EXPLANATION OF SIGNIFICANT DIFFERENCES
TYCO ELECTRONICS COROPORATION FACILITY
GLEN ROCK, PENNSYLVANIA
EPA ID#: PAD041421223

I. INTRODUCTION

This proposed Explanation of Significant Differences (ESD) describes the United States Environmental Protection Agency's (EPA) proposed modifications to the 1991 Corrective Measures that EPA selected for the facility located at 10709 and 10671 South Susquehanna Trail, Glen Rock, York County, Pennsylvania (Facility). Specifically, this proposed ESD will establish a Technical Impracticability (TI) Zone for 1,1,2-trichloroethane (1,1,2-TCA) at the Facility; modify the groundwater cleanup goal for vinyl chloride (VC) from the original risk action level of 0.2 µg/L to the Maximum Contaminant Level (MCL), promulgated at 40 C.F.R. Part 141 pursuant to Section 1412 of the Safe Drinking Water Act, 42 U.S.C. § 300g-1, of 2.0 µg/L and require institutional controls to implement land and groundwater use restrictions. Therefore, EPA's Corrective Action Objectives for Facility groundwater are to control exposure 1,1,2-TCA remaining in the groundwater; protect the current existing receptors from unacceptable concentrations from 1,1,2-TCA; ensure that the 1,1,2-TCA will not migrate beyond the Facility boundary; and ensure that no groundwater discharge concentrations of 1,1,2-TCA would result in surface water concentrations that are above the PADEP surface water criteria.

EPA has determined that the selected Corrective Measures, as modified by this ESD, remain protective of human health and the environment.

This proposed ESD and the documents supporting its issuance 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 occupies approximately 33 acres in Glen Rock, York County, Pennsylvania 17327. Amp, Inc. and its successor, Tyco Electronic Corporation, (collectively referred to herein as TEC) owned and operated the Facility from the late 1950s to 2001. The Facility consisted of two buildings, the Material Development Laboratory Building and the Plastics Building. During its period of operation, TEC conducted research on contact adhesives and lubricants and manufactured injection-molded plastic and polyester parts used in connector systems and applications. As a result of the manufacturing operations at the Facility, groundwater and soil at the Facility became contaminated with VOCs.

On January 22, 1991, EPA issued a RCRA Record of Decision (RCRA ROD) for the Facility in which EPA selected, among other things, the continued pumping and treatment of groundwater using air stripper towers until 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. § 300g-1, are attained and the installation of a bedrock flushing infiltration trench to expedite the process of remediating

contaminated subsoil and bedrock at the Facility. After twenty-seven (27) years of groundwater pump and treat, concentrations of Facility related contaminants in groundwater have achieved the applicable MCLs at all the point of compliance (POC) wells except for 1,1,2-TCA in well R-5B, which is located closest to the former contamination source area.

On January 4, 1989, EPA and TEC entered into an Administrative Order on Consent (AOC), EPA Docket No. RCRA-III-018-CA, pursuant to Section 3008(h) of RCRA. Under the terms of this AOC, TEC completed a RCRA Facility Investigation (RFI) that evaluated the nature and extent of any release of hazardous waste and/or hazardous constituents at or from the Facility. In addition, TEC conducted a Corrective Measure Study that evaluated Corrective Measure Alternatives for the cleanup of the Facility.

On January 22, 1991, EPA issued a Resource Conservation Recovery Act Record of Decision (RCRA ROD) for the Facility that describes the Corrective Measures selected by EPA to remediate the contamination at the Facility. The major components of the selected Corrective Measures are:

- the continuation of the ongoing pumping and treatment of eight (8) pumping wells and operation of dual air stripper towers and

- installation of a subsoil/bedrock flushing trench; consisting of a perforated piping system that saturates the subsoil/bedrock by gravity drainage thereby transporting contaminants into the groundwater which is recovered and treated.

Also on January 22, 1991, EPA and TEC entered into an AOC, EPA Docket No. RCRA-III-032-CA, under which TEC implemented the Corrective Measures selected by EPA in the 1991 RCRA ROD to remediate onsite and offsite contamination. EPA's selected Corrective Measure require, among other things, source removal, and the continued pumping and treating of contaminated groundwater until the groundwater media cleanup goals are attained at the POC wells. Below are the media cleanup goals discussed in the RCRA ROD for the COCs in groundwater at the Facility:

Constituents of Concern	**Cleanup Goals (µg/L)**
Trichloroethylene	5
1,1,1-Trichloroethane	200
1,1,2-Trichlorethane	5
Vinyl Chloride	0.2

After 27 years of groundwater pump and treat, Facility COCs have met the MCLs at all the POC wells except for 1,1,2-TCA in well R-5B, which is located closest to the former contamination source area. The most recent level of 1,1,2-TCA detected in well R-5B is 24 µg/L (MCL of 5.0 µg/L); a 99 % decrease from the original concentration of 2,636.0 µg/L in 1984.

