THIRD FIVE-YEAR REVIEW REPORT FOR OCCIDENTAL CHEMICAL SUPERFUND SITE MONTGOMERY COUNTY, PENNSYLVANIA

Prepared by

U.S. Environmental Protection Agency
Region III
Philadelphia, Pennsylvania

PAUL LEONARD
Digitally signed by PAUL LEONARD
Date: 2023.07.31 11:27:29 -04'00'

Paul Leonard, Division Director
Superfund and Emergency Management Division
U.S. EPA Region III

Table of Contents

TABLES

FIGURES

ATTACHMENT

LIST OF ABBREVIATIONS & ACRONYMS

ARAR	Applicable or Relevant and Appropriate Requirement
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CIC	Community Involvement Coordinator
cis-1,2 DCE	cis-1,2 Dichloroethene
COC	Contaminant of Concern
CQAP	Construction Quality Assurance Plan
DPC	Defense Plant Corporation
EPA	United States Environmental Protection Agency
ESD	Explanation of Significant Differences
FFS	Focused Feasibility Study
FTR	Firestone Tire and Rubber
FYR	Five-Year Review
GSHI	Glenn Springs Holdings, Inc.
GWRTS	Groundwater Recovery and Treatment System
HHRA	Human Health Risk Assessment
IC	Institutional Control
JAEC	Jacobs Aircraft Engine Company
MCL	Maximum Contaminant Level
mg/kg	Milligram Per Kilogram
MSL	Mean Sea Level
NCP	National Contingency Plan
NPL	National Priorities List
O&M	Operation and Maintenance
OU	Operable Unit
Oxy	Occidental Chemical Corporation
PADEP	Pennsylvania Department of Environmental Protection
PAH	Polycyclic Aromatic Hydrocarbon
PCE	Tetrachloroethylene
POTW	Publicly Owned Treatment Works
PRP	Potentially Responsible Party
PVC	Polyvinyl Chloride
RAO	Remedial Action Objective
RAP	Remedial Action Plan
RDWP	Remedial Design Work Plan
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
RPM	Remedial Project Manager
SVE	Soil Vapor Extraction
TCE	Trichloroethylene
µg/L	Micrograms Per Liter
UU/UE	Unlimited Use and Unrestricted Exposure
VOC	Volatile Organic Compound
WWTP	Wastewater Treatment Plant

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 is and will continue to be protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in FYR reports such as this one. 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 five-year review pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121, consistent with the National Contingency Plan (NCP) (40 CFR Section 300.430(f)(4)(ii)), and considering EPA policy.

This is the third FYR for the Occidental Chemical Superfund Site (Site). The triggering action for this policy review is the completion date of the previous FYR, August 1, 2018. The FYR has been prepared 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): OU-1 addresses the groundwater, OU-2 addresses contaminated materials within the earthen lagoons and drainage swale/sediment pond. This FYR addresses both OUs.

The FYR was led by Andrew Haneiko, EPA's Remedial Project Manager (RPM) for the Site. Participants included Lisa Trakis, EPA Community Involvement Coordinator (CIC), Martin Gehlhaus, EPA toxicologist, Herminio Concepcion, EPA hydrologist, Bob Hasson, EPA regional counsel, and Wayne Harms, Pennsylvania Department of Environmental Protection (PADEP) Project Manager. The PRP was notified of the initiation of the FYR. The review began on August 1, 2022.

Site Background

The Site is approximately 250 acres and located on Armand Hammer Boulevard in Lower Pottsgrove Township, Montgomery County, Pennsylvania along the Schuylkill River (Figure 1). The Schuylkill River bounds the Site to the south, east and west and is used for both water supply and recreational activities. The Site is located in an agricultural, industrial and suburban residential area. Approximately 31,000 people live within a 2-mile radius of the Site.

Stormwater drainage flows outward in three directions from the center of the Site towards the Schuylkill River. The southern portion of the Site consists of a low-lying wooded area situated within the 100-year flood plain. Several drainage swales exist within the flood plain and receive general stormwater runoff from the Site. The overburden soils at the Site consist of alluvium, fill, and weathered bedrock. The Site is underlain by sedimentary rocks of the Brunswick Group and the Lockatong Formation. Transmissive features in the bedrock are primarily bedding-parallel fractures. As a result, essentially all of the groundwater residing in the rock is stored and transmitted along bedding planes oriented parallel to the rock beds, extending along strike to and from the river. Limited amounts of groundwater move across (perpendicular to) the bedding planes. Since permeability is highest along the bedding planes, pumping influence propagates predominantly along the bedding planes. Thus, the transmissivity of the bedrock groundwater bearing system is oriented along bedding planes to the north northwest with beds cropping

in succession under the river, alluvial sediment, and soils at the Site. This understanding is the basis for utilizing the concept of the sequence of pumped intervals as the Site model (Figure 10).
Historically, the Site was the location for the manufacturing of aircraft engines, tires, and Polyvinyl Chloride (PVC) resins. From 1980 to 2005, Occidental Chemical Corporation (Oxy) manufactured PVC resins at the Site. Since 2005, the Site has undergone building and process demolition activities and decommissioning. Oxy operated a 17-acre solid waste landfill and a 7-acre residual waste landfill on the Site. The landfills were closed pursuant to Commonwealth of Pennsylvania regulations in 1985 and 1998, respectively. The Site is currently managed by Glen Springs Holdings, Inc. (GSHI), an affiliate of Oxy.

FIVE-YEAR REVIEW SUMMARY FORM

SITE IDENTIFICATION		
Site Name: Occidental Chemical		
EPA ID: PAD980229298		
Region: 3	**State:** PA	**City/County:** Pottstown/Montgomery County
SITE STATUS		
NPL Status: Final		
Multiple OUs? Yes (two)	**Has the site achieved construction completion?** Yes	
REVIEW STATUS		
Lead agency: EPA		
Author name (Federal or State Project Manager): Andrew Haneiko		
Author affiliation: EPA Region III		
Review period: 8/1/2018 – 8/1/2023		
Date of site inspection: 5/31/2023		
Type of review: Policy		
Review number: 3		
Triggering action date: 8/1/2018		
Due date *(five years after triggering action date)*: 8/1/2023		

II. RESPONSE ACTION SUMMARY

Basis for Taking Action

In 1985, EPA investigated the Site and placed the Site on the NPL on October 4, 1989. EPA identified several volatile organic compounds (VOCs) in the groundwater and Earthen Lagoon sludge including TCE, cis-1,2-DCE, and vinyl chloride (Table 1) as chemicals of concern (COCs). Contaminants identified in soil and sediment within the Drainage Swale and Sediment Pond include polycyclic

aromatic hydrocarbons (PAHs), dibenzofurans, polychlorinated biphenyls (PCBs), and mercury Tables 1 and 2).

The human health risk assessment indicated an unacceptable risk from groundwater and the earthen lagoon soil and sediments. Five chemicals in the groundwater exceeded the MCL under the Safe Drinking Water Act. Based on the conclusions of the remedial investigation (RI), EPA determined that potential risks to the environment from the sediment pond and drainage swale were unacceptable and warranted additional remedial action.

Response Actions

Four unlined earthen lagoons, covering approximately 3 acres, were used for storage of PVC sludge waste. Sludge had been removed from the earthen lagoons and placed in the 17-acre solid waste landfill. The earthen lagoons were closed in 1974 and their PVC contents were left in place. Two lined lagoons were constructed to handle the wastes and then were closed under PADEP authority in 1995-1996.

A sediment pond at the base of the residual waste landfill collected stormwater runoff. The sediment pond discharged to a drainage swale located in the flood plain that then flowed to the Schuylkill River. The residual waste landfill was closed in 1998 and, as part of that closure, the sediment pond was decommissioned.

In early 1984, approximately 898 tons of soil contaminated with TCE was removed from the TCE handling area and disposed of off-site. The removal of the contaminated soil eliminated the source of TCE to groundwater and surface water.

Oxy conducted the RI/FS between 1990 and 1993 and the Final RI/FS report was issued in March 1993. EPA selected a remedy in a Record of Decision (ROD) on June 30, 1993 addressing bedrock groundwater (OU-1) and the four earthen lagoons, drainage swale, and sediment pond (OU-2). The selected remedies were later revised in three ESDs issued in 1995 (OU-2), 2008 (OU-2), and 2013 (OU-1).

The Remedial Action Objectives (RAOs) for OU-1 include:

- Restore groundwater in the bedrock aquifer to federal and state applicable or relevant and appropriate requirements (ARARs), including drinking water standards, to a level that is protective of human health and the environment; and
- Protect non-impacted groundwater and surface water for current and future use.

The RAOs for OU-2 include:

Prevent migration of chemicals from the earthen lagoons to groundwater or to surface water, and to prevent direct contact with lagoon material.

The final Selected Remedy for OU-1 and OU-2, as modified by the 1995, 2008, and 2013 ESDs, consists of the following components:

- Installation and operation and maintenance (O&M) of groundwater extraction wells to remove contaminated groundwater from beneath the Site and to prevent contaminants from migrating further;
- Installation and O&M of an air stripper to treat groundwater to the required levels;
- Installation and O&M of a vapor phase carbon unit on the air stripper;
- Periodic sampling of groundwater and treated water to ensure that treatment components were effective and that groundwater remediation was progressing towards the cleanup levels, as outlined in Table 1;
- Construction of an access road to the earthen lagoons;
- Excavation of PVC material (which includes all PVC sludge), coal fine layers, and contaminated soil exceeding cleanup levels, as outlined in Table 3;
- Restoration of the area to original grade, which includes backfilling excavations with clean fill;
- Additional sampling during the remedial design to define the extent of cleanup required for the contaminated sediment found in the sediment pond and drainage swale. The sediment was to be remediated to levels equivalent to the maximum Schuylkill River sediment background concentration detected during the RI, as outlined in Table 2;
- Further sampling of the flood plain to the south of the 17-acre solid waste landfill and sediment pond/drainage swale was required to determine whether migration of contaminants had occurred during flooding events. Upon completion of the additional sampling, a full assessment of environmental risk and development of remedial objectives was to be completed;
- Offsite disposal of all waste materials exceeding cleanup levels; and
- Institutional controls (ICs).

Table 1. COCs and Cleanup Levels for Bedrock Groundwater (OU-1)

Contaminant of Concern	Cleanup Level (µg/L)
Vinyl Chloride	2
Ethylbenzene	700
cis-1,2 Dichloroethene	70
trans-1,2 Dichloroethene	100
Trichloroethene	5
Styrene	100
Tetrachloroethene	5

Note: Cleanup levels are MCLs

Table 2. COCs and Soil and Sediment Cleanup Levels for Drainage Swale and Sediment Pond (OU-2)

Contaminant of Concern	Cleanup Level (mg/kg)
Total PAHs	5
Dibenzofurans	0
PCBs	0
Mercury	0.4

Notes: Milligrams per kilogram (mg/kg)
Cleanup levels are based on background concentrations for Schuylkill River sediments determined during the RI

Table 3. COCs and Soil Cleanup Levels for the Earthen Lagoons (OU-2)

COCs	Cleanup Level (mg/kg)
Vinyl Chloride	1.10
Trichloroethene	0.534
Ethylbenzene	10,000
Trans- 1, 2-Dichloroethene	292
1-1 Dichloroethene	6.4
1-2 Dichloroethane	12
Acetone	10,000
Benzene	41
Carbon Disulfide	10,000
Cis, 1-2 Dichloroethene	43.9
Methylene Chloride (Dichloromethane)	4.97
Tetrachloroethene	89.1
Toluene	7,600
Chloromethane (Methyl Chloride)	180
Naphthalene	4,400
2,4 Dimethylphenol	4,400
2-Methylnaphtalene	4,400
4-Methyl 2-pentanone (Methyl isobutyl ketone)	19
Bis 2-ethylhexyl phthalate	130
Phenanthrene	10,000
Thallium	14
Cadmium	38
Chromium	94
Lead	450
Nickel	650
Barium	8,200

Notes: Milligrams per kilogram (mg/kg)
Cleanup levels are based on PA Statewide Health Standards

Status of Implementation

Oxy performed the Remedial Design and Remedial Action in accordance with a June 23, 1994 Unilateral Administrative Order (Docket No. III-94-26-DC). Figure 2 shows a general site layout, depicting the locations of various Site remedy features.

OU-1 Bedrock Groundwater Remedy Implementation

Construction of the groundwater recovery and treatment system (GWRTS) was completed between March 17, 1998 and November 20, 1998. The treatment plant houses equipment, including equalization tanks, pre-treatment filters, air stripper, carbon adsorption tanks (aqueous and vapor), and all associated piping and mechanical and electrical equipment. The location of the treatment buildings is shown on Figure 3. The groundwater extraction system consisted of 11 recovery wells connected by force mains to the treatment system. Treatment of groundwater began in March 1999. From 1999 until 2007, treated

groundwater was discharged to the Pottstown POTW. Starting in April 2007 the treated groundwater was directly discharged on-site under a National Pollutant Discharge Elimination System (NPDES) permit by PADEP.

The GWRTS has been in full operation since January 1999. Initially, the GWRTS was operated to both treat contaminated groundwater and supply process water to the PVC manufacturing facility. When manufacturing closed in January 2005 the volume of groundwater withdrawn for treatment was reduced. Oxy conducted a hydraulic testing program and concluded that modification to the GWRTS pumping program could reduce potential vertical and horizontal migration of COCs from known source areas and improve mass removal.

On May 14, 2014, EPA approved the bypass of the air stripper from the treatment process. GWRTS performance standards and the discharge criteria in the NPDES permit are being met without the air stripper step of the treatment process. The air stripper remains in place if site conditions warrant air stripper use again in the future.

In 2014, a shallow well (SVE-1) was installed in the source area (RW-ABC) to extract COCs by vapor recovery from unsaturated soil and weathered rock. A small capacity pump was also installed in SVE-1 to lower the water table in order to enhance mass recovery of the vapor phase. The water recovered was conveyed to the GWRTS for treatment. By 2019, COCs in the extracted vapor diminished, however the small volume of groundwater pumped from SVE-1 contained a significant amount of mass. Groundwater from RW-A and SVE-1 together produced 60-70% of the total removed COC mass. As part of the *2019 Groundwater Pumping Optimization Plan* (2019 Optimization Plan), the SVE system was shut down and a deeper groundwater recovery well, RW-D, was installed adjacent to SVE-1. Well SVE-1 was converted to use as a monitoring point for water levels and groundwater quality in the vicinity of RW-A and RW-D at the center of the RW-ABC plume. The 2019 Optimization Plan was completed in 2020 and included the shutdown of RW-08A, RW-B, RW-C, RW-08, and adjustments of pumping for RW-09A. This optimization improved efficiency of groundwater remediation by increasing the rate of mass recovered per volume of groundwater pump and treated.

Figure 3 shows the locations of the recovery wells, well houses and the treatment building at the Site. Figure 4 depicts a block diagram showing the general process flow and equipment used in the groundwater treatment system.

OU-2 Earthen Lagoons Remedy Implementation

On June 11, 2008, the Remedial Action contractor mobilized to the Site. Construction of an access road and excavation of the earthen lagoons was completed between June 25, 2008 and September 15, 2008. In total, 44,135 tons of PVC and contaminated soils were loaded into 1,929 trucks and disposed of at the Horizon Environment Landfill in Grandes Piles, Quebec. Oxy's Post-Construction Report for Earthen Lagoons demonstrated that construction of the OU-2 Earthen Lagoon remedy was performed in accordance with the design criteria, plans, and specifications in the RD/RA Work Plan.

OU-2 Drainage Swale and Sediment Pond Remedy Implementation

On November 12, 2001, Oxy's Remedial Action contractor excavated the soil and sediment in the swale to a depth of 2 feet below grade. Approximately 200 tons of soil/sediment were removed and disposed of off-site. Excavation areas were restored with clean soil backfill and rip-rap stabilization. The

excavated soils and sediments were direct loaded into dump trucks, transported, and disposed of at the BFI Conestoga Landfill in Morgantown, Pennsylvania. The location of the segment of the drainage swale that was remediated is shown on Figure 2. Oxy submitted a Remedial Action Report for Removal of Soil/Sediment from Drainage Swale to EPA in December 2001.

Institutional Controls Summary

The ICs in 1993 ROD included prohibiting groundwater use at the Site for drinking purposes and limiting the Site's future use to "industrial use only". Oxy filed a copy of the June 23, 1994 Unilateral Administrative Order and a copy of the 1993 ROD with the deed for the Site property with the Montgomery County (PA) Recorder of Deeds. The 2013 ESD included clarification of the Site description and the ICs that are required at the Site. The IC prohibiting the use of groundwater for drinking purposes applies to the portions of the property which approximates the boundary of contaminated groundwater plume above MCLs as shown in Figure 5. The IC limiting the use of the Site to industrial purposes applies to the general area of the Site delineated by the groundwater plume above MCLs. ICs are not required for the earthen lagoon remedy or the drainage swale/sediment pond remedy because all materials associated with these remedies that exceed the established cleanup levels have been excavated and disposed of off-site. The ICs as clarified in the 2013 ESD were implemented through an environmental covenant that was recorded in accordance with the Pennsylvania Uniform Environmental Covenants Act ("PA UECA")[1] with the Montgomery County Recorder of Deeds on September 29, 2015. EPA signed the environmental covenant as the *Agency*, as defined in section 6502 of the PA UECA.[2] As the Agency signatory, EPA has certain enforcement and notice rights under the PA UECA.

