INTERIM REMEDIAL ACTION REPORT

MONITORED NATURAL ATTENUATION

LITTLE VALLEY SUPERFUND SITE

August 2007

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I. INTRODUCTION

A monitored natural attenuation remediation program is being performed at the Little Valley site in accordance with EPA's *Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water* (EPA, 1998).

Limited actions are distinguished from remedial actions by there being no remedial design. They are distinguished from no action/no further action remedies by there being at least some remedial action component. In the case of monitored natural attenuation, natural processes are used to attain cleanup goals, and the remedial action may only consist of developing a monitored natural attenuation monitoring plan and adding monitoring wells.

Long-term response actions are defined as the Superfund-financed operation of groundwater and surface water restoration measures, including monitored natural attenuation. It applies to the first ten years of restoration, which is considered a long-term response action.

This document represents the implementation of monitored natural attenuation plan for one year as a limited action for the Operable Unit 2 (OU2) portion of the Little Valley Superfund Site (Site) in the Village of Little Valley and the City of Salamanca, New York. With the approval of this document, the long-term response action will commence.

II. SITE LOCATION AND DESCRIPTION

A groundwater plume of trichloroethylene (TCE), a common industrial cleaning agent, extending approximately eight miles southeastward from the Village of Little Valley through the Town of Little Valley to the northern edge of the City of Salamanca (Cattaraugus County), which is part of the Allegheny Indian Reservation, is considered to be the site. The site is located in a rural, agricultural area with a number of small, active and inactive industries and more than 200 residential properties which are situated along Route 353, the main transportation route between Little Valley and the City of Salamanca.

The industry, businesses, and residences located in the Village of Little Valley (including an area located approximately one-quarter mile south of the Village's corporate limits along New York State Highway 353) obtain water from the Public Water Supply of the Village of Little Valley. Private water supply wells constitute the only source of water for the Town of Little Valley and the northern portion of the City of Salamanca.

The nearest surface water bodies associated with the Site are Little Valley Creek and its tributaries. Little Valley Creek, a perennial stream with typical stream flow ranging from 20 to 80 cubic feet per second during normal precipitation periods, flows southeast, then south through the Site for approximately eight miles before joining the Allegheny River. The Site ranges in width from 1,000 to 2,500 feet and in elevation from nearly 1,600 feet above mean sea level (msl) in the Village of Little Valley to less than 1,400 feet msl near the Salamanca city line. The Site is bordered by steeply sloping wooded hillsides which attain slopes of up to 25

percent and elevations of 2,200 feet above msl.

III. SITE BACKGROUND

In 1982, Cattaraugus County Health Department (CCHD) and NYSDEC, while investigating TCE contamination at the Luminite Products Corporation (Luminite) facility located in the City of Salamanca, detected TCE in nearby private wells.

In 1989, NYSDEC sampled the plant production well, process wastewater, and septic tank on the Luminite property, as well as nearby New York State Department of Transportation monitoring wells. The analytical results indicated that groundwater contamination was present both upgradient and downgradient of the Luminite facility, with the groundwater plume extending from the Village of Little Valley to the northem edge of the City of Salamanca.

Based on these findings, the CCHD issued health advisories to exposed residents and efforts were initiated to determine sources of TCE contamination upgradient of Luminite.

In 1992, NYSDEC installed a number of monitoring wells in the area, and conducted source reconnaissances at the other active and inactive industries and waste disposal areas to investigate possible sources of the contamination. No sources were found.

In June 1996, EPA listed the Site on the National Priorities List, and prepared a focused feasibility study (FFS) to develop, screen, and evaluate alternatives for an alternate water supply system for the affected and potentially affected residences to address the most immediate concems at the Site.

Based upon the findings of the FFS, on September 30, 1996, EPA issued a ROD (1996 ROD), providing for the installation of air stripper treatment units on all of the affected and potentially affected private wells, as an interim remedy, to ensure that drinking water standards were met.

