

**PROPOSED EXPLANATION OF SIGNIFICANT DIFFERENCES  
FORMER SUPERIOR TUBE COMPANY FACILITY  
EVANSBURG, PENNSYLVANIA**

**I. INTRODUCTION**

This proposed Explanation of Significant Differences (ESD) modifies the groundwater cleanup goals for the contaminants of concern (COCs) at the Superior Tube Company (STC) facility (Facility) from the Maximum Contaminant Levels (MCLs) promulgated at 40 C.F.R. Part 141 pursuant to Section 1412 of the Safe Drinking Water Act, 42 U.S.C. Section 300g-1, to Site Specific Standards (SSSs) calculated in accordance with the Pennsylvania Land Recycling and Environmental Remediation Standards Act (Act 2), 35 P.S. Sections 6026.101 *et seq.*

On September 30, 1993, EPA issued a Final Decision and Response to Comments (FDRTC) for the Facility in which EPA selected, among other things, source reduction in the unsaturated fractured rock and soil via in-situ vapor extraction (ISVE) and the continued pumping and treating of contaminated groundwater until MCLs are attained. Since STC began implementing the remedy selected in the FDRTC, levels of contaminants in the groundwater throughout the contaminant plume have been reduced. In the southern recovery area, MCLs have been achieved in all 8 compliance monitoring wells. In the northern recovery area, MCLs have been achieved in 1 of 4 compliance wells. Those contaminants that do not meet their MCLs in the Northern Recovery Area fall below their respective MCLs within 500 feet of the Facility property line. The FDRTC, as amended by this proposed ESD, will require the continued pumping and treating of groundwater and soil vapor extraction in northern recovery area unless it is determined to be technically impracticable to meet the MCLs for the COCs.

This proposed ESD and the documents supporting its issuance, including the Pennsylvania Department of the Environment (PADEP) Consent Order and Agreement and the Final Cleanup Plan, are a part of the Administrative Record for the Facility, which is located at the EPA Region III RCRA Records Center, 1650 Arch Street, Philadelphia, Pennsylvania.

**II. SUMMARY OF SITE HISTORY, CONTAMINATION AND THE SELECTED REMEDY**

The Facility is located at 3900 Germantown Pike in Lower Providence Township, Montgomery County, Pennsylvania. Since 1935, STC has manufactured specialty cold-drawn precision tubing and formed tubular parts at the Facility. As a result of manufacturing operations at the Facility, groundwater at the Facility and at off-site locations near the Facility became contaminated with volatile organic compounds (VOCs).

In July 1990, EPA and STC entered into a Consent Order, pursuant to Section 3008(h) of RCRA, 42 U.S.C. Section 6928(h), EPA Docket No. RCRA-III-029-CA, under which STC performed a RCRA Facility Investigation (RFI) to evaluate the nature and extent of any release of hazardous waste and/or hazardous constituents at or from the Facility. EPA approved the RFI in 1992. Subsequently, in September 1993, EPA issued a FDRTC which described EPA's selected corrective measure for the Facility and provided responses to substantive comments received at the public meeting and all written comments received during the public comment period.

EPA's selected corrective measure required, among other things, source reduction in the unsaturated fractured rock and soil via in-situ vapor extraction (ISVE) and the continued pumping and treating of contaminated groundwater until the groundwater media cleanup standards were attained. The FDRTC establishes the following media cleanup goals for the contaminants in groundwater at the Facility:

<u>Contaminants of Concern</u>	<u>Cleanup Goals (micrograms/liter)</u>
TCE	5
PCE	5
cis-1,2-DCE	70
trans-1,2-DCE	100
Vinyl Chloride	2

Furthermore, the FDRTC stated that if EPA determined that a media cleanup goal was technically impracticable to achieve, EPA may consider a revised media cleanup goal. Specifically, EPA recognized in the FDRTC that some VOCs could exist as dense non-aqueous phase liquid (DNAPL) within the saturated zone and, as such, be essentially impossible to remediate to their applicable MCLs.

