TETRA TECH FW, INC.

3 June 2005
RAC II-2005-082

Ms. Sharon Trocher
Work Assignment Manager
U.S. Environmental Protection Agency
290 Broadway, 20th Floor
New York, NY 10007-1866

SUBJECT: USEPA RAC II CONTRACT NUMBER: 68-W-98-214
WORK ASSIGNMENT NUMBER: 109-RALR-0238
VESTAL WELL 1-1 SITE, OPERABLE UNIT 1
2004 ANNUAL EFFECTIVENESS MONITORING REPORT

Dear Ms. Trocher:

I am pleased to provide you with three copies of the 2004 Annual Effectiveness Monitoring Report for the Vestal 1-1 Site. As requested, I have also included a CD containing the electronic files. Please let me know if you have any questions or comments on the report. I can be reached at (973) 630-8412.

Sincerely,

Wendy DeMaio

Wendy DeMaio
Project Manager

Enclosure

cc: J. Drumm, NYSDEC

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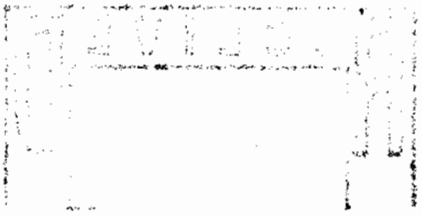

ANNUAL EFFECTIVENESS MONITORING REPORT No. 7
VESTAL WELL 1-1 TREATMENT FACILITY

WORK ASSIGNMENT NUMBER: 109-RALR-0238

PUMPHOUSE ROAD
VESTAL, NEW YORK

JUNE 2005

Prepared By:

TETRA TECH FW, INC.

1000 The American Road
Morris Plains, New Jersey 07950

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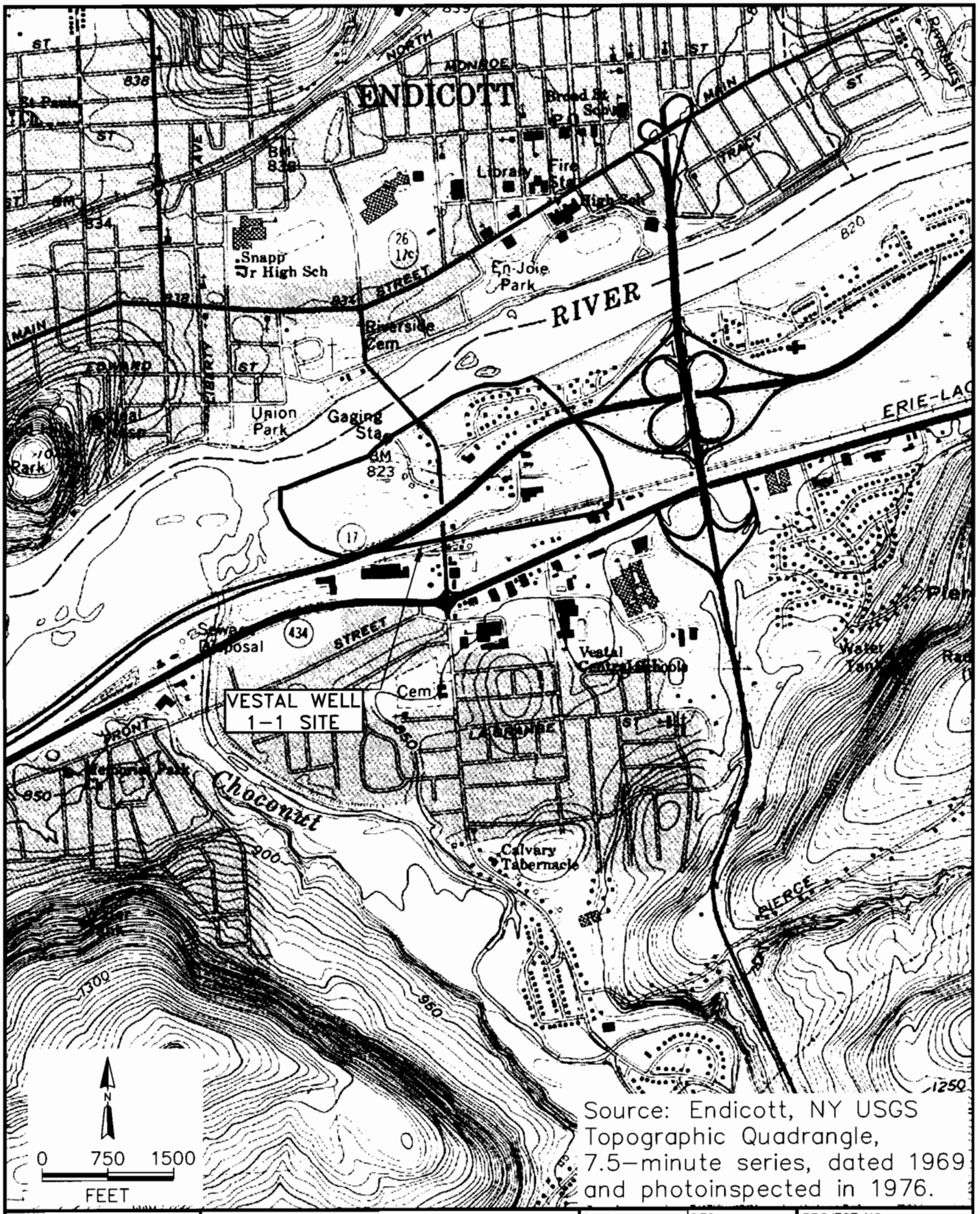
1.0 INTRODUCTION

The Town of Vestal is located in Broome County, New York, approximately five miles southwest of the City of Binghamton, on the south bank of the Susquehanna River. Figure 1-1 depicts the location of the Vestal Well 1-1 site. The Vestal Well 1-1 was one of three production wells (Wells 1-1, 1-2 and 1-3) providing drinking water to several water districts in the Vestal area. Well 1-1 was taken offline in 1980 because of contamination by volatile organic compounds (trichloroethene, 1,1-dichloroethene, 1,1-dichloroethane, 1,1,1-trichloroethane, and trans-1,2-dichloroethene). The construction of an air stripping facility for Well 1-1 was completed by the United States Environmental Protection Agency (USEPA) in early 1991 pursuant to the First Operable Unit (OU-1) Record of Decision (ROD) (USEPA, 1986). Due to problems with Well 1-1, the USEPA constructed a new (replacement) Well 1-1A to a depth of 135 feet below grade with a pumping capacity of 1,150 gallons per minute to ensure successful implementation of the remedy. In March 1995, the USEPA issued a Remedial Action Report, which determined Well 1-1A and the associated air stripping facility were fully functional and operational as a potable water supply. However, the New York State Department of Environmental Conservation (NYSDEC), which had previously agreed through a cooperative agreement with the USEPA to provide Long-Term Response (LTR) for this facility, was unable to secure a contract with the Town of Vestal. In May 1995, the NYSDEC informed the USEPA it no longer desired cooperative agreement funds to perform LTR. Therefore, the USEPA performs LTR to restore the groundwater aquifer and discharges the treated water to the Susquehanna River. The Town of Vestal does not use the treated water from Well 1-1A.

The OU-1 ROD also recommended a Second Operable Unit (OU-2) Remedial Investigation/ Feasibility Study (RI/FS) be undertaken to evaluate suspected contaminant source areas upgradient of Well 1-1. The USEPA initiated this RI/FS in November 1988. A Second (OU-2) ROD was signed on 28 September 1990, selecting *in situ* vacuum extraction as the remedy for two discrete areas of soil contamination, i.e., Area 2 and Area 4, located in the Stage Road Industrial Park. These are the predominant sources of contamination of Well 1-1 (Figure 1-2).

USEPA completed remedial design activities for Area 2 in September 1994 and entered into an IAG with the United States Army Corps of Engineers (USACE) to implement the Area 2 remedial action (RA). The USACE started construction of the soil vacuum extraction (SVE) system in October 1996 and completed construction in January 1997. The Area 2 SVE system operation was terminated in November 2000, after the results of the Interim Soil Sampling Program confirmed the SVE successfully achieved ROD cleanup goals. Construction of a SVE system in Area 4 was initiated on 1 April 2003. This system started operation on 28 June 2003 and is still operating. As of 8 September 2003, approximately 600 pounds of VOCs were removed.



Source: Endicott, NY USGS Topographic Quadrangle, 7.5-minute series, dated 1969 and photoinspected in 1976.

TETRA TECH FW, INC.	TITLE: Site Map Vestal Well 1-1 Site Vestal, New York	DWN: CTS	DES.: CTS	PROJECT NO.: 1945.2109.0700
		CHKD: CEM	APPD: HR	FIGURE NO.: 1-1
		DATE: 03/09/04	REV.: 1	

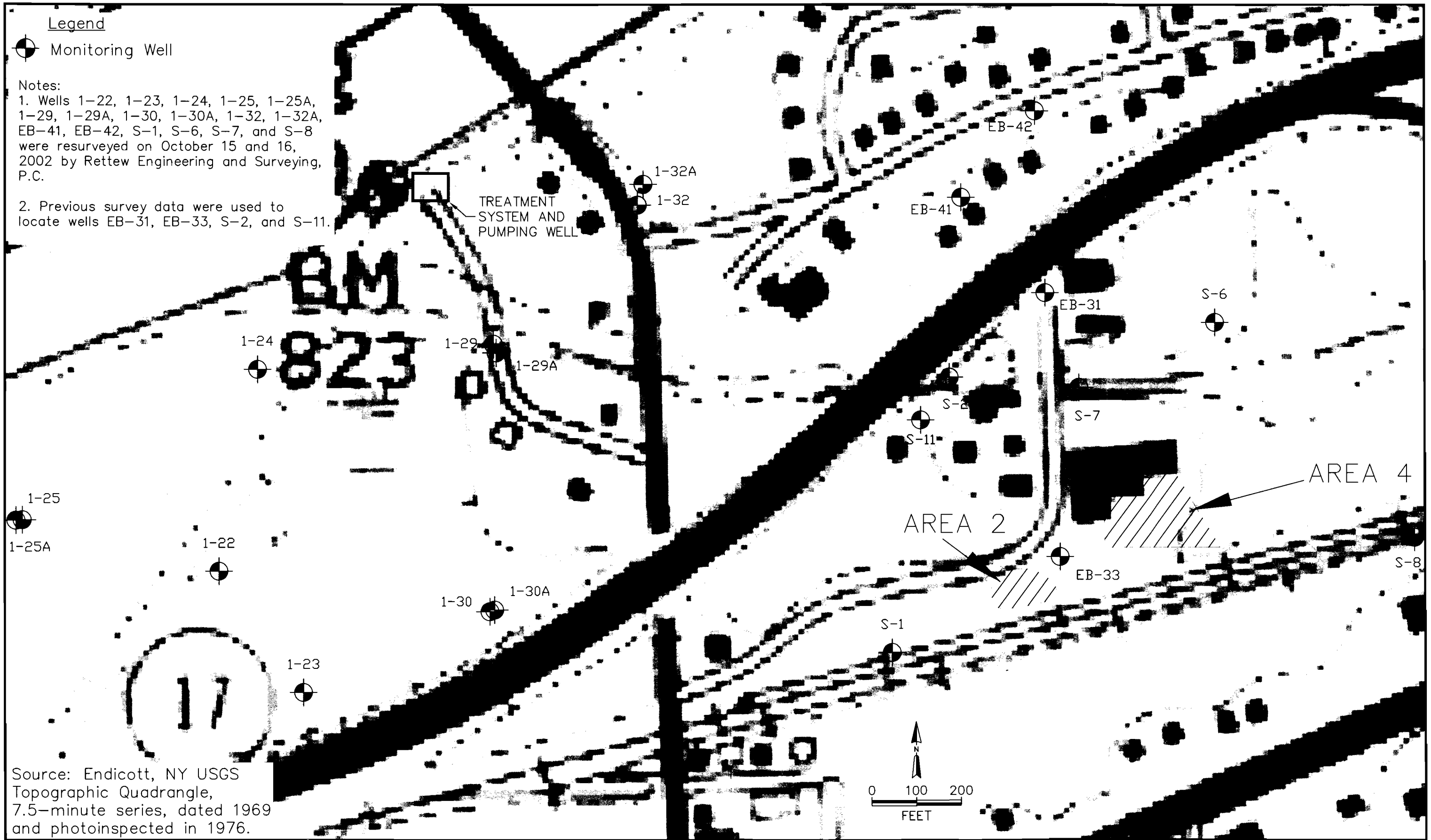
N:\GIS\GISKEY\GISPRDJ31\VESTAL-SURVEYED\GW REPORT 2005\FIGURE 1-1 050405.DWG

Legend

Monitoring Well

Notes:
1. Wells 1–22, 1–23, 1–24, 1–25, 1–25A, 1–29, 1–29A, 1–30, 1–30A, 1–32, 1–32A, EB–41, EB–42, S–1, S–6, S–7, and S–8 were resurveyed on October 15 and 16, 2002 by Rettew Engineering and Surveying, P.C.

2. Previous survey data were used to locate wells EB–31, EB–33, S–2, and S–11.



Source: Endicott, NY USGS Topographic Quadrangle, 7.5–minute series, dated 1969 and photoinspected in 1976.

TETRA TECH FW, INC.

TITLE:
Monitoring Well Locations
Vestal Well 1–1 Site
Vestal, New York

DWN.: CTS	DATE: 05/26/05	PROJECT NO.: 1945.2109.0700	
CHKD: DPC	REV.: 0	FIGURE NO.: 1–2	
DES.: CTS	APPD: WSD		

N:\GIS\GISKEY\GISPROJ31\VESTAL-SURVEYED\GW REPORT 2005\FIGURE 1-2 052605.DWG

The monitoring for OU-1 LTR consists of both monthly treatment system performance monitoring and annual groundwater effectiveness monitoring. The performance monitoring criteria are designed to evaluate the performance of the treatment system and determine whether the treated water meets the requirements for discharge to the Susquehanna River (New York State Freshwater Groundwater [Class GA] Effluent Limitations). The effectiveness monitoring criteria are designed to assess the effectiveness of groundwater contamination plume capture by Well 1-1A and determine the progress of groundwater restoration with respect to the New York State Groundwater Quality Criteria (NYSGWQC).

Table 1-1 highlights the New York State Class GA Groundwater Effluent Limitations and the New York State Class GA Groundwater Quality Criteria for the site contaminants of concern (COCs).

Table 1-1

NYS Groundwater Effluent Limitations and Groundwater Quality Criteria For the Site Contaminants of Concern

Constituent	NYS GA Groundwater Effluent Limitations (µg/L)	NYS GA Groundwater Quality Criteria (µg/L)
Chloroform	7	7
1,1-dichloroethane	5	5
1,1-dichloroethene	5	5
Trans-1,2-dichloroethene	5	5
1,1,1-trichloroethane	5	5
Trichloroethene	5	5
Total Volatile Organics	100	100
Chromium	100	50
Copper	1,000	200
Lead	50	25
Mercury	1.4	0.7
Nickel	200	100
Zinc	5,000	2,000

µg/L - micrograms per liter

This report, Effectiveness Monitoring Report No. 7, presents the results of the effectiveness monitoring sampling conducted from 28 June through 9 July 2004. Water level measurements collected in June 2004 were not used for generating a groundwater contour map as well 1-1A was not operating at that time. Water level measurements were collected on 9 November 2004, while well 1-1A was operating, in order to produce a groundwater contour map indicative of pumping conditions.

2.0 TECHNICAL APPROACH

2.1 Description of Sampling and Analysis Program Plan

The wells selected for performing the effectiveness monitoring sampling, as presented in the original ROD, are Wells S-1, S-2, S-6, S-7, S-8, S-11, EB-1, EB-31, EB-33, EB-41, EB-42, 1-22, 1-24, 1-29, and 1-29A (15 wells). Monitoring well EB-1 could not be located and has been replaced by monitoring well 1-32A. A deep monitoring well (1-32) was installed at the same location. During the 2004 effectiveness monitoring event, wells 1-25, 1-25A, 1-30, and 1-30A were added to the effectiveness monitoring sampling program to assist in delineation of the western margin of the plume. Monitoring well 1-22 was removed from the monitoring program as it became superfluous with the addition of well 1-30. Therefore, a total of 19 groundwater monitoring wells were sampled during the 2004 sampling event to evaluate the effectiveness of the remediation. Groundwater level measurements were collected from the 19 effectiveness monitoring sampling wells and monitoring wells 1-22 and 1-23. Monitoring well locations are shown on Figure 1-2.

Tetra Tech FW, Inc. (TtFW) conducted groundwater purging operations and subsequent groundwater sample collection in accordance with the USEPA Region 2 Low Stress Method using adjustable-rate stainless-steel submersible pumps equipped with dedicated tubing. The stainless steel submersible pump, with polyethylene tubing and safety line, was gently lowered into the well casing, to approximately the mid-point of the saturated screen level (target sampling zone). Following the installation of the pumping equipment, a water level measurement was recorded using an electronic water level indicator. These measurements were taken cautiously to the extent practicable, in order to cause minimum turbulence to the static water level. After the water level was recorded, groundwater in each monitoring well was purged. During the purging operations, the pump speed was adjusted to achieve minimal stabilized drawdown, to the extent practicable. If the drawdown could not be stabilized, the pumping rate was reduced to the minimum allowed by the equipment. The groundwater purging was accompanied by periodic (average of 3 to 6 minutes) measurements of field indicator parameters including pH, temperature, specific conductivity, dissolved oxygen, turbidity, and oxidation-reduction potential (Eh) using a Horiba U-22 meter. Once the field parameters were considered to be stabilized within the limits specified in the USEPA's Low Stress Method, groundwater samples were collected directly from the tubing into sample containers. A copy of the field logbook notes for this sampling round are provided in Appendix A. Low Flow Purge Data Sheets with field parameter results are provided in Appendix B.

Upon completion of sampling, the sample containers were placed in coolers with ice and maintained at 4° Celsius. Prior to overnight shipment of the sample to the analytical laboratory, sample labels were completed with sample identification number, project name/number, date, time and analytical parameters, and then placed on the sample containers. The samples were wrapped with bubble wrap and placed in the coolers with the completed chain of custody and secured with shipping tape and tamper-proof labels.

Groundwater samples were analyzed for Target Compound List volatile organic compounds (TCL VOCs) and 1,4-dioxane. The analysis of 1,4-dioxane was added to the 2004 effectiveness monitoring event at the request of USEPA. In addition, samples from wells 1-24, 1-29 and 1-29A

and 1-30 were analyzed for Target Analyte List (TAL) metals to evaluate the effectiveness of groundwater cleanup. The sample collection, handling, shipping and analytical protocols are presented in Appendix A, Monitoring Plan of the O&M Manual TtFW, February 1996.

2.2 Field Blank, Trip Blank and Duplicate Samples

Field blanks, trip blanks and duplicate samples were utilized to establish quality assurance of sampling methodology and laboratory analyses. A field blank sample, consisting of distilled water poured through decontaminated field equipment, was collected daily.

A trip blank sample, supplied by the laboratory, accompanied each shipment of samples to the laboratory.

Duplicate groundwater samples were collected from monitoring wells 1-29 (VE-129-D-070604) and EB-41 (VE-EB45-062904). The duplicate sample from monitoring well 1-29 was analyzed for metals only, and the duplicate sample from monitoring well EB-41 was analyzed for TCL VOCs and 1, 4-dioxane only. The analyte concentrations reported for the duplicates demonstrated acceptable levels of measurement precision.

2.3 Sample Analysis and Data Validation

Groundwater samples were collected from 19 groundwater monitoring wells (S-1, S-2, S-6, S-7, S-8, S-11, EB-31, EB-33, EB-41, EB-42, 1-24, 1-25, 1-25A, 1-29, 1-29A, 1-30, 1-30A, 1-32, and 1-32A). The samples were shipped to Chemtech, Inc. for analysis. Data validation was performed by TtFW, and the validation reports are provided in Appendix C. The laboratory data were evaluated according to USEPA Region 2 Functional Guidelines (SOW HW-6, Rev 8, CLP Organics Data Review and Preliminary Review, January, 1992).

The validation determined the data in the report should be considered technically defensible and completely usable, except for those samples noted.

3.0 EVALUATION OF SAMPLING RESULTS

3.1 Analytical Results

The groundwater sampling results from the 2004 sampling event indicate several COCs above NYSGWQC standards at the site. The COCs exceeding NYSGWQC include 1,1,1- trichloroethane, 1,1-dichloroethane, 1,1-dichloroethylene, cis-1,2-dichloroethylene, trichloroethylene, and vinyl chloride. The analytical results for 1,4-dioxane were qualified as unusable (R) in all samples due to low response factors in the initial and continuing calibration standards. Table 3-1 presents the analytical results and compares them to the NYSGWQC and EPA MCLs. Figure 3-1 presents the constituents detected above the NYSGWQC for each well sampled. The validated raw analytical data are presented in Appendix C.

As Figure 3-1 illustrates, the highest concentrations of VOCs were detected in groundwater samples collected from monitoring wells downgradient from Areas 2 and 4 (i.e., 1-29, EB-31, S-2, S-7, and S-11). This indicates Areas 2 and 4 were the source of the groundwater contamination.

Figure 3-2 depicts the iso-concentration contours for total VOCs detected in 2004 and the 100 ug/L total VOC iso-concentration contour from 2003. Figure 3-3 presents the individual VOCs detected in each well in 2004. Based on the 2004 groundwater sampling, the current aerial extent of site COCs appears to originate in the vicinity of Areas 2 and 4, and continues to migrate northwest toward the treatment system. The data indicates contaminants have not impacted the wells adjacent to the Susquehanna River. Low concentrations of VOCs (below groundwater quality criteria) were detected in downgradient wells 1-24, 1-25 and 1-25A, which are closest to the current Vestal water supply wells.

The groundwater analytical results indicate nearly all of the wells (EB-31, EB-33, 1-29, 1-29A, S-2, S-6, S-7, and S-11) in which COC concentrations were detected above the groundwater quality criteria are installed in the shallow groundwater zone. Well 1-29 is the only deep monitoring well at which VOCs (1,1,1-trichloroethane, 1,1-dichloroethane, and cis-1,2-dichloroethylene) were detected at concentrations exceeding the groundwater quality criteria.

A comparison of the total VOC concentrations at each monitoring well, with the results of the initial and first through seventh annual effectiveness monitoring events, is presented in Table 3-2. The total VOC concentrations at S-2, S-6, S-7, EB-33, EB-41, and 1-29 decreased from the previous year, total VOC concentrations at S-11 and EB-31 increased from the previous year, and the total VOC concentrations in the other wells remained relatively the same.

Trend analyses were performed for the pumping well influent and monitoring wells EB-31, EB-33, EB-41, S-2, S-7, S-11, and 1-29A. The chosen monitoring wells are shallow wells within the groundwater plume for which there are at least four years of data from 1996 to the present. Trend analyses were performed using the Mann-Kendall Statistical Test at the 80% and 90% confidence interval (CI), with a test for stability at the 80% CI if no statistically significant trend was identified. Appendix D presents tables and charts displaying the data used in, and results of, the Mann-Kendall Statistical Tests performed for selected chlorinated VOCs detected in the pumping well influent and monitoring wells mentioned above.

In general, for most chlorinated compounds tested, there is a statistically significant decreasing trend at the 80% and 90% CI or no trend and stable concentrations at the 80% CI. Notable exceptions are chloroethane concentrations increasing for the pumping well influent at the 80% CI; cis-1,2-dichloroethene concentrations increasing for monitoring well EB-41 at the 80% CI; 1,1-dichloroethane concentrations increasing for monitoring well S-11 at the 80% CI; and trichloroethene concentrations increasing for monitoring well 1-29A at the 80% and 90% CI. Significantly, at the most upgradient well, EB-33, located between Areas 2 and 4, concentrations of all chlorinated compounds statistically tested were decreasing at the 80% CI.

The decreasing concentrations of chlorinated VOCs and distribution of trichloroethene/ tetrachloroethene, 1,1,1-trichloroethane and 1,2-dichloroethane daughter products (dichloroethene, 1,1-dichloroethane, vinyl chloride, and chloroethane) indicate natural attenuation is likely occurring.

Table 3-1 shows inorganic site COCs (chromium, copper, lead, mercury, nickel, and zinc) were detected at concentrations below the NYSGWQC. Iron and sodium concentrations exceeded the NYSGWQC in monitoring wells 1-24, 1-29, 1-29A and 1-30. Manganese concentrations exceeded the NYSGWQC in monitoring wells 1-29A and 1-30. However, iron, manganese, and sodium are not COCs.

Field Blanks
The laboratory analyzed four field blank samples (VE-FB-062904, VE-FB-070604B, VE-FB-070804, and VE-FB-070904) for VOCs only, and three field blank samples (VE-FB-063004, VE-FB-070604, and VE-FB-070704) for VOCs and dissolved metals. Laboratory analyses indicate concentrations of one VOC (methylene chloride) in four field blank samples (VE-FB-063004, VE-FB-070604, VE-FB-070604B, and VE-FB-070904) below groundwater quality criteria. Aluminum, arsenic, barium, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, mercury, nickel, potassium, silver, sodium, vanadium, and zinc were also detected in the field blank samples at concentrations below groundwater quality criteria. Antimony, beryllium, selenium, and thallium were detected above NYSGWQC in one field blank (VE-FB-070604); however, these metals were not detected in environmental samples.

Trip Blanks
The laboratory analyzed five trip blank samples for VOCs. One trip blank was collected on each of the following days: 29 June 2004, 6 July 2004, 7 July 2004, 8 July 2004, and 9 July 2004. The laboratory analysis detected acetone, carbon disulfide, and methyl chloride, at concentrations below groundwater quality criteria, in the samples.

3.2 Field Parameter Measurement Results

Table 3-3 presents the field parameters measured during groundwater sampling activities. The following discussion of natural attenuation field parameters pertains to monitoring wells S-1, S-2, S-6, S-7, S-11, EB-31, EB-33, and 1-29A, which are located within the plume as defined by Figure 3-2.

Dissolved oxygen readings ranged from –0.48 mg/L to 0.96 mg/L, generally within the range of concentrations at which anaerobic bacteria function. The preferred redox environment for degradation of most chlorinated VOCs is anearobic.

ORP readings can be used to evaluate the redox process and confirm DO readings. ORP ranged from –159 mV to –2 mV. These readings are indicative of anaerobic conditions and generally are within the range at which denitrification or iron (III) reduction occurs. Tetrachloroethene and trichloroethene dechlorination may occur within this range.

Microbes capable of degrading chlorinated aliphatic hydrocarbons generally function best in waters with pH ranging from 6 to 8 standard units (SU). At the Vestal site monitoring wells, pH ranged from 5.71 SU to 7.39 SU.

3.3 Groundwater Level Measurements

On 9 November 2004, TtFW personnel measured the depth to groundwater in 21 wells. Table 3-4 presents the depth to groundwater, well casing reference surveyed elevations, total depth of monitoring wells, and calculated groundwater elevations.

Figure 3-4 depicts the groundwater surface elevation map generated from the wells screened in the upper hydrostratigraphic unit (monitoring wells 1-25A, 1-29A, 1-30A, 1-32A, EB-31, EB-33, EB-41, EB-42, S-1, S-2, S-6, S-7, S-8, S-11). Mounding was observed in monitoring well 1-32A, and the data for this well was excluded from Figure 3-4. The shallow groundwater flow is northwest toward the Susquehanna River. The plume is flowing in the direction of shallow groundwater flow and being captured by the downgradient pumping well.

A deep groundwater potentiometric surface map was created using monitoring wells 1-22, 1-23, 1-24, 1-25, 1-29, 1-30, and 1-32 (Figure 3-5). The deep groundwater direction is flowing to the north/northwest toward the Susquehanna River and pumping well based on the limited data points in the deep monitoring well network.

An evaluation of groundwater elevation measurements from the four well clusters indicates a slight downward vertical hydraulic gradient, from the shallow to the deep groundwater zone in well clusters 1-29/29A and 1-30/1-30A. A large vertical hydraulic gradient was observed in cluster 1-32/1-32A; however, mounding was observed in well 1-32, and the magnitude and direction of the gradient is questionable. Groundwater elevation measurements indicate a slight upward vertical hydraulic gradient at well cluster 1-25/1-25A.

3.4 Plant Operations and Sampling

Table 3-5 presents information on plant pumping rates and sample results since the last Annual Effectiveness Monitoring performed in May 2003.

Table 3-1 (Sheet 1 of 33)
Comparison of Detected Compounds to NYS Class GA Groundwater Quality Criteria

Sample Location Sample ID Sample Date Units	New York Groundwater Quality Criteria	EPA Drinking Water Regulations (MCLs)	1-24 VE-124-070704 07/07/2004 (ug/l)	1-25 VE-125-070704 07/07/2004 (ug/l)	1-25A VE-125A-070704 07/07/2004 (ug/l)
CONSTITUENTS					
1,1-Dichloroethane	5	5	0.9	0.5U	0.5U
1,1-Dichloroethene	5	5	0.24J	0.5U	0.5U
1,1,1-Trichloroethane	5	200	3.6	0.5U	0.49J
1,1,2-Trichloro-1,2,2-trifluoroethane	5	NS	0.5U	0.5U	0.5U
1,1,2-Trichloroethane	1	1	0.5U	0.5U	0.5U
1,1,2,2-Tetrachloroethane	5	NS	0.5U	0.5U	0.5U
1,2-Dibromo-3-chloropropane	0.04	0.2	0.5U	0.5U	0.5U
1,2-Dibromoethane	NS	NS	0.5U	0.5U	0.5U
1,2-Dichloroethane	0.6	5	0.5U	0.5U	0.5U
1,2-Dichloropropane	1	5	0.5U	0.5U	0.5U
1,2,3-Trichlorobenzene	5	NS	0.5U	0.5U	0.5U
1,2,4-Trichlorobenzene	5	70	0.5U	0.5U	0.5U
1,4-Dioxane	NS	NS	10R	10R	10R
2-Hexanone	50	NS	2.5U	2.5U	2.5U
Acetone	50	NS	2.5UJ	2.5U	2.5U
Benzene	1	5	0.5U	0.5U	0.5U
Bromodichloromethane	50	50	0.5U	0.5U	0.5U
Bromoform	50	80	0.5U	0.5U	0.5U
Carbon disulfide	60	NS	0.5U	0.38J	0.5U
Carbon tetrachloride	5	5	0.5U	0.5U	0.5U
Chlorobenzene	5	100	0.5U	0.5U	0.5U
Chlorobromomethane	5	80	0.5U	0.5U	0.5U
Chloroethane	5	NS	0.5U	0.5U	0.5U
Chloroform	7	80	0.5U	0.5U	0.5U
cis-1,2-Dichloroethene	5	70	1.1	0.5U	0.5U
cis-1,3-Dichloropropene	0.4	NS	0.5U	0.5U	0.5U
Cyclohexane	NS	NS	0.5U	0.5U	0.5U
Dibromochloromethane	50	80	0.5U	0.5U	0.5U
Dichlorodifluoromethane	5	NS	0.5U	0.5U	0.5U
Ethylbenzene	5	700	0.5U	0.5U	0.5U
Isopropylbenzene	5	NS	0.5U	0.5U	0.5U

Table 3-1 (Sheet 2 of 33)
Comparison of Detected Compounds to NYS Class GA Groundwater Quality Criteria

Sample Location Sample ID Sample Date Units	New York Groundwater Quality Criteria	EPA Drinking Water Regulations (MCLs)	1-24 VE-124-070704 07/07/2004 (ug/l)	1-25 VE-125-070704 07/07/2004 (ug/l)	1-25A VE-125A-070704 07/07/2004 (ug/l)
CONSTITUENTS					
m-Dichlorobenzene	3	NS	0.5U	0.5U	0.5U
Methyl Acetate	NS	NS	0.5U	0.5U	0.5U
Methyl bromide	5	NS	0.5UJ	0.5UJ	0.5UJ
Methyl chloride	5	NS	0.5U	0.5U	0.5U
Methyl ethylketone	50	NS	2.5U	2.5U	2.5U
Methyl isobutyl ketone (MIBK)	NS	NS	2.5U	2.5U	2.5U
Methyl tert-butyl ether	10	NS	0.5U	0.5U	0.5U
Methylcyclohexane	NS	NS	0.5U	0.5U	0.5U
Methylene chloride	5	5	0.83UJ	0.76UJ	0.81UJ
m/p-Xylene	5	NS	0.5U	0.5U	0.5U
o-Dichlorobenzene	3	600	0.5U	0.5U	0.5U
o-Xylene	5	NS	0.5U	0.5U	0.5U
p-Dichlorobenzene	3	75	0.5U	0.5U	0.5U
Styrene	5	100	0.5U	0.5U	0.5U
Tetrachloroethene	5	5	0.5U	0.5U	0.5U
Toluene	5	1000	0.5U	0.5U	0.5U
trans-1,2-Dichloroethene	5	100	0.5U	0.5U	0.5U
trans-1,3-Dichloropropene	0.4	NS	0.5U	0.5U	0.5U
Trichloroethene	5	5	0.5U	0.5U	0.5U
Trichlorofluoromethane	5	NS	0.5U	0.5U	0.5U
Vinyl chloride	2	2	0.5U	0.5U	0.5U
Aluminum	NS	50	200U	NA	NA
Antimony	3	6	60U	NA	NA
Arsenic	25	10	10U	NA	NA
Barium	1000	2000	200U	NA	NA
Beryllium	3	4	5U	NA	NA
Cadmium	5	5	5U	NA	NA
Calcium	NS	NS	102000	NA	NA
Chromium	50	100	10U	NA	NA
Cobalt	NS	NS	2.88J	NA	NA
Copper	200	1000	25U	NA	NA

Table 3-1 (Sheet 3 of 33)
Comparison of Detected Compounds to NYS Class GA Groundwater Quality Criteria

Sample Location Sample ID Sample Date Units	New York Groundwater Quality Criteria	EPA Drinking Water Regulations (MCLs)	1-24 VE-124-070704 07/07/2004 (ug/l)	1-25 VE-125-070704 07/07/2004 (ug/l)	1-25A VE-125A-070704 07/07/2004 (ug/l)
CONSTITUENTS					
Iron	300	300	**800**	NA	NA
Lead	25	15	10U	NA	NA
Magnesium	35000	NS	17300	NA	NA
Manganese	300	50	28.1	NA	NA
Mercury	0.7	2	0.2U	NA	NA
Nickel	100	NS	40U	NA	NA
Potassium	NS	NS	1970J	NA	NA
Selenium	10	50	35U	NA	NA
Silver	50	100	10U	NA	NA
Sodium	20000	NS	**40300**	NA	NA
Thallium	0.5	2	25U	NA	NA
Vanadium	NS	NS	50U	NA	NA
Zinc	2000	5000	129	NA	NA

Notes:
U - Non-detect
NA - Not analyzed
NS - No standard
J - Estimated
B (organics) - Found in blank
B (inorganics) - Concentration is greater than the instrument detection limit but less than the contraction required detection limit
D - Dilution
R - Rejected
ug/l - microgram per liter
BOLD - Exceeds New York Groundwater Quality Criteria