In September 1996, EPA also commenced an RI/FS to identify sources of the groundwater contamination and to evaluate remedial alternatives for the groundwater.

Installation of the air stripper treatment units was completed in October 1997. Subsequently, granular activated carbon units were installed in addition to the air strippers to serve as "polishing" units to insure the consistent removal of the contaminants.

The 1996 ROD also called for an evaluation of the efficacy of the point-of-use treatment systems within five years of their installation, and a determination as to whether or not a more permanent system (such as a waterline) would be required. In an April 2002 ESD, EPA determined that it would be more appropriate to evaluate the need for a permanent alternative water supply during the selection of the final groundwater/source area remedy for the Site. EPA also determined that because of the decreasing levels of contaminant concentrations in the private wells, granular activated carbon units alone would effectively remove the

contamination. Subsequently, the air stripper treatment units were removed from each well and replaced with a second granular activated carbon unit.

On May 16, 2002, five years after the initiation of the implementation of the alternate water supply interim remedy, EPA conducted a five-year review at the site. This five-year review found that the point-of-use treatment units called for in the 1996 ROD, as modified by the ESD, were functioning as designed and addressed the immediate threat to public health.

NYSDEC assumed responsibility for the operation and maintenance of the point-of-use treatment units and annual sampling of private wells in October 2002. Routine maintenance is conducted on the point-of-use treatment systems on a quarterly basis, and repairs are performed as needed. As part of the ongoing maintenance of the treatment units, NYSDEC evaluates the effectiveness of the treatment units by sampling the groundwater passing through the individual treatment systems on an annual basis.

Based upon soil data collected as part of the source identification and control RI/FS, the Cattaraugus Cutlery Area was determined to be a current localized source of groundwater contamination (TCE concentrations in the soils exceed TAGM objectives and TCE levels in the groundwater exceed Maximum Contaminant Levels [MCLs]). Based upon the TCE concentrations that were detected in the soil and the TCE concentrations which exceed MCLs in the groundwater, the Bush Industries Area also was determined to be a current localized source of groundwater contamination. Three areas were identified as likely past sources of the groundwater contamination—Great Triangle Area (Drum Storage Area); Luminite Area; and Ninth Street Landfill Area.

Based upon the results of a June 2005 RI/FS report, on August 19, 2005, a ROD (2005 ROD) was signed which called for the excavation and off-site treatment/disposal of an estimated 220 cubic yards of contaminated soils located on the former site of the Cattaraugus Cutlery Company (hereinafter, referred to as the "Cattaraugus Cutlery Area") and monitored natural attenuation for the Site-wide groundwater. The ROD also called for an evaluation of the potential for soil vapor intrusion into structures within the study area and mitigation, if necessary.

The 2005 ROD also included institutional controls in the form of informational devices (*e.g.*, notifications).

As is noted above, the 1996 ROD provided for the installation and maintenance of point-of-use treatment systems for private wells affected by Site contamination as an interim remedy. The 2005 ROD also made the interim alternate water supply remedy the final remedy for the water supply.

In September and November 2005, in accordance with the selected remedy for the soil, EPA undertook pre-excavation soil sampling to define the boundaries of the soil contamination at the Cattaraugus Cutlery Area. The results from this sampling effort indicated that the volume of contaminated soil is substantially greater than originally estimated in the 2005 ROD (it has

increased from approximately 220 cubic yards to approximately 3,000 cubic yards).

Since EPA believed that the increased volume of contaminated soil at the Cattaraugus Cutlery Area would impact the feasibility, effectiveness, and overall cost effectiveness of the selected remedy, the remedial alternatives for the soil component of the remedy selected in the 2005 ROD were reevaluated in *Focused Feasibility Study Report, Presentation of Air Permeability Testing Results and Evaluation of Soil Remedial Alternatives Related to the Cattaraugus Cutlery Area, Little Valley Superfund Site, Cattaraugus County, New York*, EPA, July 2006 (2006 FFS) report. Based upon the findings of the 2006 FFS and the results of a treatability study, it was determined that ISVE would be effective in addressing the contaminated soil at the Cattaraugus Cutlery Area.