Table 4. Summary of Planned and/or Implemented ICs

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	42-00-01333-00-2	To protect the integrity of the remedy, to prevent exposure to contaminated groundwater by prohibiting use of groundwater for drinking (potable) purposes, and to restrict the future use of the Site to non-residential purposes.	Environmental Covenant (September 29, 2015)

Systems Operations/Operation & Maintenance

Oxy is conducting O&M activities for the GWRTS and long-term groundwater monitoring activities in accordance with the Groundwater Extraction and Treatment System O&M Manual, which was updated on September 1, 2017. O&M activities are not required for the earthen lagoon remedy or the drainage

[1] 27 Pa. C.S. §§ 6501-6517.
[2] 27 Pa. C.S. § 6502.

swale/sediment pond remedy because all materials associated with these remedies have been excavated and disposed of off-site, and the areas have been properly restored. The primary activities associated with the ongoing O&M of the GWRTS include the following:

- Operation of the groundwater recovery and treatment system;
- Inspections of the groundwater extraction system, including recovery wells and well houses;
- Inspections of the groundwater treatment systems, including air stripper, shallow well and raw water tanks and sand filters, liquid and vapor-phase carbon adsorbers, pumps, storage, and backwash tanks;
- Monitoring of the GWRTS via the facility Supervisory Control and Data Acquisition (SCADA) system;
- Influent and effluent testing of groundwater;
- Effluent testing of vapor from air stripper;
- Influent and inter-bed testing of groundwater carbon beds;
- Discharge Monitoring Report preparation;
- Maintenance of the GWRTS in accordance with manufacturer requirements in O&M manual; and
- Routine groundwater monitoring of site monitoring wells and recovery wells, and preparation of monthly and annual reports.

Performance Monitoring

Oxy has been conducting a Performance Monitoring Program (PMP) for the groundwater remedy since February 2000. Figure 2 depicts the locations of the wells. The following PMP activities are currently being implemented at the Site:

- Quarterly manual water level measurements are collected at bedrock monitoring wells;
- Monthly sampling and analysis for COCs in 5 active and 7 inactive recovery wells;
- Monthly monitoring events in selected RW-ABC Pumped Interval monitor wells (SVE-1, TB-1B, BR-13, SBMW-2, SBMW-3); and
- Annual sampling and analysis for COCs in all bedrock monitoring wells.

Critical locations in GWRTS are sampled to monitor its performance. The critical locations are listed below and shown on Figure 4:

- TG-1: Influent to shallow wells carbon absorbers (flow from shallow recovery wells);
- TG-2: Inter-bed at the shallow wells carbon absorbers;
- TG-3: Effluent from the shallow wells carbon absorbers;
- TG-4: Influent to the air stripper (combined flow from all recovery wells);
- TG-5: Effluent from the air stripper;
- TG-6: Inter-bed at the polishing step carbon absorbers; and
- TG-7: Effluent from the polishing-step carbon absorbers (treatment system effluent/discharge to on-site).

Total phenolics are sampled at location TG-7 (treatment system effluent). These sampling results are reported to EPA in the monthly progress reports. The results from the TG-7 treatment system effluent are reported monthly in the Discharge Monitoring Report (DMR) to PADEP in accordance with the NPDES permit. Table 5 summarizes the NPDES permit discharge limitations.

Table 5. NPDES GWRTS Discharge Limits and Monthly Sampling Requirements

Discharge Parameter	Concentration (mg/L)	
	Monthly Average	**Instantaneous Maximum**
Vinyl Chloride	0.002	0.005
Ethylbenzene	0.007	0.018
cis-1,2 Dichloroethylene	0.00275	0.0041
trans-1,2 Dichloroethylene	0.005	0.010
Trichloroethylene	0.0045	0.007
Tetrachloroethylene	0.004	0.010
Phenolics, Total	Monitor Only	
Chloroform	0.005	0.010
pH (Std. Units)	Instant. Min. 6.0	9.0
Flow	Monitor Only	-

Notes:
Table is based on Site NPDES Permit No. PA0010944, effective date 08/01/2020, Expiration date 07/31/2025.

III. PROGRESS SINCE THE LAST REVIEW

This section includes the protectiveness determinations and statements from the **last** five-year review as well as the recommendations from the **last** five-year review and the status of those recommendations.

Table 6: Protectiveness Determinations/Statements from the 2018 FYR

OU #	Protectiveness Determination	Protectiveness Statement
01	Protective	The OU-1 groundwater portion of the remedy is protective of human health and the environment. Exposure pathways that could result in unacceptable risks are being controlled. The groundwater remedy is effective in reducing contaminant concentrations, and all groundwater with concentrations in excess of cleanup levels is hydraulically contained. The groundwater remedy is making demonstrable progress towards achieving cleanup levels. The ICs have been implemented to ensure protectiveness.
02	Protective	The OU-2 earthen lagoons remedy and the Site drainage swale/sediment pond remedy are

		protective of human health and the environment. The remedies are complete and were conducted as intended. All materials that exceeded the established cleanup standards have been excavated and disposed of off-Site, and the areas have been properly restored.
Sitewide	Protective	The Site-wide remedy is protective of human health and the environment. Physical construction of the remedy is complete, operation and maintenance is being conducted in accordance with the 1993 ROD, and EPA-approved plans, and ICs have been implemented.

There were no Issues and Recommendations in the 2018 FYR. However, the OTHER FINDINGS Section of the 2018 FYR recommended an Optimization Evaluation be conducted on the GWRTS. EPA approved the 2019 Optimization Plan in May 2019. Implementation of recommendations from the optimization review has resulted in decreased groundwater pumping rates and the volume of treated groundwater while maintaining COC mass recovery (Table 9).

IV. FIVE-YEAR REVIEW PROCESS

Community Notification, Involvement & Site Interviews

A public notice was published in the *Pottstown Mercury* on March 13, 2023, stating that there was a FYR and provided information to contact EPA with questions or comments. The results of the review and the report will be made available at the Site information repository located at the Pottstown Regional Public Library, 500 E High St, Pottstown, PA 19464 and over the internet at https://www.epa.gov/superfund/occidental. EPA did not receive any response to the notice expressing any comments or concerns regarding the Site. During the FYR process, an interview was conducted with the Project Manager on July 6, 2023. The Project Manager was asked if he was aware of any concerns or inquiries raised by the community about the Site. The Project Manager stated that he is not aware of concerns recently from the community about the Site.

Data Review

Oxy submits quarterly and annual progress reports summarizing monitoring data on the GWRTS. EPA reviewed these reports to determine the effectiveness of the remedy in reducing concentrations of COCs in groundwater and in preventing further migration of contaminants off-site. Data review is not required for the OU-2 earthen lagoon remedy or the drainage swale/sediment pond remedy because all materials were excavated and disposed of off-Site.
Four distinct bedrock bedding planes (pumped intervals) of groundwater are pumped as described below. These pumped intervals are shown in cross-section on Figure 6 and Figure 10. Pumped interval designations used at the Site are listed below, arranged from shallowest to deepest:

- RW-04 - This pumped interval has one recovery well (RW-04), 10 bedrock monitoring wells (BR-05, BR-06, BR-07, BR-08, BR-09, BR-10, BR-12, BR-17, TB-07 and TB-07A), and two former plant pumping wells (PW-01 and PW-01R) ;

- RW-ABC - This pumped interval has six recovery wells (active: RW-A and RW-D; inactive: RW-B, RW-C, RW-05, and RW-08A) and ten bedrock monitoring wells (BR-13, BR-14, BR-15, BR-16, OW-27A, PW-07, SBMW-2, SBMW-3, TB-1B, TB-08, and SVE-1);
- RW-08 - This pumped interval has three recovery wells (active: RW-09A; inactive: RW-08, RW-10A) and seven bedrock monitoring wells (BR-01, SBMW-1, TB-02A, TB-05, TB-05A, TB-06, and TB-10);
- RW-06 - This pumped interval has two recovery wells (RW-06 and RW-09) and six bedrock monitoring wells (BR-04, TB-02, TB-04, TB-11, TB-12, and TB-13).

Groundwater COC Concentrations

Figures 5 and 6 provide graphical representations of the TCE plume in plan and cross-section view, respectively, for a sampling event performed in November 2021 and submitted in the 2021 Annual Groundwater Treatment Report by Oxy in April 2022. TCE has been a focus in reports because the extent of the TCE plume is larger than, and in most cases, encompasses the extent of the other COCs for the Site. One exception is well location RW-04, which is not located within the TCE plume and had a PCE concentration of 7.5 µg/L and 23.8 µg/L in samples collected in 2017 and 2021, respectively.

Table 8 presents a summary of the bedrock wells (recovery and monitoring wells) that have levels of COCs at concentrations greater than MCLs, and provides a comparison of monitoring data (maximum concentrations in each sampling year) collected in 2017, 2019, and 2021. Exceedences in MCL are highlighted in red.

Table 8. Bedrock Wells with Site COCs > MCLs

Contaminant of Concern (MCL, in µg/L)	**Monitoring Well number with Concentrations > MCLs**	**Bedrock Bedding Plane/ Pumping Interval**	**Detected Concentration > MCL (µg/L)**		
			2017	**2019**	**2021**
PCE (5)	RW-04	RW-04	**7.5**	**27.7**	**23.8**
	SVE-1	RW-ABC	10U	20U	<MCL
	RW-08	RW-08	1.0U	1.0U	**17.2**
TCE (5)	BR-13	RW-ABC	< MCL	**12.5**	**6.8**
	RW-A	RW-ABC	**162**	**196**	**26.9**
	RW-B	RW-ABC	**13.1**	**8.8**	**5.3**
	RW-D	RW-ABC	n/a	**619**	**249**
	RW-8	RW-08	<MCL	<MCL	**8.2**
	TB-01B	RW-ABC	**6.8**	<MCL	**21**
	TB-05	RW-08	**35.2**	**40.5**	**35.9**
	TB-05A	RW-08	**107**	**122**	**91.2**
	SVE-1	RW-ABC	**2490**	**2580**	**178**
cis-1,2 DCE (70)	RW-A	RW-ABC	**118**	**229**	<MCL
	SVE-1	RW-ABC	**3100**	**6930**	**1040**
	RW-D	RW-ABC	n/a	**1240**	**587**
Vinyl Chloride (2)	RW-D	RW-ABC	n/a	**4.6**	**2.5**
	TB-02A	RW-08	<MCL	**10.6**	**6.6**

	TB-05	RW-08	<MCL	<MCL	<MCL
	SVE-1	RW-ABC	10U	**12.5**	<MCL

Notes:
n/a – Not applicable because data not available.
U – Not detected at the associated reporting limit.
SVE-1 – Groundwater extracted from dewatering SVE well.

Of the seven COCs, four were observed to have exceeded MCLs during the 2021 sampling program, specifically, PCE, TCE, cis-1,2, DCE, and VC. The plumes associated with each of these COCs are stable or decreasing over time. Details associated with each constituent are listed below:

- PCE: During this reporting period, PCE concentrations range from non-detect to 27.7 µg/L (RW-04 in 2019), with two monitoring wells exceeding the MCL in 2021;
- TCE: During this reporting period, TCE concentrations range from non-detect to 2580 µg/L (SVE-1 in 2019), with nine wells exceeding the MCL in 2021;
- cis-1,2-DCE: During this reporting period, cis-1,2-DCE concentrations range from non-detect to 6930 µg/L (SVE-1 in 2019), with two wells exceeding the MCL in 2021;
- Vinyl Chloride: During this reporting period, VC concentrations range from non-detect to 10.6 µg/L (TB-02A in 2019), with two wells exceeding the MCL in 2021;
- Styrene: Styrene has not been detected above the MCL since 2014;
- Ethylbenzene: Ethylbenzene has not been detected above the MCL since 2013; and
- trans-1,2 DCE: trans-1,2 DCE has not been detected above the MCL in Site wells since 2008.

The highest concentrations of COCs are found within the RW-ABC pumped interval. The highest concentrations are found in recovery well RW-D, which is located near the Site source area. A second COC plume exceeding MCLs is within the RW-08 pumped interval (wells TB-5 and TB-5A) which is adjacent to the closed solid waste landfill. Well RW-04, within pumped interval RW-04, has consistently exceeded the PCE MCL since 2009 (Figure 5). Table 9 shows the mass of COCs removed by the GWRTS at the Site by year and demonstrates a generally declining trend in COC mass removal.

Table 9. Amount of COCs removed at the Site

Year	Amount of COCs Removed (pounds)	Amount of Groundwater Treated (million gallons)	Average Pump Rate (gallons per minute)
2018	35	65	124
2019	34	59.2	112.5
2020	32	49.4	94.3
2021	33.6	46	88

Groundwater COCs Mobility

The potentiometric maps indicate that an inward hydraulic gradient is being maintained towards the recovery wells within each of the pumped intervals, demonstrating hydraulic containment of COCs. Potentiometric maps show groundwater levels in wells in Figures 7 through 9. Figure 7 shows a potentiometric map for the RW-ABC pumped interval, Figure 8 shows a potentiometric map for the RW-08 pumped interval, and Figure 9 shows a potentiometric map for the RW-04 pumped interval.

NPDES Discharge Performance Monitoring

The effluent from the GWRTS is monitored monthly for COCs, chloroform, and total phenolics. In addition, flow rates and pH of the effluent are recorded. Sampling of the effluent is performed at treatment system location TG-7, as shown on Figure 4. The results from the TG-7 treatment system effluent are included in the DMR on a monthly basis to PADEP in accordance with the NPDES permit. Table 6 summarizes the NPDES permit discharge limits and sampling requirements.

A review of the monthly DMRs submitted during 2021 was performed and indicates that the GWRTS is effective in meeting the NPDES discharge requirements. A copy of the July 2021 DMR is provided in Attachment 3.

Summary

The GWRTS is operating as designed and is making progress towards achieving the clean-up objectives. All bedrock groundwater having COC concentrations in excess of MCLs is hydraulically contained by the GWRTS recovery well network. A significant improvement to groundwater quality has been documented since the GWRTS began operation and since the previous FYR. In addition, performance monitoring confirms that the GWRTS is effective in meeting NPDES treatment discharge requirements. However, the GWRTS has been operating for almost 25 years and groundwater clean-up objectives have not been obtained and may not be in a reasonable amount of time. It would be appropriate to evaluate additional remedial measures to accelerate the timeframe needed to restore the groundwater aquifer to beneficial use.

A current unknown is the presence of 1,4-dioxane. Given that 1,4-dioxane is a solvent stabilizer often associated with chlorinated solvents, sampling should be performed to determine if it is present at the Site.

Site Inspection

The inspection of the Site was conducted on May 31, 2023. In attendance were Andrew Haneiko, EPA RPM, Tom Smith, EPA RPM, Martin Gehlhaus, EPA Physical Scientist, Wayne Harms and Matthew Sebetta of the PADEP, Kyle Schmeck of the Montgomery County Health Department, Edward Wagner, Lower Pottsgrove Township Manager, Rick Passmore and Kavin Gahndi of Glenn Springs Holdings, and Bryan Foulke and John Garges of GHD. Results of the inspection are provided on the Site Inspection Checklist included in Attachment 1. Photographs taken during the inspection are included in Attachment 2. The purpose of the inspection was to assess the protectiveness of the remedy.

During the site inspection, the GWRTS was operational and appeared to be in good condition. The necessary O&M manuals, operating records, and health and safety plans are available in the office adjacent to the treatment building. The treatment building, equipment yard outside of the building area, and recovery well houses were kept neat and clean. All operating and performance monitoring is reported in a timely manner to EPA. The Site is adequately secured by an 8-foot high chain-link fence, with 3-strand barbed wire on top, along all land access points. Select groundwater recovery and monitoring wells were inspected and were observed to be in good condition. The former earthen lagoon area and the remediated portion of the drainage swale were observed during the inspection to be in good condition with no issues. No issues were observed during the inspection.

V. TECHNICAL ASSESSMENT

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

Yes, in some respects. The review of documents and the results of the inspection indicate that the OU-1 groundwater remedy is not fully functioning as intended by the 1993 ROD, as modified by the 2013 ESD. The GWRTS is effective in hydraulically containing COCs in groundwater and has made progress in reducing COCs in groundwater. However, the GWTRS has been operating for nearly 25 years, cleanup levels have not yet been attained and the remaining concentrations indicate clean up levels may not be achieved within a reasonable timeframe. Additional groundwater remedial measures should be evaluated.

ICs are in place which prohibit the use of groundwater for drinking purposes.

Cleanup of the earthen lagoons and drainage swale/sediment pond was completed and was effective because all materials that exceeded the established cleanup levels have been excavated and disposed of off-site, and the area has been properly restored.