Table 3-1 (Sheet 4 of 33)
Comparison of Detected Compounds to NYS Class GA Groundwater Quality Criteria

Sample Location Sample ID Sample Date Units	New York Groundwater Quality Criteria	EPA Drinking Water Regulations (MCLs)	1-29 VE-129-070604 07/06/2004 (ug/l)	1-29 VE-129-D-070604 Duplicate of VE-129-070604	1-29A VE-129A-070604 07/06/2004 (ug/l)
CONSTITUENTS					
1,1-Dichloroethane	5	5	**5.9**	NA	**9**
1,1-Dichloroethene	5	5	4.1	NA	1.9
1,1,1-Trichloroethane	5	200	**37D**	NA	**8.8**
1,1,2-Trichloro-1,2,2-trifluoroethane	5	NS	2.5	NA	0.75
1,1,2-Trichloroethane	1	1	0.50U	NA	0.50U
1,1,2,2-Tetrachloroethane	5	NS	0.50U	NA	0.50U
1,2-Dibromo-3-chloropropane	0.04	0.2	0.50U	NA	0.50U
1,2-Dibromoethane	NS	NS	0.50U	NA	0.50U
1,2-Dichloroethane	0.6	5	0.50U	NA	0.50U
1,2-Dichloropropane	1	5	0.50U	NA	0.50U
1,2,3-Trichlorobenzene	5	NS	0.50U	NA	0.50U
1,2,4-Trichlorobenzene	5	70	0.50U	NA	0.50U
1,4-Dioxane	NS	NS	10R	NA	10R
2-Hexanone	50	NS	2.5U	NA	2.5U
Acetone	50	NS	2.5U	NA	2.5U
Benzene	1	5	0.50U	NA	0.50U
Bromodichloromethane	50	50	0.50U	NA	0.50U
Bromoform	50	80	0.50U	NA	0.50U
Carbon disulfide	60	NS	0.50U	NA	1.2U
Carbon tetrachloride	5	5	0.50U	NA	1.4
Chlorobenzene	5	100	0.50U	NA	0.50U
Chlorobromomethane	5	80	0.50U	NA	0.50U
Chloroethane	5	NS	0.50U	NA	0.50U
Chloroform	7	80	0.50U	NA	0.50U
cis-1,2-Dichloroethene	5	70	**52D**	NA	**20**
cis-1,3-Dichloropropene	0.4	NS	0.50U	NA	0.50U
Cyclohexane	NS	NS	0.50U	NA	0.50U
Dibromochloromethane	50	80	0.50U	NA	0.50U
Dichlorodifluoromethane	5	NS	0.50U	NA	0.50U
Ethylbenzene	5	700	0.50U	NA	0.50U
Isopropylbenzene	5	NS	0.50U	NA	0.50U

Table 3-1 (Sheet 5 of 33)
Comparison of Detected Compounds to NYS Class GA Groundwater Quality Criteria

Sample Location Sample ID Sample Date Units	New York Groundwater Quality Criteria	EPA Drinking Water Regulations (MCLs)	1-29 VE-129-070604 07/06/2004 (ug/l)	1-29 VE-129-D-070604 Duplicate of VE-129-070604	1-29A VE-129A-070604 07/06/2004 (ug/l)
CONSTITUENTS					
m-Dichlorobenzene	3	NS	0.50U	NA	0.50U
Methyl Acetate	NS	NS	0.50U	NA	0.50U
Methyl bromide	5	NS	0.50U	NA	0.50U
Methyl chloride	5	NS	0.50U	NA	0.50U
Methyl ethylketone	50	NS	2.5U	NA	2.5U
Methyl isobutyl ketone (MIBK)	NS	NS	2.5U	NA	2.5U
Methyl tert-butyl ether	10	NS	0.50U	NA	0.50U
Methylcyclohexane	NS	NS	0.50U	NA	0.50U
Methylene chloride	5	5	0.66UJ	NA	1.5UJ
m/p-Xylene	5	NS	0.50U	NA	0.50U
o-Dichlorobenzene	3	600	0.50U	NA	0.50U
o-Xylene	5	NS	0.50U	NA	0.50U
p-Dichlorobenzene	3	75	0.50U	NA	0.50U
Styrene	5	100	0.50U	NA	0.50U
Tetrachloroethene	5	5	0.50U	NA	0.50U
Toluene	5	1000	0.50U	NA	0.50U
trans-1,2-Dichloroethene	5	100	0.50U	NA	0.50U
trans-1,3-Dichloropropene	0.4	NS	0.50U	NA	0.50U
Trichloroethene	5	5	**24D**	NA	4.0
Trichlorofluoromethane	5	NS	0.50U	NA	0.50U
Vinyl chloride	2	2	0.50U	NA	0.50U
Aluminum	NS	50	207.000	200U	151.000J
Antimony	3	6	60U	60U	60U
Arsenic	25	10	10U	10U	10U
Barium	1000	2000	66.200J	200U	64.200J
Beryllium	3	4	5.0U	5.0U	5.0U
Cadmium	5	5	5.0U	5.0U	5.0U
Calcium	NS	NS	129000.000	105000.000	133000.000
Chromium	50	100	8.700J	10U	16.700
Cobalt	NS	NS	50U	2.760J	50U
Copper	200	1000	25U	25U	5.560J

Table 3-1 (Sheet 6 of 33)
Comparison of Detected Compounds to NYS Class GA Groundwater Quality Criteria

Sample Location Sample ID Sample Date Units	New York Groundwater Quality Criteria	EPA Drinking Water Regulations (MCLs)	1-29 VE-129-070604 07/06/2004 (ug/l)	1-29 VE-129-D-070604 Duplicate of VE-129-070604	1-29A VE-129A-070604 07/06/2004 (ug/l)
CONSTITUENTS					
Iron	300	300	**1160**	**823**	**10100**
Lead	25	15	10R	10U	13.900
Magnesium	35000	NS	22400.000	17800.000	23200.000
Manganese	300	50	34.600	29.600	**406**
Mercury	0.7	2	0.200U	0.200U	0.200U
Nickel	100	NS	7.940J	40U	15.000J
Potassium	NS	NS	2960.000J	1950.000J	2670.000J
Selenium	10	50	35U	35U	35U
Silver	50	100	10UJ	10UJ	10UJ
Sodium	20000	NS	**91400J**	**40900J**	**93200J**
Thallium	0.5	2	25U	25U	25U
Vanadium	NS	NS	50U	50U	50U
Zinc	2000	5000	36.800J	122.000J	30.000J

Notes:
U - Non-detect
NA - Not analyzed
NS - No standard
J - Estimated
B (organics) - Found in blank
B (inorganics) - Concentration is greater than the instrument detection limit but less than the contraction required detection limit
D - Dilution
R - Rejected
ug/l - microgram per liter
BOLD - Exceeds New York Groundwater Quality Criteria

Table 3-1 (Sheet 7 of 33)
Comparison of Detected Compounds to NYS Class GA Groundwater Quality Criteria

Sample Location Sample ID Sample Date Units	New York Groundwater Quality Criteria	EPA Drinking Water Regulations (MCLs)	1-30 VE-130-063004 06/30/2004 (ug/l)	1-30A VE-130A-063004 06/30/2004 (ug/l)	1-32 VE-132-070604 07/06/2004 (ug/l)
CONSTITUENTS					
1,1-Dichloroethane	5	5	0.5U	0.5U	0.50U
1,1-Dichloroethene	5	5	0.5U	0.5U	0.50U
1,1,1-Trichloroethane	5	200	0.5U	0.28J	0.50U
1,1,2-Trichloro-1,2,2-trifluoroethane	5	NS	NA	NA	0.50U
1,1,2-Trichloroethane	1	1	0.5U	0.5U	0.50U
1,1,2,2-Tetrachloroethane	5	NS	0.5U	0.5U	0.50U
1,2-Dibromo-3-chloropropane	0.04	0.2	0.5U	0.5U	0.50U
1,2-Dibromoethane	NS	NS	0.5U	0.5U	0.50U
1,2-Dichloroethane	0.6	5	0.5U	0.5U	0.50U
1,2-Dichloropropane	1	5	0.5U	0.5U	0.50U
1,2,3-Trichlorobenzene	5	NS	0.5U	0.5U	0.50U
1,2,4-Trichlorobenzene	5	70	0.5U	0.5U	0.50U
1,4-Dioxane	NS	NS	10R	10R	10R
2-Hexanone	50	NS	2.5U	2.5U	2.5U
Acetone	50	NS	2.5U	2.5U	2.5U
Benzene	1	5	0.5U	0.5U	0.50U
Bromodichloromethane	50	50	0.5U	0.5U	0.50U
Bromoform	50	80	0.5U	0.5U	0.50U
Carbon disulfide	60	NS	0.5U	0.5U	0.50U
Carbon tetrachloride	5	5	0.5U	0.5U	0.50U
Chlorobenzene	5	100	0.5U	0.5U	0.50U
Chlorobromomethane	5	80	0.5U	0.5U	0.50U
Chloroethane	5	NS	0.5U	0.5U	0.50U
Chloroform	7	80	0.5U	0.5U	0.50U
cis-1,2-Dichloroethene	5	70	0.5U	0.5U	0.50U
cis-1,3-Dichloropropene	0.4	NS	0.5U	0.5U	0.50U
Cyclohexane	NS	NS	0.5U	0.5U	0.50U
Dibromochloromethane	50	80	0.5U	0.5U	0.50U
Dichlorodifluoromethane	5	NS	0.5U	0.5U	0.50U
Ethylbenzene	5	700	0.5U	0.5U	0.50U
Isopropylbenzene	5	NS	0.5U	0.5U	0.50U

Table 3-1 (Sheet 8 of 33)
Comparison of Detected Compounds to NYS Class GA Groundwater Quality Criteria

Sample Location Sample ID Sample Date Units	New York Groundwater Quality Criteria	EPA Drinking Water Regulations (MCLs)	1-30 VE-130-063004 06/30/2004 (ug/l)	1-30A VE-130A-063004 06/30/2004 (ug/l)	1-32 VE-132-070604 07/06/2004 (ug/l)
CONSTITUENTS					
m-Dichlorobenzene	3	NS	0.5U	0.5U	0.50U
Methyl Acetate	NS	NS	0.5U	0.5U	0.50U
Methyl bromide	5	NS	0.5UJ	0.5UJ	0.50U
Methyl chloride	5	NS	0.5U	0.5U	0.50U
Methyl ethylketone	50	NS	2.5U	2.5U	2.5U
Methyl isobutyl ketone (MIBK)	NS	NS	2.5U	2.5U	2.5U
Methyl tert-butyl ether	10	NS	0.5U	0.5U	0.50U
Methylcyclohexane	NS	NS	0.5U	0.5U	0.50U
Methylene chloride	5	5	UJ	UJ	0.50UJ
m/p-Xylene	5	NS	0.5U	0.5U	0.50U
o-Dichlorobenzene	3	600	0.5U	0.5U	0.50U
o-Xylene	5	NS	0.5U	0.5U	0.50U
p-Dichlorobenzene	3	75	0.5U	0.5U	0.50U
Styrene	5	100	0.5U	0.5U	0.50U
Tetrachloroethene	5	5	0.5U	0.5U	0.50U
Toluene	5	1000	0.5U	0.5U	0.50U
trans-1,2-Dichloroethene	5	100	0.5U	0.5U	0.50U
trans-1,3-Dichloropropene	0.4	NS	0.5U	0.5U	0.50U
Trichloroethene	5	5	0.5U	0.5U	0.50U
Trichlorofluoromethane	5	NS	0.5U	0.5U	0.50U
Vinyl chloride	2	2	0.5U	0.5U	0.50U
Aluminum	NS	50	113J	NA	NA
Antimony	3	6	60U	NA	NA
Arsenic	25	10	5.59J	NA	NA
Barium	1000	2000	76.4J	NA	NA
Beryllium	3	4	5U	NA	NA
Cadmium	5	5	5U	NA	NA
Calcium	NS	NS	83300	NA	NA
Chromium	50	100	34.6	NA	NA
Cobalt	NS	NS	50U	NA	NA
Copper	200	1000	25U	NA	NA

Table 3-1 (Sheet 9 of 33)
Comparison of Detected Compounds to NYS Class GA Groundwater Quality Criteria

Sample Location Sample ID Sample Date Units	New York Groundwater Quality Criteria	EPA Drinking Water Regulations (MCLs)	1-30 VE-130-063004 06/30/2004 (ug/l)	1-30A VE-130A-063004 06/30/2004 (ug/l)	1-32 VE-132-070604 07/06/2004 (ug/l)
CONSTITUENTS					
Iron	300	300	**2360J**	NA	NA
Lead	25	15	2.83J	NA	NA
Magnesium	35000	NS	34600	NA	NA
Manganese	300	50	**409**	NA	NA
Mercury	0.7	2	0.2U	NA	NA
Nickel	100	NS	24.8J	NA	NA
Potassium	NS	NS	2360J	NA	NA
Selenium	10	50	35U	NA	NA
Silver	50	100	10UJ	NA	NA
Sodium	20000	NS	**63700J**	NA	NA
Thallium	0.5	2	25U	NA	NA
Vanadium	NS	NS	50U	NA	NA
Zinc	2000	5000	19.5J	NA	NA

Notes:
U - Non-detect
NA - Not analyzed
NS - No standard
J - Estimated
B (organics) - Found in blank
B (inorganics) - Concentration is greater than the instrument detection limit but less than the contraction required detection limit
D - Dilution
R - Rejected
ug/l - microgram per liter
BOLD - Exceeds New York Groundwater Quality Criteria

Table 3-1 (Sheet 10 of 33)
Comparison of Detected Compounds to NYS Class GA Groundwater Quality Criteria

Sample Location Sample ID Sample Date Units	New York Groundwater Quality Criteria	EPA Drinking Water Regulations (MCLs)	1-32A VE-132A-070604 07/06/2004 (ug/l)	EB-31 VE-EB31-070804 07/08/2004 (ug/l)	EB-33 VE-EB33-070804 07/08/2004 (ug/l)
CONSTITUENTS					
1,1-Dichloroethane	5	5	0.5U	4.1	4.1
1,1-Dichloroethene	5	5	0.5U	0.5U	2.1
1,1,1-Trichloroethane	5	200	0.5U	0.5J	0.29J
1,1,2-Trichloro-1,2,2-trifluoroethane	5	NS	0.5U	**12**	0.47J
1,1,2-Trichloroethane	1	1	0.5U	0.5U	0.5U
1,1,2,2-Tetrachloroethane	5	NS	0.5U	0.5U	0.5U
1,2-Dibromo-3-chloropropane	0.04	0.2	0.5U	0.5U	0.5U
1,2-Dibromoethane	NS	NS	0.5U	0.5U	0.5U
1,2-Dichloroethane	0.6	5	0.5U	0.5U	0.5U
1,2-Dichloropropane	1	5	0.5U	0.5U	0.5U
1,2,3-Trichlorobenzene	5	NS	0.5U	0.5U	0.5U
1,2,4-Trichlorobenzene	5	70	0.5U	0.5U	0.5U
1,4-Dioxane	NS	NS	10R	10R	10R
2-Hexanone	50	NS	2.5U	2.5U	2.5U
Acetone	50	NS	2.4UJ	2.5U	2.5U
Benzene	1	5	0.5U	0.5U	0.5U
Bromodichloromethane	50	50	0.5U	0.5U	0.5U
Bromoform	50	80	0.5U	0.5U	0.5U
Carbon disulfide	60	NS	0.5U	0.5U	0.5U
Carbon tetrachloride	5	5	0.5U	0.5U	0.5U
Chlorobenzene	5	100	0.5U	0.5U	0.5U
Chlorobromomethane	5	80	0.5U	0.5U	0.5U
Chloroethane	5	NS	0.5U	0.5U	0.5U
Chloroform	7	80	0.5U	0.5U	0.5U
cis-1,2-Dichloroethene	5	70	0.5U	**75D**	**11**
cis-1,3-Dichloropropene	0.4	NS	0.5U	0.5U	0.5U
Cyclohexane	NS	NS	0.5U	0.5U	0.5U
Dibromochloromethane	50	80	0.5U	0.5U	0.5U
Dichlorodifluoromethane	5	NS	0.5U	0.5U	0.5U
Ethylbenzene	5	700	0.5U	0.55	0.5U
Isopropylbenzene	5	NS	0.5U	0.92	0.5U

Table 3-1 (Sheet 11 of 33)
Comparison of Detected Compounds to NYS Class GA Groundwater Quality Criteria

Sample Location Sample ID Sample Date Units	New York Groundwater Quality Criteria	EPA Drinking Water Regulations (MCLs)	1-32A VE-132A-070604 07/06/2004 (ug/l)	EB-31 VE-EB31-070804 07/08/2004 (ug/l)	EB-33 VE-EB33-070804 07/08/2004 (ug/l)
CONSTITUENTS					
m-Dichlorobenzene	3	NS	0.5U	0.5U	0.5U
Methyl Acetate	NS	NS	0.5U	0.5U	0.5U
Methyl bromide	5	NS	0.5UJ	0.5UJ	0.5UJ
Methyl chloride	5	NS	0.5U	0.5UJ	0.5J
Methyl ethylketone	50	NS	2.5U	2.5U	2.5U
Methyl isobutyl ketone (MIBK)	NS	NS	2.5U	2.5U	2.5U
Methyl tert-butyl ether	10	NS	0.5U	0.42J	0.2J
Methylcyclohexane	NS	NS	0.5U	0.5U	0.5U
Methylene chloride	5	5	0.5UJ	0.5UJ	0.5U
m/p-Xylene	5	NS	0.5U	0.5U	0.5U
o-Dichlorobenzene	3	600	0.5U	0.5U	0.5U
o-Xylene	5	NS	0.5U	0.5U	0.5U
p-Dichlorobenzene	3	75	0.5U	0.5U	0.5U
Styrene	5	100	0.5U	0.5U	0.5U
Tetrachloroethene	5	5	0.5U	0.51	0.5U
Toluene	5	1000	0.5U	0.5U	0.5U
trans-1,2-Dichloroethene	5	100	0.5U	1.8	0.39J
trans-1,3-Dichloropropene	0.4	NS	0.5U	0.5U	0.5U
Trichloroethene	5	5	0.5U	4.1	**50D**
Trichlorofluoromethane	5	NS	0.5U	0.5U	0.5U
Vinyl chloride	2	2	0.5U	**20**	**2**
Aluminum	NS	50	NA	NA	NA
Antimony	3	6	NA	NA	NA
Arsenic	25	10	NA	NA	NA
Barium	1000	2000	NA	NA	NA
Beryllium	3	4	NA	NA	NA
Cadmium	5	5	NA	NA	NA
Calcium	NS	NS	NA	NA	NA
Chromium	50	100	NA	NA	NA
Cobalt	NS	NS	NA	NA	NA
Copper	200	1000	NA	NA	NA

Table 3-1 (Sheet 12 of 33)
Comparison of Detected Compounds to NYS Class GA Groundwater Quality Criteria

Sample Location Sample ID Sample Date Units	New York Groundwater Quality Criteria	EPA Drinking Water Regulations (MCLs)	1-32A VE-132A-070604 07/06/2004 (ug/l)	EB-31 VE-EB31-070804 07/08/2004 (ug/l)	EB-33 VE-EB33-070804 07/08/2004 (ug/l)
CONSTITUENTS					
Iron	300	300	NA	NA	NA
Lead	25	15	NA	NA	NA
Magnesium	35000	NS	NA	NA	NA
Manganese	300	50	NA	NA	NA
Mercury	0.7	2	NA	NA	NA
Nickel	100	NS	NA	NA	NA
Potassium	NS	NS	NA	NA	NA
Selenium	10	50	NA	NA	NA
Silver	50	100	NA	NA	NA
Sodium	20000	NS	NA	NA	NA
Thallium	0.5	2	NA	NA	NA
Vanadium	NS	NS	NA	NA	NA
Zinc	2000	5000	NA	NA	NA

Notes:
U - Non-detect
NA - Not analyzed
NS - No standard
J - Estimated
B (organics) - Found in blank
B (inorganics) - Concentration is greater than the instrument detection limit but less than the contraction required detection limit
D - Dilution
R - Rejected
ug/l - microgram per liter
BOLD - Exceeds New York Groundwater Quality Criteria

Table 3-1 (Sheet 13 of 33)
Comparison of Detected Compounds to NYS Class GA Groundwater Quality Criteria

Sample Location Sample ID Sample Date Units	New York Groundwater Quality Criteria	EPA Drinking Water Regulations (MCLs)	EB-41 VE-EB41-062904 06/29/2004 (ug/l)	EB-41 VE-EB45-062904 Duplicate of VE-EB41-062904	EB-42 VE-EB42-070704 07/07/2004 (ug/l)
CONSTITUENTS					
1,1-Dichloroethane	5	5	0.37J	0.37J	0.5U
1,1-Dichloroethene	5	5	0.5U	0.5U	0.5U
1,1,1-Trichloroethane	5	200	0.5U	0.5U	0.67
1,1,2-Trichloro-1,2,2-trifluoroethane	5	NS	NA	NA	0.5U
1,1,2-Trichloroethane	1	1	0.5U	0.5U	0.5U
1,1,2,2-Tetrachloroethane	5	NS	0.5U	0.5U	0.5U
1,2-Dibromo-3-chloropropane	0.04	0.2	0.5U	0.5U	0.5U
1,2-Dibromoethane	NS	NS	0.5U	0.5U	0.5U
1,2-Dichloroethane	0.6	5	0.5U	0.5U	0.5U
1,2-Dichloropropane	1	5	0.5U	0.5U	0.5U
1,2,3-Trichlorobenzene	5	NS	0.5U	0.5U	0.5U
1,2,4-Trichlorobenzene	5	70	0.5U	0.5U	0.5U
1,4-Dioxane	NS	NS	10R	10R	10R
2-Hexanone	50	NS	2.5U	2.5U	2.5U
Acetone	50	NS	2.5U	2.5U	2.5U
Benzene	1	5	0.5U	0.5U	0.5U
Bromodichloromethane	50	50	0.5U	0.5U	0.5U
Bromoform	50	80	0.5U	0.5U	0.5U
Carbon disulfide	60	NS	0.5U	0.5U	0.5U
Carbon tetrachloride	5	5	0.5U	0.5U	0.5U
Chlorobenzene	5	100	0.5U	0.5U	0.5U
Chlorobromomethane	5	80	0.5U	0.5U	0.5U
Chloroethane	5	NS	0.5U	0.5U	0.5U
Chloroform	7	80	0.5U	0.5U	0.5U
cis-1,2-Dichloroethene	5	70	**6.7**	**6.9**	0.5U
cis-1,3-Dichloropropene	0.4	NS	0.5U	0.5U	0.5U
Cyclohexane	NS	NS	0.5U	0.5U	0.5U
Dibromochloromethane	50	80	0.5U	0.5U	0.5U
Dichlorodifluoromethane	5	NS	0.5U	0.5U	0.5U
Ethylbenzene	5	700	0.5U	0.5U	0.5U
Isopropylbenzene	5	NS	0.5U	0.5U	0.5U

Table 3-1 (Sheet 14 of 33)
Comparison of Detected Compounds to NYS Class GA Groundwater Quality Criteria

Sample Location Sample ID Sample Date Units	New York Groundwater Quality Criteria	EPA Drinking Water Regulations (MCLs)	EB-41 VE-EB41-062904 06/29/2004 (ug/l)	EB-41 VE-EB45-062904 Duplicate of VE-EB41-062904	EB-42 VE-EB42-070704 07/07/2004 (ug/l)
CONSTITUENTS					
m-Dichlorobenzene	3	NS	0.5U	0.5U	0.5U
Methyl Acetate	NS	NS	0.5U	0.5U	0.5U
Methyl bromide	5	NS	0.5UJ	0.5UJ	0.5UJ
Methyl chloride	5	NS	0.5U	0.5U	0.5U
Methyl ethylketone	50	NS	2.5U	2.5U	2.5U
Methyl isobutyl ketone (MIBK)	NS	NS	2.5U	2.5U	2.5U
Methyl tert-butyl ether	10	NS	1.7	1.8	0.5U
Methylcyclohexane	NS	NS	0.5U	0.5U	0.5U
Methylene chloride	5	5	0.5UJ	0.61UJ	0.5U
m/p-Xylene	5	NS	0.5U	0.5U	0.5U
o-Dichlorobenzene	3	600	0.5U	0.5U	0.5U
o-Xylene	5	NS	0.5U	0.5U	0.5U
p-Dichlorobenzene	3	75	0.5U	0.5U	0.5U
Styrene	5	100	0.5U	0.5U	0.5U
Tetrachloroethene	5	5	0.5U	0.5U	0.5U
Toluene	5	1000	0.5U	0.5U	0.5U
trans-1,2-Dichloroethene	5	100	0.5U	0.5U	0.5U
trans-1,3-Dichloropropene	0.4	NS	0.5U	0.5U	0.5U
Trichloroethene	5	5	0.76	0.78	0.5U
Trichlorofluoromethane	5	NS	0.5U	0.5U	0.5U
Vinyl chloride	2	2	0.5U	0.5U	0.5U
Aluminum	NS	50	NA	NA	NA
Antimony	3	6	NA	NA	NA
Arsenic	25	10	NA	NA	NA
Barium	1000	2000	NA	NA	NA
Beryllium	3	4	NA	NA	NA
Cadmium	5	5	NA	NA	NA
Calcium	NS	NS	NA	NA	NA
Chromium	50	100	NA	NA	NA
Cobalt	NS	NS	NA	NA	NA
Copper	200	1000	NA	NA	NA

Table 3-1 (Sheet 15 of 33)
Comparison of Detected Compounds to NYS Class GA Groundwater Quality Criteria

Sample Location Sample ID Sample Date Units	New York Groundwater Quality Criteria	EPA Drinking Water Regulations (MCLs)	EB-41 VE-EB41-062904 06/29/2004 (ug/l)	EB-41 VE-EB45-062904 Duplicate of VE-EB41-062904	EB-42 VE-EB42-070704 07/07/2004 (ug/l)
CONSTITUENTS					
Iron	300	300	NA	NA	NA
Lead	25	15	NA	NA	NA
Magnesium	35000	NS	NA	NA	NA
Manganese	300	50	NA	NA	NA
Mercury	0.7	2	NA	NA	NA
Nickel	100	NS	NA	NA	NA
Potassium	NS	NS	NA	NA	NA
Selenium	10	50	NA	NA	NA
Silver	50	100	NA	NA	NA
Sodium	20000	NS	NA	NA	NA
Thallium	0.5	2	NA	NA	NA
Vanadium	NS	NS	NA	NA	NA
Zinc	2000	5000	NA	NA	NA

Notes:
U - Non-detect
NA - Not analyzed
NS - No standard
J - Estimated
B (organics) - Found in blank
B (inorganics) - Concentration is greater than the instrument detection limit but less than the contraction required detection limit
D - Dilution
R - Rejected
ug/l - microgram per liter
BOLD - Exceeds New York Groundwater Quality Criteria

Table 3-1 (Sheet 16 of 33)
Comparison of Detected Compounds to NYS Class GA Groundwater Quality Criteria

Sample Location Sample ID Sample Date Units	New York Groundwater Quality Criteria	EPA Drinking Water Regulations (MCLs)	S-1 VE-S1-070904 07/09/2004 (ug/l)	S-11 VE-S11-070804 07/08/2004 (ug/l)	S-2 VE-S2-070804 07/08/2004 (ug/l)
CONSTITUENTS					
1,1-Dichloroethane	5	5	0.50U	**75D**	**41D**
1,1-Dichloroethene	5	5	0.50U	**54D**	**9.1**
1,1,1-Trichloroethane	5	200	0.50U	**910D**	**15**
1,1,2-Trichloro-1,2,2-trifluoroethane	5	NS	0.50U	**100D**	**7.4**
1,1,2-Trichloroethane	1	1	0.50U	0.5U	0.5U
1,1,2,2-Tetrachloroethane	5	NS	0.50U	0.5U	0.5U
1,2-Dibromo-3-chloropropane	0.04	0.2	0.50U	0.5U	0.5U
1,2-Dibromoethane	NS	NS	0.50U	0.5U	0.5U
1,2-Dichloroethane	0.6	5	0.50U	0.5U	0.5U
1,2-Dichloropropane	1	5	0.50U	0.5U	0.5U
1,2,3-Trichlorobenzene	5	NS	0.50U	0.5U	0.5U
1,2,4-Trichlorobenzene	5	70	0.50U	0.5U	0.5U
1,4-Dioxane	NS	NS	10R	10R	10R
2-Hexanone	50	NS	2.5U	2.5U	2.5U
Acetone	50	NS	2.5U	2.5U	2.5U
Benzene	1	5	0.50U	0.25J	0.85J
Bromodichloromethane	50	50	0.50U	0.5U	0.5U
Bromoform	50	80	0.50U	0.5U	0.5U
Carbon disulfide	60	NS	0.50U	0.5U	0.5U
Carbon tetrachloride	5	5	0.50U	0.5U	0.5U
Chlorobenzene	5	100	0.50U	0.5U	0.5U
Chlorobromomethane	5	80	0.50U	0.5U	0.5U
Chloroethane	5	NS	0.50U	3.3	1.4
Chloroform	7	80	0.50U	0.5U	0.5U
cis-1,2-Dichloroethene	5	70	0.23J	**670D**	**260D**
cis-1,3-Dichloropropene	0.4	NS	0.50U	0.5U	0.5U
Cyclohexane	NS	NS	0.50U	0.5U	0.5U
Dibromochloromethane	50	80	0.50U	0.5U	0.5U
Dichlorodifluoromethane	5	NS	0.50U	0.5U	0.5U
Ethylbenzene	5	700	0.50U	0.5U	0.5U
Isopropylbenzene	5	NS	0.50U	0.5U	0.54

Table 3-1 (Sheet 17 of 33)
Comparison of Detected Compounds to NYS Class GA Groundwater Quality Criteria

Sample Location Sample ID Sample Date Units	New York Groundwater Quality Criteria	EPA Drinking Water Regulations (MCLs)	S-1 VE-S1-070904 07/09/2004 (ug/l)	S-11 VE-S11-070804 07/08/2004 (ug/l)	S-2 VE-S2-070804 07/08/2004 (ug/l)
CONSTITUENTS					
m-Dichlorobenzene	3	NS	0.50U	0.5U	0.5U
Methyl Acetate	NS	NS	0.50U	0.5U	0.5U
Methyl bromide	5	NS	0.50U	0.5UJ	0.5U
Methyl chloride	5	NS	0.50U	0.5U	0.5U
Methyl ethylketone	50	NS	2.5U	2.5U	2.5U
Methyl isobutyl ketone (MIBK)	NS	NS	2.5U	2.5U	2.5U
Methyl tert-butyl ether	10	NS	2.6	1.1	0.39J
Methylcyclohexane	NS	NS	0.50U	0.5U	0.5U
Methylene chloride	5	5	0.50UJ	1.4UJ	0.5UJ
m/p-Xylene	5	NS	0.50U	0.5U	0.5U
o-Dichlorobenzene	3	600	0.50U	0.5U	0.5U
o-Xylene	5	NS	0.50U	0.5U	0.5U
p-Dichlorobenzene	3	75	0.50U	0.5U	0.5U
Styrene	5	100	0.50U	0.5U	0.5U
Tetrachloroethene	5	5	0.50U	1.6	0.5U
Toluene	5	1000	0.50U	0.5U	1.1
trans-1,2-Dichloroethene	5	100	0.50U	3J	1.2
trans-1,3-Dichloropropene	0.4	NS	0.50U	0.5U	0.5U
Trichloroethene	5	5	0.36J	**220D**	**47D**
Trichlorofluoromethane	5	NS	0.50U	0.5U	0.5U
Vinyl chloride	2	2	0.50U	**11**	**25D**
Aluminum	NS	50	NA	NA	NA
Antimony	3	6	NA	NA	NA
Arsenic	25	10	NA	NA	NA
Barium	1000	2000	NA	NA	NA
Beryllium	3	4	NA	NA	NA
Cadmium	5	5	NA	NA	NA
Calcium	NS	NS	NA	NA	NA
Chromium	50	100	NA	NA	NA
Cobalt	NS	NS	NA	NA	NA
Copper	200	1000	NA	NA	NA

Table 3-1 (Sheet 18 of 33)
Comparison of Detected Compounds to NYS Class GA Groundwater Quality Criteria

Sample Location Sample ID Sample Date Units	New York Groundwater Quality Criteria	EPA Drinking Water Regulations (MCLs)	S-1 VE-S1-070904 07/09/2004 (ug/l)	S-11 VE-S11-070804 07/08/2004 (ug/l)	S-2 VE-S2-070804 07/08/2004 (ug/l)
CONSTITUENTS					
Iron	300	300	NA	NA	NA
Lead	25	15	NA	NA	NA
Magnesium	35000	NS	NA	NA	NA
Manganese	300	50	NA	NA	NA
Mercury	0.7	2	NA	NA	NA
Nickel	100	NS	NA	NA	NA
Potassium	NS	NS	NA	NA	NA
Selenium	10	50	NA	NA	NA
Silver	50	100	NA	NA	NA
Sodium	20000	NS	NA	NA	NA
Thallium	0.5	2	NA	NA	NA
Vanadium	NS	NS	NA	NA	NA
Zinc	2000	5000	NA	NA	NA

Notes:
U - Non-detect
NA - Not analyzed
NS - No standard
J - Estimated
B (organics) - Found in blank
B (inorganics) - Concentration is greater than the instrument detection limit but less than the contraction required detection limit
D - Dilution
R - Rejected
ug/l - microgram per liter
BOLD - Exceeds New York Groundwater Quality Criteria

Table 3-1 (Sheet 19 of 33)
Comparison of Detected Compounds to NYS Class GA Groundwater Quality Criteria

Sample Location Sample ID Sample Date Units	New York Groundwater Quality Criteria	EPA Drinking Water Regulations (MCLs)	S-6 VE-S6-070804 07/08/2004 (ug/l)	S-7 VE-S7-070804 07/08/2004 (ug/l)	S-8 VE-S8-070904 07/09/2004 (ug/l)
CONSTITUENTS					
1,1-Dichloroethane	5	5	0.36J	**22**	0.50U
1,1-Dichloroethene	5	5	0.5U	2.5	0.50U
1,1,1-Trichloroethane	5	200	0.5U	**28D**	0.50U
1,1,2-Trichloro-1,2,2-trifluoroethane	5	NS	0.5U	0.5U	0.50U
1,1,2-Trichloroethane	1	1	0.5U	0.5U	0.50U
1,1,2,2-Tetrachloroethane	5	NS	0.5U	0.5U	0.50U
1,2-Dibromo-3-chloropropane	0.04	0.2	0.5U	0.5U	0.50U
1,2-Dibromoethane	NS	NS	0.5U	0.5U	0.50U
1,2-Dichloroethane	0.6	5	0.5U	0.5U	0.50U
1,2-Dichloropropane	1	5	0.5U	0.5U	0.50U
1,2,3-Trichlorobenzene	5	NS	0.5U	0.5U	0.50U
1,2,4-Trichlorobenzene	5	70	0.5U	0.5U	0.50U
1,4-Dioxane	NS	NS	10R	10R	10R
2-Hexanone	50	NS	2.5U	2.5U	2.5U
Acetone	50	NS	2.5U	2.5U	4.7UJ
Benzene	1	5	0.5U	0.5U	0.50U
Bromodichloromethane	50	50	0.5U	0.5U	0.50U
Bromoform	50	80	0.5U	0.5U	0.50U
Carbon disulfide	60	NS	0.5U	0.5U	0.50U
Carbon tetrachloride	5	5	0.5U	0.5U	0.50U
Chlorobenzene	5	100	0.5U	0.5U	0.50U
Chlorobromomethane	5	80	0.5U	0.5U	0.50U
Chloroethane	5	NS	0.5U	0.5U	0.50U
Chloroform	7	80	0.5U	0.5U	0.50U
cis-1,2-Dichloroethene	5	70	**23**	**69D**	1.4
cis-1,3-Dichloropropene	0.4	NS	0.5U	0.5U	0.50U
Cyclohexane	NS	NS	0.5U	0.5U	0.50U
Dibromochloromethane	50	80	0.5U	0.5U	0.50U
Dichlorodifluoromethane	5	NS	0.5U	0.5U	0.50U
Ethylbenzene	5	700	0.5U	0.5U	0.50U
Isopropylbenzene	5	NS	0.5U	0.5U	0.50U