The RCRA ROD acknowledged that due to the elevate concentrations of VOCs and the kinetics of chemical and physical desorption of contaminants in soils and groundwater, it may be technically impossible to attain the cleanup goals of MCLs throughout the groundwater plume. The RCRA ROD states that, " if the concentrations of 1,1,1-TCA, TCE, and 1,1,2-TCA in groundwater remain stable after a minimum of five (5) years of groundwater pump and treat, TEC may petition EPA to revise the cleanup goals." After EPA issued the RCRA ROD for the Facility, EPA issued "Guidance for Evaluating the Technical Impracticability of Ground-Water Restoration," Directive 9234.2-25 (1993).

Technical impracticability (TI) for contaminated groundwater refers to a situation where achieving groundwater cleanup standards associated with final cleanup standards is not practicable from an engineering perspective. The term "engineering perspective" refers to factors such as feasibility, reliability, scale or magnitude of a project, and safety.

In August 2015, TEC submitted a petition to EPA requesting a revision of the cleanup goals for 1,1,2-TCA from 5 µg/L to 27.5 µg/L and for VC from 0.2 µg/L to 2.0 µg/L. TEC based its request on its site-wide groundwater study conducted from May 2011 to December 2013 that demonstrated that under static conditions the groundwater plume has remained stable within the Facility property boundaries and will continue to do so for the foreseeable future. The levels of COCs in groundwater have steadied and indicated a decreasing trend and do not impact groundwater quality downgradient of the Site. Furthermore, the study concluded that the existing onsite groundwater contamination does not pose any exposure pathway risks to both human and environmental receptors via direct exposure to groundwater, indoor air vapor intrusion or surface water discharge.

EPA has determined that achieving the MCL for 1,1,2-TCA in Facility groundwater is technically impracticable given that the levels of 1,1,2-TCA, while being greatly reduced after 27 years of pumping and treating, have now become stable.

Initially in the 1991 RCRA ROD, EPA acknowledged the possibility that VC could be produced by the degradation of 1,1,1-TCA and 1,1,2-TCA, and required that the concentrations of VC be below the cancer risk-based action level of 0.2 µg/L. However, VC has never been detected in any of the POC wells. Revising the original risk action level of 0.2 µg/L to the Maximum Contaminant Level (MCL) of 2.0 µg/L will be consistent with EPA's drinking water quality standard for VC.

III. DESCRIPTION OF SIGNIFICANT DIFFERENCES AND THE BASIS FOR CURRENT CHANGES TO THE SELECTED CORRECTIVE MEASURE

As described in more detail below, the purpose of this proposed ESD is to establish a TI Zone for 1,1,2-TCA; modify the groundwater cleanup goal for VC from the original risk action level of 0.2 µg/L to the its MCL of 2.0 µg/L and require institutional controls to implement land and groundwater use restrictions.

A. Establish a TI Zone

With this proposed ESD, EPA proposes to establish a TI Zone for 1,1,2-TCA. The TI zone is defined as groundwater within the Facility property boundaries. In addition, ongoing natural attenuation will continue to degrade 1,1,2-TCA thereby containing the 1,1,2-TCA onsite.

EPA acknowledged in the RCRA ROD that due to the kinetics of chemical and physical desorption of contaminants in Facility soils and groundwater, the continued implementation of the groundwater remediation selected in the RCRA ROD may not be able to achieve the MCL for COCs throughout the groundwater plume within a reasonable or foreseeable time frame. Except for 1,1,2-TCA in well R-5B, all other COCs have met their respective MCLs at the POC wells.

The current levels of 1,1,2-TCA in groundwater do not pose an exposure pathway risk for either human and environmental receptors. The average concentration of 1,1,2-TCA detected during 11 consecutive quarters of static groundwater monitoring in well R-5B is 27.5 µg/L. The groundwater

pump and treat system has achieved 99 % reduction of 1,1,2-TCA in well R-5B from the initial concentration of 2,636.0 µg/L to the most recent level of 24 µg/L. Historic groundwater data from 1984 to 2011 indicate that the groundwater remediation has reached asymptotic condition with respect to contaminant mass removal. A total of 345 pounds of VOCs have been removed overall, but only 9 pounds of VOCs had been recovered between January 2000 and March 2011.

