

**FIFTH FIVE-YEAR REVIEW REPORT FOR  
T.H. AGRICULTURE AND NUTRITION CO. (ALBANY PLANT) SUPERFUND SITE  
DOUGHERTY COUNTY, GEORGIA**



**JULY 2023**

**Prepared by**

**U.S. Environmental Protection Agency  
Region 4  
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**7/3/2023**

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## LIST OF ABBREVIATIONS & ACRONYMS

ARAR	Applicable or Relevant and Appropriate Requirement
AROD	Amended Record of Decision
BDL	Below Detection Limit
BHC	Hexachlorocyclohexane
BRA	Baseline Risk Assessment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COC	Contaminant of Concern
DDT	Dichlorodiphenyltrichloroethane
EDB	Ethylene dibromide
EPA	United States Environmental Protection Agency
ESD	Explanation of Significant Differences
FFS	Focused Feasibility Study
FYR	Five-Year Review
GAC	Granulated Activated Carbon
GAEPD	Georgia Environmental Protection Division
HQ	Hazard Quotient
IC	Institutional Control
ISCR	<i>In-Situ</i> Chemical Reduction
JEM	Johnson and Ettinger Model
LNAPL	Light Non-Aqueous Phase Liquid
LTTD	Low Temperature Thermal Desorption
MCL	Maximum Contaminant Level
mg/kg	Milligrams per Kilogram
µg/kg	Micrograms per Kilogram
µg/L	Micrograms per Liter
µg/m <sup>3</sup>	Micrograms per Cubic Meter
NA	Not Applicable
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
O&M	Operation and Maintenance
OCP	Organochlorine pesticides
OU	Operable Unit
PRP	Potentially Responsible Party
RAO	Remedial Action Objective
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
RPM	Remedial Project Manager
RSL	Regional Screening Level
SDWA	Safe Drinking Water Act
TCH	Thermal Conductive Heating
THAN	T. H. Agriculture & Nutrition, LLC
UAO	Unilateral Administrative Order
UU/UE	Unlimited Use and Unrestricted Exposure
UVOST	UltraViolet Optical Screening Tool
WISE	Vapor Intrusion Screening Level
VOC	Volatile Organic Compound
WCC	Woodward-Clyde Consultant

## **I. INTRODUCTION**

The purpose of a five-year review (FYR) is to evaluate the implementation and performance of a remedy 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 FYR pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Section 121, consistent with the National Contingency Plan (NCP) (40 Code of Federal Regulations (CFR) Section 300.430(f)(4)(ii)), and considering EPA policy.

This is the fifth FYR for the T.H. Agriculture & Nutrition Co. (Albany Plant) Superfund Site (the Site). The triggering action for this statutory review is the completion date of the previous FYR. The FYR has been prepared because 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) and both OUs are addressed in this FYR. OU-1 addressed the soil contamination on the western parcel (the T.H. Agriculture and Nutrition LLC, or THAN, Parcel) and Sitewide groundwater and associated light non-aqueous phase liquid (LNAPL). OU-2 addressed the soil contamination on the eastern parcel (Jones Parcel).

EPA remedial project manager (RPM) Christopher Jones led the FYR. Participants included John Williams and Tahsin Zahid with the Georgia Environmental Protection Division (GAEPD) and potentially responsible party (PRP) contractor support from Felix Nchako of AECOM. The PRPs were notified of the initiation of the FYR. The review began on 10/19/2022. Documents used to prepare this FYR and a Site status summary are summarized in Appendices A and B, respectively.

### **SITE BACKGROUND**

The 12-acre Site is located in a commercial and industrial area in Albany, Georgia (Figure 1). From the 1950s to the 1980s, two former pesticide formulation and packaging facilities operated on Site. T.H. Agriculture & Nutrition Co. (THAN) sold the western 7 acres of the Site (the THAN Parcel, OU-1) to VanCleave Builders, LLC in 2015. Jones Family Properties, LLC owns the eastern 5 acres of the Site (the Jones Parcel, OU-2). An unpaved but vegetated utility easement about 10 to 12 feet wide lies between the two parcels. Plant operations at both parcels released pesticide contamination to soil and groundwater. The THAN Parcel currently includes an office and warehouse used by VanCleave Builders, LLC. The remainder of the parcel is vacant. The Jones family currently operates a welding supply facility and office on the Jones Parcel. Both parcels are zoned for light industrial use.

Kinchafoonee Creek is located 0.4 miles east of the Site. No swales or ditches drain from the Site directly to the creek. Stormwater from the Site flows south through ditches and then west through a culvert into the storm sewer system. Groundwater occurs in a shallow clay residuum underlain by the Ocala Limestone Aquifer, which consists of upper, intermediate, and lower zones. Site groundwater generally flows to the north and northeast in the residuum and intermediate zone. Flows in the Upper and Lower Ocala Limestone Aquifer are multi-directional. Contaminated groundwater does not extend beyond the Site's boundary. On-Site businesses are connected to the public water supply. No groundwater is being used on Site.

## FIVE YEAR REVIEW SUMMARY FORM

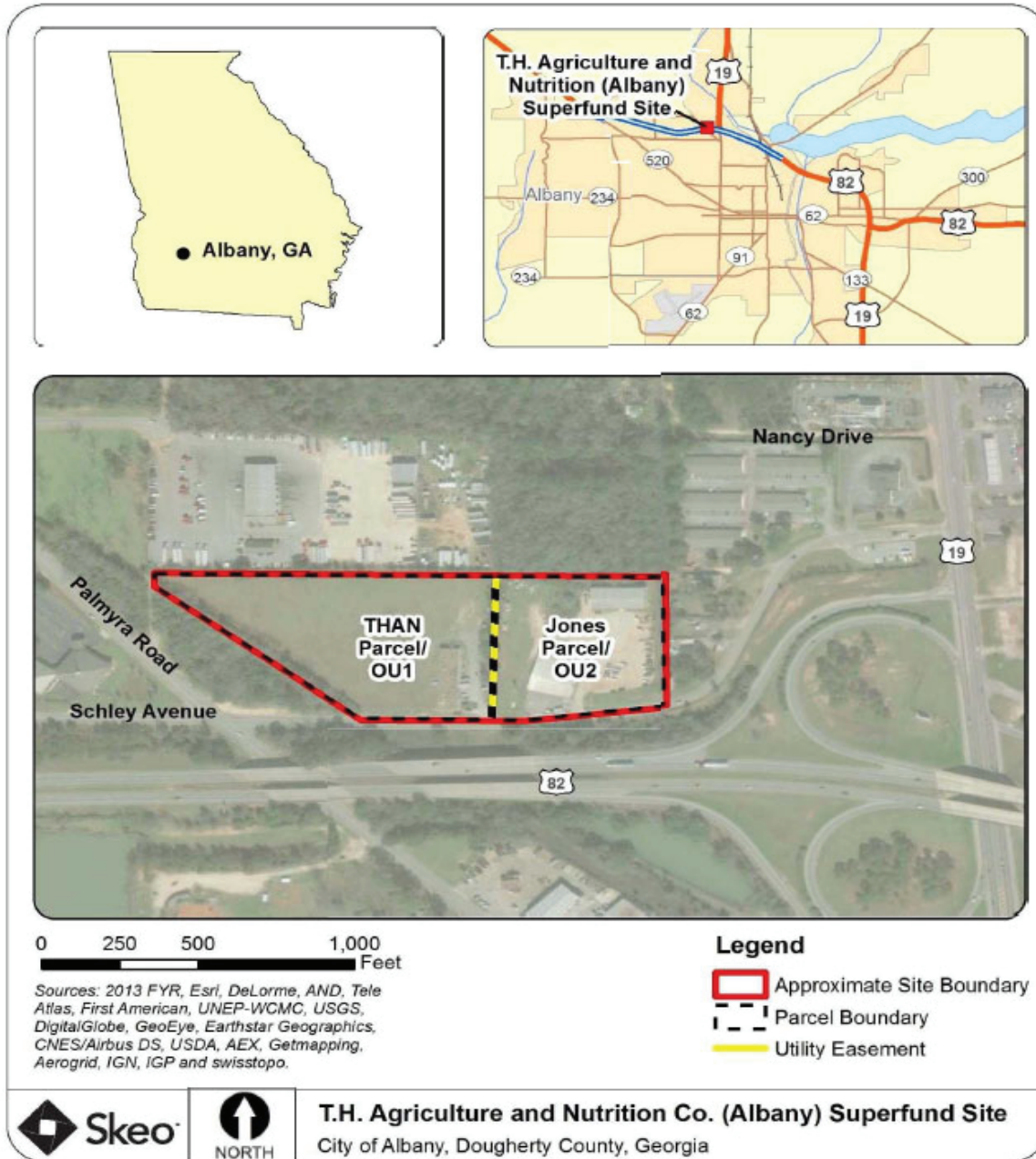
SITE IDENTIFICATION		
EPA ID: GAD042101261		
Region: 4	State: GA	City/County: Albany/Dougherty
SITE STATUS		
NPL Status: Final		
Multiple OUs? Yes	Has the Site achieved construction completion? No	
REVIEW STATUS		
Lead agency: EPA		
Author name: Christopher Jones		
Author affiliation: EPA with support provided by Georgia Environmental Protection Division		
Review period: 10/19/2022 – 7/18/2023		
<b>Date of Site inspection: 12/1/2022</b>		
Type of review: Statutory		
<b>Review number: 5</b>		
Triggering action date: 7/18/2018		
Due date (five years after triggering action date): 7/18/2023		

## II. RESPONSE ACTION SUMMARY

### Basis for Taking Action

THAN completed a remedial investigation (RI) and a baseline risk assessment (BRA) for OU-1 (THAN Parcel) in 1992. The OU-1 BRA evaluated potential human exposure to Sitewide groundwater, surface water and surface soils. It concluded that potential exposure to soil and groundwater resulted in cumulative risks above the EPA's upper bound of the acceptable risk range of  $1 \times 10^{-4}$  to  $1 \times 10^{-6}$  and the noncancer hazard index of 1.0 for both residential and worker exposures. In addition, the OU-1 BRA identified LNAPL floating on the surficial aquifer (residuuum) as the primary risk associated with Site contamination. The LNAPL contains solvents with dissolved pesticides that could be released into the groundwater.

**Figure 1: Site Location Map**



Disclaimer: This map and any boundary lines within the map are approximate and subject to change. The map is not a survey. The map is for informational purposes only regarding the EPA's response actions at the Site and is not intended for any other purpose.

The EPA completed a RI and BRA for OU-2 (Jones Parcel) in 1996. The OU-2 BRA identified several pesticides in surface soil as posing unacceptable risks to current workers or future residential receptors. The OU-2 BRA also identified the manganese, ethylene dibromide (EDB) and methyl parathion as posing leachability risks from subsurface soil to groundwater.

The Sitewide environmental risk assessment did not identify sensitive habitats or endangered species and concluded that remediation based on human health risks would eliminate ecological exposure pathways. Table 1 summarizes the primary exposure media and contaminants of concern (COC) for OU-1 and OU-2.



**Table 1: Summary of Contaminated Media and COCs**

COC	OU-1 Soil	OU-1 <sup>a</sup> LNAPL	OU-2 Surface Soil	OU-2 <sup>b</sup> Subsurface Soil	Sitewide Groundwater <sup>c</sup>
<i>Pesticide/Herbicide</i>					
Aldrin	NA				X
EDB				X	X
Alpha-Hexachlorocyclohexane		X			X
Beta-BHC					X
Dichlorodiphenyltrichloroethane (DDT)		X	X		X
Dieldrin					X
Methyl parathion		X			X
Toxaphene		X	X		X
Xylene		X			
<i>Metals</i>					
Manganese	NA			X	
<p>Notes:</p> <p>a. Information from Table 2 of the OU-1 Record of Decision (ROD)</p> <p>b. Information from Table 8 of the OU-2 ROD</p> <p>c. Information from Table 8 of the OU-1 ROD</p> <p>- Not a contaminant of concern in this medium</p> <p>COC Contaminant of concern</p> <p>LNAPL Light non-aqueous phase liquid</p> <p>NA According to Section 6.6 of the 1993 OU-1 ROD, the removal actions in 1984 and 1992 addressed contaminated surface soil at OU-1 prior to issuance of the OU-1 ROD and achieved the 1 x 10<sup>-6</sup> risk based on a future residential exposure. These response actions also eliminated unacceptable risk to environmental receptors from potential exposure to surface soil at the site. Fate-and-transport modelling conducted during the RI demonstrated that subsurface soil would not impact groundwater.</p> <p>OU Operating unit</p> <p>X Indicates a contaminant of concern in this medium</p>					

**Response Actions**

A summary of the response actions at the two OUs is provided below. A detailed summary of the Site chronology is presented in Appendix C.

**OU-1 - THAN Parcel and Sitewide Groundwater**

THAN completed two removal actions to address contaminated surface soil in 1984 and 1992 with GAEPD and EPA oversight, respectively. Both removal actions included demolition of buildings and structures, installation of a perimeter fence, excavation of contaminated surface and shallow soil for offsite disposal at a permitted hazardous waste landfill and thermal treatment, followed by on-Site disposal of soil, and establishment of a vegetative cover. A review of removal action cleanup levels is included in Appendix I. Based on contamination discovered during the first removal action and investigations, the EPA placed the Site on the Superfund program's National Priorities List (NPL) on March 31, 1989.

The EPA issued the OU-1 (THAN Parcel and Sitewide groundwater) Record of Decision (ROD) in May 1993. It stated that the goal of the remedial action was to restore groundwater to its beneficial use (as drinking water) at the Site. The 1993 ROD indicated surface soil remediation had been completed as part of the removal actions (i.e., subsurface soil remediation was not warranted); the ROD indicated that a fate-and-transport modelling demonstrated that subsurface soil would not impact groundwater. The major components of the remedy, as outlined in the 1993 ROD and further modified in a 1995 Explanation of Significant Differences (ESD), include:

- Fencing of the Site and treatment facility.
- Extraction and onsite treatment of groundwater by ultraviolet/oxidation treatment with granulated carbon (GAC) adsorption as a polishing step if needed.
- Disposal of treated groundwater using infiltration wells and discharge to the Albany Wastewater Treatment Facility. If too much treated groundwater is produced for the wells, excess treated water will be discharged to the facility through the sewer line under Schley Avenue.
- Use of three dual-phase vacuum extraction wells to extract groundwater and soil gas to remove LNAPL with off-Site disposal of LNAPL for incineration, treatment of soil gas with activated carbon, if necessary, and groundwater treatment using GAC.
- Drainage controls to divert runoff from the Site.
- Quarterly inspections of the vegetative cover installed during the removal action.
- Institutional controls for land use and groundwater use.