Table 3-1 (Sheet 20 of 33)
Comparison of Detected Compounds to NYS Class GA Groundwater Quality Criteria

Sample Location Sample ID Sample Date Units	New York Groundwater Quality Criteria	EPA Drinking Water Regulations (MCLs)	S-6 VE-S6-070804 07/08/2004 (ug/l)	S-7 VE-S7-070804 07/08/2004 (ug/l)	S-8 VE-S8-070904 07/09/2004 (ug/l)
CONSTITUENTS					
m-Dichlorobenzene	3	NS	0.5U	0.5U	0.50U
Methyl Acetate	NS	NS	0.5U	0.5U	0.50U
Methyl bromide	5	NS	0.5UJ	0.5UJ	0.50U
Methyl chloride	5	NS	0.5U	0.5U	0.50U
Methyl ethylketone	50	NS	2.5U	2.5U	2.5U
Methyl isobutyl ketone (MIBK)	NS	NS	2.5U	2.5U	2.5U
Methyl tert-butyl ether	10	NS	0.5U	0.5U	0.50U
Methylcyclohexane	NS	NS	0.5U	0.5U	0.50U
Methylene chloride	5	5	0.5UJ	0.5UJ	0.50UJ
m/p-Xylene	5	NS	0.5U	0.5U	0.50U
o-Dichlorobenzene	3	600	0.5U	0.5U	0.50U
o-Xylene	5	NS	0.5U	0.5U	0.50U
p-Dichlorobenzene	3	75	0.5U	0.5U	0.50U
Styrene	5	100	0.5U	0.5U	0.50U
Tetrachloroethene	5	5	0.5U	0.5U	0.46J
Toluene	5	1000	0.5U	0.5U	0.50U
trans-1,2-Dichloroethene	5	100	0.5U	0.76	0.50U
trans-1,3-Dichloropropene	0.4	NS	0.5U	0.5U	0.50U
Trichloroethene	5	5	**39D**	**18**	0.71
Trichlorofluoromethane	5	NS	0.5U	0.5U	0.50U
Vinyl chloride	2	2	0.5U	**24**	0.50U
Aluminum	NS	50	NA	NA	NA
Antimony	3	6	NA	NA	NA
Arsenic	25	10	NA	NA	NA
Barium	1000	2000	NA	NA	NA
Beryllium	3	4	NA	NA	NA
Cadmium	5	5	NA	NA	NA
Calcium	NS	NS	NA	NA	NA
Chromium	50	100	NA	NA	NA
Cobalt	NS	NS	NA	NA	NA
Copper	200	1000	NA	NA	NA

Table 3-1 (Sheet 21 of 33)
Comparison of Detected Compounds to NYS Class GA Groundwater Quality Criteria

Sample Location Sample ID Sample Date Units	New York Groundwater Quality Criteria	EPA Drinking Water Regulations (MCLs)	S-6 VE-S6-070804 07/08/2004 (ug/l)	S-7 VE-S7-070804 07/08/2004 (ug/l)	S-8 VE-S8-070904 07/09/2004 (ug/l)
CONSTITUENTS					
Iron	300	300	NA	NA	NA
Lead	25	15	NA	NA	NA
Magnesium	35000	NS	NA	NA	NA
Manganese	300	50	NA	NA	NA
Mercury	0.7	2	NA	NA	NA
Nickel	100	NS	NA	NA	NA
Potassium	NS	NS	NA	NA	NA
Selenium	10	50	NA	NA	NA
Silver	50	100	NA	NA	NA
Sodium	20000	NS	NA	NA	NA
Thallium	0.5	2	NA	NA	NA
Vanadium	NS	NS	NA	NA	NA
Zinc	2000	5000	NA	NA	NA

Notes:
U - Non-detect
NA - Not analyzed
NS - No standard
J - Estimated
B (organics) - Found in blank
B (inorganics) - Concentration is greater than the instrument detection limit but less than the contraction required detection limit
D - Dilution
R - Rejected
ug/l - microgram per liter
BOLD - Exceeds New York Groundwater Quality Criteria

Table 3-1 (Sheet 22 of 33)
Comparison of Detected Compounds to NYS Class GA Groundwater Quality Criteria

Sample Location Sample ID Sample Date Units	New York Groundwater Quality Criteria	EPA Drinking Water Regulations (MCLs)	Field Blank VE-FB-070704 07/07/2004 (ug/l)	Trip Blank Trip Blank 07/07/2004 (ug/l)	Field Blank VE-FB-070604 07/06/2004 (ug/l)
CONSTITUENTS					
1,1-Dichloroethane	5	5	0.5U	0.5U	0.5U
1,1-Dichloroethene	5	5	0.5U	0.5U	0.5U
1,1,1-Trichloroethane	5	200	0.5U	0.5U	0.5U
1,1,2-Trichloro-1,2,2-trifluoroethane	5	NS	0.5U	0.5U	0.5U
1,1,2-Trichloroethane	1	1	0.5U	0.5U	0.5U
1,1,2,2-Tetrachloroethane	5	NS	0.5U	0.5U	0.5U
1,2-Dibromo-3-chloropropane	0.04	0.2	0.5U	0.5U	0.5U
1,2-Dibromoethane	NS	NS	0.5U	0.5U	0.5U
1,2-Dichloroethane	0.6	5	0.5U	0.5U	0.5U
1,2-Dichloropropane	1	5	0.5U	0.5U	0.5U
1,2,3-Trichlorobenzene	5	NS	0.5U	0.5U	0.5U
1,2,4-Trichlorobenzene	5	70	0.5U	0.5U	0.5U
1,4-Dioxane	NS	NS	10R	10R	10R
2-Hexanone	50	NS	2.5U	2.5U	2.5U
Acetone	50	NS	2.5U	5.8BJ	2.5U
Benzene	1	5	0.5U	0.5U	0.5U
Bromodichloromethane	50	50	0.5U	0.5U	0.5U
Bromoform	50	80	0.5U	0.5U	0.5U
Carbon disulfide	60	NS	0.5U	0.5U	0.5U
Carbon tetrachloride	5	5	0.5U	0.5U	0.5U
Chlorobenzene	5	100	0.5U	0.5U	0.5U
Chlorobromomethane	5	80	0.5U	0.5U	0.5U
Chloroethane	5	NS	0.5U	0.5U	0.5U
Chloroform	7	80	0.5U	0.5U	0.5U
cis-1,2-Dichloroethene	5	70	0.5U	0.5U	0.5U
cis-1,3-Dichloropropene	0.4	NS	0.5U	0.5U	0.5U
Cyclohexane	NS	NS	0.5U	0.5U	0.5U
Dibromochloromethane	50	80	0.5U	0.5U	0.5U
Dichlorodifluoromethane	5	NS	0.5U	0.5U	0.5UJ
Ethylbenzene	5	700	0.5U	0.5U	0.5U
Isopropylbenzene	5	NS	0.5U	0.5U	0.5U

Table 3-1 (Sheet 23 of 33)
Comparison of Detected Compounds to NYS Class GA Groundwater Quality Criteria

Sample Location Sample ID Sample Date Units	New York Groundwater Quality Criteria	EPA Drinking Water Regulations (MCLs)	Field Blank VE-FB-070704 07/07/2004 (ug/l)	Trip Blank Trip Blank 07/07/2004 (ug/l)	Field Blank VE-FB-070604 07/06/2004 (ug/l)
CONSTITUENTS					
m-Dichlorobenzene	3	NS	0.5U	0.5U	0.5U
Methyl Acetate	NS	NS	0.5U	0.5U	0.5U
Methyl bromide	5	NS	0.5UJ	0.5U	0.5UJ
Methyl chloride	5	NS	0.5U	0.5U	0.5UJ
Methyl ethylketone	50	NS	2.5U	3.2BJ	0.5U
Methyl isobutyl ketone (MIBK)	NS	NS	NA	NA	NA
Methyl tert-butyl ether	10	NS	0.5U	0.5U	0.5U
Methylcyclohexane	NS	NS	0.5U	0.5U	0.5U
Methylene chloride	5	5	0.5U	3.2B	0.38BJ
m/p-Xylene	5	NS	0.5U	0.5U	0.5U
o-Dichlorobenzene	3	600	0.5U	0.5U	0.5U
o-Xylene	5	NS	0.5U	0.5U	0.5U
p-Dichlorobenzene	3	75	0.5U	0.5U	0.5U
Styrene	5	100	0.5U	0.5U	0.5U
Tetrachloroethene	5	5	0.5U	0.5U	0.5U
Toluene	5	1000	0.5U	0.5U	0.5U
trans-1,2-Dichloroethene	5	100	NA	NA	NA
trans-1,3-Dichloropropene	0.4	NS	0.5U	0.5U	0.5U
Trichloroethene	5	5	0.5U	0.5U	0.5U
Trichlorofluoromethane	5	NS	0.5U	0.5U	0.5U
Vinyl chloride	2	2	0.5U	0.5U	0.5U
Aluminum	NS	50	200U	NA	200
Antimony	3	6	60U	NA	60
Arsenic	25	10	4.1J	NA	10
Barium	1000	2000	200U	NA	200
Beryllium	3	4	5U	NA	5.0
Cadmium	5	5	5U	NA	5.0
Calcium	NS	NS	211J	NA	211.000J
Chromium	50	100	5.58J	NA	6.220J
Cobalt	NS	NS	50U	NA	50
Copper	200	1000	25U	NA	25

Table 3-1 (Sheet 24 of 33)
Comparison of Detected Compounds to NYS Class GA Groundwater Quality Criteria

Sample Location Sample ID Sample Date Units	New York Groundwater Quality Criteria	EPA Drinking Water Regulations (MCLs)	Field Blank VE-FB-070704 07/07/2004 (ug/l)	Trip Blank Trip Blank 07/07/2004 (ug/l)	Field Blank VE-FB-070604 07/06/2004 (ug/l)
CONSTITUENTS					
Iron	300	300	51.4J	NA	51.400J
Lead	25	15	10U	NA	15.600
Magnesium	35000	NS	5000U	NA	5000
Manganese	300	50	2.12J	NA	2.320J
Mercury	0.7	2	0.2U	NA	0.200
Nickel	100	NS	40U	NA	40
Potassium	NS	NS	5000U	NA	5000
Selenium	10	50	35U	NA	35
Silver	50	100	10U	NA	10
Sodium	20000	NS	5000U	NA	5000
Thallium	0.5	2	25U	NA	25
Vanadium	NS	NS	50U	NA	50
Zinc	2000	5000	28.1J	NA	39.200J

Notes:
U - Non-detect
NA - Not analyzed
NS - No standard
J - Estimated
B (organics) - Found in blank
B (inorganics) - Concentration is greater than the instrument detection limit but less than the contraction required detection limit
D - Dilution
R - Rejected
ug/l - microgram per liter
BOLD - Exceeds New York Groundwater Quality Criteria

Table 3-1 (Sheet 25 of 33)
Comparison of Detected Compounds to NYS Class GA Groundwater Quality Criteria

Sample Location Sample ID Sample Date Units	New York Groundwater Quality Criteria	EPA Drinking Water Regulations (MCLs)	Field Blank VE-FB-070604B 07/06/2004 (ug/l)	Trip Blank TRIPBLANK 07/06/2004 (ug/l)	Field Blank VE-FB-0630004 06/30/2004 (ug/l)
CONSTITUENTS					
1,1-Dichloroethane	5	5	0.5U	0.5U	0.5U
1,1-Dichloroethene	5	5	0.5U	0.5U	0.5U
1,1,1-Trichloroethane	5	200	0.5U	0.5U	0.5U
1,1,2-Trichloro-1,2,2-trifluoroethane	5	NS	0.5U	0.5U	0.5U
1,1,2-Trichloroethane	1	1	0.5U	0.5U	0.5U
1,1,2,2-Tetrachloroethane	5	NS	0.5U	0.5U	0.5U
1,2-Dibromo-3-chloropropane	0.04	0.2	0.5U	0.5U	0.5U
1,2-Dibromoethane	NS	NS	0.5U	0.5U	0.5U
1,2-Dichloroethane	0.6	5	0.5U	0.5U	0.5U
1,2-Dichloropropane	1	5	0.5U	0.5U	0.5U
1,2,3-Trichlorobenzene	5	NS	0.5U	0.5U	0.5U
1,2,4-Trichlorobenzene	5	70	0.5U	0.5U	0.5U
1,4-Dioxane	NS	NS	10R	10R	10R
2-Hexanone	50	NS	2.5U	2.5U	2.5U
Acetone	50	NS	2.5U	42D	2.5U
Benzene	1	5	0.5U	0.5U	0.5U
Bromodichloromethane	50	50	0.5U	0.5U	0.5U
Bromoform	50	80	0.5U	0.5U	0.5U
Carbon disulfide	60	NS	0.5U	1.4	0.5U
Carbon tetrachloride	5	5	0.5U	0.5U	0.5U
Chlorobenzene	5	100	0.5U	0.5U	0.5U
Chlorobromomethane	5	80	0.5U	0.5U	0.5U
Chloroethane	5	NS	0.5U	0.5U	0.5U
Chloroform	7	80	0.5U	0.5U	0.5U
cis-1,2-Dichloroethene	5	70	0.5U	0.5U	0.5U
cis-1,3-Dichloropropene	0.4	NS	0.5U	0.5U	0.5U
Cyclohexane	NS	NS	0.5U	0.5U	0.5U
Dibromochloromethane	50	80	0.5U	0.5U	0.5U
Dichlorodifluoromethane	5	NS	0.5U	0.5U	0.5U
Ethylbenzene	5	700	0.5U	0.5U	0.5U
Isopropylbenzene	5	NS	0.5U	0.5U	0.5U

Table 3-1 (Sheet 26 of 33)
Comparison of Detected Compounds to NYS Class GA Groundwater Quality Criteria

Sample Location Sample ID Sample Date Units	New York Groundwater Quality Criteria	EPA Drinking Water Regulations (MCLs)	Field Blank VE-FB-070604B 07/06/2004 (ug/l)	Trip Blank TRIPBLANK 07/06/2004 (ug/l)	Field Blank VE-FB-0630004 06/30/2004 (ug/l)
CONSTITUENTS					
m-Dichlorobenzene	3	NS	0.5U	0.5U	0.5U
Methyl Acetate	NS	NS	0.5U	0.5U	0.5U
Methyl bromide	5	NS	0.5U	0.5U	0.5U
Methyl chloride	5	NS	0.5U	0.5U	0.5U
Methyl ethylketone	50	NS	2.5U	2.5U	2.5U
Methyl isobutyl ketone (MIBK)	NS	NS	NA	NA	NA
Methyl tert-butyl ether	10	NS	0.5U	0.5U	0.5U
Methylcyclohexane	NS	NS	0.5U	0.5U	0.5U
Methylene chloride	5	5	0.49JB	0.70B	2.7J
m/p-Xylene	5	NS	0.5U	0.5U	0.5U
o-Dichlorobenzene	3	600	0.5U	0.5U	0.5U
o-Xylene	5	NS	0.5U	0.5U	0.5U
p-Dichlorobenzene	3	75	0.5U	0.5U	0.5U
Styrene	5	100	0.5U	0.5U	0.5U
Tetrachloroethene	5	5	0.5U	0.5U	0.5U
Toluene	5	1000	0.5U	0.5U	0.5U
trans-1,2-Dichloroethene	5	100	NA	NA	NA
trans-1,3-Dichloropropene	0.4	NS	0.5U	0.5U	0.5U
Trichloroethene	5	5	0.5U	0.5U	0.5U
Trichlorofluoromethane	5	NS	0.5U	0.5U	0.5U
Vinyl chloride	2	2	0.5U	0.5U	0.5U
Aluminum	NS	50	NA	NA	200U
Antimony	3	6	NA	NA	60U
Arsenic	25	10	NA	NA	10U
Barium	1000	2000	NA	NA	200U
Beryllium	3	4	NA	NA	5U
Cadmium	5	5	NA	NA	5U
Calcium	NS	NS	NA	NA	247J
Chromium	50	100	NA	NA	5.11U
Cobalt	NS	NS	NA	NA	50U
Copper	200	1000	NA	NA	21.3J

Table 3-1 (Sheet 27 of 33)
Comparison of Detected Compounds to NYS Class GA Groundwater Quality Criteria

Sample Location Sample ID Sample Date Units	New York Groundwater Quality Criteria	EPA Drinking Water Regulations (MCLs)	Field Blank VE-FB-070604B 07/06/2004 (ug/l)	Trip Blank TRIPBLANK 07/06/2004 (ug/l)	Field Blank VE-FB-0630004 06/30/2004 (ug/l)
CONSTITUENTS					
Iron	300	300	NA	NA	160J
Lead	25	15	NA	NA	2.79J
Magnesium	35000	NS	NA	NA	5000U
Manganese	300	50	NA	NA	2.24J
Mercury	0.7	2	NA	NA	0.2U
Nickel	100	NS	NA	NA	40U
Potassium	NS	NS	NA	NA	5000U
Selenium	10	50	NA	NA	35U
Silver	50	100	NA	NA	10UJ
Sodium	20000	NS	NA	NA	5000U
Thallium	0.5	2	NA	NA	25U
Vanadium	NS	NS	NA	NA	50U
Zinc	2000	5000	NA	NA	31.6J

Notes:
U - Non-detect
NA - Not analyzed
NS - No standard
J - Estimated
B (organics) - Found in blank
B (inorganics) - Concentration is greater than the instrument detection limit but less than the contraction required detection limit
D - Dilution
R - Rejected
ug/l - microgram per liter
BOLD - Exceeds New York Groundwater Quality Criteria

Table 3-1 (Sheet 28 of 33)
Comparison of Detected Compounds to NYS Class GA Groundwater Quality Criteria

Sample Location Sample ID Sample Date Units	New York Groundwater Quality Criteria	EPA Drinking Water Regulations (MCLs)	Trip Blank TRIPBLANK 06/30/2004 (ug/l)	Field Blank VE-FB-070804 07/08/2004 (ug/l)	Trip Blank TRIPBLANK 07/08/2004 (ug/l)	Field Blank VE-FB-062904 06/29/2004 (ug/l)
CONSTITUENTS						
1,1-Dichloroethane	5	5	0.5U	0.5U	0.5U	0.5U
1,1-Dichloroethene	5	5	0.5U	0.5U	0.5U	0.5U
1,1,1-Trichloroethane	5	200	0.5U	0.5U	0.5U	0.5U
1,1,2-Trichloro-1,2,2-trifluoroethane	5	NS	0.5U	0.5U	0.5U	0.5U
1,1,2-Trichloroethane	1	1	0.5U	0.5U	0.5U	0.5U
1,1,2,2-Tetrachloroethane	5	NS	0.5U	0.5U	0.5U	0.5U
1,2-Dibromo-3-chloropropane	0.04	0.2	0.5U	0.5U	0.5U	0.5U
1,2-Dibromoethane	NS	NS	0.5U	0.5U	0.5U	0.5U
1,2-Dichloroethane	0.6	5	0.5U	0.5U	0.5U	0.5U
1,2-Dichloropropane	1	5	0.5U	0.5U	0.5U	0.5U
1,2,3-Trichlorobenzene	5	NS	0.5U	0.5U	0.5U	0.5U
1,2,4-Trichlorobenzene	5	70	10U	0.5U	0.5U	0.5U
1,4-Dioxane	NS	NS	10R	10R	10R	10R
2-Hexanone	50	NS	2.5U	2.5U	2.5U	2.5U
Acetone	50	NS	10BJ	2.5U	4.7J	2.5U
Benzene	1	5	0.5U	0.5U	0.5U	0.5U
Bromodichloromethane	50	50	0.5U	0.5U	0.5U	0.5U
Bromoform	50	80	0.5U	0.5U	0.5U	0.5U
Carbon disulfide	60	NS	0.5U	0.5U	0.5U	0.5U
Carbon tetrachloride	5	5	0.5U	0.5U	0.5U	0.5U
Chlorobenzene	5	100	0.5U	0.5U	0.5U	0.5U
Chlorobromomethane	5	80	0.5U	0.5U	0.5U	0.5U
Chloroethane	5	NS	0.5U	0.5U	0.5U	0.5U
Chloroform	7	80	0.5U	0.5U	0.5U	0.5U
cis-1,2-Dichloroethene	5	70	0.5U	0.5U	0.5U	0.5U
cis-1,3-Dichloropropene	0.4	NS	0.5U	0.5U	0.5U	0.5U
Cyclohexane	NS	NS	0.5U	0.5U	0.5U	0.5U
Dibromochloromethane	50	80	0.5U	0.5U	0.5U	0.5U
Dichlorodifluoromethane	5	NS	0.5U	0.5U	0.5U	0.5U
Ethylbenzene	5	700	0.5U	0.5U	0.5U	0.5U
Isopropylbenzene	5	NS	0.5U	0.5U	0.5U	0.5U

Table 3-1 (Sheet 29 of 33)
Comparison of Detected Compounds to NYS Class GA Groundwater Quality Criteria

Sample Location Sample ID Sample Date Units	New York Groundwater Quality Criteria	EPA Drinking Water Regulations (MCLs)	Trip Blank TRIPBLANK 06/30/2004 (ug/l)	Field Blank VE-FB-070804 07/08/2004 (ug/l)	Trip Blank TRIPBLANK 07/08/2004 (ug/l)	Field Blank VE-FB-062904 06/29/2004 (ug/l)
CONSTITUENTS						
m-Dichlorobenzene	3	NS	0.5U	0.5U	0.5U	0.5U
Methyl Acetate	NS	NS	0.5U	0.5U	0.5U	0.5U
Methyl bromide	5	NS	0.5UJ	0.5UJ	0.5UJ	0.5UJ
Methyl chloride	5	NS	0.5U	0.5U	0.5U	0.5U
Methyl ethylketone	50	NS	2.5U	2.5U	2.5U	2.5U
Methyl isobutyl ketone (MIBK)	NS	NS	NA	NA	NA	NA
Methyl tert-butyl ether	10	NS	0.5U	0.5U	0.5U	0.5U
Methylcyclohexane	NS	NS	0.5U	0.5U	0.5U	0.5U
Methylene chloride	5	5	2.9J	0.5U	2.9J	0.66J
m/p-Xylene	5	NS	0.5U	0.5U	0.5U	0.5U
o-Dichlorobenzene	3	600	0.5U	0.5U	0.5U	0.5U
o-Xylene	5	NS	0.5U	0.5U	0.5U	0.5U
p-Dichlorobenzene	3	75	0.5U	0.5U	0.5U	0.5U
Styrene	5	100	0.5U	0.5U	0.5U	0.5U
Tetrachloroethene	5	5	0.5U	0.5U	0.5U	0.5U
Toluene	5	1000	0.5U	0.5U	0.5U	0.5U
trans-1,2-Dichloroethene	5	100	NA	NA	NA	NA
trans-1,3-Dichloropropene	0.4	NS	0.5U	0.5U	0.5U	0.5U
Trichloroethene	5	5	0.5U	0.5U	0.5U	0.5U
Trichlorofluoromethane	5	NS	0.5U	0.5U	0.5U	0.5U
Vinyl chloride	2	2	0.5U	0.5U	0.5U	0.5U
Aluminum	NS	50	NA	NA	NA	NA
Antimony	3	6	NA	NA	NA	NA
Arsenic	25	10	NA	NA	NA	NA
Barium	1000	2000	NA	NA	NA	NA
Beryllium	3	4	NA	NA	NA	NA
Cadmium	5	5	NA	NA	NA	NA
Calcium	NS	NS	NA	NA	NA	NA
Chromium	50	100	NA	NA	NA	NA
Cobalt	NS	NS	NA	NA	NA	NA
Copper	200	1000	NA	NA	NA	NA

Table 3-1 (Sheet 30 of 33)
Comparison of Detected Compounds to NYS Class GA Groundwater Quality Criteria

Sample Location Sample ID Sample Date Units	New York Groundwater Quality Criteria	EPA Drinking Water Regulations (MCLs)	Trip Blank TRIPBLANK 06/30/2004 (ug/l)	Field Blank VE-FB-070804 07/08/2004 (ug/l)	Trip Blank TRIPBLANK 07/08/2004 (ug/l)	Field Blank VE-FB-062904 06/29/2004 (ug/l)
CONSTITUENTS						
Iron	300	300	NA	NA	NA	NA
Lead	25	15	NA	NA	NA	NA
Magnesium	35000	NS	NA	NA	NA	NA
Manganese	300	50	NA	NA	NA	NA
Mercury	0.7	2	NA	NA	NA	NA
Nickel	100	NS	NA	NA	NA	NA
Potassium	NS	NS	NA	NA	NA	NA
Selenium	10	50	NA	NA	NA	NA
Silver	50	100	NA	NA	NA	NA
Sodium	20000	NS	NA	NA	NA	NA
Thallium	0.5	2	NA	NA	NA	NA
Vanadium	NS	NS	NA	NA	NA	NA
Zinc	2000	5000	NA	NA	NA	NA

Notes:
U - Non-detect
NA - Not analyzed
NS - No standard
J - Estimated
B (organics) - Found in blank
B (inorganics) - Concentration is greater than the instrument detection limit but less than the contraction required detection limit
D - Dilution
R - Rejected
ug/l - microgram per liter
BOLD - Exceeds New York Groundwater Quality Criteria

Table 3-1 (Sheet 31 of 33)
Comparison of Detected Compounds to NYS Class GA Groundwater Quality Criteria

Sample Location Sample ID Sample Date Units	New York Groundwater Quality Criteria	EPA Drinking Water Regulations (MCLs)	Trip Blank TRIPBLANK 06/29/2004 (ug/l)	Field Blank VE-FB-070904 07/09/2004 (ug/l)	Trip Blank TRIPBLANK 07/09/2004 (ug/l)
CONSTITUENTS					
1,1-Dichloroethane	5	5	0.5U	0.5U	0.5U
1,1-Dichloroethene	5	5	0.5U	0.5U	0.5U
1,1,1-Trichloroethane	5	200	0.5U	0.5U	0.5U
1,1,2-Trichloro-1,2,2-trifluoroethane	5	NS	0.5U	0.5U	0.5U
1,1,2-Trichloroethane	1	1	0.5U	0.5U	0.5U
1,1,2,2-Tetrachloroethane	5	NS	0.5U	0.5U	0.5U
1,2-Dibromo-3-chloropropane	0.04	0.2	0.5U	0.5U	0.5U
1,2-Dibromoethane	NS	NS	0.5U	0.5U	0.5U
1,2-Dichloroethane	0.6	5	0.5U	0.5U	0.5U
1,2-Dichloropropane	1	5	0.5U	0.5U	0.5U
1,2,3-Trichlorobenzene	5	NS	0.5U	0.5U	0.5U
1,2,4-Trichlorobenzene	5	70	0.5U	0.5U	0.5U
1,4-Dioxane	NS	NS	10R	10R	10R
2-Hexanone	50	NS	2.5U	2.5U	2.5U
Acetone	50	NS	5.2BJ	2.5U	5.6BJ
Benzene	1	5	0.5U	0.5U	0.5U
Bromodichloromethane	50	50	0.5U	0.5U	0.5U
Bromoform	50	80	0.5U	0.5U	0.5U
Carbon disulfide	60	NS	0.5U	0.5U	0.5U
Carbon tetrachloride	5	5	0.5U	0.5U	0.5U
Chlorobenzene	5	100	0.5U	0.5U	0.5U
Chlorobromomethane	5	80	0.5U	0.5U	0.5U
Chloroethane	5	NS	0.5U	0.5U	0.5U
Chloroform	7	80	0.5U	0.5U	0.5U
cis-1,2-Dichloroethene	5	70	0.5U	0.5U	0.5U
cis-1,3-Dichloropropene	0.4	NS	0.5U	0.5U	0.5U
Cyclohexane	NS	NS	0.5U	0.5U	0.5U
Dibromochloromethane	50	80	0.5U	0.5U	0.5U
Dichlorodifluoromethane	5	NS	0.5U	0.5U	0.5U
Ethylbenzene	5	700	0.5U	0.5U	0.5U
Isopropylbenzene	5	NS	0.5U	0.5U	0.5U

Table 3-1 (Sheet 32 of 33)
Comparison of Detected Compounds to NYS Class GA Groundwater Quality Criteria

Sample Location Sample ID Sample Date Units	New York Groundwater Quality Criteria	EPA Drinking Water Regulations (MCLs)	Trip Blank TRIPBLANK 06/29/2004 (ug/l)	Field Blank VE-FB-070904 07/09/2004 (ug/l)	Trip Blank TRIPBLANK 07/09/2004 (ug/l)
CONSTITUENTS					
m-Dichlorobenzene	3	NS	0.5U	0.5U	0.5U
Methyl Acetate	NS	NS	0.5UJ	0.5U	0.5U
Methyl bromide	5	NS	0.5U	0.5U	0.5U
Methyl chloride	5	NS	0.5U	0.5U	0.5U
Methyl ethylketone	50	NS	2.5U	2.5U	2.5U
Methyl isobutyl ketone (MIBK)	NS	NS	NA	NA	NA
Methyl tert-butyl ether	10	NS	0.5U	0.5U	0.5U
Methylcyclohexane	NS	NS	0.5U	0.5U	0.5U
Methylene chloride	5	5	0.6J	0.43BJ	5.0BJ
m/p-Xylene	5	NS	0.5U	0.5U	0.5U
o-Dichlorobenzene	3	600	0.5U	0.5U	0.5U
o-Xylene	5	NS	0.5U	0.5U	0.5U
p-Dichlorobenzene	3	75	0.5U	0.5U	0.5U
Styrene	5	100	0.5U	0.5U	0.5U
Tetrachloroethene	5	5	0.5U	0.5U	0.5U
Toluene	5	1000	0.5U	0.5U	0.5U
trans-1,2-Dichloroethene	5	100	NA	NA	NA
trans-1,3-Dichloropropene	0.4	NS	0.5U	0.5U	0.5U
Trichloroethene	5	5	0.5U	0.5U	0.5U
Trichlorofluoromethane	5	NS	0.5U	0.5U	0.5U
Vinyl chloride	2	2	0.5U	0.5U	0.5U
Aluminum	NS	50	NA	NA	NA
Antimony	3	6	NA	NA	NA
Arsenic	25	10	NA	NA	NA
Barium	1000	2000	NA	NA	NA
Beryllium	3	4	NA	NA	NA
Cadmium	5	5	NA	NA	NA
Calcium	NS	NS	NA	NA	NA
Chromium	50	100	NA	NA	NA
Cobalt	NS	NS	NA	NA	NA
Copper	200	1000	NA	NA	NA

Table 3-1 (Sheet 33 of 33)
Comparison of Detected Compounds to NYS Class GA Groundwater Quality Criteria

Sample Location Sample ID Sample Date Units	New York Groundwater Quality Criteria	EPA Drinking Water Regulations (MCLs)	Trip Blank TRIPBLANK 06/29/2004 (ug/l)	Field Blank VE-FB-070904 07/09/2004 (ug/l)	Trip Blank TRIPBLANK 07/09/2004 (ug/l)
CONSTITUENTS					
Iron	300	300	NA	NA	NA
Lead	25	15	NA	NA	NA
Magnesium	35000	NS	NA	NA	NA
Manganese	300	50	NA	NA	NA
Mercury	0.7	2	NA	NA	NA
Nickel	100	NS	NA	NA	NA
Potassium	NS	NS	NA	NA	NA
Selenium	10	50	NA	NA	NA
Silver	50	100	NA	NA	NA
Sodium	20000	NS	NA	NA	NA
Thallium	0.5	2	NA	NA	NA
Vanadium	NS	NS	NA	NA	NA
Zinc	2000	5000	NA	NA	NA

Notes:
U - Non-detect
NA - Not analyzed
NS - No standard
J - Estimated
B (organics) - Found in blank
B (inorganics) - Concentration is greater than the instrument detection limit but less than the contraction required detection limit
D - Dilution
R - Rejected
ug/l - microgram per liter
BOLD - Exceeds New York Groundwater Quality Criteria

Table 3-2
Total VOC Concentrations

Monitoring Well Identification	November 1996 (initial)	November 1997 (first)	June 1999 (second)	June 2000 (third)	June 2001 (fourth)	October 2002 (fifth)	May 2003 (sixth)	June/July 2004 (seventh)
Well S-1	NS	NS	NS	NS	NS	22.26	2.9	3.19
Well S-2	1572.5	504.9*	994	1472	807	533.68	741	409.98
Well S-6	NS	NS	NS	NS	NS	55.35*	78	62.36
Well S-7	380	561.22	NS	NS	NS	1445.3	286	164.26
Well S-8	ND	NS	NS	NS	NS	35.5	0.1	2.57
Well S-11	5131	441.7	383	4154	417	467.9	394	2049.25
Well EB-31	128.5	106	67	79	81	97.62	62	119.9
Well EB-33	2384.4	1285.23	1321	833	552	355.35	176	70.55
Well EB-41	ND	4.6	6	6	8	31.2	8.4	9.69*
Well EB-42	2	1	ND	1	ND	ND	1.5	0.67
Well 1-22	NS	NS	NS	NS	NS	ND	1.8	NS
Well 1-23	NS	1	ND	ND	ND	NS	NS	NS
Well 1-24	3.6	8.33	4	9	5	ND	6.6	5.84
Well 1-25	NS	NS	NS	NS	NS	NS	NS	0.38
Well 1-25A	NS	NS	NS	NS	NS	NS	NS	0.49
Well 1-28	NS	NS	NS	NS	ND	NS	NS	NS
Well 1-28A	NS	NS	NS	NS	ND	NS	NS	NS
Well 1-29	963	249.3	217*	58.5*	NS	175.7	200	125.5
Well 1-29A	30	97.4	69	NS	51	43.86	49	45.85
Well 1-30	ND	1	ND	ND	ND	NS	NS	ND
Well 1-30A	NS	NS	NS	NS	ND	NS	NS	ND
Well 1-32	NS	NS	NS	NS	NS	ND	0.6	ND
Well 1-32A	NS	NS	NS	NS	NS	ND	0.1	ND
Total VOCs	9220	2351.76	2775	6554	1870	1485.75	1389.5	2665.88

(initial) – indicates annual effectiveness report
NS – Not Sampled
* -Average of duplicate data
ND – Not Detected
Monitoring wells 1-23, 1-28, and 1-28A were not sampled in October 2002, May 2003 and June/July 2004 because they are not required to be sampled by the ROD. Monitoring well 1-30 was not sampled in October 2002 and May 2003 because it is not required to be sampled by the ROD. Total VOCs are calculated using the rest of this note should not be on the following page results of monitoring wells S-2, S-11, EB-31, EB-33, EB-41, EB-42, and 1-24.

