FOURTH FIVE-YEAR REVIEW REPORT FOR NORTH PENN AREA 1 SUPERFUND SITE MONTGOMERY COUNTY, PENNSYLVANIA

Prepared by

U.S. Environmental Protection Agency
Region III
PHILADELPHIA, PENNSYLVANIA

Karen Melvin

Karen Melvin, Director
Hazardous Cleanup Division
U.S. EPA Region III

SEP 19 2018

Date

TABLE OF CONTENTS

LIST OF ACRONYMS

1,1-DCA	1,1-Dichloroethane
1,1-DCE	1,1-Dichloroethene
1,2-DCE	Cis and Trans-1,2-Dichloethene
1,1,1-TCA	1,1,1-Trichloroethane
ARARs	Applicable or Relevant and Appropriate Requirements
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
COC	Contaminant of Concern
COE	U.S. Army Corps of Engineers
EPA	U.S. Environmental Protection Agency
ESD	Explanation of Significance Difference
FYR	Five Year Review
GKM	Granite Knitting Mill
GPRA	Government Performance and Results Act
IA	Interagency Agreement
IC	Institutional Control
MCL	Maximum Contaminant Level
NPL	National Priorities List
NPWA	North Penn Water Authority
O&M	Operation and Maintenance
OU	Operable Unit
ppb	Parts per billion
PADEP	Pennsylvania Department of Environmental Protection
PCE	Perchloroethene / Tetrachloroethene
PCOR	Preliminary Close Out Report
POTW	Publicly Owned Treatment Works
PRP	Potentially Responsible Party
RA	Remedial Action
RAO	Remedial Action Objective
RD	Remedial Design
RI/FS	Remedial Investigation / Feasibility Study
ROD	Record of Decision
RPM	Remedial Project Manager
SDWA	Safe Drinking Water Act
TCE	Trichloroethene
VI	Vapor Intrusion
VOC	Volatile Organic Compound

I. INTRODUCTION

The purpose of a Five-Year Review (FYR) is to evaluate the implementation and performance of a remedy in order to determine if the remedy will continue to be protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in FYR reports. In addition, FYR reports identify issues found during the review, if any, and document recommendations to address them.

The U.S. Environmental Protection Agency (EPA) is preparing this FYR pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121, 40 Code of Federal Regulation Section 300.430(f)(4)(ii) of the National Contingency Plan and EPA policy.

This is the fourth FYR for the North Penn Area 1 Superfund Site (the Site). The triggering action for this policy review is the completion date of the previous FYR report. The FYR is required due to the fact that hazardous substances, pollutants, or contaminants remain at the site above levels that allow for unlimited use and unrestricted exposure (UU/UE).

The Site consists of two operable units (OUs) which will be addressed in this report. OU1 addresses the contaminated soil remedy and OU2 addresses the contaminated groundwater remedy.

The FYR began on April 3, 2017. The Site FYR Team was led by José R. Redmond Girón, Remedial Project Manager (RPM) for EPA and included Mindi Snoparsky, EPA Hydrogeologist; Lavar Thomas, EPA Community Involvement Coordinator (CIC); Linda Watson, EPA Toxicologist and Colin Wade, Pennsylvania Department of Environmental Protection (PADEP) Project Officer.

Site Background

The Site is located in Souderton Township in Montgomery County, Pennsylvania, south of the intersection of Green Street and Main Street (see Figure 1). The Site was initially discovered based on detections of high concentrations of tetrachloroethylene (PCE) in North Penn Water Authority (NPWA) production well S9. The well was immediately taken out of service and additional investigations were performed. The Site was initially comprised five separate facilities, however contamination was only identified at the three following locations:

- Gentle Cleaners, located at 162 Main Street, Souderton, PA;
- Granite Knitting Mills (GKM), located at 38 Green Street, Souderton PA; and
- Parkside Apartments, on Parkview Drive, Souderton, PA.

The first facility, Gentle Cleaners, used PCE, 1,1,1-trichloroethane (TCA) and other chlorinated solvents of unknown composition from 1953 to 1983. The second facility, GKM, maintained a dry cleaning machine using PCE from 1967 to 1979. The third property, Parkside Apartments, once included a dry cleaning establishment. At the Parkside Apartments, historical records document a PCE spill in the early 1970s, which contaminated soil and groundwater with hazardous substances. At the issuance of this report, the Gentle Cleaners location is vacant; the GKM building is used by Franconia International, which makes equestrian articles (horse tacks, saddles and accessories); and the Parkside Apartments continue to be residential apartments. The area surrounding the Site is a densely populated mixture of residences and businesses. The Site was proposed to the National Priorities List (NPL) on January 22, 1987 and placed on the NPL on March 31, 1989.

