 13.7	C023170076
11/13/2002	91	< 5	< 13.6	C023170077
2/18/2003	75	< 5	18.6	C030500038
5/7/2003	70	< 5	< 9.57	C031270176
8/27/2003	61	< 5	< 12	C032390095

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW145

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
11/12/2003	57	< 5	29.4	C033170057
11/12/2003	54	< 5	16	C033170058
2/10/2004	52	< 10	23.1	C040410058
5/11/2004	56	< 5	< 13.7	C041330012
8/12/2004	55	< 5	< 11.2	C042250114
11/23/2004	48	< 5	< 10.6	C043280024
11/23/2004	51	< 5	< 15.2	C043280023
2/9/2005	56	< 5	< 12.6	C050400038
5/10/2005	51	< 5	22.6	C051300061
8/10/2005	50	< 5	< 11.6	C052220136
11/14/2005	58	< 5	< 13	C053180046
11/14/2005	57	< 5	23.3	C053180047
5/16/2006	75	< 5	33.5	C061370014
11/6/2006	68	< 5	19.6	C063100047
5/10/2007	63	< 5	< 8.63	C071300075
11/13/2007	68	1.2	30.4	C073180003
5/22/2008	71	< 2	44.2	C081440005
5/22/2008	70	< 2	47.3	C081440004
11/11/2008	66	< 1	32.5	C08316042009
5/5/2009	62	1	36.6	C09125023004
5/5/2009	50	< 1	42.4	C09125023003

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW145

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
11/4/2009	59	< 1	25.2	C09308040001
5/10/2010	45	< 1	40.7	C10130027003
5/10/2010	50	< 1	56	C10130027004
2/24/2011	58	< 5	36	C11055019002
8/3/2011	53	< 5	30.1	C11215009001
2/1/2012	51	< 5	32.5	C12032020002
8/7/2012	34	< 5	36.3	C12220024003
2/5/2013	42	< 1	34.5	C13036014003
8/20/2013	34	< 1	35.5	C13233002003
2/13/2014	50	< 1	32.5	C14044026002
8/26/2014	48	0.47	42.4	355748004
2/3/2015	47.8	0.41	52.5	366647002
8/24/2015	44.4	0.39	34.9	379998004
2/8/2016	35.3	< 1	26.6	391039003
8/17/2016	35.6	< 1	34.9	404230002
2/15/2017	30.1	< 1	29.6	416791003
7/11/2017	35	0.37	25	427964005
8/1/2017	26.8	< 1	29.1	429710004
10/6/2017	28.9	< 1	18.8	434637001
1/4/2018	32.7	< 1	27.2	441199002
1/4/2018	34.1	< 1	33.6	441199003

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW145

Sample Date Range: 2/21/1990 - 5/15/2018

	Organic Laboratory Analysis Results		Radiological Laboratory Analysis Results	
Sample Date	TCE µg/L	1,1-DCE µg/L	Tc-99 pCi/L	Lab Sample ID
2/14/2018	48.1	0.45	29.2	443984004
4/5/2018	48.4	0.42	28.5	447608003

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW155

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results: TCE µg/L	Organic Laboratory Analysis Results: 1,1-DCE µg/L	Radiological Laboratory Analysis Results: Tc-99 pCi/L	Lab Sample ID
12/6/1990	220	< 14		17377003
3/13/1991	1800		120	910314-108
3/13/1991	2000	< 5		9103L937-9
3/13/1991			190	21405
3/13/1991			200	21404
5/6/1991			110	21406
5/6/1991	1900	< 5		9105L550-6
7/19/1991	2400			910719-033
7/28/1993	2300		181	930729-164
8/31/1993	1800		11	930831-065
9/14/1993	1900		220	930914-093
10/27/1993	2200		191	931028-017
11/8/1993	1900		207	931109-028
12/29/1993	1800		189	931230-109
1/27/1994	2100		193	940128-062
2/3/1994	1800		181	940204-028
3/22/1994	2100		158	940322-178
4/27/1994	2200		248	940428-051
5/26/1994	1900		221	940526-204
6/8/1994	1900		234	940608-196
8/3/1994	2000			940804-002

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW155

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results: TCE µg/L	Organic Laboratory Analysis Results: 1,1-DCE µg/L	Radiological Laboratory Analysis Results: Tc-99 pCi/L	Lab Sample ID
8/9/1994	1600			940810-002
8/15/1994	1500			940816-071
8/19/1994	1500			940819-068
8/25/1994	1600			940825-165
8/25/1994	1600			940825-069
9/27/1994	2500		260	940928-011
10/17/1994	1900		246	941019-016
11/28/1994	390		240	941129-043
12/6/1994	1800		226	941206-090
5/8/1995	1300		276	950509-067
5/8/1996	1800	< 500	347	960509-007
5/12/1997	700	< 100	682	970512-116
5/12/1997	710	< 100		970512-101
5/12/1997			557	5376-97TC
12/9/1997			616	9712071-11AC
12/9/1997	410	< 13		9712064-05RE-AC
12/9/1997	524	24		011009WA100
5/11/1998	740	< 125	669.3	C981310067
8/9/1999	7500	< 1000	339	C992220060
3/21/2000	1600	< 250	420	C000820017
3/21/2000	1500	< 250	468	C000820016

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW155

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
3/19/2001	1100	< 50	422	C010780111
8/21/2001	2100	< 100	396	C012340001
3/25/2002	1700	< 250	251	C020840051
9/11/2002	2400	< 250		C022540082
6/12/2003	6800	< 500	186	C031630079
12/9/2003	16000	< 250	123	C033430057
6/4/2004	6200	< 250	138	C041590030
12/2/2004	9600	< 500	157	C043380001
6/16/2005	6900	< 500	179	C051670012
2/8/2006	20000	< 2500	157	C060390060
9/6/2006	12000	< 1200	179	C062500002
3/14/2007	23000	< 500	131	C070730158
9/5/2007	15000	< 250	150	C072490063
3/10/2008	21000	< 250	144	C080710002
8/28/2008	15000	< 200	141	C082410123
5/13/2009	20000	< 200	142	C09133031001
9/10/2009	14000	< 200	130	C09253025001
9/10/2009	14000	< 1000		C09254002003
9/15/2009	14000	< 500		C09258030001
9/22/2009	13000	< 500		C09265022002
1/19/2011	3100	< 25		C11019028004

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW155

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results: TCE µg/L	Organic Laboratory Analysis Results: 1,1-DCE µg/L	Radiological Laboratory Analysis Results: Tc-99 pCi/L	Lab Sample ID
1/25/2011	3800	< 250		C11026001006
1/25/2011	6000	< 250		C11026001005
1/31/2011	3500	< 250		C11031038005
6/23/2011	3700	< 100	124	C11174017005
12/14/2011	2400	< 500	117	C11348018003
3/13/2012	2400	< 50	137	C12073014001
6/19/2012	1900	< 250	110	C12171014003
9/19/2012	2300	< 20	136	C12263022001
12/28/2012	2200	< 20	120	C12363012002
12/28/2012	2200	< 20	125	C12363012001
3/27/2013	1900	< 20	129	C13086008001
9/16/2013	2000	< 100	131	C13259034001
12/17/2013	1600	< 20	98.6	C13351094006
12/17/2013	1600	< 20	99.1	C13351094007
3/26/2014	1900	< 20	106	C14085027001
6/12/2014	1590	< 25	107	350627004
9/15/2014	1850	0.44	153	356931002
12/2/2014	810	< 1	161	362435002
12/2/2014	817	< 1	160	362435001
3/31/2015	583	< 10	142	369938002
6/16/2015	2500	< 50	110	375398002

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW155

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results: TCE µg/L	Organic Laboratory Analysis Results: 1,1-DCE µg/L	Radiological Laboratory Analysis Results: Tc-99 pCi/L	Lab Sample ID
9/14/2015	4560	< 100	76.5	381234002
12/8/2015	4080	< 50	123	387183003
12/8/2015	4110	< 50	120	387183002
3/23/2016	3760	< 50	109	393849001
6/6/2016	5370	< 100	149	398881002
9/21/2016	5800	< 100	96.7	406611002
12/13/2016	6520	< 100	88	412748003
12/13/2016	6320	< 100	97.5	412748002
3/7/2017	8160	< 100	87.9	418299002
6/8/2017	6840	< 100	102	425123001
7/11/2017	7650	< 100	90.1	427964006
9/12/2017	9830	< 200	92.2	432724002
10/11/2017	4130	< 50	113	435057003
10/11/2017	4470	< 100	114	435057002
12/18/2017	5260	< 100	87.5	440362002
12/18/2017	5720	< 100	107	440362003
1/10/2018	10300	< 200	82.1	441541002
3/21/2018	6370	< 100	92.3	446475002
4/9/2018	5450	< 100	100	447628003
5/15/2018	6950	< 100	96.3	450363001

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW156

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
3/15/1991			190	21407
3/15/1991			85	21408
3/15/1991	300000		135	910315-053
3/15/1991	360000	< 10000		29115005DL
5/8/1991	360000	15		9105L569-2
5/8/1991			130	21409
7/19/1991	550000			910719-034
6/15/1993	460000		110	930616-136
7/28/1993	400000	< 50000	123	930729-154
8/30/1993	380000		122	930831-072
9/14/1993	400000		136	930914-097
10/27/1993	380000		110	931028-021
11/8/1993	370000		139	931109-032
12/29/1993	340000		94	931230-104
1/14/1994	380000			940119-005
1/14/1994	320000			940119-003
1/14/1994	340000			940119-004
1/14/1994	340000			940119-006
1/14/1994	380000			940119-007
1/14/1994	360000			940119-008
1/27/1994	380000		98	940128-066

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW156

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
2/3/1994	340000		100	940204-032
3/22/1994	410000		73	940322-170
4/27/1994	360000		99	940428-055
5/26/1994	350000		109	940526-208
6/8/1994	370000		96	940608-188
7/1/1994	370000		96	940701-050
8/3/1994			106	940804-103
8/3/1994			107	940804-105
8/3/1994			109	940804-102
8/3/1994	400000			940804-101
8/3/1994	390000			940804-104
8/3/1994			104	940804-100
8/3/1994	370000		120	940804-003
8/4/1994	400000		109	940804-099
8/9/1994			39	940810-056
8/9/1994	15000			940810-057
8/9/1994	11000		117	940810-055
8/9/1994			72	940810-054
8/9/1994	5500		211	940810-053
8/9/1994	1300		55	940810-001
8/10/1994			52	940811-113

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW156

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
8/10/1994			26	940811-115
8/10/1994	30000		33	940811-119
8/10/1994			30	940811-118
8/10/1994			32	940811-120
8/10/1994	24000			940811-121
8/10/1994	19000		33	940811-116
8/10/1994	35000			940811-117
8/11/1994	44000			940812-144
8/11/1994			35	940812-141
8/11/1994	38000		40	940812-142
8/11/1994			47	940812-143
8/11/1994			49	940812-145
8/12/1994	59000			940816-057
8/12/1994	52000		65	940816-056
8/12/1994			53	940816-055
8/12/1994			67	940816-054
8/12/1994			54	940816-058
8/13/1994			89	940816-061
8/13/1994			84	940816-062
8/13/1994	80000		72	940816-060
8/13/1994	85000		80	940816-059

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW156

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
8/14/1994			93	940816-064
8/14/1994			86	940816-065
8/14/1994	110000		97	940816-063
8/14/1994	100000		104	940816-066
8/15/1994			95	940816-070
8/15/1994	120000		101	940816-069
8/15/1994			115	940816-068
8/15/1994	130000		92	940816-067
8/16/1994	150000		94	940816-072
8/16/1994			88	940817-068
8/16/1994	150000		105	940817-067
8/17/1994	210000		93	940818-059
8/17/1994			93	940817-040
8/17/1994	170000		113	940818-060
8/17/1994			103	940818-058
8/17/1994			100	940818-061
8/18/1994	210000		106	940819-070
8/18/1994			112	940819-071
8/18/1994			107	940819-073
8/18/1994	200000		90	940819-072
8/19/1994			112	940823-150

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW156

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
8/19/1994	210000		100	940823-149
8/19/1994			94	940823-135
8/19/1994	210000		107	940819-069
8/20/1994	200000		95	940823-139
8/20/1994	190000		117	940823-148
8/20/1994			115	940823-137
8/20/1994			108	940823-136
8/21/1994			111	940823-141
8/21/1994	200000		98	940823-140
8/21/1994	230000		102	940823-138
8/21/1994			100	940823-142
8/22/1994	220000		107	940823-143
8/22/1994			92	940823-144
8/22/1994	210000		105	940823-145
8/22/1994			98	940823-147
8/23/1994	240000		111	940824-154
8/23/1994	220000		97	940823-146
8/23/1994			96	940824-153
8/23/1994			104	940824-155
8/24/1994			105	940825-065
8/24/1994			109	940825-068

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW156

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
8/24/1994	220000		113	940825-067
8/24/1994	230000		95	940824-152
8/25/1994	210000		121	940825-070
8/25/1994	220000		105	940825-166
9/27/1994	320000		67	940928-015
10/17/1994	290000		40	941019-012
11/28/1994	310000		24	941129-047
12/6/1994	310000		2	941206-094
5/8/1995	280000		5	950509-075
5/8/1996	350000	< 50000	0	960509-008
12/9/1997			-5.2	9712071-10AD
12/9/1997	141649	< 1000		011010WA070
12/9/1997	250000	< 13000		9712064-04DL-AC
5/11/1998	260000	< 25000	< -7.2	C981310064
8/9/1999	220000	< 25000	< 6.23	C992220059
3/21/2000	240000	< 25000	< -3.81	C000820018
3/19/2001	180000	< 12000	< 8.88	C010780112
8/21/2001	170000	< 20000	< 3.71	C012340002
3/25/2002	160000	< 25000	< -5.2	C020840071
9/19/2002	150000	< 10000	< 13.4	C022620163
6/12/2003	190000	< 10000	20.6	C031630080

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW156

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results: TCE µg/L	Organic Laboratory Analysis Results: 1,1-DCE µg/L	Radiological Laboratory Analysis Results: Tc-99 pCi/L	Lab Sample ID
12/9/2003	91000	< 10000	< 6.13	C033430058
6/4/2004	42000	< 5000	< 0.822	C041590029
12/2/2004	31000	< 5000	24	C043380002
6/16/2005	26000	< 2000	< 4.55	C051670013
2/8/2006	9000	< 2000	< 7.32	C060390061
9/6/2006	3300	< 5000	< -3.72	C062500003
3/14/2007	4600	< 5000	< -1.6	C070730159
9/5/2007	21000	< 1000	< -0.987	C072490064
3/10/2008	47000	< 2000	< 1.25	C080710003
8/28/2008	5200	< 1000	< 3.38	C082410124
5/13/2009	32000	< 1000	< 9.32	C09133031002
9/8/2009	34000	< 2000	< 0.0531	C09252004001
9/8/2009	34000	< 5000		C09252006001
9/15/2009	36000	< 5000		C09258030002
9/22/2009	39000	< 5000		C09265022001
1/20/2011	52000	< 1000		C11020026003
1/25/2011	52000	< 2500		C11026003001
1/31/2011	58000	< 2500		C11031038006
6/27/2011	83000	< 5000	< -8.94	C11178014001
12/14/2011	65000	< 5000	< -5.13	C11348018004
3/13/2012	62000	< 2000	< 6.21	C12073014002

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW156

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
6/19/2012	64000	< 5000	< 9.77	C12171014004
9/19/2012	23000	< 500	< 5.12	C12263022002
12/28/2012	1700	< 500	< -0.798	C12363012003
3/27/2013	32000	< 1000	< 3.7	C13086008002
9/16/2013	31000	< 2500	< -2.19	C13259034002
12/17/2013	600	< 500	< 2.71	C13351094008
3/26/2014	37000	< 500	< -4.56	C14085027002
6/12/2014	81800	< 1000	< -3.61	350627005
8/13/2014	50000	< 20	< 0.723	160-7947-6
9/3/2014	57000	< 40	< 1.81	160-8215-12
9/15/2014	56500	15.2	< 1.62	356931003
12/2/2014	925	< 500	< 9.1	362435003
3/31/2015	3390	< 500	< -3.32	369938003
6/16/2015	9720	< 500	< 3.72	375398003
6/16/2015	8270	< 500	< 1.43	375398004
9/14/2015	1190	< 50	< -9.6	381234003
12/8/2015	14100	< 500	< -0.175	387183001
3/23/2016	13100	170	< -8.5	393849002
6/6/2016	15300	< 500	< 2.38	398881003
6/6/2016	14600	< 500	< 1.33	398881001
9/21/2016	12500	< 500	< -2.91	406611003

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW156

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results: TCE µg/L	Organic Laboratory Analysis Results: 1,1-DCE µg/L	Radiological Laboratory Analysis Results: Tc-99 pCi/L	Lab Sample ID
12/13/2016	2140	< 100	< -7.97	412748001
3/7/2017	15000	< 500	< 3.88	418299003
6/8/2017	10300	< 500	< 5.59	425123003
6/8/2017	11800	< 500	< -5.94	425123002
7/11/2017	13800	< 500	< -8.3	427964007
7/11/2017	13700	< 500	< -2.35	427964008
9/12/2017	13100	< 500	< 2.86	432724003
10/11/2017	16700	116	< -6.64	435057004
12/18/2017	8910	71.2	< 6.73	440362001
1/10/2018	13100	< 250	< -4.91	441541001
3/21/2018	10200	< 250	< 9.83	446475003
4/9/2018	8010	< 250	< -3.04	447628005
4/9/2018	6580	< 250	< -4.14	447628004
5/15/2018	7020	< 250	< -5.19	450363003
5/15/2018	7090	< 250	< 14.2	450363002

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW163

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
12/11/1990	< 1	< 6		17412002
12/11/1990	< 1	< 6		17412004
12/11/1990	< 1	< 6		17412003
3/20/1991	95	< 5		29186005
3/20/1991			20	21440
3/20/1991			19	21439
3/20/1991	860		27	910325-004
5/9/1991			4.5	21441
5/9/1991	92	3		9105L583-9
10/30/1991	86		37	911031-025
6/15/1993	116		27	930616-128
8/16/1993	140		57	930816-105
11/4/1993	110		38	931104-251
2/16/1994	180		44	940216-127
5/4/1994	150		23	940505-173
8/11/1994	130		60	940811-146
10/11/1994	120		47	941012-001
5/2/1995	280		50	950503-090
5/13/1996	210	< 50	34	960514-004
5/11/1998	81	8	20.7	C981310070
8/5/1999	120	< 50	18.5	C992170152

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW163

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
3/20/2000	100	< 25	< 16.2	C000810001
3/21/2001	120	11	23.4	C010800076
8/22/2001	96	< 50	< 13.3	C012350003
3/25/2002	< 1	< 5	26.4	C020850015
9/10/2002	97	9		C022530137
6/9/2003	73	7	26	C031600085
12/4/2003	69	10	22.8	C033380086
6/2/2004	60	5	29.1	C041550048
12/2/2004	110	6.2	20.9	C043380000
6/13/2005	73	< 5	< 13.6	C051650009
2/8/2006	170	6.4	23	C060390063
9/12/2006	130	< 10	< 8.23	C062550160
3/20/2007	67	< 10	< 5.2	C070790075
9/6/2007	150	5	< 13.9	C072490154
3/11/2008	85	2.7	26.3	C080710142
9/11/2008	75	2.2	24.8	C082550121
4/9/2009	78	2.2	< 6.64	C09099015003
9/2/2009	80	3.3	24.2	C09245027004
3/5/2010	65	2.7	< 13.9	C10064035006
9/2/2010	100	2.9	17.8	C10245022006
5/10/2011	78	< 5	< 6.14	C11130022006

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW163

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results: TCE µg/L	Organic Laboratory Analysis Results: 1,1-DCE µg/L	Radiological Laboratory Analysis Results: Tc-99 pCi/L	Lab Sample ID
5/10/2013	93	3.3	18.8	C13130033001
6/2/2015	35.1	1.03	< 3.38	374344001
5/23/2017	57	1.96	< 6.97	424148002

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW255

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
5/15/1995	1100	< 500	7	950523-188
8/17/1995	1500		10	950818-001
9/14/1995	1300	< 250	9	950915-013
12/12/1995	1400	< 100	4	951213-089
3/19/1996	1300	< 500	17	960320-058
6/17/1996	1200	< 500	11	960618-010
9/5/1996	1200	< 500	17	960906-049
12/13/1996	1100	< 500	25	961217-013
3/4/1997	1200	< 100	0	970305-024
5/13/1997	1300	< 125	8	970515-046
6/4/1997	1300	< 100	0	970605-006
9/5/1997	1200	< 130	7	970905-105
12/9/1997	1000	< 100	< 2	C973440067
3/2/1998	970	< 125	< -0.4	C980620035
6/17/1998	1000	< 100	< 10	C981680060
9/21/1998	860	< 125	< 8.9	C982640120
12/9/1998	890	< 250	< 4.1	C983440002
2/2/1999	900	< 100	< 7	C990340072
5/11/1999	850	< 250	< 8.88	C991310084
8/4/1999	830	< 100	< 0	C992170041
11/17/1999	750	< 100	< 1.87	C993210086

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW255

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
2/14/2000	1400	< 100	< 13.1	C000460035
5/9/2000	810	< 100	< -4.84	C001300128
8/16/2000	650	< 50	< 14.1	C002290082
8/16/2000	710	< 50	< 4.64	C002290081
11/13/2000	740	< 50	< 10.8	C003190007
11/13/2000	830	< 50	< 1.34	C003190006
2/12/2001	710	< 50	< -4.58	C010430091
5/15/2001	730	< 50	< 13.6	C011350052
8/15/2001	730	< 100	< 2.55	C012280050
11/12/2001	710	< 50	< 2.07	C013170007
2/5/2002	740	< 100	17	C020370095
5/2/2002	680	< 100	< -2.74	C021220087
8/30/2002	650	< 50	< 14.8	C022420158
11/13/2002	590	< 50	< -2.66	C023170075
2/18/2003	520	< 50	19.2	C030500039
5/8/2003	520	< 50	< -11.4	C031280135
5/8/2003	510	< 50	< 1.63	C031280134
8/28/2003	500	< 50	< 13	C032400189
11/12/2003	460	< 50	< 12	C033170061
2/11/2004	440	< 50	< 12.9	C040420068
5/11/2004	480	< 50	< 7.07	C041330010

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW255

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
5/11/2004	490	< 50	< -4.01	C041330009
8/12/2004	540	< 50	< -4.62	C042250115
11/17/2004	420	< 50	< -11.4	C043230015
2/9/2005	470	< 25	< 2.64	C050400039
5/10/2005	460	< 25	< 1.68	C051300062
5/10/2005	470	< 25	< 15.3	C051300063
8/10/2005	450	< 25	< 8.82	C052220128
11/14/2005	430	< 25	< -1.59	C053180048
5/17/2006	500	< 50	< 9.76	C061370055
5/17/2006	480	< 50	< 13.6	C061370056
8/22/2006			< 2.74	C062340050
11/6/2006	420	< 25	< 10.2	C063100048
2/22/2007			< -12.1	C070530117
5/10/2007	430	< 25	< -0.437	C071300078
8/29/2007			< 0.146	C072410073
11/13/2007	420	< 5	< 0.106	C073180001
2/13/2008			< -4.98	C080440016
5/29/2008	310	< 5	< 8.45	C081500062
8/19/2008			< 3.9	C082330004
11/12/2008	380	< 5	< 0.855	C08317011002
2/17/2009			< 10.5	C09048025004

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW255

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
5/5/2009	370	< 25	< 4.13	C09125024003
8/4/2009			< -8.45	C09216023005
11/9/2009	350	< 5	< -9.38	C09313029001
2/2/2010			20.3	C10033014003
5/11/2010	330	< 5	19.2	C10131023008
8/2/2010			< 7.72	C10214022003
12/9/2010			< -3.37	C10343021004
2/23/2011	330	< 25	< -10.3	C11054029005
5/5/2011			< -3.91	C11126003001
8/9/2011	330	< 25	< 6.08	C11221021006
11/2/2011			< 3.69	C11307019002
2/1/2012	320	< 25	< -2.11	C12032008003
5/2/2012			< 5.97	C12123025002
8/6/2012	230	< 25	< 3.42	C12219037002
11/5/2012			< -1.24	C12310038002
2/4/2013	260	< 2	< 2.73	C13035045002
6/18/2013			< -1.02	C13169022001
8/20/2013	230	< 2	< 0.176	C13233002004
11/19/2013			< -0.455	C13323017001
2/13/2014	280	< 2	< -1.59	C14044005003
5/13/2014			< 0.961	348903001

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW255

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
8/26/2014	320	1.29	< -0.985	355748005
11/12/2014			< 1.41	361215001
2/5/2015	286	< 5	< 8.54	366647003
5/12/2015			< 12.7	373064002
5/12/2015			< -16.9	373064001
8/24/2015	224	< 5	< 5.01	379998005
11/24/2015			< -5.5	386382001
2/9/2016	229	< 5	< -8.7	391039004
5/17/2016			< 12.4	397601001
5/17/2016			< 9.04	397601002
8/17/2016	240	2.15	< 7.27	404230003
11/17/2016			< -1.29	410957001
2/15/2017	190	2	< -2.25	416791004
5/17/2017			< 4.82	423616001
5/17/2017			< 14.2	423616002
8/2/2017	166	1.18	< 0.281	429710005
11/14/2017			< 3.86	437928002
11/14/2017			< 5.65	437928001
2/26/2018	184	< 5	< 5.56	444774001
5/8/2018			< -2.55	449823001

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW256

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
5/15/1995	340	< 50	16	950523-196
9/15/1995	360	< 50	19	950914-031
12/12/1995	350	< 50	19	951213-081
3/19/1996	340	< 50	18	960320-054
6/17/1996	240	< 50	15	960618-009
9/5/1996	250	< 50	46	960906-050
12/16/1996	220	< 50	24	961217-015
3/4/1997	240	< 50	8	970305-025
6/4/1997	300	< 50	9	970605-005
9/24/1997	320	< 50	19	970924-094
12/9/1997	280	< 50	< 17	C973440068
3/2/1998	350	< 50	< 15.2	C980620034
6/17/1998	320	< 50	19.7	C981680061
9/24/1998	290	< 50	34.8	C982680007
12/9/1998	340	65	57.9	C983440003
2/2/1999	360	79	82.01	C990340073
5/11/1999	360	70	82.7	C991310083
8/4/1999	310	< 100	85	C992170037
11/17/1999	300	68	59.9	C993210087
2/14/2000	380	81	96.2	C000460036
5/9/2000	350	77	74.8	C001300129

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW256

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
8/16/2000	340	78	79.1	C002290085
11/13/2000	390	< 25	76.5	C003190008
2/12/2001	230	50	98.9	C010430089
5/15/2001	370	80	101	C011350051
8/15/2001	430	< 50	118	C012280051
11/12/2001	440	90	114	C013170006
2/5/2002	450	100	117	C020370098
2/5/2002	460	110	120	C020370097
5/2/2002	430	100	115	C021220086
8/30/2002	480	99	127	C022420159
11/13/2002	480	100	108	C023170074
2/18/2003	420	84	129	C030500040
5/8/2003	400	82	133	C031280136
8/28/2003	380	83	126	C032400188
11/12/2003	410	93	109	C033170060
2/11/2004	440	92	139	C040420067
5/11/2004	500	110	143	C041330011
8/12/2004	450	100	115	C042250118
11/17/2004	360	69	105	C043230014
2/9/2005	480	93	134	C050400040
5/10/2005	460	97	151	C051300064

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW256

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
8/10/2005	470	86	131	C052220129
11/14/2005	530	95	127	C053180049
5/16/2006	740	130	169	C061370015
8/22/2006			110	C062340049
11/6/2006	640	120	139	C063100049
11/6/2006	680	120	139	C063100050
2/21/2007			115	C070530119
5/10/2007	540	110	118	C071300077
8/29/2007			116	C072410074
11/13/2007	540	110	138	C073180002
2/13/2008			133	C080440015
5/29/2008	460	< 94	135	C081500061
8/19/2008			128	C082330003
11/12/2008	410	92	123	C08317011001
2/17/2009			132	C09048025003
5/5/2009	460	130	111	C09125024002
8/4/2009			110	C09216023004
11/5/2009	140	37	80.2	C09309021001
2/2/2010			105	C10033014002
5/10/2010	310	82	107	C10130027005
8/2/2010			77.7	C10214022002

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW256

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
12/9/2010			81.1	C10343021003
2/23/2011	340	100	92.3	C11054029004
2/23/2011	340	100	94	C11054029003
5/5/2011			83.3	C11126003002
8/9/2011	290	97	90.6	C11221021005
11/2/2011			76.7	C11307019003
2/1/2012	220	75	69.4	C12032008004
2/1/2012	250	82	65.6	C12032008005
5/2/2012			60.9	C12123025003
5/2/2012			64.5	C12123025004
8/6/2012	190	99	66	C12219037001
11/5/2012			75.2	C12310038003
2/4/2013	240	83	80.3	C13035045004
2/4/2013	240	84	77.4	C13035045003
6/18/2013			69.7	C13169022002
8/20/2013	230	110	70.1	C13233002005
11/18/2013			50.3	C13322025006
2/13/2014	170	62	37	C14044005004
2/13/2014	170	64	45.1	C14044005005
5/13/2014			60.3	348903002
8/26/2014	168	57	40.7	355748006

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW256

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
11/12/2014			50.2	361215002
2/5/2015	193	70.4	48.7	366647005
2/5/2015	194	70.8	48.8	366647004
5/12/2015			32.8	373064003
8/24/2015	207	78.3	70.7	379998006
11/24/2015			89.8	386382002
2/9/2016	329	67.2	93.6	391039006
2/9/2016	321	65.4	96.5	391039005
5/17/2016			102	397601003
8/17/2016	330	67.4	102	404230004
11/17/2016			90	410957002
2/15/2017	306	55.7	95.5	416791006
2/15/2017	298	56.9	81.7	416791005
5/17/2017			99.6	423616003
8/2/2017	294	60.6	99.2	429710006
11/14/2017			97.7	437928003
2/26/2018	215	46	65	444774002
2/26/2018	207	46.5	62	444774003
5/8/2018			56.5	449823002
5/8/2018			47.9	449823003

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW258

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
5/15/1995	2000	< 500	8	950523-192
6/7/1995	2200	< 250	6	950608-247
8/17/1995	2200		19	950818-002
9/15/1995	2200	< 250	10	950914-019
12/12/1995	2300	< 250	4	951213-069
3/13/1996	2100	< 250	6	960314-007
6/19/1996	1900	< 500	3	960620-135
9/18/1996			10	960919-005
12/16/1996	2000	< 500	5	961217-014
3/4/1997	2200	< 500	0	970305-022
6/4/1997	2200	< 250	3	970605-007
9/9/1997	2100	< 250	-2	970909-066
12/9/1997	1700	< 250	< -3	C973440069
3/2/1998	1600	< 250	< 4.8	C980620033
6/17/1998	1600	< 250	< 11.7	C981680062
9/21/1998	1500	< 250	< 5.4	C982640119
12/9/1998	1300	< 500	< 2.8	C983440004
2/2/1999	1300	< 500	< 13.21	C990340074
5/12/1999	1200	< 500	< -11.6	C991320089
8/4/1999	1300	< 500	< 0	C992170038
11/18/1999	1100	< 250	< -2.03	C993230018

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW258

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results: TCE µg/L	Organic Laboratory Analysis Results: 1,1-DCE µg/L	Radiological Laboratory Analysis Results: Tc-99 pCi/L	Lab Sample ID
11/18/1999	1100	< 250	< 8.95	C993230017
2/14/2000	1000	< 250	17.3	C000460037
5/9/2000	1100	< 100	< -7.48	C001300131
8/16/2000	980	< 100	< 10.2	C002290084
11/14/2000	880	< 250	< 9.48	C003190125
2/12/2001	960	< 50	< -0.928	C010430090
5/14/2001	760	< 100	< 12.2	C011350005
8/15/2001	940	< 100	< 3.91	C012280052
11/14/2001	800	< 50	< 7.79	C013180040
2/5/2002	1000	< 100	19.9	C020370096
5/2/2002	890	< 100	< 0.642	C021220085
8/30/2002	820	< 50	18.7	C022420156
11/13/2002	740	< 100	< 14.4	C023170073
2/18/2003	640	< 50	< 11.9	C030500041
5/8/2003	610	< 50	< 7.87	C031280137
8/27/2003	590	< 50	< 3.7	C032390093
8/27/2003	580	< 50	< 4.89	C032390094
11/12/2003	510	< 50	< 13.8	C033170059
2/10/2004	510	< 50	< 8.03	C040410059
5/11/2004	530	< 50	< 4.07	C041330013
8/17/2004	550	< 50	< 4.93	C042300096

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW258

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
8/17/2004	540	< 50	< 8.52	C042300097
11/23/2004	420	< 50	< 1.32	C043280022
2/8/2005	450	< 25	< 4.95	C050390027
5/12/2005	440	< 25	< 8.17	C051320129
8/10/2005	390	< 25	< 4.75	C052220130
11/14/2005	370	< 25	< 6.61	C053180050
2/6/2006			< 11.9	C060380059
5/16/2006	400	< 25	18.1	C061370013
8/21/2006			< 13.8	C062330123
8/21/2006			< 11.9	C062330122
11/6/2006	350	< 25	20.6	C063100051
2/21/2007			< -4.62	C070530118
5/10/2007	290	< 25	< 5.19	C071300076
8/29/2007			< 0.73	C072410072
11/12/2007	290	11	< 7.29	C073170019
2/13/2008			< -0.254	C080440017
5/22/2008	290	11	18.7	C081440006
8/19/2008			< 13.8	C082330002
11/11/2008	260	8.2	< 6.54	C08316042007
2/17/2009			< 12	C09048025002
5/5/2009	270	< 10	< 11.8	C09125024001

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW258

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results: TCE µg/L	Organic Laboratory Analysis Results: 1,1-DCE µg/L	Radiological Laboratory Analysis Results: Tc-99 pCi/L	Lab Sample ID
8/4/2009			< -1.44	C09216023003
11/4/2009	120	3.9	< -2.28	C09308040002
2/2/2010			< 12	C10033014001
5/10/2010	260	7.9	< 13.6	C10130027006
8/2/2010			< 11	C10214022001
12/9/2010			< 13.8	C10343021002
2/24/2011	260	< 10	< 6.74	C11055019001
5/5/2011			< 5.17	C11125014002
8/9/2011	270	< 10	< 9.45	C11221021004
11/2/2011			< 2.39	C11307019004
2/1/2012	220	< 10	< -0.166	C12032020001
5/2/2012			< 5.36	C12123025005
8/6/2012	190	< 10	< 12.2	C12219037003
11/5/2012			< -2.04	C12310038004
2/4/2013	190	4.5	< 2.36	C13035045005
6/18/2013			< 4.03	C13169022003
8/20/2013	190	3.7	< 0.704	C13233002006
11/18/2013			< 6.31	C13322025005
2/13/2014	240	4	< 4.08	C14044026001
5/13/2014			< 4.94	348903003
8/26/2014	241	2.85	< 5.78	355748007

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW258

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
11/12/2014			< 1.87	361215003
2/3/2015	233	2.9	< 3.2	366647006
5/12/2015			< 14.4	373064004
8/24/2015	209	3	< -1.63	379998007
11/24/2015			< 4.09	386382003
2/8/2016	197	3.44	< 3.3	391039007
5/17/2016			< 4.04	397601004
8/17/2016	170	0.8	< 11.4	404230001
11/17/2016			< 8.94	410957003
2/15/2017	141	3.8	< 1.19	416791007
5/17/2017			< 11.1	423616004
7/11/2017	134	0.72	< 1.92	427964009
8/2/2017	136	4.2	< 5.13	429710007
10/6/2017	126	3.42	< 0.689	434637005
1/9/2018	165	4.36	< 0.517	441537001
2/14/2018	178	2.28	< -3.38	443984001
4/5/2018	199	2.24	< -3.87	447608001

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW260

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
5/16/1995	760	< 500	23	950523-200
9/14/1995	730	< 100	17	950915-005
12/12/1995	840	< 100	28	951213-085
3/13/1996	740	< 50	11	960314-003
6/18/1996	560	< 100	2	960619-029
9/12/1996	820	< 50	28	960912-090
12/13/1996	680	< 50	18	961219-012
3/10/1997	630	< 50	13	970312-036
6/9/1997	690	< 50	35	970609-053
9/2/1997	680	< 50	36	970902-148
12/29/1997	940	< 50	32	C973640027
3/4/1998	870	< 50	38	C980640021
6/24/1998	800	< 50	36.7	C981750113
12/2/1998	820	< 100	43.3	C983360184
3/2/1999	700	< 100	45.12	C990610178
6/2/1999	690	< 200	24.7	C991540045
9/13/1999			41.5	C992560162
12/6/1999	540	< 50	38.7	C993400093
3/7/2000	560	< 50	< 10.6	C000680015
6/20/2000	610	< 50	< 16.8	C001720152
6/20/2000	600	< 50	< 11.8	C001720151

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW260

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
9/8/2000	570	< 50	28.8	C002520105
12/12/2000	620	< 25	39.1	C003470043
3/12/2001	610	18	34.7	C010710106
6/4/2001	500	< 50	47.4	C011560013
9/24/2001	560	< 50	25.7	C012670052
12/12/2001	530	< 50	40.5	C013460073
3/5/2002	530	< 50	35.4	C020650007
6/5/2002	440	< 50	27.1	C021560163
9/5/2002	520	< 50	38.2	C022480078
12/2/2002	560	< 50	37.9	C023370009
6/3/2003	620	< 50	54.1	C031550065
12/4/2003	620	< 25	22.3	C033380095
6/4/2004	680	< 50	36.1	C041590028
12/13/2004	630	< 50	52.2	C043480118
12/13/2004	640	< 50	56.1	C043480119
6/9/2005	460	< 50	56.1	C051600079
11/17/2005	680	< 50	79.1	C053210098
5/24/2006	590	< 50	86.3	C061450011
3/20/2007	420	< 50	89.9	C070790077
9/13/2007	520	5.9	133	C072570004
3/19/2008	540	< 5	143	C080800007

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW260

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
3/19/2008	520	5.2	137	C080800008
9/11/2008	470	< 10	106	C082550120
4/9/2009	67	< 1	154	C09099015001
4/9/2009	85	< 1	171	C09099015002
9/2/2009	380	9.2	115	C09245027006
3/5/2010	380	< 10	105	C10064035004
3/5/2010	390	< 10	109	C10064035003
9/7/2010	420	8.3	109	C10250033005
5/11/2011	410	< 25	70.7	C11131034004
5/10/2013	320	5.6	69.6	C13130033002
6/1/2015	403	3.11	29.1	374452003
5/23/2017	258	3	61.1	424148001

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW283

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
6/11/1996			4	960612-041
8/22/1996	680	< 50	12	960826-020
12/16/1996	790	< 50	0	961217-006
12/16/1996	700	< 50	4	961217-005
3/4/1997	1300	< 50	1	970305-029
6/9/1997	650	< 100	5	970610-077
9/9/1997	400	< 100	-1	970909-074
12/8/1997	270	< 100	< 6	C973430026
3/2/1998	280	< 125	< 8.6	C980620041
3/2/1998	290	< 125	< 8.1	C980620040
6/16/1998	220	< 100	< 13	C981670102
9/17/1998	260	< 100	< 12.3	C982610009
12/10/1998	220	< 100	21.2	C983450003
2/3/1999	220	< 50	25.43	C990340152
5/11/1999	250	< 250	< 11	C991310085
8/4/1999	190	< 100	< 16.2	C992170052
8/4/1999	190	< 100	< 3.64	C992170043
11/17/1999	220	< 100	< 3.01	C993210088
2/14/2000	210	< 25	< 5.09	C000460038
5/9/2000	190	< 50	< -2.26	C001310008
8/16/2000	180	< 50	< 15.1	C002290078

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW283

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
11/15/2000	180	< 10	< 9.17	C003200065
2/12/2001	180	< 10	< -2.24	C010430095
5/14/2001	150	< 25	< 5.38	C011350016
5/14/2001	160	< 25	< 7.18	C011350015
8/16/2001	160	< 25	< 1.86	C012280069
11/12/2001	170	< 25	< 11.2	C013170005
3/27/2002	170	< 25	< 6.22	C020860181
5/2/2002	180	< 25	< -3.27	C021220080
8/29/2002	200	< 25	< 12.3	C022420097
8/29/2002	200	< 25	< 14.9	C022420096
11/13/2002	170	< 25	< 5.6	C023170027
2/24/2003	150	< 25	< 11.6	C030550072
5/8/2003	140	< 10	< 3.32	C031280142
8/27/2003	120	< 10	< 2.1	C032390100
11/13/2003	140	< 25	18.3	C033180000
2/11/2004	120	< 25	< 12.7	C040420076
5/11/2004	100	< 10	< -5.63	C041330014
8/12/2004	130	< 10	< -2.9	C042250112
11/17/2004	130	< 10	< -5.37	C043230023
2/28/2005	100	< 5	< 5.87	C050590086
5/11/2005	110	< 5	< -0.28	C051310086

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW283

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
8/11/2005	110	< 5	< 6.78	C052230253
11/14/2005	110	< 10	< 4.76	C053180038
5/17/2006	120	< 10	< 10.9	C061370048
11/6/2006	110	< 5	< 9.24	C063100057
5/10/2007	88	< 5	< 2.13	C071300074
11/12/2007	99	< 1	< -2.5	C073170013
11/12/2007	90	< 1	< 3.88	C073170014
5/27/2008	74	< 1	< 11.2	C081480099
11/11/2008	87	< 1	< 0.536	C08316042004
11/11/2008	88	< 1	< 6.43	C08316042003
5/4/2009	81	< 1	< 11.7	C09125009002
11/3/2009	84	1.1	< 0.976	C09308004005
11/3/2009	70	1.2	< -6.83	C09308004004
5/11/2010	77	< 1	23.9	C10131023002
2/22/2011	86	< 5	28.6	C11053015002
8/8/2011	61	< 5	< 6.53	C11220029001
2/1/2012	65	< 5	19	C12032020004
8/8/2012	52	< 5	18.2	C12221010001
2/5/2013	57	< 1	< 12.1	C13036014004
8/12/2013	22	< 5	< 2.18	C13224033002
2/24/2014	62	< 1	< -4.42	C14055028004

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW283

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results: TCE µg/L	Organic Laboratory Analysis Results: 1,1-DCE µg/L	Radiological Laboratory Analysis Results: Tc-99 pCi/L	Lab Sample ID
8/26/2014	56.8	0.35	< 13.4	355748008
2/4/2015	67.6	0.6	< 14.3	366647007
8/24/2015	52	0.33	< 8.19	379998008
2/8/2016	50.7	< 1	< 8.77	391039008
8/4/2016	47.8	< 1	< 6.1	403256003
2/15/2017	51.2	0.46	< 7.25	416791008
7/10/2017	41.3	< 1	< 2.93	427964010
8/1/2017	45.3	0.41	< 0.842	429710008
10/6/2017	55.9	0.48	18.5	434637006
1/9/2018	29.8	< 1	< 6.53	441537004
2/14/2018	11.8	< 1	< -4.79	443984005
4/5/2018	28.6	< 1	< 11.9	447608004

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW288

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
6/4/1996			4	960612-034
8/22/1996	1800	< 500	11	960826-019
12/16/1996	1800	< 500	0	961217-017
3/5/1997	1600	< 250	7	970306-082
6/10/1997	1400	< 125	8	970610-118
9/10/1997	1400	< 130	9	970910-101
12/9/1997	1300	< 250	< -6	C973440070
3/3/1998	1300	< 125	< 7	C980630113
6/16/1998	1200	< 100	19.2	C981670104
9/16/1998	880	< 250	< 5	C982600071
12/14/1998	640	< 250	< 5.4	C983490003
2/2/1999	760	< 250	24.82	C990340075
5/12/1999	810	< 250	< -6.97	C991320090
8/4/1999	410	< 100	< 5.48	C992170047
11/17/1999	860	< 100	< 10.5	C993210090
2/15/2000	740	< 100	< 9.83	C000470006
5/9/2000	1100	< 100	< 5.45	C001310011
5/9/2000	1000	< 250	< 1.1	C001310012
8/17/2000	410	< 100	< 4.21	C002300084
11/15/2000	120	< 25	26.3	C003200063
2/8/2001		< 10	< 16	C010390159

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW288

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
5/14/2001	620	< 50	< 13.2	C011350010
8/15/2001	280	< 50	22.1	C012280040
11/13/2001	470	< 50	< 11.7	C013170053
3/27/2002	560	< 100	< 10.2	C020860179
5/2/2002	650	< 50	< 5.19	C021220091
8/29/2002			26.3	C030210107
8/29/2002	280	< 50		C022420104
11/11/2002	370	< 25	25.3	C023160007
2/18/2003	420	< 25	31.5	C030500035
2/18/2003	420	< 25	26	C030500034
5/7/2003	470	< 25	19.2	C031270174
8/27/2003	290	< 25	< 15.2	C032390097
11/13/2003	240	< 25	49.5	C033180002
2/11/2004	330	< 50	32.9	C040420073
2/11/2004	330	< 50	31.3	C040420074
5/12/2004	330	< 25	29.2	C041330035
8/16/2004	290	< 25	30.2	C042290045
11/18/2004	210	< 50	21.5	C043240001
2/8/2005	310	15	33	C050390064
2/8/2005	300	17	43.2	C050390063
5/11/2005	280	< 25	29.8	C051310091

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW288

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
8/10/2005	220	< 25	37	C052220138
11/14/2005	190	< 25	36.5	C053180039
2/6/2006			39	C060380060
5/17/2006	240	21	44.5	C061370057
8/21/2006			55.1	C062330124
11/6/2006	230	< 25	49.4	C063100053
2/22/2007			26.1	C070530115
5/9/2007	210	20	25.5	C071300007
5/9/2007	220	22	32.1	C071300006
8/29/2007			33	C072410069
11/12/2007	240	22	23.5	C073170017
2/20/2008			34.9	C080510148
5/27/2008	200	20	38.6	C081480101
8/19/2008			40.9	C082330001
11/11/2008	230	21	37.3	C08316042005
2/17/2009			44.2	C09048025001
5/5/2009	220	22	45.8	C09125023006
8/4/2009			31.4	C09216023001
9/17/2009	250	22	42.4	C09260022002
10/27/2009	190	19	40.7	C09300023004
10/27/2009	190	20	49.4	C09300023003

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW288

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
11/3/2009	180	22	26.2	C09308004006
2/2/2010			52.5	C10033014004
5/11/2010	180	19	43.5	C10131023004
8/5/2010			42	C10217037001
12/7/2010			31.2	C10341027002
12/7/2010			38	C10341027001
2/22/2011	190	16	37.3	C11053015004
5/4/2011			24.5	C11124021001
8/9/2011	280	35	41.2	C11221021002
11/3/2011			41.7	C11307020002
11/3/2011			45.8	C11307020003
2/2/2012	210	17	48	C12033015001
5/3/2012			32.5	C12124008001
8/7/2012	130	12	35.3	C12220024006
11/5/2012			21.5	C12310038006
11/5/2012			28.7	C12310038005
2/4/2013	140	15	37.5	C13035045006
6/19/2013			34.9	C13170009001
8/21/2013	170	31	37.6	C13233026002
11/18/2013			31.6	C13322025004
11/18/2013			35.2	C13322025003

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW288

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results: TCE µg/L	Organic Laboratory Analysis Results: 1,1-DCE µg/L	Radiological Laboratory Analysis Results: Tc-99 pCi/L	Lab Sample ID
2/24/2014	200	25	32.6	C14055028003
5/13/2014			38.6	348903004
8/26/2014	191	16.6	37.4	355748009
11/12/2014			22.4	361215004
11/12/2014			35.2	361215005
2/4/2015	199	17.6	46.3	366647008
5/12/2015			< 6.6	373064005
8/24/2015	183	20.1	32.4	379998001
11/24/2015			< 14.7	386382005
11/24/2015			< 8.62	386382004
2/8/2016	163	< 2	38.4	391039009
5/17/2016			47.4	397601005
8/4/2016	155	9.24	50.8	403256004
11/17/2016			35.9	410957005
11/17/2016			31.4	410957004
2/15/2017	141	10.8	36.8	416791009
5/17/2017			41.3	423616005
7/10/2017	139	7.13	30.6	427964011
8/1/2017	130	8.42	37.6	429710001
10/6/2017	154	6.82	44.3	434637007
1/9/2018	177	7.08	42.6	441537005

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW288

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results: TCE µg/L	Organic Laboratory Analysis Results: 1,1-DCE µg/L	Radiological Laboratory Analysis Results: Tc-99 pCi/L	Lab Sample ID
2/14/2018	151	6.6	39.9	443984006
4/5/2018	162	7.92	27.1	447608005

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW291

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
6/13/1996			0	960618-063
6/13/1996			11	960618-062
6/13/1996			0	960618-057
6/13/1996			5	960618-059
6/13/1996			8	960618-060
6/13/1996			2	960618-058
6/13/1996	600		8	960618-061
6/13/1996			2	960618-064
8/22/1996	1200	< 500	16	960826-018
12/12/1996	1200	< 500	0	961212-167
3/4/1997	1400	< 250	0	970305-031
3/4/1997	1300	< 250	3	970305-032
6/5/1997	1100	< 125	0	970605-145
6/5/1997	1100	< 125	0	970605-146
9/9/1997	650	< 130	-2	970909-067
12/8/1997	500	< 250	< -5	C973430028
3/3/1998	350	< 125	< -10	C980630114
6/15/1998	440	< 100	< 3.9	C981660108
9/17/1998	380	< 100	< 7.5	C982610011
9/17/1998	320	< 100	< 5.8	C982610010
12/10/1998	420	< 250	< -0.4	C983450005

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW291

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results: TCE µg/L	Organic Laboratory Analysis Results: 1,1-DCE µg/L	Radiological Laboratory Analysis Results: Tc-99 pCi/L	Lab Sample ID
2/3/1999	280	< 120	< 4.96	C990340154
5/12/1999	260	< 100	< -6.97	C991320091
8/3/1999	270	< 200	< 0	C992170048
11/18/1999	240	< 200	< 8.78	C993230019
2/15/2000	240	< 25	< 10.4	C000460084
5/8/2000	240	< 100	< -9.85	C001300046
8/17/2000	200	< 10	< -12.9	C002300086
11/14/2000	200	< 25	< 5.72	C003200033
2/8/2001	170	< 10	< -3.71	C010390157
5/15/2001	140	< 25	< 8.69	C011350053
8/15/2001	150	< 25	< 12.7	C012280042
8/15/2001	170	< 25	< 2.42	C012280043
11/14/2001	170	< 25	< 0.0545	C013180042
2/5/2002	180	< 25	< 4.27	C020370100
5/2/2002	180	< 25	< 0.35	C021220084
8/29/2002	170	< 25	< 9.13	C022420101
11/11/2002	160	< 25	< 7.81	C023160006
2/24/2003	150	< 25	< 12.4	C030550073
5/8/2003	120	< 10	< -7.23	C031280143
8/27/2003	100	< 10	< 4.14	C032390102
11/13/2003	120	< 10	25.7	C033180003

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW291

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
2/11/2004	120	< 10	< 14.8	C040420063
5/12/2004	120	< 10	< 0.419	C041330031
8/16/2004	100	< 10	< 3.95	C042290041
11/17/2004	98	< 5	< -11.4	C043230022
2/8/2005	110	< 5	< 0.844	C050390066
5/11/2005	100	< 5	< 7.77	C051310087
8/10/2005	84	< 10	< 12.8	C052220139
11/14/2005	95	< 5	< 3.36	C053180036
5/17/2006	97	< 5	18	C061370058
11/6/2006	83	< 5	< 10.9	C063100056
5/10/2007	72	< 5	< -6.49	C071300073
11/12/2007	75	< 1	< -2.61	C073170016
5/27/2008	76	< 1	< 12.1	C081480100
11/6/2008	66	< 1	< 7.02	C08312002001
5/4/2009	65	< 1	< 11.6	C09125009001
5/11/2010	61	< 1	25.1	C10131023001
2/22/2011	61	< 5	< 11.7	C11053015001
8/9/2011	63	< 5	< 2.27	C11221021001
2/1/2012	59	< 5	< 1.75	C12032020003
8/8/2012	38	< 5	< 2.47	C12221010002
2/5/2013	43	< 1	< 10	C13036014005

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW291

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results: TCE µg/L	Organic Laboratory Analysis Results: 1,1-DCE µg/L	Radiological Laboratory Analysis Results: Tc-99 pCi/L	Lab Sample ID
8/12/2013	49	< 5	< 2.91	C13224033001
2/24/2014	54	< 1	< 0.737	C14055028005
8/26/2014	48	< 1	< 5.41	355748010
2/4/2015	47.1	< 1	< 2.07	366647009
8/24/2015	53.3	< 1	< 1.99	379998009
2/8/2016	43.9	< 1	< -2.27	391039010
8/4/2016	34.6	< 1	< 8.3	403256005
2/15/2017	33.9	< 1	< -4.14	416791010
7/10/2017	32	< 1	< -1.76	427964012
8/1/2017	29.3	< 1	< 3.78	429710009
10/6/2017	32.2	< 1	< 6.4	434637008
1/9/2018	50.9	0.58	13.2	441537006
2/14/2018	59.4	< 1	< 3.85	443984007
4/5/2018	61.2	0.54	< 11.1	447608006

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW292

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results: TCE µg/L	Organic Laboratory Analysis Results: 1,1-DCE µg/L	Radiological Laboratory Analysis Results: Tc-99 pCi/L	Lab Sample ID
8/29/1996	710	< 50	20	960903-003
12/12/1996	910	< 50	0	961212-168
3/5/1997	800	< 100	7	970306-084
6/10/1997	1000	< 100	8	970610-117
9/10/1997	1100	< 100	7	970910-102
12/11/1997	1300	< 100	8	C973460124
12/11/1997	1300	< 100	< 3	C973460125
3/3/1998	1300	< 100	< 2	C980630115
6/15/1998	1400	< 100	18.6	C981660109
9/16/1998	1200	< 100	< 5.5	C982600073
12/9/1998	1200	< 100	< 14	C983440006
12/9/1998	57	< 5	< 9.9	C983440005
2/2/1999	1100	< 250	< 16.93	C990340077
2/2/1999	1200	< 250	< 15.94	C990340076
5/12/1999	1100	< 250	24.2	C991320092
8/3/1999	1100	< 100	< 6.19	C992170049
11/17/1999	1000	< 100	< 1.56	C993220002
2/15/2000	960	< 100	15.9	C000460083
5/9/2000	960	< 100	< -0.935	C001310006
8/17/2000	800	< 50	< 0.93	C002300085
11/13/2000	880	< 50	< 8.75	C003190009

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW292

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
2/8/2001	770	< 50	< 8.02	C010390156
5/14/2001	650	< 100	< 8.97	C011350006
8/15/2001	830	< 100	< 8.86	C012280044
11/12/2001	820	< 100	< 9.21	C013170003
11/12/2001	760	< 100	< 12.2	C013170004
2/5/2002	850	< 100	20.6	C020370101
5/2/2002	740	< 50	< 8.17	C021220092
8/29/2002	780	< 50	28.3	C022420105
11/11/2002	610	< 100	< 12.7	C023160008
2/18/2003	550	< 50	35.3	C030500036
5/7/2003	510	< 50	19.5	C031270175
8/27/2003	430	< 50	22.6	C032390096
11/17/2003	440	< 50	35	C033210102
2/11/2004	430	< 50	29	C040420066
5/12/2004	480	< 50	26.4	C041330036
8/16/2004	440	< 50	27.8	C042290044
11/18/2004	290	< 25	< 13.3	C043240002
2/9/2005	410	< 25	40.6	C050400041
5/12/2005	340	< 25	30.8	C051320128
8/10/2005	350	< 25	37.5	C052220131
11/14/2005	370	27	34.1	C053180040

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW292

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
2/6/2006			51.8	C060380061
5/17/2006	370	33	54.6	C061370049
8/21/2006			42.7	C062330125
11/6/2006	370	34	49.6	C063100052
2/22/2007			24.9	C070530116
5/9/2007	320	35	29.5	C071300008
8/29/2007			29	C072410071
8/29/2007			31.2	C072410070
11/12/2007	350	36	48.1	C073170018
2/20/2008			39.2	C080510149
5/28/2008	250	28	61.1	C081490028
8/19/2008			49.5	C082330000
11/6/2008	320	35	51.9	C08312002003
2/23/2009			46.8	C09054020001
5/5/2009	290	35	55	C09125023008
8/4/2009			45.7	C09216023002
11/3/2009	300	38	33.3	C09308004003
2/2/2010			54.9	C10033014005
5/11/2010	260	36	56.5	C10131023005
8/5/2010			50.7	C10217037002
12/7/2010			36.4	C10341027003

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW292

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
2/22/2011	270	39	39.2	C11053015005
5/4/2011			45.1	C11124021002
8/9/2011	280	38	38.4	C11221021003
11/3/2011			46.8	C11307020001
2/2/2012	280	37	78.2	C12033015002
5/3/2012			43.4	C12124008002
8/7/2012	200	37	56	C12220024005
11/5/2012			28	C12310038007
2/4/2013	210	34	43.5	C13035045007
6/12/2013			39.2	C13163026001
8/21/2013	180	32	36.4	C13233026001
11/18/2013			33.4	C13322025002
2/24/2014	270	42	36.1	C14055028006
5/13/2014			41.3	348903005
8/26/2014	240	32.1	29.2	355748011
11/12/2014			42.1	361215006
2/4/2015	215	26.8	36.5	366647010
5/12/2015			42.2	373064006
8/24/2015	208	31.3	29.8	379998010
8/24/2015	216	31.4	45.6	379998011
11/24/2015			29.4	386382006

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW292

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
2/8/2016	198	29.6	33.5	391039011
5/17/2016			43.9	397601006
8/17/2016	202	31.8	44.1	404230005
8/17/2016	180	13.7	32.4	404230006
11/17/2016			39.7	410957006
2/15/2017	161	24.4	26.8	416791011
5/17/2017			45.9	423616006
7/10/2017	145	24	28.7	427964001
8/1/2017	151	23.6	38.6	429710011
8/1/2017	150	24.1	40.5	429710010
10/6/2017	152	18.6	39.3	434637009
1/9/2018	184	30.5	41.8	441537007
2/14/2018	153	21.2	28.7	443984008
4/5/2018	160	21.7	18.5	447608007

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW293A

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results: TCE µg/L	Organic Laboratory Analysis Results: 1,1-DCE µg/L	Radiological Laboratory Analysis Results: Tc-99 pCi/L	Lab Sample ID
8/21/2003	280	< 25	< 0.053	C032330095
11/13/2003	480	< 50	< 10.4	C033180004
2/11/2004	610	< 50	< 3.25	C040420064
5/12/2004	470	< 25	< -1.68	C041330032
8/16/2004	450	< 50	< -3.95	C042290042
11/18/2004	430	< 50	< -9.01	C043240000
2/9/2005	510	< 25	< 4.12	C050400042
5/11/2005	380	< 25	< -1.62	C051310092
8/10/2005	360	< 25	< 2.92	C052220132
11/14/2005	470	< 25	< 6.36	C053180037
5/17/2006	440	< 25	19.5	C061370059
11/6/2006	410	< 25	< -3.51	C063100058
5/9/2007	430	< 25	< -4.48	C071300011
11/12/2007	310	< 5	< -0.798	C073170015
5/28/2008	260	< 5	< 2.23	C081490027
11/6/2008	270	< 5	< 5.64	C08312002002
5/5/2009	230	< 5	< -0.751	C09125023005
11/2/2009	270	< 10	< -4.19	C09306041003
5/11/2010	250	< 2	18.7	C10131023003
2/22/2011	94	< 10	< 14	C11053015003
8/3/2011	220	< 10	< 4.7	C11215009002

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW293A

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results: TCE µg/L	Organic Laboratory Analysis Results: 1,1-DCE µg/L	Radiological Laboratory Analysis Results: Tc-99 pCi/L	Lab Sample ID
2/1/2012	230	< 10	< -0.483	C12032020005
8/8/2012	200	< 10	< 4.03	C12221010003
2/5/2013	200	< 2	< 1.39	C13036014006
8/12/2013	180	< 10	< -2.29	C13224033003
2/19/2014	73	< 2	< 0.276	C14050020001
8/26/2014	40.6	< 1	< -3.21	355748012
2/4/2015	31.9	< 1	< 5.67	366647011
8/24/2015	32.1	< 1	< -3.7	379998012
2/8/2016	156	< 1	< -9.06	391039012
8/4/2016	97.7	< 1	< 3.76	403256006
2/15/2017	182	< 1	< -1.27	416791012
7/10/2017	85	< 1	< -6.25	427964013
8/1/2017	82	< 1	< -0.716	429710012
10/6/2017	101	< 2	< -0.519	434637010
1/9/2018	99.3	< 1	< 9.43	441537008
2/14/2018	111	< 2	< -3.26	443984009
4/5/2018	112	< 2	< -9.09	447608008

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW341

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results: TCE µg/L	Organic Laboratory Analysis Results: 1,1-DCE µg/L	Radiological Laboratory Analysis Results: Tc-99 pCi/L	Lab Sample ID
12/3/1998	1200	< 100	216.3	C983380051
3/4/1999	730	< 100	243.58	C990630086
6/3/1999	660	< 200	245	C991540176
9/15/1999			316	C992580211
12/6/1999	790	< 100	260	C993400090
3/7/2000	1100	< 100	276	C000680021
6/21/2000	64	< 5	281	C001730079
9/11/2000	1200	< 100	286	C002560010
12/12/2000	1000	< 5	358	C003470050
3/21/2001	1400	< 100	305	C010800073
6/4/2001	1100	< 100	282	C011560012
9/25/2001	1200	< 100	327	C012680236
12/13/2001	990	< 100	310	C013470168
3/27/2002	690	< 250	339	C020860184
6/10/2002	730	< 100	297	C021610050
9/5/2002	1700	< 100	271	C022480142
12/3/2002	2200	< 100	328	C023370122
6/9/2003	2400	< 50	271	C031600082
12/5/2003	2700	< 100	327	C033420032
6/7/2004	2400	< 100	354	C041590181
12/8/2004	1800	< 100	322	C043430125

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW341

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
6/15/2005	6200	< 100	265	C051660051
11/30/2005	12000	< 500	271	C053340079
5/23/2006	14000	< 500	264	C061430071
3/19/2007	21000	< 1000	251	C070780103
9/20/2007	14000	< 200	212	C072630187
3/12/2008	11000	< 200	246	C080720035
8/28/2008	15000	< 100	207	C082410122
5/7/2009	14000	< 500	226	C09127062001
9/23/2009	17000	< 1000	251	C09266034004
3/10/2010	15000	< 200	207	C10069026006
9/13/2010	19000	< 200	213	C10256039001
6/2/2011	15000	< 1000	172	C11153017005
6/2/2011	15000	< 1000	172	C11153017006
5/17/2013	5200	< 250	166	C13137015004
5/17/2013	5100	< 250	150	C13137015003
6/1/2015	4460	< 1	138	374452005
5/24/2017	3460	< 50	310	424148013
7/13/2017	4280	< 50	257	427964014
10/11/2017	3790	< 50	345	435057005
1/11/2018	3520	< 1	354	441547001
4/5/2018	6010	< 100	309	447608009

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW478

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results: TCE µg/L	Organic Laboratory Analysis Results: 1,1-DCE µg/L	Radiological Laboratory Analysis Results: Tc-99 pCi/L	Lab Sample ID
10/22/2009	220	< 5	< -8.59	C09295018001
5/11/2010	490	11	< -7.99	C10131015007
5/10/2011	280	< 25	< 10.5	C11130019004
5/21/2013	240	< 25	< 2.27	C13141010001
5/28/2015	232	2.1	< -1.95	374017004
5/15/2017	163	1.52	< 4.78	423664015
7/11/2017	152	1.6	< -4.46	427964015
10/11/2017	127	1.1	< -1.18	435057001
1/9/2018	182	3.6	< 10.1	441537009
4/5/2018	194	1.96	< -1.12	447608010

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW479

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results: TCE µg/L	Organic Laboratory Analysis Results: 1,1-DCE µg/L	Radiological Laboratory Analysis Results: Tc-99 pCi/L	Lab Sample ID
10/22/2009	2.6	< 1	< -14.8	C09295018002
5/5/2010	< 1	< 1	< -4.67	C10125032008
5/11/2011	8.1	< 5	< -8.28	C11131028003
5/28/2013	< 1	< 1	< -2.12	C13148029001
6/9/2015	< 1	< 1	< 1.11	374981008
5/15/2017	< 1	< 1	< 4.18	423664016
7/11/2017	1.34	< 1	< -7.77	427964016
10/11/2017	1.15	< 1	< -5.9	435057006
1/9/2018	1.21	< 1	< 3.76	441537010
4/5/2018	3.41	< 1	< -9.16	447608011

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW480

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results: TCE µg/L	Organic Laboratory Analysis Results: 1,1-DCE µg/L	Radiological Laboratory Analysis Results: Tc-99 pCi/L	Lab Sample ID
10/22/2009	58	5.8	< 0.509	C09295018003
5/5/2010	38	3.6	< 3.38	C10125032009
5/11/2011	70	6	< 10.4	C11131028004
5/28/2013	55	8	21.6	C13148029002
5/28/2015	42.1	6.13	< 5.85	374017006
5/28/2015	46.2	6.41	< 3.34	374017005
5/15/2017	70.9	10.4	32.9	423664017
7/11/2017	61.8	9.16	21.9	427964017
10/11/2017	55.5	8.23	< 15.6	435057007
1/9/2018	115	14.3	46.8	441537011
4/5/2018	118	9.2	38	447608012

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW495

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results: TCE µg/L	Organic Laboratory Analysis Results: 1,1-DCE µg/L	Radiological Laboratory Analysis Results: Tc-99 pCi/L	Lab Sample ID
12/29/2009	250	8.6	< 17	C09363017001
5/10/2011	510	< 25	30.8	C11130019005
5/21/2013	110	< 25	< 1.11	C13141010002
5/27/2015	431	8.1	28.1	374017008
5/15/2017	365	5	33.8	423670001
7/11/2017	373	6.2	36.4	427964018
10/11/2017	376	6.35	25.9	435057008
1/9/2018	373	6.7	42	441537012
4/5/2018	372	5	27.7	447608013

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW496

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results: TCE µg/L	Organic Laboratory Analysis Results: 1,1-DCE µg/L	Radiological Laboratory Analysis Results: Tc-99 pCi/L	Lab Sample ID
12/31/2009	67	1.6	< 3.2	C09365021001
5/10/2011	83	< 5	< 9.02	C11130019006
5/21/2013	500	11	43.1	C13141010003
5/27/2015	114	1.84	< 2.15	374017009
5/17/2017	116	1.56	22.4	423670002
7/11/2017	120	< 2	16	427964019
10/11/2017	124	1.62	23.6	435057009
1/4/2018	143	1.88	27.6	441199004
4/5/2018	129	1.6	21.7	447608014

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW524

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results: TCE µg/L	Organic Laboratory Analysis Results: 1,1-DCE µg/L	Radiological Laboratory Analysis Results: Tc-99 pCi/L	Lab Sample ID
10/4/2016	5.52	< 1	< -1.43	407700002
10/4/2016	4.13	< 1	< -2.15	407700003
1/10/2017	3.74	< 1	< -3.88	414020001
4/3/2017	3.58	< 1	14.5	419846001
7/13/2017	2.36	< 1	< 9.65	427964020
10/11/2017	4.53	< 1	< 1.65	435057010
1/10/2018	1.24	< 1	< -2.43	441541003
1/10/2018	1.08	< 1	< -2.75	441541004
4/5/2018	12.3	< 1	< 11.4	447608015

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW525

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results: TCE µg/L	Organic Laboratory Analysis Results: 1,1-DCE µg/L	Radiological Laboratory Analysis Results: Tc-99 pCi/L	Lab Sample ID
10/4/2016	403	0.77	27.2	407700004
1/10/2017	599	< 5	88.4	414020003
1/10/2017	607	< 5	82.6	414020002
4/3/2017	606	< 10	102	419846002
7/11/2017	510	< 10	64.4	427966001
10/11/2017	635	< 10	46.9	435057012
10/11/2017	302	< 10	52.5	435057011
1/10/2018	406	< 10	71.6	441541005
4/5/2018	501	< 10	115	447608016

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW526

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results		Radiological Laboratory Analysis Results	
	TCE µg/L	1,1-DCE µg/L	Tc-99 pCi/L	Lab Sample ID
10/4/2016	145	1.73	139	407700005
1/10/2017	214	1.72	134	414020004
4/3/2017	168	1.24	175	419846004
4/3/2017	173	1.2	164	419846003
7/11/2017	123	< 2	156	427966002
10/11/2017	131	1.04	90.2	435057013
1/10/2018	134	< 2	71.8	441541006
4/5/2018	1320	< 20	96.5	447608017
4/5/2018	1290	< 20	125	447608018

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW527

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results: TCE µg/L	Organic Laboratory Analysis Results: 1,1-DCE µg/L	Radiological Laboratory Analysis Results: Tc-99 pCi/L	Lab Sample ID
10/4/2016	5.01	< 1	14.4	407700006
1/10/2017	8.67	< 1	32	414020005
4/3/2017	6.82	< 1	26.3	419846005
7/11/2017	4.92	< 1	24.6	427966003
7/11/2017	4.91	< 1	20.1	427966004
10/11/2017	5	< 1	< 15.7	435057014
1/10/2018	12.3	< 1	< 10.9	441541007
4/5/2018	12.3	< 1	25.7	447608019

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW528

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results: TCE µg/L	Organic Laboratory Analysis Results: 1,1-DCE µg/L	Radiological Laboratory Analysis Results: Tc-99 pCi/L	Lab Sample ID
10/4/2016	32.2	< 1	< -2.63	407700007
1/10/2017	24.4	< 1	< 0.895	414020006
4/3/2017	26.7	< 1	< 9.06	419846006
7/11/2017	21.1	< 1	< 3.27	427966005
10/11/2017	20	< 1	< 3.96	435057015
1/11/2018	48.6	< 1	18.7	441547002
4/5/2018	161	< 2	36.2	447608020