On September 28, 2006, a ROD amendment was approved, changing the soil remedy selected in the 2005 ROD to ISVE.

Remedial Construction Activities

Point-of-Use Treatment Systems

The 1996 ROD called for the installation of air stripper treatment units on TCE-contaminated private wells associated with the site. Air strippers were selected because, based upon the maximum TCE concentrations that were present in the private wells at that time, they would be significantly less costly to maintain than activated carbon treatment units[1].

The design related to the individual treatment units was performed from December 1996 through March 1997. Air stripper treatment units were installed on 91 private wells by EPA's Removal Contractor from May 1997 through October 1997. Subsequently, 1.5 cubic foot-granular activated carbon treatment units were installed hydraulically downgradient of the air strippers.

An Interim Remedial Action Report for the alternate water supply was approved on September 29, 1998.

After five years of operation, it was determined that the air strippers were reaching the end of their useful life. Therefore, it was assumed that the maintenance requirements associated with these units would increase. Because of the significant reduction in contaminant concentrations in the private wells, EPA determined that granular activated carbon units alone would be able

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[1] The cost of operating carbon treatment units is largely a function of the "useful life" of the carbon (*i.e.*, how long the carbon can effectively treat the water before it needs to be replaced). The useful life of the carbon depends on the contaminant levels in the water that is passed through the treatment unit. The greater the contamination levels, the shorter the life of the carbon, which will require more frequent replacement of the carbon in the treatment unit.

to effectively remove the contamination. EPA also determined that the activated carbon units alone would be as protective of public health as the combined air stripper/activated carbon treatment units. For these reasons, EPA decided to remove the air stripper treatment units and use only activated carbon treatment units to address the contamination in the private wells. While the existing granular activated carbon units alone would adequately remove the TCE from the groundwater, under NYSDEC and New York State Department of Health standard operating procedures, the carbon in single carbon units must be replaced every two years. However, if two granular activated carbon treatment units are installed in series, the above-noted standard operating procedures allow the carbon to be replaced once sampling shows that the carbon in the primary tank (the first tank) is no longer effectively removing the contaminants (the secondary tank would remove any contaminants that pass through the primary tank, thereby continuing to protect the water supply). Since the long-term cost of installing an additional carbon unit on each well and the carbon replacement expenses related to two granular activated carbon treatment units installed in series would be significantly less than the carbon replacement expenses associated with single carbon units, when the air strippers are removed, an additional carbon unit was installed on each well. The conversion was performed from August to September 2002. Effective October 3, 2002, the responsibility for maintaining the point-of-use treatment systems and monitoring the private wells was transferred from EPA to NYSDEC.

Routine maintenance is conducted on the treatment units on a quarterly basis, and repairs are performed as needed. Private wells in the area are sampled annually.

Soil Vapor Extraction System

ISVE works best in high permeability soils. Because of concerns about the viability of ISVE at the Cattaraugus Cutlery Area due to the predominance of silt, from April 15 – 16, 2006, EPA performed an air flow study to provide an indication as to whether or not ISVE could successfully be used to remediate VOC-contaminated soils.

Six soil vapor extraction/monitoring wells were installed from seven to 12 feet below the ground surface in the contaminated area for evaluation. Air flow and vapor concentration data were collected during testing of each well and from the combined air stream of all six wells. The results of the testing indicated that air flow rates, contaminant concentration levels, and the radius of influence of the ISVE extraction/monitoring wells were suitable to support full-scale ISVE pilot test operations.