FIVE YEAR REVIEW SUMMARY FORM

SITE IDENTIFICATION		
Site Name: North Penn Area 1 Superfund Site		
EPA ID: PAD096834494		
Region: 3	**State:** PA	**City/County:** Souderton Township, Montgomery County

SITE STATUS	
NPL Status: Final	
Multiple OUs? Yes	**Has the site achieved construction completion?** Yes

REVIEW STATUS
Lead agency: EPA
Author name (Federal or State Project Manager): José R. Redmond Girón
Author affiliation: EPA
Review period: 4/3/2017 - 9/30/2018
Date of site inspection: 5/15/18
Type of review: Policy
Review number: 4
Triggering action date: 9/30/2013
Due date *(five years after triggering action date)*: 9/30/2018

II. RESPONSE ACTION SUMMARY

Basis for Taking Action

The Remedial Investigation/Feasibility Study (RI/FS) was conducted from 1991 through 1994 and focused on groundwater and soil sampling. The sampling results indicated the presence of volatile organic compounds (VOCs), primarily PCE and trichloroethylene (TCE), in soil and groundwater.

Soil sampling identified primarily PCE at elevated concentrations. The highest concentration of 300,000 µg/kg was found was next to the Gentle Cleaners location. The other two locations showed much lower concentrations; the highest concentration at GKM was 1,600 µg/kg while the highest concentration at Parkside Apartments was 120 µg/kg.

VOCs, particularly PCE and TCE, were also detected in the groundwater at the Site at concentrations exceeding the federal Maximum Contaminant Level (MCL) under the Safe Drinking Water Act (SDWA). The highest concentrations of contamination occurred in the wells at the center of the Site, including, but not limited to, the GKM well and the NPWA well S9. PCE was detected above the MCL in well S9 only.

It was determined during the RI that the Site presented potential current and future unacceptable risk due to exposure to VOCs from ingestion, dermal absorption and inhalation of contaminated soil and groundwater. EPA determined that actual or threatened releases of hazardous substances from the Site, if not addressed, may present an imminent and substantial endangerment to public health.

Response Actions

EPA issued the Record of Decision (ROD) to select the remedy for the Site on September 30, 1994 and modified the selected remedy in three Explanations of Significant Differences (ESDs) issued on October 19, 1997, September 24, 1998, and May 31, 2012.

The 1994 ROD divided the remedial work into two separate OUs. OU1 addresses contaminated soil and OU2 addresses contaminated groundwater. The 1994 ROD selected a final remedial action for OU1, which addressed the soil contamination that was the source of groundwater contamination. The OU2 groundwater remedy selected in the 1994 ROD was an interim action, and EPA later selected it as the final groundwater remedy.

The 1994 ROD established the following Remedial Action Objectives (RAOs):

- Remove the potential exposure risk from the contaminated soil (OU1);
- Eliminate the source of contamination migrating to groundwater (OU2);
- Prevent the migration of contaminated groundwater (OU2).

The selected remedy for OU1 included the excavation of contaminated soils at each of the three properties (Gentle Cleaners, GKM, and Parkside Apartments) with off-site disposal. Soils were to be excavated until the PCE concentrations reached the cleanup levels identified in Table 2 below.

Table 1: Soil Cleanup Levels

Property	**PCE Soil Cleanup Levels** (µg/kg)
Gentle Cleaners	270
Granite Knitting Mills	260
Parkside Apartments	120

The interim remedy for OU2 consisted of pumping and treating contaminated groundwater from two wells until MCLs were achieved throughout the groundwater plume. The two wells selected for pumping in the 1994 ROD were the upper interval of the GKM well (the top 30 to 40 feet); and the entire NPWA S9 well, which was approximately 270 feet deep. The extracted water from these wells would be combined prior to treatment. The 1994 ROD allowed the direct discharge of the extracted water to a publicly owned treatment works (POTW), if determined appropriate during the remedial design.

The 1994 ROD identified fifteen (15) contaminants of concern (COCs) in groundwater.
At the time of the 1994 ROD, the cleanup levels selected for the COCs were "natural background" concentrations. Subsequent to the issuance of the 1994 ROD, Pennsylvania passed into law the Land Recycling and Remediation Standards Act (Act 2), which discontinued the use of "natural background" as a cleanup level for groundwater and established new groundwater cleanup levels known as Medium-Specific Concentrations (MSCs). EPA determined that the cleanup levels established under Act 2 were not more stringent than MCLs and the cleanup levels were changed to MCLs with the issuance of the first ESD on October 29, 1997.

Not all of the COCs in the 1994 ROD have MCLs; however, only PCE and TCE have ever been detected in groundwater at concentrations higher than MCLs or Act 2 MSCs. Therefore, the groundwater cleanup levels are MCLs for all COCs with MCLs, as summarized in Table 2 below:

Table 2: Groundwater COCs and Cleanup Levels

COC	Cleanup Level (µg/L)
Benzene	5
Cis-1,2-dichloroethene	70
Trans-1,2-dichloroethene	100
Methylene chloride	5
Ethylbenzene	700
Tetrachloroethene (PCE)	5
Toluene	1,000
1,1,1-Trichloroethane	200
Trichloroethene	5

Status of Implementation

The Remedial Design (RD) was performed by EPA from February 1995 through September 1996. During the RD, no soil contamination exceeding cleanup levels was identified at the Parkside Apartments property. Additionally, only low concentrations of PCE were detected in well S9 during the remedial design. Therefore, EPA issued the first ESD on October 29, 1997 to document that no soil would be removed from the Parkside Apartments property and groundwater would not be extracted and treated from well S9. As discussed above, the first ESD also changed the groundwater cleanup levels from "natural background" to MCLs.