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW529

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results TCE µg/L	Organic Laboratory Analysis Results 1,1-DCE µg/L	Radiological Laboratory Analysis Results Tc-99 pCi/L	Lab Sample ID
10/4/2016	63.3	1.4	105	407700008
1/10/2017	95.8	2.14	165	414020007
4/3/2017	90.9	3.55	146	419846007
7/11/2017	98.9	2.07	139	427966006
10/11/2017	94.2	4.56	104	435057016
1/10/2018	207	< 4	153	441541008
4/5/2018	1010	< 20	137	447617002

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW530

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results: TCE µg/L	Organic Laboratory Analysis Results: 1,1-DCE µg/L	Radiological Laboratory Analysis Results: Tc-99 pCi/L	Lab Sample ID
10/4/2016	49.3	< 1	110	407700001
1/10/2017	63.2	< 1	204	414020008
4/3/2017	53	< 1	236	419846008
7/11/2017	58.3	< 1	209	427966007
10/11/2017	52.1	< 1	156	435057017
1/10/2018	72.5	< 1	117	441541009
4/5/2018	88.5	< 1	146	447617003

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW531

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results: TCE µg/L	Organic Laboratory Analysis Results: 1,1-DCE µg/L	Radiological Laboratory Analysis Results: Tc-99 pCi/L	Lab Sample ID
7/13/2017	91.8	0.49	90.6	427966008
10/11/2017	110	< 2	57	435057018
1/11/2018	99.7	0.5	75	441547003
4/5/2018	97.4	0.58	65.4	447617001

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW533

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results: TCE µg/L	Organic Laboratory Analysis Results: 1,1-DCE µg/L	Radiological Laboratory Analysis Results: Tc-99 pCi/L	Lab Sample ID
7/13/2017	88.9	< 1	69.7	427966009
10/11/2017	109	< 2	60.8	435057019
1/11/2018	58.1	< 1	46.7	441547004
4/5/2018	70.2	< 1	50.5	447617004

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW536

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results: TCE µg/L	Organic Laboratory Analysis Results: 1,1-DCE µg/L	Radiological Laboratory Analysis Results: Tc-99 pCi/L	Lab Sample ID
7/13/2017	173	0.56	33.5	427966010
10/11/2017	199	1.94	28.3	435057020
1/11/2018	225	1.52	51.1	441547005
4/5/2018	195	< 4	63	447617005

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW537

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results: TCE µg/L	Organic Laboratory Analysis Results: 1,1-DCE µg/L	Radiological Laboratory Analysis Results: Tc-99 pCi/L	Lab Sample ID
7/13/2017	181	4.51	34	427966011
10/11/2017	187	3.62	50.1	435058001
1/11/2018	139	< 2	92.4	441547006
4/5/2018	155	1.02	94.8	447617006

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW538

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results: TCE µg/L	Organic Laboratory Analysis Results: 1,1-DCE µg/L	Radiological Laboratory Analysis Results: Tc-99 pCi/L	Lab Sample ID
7/13/2017	54.6	2.55	< 2.92	427966012
10/11/2017	50.5	2.16	< -4.28	435058002
1/11/2018	5.05	< 1	< 4.45	441547008
4/5/2018	0.42	< 1	< 1.37	447617007

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW539

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results: TCE µg/L	Organic Laboratory Analysis Results: 1,1-DCE µg/L	Radiological Laboratory Analysis Results: Tc-99 pCi/L	Lab Sample ID
7/13/2017	62	0.77	< 7.55	427966013
10/11/2017	116	1.09	< 6.51	435058003
1/11/2018	66	1.88	< 5.39	441547007
4/5/2018	91.2	0.98	9.62	447617008

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Northeast Plume Optimization Monitoring Wells

Water Quality Records for

MW556

Sample Date Range: 2/21/1990 - 5/15/2018

Sample Date	Organic Laboratory Analysis Results		Radiological Laboratory Analysis Results	
	TCE µg/L	1,1-DCE µg/L	Tc-99 pCi/L	Lab Sample ID
7/11/2017	195	38	42.2	427966014
10/11/2017	171	30	46.3	435058004
1/9/2018	183	36.5	62.5	441537013
4/5/2018	148	22.1	44.6	447617009

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

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APPENDIX C

C-746-K LANDFILL (SWMU 8) DATA

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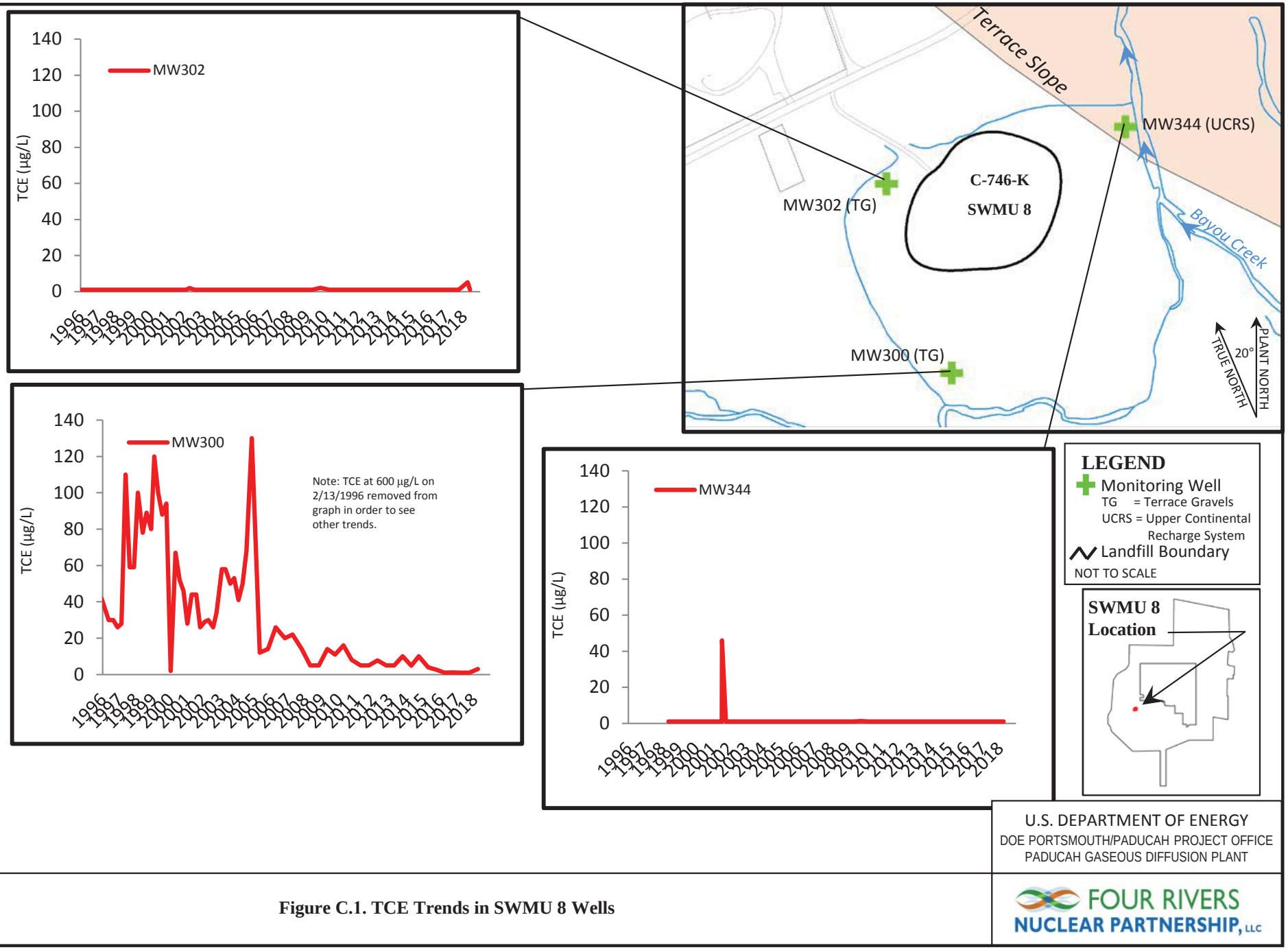

Figure C.1. TCE Trends in SWMU 8 Wells

C-746-K Landfill Monitoring

Water Quality Records for

Sample Date Range: 5/31/1994 - 5/31/2018

MW300

Sample Date	Organic Laboratory Analysis Results					Inorganic Laboratory Analysis Results			Radiological Laboratory Analysis Results			Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Al mg/L	Fe mg/L	Mn mg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	
5/31/1994	27	18	23	< 5		87.7	1230	< 50.7	25.8	< 31.3	7.68	3220303
3/21/1995	52	72	61	< 50	< 50		973	49	33.8	27	1	950322-056
7/12/1995	38	< 50	< 50	< 50	< 50		761	52.4	47	143	3	950713-153
9/12/1995	38	< 50	< 50	< 50	< 50	52.8	679	57.5	24	33	12	950913-029
12/7/1995	42	56	47	< 5	< 5		767	44.6	59.9	-6	0	951211-006
2/13/1996	600	54	< 50	< 50	< 50	64.5	985	60			4	960214-062
5/9/1996	30	< 50	< 50	< 50	< 50	44.9	792	44.9	0.4	16	2	960513-011
8/19/1996	30	< 50	< 50	< 50	< 50	37.2	568	44.4	22.9	31.5	0	960819-088
11/18/1996	26	< 50	< 50	< 50	< 50	35.8	570	37.5	7.4	48	0	961118-095
2/10/1997	28	49	30	< 25	< 25	21.3	412	20.6	5	45	0	970211-009
5/13/1997	110	120	61	< 50	< 50	31.3	518	27.6	5.2	11	0	970514-042
8/7/1997	59	< 50	68	< 50	< 50	27	497	31.2	12	13	0	970807-104
11/10/1997	59	110	66	< 25	< 25	31.8	521	32.3	-7.7	6	4	971110-114
2/4/1998	100	240	140	< 50	< 50	36.2	674	33.8	< -0.4	< 2	< -2	C980370056
5/19/1998	78	460	< 250	< 250	< 250	30.8	534	30.5	< 6.3	< 54	< 4.8	C981400029
8/11/1998	89	230	120	< 5	< 5	27.3	532	31	< 37.7	< 11	< 9.2	C982240047
11/16/1998	80	< 250	< 250	< 250	< 250	25.2	406	28.1	32.52	< 37.03	< -4.1	C983200080
1/25/1999	120	250	< 250	< 250	< 250	27	490	27.4	< 1.11	< 4.76	< -8.4	C990250154
4/19/1999	100	240	110	< 100	< 100	26.7	559	25.7	< 28.48	< 55.05	< -4.95	C991090060
7/15/1999	88	210	< 100	< 100	< 100	24.8	506	28.3	< 2.73	< -19.36	< 3.06	C991960146
10/14/1999	94	210	< 200	< 200	< 200	23.2	500	27.2	< 18.8	< 40.17	< -1.57	C992870104
1/13/2000	2	< 5	< 5	< 5	< 5	19.2	303	20.8	< -2.5	< 24.46	< 8.53	C000130120
1/13/2000	2	< 5	< 5	< 5	< 5	15.9	301	19	< -4.85	< -7.6	< 8.59	C000130123
4/27/2000	67	130	80	< 50	< 50	18.2	310	21.4	< 10.97	66.12	< -1.63	C001190009
7/27/2000	52	< 100	< 100	< 100	< 100	15.2	318	23.7	< 15.87	< 55.01	< 11.9	C002090106
10/16/2000	46	100	60	< 5	< 5	14.8	278	23	< 8.41	< 36.69	< 2.75	C002910044
1/10/2001	28	64	39	< 5	< 5	10.3	217	18	< -9.46	< 4.09	< 2.2	C010100097
4/16/2001	44	100	64	< 50	< 50	15	340	24.1	< -7.63	< 25.6	< 27.4	C011060085
7/24/2001	44	93	59	< 50	< 50	16.4	331	28.6	< 27	< 8.41	< 7.99	C012060008
10/15/2001	26	< 50	< 50	< 50	< 50	10.6	220	18.8	< 32.5	33.9	< -2.48	C012880074
1/22/2002	29	< 100	< 100	< 100	< 100	10	286	20.9	< 43.8	< 19.4	< 3.36	C020220046
4/10/2002	30	57	< 50	< 50	< 50	13	381	26.6	< -15.1	< 50.8	< 2.75	C021010048
7/24/2002	26	< 100	< 100	< 100	< 100	12.6	363	24.8	< 23.2	< 43.3	21.5	C022060003

Thursday, October 04, 2018

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-746-K Landfill Monitoring

Water Quality Records for

Sample Date Range: 5/31/1994 - 5/31/2018

MW300

Sample Date	Organic Laboratory Analysis Results					Inorganic Laboratory Analysis Results			Radiological Laboratory Analysis Results			Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Al mg/L	Fe mg/L	Mn mg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	
7/24/2002	26	< 100	< 100	< 100	< 100	12.9	339	26.8	< 47.4	62.2	< 8.97	C022060004
10/3/2002	34	66	< 50	< 50	< 50	0.0101	0.33	36.9	< 26.9	< 24.9	17.5	C022760027
1/30/2003	58	160	100	< 50	< 50	10.8	395	23.5	< 3.65	< 3.52	< 1.19	C030310020
4/15/2003	58	180	< 100	< 100	< 100	6.86	437	22.9	< 2.47	< 20.3	< 4.19	C031050068
7/30/2003	42	< 100	< 100	< 100	< 100	21.9	409	27	< 9.4	< 48.7	< 1.31	C032110044
7/30/2003	50	< 100	< 100	< 100	< 100	14.3	382	25.4	< 51.5	53.5	< 4.26	C032110045
10/21/2003	53	92	63	< 50	< 50	0.55	497	24.9	< 39.1	< 38	< -4.59	C032950017
1/26/2004	41	120	< 100	< 100	< 100	0.471	414	1.91	< 50.1	< 1.36	< 6.71	C040260079
4/21/2004	50	140	< 100	< 100	< 100	0.591	327	17.2	< -5.55	< 8.26	< -1.58	C041130033
7/15/2004	68	160	< 100	< 100	< 100	0.69	424	24.2	< 21.8	< -11.1	< -7.47	C041970166
7/15/2004	55	140	< 100	< 100	< 100	0.882	396	22.9	< 15	< 17.4	< -6.91	C041970167
11/9/2004	130	110	< 100	< 100	< 100	0.99	369	22.9	< 12	< 29.7	< -2.6	C043150018
4/27/2005	12	51	< 50	< 50	< 50	0.289	126	11.8	< 19.1	39.8	< -2.41	C051170049
10/25/2005	14	65	< 50	< 50	< 50	0.344	178	15.2	< 2.14	29.6	< 6.49	C052990006
10/25/2005	13	55	< 50	< 50	< 50	0.259	199	16.1	< 18.1	38.4	< 8.37	C052990007
4/11/2006	26	120	77	< 50	< 50	< 0.2	161	16.5	< 0.896	< 28.2	< -2.86	C061020009
10/23/2006	< 20	< 100	< 100	< 100	< 100	0.334	124	16.2	< -0.251	< 16.2	< 8.62	C062960050
4/12/2007	< 22	< 120	< 60	< 50	< 50	< 0.2	203	18.1	< -3.16	< 33.1	< -1.66	C071030007
10/25/2007	14	120	77	< 5	< 5	< 0.2	162	19.7	< -0.658	< 25.1	< 1.82	C072980183
10/25/2007	13	120	75	< 5	< 5	< 0.2	166	20.2	< 4.54	27.8	< 1.13	C072980184
4/28/2008	< 5	42	34	< 25	< 5		117	16.8	< -0.155	64.4	< 0.8	C081200001
10/29/2008	< 5	48	32	< 25	< 5	< 0.2	63.9	15	< 6.06	43.7	< 11.7	C08304013001
10/29/2008	< 5	46	29	< 25	< 5	< 0.2	110	16.9	< 5.22	34.8	< 6.45	C08304013002
4/30/2009	14	93	52	< 5	< 5	< 0.2	104	27.4	< -0.39	37	< 5.55	C09120015001
10/19/2009	9	41	24	< 2	< 2	< 0.2	65	9.73	< -2.41	27.1	< -8.19	C09292035002
10/19/2009	11	39	24	< 2	< 2	< 0.2	36.9	11.2	< -1.13	28.4	< -8.36	C09292035001
4/20/2010	16	130	58	< 25	< 5	< 0.2	121	19.2	< -4.11	33.6	< -1.74	C10110009002
10/13/2010	8	130	72	< 25	< 5	< 0.4	241	27.2	< 21.9	48.4	< -7.38	C10286021002
10/13/2010	8	140	78	< 25	< 5	< 0.4	165	25.5	< 2.34	62.3	< -3.09	C10286021003
4/26/2011	< 5	68	44	< 25	< 5	0.625	129	14.1	< 0.246	34.3	< -0.327	C11116009001
10/19/2011	< 5	68	42	< 5	< 5	0.558	155	18.4	< 2.93	65.7	< 0.89	C11292015001
10/19/2011	< 5	71	44	< 5	< 5	0.358	78.8	15.8	< 13.2	53.9	< -4.3	C11292015002
4/24/2012	7.8	100	59	< 5	< 5	< 2	218	18.2	< 3.57	80.6	< 3.84	C12115011001

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-746-K Landfill Monitoring

Water Quality Records for

Sample Date Range: 5/31/1994 - 5/31/2018

MW300

Sample Date	Organic Laboratory Analysis Results					Inorganic Laboratory Analysis Results			Radiological Laboratory Analysis Results			Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Al mg/L	Fe mg/L	Mn mg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	
10/29/2012	< 5	100	69	< 5	< 5	1.65	217	25.3	< 12.6	57.8	< -2.74	C12303019002
10/29/2012	< 5	93	56	< 5	< 5	0.271	222	25.5	< 1.27	49.6	< -4.68	C12303019003
4/23/2013	< 5	93	73	< 5	< 5	< 0.2	292	23.6	< 4.25	< 42	< -2.67	C13113007001
10/21/2013	< 10	76	53	< 10	2.2	< 0.2	201	21.4	< 3.28	61.9	< 0.287	C13294037002
10/21/2013	< 10	76	52	< 10	< 2	< 0.2	208	20.7	< -6.52	< 36.5	< 11.5	C13294037003
4/29/2014	4.9	82.4	56.8	< 10	< 10	0.0253	276	19.3	< 10.4	37.4	< 0.00258	347676009
10/7/2014	< 10	64.3	55.2	< 10	< 10	< 0.05	236	18.9	< 5	23.5	< -2.04	358703001
10/7/2014	< 10	66.7	54	< 10	< 10	0.0224	253	19.5	< 2.03	29.1	< -4.11	358703003
4/28/2015	3.9	< 1	< 1	< 1	< 1	< 0.05	26.9	3.38	< 1.86	21.2	< 3.96	371985001
10/27/2015	2.56	46.6	35.9	< 1	0.51	< 0.5	192	16.8	< 6.99	30.2	< 4.16	384156001
4/13/2016	0.97	22	17.2	< 1	< 1	0.0608	92.1	10.5	< -4.61	27.8	< -5.55	395245005
4/13/2016	0.94	22.1	16.7	< 1	< 1	0.0364	99.1	10.8	< -4.3	31.5	< -4.87	395245003
10/11/2016	1.17	19.6	14.5	< 1	< 1	0.0314	79.6	8.18	< 3.41	25.3	< -5	407853001
4/6/2017	1.06	24.6	19.5	< 2	< 2	0.0241	129	14.6	< 0.27	20.6	< 0.563	420096001
10/6/2017	< 1	< 1	< 1	< 1	< 1	0.127	77.5	12.5	< -0.084	23.7	< 1.57	434592001
4/9/2018	3.04	15.6	13.1	< 2	< 2	0.151	65.4	11.2	< 8.97	44.9	< -3.45	447581001

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-746-K Landfill Monitoring

Water Quality Records for

Sample Date Range: 5/31/1994 - 5/31/2018

MW301

Sample Date	Organic Laboratory Analysis Results					Inorganic Laboratory Analysis Results			Radiological Laboratory Analysis Results			Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Al mg/L	Fe mg/L	Mn mg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	
6/1/1994	< 5	< 5	3	< 5		0.823	470	28.3	< 10.4	< 19.4	5.07	3220101
3/21/1995	< 1	< 5	< 5	< 5	< 5		236	22	-5.9	34	3	950322-052
7/12/1995	< 1	< 5	< 5	< 5	< 5		249	22.1	14	102	9	950713-157
9/12/1995	< 1	< 5	< 5	< 5	< 5	< 0.625	171	17.8	-2.6	17	3	950913-025
12/7/1995	1	< 5	< 5	< 5	< 5		99	12.3	30.3	49	6	951211-014
2/13/1996	< 1	< 5	< 5	< 5	< 5	0.766	166	18.9	6.3	82	0	960214-066
5/9/1996	< 1	< 5	< 5	< 5	< 5	0.975	224	18	0.3	22	3	960513-010
8/19/1996	< 1	< 5	< 5	< 5	< 5	1.58	284	21.3	5.5	42.4	7	960819-087
11/18/1996	< 1	< 5	< 5	< 5	< 5	1.32	175	19.5	-1.4	47	0	961118-096
11/18/1996	< 1	< 5	< 5	< 5	< 5	< 0.75	< 0.3	< 0.05	6	15	0	961118-097
2/10/1997	< 1	< 5	< 5	< 5	< 5	1.13	225	19.8	12.6	47	0	970211-015
5/13/1997	4	< 5	< 5	< 5	< 5	< 0.75	248	22	-11	45	0	970514-043
8/7/1997	< 1	< 5	< 5	< 5	< 5	< 1	203	17.2	19.2	160	0	970807-105
11/10/1997	< 1	< 5	< 5	< 5	< 5	< 1	72.4	10	4.3	18	3	971110-115
2/4/1998	< 1	< 5	< 5	< 5	< 5	2.44	160	15.8	< -11.3	106	< 4	C980370057
5/19/1998	< 1	< 5	< 5	< 5	< 5	< 1	169	17.4	< -2.3	< 25	< 8.2	C981400028
8/11/1998	< 1	< 5	< 5	< 5	< 5	2.13	170	16.3	< -2.3	< 35	< 4.3	C982240046
11/16/1998	< 1	< 5	< 5	< 5	< 5	< 1	102	12.8	< 11.32	55.82	< -15.9	C983200081
1/25/1999	< 1	< 5	< 5	< 5	< 5	< 1	138	14.9	< 3.83	< 52.42	< -5.8	C990250155
4/19/1999	< 1	< 5	< 5	< 5	< 5	< 0.2	203	18.2	< -6.97	< 49.78	< -10.6	C991090061
7/15/1999	< 1	< 5	< 5	< 5	< 5	< 0.2	210	17.5	< -12.3	< 32.1	< -6.69	C991960147
10/14/1999	< 1	< 5	< 5	< 5	< 5	< 0.2	73.1	10.3	< 1.83	41.56	< 0.419	C992870105
10/14/1999	< 1	< 5	< 5	< 5	< 5	< 0.2	73.7	10.6	17.2	50.79	< 2.57	C992870106
1/13/2000	< 1	< 5	< 5	< 5	< 5	< 0.2	77.8	9.32	< 6.93	52.05	< 6.54	C000130122
4/27/2000	< 1	< 5	< 5	< 5	< 5	< 0.2	152	15.6	< 4.87	< -6.93	< -12.6	C001190010
7/27/2000	< 1	< 5	< 5	< 5	< 5	< 0.2	135	14.9	< 2.09	< 4.03	< -2.23	C002090105
10/16/2000	< 1	< 5	< 5	< 5	< 5	< 0.2	70.6	10.6	< -16.56	63.66	< -2.02	C002910045
1/10/2001	< 1	< 5	< 5	< 5	< 5	< 0.2	95.6	12.2	< 6.56	27.9	< -1.62	C010100098
4/16/2001	< 1	< 5	< 5	< 5	< 5	1.86	139	13.8	< 16.1	32.7	< 10.7	C011060087
4/16/2001	< 1	< 5	< 5	< 5	< 5	0.231	128	13.8	< 11.1	30.1	< 5.23	C011060088
7/24/2001	< 1	< 5	< 5	< 5	< 5	< 0.2	106	13.1	< -0.871	54.4	< 7.08	C012060010
10/15/2001	< 1	< 5	< 5	< 5	< 5	< 0.2	107	12.8	< 21.9	37.9	< 5.53	C012880075
1/25/2002	< 1	< 5	< 5	< 5	< 5	< 0.2	154	15.4	< -2.44	51.6	< 6.3	C020250056

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C-746-K Landfill Monitoring

Water Quality Records for

Sample Date Range: 5/31/1994 - 5/31/2018

MW301

Sample Date	Organic Laboratory Analysis Results					Inorganic Laboratory Analysis Results			Radiological Laboratory Analysis Results			Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Al mg/L	Fe mg/L	Mn mg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	
1/25/2002	< 1	< 5	< 5	< 5	< 5	< 0.2	146	14.5	< 3.69	< 28.3	< 2.51	C020250055
4/10/2002	< 1	< 5	< 5	< 5	< 5	0.317	172	16.2	< 19	< 5.09	< 0.617	C021010049
7/24/2002	< 1	< 5	< 5	< 5	< 5	< 0.2	186	15.4	< 36.1	< 23.5	17.8	C022060005
10/3/2002	3	< 5	< 5	< 5	< 5	< 0.002	< 0.2	14.5	< 5.72	46.8	< 15	C022760029
1/30/2003	< 1	< 5	< 5	< 5	< 5	0.287	166	15.5	< -1.71	< 6.29	< -0.324	C030310017
1/30/2003	< 1	< 5	< 5	< 5	< 5	4.62	203	16.1	< 0.197	< 3.65	< 3.3	C030310018
4/14/2003	< 1	< 5	< 5	< 5	< 5	1.03	232	17.2	< 0.227	< 37.1	< -0.162	C031040077
7/30/2003	< 1	< 5	< 5	< 5	< 5	0.71	218	15.4	< 32.9	50.2	< 2.84	C032110046
10/21/2003	< 1	< 5	< 5	< 5	< 5	< 0.2	257	17.4	< 9.47	< 31.4	< 0	C032950018
1/26/2004	< 1	< 5	< 5	< 5	< 5	0.577	266	19.3	< 17.7	73	< 11.7	C040260081
1/26/2004	< 1	< 5	< 5	< 5	< 5	0.39	267	19.6	< 14.9	53.3	< 10.8	C040260080
4/21/2004	< 1	< 5	< 5	< 5	< 5	< 0.2	238	18	< 9.42	< 42.4	< -3	C041130034
7/15/2004	< 1	5	5	< 5	< 5	< 0.2	277	19.8	< 17.3	< 40.3	< -12.4	C041970168
10/19/2004	< 1	< 5	< 5	< 5	< 5	< 0.2	152	13.7	< -32.8	< 33.7	< -1.56	C042940033
4/27/2005	< 1	< 5	< 5	< 5	< 5	< 0.2	232	20.1	< -0.987	129	< -6.58	C051170050
10/25/2005	< 1	5.1	5.6	< 5	< 5	< 0.2	289	19.9	< -12.7	51.3	< 4.49	C052990008
4/11/2006	< 1	< 5	5.4	< 5	< 5	< 0.2	279	19.6	< 3.04	62	< 8.86	C061020011
4/11/2006	< 1	< 5	5.2	< 5	< 5	< 0.2	287	20.9	< 8.03	50.9	< -2.97	C061020010
10/23/2006	< 1	5.9	5.8	< 5	< 5	0.76	295	20.5	< 13.7	< 31.7	< 15.3	C062960051
4/12/2007	< 1	< 5	< 5	< 5	< 5	2.42	265	15.8	< 7.86	60.8	< 4.66	C071030005
10/25/2007	< 1	3.6	3.1	< 1	< 1	1.06	117	8.42	< 1.59	39.3	< -9.49	C072980109
4/28/2008	< 1	< 1	2.9	< 5	< 1		192	15.3	< 25.6	45.9	< -3.1	C081190047
4/28/2008	< 1	< 1	2.8	< 5	< 1		185	14.7	< 20.4	79.9	< -4.91	C081190048
10/29/2008	< 1	3.8	3.9	< 5	< 1	< 0.2	240	16.3	< 7.81	77.1	< 5.16	C08304013003
4/30/2009	< 1	3.8	3.9	< 1	< 1	< 0.2	228	15.9	< 7.32	71	< 7.74	C09120015002
4/30/2009	< 1	4.5	4.4	< 1	< 1	< 0.2	160	14.5	< 17.8	85	< 12.3	C09120015003
10/19/2009	3.8	5.5	4.8	< 1	< 1	< 0.2	208	14	< 0.393	58.6	< -1.75	C09292035003
4/20/2010	< 1	< 5	3	< 5	< 1	< 0.2	198	13.8	< 11.5	50.7	< -8.41	C10110009004
4/20/2010	< 1	< 5	2.9	< 5	< 1	< 0.2	196	13.7	< -7.51	45.2	< -8.84	C10110009005
10/13/2010	< 1	< 5	1.9	< 5	< 1	< 0.4	133	11	< -0.711	56.4	< -4.72	C10286021005
4/26/2011	< 1	< 5	< 1	< 5	< 1	0.247	176	14.5	< 8.21	68	< -13.4	C11116009002
10/19/2011	< 1	< 5	1.7	< 1	< 1	0.298	183	11.8	< 8.7	86.5	< 4.3	C11292015003
4/24/2012	< 1	2.1	< 1	< 1	< 1	< 2	119	9.63	< 5.31	< 35.7	< 2.86	C12115011002

Thursday, October 04, 2018

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-746-K Landfill Monitoring

Water Quality Records for

Sample Date Range: 5/31/1994 - 5/31/2018

MW301

Sample Date	Organic Laboratory Analysis Results					Inorganic Laboratory Analysis Results			Radiological Laboratory Analysis Results			
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Al mg/L	Fe mg/L	Mn mg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Lab Sample ID
10/29/2012	< 1	< 1	< 1	< 1	< 1	6.98	163	8.35	< 15.1	58.9	< 1.99	C12303019004
4/23/2013	< 1	1.2	1.4	< 1	< 1	0.216	120	9.8	< 10.1	< 46.9	< 0.0556	C13113007002
10/21/2013	< 1	2.4	2.2	< 1	< 1	10.9	200	10.7	< 6.61	< 54.4	< 8.32	C13294037004
4/29/2014	< 1	1.73	1.95	< 1	< 1	0.0277	121	8.95	6.95	52.9	< 2.71	347676005

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-746-K Landfill Monitoring

Water Quality Records for

Sample Date Range: 5/31/1994 - 5/31/2018

MW302

Sample Date	Organic Laboratory Analysis Results					Inorganic Laboratory Analysis Results			Radiological Laboratory Analysis Results			Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Al mg/L	Fe mg/L	Mn mg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	
6/1/1994	< 5	< 5	< 5	< 5		< 0.415	0.238	0.189	< 3.09	< 3.11	< 0.94	3220301
3/21/1995	< 1	< 5	< 5	< 5	< 5		2.6	0.26	2.2	5	8	950322-048
7/12/1995	< 1	< 5	< 5	< 5	< 5		0.702	0.175	4	13	6	950713-149
9/11/1995	< 1	< 5	< 5	< 5	< 5	1.3	1.06	0.139	7.2	2	13	950912-007
12/7/1995	< 1	< 5	< 5	< 5	< 5		2.39	0.087	6.2	3	2	951211-018
2/13/1996	< 1	< 5	< 5	< 5	< 5	2.14	1.68	0.08	-6	-2	1	960214-054
2/13/1996	< 1	< 5	< 5	< 5	< 5	2.61	2.14	0.099	-5.4	-4	0	960214-058
5/9/1996	< 1	< 5	< 5	< 5	< 5	< 0.75	< 0.3	0.041	0.9	17	6	960513-009
8/20/1996	< 1	< 5	< 5	< 5	< 5	< 0.75	< 0.3	0.058	4.4	6	6	960821-022
8/20/1996	< 1	< 5	< 5	< 5	< 5	< 0.75	< 0.3	< 0.05	12.3	5	11	960821-020
2/10/1997	< 1	< 5	< 5	< 5	< 5	< 0.75	1.64	0.19	2.9	3	0	970211-010
2/10/1997	< 1	< 5	< 5	< 5	< 5	< 0.75	0.31	0.157	-0.2	1	0	970211-011
5/13/1997	< 1	< 5	< 5	< 5	< 5	< 0.75	< 0.3	0.099	5.9	3	10	970514-044
8/7/1997	< 1	< 5	< 5	< 5	< 5	< 1	< 0.25	< 0.1	2.8	1	0	970807-144
8/7/1997	< 1	< 5	< 5	< 5	< 5	< 1	< 0.25	0.12	1.6	1	2	970807-145
11/10/1997	< 1	< 5	< 5	< 5	< 5	1.02	1.09	0.11	9.8	14	0	971110-118
2/5/1998	< 1	< 5	< 5	< 5	< 5	< 1	< 0.5	0.114	< 1.8	< 0	< 5	C980370102
2/5/1998	< 1	< 5	< 5	< 5	< 5	< 1	< 0.5	< 0.1	< 1.2	< 4	< -2	C980370103
5/20/1998	< 1	< 5	< 5	< 5	< 5	< 1	< 0.25	0.164	< 2.3	37	< 2.1	C981400088
5/20/1998	< 1	< 5	< 5	< 5	< 5	< 1	< 0.25	0.167	< -0.9	8	< 2.8	C981400087
8/11/1998	< 1	< 5	< 5	< 5	< 5	< 1	< 0.2	0.143	< 1	< 4	< -1	C982240044
8/11/1998	< 1	< 5	< 5	< 5	< 5	< 1	< 0.2	0.173	< 7.6	11	< -7.6	C982240043
11/16/1998	< 1	< 5	< 5	< 5	< 5	< 1	< 0.2	0.1	< 3.6	8.03	< -7.2	C983200082
1/25/1999	< 1	< 5	< 5	< 5	< 5	< 1	< 0.2	0.11	< 0.86	< 0.3	< -19.8	C990250156
4/19/1999	< 1	< 5	< 5	< 5	< 5	0.22	< 0.2	0.122	< 1.67	< 4.72	< -18.5	C991090062
7/15/1999	< 1	< 5	< 5	< 5	< 5	< 0.2	< 0.2	0.157	< 0.82	< -20.12	< 5.04	C991960148
10/14/1999	< 1	< 5	< 5	< 5	< 5	< 0.2	< 0.2	0.069	< 4.18	< 3.33	< -1.15	C992870107
1/13/2000	< 1	< 5	< 5	< 5	< 5	< 0.2	0.381	0.05	< 0.05	< 5.09	< 1.59	C000130119
4/27/2000	< 1	< 5	< 5	< 5	< 5	< 0.2	< 0.2	0.11	< 4.56	< 2.89	< -21.3	C001190011
4/27/2000	< 1	< 5	< 5	< 5	< 5	< 0.2	< 0.2	0.118	< 1.91	< 4.14	< -16.4	C001190012
7/27/2000	< 1	< 5	< 5	< 5	< 5	0.203	0.315	0.185	< 6.72	< 4.08	< -2.03	C002090104
10/16/2000	< 1	< 5	< 5	< 5	< 5	< 0.2	< 0.2	0.08	< 2.79	22.54	< 5.95	C002910046
1/10/2001	< 1	< 5	< 5	< 5	< 5	< 0.2	< 0.2	0.101	< -4.7	< 3.52	< 2.65	C010100095

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C-746-K Landfill Monitoring

Water Quality Records for

Sample Date Range: 5/31/1994 - 5/31/2018

MW302

Sample Date	Organic Laboratory Analysis Results					Inorganic Laboratory Analysis Results			Radiological Laboratory Analysis Results			Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Al mg/L	Fe mg/L	Mn mg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	
1/10/2001	< 1	< 5	< 5	< 5	< 5	< 0.2	< 0.2	0.112	< 0.329	< 5.56	< 8.77	C010100096
4/16/2001	< 1	< 5	< 5	< 5	< 5	< 0.2	< 0.2	0.068	< -4.37	< 1	< 12.2	C011060086
7/24/2001	< 1	< 5	< 5	< 5	< 5	< 0.2	< 0.2	0.053	< 1.09	< 1.72	< 12.4	C012060011
10/15/2001	< 1	< 5	< 5	< 5	< 5	< 0.2	< 0.2	0.207	< 2.32	< 0.344	< 4.48	C012880076
1/22/2002	< 1	< 5	< 5	< 5	< 5	< 0.2	< 0.2	0.047	< 5.75	< 1.7	< 11.5	C020220047
4/10/2002	< 1	< 5	< 5	< 5	< 5	< 0.2	< 0.2	0.054	< 5.56	< -1.95	< 4.88	C021010050
4/10/2002	2	< 5	< 5	< 5	< 5	< 0.2	< 0.2	0.062	< 2.37	< -2.75	< -3.64	C021010051
7/24/2002	< 1	< 5	< 5	< 5	< 5	< 0.2	< 0.2	0.056	9.53	< 2.21	< 14.7	C022060006
10/3/2002	< 1	< 5	< 5	< 5	< 5	< 0.002	< 0.002	0.0688	< 9.5	< 2.76	< 10.1	C022760028
1/30/2003	< 1	< 5	< 5	< 5	< 5	0.639	0.762	0.144	< -0.209	< 1.74	< 2.05	C030310021
4/15/2003	< 1	< 5	< 5	< 5	< 5	< 0.2	< 0.2	0.0607	< 2.62	< 1.04	< 4.54	C031050066
4/15/2003	< 1	< 5	< 5	< 5	< 5	< 0.2	< 0.2	0.0609	< -4.39	43.1	16.2	C031050067
7/30/2003	< 1	< 5	< 5	< 5	< 5	< 0.2	0.523	1.3	< 6.9	< 4.11	< -9.55	C032110047
10/21/2003	< 1	< 5	< 5	< 5	< 5	< 0.2	5.77	1.88	< 4.13	< 2.82	< -6.62	C032950016
1/26/2004	< 1	< 5	< 5	< 5	< 5	< 0.2	2.64	1.98	< -3.37	9.48	< 6.25	C040260078
4/21/2004	< 1	< 5	< 5	< 5	< 5	< 0.2	0.611	1.63	< 6.89	< -1.62	< -0.819	C041130035
4/21/2004	< 1	< 5	< 5	< 5	< 5	< 0.2	0.302	1.71	< -1.61	< -0.897	< 5.4	C041130036
7/15/2004	< 1	< 5	< 5	< 5	< 5	< 0.2	1.18	1.63	< 5.85	< -0.825	< -12.4	C041970169
10/19/2004	< 1	< 5	< 5	< 5	< 5	< 0.2	0.244	1.06	< -4.94	< 3.65	< 4.4	C042940032
4/27/2005	< 1	< 5	< 5	< 5	< 5	< 0.2	0.154	0.708	< 0.394	< 0.723	< 15.5	C051170051
4/27/2005	< 1	< 5	< 5	< 5	< 5	< 0.2	< 0.1	0.675	< 1.48	< 3.76	< 15.3	C051170052
10/25/2005	< 1	< 5	< 5	< 5	< 5	< 0.2	< 0.1	1.35	< -1.17	< 0.46	< 9.83	C052990009
4/11/2006	< 1	< 5	< 5	< 5	< 5	0.418	1.02	0.572	< -1.64	< 3.54	< 0.914	C061020008
10/26/2006	< 1	< 5	< 5	< 5	< 5	< 0.2	0.128	0.986	< -3.44	< 2.09	< 8.97	C062990103
10/26/2006	< 1	< 5	< 5	< 5	< 5	0.347	0.479	0.99	< -0.702	< 3.23	< 8.62	C062990102
4/12/2007	< 1	< 5	< 5	< 5	< 5	< 0.2	0.131	0.345	< 4.96	< 3.59	< 13.1	C071030006
10/25/2007	< 1	< 1	< 1	< 1	< 1	< 0.2	0.317	0.622	< 3.48	< 4.7	< -3.38	C072980110
4/28/2008	< 1	< 1	< 1	< 5	< 1		< 0.1	0.263	< 3.99	< -0.184	< -5.34	C081190049
10/29/2008	< 1	< 1	< 1	< 5	< 1	0.23	0.281	0.319	< 1.16	< 0.994	< 10.6	C08304013004
4/30/2009	< 1	< 1	< 1	< 1	< 1	< 0.2	< 0.1	0.215	< 1.78	< 1.17	< 1.39	C09120016001
10/19/2009	2.1	< 1	< 1	< 1	< 1	0.493	0.425	0.433	< 0.942	< 1.51	< -6.33	C09292035004
4/20/2010	< 1	< 5	< 1	< 5	< 1	0.933	1.5	1.01	< 1.13	< 1.46	< -0.868	C10110009001
10/13/2010	< 1	< 5	< 1	< 5	< 1	< 0.4	0.21	0.245	< 4.95	< 2.61	< 2.66	C10286021004

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-746-K Landfill Monitoring

Water Quality Records for

Sample Date Range: 5/31/1994 - 5/31/2018

MW302

Sample Date	Organic Laboratory Analysis Results					Inorganic Laboratory Analysis Results			Radiological Laboratory Analysis Results			
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Al mg/L	Fe mg/L	Mn mg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Lab Sample ID
4/26/2011	< 1	< 5	< 1	< 5	< 1	< 0.2	0.112	0.095	< 0.402	< 3.67	< -0.163	C11116009003
10/19/2011	< 1	< 5	< 1	< 1	< 1	< 0.2	0.235	0.208	< 1.9	6.89	< 2.99	C11292015004
4/24/2012	< 1	< 1	< 1	< 1	< 1	< 0.4	0.333	0.163	< 0.867	< 0.188	< 3.89	C12115011003
10/29/2012	< 1	< 1	< 1	< 1	< 1	< 0.2	< 0.1	0.0704	< 0.308	< -0.308	< -6.18	C12303019001
4/23/2013	< 1	< 1	< 1	< 1	< 1	< 0.2	< 0.1	0.0804	< 3.53	< 1.37	< -2.15	C13113007003
10/21/2013	< 1	< 1	< 1	< 1	< 1	< 0.2	< 0.1	0.19	< 2.39	< 2.41	< 1.2	C13294037001
4/29/2014	< 1	< 1	< 1	< 1	< 1	0.0339	0.112	0.156	< -0.306	< 2.95	< 2.13	347676007
10/7/2014	< 1	< 1	< 1	< 1	< 1	0.0573	0.163	0.414	< -1.1	< 1.86	< 12.8	358703005
4/28/2015	< 1	< 1	< 1	< 1	< 1	0.0504	0.106	0.674	< 7.44	< 3.78	< -0.946	371985003
10/27/2015	< 1	< 1	< 1	< 1	< 1	0.0205	0.13	0.402	< -2.37	< -2.28	< 3.12	384156003
10/27/2015	< 1	< 1	< 1	< 1	< 1	0.0272	0.157	0.454	< -3.02	< -1.71	< -2.76	384156005
4/13/2016	< 1	< 1	< 1	< 1	< 1	0.0496	0.275	0.326	< 3.35	8.77	< -11	395245001
10/11/2016	< 1	< 1	< 1	< 1	< 1	0.102	0.222	0.31	< -3.58	< 4.11	< -7.9	407853005
10/11/2016	< 1	< 1	< 1	< 1	< 1	0.0458	0.109	0.297	< -1.69	< -6.03	< -4.58	407853003
4/6/2017	< 1	< 1	< 1	< 1	< 1	0.106	0.274	0.0465	< -2.09	< 5.58	< 3.16	420096003
10/6/2017	< 1	< 1	< 1	< 1	< 1	0.0659	0.296	0.332	< -0.704	< 8.85	< 0.00131	434592003
10/6/2017	< 1	< 1	< 1	< 1	< 1	0.0885	0.333	0.41	< 2.18	< 5.43	< 2.4	434592005
4/9/2018	5.1	< 1	< 1	< 1	< 1	0.0749	0.219	0.205	< -0.121	< -0.119	< 5.28	447581003
5/31/2018	< 1	< 1	< 1	< 1	< 1							451547001

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-746-K Landfill Monitoring

Water Quality Records for

Sample Date Range: 5/31/1994 - 5/31/2018

MW344

Sample Date	Organic Laboratory Analysis Results					Inorganic Laboratory Analysis Results			Radiological Laboratory Analysis Results			Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Al mg/L	Fe mg/L	Mn mg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	
5/20/1998	< 1	< 5	< 5	< 5	< 5	5.43	11.2	0.663	< 4	24	< -2.8	C981400089
8/11/1998	< 1	< 5	< 5	< 5	< 5	7.65	13.1	0.946	< 3.2	11	< -1.3	C982240042
11/16/1998	< 1	< 5	< 5	< 5	< 5	2.65	12.2	0.83	< 5.66	8.45	< 6.8	C983200078
11/16/1998	< 1	< 5	< 5	< 5	< 5	2.43	9.51	0.65	< 2.27	9.59	< -3.1	C983200079
1/25/1999	< 1	< 5	< 5	< 5	< 5	8.54	13	0.79	< 0.1	14.19	< 8.4	C990250157
4/19/1999	< 1	< 5	< 5	< 5	< 5	9.26	16.1	0.827	< 4.05	8.24	< -9.06	C991090063
7/15/1999	< 1	< 5	< 5	< 5	< 5	3.21	13.6	0.756	< 3.29	< 3.03	< 7.03	C991960149
10/14/1999	< 1	< 5	< 5	< 5	< 5	8.76	13.1	0.871	5.38	< 5.75	< 7.28	C992870108
1/13/2000	< 1	< 5	< 5	< 5	< 5	1.35	9.06	0.565	< 0.74	12.89	< 6.94	C000130121
4/27/2000	< 1	< 5	< 5	< 5	< 5	3.68	10.8	0.523	< 2.81	19.31	< -2.65	C001190013
7/27/2000	< 1	< 5	< 5	< 5	< 5	1.27	6.22	0.404	< 4.3	14.19	< -6.62	C002090103
7/27/2000	< 1	< 5	< 5	< 5	< 5	1.92	8.16	0.531	7.68	12.31	< 10.4	C002090102
10/16/2000	< 1	< 5	< 5	< 5	< 5	1.5	5.4	0.37	< -0.9	21.88	< 1.57	C002910048
10/16/2000	< 1	< 5	< 5	< 5	< 5	1.92	6.81	0.525	< 1.79	15.94	< 0.674	C002910047
1/10/2001	< 1	< 5	< 5	< 5	< 5	4.4	6.02	0.396	< 0.529	< 1.5	< 4.46	C010100099
4/16/2001	< 1	< 5	< 5	< 5	< 5	2.3	7.02	0.411	< 1.98	6.24	< -7.79	C011060089
7/19/2001	< 1	< 5	< 5	< 5	< 5	1.83	5.1	0.355	< -2.34	< 1.95	< 7.79	C012010060
7/24/2001	46	100	59	< 50	< 50	15.8	315	27.7	< 32.1	< 25.1	< 12.4	C012060009
10/15/2001	< 1	< 5	< 5	< 5	< 5	0.655	3.55	0.399	< 4.6	< 2.4	< -2	C012880066
10/15/2001	< 1	< 5	< 5	< 5	< 5	0.797	3.79	0.329	< 0.901	9.99	< -8.48	C012880067
1/22/2002	< 1	< 5	< 5	< 5	< 5	1.37	5.33	0.366	< 5.38	6.15	< 6.69	C020220045
4/10/2002	< 1	< 5	< 5	< 5	< 5	1.63	7.58	0.378	< -0.899	< 2.73	< 4.04	C021010052
7/24/2002	< 1	< 5	< 5	< 5	< 5	2.07	5.44	0.49	10.2	< 6.95	< 4.82	C022060007
10/3/2002	< 1	< 5	< 5	< 5	< 5	0.00423	0.00456	0.323	< 5.83	< 5.09	18.5	C022760030
10/3/2002	< 1	< 5	< 5	< 5	< 5	0.00323	0.00478	0.366	< 2.54	< 2.37	< 13.8	C022760031
1/30/2003	< 1	< 5	< 5	< 5	< 5	1.68	4.16	0.378	< -2.18	< 0.631	< 2	C030310019
4/14/2003	< 1	< 5	< 5	< 5	< 5	3.92	3.28	0.268	< 0.0183	< 8.74	20.4	C031040078
7/30/2003	< 1	< 5	< 5	< 5	< 5	21.9	35.4	6.18	< 12.1	< 6.22	< 12.3	C032110048
10/21/2003	< 1	< 5	< 5	< 5	< 5	4.19	32.6	0.388	< 5.8	< 4.3	< 3.31	C032950014
10/21/2003	< 1	< 5	< 5	< 5	< 5	3.63	34.8	3.99	< 3.45	< 3.49	< -1.39	C032950015
1/26/2004	< 1	< 5	< 5	< 5	< 5	4.22	18.2	2.32	10.1	7.74	< 5.32	C040260082
4/21/2004	< 1	< 5	< 5	< 5	< 5	2.91	13.3	1.23	< 2.26	< 1.95	< -4.04	C041130037
7/15/2004	< 1	< 5	< 5	< 5	< 5	< 0.2	12.9	1.61	< 0.82	< 2.89	< -8.52	C041970170

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-746-K Landfill Monitoring

Water Quality Records for

Sample Date Range: 5/31/1994 - 5/31/2018

MW344

Sample Date	Organic Laboratory Analysis Results					Inorganic Laboratory Analysis Results			Radiological Laboratory Analysis Results			Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Al mg/L	Fe mg/L	Mn mg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	
10/19/2004	< 1	< 5	< 5	< 5	< 5	2.51	13.2	1.56	< -0.79	9.99	< -3.88	C042940034
10/19/2004	< 1	< 5	< 5	< 5	< 5	2.99	11.8	1.63	< -2.19	< 0.172	< 4.34	C042940035
4/27/2005	< 1	< 5	< 5	< 5	< 5	3.67	7.9	0.692	< 0.794	5.87	< 10.7	C051170053
10/25/2005	< 1	< 5	< 5	< 5	< 5	1.49	5.25	0.714	< 2.1	< 5.13	< 8.07	C052990010
4/11/2006	< 1	< 5	< 5	< 5	< 5	2.55	6.79	0.419	< 2.13	< 5.53	< 0.686	C061020012
10/26/2006	< 1	< 5	< 5	< 5	< 5	4.32	5.55	0.472	< 2.45	< 5.05	< 13.9	C062990104
4/12/2007	< 1	< 5	< 5	< 5	< 5	13.5	7.9	0.279	< 6.28	< 4.88	< -3.22	C071030003
4/12/2007	< 1	< 5	< 5	< 5	< 5	7.87	6.28	0.286	8.77	< 7.36	< 7.1	C071030004
10/25/2007	< 1	< 1	< 1	< 1	< 1	5.46	4.1	0.217	< 2.24	< 2.43	< 1.88	C072980185
4/28/2008	< 1	< 1	< 1	< 5	< 1		0.947	0.183	< 1.35	< 4.02	< 2.67	C081200002
10/29/2008	< 1	< 1	< 1	< 5	< 1	3.36	3.64	0.256	< 2.88	< 4.82	< 0.645	C08304013005
4/30/2009	< 1	< 1	< 1	< 1	< 1	4	3.56	0.19	< 2.62	5.57	< 10.1	C09120016002
10/19/2009	1.3	< 1	< 1	< 1	< 1	3.55	3.04	0.299	< 1.6	< 4.25	< -0.283	C09292035005
4/20/2010	< 1	< 5	< 1	< 5	< 1	11.5	22	0.262	9.17	8.43	< 10	C10110009003
10/13/2010	< 1	< 5	< 1	< 5	< 1	9.93	13.8	0.233	8.01	9.96	< -7.65	C10286021001
4/26/2011	< 1	< 5	< 1	< 5	< 1	4.48	7.89	0.155	< 0.101	5.63	< -3.92	C11116009005
4/26/2011	< 1	< 5	< 1	< 5	< 1	4.7	8.17	0.154	< -0.331	< 5.11	< -7.02	C11116009004
10/19/2011	< 1	< 5	< 1	< 1	< 1	2.86	7.14	0.188	< 2.34	9.7	< 2.78	C11292015005
4/24/2012	< 1	< 1	< 1	< 1	< 1	4.39	7.54	0.167	< 3.64	< 3.59	< -0.511	C12115011004
4/24/2012	< 1	< 1	< 1	< 1	< 1	3.92	6.46	0.118	< 6.28	< 5.53	< 7.1	C12115011005
10/29/2012	< 1	< 1	< 1	< 1	< 1	2.12	3.89	0.143	< 0.405	< 3.49	< -8.39	C12303019005
4/23/2013	< 1	< 1	< 1	< 1	< 1	2.65	4.66	0.116	< 4.97	< 3.39	< -3.25	C13113014001
4/23/2013	< 1	< 1	< 1	< 1	< 1	2.77	3.82	0.107	< 1.89	< 3.93	< -1.43	C13113014002
10/21/2013	< 1	< 1	< 1	< 1	< 1	8.79	6.63	0.185	< 4.86	4.56	< 4.93	C13294037005
4/29/2014	< 1	< 1	< 1	< 1	< 1	3.92	9.31	0.138	9.05	7.89	< 1.14	347676001
4/29/2014	< 1	< 1	< 1	< 1	< 1	4.42	10.1	0.139	6.34	9.4	< -2.93	347676003
10/7/2014	< 1	< 1	< 1	< 1	< 1	3.61	8.09	0.253	< 0.965	< 11	< 3.57	358703007
4/28/2015	0.87	12.6	7.7	< 1	< 1	1.37	3.05	0.116	< 0.878	< 5.5	< -0.00901	371985005
4/28/2015	< 1	< 1	< 1	< 1	< 1	0.906	1.78	0.0971	< -1.64	< 5.21	< -3.42	371985007
10/27/2015	< 1	< 1	< 1	< 1	< 1	1.71	4.22	0.138	< 2.02	< 3.58	< -0.265	384156007
4/13/2016	< 1	< 1	< 1	< 1	< 1	2.07	4.76	0.153	< 10	26	< -15.1	395245007
10/11/2016	< 1	< 1	< 1	< 1	< 1	1.46	3.17	0.125	< -3.18	< 0.375	< 0.299	407853007
4/6/2017	< 1	< 1	< 1	< 1	< 1	3.31	6.42	0.129	< -7.42	< 2.91	< 5.27	420096005

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-746-K Landfill Monitoring

Water Quality Records for

Sample Date Range: 5/31/1994 - 5/31/2018

MW344

Sample Date	Organic Laboratory Analysis Results					Inorganic Laboratory Analysis Results			Radiological Laboratory Analysis Results			Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Al mg/L	Fe mg/L	Mn mg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	
4/6/2017	< 1	< 1	< 1	< 1	< 1	3.94	8.11	0.139	< -4.29	10.7	< 6.53	420096007
10/6/2017	< 1	< 1	< 1	< 1	< 1	11	21.9	0.249	< 8.2	16.1	< 1.81	434592007
4/9/2018	< 1	< 1	< 1	< 1	< 1	8.39	15.3	0.162	< 7.02	12.8	< 15.9	447581007
4/9/2018	< 1	< 1	< 1	< 1	< 1	10.8	18.4	0.182	< 10	< 7.56	< 0.551	447581005

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

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APPENDIX D

ADMINISTRATIVE RECORD AND POST-DECISION RECORD INDICES

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Paducah Documents Added to the Administrative Record Files- Second Quarter CY2018

Document Status	Document Date	Document ID	Title	Author Affiliation	To Affiliation	Protected Information	Name
ARF400OUREMEDIAL	2/15/2018	PPPO-02-4637352-18B, DOE/LX/07-2424&D1	TRANSMITTAL OF THE SCOPING DOCUMENT FOR THE C-400 COMPLEX REMEDIAL INVESTIGATION/FEASIBILITY STUDY AT PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY (DOE/LX/07-2424&D1)	DOE-PPPO	KDWM, USEPA-4	**No**	ENV 1.A-01520
ARF4-1	2/28/2018	FR-18-0054	KENTUCKY CONDITIONAL CONCURRENCE WITH THE FEASIBILITY STUDY FOR SOLID WASTE MANAGEMENT UNIT 4 OF THE BURIAL GROUNDS OPERABLE UNIT (DOE/LX/07-2408&D2)	KDWM	DOE-PPPO	**No**	ENV 1.A-01502
ARF4-1	2/28/2018	FR-18-0055	EPA CONDITIONAL CONCURRENCE: FEASIBILITY STUDY FOR SOLID WASTE MANAGEMENT UNIT 4 OF THE BURIAL GROUNDS OPERABLE UNIT AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY, (DOE/LX/07-2408&D2), PRIMARY DOCUMENT, TRANSMITTAL DATED JANUARY 29, 2018 (PPPO-02-4645212-18B)	USEPA-4	DOE-PPPO	**No**	ENV 1.A-01503
ARF4-1	3/29/2018	FR-18-0069	KENTUCKY CONCURRENCE WITH THE FEASIBILITY STUDY FOR SOLID WASTE MANAGEMENT UNIT 4 OF THE BURIAL GROUNDS OPERABLE UNIT (DOE/LX/07-2408&D2/R1)	KDWM	DOE-PPPO	**No**	ENV 1.A-01514
ARF4-1	3/29/2018	FR-18-0070	EPA APPROVAL: FEASIBILITY STUDY FOR SOLID WASTE MANAGEMENT UNIT 4 OF THE BURIAL GROUNDS OPERABLE UNIT AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY, (DOE/LX/07-2408&D2/R1), PRIMARY DOCUMENT, TRANSMITTAL DATED MARCH 26, 2018 (PPPO-02-4735954-18A)	USEPA-4	DOE-PPPO	**No**	ENV 1.A-01515
ARFREF	2/22/2018	FR-18-0051	SUBMITTAL OF COMMENTS TO THE FISCAL YEAR 2018 SITE MANAGEMENT PLAN FOR THE PADUCAH GASEOUS DIFFUSION PLANT (DOE/LX/07-2418&D1/R1-ERRATA)	KDWM	DOE-PPPO	**No**	ENV 1.A-01504
ARFREF	3/2/2018	FR-18-0056	EPA COMMENTS: SITE MANAGEMENT PLAN, PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY, ANNUAL REVISION - FISCAL YEAR 2018 (DOE/LX/07-2418&D1/R1 ERRATA), PRIMARY DOCUMENT, TRANSMITTAL OF THE ERRATA PAGES AND COMPLETE DOCUMENT DATED JANUARY 23, 2018, 2018 (PPPO-02-4602574-18A)	USEPA-4	DOE-PPPO	**No**	ENV 1.A-01505
ARFREF	3/9/2018	PPPO-02-4733810-18	NOTIFICATION OF SCHEDULE EXTENSION FOR SUBMITTAL OF THE D2 FISCAL YEAR 2018 SITE MANAGEMENT PLAN, PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY (DOE/LX/07-2418&D2)	DOE-PPPO	KDWM, USEPA-4	**No**	ENV 1.A-01506
ARFREF	3/2/2018	PPPO-02-4694194-18	RECORD OF CONVERSATION CONCERNING FIELD WORK FOR THE C-400 VAPOR INTRUSION STUDY WORK PLAN TO SUPPORT THE ADDITIONAL ACTIONS FOR THE COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT FIVE-YEAR REVIEW AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY (DOE/LX/07-2403&D2/R1)	DOE-PPPO	KDWM, USEPA-4	**No**	ENV 1.A-01509
ARFREF	4/5/2018	PPPO-02-4745260-18	RECORD OF CONVERSATION CONCERNING INCORPORATION OF THE 2017 COMMUNITY SURVEY INTO THE NEXT REVISION OF THE COMMUNITY RELATIONS PLAN UNDER THE FEDERAL FACILITY AGREEMENT AT THE U.S. DEPARTMENT OF ENERGY PADUCAH GASEOUS DIFFUSION PLANT (DOE/LX/07-2401&D2/R1)	DOE-PPPO	KDWM, USEPA-4	**No**	ENV 1.A-01517
ARFREF	4/9/2018	PPPO-02-4797380-18	FEDERAL FACILITY AGREEMENT BUDGET REPORTING-FISCAL YEAR 2020 BUDGET TARGET FUNDING GUIDANCE NOTIFICATION	DOE-PPPO	KDWM, USEPA-4	**No**	ENV 1.A-01518
ARFREF	4/23/2018	PPPO-02-4822821-18	FEDERAL FACILITY AGREEMENT BUDGET REPORTING-PRELIMINARY ASSESSMENT OF FISCAL YEAR 2020 BUDGET FORMULATION GUIDANCE AND UPDATE OF THE FISCAL YEAR 2020 ASSESSMENT OF BUDGET TARGETS ON SITE PRIORITIES (INTEGRATED PRIORITY LIST)	DOE-PPPO	KDWM, USEPA-4	**No**	ENV 1.A-01519

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GW3-PD	3/30/2018	FR-18-0071	EPA COMMENTS: NORTHEAST PLUME TRANSECT WELL BASELINE DETERMINATION, PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY, TRANSMITTAL DATED MARCH 2, 2018 (PPPO-02-4620208-18B)	USEPA-4	DOE-PPPO	**No**	ENV 1.A-01516
6PHASE-PD	04/27/18	FR-18-0078	EPA COMMENTS: REMEDIAL ACTION COMPLETION REPORT FOR THE INTERIM REMEDIAL ACTION FOR THE GROUNDWATER OPERABLE UNIT FOR THE VOLATILE ORGANIC COMPOUND CONTAMINATION AT THE C-400 CLEANING BUILDING AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY, (DOE/LX/07-2417&D1), PRIMARY DOCUMENT, TRANSMITTAL DATED FEBRUARY 6, 2018 (PPPO-02-4472864-18C)	USEPA-4	DOE-PPPO	**No**	ENV 1.A-01523
GW3-PD	04/02/18	FR-18-0073	SUBMITTAL OF COMMENTS TO THE POSTCONSTRUCTION REPORT FOR THE NORTHEAST PLUME OPTIMIZATION AT THE PADUCAH GASEOUS DIFFUSION PLANT	KDWM	DOE-PPPO	**No**	ENV 1.A-01524
GW3-PD	03/22/18	FR-18-0067	APPROVAL OF THE NORTHEAST PLUME TRANSECT WELL BASELINE DETERMINATION	KDWM	DOE-PPPO	**No**	ENV 1.A-01508
GW3-PD	03/21/18	FR-18-0066	EPA COMMENTS: POSTCONSTRUCTION REPORT FOR THE NORTHEAST PLUME OPTIMIZATION AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY, (DOE/LX/07-2419&D1), SECONDARY DOCUMENT, TRANSMITTAL DATED JANUARY 5, 2018 (PPPO-02-4501110-18B)	USEPA-4	DOE-PPPO	**No**	ENV 1.A-01507
NSDD-PD	02/07/18	20180207 NSDD-PD	C-400-L WEEKLY INSPECTIONS FEBRUARY 2018	FRNP	ADMIN RECORD	**No**	ENV 1.A-01512
NSDD-PD	02/01/18	20180201 NSDD-PD	C-400-L WEEKLY, QUARTERLY, AND SEMI-ANNUAL INSPECTIONS FEBRUARY 2018	FRNP	ADMIN RECORD	**No**	ENV 1.A-01511

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ARF400OUREMEDIAL	6/15/2018	FR-18-0115	EPA COMMENTS ON: SCOPING DOCUMENT FOR THE C-400 COMPLEX REMEDIAL INVESTIGATION/FEASIBILITY STUDY AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY, (DOE/LX/07-2424&D1), SECONDARY DOCUMENT, TRANSMITTAL DATED FEBRUARY 15, 2018 (PPPO-02-4637352-18B)	USEPA-4	DOE-PPPO	**No**	ENV 1.A-01538
ARF400OUREMEDIAL	8/23/2018	PPPO-02-4936984-18A	RESPONSE TO U.S. ENVIRONMENTAL PROTECTION AGENCY COMMENTS ON THE SCOPING DOCUMENT FOR THE C-400 COMPLEX REMEDIAL INVESTIGATION/FEASIBILITY STUDY AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY (DOE/LX/07-2424&D1)	DOE-PPPO,DOE-PPPO	KDEP, USEPA-4	**No**	ENV 1.A-01572
ARF400OUREMOVAL	1/10/2018	PPPO-02-4594721-18A, DOE/LX/07-2420&D1	TRANSMITTAL OF THE REMOVAL NOTIFICATION FOR DEMOLITION OF THE C-400 CLEANING BUILDING AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY (DOE/LX/07-2420&D1)	DOE-PPPO	KDWM, USEPA-4	**No**	ENV 1.A-01489
ARF400OUREMOVAL	2/9/2018	FR-18-0044	EPA COMMENTS: REMOVAL NOTIFICATION FOR DEMOLITION OF THE C-400 CLEANING BUILDING AT PGDP, (DOE/LX/07-2420&D1), PRIMARY DOCUMENT, TRANSMITTAL DATED JANUARY 10, 2018 (PPPO-02-4594721-18A)	USEPA-4	DOE-PPPO	**No**	ENV 1.A-01490
ARF400OUREMOVAL	2/9/2018	FR-18-0045	KENTUCKY CONCURRENCE WITH THE REMOVAL NOTIFICATION FOR DEMOLITION OF THE C-400 CLEANING BUILDING (DOE/LX/07-2420&D1)	KDWM	DOE-PPPO	**No**	ENV 1.A-01491
ARF400OUREMOVAL	3/8/2018	PPPO-02-4685072-18, DOE/LX/07-2420&D2	TRANSMITTAL OF THE REMOVAL NOTIFICATION FOR DEMOLITION OF THE C-400 CLEANING BUILDING IN THE C-400 COMPLEX OPERABLE UNIT AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY (DOE/LX/07-2420&D2)	DOE-PPPO	KDWM, USEPA-4	**No**	ENV 1.A-01510
ARF400OUREMOVAL	4/6/2018	FR-18-0074	NOTIFICATION FOR EPA COMMENTS ON: REMOVAL NOTIFICATION FOR DEMOLITION OF THE C-400 CLEANING BUILDING IN THE C400 COMPLEX OPERABLE UNIT AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY, (DOE/LX/07-2420&D2), PRIMARY DOCUMENT, TRANSMITTAL DATED MARCH 8,2018 (PPPO-02-4685072-18)	USEPA-4	DOE-PPPO	**No**	ENV 1.A-01521
ARF400OUREMOVAL	4/16/2018	FR-18-0075	KENTUCKY CONCURRENCE WITH THE REMOVAL NOTIFICATION FOR DEMOLITION OF THE C-400 CLEANING BUILDING (DOE/LX/07-2420&D2)	KDWM	DOE-PPPO	**No**	ENV 1.A-01522
ARF400OUREMOVAL	5/2/2018	PPPO-02-4836243-18A, DOE/LX/07-2425&D1	TRANSMITTAL OF THE EE/CA FOR DEMOLITION OF THE C-400 CLEANING BUILDING IN THE C-400 COMPLEX OPERABLE UNIT AT PGDP, PADUCAH, KENTUCKY (DOE/LX/07-2425&D1)	DOE-PPPO	KDWM, USEPA-4	**No**	ENV 1.A-01525
ARF400OUREMOVAL	5/7/2018	FR-18-0081	EPA CONDITIONAL CONCURRENCE ON: REMOVAL NOTIFICATION FOR DEMOLITION OF THE C-400 CLEANING BUILDING IN THE C-400 COMPLEX OPERABLE UNIT AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY, (DOE/LX/07-2420&D2), PRIMARY DOCUMENT, TRANSMITTAL DATED MARCH 8, 2018 (PPPO-02-4685072-18)	USEPA-4	DOE-PPPO	**No**	ENV 1.A-01533
ARF400OUREMOVAL	5/29/2018	FR-18-0092	SUBMITTAL OF COMMENTS TO THE ENGINEERING EVALUATION/COST ANALYSIS FOR DEMOLITION OF THE C-400 CLEANING BUILDING IN THE C-400 COMPLEX OPERABLE UNIT (DOE/LX/07-2425&D1) PADUCAH SITE, PADUCAH, MCCRACKEN COUNTY, KENTUCKY #KY8-890-008-982	KDEP,KDWM	DOE-PPPO	**No**	ENV 1.A-01535
ARF400OUREMOVAL	6/1/2018	FR-18-0097	EPA COMMENTS: ENGINEERING EVALUATION/COST ANALYSIS FOR DEMOLITION OF THE C-400 CLEANING BUILDING AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY, (DOE/LX/07-2425&D1), PRIMARY DOCUMENT, TRANSMITTAL DATED MAY 2, 2018 (PPPO-02-4836243-18A)	USEPA-4	DOE-PPPO	**No**	ENV 1.A-01536