In December 1998, EPA and STC entered into a Final Administrative Order on Consent, U.S. EPA Docket No. RCRA-II-081-CA (1998 Order), pursuant to Section 3008(h) of RCRA, 42 U.S.C. Section 6928(h), under which STC agreed to implement the FDRTC. Since STC began implementing the FDRTC, levels of contaminants in the groundwater have significantly decreased and groundwater quality in the vicinity of the Facility has improved. The ISVE system has removed a substantial amount of residual TCE mass in the unsaturated fractured bedrock and soil. That residual TCE was a significant contamination source that impacted groundwater. Reductions of the residual contamination source have improved the efficiency of the pump and treat system. Groundwater plume migration is under control and most of the contaminant plume is contained within the Facility boundaries.

In September 2011, PADEP and STC entered into a Consent Order and Agreement which requires STC to contribute to a water line extension in the vicinity of the Facility, including the area where groundwater is potentially impacted by Facility-related contaminants. In addition, Lower Providence Township (LPT) plans to adopt an ordinance that requires all potable water users in the vicinity of the Facility to connect to public water, prohibits private groundwater wells in the vicinity of the Facility, and requires all existing groundwater wells in the vicinity of the Facility to be disconnected and closed in full compliance with all state and local laws.

### **III. DESCRIPTION OF SIGNIFICANT DIFFERENCE AND THE BASIS FOR CURRENT CHANGE TO THE SELECTED CORRECTIVE MEASURE**

This proposed ESD modifies EPA's cleanup goal for TCE; PCE; cis-1,2-DCE; trans-1,2-DCE and vinyl chloride from their respective MCLs to their respective SSSs within and in the proximity of the Facility property boundaries (DNAPL Area) as presented in the attached Figure

1. EPA has determined that the continued implementation of the ISVE and groundwater pump and treat systems selected in the FDRTC are not likely to achieve the MCLs for those COCs in the DNAPL Area within a reasonable or foreseeable time frame due to technical impracticability from an engineering perspective. ISVE and groundwater pumping and treating have greatly reduced the concentration of those COCs in the groundwater, but has shown to be incapable of reducing the concentration of those COCs to their MCLs. Any technology capable of removing the DNAPL in such an environment would first have to mobilize the DNAPL and, then, have to extract the mobilized DNAPL. No known technologies are capable of extracting DNAPL from the fractured bedrock geologic system. Moreover, any attempt to remobilize the DNAPL may cause ecological and human health risks which do not currently exist.

As contemplated in the FDRTC, given that reducing certain COC concentrations to their respective MCLs is technically impracticable, EPA, in consultation with PADEP, has determined that it is appropriate to apply the following Pennsylvania SSSs for those COCs:

<u>Contaminants of Concern</u>	<u>SSS Cleanup Goals (micrograms/liter)</u>
TCE	1,800
PCE	3,500
cis-1,2-DCE	9,300
trans-1,2-DCE	7,700
Vinyl Chloride	180

The above-listed SSSs are consistent with EPA's acceptable risk based calculations based on two remaining potential exposure pathways which are indoor air vapor intrusion and groundwater discharge to surface water.

The groundwater monitoring and IC components of EPA's selected corrective measure, as described in the FDRTC and as required by the 1998 Order, apply to the DNAPL Area and will eliminate the potential for indoor air vapor intrusion, groundwater discharge to surface water and direct contact exposure to groundwater contamination. With respect to groundwater discharge to surface water and indoor air vapor intrusion, the existing groundwater monitoring program will confirm that the selected corrective measure is preventing the COCs from migrating out of the DNAPL Area. With respect to direct contact exposure to groundwater contamination, presently, there are no identified human health exposures to groundwater under an industrial use scenario at the Facility.