Table 3-3
Final Field Parameter Measurements
June/July 2004

Monitoring Well ID	S-1	S-2	S-6	S-7	S-8	S-11	EB-31	EB-33	EB-41	EB-42	1-24	1-25	1-25A	1-29	1-29A	1-30	1-30A	1-32	1-32A
Final Field Parameter Meas.																			
Dissolved Oxygen (mg/L)	0.06	0.96	0.55	0.00	0.00	0.87	0.69	-0.48	2.37	2.62	1.58	8.77	6.23	2.11	0.00	0.00	3.33	0.00	0.45
ORP (mv)	-53	-2	-157	-106	-128	-105	-47	-102	40	-23	-133	-189	23	0.57	-159	-178	22	-113	67
pH (SU)	7.11	5.71	6.88	6.65	6.81	7.13	6.99	7.09	6.65	7.15	7.53	7.83	6.41	7.39	7.39	7.73	7.06	7.16	6.23
Temperature (°C)	15.87	16.42	12.29	19.05	15.90	14.61	15.92	16.93	14.72	18.41	13.10	15.27	15.69	12.30	13.58	13.41	14.82	14.27	14.73
Conductivity (mS/cm)	1.38	16.4	2.05	1.36	1.77	1.42	1.21	1.42	1.98	2.43	0.786	0.548	0.609	1.12	1.16	0.942	1.50	1.62	1.05
Turbidity (NTU)	-3.4	18.7	-8.9	181	1.7	0	35.6	11.5	49.0	300	-10	543	89.9	38.9	1.84	69.44	-10	172	960

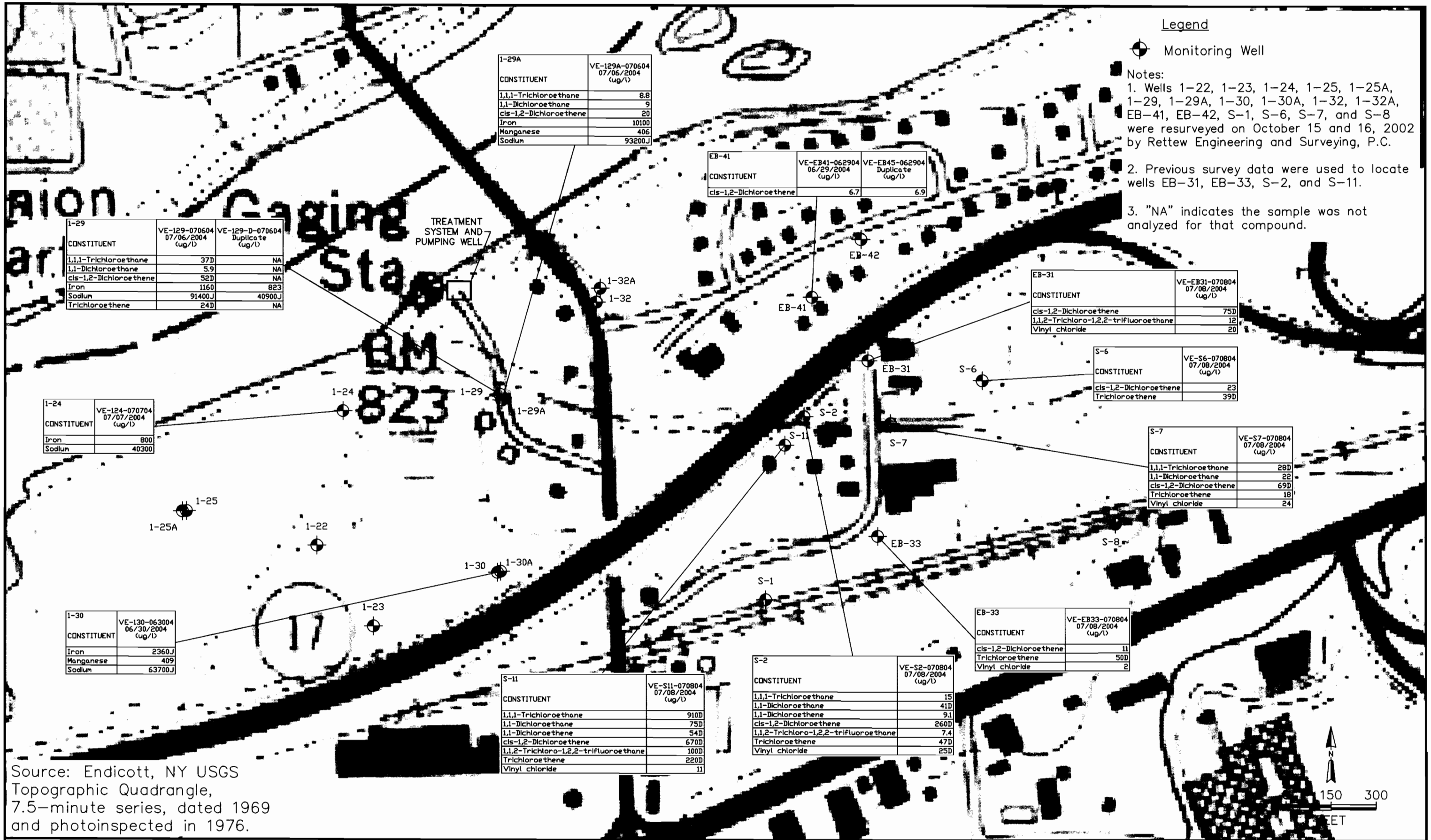
Table 3-4
Groundwater and Well Elevation Data
9 November 2004

Monitoring Well Identification	Elevation of Monitoring Well Reference Point (feet msl)	Total Depth of Monitoring Well (feet)	Depth to Groundwater (feet)	Groundwater Elevation (feet msl)
1-22*	817.61	132	12.78	804.83
1-23	820.91	136	16.85	804.06
1-24*	826.76	129	22.83	803.93
1-25	827.02	155	22.89	804.13
1-25A	826.92	49	22.88	804.04
1-29*	823.55	119	19.96	803.59
1-29A*	824.03	64	20.37	803.66
1-30	816.54	114	12.42	804.12
1-30A**	816.42	30	9.91	806.51
1-32**	831.08	152	26.58	804.50
1-32A**	830.86	35	14.81	816.05
EB-31*	825.77	53	18.75	807.02
EB-33*	828.59	35	18.62	809.97
EB-41*	825.38	28	20.31	805.07
EB-42*	831.54	29	26.31	805.23
S-1*	827.16	25	19.97	807.19
S-2*	824.73	32	18.75	805.98
S-6*	822.46	41	11.60	810.86
S-7*	823.72	32	16.56	807.16
S-8*	832.2	25	7.34	824.86
S-11*	822.78	40	17.47	805.31

Qualifiers:
* - Part of the original monitoring well network in the ROD
** - Replaced monitoring well
msl – Mean Sea Level

Table 3-5
Plant Operation and Sampling Data

	Pump Rate	Operational Days	Gallons Treated (million gallons)	Total VOC Influent Concentration (ug/l)
June 2003	57%	30	28.3	186.4
July 2003	51%	31	26.2	256.9
August 2003	50%	29	24.0	224.6
September 2003	50%	27	22.4	466.9
October 2003	50%	31	25.7	263.46
November 2003	50%	30	24.8	233.9
December 2003	50%	31	25.7	196.3
January 2004	50%	31	25.7	269.3
February 2004	50%	29	24	241.5
March 2004	45%	31	22.4	181.2
April 2004	45%	30	22.4	208.3
May 2004	40%	31	20.5	189.1



Source: Endicott, NY USGS Topographic Quadrangle, 7.5-minute series, dated 1969 and photoinspected in 1976.

TETRA TECH FW, INC.

TITLE:
Constituents Detected Above New York Groundwater Quality Standards (2004)
Vestal Well 1-1 Site
Vestal, New York

DWN.: CTS	DATE: 05/26/04	PROJECT NO.: 1945.2109.0700
CHKD: DPC	REV.: 0	
DES.: CTS	APPD: WSD	FIGURE NO.: 3-1

N:\GIS\GISKEY\GISPROJ31\VESTAL-SURVEYED\GW REPORT 2005\FIGURE 3-1 052605.DWG

Legend

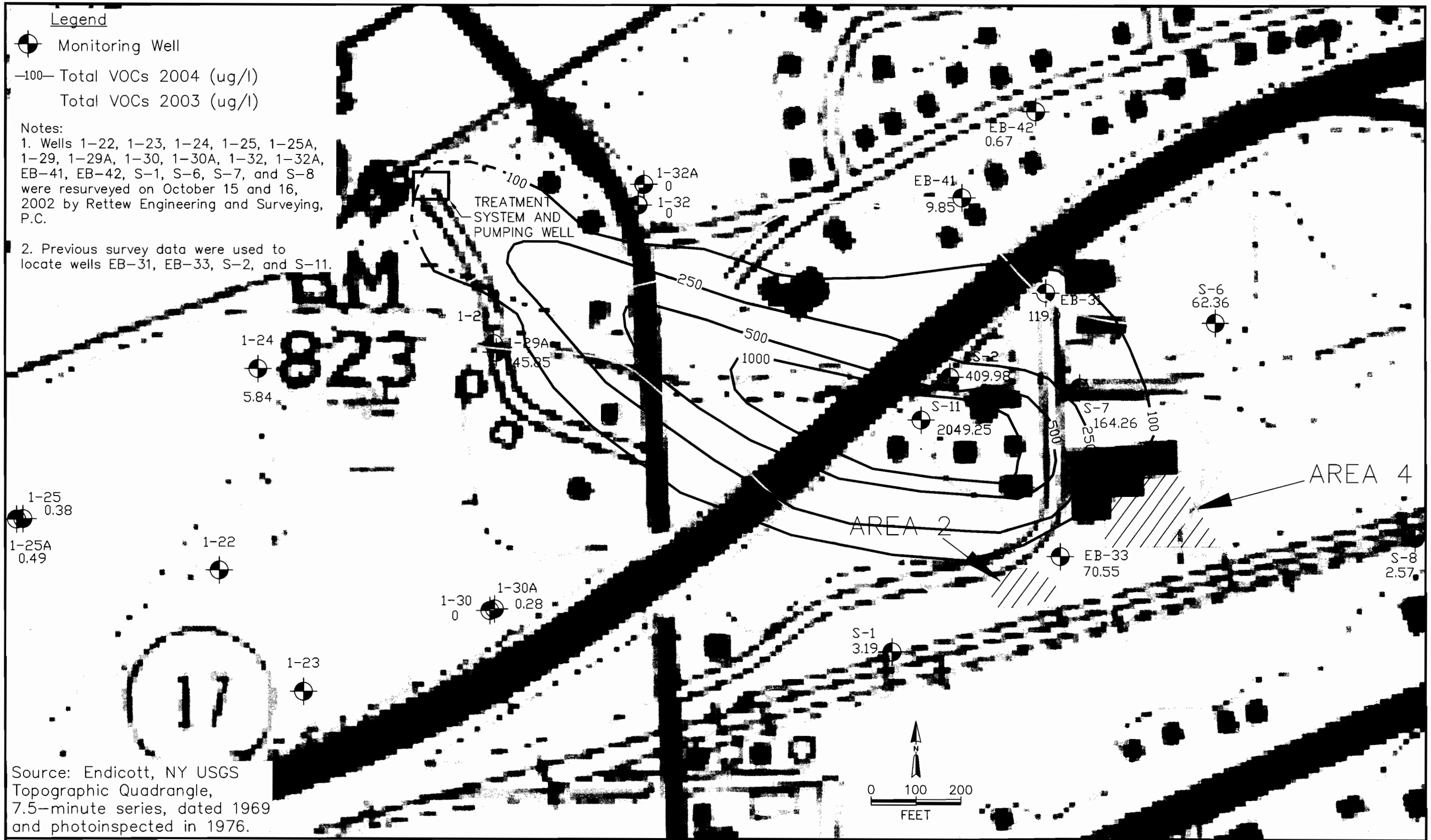
Monitoring Well

—100— Total VOCs 2004 (ug/l)

Total VOCs 2003 (ug/l)

Notes:
1. Wells 1–22, 1–23, 1–24, 1–25, 1–25A, 1–29, 1–29A, 1–30, 1–30A, 1–32, 1–32A, EB–41, EB–42, S–1, S–6, S–7, and S–8 were resurveyed on October 15 and 16, 2002 by Rettew Engineering and Surveying, P.C.

2. Previous survey data were used to locate wells EB–31, EB–33, S–2, and S–11.



Source: Endicott, NY USGS Topographic Quadrangle, 7.5–minute series, dated 1969 and photoinspected in 1976.

TETRA TECH FW, INC.

TITLE:
Total Volatile Organic Compounds in Shallow Groundwater (2004)
Vestal Well 1–1 Site
Vestal, New York

DWN.: CTS	DATE: 05/17/05	PROJECT NO.: 1945.2109.0700	
CHKD: DPC	REV.: 0	FIGURE NO.: 3–2	
DES.: CTS	APPD: WSD		

N:\GIS\GISKEY\GISPROJ31\VESTAL–SURVEYED\GW REPORT 2005\FIGURE 3–2 051705.DWG

N

0 150 300

FEET

Legend

Monitoring Well

Notes:

1. Wells 1-22, 1-23, 1-24, 1-25, 1-25A, 1-29, 1-29A, 1-30, 1-30A, 1-32, 1-32A, EB-41, EB-42, S-1, S-6, S-7, and S-8 were resurveyed on October 15 and 16, 2002 by Rettew Engineering and Surveying, P.C.

2. Previous survey data were used to locate wells EB-31, EB-33, S-2, and S-11.

3. [ ] - Indicates an exceedance of New York State Class GA Groundwater Quality Criteria.

1-32A
1-32
1-29
1-29A
1-24
1-25
1-25A
1-22
1-23
1-30
1-30A
EB-41
EB-42
EB-31
EB-33
S-1
S-2
S-6
S-7
S-8
S-11

EB-41 CONSTITUENT	NY-GWQS	VE-EB41-062904 06/29/2004 (ug/l)	VE-EB45-062904 Duplicate (ug/l)
1,1-Dichloroethane	5	0.37J	0.37J
cis-1,2-Dichloroethene	5	[6.7]	[6.9]
Methyl tert-butyl ether	10	1.7	1.8
Trichloroethene	5	0.76	0.78

EB-31 CONSTITUENT	NY-GWQS	VE-EB31-070804 07/08/2004 (ug/l)
1,1,1-Trichloroethane	5	0.5J
1,1-Dichloroethane	5	4.1
Isopropylbenzene	5	0.92
cis-1,2-Dichloroethene	5	[75]D
Ethylbenzene	5	0.55
1,1,2-Trichloro-1,2,2-trifluoroethane	5	[12]
Methyl tert-butyl ether	10	0.42J
Tetrachloroethene	5	0.51
trans-1,2-Dichloroethene	5	1.8
Trichloroethene	5	4.1
Vinyl chloride	2	[20]

EB-42 CONSTITUENT	NY-GWQS	VE-EB42-070704 07/07/2004 (ug/l)
1,1,1-Trichloroethane	5	0.67

1-29 CONSTITUENT	NY-GWQS	VE-129-070604 07/06/2004 (ug/l)
1,1,1-Trichloroethane	5	[37]D
1,1-Dichloroethane	5	[5.9]
1,1-Dichloroethene	5	4.1
cis-1,2-Dichloroethene	5	[52]D
1,1,2-Trichloro-1,2,2-trifluoroethane	5	2.5
Trichloroethene	5	[24]D

1-24 CONSTITUENT	NY-GWQS	VE-124-070704 07/07/2004 (ug/l)
1,1,1-Trichloroethane	5	3.6
1,1-Dichloroethane	5	0.9
1,1-Dichloroethene	5	0.24J
cis-1,2-Dichloroethene	5	1.1

1-25 CONSTITUENT	NY-GWQS	VE-125-070704 07/07/2004 (ug/l)
Carbon disulfide	60	0.38J

1-25A CONSTITUENT	NY-GWQS	VE-125A-070704 07/07/2004 (ug/l)
1,1,1-Trichloroethane	5	0.49J

1-29A CONSTITUENT	NY-GWQS	VE-129A-070604 07/06/2004 (ug/l)
1,1,1-Trichloroethane	5	[8.8]
1,1-Dichloroethane	5	[9.0]
1,1-Dichloroethene	5	1.9
Carbon tetrachloride	5	1.4
cis-1,2-Dichloroethene	5	[20]
1,1,2-Trichloro-1,2,2-trifluoroethane	5	0.75
Trichloroethene	5	4.0

1-30A CONSTITUENT	NY-GWQS	VE-130A-063004 06/30/2004 (ug/l)
1,1,1-Trichloroethane	5	0.28J

S-11 CONSTITUENT	NY-GWQS	VE-S11-070804 07/08/2004 (ug/l)
1,1,1-Trichloroethane	5	[910]D
1,1-Dichloroethane	5	[75]D
1,1-Dichloroethene	5	[54]D
Benzene	1	0.25J
Chloroethane	5	3.3
cis-1,2-Dichloroethene	5	[670]D
1,1,2-Trichloro-1,2,2-trifluoroethane	5	[100]D
Methyl tert-butyl ether	10	1.1
Tetrachloroethene	5	1.6
trans-1,2-Dichloroethene	5	3.J
Trichloroethene	5	[220]D
Vinyl chloride	2	[11]

S-2 CONSTITUENT	NY-GWQS	VE-S2-070804 07/08/2004 (ug/l)
1,1,1-Trichloroethane	5	[15]
1,1-Dichloroethane	5	[41]D
1,1-Dichloroethene	5	[9.1]
Benzene	1	0.85J
Isopropylbenzene	5	0.54
Chloroethane	5	1.4
cis-1,2-Dichloroethene	5	[260]D
1,1,2-Trichloro-1,2,2-trifluoroethane	5	[7.4]
Methyl tert-butyl ether	10	0.39J
Toluene	5	1.1
trans-1,2-Dichloroethene	5	1.2
Trichloroethene	5	[47]D
Vinyl chloride	2	[25]D

S-1 CONSTITUENT	NY-GWQS	VE-S1-070904 07/09/2004 (ug/l)
cis-1,2-Dichloroethene	5	0.23J
Methyl tert-butyl ether	10	2.6
Trichloroethene	5	0.36J

S-6 CONSTITUENT	NY-GWQS	VE-S6-070804 07/08/2004 (ug/l)
1,1-Dichloroethane	5	0.36J
cis-1,2-Dichloroethene	5	[23]
Trichloroethene	5	[39]D

S-7 CONSTITUENT	NY-GWQS	VE-S7-070804 07/08/2004 (ug/l)
1,1,1-Trichloroethane	5	[28]D
1,1-Dichloroethane	5	[22]
1,1-Dichloroethene	5	2.5
cis-1,2-Dichloroethene	5	[69]D
trans-1,2-Dichloroethene	5	0.76
Trichloroethene	5	[18]
Vinyl chloride	2	[24]

S-8 CONSTITUENT	NY-GWQS	VE-S8-070904 07/09/2004 (ug/l)
cis-1,2-Dichloroethene	5	1.4
Tetrachloroethene	5	0.46J
Trichloroethene	5	0.71

EB-33 CONSTITUENT	NY-GWQS	VE-EB33-070804 07/08/2004 (ug/l)
1,1,1-Trichloroethane	5	0.29J
1,1-Dichloroethane	5	4.1
1,1-Dichloroethene	5	2.1
cis-1,2-Dichloroethene	5	[11]
1,1,2-Trichloro-1,2,2-trifluoroethane	5	0.47J
Methyl tert-butyl ether	10	0.2J
trans-1,2-Dichloroethene	5	0.39J
Trichloroethene	5	[50]D
Vinyl chloride	2	[2]

Source: Endicott, NY USGS Topographic Quadrangle, 7.5-minute series, dated 1969 and photoinspected in 1976.

TETRA TECH FW, INC.

TITLE:

Volatile Organic Compounds Detected in the Groundwater (2004)
Vestal Well 1-1 Site
Vestal, New York

DWN.:	DATE:	PROJECT NO.:
CTS	05/26/05	1945.2109.0700
CHKD:	REV.:	FIGURE NO.:
DPC	0	3-3
DES.:	APPD:	
CTS	WSD	

N:\GIS\GISKEY\GISPROJ31\VESTAL-SURVEYED\GW REPORT 2005\FIGURE 3-3 052605.DWG

Legend

Monitoring Well

—806— Groundwater Elevation (ft. msl)

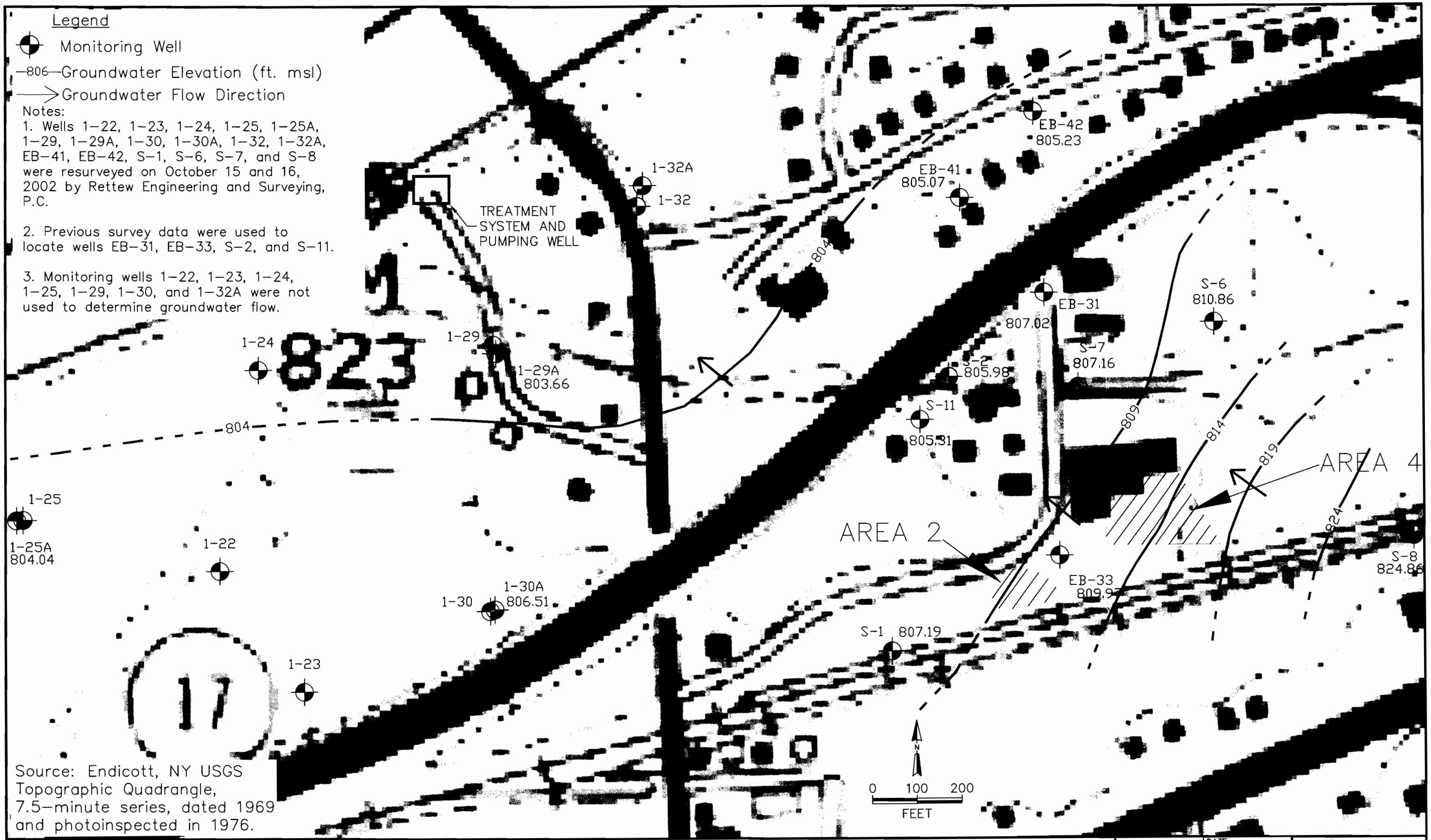
Groundwater Flow Direction

Notes:

1. Wells 1–22, 1–23, 1–24, 1–25, 1–25A, 1–29, 1–29A, 1–30, 1–30A, 1–32, 1–32A, EB–41, EB–42, S–1, S–6, S–7, and S–8 were resurveyed on October 15 and 16, 2002 by Rettew Engineering and Surveying, P.C.

2. Previous survey data were used to locate wells EB–31, EB–33, S–2, and S–11.

3. Monitoring wells 1–22, 1–23, 1–24, 1–25, 1–29, 1–30, and 1–32A were not used to determine groundwater flow.



Source: Endicott, NY USGS Topographic Quadrangle, 7.5–minute series, dated 1969 and photoinspected in 1976.

TETRA TECH FW, INC.

TITLE:
Shallow Groundwater Surface Elevation Map (November 9, 2004)
Vestal Well 1–1 Site
Vestal, New York

DWN.: CTS	DATE: 05/27/05	PROJECT NO.: 1945.2109.0700	
CHKD: DPC	REV.: 0	FIGURE NO.: 3–4	
DES.: CTS	APPD: WSD		

N:\GIS\GISKEY\GISPROJ31\VESTAL-SURVEYED\GW REPORT 2005\FIGURE 3-4 052705.DWG

Legend

Monitoring Well

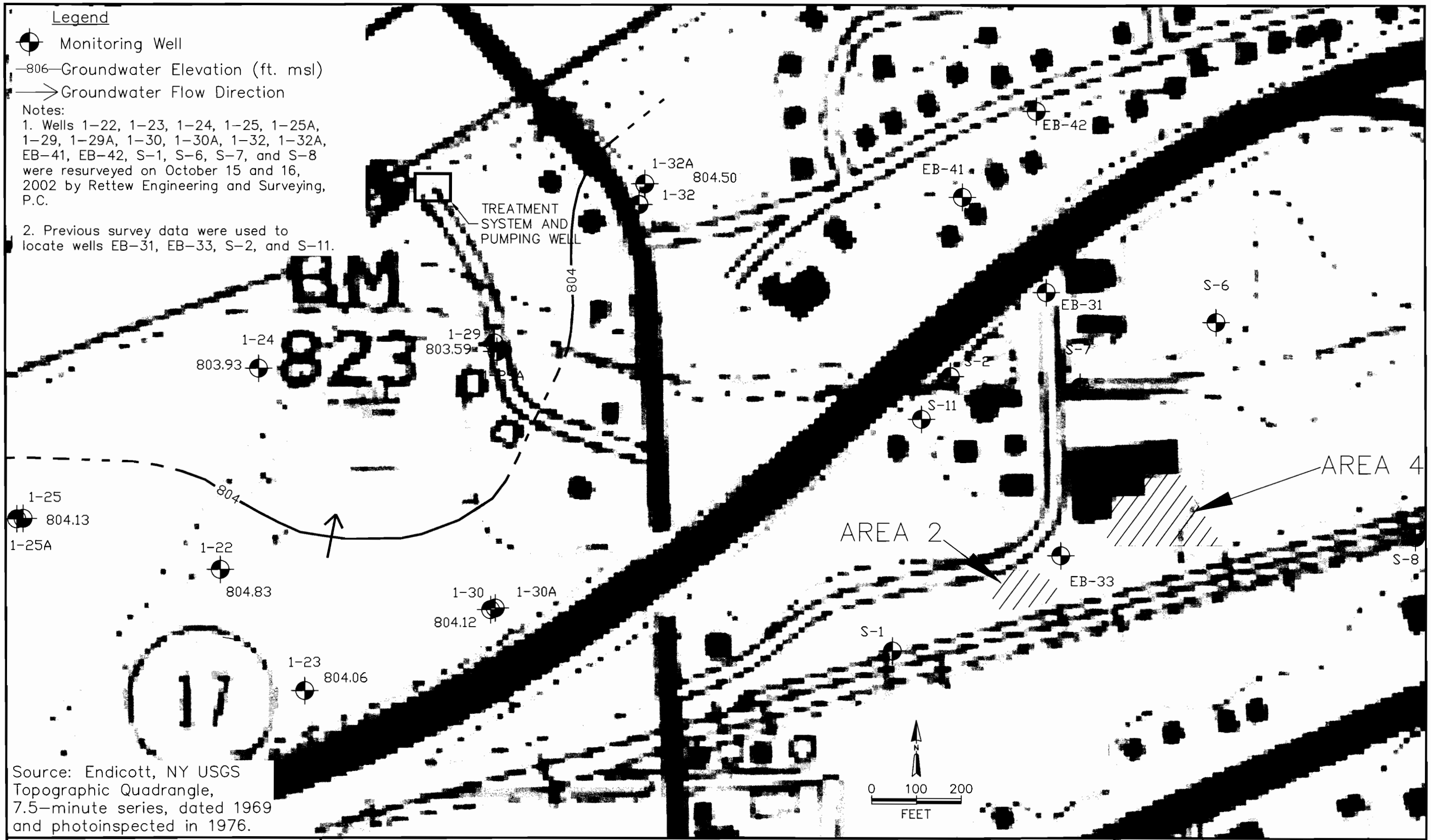
806 Groundwater Elevation (ft. msl)

Groundwater Flow Direction

Notes:

1. Wells 1–22, 1–23, 1–24, 1–25, 1–25A, 1–29, 1–29A, 1–30, 1–30A, 1–32, 1–32A, EB–41, EB–42, S–1, S–6, S–7, and S–8 were resurveyed on October 15 and 16, 2002 by Rettew Engineering and Surveying, P.C.

2. Previous survey data were used to locate wells EB–31, EB–33, S–2, and S–11.



Source: Endicott, NY USGS Topographic Quadrangle, 7.5–minute series, dated 1969 and photoinspected in 1976.

TETRA TECH FW, INC.

TITLE:
Deep Groundwater Surface Elevation Map (November 9, 2004)
Vestal Well 1–1 Site
Vestal, New York

DWN.: CTS	DATE: 05/27/05	PROJECT NO.: 1945.2109.0700	
CHKD: DPC	REV.: 0	FIGURE NO.: 3–5	
DES.: CTS	APPD: WSD		

N:\GIS\GISKEY\GISPROJ31\VESTAL-SURVEYED\GW REPORT 2005\FIGURE 3-5 052705.DWG

4.0 CONCLUSIONS AND RECOMMENDATIONS

The groundwater elevation data collected on 9 November 2004 indicate shallow groundwater is flowing northwest toward the Susquehanna River. The deep groundwater direction is flowing to the north/northwest, toward the pumping well, based on the limited data points in the deep monitoring well network. The vertical groundwater flow is generally from the shallow to deep groundwater zones. After repairs were made to the treatment system in November 2002, the system has a pumping rate (approximately 550 gpm) similar to the pump test results from 1994. Therefore, hydraulic control continues to be maintained, and based on the analytical results from 1-25, contamination is not moving toward the Vestal Well 1-2 and Well 1-3 areas.

The analytical results from the last seven years indicate, in general, the concentrations of chlorinated VOCs are decreasing or stable, confirming aquifer restoration is on-going. In particular, statistically analyzed chlorinated VOC concentrations have decreased at the 80% CI in monitoring well EB-33, located between Areas 2 and 4. The groundwater plume appears to be migrating northwest as a result of the groundwater extraction activities.

Site COCs chromium, copper, lead, mercury, nickel, and zinc were detected at concentrations below the NYSGWQC. Iron and sodium concentrations exceeded the NYSGWQC in monitoring wells 1-24, 1-29, 1-29A and 1-30. Manganese concentrations exceeded NYSGWQC in monitoring wells 1-29A and 1-30. However, iron, manganese, and sodium are not COCs.

The continuing presence of daughter products in the groundwater and decreasing concentrations of chlorinated VOCs in the nearby monitoring wells indicates natural attenuation is occurring. Site contaminants are migrating toward the extraction well and are thus being captured. Field parameters, such as dissolved oxygen, ORP, and pH, indicated that conditions within the aquifer are suitable for anaerobic reductive dechlorination. Based on these observations, it is recommended that annual effectiveness monitoring be continued to evaluate VOC concentration trends and field parameters indicative of conditions conducive to natural attenuation.

APPENDIX A

Copy of Field Logbook Entries

(61) Vestal, New York 6/28/04

Monday June 28, 2004

Weather - Cool & Clear in the morning. Overcast w/ Short Showers in the PM.

1000 John Imhoff (JTI) arrives at Site.
try to locate several of the wells. Then head to purchase supplies.

1430 Laura Saikia on site
open treatment bldg
No water turned on - need to locate where to put purge water and how to turn on water for decon

1500 - 1900 trying to locate wells to gauge. (See Groundwater level DATA form) Able to locate 1-23, 1-30, 1-30A, 1-25, 1-25A, 1-24, 1-29, 1-29A, 1-32, EB-41, EB-42

J. T. Imhoff

Vestal New York (gauge wells) (62)

unable to locate 1-32A and 1-22

1900 unload van and Ranger into treatment building

1910 off site.

Summary of water levels

Well	time	water level (TOC)
1-23	1545	19.29
1-30	1555	14.67
1-30A	1600	13.80
1-25	1614	25.00
1-25A	1617	25.22
1-24	1628	25.12
1-29	1707	22.13
1-29A	1710	22.55
1-32	1810	29.43
EB-41	1850	21.82
EB-42	1900	27.66

J. T. Imhoff

(63) VESTAL, New York 6/29/04
(Gauge wells @ & E)

Tuesday June 29, 2004

0700 JTI meet Laura Saikia at hotel. Breakfast @ Dunkin Donuts.

~730 on Site.

Weather: overcast to 3-5 mph Breeze from west ~65-70°F.

Plan for Today:

Decon Pump in prep for todays sampling activities; Continue gauging monitoring wells. Begin sampling activities when supplies arrive.

0800: H&S Brief.
- Decontamination of Pump & Equipment, appropriate

0810 Laura Saikia conducting Decontamination of Pump as follows:

John T. Imhoff

Vestal, New York 6/29/04 (64)
Daily Decon.