OU1 Remedial Action

The soil remedial action was performed at the Gentle Cleaners and GKM properties in June and July 1998. A total of 482 tons of soil were excavated and disposed offsite. The OU1 remedial action is considered complete.

OU2 Remedial Action

During the RD, three additional monitoring wells were installed (S1, S2 and D3) in addition to the existing extraction wells GKM and S9. Sampling results in all wells during the RD revealed low concentrations of contamination; therefore, EPA determined that extracted water would be discharged to the sanitary sewer to be

treated at the POTW. Additionally, as indicated above, well S9 was never pumped due to the low concentrations. Construction of the system, which consisted of installation of a pump and conveyance piping from the GKM well to the sanitary sewer, was completed in July 1998.

A second ESD was issued on September 24, 1998 to document EPA's decision that the interim extraction system selected in the 1994 ESD for OU2 would be the final remedy for the contaminated groundwater. The Site achieved construction completion status when the Preliminary Close-Out Report (PCOR) was issued by EPA on September 24, 1998.

The GKM well was operated until 2005, when PCE concentrations had decreased by two orders of magnitude and were consistently below the MCL. However, the PCE concentration at monitoring well S1 had increased significantly; therefore, an extraction system and associated pumping were installed in well S1 in September 2008 and is currently in operation. On January 8, 2009, operation and maintenance (O&M) of OU2 was transferred to PADEP.

EPA issued the third ESD on May 31, 2012 to document the change in groundwater extraction location from the GKM well to well S1 and to allow for extraction of contaminated groundwater at locations and depths determined by EPA to be appropriate to optimize the removal of contaminants. The third ESD also clarified that the goal of the groundwater remedy is to achieve MCLs throughout the plume of contamination. Finally, the third ESD added requirements for institutional controls (ICs), as described below.

Media, engineered controls, and areas that do not support UU/UE based on current conditions	ICs Needed	ICs Called for in the Decision Documents	Impacted Parcel(s)	IC Objective	Title of IC Instrument Implemented and Date (or planned)
Groundwater	Yes	Yes	Souderton Township	Obligatory connection to public water of any residence within certain distance to available water supplies.	Souderton Township Ordinance #551
Groundwater	Yes	Yes	Montgomery County Health Department (MCHD).	Obligatory testing of any new well and treatment of affected groundwater.	MCHD, Division of Water Quality Management, Water Quality Regulations, Chapter 17.

Institutional Controls Summary

As indicated above, the third ESD called for ICs to ensure that the contaminated groundwater is not used as a source of drinking water and that no new wells interfere with the remedy selected for the Site. As set forth in the ESD, ICs are implemented via existing requirements established by the Montgomery County Health Department (MCHD) and Souderton Borough. These ICs help to prevent both human exposure and damage of the remedy by human actions. The MCHD Water Regulation, specifically Chapter 17, both prevents exposure to the groundwater contamination and installations of new wells by their permitting process. MCHD requires approval for any new well and the permitting process requires that all new drinking water wells be tested for certain parameters, including VOCs. If the tested parameters exceed the County's drinking water standards, an

approval to operate will not be granted and consumption of the groundwater is not permitted unless treatment to remove the contaminant is provided.

In addition, Souderton Borough has a local ordinance that requires all new construction built within 175 feet of a public water line to connect to the water line. Because of the current configuration of the Borough, all new construction in the vicinity of the Site would be within the requirement to connect to public water. Furthermore, no residences around the Site are currently on private water wells.

Some additional levels of protection of the remedy include locking mechanisms on all the groundwater monitoring wells and regular meetings between the MCHD, PADEP and EPA to coordinate efforts, data and communications regarding all Superfund Sites located in Montgomery County, Pennsylvania.

III. PROGRESS SINCE THE LAST REVIEW

Table 3: Protectiveness Determinations/Statements from the 2013 FYR

OU #	Protectiveness Determination	Protectiveness Statement
1	Protective	The remedy at OU1, the source control operable unit, is protective of human health and the environment. The contaminated soil identified during the remedial investigation was removed to the cleanup levels established in the ROD and any potential exposure risk to this soil has been eliminated. Furthermore, this source of contamination migrating to the groundwater was removed.
2	Protective	Based on the additional sampling results and actions taken since the September 16, 2008 Five-Year Review, the remedy for OU2 of the North Penn Area 1 Superfund Site is protective of human health and the environment. After a review of the analytical data from the vapor intrusion investigation, it is EPA's determination that vapor intrusion (VI) is not an issue for the homes and businesses in the vicinity of the Site at this time. 1,4-Dioxane was not detected in any of the samples collected during the December 2008 sampling event. Therefore, 1,4-dioxane is not considered a contaminant of concern at the Site. Although high concentrations of PCE continue to be present in well S1, additional sampling and investigation since the September 2008 Five-Year Review have not indicated any additional sources of contamination near well S1. To further investigate the source of the high concentration of PCE in well S1, additional monitoring wells are being installed and will be sampled to determine the effectiveness of the remedy and the extent of the contamination.