STC is required to implement ICs to minimize the potential for human exposure to contaminated groundwater and to limit future site development to non-residential use. STC will place an Environmental Covenant consistent with the Pennsylvania Uniform Environmental Covenants Act, 27 Pa. C.S. Sections 6501-6517, (UECA) on the chain of title for the Facility property to prevent the use of groundwater for potable purposes and to alert existing future property owners to the engineering controls regarding the asphalt cap present at the Facility. In addition, EPA anticipates that the potential for direct contact exposure to groundwater contamination will be eliminated under the PADEP public water line extension program. Under that program, properties that use groundwater for potable use in the vicinity of the Facility will be connected to public water. In addition, EPA anticipates that Lower Providence Township

(LPT) will adopt an ordinance that will prevent property owners in the vicinity of the Facility from installing any new wells on their property and prevent the use of any existing wells for potable purposes. LPT expects to adopt the ordinance by the end of spring 2012.

#### **IV. SUPPORT AGENCY REVIEW**

PADEP has been consulted regarding the modification to the selected remedy for the Facility as described above and concurs with this proposed ESD.

#### **V. AFFIRMATION OF DECLARATION**

EPA has determined that the selected corrective measure as modified by this proposed ESD remains appropriate and protective of human health and the environment.

#### **VI. PUBLIC PARTICIPATION**

EPA is requesting comments from the public on this proposed ESD. The document is available for public review at the location listed in Section VII below and at [http://www.epa.gov/reg3wcmd/public\\_notices.htm](http://www.epa.gov/reg3wcmd/public_notices.htm). The public comment period will last thirty (30) calendar days from the date EPA places an announcement in the Times Herald to notify the public of the proposed ESD. Comments on, or questions regarding, the proposed ESD may be submitted to:

Mr. Khai Dao (3LC30)  
U.S. EPA, Region III  
1650 Arch Street  
Philadelphia, PA 19103  
Telephone: (215) 814-5467  
FAX: (215) 814-3113  
Email: [dao.khai@epa.gov](mailto:dao.khai@epa.gov)

EPA will respond to all comments received. On the basis of comments received or other relevant information, if EPA makes minor changes to the proposed ESD, the proposed ESD will become effective upon those changes being made. If on the basis of comments received or other relevant information, EPA makes significant changes to the proposed ESD, EPA may seek additional public comments. All comments received during the thirty (30) day comment period will become part of the Administrative Record for the Site, as will EPA responses to the significant comments.

#### **VII. ADMINISTRATIVE RECORD**

The Administrative Record supporting the issuance of this proposed ESD will be available for public review on Mondays through Fridays, from 9:00 a.m. to 5:00 p.m., by contacting the EPA Project Manager, Mr. Dao, at:

U.S. Environmental Protection Agency

Region III (3LC30)  
1650 Arch Street  
Philadelphia, Pennsylvania 19103-2029  
Telephone: (215) 814-5467  
Email: [dao.khai@epa.gov](mailto:dao.khai@epa.gov)

3/1/12  
Date

  
Abraham Ferdas, Director  
Land and Chemicals Division  
U.S. EPA Region III

Figure 1: DNAPL Area

**Notes:**  
 NRS = North Recovery System  
 SRS = South Recovery System

**Note:**  
 TOC Plume created by Surfer 7  
 using the Kriging method.

- Legend**
- SRS Point of Compliance Well
  - NRS Point of Compliance Well
  - Monitoring Well
  - Private Well (Non-Probable Use)
  - Recovery Well
  - Potable Well
  - Compliance Monitoring Perimeter
  - Property Boundary
  - Lower Providence Parcells
  - Building/Structure
  - Concrete/Gravel
  - Water Body
  - TOC Plume 1,800 ug/L (2011 data - Average of May and November results)
  - Approximate groundwater flow direction based on potentiometric surface elevations

**Scale:**  
 0 300 600 Feet

**Site features based on Pennsylvania Spatial Data Access (PSADA), Delaware Valley Regional Planning Commission (DVRPC), Montgomery Co. PA, 2002, 2005. Parcels provided by Montgomery County, PA, January, 2008.**