(1) Run Pump 5 min in Potable water Pre Rinse (8-10 gallons)
(2) Run Pump 5 min in 8-10 gallons of Alconox Soln.
(3) Run Pump 5 minutes in 8-10 gallons of Potable water
(4) disassemble impeller section and wash in 8-10 gallons of Alconox solution, scrub.
(5) Rinse pump parts in potable water
(6) Rinse Pump parts in distilled/deionized water
(7) impeller rinsed in Jar w/ 1% HNO_3
(8) Rinse impeller with Distilled/deionized water.
(9) Rinse impeller assembly in Isopropanol in Jar
(10) Rinse impeller assembly in distilled/deionized water

0845 John Imhoff calibrating Horiba U-22 in accordance with manufacturers directions.

John T. Imhoff

(65) Vestal New York 6/29/04

Horiba U-22 autocalibrate
PINE S/N# 05114

pH 3.93 SU in 4.00 SU STANDARD
Sp. Cond 4.50 mS/cm in 4.49 mS/cm STANDARD
Turbidity 0.0 NTU in 0.0 NTU STD.
D.O. 8.84 mg/L SATURATED
Temp 17.43°C

0850 Calibrate multigas meter
multi Rae plus
Pine S/N# 02088
CO 0.0 in air; 49 ppm in 50 ppm STD
H_2S 0 in air; 25 ppm in 25 ppm STD
LEL 0 in air; 49% in 50% STD
Oxy 20.9 in air; 20.9% in 20.9% STD.

0910 Calibrate PID: PINE
Mini RAE 2000 S/N# 04768
0.0 in air = background
101 ppm in 100 ppm STANDARD

945 Head out to commence collecting water levels, See GW Level Data form.

Vestal New York 6/29/04 (66)

0950 gauging EB-33
PID = 0.0 ppm CO = 0; H_2S = 0; LEL = 0; O_2 = 20.6%
SWL = 18.86' TOC

1015 gauging ~~EB~~ S-1
PID = 0.0 ppm CO = 0; LEL = 0; H_2S = 1; O_2 20.9%
SWL = 24.90' TOC

1025 gauging S-8
PID = 0.0 ppm CO = 0; LEL = 0; H_2S = 1; O_2 = 20.9%
SWL = 7.49' TOC

1050 gauging S-7
PID = 0.0 ppm CO = 0; LEL = 0; H_2S = 2 O_2 = 20.9%
SWL = 17.75

1055 gauging EB-31
PID = 0.5 ppm CO = 0 LEL = 0 H_2S = 2 O_2 = 20.9%
SWL = 20.33

1100 gauging S-6
PID = 0.0 CO = 0 LEL = 0 H_2S = 2 O_2 = 20.9
SWL = 12.45

1130 Spoke w Heide about water in treatment bldg NO city water, only water from TREATED Effluent - Heide trying to get water for tomorrow. will buy some today as necessary.

1200 called Travis Shiner. Travis called his father Dennis Shiner who met us at site. He was the former operator of the facility and now works for the Town. He is unable to get city water into the Bldgs at treatment Bldg But he gave us access to the hydrant outside the gate.

- Dennis also opening gate to area behind Dike so we can access 1-25 and 125A with the truck this afternoon.

1300 Decontaminating the pump with city water from the hydrant. (between well decontaminations)

(1) Pre Rinse - run pump 5 minutes in Potable water

(2) Wash - run pump in bucket with Alconox Solution (5 min)

(3) Rinse (5 min) - operated pump in Potable water

(4) Distilled/Deionized water Rinse

1340 finished Decon load van. break for lunch

1415 back at treatment bldg meet with Dennis Shiner. he said representative with DEC will be here in the morning to unlock gate to 1-25, 1-25A & 1-24 area

1450 setting up @ EB-41
PID = 0.0 ppm CO = 0 ppm, LEL = 0%, H_2S = 2 ppm O_2 = 20.9%
Depth to water = 21.88 TOC

1620 Pump had ground fault Error and shut itself off. Error from Turbidity of > 999 NTU

Vestal, New York 6/29/04

1705 Collect VE-EB41-062904 (MS/MSD) and Duplicate VE-EB45-062904 (@ t=1200).

pH	Sp.C.	Turb.	D.O.	Temp	ORP	Comments
6.65	1.98 mS/cm	49.0 NTU	2.37 mg/L	14.72°C	40 mV.	Colorless

1730 - Laura doing a Pump decon (bottom well), as described on P. 68.

- JTI Disposing of Purge WATER into UST.

1735 JTI Check ph of VOC samples with extra vial collected with TEST paper. pH = <2.0 as per colosmetric Scale (actual read = 1.0).

1800 ~~De~~ Collect Field Blank from Decontaminated Pump by inserting into section of 4" PVC with attached Teflon-lined hose and Pouring Distilled/Deionized water

Vestal New York 6/29/04

into PVC. Pump WATER to circulate. Collect Rinsate in labs supplied VOA vials.

1830 Prepare samples for fedex Delivery.

1845 off-site for Fedex.

1915 Drop cooler off @ FEDERAL Express in Binghampton.

NOTE: They receive packages until 7:00 PM generally for same night shipping. Samples will go out tonite.

6/29/04

Sample Summary

VE-EB41-062904 1705 MS/MSD
VE-EB45-062904 1200 (dup of above)
VE-FB-062904 Field Blank 1800
Trip Blank

(71) VESTAL, New York 6/30/04

Wednesday June 30, 2004

0730 arrive @ site JT Elaina Sukia

weather: Sunny and 70° slight Breeze.

0735 H & Safety Brief
insects & ticks.

0740 JT Calibration monitors and meters

- PID - mini Rae 2000
0.0 in air 95.6 ppm in 100 ppm isobutylene STANDARD

- PID multi rae Plus
CO = 50 ppm in 50 ppm CO STANDARD
H_2S 25 ppm in 25 ppm H_2S STANDARD
LEL 50% in 50% LEL STANDARD
O_2 = 20.9 in 20.9% O_2 STANDARDS

0800 ~~head to 1-30~~ @ 6/30/04
Calibrate Horiba U-22
in accordance w/ mfg. instructions
pH = 3.99 in 4.00 SU STANDARD; Cond 4.48 mS/cm in 4.49 STD
Turbidity = -1.7 in 0 STD. DO = 9.36 mg/L
Temp = 19.63

[signature]

VESTAL NEW YORK 6/30/04 (72)

0805 head to 1-30A
PID = 0.0; CO = 0 LEL = 0 : H_2S = 0
O_2 = 15.8% "Low".
SWL = 13.72' (2 inch well)
TOTAL Depth = 30 feet (from info sheet).
16.28' WATER column
0.163 ~~feet~~ gallon/feet conversion fctr
2.65 gallons/volume.

0825 insert pump to 25'
WATER LEVEL STAYED @ 13.72'.

0827 START flow adjust rate to 500 ml/min.

0900 Collect Sample
VE-130A-063004
for VOCs & 1,4-Dioxane

pH (SU)	SpC (mS/cm)	Turb (NTU)	DO (mg/L)	Temp (°C)	~~Dep~~ SAL	TDS (g/L)	ORP
7.06	1.50	-10	3.33	14.82	0.07	1.0	22 mV

TOTAL Depth measured after Sampling 28.85' TOC

0910 Head for Decon

0915 - Purge WATER Transferred to UST.

0920 Decontaminating Pump (between well).

[signature]

0940 gate to River side of Dike for access to I-25, I-25A and I-24 has not been opened by DEC/DOT yet. Spoke with Dennis Shiner. he is on way with the key.

0945 Decon of Pump complete.

0950 Collect FIELD BLANK ~~FB~~ VE-FB-063004 In sammanner as yesterday. VOCs, 1,4-Dioxane and Total metals.

1000 Setting up @ ~~VE~~ I-30
TOTAL Depth = 114' (From well info)
PID = 0.0 CO = 0 H_2S = 0 LEL = 0
O_2 = 20.9
SWL = 14.20' TOC

1015 insert pump to 110' feet.
WL = 11.79' TOC

1025 start pump at 0.5 L/min have to adjust flow over first 15 minutes to keep pump running, ~~and~~

1125 Sample VE-130-063004
pH Sp C. TURB DO TEMP ORP W

Depth to bottom = 114' TOC (SOFT)

- clear up and head to decon.
- John Imhoff to Howard Johnsons to pick up COOLERS SENT BY LABORATORY via UPS.
- Laura decontaminating Pump

1230 upon return to site Laura indicates that Pump control has faulting out during Decontamination.
- generator is working but controller keeps Faulting. She has contacted PINE Environmental who are contacting the MFG to try and Troubleshoot the Problem.

1330 Spoke with Heide. She is understanding what is taking. Also gave me directions to I-32A

75

Vestal, New York 6/30/04
well at 1-32A & 46'
North & 13' East of 1-32.

- Pack up and Prep Samples for Fedex shipment.

1415 - After locking up Treatment Facility area. Head to Find 1-32A and mark.

1430 Located 1-32A. marked w/ yellow Flag

1435 All OFF SITE. JJ to FEDEX.

1625 - Samples @ Fedex for Shipment to Chemtech.

76

Vestal New York 7/6/04

Monday July 6 2004
Weather: Overcast: 70°F,
Scattered showers/sprinkles

0930 John Imhoff on site.
get ice for samples. Ice in cooler

0840 unload & calibrate meters
PID = Mini RAE #04768
0.0 in air as Fresh air (background)
100 ppm ~~iso~~ in 100 ppm Isobutylene STANDARD

MultiRAE Plus 02088
CO 0.0 in air; 50 in 50 ppm STANDARD
H_2S 0 in air; 25 ppm in 25 ppm STD
LEL 0 in air; 49% ~~ppm~~ in 50% STD
O_2 20.5 in air; 20.9 in 20.9% STD.

Horiba V-22 #05114
pH 4.00 in 4.00 STANDARD
Cond 4.49 in 4.49 ms/cm STD
Turbidity = -1.2 NTU ~ 0 STD.
D.O = 8.76 mg/L, Temp = 21.6°
Sal = 0.23 TDS = 2.9 g/L ORP = 289 mV.

(77) VESTAL, NEW YORK 7/6/04

0905 Chris Cicerale on site
Discuss HASP and general site conditions.

0930 Conduct Daily Brief
discuss Decontamination
of Pumpproceedures.

0945 Conduct Daily Decontamination
of Pump in accordance
with SOP. as Described on
pp. 64.

1045 collect FIELD BLANK
VE-FB-070604
as previously described.

1110 going to set up on 1-29/29A
cluster.

VESTAL, N.Y. 7/6/04 (78)

L-29A
PID = 0.9 w background of 0.5 ppm
CO = 0
LEL = 0
H_2S = 0
O_2 = 17.9% "Low".

SWL = 22.03' TOC
BOTTOM = 64' from AS-Built info.
✓ SWL = 22.03 @ 5 min
insert pump with new Teflon
lined hose. intake at 59' TOC.
1130 WATER LEVEL = 22.01'.
1130 start pumping - adjust to ~ 400 ml/min
1200 - PID = 0.5 ppm (background)
CO = 0; LEL = 0; H_2S = 0; O_2 = 20.9%
Sample 1240 pH 7.39 spc. 1.16 ms/cm; Turb 184*; D.O. 0.00; Temp = 13.58; ORP -139 mV
1240 Collect Sample VE-129-070604
1245 Chris STARTS between well
decontamination of Pump.
1300 setting up @ 1-29
PID = 0.8 (background of 0.5 ppm)
H_2S = 0; CO = 0; LEL = 0, O_2 = 20.1%
SWL = 21.55' TOC

VESTAL New York 7/6/04

1305 inserting decontaminated Pump into hole

1315 tried to gauge depth of Pump intake with SWL meter
SWL meter got stuck

1325 Probe of SWL meter Broke off meter take. Pump is now lodged in PVC/STEEL Well at I-29. Probe is wedged between Pump and Screen at 110' TOC.
- going to sample.
Spoke with Heidi

1350 START Purging I-29
WL = 21.50' TOC. @ 1410.
See Purge Data Sheet.

1430 Sample of VE-129-070604 and Duplicate VE-129-D-070604 (for metals only).

1450 left Pump in well, Sealed w/ Cable & hose in procover.

J. T. [signature]

VESTAL New York. 7/6/04

Spoke w/ Charles Malinick: He suggested we get some PVC Pipe & Fittings and try to push Pump down to dislodge; may work free. We will do that at end of day - post sampling.

1500 head back to Treatment bldg for daily Decon of Pump # 33815755
Chris doing daily Decon. JTI trying to prep for next samples
- purge water transferred to UST

1545 Collect Field Blank VE-FB-070604 B from Backup Pump # 33815755
VOCs only

1600 Set up @ I-32
PID = 0.0 CO = 0 LEL = 0 H_2S = 0
O_2 = 21.5%
SWL = 28.95' TOC

1630 Start purging - Pump ~~well~~ intake at 146' TOC

J. T. [signature]

(81) VESTAL, New York 7/6/04

1730 Sample VE-132-070604

250 ml/min, depth to water = 29.01

pH = 7.16, Sp. Cond 1.62 ms/cm, Twb = 172 (anomalously high). DO = 0.0 temp = 14.27°C.

Orp = -113 Total Depth = 151'.

1750 Tested ph PAPER on EXTRA vial of sample from VE-132-070604 ph was < 2.0 SU. according to colorimetric chart on phydrion Packaging.

1740 Chris conducting between well decontamination of Pump. as per SOPs as described on PP. 68

1800 Setting up at 1-32A

SWL = 15.70 TOTAL =

PID = 0.0 ppm CO = 0 LEL = 0

H_2S = 0 O_2 = 20.5%.

1810 SWL = 15.70 START. at flow of ~ 200 ml/min

1815 17.45 TOC. Generator cuts out. START again from 1815.

(82) VESTAL, New York 7/6/04

1815 JT to FEDERAL express to ship samples.

1920 JT returns from FEDEX

1920 Sampled VE-132A-070604 for VOCs.

Turbidity meter reads 960 NTU but sample is turbid-free.

pH 6.23 Sp. C. 1.05 ms/cm; Turbidity (None)

D.O. = 0.45 mg/L; Temp

Sample placed into Coolers in ice for storage.

1945 Clean up and head to Treatment bldg.

2000 Cleaned up. OFF site.

(83) Vestal, N.Y. 7/7/04

Wednesday July 7th, 2004

weather: 60° F and hazy.

weather forecast indicates temps in the 80°s this afternoon w/ chance of showers & thunderstorms.

0730 arrive at site; picked up Ziplock bags & ice on way.

0740 Conduct H&S brief

0750 Chris Ciccarale doing daily decontamination of pump.

JTI calibrating meters.

PID Mini RAE 04768

0.1 as background air.

97.8 ppm in 100 ppm Isobutylene STANDARD

4-gas multi RAE plus #02088

CO = 0 in air; 50 ppm in 50 ppm STANDARD

H_2S = 0 in air; 24 ppm in 25 ppm STD

LEL = 0% in air; 49 ppm in 50% STD

O_2 = 20.9 in air; 20.9 % in 20.9% STD.

Vestal, New York 7/7/04 (84)

Horiba U-22 # 05114

Calibrate according to MFG inst.

Ph 4.00 cond 4.49 Turb -0.2 DO 8.17 Temp 21.70°

ORP 266

STANDARD: ph = 4.00 cond = 4.49 Turb = 0

0815 GATE TO 1-25, 1-25A & 1-24 opened by Village of VESTAL.

0840 Collect Field Blank on Decontaminated Pump VE-FB-070704 as Previously described. VOCs & metals.

0900 Head to set up @ 1-24

open well PID = 0.0 ppm CO = 1 ppm H_2S = 0

LEL = 0; O_2 = 20.9%

0910 SWL = 24.91 TOTAL = 129 from As built info.

0915 SWL = 24.91 - Insert pump to depth of 124' TOC.

0925 START Purging 1-24 achieve ~400 ml/min flow rate

1000 Sampled VE-124-070704 MS/MSD metals only.

pH 7.53, cond 0.786, Turb = -10 NTU, DO = 1.58

Temp = 13.10°C ORP = -133 mV.

Vestal, N.Y. 7/2/04

1015 Chris decontaminating Pump (between well decon).

Total Depth 1-24 = 128.4' (soft)

1045 Setting up at 1-25/1-25A cluster.

1-25 Total Depth = 155' 1-25A = 49' ← from well info provided

1-25A PID = 0.4 background = 0.2

CO = 1; H_2S = 0; LEL = 0; O_2 = 20.6%

SWL = 25.30' TOC.

1-25 PID = 0.3 background = 0.2-0.3

CO = 2; H_2S = 0; LEL = 0; O_2 = 20.9%

SWL = 25.1' TOC

Set up on 1-25

Pump suspended at 44' TOC.

1100 START purging 1-25

1120 PID = 0.6 ppm (Background)

CO = 0; H_2S = 0; LEL = 0%; O_2 = 20.9%

1130 Torrential Rain & Thunder

1140 WL = 27.3 ph = 10.90 Cond 0.372 Turb = 769

DO = 0 Temp = 15.04 ORP = -135

1150 WL = 27.4 ph = 10.91 Cond = 0.370 Turb = 326.0

DO = 0.0 mg/L Temp = 15.1 ORP = -158

Vestal, New York 7/7/04

Upon gauging bottom of well following sampling. Noted that the well we thought ~~had a~~ was 1-25A was 1-25 with a total depth of 148.3' (soft bottom). Map has wells switched

going to Re-insert Pump to proper depth of ~145' and resample.

1240 Start Purging 1-25 at approx 2-300 ml/min.

1320 Sample 1-25 as VE-125-070704

pH = 7.83 Cond = 0.548 Turb = 543 DO = 8.27

Temp = 15.27 -189

1325 Chris Decontaminating Pump ~~De~~. Between well decon.

1400 Begin Purge @ 1-25A

PID = 0.0 CO = 0 LEL = 0 H_2S = 0 O_2 = 20.9

SWL = 25.3 Total 49' from well info.

1500 Sample VF-125A-070704 from 125A

pH = 6.41, cond = 0.609; Turb = 89.9
DO = 6.23; Temp = 15.69 ORP = 23 mV (very soft)
TOTAL Depth 50.5' TOC.

1505 Chris decontaminating Pump + between well decon.

1525 finished decontamination head back to treatment building to change out water and resupply

1600 Setting up at EB-42
DTW = 28.05' TOC
TOTAL Depth = ~~29'~~ 44.5' from well info.

1605 insert pump in intake @ 40' TOC.
PID = 0.0 CO = 0 LEL = 0 H_2S = 0
O_2 = 20.9%

1615 SWL = 28.05 START Purging EB-42 flow rate of ~ 300 mL/min

1710 Sample EB-42 (VE-EB42-070704)
VOCs & 1,4-Dioxane only.

1720 Clean up and head back to

Treatment building for clean up & Prep samples

1740 Chris Conducting Daily Decon on Pump so that it will be ready for field BLANK collection in AM.

JTI prepare samples for fedex shipment to lab.

1750 JTI - meters plugged in for night.

1800 JTI off-site : chris still cleaning up.

1830 Samples at fedex for overnight delivery to Lab.
Summary of Samples Collected

VE-FB-070704	8:40
VE-124-070704	1000
VE-125-070704	1320
VF-125A-070704	1500
VF-EB42-070704	1710

JTI

(89) Vestal, New York 7/8/04

Thursday July 8th 2004

weather: partly cloudy 70°F 100% humidity - Forecast for 80° F by this evening w afternoon showers.

Plan for today; Continue GW sampling. Attempt to sample EB-31; S-6; S-7, S-2 S-11 & EB-33.

0715 JD on site. Picked up ice on way.

0725 Chris Cicerale on site.

0725 Calibrate meters

PID # 04768

0.0 in air as background air

105 ppm in 100 ppm isobutylene standards

Multigas meter # 02088

CO 0 in air; 49 ppm in 50 ppm standard

H_2S 0 in air; 25 ppm in 25 ppm STD

LEL 0 in air; 49 % in 50 % standard

O_2 20.9 in air; 20.9 in 20.9% STD.

John T. Boyd

Vestal, New York 7/8/04 (90)

Horiba U-22 # 05114

auto calibrate in accordance w MFG ins

pH 4.00 in 4.00 SU standard

Cond 4.49 in 4.49 mS/cm standard

Turbidity -0.8 in 0.0 NTU standard

DO = 8.42 mg/L

Temp = 23.31°C

ORP = 276 mV.

0745 collecting Field Blank from Pump (daily decon performed last night).
VE-FB-070804

0815 Setting up @ EB-31

4" Diameter well concrete

Pad in poor condition

PID = 0.0 ppm CO = 0 LEL = 0 H_2S = 1 ppm O_2 = 20.9%

SWL = 19.98' TOC TOTAL depth

Bottom measured to be 51.1' TOC.

0835 START Purge EB-31

0935 Sample VE-EB31-070804

pH 6.99 SU cond 1.21 mS/cm Twb 35.6

DO = 0.69 Temp = 15.92 ORP = -47

depth to water 22.44

John T. Boyd

(91) Vestal, New York 7/8/04

0940 Between well decontamination of pump

1015 Setting up @ S-6 location
PID 0.0, CO: 1; LEL: 0; H_2S: 0. O_2: 20.9
SWL = 12.35' TOC (open to Atmosphere)
Total Depth from well info provided: 41'.

1020 Insert pump. w/ intake @ 33' TOC.

1025 Start Purging S-6

1050 Breathing zone PID = 0.0
~~CO: 1 H_2S = 0 LEL = 0 O_2 = 20.9%~~

1100 Sample S-6 [VE-S6-070804]
~~at 11:00.~~

pH 6.88 Cond 2.05 Turb - 8.9; D.O. 0.55
Temp 12.29°C orp -157. Sal = 0.10 TDS = 1.3 g/L

1105 Total Depth = 43.75' TOC.

1110 Between well pump decontamination

1130 Setting up on S-7 no cap - open to Atmosphere
PID = 0.0 CO: 0; H_2S: 0; LEL: 0%
O_2: ~~20.8%~~ 20.9%.
SWL = 17.66' TIC. Total Depth from well info provided = 32'.

1145 Start Purging S-7

John T. [signature]

Vestal, New York (92)

1155 JTI head for treatment bldg. to transfer purge water & Decon water into UST. and get fresh decon water.

1220 Chris takes van to grab lunch.

1245 Chris back.

1300 collect sample VE-S7-070804.
measured depth to bottom 31.50 TIC.

pH at time of Sample =		6.65 SU
Cond.	" "	1.36 mS/cm
Turb	" "	181 NTU.
DO	" "	0.0 mg/L
Temp	" "	19.05 °C
ORP	" "	-106 mV.

1315 Conduct decontamination of pump Between well decon.

1340 head for S-2 location
S2 Casing (outer) is loose. Pulls right off well.
PID = 0.0; CO = 1; H_2S = 1, LEL = 0, O_2 = 20.9
SWL = 20.14 TOC. Total = 32' from well info.

John T. [signature]

(93) Vestal, New York 7/8/04

1400 START purging S-2

1435 wellhead PID=0.0 CO=2 H_2S=0; LEL=0 O_2=20.9
. Breathing Zone PID=0.0 CO=1 H_2S=1; LEL=0, O_2=20.9

1445 Sample S-2 = VE-S2-070804

pH = 5.71 Cond = 16.4 ms/cm Turb = 18.7 NTU
DO = 0.96 mg/L Temp = 16.42°C; ORP = -2 mV

1445 Sample VE-S2-070804 collected for VOCs & 1,4-DIOXANE. 3 VOA vials.

~~1450 Cleanup~~ Total depth measured to be 32'. Soft. Gray silt on probe tip upon retrieval.

1500 Head back to treatment bldg for decon & prep for addl sampling.

1510 Chris performing Between well decon.

1535 Head for S-11.

1540 setting up at S-11.

John T. Orthoff

Vestal New York 7/8/04 (94)

S-11 has been mangled approx 9" above ground surface. outer and inner casing are cut off (chewed off) very rough and sharp.

Depth to water = 18.88
PID=0.0 CO=2; H_2S=1 LEL=0 O_2=20.9%

1550 insert pump
1555 WL = 18.94
1600 START PURGE S-11
1645 sample VE-S11-070804

pH = 7.13; Spec Cond = 1.42 ms/cm;
Turbidity = 0; D.O. = 0.87 mg/L
Temp = 14.61°C; ORP = -105 mV.

clean up. pull pump depth to bottom gauged to be 40.6' T.C.

1705 move TO EB-33 location to decon pump.

1710 Chris begins between well decontamination of pump

John T. Orthoff

Vestal New York 7/8/04

1710 JM gauges EB-33
PID = 0.0 CO = 1 H_2S = 0
LEL = 0 O_2 = 20.9%
Depth to WATER = 18.75'
Total Depth (from well info) = 35'

1730 Insert Decontaminated Pump into EB-33. W ~~Screen~~ intake ~~1732~~ at 30' TOC.
1730 Depth TO water = 18.52'
~~1732~~ Depth to water = 18.60
~~1735 START~~ Purging EB-33 DTW=
1810 Sample EB-33 (VE-EB33-070804)
pH 7.09 Cond 1.42 Turb = 11.5
D.O -0.48 Temp 16.93 ORP -102
Depth TO bottom = 37.6' TOC
1815 Prep Samples for Federx
1820 Chris Cicerale back to Treatment Bldg to do Daily Decontamination on pump and pick/clean up.
— John Imhoff off to FEDEX to Ship Samples to Laboratory.

T. Imhoff

Vestal, New York 7/8/04

1850 arrive at Federal Express Ship Samples overnight priority.

Summary of Samples Collected

t	Sample	VOCs & 1,4 Dioxane
0745	VE-FB-070804	✓
0935	VE-EB31-070804	✓
1100	VE-S6-070804	✓
1300	VE-S7-070804	✓
1445	VE-S2-070804	✓
1645	VE-S11-070804	✓
1810	VE-EB33-070804	✓
	Trip Blank	✓
	Temp Blank	

T. Imhoff

(97) Vestal, New York 7/9/04

Friday July 9th 2004.
Partly Cloudy to partly Sunny
60°. Forecast to mid 60s
this afternoon.

Plan for today.
Purge & sample S-1 & S-8
Try and remove Pump from I-29
Clean up & demobilize.

0730 John Imhoff & Chris Ckerale
on site. John Imhoff
picked up Ice and PVC pipe
(To pull pump) on way to site.

0735 Collect Field Blank VE-FB-070904
from decontaminated pump
as previously described.

0800 Calibrate Meters.
Horiba U-22 PINE # 05114
Calibrate according to MFG. inst.

John T. Imhoff

Vestal New York 7/9/04 (98)

pH 4.00 in 4.00 SU STANDARD
cond 4.50 ms/cm 4.49 ms/cm STANDARD
Turb 0.4 NTU in 0.0 NTU STD.
D.O. = 8.11 mg/L
Temp = 22.13 °C
ORP = 273

PID: MiniRae 2000 PINE # 04768
0.1 ppm in background air
100 ppm Isobutylene Standard ⇒ 103 ppm.

4 gas - Multirae Plus PINE # 02058
CO in air ; 50 ppm in 50 ppm STD
H_2S in air ; 25 ppm in 25 ppm STD
LEL 0% in air ; 49% in 50% LEL STD
O_2 20.9% in air ; 20.9% in 20.9% STD.

0820 Prep to head to S-1/S-8.
835 Setting up @ S-8 open (No well cap).
PID = 0.3 ppm (Background = 0.3 ppm)
CO = 0 ; H_2S = 0 ; LEL = 0 ; O_2 = 20.9%
SWL = 7.27' TIC.
Total Depth = 25' from info Provided

John T. Imhoff

(99) Vestal, New York 7/9/04

0840 Insert pump in intake at 18' TIC. (hose only 16.5' long) Pump may be in silt. WL = 7.30'.

0845 START Purging S-8 flow rate adjusted to ~300 ml/min.

0900 Breathing zone = PID = 0.3 (background) CO = 0; H_2S = 0; LEL = 0; O_2 = 20.9%

0930 Collect Sample VE-S8-070904 from S-8.
pH 6.85 7.67 Cond 1.77 mS/cm Turb 1.7 NTU DO 0.0 mg/L Temp 15.9°C
ORP -128 mV.

0935 Roll pump. Gauge total depth of well. Total Depth = 19.65'

0940 Head to S-1 for decon and Resup to Sample S1.

0945 Between well decon of Pump.

0955 Open S1 - no sealing cap
PID = 0.0 ppm; CO = 0; H_2S = 1; LEL = 0; O_2 = 20.9

T. [illegible]

(100) Vestal, NY. 7/9/04

S1 SWL = 20.6' Total Depth = 32.35'

insert pump into S1 @ 10:10.
water level = 20.15
10:15 W.L = 20.50' START Purging S1
Adjust flow to about 200 ml/min.

1105 Sample VE-S1-070904
pH 7.11 su; cond 1.38 mS/cm; Turb = 3.4 NTU
D.O. = 0.06 mg/L; Temp = 15.87, ORP = -53 mV.

1110 Decontaminating Pump, Packaging Samples general cleanup

1140 Use lengths of PVC TO remove STUCK grundfos pump from 1-29. Pump removed in good condition.

1230 Decontaminate Pump. Clean up. load van.

1345 off site - head for Fedex.

1500 Drop off @ Federal Express

T. [illegible]

(101)

EPA Vestal Well 1-1 Vestal, NY 11-9-04

0845- Arrive on site - Chuck Rogers - to Perform system influent and EFFLuent sampling for TAL metals only and to Measure groundwater elevations in monitoring wells.
Weather: Mostly Sunny, occasional snow squalls, 30 °F

0925- Mini-RAE 2000, S/N 110-007261 Calibrated with Isobutylene provided by US Environmental Rental Corp.
Fresh Air calibration = 0.0 ppm
Span Cal w/ Isobutylen = 102 ppm

Well #	DTW	PID	Time	comments
S-1	19.97	0.00	1453	
S-2	18.75	0.00	1411	* see notes
S-6	11.60	0.00	1423	
S-7	16.56	0.00	1430	
S-8	7.34	0.00	1352	
S-11	17.47	0.00	1505	NO LID X
EB-31	18.75	0.00	1402	
EB-33	18.62	0.00	1347	Key 3791 new cap needed H2O in manhole 4 in.
EB-41	26.31	0.00	1319	
EB-42	26.31	0.00	1329	

(1-2)

EPA Vestal Well 1-1 Vestal, NY 11-9-04

well #	DTW	PID	Time	comments
1-24	22.83	0.00	1140	
1-25	22.89	0.00	1129	
1-25A	22.88	0.00	1132	
1-29	19.96	0.00	1235	
1-29A	20.37	0.00	1218	60.1 Ft. DTB
1-30	12.42	0.00	1550	
1-30A	9.91	0.00	1545	
1-32	26.58	0.00	1258	
1-32A	#14.81	0.00	1250	
1-20				NOT Found
1-20A				NOT Found
1-21				NOT Found
1-22	12.78	0.00	1108	
f-26				NOT Found
f-27				NOT Found
1-28				NOT Found
1-28A				NOT Found
1-23	16.85	0.00	1023	

Water Level indicator decontaminated between wells.

* S-2 - Metal casings is no longer attached to concrete. Concrete pad is broken. Metal casing can be Lifted over PVC well.

(103)

EPA Vestal well 1-1 Vestal, NY 11-9-04

☆ - S-11 Lid must have been hit with a mower

1605 - Treatment System EFFLuent sample Taken

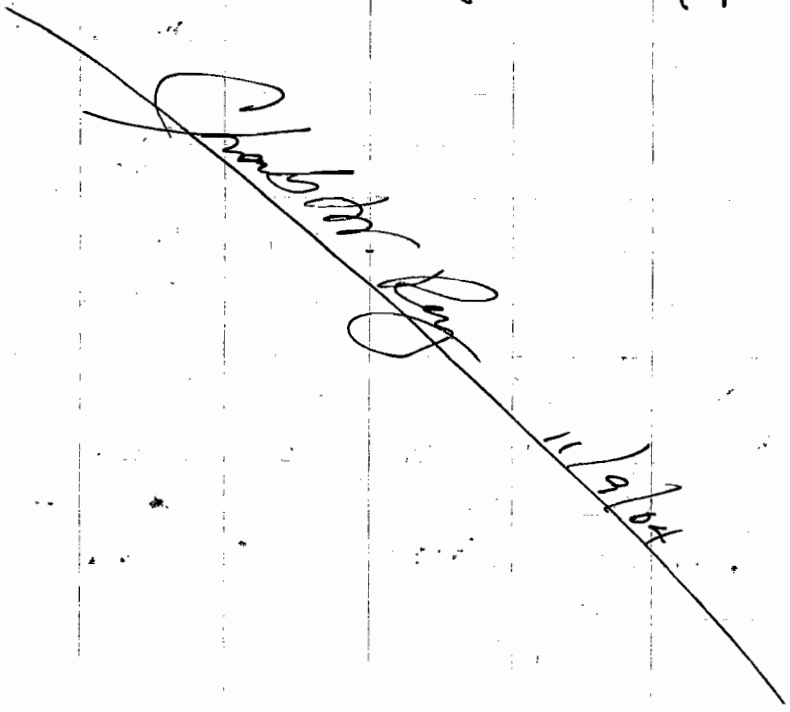
1610 - Treatment Influent sample Taken

1615 - Chain of custody completed

1625 - Mini-Rae 2000 calibrated
Fresh air = 0.0 ppm
Span Cal w/ Isobutylene = 101 ppm

1635 - Equipment has been called off - Rental.
- Depart site

2000 - Arrive at Binghamton office to drop off samples and equipment.



APPENDIX B
Low Flow Purge Data Sheets

LOW FLOW PURGE DATA SHEET

Project Name: Vestal, NY.
Project No.:
Well I.D. S-1
Date 7/9/04
Samplers John Imhoff Chris Ciceraio

Screened Interval (ft below TIC): 22 -32.35 ft
Depth of Pump Screen (ft below TIC): 25' ft

2" well.

Static Water Level (ft below TIC): 20.10' ft
Volume of Flow Through Cell: 0.5 L

Frequency of Parameter reading Calculation

Volume of Flow Through Cell = V (L) 0.5 L
Pump Discharge Flow Rate = Q (L/m) 0.2 l/m
Frequency of Readings = F (m)

F = V/Q 2.5 min

Purge Method

gamfos low flow until Parameters Stabilize then sample

Field Parameters

TIME	FLOW RATE (L/m)	DTW (ft TIC)	pH (SU)	SPEC. COND. (S/m)	TURB (NTU)	DO (mg/l)	TEMP (°C)	ORP (mV)	APPEARANCE
1015 START Purge	200 ml/min	20.50'	7.42	1.19	43.2	6.60	13.27	56	Colorless
1020	200 ml/min	21.3	7.33	1.19	30.1	4.51	13.28	49	V. Slight Turbid.
1025	200 ml/min	21.3	7.48	1.25	20.8	2.96	14.50	-48	" "
1030	200 ml/min	21.32	7.20	1.32	12.3	1.98	15.14	-69	clear
1035	200 ml/min	21.34	7.12	1.35	10.2	1.36	15.43	-72	clear
1040	200 ml/min	21.34	7.11	1.36	6.2	0.97	15.57	-69	" "
1045	200 ml/min	21.35	7.11	1.36	2.6	0.66	15.68	-64	" "
1050	200 ml/min	21.36	7.11	1.37	0.4	0.44	15.75	-60	" "
1055	200 ml/min	21.36	7.11	1.37	-0.7	0.20	15.78	-57	" "
1100	200 ml/min	21.37	7.11	1.38	-2.0	0.14	15.85	-54	" "
1105 Sample	200 ml/min	21.38	7.11	1.38	-3.4	0.06	15.87	-53	" "

Total Volume Purged: 3 gallons

Notes/Observations: Sample VE-S1-070904 collected @ 11:05
for VOCs & 1,4-DIOXANE (THREE VOA VIALS FILLED)

WELLS TOTAL Depth = 32.35' TIC.