From May 2011 to December 2013, TEC conducted a site-wide groundwater study to evaluate the characteristics of the groundwater plume and the potential of plume migration under static conditions. The groundwater flow direction is to the south-southeast of the Facility. The closest surface water body is a man-made pond known as Larkin Pond, located approximately a quarter mile south-southeast of the Site. Eleven consecutive quarters of groundwater data were collected during the span of the study. The study concluded that the groundwater plume is stable and has remained with the Facility property boundaries and does not impact Larkin Pond. The data indicate that the levels of the COCs have either steadied or showed a decreasing trend. Groundwater trend analyses from the study show that the groundwater contamination levels are expected to continue to decrease over time. To further evaluate the potential of groundwater plume migration under static conditions, a fate and transport groundwater modeling was performed at the Facility. The model predicted that the groundwater contaminant plume is expected to remain within the Facility boundary for the foreseeable future and does not impact groundwater quality downgradient of the Facility.

The potential human exposure risks to the contaminated groundwater and its impact to the environment are minimal. There are no direct human exposures to the contaminated groundwater. The Facility is connected to public water. A well survey within 0.5 miles downgradient of the Facility indicated that there are no current groundwater receptors. Properties that are located downgradient and within one-half mile of the Facility are zoned industrial and are connected to public water. The local ordinance requires all current and future residences in Glen Rock Borough be connected to public water. Therefore, the potential of direct human exposure to the groundwater contamination at the Facility are mitigated.

The levels of COCs at the Site do not pose a potential indoor vapor intrusion risk onsite or offsite. Levels of 1,1,2-TCA in the groundwater that are above the MCL are contained within the property boundaries and are below the EPA Vapor Intrusion Screening Level (VISL) for non-residential properties. These levels in groundwater do not pose a significant risk for potential indoor vapor intrusion at the Site.

B. Modify the groundwater cleanup goal for vinyl chloride

The ESD will also modify the cleanup goal for VC from the original risk action level of 0.2 µg/L to the MCL of 2.0 µg/L. Initially in the 1991 RCRA ROD, EPA acknowledged the possibility that VC could be produced by the degradation of 1,1,1-TCA and 1,1,2-TCA, and required that the concentrations of VC be below the cancer risk-based action level of 0.2 µg/L. However, VC has never been detected in any of the POC wells. Revising the original risk action level of 0.2 µg/L to the Maximum Contaminant Level (MCL) of 2.0 µg/L will be consistent with EPA's drinking water quality standard for VC.

C. Require institutional controls

This proposed ESD will also modify the Corrective Measures selected in the RCRA ROD to require the implementation of ICs at the Facility. ICs are generally non-engineered instruments such as administrative and/or legal controls that impose restrictions on use of contaminated property or resources that minimize the potential for human exposure to contamination and/or protect the integrity of a remedy. Under this proposed ESD, 1,1,2-TCA will remain in the groundwater at the Facility above levels appropriate for residential and domestic uses. Therefore, this proposed modification will require groundwater and land use restrictions at the Facility to be implemented through enforceable ICs, such as a permit, order, or environmental covenant, that will prohibit the use of contaminated groundwater for any purposes, prohibit the installation and/or operation of groundwater wells, and restrict the use of the Facility property for non-residential purposes only. Such use restrictions will minimize the potential for human exposure to contaminated groundwater at the Facility.

EPA is also proposing to require the geographical survey coordinates for: 1) the Facility property, including each point (property corner) identified in the metes and bounds description (or each vertex of the polygon) and 2) each area subject to a use restriction (including the contaminated groundwater plume identified in Section III.A., above), as follows:

i) Longitude and latitude in the decimal degrees, to at least seven (7) decimal places, using the World Geodetic System (WGS) 1984 datum, with west longitude indicated as a negative number;

ii) The coordinates shall be provided in a tabular format as follows: 1) the first and last coordinate values in the table should be the same, and should represent the coordinates of the Point of Beginning of the metes and bounds description; 2) if the metes and bounds description includes arc segments (rather than straight line segments) defined by the beginning and ending of an arc of a specific radius, additional geographical control points should be calculated along the arc so that a straight line approximation from point to point does not deviate from the true arc by more than 0.1 foot; and 3) the table of coordinate values should be provided separately as an electronic file, in a comma separated value (CSV) format, or provided as a Keyhole Markup Language (KML) file.

IV. SUPPORT AGENCY REVIEW

EPA has consulted PADEP regarding the proposed modifications to the selected Corrective Measures for the Facility as described above. PADEP concurs with the modifications.

V. AFFIRMATION OF DECLARATION

EPA has determined that the selected Corrective Measures set forth in the RCRA ROD as modified by this ESD remain 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/region3wcmd/public_notice.htm. The public comment period will last thirty (30)

calendar days from the date EPA places an announcement in the York Daily News newspaper 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
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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 Facility, as will EPA responses to the significant comments.

VII. ADMINISTRATIVE RECORD

The Administrative Record supporting the issuance of the ESD is 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:

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7.26.16
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