Table 4: Status of Recommendations from the 2013 FYR

OU #	Issue	Recommendations	Current Status	Current Implementation Status Description	Completion Date (if applicable)
OU2	Persistent levels of PCE at well S1.	To further investigate the source of the high concentration of PCE in well S1, by installing additional monitoring wells and sampling them to determine the effectiveness of the remedy. A capture zone analysis may be considered to further delineate the extent of the contamination.	Ongoing	One additional monitoring well has been installed to date and additional wells are planned in late 2018.	Ongoing

The previous FYR identified one issue which was the continued presence of elevated concentrations of PCE in extraction well S1. The previous FYR recommended the installation and sampling of additional wells in the vicinity of well S1. These additional wells would be drilled southwest of well S1, in line with the groundwater flow to delineate the plume and enhance the monitoring well system. The new wells would also help in the completion of a capture zone analysis.

During this FYR period, EPA installed one new well (MG-2220, see Figure 1) downgradient from the extraction well. During installation of the well MG-2220, faults and fractures were encountered in the well, preventing geophysical studies and packer testing from being performed. Instead, EPA will sample various depth intervals in the well in late 2018 to determine where contaminant mass enters the well to further delineate the extent of contamination in this area. This data will be utilized to determine if additional monitoring and/or extraction wells are necessary. In the meantime, pumping continues in well S1 as per the Selected Remedy.

IV. FIVE-YEAR REVIEW PROCESS

Community Notification, Involvement & Interviews

A public notice was published in the *Times Herald* on July 13, 2018, stating that the FYR was underway and inviting the public to submit any comments to EPA. The results of the FYR and the report will be made available at the Site's information repository, located at the local Indian Valley Public Library, 100 East Church Avenue, Telford PA 18969, and online at https://www.epa.gov/superfund/

On May 15, 2018, the EPA CIC Lavar Thomas, along with RPM José Redmond Girón, met with Borough Manager of Souderton Borough to inform them of the FYR and discuss their knowledge and perception of EPA's activities at the Site. Interviews were also conducted as part of the outreach process to document any perceived problems or successes with the remedy that has been implemented to date.

The Borough Manager reported being well informed about the Site and had no concerns or complaints. The Borough Manager stated that they rarely receive inquiries from residents about the Site, but feel well prepared

to address them if they do arise. One concern that community members have raised in recent years is regarding the maintenance of the vacant Granite Mills property.

Data Review

Samples are collected by PADEP at six-month intervals from both the current extraction well (S1) and the monitoring wells (S2, S3, D3, and GKM). Since the previous FYR, only PCE and TCE have been detected at concentrations that exceed their respective cleanup levels (MCLs). PCE contamination has persisted in well S1 and has periodically exceeded the MCL of 5 µg/L in well GKM (always during the spring sampling event). All the other wells are below the MCL or non-detect for PCE during the same period. Concentrations of PCE range from non-detect to 8.1 µg/L at the GKM Well, and from 329 to 1150 µg/L in well S1, well below the high concentration of 8,300 µg/L found during the initial sampling in 2003 (see Figure 2).

Table 5: Monitoring and Extraction Well PCE and TCE Concentrations (µg/L) for the Current FYR

Well	COC	Jun-2013	Dec-2013	Jun-2014	Dec-2014	Jun-2015	Jan-2016	Jun-2016	Dec-2016	Jun-2017
S1	PCE	**846**	**329**	**1150**	**1080**	**670**	**678**	**414**	**681**	**603**
	TCE	3.4	**5.4**	4.4	5	4	4.5	2.7	3.7	3.5
S2	PCE	1.1	1.7	1.2	1.3	0.82	1.3	0.72	1.3	ND
	TCE	ND	ND	ND	ND	ND	ND	0.56	ND	ND
S3	PCE	0.79	0.81	0.76	0.75	0.73	0.7	0.51	0.54	ND
	TCE	ND	ND	ND	ND	ND	ND	ND	ND	ND
D3	PCE	ND	0.99	ND	1.2	0.55	0.83	ND	0.94	ND
	TCE	0.71	ND	0.94	ND	0.58	0.52	1.1	ND	0.5
GKM	PCE	**8.1**	2.7	4.9	1.7	**5.5**	0.77	**5.7**	1.5	**5.5**
	TCE	2.5	0.96	1	0.5	1	ND	1.8	ND	1.4

Bold numbers correspond to exceedances in cleanup levels (5 µg/L)

With regard to TCE, the highest concentration is also detected at well S1, which exceeded the MCL of 5 µg/L in December of 2013 with a concentration of 5.4 ppb and in 2014 when it reached 5 µg/L. All other samples from all the wells samples during this FYR period were below the MCL for TCE (See Figure 3).