LOW FLOW PURGE DATA SHEET

Well I.D. S-2
Date 7/8/04

Project Name: VESTAL, NY.
Project No.:
Samplers John Imhoff Chris Ciceraks

Screened Interval (ft below TIC): -32' ft Bottom of screen @ 32' per As built info.
Depth of Pump Screen (ft below TIC): ~26' ft

Static Water Level (ft below TIC): 20.14 ft
Volume of Flow Through Cell: 0.5 L

Frequency of Parameter reading Calculation

Volume of Flow Through Cell = V (L) 0.5
Pump Discharge Flow Rate = Q (L/m) 300 ml/min
Frequency of Readings = F (m) 500 ml / 300 ml/min = 1 min 40 sec

F = V/Q

Purge Method

low flow purge with grundfos until parameters stabilize then sample

Field Parameters

	TIME	FLOW RATE (L/m)	DTW (ft TIC)	pH (SU)	SPEC. COND. (S/m)	TURB (NTU)	DO (mg/l)	TEMP (°C)	ORP (mV)	APPEARANCE
START	1400	300 ml/min	20.60	7.20	9.27 ms/cm	52.8	9.12	14.55	-3 mV	colorless
	1405	300 ml/min		5.52	18.8 ms/cm	58.4	6.72	15.89	39 mV	" odorless
	1410	" "	20.41	5.52	18.8	20.9	5.43	16.33	33 mV	" "
	1415	" "	20.41	5.56	18.3	D	2.88	16.27	25 mV	" "
	1420	" "	20.42	5.61	17.6	4.2	1.71	16.40	18 mV	" "
	1425	" "	20.42	5.63	17.3	6.3	1.35	16.37	14 mV	" "
	1430	" "	20.42	5.66	17.0	9.6	1.14	16.40	9 mV	
1433	~~1433~~	" "	20.43	5.67	16.8	10.9	1.08	16.45	6 mV	
	1435	" "	20.42	5.68	16.6	15.6	0.96	16.48	3 mV	
	1440	" "	20.42	5.70	16.3	18.4	1.00	16.50	-1 mV	
Sample	1445	" "	20.42	5.71	16.4	18.7	0.96	16.42	-2 mV	

Total Volume Purged: 4 gallons

Notes/Observations: Collected Sample VE-S2-070804 at 1445 for VOCs & 1,4-Dioxane. 3 VOA vials.

LOW FLOW PURGE DATA SHEET

Well I.D. S-6
Date 7/8/04

Project Name: VESTAL NY
Project No.:
Samplers John Imhoff, Chris Cicerale

2" well

Screened Interval (ft below TIC): ? - 41 ft
Depth of Pump Screen (ft below TIC): 33' ft TIC

Static Water Level (ft below TIC): 12.35 ft
Volume of Flow Through Cell: 0.5 L

Depth to bottom measured to be 43.75' TIC

Frequency of Parameter reading Calculation

Volume of Flow Through Cell = V (L) 0.5
Pump Discharge Flow Rate = Q (L/m) 0.45
Frequency of Readings = F (m) ~ 1 min.

F = V/Q

Purge Method

Grundfos low flow purge until parameters stabilize

Field Parameters

TIME	FLOW RATE (L/m)	DTW (ft TIC)	pH (SU)	SPEC. COND. (S/m)	TURB (NTU)	DO (mg/l)	TEMP (°C)	ORP (mV)	APPEARANCE
START 1025	-	12.44							
1030	~~450 ml/min~~ 450 ml/min	12.46	6.68	1.97	0.2	7.98	11.70	-132	clodless odorless
1035	450 ml/min	12.47	6.76	1.98	-5.1	4.52	12.14	-142	" "
1040	450 ml/min	12.48	6.83	1.99	3.5	3.01	12.17	-150	" "
1045	450 ml/min	12.47	6.85	2.03	0.9	1.95	12.23	-153	" "
1050	450 ml/min	12.47	6.86	2.04	-3.0	1.46	12.14	-154	" "
1055	450 ml/min	12.47	6.87	2.04	-8.7	0.89	12.24	-156	" "
sample 1100	450 ml/min	12.47	6.88	2.05	-8.9	0.55	12.29	-157	" "

Total Volume Purged: 4 gallons

Notes/Observations: Sample VE-S6-070804 collected @ 1100
Sal = 0.10, TDS = 1.3 g/L

LOW FLOW PURGE DATA SHEET

Well I.D. S-7
Date 7/8/04

Project Name: VESTAL NY
Project No.:
Samplers John Imhoff

Screened Interval (ft below TIC): -32 ft from as built info
Depth of Pump Screen (ft below TIC): 25' ft

Static Water Level (ft below TIC): 17.66 ft
Volume of Flow Through Cell: 0.5 L

Frequency of Parameter reading Calculation

Volume of Flow Through Cell = V (L)
Pump Discharge Flow Rate = Q (L/m)
Frequency of Readings = F (m)

F = V/Q

Purge Method

Use grndfos to Low flow purge until parameters stabilize, then sample

Field Parameters

TIME	FLOW RATE (L/m)	DTW (ft TIC)	pH (SU)	SPEC. COND. (S/m)	TURB (NTU)	DO (mg/l)	TEMP (°C)	ORP (mV)	APPEARANCE
START 1145	500 ml/min	19.20	6.02	0.817	>999	5.59	14.03	6	Red Turbid
1150	250 ml/min	19.06	6.00	0.818	>999	3.18	15.07	6	gray Turbid
1155	"	18.89	6.06	0.819	>999	2.63	15.90	-4	" "
1200	"	18.81	6.31	0.926	>999	1.58	16.48	-40	" "
1205	"	18.82	6.39	0.979	>999	1.48	16.68	-53	" "
1210	"	18.84	6.48	1.13	>999	1.11	16.74	-70	" "
1215	"	18.83	6.54	1.17	>999	0.83	16.93	-81	" "
1220	"	18.94	6.53	1.24	898	1.40	16.61	-78	" "
1230	"	18.69	6.58	1.30	405	0.83	16.94	-98	" "
1240	"	18.50	6.60	1.37	150	0.62	17.26	-97	" "
1250	"	18.54	6.62	1.34	200	0.0	18.50	-100	" "
1255	"	18.46	6.62	1.35	189	0.0	18.85	-101	" "
Sample 1300	"	18.41	6.65	1.36	151	0.0	19.05	-106	" "

Total Volume Purged: 5.5 gallons

Notes/Observations: Sample VE-S7-070804 Collected @ 1300 hrs

LOW FLOW PURGE DATA SHEET

Well I.D. S-8
Date 7/9/04

Project Name: Vestal, New York
Project No.:
Samplers John Imhoff Chris Cicerale

Screened Interval (ft below TIC): ? - 25' ft from well info (19.45' ACTUAL)
Depth of Pump Screen (ft below TIC): 13' ft 2" well

Static Water Level (ft below TIC): 7.29 ft
Volume of Flow Through Cell: 0.5 L

Frequency of Parameter reading Calculation

Volume of Flow Through Cell = V (L) 0.5 L
Pump Discharge Flow Rate = Q (L/m) 0.3 L/min
Frequency of Readings = F (m)

F = V/Q $\frac{5}{3}$ = 1 min 40 sec. = 1.66 min

Purge Method

Use grundfos to low flow purge until parameters stabilize then sample

Field Parameters

	TIME	FLOW RATE (L/m)	DTW (ft TIC)	pH (SU)	SPEC. COND. (S/m)	TURB (NTU)	DO (mg/l)	TEMP (°C)	ORP (mV)	APPEARANCE
start	0845	450 ml/min	7.30	6.29	1.38	592	3.72	14.45	-58	Orange, mod Turbid
	0850	400 ml/min	7.83	6.39	1.36	279	2.10	14.24	-74	" "
	0855	300 ml/min	7.70	6.55	1.35	171	1.33	14.68	-91	clearing
	0900	300 ml/min	7.68	6.68	1.36	57.0	0.83	15.03	-107	" "
	0905	300 ml/min	7.65	6.72	1.35	14.0	0.50	15.53	-114	clear
	0910	300 ml/min	7.65	6.74	1.35	10.1	0.33	15.42	-118	" "
	0915	300 ml/min	7.65	6.76	1.37	13.5	0.19	15.58	-121	" "
	0920	300 ml/min	7.66	6.77	1.29	7.5	0.05	15.68	-123	
	0925	" "	7.67	6.79	1.23	1.8	0.0	15.65	-126	" "
Sample	0930	" "	7.67	6.81	1.17	1.7	0.0	15.70	-123	

Total Volume Purged: 4.5 gallons

Notes/Observations: 0930 Collected Sample VE-S8-070904
Sample Collected for VOCs & 1,4-Dioxane (3 VOA Vials)
Total well depth measured after sampling = 19.65'

LOW FLOW PURGE DATA SHEET

Well I.D. S-11
Date 7/8/04

Project Name: VESTAL, NEW YORK
Project No.:
Samplers John Imhoff Chris Cicerale

Screened Interval (ft below TIC): -40 ft — 2" well.
Depth of Pump Screen (ft below TIC): 33' ft

Static Water Level (ft below TIC): 18.88 ft — CASING "cut" off about 9" above grade.
Volume of Flow Through Cell: 0.5 L

Frequency of Parameter reading Calculation

Volume of Flow Through Cell = V (L) 0.5 L 0.5L
Pump Discharge Flow Rate = Q (L/m) 200-250 ml/min 400ml/min
Frequency of Readings = F (m) ~ 2-2.5 min 0.5 / 0.4 : 1.2 min = 1'12"

F = V/Q

Purge Method

purge at low flow ≈ grundfos until parameters stabilize

Field Parameters

TIME	FLOW RATE (L/m)	DTW (ft TIC)	pH (SU)	SPEC. COND. (S/m)	TURB (NTU)	DO (mg/l)	TEMP (°C)	ORP (mV)	APPEARANCE
START 1600	18.90 ~ 300 ml	6.95	1.56 ms/cm	8.9	7.00	14.99	-122	very clear	
1605	18.96 200ml/min	7.00	1.50 ms/cm	14.0	4.73	15.55	-127	" "	
1610	200ml/min	18.96	7.09	1.51	12.2	4.10	15.23	-131	" "
1615	280 ml/min	18.97	7.13	1.47	21.4	3.17	14.82	-121	" "
1620	400 ml/min	18.98	7.13	1.45	20.3	2.71	14.80	-119	" "
1625	400 ml/min	18.98	7.14	1.44	4.0	1.99	14.63	-114	" "
1630	400 ml/min	18.97	7.14	1.43	0.4	1.52	14.51	-111	" "
1635	400 ml/min	18.97	7.14	1.42	1.5	1.19	14.46	-109	" "
1638	400 ml/min	18.97	7.13	1.42	0	0.92	14.65	-107	" "
1640	400 ml/min	18.95	7.13	1.41	0	0.90	14.70	-107	" "
1643	400 ml/min	18.95	7.14	1.41	0	0.78	14.69	-106	" "
Sample 1645	400 ml/min	18.94	7.13	1.42	0	0.87	14.61	-105	" "

Total Volume Purged: 4.5 Gallons

Notes/Observations: S-11 Sampled as VE-S11-070804 @ 1645

Depth To bottom measured 40.6' TIC

LOW FLOW PURGE DATA SHEET

Well I.D. EB-31
Date 7/8/04

Project Name: VESTAL, NY.
Project No.:
Samplers Jon Imhoff Chris

Screened Interval (ft below TIC): ?' - 53' ft ← measured to 51'. 4" well!
Depth of Pump Screen (ft below TIC): 43' ft

Total Depth measured to be 50.1' TIC (soft).

Static Water Level (ft below TIC): 19.98 ft
Volume of Flow Through Cell: 0.5 L

Frequency of Parameter reading Calculation

Volume of Flow Through Cell = V (L) 0.5
Pump Discharge Flow Rate = Q (L/m) .25 L min
Frequency of Readings = F (m) 2 min

F = V/Q

Purge Method

Low Flow. Purge until parameters stabilize then sample

Field Parameters

TIME	FLOW RATE (L/m)	DTW (ft TIC)	pH (SU)	SPEC. COND. (S/m)	TURB (NTU)	DO (mg/l)	TEMP (°C)	ORP (mV)	APPEARANCE
START 0835	-	20.34	6.60	1.25 mS/cm	145	7.36	13.74	162	~~colorless~~ slight orange
0840	250 ml/min	20.75	6.65	1.22	144	4.66	14.00	149	slight orange, slight turb.
0850	250 ml/min	21.04	6.95	1.23	86	3.02	14.29	114	" "
0855	250 ml/min	21.47	6.99	1.22	81	2.40	14.56	84	" "
0900	250 ml/min	21.62	7.02	1.22	83.8	2.02	15.35	53	" "
0905	200 ml/min	21.09	7.01	1.21	78.7	1.62	14.96	12	" "
0910	200 ml/min	21.95	7.02	1.20	79.1	1.27	16.17	-4	" "
0915	200 ml/min	22.6	7.06	1.25	76.8	1.32	14.63	-19	" "
0920	200 ml/min	22.3	7.03	1.21	59.5	0.98	15.05	-37	" "
0925	200 ml/min	22.4	7.04	1.20	45.6	0.94	15.67	-44	" "
0930	200 ml/min	22.46	7.00	1.21	38.8	0.74	15.70	-49	" "
sample 0935	200 ml/min	22.44	6.99	1.21	35.6	0.69	15.92	-47	

Total Volume Purged: 3 gallons purged

Notes/Observations: 0935 sample VE-EB31-070804 collected.

LOW FLOW PURGE DATA SHEET

Project Name: VESTAL, New York
Project No.:
Samplers John Imhoff; Chris Ciceraly

Well I.D. EB-33
Date 7/8/04

Screened Interval (ft below TIC): ? - 35' ft from well info provided
Depth of Pump Screen (ft below TIC): 30' ft
4" DIA well

Static Water Level (ft below TIC): 18.75 ft
Volume of Flow Through Cell: 0.5 L

Frequency of Parameter reading Calculation

Volume of Flow Through Cell = V (L)	0.5 L	0.5 L
Pump Discharge Flow Rate = Q (L/m)	0.2 L/m	0.25 L/min
Frequency of Readings = F (m)		
F = V/Q	2.5 min	2 min

Purge Method

Purge w grundfos
low flow ~~Sample~~, until Parameters stabilize then Sample

Field Parameters

TIME	FLOW RATE (L/m)	DTW (ft TIC)	pH (SU)	SPEC. COND. (S/m)	TURB (NTU)	DO (mg/l)	TEMP (°C)	ORP (mV)	APPEARANCE
START 1735	400 ml/min	18.60'	6.99	1.45	135	5.03	15.48	-17	Slight Turbid. Noodor
1740	200 ml/min	19.42'	7.04	1.43	78.9	3.02	15.90	-32	" "
1745	200 ml/min	19.42	7.13	1.43	44.9	2.04	17.18	-56	" "
1750	200 ml/min	19.43	7.18	1.43	17.2	1.53	17.41	-69	" "
1755	200 ml/min	19.44	7.15	1.43	19.0	1.24	17.23	-84	" "
1757	" "	19.44	7.13	1.42	17.8	0.97	17.45	-89	" "
1800	200 ml/min	19.43	7.12	1.42	16.0	0.86	17.46	-94	" "
1803	200 ml/min	19.43	7.11	1.42	14.8	0.60	17.35	-98	
1805	200 ml/min	19.43	7.10	1.42	13.2	0.55	17.23	-99	" "
1807	250 ml/min	19.43	7.10	1.42	13.8	0.56	17.01	-101	" "
Sample 1810	250 ml/min	19.43	7.09	1.42	13.8	0.48	16.93	-102	" "

Total Volume Purged: 3 gallons

Notes/Observations: 1810 Sample VE-EB33-070804 Collected
Three VOA Vials for VOCs & 1,4 DIOXANE

LOW FLOW PURGE DATA SHEET

Well I.D. EB-41
Date 6/29/04

Project Name: Vestal N.Y.
Project No.:
Samplers John Imhoff, Laura Saikia

Screened Interval (ft below TIC): -28' ft
Depth of Pump Screen (ft below TIC): 28' ft

Static Water Level (ft below TIC): 21.88 ft
Volume of Flow Through Cell: 0.5 L

TOTAL Depth 25' (from As built)
DEPTH TO WATER 21.88
WATER Column 6.12'
4" Diameter well x (0.653) ← conversion factor
Purge Volume = x3996 ≈ 4 gal/vol

Frequency of Parameter reading Calculation

Volume of Flow Through Cell = V (L) = .5
Pump Discharge Flow Rate = Q (L/m) .4 litre
Frequency of Readings = F (m)

F = V/Q .5/.4 ≈ 1.2 minutes

Purge Method

low flow (~ 400 ml/min) until parameters stabilize

Field Parameters

TIME	FLOW RATE (L/m)	DTW (ft TIC)	pH (SU)	SPEC. COND. (S/m)	TURB (NTU)	DO (mg/l)	TEMP (°C)	ORP (mV)	APPEARANCE
1510	~~400 ml/min~~	21.83	6.65	1.81 mS/cm	290	5.59	13.76	~~-1~~ -22	Slight flocculation from sed. collection
1517	~~22.37~~ "	22.37							
1520	400 ml/min	22.36	6.83	1.76	234.0	1.83	13.70	-38	Slight turbidity ↓
1525	400 ml/min	22.30	6.88	1.76	248	1.22	14.58	-42	"
1530	400 ml/min	22.27	6.89	1.78	249	0.95	14.67	-35	"
1535	400 ml/min	22.27	6.90	1.77	208	0.80	14.85	-32	"
1540	"	22.27	6.90	1.78	200	0.73	14.96	-27	"
1545	400 ml/min	22.27	6.90	1.80	152.0	0.71	14.74	-19	" clearing
1550	"	22.23	6.89	1.81	116.0	0.65	14.74	-17	"
1555	"	22.23	6.88	1.81	~~108~~.0	0.58	15.11	-13	"
1600	"	22.22	6.86	1.84	104.0	0.64	15.37	-8	"
1605	"	22.22	6.86	1.84	100.0	0.60	15.38	-5	"
1610	"	22.22	6.85	1.86	98.2	0.70	15.24	-3	"
1620	Around fault error on pump start						Purging again		

Total Volume Purged:

Notes/Observations: Several faults around 1630. Water backflowed and mixed water. Necessary to repurge.

LOW FLOW PURGE DATA SHEET

Project Name: Vestal NY.
Project No.:
Samplers JT, LKS

Well I.D. EB-41
Date 10-29-04

Screened Interval (ft below TIC): 28 ft
Depth of Pump Screen (ft below TIC): 28 ft

Static Water Level (ft below TIC): 21.88 ft
Volume of Flow Through Cell: 0.5 L

Frequency of Parameter reading Calculation

Volume of Flow Through Cell = V (L) 0.5
Pump Discharge Flow Rate = Q (L/m) 0.4
Frequency of Readings = F (m)

F = V/Q $\frac{0.5}{0.4} = 1.2$ min

Purge Method

Low flow (400 ml/min) until Parameters stabilize

Field Parameters

TIME	FLOW RATE (L/m)	DTW (ft TIC)	pH (SU)	SPEC. COND. (S/m)	TURB (NTU)	DO (mg/l)	TEMP (°C)	ORP (mV)	APPEARANCE
1630	400 ml/min	22.46	6.65	1.89	404	4.54	14.89	14	Pump Problems
1635	400 ml/min	22.35	6.74	1.89	>999	11.47	15.37	13	
1640	400 ml/min	22.35	6.65	1.91	740	11.08	16.23	22	slight turbidity
1645	500 ml/min	22.45	6.64	1.96	130	3.92	14.7	31	" "
1650	450 ml/min	22.45	6.64	1.95	120	2.95	15	30	" "
1655	450 ml/min	22.41	6.66	1.97	72 NTU	2.59	15.06	33	V Slight Turb.
1700	450 ml/min	22.41	6.65	1.97	693	2.55	14.88	33	" "
1705	450 ml/min	22.40	6.65	1.98	490	2.37	14.72	40	" "

Total Volume Purged: 13 gallons.

Notes/Observations: Turned flow rate to 500 ml/min to keep from running out. (ms/msD)
collected VE-EB41-062904 @ 1705 and Duplicate VE-EB45-062904 (@ 1200).

LOW FLOW PURGE DATA SHEET

Well I.D. EB-42
Date 7/7/04

Project Name: VESTAL N.Y.
Project No.:
Samplers John Inhoff Chris C

Screened Interval (ft below TIC): ? -~~42.5~~ ft — measured during purging.
Depth of Pump Screen (ft below TIC): 40 ft
Info given suggested 29'. TOTAL WATER LEVEL @ 28.05'.

Static Water Level (ft below TIC): 28.05' ft TOC
Volume of Flow Through Cell: 0.5L L

Frequency of Parameter reading Calculation

Volume of Flow Through Cell = V (L) 0.5L
Pump Discharge Flow Rate = Q (L/m) 0.3 L/min
Frequency of Readings = F (m) ~~1 min~~ 1 min 40"

F = V/Q

Purge Method

Purge @ Low Flow (200-300 ml/min) until Parameters stabilize then sample.

Field Parameters

	TIME	FLOW RATE (L/m)	DTW (ft TIC)	pH (SU)	SPEC. COND. (S/m)	TURB (NTU)	DO (mg/l)	TEMP (°C)	ORP (mV)	APPEARANCE
START	1615	~~Start~~	28.05'							
1620	1620	~~350~~	28.10'	~~7.50~~	2.53	>999	7.30	16.31	73	red - iron
	1625	350 ml/min	28.10'	7.09	2.51	>999	5.52	16.11	22	orange/red.
	1630	350 ml/min	28.07	7.13	2.50	>999	4.64	17.13	13	orange
	1635	350 ml/min	28.1	7.17	2.49	832	3.94	18.54	1	orange
	1640	350 ml/min	28.1	7.18	2.49	826	3.80	17.92	-4	orange
	1645	350 ml/min	28.1	7.18	2.48	713	3.28	17.62	-6	orange
	1650	350 ml/min	28.1	7.15	2.45	457	3.01	19.12	-13	orange
	1655	350 ml/min	28.1	7.18	2.46	406	2.85	19.51	-14	orange
	1700	350 ml/min	28.1	7.16	2.46	365	2.79	18.72	-19	orange
	1705	350 ml/min	28.1	7.16	2.44	335	2.67	18.48	-21	orange
Sample	1710	350 ml/min	28.1	7.15	2.43	300	2.62	18.41	-23	

Total Volume Purged: 4 gallons

Notes/Observations: turbidity low
Sample VE-EB42-070704 collected at 1710.

LOW FLOW PURGE DATA SHEET

Well I.D. 1-24
Date 7/7/04

Project Name: VESTAL New York
Project No.:
Samplers John Imhoff, Chris C

Screened Interval (ft below TIC): ? - 129' ft
Depth of Pump Screen (ft below TIC): ~ 120' ft

Static Water Level (ft below TIC): 24.91 ✓ ft
Volume of Flow Through Cell: 0.5 L

2" well
Total depth = 129
depth to water = 24.91
water column =

Frequency of Parameter reading Calculation

Volume of Flow Through Cell = V (L) 0.5L
Pump Discharge Flow Rate = Q (L/m) 0.4 L/min
Frequency of Readings = F (m) 1.2 min

F = V/Q

Purge Method

Purge w grundfos at < 500 ml/min, sample upon Parameter stabilization

Field Parameters

TIME	FLOW RATE (L/m)	DTW (ft TIC)	pH (SU)	SPEC. COND. (S/m)	TURB (NTU)	DO (mg/l)	TEMP (°C)	ORP (mV)	APPEARANCE
START 0925									
0925	400 ml/min	24.95	9.78	0.303	68.9	3.85	13.08	52	Colorless, odorless
0930	400ml/min	24.91	8.95	0.359	71.2	3.28	13.00	-47	" "
0935	400ml/min	24.97	8.25	0.451	35.5	2.35	12.84	-144	" "
0940	400ml/min	24.96	7.64	0.607	5.3	2.01	12.99	-148	" "
0945	400 ml/min	24.96	7.36	0.7017	-1.4	1.97	13.03	-127	" "
0950	400 ml/min	24.96	7.34	0.756	-6.4	1.82	13.05	-123	" "
0955	400 ml/min	24.97	7.40	0.777	-8.5	1.72	13.09	-123	" "
0958	400 ml/min	24.96	7.49	0.784	-9.9	1.67	13.07	-129	" "
Sample 1000	400 ml/min	24.96	7.53	0.786	-10	1.58	13.10	-133	

Total Volume Purged: 4 gallons

Notes/Observations: Sampled 1-24 (VE-124-070704) at 1000
metals collected in triplicate for ms/msd.

LOW FLOW PURGE DATA SHEET

Well I.D. 1-25
Date 7/7/04

Project Name: VESTAL, N.Y.
Project No.:
Samplers John Lanhoff, Chris C.

Screened Interval (ft below TIC): ?' - ~155 ft
Depth of Pump Screen (ft below TIC): 145' ft TOC

Static Water Level (ft below TIC): 22.74 ft
Volume of Flow Through Cell: 0.5 L

Frequency of Parameter reading Calculation

Volume of Flow Through Cell = V (L)
Pump Discharge Flow Rate = Q (L/m)
Frequency of Readings = F (m)

$$F = V/Q$$

Purge Method

low flow 2-500 ml/min until parameters stabilize then sample

Field Parameters

	TIME	FLOW RATE (L/m)	DTW (ft TIC)	pH (SU)	SPEC. COND. (S/m)	TURB (NTU)	DO (mg/l)	TEMP (°C)	ORP (mV)	APPEARANCE
Start	1240	400 ml/min	22.74	9.03	0.461	357	3.63	13.63	-101	gray
	1245	300 ml/min	27.05	7.99	0.503	407	2.46	14.64	-184	" "
	1250	300 ml/min	27.48	7.82	0.516	396	2.17	14.67	-175	" "
	1255	300 ml/min	27.85	7.77	0.522	329	1.56	14.73	-176	" "
	1300	300 ml/min	28.05	7.88	0.536	457	8.33	14.84	-185	" "
	1305	300 ml/min	27.95	7.85	0.535	475	8.69	15.23	-184	" "
	1310	200 ml/min	28.01	7.85	0.541	452	8.67	15.14	-185	" "
	1315	200 ml/min	28.01	7.84	0.547	489	8.39	15.03	-188	" "
sample	1320	200 ml/min	28.01	7.83	0.548	543	8.27	15.27	-189	Slight Turb.

Total Volume Purged: 2-3 gallons

Notes/Observations: Sampled VE-125-070704 @ 1320
Turbidity Fluctuating but not showing downward trend. All else stable.

LOW FLOW PURGE DATA SHEET

Well I.D. 1-25A
Date 7/7/04

Project Name: VESTAL N.Y.
Project No.:
Samplers J. Imhoff Chris ~~Et~~ Ciccerale

Screened Interval (ft below TIC): ?' - 49' ft — 2" well
Depth of Pump Screen (ft below TIC): ~44' ft
Static Water Level (ft below TIC): 25.3' ft
Volume of Flow Through Cell: 0.5 L

Frequency of Parameter reading Calculation

Volume of Flow Through Cell = V (L) 0.5 L
Pump Discharge Flow Rate = Q (L/m) 0.3 L/min
Frequency of Readings = F (m) 5 min = 1'40"

F = V/Q

* Total Depth measured after sampling 50.5' TOC.

Purge Method

Low flow Purge until Parameters stabilize then sample.

Field Parameters

TIME	FLOW RATE (mL/m)	DTW (ft TIC)	pH (SU)	SPEC. COND. (S/m)	TURB (NTU)	DO (mg/l)	TEMP (°C)	ORP (mV)	APPEARANCE
START 1400	200-300	25.35							
1405	200-300 ml/m	25.25	6.26	0.606	894	6.24	13.96	34	Turbid.
1410	200-300 ml/m	25.25	6.29	0.600	790	5.36	14.55	17	" "
1415	300 ml/min	25.24	6.26	0.589	487	5.36	14.75	16	" "
1420	300 ml/min	25.23	6.58	0.566	448	6.24	14.76	-3	" "
1425	300 ml/min	25.23	6.44	0.574	251	5.42	14.92	10	" "
1430	300 ml/min	25.23	6.45	0.570	230	5.35	15.11	8	" "
1435	300 ml/min	25.22	6.50	0.583	219	5.89	15.12	10	
1440	300 ml/min	25.22	6.40	0.599	150	5.43	15.23	21	
1445	300 ml/min	25.21	6.46	0.606	193	6.45	14.82	20	
1450	300 ml/min	25.20	6.37	0.601	140	6.10	15.34	25	
1455	300 ml/min	25.20	6.40	0.603	117	6.17	15.6	23	
~~Sample~~ 1458	300 ml/min	25.20	6.41	0.604	102	6.23	15.72	23	
Sample 1500	"	25.20	6.41	0.604	89.9	6.23	15.69	23	

Total Volume Purged: 6 gallons

Notes/Observations: 1500 - Collected sample VE-125A-070704

LOW FLOW PURGE DATA SHEET

Well I.D. 1-29
Date 7/6/04

Project Name: Vestal, N.Y.
Project No.: ~~John Imhoff~~
Samplers John Imhoff Chris Ciresale

Screened Interval (ft below TIC): ? - 119 ft TOC
Depth of Pump Screen (ft below TIC): 109 ~~114~~ ft TOC

Static Water Level (ft below TIC): 21.55 ft
Volume of Flow Through Cell: 0.5 L

PID = 0.8 ppm (background: 0.5)
CO = 3 ppm
H_2S = 0
LEL = 0
O_2 = 20.4 %

Frequency of Parameter reading Calculation

Volume of Flow Through Cell = V (L) 0.5 L
Pump Discharge Flow Rate = Q (L/m) ~~0.5~~ 0.4 L/min
Frequency of Readings = F (m)

F = V/Q $\frac{0.5}{0.4}$ = 1.2 min

Pump Jammed in Screen @ 109' TOC. Probe of WL indicator wedged between Pump and screen. will not budge.

Purge Method

Low flow Purge until parameters stabilize then sample for Low conc. VOCs & metals & 1,4 DIOXANE.

Field Parameters

TIME	FLOW RATE (L/m)	DTW (ft TIC)	pH (SU)	SPEC. COND. (S/m)	TURB (NTU)	DO (mg/l)	TEMP (°C)	ORP (mV)	APPEARANCE
START 1350	0.4		8.02	0.472	62.5	6.90	12.08	-77	brown
1400	"		7.19	0.850	255.0	3.20	12.21	-85	"
1405	"		7.21	0.919	209.0	2.81	12.23	-81	cloudy
1410	"	21.50	7.34	0.965	121.0	2.49	12.42	-80	"
1415	"		7.39	1.08	87.1	2.23	12.31	-76	clear
1420	"		7.39	1.10	72.6	2.15	12.35	-73	"
1423	"	21.51	7.34	1.11	55.9	2.08	12.41	-69	"
1426	"		7.39	1.12	42.4	2.08	12.34	-63	"
Sample 1430	0.4 L/min	21.51	7.39	1.12	38.9	2.11	12.30	0.57	" colorless odorless

Total Volume Purged: 4.5 gallons

Notes/Observations: 1430 collected Sample VE-129-070604 also collected Duplicate VE-129D-070604 at ± 1200. (Duplicate collected for metals only).

LOW FLOW PURGE DATA SHEET

Well I.D. 1-29A
Date 7/6/04

Project Name: VESTAL, New York
Project No.:
Samplers John Imhoff, Chris Cicerale

Screened Interval (ft below TIC): ? 54' - 64' ft TOC
Depth of Pump Screen (ft below TIC): 59' ft

Static Water Level (ft below TIC): 22.03 ft
Volume of Flow Through Cell: 0.5 L

SWL = 22.41' TOC 2" well
TOTAL = 64.0 feet TOC
WATER COL. = 41.59
(0.163) gal/ft for 2" well
6.78 gallons/Volume.

Frequency of Parameter reading Calculation

Volume of Flow Through Cell = V (L) 0.5 L
Pump Discharge Flow Rate = Q (L/min) 1.5 L/min = 1
Frequency of Readings = F (m) = 1 min

F = V/Q

Purge Method

Low flow purging until stabilization of parameters

Field Parameters

TIME	FLOW RATE (L/m)	DTW (ft TIC)	pH (SU)	SPEC. COND. (S/cm)	TURB (NTU)	DO (mg/l)	TEMP (°C)	ORP (mV)	APPEARANCE
Pump on 1130	Adjusting	22.41'	7.59	0.834	>999	2.81	13.26	~~-154~~ -154	Black
1145	400 ml/min	22.41	7.22	0.976	>999	1.77	13.19	-156	"
1150	"	~~22~~ 40'	7.21	1.09	>999	1.12	13.32	-153	"
1155	"	22.39	7.24	1.10	>999	0.92	13.34	-155	"
1200	"	22.38	7.33	1.12	>999	0.62	13.43	-159	grey-black
1205	"	22.37	7.36	1.14	104.0	0.33	13.45	-155	slightly cloudy
1210	"	22.36	7.35	1.15	105.0	0.17	13.45	-156	"
1215	"	22.40	7.38	1.15	108.0	0.36	13.59	-154	"
1220	"	22.39	7.37	1.15	116.0	0.00	13.54	-157	"
1225	"	22.38	7.38	1.16	127.0	0.00	13.57	-158	"
1230	"	22.38	7.39	1.16	134.0	0.00	13.57	-158	"
1235	"	22.35	7.39	1.16	154.0	0.00	13.55	-159	"
Sample 1240	"	22.35	7.39	1.16	184 *	0.00	13.58	~~-155~~ -157	Colorless - Turbid flow

Total Volume Purged: 5 gallons

Notes/Observations: although Turbidity reading appears high - water was colorless with almost NO Turbidity - will clean & lens of Turbidity Probe before next Sampling.

LOW FLOW PURGE DATA SHEET

Well I.D. 1-30
Date 6/30/04

Project Name: VESTAL, N.Y.
Project No.:
Samplers John Imhoff Laura Saikin

Screened Interval (ft below TIC): ?-114' ft
Depth of Pump Screen (ft below TIC): 110' ft

Static Water Level (ft below TIC): 14.20' ft
Volume of Flow Through Cell: 2.5 L

TOTAL depth = 114
DTW = 14.20
WATER col. 100'
2" well gal/ft = 0.163
16.3 gal/volume

Frequency of Parameter reading Calculation

Volume of Flow Through Cell = V (L) 0.5'
Pump Discharge Flow Rate = Q (L/m) 0.5 L/min
Frequency of Readings = F (m) 1 min

F = V/Q

Purge Method

Low flow purge w grundfos until parameters stabilized.