The remedy also included contingency measures, including:

- Discontinue pumping at individual wells where cleanup levels have been attained.
- Alternate pumping at wells to eliminate stagnation points.
- Use pulse pumping to allow aquifer equilibration and encourage adsorbed contaminants to partition into groundwater.
- Install additional extraction wells to facilitate or accelerate cleanup of the contaminant plume.

The OU-1 Remedial Action Objectives (RAO) established in the 1993 ROD are listed as the cleanup levels for the COCs in groundwater and are summarized in Table 2.

**Table 2: OU-1 Groundwater COC Cleanup Levels from the 1993 OU-1 ROD**

Contaminant	Cleanup level (µg/L) <sup>a</sup>
Aldrin	0.54 <sup>c</sup>
EDB	0.05 <sup>b</sup>
Alpha-BHC	4.1 <sup>c</sup>
Beta-BHC	5.1 <sup>c</sup>
DDT	27 <sup>c</sup>
Dieldrin	0.57 <sup>c</sup>
Toxaphene	3.0 <sup>b</sup>
Notes:	
a.	Cleanup levels listed in Table 8 of the OU-1 ROD. The ROD lists the units as µg/L but presents the values in milligrams per liter.
b.	Maximum contaminant level (MCL)
c.	Risk-based cleanup levels, as MCLs have not been established for these chemicals
µg/L	Micrograms per liter

OU-2 - Jones Parcel

The EPA selected the OU-2 (Jones Parcel) remedy in the Site's April 1996 ROD. It stated that the goal of the remedial action was to reduce risks of industrial worker exposure to surface soil to a  $1 \times 10^{-5}$  risk level and prevent impacts to groundwater due to contaminant migration from subsurface soil. The selected remedy consisted of:

- Excavation of contaminated surface and subsurface soils.
- On-Site treatment of excavated soil by low temperature thermal desorption (LTTD).
- Periodic sampling of treated soil during LTTD treatment to verify the effectiveness of the remedy.
- Placement of treated, decontaminated soil back on the Site.
- Air monitoring to ensure safety of nearby residents and workers.
- Groundwater monitoring.
- Deed restrictions to prevent residential use of the property.

The cleanup levels that the EPA established for OU-2 COCs in surface soil and subsurface soil are presented in Table 3.

**Table 3: Summary of OU-2 Soil Cleanup levels**

COC	Surface Soil (mg/kg) <sup>a,b</sup>	Subsurface Soil (mg/kg) <sup>a,c</sup>
Manganese	NA	337
DDT	94	NA
EDB	NA	0.006
Methyl parathion	NA	17
Toxaphene	29	NA
Notes:		
a.	Values source; Table 8 of the 1996 ROD for OU-2	
b.	Based on an industrial worker exposure and a $1 \times 10^{-5}$ cancer risk or non-cancer hazard index of 1.0	
c.	Based on protection of groundwater	
NA	contaminant not a COC for this medium	
mg/kg	milligrams per kilogram	

## **Status of Implementation**

### **OU-1 - THAN Parcel and Sitewide Groundwater**

The EPA issued Unilateral Administrative Orders (UAOs) to multiple PRPs (Boise Cascade Corporation [now OfficeMax], Air Products and Chemicals Inc., Hercules Inc., Gold Kist Inc., THAN and Philips Electronics North America Corporation) associated with the Site, directing the companies to conduct remedial design and remedial action for Sitewide groundwater. In 1993, the PRPs began the remedial design. The PRPs completed the remedial design and began the remedial action in November 1995. The final groundwater remedy included pumping contaminated groundwater from extraction wells on the Jones Parcel and dual-phase extraction wells on the THAN Parcel. Extracted groundwater was transferred through underground piping to the treatment system on the THAN Parcel. The treatment system included a LNAPL separator, a microfilter and GAC. The PRPs began construction of the groundwater extraction system in April 1996. The PRP and the EPA determined that LNAPL removal was considered ineffective and the LNAPL separator was bypassed in November 1998.

By 2003, COC concentrations remained largely unchanged, despite the PRP treating an estimated 3.5 million gallons of groundwater. With the EPA's approval, operation of the groundwater treatment system ceased in 2003. In 2003, the PRP began a bioremediation pilot study designed to reduce concentrations of COCs in the Site's subsurface soils to minimize the potential for leaching to groundwater. After testing various reagents, the PRP concluded that bioremediation was ineffective at reducing contaminant concentrations. The EPA confirmed this conclusion in November 2009. The PRP continued to monitor groundwater contamination trends and plume migration and evaluate other options for the treatment of Site groundwater, and if necessary, consider implementing the 1993 ROD's contingency.

In 2013, the EPA evaluated groundwater contaminant trends and plume migration and determined that the groundwater plumes were not migrating laterally. However, the EPA concluded that concentrations of some contaminants were increasing in deeper wells likely as a result of vertical migration from the shallow zone. Following the EPA's analysis, the EPA requested that the PRP evaluate other possible remedies to address the vertical migration of contamination. In response, the PRP prepared a Supplemental LNAPL Investigation Work Plan in May 2016 that the EPA approved in April 2017. The scope of work outlined in the work plan included delineation of the LNAPL area using the Ultraviolet Optical Screening Tool (UVOST), sampling of subsurface soils, Synthetic Precipitation Leaching Procedure analysis of selected Site COCs, and completion of a thermal conductive heating bench-scale study.

The first performance monitoring event for the supplemental LNAPL investigation was conducted in May 2019; and continued with quarterly events through November 2020. Subsequent annual groundwater monitoring events performed at the Site included select performance monitoring wells in the annual monitoring network. Based on Site-wide groundwater measurements collected in October 2022, groundwater generally flows to the northeast and east across the Site in the residuum and Intermediate Ocala; however, groundwater flow in the Upper and Lower Ocala is multi-directional. Potentiometric highs and steeper horizontal flow gradients are observed in the eastern-southeastern area of the THAN property. These readings are consistent with the previous monitoring events.

In July 2022, the PRP submitted a Focused Feasibility Study (FFS) which summarized the evaluated remedial alternatives. The EPA provided comments and requested additional information in December 2022 and the EPA received a response to comments in January 2023. Based on the information contained in the FFS, the EPA is preparing an Amended ROD (AROD). The AROD is expected to be completed in fall of 2023.

## OU-1 Pilot Testing

A field-scale pilot test was conducted in February 2019 in accordance with the Draft Field-Scale Pilot Test Work Plan (AECOM, November 2018; AECOM, August 2019). The pilot test injection was conducted between February 11 and February 18, 2019. Direct push injection of EHC<sup>®</sup> *in-situ* chemical reduction (ISCR) Reagent as a slurry and in-well injection of GeoForm<sup>™</sup> Soluble as a solution was performed to stimulate ISCR and enhanced biodegradation of COCs. The injections were targeted into the weathered Ocala Limestone in two areas, Pilot Test Area A and Pilot Test Area B, which are outlined below:

- Pilot Test Area A: EHC<sup>®</sup> ISCR was emplaced in an area of approximately 25 ft by 25 ft via direct push, at depths ranging between 28 and 38 ft bgs in the weathered Ocala Limestone.
- Pilot Test Area B: GeoForm<sup>™</sup> Soluble was emplaced into existing groundwater monitoring wells, including PGW-01, PGW-03, and GB-09I, that are screened across the weathered Ocala Limestone.

After six quarters of performance monitoring events following the pilot test injections of February 2019, the following conclusions were drawn:

- Toxaphene, which is the primary chlorinated pesticide (CP), has reduced to below its performance standard (3 µg/L) in several wells of both Pilot Test Areas A and B. Other CPs and organochlorine pesticides (OCP) have also reduced to below their RSLs or performance standards at several wells. The November 2018 *Field-Scale Pilot Test Work Plan* had proposed the field-scale pilot testing of two different emplacement methodologies and two different injection amendments (EHC<sup>®</sup> for ISCR and GeoForm<sup>™</sup> Soluble for biogeochemical degradation). Even though both reagents were able to degrade OCPs, direct push injection of EHC<sup>®</sup> was determined to be a more successful emplacement methodology based on field observations, with the ability to degrade high concentration of OCPs and maintain reducing conditions in the subsurface for longer periods of time for continued OCP degradation. As OCPs do not show migration from the Site, the use of the EHC<sup>®</sup> slurry for targeted remediation may help degrade COCs faster than GeoForm<sup>™</sup> Soluble, which may be more suited for more dilute plumes.
- In both the pilot test areas, there were some decreases in total xylenes and ethylbenzene concentrations; however, the discovery of partitioning of xylenes from groundwater to soil in the bench-scale treatability study indicates that the apparent concentration reductions of xylenes in the field were now likely attributable to partitioning instead of degradation. Partitioning of OCPs between soil and groundwater was not observed in the bench-scale test; therefore, attenuation of OCPs observed in the field was confirmed as actual abiotic reduction of OCPs.
- Among the wells where OCP decreases have been observed, chloride concentrations have continued to increase compared to baseline, which is another indicator of possible reductive dechlorination of the OCPs versus dilution. Methane concentrations have continued to rise in all wells, even into the fifth and sixth monitoring events.
- The Mann-Kendall analyses performed for the performance wells also confirms decreasing trends in groundwater concentrations for several COCs. Increasing trends in wells PM-02 and GB-03D may be attributable to lateral and downward migration of COCs, respectively.

## OU-2 - Jones Parcel

The OU-2 PRP signed a Consent Decree on March 25, 1997, to conduct the remedial design and remedial action for surface and subsurface soil. The PRP completed the remedial design between June 1997 and September 1998 and completed the remedial action in January 2000. During remediation, an area of about 39 cubic yards of subsurface contaminated soil could not be excavated due to building structural concerns. The contaminated soil left in place increased the Sitewide average EDB concentration to 7 micrograms per kilogram ( $\mu\text{g}/\text{kg}$ ), which is above the 6  $\mu\text{g}/\text{kg}$  cleanup level set by the ROD. As a result, additional soil in an area adjacent to the building was thermally treated to provide the original, post-project EDB Sitewide average concentration for the soil remaining at the Site. It included staging and reconditioning of the soil, treatment of the soil using LTTD, placement of the treated soil back on the Site, periodic sampling of treated soil during the treatment process to verify the effectiveness of the remedy, and air monitoring to ensure the safety of nearby residents and workers.

In the summer of 2000, the PRP and the EPA conducted independent sampling to determine if contaminated soil remained at OU-2. The EPA estimated that 2,800 tons of contaminated soil remained above the cleanup level for EDB at a depth of between 12 and 16 feet in the formerly excavated area. The soil is covered by a minimum of 7 to 8 feet of clean soil thereby eliminating the exposure pathway. The remaining contaminated soil exceeds the leachability-based cleanup level of 0.006 milligrams per kilogram ( $\text{mg}/\text{kg}$ ) for EDB.

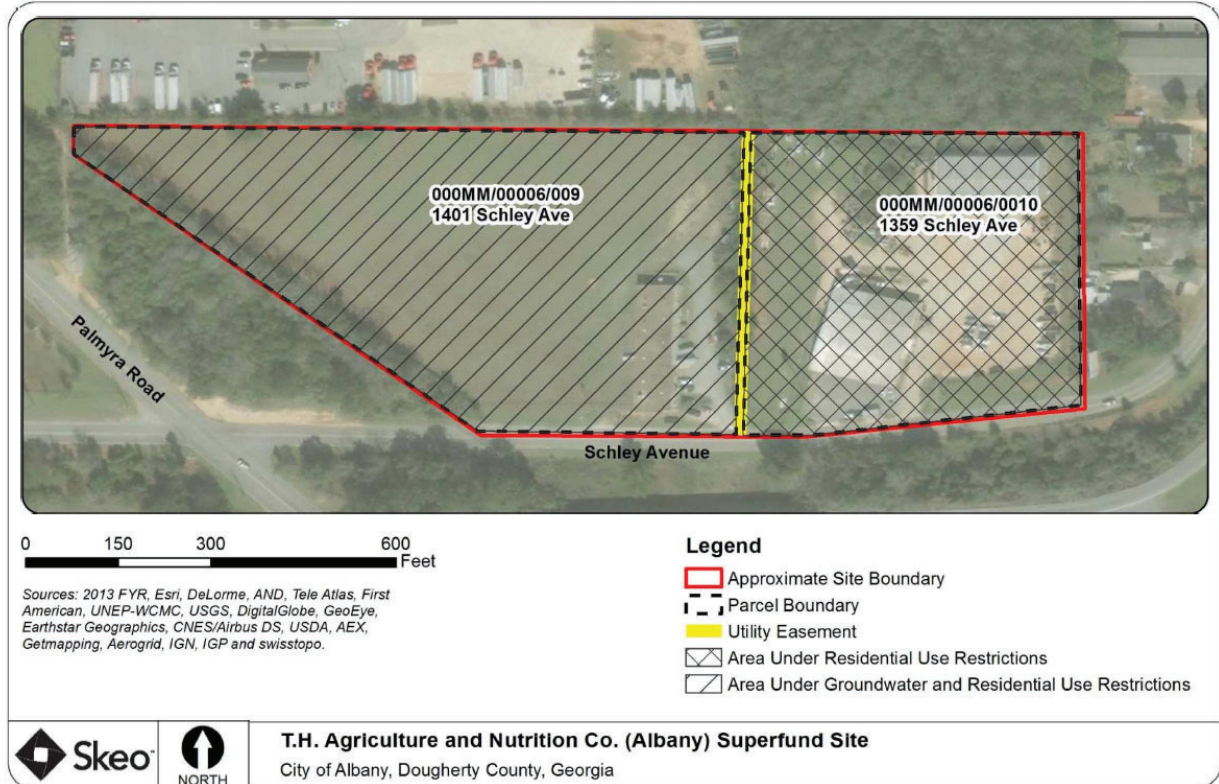
### **Institutional Controls**

EPA contractor staff conducted a review of the deed information at the Dougherty County Public Records Office in November 2017. Table 4 presents a summary of the status of the institutional controls and the deed documents recording them. In March 2015, THAN sold the property to VanCleave Builders, LLC; the sale included conveyance of easements and restrictions on record. The institutional control base map for the Site is included as Figure 2. As shown in Table 4, institutional controls restricting Sitewide groundwater use as required in the OU-1 ROD, need to be put in place for the Jones Parcel. In addition, institutional controls are needed on both the THAN and Jones Parcels to prevent the disturbance of subsurface soils. The OU-2 ROD did not require an institutional control for subsurface soil; therefore, EPA will memorialize the need to prevent disturbance of subsurface soils on the Jones Parcel in a decision document.