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ARF400OUREMOVAL	6/4/2018	PPPO-4882943-18	NOTIFICATION OF INVOCATION OF INFORMAL DISPUTE RESOLUTION CONCERNING RECEIPT OF CONDITIONAL CONCURRENCE RELATED TO THE REMOVAL NOTIFICATION FOR DEMOLITION OF THE C-400 CLEANING BUILDING IN THE C-400 COMPLEX OPERABLE UNIT AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY (DOE/LX/07-2420&D2)	DOE-PPPO	KDWM, USEPA-4	**No**	ENV 1.A-01537
ARF400OUREMOVAL	6/26/2018	FR-18-0118	EPA COMMENTS: APPENDIX OR RELEVANT AND APPROPRIATE REQUIREMENTS AND TO BE CONSIDERED GUIDANCE FOR DEMOLITION OF THE C-400 BUILDING. APPENDIX TO THE ENGINEERING EVALUATION/COST ANALYSIS FOR DEMOLITION OF THE C-400 CLEANING BUILDING AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY, (DOE/LX/07-2425&D1), PRIMARY DOCUMENT, TRANSMITTAL DATED MAY 2, 2018 (PPPO-02-4836243-18A)	USEPA-4	DOE-PPPO	**No**	ENV 1.A-01539
ARF400OUREMOVAL	6/26/2018	FR-18-0119	SUBMITTAL OF ADDITIONAL COMMENTS TO THE ENGINEERING EVALUATION/COST ANALYSIS FOR DEMOLITION OF THE C-400 CLEANING BUILDING IN THE C-400 COMPLEX OPERABLE UNIT (DOE/LX/07-2425&D1) PADUCAH SITE, PADUCAH, MCCRACKEN COUNTY, KENTUCKY #KY8-890-008-982	KDEP,KDWM	DOE-PPPO	**No**	ENV 1.A-01540
ARF400OUREMOVAL	6/21/2018	PPPO-02-4895082-18	TRANSMITTAL OF ACTION MEMORANDUM FOR THE C-400 CLEANING BUILDING NON-TIME-CRITICAL REMOVAL ACTION AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY (DOE/LX/07-2427&D1)	DOE-PPPO	KDEP, USEPA-4	**No**	ENV 1.A-01553
ARF400OUREMOVAL	7/6/2018	PPPO-02-4932146-18	WRITTEN STATEMENT INITIATING FORMAL DISPUTE RESOLUTION CONCERNING RECEIPT OF CONDITIONAL CONCURRENCE RELATED TO THE REMOVAL NOTIFICATION FOR DEMOLITION OF THE C-400 CLEANING BUILDING IN THE C-400 COMPLEX OPERABLE UNIT AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY (DOE/LX/07-2420&D2)	DOE-PPPO	USEPA-4, KDEP	**No**	ENV 1.A-01554
ARF400OUREMOVAL	06/20/18	PPPO-02-4936822-18	U.S. ENVIRONMENTAL PROTECTION AGENCY COMMENTS ON THE ENGINEERING EVALUATION/COST ANALYSIS FOR DEMOLITION OF THE C-400 CLEANING BUILDING IN THE C-400 COMPLEX OPERABLE UNIT AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY (DOE/LX/07-2425&D1)	DOE-PPPO	KDEP, USEPA-4	**No**	ENV 1.A-01555
ARF400OUREMOVAL	07/20/18	FR-18-0130	NOTIFICATION FOR EPA COMMENTS ON: ACTION MEMORANDUM FOR THE C-400 CLEANING BUILDING NON-TIME CRITICAL REMOVAL ACTION AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY, (DOE/LX/07-2427&D1), PRIMARY DOCUMENT, TRANSMITTAL DATED JUNE 21, 2018 (PPPO-02-4895082-18)	USEPA-4	DOE-PPPO	**No**	ENV 1.A-01563
ARF400OUREMOVAL	07/26/18	PPPO-02-4897673-18, DOE/LX/07-2425&D2	TRANSMITTAL OF THE ENGINEERING EVALUATION/COST ANALYSIS FOR DEMOLITION OF THE C-400 CLEANING BUILDING IN THE C-400 COMPLEX OPERABLE UNIT AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY (DOE/LX/07-2425&D2)	DOE-PPPO,DOE-PPPO	KDEP, USEPA-4	**No**	ENV 1.A-01564
ARF400OUREMOVAL	08/15/18	PPPO-02-5051863-18	ELEVATION OF THE FORMAL DISPUTE TO THE SENIOR EXECUTIVE COMMITTEE ON THE REMOVAL NOTIFICATION FOR DEMOLITION OF THE C-400 CLEANING BUILDING IN THE C-400 COMPLEX OPERABLE UNIT AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY (DOE/LX/07-2420&D2)	DOE-PPPO	USEPA-4, KDEP	**No**	ENV 1.A-01565

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ARF400OUREMOVAL	08/16/18	PPPO-02-5070866-18	TRANSMITTAL OF REMOVAL ACTION WORK PLAN FOR DEMOLITION OF THE C-400 CLEANING BUILDING IN THE C-400 COMPLEX OPERABLE UNIT AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY (DOE/LX/07-2432&D1)	DOE-PPPO,DOE-PPPO	KDEP, USEPA-4	**No**	ENV 1.A-01566
ARF400OUREMOVAL	08/20/18	FR-18-0138	EPA COMMENTS: ACTION MEMORANDUM FOR THE C-400 CLEANING BUILDING NON-TIME CRITICAL REMOVAL ACTION AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY, (DOE/LX/07-2427&D1), TRANSMITTAL DATED JUNE 21, 2018 (PPPO-02-4895082-18) EPA ID KY8890008982	USEPA-4	DOE-PPPO	**No**	ENV 1.A-01567
ARF400OUREMOVAL	08/22/18	FR-18-0139	CONCURRENCE WITH ENGINEERING EVALUATION/COST ANALYSIS FOR DEMOLITION OF THE C-400 CLEANING BUILDING IN THE C-400 COMPLEX OPERABLE UNIT (DOE/LX/07-2425&D2) PADUCAH SITE, PADUCAH, MCCRACKEN COUNTY, KENTUCKY, #KY8-890-008-982	KDWM,KDWM	DOE-PPPO	**No**	ENV 1.A-01568
ARF400OUREMOVAL	08/22/18	FR-18-0140	EPA CONDITIONAL CONCURRENCE: ENGINEERING EVALUATION/COST ANALYSIS FOR DEMOLITION OF THE C-400 CLEANING BUILDING AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY, (DOE/LX/07-2425&D2), PRIMARY DOCUMENT, TRANSMITTAL DATED JULY 26, 2018 (PPPO-02-4897673-18)	USEPA-4	DOE-PPPO	**No**	ENV 1.A-01569
ARF400OUREMOVAL	08/24/18	PPPO-02-5072630-18	TRANSMITTAL OF THE NOTIFICATION OF PLANNED WORK INITIATION DATE FOR THE C-400 CLEANING BUILDING DEMOLITION AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY	DOE-PPPO,DOE-PPPO	USEPA-4-HQ, USEPA-4	**No**	ENV 1.A-01570
ARF4-1	03/26/18	PPPO-02-4735954-18A	TRANSMITTAL OF THE FEASIBILITY STUDY FOR SOLID WASTE MANAGEMENT UNIT 4 OF THE BURIAL GROUNDS OPERABLE UNIT AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY (DOE/LX/07-2408&D2/R1)	DOE-PPPO,DOE-PPPO	KDWM, USEPA-4	**No**	ENV 1.A-01532
ARFCC	06/06/18	FR-18-0101	EPA COMMENTS ON: REMEDIAL INVESTIGATION/FEASIBILITY STUDY REPORT FOR COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT WASTE DISPOSAL ALTERNATIVES EVALUATION AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY, (DOE/LX/07-0244&D2/R1), PRIMARY DOCUMENT, TRANSMITTAL DATED MAY 7, 2018 (PPPO-02-2151529-18A)	USEPA-4	DOE-PPPO	**No**	ENV 1.A-01527
ARFCC	06/07/18	FR-18-0102	CONDITIONAL CONCURRENCE WITH THE REMEDIAL INVESTIGATION/FEASIBILITY STUDY REPORT FOR CERCLA WASTE DISPOSAL ALTERNATIVES EVALUATION (DOE/LX/07-0244&D2/R1) PADUCAH SITE, PADUCAH, MCCRACKEN COUNTY, KENTUCKY #KY8-890-008-982	KDEP,KDEP	DOE-PPPO	**No**	ENV 1.A-01528
ARFCC	07/06/18	FR-18-0124	CONCURRENCE WITH THE REMEDIAL INVESTIGATION/FEASIBILITY STUDY REPORT FOR CERCLA WASTE DISPOSAL ALTERNATIVE EVALUATION (DOE/LX/07-0244&D2/R2) PADUCAH SITE, PADUCAH, MCCRACKEN COUNTY, KENTUCKY #KY8-890-008-982	KDWM	DOE-PPPO	**No**	ENV 1.A-01542
ARFCC	07/10/18	FR-18-0126	EPA APPROVAL: INVESTIGATION/FEASIBILITY STUDY REPORT FOR COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT WASTE DISPOSAL ALTERNATIVES EVALUATION AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY, (DOE/LX/07-0244&D2), PRIMARY DOCUMENT, TRANSMITTAL DATED JULY 2, 2018 (PPPO-02-4938071-18)	USEPA-4	DOE-PPPO	**No**	ENV 1.A-01547

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ARFCC	07/02/18	PPP0-02-4938071-18, DOE/LX/07-0244&D2/R2	TRANSMITTAL OF THE REMEDIAL INVESTIGATION/FEASIBILITY STUDY REPORT FOR COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT WASTE DISPOSAL ALTERNATIVES EVALUATION AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY (DOE/LX/07-0244&D2/R2)	DOE-PPPO,DOE-PPPO	KDEP, USEPA-4	**No**	ENV 1.A-01560
ARFREF	04/16/18	PPPO-02-4711939-18	TRANSMITTAL OF THE D1/R1 SITE MANAGEMENT PLAN, PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY, ANNUAL REVISION, FISCAL YEAR 2018 (DOE/LX/07-2418&D2) - GENERAL OPERABLE UNIT 00	DOE-PPPO	KDEP	**No**	ENV 1.A-01529
ARFREF	05/16/18	FR-18-0084	NON-CONCURRENCE WITH THE FISCAL YEAR 2018 SITE MANAGEMENT PLAN FOR THE PADUCAH GASEOUS DIFFUSION PLANT (DOE/LX/07-2418&D2) PADUCAH SITE, PADUCAH, MCCRACKEN COUNTY, KENTUCKY #KY8-890-008-982	KDEP,KDWM	DOE-PPPO	**No**	ENV 1.A-01530
ARFREF	05/16/18	FR-18-0085	EPA CONDITIONAL CONCURRENCE: SITE MANAGEMENT PLAN, PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY, ANNUAL REVISION - FISCAL YEAR 2018 (DOE/LX/07-2418&D2), PRIMARY DOCUMENT, TRANSMITTAL DATED APRIL 16, 2018 (PPPO-02-4711939-18)	USEPA-4	DOE-PPPO	**No**	ENV 1.A-01531
ARFREF	04/30/18	PPPO-02-4798250-18A, DOE/LX/07-2428 V1	U.S. DEPARTMENT OF ENERGY PADUCAH GASEOUS DIFFUSION PLANT FEDERAL FACILITY AGREEMENT SEMIANNUAL PROGRESS REPORT FOR THE FIRST HALF OF FISCAL YEAR 2018, PADUCAH, KENTUCKY, DOE/LX/07-2428/V1	DOE-PPPO	KDEP, USEPA-4, KDEP	**No**	ENV 1.A-01548
ARFREF	06/26/18	PPPO-02-4930994-18A, DOE/LX/07-2413&D1	TRANSMITTAL OF THE COMMUNITY RELATIONS PLAN UNDER THE FEDERAL FACILITY AGREEMENT AT THE U.S. DEPARTMENT OF ENERGY PADUCAH GASEOUS DIFFUSION PLANT (DOE/LX/07-2413&D1)	DOE-PPPO	KDEP, USEPA-4	**No**	ENV 1.A-01549
ARFREF	07/25/18	PPPO-02-4759760-18D, DOE/LX/07-2426&D1	TRANSMITTAL OF THE FIVE-YEAR REVIEW FOR REMEDIAL ACTIONS AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY (DOE/LX/07-2426&D1)	DOE-PPPO	KDEP, USEPA-4	**No**	ENV 1.A-01550
ARFREF	07/30/18	FR-18-0132	WRITTEN STATEMENT OF FORMAL DISPUTE FISCAL YEAR 2018 SITE MANAGEMENT PLAN FOR THE PADUCAH GASEOUS DIFFUSION PLANT (DOE/LX/07-2418&D2) PADUCAH SITE, PADUCAH, MCCRACKEN COUNTY, KENTUCKY, #KY8-890-008-982	KDWM	DOE-PPPO, USEPA-4	**No**	ENV 1.A-01551
ARFREF	06/15/18	PPPO-02-4892075-18	NOTIFICATION OF INVOCATION OF INFORMAL DISPUTE RESOLUTION CONCERNING RECEIPT OF CONDITIONAL CONCURRENCE RELATED TO THE SITE MANAGEMENT PLAN, PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY, ANNUAL REVISION-FISCAL YEAR 2018 (DOE/LX/07-2418&D2)	DOE-PPPO	KDEP, USEPA-4	**No**	ENV 1.A-01561
ARFREF	08/10/18	PPP0-02-4946344-18	WRITTEN STATEMENT INITIATING FORMAL DISPUTE RESOLUTION CONCERNING THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY CONDITIONAL CONCURRENCE RELATED TO THE SITE MANAGEMENT PLAN, PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY, ANNUAL REVISION-FISCAL YEAR 2018 (DOE/LX/07-2418&D2)	DOE-PPPO	USEPA-4, KDEP	**No**	ENV 1.A-01562

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SWP-PD	05/23/18	20180523 211A&B	SWMU 211-A AND SWMU 211-B OPTIONS PATH FORWARD PRESENTATION	FRNP	DOE-PPPO	**No**	ENV 1.A-01526
6PHASE-PD	05/07/18	FR-18-0082	SUBMITTAL OF COMMENTS TO THE REMEDIAL ACTION COMPLETION REPORT FOR THE INTERIM REMEDIAL ACTION FOR THE GROUNDWATER OPERABLE UNIT FOR THE VOLATILE ORGANIC CONTAMINATION AT THE C-400 CLEANING BUILDING (DOE/LX/07-2417&D1) PADUCAH SITE, PADUCAH, MCCRACKEN COUNTY, KENTUCKY #KY8-890-008-982	KDEP, KDWM	DOE-PPPO	**No**	ENV 1.A-01534
6PHASE-PD	7/30/2018	FR-18-0131	EPA APPROVAL: REMEDIAL ACTION COMPLETION REPORT FOR THE INTERIM REMEDIAL ACTION FOR THE GROUNDWATER OPERABLE UNIT FOR THE VOLATILE ORGANIC COMPOUND CONTAMINATION AT THE C-400 CLEANING BUILDING AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY, (DOE/LX/07-2417&D2), PRIMARY DOCUMENT, TRANSMITTAL DATED JULY 2, 2018 (PPPO-02-482399-18A)	USEPA-4	DOE-PPPO	**No**	ENV 1.A-01552
6PHASE-PD	7/18/2018	FR-18-0129	CONCURRENCE WITH THE REMEDIAL ACTION COMPLETION REPORT FOR THE INTERIM REMEDIAL ACTION FOR THE GROUNDWATER OPERABLE UNIT FOR THE VOLATILE ORGANIC CONTAMINATION AT THE C-400 CLEANING BUILDING (DOE/LX/07-2417&D2) PADUCAH SITE, PADUCAH, MCCRACKEN COUNTY, KENTUCKY, #KY8-890-008-982	KDWM,KDWM	DOE-PPPO	**No**	ENV 1.A-01571
GW3-PD	07/03/18	FR-18-0123	EPA CONCURRENCE: POSTCONSTRUCTION REPORT FOR THE NORTHEAST PLUME OPTIMIZATION AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY, (DOE/LX/07-2419&D2/R1), SECONDARY DOCUMENT, TRANSMITTAL DATED JUNE 22, 2018 (PPPO-02-4907680-18)	USEPA-4	DOE-PPPO	**No**	ENV 1.A-01541
GW3-PD	05/22/18	FR-18-0086	APPROVAL OF THE POST CONSTRUCTION REPORT FOR THE NORTHEAST PLUME OPTIMIZATION AT THE PADUCAH GASEOUS DIFFUSION PLANT (DOE/LX/07-2419&D2) PADUCAH SITE, PADUCAH, MCCRACKEN COUNTY, KENTUCKY #KY8-890-008-982	KDEP, KDWM	DOE-PPPO	**No**	ENV 1.A-01543
GW3-PD	06/01/18	FR-18-0096	EPA ACKNOWLEDGEMENT AND COMMENTS: POST CONSTRUCTION REPORT FOR THE NORTHEAST PLUME OPTIMIZATION AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY, (DOE/LX/07-2419&D2), SECONDARY DOCUMENT, TRANSMITTAL DATED MAY 15, 2018 (PPPO-02-4762649-18B)	USEPA-4	DOE-PPPO	**No**	ENV 1.A-01544
NSDD-PD	04/04/18	20180404 NSDD-PD	C-400-L WEEKLY INSPECTIONS NORTH-SOUTH DIVERSION DITCH APRIL 2018	FRNP	ADMIN RECORD	**No**	ENV 1.A-01545
NSDD-PD	05/03/18	20180503 NSDD-PD	C-400-L WEEKLY INSPECTIONS NORTH-SOUTH DIVERSION DITCH MAY 2018	FRNP	ADMIN RECORD	**No**	ENV 1.A-01546

Paducah Documents Added to the Post-Decision Files- Third Quarter CY2018

Document Status	Document Date	Document ID	Title	Author Affiliation	To Affiliation	Protected Information	Name
GW3-PD	07/02/18	FR-18-0122	APPROVAL OF THE POSTCONSTRUCTION REPORT FOR THE NORTHEAST PLUME OPTIMIZATION AT THE PADUCAH GASEOUS DIFFUSION PLANT (DOE/LX/07-2419&D2R1) PADUCAH SITE, PADUCAH, MCCRACKEN COUNTY, KENTUCKY, #KY8-890-008-982	KDWM	DOE-PPPO	**No**	ENV 1.A-01556
GW3-PD	08/06/18	PPPO-02-4787901-18A	TRANSMITTAL OF THE TRANSECT WELL BASELINE CONCENTRATIONS ADDENDUM TO THE REMEDIAL ACTION WORK PLAN FOR OPTIMIZATION OF THE NORTHEAST PLUME INTERIM REMEDIAL ACTION AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY (DOE/LX/07-1280&D2/R3/A1)	DOE-PPPO	KDEP, USEPA-4	**No**	ENV 1.A-01557
GW3-PD	08/08/18	FR-18-0135	EPA APPROVAL: TRANSECT WELL BASELINE CONCENTRATIONS ADDENDUM TO THE REMEDIAL ACTION WORK PLAN FOR OPTIMIZATION OF THE NORTHEAST PLUME INTERIM REMEDIAL ACTION AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY (DOE/LX/07-1280&D2/R3/A1), TRANSMITTAL DATED AUGUST 8, 2018 (PPPO-02-4787901-18A), USEPA ID KY8890008982	USEPA-4	DOE-PPPO	**No**	ENV 1.A-01558
GW3-PD	08/08/18	FR-18-0136	APPROVAL OF THE TRANSECT WELL BASELINE CONCENTRATIONS ADDENDUM TO THE REMEDIAL ACTION WORK PLAN FOR OPTIMIZATION OF THE NORTHEAST PLUME INTERIM REMEDIAL ACTION AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY (DOE/LX/07-1280&D2/R3/A1) PADUCAH SITE, PADUCAH, MCCRACKEN COUNTY, KENTUCKY, KY8-890-008-982	KDWM	DOE-PPPO	**No**	ENV 1.A-01559
GW3-PD	05/15/18	PPPO-02-4762649-18B, DOE/LX/07-2419&D2	TRANSMITTAL OF THE POSTCONSTRUCTION REPORT FOR THE NORTHEAST PLUME OPTIMIZATION AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY, DOE/LX/07-2419&D2	DOE-PPPO, DOE-PPPO	KDEP, USEPA-4	**No**	ENV 1.A-01573
GW3-PD	06/28/18	PPPO-02-4907680-18, DOE/LX/07-2419&D2/R1	TRANSMITTAL OF THE POSTCONSTRUCTION REPORT FOR THE NORTHEAST PLUME OPTIMIZATION AT THE PADUCAH GASEOUS DIFFUSION PLANT, PADUCAH, KENTUCKY (DOE/LX/07-2419&D2/R1)	DOE-PPPO, DOE-PPPO	KDEP, USEPA-4	**No**	ENV 1.A-01574
NSDD-PD	01/24/18	20180124 NSDD-PD	C-400-L NORTH-SOUTH DIVERSION DITCH WEEKLY INSPECTIONS	FRNP, FRNP	ADMIN RECORD	**No**	ENV 1.A-01575
NSDD-PD	01/31/18	20180131 NSDD-PD	C-400-L NORTH-SOUTH DIVERSION DITCH WEEKLY ELECTRICIANS INSPECTIONS	FRNP, FRNP, FRNP	ADMIN RECORD	**No**	ENV 1.A-01576
NSDD-PD	03/28/18	20180328 NSDD-PD	C-400-L NORTH-SOUTH DIVERSION DITCH WEEKLY ELECTRICIANS INSPECTIONS	FRNP, FRNP	ADMIN RECORD	**No**	ENV 1.A-01577
NSDD-PD	06/28/18	20180628 NSDD-PD	C-400-L NORTH-SOUTH DIVERSION DITCH WEEKLY AND QUARTERLY ELECTRICIANS INSPECTIONS	FRNP, FRNP	ADMIN RECORD	**No**	ENV 1.A-01578
NSDD-PD	07/16/18	20180716 NSDD-PD	C-400-L NORTH-SOUTH DIVERSION DITCH WEEKLY INSPECTIONS	FRNP, FRNP	ADMIN RECORD	**No**	ENV 1.A-01579

APPENDIX E

C-400 PROJECT GROUNDWATER MONITORING WELLS DATA

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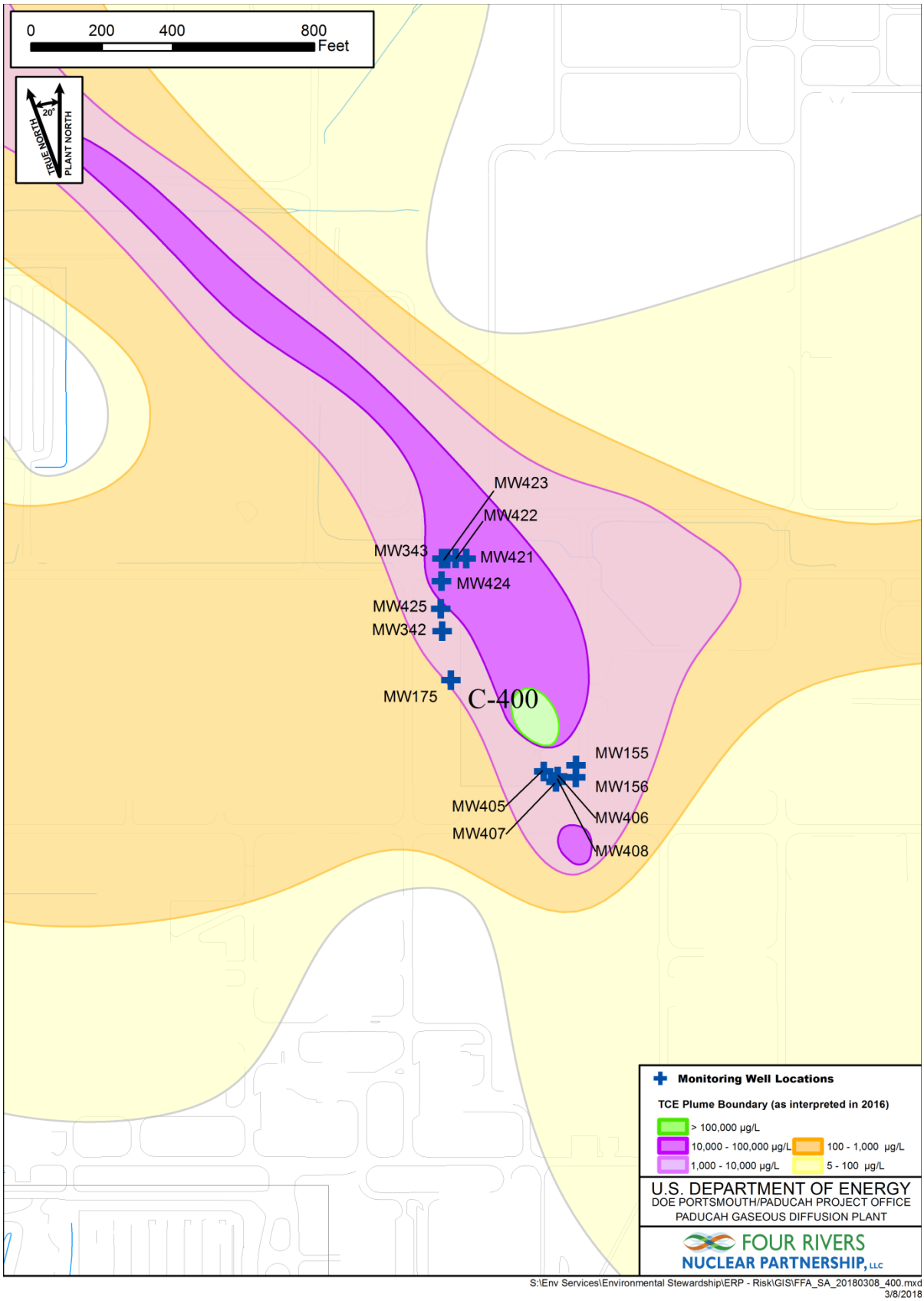

Figure E.1. C-400 Monitoring Wells

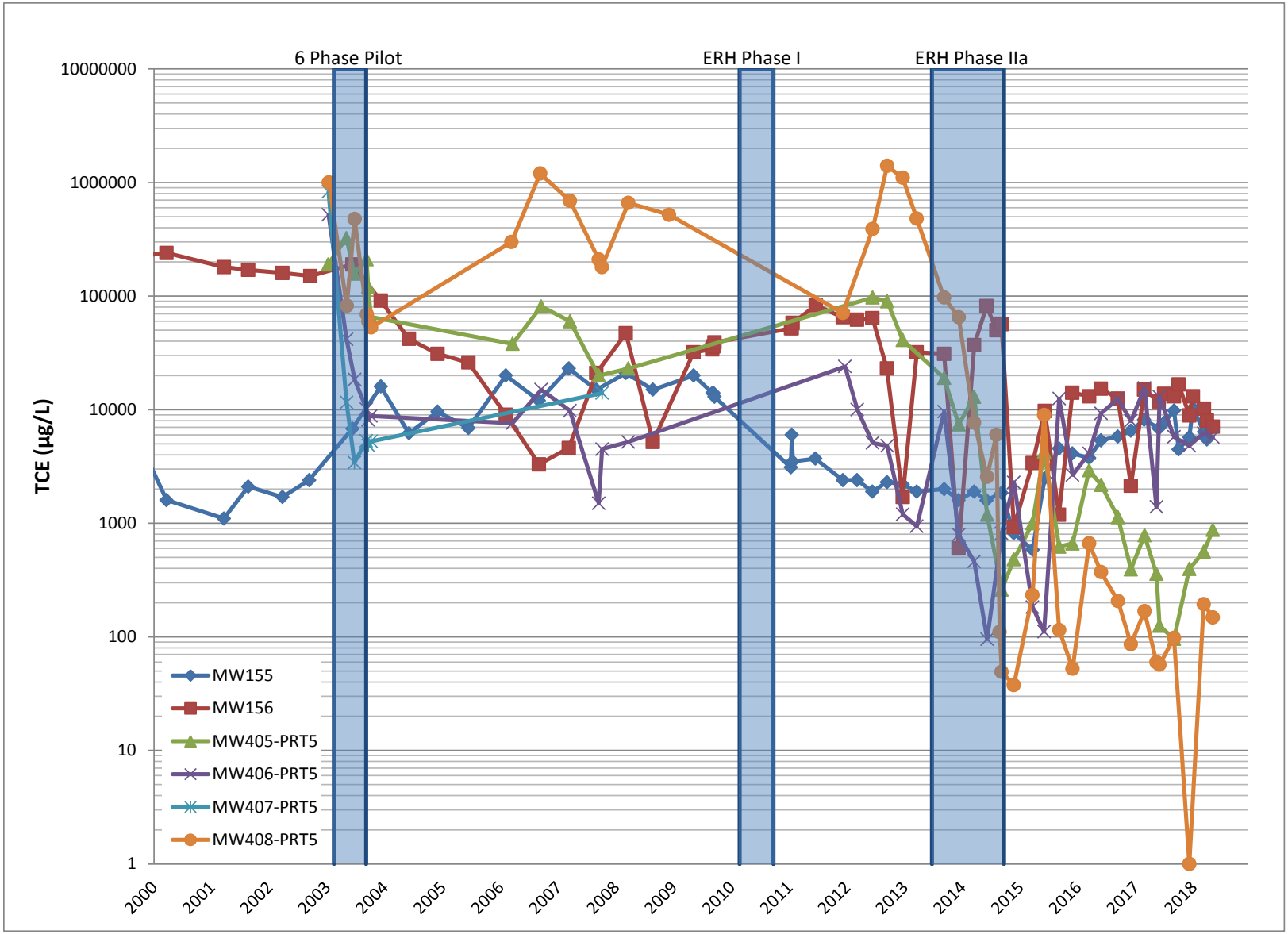

Figure E.2. C-400 TCE Trends in MWs in Source Areas

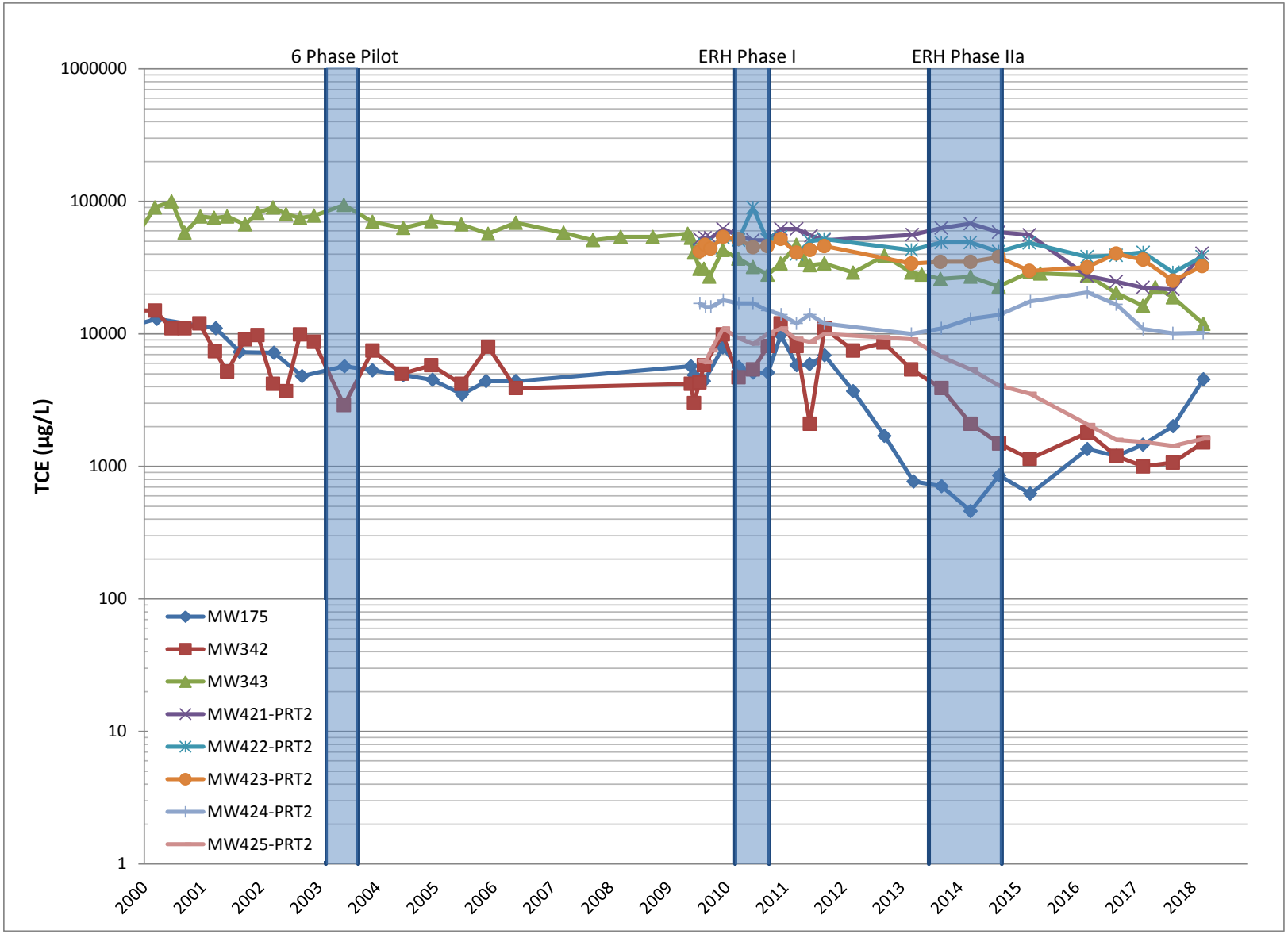

Figure E.3. C-400 TCE Trends in MWs Downgradient of Source Areas

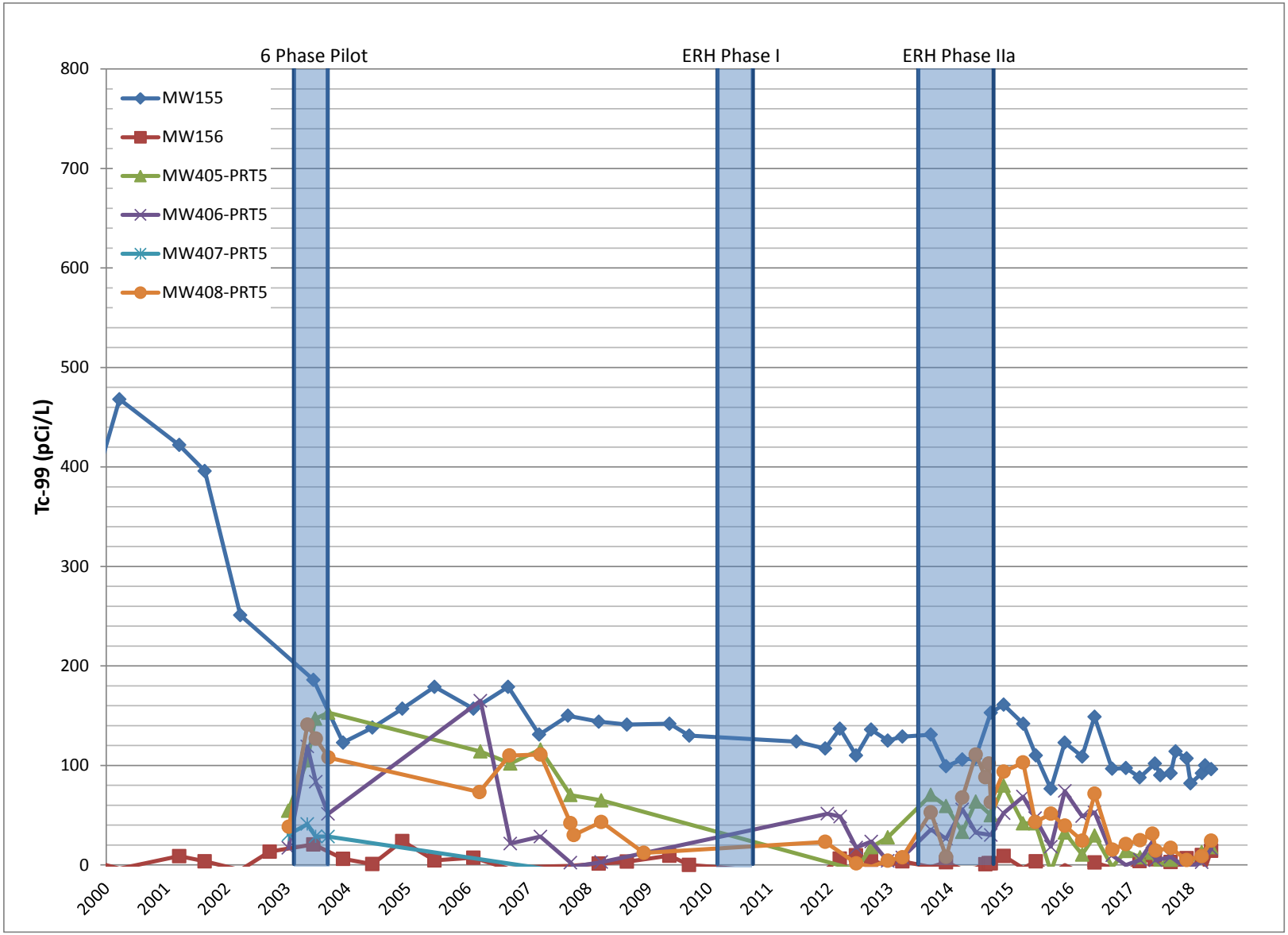

Figure E.4. C-400 Tc-99 Trends in MWs in Source Areas

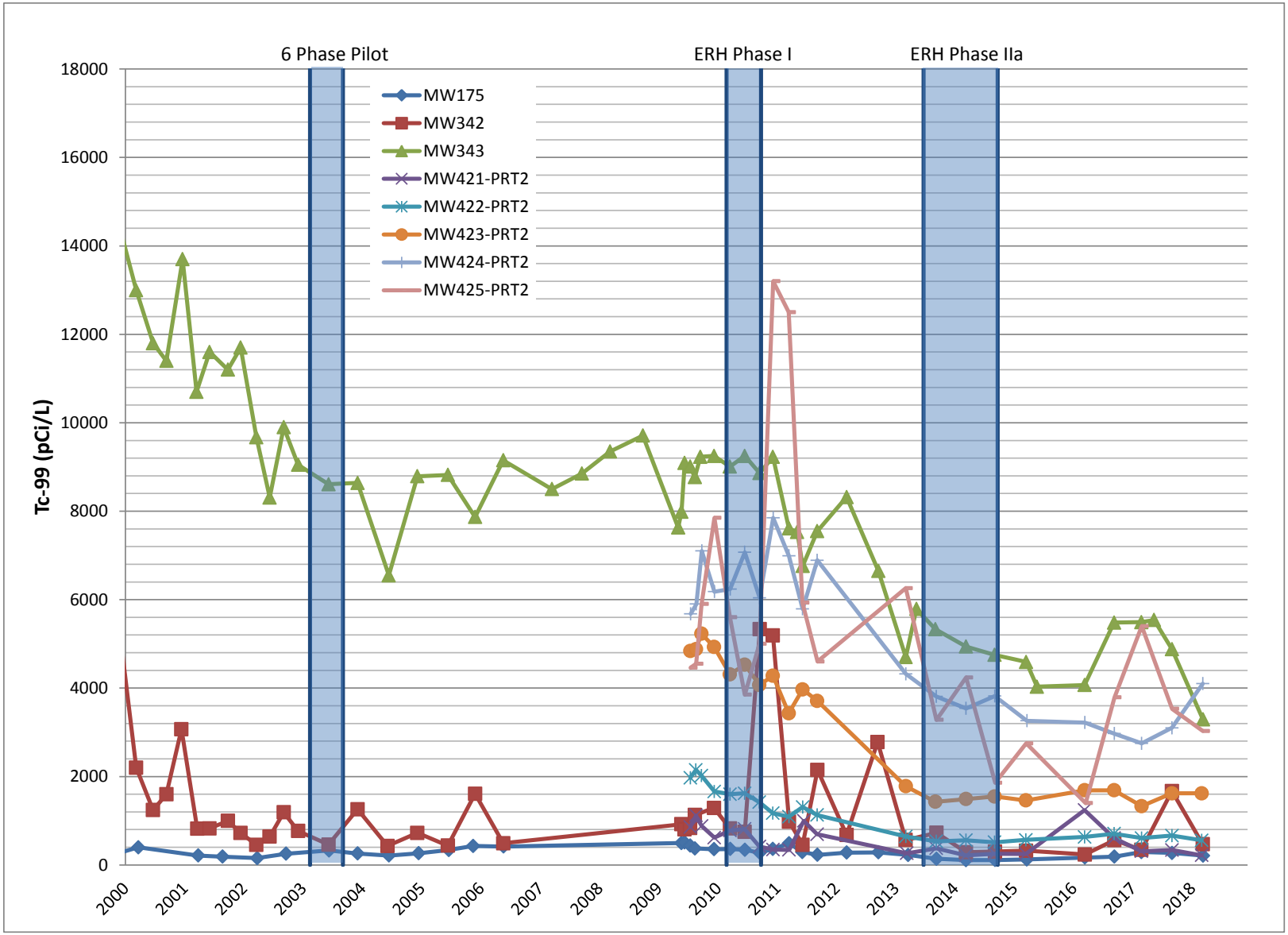

Figure E.5. C-400 Tc-99 Trends in MWs Downgradient of Source Areas

C-400 Monitoring

Water Quality Records for

MW155

Sample Date Range: 6/16/2009 - 5/16/2018

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	
9/10/2009	14000	< 200	< 200	< 200	< 200	< 1.12	93.2	130	< 0.005									C09253025001
9/10/2009	14000	< 1000			< 1000													C09254002003
9/15/2009	14000	< 500			< 500													C09258030001
9/22/2009	13000	< 500			< 500													C09265022002
1/19/2011	3100	< 25			< 25					< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C11019028004
1/25/2011	6000	< 250			< 50													C11026001005
1/25/2011	3800	< 250			< 50													C11026001006
1/31/2011	3500	< 250			< 50													C11031038005
6/23/2011	3700	< 100	< 20	< 20	< 20	7.65	130	124	< 0.005									C11174017005
12/14/2011	2400	< 500			< 100	< 3.61	111	117	< 0.005									C11348018003
3/13/2012	2400	< 50			< 50	< 2.35	89.7	137	< 0.005									C12073014001
6/19/2012	1900	< 250			< 50	6.46	121	110	< 0.005									C12171014003
9/19/2012	2300	< 20			< 20	< 3.19	131	136	< 0.005									C12263022001
12/28/2012	2200	< 20			< 20			125										C12363012001
12/28/2012	2200	< 20			< 20			120										C12363012002
3/27/2013	1900	< 20			< 20			129										C13086008001
9/16/2013	2000	< 100			< 20			131										C13259034001
12/17/2013	1600	< 20			< 20			98.6										C13351094006
12/17/2013	1600	< 20			< 20			99.1										C13351094007
3/26/2014	1900	< 20			< 20			106										C14085027001
6/12/2014	1590	< 25			< 25			107										350627004
9/15/2014	1850	0.44			0.31			153										356931002

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-400 Monitoring

Water Quality Records for

MW155

Sample Date Range: 6/16/2009 - 5/16/2018

Sample Date	Organic Laboratory Analysis Results: TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Radiological Laboratory Analysis Results: Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Metal: Uranium mg/L	Polychlorinated biphenyl Analysis Results: PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	Lab Sample ID
12/2/2014	817	< 1			< 1			160										362435001
12/2/2014	810	< 1			< 1			161										362435002
3/31/2015	583	< 10			< 10			142										369938002
6/16/2015	2500	< 50			< 50			110										375398002
9/14/2015	4560	< 100			< 100			76.5										381234002
12/8/2015	4110	< 50			< 50			120										387183002
12/8/2015	4080	< 50			< 50			123										387183003
3/23/2016	3760	< 50			< 50			109										393849001
6/6/2016	5370	< 100			< 100			149										398881002
9/21/2016	5800	< 100			< 100			96.7										406611002
12/13/2016	6320	< 100			< 100			97.5										412748002
12/13/2016	6520	< 100			< 100			88										412748003
3/7/2017	8160	< 100			< 100			87.9										418299002
6/8/2017	6840	< 100			< 100			102										425123001
7/11/2017	7650	< 100						90.1										427964006
9/12/2017	9830	< 200			< 200			92.2										432724002
10/11/2017	4470	< 100						114										435057002
10/11/2017	4130	< 50						113										435057003
12/18/2017	5720	< 100			< 100			107										440362003
12/18/2017	5260	< 100			< 100			87.5										440362002
1/10/2018	10300	< 200						82.1										441541002
3/21/2018	6370	< 100			< 100			92.3										446475002

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Water Quality Records for

Sample Date Range: 6/16/2009 - 5/16/2018

MW155

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	
4/9/2018	5450	< 100						100										447628003
5/15/2018	6950	< 100			< 100			96.3										450363001

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-400 Monitoring

Water Quality Records for

Sample Date Range: 6/16/2009 - 5/16/2018

MW156

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	
9/8/2009	34000	< 2000	< 2000	< 2000	< 2000	< 3.89	4.01	< 0.0531	< 0.005									C09252004001
9/8/2009	34000	< 5000			< 5000													C09252006001
9/15/2009	36000	< 5000			< 5000													C09258030002
9/22/2009	39000	< 5000			< 5000													C09265022001
1/20/2011	52000	< 1000			< 1000					< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C11020026003
1/25/2011	52000	< 2500			< 500													C11026003001
1/31/2011	58000	< 2500			< 500													C11031038006
6/27/2011	83000	< 5000	< 1000	< 1000	< 1000	< 3.86	5.6	< -8.94	< 0.005									C11178014001
12/14/2011	65000	< 5000			< 1000	< 2.55	7.54	< -5.13	< 0.005									C11348018004
3/13/2012	62000	< 2000			< 2000	6.83	< 4.93	< 6.21	< 0.005									C12073014002
6/19/2012	64000	< 5000			< 1000	< 6.32	< 6.31	< 9.77	< 0.005									C12171014004
9/19/2012	23000	< 500			< 500	< 3.24	< 5.54	< 5.12	< 0.005									C12263022002
12/28/2012	1700	< 500			< 500			< -0.798										C12363012003
3/27/2013	32000	< 1000			< 1000			< 3.7										C13086008002
9/16/2013	31000	< 2500			< 500			< -2.19										C13259034002
12/17/2013	600	< 500			< 500			< 2.71										C13351094008
3/26/2014	37000	< 500			< 500			< -4.56										C14085027002
6/12/2014	81800	< 1000			< 1000			< -3.61										350627005
8/13/2014	50000	< 20			< 20			< 0.723										160-7947-6
9/3/2014	57000	< 40			< 40			< 1.81										160-8215-12
9/15/2014	56500	15.2			3.67			< 1.62										356931003
12/2/2014	925	< 500			8.79			< 9.1										362435003

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-400 Monitoring

Water Quality Records for

MW156

Sample Date Range: 6/16/2009 - 5/16/2018

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	
3/31/2015	3390	< 500			< 500			< -3.32										369938003
6/16/2015	8270	< 500			< 500			< 1.43										375398004
6/16/2015	9720	< 500			< 500			< 3.72										375398003
9/14/2015	1190	< 50			< 50			< -9.6										381234003
12/8/2015	14100	< 500			< 500			< -0.175										387183001
3/23/2016	13100	170			< 50			< -8.5										393849002
6/6/2016	14600	< 500			< 500			< 1.33										398881001
6/6/2016	15300	< 500			< 500			< 2.38										398881003
9/21/2016	12500	< 500			< 500			< -2.91										406611003
12/13/2016	2140	< 100			< 100			< -7.97										412748001
3/7/2017	15000	< 500			< 500			< 3.88										418299003
6/8/2017	11800	< 500			< 500			< -5.94										425123002
6/8/2017	10300	< 500			< 500			< 5.59										425123003
7/11/2017	13800	< 500						< -8.3										427964007
7/11/2017	13700	< 500						< -2.35										427964008
9/12/2017	13100	< 500			< 500			< 2.86										432724003
10/11/2017	16700	116						< -6.64										435057004
12/18/2017	8910	71.2			9.11			< 6.73										440362001
1/10/2018	13100	< 250						< -4.91										441541001
3/21/2018	10200	< 250			< 250			< 9.83										446475003
4/9/2018	6580	< 250						< -4.14										447628004
4/9/2018	8010	< 250						< -3.04										447628005

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Water Quality Records for

Sample Date Range: 6/16/2009 - 5/16/2018

MW156

Sample Date	Organic Laboratory Analysis Results: TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Radiological Laboratory Analysis Results: Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Metal: Uranium mg/L	Polychlorinated biphenyl Analysis Results: PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	Lab Sample ID
5/15/2018	7090	< 250			< 250			< 14.2										450363002
5/15/2018	7020	< 250			< 250			< -5.19										450363003

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-400 Monitoring

Water Quality Records for

MW175

Sample Date Range: 6/16/2009 - 5/16/2018

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	
6/16/2009	4900	< 50			< 50	11.7	447	508	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C09168007001
7/20/2009	4400	< 250			< 50	< 3.65	415	438	< 0.005	< 0.16	< 0.17	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C09201015001
8/18/2009	4400	< 50			< 50	9.43	416	375	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C09230023001
12/14/2009	7900	< 250			< 50	< -0.722	363	357	< 0.005	< 0.16	< 0.17	< 0.13	< 0.09	< 0.11	< 0.07	< 0.05	< 0.08	C09348024001
3/24/2010	5600	< 50			< 50	< 1.61	211	360	< 0.005	< 0.16	< 0.17	< 0.13	< 0.09	< 0.11	< 0.07	< 0.05	< 0.08	C10083023001
6/23/2010	4800	< 250			< 50	< 4.95	292	343	< 0.005	< 0.16	< 0.17	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10174017001
6/23/2010	5100	< 250			< 50	12.9	301	315	< 0.005	< 0.16	< 0.17	< 0.13	< 0.1	< 0.11	< 0.07	< 0.05	< 0.09	C10174017002
9/23/2010	5100	< 250			< 50	7.46	226	275	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10266013001
12/13/2010	9800	< 250			< 50	26.6	274	363	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10347023005
3/23/2011	5800	< 100			< 100	24.3	366	488	< 0.005	< 167	< 176	< 137	< 98	< 118	< 68.6	6730	< 88.2	C11082024002
6/13/2011										< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	1106040-01
6/13/2011										< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	1106040-02
6/13/2011	5900	< 250			< 50	9.43	190	267	< 0.005									C11165011003
6/13/2011	5900	< 250			< 50	13.5	201	292	< 0.005									C11165011004
9/14/2011	6900	< 250			< 50	< -1.01	218	228	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C11257087005
3/12/2012	3700	< 50			< 50	< 5.16	156	279	< 0.005									C12072031011
9/25/2012	1700	< 20			< 20	< 3.18	245	282	< 0.005									C12269015003
9/25/2012	1700	< 20			< 20	< 3.25	245	284	< 0.005									C12269015004
3/27/2013	770	< 10			< 10			226										C13086008003
9/18/2013	710	< 100			< 20			139										C13261023005
3/20/2014	460	< 5			< 5			110										C14079018001
3/20/2014	460	< 5			< 5			102										C14079018002

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-400 Monitoring

Water Quality Records for

Sample Date Range: 6/16/2009 - 5/16/2018

MW175

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	
9/15/2014	855	< 10			< 10			111										356931004
3/30/2015	623	< 10			6.1			124										369938005
3/30/2015	575	< 10			5.2			98.2										369938004
3/23/2016	1350	< 20			< 20			160										393849003
3/23/2016	1330	< 20			< 20			167										393849004
9/21/2016	1200	< 20			< 20			189										406611004
3/7/2017	1460	< 20			< 20			285										418299004
3/7/2017	1420	< 20			< 20			293										418299005
9/12/2017	2010	< 50			< 50			272										432724001
3/22/2018	4340	< 50			< 50			211										446481001
3/22/2018	4550	< 100			< 100			208										446481002

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-400 Monitoring

Water Quality Records for

MW342

Sample Date Range: 6/16/2009 - 5/16/2018

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	
6/16/2009	3000	< 50			< 50	16.7	616	805	< 0.005	< 0.16	< 0.17	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C09168006001
7/20/2009	4300	< 250			< 50	< -0.785	510	837	< 0.005	< 0.16	< 0.17	< 0.13	< 0.1	< 0.11	< 0.07	< 0.05	< 0.09	C09201016001
8/18/2009	5800	< 50			< 50	16	985	1130	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C09230024001
12/14/2009	9500	< 250			< 50	< -6.46	978	1290	< 0.005	< 0.16	< 0.17	< 0.13	< 0.09	< 0.11	< 0.07	< 0.05	< 0.08	C09348024002
12/14/2009	9900	< 250			< 50	< 0.633	926	1280	< 0.005	< 0.16	< 0.17	< 0.13	< 0.1	< 0.11	< 0.07	< 0.05	< 0.09	C09348024003
3/23/2010	4700	< 50			< 50	10.3	386	827	< 0.005	< 0.16	< 0.17	< 0.13	< 0.09	< 0.11	< 0.07	< 0.05	< 0.08	C10082025007
6/22/2010	5400	< 250			< 50	11.4	642	750	< 0.005	< 0.16	< 0.17	< 0.13	< 0.1	< 0.11	< 0.07	< 0.05	< 0.09	C10173039001
9/23/2010	7600	< 250			< 50	< -52	3690	5330	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10266013002
9/23/2010	8100	< 250			< 50	< -57.1	3720	4720	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10266013003
12/13/2010	12000	< 200			< 200	41	4120	5000	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10347023002
12/13/2010	12000	< 200			< 200	56	3960	5190	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10347023003
3/23/2011	8100	< 100			< 100	26.8	835	980	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.32	< 0.09	C11082024001
6/14/2011										< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	1106059-01
6/14/2011	2100	< 500			< 100	28.8	457	456	< 0.005									C11165038001
9/14/2011	11000	< 250			< 50	< -9.47	1800	2150	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C11257087003
9/14/2011	10000	< 250			< 50	< -4.68	1750	1930	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C11257087004
3/12/2012	7500	< 100			< 100	< 2.56	420	678	< 0.005									C12072031010
9/19/2012	8600	< 100			< 100	10.4	2820	2780	< 0.005									C12263022003
3/12/2013	5400	< 100			< 100			564										C13072002001
9/18/2013	3900	< 500			< 100			728										C13261023004
3/20/2014	2100	< 20			< 20			287										C14079016010
9/15/2014	1490	5.8			0.6			303										356931001

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Water Quality Records for

Sample Date Range: 6/16/2009 - 5/16/2018

MW342

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	
3/26/2015	1140	5.96			0.66			322										369707001
3/23/2016	1800	< 25			< 25			237										393849005
9/21/2016	1200	< 25			< 25			562										406611001
3/7/2017	1000	< 20			< 20			341										418299006
9/11/2017	1070	< 20			< 20			1670										432728002
3/21/2018	1520	5.91			0.58			467										446475004

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-400 Monitoring

Water Quality Records for

MW343

Sample Date Range: 6/16/2009 - 5/16/2018

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	
6/16/2009	41000	< 500			< 500	82.1	6710	9090	< 0.005	< 0.16	< 0.17	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C09168007002
7/20/2009	31000	< 2500			< 500	< 4.65	6730	9010	< 0.005	< 0.16	< 0.17	< 0.13	< 0.09	< 0.11	< 0.07	< 0.05	< 0.08	C09201066001
8/18/2009	31000	< 400			< 400	19.7	7420	8770	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C09230023002
9/21/2009	27000	< 1000	< 200	< 1000	< 200	< -119	6980	9230	< 0.005									C09265006005
12/14/2009	43000	< 2000			< 400	< -176	6970	9250	< 0.005	< 0.16	< 0.17	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C09348027001
3/22/2010	37000	< 400	< 250	< 250	< 250	< -90.6	5370	8960	< 0.005									C10082002001
3/22/2010	37000	< 250			< 250	37.4	6850	< 8920	< 0.005	< 0.16	< 0.17	< 0.13	< 0.1	< 0.11	< 0.07	< 0.05	< 0.09	C10082005001
3/22/2010	37000	< 250			< 250	92.1	5660	9010	< 0.005	< 0.16	< 0.17	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10082005002
6/22/2010	32000	< 2500			< 500	22	6440	9250	< 0.005	< 0.16	< 0.17	< 0.13	< 0.1	< 0.11	< 0.07	< 0.05	< 0.09	C10173027001
9/22/2010	28000	< 2500			< 500	< -114	6340	8860	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10265020004
12/13/2010	34000	< 2500			< 500	< -77.3	6970	9230	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10347023006
3/22/2011	39000	< 400			< 400	134	5310	7600	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.53	< 0.09	C11081023003
3/22/2011	47000	< 400			< 400	46.5	6570	7610	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.13	< 0.09	C11081023004
5/12/2011	36000	< 2500	< 500	< 500	< 500	150	5510	7530	< 0.005									C11132027003
6/15/2011										< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	1106059-02
6/15/2011	33000	< 2000			< 400	< -4.39	7110	6760	< 0.005									C11166026001
9/13/2011	34000	< 2000			< 400	< -144	6990	7550	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C11256012004
3/12/2012	28000	< 400			< 400	< -85.1	4680	8320	< 0.005									C12072031006
3/12/2012	29000	< 400			< 400	< -56.9	4670	7030	< 0.005									C12072031007
9/24/2012	39000	< 500			< 500	< -23.7	4970	6650	< 0.005									C12268086002
3/12/2013	29000	< 400			< 400			4700										C13072002002
5/17/2013	28000	< 1000	< 200	< 200	< 200			5790										C13137019001

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-400 Monitoring

Water Quality Records for

Sample Date Range: 6/16/2009 - 5/16/2018

MW343

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	
9/12/2013	25000	< 1000			< 200			5330										C13255009004
9/12/2013	26000	< 1000			< 200			5150										C13255009005
3/20/2014	27000	< 200			< 200			4940										C14079016011
9/12/2014	22000	< 50			< 50			4750										356931005
9/12/2014	22800	< 50			< 50			4710										356931006
3/26/2015	29300	9.73			2.09			4590										369707002
6/1/2015	28600	< 500	< 500	< 500	< 500			4030										374452006
3/21/2016	27700	0.84			10.5			4070										393717001
9/19/2016	20400	< 250			< 250			5480										406359010
3/7/2017	16300	< 250			< 250			5490										418299007
5/24/2017	22500	< 500	< 500	< 500	< 500			5540										424148014
9/11/2017	18900	< 200			< 200			4880										432728003
3/22/2018	11900	< 250			< 250			3290										446481003

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-400 Monitoring

Water Quality Records for

MW405

Sample Date Range: 6/16/2009 - 5/16/2018

	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								
Sample Date	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	Lab Sample ID
6/23/2011	52000	< 2500	< 500	< 500	< 500	8.66	22.7	< 16.1	0.014									C11174017004

E-20

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-400 Monitoring

Water Quality Records for

MW405-PRT5

Sample Date Range: 6/16/2009 - 5/16/2018

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	
6/20/2012	97000	< 5000			< 1000	< 4.86	15.7	< -4.94	< 0.005									C12172011001
9/20/2012	90000	< 1000			< 1000	< 0.778	14.6	< 17.9	< 0.005									C12264031001
12/28/2012	41000	< 1000			< 1000			27.7										C12363012004
9/16/2013	19000	< 1000			< 200			70.4										C13259034003
12/18/2013	7400	< 100			< 100			59.1										C13353003001
3/26/2014	13000	< 100			< 100			33.1										C14085027003
6/16/2014	1190	< 20			< 20			63.8										350866002
9/16/2014	261	2.45			< 5			50										356931007
12/2/2014	481	< 10			< 10			79.8										362435004
3/30/2015	1000	< 20			< 20			41.8										369938006
6/12/2015	4010	< 50			< 50			41.9										375132002
6/12/2015	4270	< 100	< 100	< 100	< 100			34.4										375135001
9/15/2015	622	< 10			< 10			< -6.41										381234004
12/9/2015	663	< 10			< 10			32.5										387183004
3/23/2016	2930	< 10			< 10			< 10.5										393849006
6/7/2016	2180	< 50			< 50			29.5										398881004
9/22/2016	1130	< 20			< 20			< -1.98										406611005
12/13/2016	393	< 5			< 5			< 13.9										412748004
3/9/2017	784	< 10			< 10			< 7.61										418299008
5/24/2017	358	< 10	< 10	< 10	< 10			< 12.1										424148017
6/12/2017	125	< 10			< 10			< -1.71										425662001
9/12/2017	96	< 2			< 2			< 5.3										432724004

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Water Quality Records for

Sample Date Range: 6/16/2009 - 5/16/2018

MW405-PRT5

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	
12/18/2017	396	< 5			< 5			< -0.144										440362004
3/19/2018	562	< 10			< 10			< 12.9										446475005
5/16/2018	874	< 10			< 10			< 17.8										450363004

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-400 Monitoring

Water Quality Records for

MW406

Sample Date Range: 6/16/2009 - 5/16/2018

	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								
Sample Date	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	Lab Sample ID
6/23/2011	6500	< 500	< 100	< 100	< 100	11.4	45.5	47.7	< 0.005									C11174017003

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-400 Monitoring

Water Quality Records for

MW406-PRT5

Sample Date Range: 6/16/2009 - 5/16/2018

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	
12/28/2011	24000	< 500			< 100	7.77	54.5	51.5	< 0.005									C11362008002
3/15/2012	10000	< 100			< 100	< -2.11	45.3	48.6	< 0.005									C12075015001
6/20/2012	5100	< 500			< 100	< 1.89	23.6	< 17.5	< 0.005									C12172011002
9/20/2012	4800	< 100			< 100	< -0.0458	31.2	23.5	< 0.005									C12264031002
12/28/2012	1200	< 10			< 10			< 4.01										C12363012005
3/27/2013	940	< 20			< 20			< 7.56										C13086018001
9/16/2013	9600	< 100			< 20			35.5										C13259034004
12/18/2013	790	< 10			< 10			26.5										C13353003002
3/26/2014	460	< 5			< 5			55.9										C14085027004
6/16/2014	95.4	< 2			< 2			32.5										350866003
9/16/2014	812	< 10			< 10			30.1										356931008
12/2/2014	2290	1.1			0.87			52										362435005
3/30/2015	183	< 4			< 4			68.6										369938007
6/12/2015	100	< 2			< 2			47.1										375132003
6/12/2015	111	< 2	< 2	< 2	< 2			43.2										375135002
9/15/2015	12500	< 250			< 250			< 18.3										381234005
12/9/2015	2660	< 50			< 50			74.3										387183005
3/23/2016	4120	< 50			< 50			49										393849007
6/7/2016	9270	< 100			< 100			52.7										398881005
9/22/2016	12400	< 250			< 250			< 9.62										406611006
12/13/2016	7960	< 100			< 100			< -0.059										412748005
3/9/2017	15500	< 250			< 250			< 5.12										418299009

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Water Quality Records for

Sample Date Range: 6/16/2009 - 5/16/2018

MW406-PRT5

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	
5/24/2017	1390	< 25	< 25	< 25	< 25			23.6										424148018
6/12/2017	13000	< 250			< 250			< 4.63										425662002
9/12/2017	5760	< 100			< 100			< 8.05										432724005
12/18/2017	4810	< 100			< 100			< -2.88										440362005
3/19/2018	6210	< 100			< 100			< 2.75										446475006
5/16/2018	5740	< 100			< 100			< 16.2										450363005

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-400 Monitoring

Water Quality Records for

MW407-PRT4

Sample Date Range: 6/16/2009 - 5/16/2018

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	
12/28/2011	4900	< 500			< 100	< 3.09	10.7	< 5.26	< 0.005									C11362008001
3/14/2012	14000	< 100			< 100	< 3.36	5.57	< -5.15	< 0.005									C12074017002
6/20/2012	13000	< 500			< 100	< 4.76	8.43	< 8.61	< 0.005									C12172011003
9/20/2012	13000	< 100			< 100	< 0.291	< 3.11	< -10.2	< 0.005									C12264031003
12/28/2012	7000	< 50			< 50			< 0.433										C12363012006
3/27/2013	14000	< 200			< 200			< 0.435										C13086018002
9/16/2013	24000	< 500			< 100			< 13.4										C13259034005
12/18/2013	7000	< 100			< 100			< 3.81										C13353003003
3/26/2014	2300	< 20			< 20			67.6										C14085027005
6/16/2014	32100	< 500			< 500			58.3										350866004
9/16/2014	23800	< 500			< 500			< 11.5										356931009
12/2/2014	13900	< 1			0.8			< 2.74										362435006
3/30/2015	10300	< 200			< 200			45.8										369938008
6/12/2015	18200	< 250			< 250			< 11.6										375132001
6/12/2015	18600	< 250	< 250	< 250	< 250			< 11.3										375135003
9/15/2015	671	< 10			< 10			55.1										381234006
12/9/2015	544	< 10			< 10			81										387183006
3/23/2016	3300	< 10			< 10			57.6										393849008
6/7/2016	9180	< 100			< 100			115										398881006
9/22/2016	9990	< 100			< 100			50.6										406611007
12/13/2016	2100	< 50			< 50			65.2										412748006
3/9/2017	2810	< 50			< 50			54.3										418299010

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-400 Monitoring

Water Quality Records for

Sample Date Range: 6/16/2009 - 5/16/2018

MW407-PRT4

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	
5/24/2017	3710	< 100	< 100	< 100	< 100			53.1										424148019
6/12/2017	2960	< 40			< 40			49.4										425662003
9/12/2017	2160	< 50			< 50			59.4										432724006
12/18/2017	468	< 10			< 10			37.5										440362006
3/19/2018	696	< 10			< 10			29.9										446475007
5/16/2018	1360	< 10			< 10			29.4										450363006

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Water Quality Records for

Sample Date Range: 6/16/2009 - 5/16/2018

MW408

	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								
Sample Date	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	Lab Sample ID
6/23/2011	95000	< 5000	< 1000	< 1000	< 1000	< 2.51	13.3	< 14.5	< 0.005									C11174017001

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-400 Monitoring

Water Quality Records for

MW408-PRT5

Sample Date Range: 6/16/2009 - 5/16/2018

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	
12/14/2011	71000	< 5000			< 1000	< 1.93	32.9	23.2	< 0.005									C11348026001
6/20/2012	390000	< 20000			< 4000	< 3.79	12.2	< 1.58	< 0.005									C12172011004
9/20/2012	1400000	< 4000			< 4000	< -1.52	13.4	< -1.7	< 0.005									C12264031004
12/28/2012	1100000	< 5000			< 5000			< 4.33										C12363012007
3/27/2013	480000	< 10000			< 10000			< 7.73										C13086018003
9/16/2013	97000	< 2500			< 500			52.9										C13259034006
12/18/2013	65000	< 1000			< 1000			< 8.07										C13353003004
3/26/2014	7700	< 50			< 50			67.7										C14085027006
6/16/2014	2560	< 40			< 40			111										350866001
8/13/2014	6000	< 2			< 2			88.2										160-7947-7
9/3/2014	110	< 0.08			< 0.08			102										160-8215-10
9/16/2014	49.1	< 1			< 1			63										356931010
12/2/2014	37.6	< 1			< 1			93.7										362435007
3/30/2015	234	< 4			< 4			103										369938009
6/12/2015	8990	< 200	< 200	< 200	< 200			36										375135004
6/12/2015	3490	< 50			< 50			43.1										375132004
9/15/2015	115	< 2			< 2			51.5										381234001
12/9/2015	52.4	< 1			< 1			39.5										387183007
3/23/2016	665	0.94			0.84			24.5										393849009
6/7/2016	371	< 5			< 5			71.6										398881007
9/22/2016	207	< 5			< 5			< 15.4										406611008
12/13/2016	86.2	< 1			< 1			20.9										412748007

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Water Quality Records for

Sample Date Range: 6/16/2009 - 5/16/2018

MW408-PRT5

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	
3/9/2017	168	< 2			< 2			24.8										418299011
5/24/2017	59.8	< 1	< 1	< 1	< 1			31.5										424148020
6/12/2017	56.9	< 1			< 1			< 14.5										425662004
9/12/2017	97.9	< 2			< 2			17.1										432724007
12/18/2017	< 1	< 1			< 1			< 4.89										440362007
3/19/2018	194	< 1			< 1			< 8.91										446475008
5/16/2018	148	< 5			< 5			24.5										450363007

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-400 Monitoring

Water Quality Records for

MW421-PRT1

Sample Date Range: 6/16/2009 - 5/16/2018

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	
7/21/2009	20000	< 1000			< 200	38	1780	1650	< 0.005	< 0.16	< 0.17	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C09202027001
8/25/2009	21000	< 200			< 200	< -0.377	1300	1670	< 0.005	< 0.16	< 0.17	< 0.13	< 0.09	< 0.11	< 0.07	< 0.05	< 0.08	C09237029001
9/29/2009	22000	< 200			< 200	33	878	1240	< 0.005	< 0.16	< 0.17	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C09273002001
12/16/2009	27000	< 1000			< 200	27.7	906	1160	< 0.005	< 0.16	< 0.17	< 0.13	< 0.09	< 0.11	< 0.07	< 0.05	< 0.08	C09350025004
3/23/2010	24000	< 200			< 200	15.5	1180	1780	< 0.005	< 0.16	< 0.17	< 0.13	< 0.1	< 0.11	< 0.07	< 0.05	< 0.09	C10082025004
6/23/2010	58000	< 500			< 500	18.4	1710	2340	< 0.005	< 0.16	< 0.17	< 0.13	< 0.1	< 0.11	< 0.07	< 0.05	< 0.09	C10172026001
9/21/2010	34000	< 500			< 500	15.1	826	1190	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10264016001
12/14/2010	28000	< 2500			< 500	9.44	789	916	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10348026001
3/23/2011	28000	< 250			< 250	< 4.35	623	859	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.06	< 0.09	C11082024003
6/22/2011										< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	1106092-01
6/22/2011	29000	< 2000			< 400	< -121	3300	3930	< 0.005									C11173026001
9/12/2011	32000	< 1000			< 200	9.06	2190	2500	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C11255015001
3/19/2013	26000	< 400			< 400			912										C13078013003
9/17/2013	34000	< 2000			< 400			1750										C13260018001
3/19/2014	31000	< 400			< 400			761										C14078013004
9/10/2014	26000	< 500			< 500			944										356723001
3/24/2015	19300	< 500			< 500			892										369707003
3/21/2016	9860	21.5			0.54			4160										393717002
9/19/2016	10300	< 200			< 200			1750										406359001
3/7/2017	9260	< 200			< 200			898										418299001
9/11/2017	9440	< 100			< 100			1500										432728004
3/14/2018	4980	11.9			0.4			770										446010001

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-400 Monitoring

Water Quality Records for

MW421-PRT2

Sample Date Range: 6/16/2009 - 5/16/2018

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	
7/21/2009	52000	< 2500			< 500	15.2	830	856	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C09202027002
8/25/2009	53000	< 500			< 500	6.73	865	1120	< 0.005	< 0.16	< 0.17	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C09237029002
9/29/2009	53000	< 500			< 500	27.9	639	882	< 0.005	< 0.16	< 0.17	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C09273002002
12/16/2009	62000	< 2500			< 500	4.74	475	618	< 0.005	< 0.16	< 0.17	< 0.13	< 0.1	< 0.11	< 0.07	< 0.05	< 0.09	C09350025005
3/23/2010	55000	< 500			< 500	12.7	417	777	< 0.005	< 0.16	< 0.17	< 0.13	< 0.09	< 0.11	< 0.07	< 0.05	< 0.08	C10082025005
6/21/2010	51000	< 500			< 500	26.9	514	813	< 0.005	< 0.16	< 0.17	< 0.13	< 0.1	< 0.11	< 0.07	< 0.05	< 0.09	C10172026002
9/21/2010	51000	< 500			< 500	8.44	255	416	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10264016002
12/14/2010	62000	< 500			< 500	10.4	280	348	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10348026002
3/23/2011	62000	< 500			< 500	8.6	220	340	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.15	< 0.09	C11082024004
6/22/2011										< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	1106092-02
6/22/2011	55000	< 2500			< 500	< -24.9	853	996	< 0.005									C11173026002
9/12/2011	51000	< 2000			< 400	14.5	582	694	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C11255015002
3/19/2013	56000	< 500			< 500			265										C13078013004
9/17/2013	63000	< 2000			< 400			377										C13260018002
3/19/2014	68000	< 400			< 400			216										C14078013005
9/12/2014	58600	< 50			< 50			255										356931011
3/24/2015	55900	< 1000			< 1000			249										369707004
3/21/2016	27400	8.01			1.39			1240										393717003
9/19/2016	24800	< 500			< 500			609										406359002
3/7/2017	22400	< 500			< 500			311										418299012
9/11/2017	21700	< 500			< 500			339										432728001
3/14/2018	40600	6.75			1.56			219										446010002