Field Parameters

	TIME	FLOW RATE (L/m)	DTW (ft TIC)	pH (SU)	SPEC. COND. (S/m)	TURB (NTU)	DO (mg/l)	TEMP (°C)	ORP (mV)	APPEARANCE
START	1025	450 ml/min	17.05	9.167	0.528	155	2.56			
	1030	250 ml/min	17.29	9.47	0.600	252	1.74	13.98	-185	grey, mod. turb.
	1035	300 ml/min	17.93	9.48	0.584	332	0.95	13.54	-214	Dark grey, tiny specks of sheen
	1045	400 ml/min	18.92	9.13	0.653	190	0.47	13.40	-204	
	1050	400 ml/min	18.99	8.80	0.727	135	0.24	13.56	-221	gray. mod. turbidity
	1055	"	19.02	8.50	0.789	105.0	0.10	13.56	-221	"
	1100	450 ml/min	19.04	8.23	0.837	88.0	0.00	13.45	-206	"
	1105	450/min	19.06	8.12	0.862	83.3	0.00	13.52	-202	Slight sheen
	1110	450 ml/min	19.13	8.01	0.880	73.6	0.00	13.61	-194	"
	1115	450 ml/min	19.16	7.95	0.905	72.7	0.00	13.64	-191	"
	1120	450 ml/min	19.19	7.90	0.921	71.2	0.00	13.64	-187	"
	1121	450 ml/min	19.19	7.80	0.931	76.2	0.00	13.46	-182	"
	1122	300 ml/min	19.06	7.77	0.936	72.0	0.00	13.56	-180	"
	1123	300 ml/min	19.06	7.75	0.940	71.5	0.00	13.55	-179	"
	1125	300 ml/min	19.06	7.73	0.942	69.4	0.00	13.41	-178	"

Total Volume Purged: 7 gallons

Notes/Observations: Sample VE-130-060304 collected @ 1125 for VOCs, 1,4-Dioxane and Total Metals

LOW FLOW PURGE DATA SHEET

Well I.D. 1-30A
Date 6/30/04

Project Name: Vestal, New York
Project No.:
Samplers John Imhoff Laura Saikia

Screened Interval (ft below TIC): ~ 20-30' ft TOC
Depth of Pump Screen (ft below TIC): 25' ft TOC
Static Water Level (ft below TIC): 13.72 ft
Volume of Flow Through Cell: ~ 0.5 L

Depth to water 13.72'
TOTAL Depth 30
water col 16.28
(2" well) gal/ft =0 0.163

Frequency of Parameter reading Calculation

Volume of Flow Through Cell = V (L) .5 L
Pump Discharge Flow Rate = Q (L/m) 500 ml/m
Frequency of Readings = F (m)

F = V/Q $\frac{.5L}{.52}$ = 1 min minimum.

Purge Method

purge at 500 ml/min until parameters stabilize
Grundfos pump

Field Parameters

TIME	FLOW RATE (L/m)	DTW (ft TIC)	pH (SU)	SPEC. COND. (S/m)	TURB (NTU)	DO (mg/l)	TEMP (°C)	ORP (mV)	APPEARANCE
0832	500 ml/min	13.72'	6.81	1.46 ms/cm	50	3.69	14.32	-34	Colorless
0835	500 ml/min	13.74	7.00	1.48	11.3	3.65	14.49	-26	"
0840	"	13.74	7.03	1.49	-9.0	3.50	14.86	-9	Colorless Turbid free
0845	"	"	7.05	1.49	~10	3.35	14.91	~~12~~ 13	" "
0850	"	13.73	7.06	1.49	~10	3.30	14.97	16	" "
0855	"	13.74	7.06	1.50	~10	3.29	14.90	19	" "
0900	"	13.74	7.06	1.50	~10	3.33	14.82	22	" "

Total Volume Purged: 3.5-4.0 gallons

Notes/Observations: Sampled for VOCs & 1,4 Dioxane at 0900
TOTAL Depth measured after sampling 28.35' TOC

LOW FLOW PURGE DATA SHEET

Well I.D. 1-32
Date 7/6/09

Project Name: VESTAL, N.Y.
Project No.:
Samplers John Imhoff Chris C.

Screened Interval (ft below TIC): 142? - 152' ft
Depth of Pump Screen (ft below TIC): ~~148'~~ 146' ft

Static Water Level (ft below TIC): 28.95 ft
Volume of Flow Through Cell: 0.5 L

2" well
Total Depth = 152'
Depth to water 28.95
Water Col. = 123.05
0.163 gal/ft
20.06 gal/volume.

Frequency of Parameter reading Calculation

Volume of Flow Through Cell = V (L) 0.5 l
Pump Discharge Flow Rate = Q (L/m) 400 ml/min
Frequency of Readings = F (m) 1.2 min

F = V/Q

Purge Method

Low flow purge @ 400 ml/min until parameters stabilize then sample

Field Parameters

TIME	FLOW RATE (L/m)	DTW (ft TIC)	pH (SU)	SPEC. COND. (S/m)	TURB (NTU)	DO (mg/l)	TEMP (°C)	ORP (mV)	APPEARANCE
1630	400 ml/min	29.05	11.98	1.82	23.4	5.56	14.70	-113	Colorless, odorless
1635	400 ml/min	29.05	11.75	1.71	19.8	4.57	14.82	-117	" "
1640	350-400 ml/min	29.03	7.22	1.57	999	1.81	13.70	-114	Turbid/cloudy
1645	350-400 ml/min	29.03	7.09	1.60	692	1.44	13.74	-109	" "
1650	500 ml/min	29.01	7.15	1.61	558	0.96	13.80	-112	" "
1655	500 ml/min	29.01	7.15	1.61	413	0.67	13.60	~~-113~~ -111	" "
1700	"	29.01	7.16	1.61	275	0.55	13.73	-111	" "
1705	"	29.02	7.16	1.61	224	0.30	13.56	-111	" "
1710	"	29.01	7.16	1.62	175	0.22	13.69	-111	" "
1715	400 ml/min	29.00	7.16	1.61	162	0.15	14.05	-113	" "
1720	400 ml/min	29.02	7.17	1.61	164	0.05	13.84	-113	" "
1725	250 ml/min	29.01	7.17	1.62	156	0.0	14.29	-113	" "
1730			7.16	1.62	172	0.0	14.27	-113	V. Slight Turb

Sample

Total Volume Purged: 7.0 gallons

Notes/Observations: turbidity reading appears anomalously high. V. slight turbidity in sample

LOW FLOW PURGE DATA SHEET

Well I.D. 1-32A
Date 7/6/04

Project Name: Vestal, New York
Project No.:
Samplers John T, Chris C.

Screened Interval (ft below TIC): 25-35 ft
Depth of Pump Screen (ft below TIC): 30 ft

Static Water Level (ft below TIC): 15.70 ft
Volume of Flow Through Cell: 0.5 L

SWL = 15.70
TOTAL = 35.0 ft bgs
WATER COL = 19.3' TOC
0.163 gal/ft
3.15 gal/vol

Frequency of Parameter reading Calculation

Volume of Flow Through Cell = V (L) 0.5 L
Pump Discharge Flow Rate = Q (L/m) 0.4 L/m
Frequency of Readings = F (m) 1.2 min

F = V/Q

Purge Method

purge at low flow until parameters stabilize.

Field Parameters

	TIME	FLOW RATE (L/m)	DTW (ft TIC)	pH (SU)	SPEC. COND. (S/m)	TURB (NTU)	DO (mg/l)	TEMP (°C)	ORP (mV)	APPEARANCE
START	1810	250 ml/m	17.45	6.35	1.13	>999	10.25	13.97	43	cloudy, grey
	1820	" "	17.45	6.21	1.11	>999	5.06	14.10	41	" "
	1830	250 ml/min	18.92	6.18	1.11	>999	3.39	13.52	53	cloudy/colorless
	1835	" "	19.52	6.25	1.09	>999	1.34	13.82	47	" "
	1840	200 ml/min	19.78	6.24	1.08	>999	1.55	14.35	47	" "
	1845	250 ml/min	22.11	6.19	1.05	935	0.96	14.54	67	" "
	1850	250 ml/min	22.11	6.18	1.01	675	0.98	14.75	72	" "
	1855	250 ml/min	24.41	6.17	1.00	624	1.04	15.23	70	" "
	1900	250ml/min	24.53	6.18	1.01	830	1.02	14.79	70	" "
	1905	250ml/min	24.54	6.20	1.02	840	0.81	14.64	70	clear
	1910	250ml/min	24.59	6.24	1.04	857	0.70	14.53	67	clear
	1915	250ml/min	24.81	6.23	1.04	935	0.52	14.67	68	clear
Sample	1920	250ml/min	25.43	6.23	1.05	960	0.45	14.73	67	clear

Total Volume Purged: 16 gallons.

Notes/Observations: Purging Terminated at 1820 due to low gas in generator. Resumed at 1830
Turbidity - Very slight, not at all in accordance w/ NTU Reading. meter Rad.

APPENDIX C
Validation Reports and Laboratory Data

CLP DATA ASSESSMENT

Functional Guidelines for Evaluating Organic Analysis

WORK ORDER NO.: S3330

LABORATORY: Chemtech SITE: Vestal Well

DATA ASSESSMENT

The current SOP No. HW-13 (Revision 3), July 2001 for Organic Data Review for Low Concentration Water has been applied.

All data were found to be valid and acceptable except those analytes which have been rejected, "R" (unusable). Due to various QC problems some analytes may have been qualified with a "J" (estimated), "N" (presumptive evidence for the presence of the material), "U" (non-detect), or "JN" (presumptive evidence for the presence of the material at an estimated value) flag. All action is detailed on the attached sheets.

The "R" flag means that the associated value is unusable. In other words, significant data bias is evident and the reported analyte concentration is unreliable.

Reviewer's Signature: Cecelia O'Neill Date: 3/1/05

Verified By: _____ Date: _____

CLP DATA ASSESSMENT

1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as estimated, "J", or unusable, "R", if the holding times are grossly exceeded.

The following action was taken in the samples and analytes shown due to excessive holding time.

All samples were analyzed within specified holding times, therefore, no action was required.

2. SURROGATES:

All samples are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate concentrations were outside contract specifications, qualifications were applied to the samples and analytes as shown below.

All surrogates were within specified limits.

CLP DATA ASSESSMENT

3. MATRIX SPIKE/SPIKE DUPLICATE, MS/MSD:

The MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD may be used in conjunction with other QC criteria for additional qualification of data.

Spike analyses performed on VE-EB41-062904 were satisfactory.

4. BLANK CONTAMINATION:

Quality assurance (QA) blanks, i.e., method, trip, field, or rinse blanks are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field and rinse blanks measure cross-contamination of samples during field operations. If the concentration of the analyte is less than the blank contaminant level (2 or 10 times for common contaminants), the analytes are qualified as non-detects, "U". The following analytes in the sample shown were qualified with "U" for these reasons:

A) Method blank contamination:

B) Field or rinse blank contamination:
methylene chloride: VE-EB41-062904, VE-EB45-062904

C) Trip blank contamination:

CLP DATA ASSESSMENT

5. MASS SPECTROMETER TUNING:

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances. The tuning standard for volatile organics is (BFB) Bromofluorobenzene and for semi-volatiles Decafluorotriphenyl-phosphine (DFTPP).

If the mass calibration is in error, all associated data will be classified as unusable "R".

All criteria were met.

CLP DATA ASSESSMENT

6. CALIBRATION:

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

A) Response Factor GC/MS:

The response factor measures the instrument's response to specific chemical compounds. The response factor for the Target Compound List (TCL) must be ≥ 0.05 ($\geq$ 0.01 for poor performers) in both initial and continuing calibrations. A value < 0.05, $<$ 0.01 for poor performers, indicates a serious detection and quantitation problem (poor sensitivity). Analytes detected in the sample will be qualified as estimated, "J". All non-detects for that compound will be qualified as unusable (R).

1,4-Dioxane was qualified as unusable (R) in all samples due to low response factors in the initial and continuing calibration standards.

CLP DATA ASSESSMENT

7. CALIBRATION:

B) Percent Relative Standard Deviation (%RSD) and Percent Difference (%D):

Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor of the continuing calibration check to the mean response factor (RRF) from the initial calibration. Percent D is a measure of the instrument's daily performance. Percent RSD and %D must be $\leq$ 30%, $\leq$ 50% for the poor performers. A value outside of these limits indicates potential detection and quantitation errors. For these reasons, all positive results are flagged as estimated, "J" and non-detects are flagged "UJ". If %RSD and %D grossly exceed QC criteria, non-detects data may be qualified "R".

For the PEST/PCB fraction, if %RSD exceeds 20% for all analytes except for the two surrogates (which must not exceed 30% RSD), qualify all associated positive results "J" and non-detects "UJ".

The following analytes in the sample shown were qualified for %RSD and %D:

The positive results for the following compounds were estimated (J) in the samples indicated for exceeding %RSD criteria.
methylene chloride: all samples
acetone: TRIP BLANK

%D > 30.0%; data estimated (UJ)
bromomethane: all samples

CLP DATA ASSESSMENT

8. INTERNAL STANDARDS PERFORMANCE GC/MS:

Internal standards (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during every experimental run. The internal standard area count must fall within the limits of ± 40% of the associated continuing calibration standard. The retention time of the internal standard must not vary more than ±30 seconds from the associated continuing calibration standard. If the area count is outside the (± 40%) range of the associated standard, all of the positive results for compounds quantitated using that IS are qualified as estimated, "J", and all non-detects as "UJ", or "R" if there is a severe loss of sensitivity.

If an internal standard retention time varies by more than 30 seconds, the reviewer will use professional judgement to determine either partial or total rejection of the data for that sample fraction.

All internal standards were within limits.

CLP DATA ASSESSMENT

9. COMPOUND IDENTIFICATION:

A) Volatile and Semi-Volatile Fractions:

TCL compounds are identified on the GC/MS by using the analyte's relative retention time (RRT) and by comparison to the ion spectra obtained from known standards. For the results to be a positive hit, the sample peak must be within ± 0.06 RRT units of the standard compound and have an ion spectra which has a ratio of the primary and secondary m/e intensities within 20% of that in the standard compound. For the tentatively identified compounds (TIC) the ion spectra must match accurately. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications.

N/A

B) Pesticide Fraction:

The retention times of reported compounds must fall within the calculated retention time (RT) windows for the two chromatographic columns and a GC/MS confirmation is required if the concentration exceeds 10ng/ml in the final sample extract.

N/A

CLP DATA ASSESSMENT

10. CONTRACT PROBLEMS NON-COMPLIANCE:

11. FIELD DOCUMENTATION:

Analyses of the field duplicate samples, VE-EB41-062904 and VE-EB45-062904 were satisfactory.

12. OTHER PROBLEMS:

13. This package contains re-extractions, reanalyses or dilutions. Upon reviewing the QA results, the following Form 1(s) are identified as not to be used.

none

DPO: [ ]ACTION [ ]FYI REGION II

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY

Work Order No.: S3330

LABORATORY: Chemtech DATA USER: EPA Region II

SOW: OLM03.2 REVIEW COMPLETION DATE: 3/1/05

NO. OF SAMPLES: 4 WATER ____ SOIL ____ OTHER

REVIEWER: [ ] ESD [ ] ESAT [ ] OTHER, CONTRACTOR TtFW

QC ITEM	VOA	BNA	PCB		
HOLDING TIMES	O				
GC-MS PERFORMANCE	O				
INITIAL CALIBRATIONS	X				
CONTINUING CALIBRATIONS	O				
FIELD BLANKS(F = N/A)	O				
LABORATORY BLANKS	O				
SURROGATES	O				
MATRIX SPIKE/DUPLICATES	O				
QC SAMPLES(LCS, PVS)	N/A				
INTERNAL STANDARDS	O				
COMPOUND IDENTIFICATION	O				
COMPOUND QUANTITATION	O				
SYSTEM PERFORMANCE	O				
OVERALL ASSESSMENT	X				

O = No problems or minor problems that do not affect data usability.
X = No more than about 5% of the data points are qualified as either estimated or unusable.
M = More than about 5% of the data points are qualified as either estimated or unusable.
Z = More than about 5% of the data points are qualified as unusable.

DPO ACTION ITEMS:

AREAS OF CONCERN:

DATA REJECTION SUMMARY

Type of Review: Level 4 Date: 3/1/05 Work Order No.: S3330

Site Name: Vestal Well Lab Name: Chemtech

Reviewer's Initials: [illegible] Number of Samples: 4W

Analytes Rejected Due to Exceeding Review Criteria For:

No. of Compounds/No. of Fractions (Samples)

	Surrogates	Holding Time	Calibration	Contamination	ID	Internal Standards	Other	Total # of Samples	Total # Rejected/Total # in All Samples
VOA(52)	0	0	4	0	0	0		4	4 / 208 = 2 %
ACID(14)									/ = %
B/N(51)									/ = %
PEST(21)									/ = %
PCB(7)									/ = %

NOTE: ASTERISK (*) INDICATES ADDITIONAL EXCEEDANCES OF REVIEW CRITERIA.

Analytes Estimated Due to Exceeding Review Criteria For:

No. of Compounds/No. of Fractions (Samples)

	Surrogates	Holding Time	Calibration	Contamination	ID	Internal Standards	Other	Total # of Samples	Total # Estimated/Total # in All Samples
VOA(52)	0	0	9	2	0	0		4	11 / 208 = 5 %
ACID(14)									/ = %
B/N(51)									/ = %
PEST(21)									/ = %
PCB(7)									/ = %

NOTE: ASTERISK (*) INDICATES ADDITIONAL EXCEEDANCES OF REVIEW CRITERIA.

Subj: **Vestal S3330**
Date: 2/3/05 3:06:37 AM Eastern Standard Time
From: Auseal
To: mildred@chemtech.net

Mildred,
The following issues require resolution before I can complete my review of the Vestal Well data package identified below.

S3330
Volatiles
1. resubmit internal standard summaries with the correct limits identified (± 40%). they are presently listed as -50%/+100%.
2. resubmit a revised narrative with a comment addressing analytes that exceeded %RSD and %D criteria (bromomethane and benzene)

Please forward a hardcopy of all resubmittals to my attention by 2/9/05.
Thank you.
Celia Minch
873 Chivas Dr.
Toms River, NJ 08753

Mildred Reyes

From: Auseal@aol.com
Sent: Thursday, February 03, 2005 4:08 PM
To: mildred@chemtech.net
Subject: S3330 and S3352

Mildred,
Please revise and resubmit 2 copies of all field and QC (MS/MSD, LCS, blanks) sample summaries (Form 1) for **S3330** and **S3352** with 1,1,2-trichloro-1,2,2-trifluoroethane added to the target list. Somehow it was omitted in these packages.
Thank you.
Celia

TETRA TECH FW, INC

873 Chivas Drive, Toms River, NJ 08753
Tel 732-270-0988 **Fax** 732-270-1902

FAX

To M. Reyes

Phone 908 - 789 - 8900

Fax 908 - 789 - 8922

Date 2/22/05

No. of pages (including cover sheet) 1

From C. Minch

Mildred,

S3330 - volatiles

Revise and resubmit field and QC sample summaries (Form 1). The forms revised to include the missing freon are now missing 1,4-dioxane.
Thank you.

Celia

CHEMTECH 284 Sheffield Street • Mountainside, NJ 07092 Phone: 908.789.8900 Fax: 908.789.8922

ANALYTICAL RESULTS SUMMARY

PROJECT NAME: Vestal Well 1 1 Site

TETRA TECH FW INC..
1000 AMERICAN ROAD
MORRIS PLAINS, NJ 07950
9736308000

CHEMTECH PROJECT NO.	S3330
ATTENTION:	Heidemarie Roldan

Chemtech

Summary Sheet
SW-846

SDG No.: S3330 Order ID: S3330

Client: Tetra Tech FW Inc.. Project ID: FOST03

Sample ID	Client ID	Matrix	Parameter		Concentration	C	RDL	MDL	Units
Client ID:	**TRIPBLANK**								
S3330-06	TRIPBLANK	WATER	Acetone		5.2	B	2.5	1.2	ug/L
S3330-06	TRIPBLANK	WATER	Methylene Chloride		0.60		0.50	0.36	ug/L
			Total VOC's:		5.80				
			Total TIC's:		0.00				
			Total VOC's and TIC's:		5.80				
Client ID:	**VE-EB41-062904**								
S3330-01	VE-EB41-062904	WATER	Methyl tert-butyl Ether		1.7		0.50	0.21	ug/L
S3330-01	VE-EB41-062904	WATER	Methylene Chloride		0.41	J	0.50	0.36	ug/L
S3330-01	VE-EB41-062904	WATER	1,1-Dichloroethane		0.37	J	0.50	0.21	ug/L
S3330-01	VE-EB41-062904	WATER	cis-1,2-Dichloroethene		6.7		0.50	0.27	ug/L
S3330-01	VE-EB41-062904	WATER	Trichloroethene		0.76		0.50	0.19	ug/L
S3330-01	VE-EB41-062904	WATER	Ethane, 1,2-dichloro-1,1,2-tri	*	0.41	J	0	0	ug/L
			Total VOC's:		9.94				
			Total TIC's:		0.41				
			Total VOC's and TIC's:		10.35				
Client ID:	**VE-EB45-062904**								
S3330-04	VE-EB45-062904	WATER	Methyl tert-butyl Ether		1.8		0.50	0.21	ug/L
S3330-04	VE-EB45-062904	WATER	Methylene Chloride		0.61		0.50	0.36	ug/L
S3330-04	VE-EB45-062904	WATER	1,1-Dichloroethane		0.37	J	0.50	0.21	ug/L
S3330-04	VE-EB45-062904	WATER	cis-1,2-Dichloroethene		6.9		0.50	0.27	ug/L
S3330-04	VE-EB45-062904	WATER	Trichloroethene		0.78		0.50	0.19	ug/L
S3330-04	VE-EB45-062904	WATER	Ethane, 1,2-dichloro-1,1,2-tri	*	0.39	J	0	0	ug/L
			Total VOC's:		10.46				
			Total TIC's:		0.39				
			Total VOC's and TIC's:		10.85				
Client ID:	**VE-FB-062904**								
S3330-05	VE-FB-062904	WATER	Methylene Chloride		0.66		0.50	0.36	ug/L
S3330-05	VE-FB-062904	WATER	Isobutane	*	0.29	J	0	0	ug/L
			Total VOC's:		0.66				
			Total TIC's:		0.29				
			Total VOC's and TIC's:		0.95				

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-EB41-062904

ab Name: Chemtech Contract: FOST03

Lab Code: CHEMTECH Case No.: S3330 SAS No.: S3330 SDG No.: S3330

Matrix (soil/water): WATER Lab Sample ID: S3330-01

ample wt/vol: 25.0 (g/mL) ml Lab File ID: VF070808.D

Level (low/med): Date Received: 6/30/04

% Moisture: not dec. 100 Date Analyzed: 7/8/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

oil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl chloride	0.50	U
74-83-9	Bromomethane	0.50	U J
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
76-13-1	1,1,2-Trichlorotrifluoroethan	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
67-64-1	Acetone	2.5	U
75-15-0	Carbon disulfide	0.50	U
1634-04-4	Methyl tert-butyl Ether	1.7	
79-20-9	Methyl Acetate	0.50	U
75-09-2	Methylene Chloride	0.50 41	J U
156-60-5	trans-1,2-Dichloroethene	0.50	U
75-34-3	1,1-Dichloroethane	0.37	J
110-82-7	Cyclohexane	0.50	U
78-93-3	2-Butanone	2.5	U
56-23-5	Carbon Tetrachloride	0.50	U
156-59-2	cis-1,2-Dichloroethene	6.7	
74-97-5	Bromochloromethane	0.50	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
108-87-2	Methylcyclohexane	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.76	
78-87-5	1,2-Dichloropropane	0.50	U
123-91-1	1,4-Dioxane	10	U R
75-27-4	Bromodichloromethane	0.50	U
108-10-1	4-Methyl-2-Pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	t-1,3-Dichloropropene	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-EB41-062904

Lab Name: Chemtech Contract: FOST03

Lab Code: CHEMTECH Case No.: S3330 SAS No.: S3330 SDG No.: S3330

Matrix (soil/water): WATER Lab Sample ID: S3330-01

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF070808.D

Level (low/med): Date Received: 6/30/04

% Moisture: not dec. 100 Date Analyzed: 7/8/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
591-78-6	2-Hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethyl Benzene	0.50	U
136777-61-2	m&p-xylenes	0.50	U
95-47-6	o-xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropylbenzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VE-EB41-062904

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3330 SAS No.: S3330 SDG No.: S3330

Matrix (soil/water): WATER Lab Sample ID: S3330-01

Sample wt/vol: 25.0 (g/mL) mL Lab File ID: VF070808.D

Level (low/med): Date Received: 6/30/2004

% Moisture: not dec. 100 Date Analyzed: 7/8/2004

GC Column: RTX624 ID: 0.53 Dilution Factor: 1.0

Soil Extract Volume: Soil Aliquot Volume:

Number TICS found: 1 CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NO.	COMPOUND	RT	EST. CONC.	Q
1.	354234	Ethane, 1,2-dichloro-1,1,2-t	3.45	0.41	J

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-EB45-062904

Lab Name: Chemtech   Contract: FOST03

Lab Code: CHEMTECH   Case No.: S3330   SAS No.: S3330   SDG No.: S3330

Matrix (soil/water): WATER   Lab Sample ID: S3330-04

Sample wt/vol: 25.0 (g/mL) ml   Lab File ID: VF070807.D

Level (low/med):   Date Received: 6/30/04

% Moisture: not dec. 100   Date Analyzed: 7/8/04

GC Column: RTX624 ID: 0.53 (mm)   Dilution Factor: 1.0

Soil Extract Volume: (uL)   Soil Aliquot Volume: (uL)

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS No.	Compound	ug/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl chloride	0.50	U
74-83-9	Bromomethane	0.50	U J
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
76-13-1	1,1,2-Trichlorotrifluoroethan	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
67-64-1	Acetone	2.5	U
75-15-0	Carbon disulfide	0.50	U
1634-04-4	Methyl tert-butyl Ether	1.8	
79-20-9	Methyl Acetate	0.50	U
75-09-2	Methylene Chloride	0.61	U J
156-60-5	trans-1,2-Dichloroethene	0.50	U
75-34-3	1,1-Dichloroethane	0.37	J
110-82-7	Cyclohexane	0.50	U
78-93-3	2-Butanone	2.5	U
56-23-5	Carbon Tetrachloride	0.50	U
156-59-2	cis-1,2-Dichloroethene	6.9	
74-97-5	Bromochloromethane	0.50	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
108-87-2	Methylcyclohexane	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.78	
78-87-5	1,2-Dichloropropane	0.50	U
123-91-1	1,4-Dioxane	10	~~U~~ R
75-27-4	Bromodichloromethane	0.50	U
108-10-1	4-Methyl-2-Pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	t-1,3-Dichloropropene	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U

CH 2/23/05

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-EB45-062904

Lab Name: Chemtech Contract: FOST03

Lab Code: CHEMTECH Case No.: S3330 SAS No.: S3330 SDG No.: S3330

Matrix (soil/water): WATER Lab Sample ID: S3330-04

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF070807.D

Level (low/med): Date Received: 6/30/04

% Moisture: not dec. 100 Date Analyzed: 7/8/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS No.	Compound	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
591-78-6	2-Hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethyl Benzene	0.50	U
136777-61-2	m&p-xylenes	0.50	U
95-47-6	o-xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropylbenzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VE-EB45-062904

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3330 SAS No.: S3330 SDG No.: S3330

Matrix (soil/water): WATER Lab Sample ID: S3330-04

Sample wt/vol: 25.0 (g/mL) mL Lab File ID: VF070807.D

Level (low/med): Date Received: 6/30/2004

% Moisture: not dec. 100 Date Analyzed: 7/8/2004

GC Column: RTX624 ID: 0.53 Dilution Factor: 1.0

Soil Extract Volume: Soil Aliquot Volume:

Number TICS found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NO.	COMPOUND	RT	EST. CONC.	Q
1.	354234	Ethane, 1,2-dichloro-1,1,2-t	3.47	0.39	J

Comments:

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-FB-062904

Lab Name: Chemtech Contract: FOST03

Lab Code: CHEMTECH Case No.: S3330 SAS No.: S3330 SDG No.: S3330

Matrix (soil/water): WATER Lab Sample ID: S3330-05

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF070806.D

Level (low/med): Date Received: 6/30/04

% Moisture: not dec. 100 Date Analyzed: 7/8/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl chloride	0.50	U
74-83-9	Bromomethane	0.50	U J
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
76-13-1	1,1,2-Trichlorotrifluoroethan	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
67-64-1	Acetone	2.5	U
75-15-0	Carbon disulfide	0.50	U
1634-04-4	Methyl tert-butyl Ether	0.50	U
79-20-9	Methyl Acetate	0.50	U
75-09-2	Methylene Chloride	0.66	J
156-60-5	trans-1,2-Dichloroethene	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
110-82-7	Cyclohexane	0.50	U
78-93-3	2-Butanone	2.5	U
56-23-5	Carbon Tetrachloride	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
74-97-5	Bromochloromethane	0.50	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
108-87-2	Methylcyclohexane	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
123-91-1	1,4-Dioxane	10	U R
75-27-4	Bromodichloromethane	0.50	U
108-10-1	4-Methyl-2-Pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	t-1,3-Dichloropropene	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U

7/26/05

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-FB-062904

Lab Name: Chemtech Contract: FOST03

Lab Code: CHEMTECH Case No.: S3330 SAS No.: S3330 SDG No.: S3330

Matrix (soil/water): WATER Lab Sample ID: S3330-05

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF070806.D

Level (low/med): Date Received: 6/30/04

% Moisture: not dec. 100 Date Analyzed: 7/8/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
591-78-6	2-Hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethyl Benzene	0.50	U
136777-61-2	m&p-xylenes	0.50	U
95-47-6	o-xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropylbenzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VE-FB-062904

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3330 SAS No.: S3330 SDG No.: S3330

Matrix (soil/water): WATER Lab Sample ID: S3330-05

Sample wt/vol: 25.0 (g/mL) mL Lab File ID: VF070806.D

Level (low/med): Date Received: 6/30/2004

% Moisture: not dec. 100 Date Analyzed: 7/8/2004

GC Column: RTX624 ID: 0.53 Dilution Factor: 1.0

Soil Extract Volume: Soil Aliquot Volume:

Number TICS found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NO.	COMPOUND	RT	EST. CONC.	Q
1.	75285	Isobutane	1.96	0.29	JN

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIPBLANK

Lab Name: Chemtech Contract: FOST03

Lab Code: CHEMTECH Case No.: S3330 SAS No.: S3330 SDG No.: S3330

Matrix (soil/water): WATER Lab Sample ID: S3330-06

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF070812.D

Level (low/med): Date Received: 6/30/04

% Moisture: not dec. 100 Date Analyzed: 7/8/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl chloride	0.50	U
74-83-9	Bromomethane	0.50	U J
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
76-13-1	1,1,2-Trichlorotrifluoroethan	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
67-64-1	Acetone	5.2	B J
75-15-0	Carbon disulfide	0.50	U
1634-04-4	Methyl tert-butyl Ether	0.50	U
79-20-9	Methyl Acetate	0.50	U
75-09-2	Methylene Chloride	0.60	J
156-60-5	trans-1,2-Dichloroethene	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
110-82-7	Cyclohexane	0.50	U
78-93-3	2-Butanone	2.5	U
56-23-5	Carbon Tetrachloride	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
74-97-5	Bromochloromethane	0.50	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
108-87-2	Methylcyclohexane	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
123-91-1	1,4-Dioxane	10	U
75-27-4	Bromodichloromethane	0.50	U
108-10-1	4-Methyl-2-Pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	t-1,3-Dichloropropene	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIPBLANK

Lab Name: Chemtech Contract: FOST03

Lab Code: CHEMTECH Case No.: S3330 SAS No.: S3330 SDG No.: S3330

Matrix (soil/water): WATER Lab Sample ID: S3330-06

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF070812.D

Level (low/med): Date Received: 6/30/04

% Moisture: not dec. 100 Date Analyzed: 7/8/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
591-78-6	2-Hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethyl Benzene	0.50	U
136777-61-2	m&p-xylenes	0.50	U
95-47-6	o-xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropylbenzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TRIPBLANK

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3330 SAS No.: S3330 SDG No.: S3330

Matrix (soil/water): WATER Lab Sample ID: S3330-06

Sample wt/vol: 25.0 (g/mL) mL Lab File ID: VF070812.D

Level (low/med): Date Received: 6/30/04

% Moisture: not dec. 100 Date Analyzed: 7/8/04

GC Column: RTX624 ID: 0.53 Dilution Factor: 1.0

Soil Extract Volume: Soil Aliquot Volume:

Number TICS found: 0 CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND	RT	EST. CONC.	Q

Comments:

CLP DATA ASSESSMENT

Functional Guidelines for Evaluating Organic Analysis

WORK ORDER NO.: S3439

LABORATORY: Chemtech SITE: Vestal Well

DATA ASSESSMENT

The current SOP No. HW-13 (Revision 3), July 2001 for Organic Data Review for Low Concentration Water has been applied.

All data were found to be valid and acceptable except those analytes which have been rejected, "R" (unusable). Due to various QC problems some analytes may have been qualified with a "J" (estimated), "N" (presumptive evidence for the presence of the material), "U" (non-detect), or "JN" (presumptive evidence for the presence of the material at an estimated value) flag. All action is detailed on the attached sheets.

The "R" flag means that the associated value is unusable. In other words, significant data bias is evident and the reported analyte concentration is unreliable.

Reviewer's Signature: Cecelia N. Munch Date: 2/22/05

Verified By: _____ Date: _____

CLP DATA ASSESSMENT

1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as estimated, "J", or unusable, "R", if the holding times are grossly exceeded.

The following action was taken in the samples and analytes shown due to excessive holding time.

All samples were analyzed within specified holding times, therefore, no action was required.

2. SURROGATES:

All samples are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate concentrations were outside contract specifications, qualifications were applied to the samples and analytes as shown below.

All surrogate recoveries were within limits.

CLP DATA ASSESSMENT

3. MATRIX SPIKE/SPIKE DUPLICATE, MS/MSD:

The MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD may be used in conjunction with other QC criteria for additional qualification of data.

Spike analyses were not designated on a sample in this data set. The MS/MSD reported were satisfactory.

4. BLANK CONTAMINATION:

Quality assurance (QA) blanks, i.e., method, trip, field, or rinse blanks are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field and rinse blanks measure cross-contamination of samples during field operations. If the concentration of the analyte is less than the blank contaminant level (2 or 10 times for common contaminants), the analytes are qualified as non-detects, "U". The following analytes in the sample shown were qualified with "U" for these reasons:

A) Method blank contamination:

B) Field or rinse blank contamination:

C) Trip blank contamination:
carbon disulfide: VE-129A-070604
methylene chloride: VE-129A-070604, VE-129-070604, VE-129-070604DL, VE-132-070604

CLP DATA ASSESSMENT

5. MASS SPECTROMETER TUNING:

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances. The tuning standard for volatile organics is (BFB) Bromofluorobenzene and for semi-volatiles Decafluorotriphenyl-phosphine (DFTPP).