**Table 4: Summary of Institutional Controls (ICs) for OU-1 and OU-2**

<b>Media That Do Not Support UU/UE Based on Current Conditions</b>	<b>ICs Needed</b>	<b>ICs Called for in the Decision Documents</b>	<b>Impacted Parcel(s)</b>	<b>IC Objective</b>	<b>Title of IC Instrument Implemented and Filing Date</b>
OU-1 THAN Groundwater	Yes	Yes	000MM/00006 /009	Restrict use of groundwater	1997 Declaration of Restriction 11/14/1997
OU-1 Jones Groundwater	Yes	Yes	000MM/00006 /010	Restrict use of groundwater	None
OU-1 THAN Soil	Yes	Yes	000MM/00006 /009	Prohibit residential use	2002 First Amendment to the 1997 Declaration of Restriction 02/05/2002
				Prevent disturbance of subsurface soil	None
OU-2 Jones Soil	Yes	Yes	000MM/00006 /010	Prohibit residential use	1997 Notice of Consent Decree, Declaration of Restrictive Covenants and Grant of Access 09/29/1997
	Yes	No		Prevent disturbance of subsurface soils	None

**Figure 2: Institutional Control Map**



Disclaimer: This map and any boundary lines within the map are approximate and subject to change. The map is not a survey. The map is for informational purposes only regarding the EPA's response actions at the Site.

### Systems Operations & Maintenance (O&M)

THAN developed an O&M Plan in March 1997. The plan described system operating procedures, inspection and maintenance procedures, and monitoring and sampling activities for the Site. The 1993 ROD did not specify estimated O&M costs associated with the OU-1 remedy. The 1996 OU-2 ROD estimated OU-2 O&M costs at \$500,000. Annual groundwater monitoring events have been conducted since August 1993 in accordance with the May 1993 ROD. Future O&M needs should be evaluated and implemented once a final remedy is put in place.

### **III. PROGRESS SINCE THE PREVIOUS REVIEW**

This section includes the protectiveness determinations and statements from the previous FYR, as well as the recommendations from the previous FYR and the status of those recommendations.



**Table 5: Protectiveness Determinations/Statements from the 2018 FYR**

OU #	Protectiveness Determination	Protectiveness Statement
1	Short-term Protective	The remedy at OU-1 currently protects human health and the environment because contaminated surface soils have been removed, groundwater is not currently used at the Site, and institutional controls have been implemented restricting future groundwater use on the THAN parcel as well as prohibiting residential use of the Site. However, for the remedy to be protective in the long-term, the following actions need to be taken: complete an evaluation of alternative remedies, evaluate the need to update groundwater cleanup levels and document the decision in a decision document, and implement subsurface soil institutional controls, if warranted.
2	Short-term Protective	The remedy at OU-2 currently protects human health and the environment because there are no complete exposure pathways at this time. However, in order for the remedy to be protective in the long-term, implement groundwater and soil institutional controls, if warranted.

**Table 6: Status of Recommendations from the 2018 FYR**

OU	Issue	Recommendations	Current Status	Current Implementation Status Description	Completion Date (if Applicable)
1	The groundwater remedy has not been effective to date in significantly reducing contaminant concentrations below cleanup levels and toxicity values have become more stringent for some contaminants since cleanup levels were determined.	Complete an evaluation of alternative remedies, evaluate the need to update groundwater cleanup levels and document the decision in a decision document.	Complete	The 2022 Focused Feasibility Study evaluated several alternatives for the LNAPL area, and non-LNAPL (groundwater) area. The EPA is currently preparing an amended ROD which will select the revised remedy.	NA
1,2	Institutional controls required in the OU-1 ROD restricting Sitewide groundwater use have not been implemented at the Jones Parcel	Implement groundwater and soil institutional controls, if warranted.	Ongoing	The EPA continues to work with the PRP and property owners to implement groundwater institutional controls.	NA

#### IV. FIVE-YEAR REVIEW PROCESS

##### Community Notification, Involvement & Site Interviews

The EPA released a public notice on 10/19/2022. It stated that the FYR was underway and invited the public to submit any comments to the EPA (Appendix F). The results of the FYR and the report will be made available at the Site's webpage <https://www.epa.gov/superfund/t-h-agriculture> and can be accessed at the Dougherty County Public Library, 300 Pine Avenue, in Albany, Georgia.

During the FYR process, interviews were conducted to document any perceived problems or successes with the remedy that has been implemented to date. The results of these interviews are summarized below with copies of the interview forms in Appendix J.

Two individuals closely associated with the Site, either as property owners, representatives of the State (GAEPD), PRP Contractor (AECOM), or local governments (City of Albany), were interviewed. The interviewees stated that progress at the Site is proceeding well. None of the interviewees were aware of trespassing at the Site, or any complaints, violations, or incidents related to the Site.

### **Data Review**

This section summarizes current groundwater conditions. In 2022, the PRP gauged 73 monitoring wells for depth to water and presence or absence of LNAPL and sampled 47 of the 51 monitoring wells for volatile organic compounds (VOCs), organochlorine pesticides (OCP), EDB, 1,2-dibromo-3-chloropropane, chloride, and total organic carbon (TOC). The wells monitor the residuum and all three zones of the Ocala Limestone Aquifer (upper, intermediate, and lower) (figure 3).

### **Groundwater**

#### *Residuum and Upper Ocala Limestone*

**VOCs, CPs, and OCPs:** Among the sampled wells screened across both the residuum and the Upper Ocala aquifer (wells MW-03, MW-11, MW-47U, MW-48U, MW-N2, and PGW-01), the most exceedances above performance standards or RSLs were observed at MW-N2, which has historically shown high impacts and where LNAPL has historically been observed. This was followed by wells MW-47U and MW-48U, installed in January 2021, where high concentrations have also been related to the observation of LNAPL in these wells. Wells PGW-01 and MW-03 have lower concentrations of OCPs and VOCs, and MW-11 had no exceedances.

Among the wells screened only in the Upper Ocala Limestone aquifer, constituents were detected at concentrations exceeding the RSLs or performance standards in all wells except MW-17U, MW-18U, MW-25U, MW-27U, MW-28U, MW-30U, and MW-37U. These wells are located near the western periphery of the THAN property, near the eastern periphery of the Jones property, or outside the boundaries of both properties, away from the contaminated groundwater areas. The COCs with exceedances included 4,4'-DDD, Beta-BHC, Gamma-BHC, Dieldrin, Endrin, heptachlor epoxide, Toxaphene, EDB, 1,2-DCP, 2-butanone, Benzene, Ethylbenzene, M- & P-Xylene, O-Xylene, and total Xylenes.

**Toxaphene and Xylenes:** High concentrations of toxaphene and total xylenes in groundwater were primarily restricted to the LNAPL area on OU-1 and the western portion of the Jones property, with the highest concentration observed in well MW-N2, including toxaphene at 879 micrograms per liter ( $\mu\text{g/L}$ ) and total xylenes at 61,900  $\mu\text{g/L}$ . Both the toxaphene and total xylenes footprints have remained within the OU-1 property footprint, and no impacts were observed off-Site. The total xylenes concentrations were higher for the October 2022 event compared to November 2021 footprint; however, this is anticipated as air sparging activities of 2021 caused the dissolution of constituents from the LNAPL phase into groundwater.

#### *Intermediate Ocala Limestone*

Among the wells screened in the Intermediate Ocala Limestone aquifer, constituents were detected at concentrations exceeding the RSLs or performance standards in all wells except MW-42D. The exceedances include toxaphene, 4,4'-DDD, EDB, 1,2-DCP, benzene, ethylbenzene, m- & p-xylene,

o-xylene, and total xylenes. Toxaphene and total xylenes exceedances were observed at newer wells MW-44D and MW-46D, with toxaphene consistent with the 2021 monitoring event. The footprint of the toxaphene and xylenes plumes are similar to that observed during the 2021 monitoring event, with no impacts observed offsite.

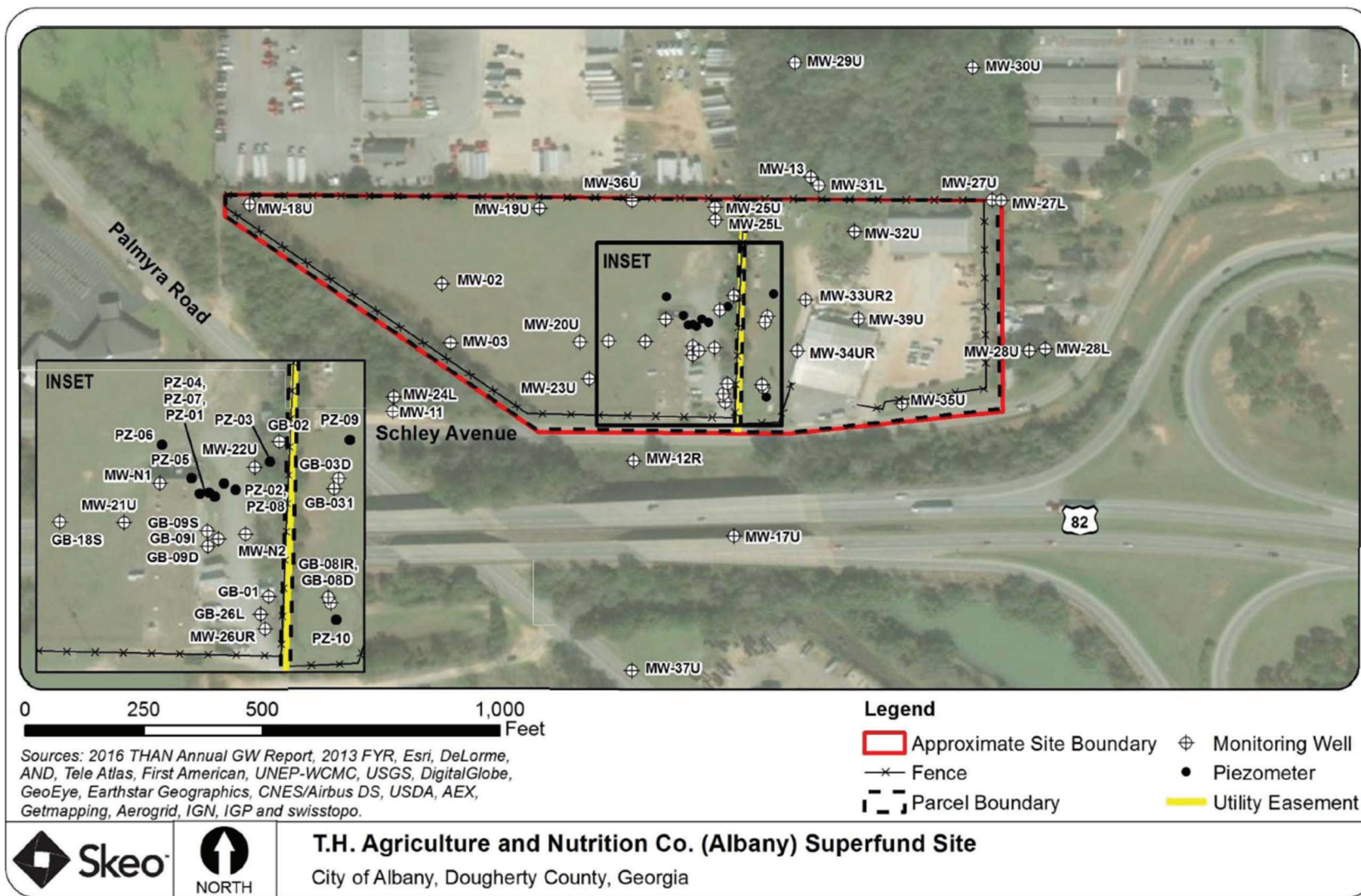
#### *Lower Ocala Limestone*

No constituents were detected in the groundwater samples from the Lower Ocala Limestone aquifer.

#### Concentration Trend Analysis

The Mann-Kendall analyses confirms mostly decreasing trends in groundwater concentrations of contaminants. In several Upper Ocala Limestone aquifer wells where the highest contaminant concentrations were detected, most of the concentration trends exhibited no trend due to data fluctuation in the Mann-Kendall test. The increasing and probably increasing Ethylbenzene and total xylenes concentration trends in the sampling data from well MW-N2 may be attributable to the presence of LNAPL in the well, which is a continuing source of Site contaminants. There may be a vertical downward gradient from GB-03I to GB-03D, causing its increasing trends for VOCs.

Figure 3: Monitoring Well Network



Disclaimer: This map and any boundary lines within the map are approximate and subject to change. The map is not a survey. The map is for informational purposes only regarding the EPA's response actions at the Site.

## **Site Inspection**

The Site inspection took place on December 1, 2022. The EPA RPM Christopher Jones led the inspection. GAEPD SPM John Williams and Tahsin Zahid, and PRP support contractor Felix Nchako from AECOM participated in the inspection. The purpose of the inspection was to see Site conditions and well locations. The Site inspection checklist and photographs are provided in Appendices D and E, respectively.

Site inspection participants met at the OU-1 THAN Parcel, located at 1401 Schley Avenue. Participants viewed monitoring well MW-N2, where LNAPL product has historically been observed. Participants observed the vegetative cover across the Site and location of TCH pilot studies. The vegetative cover appeared to be in good condition. No barren areas were observed, and vegetation appears to be well established. No trees are located within the cover area. Monitoring wells were locked and in good condition. The THAN parcel is fenced with locked gates. VanCleave Builders, LLC is currently operating in the building on the THAN parcel. There is a front office and warehouse area.

Participants viewed the easement between the OU-1 THAN Parcel and the Jones Parcel. It is fenced. Entry is prohibited by a locked gate. The easement is vegetated with trees as well as high shrubbery.

Site inspection participants proceeded to inspect the OU-2 Jones Parcel. Jones Welding and Industrial Supply continues to operate on Site. It is a busy operation with frequent entry and exit of vehicles. The Site was well maintained, and monitoring wells were in good condition. The parcel is fenced with a gate, but the gate was unlocked during the time of inspection.

Participants visited the designated Site repository, Dougherty County Public Library. Computers are available to access Site-related Documents are available at the site webpage <https://www.epa.gov/superfund/t-h-agriculture>.