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. Exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy are still valid. There have been no changes in the physical conditions of the Site that would affect the protectiveness of the remedy.

Changes in Standards and Standards To Be Considered (TBC)

As part of this five-year review, EPA reviewed the ARARs for the Site to determine whether any significant changes in regulations, promulgated standards, or standards TBC such as criteria and guidance had occurred, and if so, whether the changes impact the selected cleanup levels or protectiveness of the remedy. A comprehensive list of those ARARs identified for the Site is included in the decision documents. During the review, EPA did not identify any changes in regulations, standards, or TBCs that would call into question the protectiveness of the remedy.

Changes in Toxicity and Other Contaminant Characteristics

Toxicity criteria have changed for the COCs and the methodology of calculating risk, specifically for TCE, has changed; however, these changes do not affect the protectiveness of the remedy because exposure pathways are controlled. Due to changing toxicity values and risk assessment methodologies, final human health protection may be evaluated when the ARAR-based groundwater cleanup levels are achieved.

Changes in Exposure Pathways

There are no uncontrolled exposure pathways to contaminants above the groundwater cleanup levels, and ICs prevent future exposure to human receptors.

The potential for VOCs in groundwater to volatilize and impact human health by migrating into habitable building spaces is typically a consideration on sites having a VOC groundwater plume. There are no inhabitable buildings in the near vicinity of the groundwater VOC plume; therefore, VOC vapor intrusion is not considered an issue at the Site. The groundwater treatment building and ancillary structures are slab-on-grade structures (i.e., no basements or crawl spaces) and are not inhabited. Access to these buildings is restricted to performance of groundwater O&M activities performed periodically during the day. O&M personnel offices are in a raised mobile office trailer adjacent to the treatment building.

Due to the presence of multiple chlorinated volatile solvents, sampling groundwater for 1,4-dioxane is recommended. The GWRTS, in its current configuration, does not remove 1,4-dioxane and further evaluation is needed to ensure that the remedy and remedial components remain protective of human health and the environment.

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

There is no other information that calls into question the protectiveness of the remedy.

Summary

The OU-1 groundwater remedy is effective in reducing contaminant concentrations and groundwater with concentrations in excess of MCLs is hydraulically contained. The groundwater remedy is making progress towards achieving clean-up objectives. However, it is unclear if the GWRTS will be able to attain the RAO's for the OU-1 groundwater. Effective O&M and long-term monitoring activities are being performed and the GWRTS is effective in meeting NPDES discharge requirements. However, the presence of 1,4-dioxane is unknown which effects the longterm protectiveness of the remedy. The ICs have been implemented via an UECA to ensure the protectiveness of the remedy.

VI. ISSUES/RECOMMENDATIONS

Issues/Recommendations
OU(s) without Issues/Recommendations Identified in the Five-Year Review:
OU2 Earthen Lagoons and the Drainage Swale/Sediment Pond

Issues and Recommendations Identified in the Five-Year Review:

OU(s): OU1	**Issue Category:** Monitoring			
	Issue: The presence of 1,4-dioxane is unknown			
	Recommendation: Due to the presence of multiple chlorinated volatile solvents, sampling groundwater for 1,4-dioxane is recommended.			
Affect Current Protectiveness	**Affect Future Protectiveness**	**Party Responsible**	**Oversight Party**	**Milestone Date**
No	Yes	PRP	EPA	9/30/2024

OTHER FINDINGS

The GWRTS has been effective in reducing COC concentrations and mass; however, COC concentrations in groundwater remain high (current maximum concentration is 6930 ug/L of cis-1,2-DCE). As the GWRTS has been in place since 1999, an evaluation should be conducted to determine if the GWRTS will be effective in achieving groundwater cleanup goals within a reasonable timeframe and, if not, additional groundwater remedial measures should be evaluated.

VII. PROTECTIVENESS STATEMENT

Protectiveness Statement(s)		
Operable Unit: OU-1, Groundwater	*Protectiveness Determination:* Short-term Protective	*Planned Addendum Completion Date:* Not Applicable
Protectiveness Statement: The OU-1 groundwater portion of the remedy is protective of human health and the environment in the short-term. Exposure pathways that could result in unacceptable risks are being controlled. The groundwater remedy is effective in reducing contaminant concentrations, and all groundwater with concentrations in excess of MCLs is hydraulically contained. It is uncertain that clean-up levels will be achieved in a reasonable time-frame. The Ics have been implemented to ensure protectiveness. However, the presence of 1,4-dioxane is unknown which and sampling is required to determine if it is present.		

Protectiveness Statement(s)		
Operable Unit: OU-2, Earthen Lagoons and Swale/Sediment Pond	*Protectiveness Determination:* Protective	*Planned Addendum Completion Date:* Not Applicable
Protectiveness Statement: The OU-2 earthen lagoons remedy and the Site drainage swale/sediment pond remedy are protective of human health and the environment. All materials that exceeded the established cleanup levels have been excavated and disposed of off-Site, and the areas have been properly restored.		

Sitewide Protectiveness Statement	
Protectiveness Determination: Short-term Protective	*Planned Addendum Completion Date:* 09/30/2024
Protectiveness Statement: The Site-wide remedy is protective of human health and the environment in the short-term. The OU-2 earthen lagoons remedy and the Site drainage swale/sediment pond remedy are protective of human health and the environment. All materials that exceeded the established cleanup levels have been excavated and disposed of off-Site, and the areas have been properly restored. The OU-2 groundwater remedy is effective in reducing contaminant concentrations, and all groundwater with concentrations in excess of MCLs is hydraulically contained. It is uncertain that clean-up levels will be achieved in a reasonable time-frame.The Ics have been implemented to ensure protectiveness. However, the presence of 1,4-dioxane is unknown which and sampling is required to determine if it is present.	

Government Performance Results Act (GPRA) Measure Review

As part of this FYR, the GPRA Measures were evaluated. The GPRA Measures and their status are provided as follows:

Environmental Indicators

Human Health: Current Exposure Controlled and Protective Remedy in Place.
Groundwater Migration: Groundwater Migration Under Control.

Sitewide Ready for Anticipated Use

The Site was determined to be Sitewide Ready for Anticipated Use (SWRAU) on September 11, 2015.

VIII. NEXT REVIEW

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

APPENDIX A – REFERENCE LIST

U.S. Environmental Protection Agency (EPA), 1993. Record of Decision, Occidental Chemical Corporation Site.
U.S. EPA, 1995. Explanation of Significant Differences (ESD), Occidental Chemical Corporation Site.
U.S. EPA, 2008. ESD, Occidental Chemical Corporation Site.
U.S. EPA, 2013. ESD, Occidental Chemical Corporation Site.
U.S. EPA, 2013 Five Year Review, Occidental Chemical Corporation Site.
U.S. EPA, 2018 Five Year Review, Occidental Chemical Corporation Site.
Glenn Springs Holdings, Inc. (GSHI), 2018 Annual Groundwater Treatment System Report.
GSHI, 2019 Annual Groundwater Treatment System Report.
GSHI, 2020 Annual Groundwater Treatment System Report.
GSHI, 2021 Annual Groundwater Treatment System Report.
GSHI, 2019 Groundwater Pumping Opitimization Plan.
GSHI, 2021 Report on Optimization.

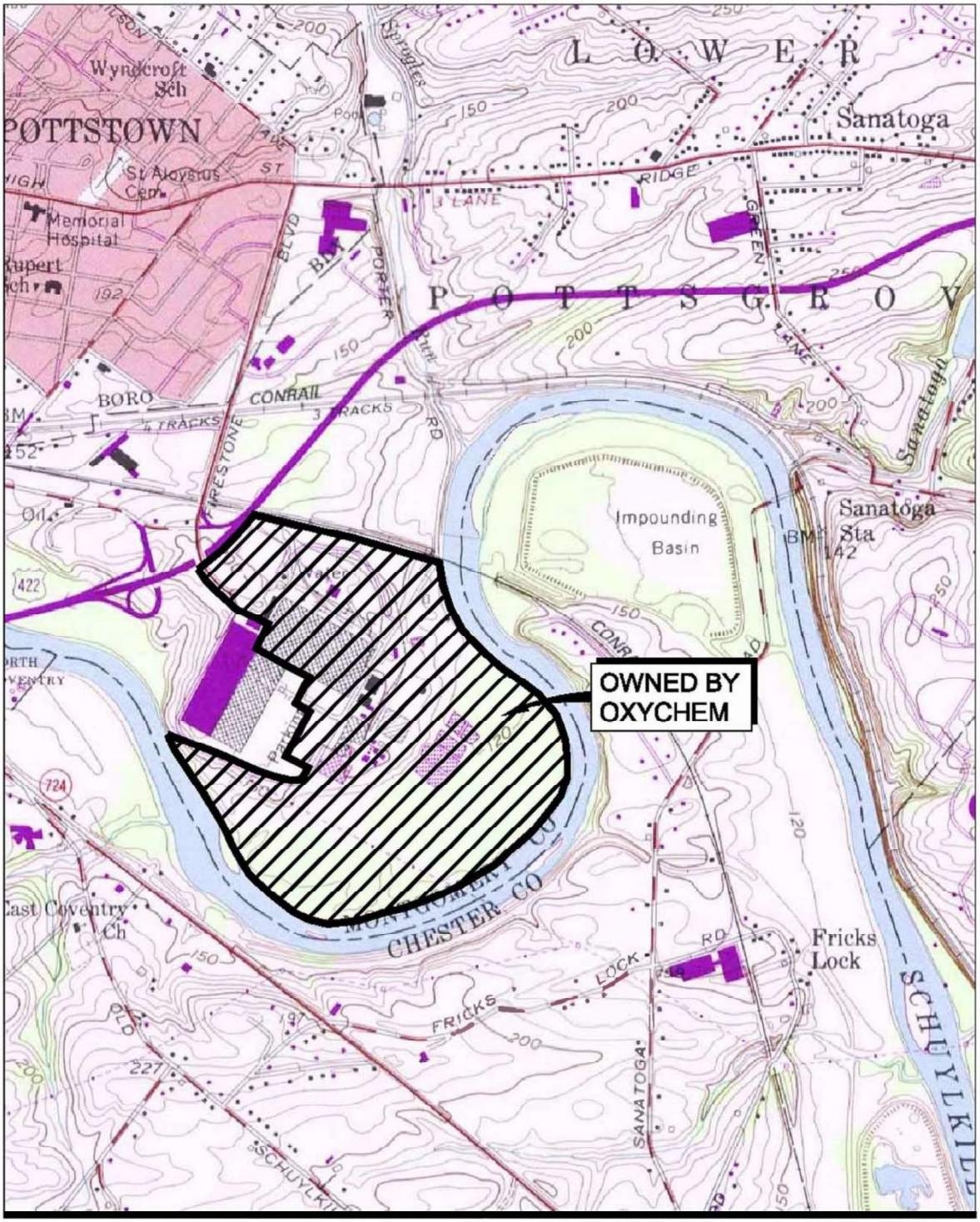
APPENDIX B - CHRONOLOGY OF SITE EVENTS

Event	Date
Jacobs Aircraft Engine Company (JAEC) operated on the Site and manufactured aircraft engines.	Prior to WWII
The Defense Plant Corporation (DPC) purchased the Site from JAEC.	1942
JAEC continued to operate and manufacture aircraft engines for the DPC.	1942 to 1944
The DPC leased the Site to Firestone Tire and Rubber (FTR).	1945 to 1950
FTR purchased the Site from DPC in 1950, manufacturing tires and polyvinyl chloride (PVC) resins.	1950 to 1980
FTR sold the Site in 1980 to Hooker Chemicals and Plastics Corporation, which later became Occidental Chemical Corporation (Oxy), who manufactured PVC resins at the site until 2005.	1980
FTR and Oxy performed investigations at the Site and determined that elevated levels of trichloroethene (TCE) had migrated into bedrock groundwater.	1980 to 1983
Approximately 898 tons of soil contaminated with TCE was removed from the TCE handling area of the Site and was disposed off-site.	1984
EPA investigated the Site to characterize existing site conditions. Groundwater and sediment samples were collected and analyzed.	1985
EPA evaluated the Site using the Hazard Ranking System (HRS). TCE, trans1,2-dichloroethene (1,2-DCE), and vinyl chloride monomer were identified as primary chemicals of concern at the Site.	1986 to 1987
The Site was added to the National Priorities List (NPL) of hazardous waste sites as a result of the presence of TCE and related volatile organic compounds (VOC) in the bedrock aquifer.	October 4, 1989
A Consent Order was signed between EPA and Oxy requiring Oxy to perform a Remedial Investigation (RI) and Feasibility Study (FS), sometimes referenced collectively as an RI/FS.	December 28, 1989
Oxy conducted an RI/FS to identify the nature and extent of contamination at the Site. The RI/FS was submitted to EPA in March 1993.	1990 to 1993
EPA issued a Record of Decision (ROD) selecting the final remedy. The final remedy required cleanup of three distinct areas of the Site: a contaminated bedrock groundwater plume (Operable Unit 1 [OU-1]), four unlined earthen lagoons containing PVC waste (OU-2), and contaminated sediments in an onsite drainage swale and sediment pond.	June 30, 1993
EPA issued a Unilateral Order to Oxy and Bridgestone/Firestone, the successor to FTR, directing Oxy to implement the remedies detailed in the ROD.	June 23, 1994
Oxy submitted a Remedial Design Work Plan to EPA in April 1995, which was approved by EPA in July 1995.	1995
Oxy prepared a remedial design for the OU-1 groundwater remedy. EPA approved the remedial design in August 1997.	1995 to 1997
EPA issued an Explanation of Significant Differences (ESD) changing the method selected in the ROD for disposal of certain material generated in the implementation of the OU-2 earthen lagoon remedy.	June 29, 1995
Oxy submitted a remedial action plan to EPA for the OU-2 earthen lagoons and conducted a pilot study using low-temperature thermal aeration (LTTA) for drying the earthen lagoon PVC material for potential recycling. After bag house fires and other operating problems, Oxy terminated the LTTA pilot test.	August 1996 to March 1997

Oxy submitted an Additional Flood Plain Investigation and Ecological Risk Assessment Report. Based on sampling results of post-ROD soil sediment, and surface water samples, the report established background concentrations for ROD contaminants of concern (COC); identified new contaminants of potential concern; and concluded there was no ecological risk from surface water and sediments within the site drainage swale and sediment pond, and in flood plain soils located adjacent to the closed site landfills. The report concluded that no further action was required to address the drainage swale, sediment pond, or flood plain.	February 1997
Oxy submitted an Alternative Technology Evaluation for OU-2 Earthen Lagoons to EPA and conducted a pilot study using Mechanical Aeration and Radiant Heat (MA/RH) for drying the earthen lagoon PVC material for potential recycling. Oxy subsequently submitted a report summarizing the pilot test ("Results of Mechanical Aeration and Radiant Heat Pilot Test for Earthen Lagoons PVC Material"). The report concluded that the use of MA/RH was not feasible.	May 1997 to December 1998
Oxy conducted the following activities: (1) prepared a Groundwater Remedial Action Plan and a Construction Quality Assurance Project Plan (approved by EPA in June 1997); (2) constructed the OU-1 groundwater treatment plant and groundwater recovery wells; and (3) established start-up and optimization measures for the treatment plant and recovery wells. EPA conducted a preliminary site inspection and the treatment system was considered ready to permanently go on-line in January 1999.	June 1997 to January 1999
EPA issued a letter to Oxy requesting additional information pertaining to the February 1997 Flood Plain Investigation and Ecological Risk Assessment Report.	June 17, 1998
Oxy provided additional information requested by EPA pertaining to the February 1997 Flood Plain Investigation and Ecological Risk Assessment Report.	November 6, 1998
Oxy completed OU-1 groundwater remediation construction punch list items. EPA and Pennsylvania Department of Environmental Protection (PADEP) performed final inspections.	January 1999 to May 1999
Oxy requested that EPA issue an ESD for OU-2 to revise the clean-up criteria that were selected in the ROD for the soil underlying the earthen lagoons.	February 5, 1999
Based on results of the Oxy Flood Plain Investigation and Ecological Risk Assessment Report and internal evaluations, EPA issued a letter to Oxy requiring remediation of near surface soil and sediment in a portion of the site drainage swale where total polycyclic aromatic hydrocarbons (PAH) exceeded 5 milligrams per kilogram (mg/kg).	June 30, 2000
Oxy submitted a Remedial Action Plan for Removal of Soil/Sediment from the Site Drainage Swale.	August 7, 2000
Based on comments by EPA, Oxy submitted a revised Remedial Action Plan for Removal of Soil/Sediment from the Site Drainage Swale.	December 1, 2000
Based on Oxy's pre-remedial action sampling data for the site drainage swale, EPA issued a letter to Oxy recommending excavation of 2 feet of soil/sediment within the area of the swale where sampling indicted results exceeding the clean-up criteria of 5 mg/kg for PAHs.	May 29, 2001
Oxy conducted additional sampling in the OU-2 earthen lagoons to better characterize the PVC material and the underlying coal fines and soils.	August 2001