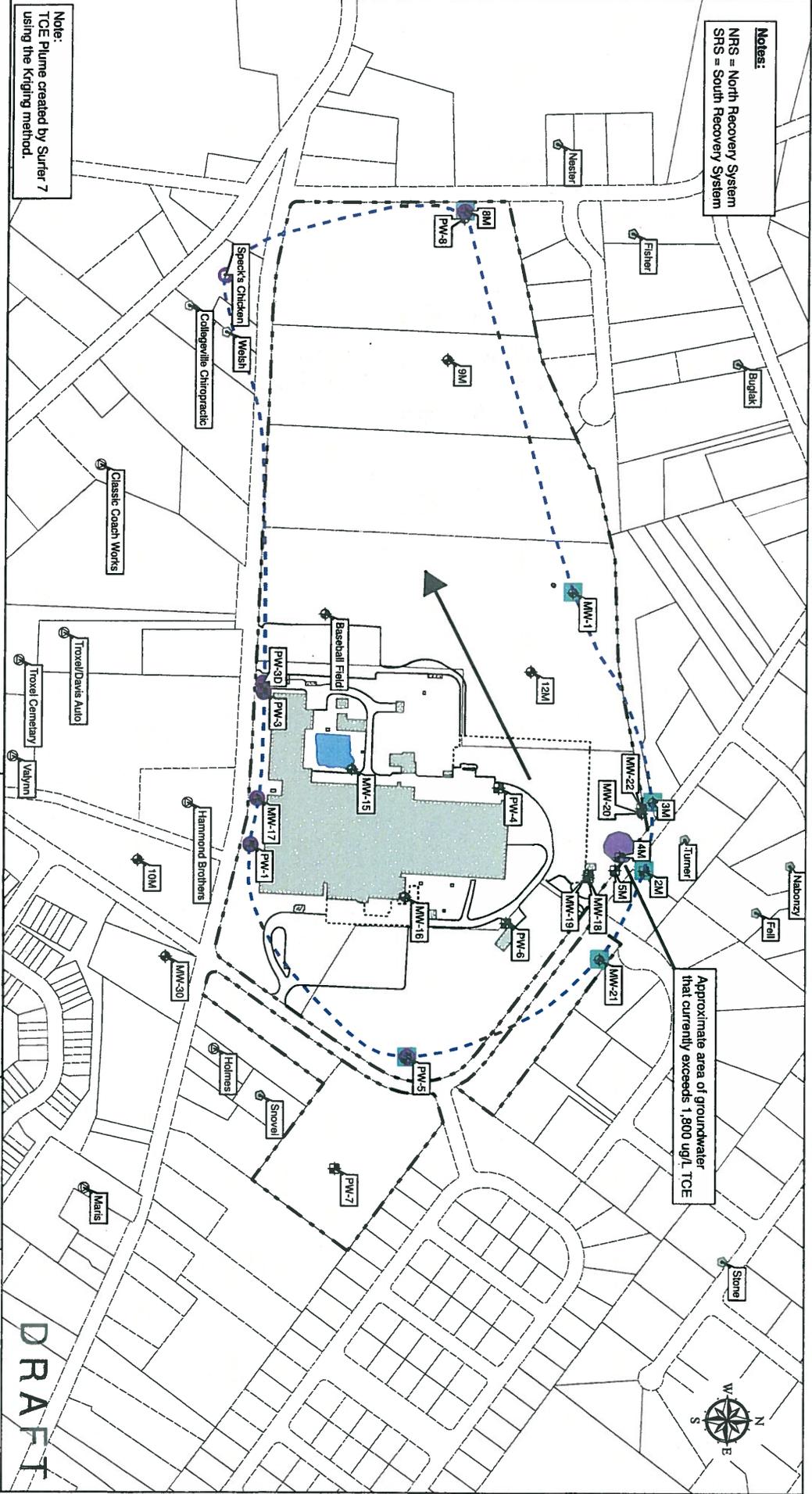


**Environmental Alliance, Inc.**  
 5411 Limestone Road, Whitehall, DE 19880  
 Phone: (302) 234-4400 - Fax: (302) 234-1535

**Superior Tube**  
 3900 Germantown Pike  
 Collegeville, PA 19422

**Compliance Monitoring Area**

DESIGNED BY:	DRWING BY:	DATE:	PROJECT NO.:	SCALE:
APPROVED BY:	DATE:	1/26/2012		



Approximate area of groundwater that currently exceeds 1,800 ug/L TOC

**DRAFT**