## **V. TECHNICAL ASSESSMENT**

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

### **Question A Summary:**

The OU-1 groundwater remedy is not functioning as intended by the decision documents. In 2003, the operation of the groundwater treatment system ceased because groundwater COC concentrations within the plume had remained largely unchanged since the systems installation in 1997. The PRP submitted a FFS in 2022 which evaluated other alternatives based on previous pilot tests. The EPA is preparing an AROD to select a new remedy.

The 1996 OU-2 ROD indicated that institutional controls to prevent use of groundwater were addressed under the OU-1 remedy. Institutional controls restricting groundwater use have been put in place on the THAN Parcel. However, institutional controls restricting groundwater use have not yet been put in place on the Jones Parcel. In addition, based on the previous FYR, subsurface soil contamination remains at both the THAN and Jones Parcels above industrial use-based cleanup levels. Current institutional controls prevent only future residential use of the Site; they do not prevent disturbance of site soils. The EPA should continue to work with the Site's PRPs and property owners to record institutional controls to prevent future exposures to groundwater on the Jones Parcel and subsurface soil at both the Jones and THAN Parcels.

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?

**Question B Summary:**

Since the previous FYR, there have been no changes to the MCLs for either OU. In addition, there have been no changes in site conditions that would suggest the presence of new exposure pathways. Health-based groundwater and soil cleanup values were reviewed to determine if they remain valid based on current toxicity values. The health evaluation of soil cleanup levels indicate that the cleanup levels remain valid. However, evaluation of OU-1 groundwater cleanup levels shows that toxicity values have become more stringent for aldrin, alpha-BHC, beta-BHC, dieldrin and DDT, which indicate the cleanup levels are equivalent to a cancer risk greater than  $1.0 \times 10^{-4}$  or greater than a noncancer hazard quotient (HQ) of 1.0.

Although cleanup levels are less stringent for four of the groundwater COCs, the remedy remains protective in the short term because there is no exposure pathway. Groundwater is not currently used at the Site, and institutional controls have been implemented restricting future groundwater use on the THAN parcel as well as prohibiting residential use of the Site.

The EPA is currently preparing an AROD which will update cleanup levels and RAOs based on the more stringent toxicity values. The AROD is expected to be finalized later this year (2023).

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

No other information has come to light that could call into question the protectiveness of the remedy.

**VI. ISSUES/RECOMMENDATIONS**

Issues/Recommendations				
OU(s) without Issues/Recommendations Identified in the FYR:				
None				

**Issues and Recommendations Identified in the FYR:**

<b>OU(s): OU-1</b>	<b>Issue Category: Remedy Performance</b>			
	<b>Issue:</b> The groundwater remedy has not been effective to date in significantly reducing contaminant concentrations below cleanup levels and toxicity values have become more stringent for some contaminants since they were established in the 1993 ROD.			
	<b>Recommendation:</b> Complete an evaluation of alternative remedies, evaluate the need to update groundwater cleanup levels and document the decision in a decision document.			
<b>Affect Current Protectiveness</b>	<b>Affect Future Protectiveness</b>	<b>Party Responsible</b>	<b>Oversight Party</b>	<b>Milestone Date</b>
No	Yes	EPA	EPA/State	9/30/2023
<b>OU(s): OU-1 and OU-2</b>	<b>Issue Category: Institutional Controls</b>			
	<b>Issue:</b> Institutional controls required in the OU-1 ROD restricting sitewide groundwater use have not been implemented at the Jones Parcel. In addition, institutional controls to prevent disturbing contaminated subsurface soils at both the THAN and Jones Parcels have not been implemented and they are not called for in decision document at the Jones Parcel.			

	<b>Recommendation:</b> Memorialize the decision to prevent disturbance to OU-2 subsurface soils in a decision document and implement groundwater and soil institutional controls.			
<b>Affect Current Protectiveness</b>	<b>Affect Future Protectiveness</b>	<b>Party Responsible</b>	<b>Oversight Party</b>	<b>Milestone Date</b>
No	Yes	EPA	EPA/State	9/30/2023

**OTHER FINDINGS**

In addition, the following recommendations were identified during the FYR. These recommendations do not affect current and or future protectiveness:

- Future O&M needs should be evaluated and addressed once a final remedy is put in place.
- Reevaluate the vapor intrusion pathway, if appropriate.

**VII. PROTECTIVENESS STATEMENT**

<b>Protectiveness Statement(s)</b>	
<i>Operable Unit:</i> OU-1	<i>Protectiveness Determination:</i> Short-term Protective
<i>Protectiveness Statement:</i> The remedy at OU-1 currently protects human health and the environment because contaminated surface soils have been removed, groundwater is not currently used at the Site, and institutional controls have been implemented restricting future groundwater use on the THAN parcel as well as prohibiting residential use of the Site. The EPA is in the process of updating groundwater cleanup levels and selecting a remedy to achieve long-term protectiveness. These will be documented in a decision document (amended record of decision) and finalized later this year (2023).	

<b>Protectiveness Statement(s)</b>	
<i>Operable Unit:</i> OU-2	<i>Protectiveness Determination:</i> Short-term Protective
<i>Protectiveness Statement:</i> The remedy at OU-2 currently protects human health and the environment because ICs have been implemented and there are no complete exposure pathways at this time.	

**VIII. NEXT REVIEW**

The next FYR Report for the T.H. Agriculture & Nutrition Co. (Albany Plant) Superfund Site is required five years from the completion date of this review.

## APPENDIX A – REFERENCE LIST

Addendum to T.H. Agriculture and Nutrition (Albany) Five-Year Review Report. Dated September 9, 2008. United States Environmental Protection Agency Region 4. September 28, 2012.

Alternatives Analysis Report. Post-Remedial Action Conditions. T.H. Agriculture & Nutrition Site. Operable Unit 2. Albany. GA. Submitted by Boise Cascade Corporation. Submitted to the EPA Region 4. May 2001.

2017 Annual Groundwater Monitoring Report. T.H. Agriculture & Nutrition L.L.C., Albany. Georgia. Prepared by AECOM Environment. March 2018.

2018 Annual Groundwater Monitoring Report. T.H. Agriculture & Nutrition L.L.C., Albany, Georgia. Prepared by AECOM. April 2019.

2019 Annual Groundwater Monitoring Report. T.H. Agriculture & Nutrition L.L.C., Albany, Georgia. Prepared by AECOM. July 14, 2020.

2020 Annual Groundwater Monitoring Report. T.H. Agriculture & Nutrition L.L.C., Albany, Georgia. Prepared by AECOM. July 1, 2021.

2021 Annual Groundwater Monitoring Report. T.H. Agriculture & Nutrition L.L.C., Albany, Georgia. Prepared by AECOM. June 30, 2022.

2022 Annual Groundwater Monitoring Report. T.H. Agriculture & Nutrition L.L.C., Albany, Georgia. Prepared by AECOM. March 27, 2023.

Baseline Risk Assessment for the T.H. Agriculture & Nutrition Site. Albany, Georgia. Prepared by Woodward-Clyde Consultants. Prepared for T.H. Agriculture & Nutrition Company Inc., February 1992.

Draft Remedial Action Report. T.H. Agriculture & Nutrition Site. Operable Unit 2. Albany. GA. Prepared by focus Environmental. Prepared for Boise Cascade Corporation. Submitted to the EPA Region 4. February 24, 2000.

Explanation of Significant Differences. U.S. Environmental Protection Agency-Region 4. December 1995.

Feasibility Study Report. T.H. Agriculture & Nutrition Company Inc., Albany, Georgia Site. Prepared by Woodward-Clyde Consultants. Prepared for T.H. Agriculture & Nutrition Company Inc., February 1992.

Final Construction Report. Volumes 1 & 2. Prepared by Woodward-Clyde Consultants. Prepared for: TH Agriculture & Nutrition Company Inc., May 1997.

Final Report. Daramend Injection for In-Situ Bioremediation. T.H. Agriculture & Nutrition Site. Albany. Georgia. Prepared by URS Corporation. November 2007.

Five-Year Review Report for T.H. Agriculture & Nutrition. Operable Unit 1. Albany, Dougherty County, Georgia. Prepared by United States Environmental Protection Agency Region 4. March 2003. Signed September 4, 2003.



Five-Year Review Report for T.H. Agriculture & Nutrition. Operable Unit 2. Albany, Dougherty County, Georgia. Prepared by United States Environmental Protection Agency Region 4. January 31, 2006.

Five-Year Review Report for T.H. Agriculture & Nutrition. Sitewide. Albany, Dougherty County, Georgia. Prepared by E<sup>2</sup> Inc. Prepared for United States Environmental Protection Agency Region 4. September 9, 2008.

Five-Year Review Report for T.H. Agriculture & Nutrition. Sitewide. Albany, Dougherty County, Georgia. Prepared by Skeo Solutions. Prepared for United States Environmental Protection Agency Region 4. September 30, 2013.

Focused Feasibility Study Report. T.H. Agriculture & Nutrition Company Facility. Albany, Georgia. Prepared by AECOM. Prepared for United States Environmental Protection Agency Region 4. July 14, 2020.

Preliminary Remedial Investigation Report. T.H. Agriculture & Nutrition Company Facility. Albany, Georgia. Prepared by Woodward-Clyde Consultants. Prepared for T.H. Agriculture & Nutrition Company Inc., April 25, 1990.

Record of Decision. Summary of Remedial Alternative Selection. T.H. Agriculture & Nutrition Site. Operable Unit One. Albany, Dougherty County. Georgia. Prepared by U.S. Environmental Protection Agency Region 4. May 21, 1993.

Record of Decision. T.H. Agriculture & Nutrition Co. (Albany Plant). EPA ID: GAD042101261, OU-2. Albany, Georgia. April 26, 1996.

Remedial Investigation Report. Jones Property Site. Albany, Georgia. U.S. Environmental Protection Agency Region 4. Environmental Services Division. February 1995.

Removal Action Work Plan. Prepared by Woodward-Clyde Consultants. Prepared for T.H. Agriculture & Nutrition Company Inc., March 1992.

Removal Action Report - Thermal Desorption. T.H. Agriculture & Nutrition Co. Facility. Albany, Georgia. Focus Project No. 069206. Prepared by Focus Environment Inc. Prepared for T.H. Agriculture & Nutrition Company Inc., February 1994.

Review of Groundwater and Soil Contamination at the T.H. Agriculture and Nutrition Site. Albany, Georgia. Prepared by North Wind Inc., February 2006.

Summary of Pre-Final Construction Inspection. T.H. Agriculture & Nutrition Company Inc., Albany, Georgia. Sent from Woodward-Clyde Consultants. Sent to US. Environmental Protection Agency Region 4. September 3, 1996.

Supplemental LNAPL Investigation Report. T.H. Agriculture & Nutrition L.L.C., Albany, Georgia. Prepared by AECOM. December 2017.

Supplemental LNAPL Investigation Work Plan. T. H. Agriculture & Nutrition Site. Albany, Georgia. Prepared by AECOM May 2016.

Technical Memorandum. Data Analysis in Support of the FYR. Prepared by the EPA Region 4 Technical Support Section. September 2013.

Technical Memorandum. Exposure Assessment and Documentation. Prepared by Woodward-Clyde Consultants. Prepared for T.H. Agriculture & Nutrition Company Inc. June 1991.

Technical Memorandum. Industrial Use Scenario for the THAN-Albany, Georgia Facility. Prepared by Woodward-Clyde Consultants. Prepared for T.H. Agriculture & Nutrition Company Inc. November 1991.

Technical Memorandum. Preliminary Remedial Action Objectives. Prepared by Woodward-Clyde Consultants. Prepared for T.H. Agriculture & Nutrition Company Inc. January 1992.

Treatability Study and Rapid Optical Screening Tool Investigation Results. T.H. Agriculture & Nutrition Site. Albany, Georgia. Prepared by URS Corporation. Prepared for T.H. Agriculture & Nutrition L.L.C., March 21, 2003.

Work Plan for Enhanced In-Situ Bioremediation Treatment Pilot Test. T.H. Agriculture & Nutrition. L.L.C., Albany, Georgia. Prepared by URS Corporation. Prepared for USEPA Waste Division. August 7, 2003.

**APPENDIX B – CURRENT SITE STATUS**

<b>Environmental Indicators</b>
<i>- Current human exposures at the Site are under control. - Current groundwater migration is under control.</i>

<b>Are Necessary Institutional Controls in Place?</b>
<input type="checkbox"/> All <input checked="" type="checkbox"/> Some <input type="checkbox"/> None <i>Implementation of institutional controls restricting disturbance of subsurface soils at the Site is necessary. Implementation of institutional controls restricting groundwater use at the Jones Parcel and easement area is necessary.</i>

<b>Has the EPA Designated the Site as Sitewide Ready for Anticipated Use?</b>
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

<b>Has the Site Been Put into Reuse?</b>
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>VanCleave Builders, LLC operates on the THAN Parcel. The Jones family operates a welding and industrial supply business on the Jones Parcel</i>

## APPENDIX C – SITE CHRONOLOGY

EVENT	DATE
Site PRPs began removal action on THAN Parcel with GAEPD oversight	July 23, 1984
GAEPD performed preliminary assessment on THAN Parcel	August 1, 1984
Site PRPs completed removal action on THAN Parcel	September 26, 1984
The EPA conducted Site inspection	September 17, 1985
The EPA proposed Site for listing on NPL	June 24, 1988
The EPA finalized Site on NPL	March 31, 1989
The EPA issued Administrative Order on Consent for OU-1 Site PRPs initiated Site’s remedial investigation/feasibility study (RI/FS) for OU-1	July 6, 1990
Site PRPs completed baseline risk assessment	February 15, 1992
Site PRPs began removal action at OU-1	March 23, 1992
The EPA issued UAO for OU-1	March 30, 1992
Site PRPs began RI/FS for OU-2	January 20, 1993
Site PRPs completed RI/FS for OU-1 The EPA issued ROD for OU-1	May 21, 1993
The EPA issued UAO for OU-2	October 25, 1993
Site PRPs began remedial design for OU-1	November 1, 1993
Site PRPs completed OU-1 removal action	December 31, 1993
Site PRPs completed remedial design and began remedial action for OU-1	November 29, 1995
The EPA issued ESD for OU-1	December 1995
Site PRPs completed OU-2 RI/FS The EPA issued ROD for OU-2	April 26, 1996
Site PRPs began construction of OU-1 remedy	April 29, 1996
Site PRPs completed construction of OU-1 remedy	April 2, 1997
The Court enters Consent Decree for OU-2	March 25, 1997
Site PRPs began remedial design for OU-2	June 19, 1997
THAN filed restrictive covenant with Dougherty County	November 3, 1997
Site PRPs completed OU-2 remedial design Site PRPs began remedial action for OU-2	September 29, 1998
Site PRPs began construction of OU-2 remedy	August 9, 1999
Site PRPs completed construction of OU-2 remedy	January 3, 2000
The EPA identified laboratory irregularities for OU-2 soil samples	February 2000
Site PRPs conducted additional confirmatory soil sampling	Summer 2000
The Court enters Consent Decree for OU-1	May 28, 2002
Site PRPs discontinued use of groundwater treatment system	2003
The EPA signed first FYR Report for OU-1	September 4, 2003
Site PRPs began groundwater bioremediation pilot treatability study	October 2003
The EPA issued Administrative Order on Consent	October 2, 2003
The EPA issued Administrative Order on Consent	July 28, 2004
The EPA signed first FYR Report for OU-2	January 31, 2006
Site PRPs completed study reviewing contaminated subsurface soils at OU-2	March 2006
Site PRPs completed groundwater bioremediation pilot treatability study and submitted report to the EPA	November 2007
For the second FYR, the EPA combined OU-1 and OU-2 into a sitewide report. The EPA signed Site’s second FYR Report	September 9, 2008
The EPA signed Addendum to 2008 FYR	September 28, 2012
The EPA signed Site’s third FYR Report	September 30, 2013
The EPA approved LNAPL Work Plan to complete activities that will support remedy optimization	April, 2017
The EPA signed Site’s fourth FYR Report	July 18, 2018
2019 Annual and Performance Groundwater Monitoring Report	July 14, 2020