EPA performed a Human Health Risk Assessment (HHRA) for the OU-2 earthen lagoons using the Oxy August 2011 sampling results. Results of the HHRA showed unacceptable risk to human health. In addition, results of a soil-to-groundwater analysis showed that contaminants in the lagoons could potentially migrate to the groundwater.	August 2001 to April 2004
Oxy performed a remedial action within the site drainage swale. Approximately 200 tons of soil/sediment were removed and disposed of offsite. Excavation areas were restored with clean soil backfill and rip-rap stabilization.	November 2001
Oxy issued a Remedial Action Report for the Removal of Soil/Sediment from the Site Drainage Swale.	December 2001
Oxy issued a Quality Assurance and Certification Report for the Groundwater Extraction and Treatment System. This report certified that the construction of the OU-1 groundwater remedy extraction and treatment system was performed in accordance with the requirements of the remedial design and approved changes.	May 2003
Dioxin sampling of earthen lagoon sludges that were involved in the thermal treatment pilot study.	December 2003
EPA conducted a review of the performance of the groundwater remedy and issued an Interim Report of Findings.	2004
EPA conducted a residential well survey and conducted residential well sampling for select private residential wells located on the other side of the Schuylkill River, within a 1-mile radius of the Site. EPA concluded that the residential wells were not impacted by Site groundwater COCs.	2004 to 2005
Oxy performed a bedrock groundwater hydraulic testing program and other field activities at the site. Oxy issued a 2005/2006 Summary of Findings Report to EPA on April 21, 2006, indicating that modifications to the groundwater treatment system pumping program could reduce potential vertical and horizontal migration of COCs from known source areas and improve mass removal.	2005 to 2006
Oxy entered into an Administrative Agreement and Order on Consent with EPA to conduct a Focused Feasibility Study (FFS) to re-evaluate the remedial action previously selected for the OU-2 earthen lagoons.	September 29, 2005
Oxy submitted a Recovery Well Optimization Work Plan, which included a six-step phased approach to shut down select OU-1 recovery wells to optimize the treatment system pumping program. EPA approved the Work Plan, and Oxy subsequently implemented the optimization program with oversight by EPA.	2007 to 2012
Discharge of effluent from the OU-1 groundwater treatment system was changed from conveyance to a local, publicly owned treatment works to direct discharge on-site under a NDPES permit.	April 2007
Oxy submitted a FFS for earthen lagoons that evaluated various clean-up options for OU-2 earthen lagoons. EPA subsequently approves the FFS Report.	March 2008
EPA issued an ESD (second ESD) changing the ROD in three ways pertaining to the OU-2 earthen lagoons. The ESD (1) selected a remedial alternative of excavation and off-site disposal of PVC wastes; (2) modified the clean-up levels for the lagoon soils; and (3) eliminated the required ICs for the earthen lagoons because all PVC waste and soils not meeting the performance standards in the ESD will be disposed of off-site.	April 9, 2008
Oxy submitted a Remedial Design/Remedial Action Work Plan to EPA for remediation of the OU-2 earthen lagoons.	June 2008

Oxy performed remediation activities related to the OU-2 earthen lagoon. Remediation activities included excavation of PVC material, excavation of lagoon soils above clean-up levels, off-site disposal of PVC and soil materials, and site restoration. A total of 44,135 tons of PVC and contaminated soil material were disposed of off-site in a permitted landfill (Horizon Environment Landfill in Grandes Piles, Quebec).	June 2008 to September 2008
EPA issued a Preliminary Close-out Report indicating that the construction phase of the OU-1 and OU-2 remedy had been completed.	September 29, 2008
EPA conducted a final inspection for the construction phase of the OU-2 earthen lagoon remedy.	November 24, 2008
Oxy issued a Post-Construction Report for Earthen Lagoons to EPA. This report certified that construction of the OU-2 earthen lagoon remedy was performed in accordance with the project plans and specifications.	February 13, 2009
Operation of voluntary SVE well	2013 - 2019
EPA issued an ESD (third ESD) changing the ROD in three ways. The ESD (1) clarified the description of the Site and ICs that are still required for the Site; (2) changed the groundwater performance standards; and (3) added tetrachloroethene (PCE) and cis-l,2-dichloroethene (cis-1,2 DCE) as additional COCs for groundwater at the Site.	January 29, 2013
EPA signs a Five Year Review Report.	August 15, 2013
Uniform Environmental Covenant Act (UECA) signed by EPA and Recorded by the Montgomery County Recorder of Deeds implementing ICs called for in 2013 ESD.	September 11, 2015
EPA signs Second Five Year Review Report	August 1, 2018
EPA approves Groundwater Pumping Optimization Plan	June 25, 2019
Installation of Recovery Well RW-D	July 1, 2019


OWNED BY
OXYCHEM
Impounding
Basin
Sanatoga
Sanatoga
Sta
142
POTTSTOWN
POTTSGROV
LOWER
Wyndcroft
Sch
St Aloysius
Cem
Memorial
Hospital
BORO
CONRAIL
3 TRACKS
4 TRACKS
PORTER BLVD
RIDGE PIKE
GREEN LANE
FIRESTONE RD
CHESTER CO
MONTGOMERY CO
East Coventry
Ch
Fricks
Lock
FRICKS LOCK RD
SANATOGA
SCHUYLKILL
0 1000 2000ft
N
GHD
GLENN SPRINGS HOLDINGS
POTTSTOWN, PENNSYLVANIA
2021 ANNUAL REPORT
SITE LOCATION MAP
Project No. 11230711
Date February 2022
FIGURE 1
Source: USGS Quadrangle Map, Phoenixville, PA, Revised 1983.

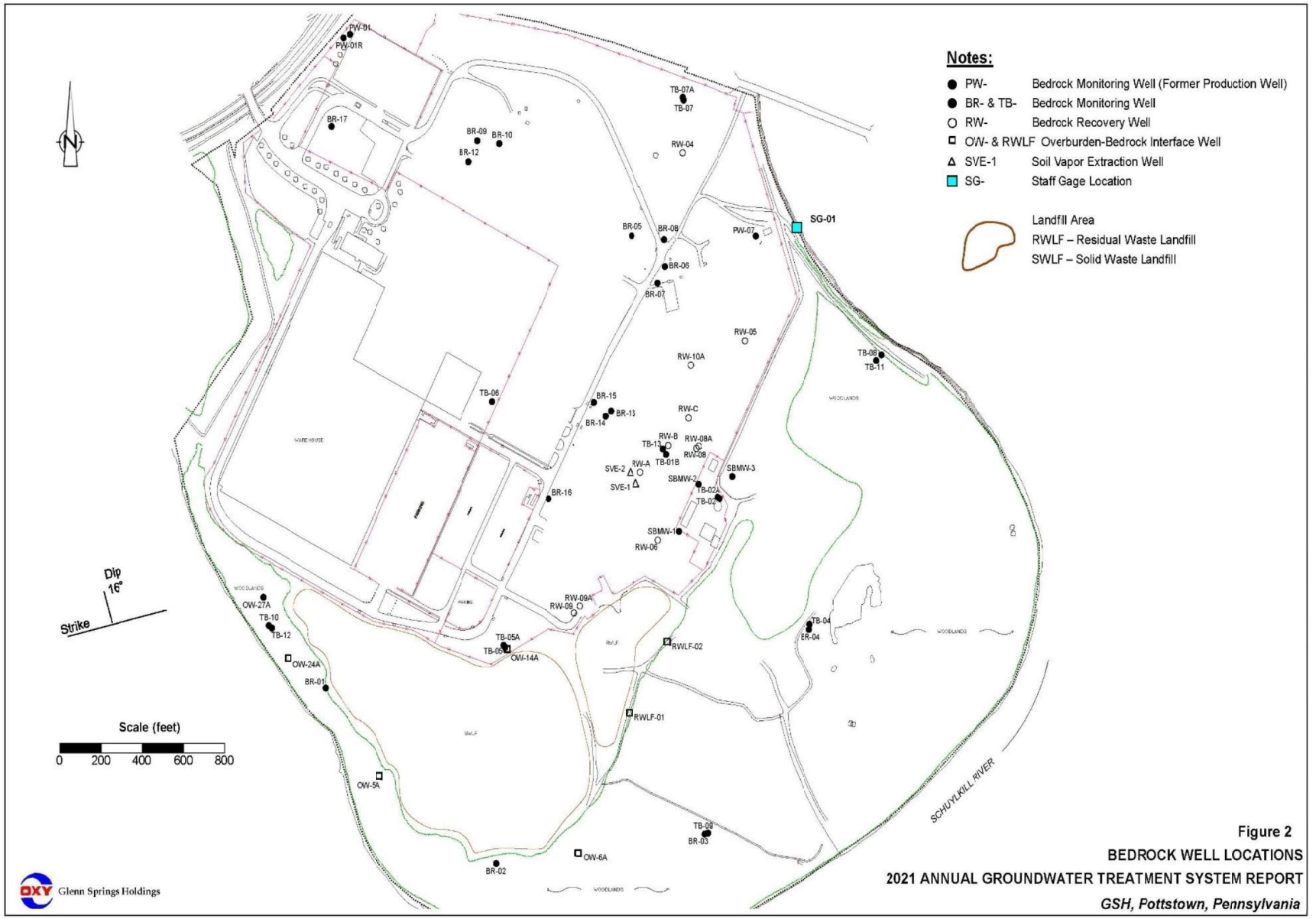


Figure 2
BEDROCK WELL LOCATIONS
2021 ANNUAL GROUNDWATER TREATMENT SYSTEM REPORT
GSH, Pottstown, Pennsylvania

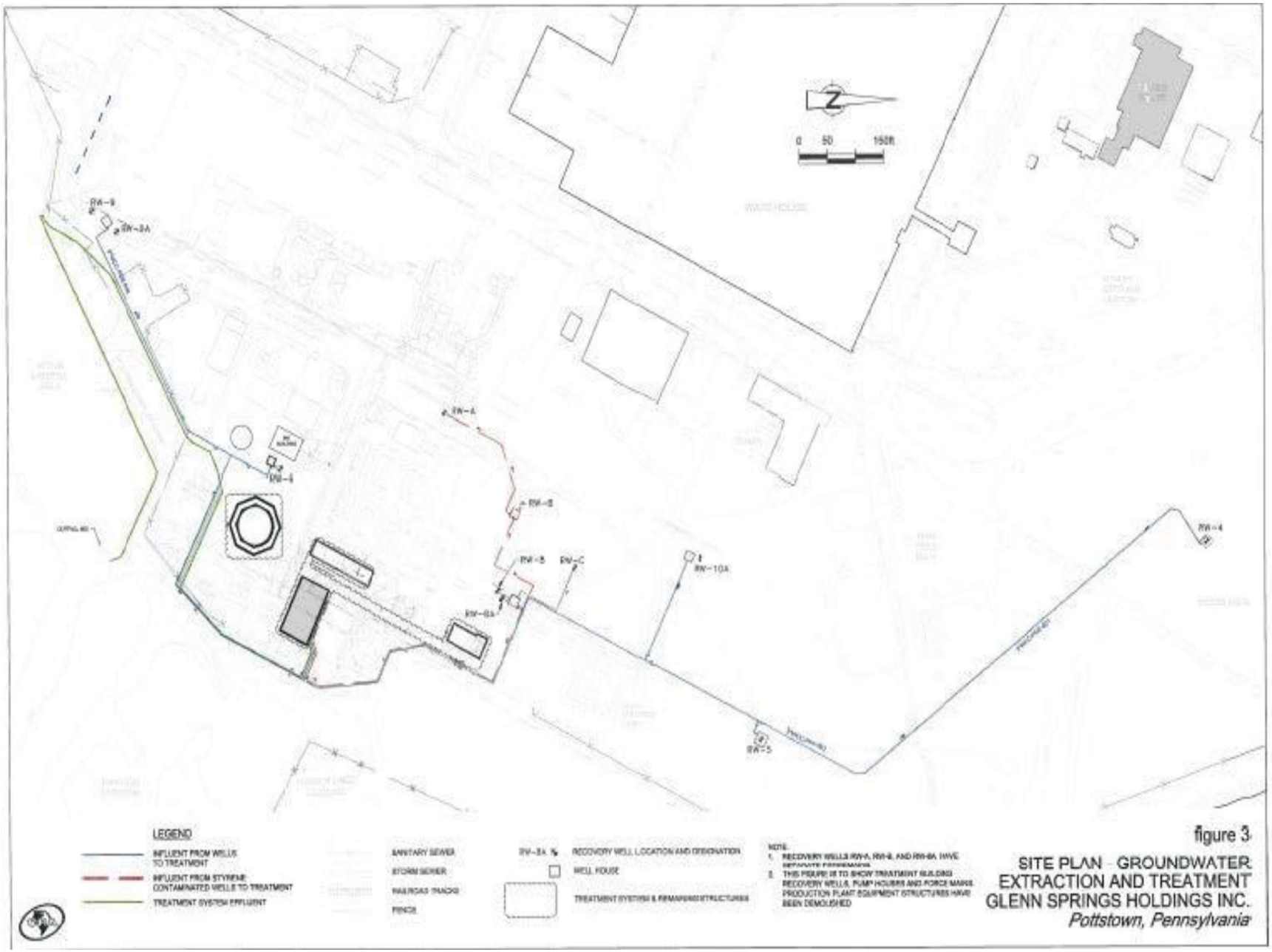
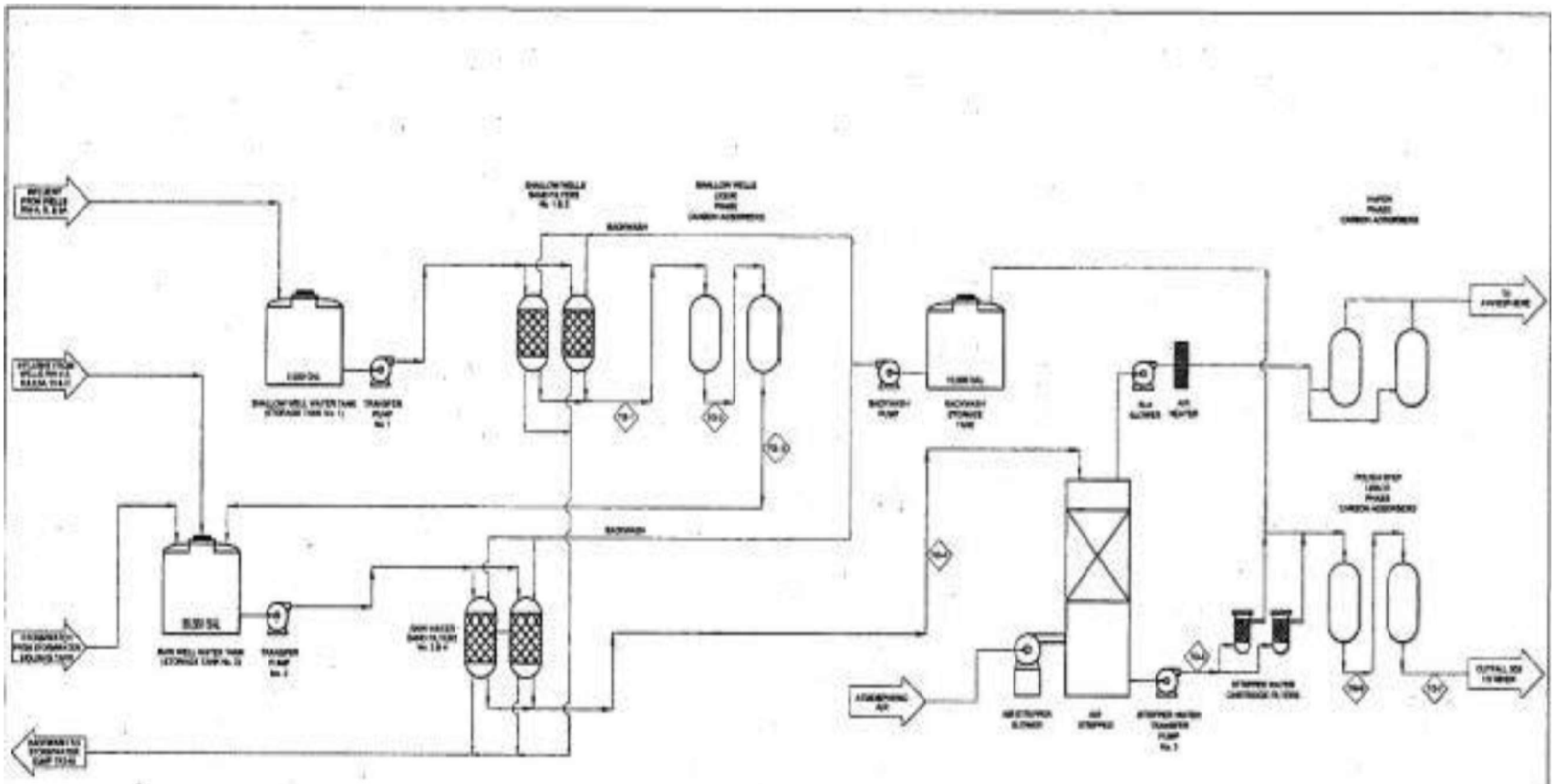


figure 3

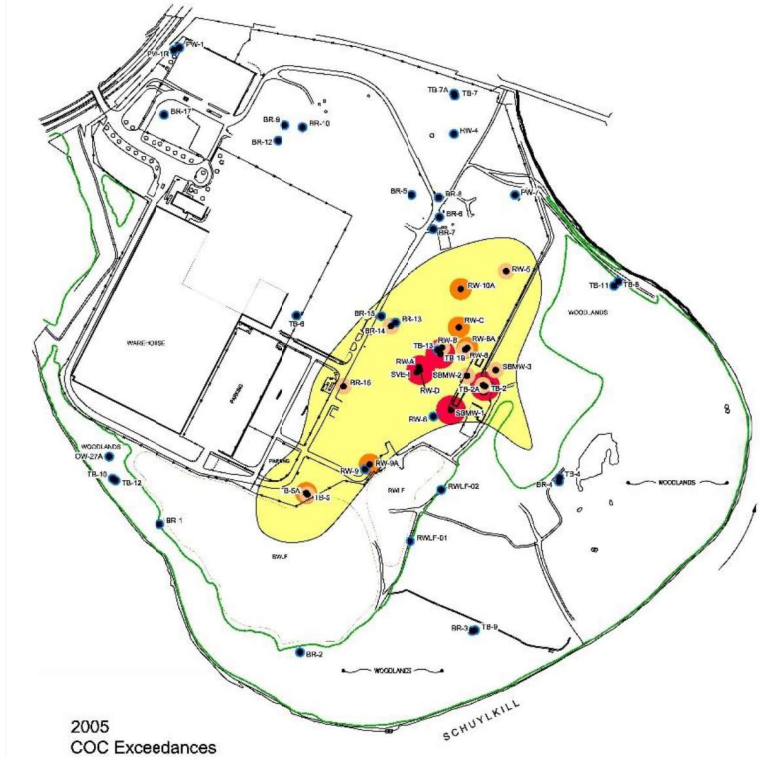
SITE PLAN - GROUNDWATER EXTRACTION AND TREATMENT
GLENN SPRINGS HOLDINGS INC.
Pottstown, Pennsylvania