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-400 Monitoring

Water Quality Records for

Sample Date Range: 6/16/2009 - 5/16/2018

MW421-PRT3

	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								
Sample Date	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	Lab Sample ID
7/21/2009	63000	< 2500			< 500	< 3.73	327	302	< 0.005	< 0.16	< 0.17	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C09202027003
8/25/2009	66000	< 500			< 500	< 3.62	398	451	< 0.005	< 0.16	< 0.17	< 0.13	< 0.1	< 0.11	< 0.07	< 0.05	< 0.09	C09237029003
9/29/2009	61000	< 500			< 500	8.99	323	335	< 0.005	< 0.16	< 0.17	< 0.13	< 0.1	< 0.11	< 0.07	< 0.05	< 0.09	C09273002003
12/16/2009	77000	< 2500			< 500	4.67	226	345	< 0.005	< 0.16	< 0.17	< 0.13	< 0.1	< 0.11	< 0.07	< 0.05	< 0.09	C09350025006
3/23/2010	70000	< 500			< 500	12.8	218	376	< 0.005	< 0.16	< 0.17	< 0.13	< 0.09	< 0.11	< 0.07	< 0.05	< 0.08	C10082025006
6/21/2010	68000	< 500			< 500	< 4.02	278	251	< 0.005	< 0.16	< 0.17	< 0.13	< 0.1	< 0.11	< 0.07	< 0.05	< 0.09	C10173001001
9/21/2010	64000	< 500			< 500	6.83	215	285	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10264016003
12/14/2010	65000	< 500			< 500	< 5.08	209	278	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10348026003
3/23/2011	61000	< 500			< 500	19	186	278	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.34	< 0.09	C11082024005
6/22/2011										< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	1106092-03
6/22/2011	72000	< 2500			< 500	15.7	289	399	< 0.005									C11173026003
9/12/2011	67000	< 2500			< 500	5.7	272	313	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C11255015003
3/12/2012	73000	< 500			< 500	5.39	177	283	< 0.005									C12072031003
9/25/2012	96000	< 1000			< 1000	< 1.59	225	211	< 0.005									C12270003002
3/19/2013	80000	< 1000			< 1000			216										C13078013005
9/17/2013	63000	< 2500			< 500			191										C13260018003
3/19/2014	67000	< 500			< 500			202										C14078013006
9/12/2014	62800	< 50			< 50			181										356931012
3/24/2015	45500	4.96			1.92			200										369707005
3/21/2016	49300	4.07			1.22			318										393717004
9/19/2016	49500	< 500			< 500			261										406359003
3/7/2017	49600	< 1000			< 1000			155										418299013

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Water Quality Records for

Sample Date Range: 6/16/2009 - 5/16/2018

MW421-PRT3

	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								
Sample Date	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	Lab Sample ID
9/11/2017	42100	< 1000			< 1000			194										432728005
3/14/2018	53200	7.28			2.36			180										446010003

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-400 Monitoring

Water Quality Records for

MW422-PRT1

Sample Date Range: 6/16/2009 - 5/16/2018

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	
7/21/2009	10000	< 500			< 100	< -96.7	10400	13600	< 0.005	< 0.16	< 0.17	< 0.13	< 0.1	< 0.11	< 0.07	< 0.05	< 0.09	C09202018001
8/24/2009	13000	< 100			< 100	95	12900	15600	< 0.005	< 0.16	< 0.17	< 0.13	< 0.1	< 0.11	< 0.07	< 0.05	< 0.09	C09237007001
9/28/2009	12000	< 100			< 100	59.7	14200	16900	< 0.005	< 0.16	< 0.17	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C09271021004
12/16/2009	16000	< 1000			< 200	< -15.7	10200	13900	< 0.005	< 0.16	< 0.17	< 0.13	< 0.1	< 0.11	< 0.07	< 0.05	< 0.09	C09350025001
3/23/2010	14000	< 100			< 100	< -25.6	8460	13400	< 0.005	< 0.16	< 0.17	< 0.13	< 0.09	< 0.11	< 0.07	< 0.05	< 0.08	C10082025001
6/21/2010	14000	< 100			< 100	< -60.6	11600	15500	< 0.005	< 0.16	< 0.17	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10173001002
9/20/2010	15000	< 200			< 200	< -51	8500	12900	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10263039004
12/13/2010	23000	< 1000			< 200	< -3.47	5090	6610	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10347024004
3/22/2011	20000	< 200			< 200	87.5	4860	6410	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C11081023005
6/15/2011										< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	1106059-03
6/15/2011	14000	< 1000			< 200	< -13.8	7910	9730	< 0.005									C11166026002
9/12/2011	16000	< 1000			< 200	< -54.7	10600	12300	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C11255022001
3/13/2013	16000	< 250			< 250			6720										C13072022004
9/17/2013	17000	< 500			< 100			14200										C13260018004
3/19/2014	15000	< 100			< 100			5800										C14078013007
9/12/2014	10800	32.8			< 25			10400										356931013
3/24/2015	9330	< 100			< 100			7120										369707006
3/21/2016	4720	43.2			0.4			10800										393717005
9/19/2016	4490	34			< 100			14900										406359004
3/8/2017	7020	< 100			< 100			7680										418299014
9/11/2017	4230	< 100			< 100			15000										432728006
3/14/2018	4910	42			< 100			7480										446010004

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-400 Monitoring

Water Quality Records for

MW422-PRT2

Sample Date Range: 6/16/2009 - 5/16/2018

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	
7/21/2009	43000	< 2500			< 500	32.8	1570	1970	< 0.005	< 0.16	< 0.17	< 0.13	< 0.1	< 0.11	< 0.07	< 0.05	< 0.09	C09202019001
8/24/2009	47000	< 500			< 500	28.2	1650	2150	< 0.005	< 0.16	< 0.17	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C09237008001
9/28/2009	45000	< 500			< 500	18.5	1490	2020	< 0.005	< 0.16	< 0.17	< 0.13	< 0.09	< 0.11	< 0.07	< 0.05	< 0.08	C09271021005
12/16/2009	53000	< 2500			< 500	16.1	1110	1660	< 0.005	< 0.16	< 0.17	< 0.13	< 0.1	< 0.11	< 0.07	< 0.05	< 0.09	C09350025002
3/23/2010	51000	< 500			< 500	24	823	1600	< 0.005	< 0.16	< 0.17	< 0.13	< 0.09	< 0.11	< 0.07	< 0.05	< 0.08	C10082025002
6/21/2010	90000	< 400			< 400	17.5	1060	1620	< 0.005	< 0.16	< 0.17	< 0.13	< 0.1	< 0.11	< 0.07	< 0.05	< 0.09	C10173001003
9/20/2010	51000	< 1000			< 1000	9.61	808	1420	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10263039005
12/13/2010	54000	< 2500			< 500	41.2	789	1170	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10347024005
3/22/2011	40000	< 500			< 500	27.3	823	1090	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.44	< 0.09	C11081023006
6/15/2011										< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	1106059-04
6/15/2011	50000	< 2500			< 500	35.3	1000	1310	< 0.005									C11166026003
9/12/2011	52000	< 2000			< 400	10.6	900	1130	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C11255022002
3/13/2013	43000	< 500			< 500			643										C13072022005
9/17/2013	49000	< 2000			< 400			535										C13260018005
3/19/2014	49000	< 400			< 400			559										C14078013008
9/12/2014	41800	< 50			< 50			514										356931014
3/24/2015	48700	< 100			< 100			567										369707007
3/21/2016	38200	3.2			1.2			634										393717006
9/19/2016	39200	< 500			< 500			707										406359005
3/8/2017	41200	< 500			< 500			608										418299015
9/11/2017	29100	< 500			< 500			663										432728007
3/14/2018	38300	< 500			< 500			558										446010005

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-400 Monitoring

Water Quality Records for

MW422-PRT3

Sample Date Range: 6/16/2009 - 5/16/2018

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	
7/21/2009	45000	< 2500			< 500	< -0.394	1650	2310	< 0.005	< 0.16	< 0.17	< 0.13	< 0.1	< 0.11	< 0.07	< 0.05	< 0.09	C09202019002
8/24/2009	46000	< 500			< 500	15.4	1380	1960	< 0.005	< 0.16	< 0.17	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C09237008002
9/28/2009	45000	< 500			< 500	15.5	1560	1940	< 0.005	< 0.16	< 0.17	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C09271021006
12/16/2009	58000	< 2500			< 500	20.7	1230	1630	< 0.005	< 0.16	< 0.17	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C09350025003
3/23/2010	53000	< 500			< 500	19.6	866	1490	< 0.005	< 0.16	< 0.17	< 0.13	< 0.1	< 0.11	< 0.07	< 0.05	< 0.09	C10082025003
6/21/2010	72000	< 1000			< 1000	15.1	883	1520	< 0.005	< 0.16	< 0.17	< 0.13	< 0.09	< 0.11	< 0.07	< 0.05	< 0.08	C10173001004
9/20/2010	61000	< 1000			< 1000	16.3	777	1320	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10263039006
12/13/2010	54000	< 2500			< 500	22.6	782	1070	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10347024006
3/22/2011	54000	< 500			< 500	23.3	677	1010	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.36	< 0.09	C11081023007
6/15/2011										< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	1106059-05
6/15/2011	49000	< 2500			< 500	13.5	864	1140	< 0.005									C11166026004
9/12/2011	53000	< 2000			< 400	7.69	718	910	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C11255022003
3/12/2012	69000	< 500			< 500	< 4.11	575	774	< 0.005									C12072031004
9/25/2012	48000	< 1000			< 1000	< 4.02	524	631	< 0.005									C12270003001
3/13/2013	35000	< 500			< 500			559										C13072022006
9/17/2013	47000	< 2000			< 400			535										C13260018006
3/19/2014	49000	< 400			< 400			543										C14078013009
9/12/2014	46700	< 50			< 50			496										356931015
3/24/2015	44600	< 100			< 100			550										369707008
3/21/2016	37800	3.13			1.09			635										393717007
9/19/2016	44300	< 500			< 500			678										406359006
3/8/2017	39700	< 500			< 500			622										418299016

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Water Quality Records for

Sample Date Range: 6/16/2009 - 5/16/2018

MW422-PRT3

	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								
Sample Date	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	Lab Sample ID
9/11/2017	25200	< 500			< 500			623										432728008
3/14/2018	37300	< 500			< 500			605										446010006

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-400 Monitoring

Water Quality Records for

MW423-PRT1

Sample Date Range: 6/16/2009 - 5/16/2018

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	
7/22/2009	13000	< 500			< 100	< -60	8610	10400	< 0.005	< 0.16	< 0.17	< 0.13	< 0.1	< 0.11	< 0.07	< 0.05	< 0.09	C09203009001
8/25/2009	12000	< 200			< 200	81	9720	12100	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C09237022001
9/28/2009	11000	< 100			< 100	87.3	11100	14000	< 0.005	< 0.16	< 0.17	< 0.13	< 0.1	< 0.11	< 0.07	< 0.05	< 0.09	C09271021001
12/15/2009	15000	< 1000			< 200	< -236	11500	14400	< 0.005	< 0.16	< 0.17	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C09349015001
3/22/2010	15000	64			< 25	45.5	8550	13800	< 0.005	< 0.16	< 0.17	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10082005003
6/22/2010	12000	< 500			< 100	< -79.6	10100	13400	< 0.005	< 0.16	< 0.17	< 0.13	< 0.09	< 0.11	< 0.07	< 0.05	< 0.08	C10173027002
9/20/2010	12000	< 200			< 200	52.9	9500	16000	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10263039001
12/13/2010	18000	< 500			< 100	< -161	8180	10800	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10347024001
3/21/2011	15000	< 200			< 200	95.2	6870	8960	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C11080075002
6/14/2011	15000	< 500			< 100	< -273	9620	9790	< 0.005									C11165038005
6/14/2011										< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	1106059-06
9/13/2011	14000	< 1000			< 200	< -18.7	8820	10500	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C11256012001
3/13/2013	18000	< 200			< 200			9070										C13072009001
9/12/2013	13000	< 1000			< 200			14900										C13255083001
3/20/2014	13000	< 100			< 100			8350										C14079016004
9/12/2014	8980	32.8			< 25			9080										356931016
3/24/2015	8970	35.5			< 50			8220										369707009
3/21/2016	3350	35.7			0.4			8560										393717008
9/19/2016	4890	41.5			< 50			12600										406359007
3/8/2017	4520	< 100			< 100			8980										418299017
9/11/2017	3370	22.5			< 50			13000										432728009
3/14/2018	3410	44.5			< 50			10300										446010007

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-400 Monitoring

Water Quality Records for

MW423-PRT2

Sample Date Range: 6/16/2009 - 5/16/2018

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	
7/22/2009	42000	< 2500			< 500	< -8.97	3760	4840	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C09203009002
8/25/2009	47000	< 500			< 500	34.3	3420	4880	< 0.005	< 0.16	< 0.17	< 0.13	< 0.1	< 0.11	< 0.07	< 0.05	< 0.09	C09237022002
9/28/2009	44000	< 500			< 500	35.8	3820	5230	< 0.005	< 0.16	< 0.17	< 0.13	< 0.1	< 0.11	< 0.07	< 0.05	< 0.09	C09271021002
12/15/2009	54000	< 2500			< 500	< -51.8	3650	4930	< 0.005	< 0.16	< 0.17	< 0.13	< 0.1	< 0.11	< 0.07	< 0.05	< 0.09	C09349015002
3/22/2010	52000	< 500			< 500	40.2	2260	4310	< 0.005	< 0.16	< 0.17	< 0.13	< 0.1	< 0.11	< 0.07	< 0.05	< 0.09	C10082005004
6/22/2010	45000	< 2500			< 500	< -2.09	3050	4530	< 0.005	< 0.16	< 0.17	< 0.13	< 0.09	< 0.11	< 0.07	< 0.05	< 0.08	C10173027003
9/20/2010	46000	< 500			< 500	14.3	2590	4070	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10263039002
12/13/2010	52000	< 2500			< 500	42.7	2070	4280	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10347024002
3/21/2011	41000	< 500			< 500	114	1990	3430	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.15	< 0.09	C11080075003
6/14/2011										< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	1106059-07
6/14/2011	43000	< 2500			< 500	< -23.6	2810	3970	< 0.005									C11165038006
9/13/2011	46000	< 2000			< 400	< -37.2	2730	3710	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C11256012002
3/13/2013	34000	< 500			< 500			1780										C13072009002
9/12/2013	35000	< 2000			< 400			1430										C13255083002
3/20/2014	35000	< 400			< 400			1490										C14079016005
9/12/2014	38100	< 500			< 500			1550										356937007
3/24/2015	29900	< 1000			< 1000			1460										369707010
3/21/2016	31900	2.39			1.49			1690										393717009
9/19/2016	40400	< 500			< 500			1690										406359008
3/8/2017	36300	< 500			< 500			1330										418299018
9/11/2017	25200	< 500			< 500			1620										432728010
3/14/2018	32500	< 500			< 500			1620										446010008

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-400 Monitoring

Water Quality Records for

MW423-PRT3

Sample Date Range: 6/16/2009 - 5/16/2018

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	
7/22/2009	42000	< 2500			< 500	< -4.38	2660	4350	< 0.005	< 0.16	< 0.17	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C09203009003
8/25/2009	47000	< 500			< 500	23.4	2850	4440	< 0.005	< 0.16	< 0.17	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C09237022003
9/28/2009	14000	< 500			< 500	97.8	10600	13500	< 0.005	< 0.16	< 0.17	< 0.13	< 0.09	< 0.11	< 0.07	< 0.05	< 0.08	C09271021003
12/15/2009	53000	< 2500			< 500	< -48.6	2970	4030	< 0.005	< 0.16	< 0.17	< 0.13	< 0.09	< 0.11	< 0.07	< 0.05	< 0.08	C09349015003
3/22/2010	51000	< 500			< 500	43.5	1960	3810	< 0.005	< 0.16	< 0.17	< 0.13	< 0.1	< 0.11	< 0.07	< 0.05	< 0.09	C10082005005
6/22/2010	49000	< 2500			< 500	5.16	2930	3850	< 0.005	< 0.16	< 0.17	< 0.13	< 0.09	< 0.11	< 0.07	< 0.05	< 0.08	C10173027004
9/20/2010	50000	< 500			< 500	34.3	2080	3730	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10263039003
12/13/2010	50000	< 2500			< 500	19	2120	3140	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	0.15	< 0.09	C10347024003
3/21/2011	41000	< 500			< 500	89.1	1880	2900	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.12	< 0.09	C11080075004
6/14/2011										< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	1106059-08
6/14/2011	43000	< 2500			< 500	< -17.1	2540	3680	< 0.005									C11165038007
9/13/2011	47000	< 2000			< 400	< -27.3	2490	2990	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C11256012003
3/12/2012	37000	< 500			< 500	< -9.6	1620	2350	< 0.005									C12072031005
9/24/2012	67000	< 500			< 500	19.2	1550	1820	< 0.005									C12268086001
3/13/2013	34000	< 500			< 500			1800										C13072009003
9/12/2013	35000	< 2000			< 400			1730										C13255083003
3/20/2014	36000	< 400			< 400			1480										C14079016006
9/13/2014	38300	< 50			< 50			1500										356931017
3/24/2015	34900	< 1000			< 1000			1470										369707011
3/21/2016	32800	2.35			0.98			1820										393717010
9/19/2016	37800	< 500			< 500			1600										406359009
3/8/2017	31800	< 500			< 500			1230										418299019

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

Water Quality Records for

Sample Date Range: 6/16/2009 - 5/16/2018

MW423-PRT3

	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								
Sample Date	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	Lab Sample ID
9/11/2017	26800	< 500			< 500			1670										432728011
3/14/2018	32500	< 500			< 500			1570										446010009

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-400 Monitoring

Water Quality Records for

MW424-PRT1

Sample Date Range: 6/16/2009 - 5/16/2018

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	
7/23/2009	7200	< 500			< 100	< -7	2300	1790	< 0.005	< 0.16	< 0.17	< 0.13	< 0.1	< 0.11	< 0.07	< 0.05	< 0.09	C09204021001
8/27/2009	7100	< 50			< 50	< 3.09	2680	3330	< 0.005	< 0.16	< 0.17	< 0.13	< 0.09	< 0.11	< 0.07	< 0.05	< 0.08	C09239018001
9/30/2009	7700	< 100			< 100	125	4580	6150	< 0.005	< 0.16	< 0.17	< 0.13	< 0.09	< 0.11	< 0.07	< 0.05	< 0.08	C09273021001
12/17/2009	9200	< 100			< 100	< -31.9	7760	10000	< 0.005	< 0.16	< 0.17	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C09351022002
3/24/2010	7900	< 100			< 100	86.8	4420	6540	< 0.005	< 0.16	< 0.17	< 0.13	< 0.1	< 0.11	< 0.07	< 0.05	< 0.09	C10083023002
6/23/2010	7900	< 250			< 50	14	4020	5080	< 0.005	< 0.16	< 0.17	< 0.13	< 0.1	< 0.11	< 0.07	< 0.05	< 0.09	C10174017003
9/22/2010	7900	< 1000			< 200	< -79.8	7420	10300	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10265020001
12/15/2010	8400	< 100			< 100	< -325	9940	13900	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10349020001
6/14/2011										< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	1106059-09
6/14/2011	7900	< 500			< 100	< -211	7890	8220	< 0.005									C11165038002
9/13/2011	9000	< 500			< 100	< -150	5730	6730	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C11256019001
3/13/2013	7900	< 100			< 100			10300										C13072022001
9/17/2013	5900	< 250			< 50			5540										C13260018007
3/20/2014	3900	< 50			< 50			6530										C14079016007
9/13/2014	2630	18.8			< 25			3070										356931018
3/26/2015	2520	18.5			< 50			5140										369707012
3/23/2016	1410	22.2			< 20			2400										393849010
9/20/2016	1650	23			< 20			6870										406359011
3/8/2017	1380	< 20			< 20			8620										418299020
9/11/2017	1180	11			< 20			6110										432728012
3/21/2018	936	11.6			< 1			3750										446475009

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-400 Monitoring

Water Quality Records for

Sample Date Range: 6/16/2009 - 5/16/2018

MW424-PRT2

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	
7/23/2009	17000	< 1000			< 200	< -29.4	4170	5680	< 0.005	< 0.16	< 0.17	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C09204022001
8/27/2009	16000	< 200			< 200	< -4.44	6130	5900	< 0.005	< 0.16	< 0.17	< 0.13	< 0.1	< 0.11	< 0.07	< 0.05	< 0.09	C09239019001
9/30/2009	16000	< 200			< 200	91.8	5200	7100	< 0.005	< 0.16	< 0.17	< 0.13	< 0.09	< 0.11	< 0.07	< 0.05	< 0.08	C09273023001
12/17/2009	18000	< 200			< 200	7.27	4010	6180	< 0.005	< 0.16	< 0.17	< 0.13	< 0.09	< 0.11	< 0.07	< 0.05	< 0.08	C09351022003
3/24/2010	17000	< 250			< 250	52.8	2940	6240	< 0.005	< 0.16	< 0.17	< 0.13	< 0.09	< 0.11	< 0.07	< 0.05	< 0.08	C10083023003
6/22/2010	17000	< 1000			< 200	12.7	5150	7070	< 0.005	< 0.16	< 0.17	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10174017004
9/22/2010	15000	< 1000			< 200	< -41.8	4000	6040	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10265020002
12/15/2010	14000	< 200			< 200	< -161	5510	7850	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10349020002
3/22/2011	12000	< 100			< 100	170	4620	6990	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.26	< 0.09	C11081023001
6/14/2011										< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	1106059-10
6/14/2011	14000	< 500			< 100	< -51.5	4820	5790	< 0.005									C11165038003
9/13/2011	12000	< 500			< 100	< -138	5900	6890	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C11256019002
3/13/2013	10000	< 100			< 100			4320										C13072022002
9/17/2013	11000	< 500			< 100			3810										C13260018008
3/20/2014	13000	< 100			< 100			3540										C14079016008
9/13/2014	13900	< 250			< 250			3820										356931019
3/31/2015	17600	< 250			< 250			3260										369938010
3/23/2016	20600	< 250			< 250			3220										393849011
9/20/2016	16700	< 250			< 250			2970										406359012
3/8/2017	10900	< 250			< 250			2750										418307001
9/11/2017	10100	< 250			< 250			3100										432728013
3/21/2018	10200	1.94			0.63			4100										446475010

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-400 Monitoring

Water Quality Records for

Sample Date Range: 6/16/2009 - 5/16/2018

MW424-PRT3

	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								
Sample Date	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	Lab Sample ID
7/23/2009	22000	< 1000			< 200	< -7.72	1900	2770	< 0.005	< 0.16	< 0.17	< 0.13	< 0.1	< 0.11	< 0.07	< 0.05	< 0.09	C09204023001
8/27/2009	23000	< 200			< 200	< 5.21	3400	4970	< 0.005	< 0.16	< 0.17	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C09239020001
9/30/2009	23000	< 250			< 250	78.9	3350	4660	< 0.005	< 0.16	< 0.17	< 0.13	< 0.1	< 0.11	< 0.07	< 0.05	< 0.09	C09273024001
12/17/2009	23000	< 200			< 200	12.3	2960	4500	< 0.005	< 0.16	< 0.17	< 0.13	< 0.1	< 0.11	< 0.07	< 0.05	< 0.09	C09351022004
3/24/2010	23000	< 250			< 250	< -39.3	2810	4600	< 0.005	< 0.16	< 0.17	< 0.13	< 0.09	< 0.11	< 0.07	< 0.05	< 0.08	C10083023004
6/23/2010	21000	< 1000			< 200	10.2	3160	4740	< 0.005	< 0.16	< 0.17	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10174017005
9/22/2010	21000	< 1000			< 200	< -14.6	2650	4440	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10265020003
12/15/2010	19000	< 200			< 200	< -54.8	2840	4300	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10349020003
3/22/2011	16000	< 200			< 200	93.3	2580	3430	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.28	< 0.09	C11081023002
6/14/2011										< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	1106059-11
6/14/2011	18000	< 1000			< 200	< -23	2990	3940	< 0.005									C11165038004
9/13/2011	16000	< 1000			< 200	< -42.4	2720	4190	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C11256019003
3/12/2012	12000	< 200			< 200	15.3	2120	3500	< 0.005									C12072031008
9/25/2012	11000	< 200			< 200	< -2.6	3010	3600	< 0.005									C12269015005
3/13/2013	10000	< 100			< 100			3070										C13072022003
9/17/2013	9300	< 500			< 100			2870										C13260018009
3/20/2014	10000	< 100			< 100			2500										C14079016009
9/13/2014	11100	< 250			< 250			2600										356931020
3/31/2015	14000	< 250			< 250			2570										369938011
3/23/2016	16800	< 250			< 250			2680										393849012
9/20/2016	16600	< 250			< 250			2580										406359013
3/8/2017	13500	< 250			< 250			2190										418307002

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Water Quality Records for

Sample Date Range: 6/16/2009 - 5/16/2018

MW424-PRT3

	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								
Sample Date	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	Lab Sample ID
9/11/2017	13300	< 250			< 250			2330										432728014
3/21/2018	15100	1.43			1.02			2220										446475011

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-400 Monitoring

Water Quality Records for

MW425-PRT1

Sample Date Range: 6/16/2009 - 5/16/2018

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	
7/22/2009	5100	< 250			< 50	< 2.26	755	789	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C09203011001
8/26/2009	8200	< 100			< 100	9.62	4390	3870	< 0.005	< 0.16	< 0.17	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C09238024001
9/29/2009	11000	< 100			< 100	107	6500	8580	< 0.005	< 0.16	< 0.17	< 0.13	< 0.1	< 0.11	< 0.07	< 0.05	< 0.09	C09273002004
12/16/2009	13000	< 500			< 100	26.5	6360	9490	< 0.005	< 0.16	< 0.17	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C09350025007
3/23/2010	8900	< 100			< 100	51.4	2200	3010	< 0.005	< 0.16	< 0.17	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10082005006
6/22/2010	8300	< 500			< 100	25	1340	1330	< 0.005	< 0.16	< 0.17	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10173039002
9/21/2010	12000	< 500			< 100	< -221	10000	12700	< 0.005	< 0.16	< 0.17	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10264016004
12/15/2010	13000	< 200			< 200	< -819	15000	18300	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10349020004
3/21/2011	11000	< 100			< 100	81.2	10800	14000	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.17	< 0.09	C11080075005
6/13/2011										< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	1106040-03
6/13/2011	7600	< 500			< 100	75.3	2130	2530	< 0.005									C11165011005
9/14/2011	12000	< 500			< 100	< -143	7140	9190	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C11257087006
3/12/2013	6500	< 100			< 100			5630										C13072002003
9/18/2013	4600	< 500			< 100			5220										C13261023001
3/20/2014	3000	< 50			< 50			2810										C14079016001
9/15/2014	2260	< 50			< 50			2220										356937001
3/26/2015	1820	12.8			< 25			2220										369707013
3/28/2016	1080	14.2			< 20			1040										393954001
9/21/2016	1320	9.4			< 20			6810										406611009
3/8/2017	1160	11.6			< 20			4280										418307003
9/11/2017	1140	< 20			< 20			6150										432728015
3/21/2018	1340	17.6			0.45			1890										446475001

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-400 Monitoring

Water Quality Records for

MW425-PRT2

Sample Date Range: 6/16/2009 - 5/16/2018

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	
7/22/2009	6300	< 250			< 50	< 3.37	2930	4460	< 0.005	< 0.16	< 0.17	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C09203011002
8/26/2009	6100	< 50			< 50	< -19.6	3370	4550	< 0.005	< 0.16	< 0.17	< 0.13	< 0.1	< 0.11	< 0.07	< 0.05	< 0.09	C09238024002
9/29/2009	7500	< 50			< 50	121	4600	5900	< 0.005	< 0.16	< 0.17	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C09273002005
12/16/2009	11000	< 500			< 100	< -17.7	5550	7850	< 0.005	< 0.16	< 0.17	< 0.13	< 0.09	< 0.11	< 0.07	< 0.05	< 0.08	C09350025008
3/23/2010	9300	< 50			< 50	49.5	3710	5600	< 0.005	< 0.16	< 0.17	< 0.13	< 0.1	< 0.11	< 0.07	< 0.05	< 0.09	C10082005007
6/22/2010	8400	< 250			< 50	43.7	2900	3850	< 0.005	< 0.16	< 0.17	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10173039003
9/21/2010	10000	< 500			< 100	< -37.4	4910	5000	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10264016005
12/15/2010	11000	< 100			< 100	< -456	9930	13200	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10349020005
3/21/2011	9200	< 100			< 100	28.2	8260	12500	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.36	< 0.09	C11080075006
6/13/2011										< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	1106040-04
6/13/2011	8700	< 500			< 100	< -26.5	4870	5930	< 0.005									C11165011006
9/14/2011	10000	< 500			< 100	< -98.5	4370	4600	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C11257087007
3/12/2013	9100	< 100			< 100			6260										C13072002004
9/18/2013	6700	< 500			< 100			3280										C13261023002
3/20/2014	5400	< 50			< 50			4240										C14079016002
9/15/2014	4080	< 50			< 50			1860										356937002
3/26/2015	3540	< 50			< 50			2750										369707014
3/28/2016	2060	< 25			< 25			1400										393954002
9/21/2016	1590	< 25			< 25			3790										406611010
3/8/2017	1530	< 25			< 25			5400										418307004
9/12/2017	1430	< 25			< 25			3530										432724008
3/21/2018	1620	< 25			< 25			3030										446475012

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-400 Monitoring

Water Quality Records for

MW425-PRT3

Sample Date Range: 6/16/2009 - 5/16/2018

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	
7/22/2009	6200	< 250			< 50	< 0.86	3380	4420	< 0.005	< 0.16	< 0.17	< 0.13	< 0.1	< 0.11	< 0.07	< 0.05	< 0.09	C09203011003
8/26/2009	4700	< 50			< 50	< -23.2	3770	4120	< 0.005	< 0.16	< 0.17	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C09238024003
9/29/2009	6900	< 50			< 50	96.2	3490	4570	< 0.005	< 0.16	< 0.17	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C09273002006
12/17/2009	8100	< 100			< 100	39.3	3620	5210	< 0.005	< 0.16	< 0.17	< 0.13	< 0.09	< 0.11	< 0.07	< 0.05	< 0.08	C09351022001
3/23/2010	7600	< 50			< 50	57	2590	4290	< 0.005	< 0.16	< 0.17	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10082005008
6/22/2010	7700	< 250			< 50	33.6	2790	3760	< 0.005	< 0.16	< 0.17	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10173039004
9/21/2010	8500	< 500			< 100	< -22.6	3270	5070	< 0.005	< 0.16	< 0.17	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10264016006
12/15/2010	9100	< 100			< 100	< -325	7150	8570	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C10349020006
6/13/2011	7400	< 500			< 100	< -23.1	3310	4310	< 0.005									C11165011007
6/13/2011										< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	1106040-05
9/14/2011	8500	< 500			< 100	< -99.4	4540	4360	< 0.005	< 0.17	< 0.18	< 0.14	< 0.1	< 0.12	< 0.07	< 0.05	< 0.09	C11257087008
3/12/2012	8000	< 100			< 100	< -25.1	3230	5410	< 0.005									C12072031009
9/19/2012	9900	< 100			< 100	< -28.6	4490	5320	< 0.005									C12263022004
3/12/2013	11000	< 100			< 100			4600										C13072002005
9/18/2013	9600	< 500			< 100			2530										C13261023003
3/20/2014	9500	< 100			< 100			3230										C14079016003
9/15/2014	8610	< 100			< 100			1950										356937003
3/26/2015	7170	< 100			< 100			2340										369707015
3/28/2016	4430	< 50			< 50			1200										393954003
9/21/2016	3320	< 50			< 50			1890										406611011
3/8/2017	2850	< 50			< 50			3480										418307005
9/12/2017	2630	< 50			< 50			2430										432724009

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-400 Monitoring

Water Quality Records for

Sample Date Range: 6/16/2009 - 5/16/2018

MW425-PRT3

	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								
Sample Date	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	Lab Sample ID
3/21/2018	2990	< 50		< 50		2630												446475013

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NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-400 Monitoring

Water Quality Records for

MW505

Sample Date Range: 6/16/2009 - 5/16/2018

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	
3/13/2012	160	< 5			< 5	< -2.14	48.8	51.6	< 0.005									C12073014003
6/18/2012	18	< 5			< 1	< -1.58	54	51.4	< 0.005									C12170024001
9/19/2012	22	< 1			< 1	< 1.39	45.1	61.8	< 0.005									C12263015001
12/5/2012	22	< 5			< 1			56.2										C12340029002
3/19/2013	34	< 1			< 1			49.2										C13078040001
3/19/2013	32	< 1			< 1			53.9										C13078040002
6/11/2013	31	< 1			< 1			55.5										C13162015006
9/12/2013	26	< 5			< 1			74.3										C13255009001
12/17/2013	28	< 1			< 1			56.2										C13351094003
3/19/2014	23	< 1			< 1			69										C14078013001
6/11/2014	26.2	< 1			< 1			52.8										350627002
9/13/2014	150	< 1			< 1			63.4										356937004
12/2/2014	22.8	< 1			< 1			71.4										362435008
3/30/2015	16.3	< 1			< 1			61.1										369938012
6/16/2015	16.8	< 1			< 1			53.1										375398001
9/14/2015	18.9	< 1			< 1			40.7										381234007
9/14/2015	19	< 1			< 1			36.5										381234008
12/8/2015	49.2	< 1			< 1			56.4										387183008
3/23/2016	22.6	< 1			< 1			62.2										393849013
6/6/2016	32.6	< 1			< 1			86.4										398881008
9/20/2016	56.1	< 1			< 1			70										406359014
9/20/2016	19.7	< 1			< 1			63.1										406359015

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-400 Monitoring

Water Quality Records for

MW505

Sample Date Range: 6/16/2009 - 5/16/2018

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	
12/13/2016	10.5	< 1			< 1			47.1										412748008
3/9/2017	13.9	< 1			< 1			51.1										418307006
6/20/2017	109	< 2			< 2			50.1										425938001
9/12/2017	9.44	< 1			< 1			59.9										432724010
9/12/2017	15	< 1			< 1			56.2										432724011
12/18/2017	36.2	< 1			< 1			57										440362008
3/22/2018	20.9	< 1			< 1			51.4										446481004
5/15/2018	10.2	< 1			< 1			59.7										450363008

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-400 Monitoring

Water Quality Records for

MW506

Sample Date Range: 6/16/2009 - 5/16/2018

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	
3/13/2012	4300	< 50			< 50	< 0.856	50.5	62.6	< 0.005									C12073014004
6/18/2012	4100	< 250			< 50	< 3.44	66.4	59.7	< 0.005									C12170024002
9/19/2012	3700	< 50			< 50	< 3.84	50.8	59	< 0.005									C12263015002
12/5/2012	4200	< 250			< 50			42.8										C12340029004
3/19/2013	2100	< 50			< 50			49.7										C13078040003
6/11/2013	2400	< 50			< 50			64										C13162015005
9/12/2013	2100	< 100			< 20			63.1										C13255009002
12/17/2013	2000	< 20			< 20			60.9										C13351094004
3/19/2014	1200	< 20			< 20			65.4										C14078013002
6/11/2014	954	< 20			< 20			56.8										350627003
9/13/2014	641	< 10			< 10			59.6										356937005
12/2/2014	1080	< 1			0.47			72.7										362435009
3/30/2015	906	< 10			< 10			66.8										369938001
6/16/2015	2690	< 50			< 50			73.4										375398005
9/14/2015	7110	< 100			< 100			46.3										381234009
12/8/2015	9040	< 100			< 100			72.7										387183009
3/23/2016	17600	< 100			< 100			54.8										393849014
6/6/2016	24400	< 250			< 250			108										398881009
9/20/2016	19700	< 500			< 500			69.1										406359016
12/13/2016	22200	< 500			< 500			59.2										412748009
3/9/2017	15000	< 500			< 500			75.2										418307007
6/20/2017	17800	< 250			< 250			52.5										425938002

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-400 Monitoring

Water Quality Records for

MW506

Sample Date Range: 6/16/2009 - 5/16/2018

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	
9/12/2017	17400	< 250			< 250			72.4										432724012
12/18/2017	19600	< 250			< 250			89.3										440362009
3/22/2018	15500	< 250			< 250			51.8										446481005
5/15/2018	17900	< 250			< 250			62.4										450363009

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-400 Monitoring

Water Quality Records for

MW507

Sample Date Range: 6/16/2009 - 5/16/2018

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	
3/13/2012	1200	< 10			< 10	< 3.11	38.7	53.4	< 0.005									C12073014005
6/18/2012	1200	< 100			< 20	< 5.7	51.2	41.2	< 0.005									C12170024003
9/19/2012	1800	< 10			< 10	< 0.808	34.4	30.7	< 0.005									C12263015003
12/5/2012	1900	< 100			< 20			42.9										C12340029005
3/19/2013	770	< 20			< 20			48.3										C13078040004
6/11/2013	1100	< 10			< 10			65.1										C13162015004
6/11/2013	1000	< 10			< 10			72.4										C13162015003
9/12/2013	530	< 50			< 10			86.6										C13255009003
12/17/2013	870	< 10			< 10			64.6										C13351094005
3/19/2014	190	< 1			< 1			82.7										C14078013003
6/12/2014	260	< 5			< 5			80.4										350627006
6/12/2014	245	< 5			< 5			77.6										350627001
9/13/2014	582	< 10			< 10			57.3										356937006
12/2/2014	510	< 1			< 1			71.7										362435010
3/30/2015	265	< 5			< 5			74.1										369938013
6/16/2015	913	< 20			< 20			52.1										375398006
9/14/2015	2700	< 50			< 50			53.2										381234010
12/8/2015	6030	< 100			< 100			61.6										387183010
3/23/2016	6960	< 100			< 100			67.9										393849015
6/6/2016	9720	< 200			< 200			105										398881010
9/20/2016	11100	< 200			< 200			77.5										406359017
12/13/2016	10900	< 200			< 200			65.4										412748010

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-400 Monitoring

Water Quality Records for

Sample Date Range: 6/16/2009 - 5/16/2018

MW507

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results			Metal	Polychlorinated biphenyl Analysis Results								Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	Uranium mg/L	PCB 1016 µg/L	PCB 1221 µg/L	PCB 1232 µg/L	PCB 1242 µg/L	PCB 1248 µg/L	PCB 1254 µg/L	PCB 1260 µg/L	PCB 1268 µg/L	
3/9/2017	6990	< 200			< 200			59.6										418307008
6/20/2017	4240	< 100			< 100			55.6										425938003
9/12/2017	7590	< 200			< 200			55.3										432724013
12/18/2017	5300	< 100			< 100			75.7										440362010
3/22/2018	4630	< 100			< 100			68.2										446481006
5/15/2018	5590	< 100			< 100			65.5										450363010

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

APPENDIX F

C-749 URANIUM BURIAL GROUND (SWMU 2) GROUNDWATER MONITORING WELL DATA

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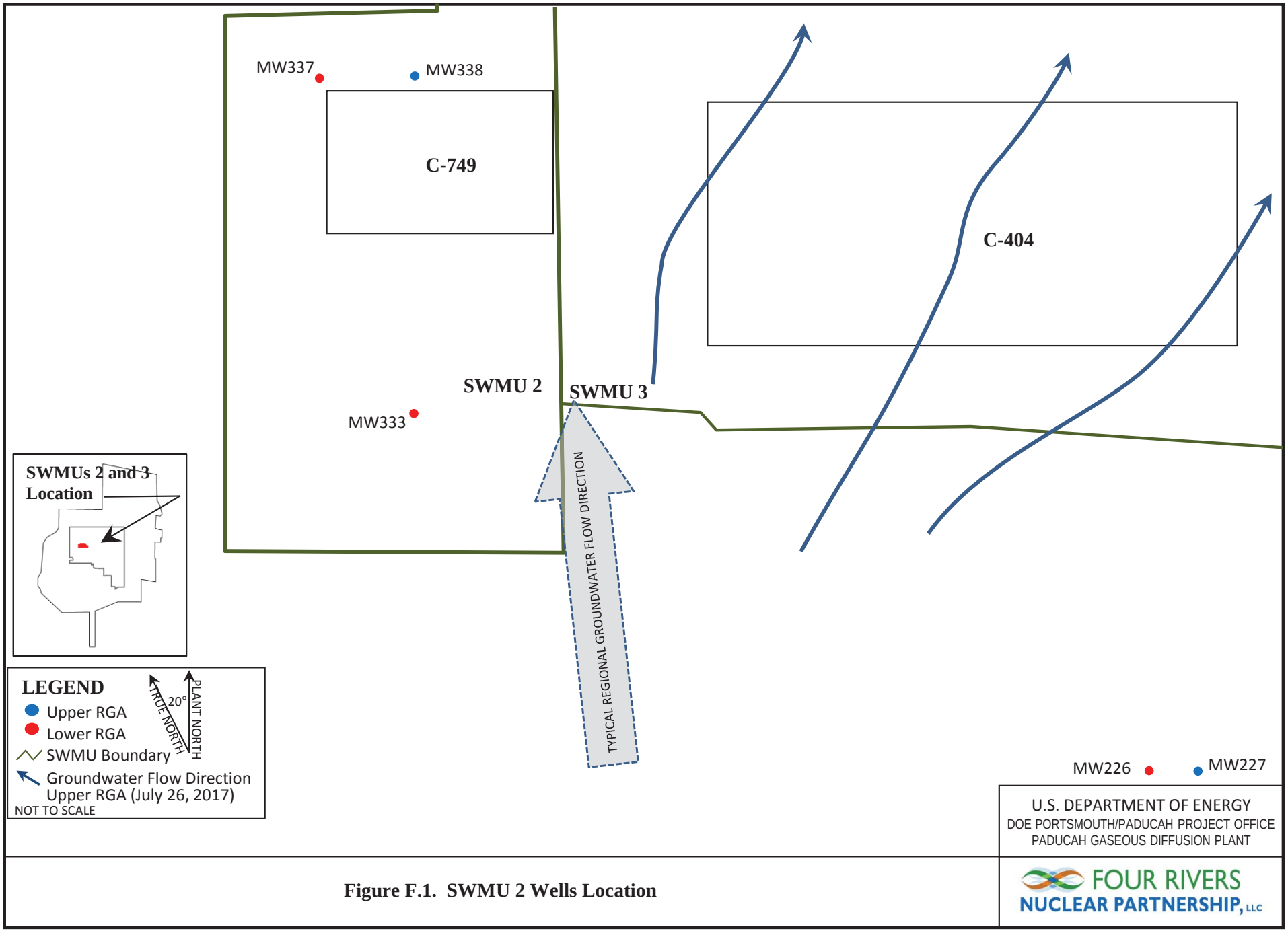

Figure F.1. SWMU 2 Wells Location

S:\Env Services\Environmental Stewardship\ERP - Risk\FFA Semi Annual & 5YR\FFA Semiannual Reporting V1\2018-03\Appendix F 20180307 SWMU 2 REG lkg.pptx

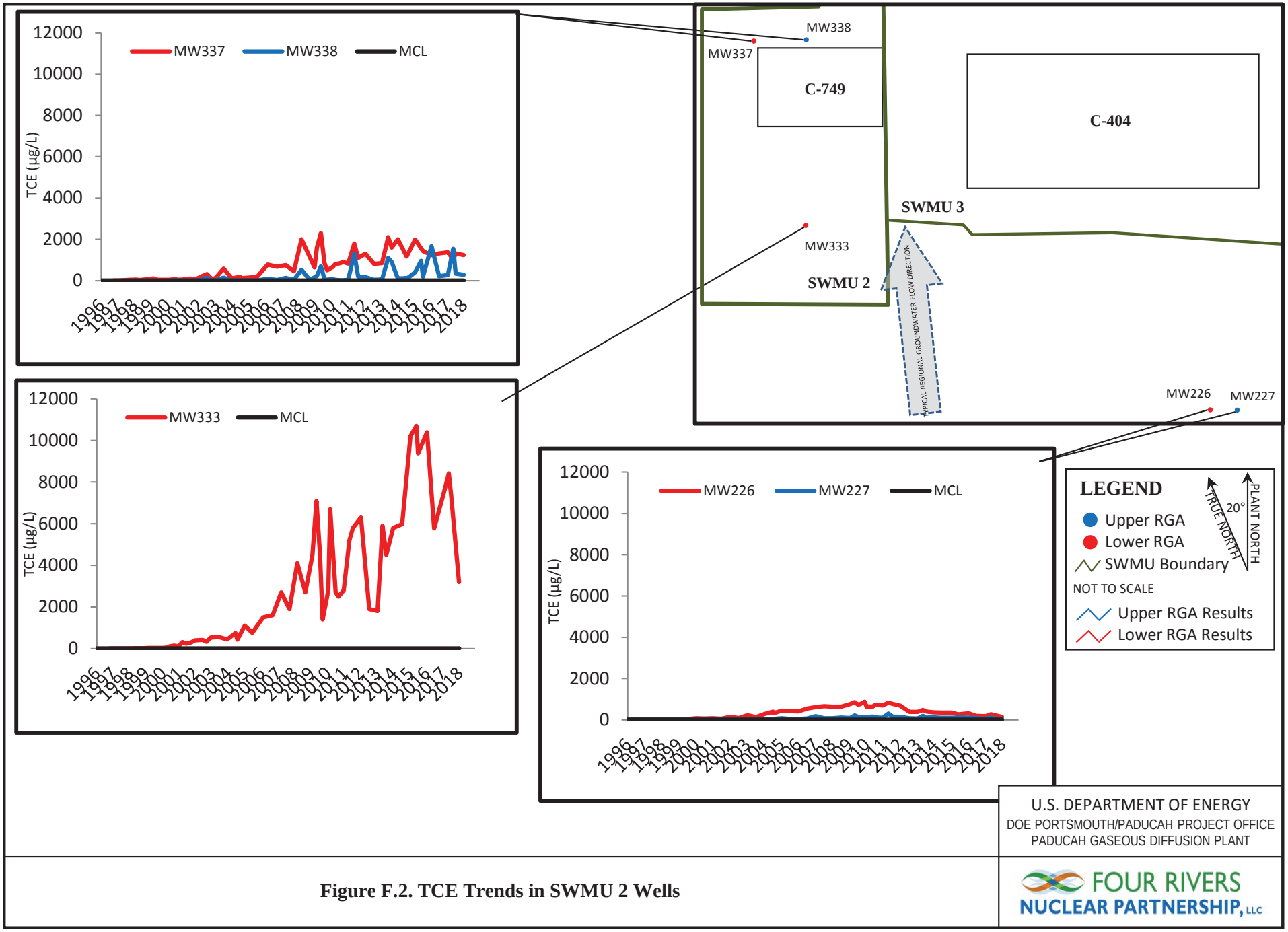

Figure F.2. TCE Trends in SWMU 2 Wells

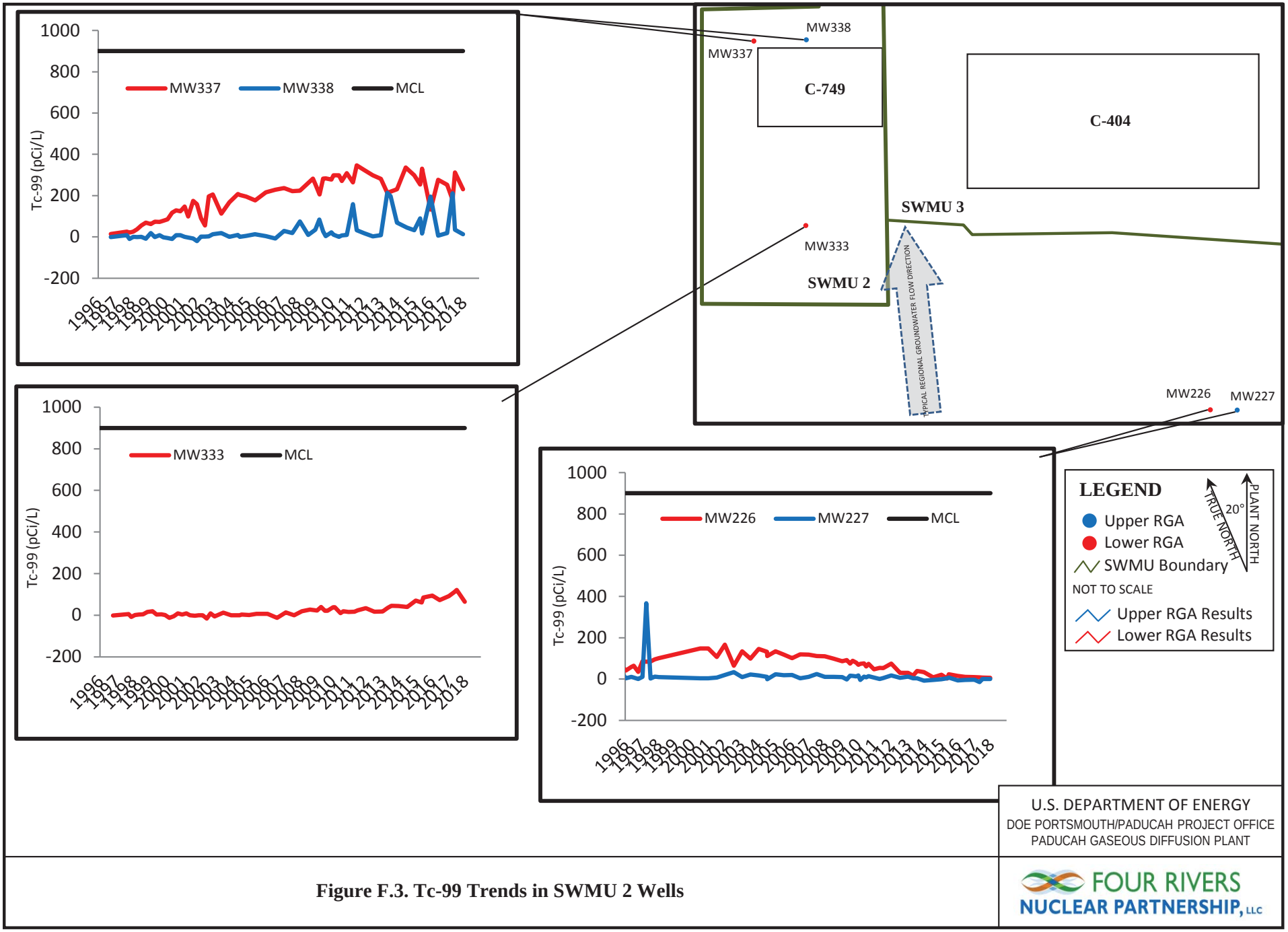

Figure F.3. Tc-99 Trends in SWMU 2 Wells

C-749 Uranium Burial Ground (SWMU2) Monitoring

Water Quality Records for

Sample Date Range: 5/6/1993 - 1/10/2018

MW226

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results						Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	U-234 pCi/L	U-235 pCi/L	U-238 pCi/L	
5/6/1993	8							11				930507-105
5/6/1993	2							6				930507-101
5/13/1993	7							12				930513-235
6/2/1993	8							10				930602-113
6/16/1993	8							8				930617-116
6/16/1993	2											930617-118
7/14/1993	9							16				930715-049
7/20/1993	10							8				930721-106
8/9/1993	11							15				930810-018
8/16/1993	11							18				930819-067
9/30/1993	11							18				930930-169
10/26/1993	12							35				931027-061
11/8/1993	11							32				931109-073
11/16/1993	11							22				931117-105
1/11/1994	11							25				940111-177
1/25/1994	12							13				940126-013
2/8/1994	10							32				940209-005
2/15/1994	12							14				940216-023
7/18/1994	12							18				940719-065
7/26/1994	14							35				940726-198
8/11/1994	15							32				940812-033
8/18/1994	15							15				940818-135
1/17/1995	17							26				950117-115
1/17/1995	17							30				950117-119
1/23/1995	17							31				950125-081

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-749 Uranium Burial Ground (SWMU2) Monitoring

Water Quality Records for

Sample Date Range: 5/6/1993 - 1/10/2018

MW226

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results						Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	U-234 pCi/L	U-235 pCi/L	U-238 pCi/L	
2/6/1995	16							28				950207-055
2/13/1995	16							36				950215-031
4/19/1995								39				950419-194
4/24/1995								44				950425-170
5/3/1995								15				950503-140
5/8/1995								43				950509-033
5/8/1995								49				950509-041
7/19/1995	16							32				950720-047
7/25/1995	11							32				950726-034
8/7/1995								41				950808-083
8/14/1995								43				950815-023
8/14/1995								30				950815-031
10/23/1995								34				951024-036
10/30/1995								40				951031-056
10/30/1995								36				951031-060
11/8/1995								54				951110-059
11/15/1995								55				951116-020
1/22/1996	20							42				960122-119
5/17/1996								59				960521-007
7/10/1996	20							65				960710-204
10/14/1996								35				961015-019
1/16/1997	24							86				970121-043
4/14/1997								84				970414-100
7/14/1997	26							84				970714-133
7/14/1997	27							85				970714-134

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-749 Uranium Burial Ground (SWMU2) Monitoring

Water Quality Records for

Sample Date Range: 5/6/1993 - 1/10/2018

MW226

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results						Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	U-234 pCi/L	U-235 pCi/L	U-238 pCi/L	
10/14/1997								95				971014-047
1/12/1998	30							101				C980140119
7/13/1998	25											C981960005
7/13/1998	25											C981960004
1/11/1999	26											C990110084
7/20/1999	40											C992020007
7/20/1999	42											C992020008
1/11/2000	71											C000110092
7/12/2000	61							148				C001940098
1/9/2001	81							148				C010100017
7/11/2001	55							107				C011930007
1/8/2002	140							166				C020080098
7/22/2002	89							64.7				C022030173
1/21/2003	230							134				C030210115
7/23/2003	130							98.9				C032040144
1/21/2004	280							146				C040210090
7/22/2004	340	12	< 5	< 5	< 5	< 0.668	57.7	132	< 0.0902	< 0.0122	< 0.348	C042050009
7/22/2004	394											C042050002
7/27/2004	320							112				C042090056
1/24/2005	440							134	< 0.0357	< 0.0147	< -0.0135	C050240045
7/27/2005	420							118	< 0.0346	< 0.00589	< 0.00252	C052080180
1/24/2006	410							101	< 0.0973	< -0.0183	< 0.0768	C060240039
7/24/2006	550							119	< 1.07	< 0.187	< 0.282	C062050057
1/24/2007	610							118	< 1.03	< -0.00311	< 0.21	C070240038
7/24/2007	660							112	< 0.0971	< -0.0355	< 0.0361	C072060043

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-749 Uranium Burial Ground (SWMU2) Monitoring

Water Quality Records for

Sample Date Range: 5/6/1993 - 1/10/2018

MW226

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results						Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	U-234 pCi/L	U-235 pCi/L	U-238 pCi/L	
1/15/2008	640							110	< -0.0264	< 0.0644	< 0.00478	C080160004
7/24/2008	640							98.7	< 0.0399	< 0.00678	< -0.00253	C082060091
2/5/2009	760							86.5				C09036036004
5/12/2009	850	26	< 5	< 5	< 5	< -0.403	49.2	92.3				C09132009001
7/28/2009	730							74.6				C09209020001
9/21/2009	780	< 25	< 5	< 25	< 5	< 2.56	46.3	88.1				C09265006002
12/10/2009	880							79.1				C09344026005
1/26/2010	610							69.3				C10026023001
3/9/2010	650	22	< 10	< 10	< 10	4.2	49.4	74				C10068052005
6/1/2010	640							75.7				C10152026001
7/14/2010	710							60.7				C10195040002
9/7/2010	720	22	< 10	< 10	< 10	< 4.04	38.8	73.8				C10250033001
1/3/2011	690							47.6				C11003029002
5/11/2011	830	28	< 5	< 5	< 5	4.3	41	54.5				C11131023001
7/28/2011	780							53.2				C11209031001
1/20/2012	680							74.7				C12020022001
7/31/2012	390							30.5				C12213022002
1/23/2013	380							30.3				C13023019002
5/14/2013	480	< 25	< 5	< 5	< 5			< 16.5				C13134021006
8/12/2013	400							39.3				C13224030001
1/8/2014	360							33				C14008024003
7/28/2014	350							< 7.97				353626001
1/26/2015	351							20.5				365824001
6/1/2015	267	5.4	< 1	0.32	< 1			< 2.55				374452002
7/11/2015	270							23.2				377100001

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C-749 Uranium Burial Ground (SWMU2) Monitoring

Water Quality Records for

Sample Date Range: 5/6/1993 - 1/10/2018

MW226

	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results						
Sample Date	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	U-234 pCi/L	U-235 pCi/L	U-238 pCi/L	Lab Sample ID
1/25/2016	311							< 14.9				390095001
7/5/2016	194							< 10.7				401035001
1/23/2017	177							< 9.01				414959002
5/19/2017	271	5.5	< 5	< 5	< 5			< 8				423910002
7/17/2017	235							< 7.1				428290002
1/8/2018	150							< 6.27				441372001

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NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-749 Uranium Burial Ground (SWMU2) Monitoring

Water Quality Records for

Sample Date Range: 5/6/1993 - 1/10/2018

MW227

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results						Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	U-234 pCi/L	U-235 pCi/L	U-238 pCi/L	
5/13/1993	2							17				930513-239
6/2/1993	2							0				930602-124
6/16/1993	2							0				930617-138
7/13/1993	2							12				930713-156
7/19/1993	2							10				930721-102
8/9/1993	2							5				930810-014
8/16/1993	2							13				930820-001
9/30/1993	2							13				930930-173
10/26/1993	2							7				931027-053
11/8/1993	2							0				931109-077
11/16/1993	2							9				931117-134
1/11/1994	3							18				940111-181
1/25/1994	3							11				940126-017
2/8/1994	3							0				940209-001
2/15/1994	3							5				940216-019
4/29/1994	4											940429-116
7/18/1994	2							0				940719-061
7/26/1994	3							6				940726-202
8/10/1994	4							14				940811-063
8/10/1994	4							10				940811-075
8/10/1994	3	< 5	< 5	< 5	< 5							S408081-01V
8/18/1994	4							3				940818-131
1/17/1995	4							9				950118-204
1/23/1995	3							18				950125-093
1/23/1995	4							10				950125-097

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-749 Uranium Burial Ground (SWMU2) Monitoring

Water Quality Records for

Sample Date Range: 5/6/1993 - 1/10/2018

MW227

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results						Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	U-234 pCi/L	U-235 pCi/L	U-238 pCi/L	
2/6/1995	3							9				950207-059
2/13/1995	4							17				950215-027
4/19/1995								16				950419-202
4/24/1995								20				950425-162
4/24/1995								23				950425-178
5/3/1995								5				950503-136
5/8/1995								14				950509-049
7/19/1995	5							6				950720-043
7/25/1995	4							23				950726-038
8/7/1995								14				950808-067
8/7/1995								17				950808-087
8/14/1995								12				950815-027
10/23/1995								0				951024-032
10/23/1995								0				951024-040
10/30/1995								6				951031-064
11/8/1995								7				951110-063
11/15/1995								22				951116-024
1/22/1996	4							3	2.9	0.18	6.69	960122-115
1/22/1996	4							4				960122-123
5/17/1996								10				960521-008
7/9/1996	5							7				960709-085
10/14/1996								0				961015-018
1/16/1997	6							11				970121-041
1/16/1997	6							3				970121-042
4/14/1997								367				970414-099

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C-749 Uranium Burial Ground (SWMU2) Monitoring

Water Quality Records for

Sample Date Range: 5/6/1993 - 1/10/2018

MW227

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results						Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	U-234 pCi/L	U-235 pCi/L	U-238 pCi/L	
7/14/1997	6							2				970714-135
10/14/1997								< 12				971014-048
1/12/1998	4							< 9				C980140120
1/12/1998	4							< 8				C980140122
7/13/1998	6											C981960003
1/11/1999	6											C990110085
1/11/1999	6											C990110086
7/20/1999	8											C992020009
1/11/2000	3											C000110093
7/12/2000	6							< 3.92				C001940099
1/9/2001	3							< 3.82				C010100018
7/11/2001	7							< 7.5				C011930006
1/8/2002	23							20.2				C020080097
7/22/2002	23							33.4				C022030172
1/21/2003	24							< 9.75				C030210114
7/23/2003	26							22.5				C032040145
1/21/2004	31							< 17				C040210091
7/22/2004	40											C042050003
7/22/2004	33	< 1	< 1	< 1	< 1	5.9	10.1	< 10.4	< 0.284	< 0.00706	< 0.412	C042050010
7/27/2004	39							< -0.469				C042090057
1/24/2005	76							22.8	< 0.348	< -0.0287	< 0.122	C050240047
7/27/2005	45							18.9	< 0.0822	< 0.0131	< 0.0649	C052080181
1/25/2006	38							20.3	< 0.0898	< 0.004	< 0.0169	C060250133
7/24/2006	61							< 4.11	< 1.36	< 0.263	< 0.298	C062050058
1/24/2007	180							< 11	< 0.219	< 0.0426	< 0.0696	C070240039

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C-749 Uranium Burial Ground (SWMU2) Monitoring

Water Quality Records for

Sample Date Range: 5/6/1993 - 1/10/2018

MW227

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results						Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	U-234 pCi/L	U-235 pCi/L	U-238 pCi/L	
7/24/2007	73							24	< 0.124	< -0.0338	< 0.0891	C072060044
1/16/2008	79							< 11	< 0.21	< 0.00145	< 0.0742	C080160068
7/24/2008	110							< 10.9	< 0.0526	< 0.00769	< -0.00691	C082060092
2/5/2009	82							< 9.22				C09036036005
5/12/2009	210	4.2	< 1	< 1	< 1	< 1.54	7.61	< -2.16				C09132009002
7/28/2009	140							16.5				C09209020002
9/21/2009	140	< 5	< 1	< 5	< 1	< 0.447	7.47	< 14.8				C09265006003
12/10/2009	150							< 12.6				C09344026006
1/26/2010	110							< 17.1				C10026023002
3/9/2010	150	3.5	< 1	< 1	< 1	< 2.74	7.52	< -4.34				C10068052006
6/1/2010	160							< 11.8				C10152026002
7/14/2010	140							< 8.12				C10195040003
9/7/2010	110	2.5	< 1	< 1	< 1	< -0.521	5.85	< 13.6				C10250033002
1/3/2011	94							< 7.15				C11003029001
5/11/2011	310	6.2	< 1	< 1	< 1	< 0.974	10.6	< 0.676				C11131023002
7/28/2011	160							< 4.69				C11209031002
1/20/2012	150							17.9				C12020022003
7/31/2012	74							< 5.99				C12213022003
1/22/2013	63							< 11.8				C13022086002
5/14/2013	190	< 5	< 1	< 1	< 1			< 3.61				C13134021005
8/12/2013	110							< 4.08				C13224030002
1/8/2014	120							< -7.61				C14008024004
7/28/2014	104							< -4.4				353626002
1/26/2015	97.8							< -1.45				365824002
6/2/2015	110	1.68	< 2	< 2	< 2			< 3.74				374344008

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C-749 Uranium Burial Ground (SWMU2) Monitoring

Water Quality Records for

Sample Date Range: 5/6/1993 - 1/10/2018

MW227

	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results						
Sample Date	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	U-234 pCi/L	U-235 pCi/L	U-238 pCi/L	Lab Sample ID
7/11/2015	94.3							< 7.22				377100002
1/25/2016	110							< -6.66				390095002
7/5/2016	75.5							< -4.03				401035002
1/23/2017	55							< -2.64				414959001
5/19/2017	112	1.31	< 1	< 1	< 1			< -14.1				423910003
7/17/2017	66.7							< 0.795				428290003
1/8/2018	39.1							< 0.655				441372002

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NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-749 Uranium Burial Ground (SWMU2) Monitoring

Water Quality Records for

Sample Date Range: 5/6/1993 - 1/10/2018

MW333

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results						Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	U-234 pCi/L	U-235 pCi/L	U-238 pCi/L	
10/14/1996	10				< 0.48							96M04623-3717
10/14/1996									9.66		0.14	96M04623-3731
10/14/1996								-1.1				96M04623-3761
1/29/1997	5	< 5	< 5	< 5	< 5							970130-051
9/23/1997	5	< 5	< 5	< 5	< 5	-0.2	2	6				970923-064
11/19/1997	6	< 5	< 5	< 5	< 5	-0.7	2	-8				971119-080
2/9/1998	8	< 5	< 5	< 5	< 5	< 2.3	< 1	< 1				C980420046
5/4/1998	14	< 5	< 5	< 5	< 5	< 5.1	15	< 3				C981250036
8/10/1998	16	< 5	< 5	< 5	< 5	< 4.3	6	< 3.9				C982220109
11/12/1998	16	< 5	< 5	< 5	< 5	< -1.37	5.36	< 16				C983160089
3/3/1999	30	< 5	< 5	< 5	< 5	< 0.68	< 2.83	19.27				C990620037
6/4/1999	33	< 5	< 5	< 5	< 5	< 1.23	< 0.07	< 2.81				C991580024
9/15/1999						< -0.79		< 4.13				C992580210
12/7/1999	29	< 5	< 5	< 5	< 5	2.48	< 1.48	< 0.475				C993410100
12/7/1999	33	< 5	< 5	< 5	< 5	< 0.45	< 0.49	< -6.17				C993410101
3/8/2000	46	< 5	< 5	< 5	< 5	< 1.58	< 4.62	< -12.8		< 0		C000680108
6/14/2000	110	< 5	< 5	< 5	< 5	< 0.52	< -0.97	< -4.54				C001670002
9/12/2000	140	< 5	< 5	< 5	< 5	< 2.67	< 3.97	< 9.38				C002560135
12/18/2000	110	< 10	< 10	< 10	< 10	< 0.462	< 0.604	< 3.24				C003540006
3/19/2001	310	< 5	< 5	< 5	< 5	< -0.5	< 0.794	< 8.5				C010780093
6/6/2001	230	< 25	< 25	< 25	< 25	< 1.62	4.76	< -0.303				C011570178
9/25/2001	290	< 25	< 25	< 25	< 25	< 2.25	< 1.41	< -2.35		< -9.94		C012680234
12/17/2001	390	< 25	< 25	< 25	< 25	< 1.86	< -0.125	< -0.337				C013510092
3/13/2002										< -3.95		C020720129
3/13/2002	410	< 25	< 25	< 25	< 25	< 1.13	< 0.94	< -0.654				C020720130

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C-749 Uranium Burial Ground (SWMU2) Monitoring

Water Quality Records for

Sample Date Range: 5/6/1993 - 1/10/2018

MW333

	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results						
Sample Date	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	U-234 pCi/L	U-235 pCi/L	U-238 pCi/L	Lab Sample ID
6/10/2002	420	< 50	< 50	< 50	< 50	< 1.57	< -2.59	< -15.7				C021610047
9/5/2002	330	< 50	< 50	< 50	< 50	< -0.977	< -0.125	< 8.51				C022480132
12/2/2002	530	< 25	< 25	< 25	< 25	< 1.7	< 0.462	< -6.2				C023370013
6/10/2003	550	< 25	< 25	< 25	< 25	< 1.08	< 1.1	< 12.4				C031620013
12/4/2003	440	< 25	< 25	< 25	< 25	< 0.213	< 2.21	< 0				C033380096
6/7/2004	750	< 50	< 50	< 50	< 50	< -0.231	< -0.683	< -0.384	< 30	< 2.2	< 0.35	C041590175
7/20/2004	430	< 10	< 10	< 10	< 10	< 1.44	< 1.43	< 2.73	< 0.198	< 0.00505	< 0.363	C042020116
12/30/2004	1100	< 50	< 50	< 50	< 50	< -0.0341	< 0.436	< 1.21				C043650022
6/14/2005	760	< 50	< 50	< 50	< 50	< 0.455	< 2.91	< 6.24	< 0.0723	< -0.0127	< 0.0115	C051650114
2/14/2006	1500	< 50	< 50	< 50	< 50	< -0.267	< 3.66	< 6.25				C060450089
2/14/2006	1300	< 50	< 50	< 50	< 50	< 2.43	< 3.19	< 5.18				C060450088
9/12/2006	1600	< 120	< 120	< 120	< 120	< 1.58	4.31	< -12.7				C062550163
3/19/2007	2700	< 100	< 100	< 100	< 100	4.34	8.66	< 13.8				C070780102
9/19/2007	1900	< 20	< 20	< 100	< 20	< 2.81	6.15	< 0.212				C072630092
3/11/2008	4100	< 25	< 25	< 120	< 25	< 1.75	16.9	19				C080710145
9/3/2008	2700	< 25	< 25	< 120	< 25	< 0.456	6.72	27.3				C082470086
2/9/2009	4500							22.7				C09040013001
5/7/2009	7100	< 250	< 50	< 250	< 50	< 2.35	22	39.9				C09127062003
7/28/2009	4500							21.1				C09209012001
9/25/2009	1400	< 50	< 50	< 50	< 50	< 0.535	17.7	21.3				C09268017001
1/26/2010	2800							38.1				C10026023004
3/8/2010	6700	< 50	< 50	< 50	< 50	< 0.795	24.7	38.6				C10067037002
7/9/2010	2700							< 10.3				C10190027002
9/8/2010	2500	< 50	< 50	< 50	< 50	< 1.48	10.6	18.7				C10251037004
1/4/2011	2800							< 15.6				C11005004006