Quarterly samples are also collected from extraction well S1. Results are consistent with the semi-annual data presented above. Sampling at all extraction and monitoring wells will continue in order to evaluate the overall effectiveness of the remedy.

Surface water samples are also collected during the semiannual sampling events. Two locations are sampled in the unnamed tributary to the Skippack Creek; SW1 which is approximately 1,000 feet downstream from well S1 and SW2 which is where the unnamed tributary surfaces through a culvert under Wile Avenue, approximately 300 feet from well S1. All the COCs are non-detect in surface water except for PCE, which has been found below its MCL at concentrations between between1.3 µg/L and 2 µg/L. This concentration is above the Pennsylvania Water Quality Criteria for Toxic Substances Human Health Criteria for surface water (0.69 µg/L) but below the Fish and Aquatic Life Criteria Continuous (140 µg/L) and Maximum (700 µg/L) Concentrations. Although the PCE concentrations in the unnamed tributary exceeded the Human Health Criteria, the detected concentrations are within the Superfund acceptable excess carcinogenic risk range of 1E-4 to 1E-6.

Additionally, the unnamed tributary is not used for drinking water or recreational purposes and no exposure is expected to occur. Surface water monitoring will continue to evaluate any changes in surface water quality.

Site Inspection

The inspection of the Site was conducted on May 15, 2018. In attendance were José R. Redmond, RPM and Lavar Thomas, CIC. The purpose of the inspection was to assess the conditions of the extraction and monitoring well network. The well network appeared to be in good shape, with the wells being secured with lids and locks. The flow totalizer at the extraction well S1 is working as expected.

V. TECHNICAL ASSESSMENT

QUESTION A: Is the remedy functioning as intended by the decision documents?

Yes. The remedy is functioning as designed in the 1994 ROD and the ESDs from 1997, 1998 and 2012, thus protecting human health and the environment. The soil remedial action was completed in 1998 at the Gentle Cleaners and GKM properties. Groundwater monitoring confirms concentrations are near or below cleanup levels in all wells, except well S1. Although elevated levels of PCE remain at the well S1, concentrations have decreased by an order of magnitude since pumping of well S1 began in 2008. Well S1 continues to be used as an extraction well for the remedial system.

Additional wells are recommended to further delineate the groundwater contaminant plume to the southwest of the former source area at the GKM property. Additionally, a capture zone analysis is recommended once the new wells are installed to determine if the current system is capable of capturing all contaminated groundwater at the Site. Continued operation of the extraction system and monitoring of the current well network will provide protection of human health and the environment. Adding the new wells to the sampling plan will enhance the monitoring network.

ICs are in place to ensure that the contaminated groundwater is not used as a source of drinking water and that no new wells interfere with the remedy selected for the Site. The ICs are implemented via Montgomery County Health Department and Souderton Borough regulations to achieve these objectives.

QUESTION B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy selection still valid?

Yes. The RAOs used at the time of the remedy selection are still valid. While some of the exposure assumptions and toxicity data may have changed since the remedy selection, the remedy remains protective due to ICs implemented at the Site.

Soil cleanup levels are identified in the 1994 ROD for PCE and are still valid. "Natural background" was identified as the cleanup level for groundwater in the 1994 ROD but was changed to MCLs in the first ESD issued in 1997. The third ESD further clarified that the RAO for groundwater is restoration of the entire groundwater plume to MCLs.

QUESTION C: Has any other information come to light that could call into question the protectiveness of the remedy?

No. There has been no new information to question the effectiveness of the remedy.

VI. ISSUES/RECOMMENDATIONS

Issues/Recommendations
OU(s) without Issues/Recommendations Identified in the Five-Year Review:
OU1

Issues and Recommendations Identified in the Five-Year Review:				
OU(s): *OU2*	**Issue Category: Operations and Maintenance**			
	Issue: The groundwater contamination plume may not be fully delineated to the southwest of the Site.			
	Recommendation: Install additional monitoring wells to fully delineate the groundwater contamination plume.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	No	EPA	EPA	12/30/2022
OU(s): *OU2*	**Issue Category: Remedy Performance**			
	Issue: The capture zone of the current extraction system has not been defined.			
	Recommendation: Perform a capture zone analysis after the new wells are installed and the delineation of the plume is complete to determine the effectiveness of the current extraction system and evaluate if additional extraction wells are necessary.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	No	EPA	EPA	12/30/2022

VII. PROTECTIVENESS STATEMENT

Protectiveness Statement	
Operable Unit:	*Protectiveness Determination:*
OU1	Protective
Protectiveness Statement:	
The remedy at OU1, the source control operable unit, is protective of human health and the environment. The contaminated soil identified during the remedial investigation was removed to the cleanup levels established in the ROD and any potential exposure risk to this soil has been eliminated. Furthermore, this source of contamination migrating to the groundwater was removed.	