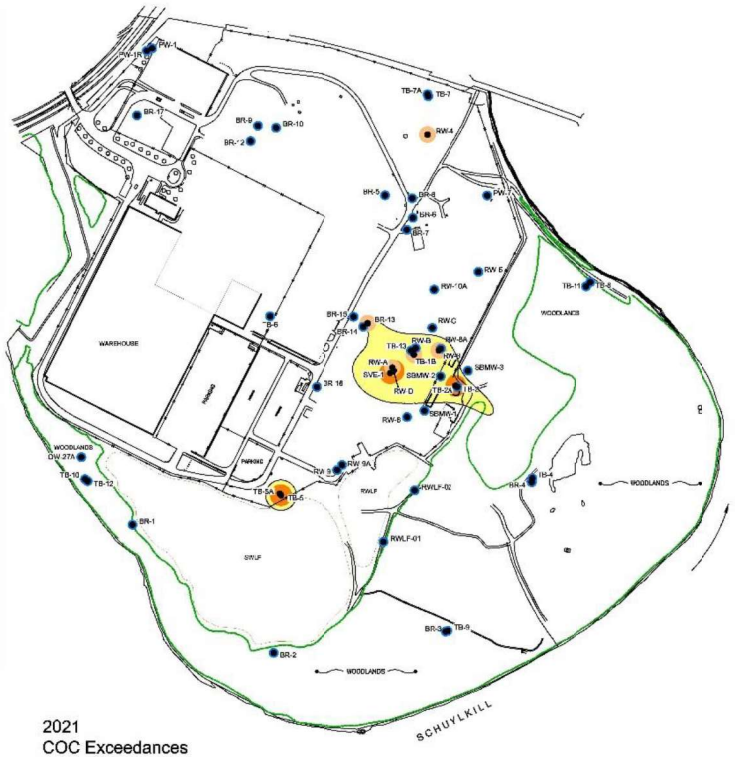


SAMPLE POINTS	
LOCATION	DESCRIPTION
TG-1	INFLUENT TO SHALLOW WELLS CARBON ADSORBERS
TG-2	INTERBED AT THE SHALLOW WELLS CARBON ADSORBERS
TG-3	EFFLUENT FROM THE SHALLOW WELLS CARBON ADSORBERS
TG-4	INFLUENT TO THE AIR STRIPPER
TG-5	EFFLUENT FROM THE AIR STRIPPER
TG-6	INTERBED AT THE POLISH STEP CARBON ADSORBERS
TG-7	EFFLUENT FROM THE POLISH STEP CARBON ADSORBERS

Figure 4

PROCESS FLOW DIAGRAM - GROUNDWATER TREATMENT SYSTEM
GLENN SPRINGS HOLDINGS INC.
Pottstown, Pennsylvania





LEGEND

BR-13 ● Bedrock well

Notes:
- Dots compare all seven Site COCs to their MCLs. Blue points are <MCLs for all COCs.
- Max values for 2021 were used.

≤ 1x Standard and non-detects
≥1x to <10x Standard
≥10x to <100x Standard
≥100x Standard
Area Exceeding Groundwater MCLs

0 300 600ft

Coordinate System: PA83-SF

GLENN SPRINGS HOLDINGS
FOTTSTOWN, PENNSYLVANIA
2021 ANNUAL REPORT

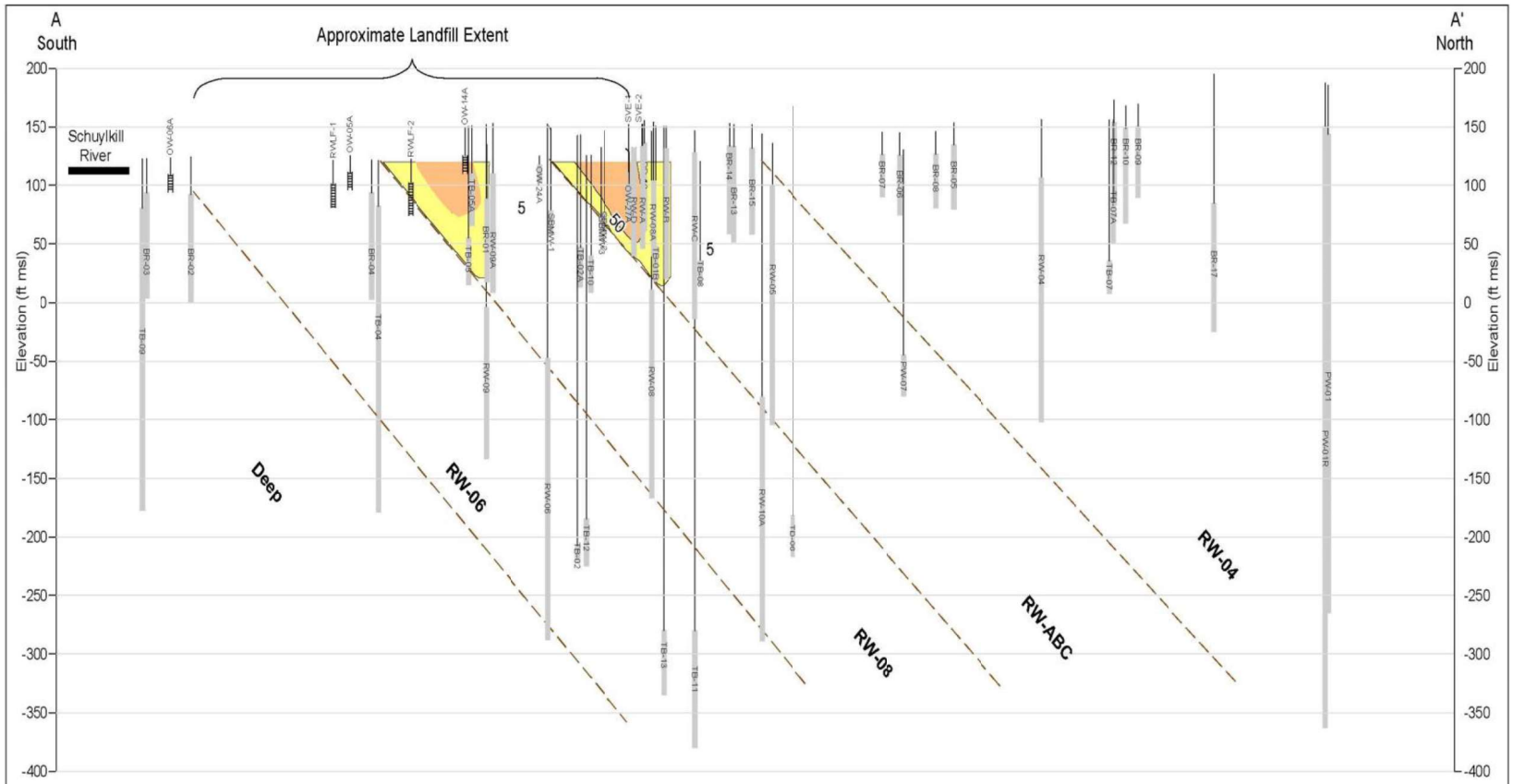
PLUME COMPARISON PRE AND POST OPTIMIZATION

Project No. 11230711
Date April 2022

FIGURE 5

Filename: N:\US\North Wales\Projects\Bill\11230711\Gis_Design\ACAD\Figures\RPT-2021 Annual Rep\11230711-GHD-3005-RPT-SN-0105_WA-25" Annual Report.dwg
Plot Date: 26 April 2022 1:27 PM

Source: Greenhorne & O'Mara, Pottstown Plant 2, Job No. 0089-078.



- Non-detects interpreted as ½ the detection limit.
- Wells used in contouring are shown with solid gray screened intervals. Unused wells are shown with cross-hatched screens.
- Data are interpolated at the screen midpoint with the following exceptions:
  - TB-05, RW-08 and RW-10A set at top of screen near higher yielding interval, and
  - RW-A is included twice - at mid-point and at the top of screen.
- OWWells, RW-08A, RW-C, BR-01, SBMW-1, TB-08 and TB-10 were removed from interpolation as relative low concentrations distorted high concentration area plume contours.
- Data were contoured manually and traced in CAD, based on revisions to the 2020 contours created using Golden Graphics Surfer with kriging of the log of the data with 4:1 anisotropy along bedding
- Pumped Interval delineation is based on screening of recovery wells and bedding dip.
- See Figure 1.2 for the plan view location of the wells.
- Vertical exaggeration 3:1