EVENT	DATE
Focused Feasibility Study Report	July 14, 2020
2020 Annual and Performance Groundwater Monitoring Report	July 1, 2021
GAEPD participated in Site visit with the EPA and AECOM	December 1, 2022
2022 Annual Groundwater Monitoring Report	March 27, 2023

**APPENDIX D – SITE INSPECTION CHECKLIST**

I. SITE INFORMATION													
<b>Site name: T.H. Agriculture &amp; Nutrition Co. (Albany Plant) Superfund Site</b>	<b>Date of inspection: December 1, 2022</b>												
<b>Location and Region: Albany, Georgia/Region 4</b>	<b>EPA ID: GAD042101261</b>												
<b>Agency, office, or company leading the five-year review: USEPA</b>	<b>Weather/temperature: 40/50's, Sunny</b>												
<b>Remedy Includes:</b> (Check all that apply) <table style="width: 100%; margin-left: 20px;"> <tr> <td><input type="checkbox"/> Landfill cover/containment</td> <td><input type="checkbox"/> Monitored natural attenuation</td> </tr> <tr> <td><input checked="" type="checkbox"/> Access controls</td> <td><input type="checkbox"/> Groundwater containment</td> </tr> <tr> <td><input checked="" type="checkbox"/> Institutional controls</td> <td><input type="checkbox"/> Vertical barrier walls</td> </tr> <tr> <td><input checked="" type="checkbox"/> Groundwater pump and treatment</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Surface water collection and treatment</td> <td></td> </tr> <tr> <td colspan="2"><input checked="" type="checkbox"/> Other: <u>OU-2 soil excavation and on-site low temperature thermal desorption</u></td> </tr> </table>		<input type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation	<input checked="" type="checkbox"/> Access controls	<input type="checkbox"/> Groundwater containment	<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls	<input checked="" type="checkbox"/> Groundwater pump and treatment		<input type="checkbox"/> Surface water collection and treatment		<input checked="" type="checkbox"/> Other: <u>OU-2 soil excavation and on-site low temperature thermal desorption</u>	
<input type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation												
<input checked="" type="checkbox"/> Access controls	<input type="checkbox"/> Groundwater containment												
<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls												
<input checked="" type="checkbox"/> Groundwater pump and treatment													
<input type="checkbox"/> Surface water collection and treatment													
<input checked="" type="checkbox"/> Other: <u>OU-2 soil excavation and on-site low temperature thermal desorption</u>													
<b>Attachments:</b> <input type="checkbox"/> Inspection team roster attached <input checked="" type="checkbox"/> Site map attached													
II. INTERVIEWS (Check all that apply)													
1. <b>O&amp;M Site manager</b>	<u>Felix Nchako</u> Name	<u>Project Manager</u> Title	_____ Date										
Interviewed <input type="checkbox"/> at Site <input type="checkbox"/> at office <input type="checkbox"/> by phone   Phone No. _____													
Problems, suggestions; <input type="checkbox"/> Report attached _____													
2. <b>O&amp;M staff</b>	_____ Name	_____ Title	_____ Date										
Interviewed <input type="checkbox"/> at Site <input type="checkbox"/> at office <input type="checkbox"/> by phone   Phone No. _____													
Problems, suggestions; <input type="checkbox"/> 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 USEPA Region 4

Contact	<u>Christopher Jones</u>	<u>RPM</u>	_____	_____
	Name	Title	Date	Phone No.

Problems; suggestions;  Report attached \_\_\_\_\_

Agency Georgia Environmental Protection Division

Contact	<u>John Williams</u>	<u>Project Manager</u>	_____	_____
	Name	Title	Date	Phone No.

Problems; suggestions;  Report attached \_\_\_\_\_

Agency Georgia Environmental Protection Division

Contact	<u>Tahsin Zahid</u>	<u>Project Manager</u>	_____	_____
	Name	Title	Date	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.	<b>O&amp;M Documents</b>	<input type="checkbox"/> O&M manual	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
		<input type="checkbox"/> As-built drawings	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
		<input type="checkbox"/> Maintenance logs	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
Remarks _____					
2.	<b>Site-Specific Health and Safety Plan</b>		<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
	<input type="checkbox"/> Contingency plan/emergency response plan		<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
Remarks _____					
3.	<b>O&amp;M and OSHA Training Records</b>		<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
Remarks _____					
4.	<b>Permits and Service Agreements</b>				
	<input type="checkbox"/> Air discharge permit		<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
	<input type="checkbox"/> Effluent discharge		<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
	<input type="checkbox"/> Waste disposal, POTW		<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
	<input type="checkbox"/> Other permits _____		<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
Remarks _____					
5.	<b>Gas Generation Records</b>		<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
Remarks _____					
6.	<b>Settlement Monument Records</b>		<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
Remarks _____					
7.	<b>Groundwater Monitoring Records</b>		<input checked="" type="checkbox"/> Readily available	<input checked="" type="checkbox"/> Up to date	<input type="checkbox"/> N/A
Remarks _____					
8.	<b>Leachate Extraction Records</b>		<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input checked="" type="checkbox"/> N/A
Remarks _____					



9. **Discharge Compliance Records**

Air  Readily available  Up to date  N/A

Water (effluent)  Readily available  Up to date  N/A

Remarks \_\_\_\_\_

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

Remarks \_\_\_\_\_

**IV. O&M COSTS**

1. **O&M Organization**

State in-house  Contractor for State

PRP in-house  Contractor for PRP

Federal Facility in-house  Contractor for Federal Facility

Other \_\_\_\_\_

2. **O&M Cost Records**

Readily available  Up to date  Unavailable

Funding mechanism/agreement in place

Original O&M cost estimate \_\_\_\_\_  Breakdown attached

Total annual cost by year for review period if available

From _____	To _____			<input type="checkbox"/> Breakdown attached
Date	Date	Total cost		
From _____	To _____			<input type="checkbox"/> Breakdown attached
Date	Date	Total cost		
From _____	To _____			<input type="checkbox"/> Breakdown attached
Date	Date	Total cost		
From _____	To _____			<input type="checkbox"/> Breakdown attached
Date	Date	Total cost		
From _____	To _____			<input type="checkbox"/> Breakdown attached
Date	Date	Total cost		

3.	<b>Unanticipated or Unusually High O&amp;M Costs During Review Period</b>	
Describe costs and reasons: NA		
<b>V. ACCESS AND INSTITUTIONAL CONTROLS</b> <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A		
<b>A. Fencing</b>		
1.	<b>Fencing damaged</b> <input type="checkbox"/> Location shown on Site map <input type="checkbox"/> Gates secured <input checked="" type="checkbox"/> N/A	
Remarks _____		
<b>B. Other Access Restrictions</b>		
1.	<b>Signs and other security measures</b> <input type="checkbox"/> Location shown on Site map <input checked="" type="checkbox"/> N/A	
Remarks _____		
<b>C. Institutional Controls (ICs)</b>		
1.	<b>Implementation and enforcement</b>	
Site conditions imply ICs not properly implemented <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		
Site conditions imply ICs not being fully enforced <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		
Type of monitoring ( <i>e.g.</i> , self-reporting, drive by) _____		
Frequency _____		
Responsible party/agency _____		
Contact _____		
	Name	Title
		Date no.
		Phone
Reporting is up-to-date <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Reports are verified by the lead agency <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Specific requirements in deed or decision documents have been met <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		
Violations have been reported <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Other problems or suggestions: <input type="checkbox"/> Report attached		
_____		
2.	<b>Adequacy</b> <input checked="" type="checkbox"/> ICs are adequate <input type="checkbox"/> ICs are inadequate <input type="checkbox"/> N/A	
Remarks _____		

<b>D. General</b>			
1.	<b>Vandalism/trespassing</b>	<input type="checkbox"/> Location shown on Site map	<input checked="" type="checkbox"/> No vandalism evident
Remarks _____			
2.	<b>Land use changes on Site</b>	<input checked="" type="checkbox"/> N/A	
Remarks _____			
3.	<b>Land use changes off Site</b>	<input checked="" type="checkbox"/> N/A	
Remarks _____			
<b>VI. GENERAL SITE CONDITIONS</b>			
<b>A. Roads</b> <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			
1.	<b>Roads damaged</b>	<input type="checkbox"/> Location shown on Site map	<input type="checkbox"/> Roads adequate <input type="checkbox"/> N/A
Remarks _____			
<b>B. Other Site Conditions</b>			
Remarks _____			
<b>VII. LANDFILL COVERS</b> <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			
<b>VIII. VERTICAL BARRIER WALLS</b> <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			
<b>IX. GROUNDWATER/SURFACE WATER REMEDIES</b> <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A			
<b>A. Groundwater Extraction Wells, Pumps, and Pipelines</b> <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A			
1.	<b>Pumps, Wellhead Plumbing, and Electrical</b>		
<input checked="" type="checkbox"/> Good condition <input type="checkbox"/> All required wells properly operating <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A			
Remarks: <u>The pump and treat system is not operating. Planning is underway to select a new remedy.</u>			
2.	<b>Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances</b>		
<input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance			
Remarks _____			
3.	<b>Spare Parts and Equipment</b>		
<input type="checkbox"/> Readily available <input type="checkbox"/> Good condition <input type="checkbox"/> Requires upgrade <input type="checkbox"/> Needs to be provided			
Remarks _____			
<b>B. Surface Water Collection Structures, Pumps, and Pipelines</b> <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			

1.	<b>Collection Structures, Pumps, and Electrical</b> <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____
2.	<b>Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances</b> <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____
3.	<b>Spare Parts and Equipment</b> <input type="checkbox"/> Readily available <input type="checkbox"/> Good condition <input type="checkbox"/> Requires upgrade <input type="checkbox"/> Needs to be provided Remarks _____
<b>C. Treatment System</b> <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A	
1.	<b>Treatment Train</b> (Check components that apply) <input type="checkbox"/> Metals removal <input type="checkbox"/> Oil/water separation <input type="checkbox"/> Bioremediation <input type="checkbox"/> Air stripping <input type="checkbox"/> Carbon adsorbers <input type="checkbox"/> Filters _____ <input type="checkbox"/> Additive ( <i>e.g.</i> , chelation agent, flocculent) _____ <input type="checkbox"/> Others _____ <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> Sampling ports properly marked and functional <input type="checkbox"/> Sampling/maintenance log displayed and up to date <input type="checkbox"/> Equipment properly identified <input type="checkbox"/> Quantity of groundwater treated annually _____ <input type="checkbox"/> Quantity of surface water treated annually _____ Remarks _____
2.	<b>Electrical Enclosures and Panels</b> (properly rated and functional) <input type="checkbox"/> N/A <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance Remarks _____

3. **Tanks, Vaults, Storage Vessels**  
 N/A       Good condition       Proper secondary containment       Needs Maintenance  
 Remarks \_\_\_\_\_

4. **Discharge Structure and Appurtenances**  
 N/A       Good condition       Needs Maintenance  
 Remarks \_\_\_\_\_

5. **Treatment Building(s)**  
 N/A       Good condition (esp. roof and doorways)       Needs repair  
 Chemicals and equipment properly stored  
 Remarks \_\_\_\_\_

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

**D. Monitoring Data**

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

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

**E. Monitored Natural Attenuation**

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

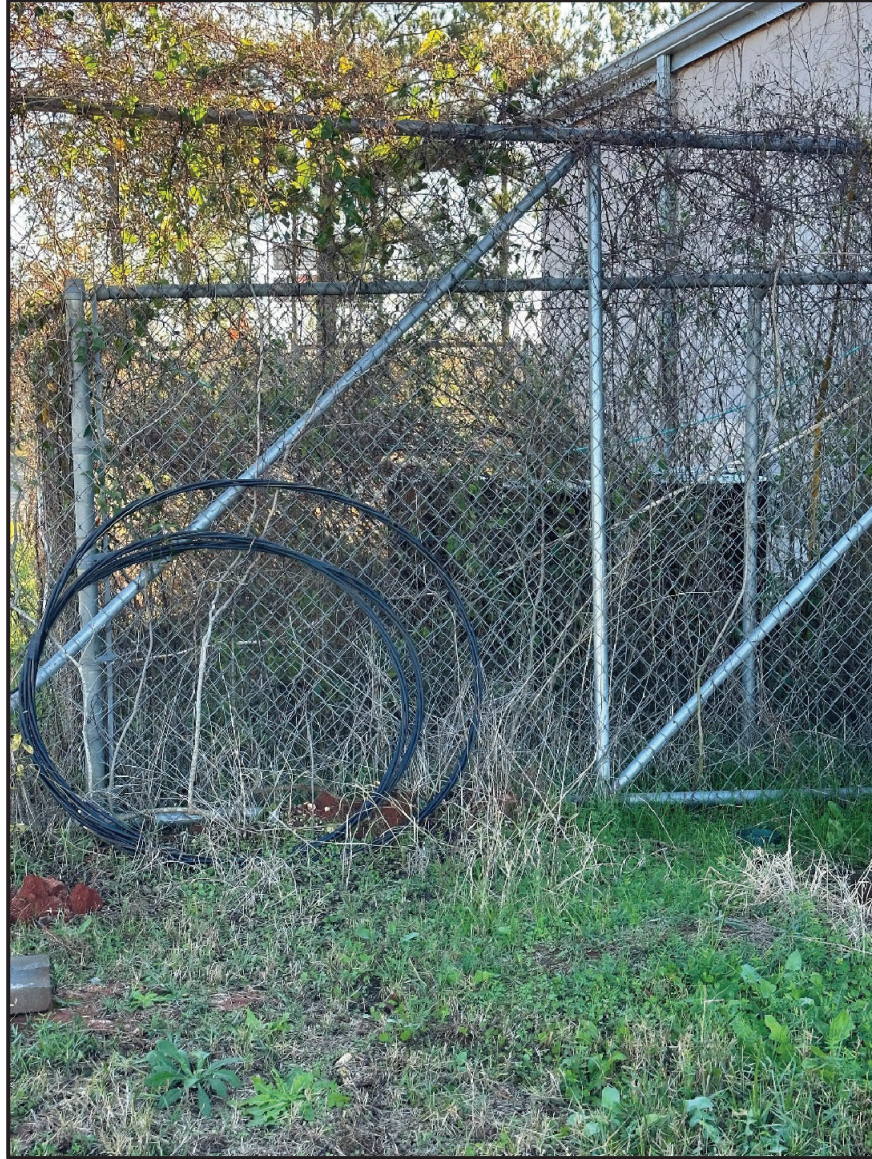
**X. OTHER REMEDIES**

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.