Protectiveness Statement	
Operable Unit:	*Protectiveness Determination:*
OU2	Short-term Protective
Protectiveness Statement: The remedy at OU2, the contaminated groundwater control operable unit, is protective of human health and the environment in the short term. The groundwater extraction and treatment system has been effective in reducing groundwater contamination at the Site. ICs are in place to prevent exposure to contaminated groundwater. In addition, continued monitoring of the monitoring well network and annual sampling of the surface water will continue to evaluate the effectiveness of the remedy. However, additional monitoring wells are necessary to fully delineate the groundwater contamination plume to the southwest of the former source area and a capture zone analysis is necessary to ensure the remedy is protective in the long term.	

Sitewide Protectiveness Statement
Protectiveness Determination: Protective
Protectiveness Statement: The Site is protective of human health and the environment in the short term. Both the OU1 and OU2 remedies were constructed in accordance with the Site decision documents and are effective in preventing exposure to contaminated soil and groundwater. However, additional monitoring wells and a capture zone analysis are necessary to ensure that the OU2 remedy is protective in the long term.

VIII. GOVERNMENT PERFORMANCE AND RESULTS ACT MEASURES

The Government Performance and Results Act holds the federal agencies accountable for using resources wisely and achieving program results. The measures and their current status are provided as follows.

Environmental Indicators

Human Health: Human exposure under control (HEUC).
Groundwater Migration: There is insufficient data to determine groundwater migration under control.

Sitewide Ready for Anticipated Use

The Site was determined to be Site-Wide Ready for Anticipated Use on June 29, 2012.

IX. NEXT REVIEW

The next FYR report for the Site is required five years from the completion date of this review.

APPENDIX A – REFERENCE LIST

- Borough of Souderton Ordinance No. 551. May 1990. Six pages. https://semspub.epa.gov/work/03/2136686.pdf
- Phase II Remedial Investigation (RI) Report Volume II. March 1993. 169 pages. https://semspub.epa.gov/work/03/28009.pdf
- Record of Decision (ROD)- OUs 1&2. September 1994. 70 pages. https://semspub.epa.gov/work/03/28077.pdf
- EPA Superfund Explanation of Significant Differences(ESD). October 1997. Six pages. https://semspub.epa.gov/work/03/83147.pdf
- EPA Superfund Explanation of Significant Differences. September 1998. Four pages. https://semspub.epa.gov/work/HQ/185585.pdf
- Third Explanation of Significance Differences (ESD). May 2012. 11 pages. https://semspub.epa.gov/src/document/03/2136696
- Montgomery county Health Department, Division of Water Quality Management, Public Health Code Chapter 17 " Individual Water Supply, Irrigation Wellsand Geothermal Well Systems Regulations". January 2013. 12 pages.
- https://semspub.epa.gov/src/document/03/2136687
- Annual Operations & Maintenance Report July 2012 to June 2013, September 2013. 60 pages
- Third Five-Year Review Report. September 2013. 30 pages. https://semspub.epa.gov/work/03/2180740.pdf
- Annual Operations & Maintenance Report July 2013 to June 2014. September 2014. 55 pages.
- Annual Operations & Maintenance Report July 2014 to June 2015. October 2015. 54 pages.
- Annual Operations & Maintenance Report July 2015 to June 2016, August 2016. 89 pages.
- Annual Operations & Maintenance Report July 2016 to June 2017, September 2017. 107 pages.