Color Scale

- > 500 ug/L
- 50 - 500 ug/L
- 5 - 50 ug/L

0 50 100ft

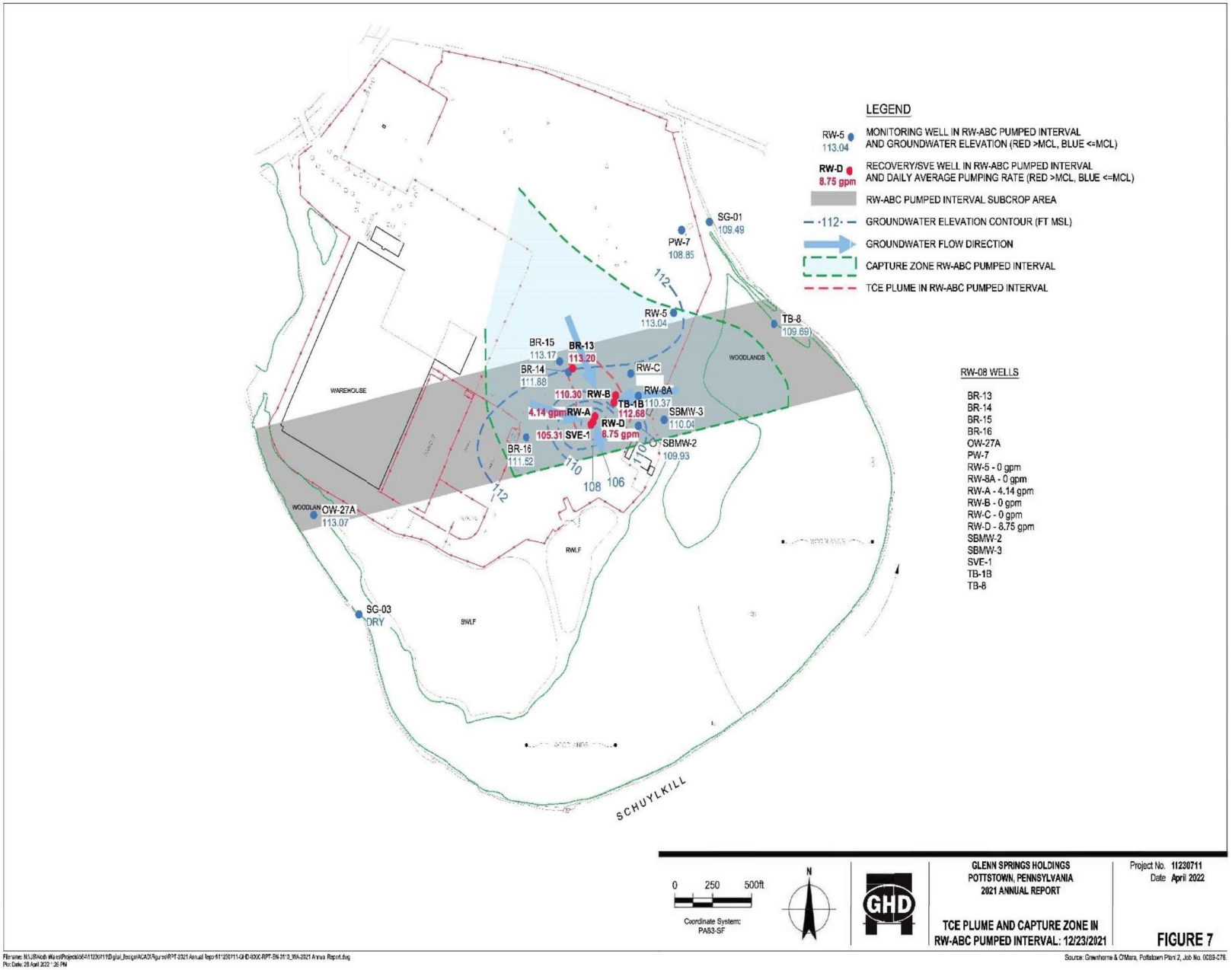
GHD

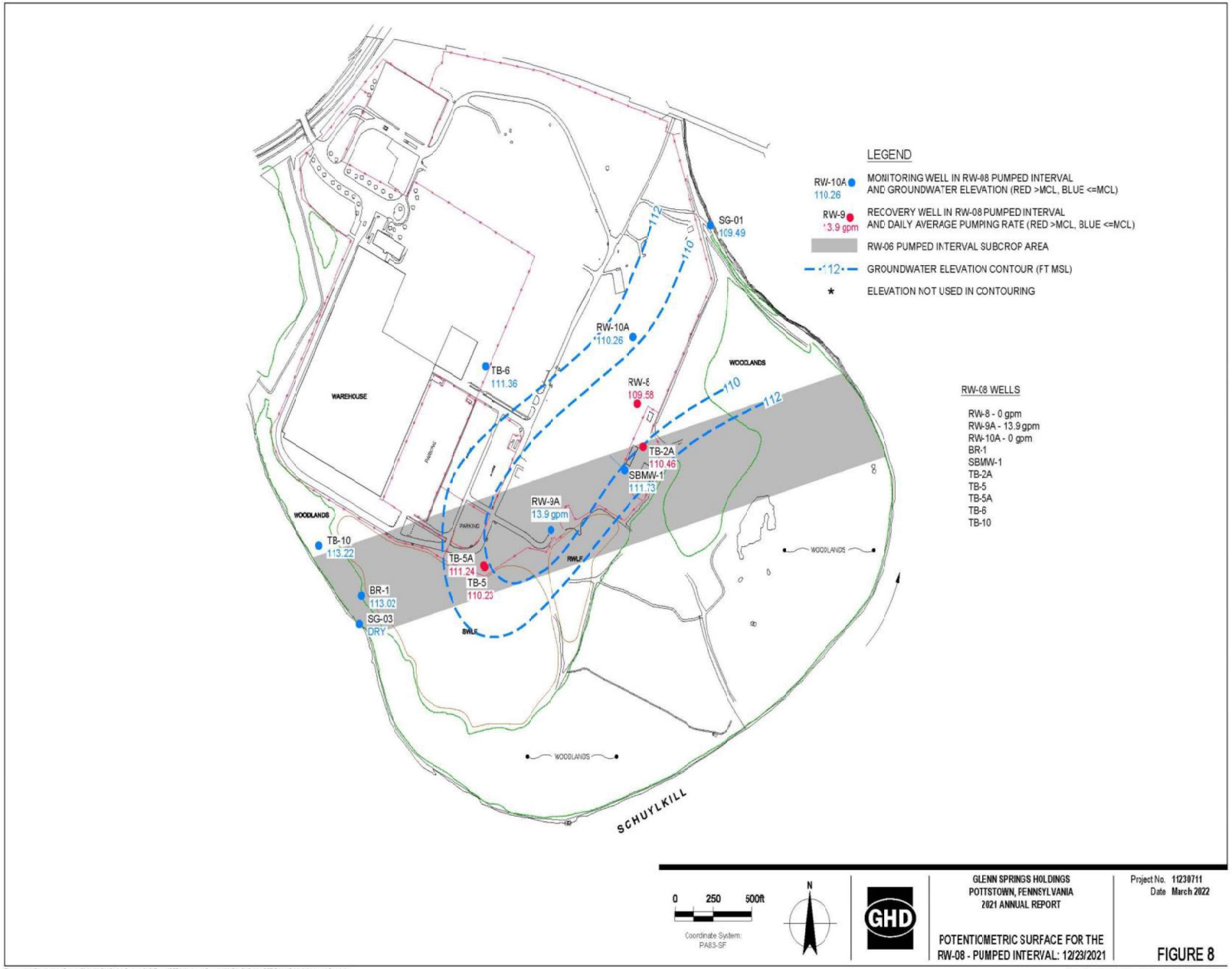
GLENN SPRINGS HOLDINGS
POTTSTOWN, PENNSYLVANIA
2021 ANNUAL REPORT

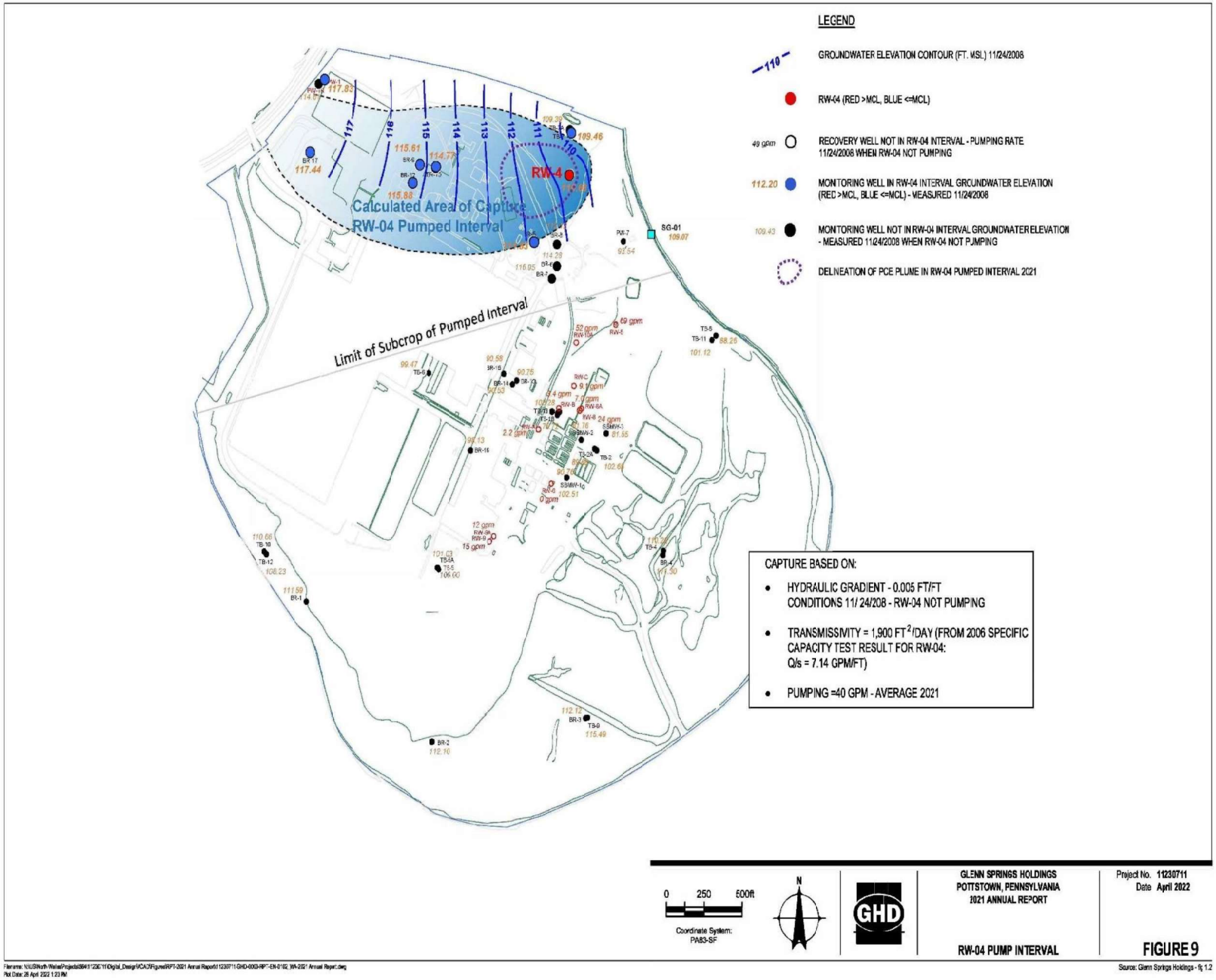
CROSS-SECTION A-A'
NOV. 2021 TCE CONCENTRATIONS
IN BEDROCK GROUNDWATER

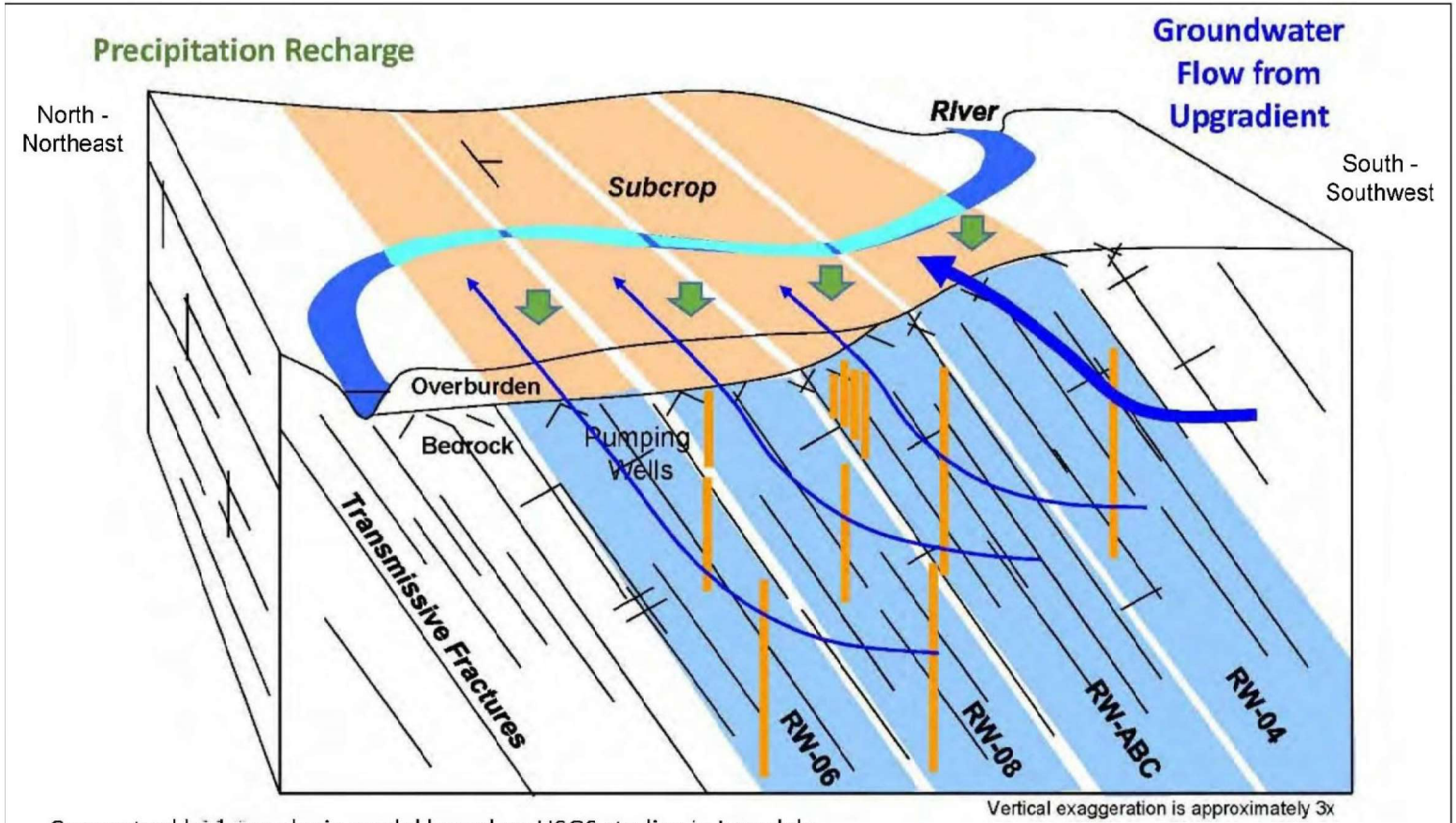
Project No. 11230711
Date April 2022

FIGURE 6


LEGEND
RW-5 113.04
MONITORING WELL IN RW-ABC PUMPED INTERVAL AND GROUNDWATER ELEVATION (RED >MCL, BLUE <=MCL)
RW-D 8.75 gpm
RECOVERY/SVE WELL IN RW-ABC PUMPED INTERVAL AND DAILY AVERAGE PUMPING RATE (RED >MCL, BLUE <=MCL)
RW-ABC PUMPED INTERVAL SUBCROP AREA
112
GROUNDWATER ELEVATION CONTOUR (FT MSL)
GROUNDWATER FLOW DIRECTION
CAPTURE ZONE RW-ABC PUMPED INTERVAL
TCE PLUME IN RW-ABC PUMPED INTERVAL
RW-08 WELLS
BR-13
BR-14
BR-15
BR-16
OW-27A
PW-7
RW-5 - 0 gpm
RW-8A - 0 gpm
RW-A - 4.14 gpm
RW-B - 0 gpm
RW-C - 0 gpm
RW-D - 8.75 gpm
SBMW-2
SBMW-3
SVE-1
TB-1B
TB-8
SG-01 109.49
PW-7 108.85
RW-5 113.04
TB-8 109.69
BR-15 113.17
BR-13 113.20
BR-14 111.88
RW-C
110.30 RW-B
RW-8A
TB-1B 112.68
110.37
4.14 gpm RW-A
SBMW-3 110.04
RW-D 8.75 gpm
105.31 SVE-1
BR-16 111.52
SBMW-2 109.93
WOODLANDS
WAREHOUSE
OW-27A 113.07
RWLF
SWLF
SG-03 DRY
SCHUYLKILL
0 250 500ft
Coordinate System: PA83-SF
N
GLENN SPRINGS HOLDINGS
POTTSTOWN, PENNSYLVANIA
2021 ANNUAL REPORT
TCE PLUME AND CAPTURE ZONE IN RW-ABC PUMPED INTERVAL: 12/23/2021
Project No. 11230711
Date April 2022
FIGURE 7
Source: Greenhorne & O'Mara, Pottstown Plant 2, Job No. 0069-076.


LEGEND
RW-10A 110.26
MONITORING WELL IN RW-08 PUMPED INTERVAL AND GROUNDWATER ELEVATION (RED >MCL, BLUE <=MCL)
RW-9 13.9 gpm
RECOVERY WELL IN RW-08 PUMPED INTERVAL AND DAILY AVERAGE PUMPING RATE (RED >MCL, BLUE <=MCL)
RW-06 PUMPED INTERVAL SUBCROP AREA
112
GROUNDWATER ELEVATION CONTOUR (FT MSL)
ELEVATION NOT USED IN CONTOURING
RW-08 WELLS
RW-8 - 0 gpm
RW-9A - 13.9 gpm
RW-10A - 0 gpm
BR-1
SBMW-1
TB-2A
TB-5
TB-5A
TB-6
TB-10
SG-01 109.49
RW-10A 110.26
TB-6 111.36
RW-8 109.58
TB-2A 110.46
SBMW-1 111.73
RW-9A 13.9 gpm
TB-10 113.22
TB-5A 111.24
TB-5 110.23
BR-1 113.02
SG-03 DRY
WAREHOUSE
WOODLANDS
PARKING
RWLF
SWLF
SCHUYLKILL
0 250 500ft
Coordinate System: PA83-SF
N
GLENN SPRINGS HOLDINGS
POTTSTOWN, PENNSYLVANIA
2021 ANNUAL REPORT
POTENTIOMETRIC SURFACE FOR THE RW-08 - PUMPED INTERVAL: 12/23/2021
Project No. 11230711
Date March 2022
FIGURE 8


LEGEND
GROUNDWATER ELEVATION CONTOUR (FT. MSL) 11/24/2008
RW-04 (RED >MCL, BLUE <=MCL)
49 gpm
RECOVERY WELL NOT IN RW-04 INTERVAL - PUMPING RATE 11/24/2008 WHEN RW-04 NOT PUMPING
112.20
MONTORING WELL IN RW-04 INTERVAL GROUNDWATER ELEVATION (RED >MCL, BLUE <=MCL) - MEASURED 11/24/2008
109.43
MONTORING WELL NOT IN RW-04 INTERVAL GROUNDWATER ELEVATION - MEASURED 11/24/2008 WHEN RW-04 NOT PUMPING
DELINEATION OF PCE PLUME IN RW-04 PUMPED INTERVAL 2021
Calculated Area of Capture RW-04 Pumped Interval
Limit of Subcrop of Pumped Interval
RW-4
CAPTURE BASED ON:
HYDRAULIC GRADIENT - 0.005 FT/FT CONDITIONS 11/ 24/208 - RW-04 NOT PUMPING
TRANSMISSIVITY = 1,900 FT2/DAY (FROM 2006 SPECIFIC CAPACITY TEST RESULT FOR RW-04: Q/s = 7.14 GPM/FT)
PUMPING =40 GPM - AVERAGE 2021
0 250 500ft
Coordinate System: PA83-SF
N
GHD
GLENN SPRINGS HOLDINGS
POTTSTOWN, PENNSYLVANIA
2021 ANNUAL REPORT
RW-04 PUMP INTERVAL
Project No. 11230711
Date April 2022
FIGURE 9
Source: Glenn Springs Holdings - fig 1.2



Conceptual hydrogeologic model based on USGS studies in Lansdale

- Transmissivity maximal along bedding; minimal across bedding
- Groundwater flow preferential along bedding parallel features

GHD

GLENN SPRINGS HOLDINGS
POTTSTOWN, PENNSYLVANIA
2021 ANNUAL REPORT

SITE CONCEPTUAL MODEL
BLOCK DIAGRAM

Project No. 11230711
Date April 2022

FIGURE 10

Filename: N:\US\North Wales\Projects\64\11230711\Digital_Design\ACAD\Figures\RPT 2021 Annual Report\11230711-GHD-0000-RPT-EN-0103_WA-2021 Annual Report.dwg
Plot Date: 21 April 2022 2:11 PM

Source: Glenn Springs Holdings - fig 1.2

Attachment 1

Five-Year Review Site Inspection Checklist

Five-Year Review Site Inspection Checklist

I. SITE INFORMATION	
Site name: Occidental Chemical (OXY)	**Date of inspection: May 31, 2023**
Location and Region: Pottstown, PA	**EPA ID: PAD980229298**
Agency, office, or company leading the five-year review: USEPA	**Weather/temperature: Sunny, 78°F**

Remedy Includes: (Check all that apply)

- ☐ Landfill cover/containment
- x Access controls
- x Institutional controls
- x Groundwater pump and treatment
- ☐ Surface water collection and treatment
- x Other: Earthen Lagoons and Drainage Swale/Sedimentation Pond
- ☐ Monitored natural attenuation
- x Groundwater containment
- ☐ Vertical barrier walls

Attachments: Inspection team roster attached ☐ Site map attached

II. INTERVIEWS (Check all that apply)

1. **O&M site manager**: Rick Passmore (Name) VP of Operations (Title) May 31, 2023 (Date)
   Interviewed: x at site ☐ at office ☐ by phone Phone no. 859-221-7616
   Problems, suggestions; ☐ Report attached _____

2. **O&M staff:** Bryan Foulke (Name) Project Manager (Title) May 31.2023 (Date)
   Interviewed x at site ☐ at office ☐ by phone Phone no. 610-476-1359
   Problems, suggestions; ☐ Report attached _____

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency: Lower Pottsgrove Township
Contact: Edward Wagner (Name) Township Manager (Title) May 31, 2023 (Date) 610-323-0436 x5 (Phone no.)
Problems; suggestions; ☐ Report attached _____

Agency: Montgomery County Health Department
Contact: Kyle Schmeck (Name) Dir. Of Water Quality Management (Title) May 31, 2023 (Date) 610-278-5117 (Phone no.)
Problems; suggestions; ☐ Report attached _____

Agency: Pennsylvania Department of Environmental Protection
Contact: Wayne Harms (Name) Environmental Protection Specialist (Title) May 31, 2023 (Date) 484-250-5730 (Phone no.)
Problems; suggestions; ☐ Report attached _____

Agency _____
Contact _____ (Name) _____ (Title) _____ (Date) _____ (Phone no.)
Problems; suggestions; ☐ Report attached _____

4. **Other interviews** (optional) ☐ Report attached.