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-749 Uranium Burial Ground (SWMU2) Monitoring

Water Quality Records for

Sample Date Range: 5/6/1993 - 1/10/2018

MW333

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results						Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	U-234 pCi/L	U-235 pCi/L	U-238 pCi/L	
5/11/2011	5200	< 100	< 20	< 20	< 20	< 2.14	13.1	< 16.3				C11131034002
7/28/2011	5800							23.4				C11209031004
1/20/2012	6300							33.7				C12020022002
7/26/2012	1900							< 17.2				C12208015003
1/22/2013	1800							18				C13022086003
5/15/2013	5900	< 250	< 50	< 50	< 50			34.7				C13135012003
8/6/2013	4500							45				C13219005002
1/8/2014	5800							44.4				C14008024002
7/23/2014	5980							40.1				353402002
1/26/2015	10200							70				365824003
6/3/2015	10700	< 200	< 200	< 200	< 200			61				374344009
7/11/2015	9380							85.7				377100003
1/25/2016	10400							93.9				390095003
7/5/2016	5780							72.8				401035003
1/23/2017	7400							91.9				414959003
5/24/2017	8420	< 200	< 200	< 200	< 200			111				424148010
7/17/2017	7350							122				428290001
1/8/2018	3190							65.1				441372003

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

C-749 Uranium Burial Ground (SWMU2) Monitoring

Water Quality Records for

Sample Date Range: 5/6/1993 - 1/10/2018

MW337

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results						Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	U-234 pCi/L	U-235 pCi/L	U-238 pCi/L	
10/4/1996	8.3				< 0.48							96M04622-3716
10/4/1996								14				96M04622-3760
10/4/1996									0.38		0.27	96M04622-3730
1/29/1997	10	< 5	< 5	< 5	< 5							970130-050
9/22/1997	38	< 5	< 5	< 5	< 5	3.8	21	26				970923-040
11/19/1997	41	< 5	< 5	< 5	< 5	0.9	22	21				971119-081
2/9/1998	48	< 5	< 5	< 5	< 5	< 1.3	18	26				C980420047
5/4/1998	34	< 5	< 5	< 5	< 5	< 4.4	37	36.8				C981250037
8/10/1998	58	< 5	< 5	< 5	< 5	< 0.6	35	55.1				C982220110
11/17/1998	61	< 5	< 5	< 5	< 5	3.06	37.83	69.2				C983210021
3/3/1999	110	< 25	< 25	< 25	< 25	< 1.91	< 2.49	62.71				C990620038
6/4/1999	47	< 5	< 5	< 5	< 5	< 0.4	48.8	73.5				C991580025
9/15/1999						< 0.8	48.9	72.4				C992580183
12/7/1999	44	< 5	< 5	< 5	< 5	4.34	69.36	77.7				C993410097
3/7/2000	44	< 5	< 5	< 5	< 5	< -0.43	79.03	84.8		< -9.63		C000680019
6/14/2000	75	< 5	< 5	< 5	< 5	< 1.02	97.07	117				C001670003
9/12/2000	44	< 5	< 5	< 5	< 5	< 3.09	112.58	129				C002560134
12/18/2000	50	< 5	< 5	< 5	< 5	< -0.451	75.1	124				C003540007
3/19/2001	90	< 5	< 5	< 5	< 5	< 1.05	81.1	147				C010780094
6/6/2001	97	< 5	< 5	< 5	< 5	< 0.921	97.6	98.5				C011570179
9/24/2001	75	< 5	< 5	< 5	< 5	< -2.29	97.2	175		< -8.42		C012680004
12/17/2001	150	< 10	< 10	< 10	< 10	4.96	103	158				C013510093
3/13/2002										< -7.31	< 0	C020720125
3/13/2002	240	< 25	< 25	< 25	< 25	< 4.6	68	91.3				C020720126
6/10/2002	320	< 25	< 25	< 25	< 25	< -1.91	43.3	55.1				C021610048

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C-749 Uranium Burial Ground (SWMU2) Monitoring

Water Quality Records for

Sample Date Range: 5/6/1993 - 1/10/2018

MW337

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results						Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	U-234 pCi/L	U-235 pCi/L	U-238 pCi/L	
9/5/2002	96	< 25	< 25	< 25	< 25	< 0.989	115	196				C022480133
12/2/2002	100	< 5	< 5	< 5	< 5	< 1.72	127	205				C023370011
6/9/2003	580	< 25	< 25	< 25	< 25	< 0.265	63.1	113				C031600083
12/4/2003	110	< 25	< 25	< 25	< 25	10.8	159	168				C033380097
6/8/2004	180	< 25	< 25	< 25	< 25	< -1.26	111	208	< 30	< 2.2	< 0.35	C041600042
7/20/2004	120	< 2	2.2	< 2	< 2	3.45	111	203	< 0.101	< -0.00296	< 0.275	C042020117
12/8/2004	140	< 10	< 10	< 10	< 10	< -2.1	129	195				C043430086
6/21/2005	180	< 10	< 10	< 10	< 10	4.73	113	177	< 0.059	< -0.0123	< 0.00534	C051720110
2/14/2006	780	< 25	< 25	< 25	< 25	< 0.0576	21.5	216				C060450090
9/12/2006	670	< 50	< 50	< 50	< 50	3.19	157	229				C062550177
3/19/2007	750	< 5	14	< 5	< 5	< 2.38	163	237				C070790063
9/19/2007	450	< 5	< 5	< 25	< 5	4.99	123	222				C072630052
3/6/2008	2000	< 10	< 10	< 50	< 10	4.24	173	224				C080670001
12/18/2008	640	< 10	< 10	< 10	< 10	< 1.52	97.5	282				C08353022001
2/10/2009	1600							256				C09041031001
5/11/2009	2300	< 25	< 25	< 25	< 25	< 1.82	177	205				C09131017003
7/28/2009	860							282				C09209006001
9/25/2009	500	< 10	< 10	< 10	< 10	4.01	196	284				C09268025002
1/27/2010	660							278				C10027031002
3/16/2010	790	< 50	< 10	< 50	< 10	5.77	191	298				C10075019002
7/14/2010	840							298				C10195017001
9/13/2010	900	< 10	< 10	< 10	< 10	< 1.14	155	271				C10256034001
1/3/2011	820							309				C11003029004
5/19/2011	1800	< 50	< 10	< 10	< 10	6.63	172	264				C11139019001
8/10/2011	1100							333				C11222050003

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C-749 Uranium Burial Ground (SWMU2) Monitoring

Water Quality Records for

Sample Date Range: 5/6/1993 - 1/10/2018

MW337

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results						Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	U-234 pCi/L	U-235 pCi/L	U-238 pCi/L	
8/10/2011	880							347				C11222050002
1/23/2012	1300							324				C12023024006
7/30/2012	810							294				C12212050002
7/30/2012	800							298				C12212050001
1/24/2013	840							281				C13024007001
6/11/2013	2100	< 20	< 20	< 20	< 20			213				C13162014003
8/26/2013	1600							219				C13238022001
1/13/2014	2000							231				C14013030001
7/24/2014	1160							336				353464001
1/27/2015	1990							298				365920001
6/11/2015	1570	0.8	< 1	< 1	3.37			254				374981003
7/20/2015	1430							330				377570001
1/27/2016	1230							132				390195001
7/12/2016	1310							277				401419001
1/24/2017	1370							253				414959004
5/25/2017	1020	< 20	< 20	< 20	< 20			179				424148011
7/17/2017	1320							312				428290004
1/10/2018	1230							231				441372004

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C-749 Uranium Burial Ground (SWMU2) Monitoring

Water Quality Records for

Sample Date Range: 5/6/1993 - 1/10/2018

MW338

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results						Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	U-234 pCi/L	U-235 pCi/L	U-238 pCi/L	
10/4/1996								-0.82				96M04621-3759
10/4/1996									0.56		0.67	96M04621-3729
10/4/1996	0.7				< 0.48							96M04621-3715
1/29/1997	< 1	< 5	< 5	< 5	< 5							970130-049
9/22/1997	< 1	< 5	< 5	< 5	< 5	-1.1	3	8				970923-041
11/19/1997	< 1	< 5	< 5	< 5	< 5	0.8	2	-10				971119-082
2/9/1998	< 1	< 5	< 5	< 5	< 5	< 4.2	< 5	< 0				C980420048
5/4/1998	2	< 5	< 5	< 5	< 5	< 0.2	12	< -0.6				C981250038
8/6/1998	< 1	< 5	< 5	< 5	< 5	< -1.9	< 3	< 0.2				C982180120
11/17/1998	< 1	< 5	< 5	< 5	< 5	< 1.15	< 2.58	< -9.2				C983210022
3/3/1999	5	< 5	< 5	< 5	< 5	< 0.35	< 1.7	19.04				C990620039
6/3/1999	1	< 5	< 5	< 5	< 5	< 0.96	19.31	< -0.869				C991540178
9/15/1999						< 1.1		< 8.63				C992580184
12/7/1999	< 1	< 5	< 5	< 5	< 5	< 1.51	< 2.91	< -2.48				C993410096
3/7/2000	< 1	< 5	< 5	< 5	< 5	< 0	5.93	< -4.97		< -11.6		C000680018
6/14/2000	24	< 5	< 5	< 5	< 5	< 1.83	< -2.5	< -9.54				C001670001
9/12/2000	21	< 5	< 5	< 5	< 5	< 2.6	8.27	< 7.94				C002560133
12/18/2000	< 1	< 5	< 5	< 5	< 5	< 3.14	5.38	< 7.73				C003540008
3/19/2001	5	< 5	< 5	< 5	< 5	< -0.418	< 0.657	< 0.481				C010780095
6/6/2001	8	< 5	< 5	< 5	< 5	< 0.866	< 2.9	< -3.53				C011570180
9/24/2001	3	< 5	< 5	< 5	< 5	< -0.18	< 2.92	< -7.31		< -4.82		C012680005
12/17/2001	24	< 5	< 5	< 5	< 5	< 1.14	< 0.738	< -20.6				C013510094
3/13/2002										< 0		C020720127
3/13/2002	78	< 5	< 5	< 5	< 5	< -0.652	< 4	< 1.2				C020720128
6/10/2002	130	< 10	< 10	< 10	< 10	< 1.08	< 5.59	< 1.54				C021610049

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C-749 Uranium Burial Ground (SWMU2) Monitoring

Water Quality Records for

Sample Date Range: 5/6/1993 - 1/10/2018

MW338

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results						Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	U-234 pCi/L	U-235 pCi/L	U-238 pCi/L	
9/5/2002	11	< 5	< 5	< 5	< 5	< 0.0927	< 2.41	< 2.99				C022480134
12/3/2002	8	< 5	< 5	< 5	< 5	< 0.447	< 3.19	< 13.4				C023370048
6/9/2003	140	< 10	< 10	< 10	< 10	< -0.525	8.03	18.8				C031600084
12/4/2003	9	< 5	< 5	< 5	< 5	< 1.42	6.17	< 0				C033380098
6/8/2004	22	< 5	< 5	< 5	< 5	< -1.41	< 0.409	< 9.88	< 30	< 2.2	< 0.35	C041600043
7/20/2004	4.6	< 1	< 1	< 1	< 1	< 0.125	< 2.32	< -0.111	< 0.169	< 0.0261	< 0.423	C042020118
12/8/2004	13	< 5	< 5	< 5	< 5	< 0.742	< 3.48	< 5.2				C043430088
6/16/2005	11	< 5	< 5	< 5	< 5	< 1.43	< 2.46	< 12.4	< 0.0101	< -0.0133	< -0.0335	C051670015
2/14/2006	82	< 5	< 5	< 5	< 5	< -0.143	6.12	< 3.55				C060450091
9/12/2006	25	< 5	< 5	< 5	< 5	< 0.511	7.01	< -7.99				C062550178
3/19/2007	130	< 5	< 5	< 5	< 5	< 1.6	18.3	29.4				C070790064
9/19/2007	44	< 1	< 1	< 5	< 1	< 1.36	7.27	18.2				C072630053
9/19/2007	44	< 1	< 1	< 5	< 1	< 2.72	9.39	< 12.3				C072630054
3/6/2008	520	< 1	< 1	< 5	< 1	< 2.16	60.8	74.6				C080670002
9/2/2008	33	< 1	< 1	< 5	< 1	< 2.39	7.6	< 9.04				C082460126
2/9/2009	220							35.1				C09040021003
5/7/2009	690	< 25	< 5	< 25	< 5	< -0.167	64.6	83.5				C09127062004
7/28/2009	80							26.3				C09209006002
9/25/2009	40	< 1	< 1	< 1	< 1	< 3.07	< 3.87	< 3.76				C09268017003
1/27/2010	89							22.4				C10027031001
3/16/2010	36	< 10	< 2	< 10	< 2	< 1.76	8.45	< 10.3				C10075019003
7/14/2010	14							< -3.51				C10195017002
7/14/2010	14							< 0.779				C10195017003
9/13/2010	14	< 1	< 1	< 1	< 1	< 1.25	< 3.53	< 7.51				C10256034002
1/3/2011	39							< 9.16				C11003029005

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C-749 Uranium Burial Ground (SWMU2) Monitoring

Water Quality Records for

Sample Date Range: 5/6/1993 - 1/10/2018

MW338

Sample Date	Organic Laboratory Analysis Results					Radiological Laboratory Analysis Results						Lab Sample ID
	TCE µg/L	1,1-DCE µg/L	1,1-DCA µg/L	1,2-DCA µg/L	trans-1,2-DCE µg/L	Alpha Activity pCi/L	Beta Activity pCi/L	Tc-99 pCi/L	U-234 pCi/L	U-235 pCi/L	U-238 pCi/L	
5/19/2011	1300	< 5	< 1	< 1	< 1	< 1.41	94.2	158				C11139019002
8/10/2011	200							32.7				C11222050004
1/23/2012	170							18				C12023024007
7/30/2012	44							< 2.01				C12212050003
1/24/2013	54							< 8.03				C13024007002
6/11/2013	1100	< 20	< 20	< 20	< 20			214				C13162014004
8/26/2013	900							197				C13238022002
1/13/2014	100							69.4				C14013030002
8/20/2014								44.4				355247001
8/25/2014	133											355531001
1/27/2015	404							32.6				365920002
6/11/2015	963	0.71	< 1	< 1	0.74			89.3				374981004
7/20/2015	193							< 16.7				377570002
1/27/2016	1670							195				390195002
7/12/2016	211							< 6.49				401419002
1/24/2017	267							19				414959005
5/25/2017	1540	< 40	< 40	< 40	< 40			211				424148012
7/17/2017	335							35.1				428290005
1/10/2018	288							< 12.9				441372005

NOTE: This report does not include data that has been rejected during data assessment and/or data validation.

APPENDIX G

NORTHEAST PLUME OPTIMIZATION HYDRAULIC MONITORING PUMPING TEST

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CONTENTS

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FIGURES

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TABLES

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G.1. INTRODUCTION

The U.S. Department of Energy (DOE) installed new extraction wells, monitoring wells, and piezometers for the Northeast Plume Optimization Project during the period of July 12, 2016, through August 23, 2017 (Figure G.1). Construction of the treatment system for the Northeast Plume Optimization Project was completed, and testing and production began on October 10, 2017.

A requirement of both the *Remedial Action Work Plan for Optimization of the Northeast Plume Interim Remedial Action at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/LX/07-1280&D2/R3, (DOE 2016) and the *Operation and Maintenance Plan for the Northeast Plume Containment System Interim Remedial Action at the Paducah Gaseous Diffusion Plant*, DOE/OR/07-1535&D3/R6, (DOE 2017a) is a hydraulic monitoring pumping test of the extraction well (EW) field system. The assessment follows methods described in *A Systematic Approach for Evaluation of Capture Zones at Pump and Treat Systems, Final Project Report*, EPA 600/R-08/003, January 2008, to determine aquifer properties, drawdown, and capture zone of the new extraction wells. Ultimately, the hydraulic monitoring pumping test is intended to support the determination of the optimal pumping rates for EW234 and EW235 to maximize trichloroethene (TCE) mass removal and effectiveness of the TCE plume capture zone.

DOE began the Northeast Plume hydraulic monitoring pumping tests of EW234 and EW235 during the period of February 15, 2018, through April 2, 2018. During the tests, the extraction wells were pumped at the maximum design pumping rates (150 gpm in EW234 and 125 gpm in EW235); they were pumped separately over two periods and pumped together over a third period.

Water level measurements during the hydraulic monitoring pumping test, as required by the Remedial Action Work Plan (DOE 2016), indicated that the cone of depression associated with the extraction wells may extend to the west to the C-400 Cleaning Building, indicating a westward shift in the groundwater divide that previously had occurred east of the C-400 Cleaning Building (before the Northeast Plume Optimization program). Consequently, DOE performed an additional hydraulic test to assess the impact of reduced pumping rate scenarios for each of the extraction wells. The additional test was performed between April 19, 2018, and May 10, 2018.

G.2. CONCLUSIONS

The primary data used in this assessment are (1) Regional Gravel Aquifer (RGA) water level measurements, converted to elevations and extraction well rates from pumping tests of EW234 and EW235 Analyses of these data support the following conclusions.

These are conclusions regarding capture zone development, gradient manipulation, and plume trajectory.

- At the maximum design pumping rates, the combined capture zone of EW234 and EW235 extends beyond the intended reach in the area of the groundwater divide east of the C-400 Cleaning Building area and results in undesired dissolved contaminant migration from the C-400 Cleaning Building, at issue with *Operation and Maintenance Plan for the Northeast Plume Containment System Interim Remedial Action at the Paducah Gaseous Diffusion Plant*, DOE/OR/07-1535&D3/R6, (DOE 2017a). Operating at the maximum design pumping rates, EW234 and EW235 capture the Northwest Plume beneath the C-400 Cleaning Building.

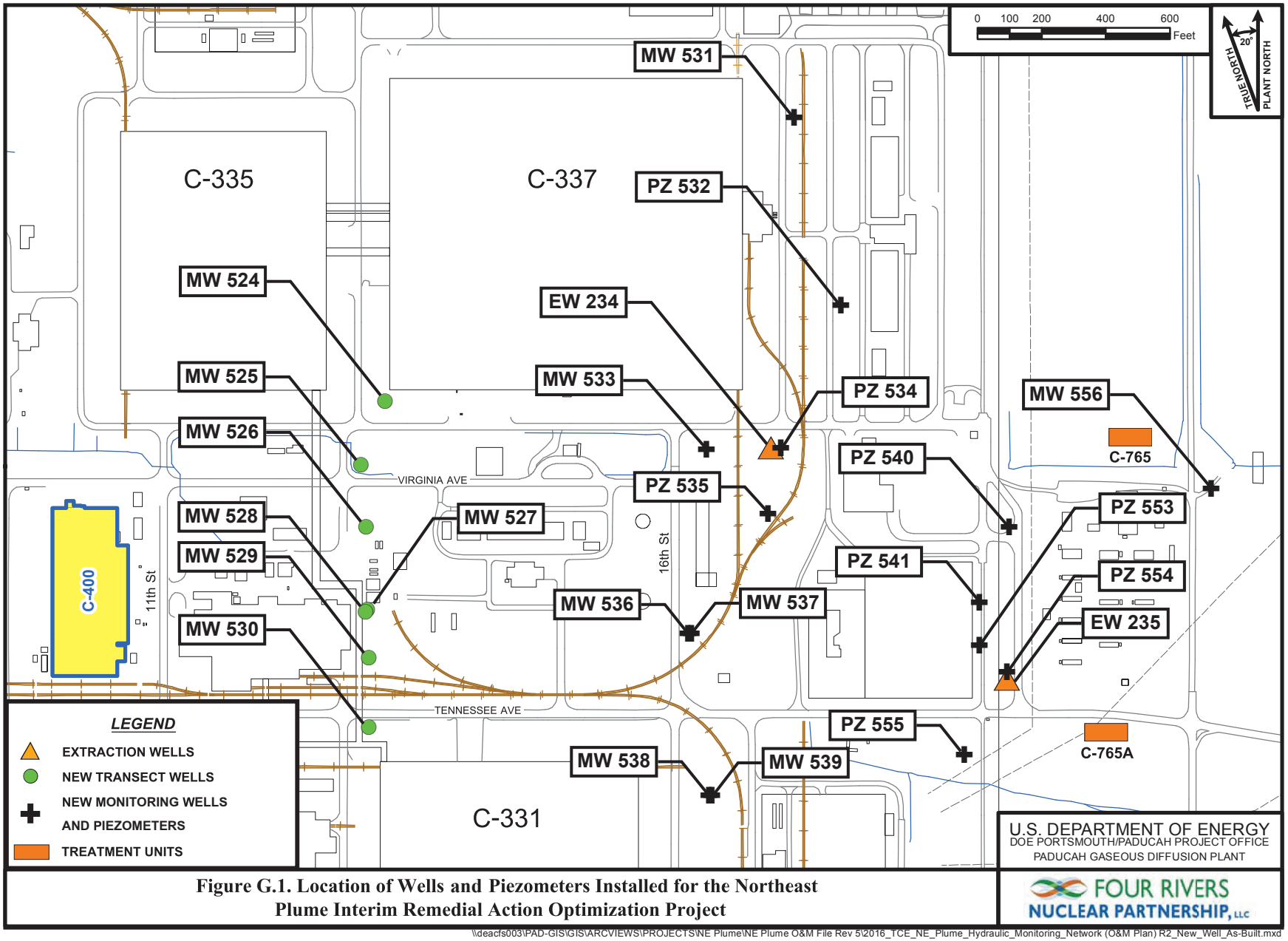

Figure G.1. Location of Wells and Piezometers Installed for the Northeast Plume Interim Remedial Action Optimization Project

\\deacfs003\PAD-GIS\GIS\ARCVIEWS\PROJECTS\NE Plume\NE Plume O&M File Rev 5\2016_TCE_NE_Plume_Hydraulic_Monitoring_Network (O&M Plan) R2_New_Well_As-Built.mxd
9/14/2017

- Operating at the minimum design pumping rates sufficiently lessens the hydraulic gradient in the C-400 area such that the Northwest Plume extraction wells regain capture of the Northwest Plume.

- Under both maximum and minimum design pumping rates, EW234 and EW235 control future downgradient spread of the Northeast Plume.

This conclusion was reached regarding external hydraulic stresses.

- The design pumping rates for EW234 and EW235 are sufficient to control the Northeast Plume under current and foreseeable external hydraulic stresses.

These conclusions were reached regarding impacts on adjacent plumes.

- Under current external hydraulic stresses, the maximum design pumping rates interfere with the Northwest Plume pump and treat action.

- Operation of EW234 and EW235, at minimum pump rates, is sufficient to control the Northeast Plume.

G.3. HYDRAULIC TEST

As outlined in *Operation and Maintenance Plan for the Northeast Plume Containment System, Interim Remedial Acton at the Paducah Gaseous Diffusion Plant, Paducah, Kentucky*, DOE/OR/07-1535&D3/R6 (DOE 2017), the hydraulic test consisted of Phases I through Phase VI as follows:

- Phase I: shutdown of EW234 and EW235, the extraction wells, for a minimum of 4 days
- Phase II: EW235 pumping test for a minimum of 8 days
- Phase III: EW235 shutdown for a minimum of 4 days
- Phase IV: EW234 pumping test for a minimum of 8 days
- Phase V: EW234 shutdown for a minimum of 4 days
- Phase VI: restart of both EW234 and EW235

Table G.1 summarizes the schedule of plume operations and water level measurements for the hydraulic test.

Water level measurements for the hydraulic test span the time period of February 15, 2018, to April 2, 2018. A total of 11.86 inches of rain occurred during this period, which was a significant rainfall event in 2018. In response to significantly increased regional rainfall, the Ohio River near the Paducah Site rose to a significant flood stage between February 21, 2018, and March 17, 2018. The impact of rainfall on the RGA is moderated by the Upper Continental Recharge System (UCRS); no influence of the rainfall events is evident in the RGA water levels during the hydraulic test.

The February/March 2018 Ohio River flood appears to have had a significant impact on the RGA flow system. The prolonged flood with river stage above RGA water levels in the plant area (Figure G.2) effectively prevented the typical pattern of RGA discharge to the Ohio River. A consequence is regional water levels rose in response to continuing recharge throughout the hydraulic test. [Water level measurements in background wells to the hydraulic test (MW200 and MW527) provide data to correct for the regional trend: see *Data Preparation* in Section G.3.]

Table G.1. Schedule for the Hydraulic Test

HYDRAULIC TEST PHASE	DAY	DATE	PLUME Ops	MANUAL WLs	DATA LOGGER DOWNLOAD
Pre-shutdown Monitoring	THU	2/15/2018	Data Logger Start		
	FRI	2/16/2018			
	SAT	2/17/2018			
	SUN	2/18/2018		SYNOPTIC	X
Phase I - Shutdown of NEPCS Operation	MON	2/19/2018	Shutdown both extraction wells @ 06:50	X	
	TUE	2/20/2018		X	
	WED	2/21/2018		X	
	THU	2/22/2018	C-360 CAAS OUTAGE		
	FRI	2/23/2018	WEATHER DELAY	X	
	SAT	2/24/2018	WEATHER DELAY		
	SUN	2/25/2018	WEATHER DELAY	SYNOPTIC	X
Phase II - EW235 Pumping Test	MON	2/26/2018	Start EW235 @ 07:06	X	
	TUE	2/27/2018		X	
	WED	2/28/2018		X	
	THU	3/1/2018		X	
	FRI	3/2/2018			
	SAT	3/3/2018		X	
	SUN	3/4/2018			
	MON	3/5/2018		SYNOPTIC	X
Phase III - EW235 Shutdown Test	TUE	3/6/2018	Shutdown EW235 @ 07:01	X	
	WED	3/7/2018		X	
	THU	3/8/2018		X	
	FRI	3/9/2018		SYNOPTIC	X
Phase IV - EW234 Pumping Test	SAT	3/10/2018	Start EW234 @ 07:02	X	
	SUN	3/11/2018		X	
	MON	3/12/2018		X	
	TUE	3/13/2018		X	
	WED	3/14/2018			
	THU	3/15/2018		X	
	FRI	3/16/2018			
	SAT	3/17/2018		SYNOPTIC	X
Phase V - EW234 Shutdown Test	SUN	3/18/2018	Shutdown EW234 @ 07:00	X	
	MON	3/19/2018		X	
	TUE	3/20/2018		X	
	WED	3/21/2018		SYNOPTIC	X
Phase VI - Full NEPCS Restart	THU	3/22/2018	Restart both extraction wells @ 07:00	X	
	FRI	3/23/2018		X	
	SAT	3/24/2018		X	
	SUN	3/25/2018		X	
	MON	3/26/2018			
	TUE	3/27/2018		X	
	WED	3/28/2018			
	THU	3/29/2018			
	FRI	3/30/2018			
	SAT	3/31/2018			
	SUN	4/1/2018			
	MON	4/2/2018	End of Hydraulic Test 09:32	SYNOPTIC	X

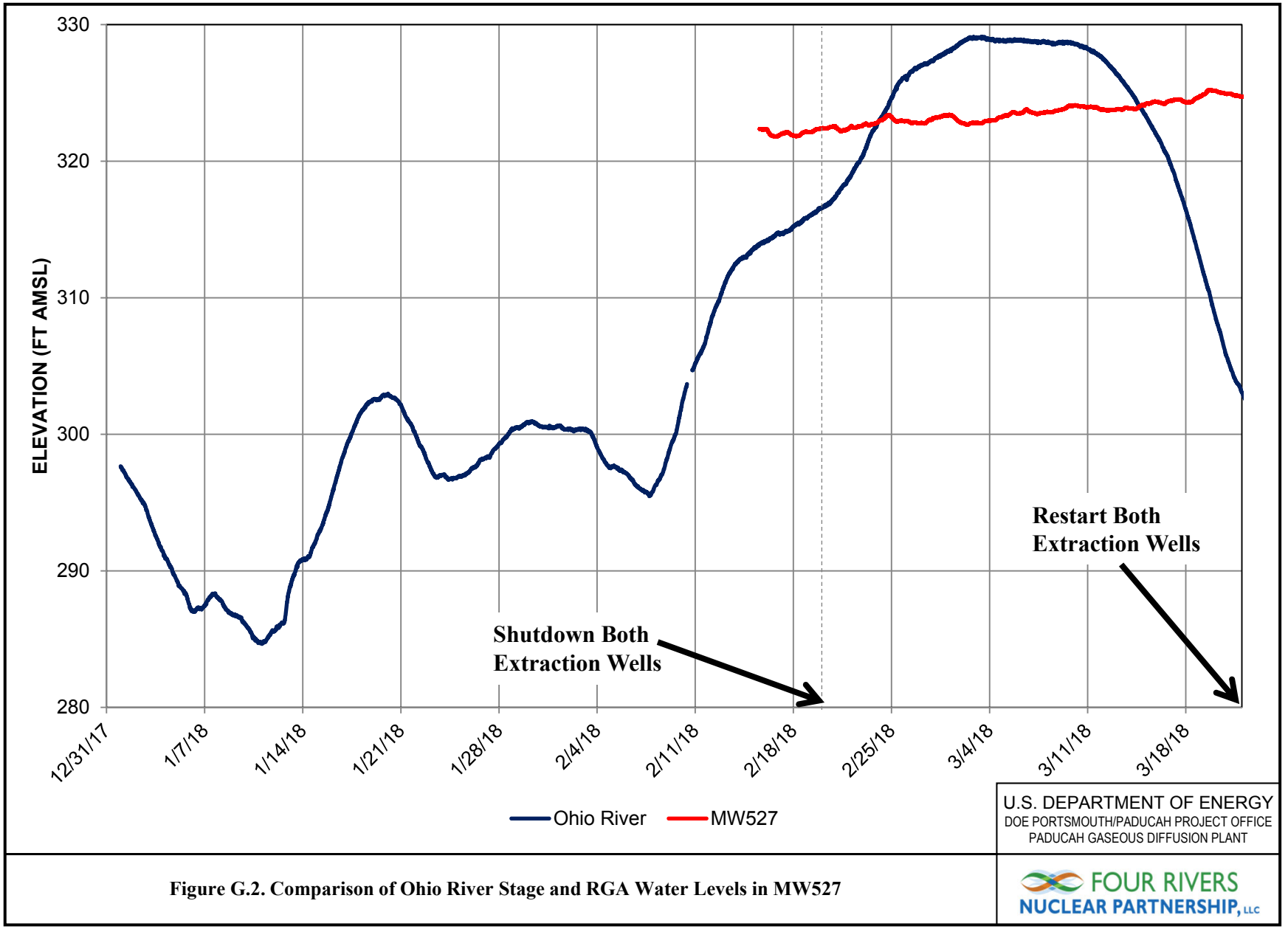

Figure G.2. Comparison of Ohio River Stage and RGA Water Levels in MW527

The hydraulic test included water level measurements nearly continuously in eight monitoring wells and piezometers and the two extraction wells using the *In-Situ Inc.*, LevelTROLL 500 pressure transducer/data logger assemblies with a 30 PSIG/69 ft water level range[1] set to record measurements linearly on 1-minute intervals throughout the duration of the test (Table G.2). These records document water level trends in distal background wells and in the vicinity of the extraction wells before, during, and following the hydraulic assessment. Manual water level measurements were made in these wells and in piezometers and an additional +30 wells and piezometers 32 times (Table G.3) to document areal water level trends and to validate the pressure transducer/data logger records. Figure G.3 shows the location of the wells and piezometers required for the hydraulic test.

Table G.2. Northeast Plume Optimization Hydraulic Test Monitoring Wells and Piezometers

Monitoring Well ID	Completion Interval[a]	Screened Interval (ft above mean sea level)	Continuous Logger/ Manual Measurements for Extraction Well System Test	Relative Wellfield Location
PZ110	URGA	312.4/302.4	Manual	Distant Observation Well
MW145	URGA	293.1/283.1		
MW155	LRGA	292.1/287.1		
MW163	LRGA	289.8/284.8		
MW165A	URGA	315.2/310.2		
MW205	URGA	312.2/307.2		
MW255	LRGA	292.5/287.8		
MW256	LRGA	281.9/277.2		
MW258	LRGA	292.0/287.3		
MW260	LRGA	289.8/285.1		
MW288	LRGA	290.0/280.0		
MW292	LRGA	286.1/276.1		
MW341	MRGA	302.0/292.0		
MW355	LRGA	290.4/285.4		
MW480	LRGA	294.1/284.1		
MW495	LRGA	278.6/268.6		
MW496	LRGA	277.6/267.6		
MW524	MRGA	308.7/298.7		
MW525	MRGA	310.6/300.6		
MW526	MRGA	311.8/301.8		
MW528[b]	LRGA	301.4/291.4		
MW529	LRGA	298.9/288.9		
MW530	LRGA	295.1/285.1		
MW531	LRGA	277.3/267.3		
PZ532	LRGA	295.7/285.7		
MW533	LRGA	292.0/282.0	Continuous	Near-field Well to EW234
PZ534	LRGA	293.7/283.7		
PZ535	LRGA	290.9/280.9		
MW537	LRGA	287.1/277.1	Manual	Near-field Well to EW234
MW539	LRGA	291.4/281.4		Near-field Well to EW235
PZ540	LRGA	289.5/279.5		Near-field Well to EW235

[1] The LevelTROLL 500 has an accuracy of ± 0.005% of full scale (0.0345 ft for the 30 PSIG transducer) and a resolution of ± 0.0005% of full scale (0.00345 ft for the 30 PSIG transducer).

Table G.2. Northeast Plume Optimization Hydraulic Test Monitoring Wells and Piezometers (Continued)

Monitoring Well ID	Completion Interval[a]	Screened Interval (ft above mean sea level)	Continuous Logger/ Manual Measurements for Extraction Well System Test	Relative Wellfield Location
PZ541	LRGA	287.0/277.0	Continuous	Near-field Well to EW235
PZ553	LRGA	289.2/279.2		
PZ554	LRGA	289.2/279.2		
PZ555	LRGA	290.1/280.1	Manual	Distant Observation Well
MW556	LRGA	288.8/278.8		
Background Monitoring Wells				
MW200	MRGA	304.6/299.6	Continuous	Distant Observation Well
MW527	MRGA	311.4/301.6	Continuous	Distant Observation Well

[a] Definitions of completion intervals are as follows:
URGA = Upper RGA
MRGA = Middle RGA
LRGA = Lower RGA

[b] MW527 and MW528 are collocated wells. Hydraulic monitoring for the area of these collocated wells is provided by MW528.

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Table G.3. Manual Water Level Measurements of the Initial Hydraulic Test

Station	Plant Coordinates		RGA Water Elevation (ft amsl)															
	X	Y	2/18/2018	2/19/2018	2/20/2018	2/21/2018	2/23/2018	2/25/2018	2/26/2018	2/27/2018	2/28/2018	3/1/2018	3/3/2018	3/5/2018	3/6/2018	3/7/2018	3/8/2018	3/9/2018
MW71	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW145	-769.36	384.01	321.935	322.24	322.45	322.22	322.55	322.82	322.76	322.70	323.25	323.21	322.79	323.41	323.65	323.57	323.61	323.86
MW155	-4024.61	-1669.36	322.069	322.39	322.57	322.35	322.73	323.01	322.91	322.89	323.36	323.34	322.90	323.45	323.64	323.56	323.65	323.90
MW163	-2040.65	-1400.72	321.428	322.19	322.52	322.30	322.68	322.96	322.74	322.66	323.11	323.09	322.68	323.20	323.55	323.52	323.64	323.91
MW165A	-3152.67	881.19	321.988	322.27	322.31	322.00	322.3	322.58	322.49	322.54	323.09	323.08	322.56	323.16	323.43	323.22	323.23	323.46
MW205	-4,359.66	-364.19	321.869	322.15	322.15	321.86	322.15	322.47	322.36	322.42	322.95	322.95	322.53	323.11	323.41	323.24	323.30	323.54
MW255	-1510.2	-2230.01	321.338	322.17	322.52	322.34	322.69	322.88	322.47	322.38	322.85	322.85	322.38	322.88	323.56	323.53	323.51	323.87
MW256	-1596.27	-1896.29	321.238	322.28	322.56	322.33	322.72	322.95	322.47	322.36	322.79	322.86	322.32	322.91	323.57	323.57	323.68	323.94
MW258	-745.05	-1643.25	321.395	322.18	322.57	322.34	322.71	323.00	322.51	322.40	322.9	322.88	322.40	323.02	323.65	323.64	323.65	323.95
MW260	-1981.91	-785.46	321.408	322.12	322.41	322.13	322.45	322.78	322.66	322.62	323.05	322.97	322.63	323.24	323.44	323.38	323.48	323.76
MW288	1564.98	679.55	322.010	322.39	322.49	322.27	322.59	322.91	322.80	322.82	322.29	323.32	322.94	323.54	323.85	323.76	323.79	324.04
MW292	924.15	33.58	321.990	322.3	322.45	322.26	322.55	322.86	322.73	322.78	322.25	323.31	322.91	323.49	323.8	323.72	323.77	324.03
MW341	-3939.12	-1061.05	321.979	322.27	322.36	322.09	322.45	322.63	322.60	322.66	323.13	323.07	322.69	323.24	323.45	323.40	323.35	323.58
MW355	-4,327.87	761.71	321.889	322.18	322.18	321.86	322.14	322.47	322.36	322.39	322.94	322.96	322.52	323.13	323.41	323.25	323.28	323.53
MW480	-749.11	-575.03	321.765	322.16	322.46	322.21	322.59	322.86	322.68	322.63	323.13	323.12	322.68	323.29	323.60	323.54	323.61	323.85
MW495	-769.13	-43.41	322.055	322.36	322.64	322.37	322.72	322.99	322.88	322.85	323.36	323.35	322.89	323.49	323.82	323.69	323.75	324.02
MW496	-763.38	891.96	321.925	322.19	322.38	322.13	322.49	322.71	322.65	322.66	323.15	323.17	322.71	323.36	323.61	323.60	323.53	323.77
MW524	-3314.77	-874.953	321.839	322.12	322.29	321.99	322.36	322.58	322.58	322.63	323.06	322.98	322.69	323.17	323.35	323.22	323.33	323.56
MW525	-3389.27	-1075.11	321.784	322.03	322.22	321.93	322.33	322.55	322.53	322.56	322.98	322.93	322.61	323.12	323.29	323.13	323.24	323.50
MW526	-3373.911	-1266.96	321.869	322.17	322.40	322.10	322.53	322.75	322.73	322.72	323.18	323.11	322.74	323.26	323.47	323.35	323.44	323.68
MW528	-3375.712	-1531.836	321.889	322.23	322.50	322.22	322.64	322.93	322.83	322.79	323.25	323.20	322.79	323.34	323.56	323.49	323.55	323.86
MW529	-3364.049	-1675.126	321.879	322.2	322.50	322.24	322.63	322.91	322.86	322.77	323.25	323.20	322.77	323.31	323.56	323.50	323.57	323.84
MW530	-3364.71	-1893.375	321.909	322.26	322.54	322.29	322.67	322.97	322.89	322.80	323.29	323.24	322.82	323.38	323.61	323.54	323.62	323.90
MW531	-2038.944	9.633	321.948	322.3	322.48	322.15	322.52	322.80	322.73	322.73	323.21	323.19	322.77	323.39	323.57	323.44	323.52	323.74
MW537	-2359.667	-1599.48	321.619	322.19	322.52	322.25	322.65	322.92	322.79	322.69	323.18	323.11	322.69	323.26	323.53	323.54	323.62	323.87
MW539	-2295.121	-2102.562	321.718	322.24	322.56	322.31	322.69	322.97	322.80	322.70	323.19	323.16	322.70	323.29	323.60	323.56	323.65	323.89
PZ110	-3741.9	-3166.7	321.569	321.83	322.16	321.95	322.29	322.57	322.96	322.88	323.37	323.31	322.87	323.46	323.67	323.60	323.68	323.94
PZ532	-1892.665	-576.08	321.688	322.19	322.44	322.21	322.54	322.78	322.74	322.69	323.15	323.09	322.73	323.32	323.54	323.42	323.51	323.78
PZ540	-1367.833	-1266.184	321.418	322.17	322.53	322.32	322.65	322.95	322.62	322.52	322.97	322.98	322.52	323.14	323.55	323.56	323.65	323.92
PZ555	-1508.32	-1976.65	321.338	322.24	322.58	322.36	322.79	323.05	322.48	322.36	322.82	322.79	322.38	322.89	323.63	323.60	323.74	324.00
MW556	-738.347	-1146.84	321.585	322.13	322.52	322.30	322.67	322.90	322.62	322.55	323.02	323.00	322.58	323.16	323.63	323.59	323.66	325.90
EW234	-2110.675	-1019.85	318.711					322.99						322.71*				324.00
EW235	-1375.348	-1740.887	307.881					323.04						309.50				324.07
MW200	-4823.68	4443.4	322.271					323.01						324.57				325.35
MW527	-3369.59	-1525.322	321.874					322.93						323.34				323.84
MW533	-2312.445	-1026.16	321.349					322.80						323.21				323.78
PZ534	-2080.02	-1020.02	320.869					322.81						323.12				323.82
PZ535	-2119.753	-1224.765	321.339					322.83						323.20				323.84
PZ541	-1460.671	-1500.544	321.268					322.97						322.95				323.91
PZ553	-1460.861	-1635.596	321.158					322.99						322.81				323.92
PZ554	-1374.82	-1719.248	317.775					322.71*						319.40				323.95*

*Data logger/pressure transducer assembly measurement.
Shading indicates that no measurement is available.

Table G.3. Manual Water Level Measurements of the Initial Hydraulic Test (Continued)

Station	Plant Coordinate		RGA Water Elevation (ft amsl)															
	X	Y	3/10/2018	3/11/2018	3/12/2018	3/13/2018	3/15/2018	3/17/2018	3/18/2018	3/19/2018	3/20/2018	3/21/2018	3/22/2018	3/23/2018	3/24/2018	3/25/2018	3/27/2018	4/2/2018
MW71	NA	NA	NA	NA	NA	324.11	324.50	324.80	324.60	325.19	325.25	325.08	325.60	324.94	325.37	325.10	325.15	325.66
MW145	-769.36	384.01	324.01	324.00	323.84	323.98	324.35	324.67	324.55	325.09	325.15	324.98	325.37	324.72	325.21	324.96	324.99	325.46
MW155	-4024.61	-1669.36	324.11	324.07	323.90	323.96	324.38	324.68	324.51	324.95	325.13	324.96	325.49	324.81	325.23	324.94	325.00	325.49
MW163	-2040.65	-1400.72	323.86	323.69	323.52	323.61	323.99	324.29	324.35	325.03	325.10	324.96	325.04	324.23	324.63	324.30	324.41	324.96
MW165A	-3152.67	881.19	323.69	323.74	323.53	323.57	324.05	324.34	324.14	324.64	324.69	324.44	324.90	324.47	324.97	324.68	324.79	325.24
MW205	-4,359.66	-364.19	323.76	323.83	323.68	323.77	324.25	324.57	324.42	324.87	324.94	324.73	325.21	324.74	325.25	324.97	325.05	325.45
MW255	-1510.2	-2230.01	324.02	323.82	323.74	323.76	324.19	324.46	324.42	325.08	325.14	324.93	324.94	324.14	324.54	324.20	324.28	324.87
MW256	-1596.27	-1896.29	324.03	323.88	323.74	323.75	324.19	324.47	324.42	325.07	325.12	324.94	324.88	324.12	324.49	324.21	324.14	324.79
MW258	-745.05	-1643.25	324.07	323.98	323.75	323.87	324.29	324.59	324.49	325.11	325.19	325.04	325.02	324.22	324.64	324.35	324.39	325.09
MW260	-1981.91	-785.46	323.64	323.50	323.37	323.41	323.80	324.05	324.17	324.84	324.74	324.75	324.92	324.17	324.56	324.28	324.37	324.90
MW288	1564.98	679.55	324.26	324.32	324.13	324.27	324.71	325.08	324.98	325.46	325.53	325.33	325.75	325.17	325.67	325.36	325.39	325.86
MW292	924.15	33.58	324.2	324.26	324.02	324.21	324.61	324.97	324.79	325.35	325.41	325.22	325.60	325.02	325.50	325.27	325.29	325.76
MW341	-3939.12	-1061.05	323.81	323.80	323.62	323.75	324.16	324.43	324.28	324.76	324.83	324.66	325.16	324.63	325.07	324.78	324.93	325.33
MW355	-4,327.87	761.71	323.74	323.82	323.65	323.76	324.24	324.61	324.41	324.87	324.96	324.74	325.16	324.72	325.25	324.96	325.08	325.48
MW480	-749.11	-575.03	324.03	324.00	323.76	323.91	324.31	324.63	324.46	325.08	325.13	324.98	325.31	324.57	325.05	324.76	324.82	325.32
MW495	-769.13	-43.41	324.20	324.20	323.98	324.11	324.51	324.83	324.67	325.24	325.29	325.16	325.52	324.86	325.35	325.05	325.12	325.59
MW496	-763.38	891.96	323.97	324.00	323.79	323.94	324.38	324.67	324.53	325.05	325.11	324.96	325.33	324.77	325.26	324.96	325.00	325.43
MW524	-3314.77	-874.953	323.73	323.71	323.55	323.63	324.02	324.26	324.15	324.65	324.70	324.59	325.14	324.59	324.96	324.62	324.74	325.17
MW525	-3389.27	-1075.11	323.65	323.64	323.48	323.59	323.98	324.21	324.06	324.60	324.63	324.49	325.07	324.52	324.91	324.55	324.68	325.11
MW526	-3373.911	-1266.96	323.87	323.81	323.44	NA	324.15	324.37	324.24	324.80	324.86	324.70	325.20	324.63	325.02	324.66	324.79	325.18
MW528	-3375.712	-1531.836	324.03	323.95	323.74	NA	324.25	324.52	324.36	324.96	325.03	324.86	325.32	324.66	325.06	324.70	324.83	325.33
MW529	-3364.049	-1675.126	324.01	323.96	323.75	NA	324.27	324.51	324.35	324.99	325.06	324.90	325.32	324.66	325.07	324.72	324.83	325.33
MW530	-3364.71	-1893.375	324.08	323.99	323.78	NA	324.31	324.58	324.40	325.02	325.09	324.92	325.37	324.70	325.10	324.74	324.86	325.36
MW531	-2038.944	9.633	323.92	323.89	323.72	323.83	324.23	324.53	324.37	324.92	324.99	324.81	325.27	324.68	325.11	324.82	324.90	325.38
MW537	-2359.667	-1599.48	323.97	323.80	323.63	323.69	324.13	324.40	324.36	325.00	325.08	324.88	325.16	324.42	324.84	324.47	324.58	325.10
MW539	-2295.121	-2102.562	324.09	323.95	323.77	NA	324.29	324.54	324.41	325.08	325.15	324.95	325.29	324.54	324.93	324.59	324.69	325.21
PZ110	-3741.9	-3166.7	324.14	324.07	323.85	323.94	324.39	324.65	324.47	325.08	325.18	324.96	325.48	324.78	325.19	324.86	324.96	325.46
PZ532	-1892.665	-576.08	323.92	323.72	323.52	323.67	324.05	324.32	324.28	324.91	324.98	324.78	325.15	324.46	324.83	324.55	324.60	324.12
PZ540	-1367.833	-1266.184	324.02	323.87	323.66	323.76	324.19	324.47	324.41	325.09	325.15	324.95	325.06	324.25	324.67	324.35	324.44	324.99
PZ555	-1508.32	-1976.65	324.09	323.96	323.72	323.85	324.27	324.55	324.46	325.10	325.18	325.05	324.92	324.13	324.55	324.24	324.32	324.84
MW556	-738.347	-1146.84	324.05	323.99	323.76	323.89	324.29	324.61	324.48	325.13	325.17	325.04	325.20	324.39	324.86	324.57	324.61	325.17
EW234	-2110.675	-1019.85						321.50				325.09						322.21
EW235	-1375.348	-1740.887						324.57				325.06						311.58
MW200	-4823.68	4443.4						326.85				326.90						317.16
MW527	-3369.59	-1525.322						324.51				324.86						325.33
MW533	-2312.445	-1026.16						323.99				324.81						324.79
PZ534	-2080.02	-1020.02						323.59				324.78						324.34
PZ535	-2119.753	-1224.765						324.13				324.84						324.80
PZ541	-1460.671	-1500.544						324.48				324.99						324.83
PZ553	-1460.861	-1635.596						324.49				324.99						324.73
PZ554	-1374.82	-1719.248						324.47				325.03						324.65

Shading indicates that no measurement is available.

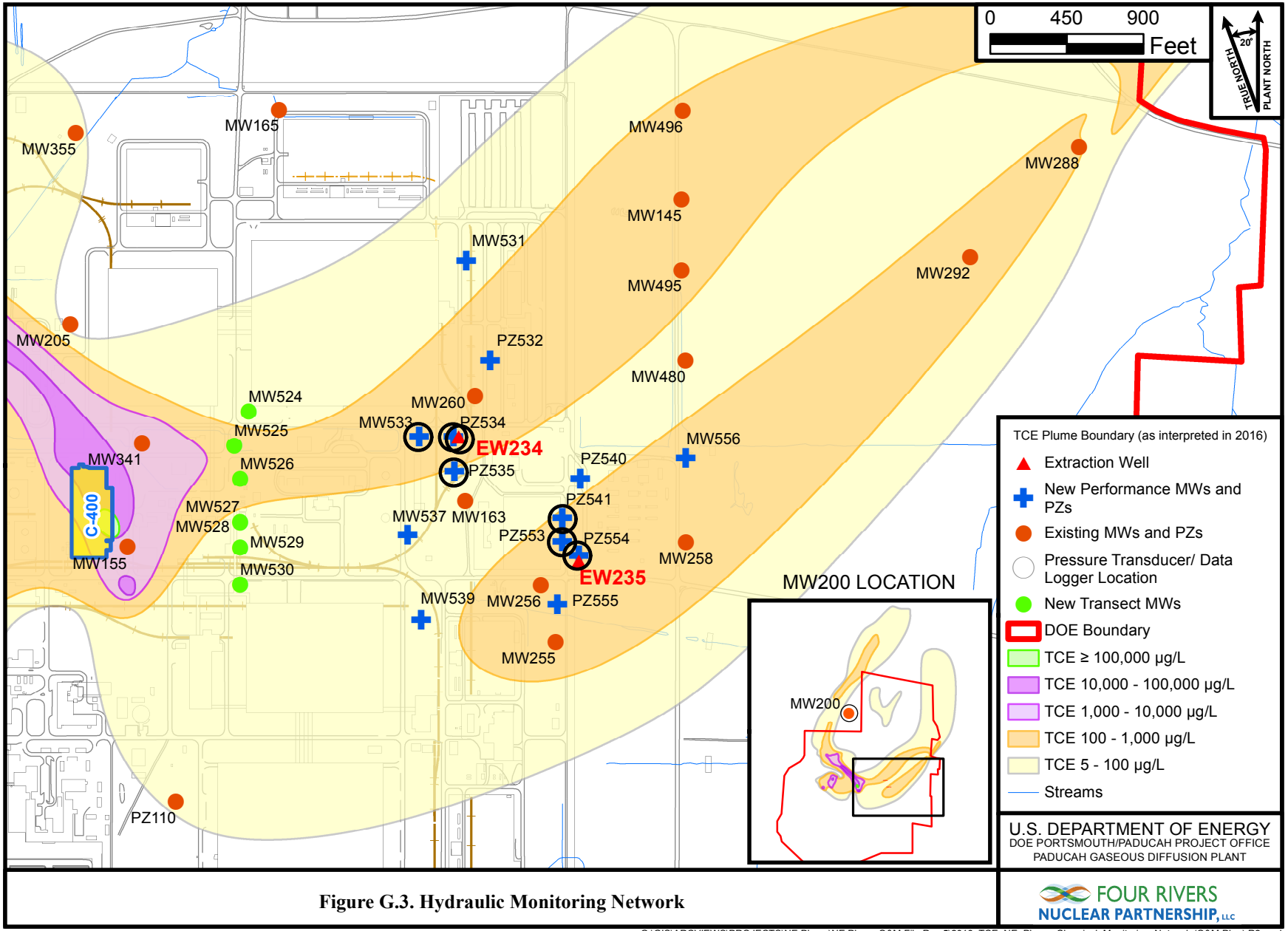

Figure G.3. Hydraulic Monitoring Network

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10/10/2018

Data Preparation: Figures G.4 and G.5 summarize the pressure transducer/data logger measurements during the hydraulic test (subtracting the background trend of increasing water levels and converting the measurements to water levels) for Phase II (EW235 pumping test) and Phase IV (EW234 pumping test). In both tests, water levels quickly responded to the initiation of pumping and stabilized within 21 hours in the EW235 test and within 19 hours in the EW234 test.

Water level measurements in MW527 (near distal) and MW200 (far distal) provided background water level trends for the hydraulic test. The trends in both wells were similar over the duration of the test. With correction of the water level trends for barometric pressure fluctuations, the background well records document a regional trend of increasing RGA water elevation (decreasing depth to water) for the duration of the test (Figure G.6).

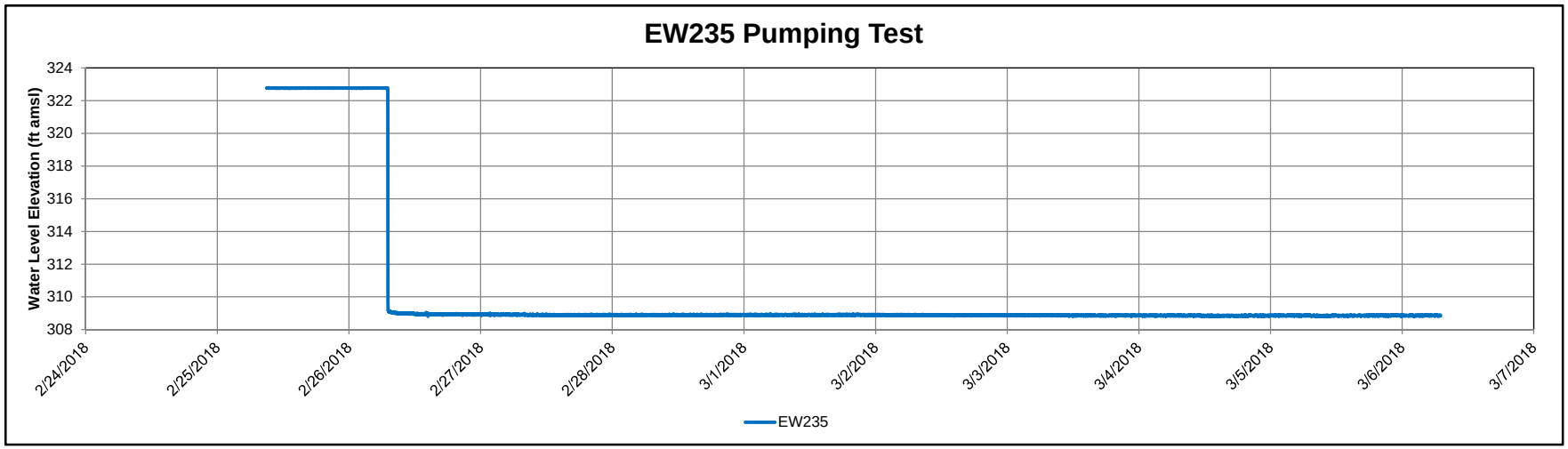
Because all RGA monitoring wells and piezometers used in the hydraulic monitoring pumping test have similar, nearly 100%, barometric efficiency,[2] water level trends in the background wells (documented by data logger/pressure transducer assembly at 5-minute intervals) could be subtracted from water level trends in the hydraulic test monitoring wells and piezometers to reveal the hydraulic stresses (water level trends) induced by the pumping tests (Figures G.4 and G.5). Because of its nearer proximity, the water level trends in MW527 were used to "normalize" the water level records for the hydraulic test monitoring wells and piezometers.

Hourly barometric pressure measurements from the National Weather Service station at Barkley Airport, Paducah, Kentucky, were used to document trends in barometric pressure for the duration of the test. The hourly measurements were interpolated into 5-minute values and a barometric pressure correction was calculated for the data logger/pressure transducer measurements (Figure G.7). When barometric pressure-induced water level trends were subtracted from the background water level trends, the resulting regional trend was a near-steady increasing water level during the EW235 and EW234 pumping tests (Figure G.8).

Pumping Test Analyses: The aquifer testing analysis software AQTESOLV® version 4.50 was used to analyze the pumping test data, as well as earlier step-drawdown test data (June 19 and 20, 2017, following construction) for EW234 and EW235 (Geosyntec 2018). Data from the pumping tests were analyzed as a leaky (semiconfined) aquifer with partially penetrating wells using a combination of the Hantush-Jacob (1955) and Hantush (1964) solutions. The pumping tests provide data for time-drawdown, distance-drawdown, and step drawdown analysis of hydrogeologic parameters.

The constant rate pumping tests were performed by pumping the RGA from wells EW234 and EW235 at a constant rate of 150 gpm and 125 gpm, respectively, for a duration of eight days. The time-drawdown analysis is based on data for four observation wells for each pumping well. Drawdown data collected from the actively pumping wells were not used for the data analysis due to limited data points available at the beginning of the constant rate pumping tests. The distance-drawdown analysis is based on three distance-drawdown plots (representing measured drawdown in pumping and observation wells after one, four, and eight days of pumping) that were created using the constant rate pumping test data. Analysis of the step drawdown tests were based on in-well drawdown at pumping rates of 50 gpm, 100 gpm, 150 gpm, and 200 gpm. Results of the analyses are summarized in Table G.4. The Hantush-Jacob AQTESOLV plots are included in Attachment G.1 of this report.

[2] 100% barometric efficiency means water level rise and fall within the monitoring wells and piezometers is 100% of the calculated value based on barometric trends. Near 100% barometric efficiency is common to RGA monitoring wells and piezometers of the Paducah Site.



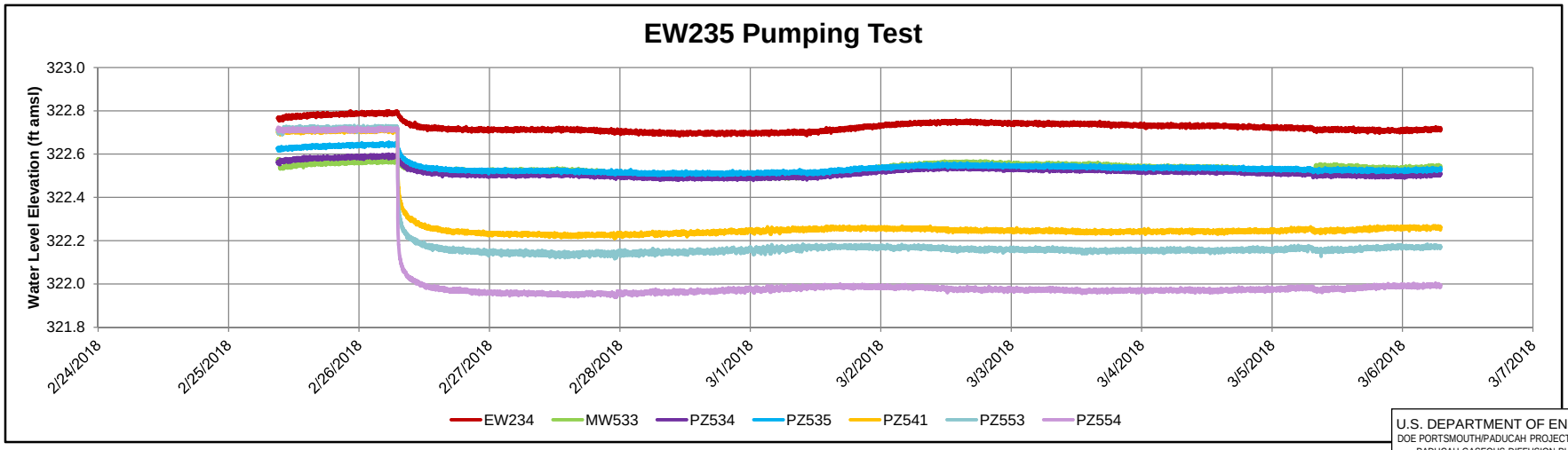


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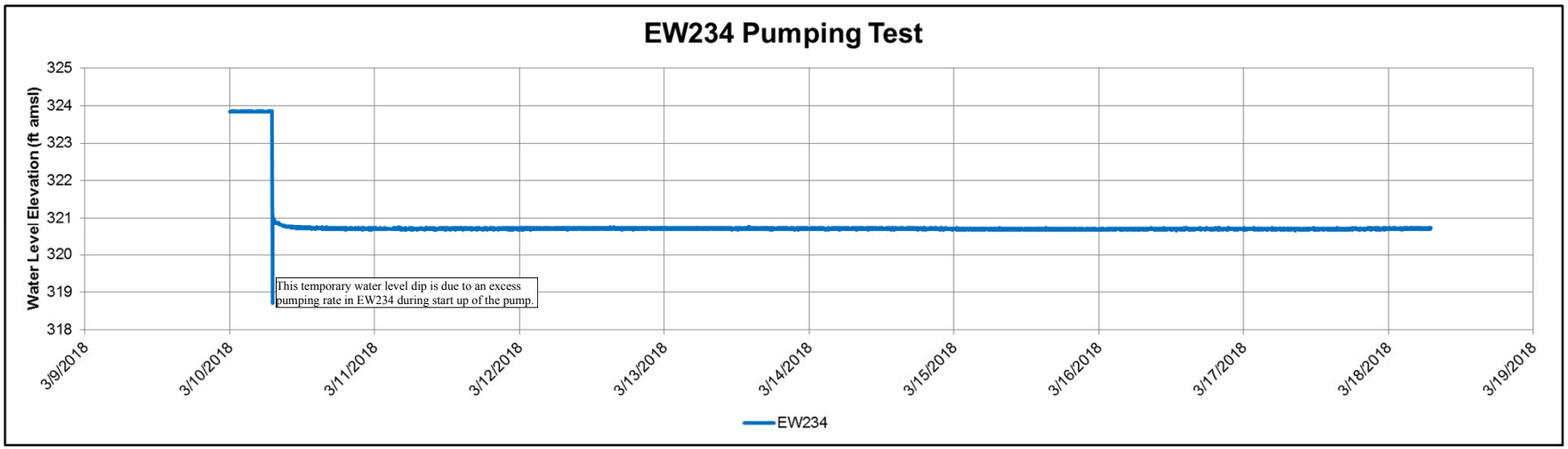
Figure G.4. Processed Pressure Transducer/Data Logger Records for EW235 Pumping Test



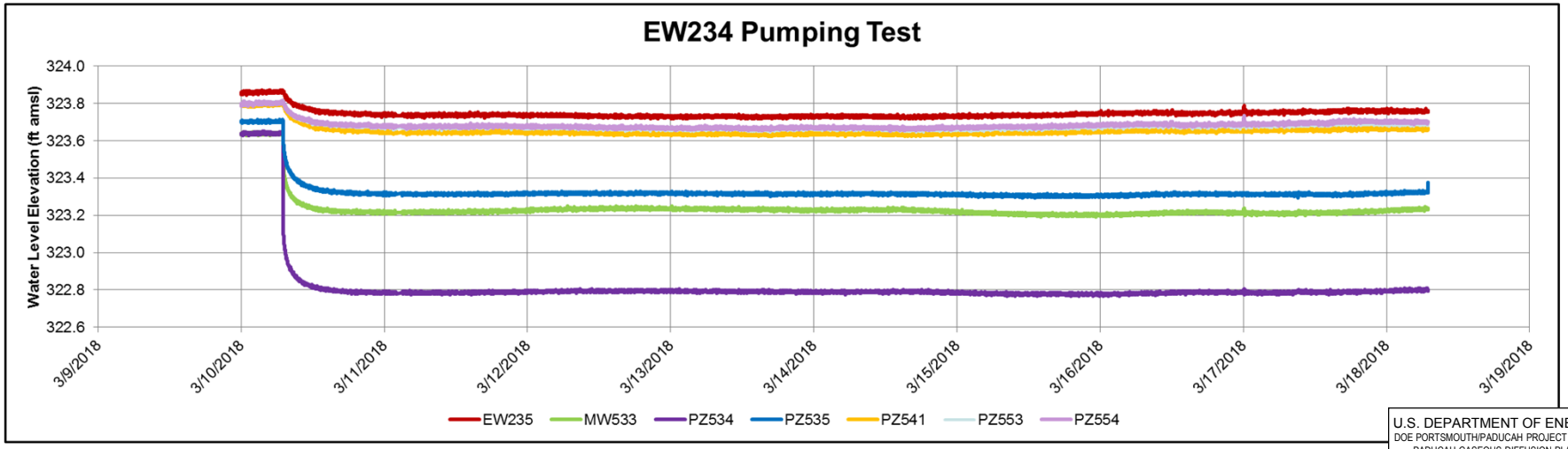


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Figure 5. Processed Pressure Transducer/Data Logger Records for EW234 Pumping Test

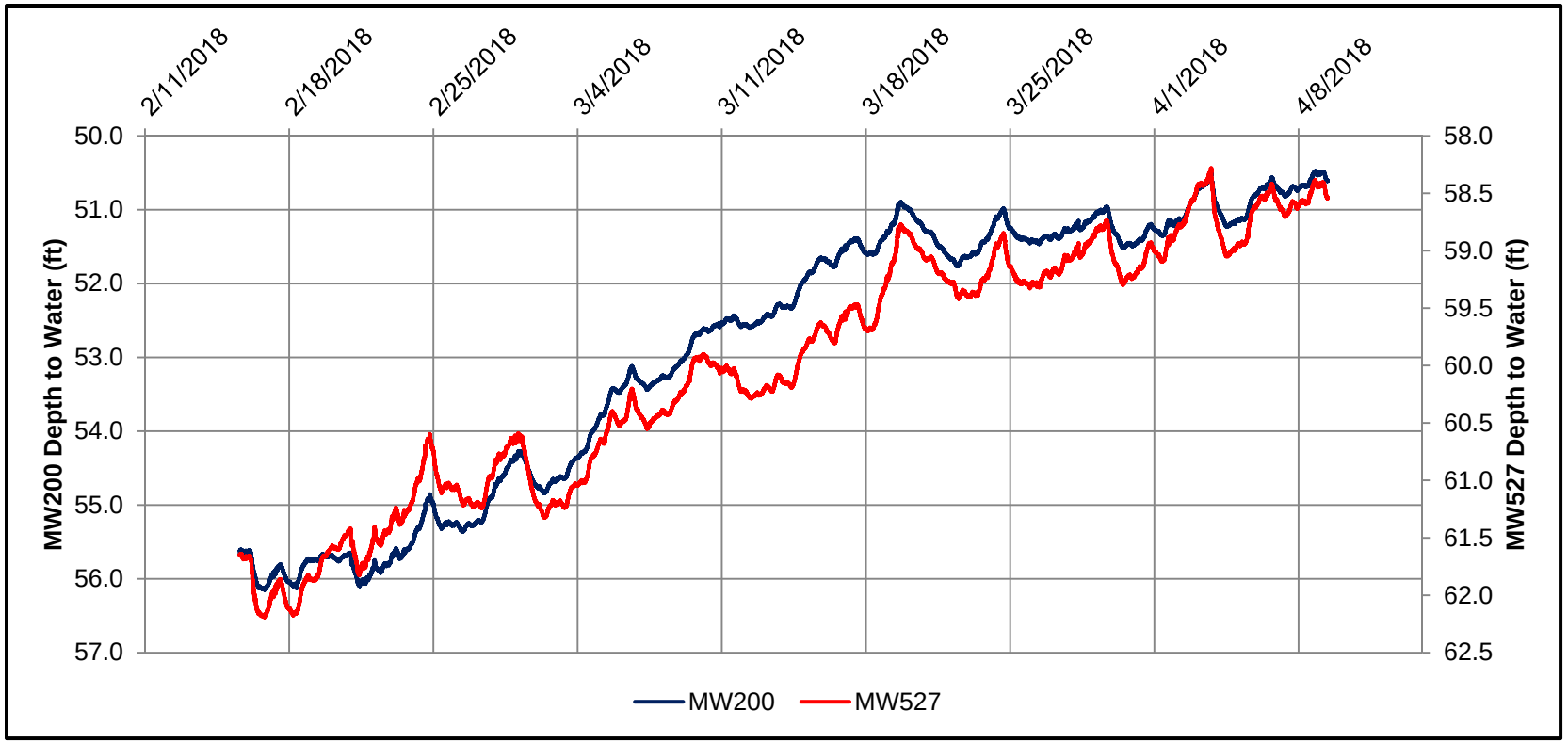

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Figure G.6. Background Water Level Trends

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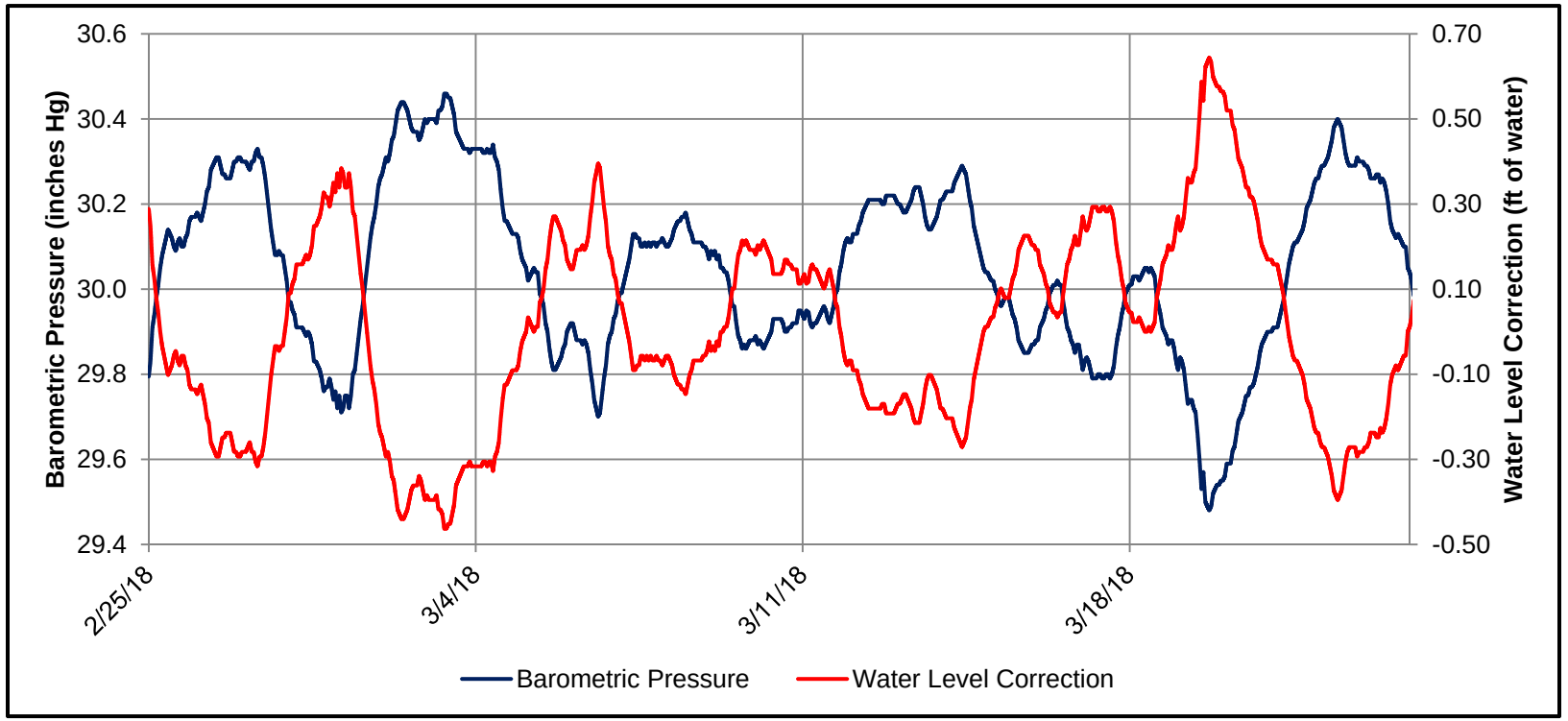

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Figure G.7. Barometric Pressure Correction for the Period of the Pumping Tests

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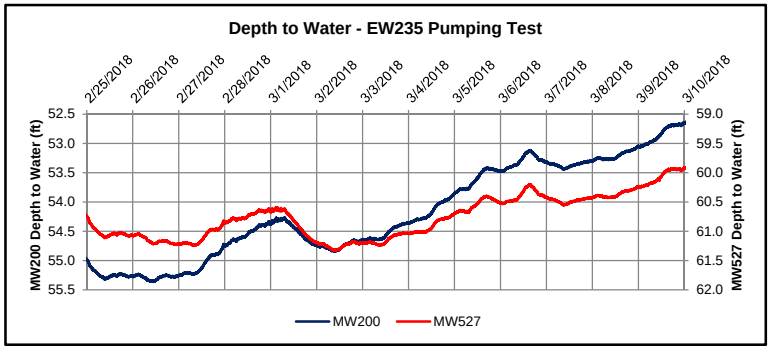

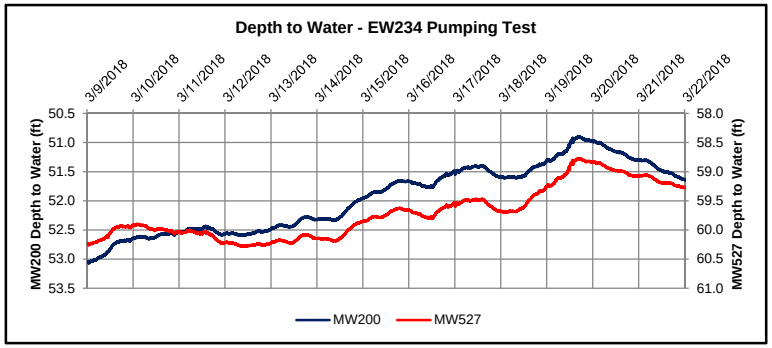

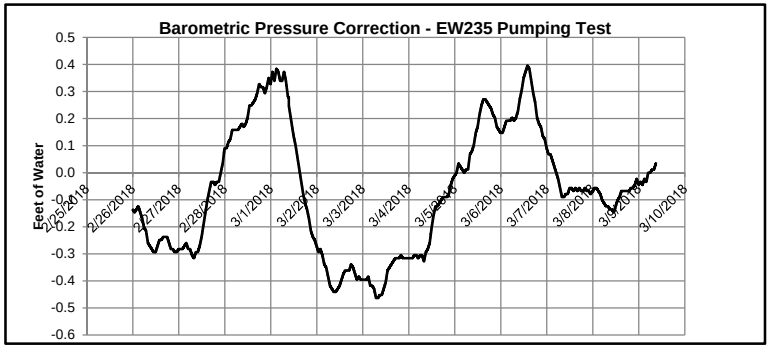

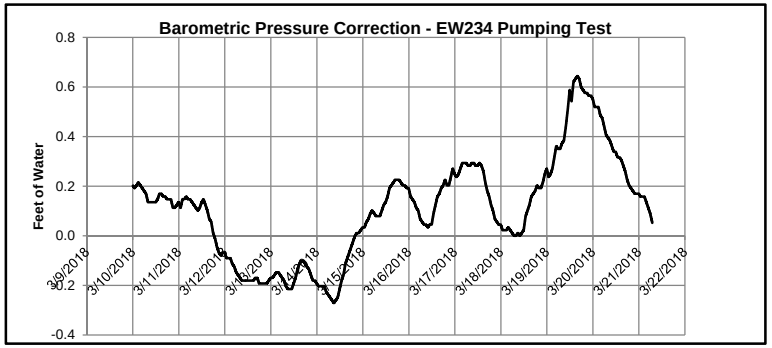

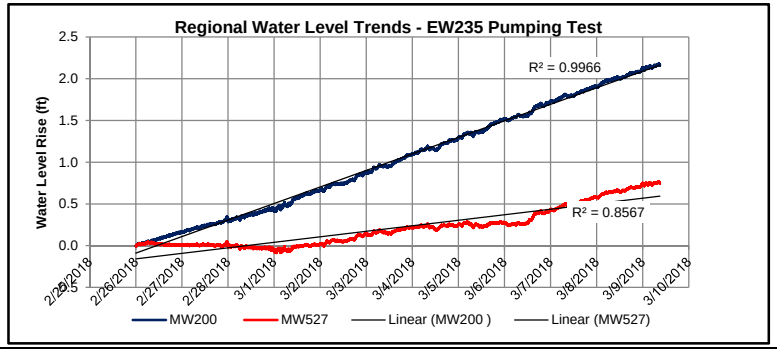

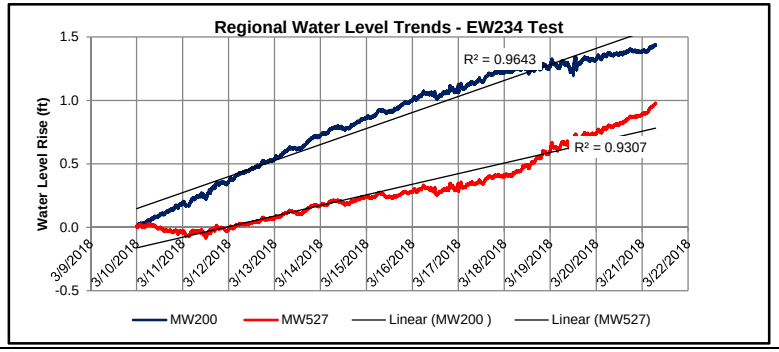

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Figure G.8. Derivation of Regional Water Level Trends

Table G.4. Summary of Pumping Tests Analyses Results

Well	Analysis	Hydraulic Conductivity		Storativity	Anisotropy
		(ft/day)	(cm/sec)		(Kz/Kr)
EW234	EW234 Time-Drawdown	2215	7.81E-01	1.27E-03	3.00E-02
	EW234 Distance Drawdown—1 day	392	1.38E-01	1.49E-03	4.32E-02
	EW234 Distance Drawdown—4 days	350	1.23E-01	1.49E-03	4.32E-02
	EW234 Distance Drawdown—8 days	339	1.20E-01	1.49E-03	4.32E-02
	EW234 Step Drawdown	847	2.99E-01	1.45E-04	NA
EW235	EW235 Time-Drawdown	1500	5.29E-01	1.97E-03	3.00E-02
	EW235 Distance Drawdown—1 day	37	1.32E-02	1.41E-03	4.25E-02
	EW235 Distance Drawdown—4 days	37	1.31E-02	1.41E-03	4.25E-02
	EW235 Distance Drawdown—8 days	37	1.30E-02	1.41E-03	4.25E-02
	EW235 Step Drawdown	73	2.58E-02	1.00E-05	NA
MW533	EW234 Time-Drawdown	1110	3.92E-01	1.00E-03	3.00E-02
PZ534	EW234 Time-Drawdown	1051	3.71E-01	1.00E-03	4.81E-02
	EW235 Time-Drawdown	1643	5.80E-01	1.82E-03	3.00E-02
PZ535	EW235 Time-Drawdown	1346	4.75E-01	1.30E-03	3.00E-02
PZ541	EW234 Time-Drawdown	1960	6.91E-01	1.81E-03	3.00E-02
	EW235 Time-Drawdown	1227	4.33E-01	6.96E-03	5.00E-02

AQTESOLV was used to predict drawdown for a 3-month period of pumping, for EW234 pumping alone at a rate of 150 gpm and for EW235 pumping alone at a rate of 125 gpm. Predicted drawdown contours for each pumping scenario are shown on Figures G.9 and G.10. Attachment G.1 of this report presents the AQTESOLV plots of simulated drawdown.