An ISVE treatability system, consisting of 25 additional vapor extraction wells and a positive displacement blower rated at 500 CFM air flow at 5 inches of Hg, was subsequently installed. The ISVE system (blower, etc.) is located in a sealed, metal cargo container. Off-gas treatment from the ISVE system is provided by two 2,000-pound vapor phase granular activated carbon vessels arranged in series. The treatability study commenced on August 14, 2006. From September 27-28, 2006, a subsurface horizontal vapor extraction well was installed to address subsurface soil contamination beneath one of the buildings.

Although the 2006 ROD amendment has a contingency remedy of excavation and off-site treatment/disposal should operational data indicate that ISVE will not address all of the contaminated soils, based upon the yields of VOCs and the operational data that has been collected, it appears that the contingency remedy will not be needed.

It is anticipated that the soil will achieve the cleanup objectives in three years.

Soil Vapor Intrusion Mitigation

Concerns about TCE vapors from the groundwater getting into the air inside homes in the study area prompted the 2005 ROD to call for an evaluation of the potential for soil vapor intrusion into structures within the study area and the installation of mitigation systems, if necessary.

To evaluate the possibility of soil vapor intrusion, in September 2005, EPA tested under the foundations of 23 homes and a manufacturing facility (Luminite) as a representative sample of the more than 300 residences and businesses overlying the contaminant plume. In January 2006, EPA revisited 12 of the homes tested in September 2005 to sample the indoor air quality and also tested under the foundations of an additional four homes. Based upon these results, EPA collect subslab samples from an additional 82 homes in July 2006[2]. In August 2006, indoor air samples were collected from 36 homes and subslab samples were collected from beneath two homes.

Based upon the results of the soil vapor intrusion sampling effort, subslab mitigation systems were installed beneath two residences from September 27-28, 2006.

Institutional Controls

The 2005 ROD called for institutional controls. Specifically, after an initial notification, NYSDEC, the New York State Department of Health (NYSDOH), and/or CCHD will periodically meet with or notify local governmental agencies to remind them that if any unimproved parcel where the underlying groundwater is contaminated with TCE above the MCL is developed, the groundwater should not be used without treatment. In addition, EPA is to notify the Bush Industries and Cattaraugus Cutlery Area property owners that the underlying groundwater is contaminated and should not be used without treatment. As part of EPA's natural attenuation monitoring at the Bush Industries and Cattaraugus Cutlery Areas, the properties are to be inspected annually to verify that wells without treatment systems have not been installed. An annual report summarizing the results of the groundwater monitoring and the findings of such

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[2] Although soil vapor intrusion information packets and access agreements were provided to over 300 homeowners/tenants, a public meeting was held on June 14, 2006 to discuss the soil vapor intrusion program, and follow up letters were sent to those homeowners/tenants that failed to respond to the initial access agreement package, only 148 consented to the sampling program.

inspections will be prepared.

On December 21, 2005, EPA notified the Bush Industries and Cattaraugus Cutlery Area property owners via letters that the selected remedy includes monitored natural attenuation and institutional controls and that the groundwater underlying their respective properties is contaminated and should not be used without treatment. On December 22, 2005, the local governmental agencies were notified via letters that if any unimproved parcel where the underlying groundwater is contaminated with TCE above the MCL is developed, the groundwater should not be used without treatment.

Monitored Natural Attenuation

EPA's contractor, Tetra Tech EC, Inc. (TtEC), prepared a monitored natural attenuation plan, which was approved by EPA on May 8, 2006. The monitored natural attenuation plan was implemented as a limited action for one year. The limited action commenced on May 26, 2006.

The first round of monitored natural attenuation samples were collected from October 23, 2006 through November 1, 2006. The data, which are summarized in *Data Evaluation Report #1 for the Remedial Action, Little Valley Superfund Site, Cattaraugus County, New York*, Tetra Tech EC, Inc., June 2007 (see Appendix B), indicate that there is evidence of natural attenuation.