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)

1. **O&M Documents**
   - x O&M manual — x Readily available — x Up to date — ☐ N/A
   - x As-built drawings — x Readily available — x Up to date — ☐ N/A
   - x Maintenance logs — x Readily available — x Up to date — ☐ N/A

   Remarks: Updated July 2018

2. **Site-Specific Health and Safety Plan** — x Readily available — x Up to date — ☐ N/A
   - x Contingency plan/emergency response plan — x Readily available — x Up to date — ☐ N/A

   Remarks: May 2020

3. **O&M and OSHA Training Records** — x Readily available — x Up to date — ☐ N/A

   Remarks

4. **Permits and Service Agreements**
   - ☐ Air discharge permit — ☐ Readily available — ☐ Up to date — x N/A
   - x Effluent discharge — x Readily available — x Up to date — ☐ N/A
   - ☐ Waste disposal, POTW — ☐ Readily available — ☐ Up to date — x N/A
   - ☐ Other permits _____ — ☐ Readily available — ☐ Up to date — x N/A

   Remarks: NPDES Permit # PA0010944, expires 08/31/2025; Air permit not required per PADEP approval on October 21, 2005.

5. **Gas Generation Records** — ☐ Readily available — ☐ Up to date — x N/A

   Remarks

6. **Settlement Monument Records** — ☐ Readily available — ☐ Up to date — x N/A

   Remarks

7. **Groundwater Monitoring Records** — x Readily available — x Up to date — ☐ N/A

   Remarks: Submitted quarterly to EPA

8. **Leachate Extraction Records** — ☐ Readily available — ☐ Up to date — x N/A

   Remarks

9. **Discharge Compliance Records**
   - ☐ Air — ☐ Readily available — ☐ Up to date — x N/A
   - x Water (effluent) — x Readily available — x Up to date — ☐ N/A

   Remarks: Submitted monthly to PADEP

10. **Daily Access/Security Logs** — x Readily available — x Up to date — ☐ N/A

    Remarks

IV. O&M COSTS

1. **O&M Organization**

☐ State in-house ☐ Contractor for State
x PRP in-house x Contractor for PRP
☐ Federal Facility in-house ☐ Contractor for Federal Facility
☐ Other_____

2. **O&M Cost Records**

☐ Readily available ☐ Up to date
☐ Funding mechanism/agreement in place
Original O&M cost estimate_____ ☐ Breakdown attached

Total annual cost by year for review period if available

From_____ To_____ _____ ☐ Breakdown attached
Date Date Total cost
From_____ To_____ _____ ☐ Breakdown attached
Date Date Total cost
From_____ To_____ _____ ☐ Breakdown attached
Date Date Total cost
From_____ To_____ _____ ☐ Breakdown attached
Date Date Total cost
From_____ To_____ _____ ☐ Breakdown attached
Date Date Total cost

3. **Unanticipated or Unusually High O&M Costs During Review Period**

Describe costs and reasons: _____

V. ACCESS AND INSTITUTIONAL CONTROLS x Applicable ☐ N/A

A. Fencing

1. **Fencing damaged** ☐ Location shown on site map x Gates secured ☐ N/A

Remarks: Fence is in good condition. Consists of 8' high chain-link with 3-strand barbed wire on top.

B. Other Access Restrictions

1. **Signs and other security measures** ☐ Location shown on site map ☐ N/A

Remarks: Signs are posted along fence line approximately every 25 feet.

C. Institutional Controls (ICs)

1. **Implementation and enforcement**

Site conditions imply ICs not properly implemented ☐ Yes ☐ No **x** N/A
Site conditions imply ICs not being fully enforced ☐ Yes ☐ No **x** N/A

Type of monitoring (*e.g.*, self-reporting, drive by): N/A
Frequency _____
Responsible party/agency _____
Contact _____ _____ _____ _____
Name Title Date Phone no.

Reporting is up-to-date ☐ Yes ☐ No **x** N/A
Reports are verified by the lead agency ☐ Yes ☐ No **x** N/A

Specific requirements in deed or decision documents have been met **x** Yes ☐ No ☐ N/A
Violations have been reported ☐ Yes **x** No ☐ N/A
Other problems or suggestions: ☐ Report attached

_____
_____
_____
_____

2. **Adequacy** **x** ICs are adequate ☐ ICs are inadequate ☐ N/A

Remarks: ICs consist of restriction of the Site to industrial use only, prohibition of groundwater for drinking purposes, and requiring vapor intrusion measures be addressed on any future building on the Site. The ROD and UAO were attached to the deed by OXY at Deed Recorder office in 1994. The ICs as clarified by the 2013 ESD were filed at the Deed Recorder office on September 29, 2015. There is no Site development occurring nor is groundwater being utilized for drinking purposes.

D. General

1. **Vandalism/trespassing**: ☐ Location shown on site map **x** No vandalism evident

Remarks: Trespassing has been an issue at the Site in recent years. The PRP has installed security cameras and has been working closely with local authorities to conduct regular site inspections.

2. **Land use changes on site** ☐ N/A

Remarks: Oxy's production facilities have been demolished and the majority of the area restored to grass. The only land use is the operation of the groundwater remedy.

3. **Land use changes off site** ☐ N/A

Remarks _____
_____

VI. GENERAL SITE CONDITIONS

A. Roads **x** Applicable ☐ N/A

1. **Roads damaged**: ☐ Location shown on site map **x** Roads adequate ☐ N/A

Remarks _____
_____

B. Other Site Conditions

Remarks: The Site is in relatively excellent condition.

VII. LANDFILL COVERS ☐ Applicable **x** N/A

A. Landfill Surface

1. **Settlement** (Low spots) ☐ Location shown on site map ☐ Settlement not evident
   Areal extent_____ Depth_____
   Remarks_____

2. **Cracks** ☐ Location shown on site map ☐ Cracking not evident
   Lengths_____ Widths_____ Depths_____
   Remarks_____

3. **Erosion** ☐ Location shown on site map ☐ Erosion not evident
   Areal extent_____ Depth_____
   Remarks_____

4. **Holes** ☐ Location shown on site map ☐ Holes not evident
   Areal extent_____ Depth_____
   Remarks_____

5. **Vegetative Cover** ☐ Grass ☐ Cover properly established ☐ No signs of stress
   ☐ Trees/Shrubs (indicate size and locations on a diagram)
   Remarks_____

6. **Alternative Cover (armored rock, concrete, etc.)** ☐ N/A
   Remarks_____

7. **Bulges** ☐ Location shown on site map ☐ Bulges not evident
   Areal extent_____ Height_____
   Remarks_____

8. **Wet Areas/Water Damage** ☐ Wet areas/water damage not evident
   ☐ Wet areas ☐ Location shown on site map Areal extent_____
   ☐ Ponding ☐ Location shown on site map Areal extent_____
   ☐ Seeps ☐ Location shown on site map Areal extent_____
   ☐ Soft subgrade ☐ Location shown on site map Areal extent_____
   Remarks_____

9.	**Slope Instability** ☐ Slides ☐ Location shown on site map ☐ No evidence of slope instability Areal extent_____ Remarks_____
B. Benches	☐ Applicable ☐ N/A (Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)
1.	**Flows Bypass Bench** ☐ Location shown on site map ☐ N/A or okay Remarks_____
2.	**Bench Breached** ☐ Location shown on site map ☐ N/A or okay Remarks_____
3.	**Bench Overtopped** ☐ Location shown on site map ☐ N/A or okay Remarks_____
C. Letdown Channels	☐ Applicable ☐ N/A (Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)
1.	**Settlement** ☐ Location shown on site map ☐ No evidence of settlement Areal extent_____ Depth_____ Remarks_____
2.	**Material Degradation** ☐ Location shown on site map ☐ No evidence of degradation Material type_____ Areal extent_____ Remarks_____
3.	**Erosion** ☐ Location shown on site map ☐ No evidence of erosion Areal extent_____ Depth_____ Remarks_____

4. **Undercutting** ☐Location shown on site map ☐No evidence of undercutting
Areal extent_____ Depth_____
Remarks_____

5. **Obstructions** Type_____ ☐No obstructions
☐Location shown on site map Areal extent_____
Size_____
Remarks_____

6. **Excessive Vegetative Growth** Type_____
☐No evidence of excessive growth
☐Vegetation in channels does not obstruct flow
☐Location shown on site map Areal extent_____
Remarks_____

D. Cover Penetrations ☐Applicable ☐N/A

1. **Gas Vents** ☐Active☐Passive
☐Properly secured/locked ☐Functioning ☐Routinely sampled ☐Good condition
☐Evidence of leakage at penetration ☐Needs Maintenance
☐N/A
Remarks_____

2. **Gas Monitoring Probes**
☐Properly secured/locked ☐Functioning ☐Routinely sampled ☐Good condition
☐Evidence of leakage at penetration ☐Needs Maintenance ☐N/A
Remarks_____

3. **Monitoring Wells** (within surface area of landfill)
☐Properly secured/locked ☐Functioning ☐Routinely sampled ☐Good condition
☐Evidence of leakage at penetration ☐Needs Maintenance ☐N/A
Remarks_____

4. **Leachate Extraction Wells**
☐Properly secured/locked ☐Functioning ☐Routinely sampled ☐Good condition
☐Evidence of leakage at penetration ☐Needs Maintenance ☐N/A
Remarks_____

5. **Settlement Monuments** ☐Located ☐Routinely surveyed ☐N/A
Remarks_____

E. Gas Collection and Treatment ☐ Applicable ☐ N/A

1. **Gas Treatment Facilities**
   ☐ Flaring ☐ Thermal destruction ☐ Collection for reuse
   ☐ Good condition ☐ Needs Maintenance
   Remarks_____

2. **Gas Collection Wells, Manifolds and Piping**
   ☐ Good condition ☐ Needs Maintenance
   Remarks_____

3. **Gas Monitoring Facilities** (*e.g.*, gas monitoring of adjacent homes or buildings)
   ☐ Good condition ☐ Needs Maintenance ☐ N/A
   Remarks_____

F. Cover Drainage Layer ☐ Applicable ☐ N/A

1. **Outlet Pipes Inspected** ☐ Functioning ☐ N/A
   Remarks_____

2. **Outlet Rock Inspected** ☐ Functioning ☐ N/A
   Remarks_____

G. Detention/Sedimentation Ponds ☐ Applicable ☐ N/A

1. **Siltation** Areal extent_____ Depth_____ ☐ N/A
   ☐ Siltation not evident
   Remarks_____

2. **Erosion** Areal extent_____ Depth_____
   ☐ Erosion not evident
   Remarks_____

3. **Outlet Works** ☐ Functioning ☐ N/A
   Remarks_____

4. **Dam** ☐ Functioning ☐ N/A
   Remarks_____

H. Retaining Walls ☐ Applicable ☐ N/A

1. **Deformations** ☐ Location shown on site map ☐ Deformation not evident
   Horizontal displacement_____ Vertical displacement_____
   Rotational displacement_____
   Remarks_____

2. **Degradation** ☐ Location shown on site map ☐ Degradation not evident
   Remarks_____

I. Perimeter Ditches/Off-Site Discharge ☐ Applicable ☐ N/A

1. **Siltation** ☐ Location shown on site map ☐ Siltation not evident
   Areal extent_____ Depth_____
   Remarks_____

2. **Vegetative Growth** ☐ Location shown on site map ☐ N/A
   ☐ Vegetation does not impede flow
   Areal extent_____ Type_____
   Remarks_____

3. **Erosion** ☐ Location shown on site map ☐ Erosion not evident
   Areal extent_____ Depth_____
   Remarks_____

4. **Discharge Structure** ☐ Functioning ☐ N/A
   Remarks_____

VIII. VERTICAL BARRIER WALLS ☐ Applicable ☒ N/A

1. **Settlement** ☐ Location shown on site map ☐ Settlement not evident
   Areal extent Depth
   Remarks_____

2. **Performance Monitoring** Type of monitoring_____
   ☐ Performance not monitored
   Frequency_____ ☐ Evidence of breaching
   Head differential_____
   Remarks_____

IX. GROUNDWATER/SURFACE WATER REMEDIES x Applicable ☐N/A

A. Groundwater Extraction Wells, Pumps, and Pipelines x Applicable ☐N/A

1. **Pumps, Wellhead Plumbing, and Electrical**
x Good condition☐ All required wells properly operating ☐Needs Maintenance ☐N/A
Remarks:

2. **Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
x Good condition☐ Needs Maintenance
Remarks_____

3. **Spare Parts and Equipment**
x Readily available ☐Good condition☐ Requires upgrade ☐Needs to be provided
Remarks_____

B. Surface Water Collection Structures, Pumps, and Pipelines ☐Applicable x N/A

1. **Collection Structures, Pumps, and Electrical**
☐Good condition☐ Needs Maintenance
Remarks_____

2. **Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances**
☐Good condition☐ Needs Maintenance
Remarks_____

3. **Spare Parts and Equipment**
☐Readily available ☐Good condition☐ Requires upgrade ☐Needs to be provided
Remarks_____

C. Treatment System x Applicable ☐N/A

1. **Treatment Train** (Check components that apply)
☐Metals removal ☐Oil/water separation ☐Bioremediation
x Air stripping x Carbon adsorbers
x Filters: Sand
☐Additive (*e.g.*, chelation agent, flocculent)_____
☐Others_____
x Good condition ☐Needs Maintenance
x Sampling ports properly marked and functional
x Sampling/maintenance log displayed and up to date
☐Equipment properly identified
x Quantity of groundwater treated annually: 69,061,800 gallons (2016)
☐Quantity of surface water treated annually_____
Remarks: Most of the equipment is labelled (identified), O&M personnel has thorough knowledge of treatment train, equipment, and controls.

2. **Electrical Enclosures and Panels** (properly rated and functional)
☐N/A x Good condition ☐Needs Maintenance
Remarks_____

3. **Tanks, Vaults, Storage Vessels**
☐N/A x Good condition ☐Proper secondary containment ☐Needs Maintenance
Remarks_____

4. **Discharge Structure and Appurtenances**
☐N/A x Good condition ☐Needs Maintenance
Remarks_____

5. **Treatment Building(s)**
☐N/A x Good condition (esp. roof and doorways) ☐Needs repair
x Chemicals and equipment properly stored
Remarks_____

6. **Monitoring Wells** (pump and treatment remedy)
x Properly secured/locked x Functioning x Routinely sampled x Good condition
x All required wells located ☐Needs Maintenance ☐N/A
Remarks_____

D. Monitoring Data

1. Monitoring Data
x Is routinely submitted on time x Is of acceptable quality

2. Monitoring data suggests:
x Groundwater plume is effectively contained x Contaminant concentrations are declining

D. Monitored Natural Attenuation

1. **Monitoring Wells** (natural attenuation remedy)
☐ Properly secured/locked ☐ Functioning ☐ Routinely sampled ☐ Good condition
☐ All required wells located ☐ Needs Maintenance **x** N/A
Remarks_____

X. OTHER REMEDIES

If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

O&M activities are not required for the earthen lagoon/drainage swale/sediment pond remedy because all materials associated with the remedy that exceeded established cleanup standards have been excavated and removed off-site. The areas of the earthen lagoon/drainage swale/sedimentation pond have been properly restored. These areas were observed during the Site inspection and appear to be in good condition.

XI. OVERALL OBSERVATIONS

A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).

The purpose of the groundwater remedy is to restore groundwater to MCLs, making the groundwater protective of human health and the environment. The Groundwater Recovery and Treatment System (GWRTS) is operating as designed. All bedrock groundwater with COC concentrations above MCLs is hydraulically contained by the GWRTS. In addition, performance monitoring confirms that the GWRTS is effective in meeting NPDES Permit requirements.

B.	**Adequacy of O&M**
	Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. The GWRTS is functioning well. The treatment building and system components appear to be in good condition and operating well. Appropriate documents and records are being kept and are on file at the Site. The required performance monitoring program is being performed and properly reported to the EPA. The Site security fence is in good condition. Monitoring wells are in good condition and well caps are locked. The control system allows the GWRTS to be operated with minimal supervision.
C.	**Early Indicators of Potential Remedy Problems**
	Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future. No issues or observations exist that would suggest that the protectiveness of the groundwater remedy may be compromised in the future.
D.	**Opportunities for Optimization**
	Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy. The 2019 Groundwater Optimization Plan was implemented at the Site. Activities included the abonnement of a number of extraction wells and the installation of a new shall well (RW-D) to capture additional COC mass within the source area. While the GWRTS is successful in hydraulicly containing the COC plume and reducing COC concentration, additional remedial measures should be evaluated to ensure groundwater cleanup goals are met.