APPENDIX B - FIGURES

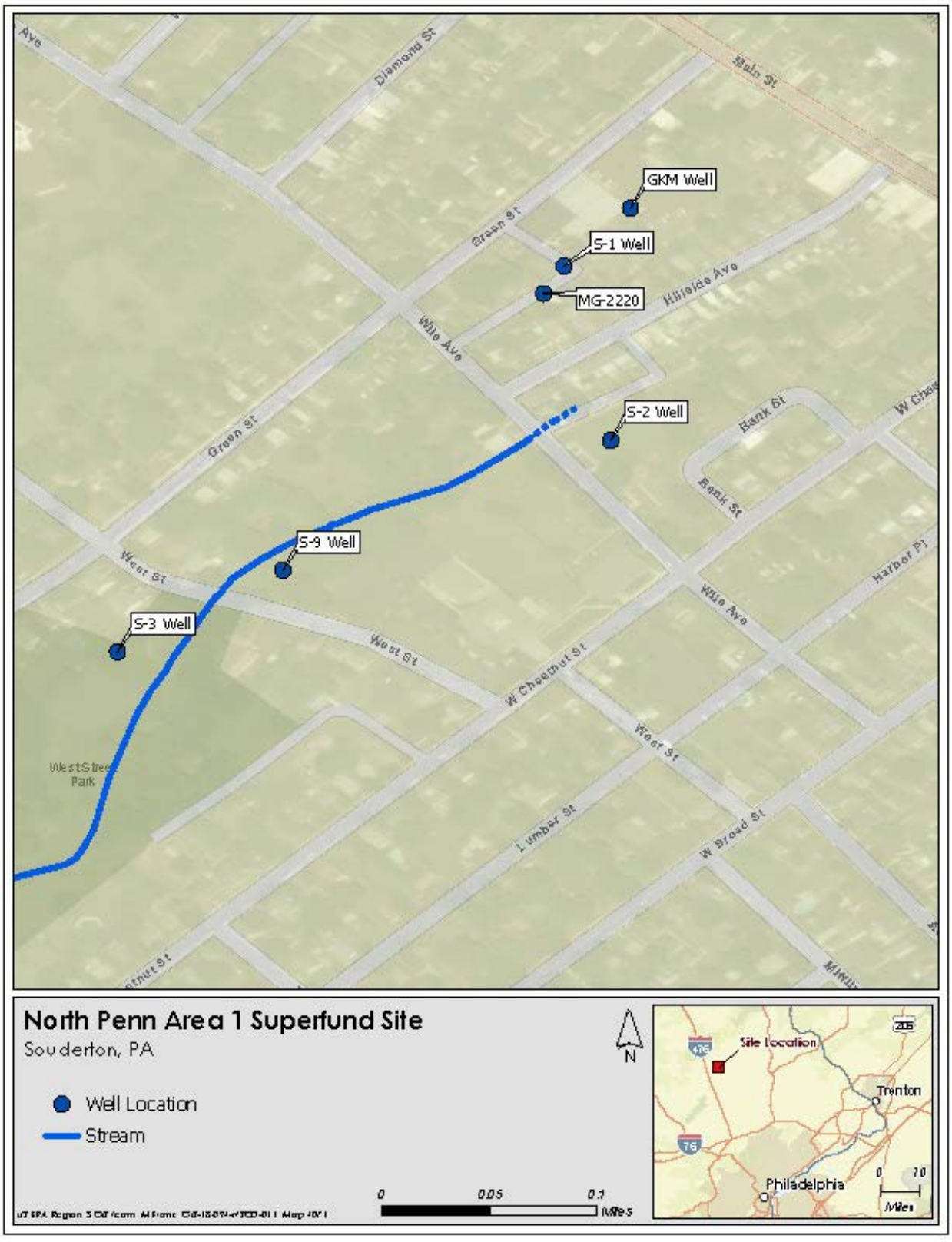

Figure 1-Site map and location

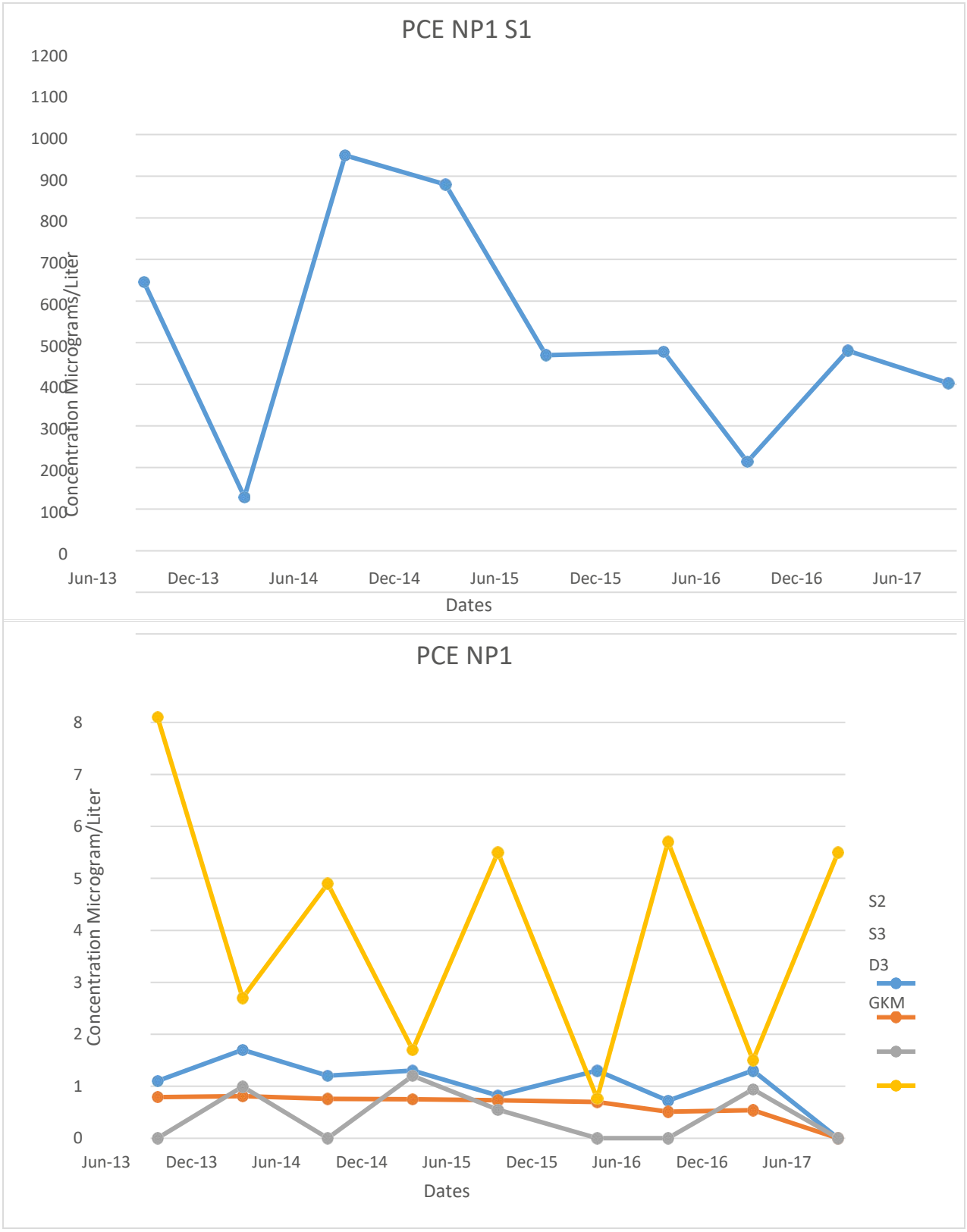