IV. CONSTRUCTION ACTIVITIES

Twenty-four of the existing monitoring wells and piezometers present at the Site were selected to be sampled during the MNA program based on a site visit and site-specific information included in the RI Report, the MNA Evaluation Report (Appendix C of the April 2005 FS Report) and EPA's *Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Ground Water.* An additional 11 monitoring wells and/or piezometers are designated as alternates in hierarchical order for substitution purposes, as needed.

Analyses for the first sampling round were performed through the EPA's Contract Laboratory Program (CLP) and an independent subcontract laboratory.

TtEC began mobilizing the necessary personnel, equipment and materials for the first annual sampling event on October 20, 2006. Groundwater sampling was conducted from October 23, 2006 to November 1, 2006.

Groundwater purging operations and subsequent sample collection, were conducted using low-flow methodology and adjustable-rate stainless-steel submersible pumps equipped with dedicated Teflon-lined tubing and a flow-through cell. Field indicator parameter readings (i.e., pH, specific conductivity, turbidity, dissolved oxygen, oxidation-reduction potential, temperature,

and total dissolved solids were taken during purging operations. Once the indicator parameters were considered to be stabilized, groundwater samples were collected from the monitoring wells/piezometers directly from the Teflon-lined tubing into the sample bottles.

The data results obtained from these off-site laboratories underwent a systematic validation to provide assurance that the data would be adequate for its intended use. EPA Region 2 Hazardous Waste Support Section personnel, in conjunction with EPA Division of Environmental Science and Assessment personnel, performed the validation of the samples sent to the CLP laboratory.

V. CHRONOLOGY OF EVENTS

The major events associated with the subject monitored natural attenuation are provided below.

Event	Date(s)
Cattaraugus County Health Department (CCHD) and New York State Department of Environmental Conservation (NYSDEC) investigate trichloroethylene contamination at a local manufacturing facility.	1982
CCHD and New York State Department of Health sample residential wells.	1989-1996
NYSDEC conducts a source investigation.	1989-1994
Little Valley Site listed on National Priorities List.	1996
Alternate water supply Record of Decision signed.	1996
Installation of stripper treatment units on impacted residential wells.	1997
Alternate water supply Explanation of Significant Differences issued.	2002
First five-year review	5/2002
Source identification and control Record of Decision signed.	8/2005
Commence Monitored Natural Attenuation Sampling	10/2006
Preliminary Close-Out Report	9/2006
Second five-year review	5/2007

VI. PERFORMANCE STANDARDS/CONSTRUCTION QUALITY CONTROL

Performance Standards

All water sample collection activities at the Site were conducted in accordance with the EPA-approved *Final Remedial Action Work Plan for the Little Valley Superfund Site, Cattaraugus County, New York* (Tetra Tech EC, Inc., October 2006) and *Quality Assurance Project Plan Addendum for Remedial Action of Monitored Natural Attenuation at the Little Valley Superfund Site* (Tetra Tech EC, Inc., September 2006).

The usability of the analytical data acquired during the October 2006 field investigation is based on the adequacy of the results to fulfill the requirements of the site-specific quality assurance/quality control (QA/QC) objectives. Characteristics to satisfy these requirements include precision, accuracy, representativeness, comparability, completeness, detection limit verification, and blank contamination elimination. This assessment determines whether the data can be relied upon for assessing the progress of the MNA program. A total of 41 samples (24 environmental samples; two duplicate samples; and 15 field, trip and deionized water blanks) were analyzed, and these off-site laboratory samples contained 2,410 separate constituent results.