G.4. POTENTIOMETRIC SURFACE MAPS

A synoptic set of manual water level measurements were collected before the beginning of each phase of the hydraulic test (and near the end of Phase IV) to assess spatial trends in water levels during the test. Hydraulic potential contours at the end of each pumping phase document the extent and magnitude of the cones of depression resulting from pumping in each well, individually and in both wells simultaneously. Figures G.11 and G.12 show the location of monitoring wells and piezometers used for water level measurements and a geologic cross section through the area. Figures G. 13 through G.19 are the potentiometric surface maps for the RGA during the hydraulic test.

A synoptic set of water level measurements was made on February 18, 2017, immediately prior to beginning Phase I of the hydraulic test, to document the hydraulic stress to the RGA induced by pumping in both extraction wells at the maximum design rates (150 gpm in EW234 and 125 gpm in EW235). At that time, the two cones of depression had coalesced and provided strong control on eastward groundwater migration at the plant security fence for the Northeast Plume. The hydraulic gradient in the area of the Northeast Plume transect wells (MW524 through MW530) was slight, approximately 2.57×10^{-4} ft/ft to the east. The cone of depression appeared to extend westward to the C-400 Cleaning Building.

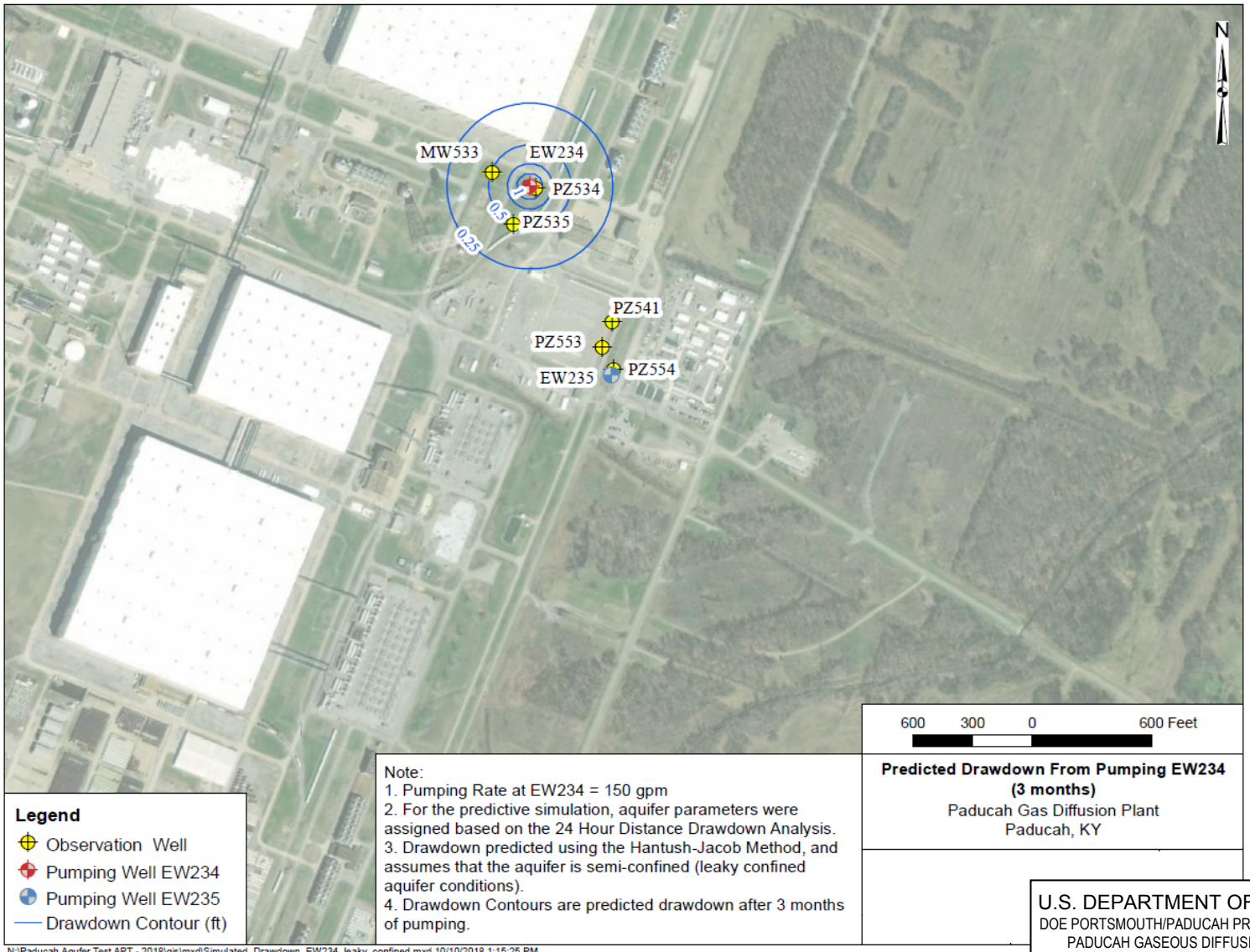

Figure G.9. Predicted Drawdown from Pumping EW234 (3 Months)

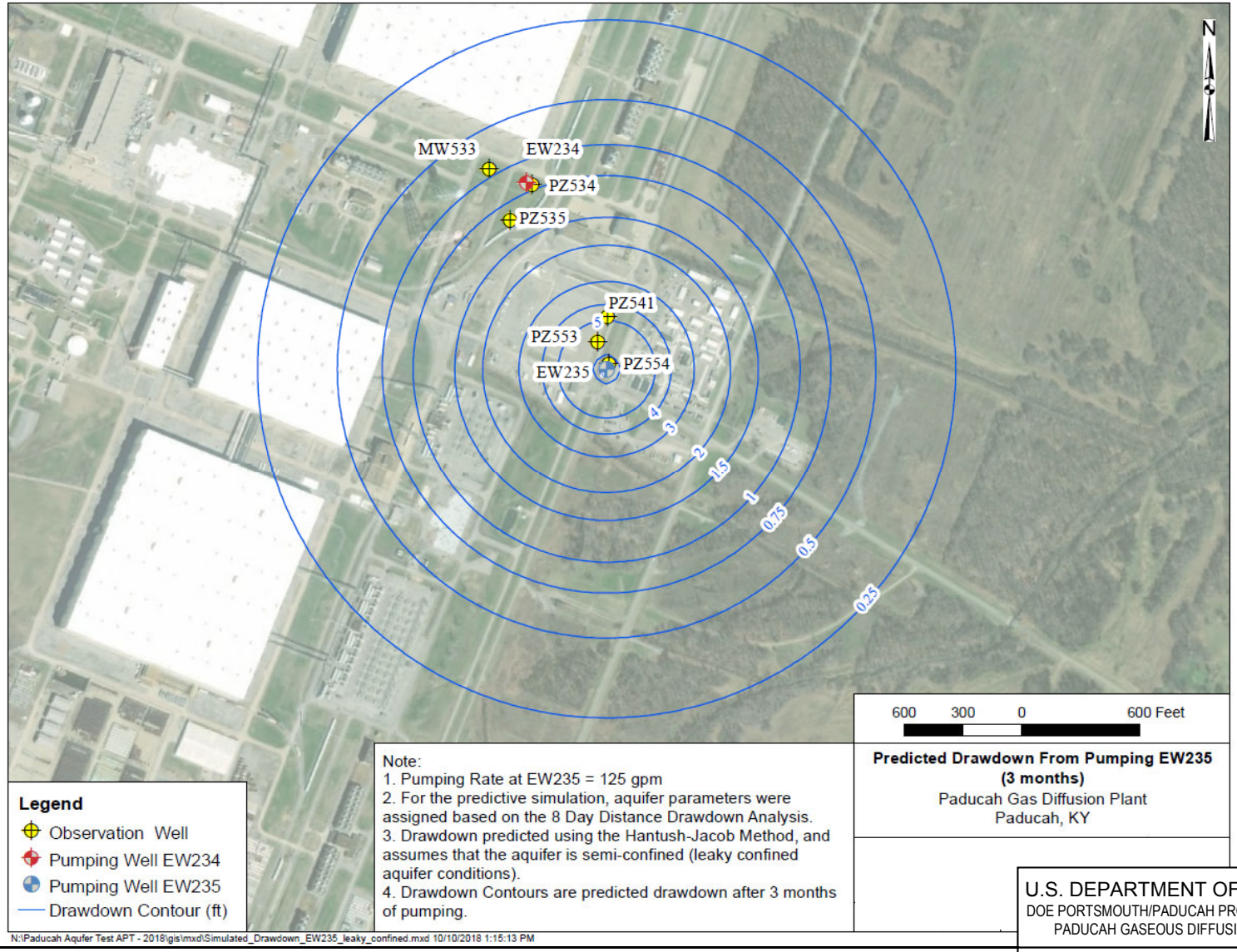

Figure G.10. Predicted Drawdown from Pumping EW235 (3 Months)

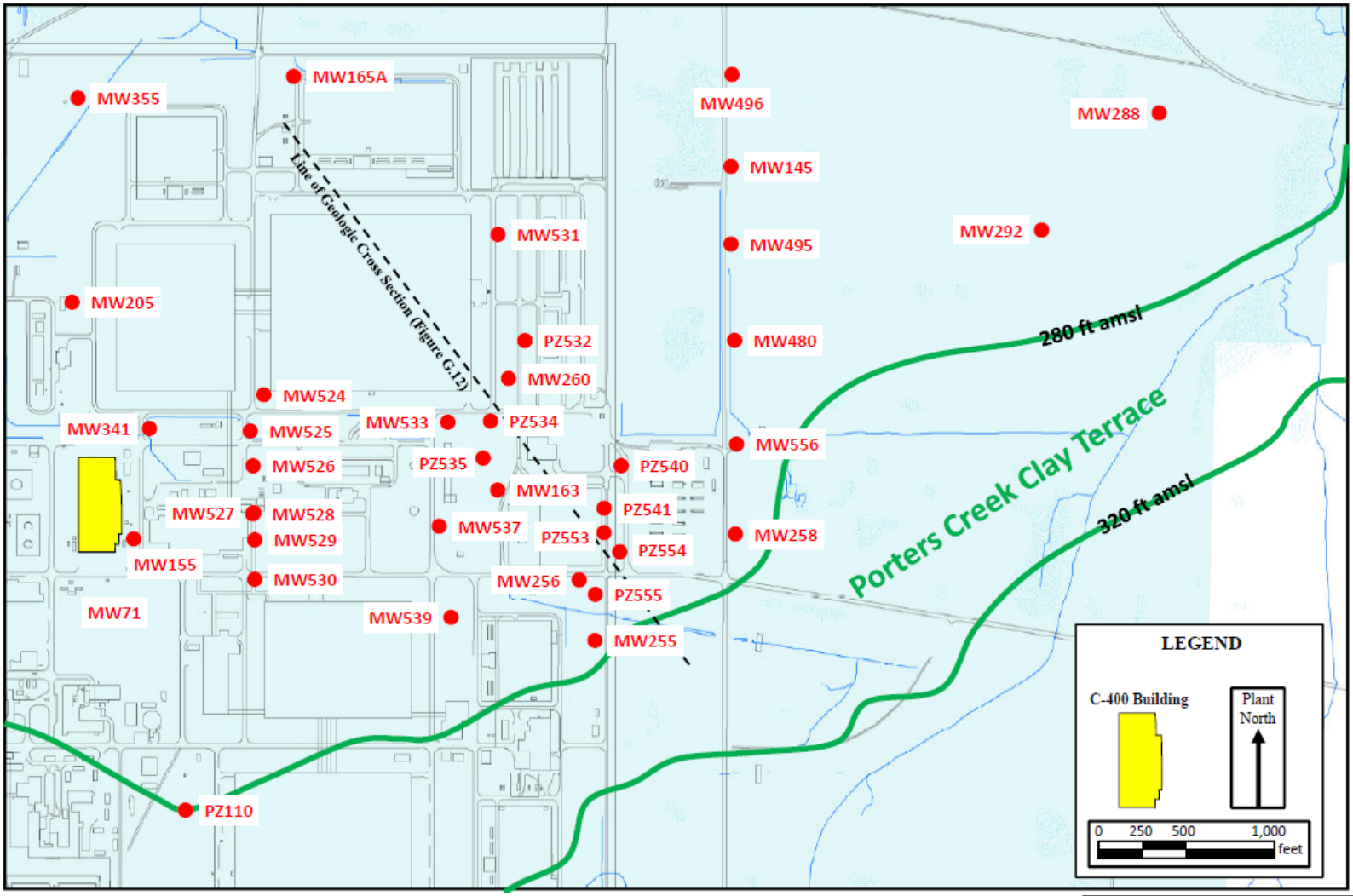

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Figure G.11. Monitoring Wells and Piezometers Used for Water Level Measurements

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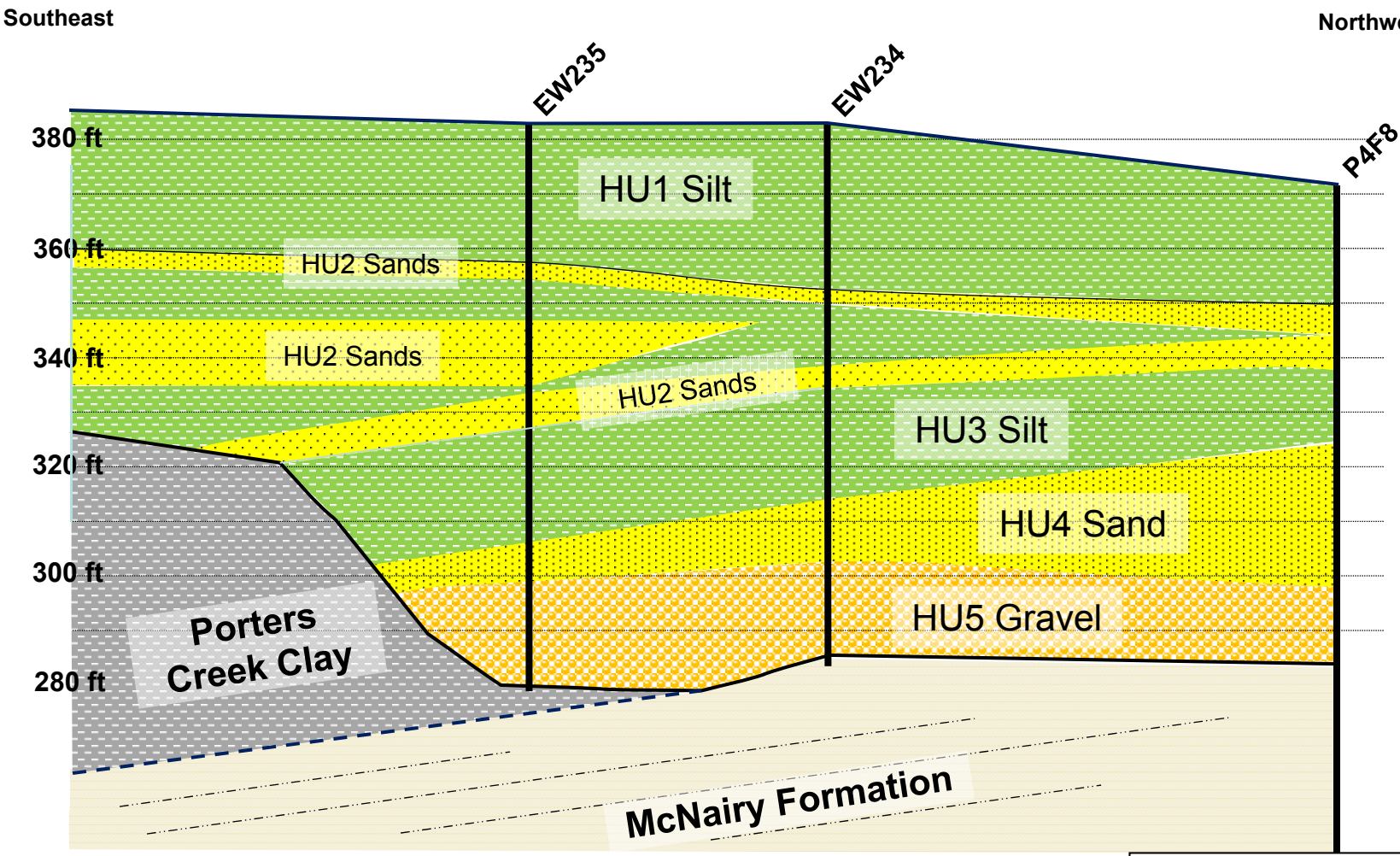

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Figure G.12. Geologic Cross Section Through EW234 and EW235

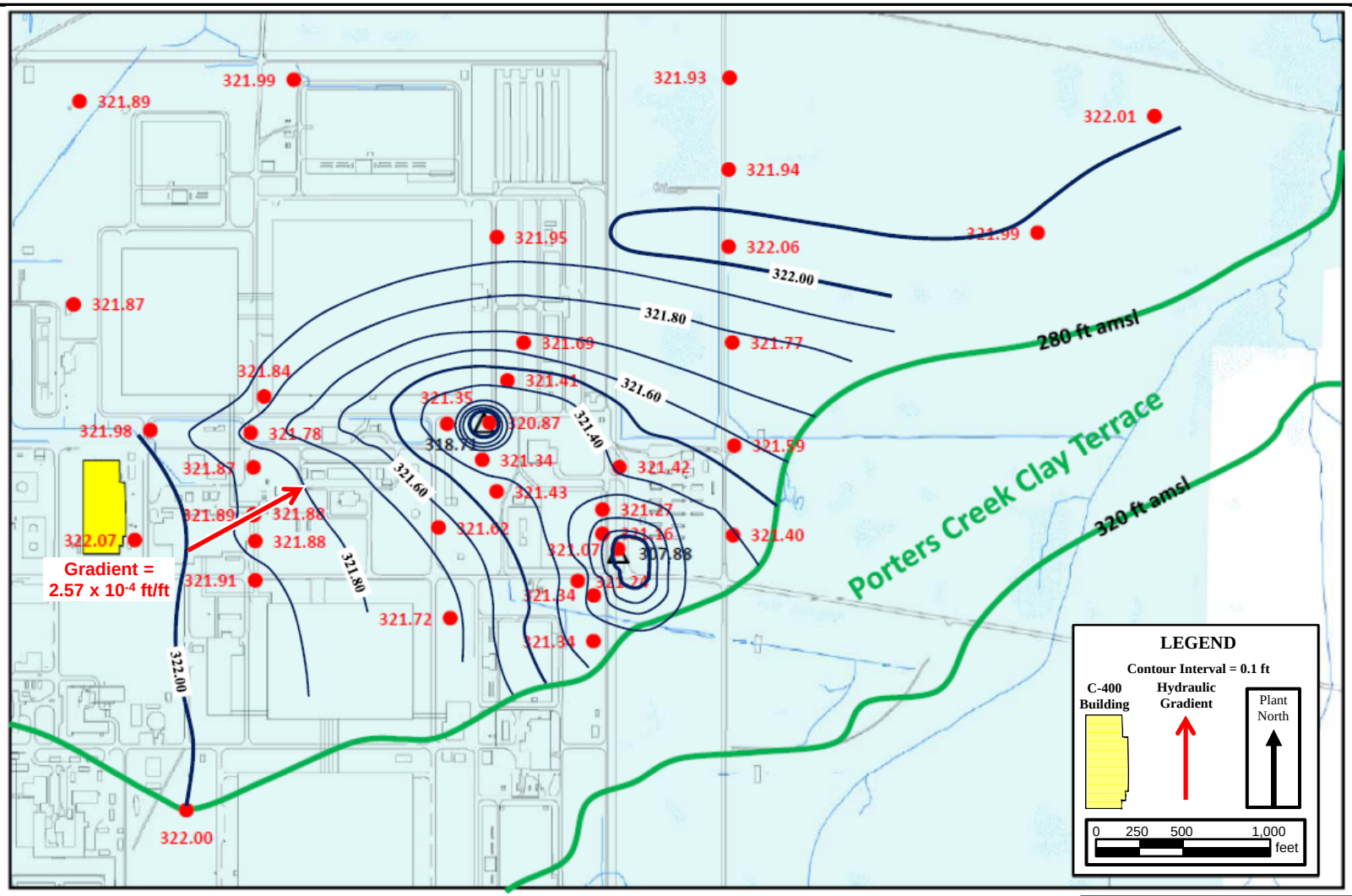

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Figure G.13. February 18, 2018—Phase I (EW234: 150 gpm/EW235: 125 gpm)

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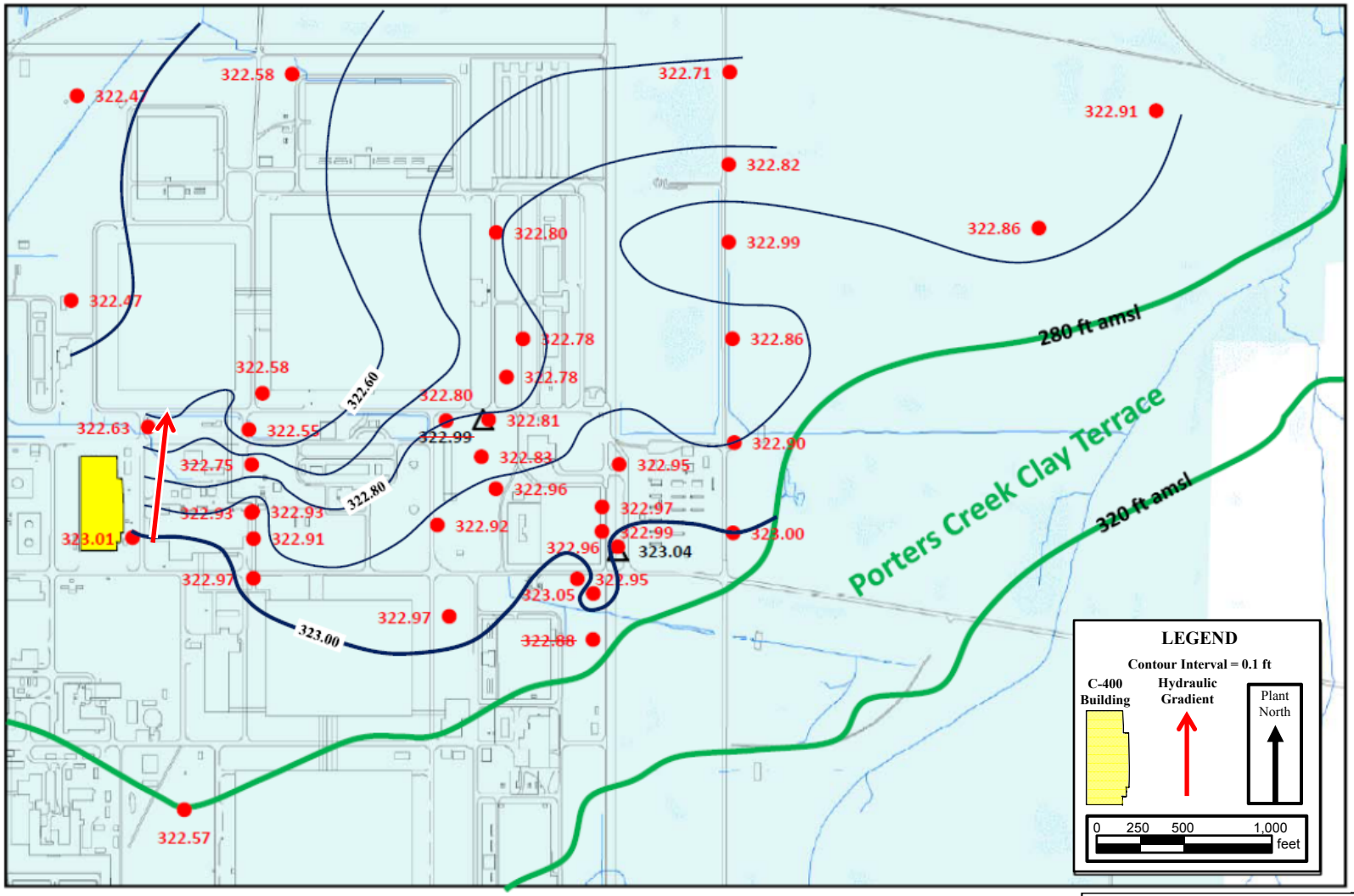

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Figure G.14. February 25, 2018—Phase II (EW234: 0 gpm/EW235: 0 gpm)

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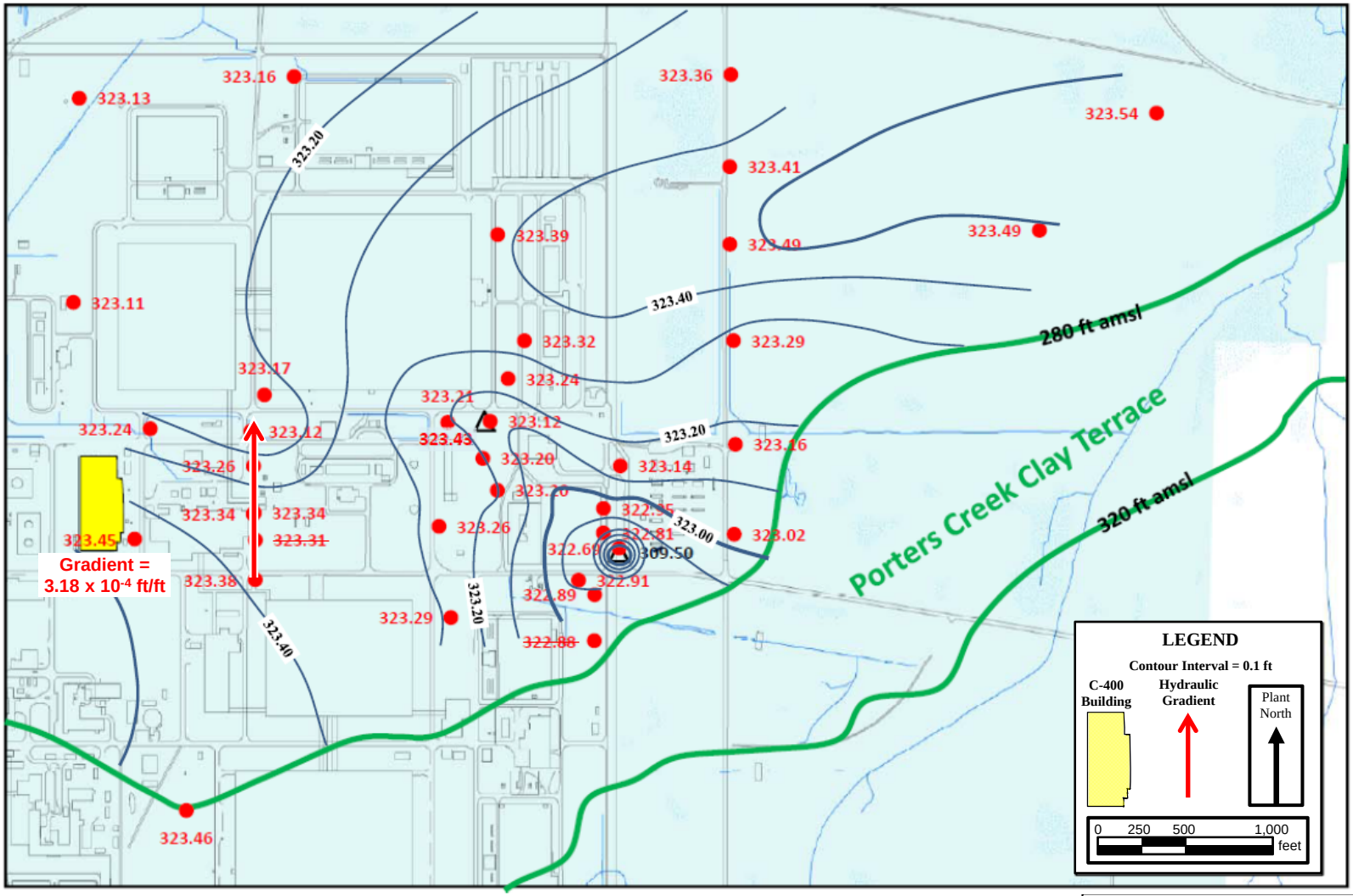

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Figure G.15. March 5, 2018—Phase III (EW234: 0 gpm/EW235: 125 gpm)

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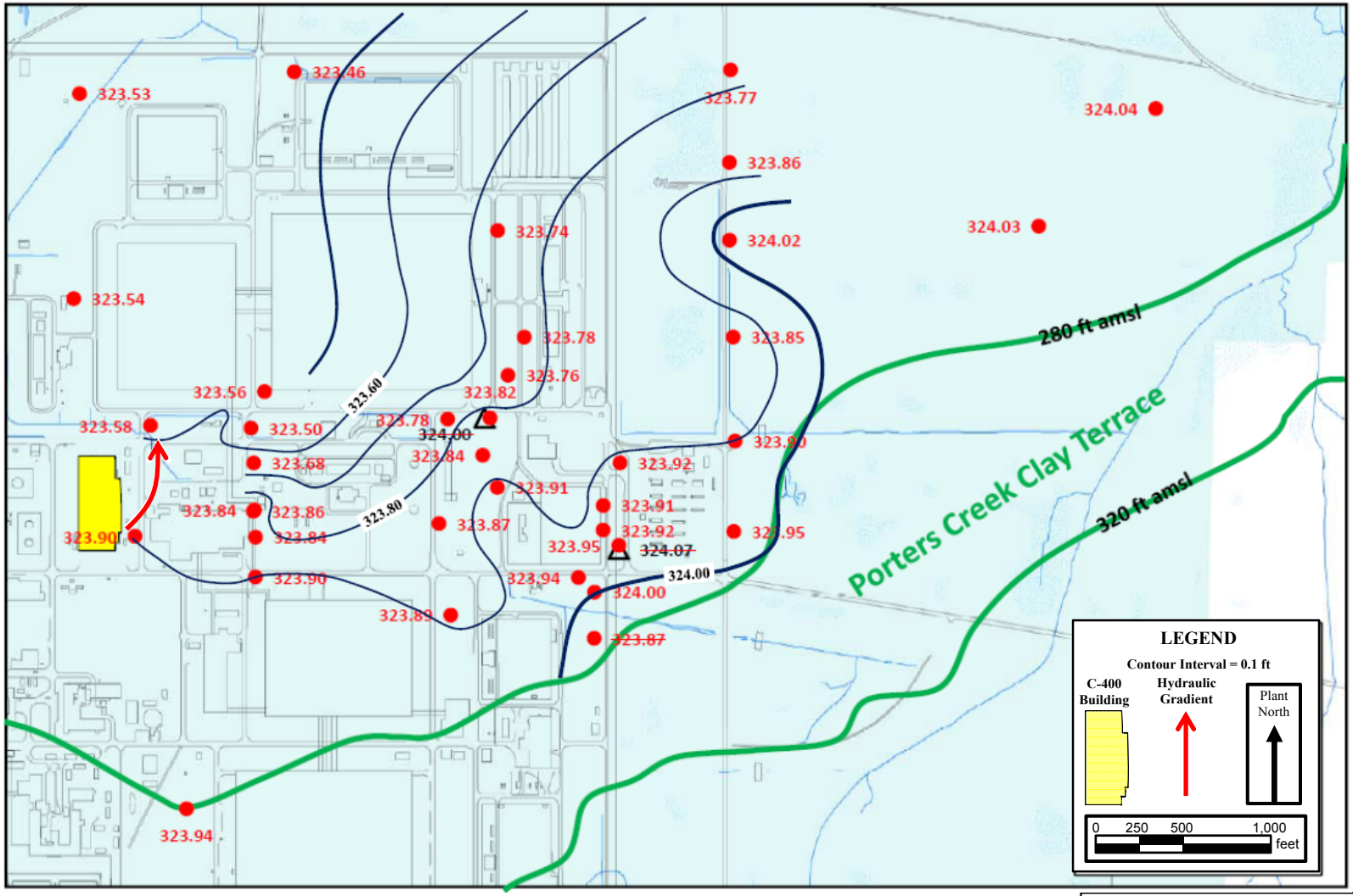

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Figure G.16. March 9, 2018—Phase IV (EW234: 0 gpm/EW235: 0 gpm)

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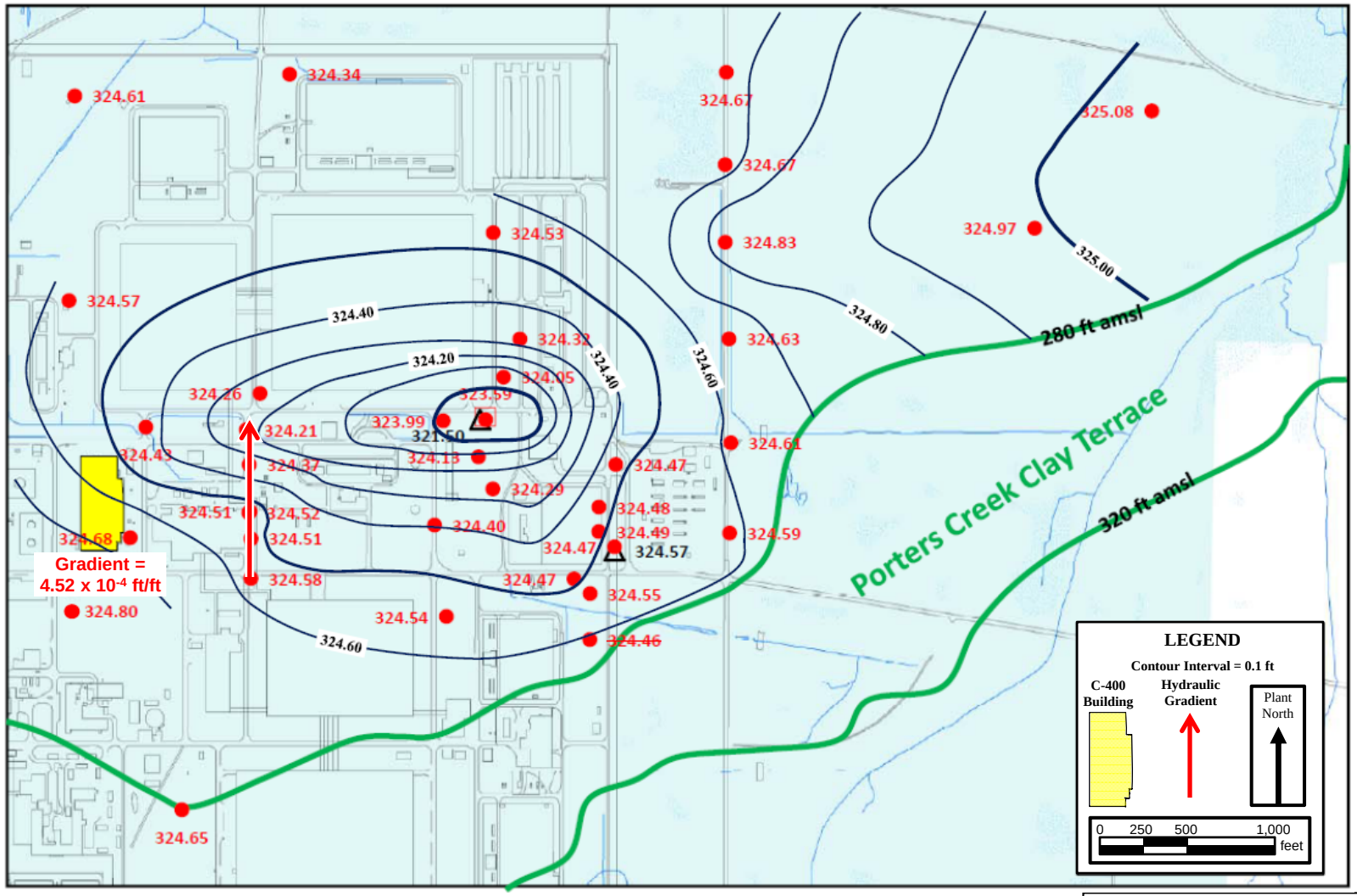

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Figure G.17. March 17, 2018—Phase V (EW234: 150 gpm/EW235: 0 gpm)

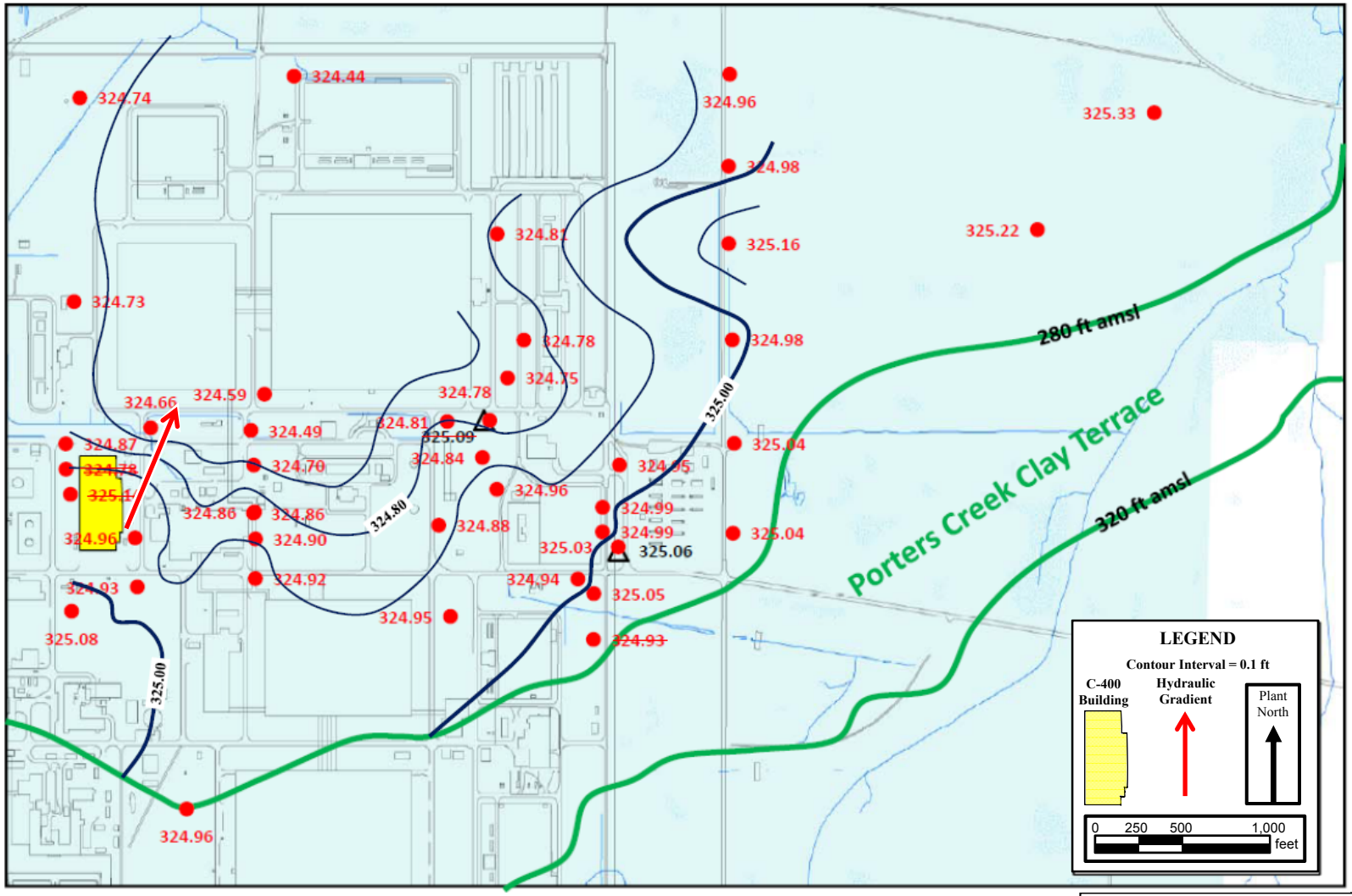

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Figure G.18. March 21, 2018—Phase VI (EW234: 0 gpm/EW235: 0 gpm)

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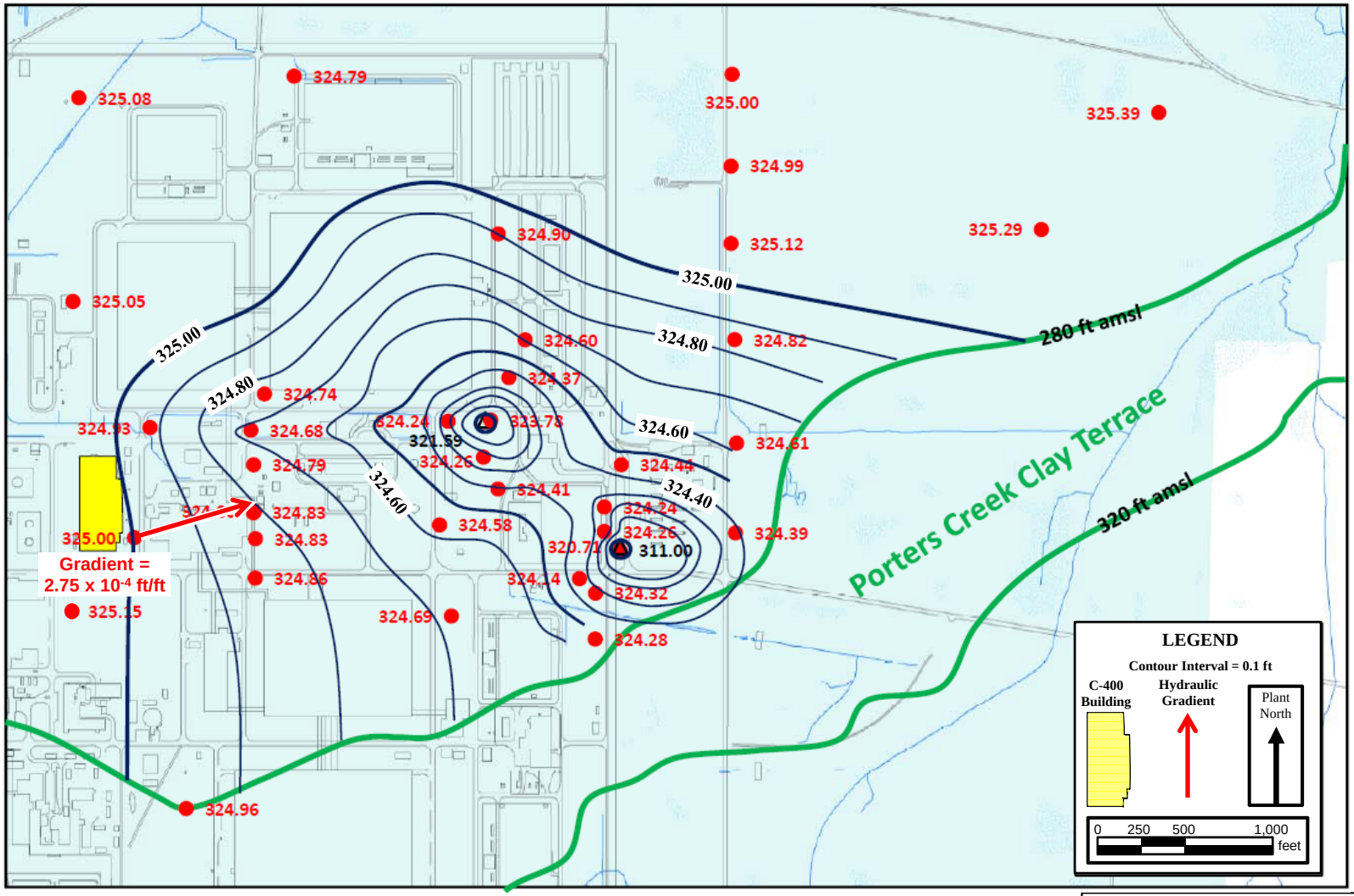

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Figure G.19. March 27, 2018—Phase VII (EW234: 150 gpm/EW235: 120 gpm)

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During the hydraulic test, water levels in the monitoring wells and piezometers recovered quickly. Water level trends at the end of Phases when the extraction wells had been idled (Phases I, III, and V) show no lingering effects of pumping stress. At these times, the RGA water level gradient in the area of the Northeast Plume Optimization is predominately northward with a northwestward bias in the northwest quadrant (toward the Northwest Plume).

The March 5, 2018, synoptic water level set documents the hydraulic stress induced by pumping in EW235 alone, at a rate of 125 gpm. The resulting cone of depression extends over much of the area of the Northeast Plume in the area of the plant security fence with no strong influence on the hydraulic gradient in the area of the Northeast Plume transect wells. Water levels in the transect wells MW525 through MW530 document a northward gradient of 3.18×10^{-4} ft/ft. The cone of depression does not appear to dominantly influence the area of the C-400 Cleaning Building.

A synoptic water level set measured on March 17, 2018 quantified the hydraulic potential stress in the RGA produced by pumping in EW234 alone, at a rate of 150 gpm. The resulting cone of depression underlay a broad area along the east plant security fence and extended westward beyond the C-400 Cleaning Building, along a high-hydraulic conductivity trend defined by water levels. In the area of the transect wells, groundwater flow was northward to MW525 and then eastward to EW234. At the transect wells, the hydraulic gradient as measured between MW525 and MW530 was 4.52×10^{-4} ft/ft.

Water level trends on March 27, 2018, with pumping in EW234 at 150 gpm and pumping in EW235 at 120 gpm, are similar to those measured on February 18, 2018, before the start of the hydraulic test. In the area of the transect wells, the hydraulic gradient was northeastward at 2.75×10^{-4} ft/ft. The interpreted cone of depression extends to the C-400 Cleaning Building.

As stated previously, it is apparent that a significant flow path exists between MW525 and EW234. While the interpretation of water level trends is interpretive, water level measurements in MW525 and MW533 (MW533 is located 202 ft west of EW234) offer a qualitative measure of the relative hydraulic stress induced by the pumping scenarios. Table G.5 summarizes an analysis of the data. Note that the overall groundwater flow velocity is directly proportional to hydraulic gradient: a doubling of the gradient results in an approximate doubling of the velocity of groundwater flow. The analysis reveals that the hydraulic gradient is westward (towards the Northwest Plume) during non-pumping scenarios and with EW235 alone, pumping. The hydraulic gradient reverses (to the east—toward EW234) with pumping in EW234, alone. With both extraction wells pumping, the gradient (to the east—toward EW234) effectively doubles.

G.5. VERTICAL HYDRAULIC GRADIENT

The wells and piezometers used for the hydraulic test included one nested well pair (MW527 and MW528). The shallow well, MW527 is screened over the depth interval 70.3 to 80.1 ft bgs, and the deep well (MW528) is screened over the depth interval 80.3 to 90.1 ft bgs. Using the midpoint of the well screens as the reference depth, water level measurements in the two wells represent a vertical difference of 10 ft.

The hydraulic test resulted in 31 manual water level measurements in MW528 that can be compared to data logger/pressure transducer assembly measurements of water level in MW527 for the same date and time (Table G.6). The average (and median) difference of the water levels is 0.010 ft (upward gradient). The minimum difference is 0.037 ft (upward gradient) and the maximum difference is

Table G.5. Analysis of Hydraulic Gradient—Hydraulic Test

Scenario	Date	Water Elevation (ft amsl)		Difference (ft)	Eastward Gradient* (ft/ft)	Interpretation
		MW525	MW533			
Non-pumping Periods	February 25, 2018	322.545	322.800	-0.255	2.37E-04	
	March 9, 2018	323.504	323.779	-0.275	2.55E-04	
	March 21, 2018	324.494	324.809	-0.315	2.92E-04	
				AVERAGE:	**2.61E-04**	"Background" gradient
EW235, alone, pumping	March 5, 2018	323.124	323.209	-0.085	7.89E-05	Gradient reduced
EW234, alone, pumping	March 17, 2018	324.214	323.989	0.225	-2.09E-04	Gradient reversed
EW234 and EW235 pumping	February 18, 2018	321.784	321.349	0.435	-4.04E-04	
	March 27, 2018	324.683	324.238	0.445	-4.13E-04	
				AVERAGE:	**-4.08E-04**	Gradient increased

*The distance between MW525 and MW533 is 1,077.94 ft.

Table G.6. Assessment of Vertical Gradient at MW527 and MW528

Date	Time	Water Level Elevation (ft amsl)		Difference*
		MW528	MW527	
		(Manual Measurement)	(Data Logger/Pressure Transducer Measurement)	
2/18/2018	9:17	321.889	321.870	-0.019
2/19/2018	10:44	322.229	322.192	-0.037
2/20/2018	12:41	322.499	322.469	-0.030
2/21/2018	7:27	322.219	322.218	-0.001
2/23/2018	8:19	322.639	322.629	-0.010
2/25/2018	9:03	322.920	322.912	-0.008
2/26/2018	9:15	322.829	322.816	-0.013
2/27/2018	8:05	322.789	322.764	-0.025
2/28/2018	9:13	323.249	323.235	-0.014
3/1/2018	12:33	323.199	323.167	-0.032
3/3/2018	9:41	322.779	322.777	-0.002
3/5/2018	7:30	323.339	323.336	-0.003
3/6/2018	7:51	323.559	323.533	-0.026
3/7/2018	7:05	323.489	323.499	0.010
3/8/2018	7:18	323.549	323.583	0.034
3/9/2018	8:30	323.859	323.850	-0.009
3/10/2018	8:28	324.029	324.025	-0.004
3/11/2018	9:09	323.949	323.951	0.002
3/12/2018	8:23	323.739	323.729	-0.010
3/15/2018	7:54	324.249	324.222	-0.027
3/17/2018	8:45	324.519	324.512	-0.007
3/18/2018	8:45	324.359	324.339	-0.020
3/19/2018	8:33	324.939	324.913	-0.026
3/20/2018	12:23	325.029	325.025	-0.004
3/21/2018	8:23	324.859	324.873	0.014
3/22/2018	9:23	324.609	324.618	0.009
3/23/2018	8:36	324.659	324.630	-0.029
3/24/2018	9:03	325.059	325.040	-0.019
3/25/2018	9:37	324.699	324.727	0.028
3/27/2018	7:39	324.839	324.809	-0.030
4/2/2018	13:11	325.319	325.304	-0.015

*Positive differences indicate a downward gradient.

0.034 ft (downward gradient). The average resulting gradient is 0.001 ft/ft (upwards). This magnitude of gradient may be an artifact of the accuracy of the derivation of the reference elevation used to calculate water level elevation from water level depth.

Additional data for an assessment of vertical gradients in the area of the Northeast Plume derives from quarterly water level measurements in the well pairs MW536/MW537 and MW538/MW539. All four monitoring wells have 10 ft length well screens. In the MW536/MW537 well pair, the midpoints of the well screens are separated by a vertical distance of 11.2 ft. In the MW538/MW539 well pair, the midpoints of the well screens are separated by a vertical distance of 13 ft.

Water level measurements are available from all four wells for 6 measurements between July 3, 2017, and April 5, 2018.

- The average difference of water levels in the MW536/MW537 well pair was 0.12 ft (with the deeper water level in the deeper well). The average measured vertical hydraulic gradient in the MW536/MW537 well pair was -0.01 ft/ft.

- The average difference of water levels in the MW538/MW539 well pair was 0.02 ft (with the deeper water level in the deeper well). The average measured vertical hydraulic gradient in the MW538/MW539 well pair was -0.00 ft/ft.

In all three well pairs, the measured vertical gradient is within common "error bounds" of manual water level measurements.

G.6. ADDITIONAL HYDRAULIC TESTING

Real time analysis of the RGA potentiometric surfaces during the hydraulic test revealed the presence of the eastward hydraulic gradient under the EW234 pumping scenarios. Additional testing was performed April 19, 2018 through May 10, 2018 to assess the impact of reduced pumping rates in EW234 and EW235. The additional testing consisted of four phases of reduced pumping rate scenarios. EW234 was pumped at rates of 100 gpm, and 125 gpm and EW235 was pumped at rates of 75 gpm and 100 gpm as follows:

- Phase I: Reduction of pumping rates to 125 gpm in EW234 and 75 gpm in EW235 for 3 days
- Phase II: Increased pumping rate to 100 gpm in EW235 for 4 days
- Phase III: Reduced pumping rate to 100 gpm in EW234 for 3 days
- Phase IV: Reduced pumping rate to 75 gpm in EW235 for 7 days[3]

Pumping rates were restored to approximately 150 gpm in EW234 and 120 gpm in EW235 on May 10, 2018. Table G.7 summarizes the schedule of the additional testing.

A total of 5.29 inches of rainfall occurred during the period of the additional hydraulic testing, which was a significant rainfall event for 2018. As stated earlier, the UCRS moderates the impact of periodic rainfall events, and no response was evident in the RGA water levels. The Ohio River experienced a lesser flood and river stage fell during the period of the additional hydraulic test. River stage did not impact the normal flow of the RGA in the area of the hydraulic test during this period.

[3] Failure of EW235 for 12 hours during Phase IV extended the test.

Table G.7. Schedule for the Additional Hydraulic Testing

Hydraulic Test Phase	Day	Date	PLUME OPERATIONS		Manual Water Level Measurements
			EW234 Pumping Rate	EW235 Pumping Rate	
Pre-shutdown Monitoring	THU	4/19/2018	150 gpm	120 gpm	
	FRI	4/20/2018			
	SAT	4/21/2018			
	SUN	4/22/2018			
Phase I Pumping Test	MON	4/23/2018	125 gpm @ 14:10	75 gpm @ 14:15	SYNOPTIC
	TUE	4/24/2018			
	WED	4/25/2018			
	THU	4/26/2018	125 gpm	100 gpm @ 14:05	SYNOPTIC
Phase II Pumping Test	FRI	4/27/2018			
	SAT	4/28/2018			
	SUN	4/29/2018			
	MON	4/30/2018	100 gpm @14:00	100 gpm	SYNOPTIC
Phase III Pumping Test	TUE	5/1/2018			
	WED	5/2/2018			
	THU	5/3/2018	100 gpm	75 gpm @ 14:05	SYNOPTIC
Phase IV Pumping Test	FRI	5/4/2018			
	SAT	5/5/2018			
	SUN	5/6/2018		EW235 FAILED @ 23:20	
	MON	5/7/2018		EW235 RESTART @ 11:11	SYNOPTIC
	TUE	5/8/2018			
	WED	5/9/2018			
	THU	5/10/2018	150 gpm @ 14:00	120 gpm @ 14:10	SYNOPTIC

Data logger download on May 14, 2018.

The additional testing included water level measurements recorded nearly continuously in the same eight monitoring wells and piezometers and the two extraction wells as before (Figure G.3). Manual water level measurements were made in these wells and piezometers and an additional 50 wells and piezometers six times (Table G.8) to document areal water level trends and to validate the pressure transducer/data logger records. Water levels were measured in more wells and piezometers during the additional hydraulic testing to better understand the C-400 area and the influence of pumping in the Northeast Plume extraction wells on water level trends in the Northwest Plume. The location of the wells and piezometers are shown on Figure G.20.

Table G.8. Manual Water Level Measurements of the Additional Hydraulic Testing

Station	Plant Coordinates		RGA Water Elevation (ft amsl)					
	X	Y	4/23/2018	4/26/2018	4/30/2018	5/3/2018	5/7/2018	5/10/2018
MW65	-7235.77	864.65	327.90	327.84	327.59	328.01	328.10	328.33
MW71	-4372.90	-2073.70	326.83	327.17	326.99	327.43	327.70	327.98
MW72	-5880.60	-737.48	327.17	327.30	327.59	328.02	328.19	327.49
MW79	-5499.84	-847.20	327.02	327.15	327.27	327.71	327.97	327.88
MW80	-5499.74	-856.71	327.03	327.17	327.31	327.77	327.81	328.23
PZ110	-3741.90	-3166.70	NA	326.96	326.80	327.26	327.55	327.83
MW145	-769.36	384.01	326.80	327.05	326.91	327.31	327.59	327.82
MW155	-4024.61	-1669.36	326.87	327.05	326.85	327.30	327.57	327.85
MW163	-2040.65	-1400.72	326.19	326.54	326.35	326.84	327.29	327.41
MW165A	-3152.67	881.19	326.61	326.75	326.53	326.90	327.07	327.39
MW168	-4821.93	-924.83	327.06	327.16	326.93	327.35	327.55	327.85
MW169	-5557.36	-191.65	327.13	327.18	326.92	327.34	327.51	327.80
MW175	-4378.81	-1428.36	326.83	327.32	326.88	327.30	327.54	327.85
MW185	-6601.58	953.46	327.48	327.40	327.19	327.58	327.67	327.95
MW200	-4823.68	4443.40	328.70	328.81	328.63	328.93	328.93	329.02
MW203	-5014.35	-2158.47	327.03	327.32	327.14	327.56	327.79	328.09
MW205	-4359.66	-364.19	326.99	327.01	326.79	327.19	327.38	327.69
EW232	-6695.80	1150.42	326.77	325.44	325.27	325.60	325.78	325.94
EW233	-5532.96	1095.21	326.24	322.34	322.17	322.48	322.71	322.96
EW234	-2110.68	-1019.85	323.50	324.39	324.21	325.23	325.51	325.71
EW235	-1375.35	-1740.89	312.47	318.86	315.78	316.22	320.28	319.68
MW242	-7083.28	1678.98	328.04	327.90	327.79	328.14	328.24	328.44
MW245	-7398.00	1119.08	328.08	327.96	327.78	328.13	328.23	328.43
MW255	-1510.20	-2230.01	326.08	326.55	326.29	326.72	327.28	327.30
MW256	-1596.27	-1896.29	326.06	326.51	326.23	326.68	327.43	327.35
MW257	-5971.67	442.90	327.19	327.19	326.78	327.30	327.47	327.69
MW258	-745.05	-1643.25	326.06	326.64	326.40	326.84	327.33	327.47
MW260	-1981.91	-785.46	326.12	326.46	326.31	326.78	327.14	327.32
MW262	-5379.90	-294.22	327.10	327.16	326.87	327.16	327.44	327.72
MW288	1564.98	679.55	327.25	327.52	327.29	327.67	327.88	328.05
MW292	924.15	33.58	327.12	327.35	327.15	327.52	327.81	327.96

Table G.8. Manual Water Level Measurements of the Additional Hydraulic Testing (Continued)

Station	Plant Coordinates		RGA Water Elevation (ft amsl)					
	X	Y	4/23/2018	4/26/2018	4/30/2018	5/3/2018	5/7/2018	5/10/2018
MW340	-6151.63	714.79	327.33	327.27	327.05	327.45	327.57	327.89
MW341	-3939.12	-1061.05	326.77	326.90	326.69	327.09	327.33	327.65
MW342	-4403.67	-1289.64	326.91	327.11	326.83	327.29	327.50	327.83
MW355	-4327.87	761.71	326.98	327.03	326.73	327.12	327.32	327.60
MW424	-4404.38	-1149.40	326.95	327.12	326.93	327.36	327.56	NA
MW462	-6180.36	1972.42	327.86	327.75	327.61	327.99	328.09	328.31
MW480	-749.11	-575.03	326.62	326.90	326.76	327.19	327.52	327.72
MW495	-769.13	-43.41	326.93	327.17	327.03	327.44	327.73	327.96
MW496	-763.38	891.96	326.82	327.07	326.90	327.30	327.54	327.77
MW504	-5376.34	1084.73	327.37	327.30	327.08	327.46	327.63	327.91
MW506	-4012.90	-1939.50	326.77	327.06	326.68	327.09	327.41	327.67
MW524	-3314.77	-874.95	326.50	326.70	326.58	326.99	327.25	327.52
MW525	-3389.27	-1075.11	326.44	326.64	326.50	326.91	327.15	327.43
MW526	-3373.91	-1266.96	326.55	326.78	326.63	327.06	327.34	327.62
MW527	-3369.59	-1525.32	326.60	326.84	326.68	327.12	327.43	327.69
MW528	-3375.71	-1531.84	326.60	326.84	326.69	327.14	327.46	327.71
MW529	-3364.05	-1675.13	326.60	326.85	326.70	327.15	327.46	327.70
MW530	-3364.71	-1893.38	326.62	326.88	326.71	327.16	327.49	327.74
MW531	-2038.94	9.63	326.66	326.91	326.76	327.17	327.43	327.69
PZ532	-1892.67	-576.08	326.38	326.68	326.47	326.91	327.23	327.46
MW533	-2312.45	-1026.16	325.99	326.39	326.24	326.70	327.07	327.28
PZ534	-2080.02	-1020.02	325.57	326.05	325.79	326.35	326.73	326.93
PZ535	-2119.75	-1224.77	326.04	326.46	326.15	326.65	327.06	327.23
MW537	-2359.67	-1599.48	326.34	326.68	326.46	326.93	327.34	327.52
MW539	-2295.12	-2102.56	326.45	326.78	326.54	326.99	327.43	327.59
PZ540	-1367.83	-1266.18	326.19	326.62	326.42	326.90	327.45	327.51
PZ541	-1460.67	-1500.54	326.04	326.53	326.23	326.70	327.39	327.35
PZ553	-1460.86	-1635.60	325.93	326.48	326.09	326.57	327.32	327.12
PZ554	-1374.82	-1719.25	325.77	326.38	326.08	326.54	327.17	327.27
PZ555	-1508.32	-1976.65	326.04	326.55	326.31	326.77	327.50	327.41
MW556	-738.35	-1146.84	326.40	326.81	326.57	327.01	327.45	327.60

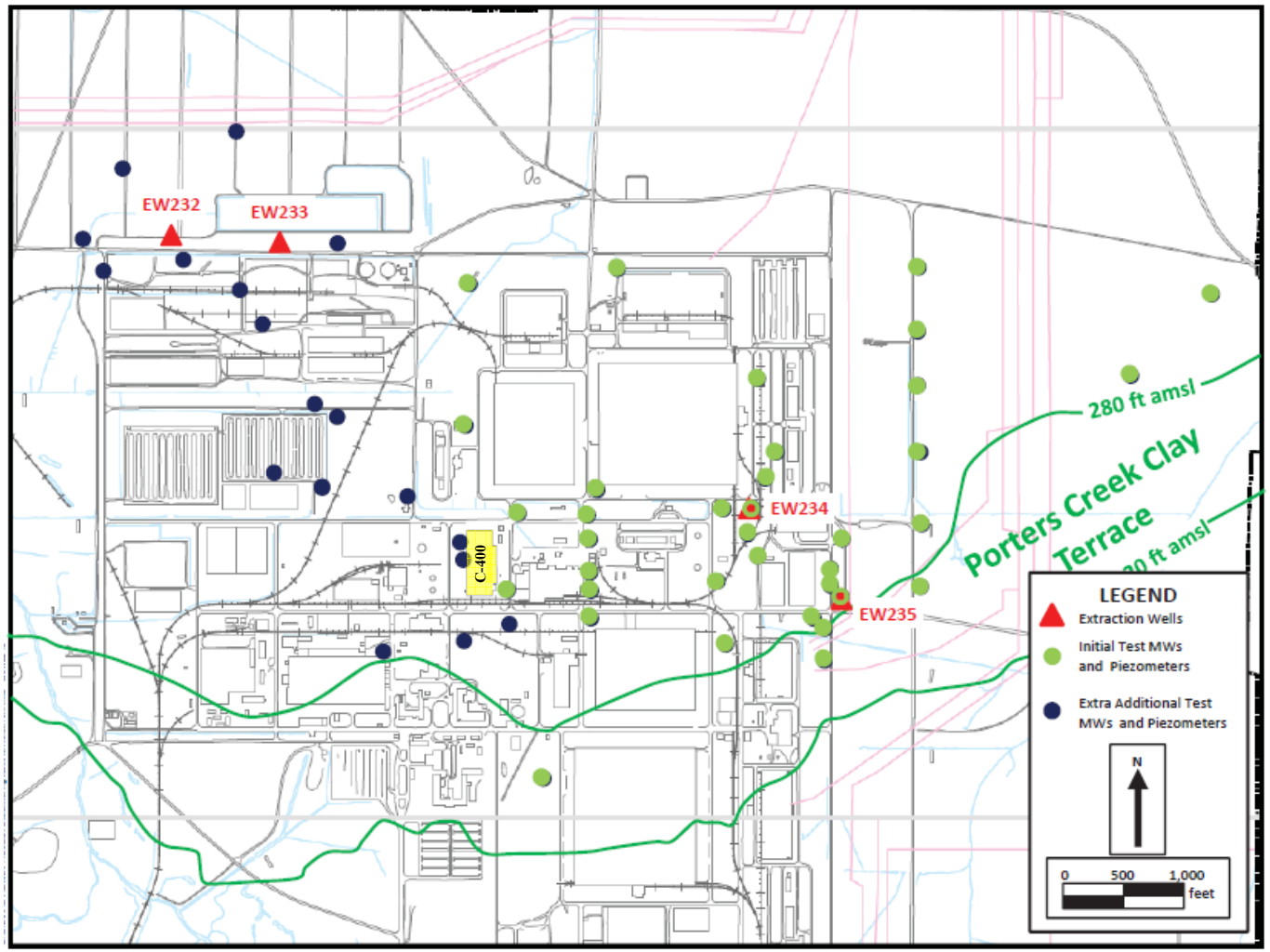

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Figure G.20. Location of Wells and Piezometers Used for Additional Hydraulic Testing

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G.7. POTENTIOMETRIC SURFACE MAPS

The synoptic water level measurements on April 23, 2018, (Figure G.21) show similar hydraulic trends as other synoptic water level sets with EW234 and EW235 operating at near maximum design pumping rates (February 18, 2018, and March 27, 2018). The additional well measurements for April 23, 2018, clearly demonstrate the cone of depression developed by the Northeast Plume extraction wells, encompassing the C-400 Cleaning Building; the influence of the Northwest Plume extraction wells does not include the C-400 area.