Figure 2-PCE concentrations in Site wells

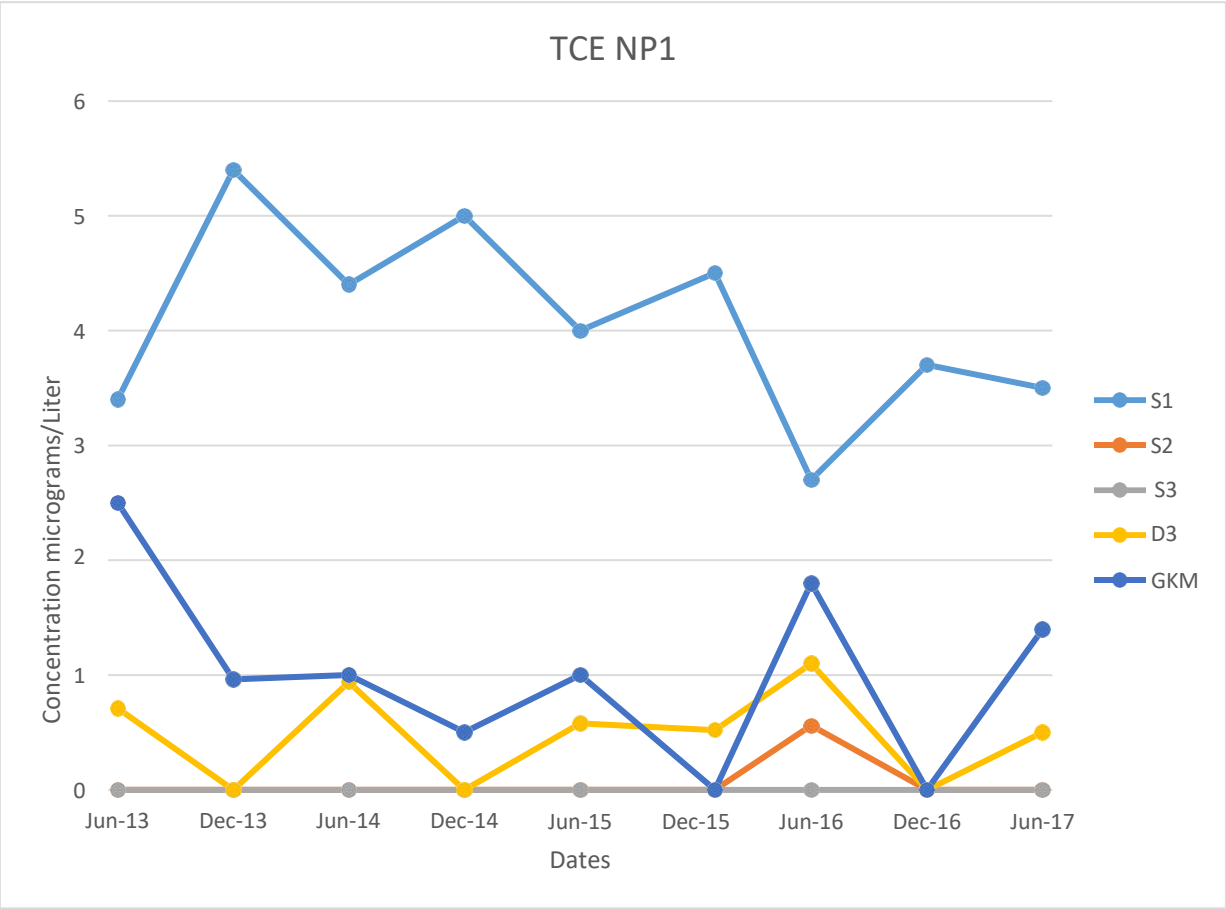

Figure 3- TCE concentrations in Site wells