Attachment 2 – Site Inspection Photographs
(May 31,2023)

Facility Front Gate

Groundwater Treatment Plant

Former Lagoon Area

Former Drainage Swale Area

Wells SVE-1 and RW-D

Wells TB-05 and TB-05A

Office Trailer with 24 hour surveillance

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

National Pollutant Discharge Elimination System (NPDES)
Electronic Discharge Monitoring Report (eDMR)

3/6/2023 12:50:17 PM

Region: All
County: 46 - Montgomery
Municipality: 46936 - Lower Pottsgrove Twp
Permit #: PA0010944
Monitoring Period Date Range: 1/1/2021 To 2/28/2023
Client: All
Parameter: All

Permit #:	**PA0010944**	Facility Address:	**OCCIDENTAL CHEMICAL GROUNDWATER REMEDIATION SITE 375 ARMAND HAMMER BLVD POTTSTOWN, PA 19464**
Client ID / Name:	**6983 - GLENN SPRINGS HOLDINGS INC**		
Primary Facility ID / Name:	**263226 - OCCIDENTAL CHEMICAL GROUNDWATER REMEDIATION SITE**	County:	**Montgomery**
		Municipality:	**Lower Pottsgrove Twp**
Major Facility:	**No**	Latitude / Longitude:	**40.231944 / -75.607778**
Region:	**SERO**		

Monitoring Period Begin Date	Monitoring Period End Date	DMR Received Date	Outfall	Discharge	Monitoring Location	Parameter Name	Parameter Code	DMR Value	Permit Limit	Units	Statistical Base Code
01/01/2021	06/30/2021	07/09/2021	003	Yes	Final Effluent	Chemical Oxygen Demand (COD)	00340	47.0	Monitor and Report	mg/L	Daily Maximum
					Final Effluent	Iron, Dissolved	01046	< 0.100	Monitor and Report	mg/L	Daily Maximum
					Final Effluent	Oil and Grease	00556	< 5.0	Monitor and Report	mg/L	Daily Maximum
					Final Effluent	pH	00400	8.2	Monitor and Report	S.U.	Daily Maximum
					Final Effluent	Total Kjeldahl Nitrogen	00625	0.47	Monitor and Report	mg/L	Daily Maximum
					Final Effluent	Total Phosphorus	00665	0.20	Monitor and Report	mg/L	Daily Maximum
					Final Effluent	Total Suspended Solids	00530	99.2	Monitor and Report	mg/L	Daily Maximum
					Final Effluent	Zinc, Total	01092	0.134	Monitor and Report	mg/L	Daily Maximum
			004	Yes	Final Effluent	Chemical Oxygen Demand (COD)	00340	GG	Monitor and Report	mg/L	Daily Maximum

01/01/2021	06/30/2021	07/09/2021	004	Yes	Final Effluent	Iron, Dissolved	01046	GG	Monitor and Report	mg/L	Daily Maximum
					Final Effluent	Oil and Grease	00556	GG	Monitor and Report	mg/L	Daily Maximum
					Final Effluent	pH	00400	GG	Monitor and Report	S.U.	Daily Maximum
					Final Effluent	Total Kjeldahl Nitrogen	00625	GG	Monitor and Report	mg/L	Daily Maximum
					Final Effluent	Total Phosphorus	00665	GG	Monitor and Report	mg/L	Daily Maximum
					Final Effluent	Total Suspended Solids	00530	GG	Monitor and Report	mg/L	Daily Maximum
					Final Effluent	Zinc, Total	01092	GG	Monitor and Report	mg/L	Daily Maximum
			005	Yes	Final Effluent	Chemical Oxygen Demand (COD)	00340	35.3	Monitor and Report	mg/L	Daily Maximum
					Final Effluent	Iron, Dissolved	01046	< 0.100	Monitor and Report	mg/L	Daily Maximum
					Final Effluent	Oil and Grease	00556	< 5.0	Monitor and Report	mg/L	Daily Maximum
					Final Effluent	pH	00400	8.1	Monitor and Report	S.U.	Daily Maximum
					Final Effluent	Total Kjeldahl Nitrogen	00625	0.84	Monitor and Report	mg/L	Daily Maximum
					Final Effluent	Total Phosphorus	00665	0.10	Monitor and Report	mg/L	Daily Maximum
					Final Effluent	Total Suspended Solids	00530	16.4	Monitor and Report	mg/L	Daily Maximum
					Final Effluent	Zinc, Total	01092	< 0.020	Monitor and Report	mg/L	Daily Maximum
			006	Yes	Final Effluent	Chemical Oxygen Demand (COD)	00340	< 20	Monitor and Report	mg/L	Daily Maximum
					Final Effluent	Iron, Dissolved	01046	< 0.100	Monitor and Report	mg/L	Daily Maximum
					Final Effluent	Oil and Grease	00556	< 5.0	Monitor and Report	mg/L	Daily Maximum

01/01/2021	06/30/2021	07/09/2021	006	Yes	Final Effluent	pH	00400	7.7	Monitor and Report	S.U.	Daily Maximum
					Final Effluent	Total Kjeldahl Nitrogen	00625	0.36	Monitor and Report	mg/L	Daily Maximum
					Final Effluent	Total Phosphorus	00665	0.091	Monitor and Report	mg/L	Daily Maximum
					Final Effluent	Total Suspended Solids	00530	45.8	Monitor and Report	mg/L	Daily Maximum
					Final Effluent	Zinc, Total	01092	0.053	Monitor and Report	mg/L	Daily Maximum
01/01/2021	01/31/2021	02/05/2021	105	Yes	Internal Monitoring Point	Chloroform	32106	< 0.001	0.005	mg/L	Average Monthly
					Internal Monitoring Point	Chloroform	32106	< 0.001	0.010	mg/L	Instantaneous Maximum
					Internal Monitoring Point	cis-1,2-Dichloroethylene	77093	< 0.00100	0.00275	mg/L	Average Monthly
					Internal Monitoring Point	cis-1,2-Dichloroethylene	77093	< 0.0010	0.0041	mg/L	Instantaneous Maximum
					Internal Monitoring Point	Ethylbenzene	34371	< 0.007	0.007	mg/L	Average Monthly
					Internal Monitoring Point	Ethylbenzene	34371	< 0.007	0.018	mg/L	Instantaneous Maximum
					Internal Monitoring Point	Flow	50050	0.1262	Monitor and Report	MGD	Average Monthly
					Internal Monitoring Point	Flow	50050	0.1491	Monitor and Report	MGD	Daily Maximum
					Internal Monitoring Point	pH	00400	7.68	9.0	S.U.	Instantaneous Maximum
					Internal Monitoring Point	pH	00400	7.68	6.0	S.U.	Instantaneous Minimum
					Internal Monitoring Point	Phenolics, Total	32730	< 0.0050	Monitor and Report	mg/L	Average Monthly
					Internal Monitoring Point	Phenolics, Total	32730	< 0.0050	Monitor and Report	mg/L	Instantaneous Maximum
					Internal Monitoring Point	Tetrachloroethylene	34475	< 0.004	0.004	mg/L	Average Monthly
					Internal Monitoring Point	Tetrachloroethylene	34475	< 0.004	0.010	mg/L	Instantaneous Maximum
					Internal Monitoring Point	trans-1,2-Dichloroethylene	34546	< 0.001	0.005	mg/L	Average Monthly

FYR Press Release

A3 LOCAL NEWS

Wednesday, March 15, 2023 » MORE AT FACEBOOK.COM/POTTSTOWNMERCURY AND TWITTER.COM/MERCURYX pottsmerc.com

BOYERTOWN

Coming Out of Hibernation event celebrates spring

The celebration on April 15 will feature games and activities, local artisans' goods for sale and food

By MediaNews Group

Building a Better Boyertown will celebrate the arrival of spring with its annual Coming Out of Hibernation event on April 15 from 10 a.m. to 2 p.m.

Held on the third Saturday in April in downtown Boyertown, Coming Out of Hibernation features games and activities, local artisans' goods for sale, and food — all with a nod to the warm and vibrant spring season.

"Coming Out of Hibernation is one of our longest running events," Ellen Martignetti, Main Street Manger, said in a release. "This used to be a small event and it has grown so much. It's wonderful how many visitors enjoy spending their day here."

Building a Better Boyertown will celebrate spring with its annual Coming Out of Hibernation event on April 15, featuring games and activities, local artisan goods for sale and food.

LE PHOTO

Building a Better Boyertown's goal for its street festival events is to provide an opportunity for area residents to come together and enjoy a special moment without having to travel far or spend a lot of money.

"It's something that many people look forward to every year," Assistant Manager Kim Evans said in the release. "Within a few days of creating the Facebook Event Page, hundreds of people have responded as interested in attending."

Vendor booths selling their wares will line East Philadelphia Avenue. Enjoy brunch or lunch at Boyertown restaurants or food trucks. Local businesses and organizations will offer games and crafts. Children can decorate and assemble their own kite to take home. Guests 21 years and older can head to the Colebrookdale rail yard to visit the pop-up Bears & Bees bar, featuring spring cocktails, wine and mead, featuring local mead from Rebel Hive Meadery of Reading and Stonekeep Meadery of Fleetwood.

Free to attend, some activities, such as the Bears & Bees bar, may incur a fee. For more information, including a list of participating vendors and entertainment, visit www.buildingabetterboyertown.org/hibernation. Rain date is April 16 from 10 a.m. to 2 p.m.

A nonprofit organization that seeks to preserve Boyertown's artistic, historical and agricultural heritage, Building a Better Boyertown provides the Boyertown community with physical improvements, unique opportunities and social interactions for businesses, residents and visitors. For more information, call 610-369-3054 or visit www.buildingabetterboyertown.org.

Internet

FROM PAGE 2

"next-generation access" to the internet.

"We're thrilled to bring our fastest speeds and our best internet experience to more homes, businesses and schools here in Berks, Chester and Lancaster counties," Susan Schraibman, Kinetic state operations president, said at the announcement. "The energy and momentum we have in the marketplace are unmistakable, and we're proud we're able to bring our ultrafast fiber connectivity to more customers and the community every single day. Our mission is to provide exceptional internet to all our customers."

Schraibman said the importance of having access to fast, reliable internet is something that became crystal clear as everything from school to doctors appointments went online during the COVID-19 pandemic.

"If the last years have taught us anything it's the importance of being connected," she said.

That particularly matters when it comes to schools.

Dr. Patrick Winters, Twin Valley School District superintendent who spoke during Wednesday's event, said schools need reliable and efficient internet services to operate in today's world.

"We commend Kinetic for completing these area upgrades and understanding the importance of ensuring our students and families have efficient and consistent access to the internet," he said. "With these improvements and the affordable products offered to our families, there is continued opportunity for learning for all Twin Valley students in school, at home and throughout our community."

BILL UHRICH READING EAGLE

Susan Schraibman, president of Kinetic State Operations, cuts a ribbon with state and local officials during a press conference Wednesday at the Caernarvon Township Municipal Building in Morgantown announcing fiber optic expansion in a tri-county rural area

Winters wasn't alone in his praise for Kinetic's efforts to improve broadband service.

Pamela Shupp Menet, director of economic and community development for Berks County, said internet access has become a necessity. And, she added, the county has made filling in service gaps a priority in its long-term plans.

"It's vital to the economic growth of the region," she said.

She also said the county is working to make sure that once Berks residents get high-speed internet access they know what to do with it. The county is helping to fund two digital literacy program one through the Berks County Intermediate Unit and one through the Berks Community Health Center.

Kinetic's broadband expansion in the Morgantown region is part of the company's southeastern Pennsylvania fiber project, which is part of the company's large effort to expand service to rural areas. Kinetic is undertaking a $2 billion, multiyear capital investment strategy the expand gigabit internet service across the 18 states it serves.

Local customers who want to find out if they're eligible for the new broadband service can visit GoKinetic.com; visit the Kinetic Connection Center retail store at 130 East Main St., Ephrata; or call 717-738-7100.

Homeless

FROM PAGE 1

nition.

One of the first business items on order Monday night's council agenda was listed as "possible action regarding the zoning relief request on the application of St. Paul's United Church of Christ and the Pottstown Beacon of Hope, to allow a temporary warming center on the property located at 931 North Franklin Street."

But despite the discussion at Wednesday's work session, Saturday's town hall, and Monday's meeting, when the time came, Council President Dan Weand announced there would be no action taken and went on to the next item.

As a result, when the zoning hearing board takes up the matter on March 29, it will decide based solely on the evidence presented that night.

But while the council may have remained silent as a voting body, the same can not be said of those who spoke about the matter Monday.

The Rev. Nichole Jackson, the pastor of Open Table United Church of Christ, said she and her husband moved to Pottstown because they "love it here," but told council Monday "in the past several months, I have been so very disappointed, disheartened and frankly quite angry at all the mess that has happened surrounding Beacon of Hope and St. Paul's."

Praising those "doing this important work," Jackson added "I know many others are breeding fear of 'the others' calling our most vulnerable neighbors de-humanizing names and furthering narratives that make others fear them." She called on the council to "take a good path forward tonight. I would love if you could support the variance, but what I'm asking is for you to no longer stand in the way of the people who are trying to give people a chance. Shelter is not a luxury, food is not a luxury."

MEDIA NEWS GROUP FILE PHOTO

St. Paul's UCC Church in Pottstown.

Matt Green told council that he supports the goals of the warming center and the permanent shelter proposed for the corner of West high and Glasgow streets which received a zoning variance last fall. "But I have not heard from Beacon of Hope about how they are going to help us deal with what Councilman Andrew Monastra calls 'the ripples,' or the unintended consequences of our charity."

He said "I think we can come up with some solutions, along with the good people from Beacon of Hope, and I would hope that we could put those solutions in writing and codify them into some type of agreement so that all parties can be held accountable."

When the zoning board issued the variance for the permanent shelter, it included 25 conditions requested by the borough, and which Beacon of Hope agreed to.

Jeanva Ellison told council that attention also needs to be made to preventative measures to ensure people do not lose their homes in the first place, something she said she is struggling with.

School Board member Laura Johnson said the conversation surrounding the warming center has "a lot of finger-pointing, sometimes bemoaning that the county or surrounding municipalities are not doing their part, argument that Beacon of Hope could have done things differently and of course everyone insisting that they want to help the homeless."

The zoning board, she said, "has already recognized that housing is needed. They've already approved a variance for a permanent facility to meet this need, which everybody recognizes is a real need. So I don't understand why we would deny a short-term variance for the interim," Johnson said.

"We as a community, rise and fall together. And often we have this businesses vs. low-income or homeless people, or the taxpayers versus the school, or whatever it is, this tug-of-war that no one can win and everyone just pulls harder and harder," Johnson said. "We cannot deny help to the people who need it most and believe we're going to succeed economically, and we cannot ignore our need for economic revitalization while we're trying to help people. It's got to be both. It's not one or the other."

Jen Green referred to her interaction "with Mr. Weand's wife Polly, who was spreading propaganda with a letter that was not true" and said she was "amazed" to discover that Weand only recently learned the nearby location of one of the homeless encampments.

"I mean how out of touch is our president?" asked Green, who has twice opposed him for the Fifth Ward seat on council.

"We need to have not just a warming center, we need to have some sort of shelter that we can give them a temporary residency, so they can get an ID, so they can get a job, so they can get a permanent residence," Green said.

Aram Ecker, a member of the Pottstown Borough Authority, said he is very involved with Mission First, a High Street church that offers numerous programs for homeless and low-income residents. "For my whole adult life I've been trying to help, unfortunately, the growing population of homeless," he said adding Mission First provides mental health services.

Weand broke with council practice of not responding to comments to council "because of accusations of the validity of the information that was distributed," presumably in the anonymous letter his wife was circulating. "After the accusations of being inaccurate, we had it checked out and there was a flaw; that being that what's being discussed is not a zoning change. The proper phrase is a zoning variance, so I'll admit, that was a flaw in the paper. The rest of it, to the best of our research, was true."

He then announced there would be not vote on the council taking a position on the variance request.

Councilwoman Lisa Vanni ended the meeting by offering extensive comments. "I feel like I was lied to and manipulated for months. The borough long ago should have talked to the county and there should be a paper trail of that and there isn't."

She said she spoke with business owners on High Street "and each person has had a different experience with the homeless. We need to come together. I'd like a community meeting about that too. We need people from all walks of life. People who have struggled with homelessness, people who have never even thought about it, business owners, residents and also people who have some expertise in the area."

Added Vanni, "I don't think we can continue to point fingers, but we do need to be honest. I don't like being lied to and I don't like being manipulated and that's what it feels like."

Stabbing

FROM PAGE 1

Wyk uttered "you're going to say this about my man," as she stabbed the victim.

The victim fled the area on foot and was later transported to Reading Hospital by ambulance to be treated for her wounds. Police said the victim suffered four stab sounds to her left arm and upper back and shoulder.

Detectives obtained video surveillance footage from the 200 block of King Street that recorded the attack.

"As the female approaches the victim she is seen carrying a large kitchen knife with a black handle. She is seen stabbing the victim multiple times with the knife before the victim runs away," Istenes wrote in the criminal complaint.

Other charges of possession of a weapon with intent to employ it criminally, simple assault and recklessly endangering another person were dismissed against Van Wyk as part of the plea agreement.