Precision is the measurement of agreement in repeated tests of the same or identical samples, under prescribed conditions. Analytical precision can be expressed in terms of standard deviation, relative standard deviation and/or relative percent difference (RPD). Acceptance criteria for laboratory precision are described in the applicable analytical methodologies. The acceptance criterion for the field duplicates was an RPD less than or equal to 50 percent for aqueous samples. Laboratory precision was determined through replicate measurements of the same or identical samples, such as matrix spike duplicates and laboratory duplicates. More than 98 percent of the laboratory analytical results (or 2,366 constituent results) were associated with precision samples that were within their prescribed limits. Only 0.1 percent (or three constituent results) had laboratory precision samples slightly outside limits, and were qualified as estimated after validation. A total of 41 constituent results (or 1.7 percent) was determined to be unusable due to severe data bias, and these results were for 1,4-dioxane (which is not a contaminant of concern for the Site). The precision of the field sampling effort was determined by the analysis of two field duplicate samples and the calculation of RPDs. The RPD was not calculated for any set of sample pairs that had only one detection in either sample but not in both; was not detected in both the data sets, and/or had a data result value deemed unusable ("rejected") during validation for at least one of the samples. Agreement between the two data pairs can be inferred when both of the results are nondetects, and when the one detected result value is below the quantitation limit of the other sample set. Nineteen of the possible 20 constituent results for which RPDs were calculated (or 95 percent) had acceptable RPDs. The one set of constituent results (or 5 percent) had a calculated RPD of approximately 82 percent, and was for methane.

Accuracy of the data, or the degree of agreement between a measured result with the

accepted true value, was determined through the use of surrogate compounds, internal standard compounds, and matrix spike samples. The majority of the laboratory analytical runs had percent recovery measurements within the prescribed method limits (i.e., 99.9 percent or 2,408 constituent results). Two separate constituents (or almost 0.1 percent) were estimated following validation based on exceeding the appropriate recovery limits. None of the concentration results were considered unusable due to gross recovery limit exceedances.

Representativeness is the degree to which the results of the analyses accurately and precisely represent a characteristic of a population, a process condition, or an environmental condition (i.e., the degree to which the data reflect the contaminants present and their concentration magnitudes in the sampled site areas). Representativeness of the field investigation data occurred through the use of previously installed locations that were selected by EPA based on Site-specific information. In addition, representativeness is assessed through the implementation of approved sampling procedures as described in the Final Work Plan and Quality Assurance Project Plan Addendum. A field inspection by the TtEC Quality Assurance Officer on 24 and 25 October 2006 indicated that the sampling investigation was found to be in general compliance with the applicable plans. Three minor findings were noted, and corrections were implemented immediately by the field staff. Based on the above, the October 2006 field investigation data are considered representative of the current environmental conditions at the Site.

Comparability is the degree of confidence with which results from two or more data sets, or two or more laboratories, may be compared. To increase the degree of comparability between data results and between past, present and future sampling events, standard environmental methods were employed by the off-site laboratories. Routine Analytical Service (RAS) sample analyses available through the EPA CLP Program were utilized for the Trace Concentration VOCs, and one CLP laboratory was used during the October 2006 investigation. Noncompliance with the CLP Statement of Work occurred during the calibration of 1,4-dioxane, which qualified these data results as unusable ("rejected"). Non-CLP parameters (i.e., the monitored natural attenuation/water quality parameters) were 3-3 analyzed by either the EPA Region 2 DESA Laboratory or Life Science Laboratory, Inc. The methodologies and analytical procedures utilized by these Non-CLP laboratories were EPA approved, generally accepted methods specified in the Quality Assurance Project Plan Addendum and/or the Subcontract. Noncompliance by the Non-CLP laboratories resulted in either qualification of the results as estimated or did not qualify the data.

Completeness is defined as the percentage of samples that meet or exceed all the criteria objective levels within a defined time period or event. The objective for completeness was 90 percent, as stated in the Quality Assurance Project Plan Addendum. Approximately 1.7 percent of the constituent results (or 41) were considered unusable due to being qualified "rejected" during validation. Therefore, a total of 2,369 constituents (or over 98 percent) was determined to be usable results, which exceeds the completeness criterion.