With the pumping rate in EW234 reduced to 125 gpm (was 150 gpm), the water level measurements on April 26, 2018, (Figure G.22) show the cone of depression of the Northeast Plume extraction wells still extends to the C-400 Cleaning Building, but the influence of the Northwest Plume extraction wells may reach to C-400. A key interpretation of the April 26, 2018, data set, which benefits from additional wells to the south and southwest of the C-400 Cleaning Building (compared to the hydraulic test), is the presence of a north trend of groundwater flow between the east side of C-400 and the Northeast Plume transect wells. It is apparent that groundwater flow from the southeast corner of the C-400 block flows northward, then eastward through MW525, and eventually eastward to EW234.

The synoptic water level data sets of April 30, 2018, and May 3, 2018, (Figures G.23 and G.24) measure the impact of an increase in the pumping rate of EW235 [increased from 75 gpm to 100 gpm (the maximum design pumping rate is 125 gpm)] with EW234 first operating at 125 gpm and then 100 gpm. The extent of the cones of depression associated with the Northeast Plume extraction wells is similar to the previous pumping scenario, however, the northward flow trend between C-400 and the Northeast Plume transect wells is accentuated.

Water level measurements on May 10, 2018, (Figure G.25) show the influence of the Northeast and Northwest Plume extraction wells with the Northeast Plume extraction wells operating at their minimum design pumping rates (100 gpm in EW234 and 75 gpm in EW235). Under this pumping scenario, the influence of the Northwest Plume extraction wells extends to the C-400 Cleaning Building and flow to the Northeast Plume extraction wells appears to be minimized.

Table G.9 summarizes the impact of the different pumping scenarios to the gradient between MW525 and MW533. The pumping rate of EW234 is the dominant influence. As anticipated, increasing the pumping rate in EW235 increases the gradient. Groundwater flow towards EW234 is increased by a factor of 2.9 × between pumping at the minimum design rate in both extraction wells (75 gpm in EW235 and 100 gpm in EW234) and pumping near the maximum design rate in both extraction wells (120 gpm in EW235 and 150 gpm in EW234).

G.8. ASSESSMENT OF CAPTURE EFFICIENCY OF NORTHEAST PLUME EXTRACTION WELLS EW234 AND EW235

The Northeast Plume extraction wells began operation on October 10, 2017. To provide monitoring of the new extraction well system, the optimization project included construction of monitoring wells and piezometers at the following locations:

- An upgradient transect of monitoring wells located approximately 740 ft east of the C-400 Cleaning Building to monitor the impact of pumping in the extraction wells in the C-400 area;

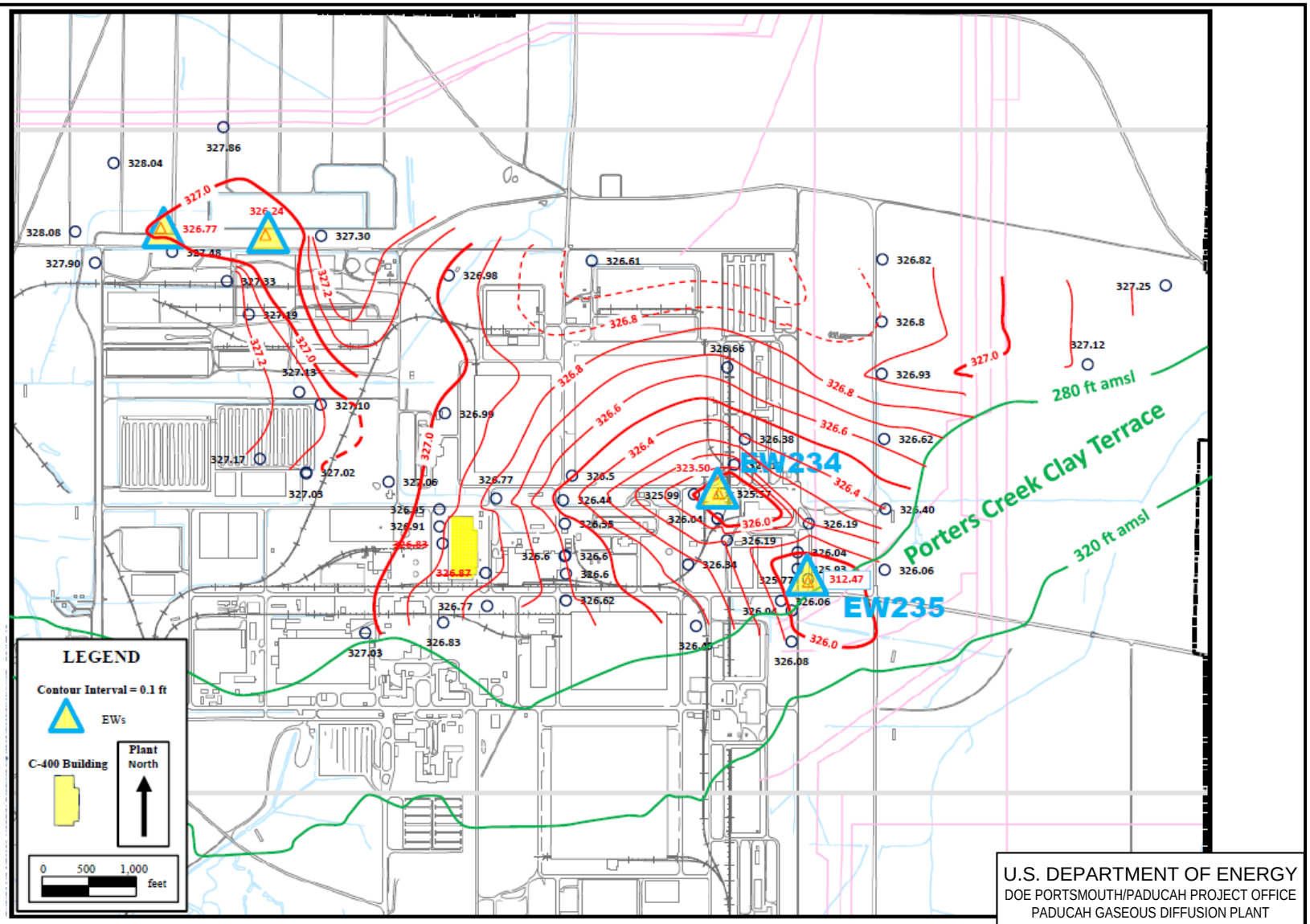

Figure G.21. April 23, 2018—Phase I (EW234: 150 gpm/EW235: 120 gpm

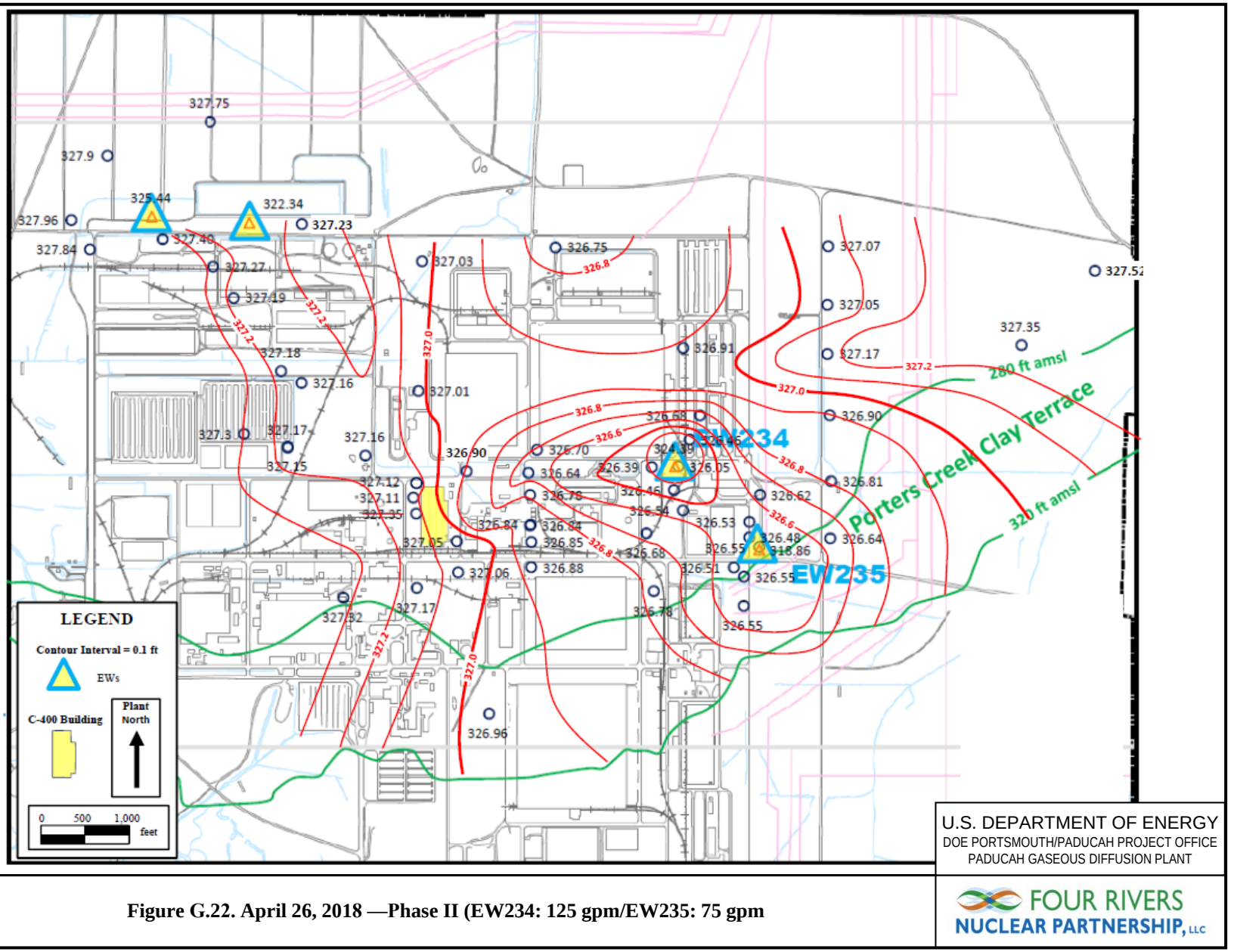

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Figure G.22. April 26, 2018 —Phase II (EW234: 125 gpm/EW235: 75 gpm

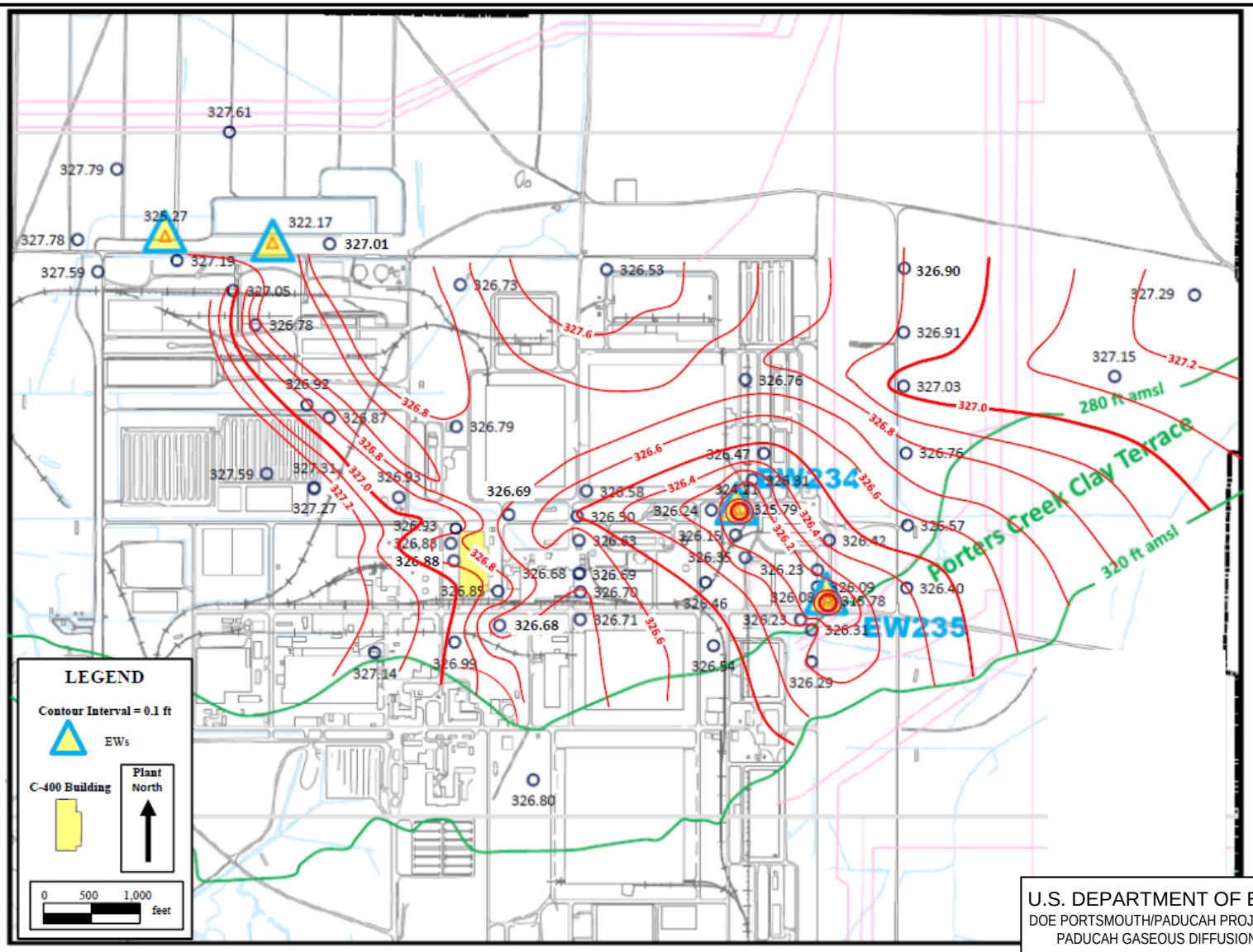

Figure G.23. April 30, 2018 — Phase III (EW234: 125 gpm/EW235: 100 gpm

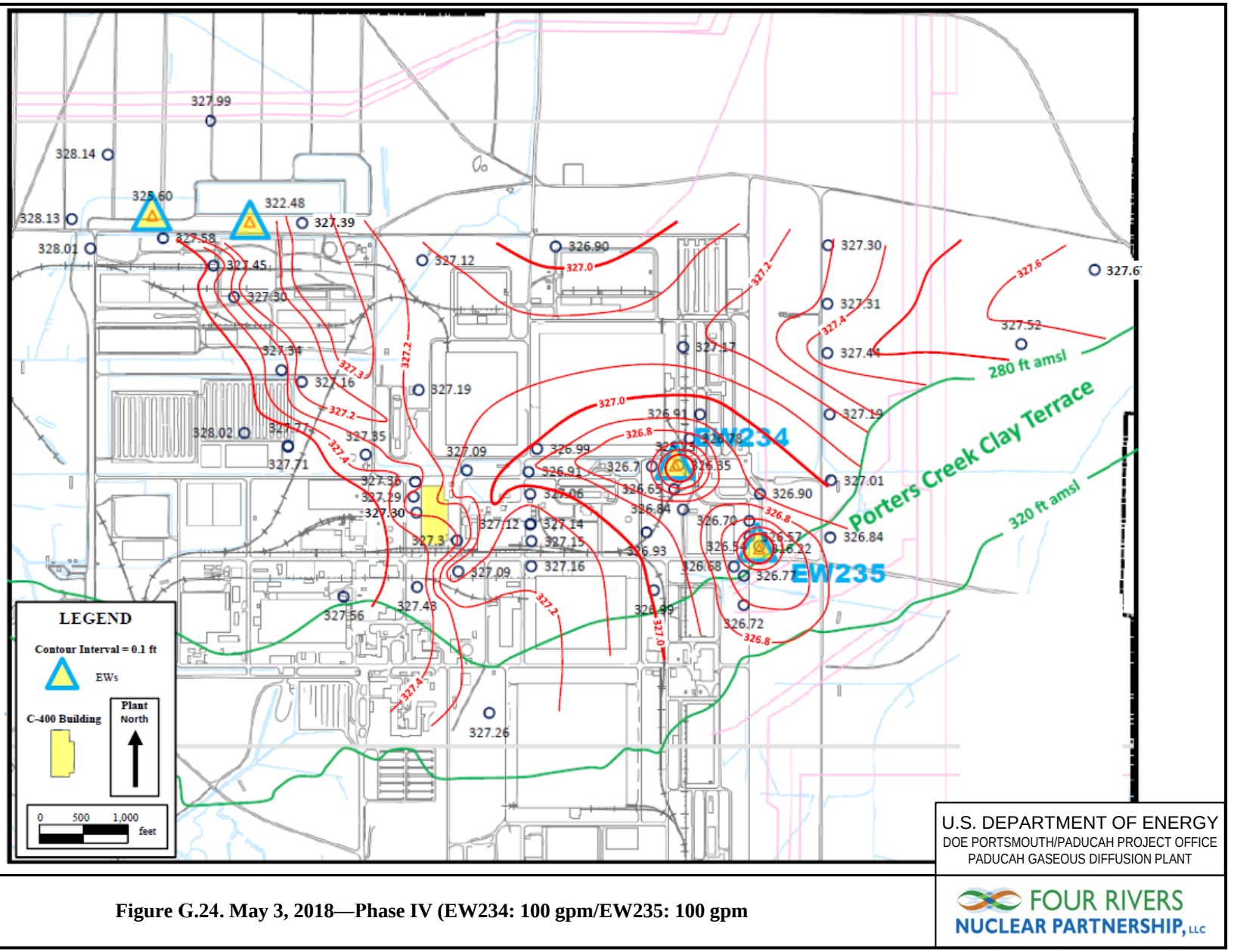

Figure G.24. May 3, 2018—Phase IV (EW234: 100 gpm/EW235: 100 gpm

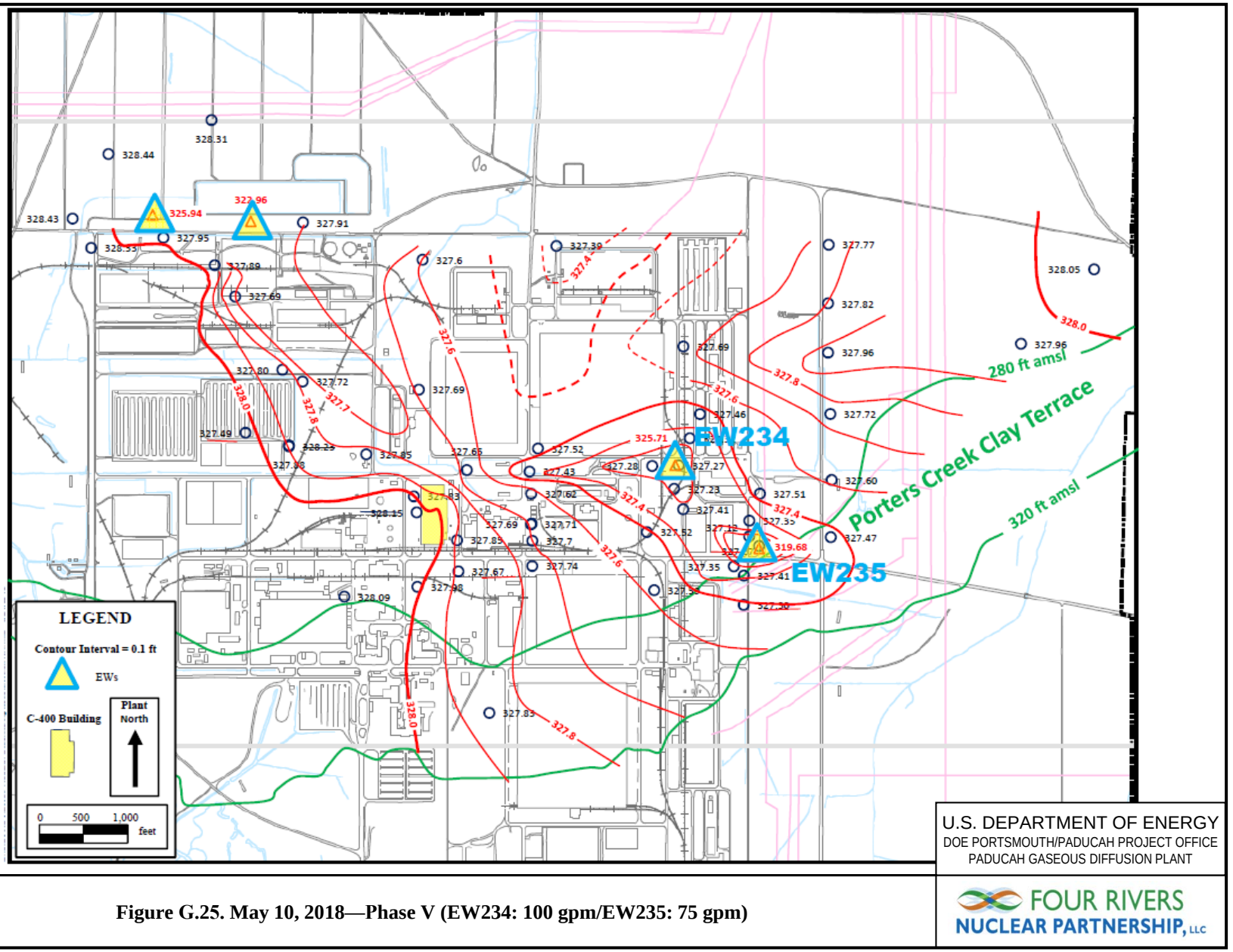

Figure G.25. May 10, 2018—Phase V (EW234: 100 gpm/EW235: 75 gpm)

Table G.9. Analysis of Hydraulic Gradient—Additional Hydraulic Testing

EW234 Pumping Rate (gpm)	EW235 Pumping Rate (gpm)	Date	Water Elevation (ft amsl)		Difference (ft)	Eastward Gradient* (ft/ft)	Flow Rate Increase
			MW525	MW533			
100	75	May 10, 2018	327.43	327.28	0.15	-1.41×10^{-4}	Baseline
	100	May 3, 2018	326.91	326.70	0.22	-1.99×10^{-4}	1.4 × Baseline
125	75	April 26, 2018	326.64	326.39	0.25	-2.28×10^{-4}	1.6 × Baseline
	100	April 30, 2018	326.50	326.24	0.26	-2.46×10^{-4}	1.7 × Baseline
150	120	April 23, 2018	326.38	325.95	0.44	-4.04×10^{-4}	2.9 × Baseline

*The distance between MW525 and MW533 is 1,077.94 ft.

- Wells and piezometers in the vicinity of the extraction wells to assess aquifer properties and the hydraulic stress induced by the extraction wells; and

- A monitoring well to the east of the extraction wells to complete a downgradient transect of monitoring wells to evaluate the capture efficiency of the new extraction wells.

G.8.1 HORIZONTAL HYDRAULIC CAPTURE EVALUATION

The U.S. Environmental Protection Agency (EPA) documents hydraulic capture assessment in *A Systematic Approach for Evaluation of Capture Zones at Pump and Treat Systems, Final Project Report*, EPA 600/R-08/003, January 2008. Simple equations resolve three limits of the horizontal extent of the capture zone of an extraction well:

- Distance from the extraction well to the downgradient end of the capture zone along the central line of the flow direction;

- Maximum capture zone width from the central line of the plume; and

- Capture zone width at the location of well from the central line of the plume.

These equations require values for the extraction rate and aquifer properties: hydraulic conductivity, transmissivity, saturated thickness, and regional hydraulic gradient. The minimum/maximum design pumping rates are 100 gpm/150 gpm for EW234 and 75 gpm/125 gpm for EW235. Saturated thickness and regional hydraulic gradient are documented by soil boring logs and RGA water level measurements.

Hydraulic conductivity and transmissivity are related properties (transmissivity = hydraulic conductivity × saturated thickness) which have not been previously documented for EW234 and EW235. The 2017 update of the site groundwater flow model (DOE 2017b) provides model-calibrated values of hydraulic conductivity for each of the extraction wells. Moreover, data are available to assess hydraulic conductivity for each extraction well from a step-drawdown test of each extraction well in June 2017 and from a hydraulic test of the extraction well system over the period of February 2018 through April 2018. The results are summarized in Table G.10.

Table G.10. Estimates of Hydraulic Conductivity and Transmissivity in EW234 and EW235

Extraction Well	Estimate Method	Hydraulic Conductivity (ft/d)	Transmissivity (ft^2/d)
EW234	Groundwater flow model	288	7.49×10^3
	Step-drawdown	847	2.20×10^4
	Time-drawdown	1,500	3.84×10^4
	Distance-drawdown—8 days	339	8.81×10^3
EW235	Groundwater flow model	992	2.54×10^4
	Step-drawdown	73	1.87×10^3
	Time-drawdown	2,215	5.76×10^4
	Distance-drawdown—8 days	37	9.47×10^2

The estimates of hydraulic conductivity and transmissivity using the step-drawdown, time-drawdown, and distance-drawdown methods are derived from AQTESOLV® version 4.50 (Geosyntec, 2018). Attachment G.1 provides output summaries from the program.

Among the estimate methods, this assessment considers the time-drawdown method as the best estimate of aquifer properties. The time-drawdown analysis assessed water level response to a robust pumping stress upon the aquifer in areas surrounding the extraction well. The step-test and distance-drawdown methods were strongly influenced by inefficiencies of the extraction wells.[4] The groundwater flow model results are based on an assessment of area-wide data.

Equations in the EPA's *A Systematic Approach for Evaluation of Capture Zones at Pump and Treat Systems, Final Project Report* determine key distances, relative to the extraction well, to define the extent of the extraction well's capture zone (Attachment G.2). The extent of the capture zones for EW234 and EW235, using the derived values of hydraulic conductivity and transmissivity and ± 25% bounding values are summarized in Table G.11. (Saturated thickness is 26.0 ft in EW234 and 25.6 ft in EW235.). The regional hydraulic gradient is assumed to be 2.6×10^{-4} for each extraction well.)

Table G.11. Extent of Capture Zones for EW234 and EW235 (Using Minimum Design Pumping Rate)

Hydraulic Conductivity and Transmissivity Values	Extraction Well	Distance (ft)		
		Extraction Well to Downgradient End	½ Width at Extraction Well	Max ½ Width
As Derived	EW234	307	482	964
	EW235	153	241	482
25% Decrease	EW234	409	643	1,285
	EW235	205	321	643
25% Increase	EW234	245	386	771
	EW235	123	193	386

In the horizontal perspective, for extraction wells located across the trend of the contaminant plume, a simple assessment of hydraulic control between the extraction wells is the combined half widths of the capture zones should exceed the distance between the extraction wells. The distance between EW234 and EW235 is 1,030 ft. Under the minimum design pumping rates scenario, the combined half widths at the extraction wells are less than the distance between the extraction wells; in all cases, the combined maximum half widths exceed the distance between the extraction wells. The horizontal extents of the capture zones, using the minimum design pumping rates, are appropriate for control of the Northeast Plume. Figure G.26 illustrates the calculated extent of the capture zones for EW234 and EW235 using the derived values of hydraulic conductivity and transmissivity.

Another approach to assess the sufficiency of the hydraulic capture is to compare calculated groundwater flow volume, on a daily basis, against actual pumping rates in the extraction wells. The calculation is based on Darcy's Equation.

$$Q = -KiA$$

where Q = flow volume/day, K = hydraulic conductivity, i = gradient, and A = the cross sectional area through which the flow occurs.

[4] EW235 has greater inefficiency. The inefficiency likely is related to air entrapped in the formation, derived from the drilling method (air dual rotary drill system).

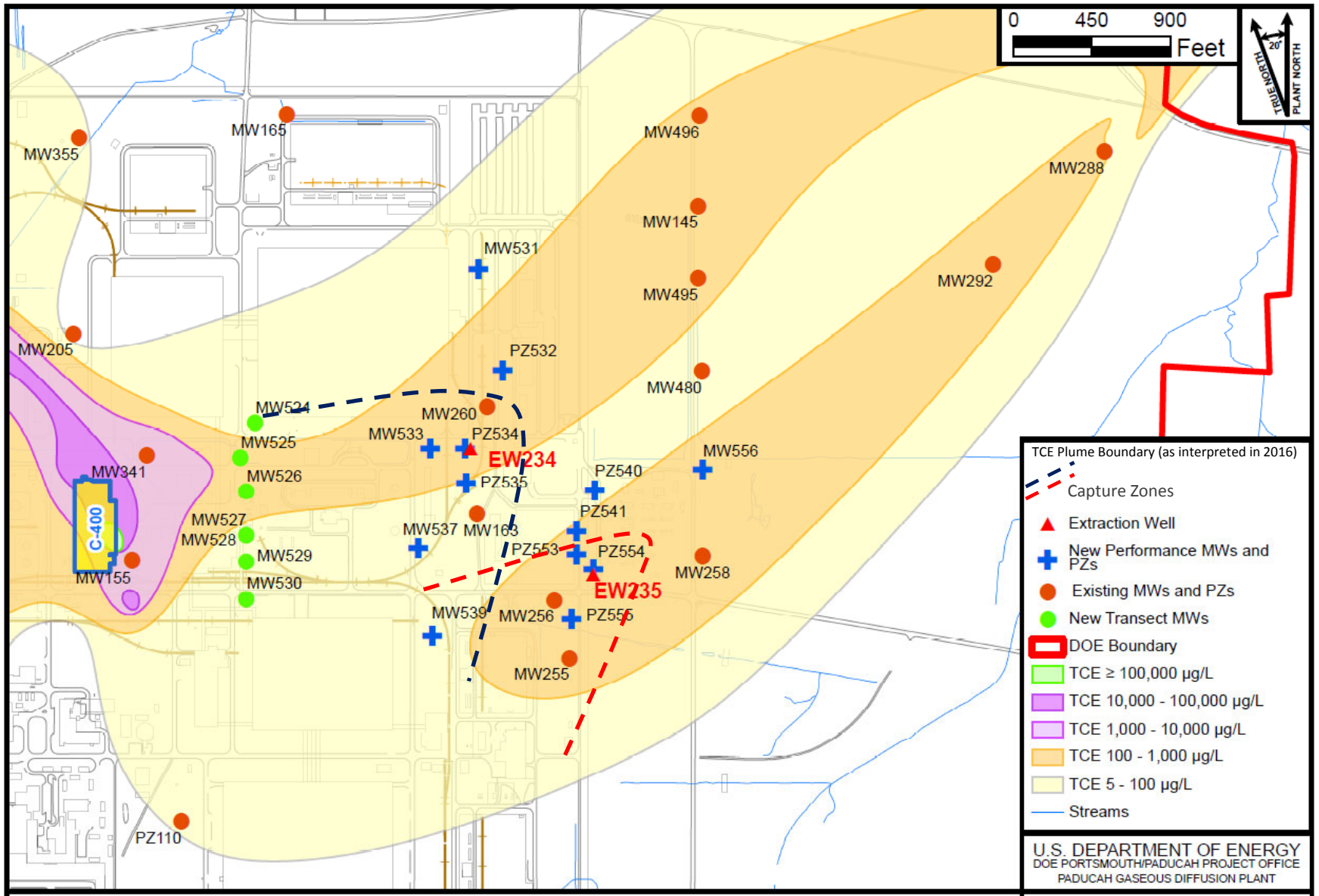

Figure G.26. Capture Zones of EW234 and EW235 Using Minimum Design Pumping Rates

Table G.12 summarizes conservative (protective) values for inputs and derived flow volume per day.

A simple comparison of the calculated flow volume per day in the plume against the minimum pumping rate per day of the extraction wells indicates the pumping rate is marginally inadequate. However, the values assigned to hydraulic conductivity and the width of the cross-sectional area are conservative (protective) estimates. Replacing the conservative value of hydraulic conductivity (average of values attributed to the extraction wells) with the median of values for all area wells and piezometers[5] (1,571.5 ft/d) results in a calculated flow rate of 253,503 gal/d (essentially equal to the combined extraction well withdrawal rate at the minimum pumping rates). Limiting the width of the cross-sectional area to the width across the cores of the Northeast Plume (2,209 ft) further reduces the calculated flow rate in the plume to 172,552 gal/d.

Table G.12. Assessment of Flow Volume

Parameter	Value	Unit	Notes
Hydraulic Conductivity (K)	1,858	ft/d	Average of values derived for EW234 and EW235
Gradient (i)	-2.60×10^{-4}	ft/ft	Average nonpumping gradient measured between MW525 and MW533
Cross-sectional area (A)	82,940	ft^2	3,190 ft (width of plume as mapped for calendar year 2016) multiplied by 26 ft (greater thickness of RGA measured in EW234 and EW235)
Calculated Flow Volume (Q)	40,067	ft^3/d	
	299,719	gal/d	
Minimum Pumping Rate	252,000	gal/d	Pumping rates of 100 gpm for EW234 and 75 gpm for EW235

The reasoned comparison of calculated flow volume and actual extraction well flow rates indicates the minimum design pumping rates for EW234 and EW235 are sufficient to capture the dissolved contamination in the Northeast Plume.

G.8.2 VERTICAL HYDRAULIC CAPTURE EVALUATION

Capture zones are 3-dimensional. The ability of extraction wells EW234 and EW235 to control the Northeast Plume in the vertical perspective is dependent upon the additional considerations of vertical hydraulic gradient and vertical anisotropy of hydraulic conductivity within the RGA.

Vertical hydraulic gradients are slight in the RGA and cannot be reliably measured. Comparison of hydraulic potential in the RGA, and the underlying McNairy Formation indicates that vertical downward hydraulic gradients must exist within the Paducah fenced security area. Drawdown of 2 ft or greater in the RGA is likely to induce vertically upward gradients at the base of the RGA in the vicinity of each extraction well.

Vertical anisotropy of hydraulic conductivity generally is not apparent in soil cores of the RGA and is not in the soil cores of boreholes adjacent to extraction wells EW234 and EW235. The lithologic logs for PZ534 (EW234) and PZ554 (EW235) report sands and gravels throughout the RGA interval. Grain size analyses are available for several depth intervals in these soil cores (seven representing EW234 and four representing EW235). A steam injection treatability study in the RGA at the C-400 Cleaning Building

[5] The highest derived hydraulic conductivity for each well was used in the calculation of the median value.

revealed the presence of distinctive lower and upper RGA facies (not visually evident). Steam front advancement determined the anisotropy of horizontal to vertical hydraulic conductivity to be 10:1 in the upper RGA and 30:1 in the lower RGA. It is reasonable that significant vertical anisotropy may be present in the area of EW234 and EW235. In the presence of an induced slight upward vertical gradient, horizontal flow likely dominates in response to pumping in the RGA.

G.9. REFERENCES

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ATTACHMENT G1

AQTESOLV® VERSION 4.50 OUTPUT

(GEOSYNTEC 2018)

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TABLES

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TABLE G1.1.
SUMMARY OF AQTESOLV INPUT PARAMETERS AND RESULTS
CONSTANT RATE PUMPING TEST: TIME-DRAWDOWN DATA ANALY
SIS (PUMPING WELL: EW234)
FRNP
Paducah, Kentucky, August 2018

	Well ID		EW234	EW235	MW533	PZ534	PZ541
Well Information	Well Diameter (in)		8	8	4	2	2
	Initial Boring Diameter (in)		16	16	9	7	7
	Screen Interval (ft BGS)		80.7 to 95.7	85.0-100.0	89.1-99.1	87.45-97.2	94.2-104.2
	Screen Top (ft BGS)		80.7	85	89.1	87.45	94.2
	Screen Bottom (ft BGS)		95.7	100.0	99.1	97.2	104.2
	Screen Top Elevation (ft BGS)		300.6	297.8	292.0	294.0	286.9
	Screen Bottom Elevation (ft BGS)		285.6	282.8	282.0	284.2	276.9
	Aquifer Type		Leaky Confined	Leaky Confined	Leaky Confined	Leaky Confined	Leaky Confined
	Top of Confining Unit (ft BGS)		69.7	74.0	73.1	71.2	78.2
	Top of Casing Elevation (ft MSL)		381.276	382.849	384.174	383.895	384.139
	Ground Surface Elevation (ft MSL)		381.28	382.85	381.14	381.44	381.15
	Static Water Level (ft BGS)		57.4	59.0	60.5	60.3	60.3
	Static Water Level Elevation (ft MSL)		323.85	323.86	323.64	323.64	323.79
AQTESOLV Input	Pumping Rates (gpm)		150.00	N/A	N/A	N/A	N/A
	Aquifer Saturated Thickness (ft) [AQTESOLV b]		26.0	26.0	26.0	26.0	26.0
	Aquitard Thickness (ft) [AQTESOLV b']		23.8				
	Distance from Pumping Well (ft)		N/A	1030	202	30	800
	Depth to Well Screen [AQTESOLV d]		11	11	16	16	16
	Screen Length (ft) [AQTESOLV "L"]		15	15	10	10	10
	Inside Radius of Well Casing (ft) [AQTESOLV r(c)]		0.333	0.333	0.167	0.083	0.083
	Radius of Well (ft) [AQTESOLV r(w)]		0.667	0.667	0.375	0.292	0.292
Pumping Test Results	Hantush-Jacob (1955)/ Hantush (1964) w/o aquitard storage	Horizontal Hydraulic Conductivity (K, ft/day)		2215.00	1110.38	1050.77	1960.00
		Transmissivity (T, ft^2/day)		5.76E+04	2.89E+04	2.73E+04	5.10E+04
		Horizontal Hydraulic Conductivity (K, cm/sec)		7.81E-01	3.92E-01	3.71E-01	6.91E-01
		Transmissivity (T, cm^2/sec)		619.25	310.43	293.76	547.96
		Storativity (S)		1.27E-03	1.00E-03	1.00E-03	1.81E-03
		Hydraulic Conductivity Anisotropy Ratio (Kz/Kr)		3.00E-02	3.00E-02	4.81E-02	3.00E-02

Notes:
ft MSL = feet mean sea level
ft BGS = feet below ground suface
in = inches
ft = feet
ft/day indicates feet per day
ft^2/day = square feet per day
gpm = gallons per minute
AQTESOLV = Aquifer Test SOLVer
N/A = not applicable
Bottom of aquifer is assumed to be bottom of screen.

TABLE G1.2.
SUMMARY OF AQTESOLV INPUT PARAMETERS AND RESULTS
CONSTANT RATE PUMPING TEST: TIME-DRAWDOWN DATA ANALYSIS
(PUMPING WELL: EW235)
FRNP
Paducah, Kentucky, August 2018

	Well ID		EW234	EW235	PZ534	PZ535	PZ541
Well Information	Well Diameter (in)		8	8	2	2	2
	Initial Boring Diameter (in)		16	16	7	7	7
	Screen Interval (ft BGS)		80.7 to 95.7	85.0-100.0	87.45-97.2	91.3-101.3	94.2-104.2
	Screen Top (ft BGS)		80.7	85	87.45	91.3	94.2
	Screen Bottom (ft BGS)		95.7	100.0	97.2	101.3	104.2
	Screen Top Elevation (ft BGS)		300.6	297.8	294.0	290.9	286.9
	Screen Bottom Elevation (ft BGS)		285.6	282.8	284.2	280.9	276.9
	Aquifer Type		Leaky Confined	Leaky Confined	Leaky Confined	Leaky Confined	Leaky Confined
	Top of Confining Unit (ft BGS)		70.1	74.4	71.6	75.7	78.6
	Top of Casing Elevation (ft MSL)		381.276	382.849	383.895	385.319	384.139
	Ground Surface Elevation (ft MSL)		381.28	382.85	381.44	382.22	381.15
	Static Water Level (ft BGS)		58.5	60.1	61.3	62.7	61.4
	Static Water Level Elevation (ft MSL)		322.79	322.77	322.59	322.64	322.71
AQTESOLV Input	Pumping Rates (gpm)		N/A	125.00	N/A	N/A	N/A
	Aquifer Saturated Thickness (ft) [AQTESOLV b]		25.6	25.6	25.6	25.6	25.6
	Aquitard Thickness (ft) [AQTESOLV b']		30.5				
	Distance from Pumping Well (ft)		1030	N/A	30	205	800
	Depth to Well Screen [AQTESOLV d]		10.60	10.60	15.85	15.60	15.60
	Screen Length (ft) [AQTESOLV "L"]		15	15	10	10	10
	Inside Radius of Well Casing (ft) [AQTESOLV r(c)]		0.333	0.333	0.083	0.083	0.083
	Radius of Well (ft) [AQTESOLV r(w)]		0.667	0.667	0.292	0.292	0.292
Pumping Test Results	Hantush-Jacob (1955)/ Hantush (1964) w/o aquitard storage	Horizontal Hydraulic Conductivity (K, ft/day)	1500.39		1643.36	1346.09	1227.34
		Transmissivity (T, ft^2/day)	3.84E+04		4.21E+04	3.45E+04	3.14E+04
		Horizontal Hydraulic Conductivity (K, cm/sec)	5.29E-01		5.80E-01	4.75E-01	4.33E-01
		Transmissivity (T, cm^2/sec)	413.01		452.37	370.54	337.85
		Storativity (S)	1.97E-03		1.82E-03	1.30E-03	6.96E-05
		Hydraulic Conductivity Anisotropy Ratio (Kz/Kr)	3.00E-02		3.00E-02	3.00E-02	5.00E-02

Notes:
ft MSL = feet mean sea level
ft BGS = feet below ground suface
in = inches
ft = feet
ft/day indicates feet per day
ft^2/day = square feet per day
gpm = gallons per minute
AQTESOLV = Aquifer Test SOLVer
N/A = not applicable
Bottom of aquifer is assumed to be bottom of screen.

TABLE G1.3.
SUMMARY OF AQTESOLV INPUT PARAMETERS AND RESULTS
CONSTANT RATE PUMPING TEST: PUMPING WELL EW234
DISTANCE-DRAWDOWN DATA ANALYSIS
FRNP
Paducah, Kentucky, August 2018

	Well ID	EW234	EW235	MW533	PZ534	PZ535	PZ541	PZ553	PZ554
Well Information	Well Diameter (in)	8	8	4	2	2	2	2	2
	Initial Boring Diameter (in)	16	16	9	7	7	7	7	7
	Screen Interval (ft BGS)	80.7 to 95.7	85.0-100.0	89.1-99.1	87.45-97.2	91.3-101.3	94.2-104.2	92.2-102.2	93.7-103.7
	Screen Top (ft BGS)	80.7	85	89.1	87.45	91.3	94.2	92.2	93.7
	Screen Bottom (ft BGS)	95.7	100.0	99.1	97.2	101.3	104.2	102.2	103.7
	Screen Top Elevation (ft BGS)	300.6	297.8	292.0	294.0	290.9	286.9	289.2	289.4
	Screen Bottom Elevation (ft BGS)	285.6	282.8	282.0	284.2	280.9	276.9	279.2	279.4
	Aquifer Type	Leaky Confined	Leaky Confined	Leaky Confined	Leaky Confined	Leaky Confined	Leaky Confined	Leaky Confined	Leaky Confined
	Top of Confining Unit (ft BGS)	69.7	74.0	73.1	71.2	75.3	78.2	76.2	77.7
	Top of Casing Elevation (ft MSL)	381.276	382.849	384.174	383.895	385.319	384.139	384.609	386.08
	Ground Surface Elevation (ft MSL)	381.28	382.85	381.14	381.44	382.22	381.15	381.36	383.10
	Static Water Level (ft BGS)	57.4	59.0	60.5	60.3	61.6	60.3	60.8	62.3
	Static Water Level (ft MSL)	323.85	323.86	323.64	323.64	323.70	323.79	323.80	323.80
AQTESOLV Input	Pumping Rates (gpm)	150.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Aquifer Saturated Thickness (ft) [AQTESOLV b]	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0
	Aquitard Thickness (ft) [AQTESOLV b']	23.8							
	Distance from Pumping Well (ft)	0.67	1030	202	30	205	800	888	1015
	Depth to Well Screen [AQTESOLV d]	11	11	16	16	16	16	16	16
	Screen Length (ft) [AQTESOLV "L"]	15	15	10	10	10	10	10	10
	Inside Radius of Well Casing (ft) [AQTESOLV r(c)]	0.333	0.333	0.167	0.083	0.083	0.083	0.083	0.083
	Radius of Well (ft) [AQTESOLV r(w)]	0.667	0.667	0.375	0.292	0.292	0.292	0.292	0.292

Distance Drawdown Results		24 hrs After Pumping Began	4 days After Pumping Began	8 days After Pumping Began
Hantush-Jacob (1955)/ Hantush (1964) w/o Aquitard Storage	Horizontal Hydraulic Conductivity (K, ft/day)	392	350	339
	Transmissivity (T, ft^2/day)	1.02E+04	9.10E+03	8.81E+03
	Horizontal Hydraulic Conductivity (K, cm/sec)	1.38E-01	1.23E-01	1.20E-01
	Transmissivity (T, cm^2/sec)	109	98	95
	Storativity (S)	1.49E-03	1.49E-03	1.49E-03
	Hydraulic Conductivity Anisotropy Ratio (Kz/Kr)	4.32E-02	4.32E-02	4.32E-02

Notes:
ft MSL = feet mean sea level
ft BGS = feet below ground suface
in = inches
ft = feet
ft/day indicates feet per day
ft^2/day = square feet per day
gpm = gallons per minute
AQTESOLV = Aquifer Test SOLVer
N/A = not applicable
Bottom of aquifer is assumed to be bottom of screen.

TABLE G1.4.
SUMMARY OF AQTESOLV INPUT PARAMETERS AND RESULTS
CONSTANT RATE PUMPING TEST: PUMPING WELL EW235
DISTANCE-DRAWDOWN DATA ANALYSIS
FRNP
Paducah, Kentucky, August 2018

	Well ID	EW234	EW235	MW533	PZ534	PZ535	PZ541	PZ553	PZ554
Well Information	Well Diameter (in)	8	8	4	2	2	2	2	2
	Initial Boring Diameter (in)	16	16	9	7	7	7	7	7
	Screen Interval (ft BGS)	80.7 to 95.7	85.0-100.0	89.1-99.1	87.45-97.2	91.3-101.3	94.2-104.2	92.2-102.2	93.7-103.7
	Screen Top (ft BGS)	80.7	85	89.1	87.45	91.3	94.2	92.2	93.7
	Screen Bottom (ft BGS)	95.7	100.0	99.1	97.2	101.3	104.2	102.2	103.7
	Screen Top Elevation (ft BGS)	300.6	297.8	292.0	294.0	290.9	286.9	289.2	289.4
	Screen Bottom Elevation (ft BGS)	285.6	282.8	282.0	284.2	280.9	276.9	279.2	279.4
	Aquifer Type	Leaky Confined	Leaky Confined	Leaky Confined	Leaky Confined	Leaky Confined	Leaky Confined	Leaky Confined	Leaky Confined
	Top of Confining Unit (ft BGS)	70.1	74.4	73.5	71.6	75.7	78.6	76.6	78.1
	Top of Casing Elevation (ft MSL)	381.276	382.849	384.174	383.895	385.319	384.139	384.609	386.08
	Ground Elevation (ft MSL)	381.28	382.85	381.14	381.44	382.22	381.15	381.36	383.10
	Static Water Level (ft BGS)	58.5	60.1	61.6	61.3	62.7	61.4	61.9	63.4
	Static Water Level (ft MSL)	322.79	322.77	322.57	322.59	322.64	322.71	322.72	322.71
AQTESOLV Input	Pumping Rates (gpm)	NA	125.00	N/A	N/A	N/A	N/A	N/A	N/A
	Aquifer Saturated Thickness (ft) [AQTESOLV b]	25.6	25.6	25.6	25.6	25.6	25.6	25.6	25.6
	Aquitard Thickness (ft) [AQTESOLV b']	30.5							
	Distance from Pumping Well (ft)	0.67	1030	202	30	205	800	888	1015
	Depth to Well Screen [AQTESOLV d]	10.60	10.60	15.60	15.85	15.60	15.60	15.60	15.60
	Screen Length (ft) [AQTESOLV "L"]	15	15	10	10	10	10	10	10
	Inside Radius of Well Casing (ft) [AQTESOLV r(c)]	0.333	0.333	0.167	0.083	0.083	0.083	0.083	0.083
	Radius of Well (ft) [AQTESOLV r(w)]	0.667	0.667	0.375	0.292	0.292	0.292	0.292	0.292

Distance Drawdown Results		24 hrs After Pumping Began	4 days After Pumping Began	8 days After Pumping Began
Hantush-Jacob (1955)/ Hantush (1964) w/o Aquitard Storage	Horizontal Hydraulic Conductivity (K, ft/day)	37	37	37
	Transmissivity (T, ft^2/day)	9.56E+02	9.49E+02	9.45E+02
	Horizontal Hydraulic Conductivity (K, cm/sec)	1.32E-02	1.31E-02	1.30E-02
	Transmissivity (T, cm^2/sec)	10	10	10
	Storativity (S)	1.41E-03	1.41E-03	1.41E-03
	Hydraulic Conductivity Anisotropy Ratio (Kz/Kr)	4.25E-02	4.25E-02	4.25E-02

Notes:
ft MSL = feet mean sea level
ft BGS = feet below ground suface
in = inches
ft = feet
ft/day indicates feet per day
ft^2/day = square feet per day
gpm = gallons per minute
AQTESOLV = Aquifer Test SOLVer
N/A = not applicable
Bottom of aquifer is assumed to be bottom of screen.

TABLE G1.5.
SUMMARY OF AQTESOLV INPUT PARAMETERS AND RESULTS
STEP DRAWDOWN PUMPING TEST DATA ANALYSIS
FRNP
Paducah, Kentucky, August 2018

			Pumping Well ID	EW234	EW235
Well Information			Well Diameter (in)	8	8
			Initial Boring Diameter (in)	16	16
			Screen Interval (ft BGS)	80.7 to 95.7	85.0-100.0
			Top of Aquifer (ft BGS)	69.7	74.4
			Bottom of Aquifer (ft BGS)	95.7	100.0
			Aquifer Type	Leaky Confined	Leaky Confined
			Static Water Level (ft BGS)	50.42	51.63
AQTESOLV Input			Pumping Rates (gpm)	0/50/100/150/200/0	0/50/100/150/200/0
			Time Pumping Rate Changed (Sec)	2955/6630/10245/13845/17475	465/4035/7665/11265/14895
			Formation Saturated Thickness (ft) [AQTESOLV b]	26.00	25.60
			Confining Unit Thickness (ft) [AQTESOLV b']	23.80	30.50
			Hydraulic Conductivity Anisotropy Ratio [AQTESOLV kv/Kh]	0.10	0.10
			Depth to Well Screen [AQTESOLV d]	11.00	10.60
			Screen Length (ft) [AQTESOLV "L"]	15	15
			Inside Radius of Well Casing (ft) [AQTESOLV r(c)]	0.333	0.333
			Radius of Well (ft) [AQTESOLV r(w)]	0.667	0.667
Pumping Test Results	Hantush Jacob (1955) Step-drawdown Test		Horizontal Hydraulic Conductivity (K, ft/day)	846.73	73.07
			Transmissivity (T, ft^2/day)	2.20E+04	1.87E+03
			Horizontal Hydraulic Conductivity (K, cm/sec)	2.99E-01	2.58E-02
			Transmissivity (T, cm^2/sec)	236.72	20.11
			Storativity (S)	1.45E-04	1.00E-05

Notes:
ft BGS = feet below ground suface
in = inches
ft = feet
ft/day = feet per day
ft^2/day = square feet per day
gpm = gallons per minute
AQTESOLV = Aquifer Test SOLVer
Bottom of aquifer is assumed to be bottom of screen.

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FIGURES

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Pumping and Observation Well Location
Paducah Gas Diffusion Plant
Paducah, KY

Geosyntec consultants

Kennesaw, GA | August 2018

Figure 1

G1-13

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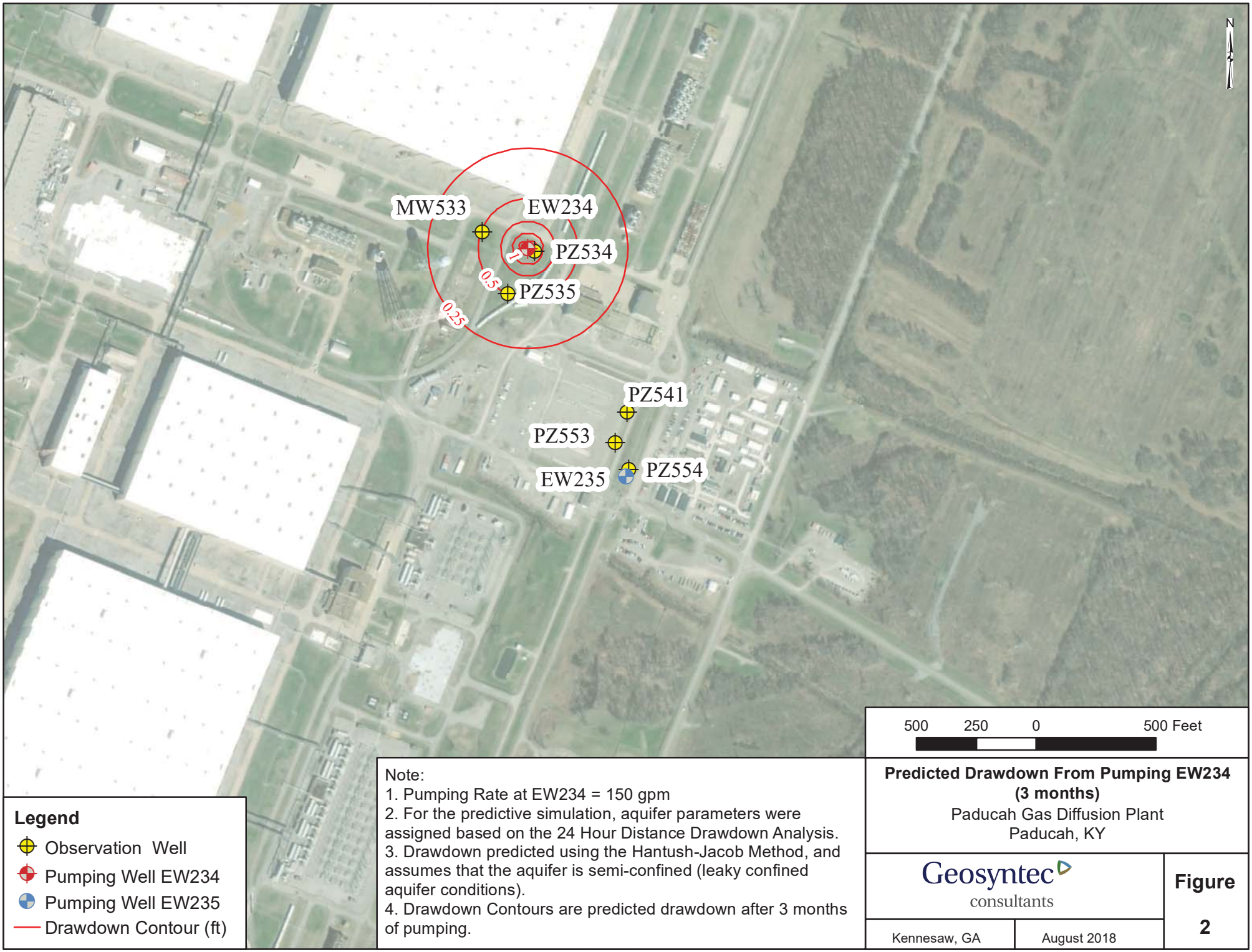

Note:
1. Pumping Rate at EW234 = 150 gpm
2. For the predictive simulation, aquifer parameters were assigned based on the 24 Hour Distance Drawdown Analysis.
3. Drawdown predicted using the Hantush-Jacob Method, and assumes that the aquifer is semi-confined (leaky confined aquifer conditions).
4. Drawdown Contours are predicted drawdown after 3 months of pumping.

Predicted Drawdown From Pumping EW234 (3 months)
Paducah Gas Diffusion Plant
Paducah, KY

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Figure 2

G1-14

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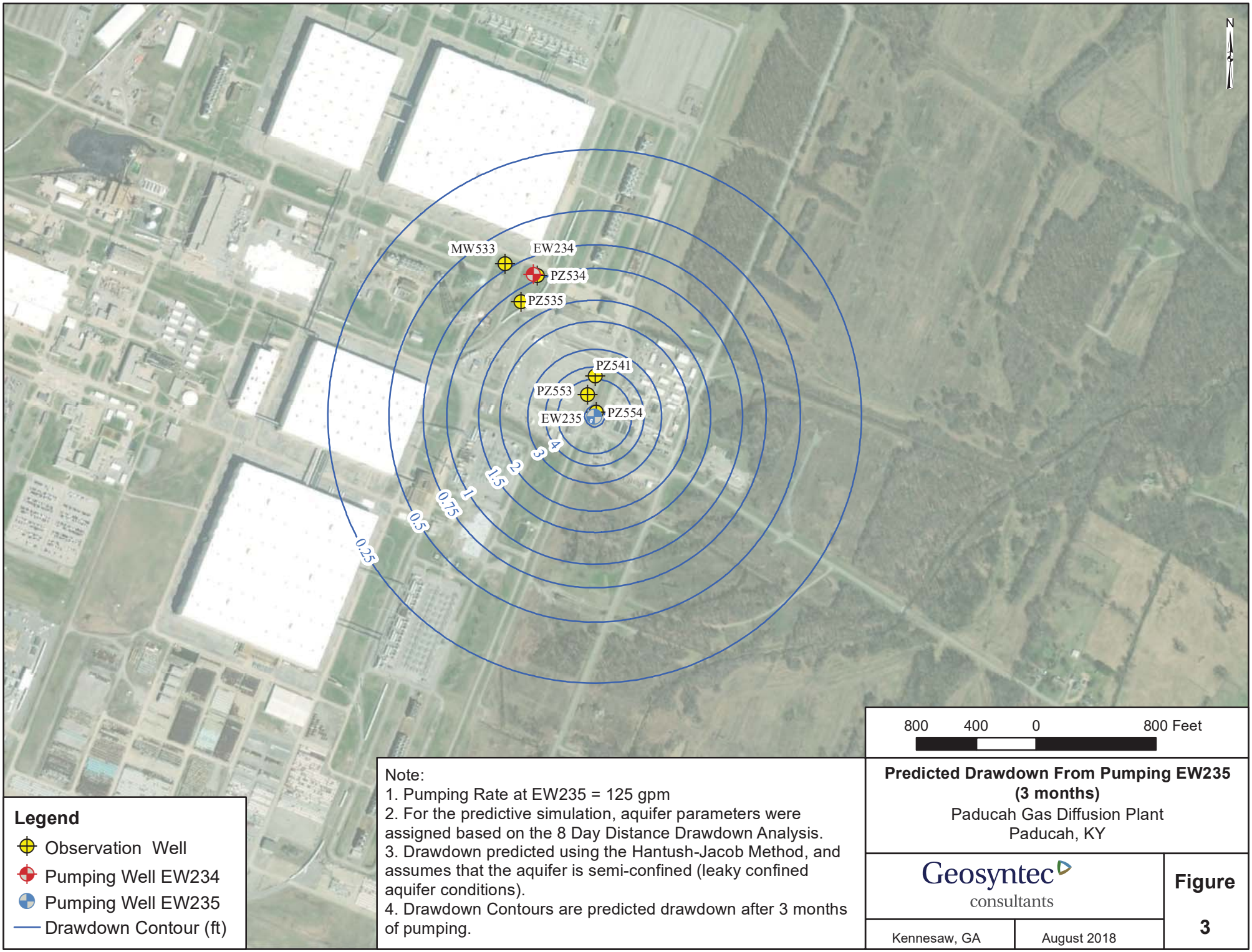

Note:
1. Pumping Rate at EW235 = 125 gpm
2. For the predictive simulation, aquifer parameters were assigned based on the 8 Day Distance Drawdown Analysis.
3. Drawdown predicted using the Hantush-Jacob Method, and assumes that the aquifer is semi-confined (leaky confined aquifer conditions).
4. Drawdown Contours are predicted drawdown after 3 months of pumping.