**XI. OVERALL OBSERVATIONS**

<p><b>A. Implementation of the Remedy</b></p>
<p>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.).</p> <p>The remedy was designed to remove contamination from both soil and groundwater and has not been effective at achieving the cleanup levels established in the Sites’s decisions documents. For OU-1 soil contamination has been addressed through two removal actions. Groundwater treatment was selected to address sitewide groundwater contamination. The treatment system proved ineffective, and operation of the system ended in 2003. The PRP conducted a bioremediation pilot project to address groundwater contamination through injections instead of groundwater extraction and treatment but demonstrated bioremediation was ineffective. The PRP completed a pilot study using TCH that appears to be effective in reducing groundwater and soil contamination. The PRP prepared a Supplemental LNAPL Investigation Work Plan in May 2016. The first performance monitoring event for the supplemental LNAPL investigation was conducted in May 2019; and continued with quarterly events through November 2020. In July 2022, the PRP submitted a Focused Feasibility Study (FFS) which summarized the evaluated remedial alternatives. Based on the information contained in the FFS, the EPA is preparing an Amended ROD (AROD). The AROD is expected to be completed in fall of 2023.</p>
<p><b>B. Adequacy of O&amp;M</b></p>
<p>Describe issues and observations related to the implementation and scope of O&amp;M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.</p> <p>None</p>
<p><b>C. Early Indicators of Potential Remedy Problems</b></p>
<p>Describe issues and observations such as unexpected changes in the cost or scope of O&amp;M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.</p> <p>None</p>
<p><b>D. Opportunities for Optimization</b></p>
<p>Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.</p> <p>A summary of site remedy alternatives technologies has been evaluated and the EPA is preparing an AROD. The AROD is anticipated to be finalized later this year.</p>

**APPENDIX E – SITE INSPECTION PHOTOS**



**PHOTOGRAPH No. 1**

**Site Name:** T.H Agriculture & Nutrition (THAN) Albany

**Photographer:** Tahsin Zahid, Georgia Department of Environmental Protection (GA EPD)

**Date:** 12/1/2022

**Witness:** John Williams, GA EPD

**Description:** IDW properly stored on the THAN parcel



**PHOTOGRAPH No. 2**

**Site Name:** THAN Albany

**Photographer:** Tahsin Zahid, GA EPD

**Date:** 12/1/2022

**Witness:** John Williams, GA EPD

**Description:** Tank storage in the rear portion of the Jones parcel





**PHOTOGRAPH No. 3**

**Site Name:** THAN Albany

**Photographer:** Tahsin Zahid, GA EPD

**Date:** 12/1/2022

**Witness:** John Williams, GA EPD

**Description:** Additional tank storage in the rear of the Jones parcel



**PHOTOGRAPH No. 4**

**Site Name:** THAN Albany

**Photographer:** Tahsin Zahid, GA EPD

**Date:** 12/1/2022

**Witness:** John Williams, GA EPD

**Description:** Locked and secured monitoring well on the THAN parcel



**PHOTOGRAPH No. 5**

**Site Name:** THAN Albany

**Photographer:** Tahsin Zahid, GA EPD

**Date:** 12/1/2022

**Witness:** John Williams, GA EPD

**Description:** Properly locked monitoring well in the THAN parcel



**PHOTOGRAPH No. 6**

**Site Name:** THAN Albany

**Photographer:** Tahsin Zahid, GA EPD

**Date:** 12/1/2022

**Witness:** John Williams, GA EPD

**Description:** Rear portion of the THAN parcel, with monitoring wells visible.



**PHOTOGRAPH No. 7**

**Site Name:** THAN Albany

**Photographer:** Tahsin Zahid, GA EPD

**Date:** 12/1/2022

**Witness:** John Williams, GA EPD

**Description:** Unlocked utility gate to the easement area between the two parcels.



**PHOTOGRAPH No. 8**

**Site Name:** THAN Albany

**Photographer:** Tahsin Zahid, GA EPD

**Date:** 12/1/2022

**Witness:** John Williams, GA EPD

**Description:** VanCleave Builders on the THAN parcel

## APPENDIX F –PRESS NOTICE



### EPA to Review Cleanups at 45 Southeast Superfund Sites

Contact Information: [region4press@epa.gov](mailto:region4press@epa.gov), 404-562-8400

**ATLANTA (Oct. 19, 2022)** – Today, the U.S. Environmental Protection Agency (EPA) announced that comprehensive reviews will be conducted of completed cleanup work at 45 National Priority List (NPL) Superfund sites in the Southeast.

The sites, located in Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee, will undergo a legally required Five-Year Review to ensure that previous remediation efforts at the sites continue to protect public health and the environment.

"The Southeast Region will benefit tremendously from the full restoration of Superfund sites, which can become valuable parts of the community landscape," **said the EPA Region 4 Administrator Daniel Blackmon**. "The Five-Year Review evaluations ensure that remedies put in place to protect public health remain effective over time."

The Superfund Sites where the EPA will conduct Five-Year Reviews in 2022 are listed below. The web links provide detailed information on site status as well as past assessment and cleanup activity. Once the Five-Year Review is complete, its findings will be posted in a final report at <https://www.epa.gov/superfund/search-superfund-five-year-reviews>.

#### Alabama

Alabama Army Ammunition Plant <https://www.epa.gov/superfund/alabama-army-ammunition-plant>

Alabama Plating Company, Inc. <https://www.epa.gov/superfund/alabama-plating-co>

Mowbray Engineering Co. <https://www.epa.gov/superfund/mowbray-engineering>

US NASA Marshall Space Flight Center

US Army/NASA Redstone Arsenal <https://www.epa.gov/superfund/redstone-arsenal>

#### Florida

ALARIC Area GW Plume <https://www.epa.gov/superfund/alaric-area-groundwater-plume>

Beulah Landfill <https://www.epa.gov/superfund/beulah-landfill>

Chevron Chemical Co. (Ortho Division) <https://www.epa.gov/superfund/chevron-chemical-company>

Florida Petroleum Reprocessors <https://www.epa.gov/superfund/florida-petroleum-reprocessors>

Miami Drum Services <https://www.epa.gov/superfund/miami-drum-services>

Pensacola Naval Air Station <https://www.epa.gov/superfund/naval-air-station-pensacola>

Raleigh Street Dump <https://www.epa.gov/superfund/raleigh-street-dump>

Taylor Road Landfill <https://www.epa.gov/superfund/taylor-road-landfill>

Tower Chemical Co. <https://www.epa.gov/superfund/tower-chemical-company>

### **Georgia**

Alternate Energy Resources Inc. <https://www.epa.gov/superfund/alternate-energy-resources>

Peach Orchard & Nutrition Co. Rd PCE Groundwater Plume Site <https://www.epa.gov/superfund/peach-orchard-road-pce-plume>

Powersville Site <https://www.epa.gov/superfund/powersville-site>

T.H. Agriculture & Nutrition Co (Albany Plant) <https://www.epa.gov/superfund/t-h-agriculture>

### **Kentucky**

A.L. Taylor (Valley of the Drums) <https://www.epa.gov/superfund/al-taylor-valley-of-drums>

Brantley Landfill <https://www.epa.gov/superfund/brantley-landfill>

Distler Brickyard <https://www.epa.gov/superfund/distler-brickyard>

Distler Farm <https://www.epa.gov/superfund/lee-lane-landfill/distler-farm>

Lee's Lane Landfill <https://www.epa.gov/superfund/lee-lane-landfill>

National Electric Coil Co./Cooper Industries <https://www.epa.gov/superfund/national-electric-coil-cooper-industries>

Tri City Disposal Co. <https://www.epa.gov/superfund/tri-city-disposal>

### **North Carolina**

ABC One Hour Cleaners <https://www.epa.gov/superfund/abc-one-hour-cleaners>

Aberdeen Pesticide Dumps <https://www.epa.gov/superfund/aberdien-contaminated-groundwater>

Benfield Industries, Inc. <https://www.epa.gov/superfund/benfield-industries>

Cherry Point Marine Corps Air Station <https://www.epa.gov/superfund/cherry-point-marine-corps>

CTS of Ashville, Inc. <https://www.epa.gov/superfund/cts-millsgap>

GEIGY Chemical Corp (Aberdeen Plant) <https://www.epa.gov/superfund/ciba-geigy-corporation>

Gurley Pesticide Burial <https://www.epa.gov/superfund/gurley-pesticide-burial>

North Carolina State University (Lot 86, Farm Unit #1) <https://www.epa.gov/superfund/north-carolina-state-university>

Sigmon's Septic Tank Service <https://www.epa.gov/superfund/sigmon-septic-tank>

### **South Carolina**

Admiral Home Appliances <https://www.epa.gov/superfund/admiral-home-appliances>

Beaunit Corp (Circular Knit & Dyeing Plant) <https://www.epa.gov/superfund/beaunit>

Carolawn Inc. <https://www.epa.gov/superfund/carolawn>



Elmore Waste Disposal <https://www.epa.gov/superfund/elmore-waste-disposal>

International Minerals and Chemicals (IMC) <https://www.epa.gov/superfund/imc>

## Tennessee

Mallory Capacitor Co. <https://www.epa.gov/superfund/mallory-capacitor>

Memphis Defense Depot (DLA) <https://www.epa.gov/superfund/memphis-defense-depot>

## Background

Throughout the process of designing and constructing a cleanup at a hazardous waste site, the EPA's primary goal is to make sure the remedy will be protective of public health and the environment. At many sites, where the remedy has been constructed, the EPA continues to ensure it remains protective by requiring reviews of cleanups every five years. It is important for the EPA to regularly check on these sites to ensure the remedy is working properly. These reviews identify issues (if any) that may affect the protectiveness of the completed remedy and, if necessary, recommend action(s) necessary to address them.

There are many phases of the Superfund cleanup process including considering future use and redevelopment at sites and conducting post cleanup monitoring of sites. The EPA must ensure the remedy is protective of public health and the environment and any redevelopment will uphold the protectiveness of the remedy into the future.

The Superfund program, a federal program established by Congress in 1980, investigates and cleans up the most complex, uncontrolled or abandoned hazardous waste sites in the country and endeavors to facilitate activities to return them to productive use. In total, there are more than 280 Superfund sites across the Southeast.

## More information:

EPA's Superfund program: <https://www.epa.gov/superfund>

###

EPA.GOV



Kalama Specialty Chemicals <https://www.epa.gov/superfund/kalama-specialty-chemicals>

Koppers Company, Inc. (Charleston Plant) <https://www.epa.gov/superfund/koppers-charleston-plant>

Savannah River Site (USDOE) <https://www.epa.gov/superfund/savannah-river-site>

SCRDI Bluff Road <https://www.epa.gov/superfund/scr-di-dixiana>

**APPENDIX G – DETAILED APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENT (ARARs) REVIEW**

CERCLA Section 121(d)(1) requires that Superfund remedial actions attain “a degree of cleanup of hazardous substance, pollutants, and contaminants released into the environment and of control of further release at a minimum which assures protection of human health and the environment.” The remedial action must achieve a level of cleanup that at least attains those requirements that are legally applicable or relevant and appropriate. In performing the FYR for compliance with applicable or relevant and appropriate requirements (ARARs), only those ARARs that address the protectiveness of the remedy are reviewed.

*Groundwater ARARs*

The 1993 ROD identified federal MCLs under the Safe Drinking Water Act (SDWA) as ARARs for two of the seven groundwater COCs. Cleanup levels were based on the MCLs, and when primary MCLs were unavailable, health-based levels were established as the cleanup levels. These health-based values are further discussed in Appendix I. As shown in Table G-1 there have been no changes to the primary MCLs for EDB or Toxaphene.

**Table G-1: Previous and Current ARARs for Groundwater COCs**

COCs <sup>a</sup>	1993 ARARs <sup>c</sup> (µg/L)	Current ARARs (µg/L)	ARAR Change
Aldrin	NA	NA	NA
EDB <sup>b</sup>	0.05	0.05	None
Alpha-Hexachlorocyclohexane (BHC)	NA	NA	NA
Beta-BHC	NA	NA	NA
Dichlorodiphenyltrichloroethane (DDT)	NA	NA	NA
Dieldrin	NA	NA	NA
Toxaphene	3	3	None
Notes:			
a.	COCs from 1993 ROD		
b.	Also known as ethylene dibromide or 1,2-dibromoethane		
c.	Based on the SDWA primary MCL. Current SDWA standards can be found at: <a href="https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations#one">https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations#one</a> (accessed on 5/12/2023)		
COC	Contaminant of Concern		
MCL	Maximum Contaminant Level		
ROD	Record of Decision		
SDWA	Safe Drinking Water Act		
µg/L	Micrograms per liter		

*Soil ARARs*

There are no chemical-specific soil ARARs for the Site identified in the decision documents for either OU-1 or OU-2.