An evaluation of detection limits was part of the determination of analytical methods to verify that the sensitivity of the chosen methods was adequate to meet the applicable screening

criteria. Analytical methods were selected based on, depending on the analytical fraction, either all or a majority of the constituent detection limits being less than applicable criteria values, with special attention paid to the contaminants of potential concern at the Site (e.g., TCE and its reductive dechlorination products). There were no constituents during the October 2006 sampling event that had screening criteria lower than detection limits (SQLs).

Blanks were prepared during the field investigation and analyzed by the off-site laboratories with the associated environmental samples to evaluate the potential for contamination that may have been introduced into the samples. Validation determines the need for qualification of sampling analytical results based on blank contamination. Concentrations of 14 constituents were detected during the analysis of field, trip and/or deionized water blanks (see Tables B-15 and B-16). Based on the blank contamination amounts, the constituent concentrations in the associated environmental samples were considered legitimate occurrences or qualified as not detected (144 constituent results).

In general, the data fulfilled the site-specific QA/QC requirements, and therefore, are considered acceptable for use under the project objectives and to support the evaluation of the MNA program.

Review of Monitored Natural Attenuation Data

Natural attenuation of TCE via reduction dechlorination produces daughter products such as 1,1-dichloroethylene (DCE), 1,2-DCE, and vinyl chloride. The results of the October 2006 MNA sampling indicate that the current groundwater quality is not readily conducive to biodegradation by reductive dechlorination throughout most of the plume, however, some daughter products are detected within the plume and appear to indicate that limited degradation of TCE is occurring in some locations. The presence of these daughter products in the Bush Industries Area, and to a lesser extent, the Cattaraugus Cutlery and Great Triangle Areas, indicates that dechlorination is occurring near the source areas. Further downgradient areas in the valley showed no detectable concentrations of daughter products.

Concentrations of selected VOCs (TCE, 1,2-DCE, and vinyl chloride) were evaluated statistically at selected individual monitoring and residential wells across the valley. For those compounds and wells for which the statistical analysis could be run, 70 percent demonstrated a statistically significant decreasing trend. Further, none of the selected wells showed a statistically increasing trend for the selected VOCs.

Other natural attenuation mechanisms, such as biodegradation by cometabolism, dilution, dispersion, and/or adsorption, may also be occurring within the valley aquifer system. These mechanisms, and the installation of a soil remedy at the Cattaraugus Cutlery property, should continue to improve the quality of water in the valley over time.

VII. FINAL INSPECTION

On September 25, 2006, the groundwater monitoring wells associated with the monitored natural attenuation sampling effort were inspected.

VIII. CERTIFICATION THAT REMEDY IS OPERATIONAL AND FUNCTIONAL

Operational and Functional (O&F) activities are conducted after physical construction of the remedy is complete to ensure that it is functioning properly and operating as designed. The National Oil and Hazardous Substances Pollution Contingency Plan, 40 CFR Part 300, provides for a maximum time frame of one year for performing O&F activities, though EPA may extend the one-year period, as appropriate. O&F determinations are made for containment (all media), groundwater restoration and surface water restoration. The determination is made after physical construction of the remedy is complete to ensure that it is functioning properly and operating as designed. Monitored natural attenuation remedies do not go through an O&F determination.

IX. OPERATION, MAINTENANCE, AND MONITORING ACTIVITIES

Natural attenuation monitoring of the TCE-contaminated groundwater underlying the Bush Industries, Cattaraugus Cutlery, Great Triangle, and Ninth Street Landfill Areas, as well as the site-wide groundwater plume, will be conducted on an annual basis. The first monitoring was conducted in October 2006.

X. SUMMARY OF PROJECT COSTS

The estimated average annual monitored natural attenuation monitoring cost is $166,000. There are no capital costs. A breakdown of the costs is provided in Appendix A.

XI. OBSERVATIONS AND LESSONS LEARNED

No observations or lessons learned have been identified.

XII. CONTACT INFORMATION

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APPENDIX A

SUMMARY OF PROJECT COSTS