Predicted Drawdown From Pumping EW235 (3 months)
Paducah Gas Diffusion Plant
Paducah, KY

Geosyntec consultants

Kennesaw, GA | August 2018

Figure 3

G1-15

N:\Paducah Aquifer Test APT - 2018\gis\mxd\Simulated_Drawdown_EW235_leaky_confined.mxd 8/30/2018 4:13:29 PM

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AQTESOLV PLOTS

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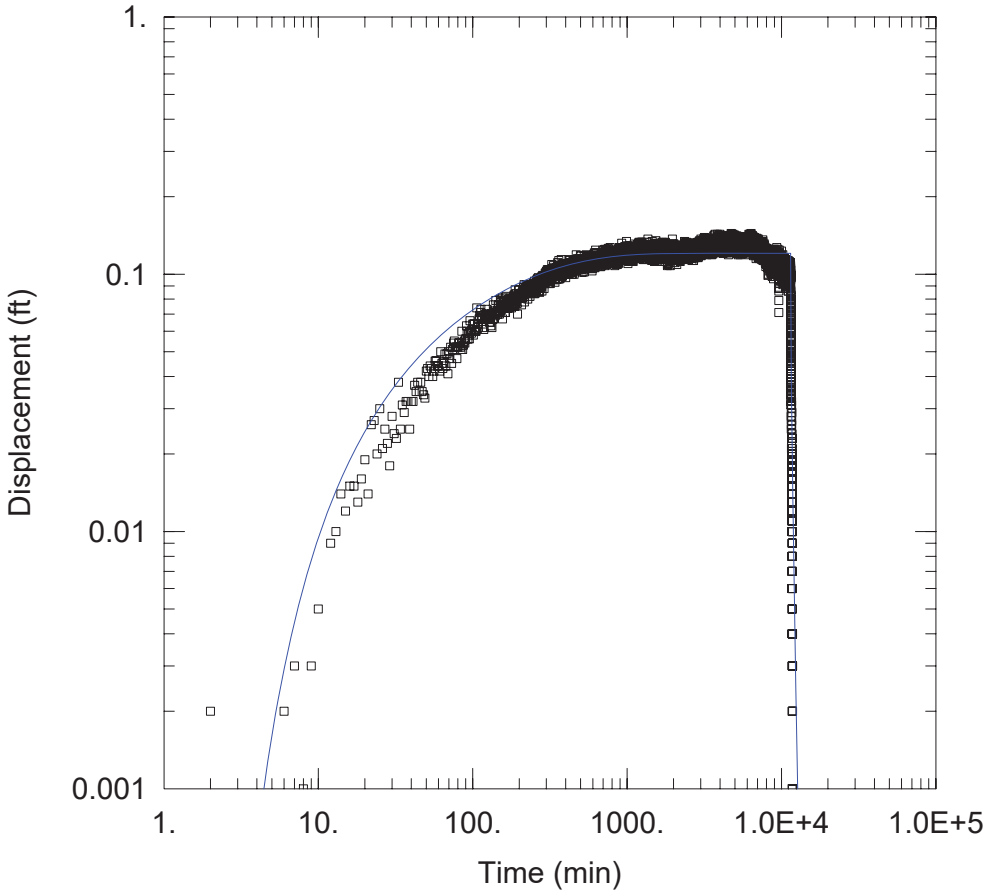


WELL TEST ANALYSIS

Data Set: N:\...\EW235 Leaky Confined Aquifer Test.aqt
Date: 08/27/18 Time: 16:24:25

PROJECT INFORMATION

Company: Geosyntec Consultants
Client: FRNP
Project: KX6467A
Location: Paducah, Kentucky
Test Well: EW234

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
EW234	750201	1939019

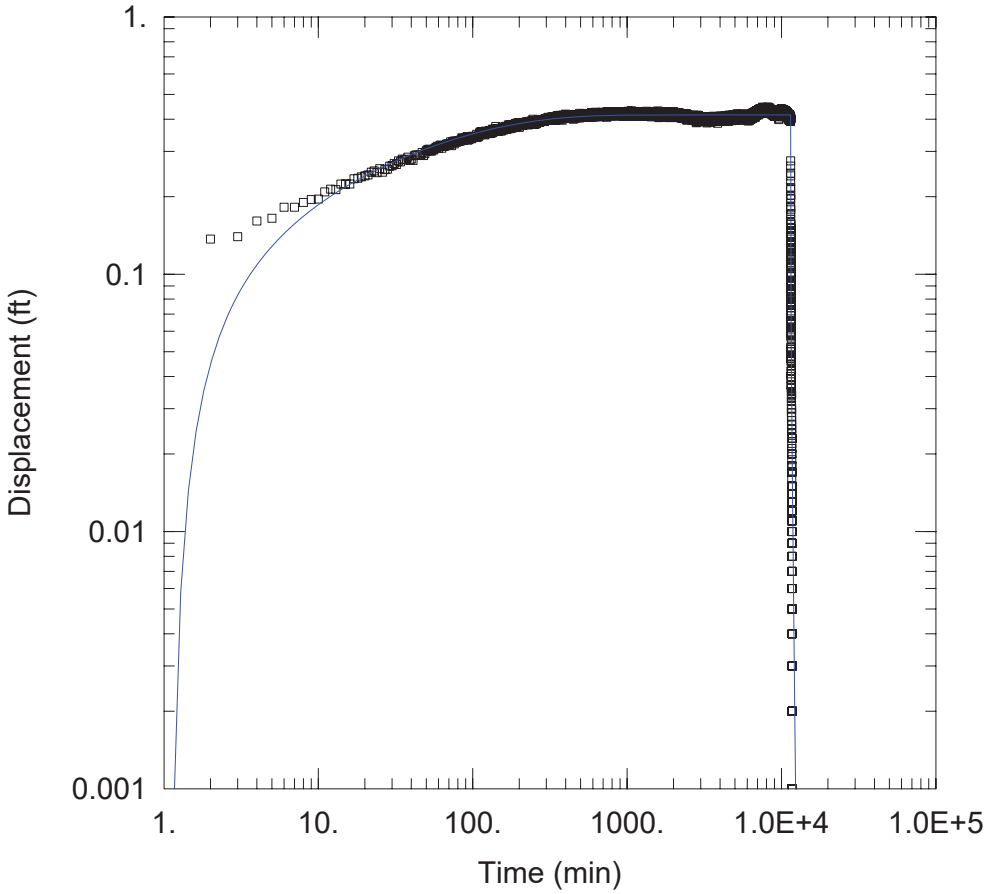
Observation Wells

Well Name	X (ft)	Y (ft)
▫ EW235	750611	1938067

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush-Jacob

T = 5.759E+4 ft^2/day
S = 0.001272
r/B = 0.2583
Kz/Kr = 0.03
b = 26. ft



WELL TEST ANALYSIS

Data Set: \...\MW533 Leaky Confined Aquifer Test.aqt
Date: 08/28/18 Time: 11:48:03

PROJECT INFORMATION

Company: Geosyntec Consultants
Client: FRNP
Project: KX6467A
Location: Paducah, Kentucky
Test Well: EW234

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
EW234	750201	1939019

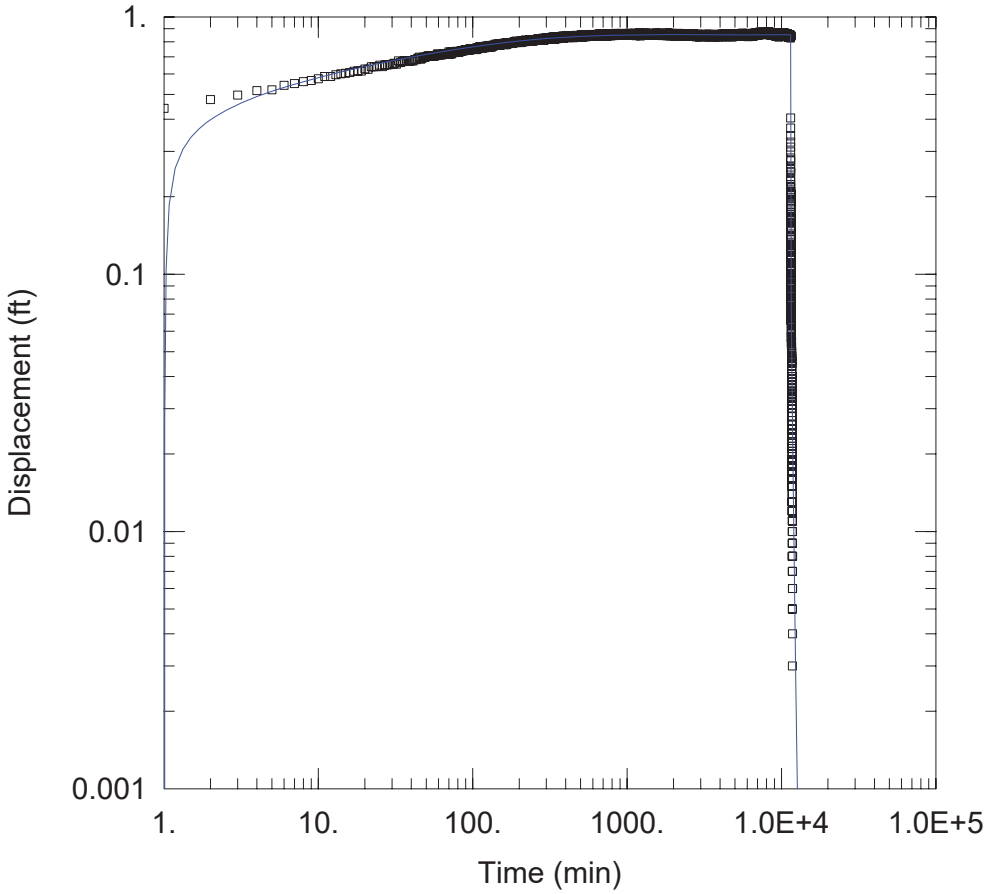
Observation Wells

Well Name	X (ft)	Y (ft)
▫ MW533	750011	1939088

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush-Jacob

T = 2.887E+4 ft^2/day
S = 0.001
r/B = 0.08355
Kz/Kr = 0.03
b = 26. ft



WELL TEST ANALYSIS

Data Set: N:\...\PZ534 Leaky Confined Aquifer Test.aqt
Date: 08/27/18 Time: 16:07:24

PROJECT INFORMATION

Company: Geosyntec Consultants
Client: FRNP
Project: KX6467A
Location: Paducah, Kentucky
Test Well: EW234

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
EW234	750201	1939019

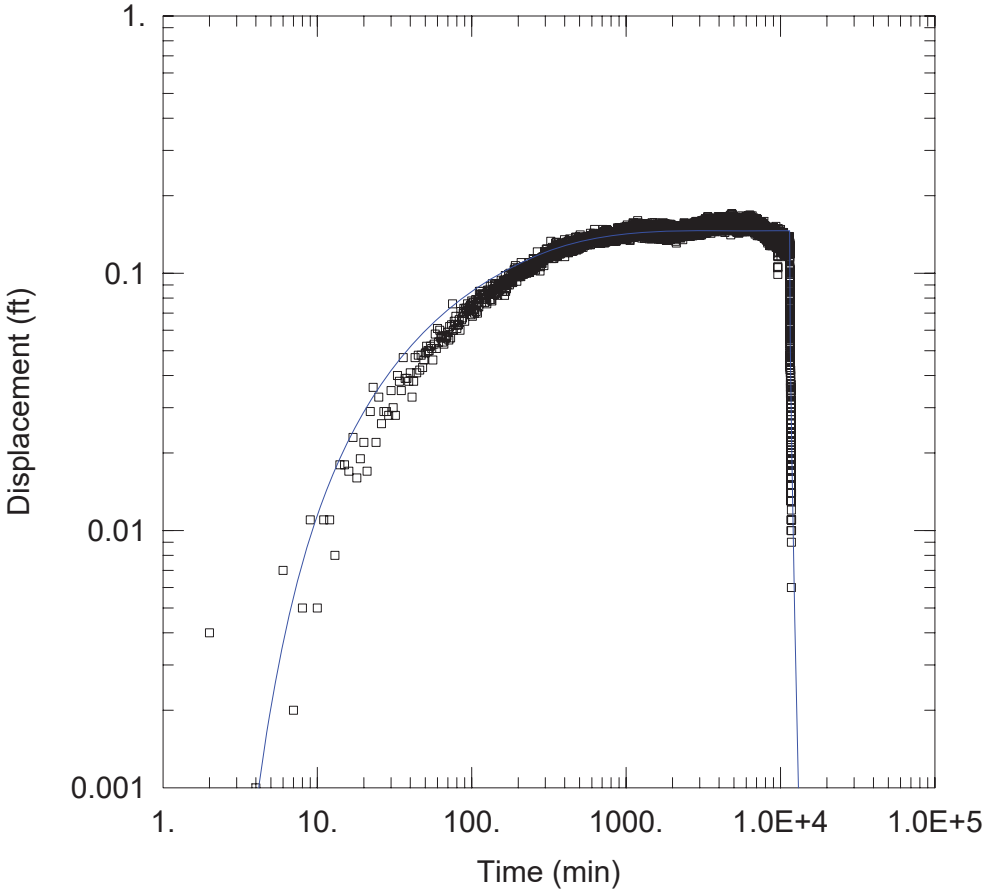
Observation Wells

Well Name	X (ft)	Y (ft)
▫ PZ534	750229	1939007

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush-Jacob

T = 2.732E+4 ft^2/day
S = 0.001
r/B = 0.01109
Kz/Kr = 0.04809
b = 26. ft



WELL TEST ANALYSIS

Data Set: N:\...\PZ541 Leaky Confined Aquifer Test.aqt
Date: 08/27/18 Time: 16:17:24

PROJECT INFORMATION

Company: Geosyntec Consultants
Client: FRNP
Project: KX6467A
Location: Paducah, Kentucky
Test Well: EW234

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
EW234	750201	1939019

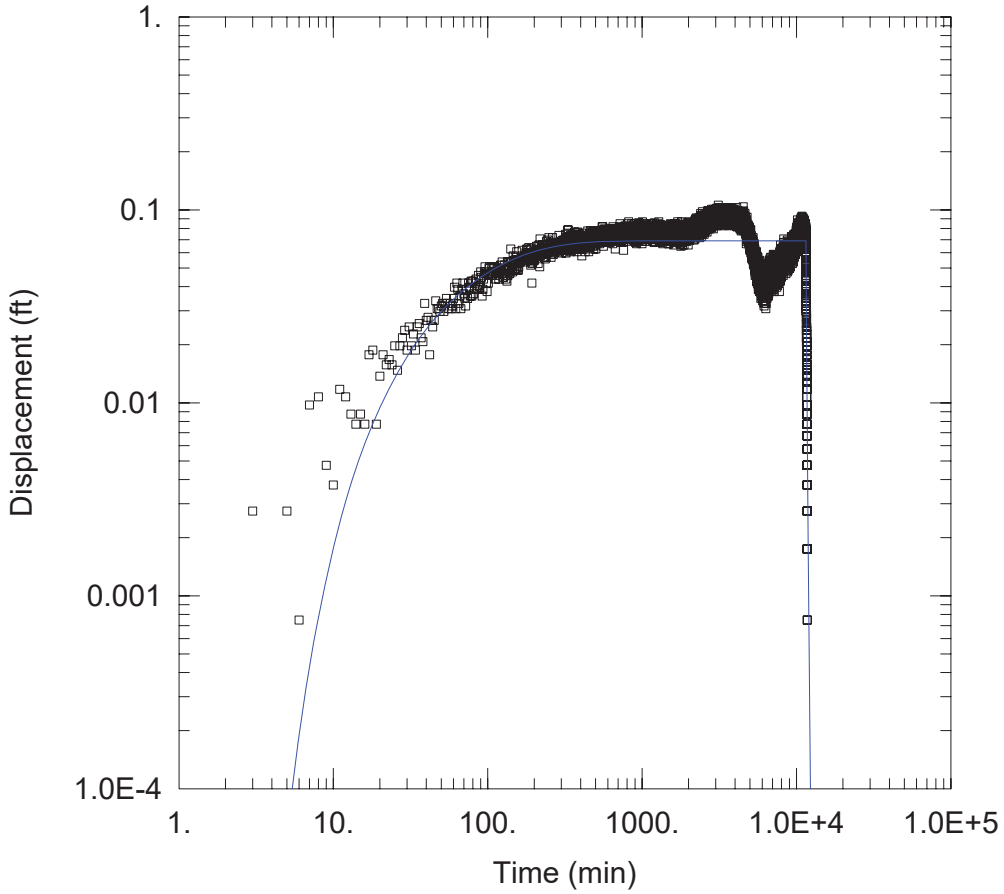
Observation Wells

Well Name	X (ft)	Y (ft)
▫ PZ541	750616	1938335

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush-Jacob

T = 5.096E+4 ft^2/day
S = 0.001811
r/B = 0.2298
Kz/Kr = 0.03
b = 26. ft



WELL TEST ANALYSIS

Data Set: N:\...\EW234 Leaky Confined Aquifer Test.aqt
Date: 08/27/18 Time: 18:27:18

PROJECT INFORMATION

Company: Geosyntec Consultants
Client: FRNP
Project: KX6467A
Location: Paducah, Kentucky
Test Well: EW234

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
EW235	750611	1938067

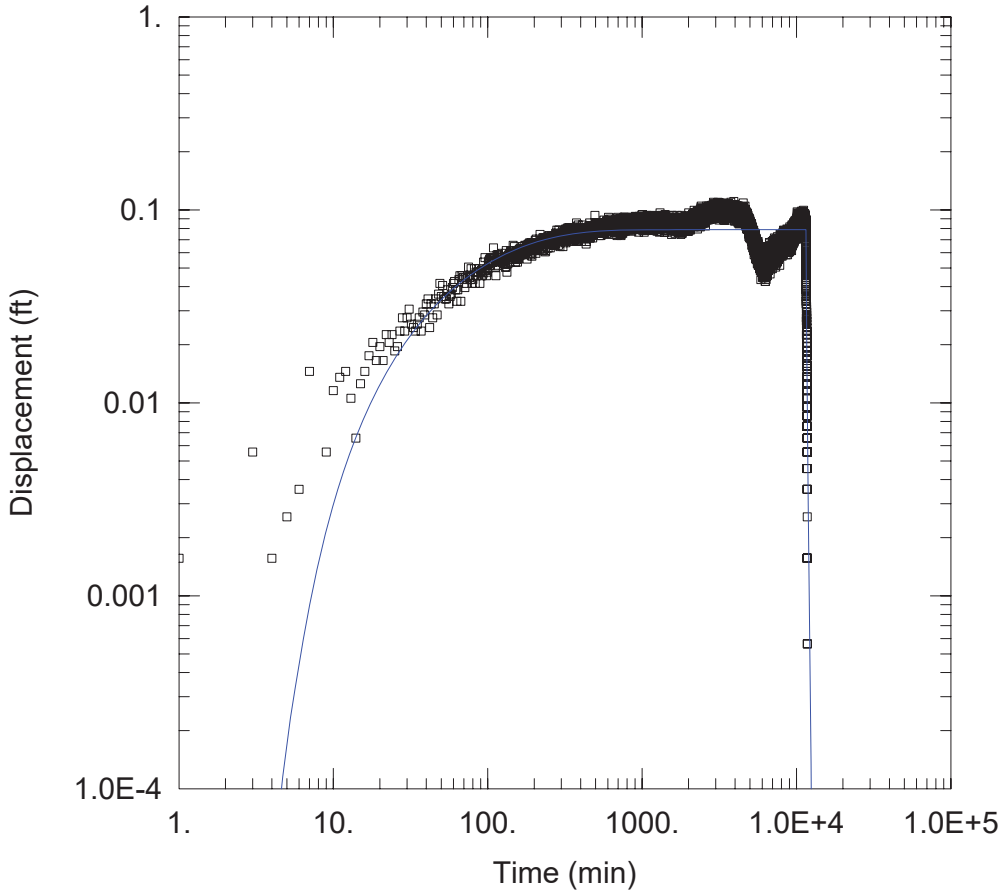
Observation Wells

Well Name	X (ft)	Y (ft)
▫ EW234	750201	1939019

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush-Jacob

T = 3.841E+4 ft^2/day
S = 0.00197
r/B = 0.6701
Kz/Kr = 0.03
b = 25.6 ft



WELL TEST ANALYSIS

Data Set: N:\...\PZ534 Leaky Confined Aquifer Test.aqt
Date: 08/27/18 Time: 18:21:57

PROJECT INFORMATION

Company: Geosyntec Consultants
Client: FRNP
Project: KX6467A
Location: Paducah, Kentucky
Test Well: EW234

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
EW235	750611	1938067

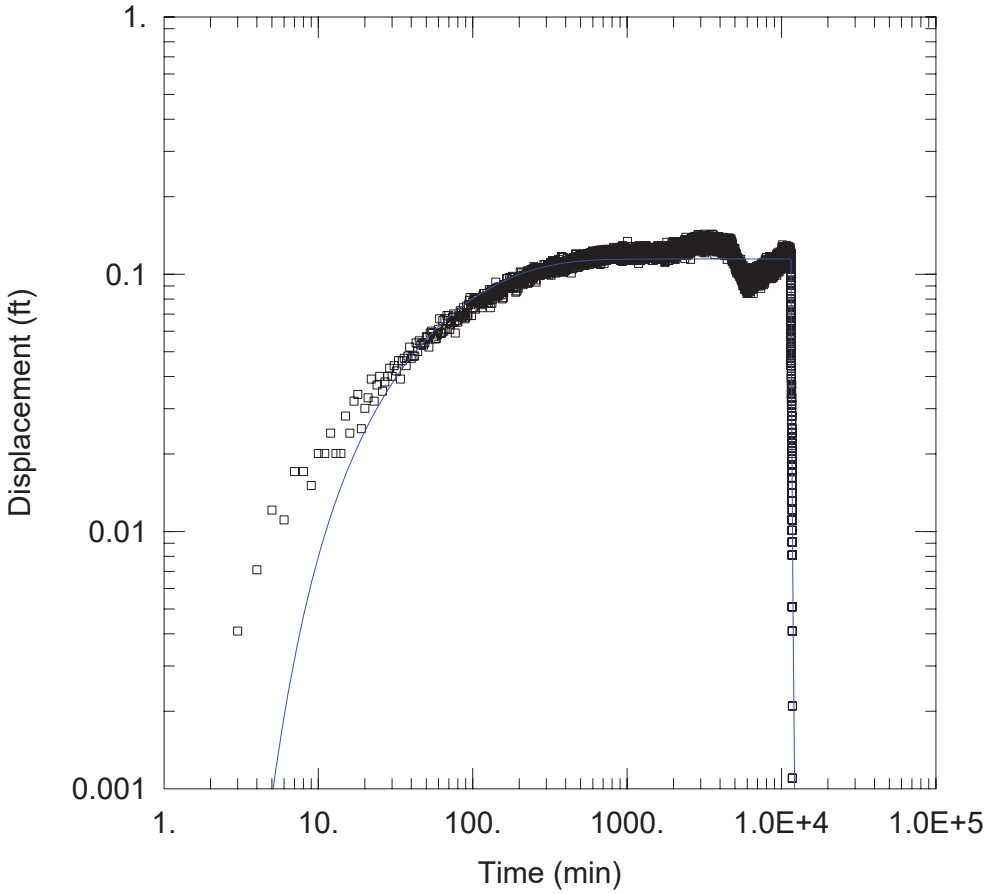
Observation Wells

Well Name	X (ft)	Y (ft)
▫ PZ534	750229	1939007

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush-Jacob

T = 4.207E+4 ft^2/day
S = 0.001815
r/B = 0.5363
Kz/Kr = 0.03
b = 25.6 ft



WELL TEST ANALYSIS

Data Set: N:\...\PZ535 Leaky Confined Aquifer Test.aqt
Date: 08/27/18 Time: 18:19:36

PROJECT INFORMATION

Company: Geosyntec Consultants
Client: FRNP
Project: KX6467A
Location: Paducah, Kentucky
Test Well: EW234

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
EW235	750611	1938067

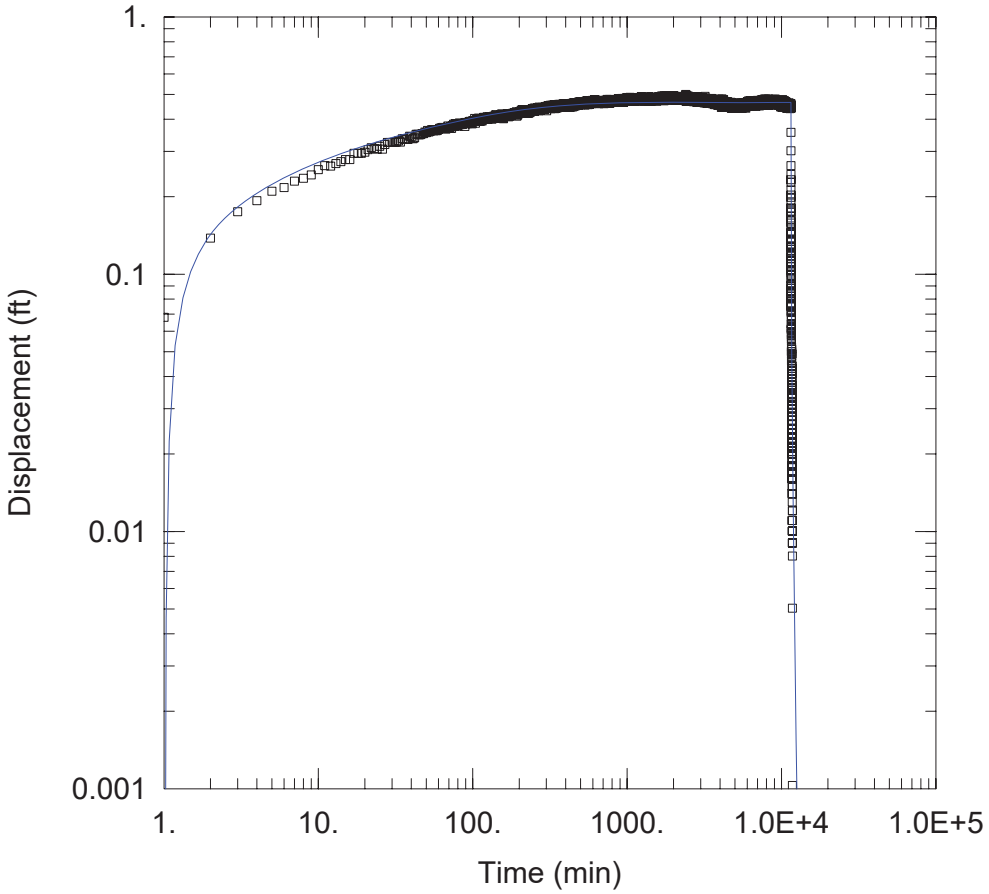
Observation Wells

Well Name	X (ft)	Y (ft)
▫ PZ535	750118	1938831

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush-Jacob

T = 3.446E+4 ft^2/day
S = 0.001298
r/B = 0.4405
Kz/Kr = 0.03
b = 25.6 ft



WELL TEST ANALYSIS

Data Set: N:\...\PZ541 Leaky Confined Aquifer Test.aqt
Date: 08/27/18 Time: 18:16:40

PROJECT INFORMATION

Company: Geosyntec Consultants
Client: FRNP
Project: KX6467A
Location: Paducah, Kentucky
Test Well: EW234

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
EW235	750611	1938067

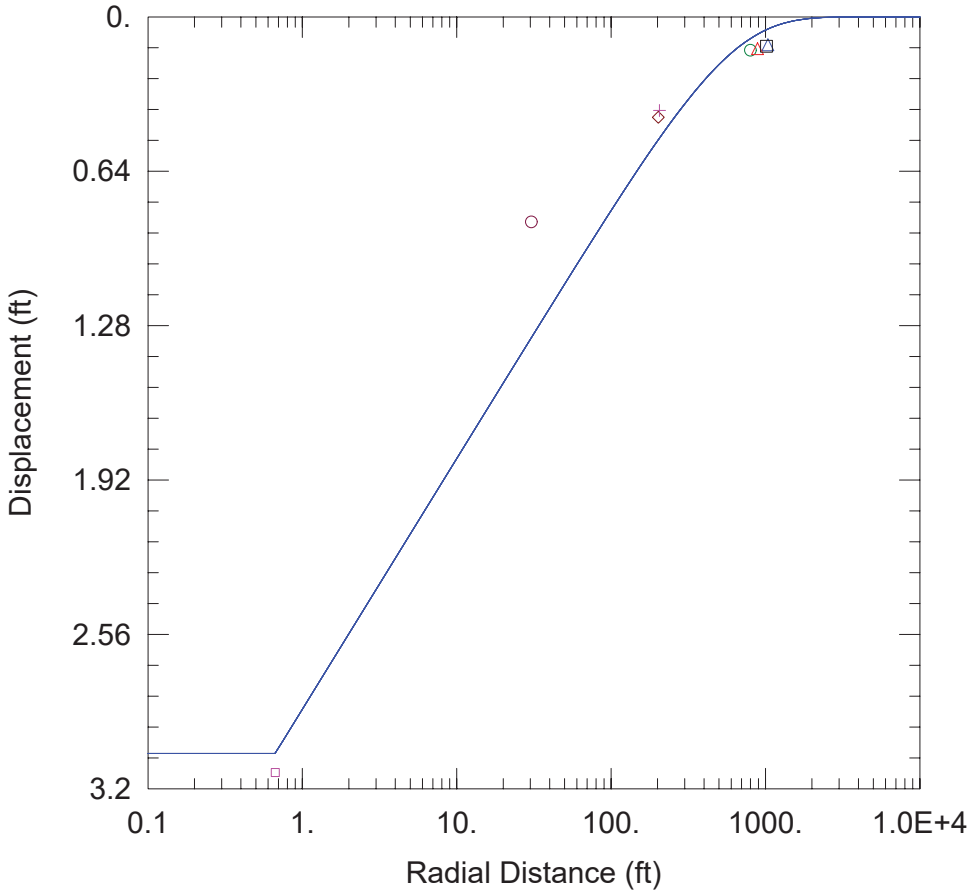
Observation Wells

Well Name	X (ft)	Y (ft)
▫ PZ541	750616	1938335

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush-Jacob

T = 3.142E+4 ft^2/day
S = 6.964E-5
r/B = 0.02471
Kz/Kr = 0.05
b = 25.6 ft



WELL TEST ANALYSIS

Data Set: N:\...\Distance drawdown-Theis_24 Hrs.aqt
Date: 08/28/18 Time: 09:20:34

PROJECT INFORMATION

Company: Geosyntec Consultants
Client: FRNP
Project: KX6467A
Location: Paducah, Kentucky
Test Well: EW234

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
EW234	750201	1939019

Observation Wells

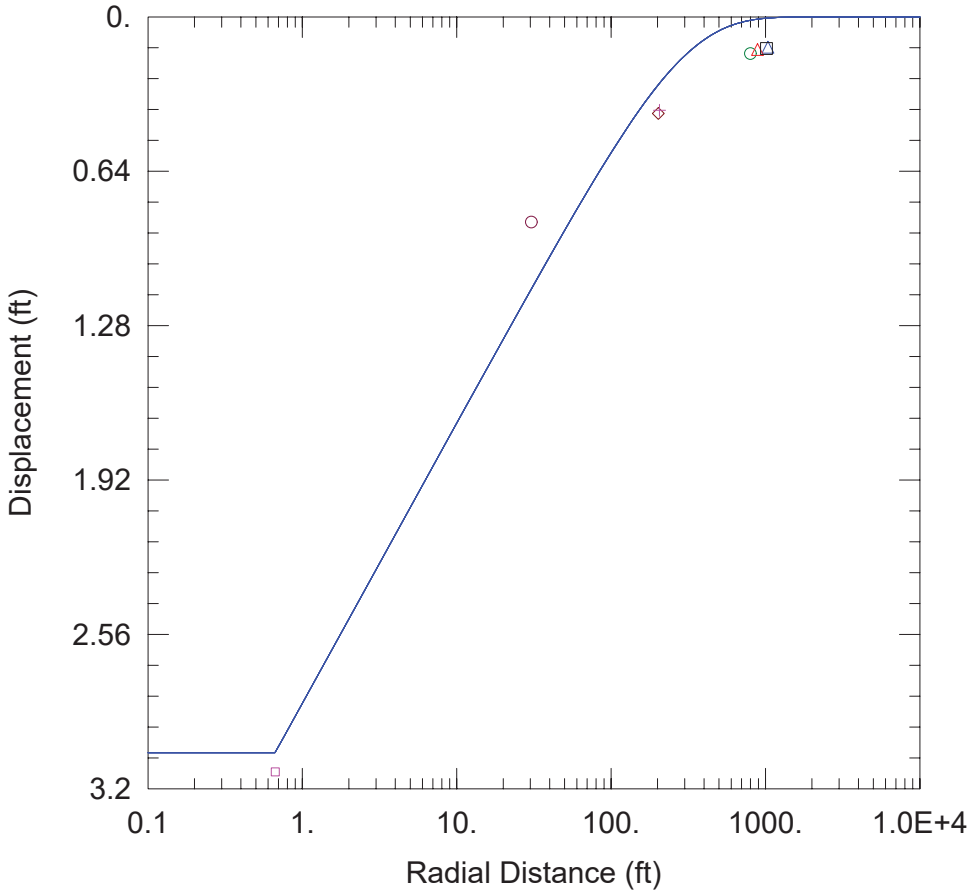
Well Name	X (ft)	Y (ft)
▫ EW234	750201	1939019
△ EW235	750611	1938067
◇ MW533	750011	1939088
○ PZ534	750229	1939007
+ PZ535	750118	1938831
○ PZ541	750616	1938335
△ PZ553	750566	1938209
□ PZ554	750622	1938095

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush-Jacob

T = 1.018E+4 ft^2/day
1/B = 0.001948 ft^{-1}
b = 26. ft

S = 0.001494
Kz/Kr = 0.04323



WELL TEST ANALYSIS

Data Set: N:\...\Distance drawdown-Theis_4days.aqt
Date: 08/27/18 Time: 19:11:31

PROJECT INFORMATION

Company: Geosyntec Consultants
Client: FRNP
Project: KX6467A
Location: Paducah, Kentucky
Test Well: EW234

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
EW234	750201	1939019

Observation Wells

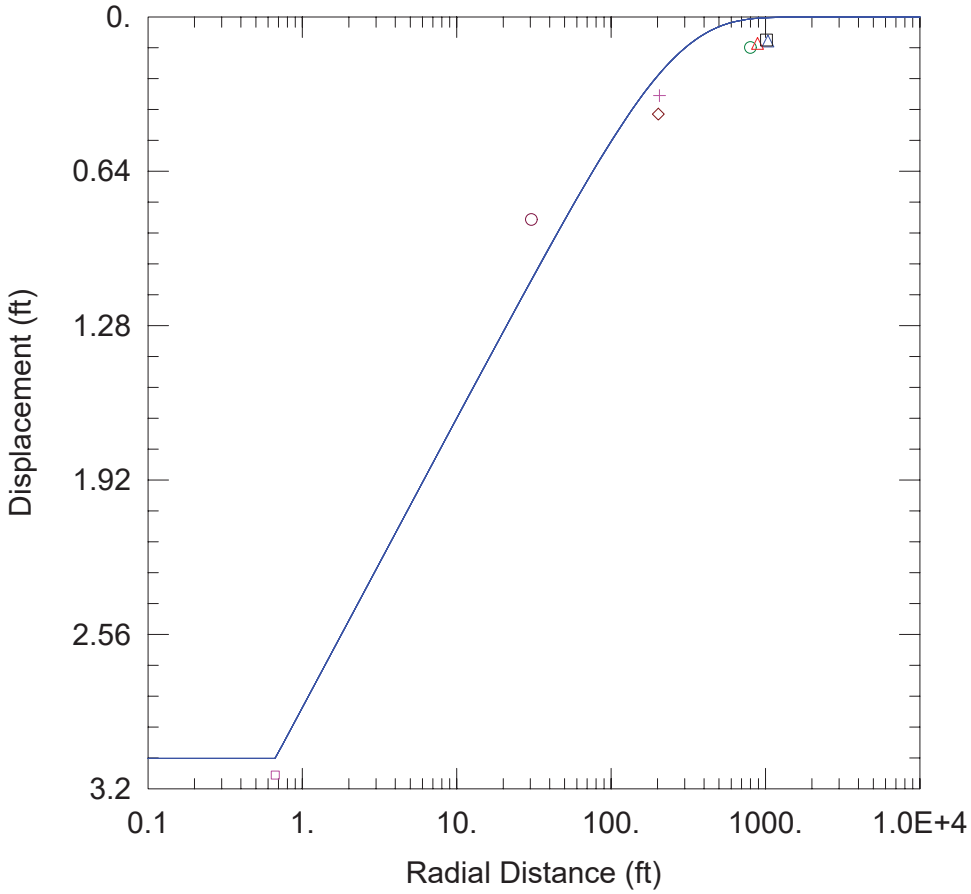
Well Name	X (ft)	Y (ft)
EW234	750201	1939019
EW235	750611	1938067
MW533	750011	1939088
PZ534	750229	1939007
PZ535	750118	1938831
PZ541	750616	1938335
PZ553	750566	1938209
PZ554	750622	1938095

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush-Jacob

T = 9102.2 ft^2/day
1/B = 0.004002 ft^{-1}
b = 26. ft

S = 0.001494
Kz/Kr = 0.04323



WELL TEST ANALYSIS

Data Set: N:\...\Distance drawdown-Theis_8days.aqt
Date: 08/27/18 Time: 19:15:00

PROJECT INFORMATION

Company: Geosyntec Consultants
Client: FRNP
Project: KX6467A
Location: Paducah, Kentucky
Test Well: EW234

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
EW234	750201	1939019

Observation Wells

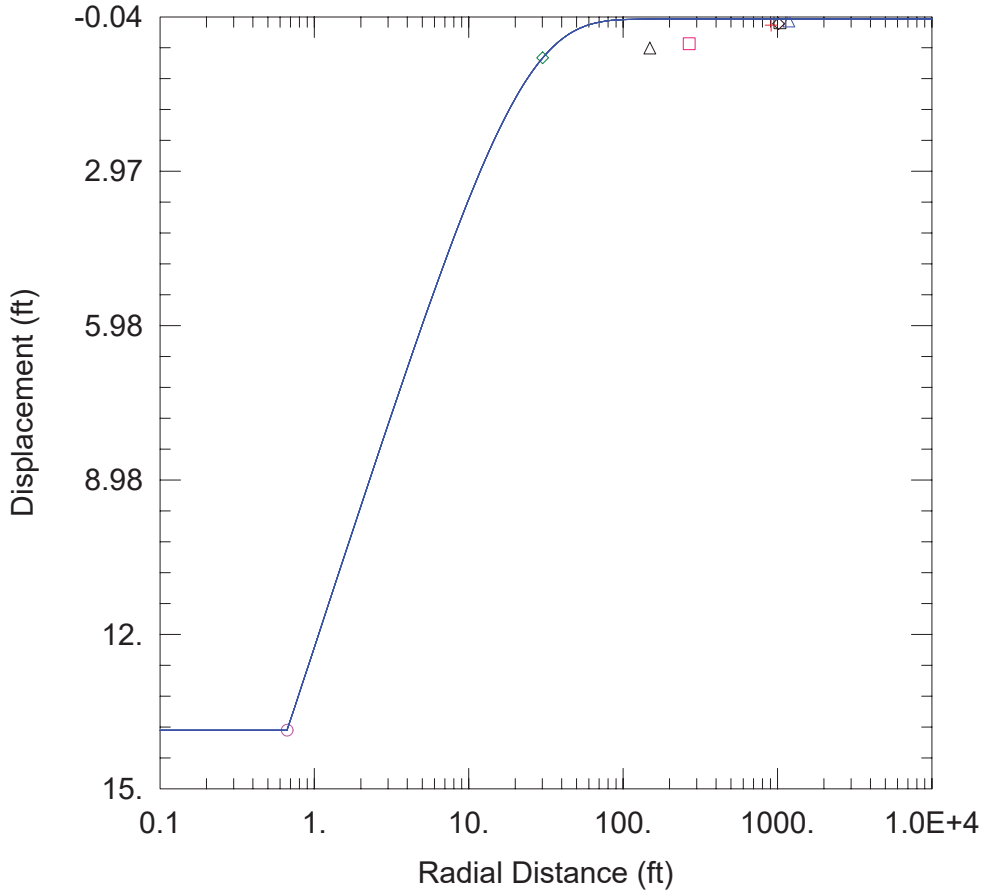
Well Name	X (ft)	Y (ft)
EW234	750201	1939019
EW235	750611	1938067
MW533	750011	1939088
PZ534	750229	1939007
PZ535	750118	1938831
PZ541	750616	1938335
PZ553	750566	1938209
PZ554	750622	1938095

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush-Jacob

T = 8814.6 ft^2/day
1/B = 0.004625 ft^{-1}
b = 26. ft

S = 0.001494
Kz/Kr = 0.04323



WELL TEST ANALYSIS

Data Set: N:\...\Distance drawdown-Theis_24h.aqt
Date: 08/27/18 Time: 19:40:16

PROJECT INFORMATION

Company: Geosyntec Consultants
Client: FRNP
Project: KX6467A
Location: Paducah, Kentucky
Test Well: EW235

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
EW235	750611	1938067

Observation Wells

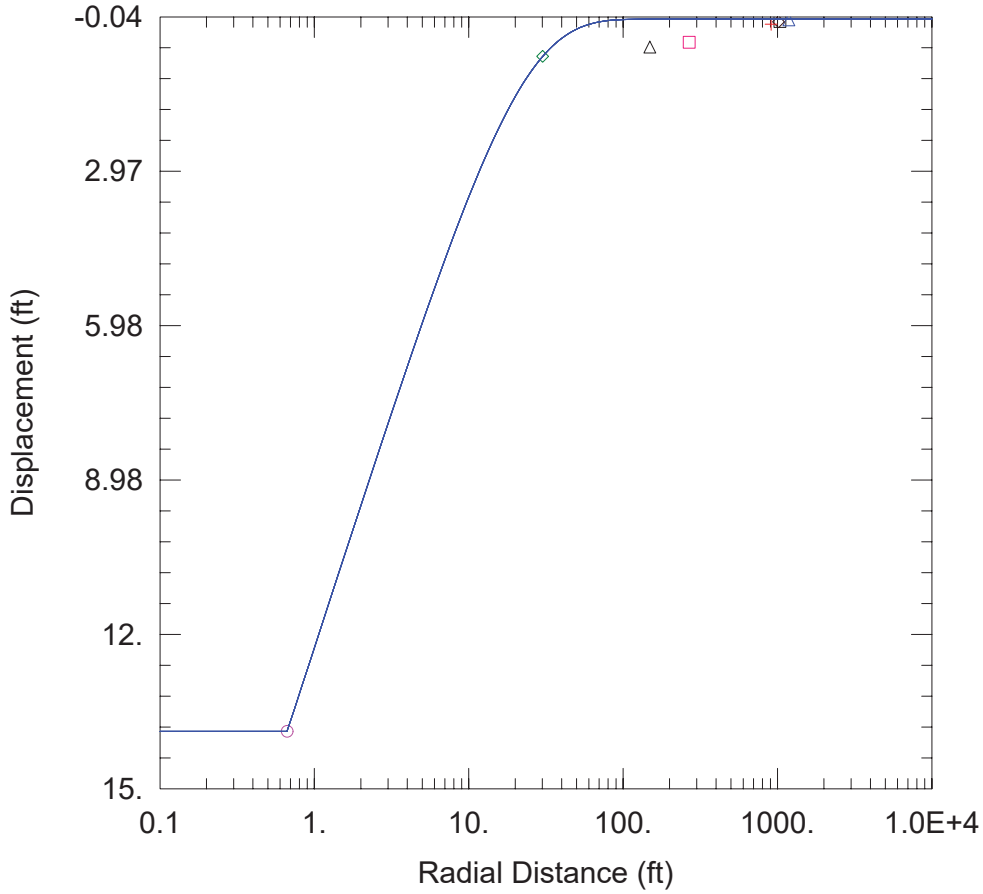
Well Name	X (ft)	Y (ft)
○ EW235	750611	1938067
□ EW234	750201	1939019
△ MW533	750011	1939088
◇ PZ534	750229	1939007
+ PZ535	750118	1938831
□ PZ541	750616	1938335
△ PZ553	750566	1938209
◇ PZ554	750622	1938095

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush-Jacob

T = 956.2 ft^2/day
1/B = 0.05297 ft^{-1}
b = 25.6 ft

S = 0.001408
Kz/Kr = 0.04249



WELL TEST ANALYSIS

Data Set: N:\...\Distance drawdown-Theis_4days.aqt
Date: 08/27/18 Time: 19:43:46

PROJECT INFORMATION

Company: Geosyntec Consultants
Client: FRNP
Project: KX6467A
Location: Paducah, Kentucky
Test Well: EW235

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
EW235	750611	1938067

Observation Wells

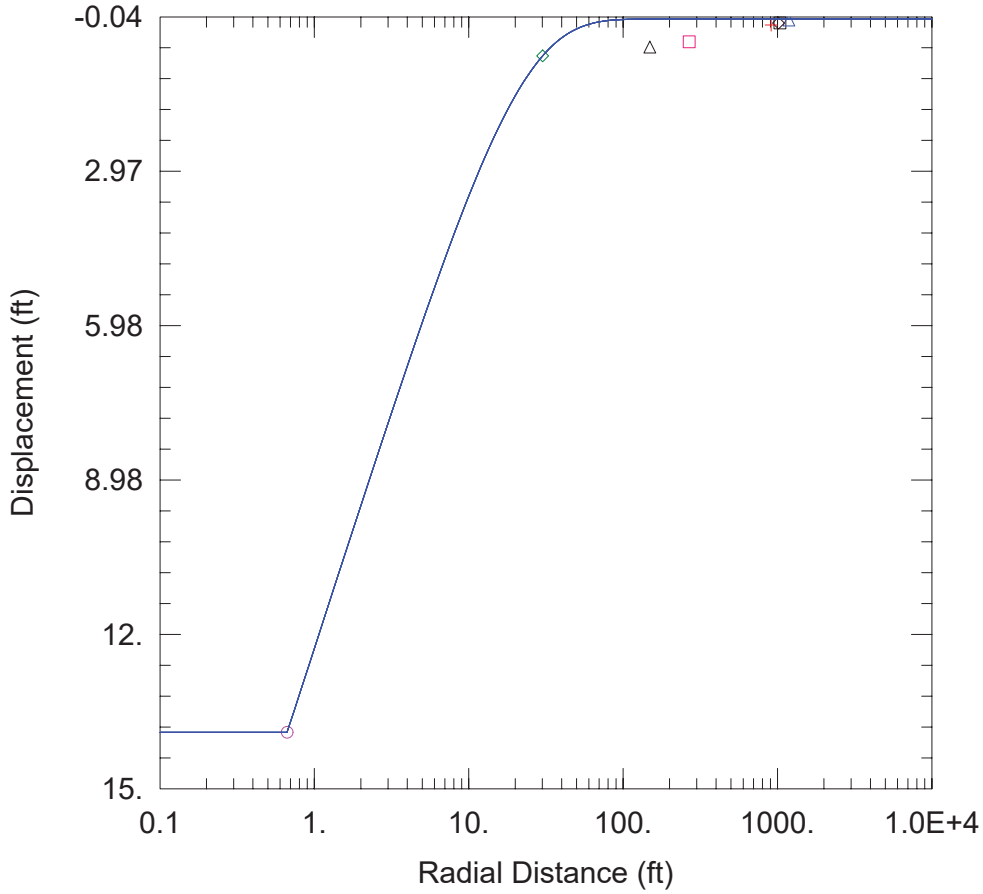
Well Name	X (ft)	Y (ft)
○ EW235	750611	1938067
□ EW234	750201	1939019
△ MW533	750011	1939088
◇ PZ534	750229	1939007
+ PZ535	750118	1938831
□ PZ541	750616	1938335
△ PZ553	750566	1938209
◇ PZ554	750622	1938095

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush-Jacob

T = 948.6 ft^2/day
1/B = 0.05413 ft^{-1}
b = 25.6 ft

S = 0.001408
Kz/Kr = 0.04249



WELL TEST ANALYSIS

Data Set: N:\...\Distance drawdown-Theis_8days.aqt
Date: 08/27/18 Time: 19:45:25

PROJECT INFORMATION

Company: Geosyntec Consultants
Client: FRNP
Project: KX6467A
Location: Paducah, Kentucky
Test Well: EW235

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
EW235	750611	1938067

Observation Wells

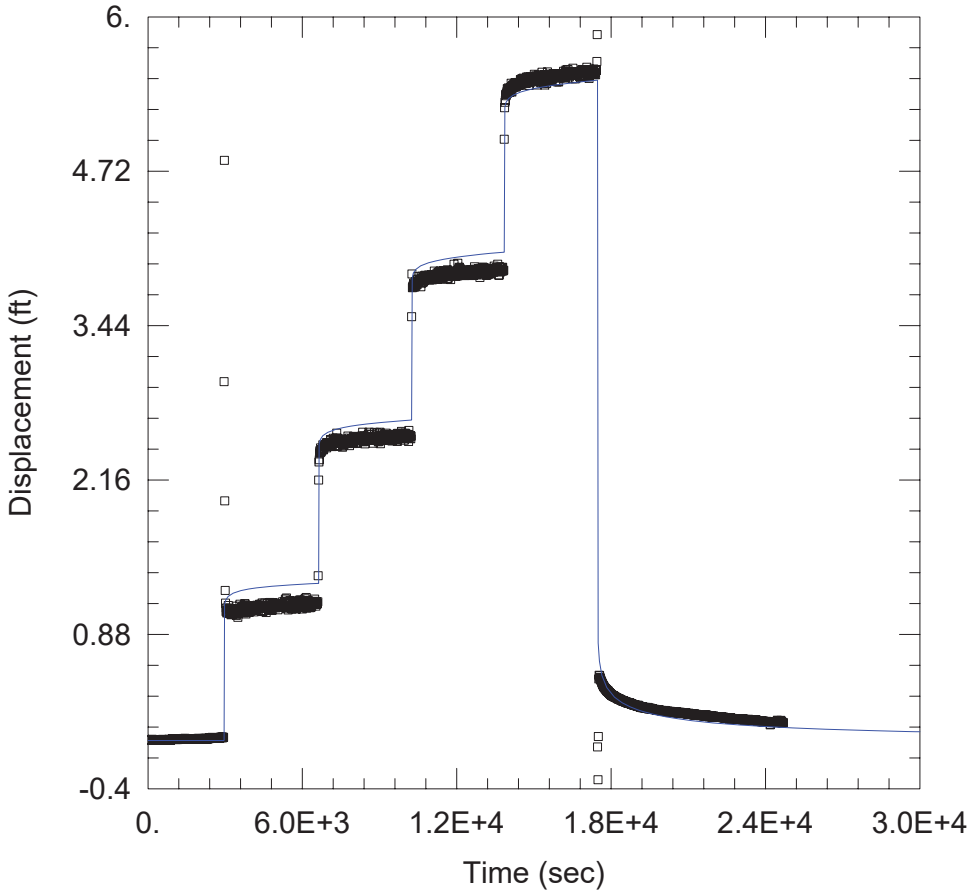
Well Name	X (ft)	Y (ft)
○ EW235	750611	1938067
□ EW234	750201	1939019
△ MW533	750011	1939088
◇ PZ534	750229	1939007
+ PZ535	750118	1938831
□ PZ541	750616	1938335
△ PZ553	750566	1938209
◇ PZ554	750622	1938095

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush-Jacob

T = 944.6 ft^2/day
1/B = 0.05467 ft^{-1}
b = 25.6 ft

S = 0.001408
Kz/Kr = 0.04249



WELL TEST ANALYSIS

Data Set: N:\...\EW234 Step test analysis_HantushJacob.aqt
Date: 08/27/18 Time: 14:34:07

PROJECT INFORMATION

Company: Geosyntec Consultants
Client: FRNP
Project: KX6467A
Location: Paducah, Kentucky
Test Well: EW234

AQUIFER DATA

Saturated Thickness: 26. ft
Anisotropy Ratio (Kz/Kr): 0.1
Aquitard Thickness (b'): 23.8 ft
Aquitard Thickness (b"): 1. ft

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
EW234	750201	1939019

Observation Wells

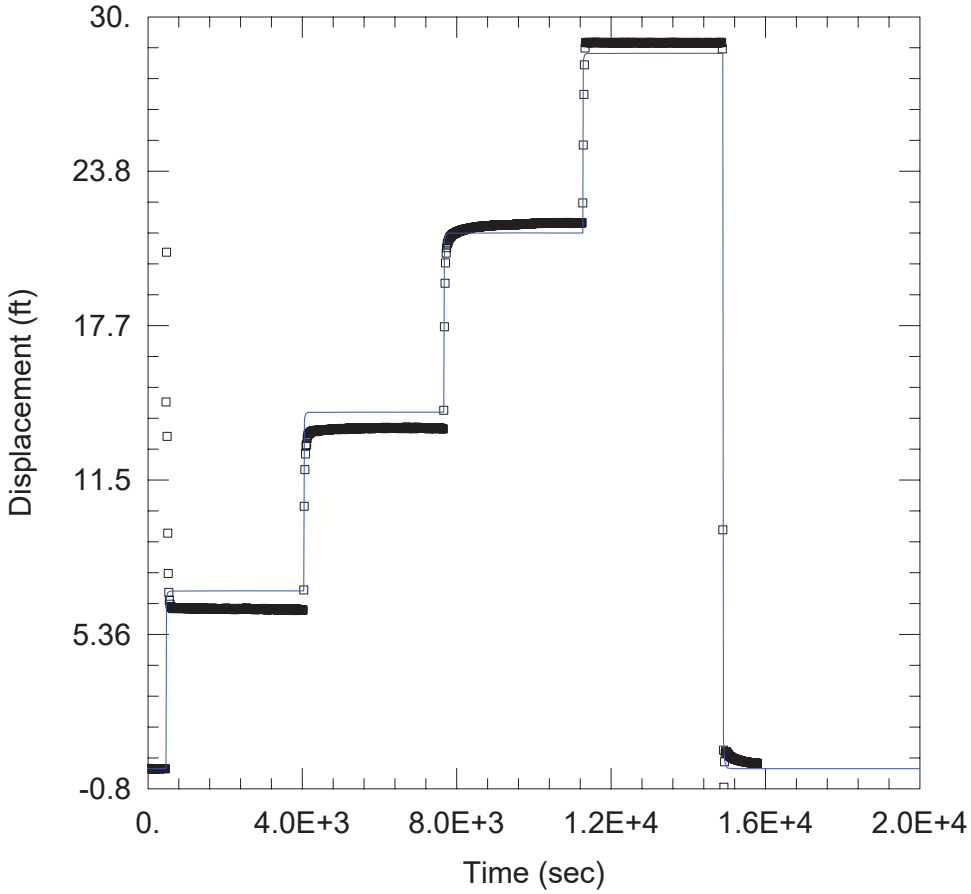
Well Name	X (ft)	Y (ft)
▫ EW234	750201	1939019

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush-Jacob

T = 2.201E+4 ft^2/day
S = 0.0001445
r/B = 1.0E-5
Sw = 4.195
C = 1. sec^2/ft^5
P = 1.807

Step Test Model: Jacob-Rorabaugh
$s(t) = -0.5207Q + 1.Q^{1.807}$
Time (t) = 1. sec Rate (Q) in cu. ft/sec
W.E. = -1.#IO% (Q from last step)



WELL TEST ANALYSIS

Data Set: N:\...\EW235 Step test analysis_hantush_jacob.aqt
Date: 08/27/18 Time: 14:46:05

PROJECT INFORMATION

Company: Geosyntec Consultants
Client: FRNP
Project: KX6467A
Location: Paducah, Kentucky
Test Well: EW234

AQUIFER DATA

Saturated Thickness: 25.6 ft
Aquitard Thickness (b'): 30.5 ft
Anisotropy Ratio (Kz/Kr): 0.1
Aquitard Thickness (b"): 1. ft

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
EW235	750611	1938067

Observation Wells

Well Name	X (ft)	Y (ft)
▫ EW235	750611	1938067

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush-Jacob

T = 1870.6 ft^2/day
r/B = 0.002231
C = 1. sec^2/ft^5

S = 1.0E-5
Sw = 0.
P = 1.718

Step Test Model: Jacob-Rorabaugh
Time (t) = 1. sec Rate (Q) in cu. ft/sec

$s(t) = -0.5597Q + 1.Q^{1.718}$
W.E. = -1.#IO% (Q from last step)

AQTESOLV PLOTS (SIMULATED DRAWDOWN)

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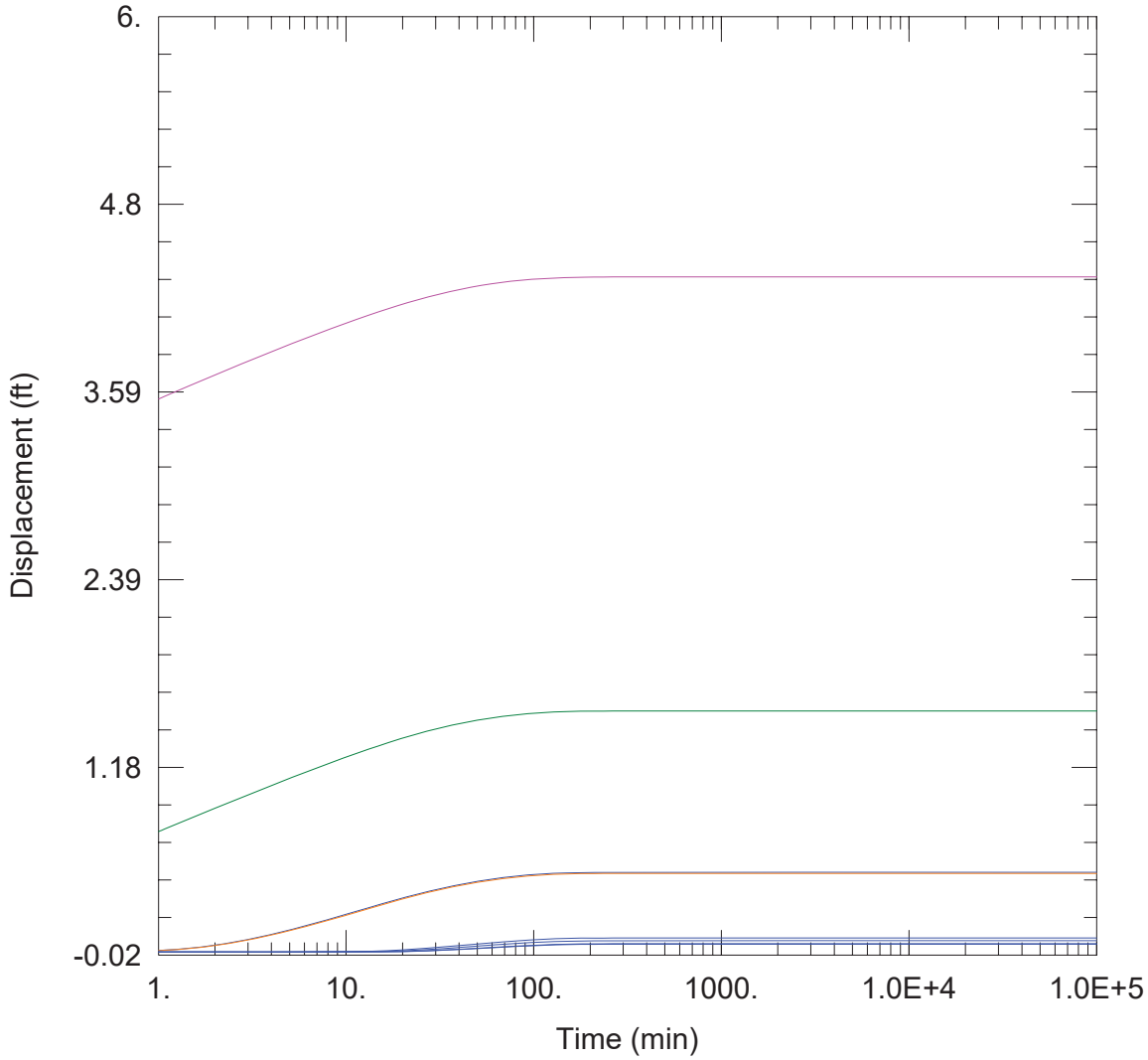


EW234 PREDICTED DRAWDOWN AT 3 MONTHS

Data Set: N:\...\EW234_drawdown_prediction_3months.aqt
Date: 08/30/18 Time: 16:54:23

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
EW234	750201	1939019

Observation Wells

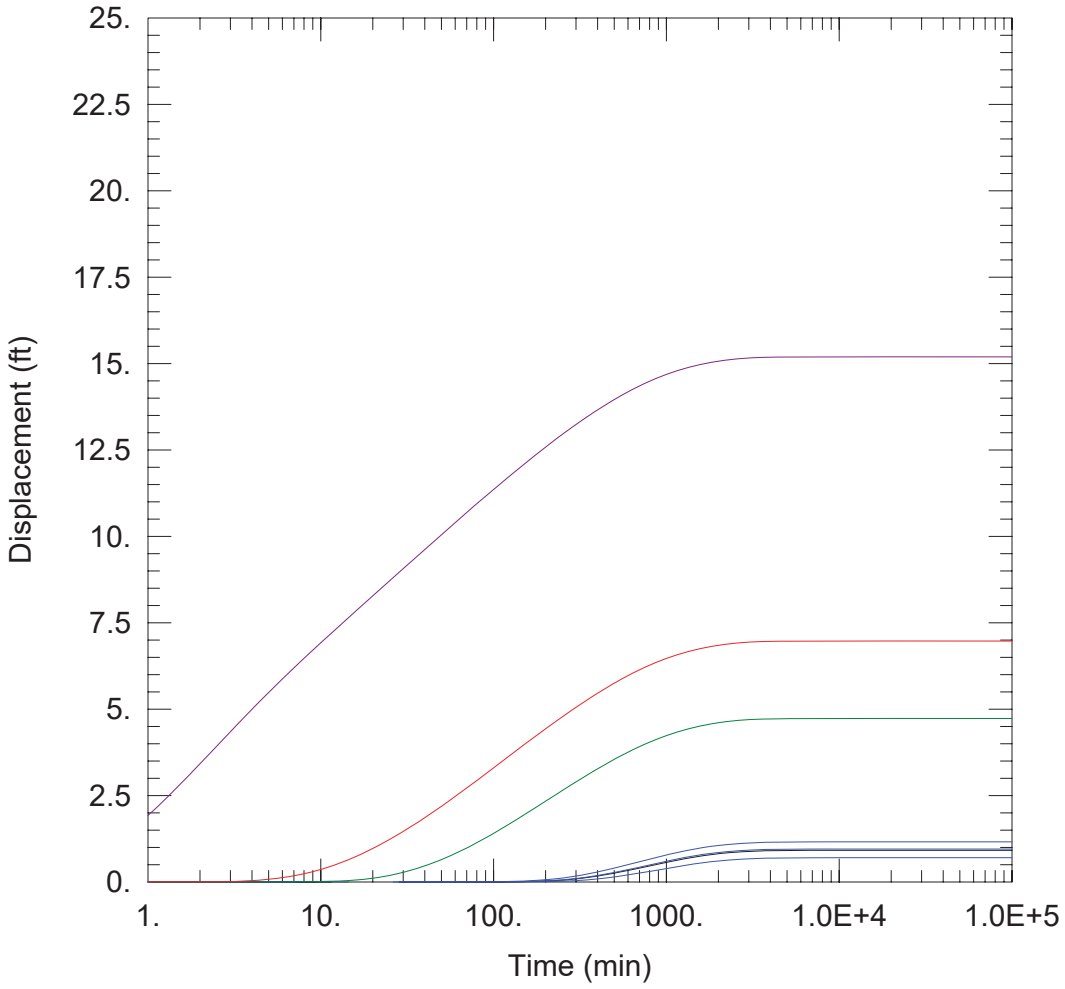
Well Name	X (ft)	Y (ft)
▫ EW234	750201	1939019
△ EW235	750611	1938067
◇ MW533	750011	1939088
○ PZ534	750229	1939007
+ PZ535	750118	1938831
○ PZ541	750616	1938335
△ PZ553	750566	1938209
□ PZ554	750622	1938095

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush-Jacob

T = 1.018E+4 ft^2/day
1/B = 0.001948 ft^{-1}
b = 26. ft

S = 0.001494
Kz/Kr = 0.04323



EW235 PREDICTED DRAWDOWN AT 3 MONTHS

Data Set: N:\...\EW235_drawdown_prediction_3months.aqt
Date: 08/30/18 Time: 14:54:42

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
EW235	750611	1938067

Observation Wells

Well Name	X (ft)	Y (ft)
□ EW234	750201	1939019
○ EW235	750611	1938067
△ MW533	750011	1939088
◇ PZ534	750229	1939007
+ PZ535	750118	1938831
□ PZ541	750616	1938335
△ PZ553	750566	1938209
◇ PZ554	750622	1938095

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush-Jacob

T = 944.6 ft^2/day
1/B = 0.001408 ft^{-1}
b = 25.6 ft

S = 0.001408
Kz/Kr = 0.04249

ATTACHMENT G2

CAPTURE ZONE CALCULATIONS

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Calculations for capture zone dimensions, based on guidance in EPA 2008, are presented in this attachment as Excel worksheets. For these calculations, the following applies:

- $\mathbf{X_0}$ (distance from the well to the downgradient end of the capture zone) = Q/(2 × PI × T × -i)
- $\mathbf{Y_{well}}$ (capture zone width at the location of the well) = Q/(4 × T × -i)
- $\mathbf{Y_{max}}$ (max capture zone width) = Q/(2 × T × –i)

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Capture Zone Dimensions at the Extraction Well

For Expected Values of Hydraulic Conductivity and Transmissivity

Max Design Pumping Rate

Inputs:		Values: EW234:	EW235:	Units:
Q:	extraction rate	28,875	24,063	ft^3/day
T:	transmissivity	38,400	57,600	ft^2/day
K:	hydraulic conductivity	1,500	2,215	ft/day
b:	saturated thickness	26	25.6	ft
i:	regional hydraulic gradient	-0.00026	-0.00026	ft/ft
X_0:	distance from the well to the downgradient end of the capture zone	460	256	ft
Y_{well}:	capture zone width at the location of the well from the central line of the plume	723	402	ft
	sum of half widths of capture zones at the locations of the wells	**1,125**	**ft**	**(COMPARES TO 1,030 ft DISTANCE BETWEEN EXTRACTION WELLS)**

1	gal =	0.1336806	ft^3
1	min =	0.0006944	day
1	gpm =	192.50	ft^3/day

Average of non-pumping gradients

For 25% Decrease of Hydraulic Conductivity and Transmissivity

Inputs:		Values: EW234:	EW235:	Units:
Q:	extraction rate	28,875	24,063	ft^3/day
T:	transmissivity	28,800	43,200	ft^2/day
K:	hydraulic conductivity	1,125	1,661	ft/day
b:	saturated thickness	26	25.6	ft
i:	regional hydraulic gradient	-0.00026	-0.00026	ft/ft
X_0:	distance from the well to the downgradient end of the capture zone	614	341	ft
Y_{well}:	capture zone width at the location of the well from the central line of the plume	964	536	ft
	sum of half widths of capture zones at the locations of the wells	**1,500**	**ft**	**(GREATER THAN 1,030 ft DISTANCE BETWEEN EXTRACTION WELLS)**

For 25% Increase of Hydraulic Conductivity and Transmissivity

Inputs:		Values: EW234:	EW235:	Units:
Q:	extraction rate	28,875	24,063	ft^3/day
T:	transmissivity	48,000	72,000	ft^2/day
K:	hydraulic conductivity	1,875	2,769	ft/day
b:	saturated thickness	26	25.6	ft
i:	regional hydraulic gradient	-0.00026	-0.00026	ft/ft
X_0:	distance from the well to the downgradient end of the capture zone	368	205	ft
Y_{well}:	capture zone width at the location of the well from the central line of the plume	578	321	ft
	sum of half widths of capture zones at the locations of the wells	**900**	**ft**	**(COMPARES TO 1,030 ft DISTANCE BETWEEN EXTRACTION WELLS)**

Capture Zone Dimensions at the Extraction Well (Continued)

For Expected Values of Hydraulic Conductivity and Transmissivity

Min Design Pumping Rate

Inputs:		Values: EW234:	EW235:	Units:
Q:	extraction rate	19,250	14,438	ft^3/day
T:	transmissivity	38,400	57,600	ft^2/day
K:	hydraulic conductivity	1,500	2,215	ft/day
b:	saturated thickness	26	25.6	ft
i:	regional hydraulic gradient	-0.00026	-0.00026	ft/ft
X_0:	distance from the well to the downgradient end of the capture zone	307	153	ft
Y_{well}:	capture zone width at the location of the well from the central line of the plume	482	241	ft
	sum of half widths of capture zones at the locations of the wells	**723**	**ft**	**(LESS THAN 1,030 ft DISTANCE BETWEEN EXTRACTION WELLS)**

1	gal =	0.1336806	ft^3
1	min =	0.0006944	day
1	gpm =	192.50	ft^3/day

Average of non-pumping gradients

For 25% Decrease of Hydraulic Conductivity and Transmissivity

Inputs:		Values: EW234:	EW235:	Units:
Q:	extraction rate	19,250	14,438	ft^3/day
T:	transmissivity	28,800	43,200	ft^2/day
K:	hydraulic conductivity	1,125	1,661	ft/day
b:	saturated thickness	26	25.6	ft
i:	regional hydraulic gradient	-0.00026	-0.00026	ft/ft
X_0:	distance from the well to the downgradient end of the capture zone	409	205	ft
Y_{well}:	capture zone width at the location of the well from the central line of the plume	643	321	ft
	sum of half widths of capture zones at the locations of the wells	**964**	**ft**	**(COMPARES TO 1,030 ft DISTANCE BETWEEN EXTRACTION WELLS)**

For 25% Increase of Hydraulic Conductivity and Transmissivity

Inputs:		Values: EW234:	EW235:	Units:
Q:	extraction rate	19,250	14,438	ft^3/day
T:	transmissivity	48,000	72,000	ft^2/day
K:	hydraulic conductivity	1,875	2,769	ft/day
b:	saturated thickness	26	25.6	ft
i:	regional hydraulic gradient	-0.00026	-0.00026	ft/ft
X_0:	distance from the well to the downgradient end of the capture zone	245	123	ft
Y_{well}:	capture zone width at the location of the well from the central line of the plume	386	193	ft
	sum of half widths of capture zones at the locations of the wells	**578**	**ft**	**(LESS THAN 1,030 ft DISTANCE BETWEEN EXTRACTION WELLS)**

Maximum Capture Zone Widths

For Expected Values of Hydraulic Conductivity and Transmissivity

Max Design Pumping Rate

Inputs:		Values: EW234:	EW235:	Units:
Q:	extraction rate	28,875	24,063	ft^3/day
T:	transmissivity	38,400	57,600	ft^2/day
K:	hydraulic conductivity	1,500	2,215	ft/day
b:	saturated thickness	26	25.6	ft
i:	regional hydraulic gradient	-0.00026	-0.00026	ft/ft
X_0:	distance from the well to the downgradient end of the capture zone	460	256	ft
Y_{max}:	max caputre zone width from cental line of the plume	1,446	803	ft
	sum of half widths of max capture zones	**2,249**	**ft**	**(GREATER THAN 1,030 ft DISTANCE BETWEEN EXTRACTION WELLS)**

1	gal =	0.1336806	ft^3
1	min =	0.0006944	day
1	gpm =	192.50	ft^3/day

Average of non-pumping gradients

For 25% Decrease of Hydraulic Conductivity and Transmissivity

Inputs:		Values: EW234:	EW235:	Units:
Q:	extraction rate	28,875	24,063	ft^3/day
T:	transmissivity	28,800	43,200	ft^2/day
K:	hydraulic conductivity	1,125	1,661	ft/day
b:	saturated thickness	26	25.6	ft
i:	regional hydraulic gradient	-0.00026	-0.00026	ft/ft
X_0:	distance from the well to the downgradient end of the capture zone	614	341	ft
Y_{max}:	max caputre zone width from cental line of the plume	1,928	1,071	ft
	sum of half widths of max capture zones	**2,999**	**ft**	**(GREATER THAN 1,030 ft DISTANCE BETWEEN EXTRACTION WELLS)**

For 25% Increase of Hydraulic Conductivity and Transmissivity

Inputs:		Values: EW234:	EW235:	Units:
Q:	extraction rate	28,875	24,063	ft^3/day
T:	transmissivity	48,000	72,000	ft^2/day
K:	hydraulic conductivity	1875	2768.75	ft/day
b:	saturated thickness	26	25.6	ft
i:	regional hydraulic gradient	-0.00026	-0.00026	ft/ft
X_0:	distance from the well to the downgradient end of the capture zone	368	205	ft
Y_{max}:	max caputre zone width from cental line of the plume	1,157	643	ft
	sum of half widths of max capture zones	**1,800**	**ft**	**(GREATER THAN 1,030 ft DISTANCE BETWEEN EXTRACTION WELLS)**

Maximum Capture Zone Widths (Continued)

For Expected Values of Hydraulic Conductivity and Transmissivity

Min Design Pumping Rate

Inputs:		Values: EW234:	EW235:	Units:	
Q:	extraction rate	19,250	14,438	ft^3/day	
T:	transmissivity	38,400	57,600	ft^2/day	
K:	hydraulic conductivity	1,500	2,215	ft/day	
b:	saturated thickness	26	25.6	ft	
i:	regional hydraulic gradient	-0.00026	-0.00026	ft/ft	Average of non-pumping gradients
X_0:	distance from the well to the downgradient end of the capture zone	307	153	ft	
Y_{max}:	max caputre zone width from cental line of the plume	964	482	ft	
	sum of half widths of max capture zones	**1,446**	**ft**		**(GREATER THAN 1,030 ft DISTANCE BETWEEN EXTRACTION WELLS)**

1	gal =	0.1336806	ft^3
1	min =	0.0006944	day
1	gpm =	192.50	ft^3/day

For 25% Decrease of Hydraulic Conductivity and Transmissivity

Inputs:		Values: EW234:	EW235:	Units:	
Q:	extraction rate	19,250	14,438	ft^3/day	
T:	transmissivity	28,800	43,200	ft^2/day	
K:	hydraulic conductivity	1,125	1,661	ft/day	
b:	saturated thickness	26	25.6	ft	
i:	regional hydraulic gradient	-0.00026	-0.00026	ft/ft	
X_0:	distance from the well to the downgradient end of the capture zone	409	205	ft	
Y_{max}:	max caputre zone width from cental line of the plume	1,285	643	ft	
	sum of half widths of max capture zones	**1,928**	**ft**		**(GREATER THAN 1,030 ft DISTANCE BETWEEN EXTRACTION WELLS)**

For 25% Increase of Hydraulic Conductivity and Transmissivity

Inputs:		Values: EW234:	EW235:	Units:	
Q:	extraction rate	19,250	14,438	ft^3/day	
T:	transmissivity	48,000	72,000	ft^2/day	
K:	hydraulic conductivity	1875	2768.75	ft/day	
b:	saturated thickness	26	25.6	ft	
i:	regional hydraulic gradient	-0.00026	-0.00026	ft/ft	
X_0:	distance from the well to the downgradient end of the capture zone	245	123	ft	
Y_{max}:	max caputre zone width from cental line of the plume	771	386	ft	
	sum of half widths of max capture zones	**1,157**	**ft**		**(COMPARES TO 1,030 ft DISTANCE BETWEEN EXTRACTION WELLS)**