APENDIX H – DATA REVIEW TABLES

Table H-1  
Off-Site Wells Monitoring the Upper Ocala Aquifer Zone  
Organochlorine Pesticide Results

Chemical Name	USEPA RSL for Tapwater (µg/L)	Performance Standards for GW (µg/L)	MW-02		MW-03		MW-11		MW-22U		MW-23U		MW-26UR	
			Result	Data Qualifiers	Result	Data Qualifiers	Result	Data Qualifiers	Result	Data Qualifiers	Result	Data Qualifiers	Result	Data Qualifiers
Organochlorine Pesticides (Method SW-846 8081B) µg/L														
4,4'-DDD	0.032	--	<0.00534		<0.00534		<0.00534		<0.00534		<0.107		<b>0.0663</b>	
4,4'-DDE	0.046	--	<0.00295		<0.00295		<0.00295		<0.00295		<0.0590		<0.00295	
4,4'-DDT	--	27	<0.00690		<0.00690		<0.00690		<b>0.418</b>		<0.138		<0.00690	
Aldrin	--	0.54	<0.00356		<0.00356		<0.00356		<0.00356		<0.0712		<0.00356	
alpha-BHC	--	4.1	<0.00238		<b>0.741</b>		<0.00238		<b>1.9</b>		<b>2.18</b>		<0.00238	
alpha-Chlordane (cis)	--	--	<0.00367		<0.00367		<0.00367		<0.00367		<0.0734		<0.00367	
beta-BHC	--	5.1	<b>7.87</b>		<b>10.2 J</b>		<0.00366		<b>0.615 J</b>		<b>21.6</b>		<b>0.453</b>	
delta-BHC	--	--	<0.00643		<b>0.411</b>		<0.00643		<b>0.524</b>		<0.129		<0.00643	
Dieldrin	--	0.57	<b>0.357</b>		<b>0.178</b>		<b>0.0811</b>		<0.00274		<b>1.57</b>		<b>0.181</b>	
Endosulfan I	--	--	<0.00685		<0.00685		<0.00685		<0.00685		<0.137		<0.00685	
Endosulfan II	--	--	<0.00316		<0.00316		<0.00316		<0.00316		<0.0632		<0.00316	
Endosulfan sulfate	--	--	<0.00638		<0.00638		<0.00638		<0.00638		<0.128		<0.00638	
Endrin	2	--	<0.00228		<0.00228		<0.00228		<0.00228		<0.0456		<b>0.0708 J</b>	
Endrin aldehyde	--	--	<0.00519		<0.00519		<0.00519		<0.00519		<0.104		<0.00519	
Endrin ketone	--	--	<b>0.127</b>		<0.00395		<0.00395		<0.00395		<0.0790		<0.00395	
gamma-BHC (Lindane)	0.2	--	<0.00293		<b>0.0357</b>		<0.00293		<0.00293		<b>0.877</b>		<0.00293	
gamma-Chlordane (trans)	--	--	<0.00409		<0.00409		<0.00409		<0.00409		<0.0818		<0.00409	
Heptachlor	0.4	--	<0.00452		<0.00452		<0.00452		<0.00452		<0.0904		<0.00452	
Heptachlor epoxide	0.2	--	<0.00341		<0.00341		<0.00341		<0.00341		<0.0682		<0.00341	
Methoxychlor	40	--	<0.00775		<0.00775		<0.00775		<0.00775		<0.155		<0.00775	
Toxaphene	--	3	<b>8.77</b>		<b>13.2</b>		<0.491		<b>14.4 NJ</b>		<9.82		<b>9.61</b>	

Notes:

- Not applicable
- \* MW-35U not sampled as inaccessible and MW-12 not sampled due to damage.
- DUP Duplicate
- GW Groundwater
- ID Identification
- J The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.
- mg/L milligrams per liter
- NJ The analyte was tentatively identified. The associated numerical value is the approximate concentration of the analyte in the sample.
- RSL Regional Screening Level
- U The analyte was qualified as non-detect at a higher detection limit
- UJ The analyte was not detected; however, the reported quantitation limit is approximated and may be inaccurate or imprecise.
- µg/L Micrograms per liter
- USEPA United States Environmental Protection Agency
- BOLD Values indicate that the analyte was detected above the laboratory reporting limit.
- BOLD Values indicate that the analyte exceeded the laboratory reporting limit and the USEPA RSL for tapwater/Performance Standard for Groundwater.

**Table H-1**  
**Off-Site Wells Monitoring the Upper Ocala Aquifer Zone**  
**Organochlorine Pesticide Results**

		Sample ID <sup>a</sup>	MW-27U		MW-28U		MW-36U		MW-37U		MW-39U		MW-N2	
		Date	10/18/2022		10/19/2022		10/19/2022		10/18/2022		10/19/2022		10/25/2022	
Chemical Name	USEPA RSL for Tapwater (µg/L)	Performance Standards for GW (µg/L)	Result	Data Qualifiers	Result	Data Qualifiers	Result	Data Qualifiers	Result	Data Qualifiers	Result	Data Qualifiers	Result	Data Qualifiers
			<b>Organochlorine Pesticides (Method SW-846 8081B) µg/L</b>											
4,4'-DDD	0.032	--	<0.00534		<0.00534		<0.0534		<0.00534		<0.00534			<b>39.2</b>
4,4'-DDE	0.046	--	<0.00295		<0.00295		<0.0295		<0.00295		<0.00295			<0.738
4,4'-DDT	--	27	<0.00690		<0.00690		<0.0690		<0.00690		<0.00690			<b>19.6 NJ</b>
Aldrin	--	0.54	<0.00356		<0.00356		<0.0356		<0.00356		<0.00356			<0.890
alpha-BHC	--	4.1	<0.00238		<0.00238		<0.0238		<0.00238		<0.00238			<b>9.81</b>
alpha-Chlordane (cis)	--	--	<0.00367		<0.00367		<0.0367		<0.00367		<0.00367			<0.918
beta-BHC	--	5.1	<0.00366		<0.00366		9.69		<0.00366		<b>0.371</b>			3.13 U
delta-BHC	--	--	<0.00643		<0.00643		<0.0643		<0.00643		<0.00643			<b>3.03 J</b>
Dieldrin	--	0.57	<0.00274		<0.00274		0.0502	J	<0.00274		<0.00274			<0.685
Endosulfan I	--	--	<0.00685		<0.00685		<0.0685		<0.00685		<0.00685			<b>20.9</b>
Endosulfan II	--	--	<0.00316		<0.00316		<0.0316		<0.00316		<0.00316			<0.790
Endosulfan sulfate	--	--	<0.00638		<0.00638		<0.0638		<0.00638		<0.00638			<b>4.37 NJ</b>
Endrin	2	--	<0.00228		<0.00228		<0.0228		<0.00228		<b>0.115 NJ</b>			<0.570
Endrin aldehyde	--	--	<0.00519		<0.00519		<0.0519		<0.00519		<0.00519			<1.30
Endrin ketone	--	--	<0.00395		<0.00395		<0.0395		<0.00395		<b>0.127</b>			<0.988
gamma-BHC (Lindane)	0.2	--	<0.00293		<0.00293		<0.0293		<0.00293		<0.00293			<b>2.97 J</b>
gamma-Chlordane (trans)	--	--	<0.00409		<0.00409		<0.0409		<0.00409		<0.00409			<1.02
Heptachlor	0.4	--	<0.00452		<0.00452		<0.0452		<0.00452		<0.00452			<1.13
Heptachlor epoxide	0.2	--	<0.00341		<0.00341		<0.0341		<0.00341		<0.00341			<0.853
Methoxychlor	40	--	<0.00775		<0.00775		<0.0775		<0.00775		<0.00775			<1.94
Toxaphene	--	3	<0.491		<0.491		<4.91		<0.491		<b>10.5</b>			<b>879</b>

Notes:

- Not applicable
- \* MW-35U not sampled as inaccessible and MW-12 not sampled due to damage.
- DUP Duplicate
- GW Groundwater
- ID Identification
- J The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.
- mg/L milligrams per liter
- NJ The analyte was tentatively identified. The associated numerical value is the approximate concentration of the analyte in the sample.
- RSL Regional Screening Level
- U The analyte was qualified as non-detect at a higher detection limit
- UJ The analyte was not detected; however, the reported quantitation limit is approximated and may be inaccurate or imprecise.
- µg/L Micrograms per liter
- USEPA United States Environmental Protection Agency
- BOLD** Values indicate that the analyte was detected above the laboratory reporting limit.
- BOLD** Values indicate that the analyte exceeded the laboratory reporting limit and the USEPA RSL for tapwater/Performance Standard for Groundwater.

**Table H-2**  
**Off-Site Wells Monitoring the Upper Ocala Aquifer Zone**  
**Volatile Organic Compound Results**

Chemical Name	USEPA RSL for Tapwater (µg/L)	Performance Standards for GW (µg/L)	MW-02		MW-03		MW-11		MW-22U	
			Result	Data Qualifiers	Result	Data Qualifiers	Result	Data Qualifiers	Result	Data Qualifiers
<b>Volatile Organic Compounds (Method SW-846 8260C) µg/L</b>										
1,1,1-Trichloroethane	200	--	<0.820		<0.820		<0.820		<41.0	
1,1,2,2-Tetrachloroethane	0.076	--	<0.210		<0.210		<0.210		<10.5	
1,1,2-Trichloroethane	5	--	<0.230		<0.230		<0.230		<11.5	
1,1-Dichloroethane	2.8	--	<0.380		<0.380		<0.380		<19.0	
1,1-Dichloroethene	7	--	<0.290		<0.290		<0.290		<14.5	
1,2-Dibromo-3-Chloropropane	0.2	--	<0.390		<0.390		<0.390		<19.5	
1,2-Dibromoethane (EDB)	--	0.05	<0.730		<0.730		<0.730		<36.5	
1,2-Dichloroethane	5	--	<0.210		<0.210		<0.210		<10.5	
1,2-Dichloropropane	5	--	<0.720		<0.720		<0.720		<36.0	
2-Butanone (MEK)	560	--	<1.32		<1.32		<1.32		<b>322 J</b>	
2-Hexanone	3.8	--	<1.24		<1.24		<1.24		<62.0	
4-Methyl-2-pentanone (MIBK)	630	--	<2.10		<2.10		<2.10		<105	
Acetone	1,400	--	<3.00		<3.00		<3.00		<150	
Benzene	5	--	<0.410		<0.410		<0.410		<20.5	
Bromodichloromethane	80	--	<0.390		<0.390		<0.390		<19.5	
Bromoform	80	--	<0.260		<0.260		<0.260		<13.0	
Bromomethane	0.75	--	<0.690		<0.690		<0.690		<34.5	
Carbon disulfide	81	--	<0.190		<0.190		<0.190		<9.50	
Carbon tetrachloride	5	--	<0.270		<0.270		<0.270		<13.5	
Chlorobenzene	100	--	<0.750		<0.750		<0.750		<37.5	
Chloroethane	2,100	--	<0.320		<0.320		<0.320		<16.0	
Chloroform	80	--	<0.340		<0.340		<0.340		<17.0	
Chloromethane	19	--	<0.350		<0.350		<0.350		<17.5	
cis-1,2-Dichloroethene	70	--	<0.810		<0.810		<0.810		<40.5	
cis-1,3-Dichloropropene	0.47	--	<0.360		<0.360		<0.360		<18.0	
Dibromochloromethane	80	--	<0.320		<0.320		<0.320		<16.0	
Ethylbenzene	700	--	<0.740		<0.740		<0.740		<b>8,220</b>	
m,p-Xylene	10,000	--	<0.660		<0.660		<0.660		<b>32,200</b>	
Methylene Chloride	5	--	<0.440		<0.440		<0.440		<22.0	
o-Xylene	10,000	--	<0.760		<0.760		<0.760		<b>15,400</b>	
Styrene	100	--	<0.730		<0.730		<0.730		<36.5	
Tetrachloroethene	5	--	<0.360		<0.360		<0.360		<18.0	
Toluene	1,000	--	<0.510		<0.510		<0.510		<b>253</b>	
trans-1,2-Dichloroethene	100	--	<0.900		<0.900		<0.900		<45.0	
trans-1,3-Dichloropropene	47	--	<0.370		<0.370		<0.370		<18.5	
Trichloroethene	5	--	<0.460		<0.460		<0.460		<23.0	
Vinyl chloride	2	--	<0.900		<0.900		<0.900		<45.0	
Xylenes, Total	10,000	--	<0.660		<0.660		<0.660		<b>47,600</b>	
<b>EPA Method 504.1 µg/L</b>										
1,2-Dibromo-3-Chloropropane			--		--		--		--	
1,2-Dibromoethane (EDB)			--		--		--		--	
<b>EPA Methods 300.0 and 9060A mg/L</b>										
Chloride			--		--		--		<b>19.2</b>	
Total Organic Carbon			--		--		--		<b>64.5</b>	

Notes:

--	Not applicable
*	MW-35U not sampled as inaccessible and MW-12 not sampled due to damage.
DUP	Duplicate
GW	Groundwater
ID	Identification
J	The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.
mg/L	milligrams per liter
NJ	The analyte was tentatively identified. The associated numerical value is the approximate concentration of the analyte in the sample.
RSL	Regional Screening Level
U	The analyte was qualified as non-detect at a higher detection limit
UJ	The analyte was not detected; however, the reported quantitation limit is approximated and may be inaccurate or imprecise.
µg/L	Micrograms per liter
USEPA	United States Environmental Protection Agency
<b>BOLD</b>	Values indicate that the analyte was detected above the laboratory reporting limit.
<b>BOLD</b>	Values indicate that the analyte exceeded the laboratory reporting limit and the USEPA RSL for tapwater/Performance Standard for Groundwater.

**Table H-2**  
**Off-Site Wells Monitoring the Upper Ocala Aquifer Zone**  
**Volatile Organic Compound Results**

Chemical Name	USEPA RSL for Tapwater (ug/L)	Performance Standards for GW (ug/L)	Sample ID*		MW-23U		MW-26UR		MW-27U		MW-28U	
			Date	Result	Data Qualifiers	Date	Result	Data Qualifiers	Date	Result	Data Qualifiers	Date
Volatile Organic Compounds (Method SW-846 8260C) µ												
1,1,1-Trichloroethane	200	--	<0.820		<0.820		<0.820		<0.820		<0.820	
1,1,2,2-Tetrachloroethane	0.076	--	<0.210		<0.210		<0.210		<0.210		<0.210	
1,1,2-Trichloroethane	5	--	<0.230		<0.230		<0.230		<0.230		<0.230	
1,1-Dichloroethane	2.8	--	<0.380		<0.380		<0.380		<0.380		<0.380	
1,1-Dichloroethene	7	--	<0.290		<0.290		<0.290		<0.290		<0.290	
1,2-Dibromo-3-Chloropropane	0.2	--	<0.390		<0.390		<0.390		<0.390		<0.390	
1,2-Dibromoethane (EDB)	--	0.05	<0.730		<0.730		<0.730		<0.730		<0.730	
1,2-Dichloroethane	5	--	<0.210		<0.210		<0.210		<0.210		<0.210	
1,2-Dichloropropane	5	--	<b>8.08</b>		<b>0.72 J</b>		<0.720		<0.720		<0.720	
2-Butanone (MEK)	560	--	<1.32		<1.32		<1.32		<1.32		<1.32	
2-Hexanone	3.8	--	<1.24		<1.24		<1.24		<1.24		<1.24	
4-Methyl-2-pentanone (MIBK)	630	--	<2.10		<2.10		<2.10		<2.10		<2.10	
Acetone	1,400	--	<3.00		<3.00		<3.00		<3.00		<3.00	
Benzene	5	--	<0.410		<0.410		<0.410		<0.410		<0.410	
Bromodichloromethane	80	--	<0.390		<0.390		<0.390		<0.390		<0.390	
Bromoform	80	--	<0.260		<0.260		<0.260		<0.260		<0.260	
Bromomethane	0.75	--	<0.690		<0.690		<0.690		<0.690		<0.690	
Carbon disulfide	81	--	<0.190		<0.190		<0.190		<0.190		<0.190	
Carbon tetrachloride	5	--	<0.270		<0.270		<0.270		<0.270		<0.270	
Chlorobenzene	100	--	<0.750		<0.750		<0.750		<0.750		<0.750	
Chloroethane	2,100	--	<0.320		<0.320		<0.320		<0.320		<0.320	
Chloroform	80	--	<0.340		<0.340		<0.340		<0.340		48	
Chloromethane	19	--	<0.350		<0.350		<0.350		<0.350		<0.350	
cis-1,2-Dichloroethene	70	--	<0.810		<0.810		<0.810		<0.810		<0.810	
cis-1,3-Dichloropropene	0.47	--	<0.360		<0.360		<0.360		<0.360		<0.360	
Dibromochloromethane	80	--	<0.320		<0.320		<0.320		<0.320		<0.320	
Ethylbenzene	700	--	<0.740		<0.740		<0.740		<0.740		<0.740	
m,p-Xylene	10,000	--	<0.660		<0.660		<0.660		<0.660		<0.660	
Methylene Chloride	5	--	<0.440		<0.440		<0.440		<0.440		<0.440	
o-Xylene	10,000	--	<0.760		<0.760		<0.760		<0.760		<0.760	
Styrene	100	--	<0.730		<0.730		<0.730		<0.730		<0.730	
Tetrachloroethene	5	--	<0.360		<0.360		<0.360		<0.360		<0.360	
Toluene	1,000	--	<0.510		<0.510		<0.510		<0.510		<0.510	
trans-1,2-Dichloroethene	100	--	<0.900		<0.900		<0.900		<0.900		<0.900	
trans-1,3-Dichloropropene	47	--	<0.370		<0.370		<0.370		<0.370		<0.370	
Trichloroethene	5	--	<0.460		<0.460		<0.460		<0.460		<0.460	
Vinyl chloride	2	--	<0.900		<0.900		<0.900		<0.900		<0.900	
Xylenes, Total	10,000	--	<0.660		<0.660		<0.660		<0.660		<0.660	
<b>EPA Method 504.1 µg/L</b>												
1,2-Dibromo-3-Chloropropane			--		--		<=0.00305		<=0.00305		<=0.00308	
1,2-Dibromoethane (EDB)			--		--		<=0.00509		<=0.00509		<=0.00513	
<b>EPA Methods 300.0 and 9060A mg/L</b>												
Chloride			--		--		--		--		--	
Total Organic Carbon			--		--		--		--		--	

Notes:

- Not applicable
- \* MW-35U not sampled as inaccessible and MW-12 not sampled due to damage.
- DUP Duplicate
- GW Groundwater
- ID Identification
- J The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.
- mg/L milligrams per liter
- NJ The analyte was tentatively identified. The associated numerical value is the approximate concentration of the analyte in the sample.
- RSL Regional Screening Level
- U The analyte was qualified as non-detect at a higher detection limit
- UJ The analyte was not detected; however, the reported quantitation limit is approximated and may be inaccurate or imprecise.
- µg/L Micrograms per liter
- USEPA United States Environmental Protection Agency
- BOLD** Values indicate that the analyte was detected above the laboratory reporting limit.
- BOLD** Values indicate that the analyte exceeded the laboratory reporting limit and the USEPA RSL for tapwater/Performance Standard for Groundwater.

**Table H-2**  
**Off-Site Wells Monitoring the Upper Ocala Aquifer Zone**  
**Volatile Organic Compound Results**

Chemical Name	USEPA RSL for Tapwater (µg/L)	Performance Standards for GW (µg/L)	Sample ID# MW-36U		MW-37U		MW-39U		MW-N2	
			Date	10/19/2022	10/18/2022	10/19/2022	10/25/2022			
			Result	Data Qualifiers	Result	Data Qualifiers	Result	Data Qualifiers	Result	Data Qualifiers
<b>Volatile Organic Compounds (Method SW-846 8260C) µg</b>										
1,1,1-Trichloroethane	200	--	<0.820		--		<0.820		<82.0	
1,1,2,2-Tetrachloroethane	0.076	--	<0.210		--		<0.210		<21.0	
1,1,2-Trichloroethane	5	--	<0.230		--		<0.230		<23.0	
1,1-Dichloroethane	2.8	--	<0.380		--		<b>0.383 J</b>		<38.0	
1,1-Dichloroethene	7	--	<0.290		--		<0.290		<29.0	
1,2-Dibromo-3-Chloropropane	0.2	--	<0.390		--		<0.390		<39.0	
1,2-Dibromoethane (EDB)	--	0.05	<0.730		--		<0.730		<73.0	
1,2-Dichloroethane	5	--	<0.210		--		<b>0.806 J</b>		<21.0	
1,2-Dichloropropane	5	--	<b>19.2</b>		--		<b>25.3</b>		<72.0	
2-Butanone (MEK)	560	--	<1.32		--		<1.32		<132	
2-Hexanone	3.8	--	<1.24		--		<1.24		<124	
4-Methyl-2-pentanone (MIBK)	630	--	<2.10		--		<2.10		<210	
Acetone	1,400	--	<3.00		--		<3.00		<300	
Benzene	5	--	<0.410		--		<0.410		<41.0	
Bromodichloromethane	80	--	<0.390		--		<0.390		<39.0	
Bromoform	80	--	<0.260		--		<0.260		<26.0	
Bromomethane	0.75	--	<0.690		--		<0.690		<69.0	
Carbon disulfide	81	--	<0.190		--		<0.190		<19.0	
Carbon tetrachloride	5	--	<0.270		--		<0.270		<27.0	
Chlorobenzene	100	--	<0.750		--		<0.750		<75.0	
Chloroethane	2,100	--	<0.320		--		<0.320		<32.0	
Chloroform	80	--	<b>0.738 J</b>		--		<b>1.12</b>		<34.0	
Chloromethane	19	--	<0.350		--		<0.350		<35.0	
cis-1,2-Dichloroethene	70	--	<0.810		--		<0.810		<81.0	
cis-1,3-Dichloropropene	0.47	--	<0.360		--		<0.360		<36.0	
Dibromochloromethane	80	--	<0.320		--		<0.320		<32.0	
Ethylbenzene	700	--	<0.740		--		<0.740		<b>6.980</b>	
m,p-Xylene	10,000	--	<0.660		--		<0.660		<b>42.700</b>	
Methylene Chloride	5	--	<0.440		--		<0.440		<44.0	
o-Xylene	10,000	--	<0.760		--		<0.760		<b>19.200</b>	
Styrene	100	--	<0.730		--		<0.730		<73.0	
Tetrachloroethene	5	--	<0.360		--		<0.360		<36.0	
Toluene	1,000	--	<0.510		--		<0.510		<b>282</b>	
trans-1,2-Dichloroethene	100	--	<0.900		--		<0.900		<90.0	
trans-1,3-Dichloropropene	47	--	<0.370		--		<0.370		<37.0	
Trichloroethene	5	--	<0.460		--		<0.460		<46.0	
Vinyl chloride	2	--	<0.900		--		<0.900		<90.0	
Xylenes, Total	10,000	--	<0.660		--		<0.660		<b>61.900</b>	
<b>EPA Method 504.1 µg/L</b>										
1,2-Dibromo-3-Chloropropane			--		<0.00302		--		--	
1,2-Dibromoethane (EDB)			--		<0.00503		--		--	
<b>EPA Methods 300.0 and 9060.A mg/L</b>										
Chloride			--		--		--		--	
Total Organic Carbon			--		--		--		--	

Notes:

- Not applicable
- \* MW-35U not sampled as inaccessible and MW-12 not sampled due to damage
- DUP Duplicate
- GW Groundwater
- ID Identification
- J The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.
- mg/L milligrams per liter
- NJ The analyte was tentatively identified. The associated numerical value is the approximate concentration of the analyte in the sample.
- RSL Regional Screening Level
- U The analyte was qualified as non-detect at a higher detection limit
- UJ The analyte was not detected; however, the reported quantitation limit is approximated and may be inaccurate or imprecise.
- µg/L Micrograms per liter
- USEPA United States Environmental Protection Agency
- BOLD** Values indicate that the analyte was detected above the laboratory reporting limit.
- BOLD** Values indicate that the analyte exceeded the laboratory reporting limit and the USEPA RSL for tapwater/Performance Standard for Groundwater.

**APPENDIX I – INTERVIEW FORMS**

<b>TH AGRICULTURE AND NUTRITION SUPERFUND SITE FIVE-YEAR REVIEW INTERVIEW FORM</b>	
<b>Site Name: T.H. Agriculture &amp; Nutrition Co. (Albany Plant) Superfund Site</b>	
<b>EPA ID: GAD042101261</b>	
<b>Interviewer name: John Williams</b>	<b>Interviewer affiliation: GAEPD</b>
<b>Subject name: Christopher Jones</b>	<b>Subject affiliation: EPA RPM</b>
<b>Subject contact information: 404-562-8353</b>	
<b>Interview date: April 4, 2023</b>	<b>Interview time: 8:30</b>
<b>Interview location:</b>	
<b>Interview format (circle one):</b> In Person      Phone      Mail <u>Email</u> Other:	
<b>Interview category:</b>	

1. What is your overall impression of the project, including cleanup, maintenance, and reuse activities (as appropriate)?  
It's great to see reuse occurring at both OUs (parcels). Contaminants remain in the groundwater and the EPA is in the process of issuing an Amended Record of Decision (AROD) which will select a new remedy to remediate the groundwater. Available data suggests that the groundwater contaminant plume has not migrated outside of the parcel boundary.
  
2. What is your assessment of the current performance of the remedy in place at the Site?  
The original remedy selected in 1993 was ineffective; therefore, an AROD will be issued later this year to select a new groundwater remedy.
  
3. Are you aware of any complaints or inquiries regarding Site-related environmental issues or remedial activities from residents in the past five years?  
No
  
4. Has your office conducted any Site-related activities or communications in the past five years? If so, please describe the purpose and results of these activities.  
None that I am aware of.
  
5. Are you aware of any changes to state laws that might affect the protectiveness of the Site's remedy?  
No



6. Are you comfortable with the status of the institutional controls at the Site? If not, what are the associated outstanding issues?

Yes

7. Are you aware of any changes in projected land use(s) at the Site?

No

8. Do you have any comments, suggestions or recommendations regarding the management or operation of the Site's remedy?

I do not have any

9. Do you consent to have your name included along with your responses to this questionnaire in the FYR report?

Yes

<b>TH AGRICULTURE AND NUTRITION SUPERFUND SITE FIVE-YEAR REVIEW INTERVIEW FORM</b>	
Site Name: T.H. Agriculture & Nutrition Co. (Albany Plant) Superfund Site	
EPA ID: GAD042101261	
Interviewer name: John Williams	Interviewer affiliation: GAEPD
Subject name: Felix Nchako	Subject affiliation: AECOM
Subject contact information: felix.nchako@aecom.com	
Interview date:	Interview time:
Interview location:	
Interview format (circle one): In Person    Phone    Mail <b>Email</b> Other:	
Interview category: O&M Contractor	

1. What is your overall impression of the project, including cleanup, maintenance and reuse activities (as appropriate)?

Site groundwater monitoring and reporting continues to confirm that site constituents of concern continue to remain within the Operable Unit No. 1 boundaries and are still protective of human health and the environment. In addition, Institutional Controls prevent residential use of the site.

2. What is your assessment of the current performance of the remedy in place at the Site?

No remedy has been implemented since the Pump & Treat System (which was ineffective) was decommissioned in 2019. However, two pilot tests consisting of Enhanced Reductive Dechlorination and Air Sparge/ Soil Vapor Extraction have shown promising results. A revised Record of Decision (ROD) should consider these two remedies in future remedy implementations.

3. Are you aware of any complaints or inquiries regarding site-related environmental issues or remedial activities from residents in the past five years?

No.

4. Has your office conducted any site-related activities or communications in the past five years? If so, please describe the purpose and results of these activities.

Yes. Two pilot tests have been completed at the site: One in February 2019, when injection activities were conducted to obtain sufficient site-specific data to evaluate the effectiveness of direct injection into boreholes and wells of remediation amendments, including EHC® reagent and GeoForm™ Soluble. The EHC® reagent showed decreasing trends for

toxaphene and the other organochlorine pesticides (OCPs) while the GeoForm™ Soluble did not show a distinct decreasing trend for OCPs and volatile organic compounds.

Another pilot test was conducted in January 2021, when air sparge (AS) and soil vapor extraction (SVE) wells were installed, along with five new monitoring wells for the purpose of observing radius of influence (ROI) and effectiveness of an AS/SVE pilot test system. Based on the observations at the monitoring wells and the air analytical results, AS combined with SVE was determined to be an effective remedial technology to address petroleum hydrocarbon impacts in groundwater at the Site.

5. Are you aware of any changes to state laws that might affect the protectiveness of the Site's remedy?

No.

6. Are you comfortable with the status of the institutional controls at the Site? If not, what are the associated outstanding issues?

Yes.

7. Are you aware of any changes in projected land use(s) at the Site?

No.

8. Do you have any comments, suggestions or recommendations regarding the management or operation of the Site's remedy?

A Focused Feasibility Study Report has been developed for the site in which appropriate and applicable remedies for the site groundwater have been discussed.

9. Do you consent to have your name included along with your responses to this questionnaire in the FYR report?

Yes.