If the mass calibration is in error, all associated data will be classified as unusable "R".

All criteria were met.

CLP DATA ASSESSMENT

6. CALIBRATION:

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

A) Response Factor GC/MS:

The response factor measures the instrument's response to specific chemical compounds. The response factor for the Target Compound List (TCL) must be ≥ 0.05 ($\geq$ 0.01 for poor performers) in both initial and continuing calibrations. A value < 0.05, $<$ 0.01 for poor performers, indicates a serious detection and quantitation problem (poor sensitivity). Analytes detected in the sample will be qualified as estimated, "J". All non-detects for that compound will be qualified as unusable (R).

1,4-Dioxane was qualified as unusable (R) in all samples due to low response factors in the initial and continuing calibration standards.

CLP DATA ASSESSMENT

7. CALIBRATION:

B) Percent Relative Standard Deviation (%RSD) and Percent Difference (%D):

Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor of the continuing calibration check to the mean response factor (RRF) from the initial calibration. Percent D is a measure of the instrument's daily performance. Percent RSD and %D must be $\leq$ 30%, $\leq$ 50% for the poor performers. A value outside of these limits indicates potential detection and quantitation errors. For these reasons, all positive results are flagged as estimated, "J" and non-detects are flagged "UJ". If %RSD and %D grossly exceed QC criteria, non-detects data may be qualified "R".

For the PEST/PCB fraction, if %RSD exceeds 20% for all analytes except for the two surrogates (which must not exceed 30% RSD), qualify all associated positive results "J" and non-detects "UJ".

The following analytes in the sample shown were qualified for %RSD and %D:

The positive results for the following compounds were estimated in the samples indicated for exceeding %RSD OR %D criteria.
%RSD:
methylene chloride: all samples
acetone: TRIP BLANK, TRIP BLANKDL

%D:
bromomethane: TRIP BLANKDL, VE-129A-070604DL, VE-FB-070604
dichlorodifluoromethane, chloromethane: VE-FB-070604

CLP DATA ASSESSMENT

8. INTERNAL STANDARDS PERFORMANCE GC/MS:

Internal standards (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during every experimental run. The internal standard area count must fall within the limits of ± 40% of the associated continuing calibration standard. The retention time of the internal standard must not vary more than ±30 seconds from the associated continuing calibration standard. If the area count is outside the (± 40%) range of the associated standard, all of the positive results for compounds quantitated using that IS are qualified as estimated, "J", and all non-detects as "UJ", or "R" if there is a severe loss of sensitivity.

If an internal standard retention time varies by more than 30 seconds, the reviewer will use professional judgement to determine either partial or total rejection of the data for that sample fraction.

All internal standards were within limits.

CLP DATA ASSESSMENT

9. COMPOUND IDENTIFICATION:

A) Volatile and Semi-Volatile Fractions:

TCL compounds are identified on the GC/MS by using the analyte's relative retention time (RRT) and by comparison to the ion spectra obtained from known standards. For the results to be a positive hit, the sample peak must be within ± 0.06 RRT units of the standard compound and have an ion spectra which has a ratio of the primary and secondary m/e intensities within 20% of that in the standard compound. For the tentatively identified compounds (TIC) the ion spectra must match accurately. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications.

N/A

B) Pesticide Fraction:

The retention times of reported compounds must fall within the calculated retention time (RT) windows for the two chromatographic columns and a GC/MS confirmation is required if the concentration exceeds 10ng/ml in the final sample extract.

N/A

CLP DATA ASSESSMENT

10. CONTRACT PROBLEMS NON-COMPLIANCE:

11. FIELD DOCUMENTATION:

12. OTHER PROBLEMS:

13. This package contains re-extractions, reanalyses or dilutions. Upon reviewing the QA results, the following Form 1(s) are identified as not to be used.

VE-129-070604DL (VF071205)
TRIP BLANK (VF071316)

DPO: [ ]ACTION [ ]FYI REGION II

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY

Work Order No.: S3439

LABORATORY: Chemtech DATA USER: EPA Region II

SOW: OLM03.2 REVIEW COMPLETION DATE: 2/22/05

NO. OF SAMPLES: 6 WATER ____ SOIL ____ OTHER

REVIEWER: [ ] ESD [ ] ESAT [ ] OTHER, CONTRACTOR TtFW

QC ITEM	VOA	BNA	PCB		
HOLDING TIMES	O				
GC-MS PERFORMANCE	O				
INITIAL CALIBRATIONS	X				
CONTINUING CALIBRATIONS	O				
FIELD BLANKS(F = N/A)	O				
LABORATORY BLANKS	O				
SURROGATES	O				
MATRIX SPIKE/DUPLICATES	O				
QC SAMPLES(LCS, PVS)	N/A				
INTERNAL STANDARDS	O				
COMPOUND IDENTIFICATION	O				
COMPOUND QUANTITATION	O				
SYSTEM PERFORMANCE	O				
OVERALL ASSESSMENT	M				

O = No problems or minor problems that do not affect data usability.
X = No more than about 5% of the data points are qualified as either estimated or unusable.
M = More than about 5% of the data points are qualified as either estimated or unusable.
Z = More than about 5% of the data points are qualified as unusable.

DPO ACTION ITEMS:

AREAS OF CONCERN:

DATA REJECTION SUMMARY

Type of Review: Level 4 Date: 2/22/05 Work Order No.: S3439

Site Name: Vestal Well Lab Name: Chemtech

Reviewer's Initials: aw Number of Samples: 6W

Analytes Rejected Due to Exceeding Review Criteria For:

No. of Compounds/No. of Fractions (Samples)

	Surrogates	Holding Time	Calibration	Contamination	ID	Internal Standards	Other	Total # of Samples	Total # Rejected/Total # in All Samples
VOA(52)	0	0	8	0	0	0		8	8 / 416 = 2 %
ACID(14)									/ = %
B/N(51)									/ = %
PEST(21)									/ = %
PCB(7)									/ = %

NOTE: ASTERISK (*) INDICATES ADDITIONAL EXCEEDANCES OF REVIEW CRITERIA.

Analytes Estimated Due to Exceeding Review Criteria For:

No. of Compounds/No. of Fractions (Samples)

	Surrogates	Holding Time	Calibration	Contamination	ID	Internal Standards	Other	Total # of Samples	Total # Estimated/Total # in All Samples
VOA(52)	0	0	15	5	0	0		8	20 / 416 = 5 %
ACID(14)									/ = %
B/N(51)									/ = %
PEST(21)									/ = %
PCB(7)									/ = %

NOTE: ASTERISK (*) INDICATES ADDITIONAL EXCEEDANCES OF REVIEW CRITERIA.

Title: Evaluation of Metals Data for the Contract Laboratory Program
Appendix A.2: Data Assessment Narrative

Date: Jan. 1992
Number: HW-2
Revision: 11

Project # S3439 **Matrix:** **Soil** _____

Site Vestal Well **Lab** Chemtech **Water** 4

Contractor TtFW **Reviewer** C. Minch **Other** _____

A.2.1 **Validation Flags-** The following flags have been applied in red by the data validator and must be considered by the data user.

J- This flag indicates the result qualified as **estimated**

Red- Line- A red-line drawn through a sample result indicates **unusable** value. The red-lined data are known to contain significant errors based on documented information and must not be used by the data user.

Fully Usable Data- The results that do not carry "J" or "red-line" are fully **usable**.

Contractual Qualifiers- The legend of contractual qualifiers applied by the lab on Form I's is found on page B-20 of SOW ILM01.0.

A.2.2 The data assessment is given below and on the attached sheets.

Barium was estimated in samples VE-129A-070604 and VE-129-070604 due to high spike recovery criteria.

Silver was estimated (UJ) in all samples due to low recovery in the associated CRI standard.
Thallium exceeded CRI recovery criteria, but no action was required.

Sodium exceeded criteria in the serial dilution and was estimated (J) in samples VE-129-070604, VE-129A-070604 and VE-129-D-070604.

Lead was qualified as unusable in samples VE-129A-070604 and VE-129-070604 due to contamination in the field blank.

Zinc failed field duplicate criteria and was estimated (J) in samples VE-129-070604 and VE-129-D-070604. Sodium also exceeded specified limits between the field duplicate analyses, but was qualified for other criteria.

A.2.3 Contract-Problem/Non-Compliance

Barium exceeded spike recovery criteria.

Silver exhibited low recovery in the CRI standard.
Thallium exceeded CRI recovery criteria.

Sodium exceeded criteria in the serial dilution.

MMB/ESAT Reviewer: _____ Date: _____
Signature

Contractor Reviewer: Cecelia Merck Date: 3/8/05
Signature

Verified by: _____ Date: _____

Title: Evaluation of Metals Data for the
Contract Laboratory Program
Appendix A.3: Contract Non-Compliance
(SMO Report)

Date: Jan. 1992
Number: HW-2
Revision: 11

CONTRACT NON-COMPLIANCE
(SMO REPORT)

Regional Review of Uncontrolled Hazardous Waste
Site Contract Laboratory Data Package

PROJECT NO. S3439

The hardcopied (laboratory name) Chemtech
Inorganic data package received at Region II has been reviewed and the quality assurance and performance data summarized. The data reviewed included:
Sample No: VE-FB-070604, VE-129-070604, VE-129-D-070604, VE-129A-070604

Conc. & Matrix: 4 water

Contract No.(____) requires that specific analytical work be done and that associated reports be provided by the contractor to the Regions, EMSL-LV, and SMO. The general criteria used to determine the performance were based on an examination of:

- Data Completeness
- Matrix Spike Results
- Calibration Standards Results
- Duplicate Analysis Results
- Blank Analysis Results
- MSA Results

Items of non-compliance with the above contract are described below.

Comments:

The spike analysis failed recovery criteria for Ba.
Silver and Tl failed CRI criteria.
Sodium exceeded serial dilution criteria.

CW
Reviewer's Initials

3/8/05
Date

Title: Evaluation of Metals Data for the Contract Laboratory Program
Appendix A.5: CLP Data Assessment Summary Form (Inorganics)

Date: Jan. 1992
Number: HW-2
Revision: 11

CLP DATA ASSESSMENT SUMMARY FORM (INORGANICS)

Type of Review: Level 4 Date: 3/8/05 Project No.: S3439

Site: Vestal Well Lab Name: Chemtech

Reviewer's Initials: CW Number of Samples: 4W

Analytes Rejected Due to Exceeding Review Criteria

	Holding Time	Calibration	Prep Blank	Field Blank	Interference	Matrix Spike	Duplicates		Detection Limits	LCS	Serial Dilution	MSA	Total Analytes	Rejected
							Lab	Field						
ICP				2									88	2
Flame AA														
Furnace AA														
Mercury													4	0
Other														
Total				2									92	2

Analytes Flagged as Estimated (J) Due to Exceeding Criteria For:

	Holding Time	CRDL/CRI Calibration	Prep Blank	Field Blank	Interference	Matrix Spike	Duplicates		Detection Limits	LCS	Serial Dilution	MSA	Total Analytes	Estimated
							Lab	Field						
ICP		4				2		2*			3		88	11
Flame AA														
Furnace AA														
Mercury													4	0
Other														
Total		4				2		2			3		92	11

Note:
Asterisk (*) indicates additional exceedances of review criteria.

Title: Evaluation of Metals Data for the Contract Laboratory Program
Appendix A.6: CLP Data Assessment Checklist

Inorganic Analysis

Date: Jan. 1992
Number: HW-2
Revision: 11

INORGANIC REGIONAL DATA ASSESSMENT Region II

PROJECT NO S3439 SITE Vestal Well

LABORATORY Chemtech NO. OF SAMPLES/MATRIX 4W

SDG# REVIEWER (IF NOT ESD) TtFW

SOW# ILMO4.0 REVIEWER'S NAME C. Minch

DPO: ACTION FYI COMPLETION DATE 3/8/05

DATA ASSESSMENT SUMMARY

	ICP	AA	Hg	CN
1. HOLDING TIMES	O		O	
2. CALIBRATIONS	O		O	
3. BLANKS	O		O	
4. ICS	O		O	
5. LCS	O		O	
6. DUPLICATE ANALYSIS	O		O	
7. MATRIX SPIKE	O		O	
8. MSA	-		-	
9. SERIAL DILUTION	O		O	
10. SAMPLE VERIFICATION	O		O	
11. OTHER QC	-		-	
12. OVERALL ASSESSMENT	O		O	

O = Data has no problems/or qualified due to minor problems.
M = Data qualified due to major problems.
Z = Data unacceptable.
X = Problems, but do not affect data.

ACTION ITEMS:
Silver failed CRI criteria. Barium exceeded spike recovery. Sodium exceeded serial dilution criteria.

AREAS OF CONCERN:
Lead rejected due to field blank contamination.

NOTABLE PERFORMANCE:

Mildred Reyes

From: Auseal@aol.com
Sent: Tuesday, February 01, 2005 2:17 AM
To: mildred@chemtech.net
Subject: Vestal S3439

Mildred,
The following issues require resolution before I can complete my review of the Vestal Well data package identified below.

S3439
Volatiles
1. resubmit the spike and LCS summary forms with the spike amount and sample values corrected. they are presently high by a factor of 5.
2. resubmit internal standard summaries with the correct limits identified (± 40%). they are presently reported as -50%/ +100%.
3. re-evaluate sample file VF071016 for a possible carbon tetrachloride false positive. resubmit revised sample summary (2 copies), quantitation report, and hits summary.

Metals
1. submit raw data for analyses acquired at 14:14, 14:17, and 14:20.
2. resubmit CRQL summary with "U" removed from Hg result (#2).

Please forward a hardcopy of all resubmittals to my attention by 2/7/05.
Thank you.
Celia Minch
873 Chivas Dr.
Toms River, NJ 08753

Subj: **S3459 and S3439**
Date: 2/3/05 3:30:43 AM Eastern Standard Time
From: Auseal
To: mildred@chemtech.net

Mildred,
Please include a revised narrative with a comment addressing analytes that exceeded %RSD and %D criteria (bromomethane and benzene) with resubmittals previously requested for project numbers **S3459** and **S3439**.
Thank you.

Celia Minch
873 Chivas Dr.
Toms River, NJ 08753

TETRA TECH FW, INC

873 Chivas Drive, Toms River, NJ 08753
Tel 732-270-0988 Fax 732-270-1902

FAX

To M. Reyes

Date 2/28/05

Phone 908 - 789 - 8900

No. of pages (including cover sheet) 4

Fax 908 - 789 - 8922

From C. Minch

Mildred,

S3459, S3439, S3352 - metals

The issue regarding the MDL for Hg is still unresolved. Originally Form 2B reported the value of the final CRQL standard as 0.19U with a %R entered and the MDL reported as 0.200 on Form 9 (see copies of both forms). When I questioned the inconsistency, I mentioned that you can not report a value less than the MDL. Since the MDL was reported as 0.07 on Form 9 in S5687, I asked that the MDL be verified and that revised forms be submitted once all information was confirmed. What I received was a revised Form 2B showing a positive value of 0.19, but did not receive a revised Form 9 showing a MDL $\leq$ 0.19. Report the MDL on Form 9 to 2 decimal places to avoid confusion (i.e. 0.19 not 0.2). Please re-evaluate all data and resubmit forms that substantiate the information reported on both of them for each data set. Thank you.

Celia

CHEMTECH 284 Sheffield Street • Mountainside, NJ 07092 Phone: 908.789.8900 Fax: 908.789.8922

ANALYTICAL RESULTS
SUMMARY

PROJECT NAME: Vestal Well 1 1 Site

TETRA TECH FW INC..
1000 AMERICAN ROAD
MORRIS PLAINS, NJ 07950
9736308000

CHEMTECH PROJECT NO.	S3439
ATTENTION:	Heidemarie Roldan

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-FB-070604

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3439 SAS No.: S3439 SDG No.: S3439

Matrix (soil/water): WATER Lab Sample ID: S3439-01

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF070918.D

Level (low/med): Date Received: 7/7/04

% Moisture: not dec. 100 Date Analyzed: 7/10/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS No.	Compound	CONCENTRATION UNITS: (ug/L or ug/Kg)	ug/L	Q
75-71-8	Dichlorodifluoromethane		0.50	U J
74-87-3	Chloromethane		0.50	U J
75-01-4	Vinyl chloride		0.50	U
74-83-9	Bromomethane		0.50	U J
75-00-3	Chloroethane		0.50	U
75-69-4	Trichlorofluoromethane		0.50	U
76-13-1	1,1,2-Trichlorotrifluoroethan		0.50	U
75-35-4	1,1-Dichloroethene		0.50	U
67-64-1	Acetone		2.5	U
75-15-0	Carbon disulfide		0.50	U
1634-04-4	Methyl tert-butyl Ether		0.50	U
79-20-9	Methyl Acetate		0.50	U
75-09-2	Methylene Chloride		0.38	JB J
156-60-5	trans-1,2-Dichloroethene		0.50	U
75-34-3	1,1-Dichloroethane		0.50	U
110-82-7	Cyclohexane		0.50	U
78-93-3	2-Butanone		2.5	U
56-23-5	Carbon Tetrachloride		0.50	U
156-59-2	cis-1,2-Dichloroethene		0.50	U
74-97-5	Bromochloromethane		0.50	U
67-66-3	Chloroform		0.50	U
71-55-6	1,1,1-Trichloroethane		0.50	U
108-87-2	Methylcyclohexane		0.50	U
71-43-2	Benzene		0.50	U
107-06-2	1,2-Dichloroethane		0.50	U
79-01-6	Trichloroethene		0.50	U
78-87-5	1,2-Dichloropropane		0.50	U
123-91-1	1,4-Dioxane		10	UJ R
75-27-4	Bromodichloromethane		0.50	U
108-10-1	4-Methyl-2-Pentanone		2.5	U
108-88-3	Toluene		0.50	U
10061-02-6	t-1,3-Dichloropropene		0.50	U
10061-01-5	cis-1,3-Dichloropropene		0.50	U
79-00-5	1,1,2-Trichloroethane		0.50	U

CM 7/21/04

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-FB-070604

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3439 SAS No.: S3439 SDG No.: S3439

Matrix (soil/water): WATER Lab Sample ID: S3439-01

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF070918.D

Level (low/med): Date Received: 7/7/04

% Moisture: not dec. 100 Date Analyzed: 7/10/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
591-78-6	2-Hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethyl Benzene	0.50	U
136777-61-2	m&p-xylenes	0.50	U
95-47-6	o-xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropylbenzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VE-FB-070604

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3439 SAS No.: S3439 SDG No.: S3439

Matrix (soil/water): WATER Lab Sample ID: S3439-01

Sample wt/vol: 25.0 (g/mL) mL Lab File ID: VF070918.D

Level (low/med): Date Received: 7/7/2004

% Moisture: not dec. 100 Date Analyzed: 7/10/2004

GC Column: RTX624 ID: 0.53 Dilution Factor: 1.0

Soil Extract Volume: Soil Aliquot Volume:

Number TICS found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND	RT	EST. CONC.	Q

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-129A-070604

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3439 SAS No.: S3439 SDG No.: S3439

Matrix (soil/water): WATER Lab Sample ID: S3439-02

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071016.D

Level (low/med): Date Received: 7/7/04

% Moisture: not dec. 100 Date Analyzed: 7/10/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
76-13-1	1,1,2-Trichlorotrifluoroethan	0.75	
75-35-4	1,1-Dichloroethene	1.9	
67-64-1	Acetone	2.5	U
75-15-0	Carbon disulfide	1.2	U
1634-04-4	Methyl tert-butyl Ether	0.50	U
79-20-9	Methyl Acetate	0.50	U
75-09-2	Methylene Chloride	1.5	BUJ
156-60-5	trans-1,2-Dichloroethene	0.50	U
75-34-3	1,1-Dichloroethane	9.0	
110-82-7	Cyclohexane	0.50	U
78-93-3	2-Butanone	2.5	U
56-23-5	Carbon Tetrachloride	0.50	U
156-59-2	cis-1,2-Dichloroethene	20	
74-97-5	Bromochloromethane	0.50	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	8.8	
108-87-2	Methylcyclohexane	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	4.0	
78-87-5	1,2-Dichloropropane	0.50	U
123-91-1	1,4-Dioxane	10	U K
75-27-4	Bromodichloromethane	0.50	U
108-10-1	4-Methyl-2-Pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	t-1,3-Dichloropropene	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-129A-070604

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3439 SAS No.: S3439 SDG No.: S3439

Matrix (soil/water): WATER Lab Sample ID: S3439-02

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071016.D

Level (low/med): Date Received: 7/7/04

% Moisture: not dec. 100 Date Analyzed: 7/10/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS No.	Compound	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
79-00-5	1,1,2-Trichloroethane	0.50	U
591-78-6	2-Hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethyl Benzene	0.50	U
136777-61-2	m&p-xylenes	0.50	U
95-47-6	o-xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropylbenzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VE-129A-070604

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3439 SAS No.: S3439 SDG No.: S3439

Matrix (soil/water): WATER Lab Sample ID: S3439-02

Sample wt/vol: 25.0 (g/mL) mL Lab File ID: VF071016.D

Level (low/med): Date Received: 7/7/2004

% Moisture: not dec. 100 Date Analyzed: 7/10/2004

GC Column: RTX624 ID: 0.53 Dilution Factor: 1.0

Soil Extract Volume: Soil Aliquot Volume:

Number TICS found: 1 CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NO.	COMPOUND	RT	EST. CONC.	Q
1.	354234	Ethane, 1,2-dichloro-1,1,2-t	3.44	0.57	J N

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-129-070604

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3439 SAS No.: S3439 SDG No.: S3439

Matrix (soil/water): WATER Lab Sample ID: S3439-03

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071014.D

Level (low/med): U56 Date Received: 7/7/04

% Moisture: not dec. 100 Date Analyzed: 7/10/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
76-13-1	1,1,2-Trichlorotrifluoroethan	2.5	
75-35-4	1,1-Dichloroethene	4.1	
67-64-1	Acetone	2.5	U
75-15-0	Carbon disulfide	0.50	U
1634-04-4	Methyl tert-butyl Ether	0.50	U
79-20-9	Methyl Acetate	0.50	U
75-09-2	Methylene Chloride	0.66	B U
156-60-5	trans-1,2-Dichloroethene	0.50	U
75-34-3	1,1-Dichloroethane	5.9	
110-82-7	Cyclohexane	0.50	U
78-93-3	2-Butanone	2.5	U
56-23-5	Carbon Tetrachloride	0.50	U
156-59-2	cis-1,2-Dichloroethene	51 * ~~38~~	E
74-97-5	Bromochloromethane	0.50	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	37 * ~~56~~	E
108-87-2	Methylcyclohexane	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	~~14~~ * 25	E
78-87-5	1,2-Dichloropropane	0.50	U
123-91-1	1,4-Dioxane	10	U R
75-27-4	Bromodichloromethane	0.50	U
108-10-1	4-Methyl-2-Pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	t-1,3-Dichloropropene	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U

* FROM DILUTION

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-129-070604

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3439 SAS No.: S3439 SDG No.: S3439

Matrix (soil/water): WATER Lab Sample ID: S3439-03

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071014.D

Level (low/med): Use Date Received: 7/7/04

% Moisture: not dec. 100 Date Analyzed: 7/10/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS No.	Compound	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
591-78-6	2-Hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethyl Benzene	0.50	U
136777-61-2	m&p-xylenes	0.50	U
95-47-6	o-xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropylbenzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VE-129-070604

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3439 SAS No.: S3439 SDG No.: S3439

Matrix (soil/water): WATER Lab Sample ID: S3439-03

Sample wt/vol: 25.0 (g/mL) mL Lab File ID: VF071014.D

Level (low/med): Date Received: 7/7/2004

% Moisture: not dec. 100 USE Date Analyzed: 7/10/2004

GC Column: RTX624 ID: 0.53 Dilution Factor: 1.0

Soil Extract Volume: Soil Aliquot Volume:

Number TICS found: 0 CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND	RT	EST. CONC.	Q

EP 12/15/04

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-129-070604DL

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3439 SAS No.: S3439 SDG No.: S3439

Matrix (soil/water): WATER Lab Sample ID: S3439-03DL

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071205.D

Level (low/med): Date Received: 7/7/04

% Moisture: not dec. 100 Date Analyzed: 7/12/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 10.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS No.	Compound	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	5.0	UD
74-87-3	Chloromethane	5.0	UD
75-01-4	Vinyl chloride	5.0	UD
74-83-9	Bromomethane	5.0	UD J
75-00-3	Chloroethane	5.0	UD
75-69-4	Trichlorofluoromethane	5.0	UD
76-13-1	1,1,2-Trichlorotrifluoroethan	5.0	UD
75-35-4	1,1-Dichloroethene	3.1	JD
67-64-1	Acetone	25	UD
75-15-0	Carbon disulfide	5.0	UD
1634-04-4	Methyl tert-butyl Ether	5.0	UD
79-20-9	Methyl Acetate	5.0	UD
75-09-2	Methylene Chloride	5.5	B UJ
156-60-5	trans-1,2-Dichloroethene	5.0	UD
75-34-3	1,1-Dichloroethane	5.4	D
110-82-7	Cyclohexane	5.0	UD
78-93-3	2-Butanone	25	UD
56-23-5	Carbon Tetrachloride	5.0	UD
156-59-2	cis-1,2-Dichloroethene	52	D
74-97-5	Bromochloromethane	5.0	UD
67-66-3	Chloroform	5.0	UD
71-55-6	1,1,1-Trichloroethane	37	D
108-87-2	Methylcyclohexane	5.0	UD
71-43-2	Benzene	5.0	UD
107-06-2	1,2-Dichloroethane	5.0	UD
79-01-6	Trichloroethene	24	D
78-87-5	1,2-Dichloropropane	5.0	UD
123-91-1	1,4-Dioxane	100	UD
75-27-4	Bromodichloromethane	5.0	UD
108-10-1	4-Methyl-2-Pentanone	25	UD
108-88-3	Toluene	5.0	UD
10061-02-6	t-1,3-Dichloropropene	5.0	UD
10061-01-5	cis-1,3-Dichloropropene	5.0	UD
79-00-5	1,1,2-Trichloroethane	5.0	UD

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-129-070604DL

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3439 SAS No.: S3439 SDG No.: S3439

Matrix (soil/water): WATER Lab Sample ID: S3439-03DL

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071205.D

Level (low/med): Date Received: 7/7/04

% Moisture: not dec. 100 Date Analyzed: 7/12/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 10.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
591-78-6	2-Hexanone	25	UD
124-48-1	Dibromochloromethane	5.0	UD
106-93-4	1,2-Dibromoethane	5.0	UD
127-18-4	Tetrachloroethene	5.0	UD
108-90-7	Chlorobenzene	5.0	UD
100-41-4	Ethyl Benzene	5.0	UD
136777-61-2	m&p-xylenes	5.0	UD
95-47-6	o-xylene	5.0	UD
100-42-5	Styrene	5.0	UD
75-25-2	Bromoform	5.0	UD
98-82-8	Isopropylbenzene	5.0	UD
79-34-5	1,1,2,2-Tetrachloroethane	5.0	UD
541-73-1	1,3-Dichlorobenzene	5.0	UD
106-46-7	1,4-Dichlorobenzene	5.0	UD
95-50-1	1,2-Dichlorobenzene	5.0	UD
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	UD
120-82-1	1,2,4-Trichlorobenzene	5.0	UD
87-61-6	1,2,3-Trichlorobenzene	5.0	UD

CP 1/31/05

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VE-129-070604DL

Lab Name: Chemtech Contract: EOST03

Lab Code: CTECH Case No.: S3439 SAS No.: S3439 SDG No.: S3439

Matrix (soil/water): WATER Lab Sample ID: S3439-03DL

Sample wt/vol: 25.0 (g/mL) mL Lab File ID: VF071205.D

Level (low/med): Date Received: 7/7/2004

% Moisture: not dec. 100 Date Analyzed: 7/12/2004

GC Column: RTX624 ID: 0.53 Dilution Factor: 10.0

Soil Extract Volume: Soil Aliquot Volume:

Number TICS found: 0 CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND	RT	EST. CONC.	Q

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIPBLANK

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3439 SAS No.: S3439 SDG No.: S3439

Matrix (soil/water): WATER Lab Sample ID: S3439-05

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071011.D

Level (low/med): Date Received: 7/7/04

% Moisture: not dec. 100 Date Analyzed: 7/10/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
76-13-1	1,1,2-Trichlorotrifluoroethan	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
67-64-1	Acetone	42 * 29	EB J
75-15-0	Carbon disulfide	1.4	
1634-04-4	Methyl tert-butyl Ether	0.50	U
79-20-9	Methyl Acetate	0.50	U
75-09-2	Methylene Chloride	0.70	B J
156-60-5	trans-1,2-Dichloroethene	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
110-82-7	Cyclohexane	0.50	U
78-93-3	2-Butanone	2.5	U
56-23-5	Carbon Tetrachloride	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
74-97-5	Bromochloromethane	0.50	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
108-87-2	Methylcyclohexane	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
123-91-1	1,4-Dioxane	10	U R
75-27-4	Bromodichloromethane	0.50	U
108-10-1	4-Methyl-2-Pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	t-1,3-Dichloropropene	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U

USE

EM 7/8/04

* FROM DILUTION

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIPBLANK

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3439 SAS No.: S3439 SDG No.: S3439

Matrix (soil/water): WATER Lab Sample ID: S3439-05

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071011.D

Level (low/med): USE Date Received: 7/7/04

% Moisture: not dec. 100 Date Analyzed: 7/10/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS No.	Compound	CONCENTRATION UNITS: (ug/L or ug/Kg)	ug/L	Q
591-78-6	2-Hexanone		2.5	U
124-48-1	Dibromochloromethane		0.50	U
106-93-4	1,2-Dibromoethane		0.50	U
127-18-4	Tetrachloroethene		0.50	U
108-90-7	Chlorobenzene		0.50	U
100-41-4	Ethyl Benzene		0.50	U
136777-61-2	m&p-xylenes		0.50	U
95-47-6	o-xylene		0.50	U
100-42-5	Styrene		0.50	U
75-25-2	Bromoform		0.50	U
98-82-8	Isopropylbenzene		0.50	U
79-34-5	1,1,2,2-Tetrachloroethane		0.50	U
541-73-1	1,3-Dichlorobenzene		0.50	U
106-46-7	1,4-Dichlorobenzene		0.50	U
95-50-1	1,2-Dichlorobenzene		0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane		0.50	U
120-82-1	1,2,4-Trichlorobenzene		0.50	U
87-61-6	1,2,3-Trichlorobenzene		0.50	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TRIPBLANK

Lab Name: Chemtech Contract: EOST03

Lab Code: CTECH Case No.: S3439 SAS No.: S3439 SDG No.: S3439

Matrix (soil/water): WATER Lab Sample ID: S3439-05

Sample wt/vol: 25.0 (g/mL) mL Lab File ID: VF071011.D

Level (low/med): Date Received: 7/7/2004

% Moisture: not dec. 100 USE Date Analyzed: 7/10/2004

GC Column: RTX624 ID: 0.53 Dilution Factor: 1.0

Soil Extract Volume: Soil Aliquot Volume:

Number TICS found: 0 CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND	RT	EST. CONC.	Q

CM 1/31/05

Comments:

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIPBLANKDL

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3439 SAS No.: S3439 SDG No.: S3439

Matrix (soil/water): WATER Lab Sample ID: S3439-05DL

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071316.D

Level (low/med): Date Received: 7/7/04

% Moisture: not dec. 100 Date Analyzed: 7/13/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 5.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS No.	Compound	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	2.5	UD
74-87-3	Chloromethane	2.5	UD
75-01-4	Vinyl chloride	2.5	UD
74-83-9	Bromomethane	2.5	UD J
75-00-3	Chloroethane	2.5	UD
75-69-4	Trichlorofluoromethane	2.5	UD
76-13-1	1,1,2-Trichlorotrifluoroethan	2.5	UD
75-35-4	1,1-Dichloroethene	2.5	UD
67-64-1	Acetone	42	DB J
75-15-0	Carbon disulfide	2.5	UD
1634-04-4	Methyl tert-butyl Ether	2.5	UD
79-20-9	Methyl Acetate	2.5	UD
75-09-2	Methylene Chloride	4.0	DB J
156-60-5	trans-1,2-Dichloroethene	2.5	UD
75-34-3	1,1-Dichloroethane	2.5	UD
110-82-7	Cyclohexane	2.5	UD
78-93-3	2-Butanone	12	UD
56-23-5	Carbon Tetrachloride	2.5	UD
156-59-2	cis-1,2-Dichloroethene	2.5	UD
74-97-5	Bromochloromethane	2.5	UD
67-66-3	Chloroform	2.5	UD
71-55-6	1,1,1-Trichloroethane	2.5	UD
108-87-2	Methylcyclohexane	2.5	UD
71-43-2	Benzene	2.5	UD
107-06-2	1,2-Dichloroethane	2.5	UD
79-01-6	Trichloroethene	2.5	UD
78-87-5	1,2-Dichloropropane	2.5	UD
123-91-1	1,4-Dioxane	50	UD R
75-27-4	Bromodichloromethane	2.5	UD
108-10-1	4-Methyl-2-Pentanone	12	UD
108-88-3	Toluene	2.5	UD
10061-02-6	t-1,3-Dichloropropene	2.5	UD
10061-01-5	cis-1,3-Dichloropropene	2.5	UD
79-00-5	1,1,2-Trichloroethane	2.5	UD

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIPBLANKDL

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3439 SAS No.: S3439 SDG No.: S3439

Matrix (soil/water): WATER Lab Sample ID: S3439-05DL

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071316.D

Level (low/med): Date Received: 7/7/04

% Moisture: not dec. 100 Date Analyzed: 7/13/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 5.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS No.	Compound	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
591-78-6	2-Hexanone	12	UD
124-48-1	Dibromochloromethane	2.5	UD
106-93-4	1,2-Dibromoethane	2.5	UD
127-18-4	Tetrachloroethene	2.5	UD
108-90-7	Chlorobenzene	2.5	UD
100-41-4	Ethyl Benzene	2.5	UD
136777-61-2	m&p-xylenes	2.5	UD
95-47-6	o-xylene	2.5	UD
100-42-5	Styrene	2.5	UD
75-25-2	Bromoform	2.5	UD
98-82-8	Isopropylbenzene	2.5	UD
79-34-5	1,1,2,2-Tetrachloroethane	2.5	UD
541-73-1	1,3-Dichlorobenzene	2.5	UD
106-46-7	1,4-Dichlorobenzene	2.5	UD
95-50-1	1,2-Dichlorobenzene	2.5	UD
96-12-8	1,2-Dibromo-3-Chloropropane	2.5	UD
120-82-1	1,2,4-Trichlorobenzene	2.5	UD
87-61-6	1,2,3-Trichlorobenzene	2.5	UD

CM 7/21/05

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TRIPBLANKDL

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3439 SAS No.: S3439 SDG No.: S3439

Matrix (soil/water): WATER Lab Sample ID: S3439-05DL

Sample wt/vol: 25.0 (g/mL) mL Lab File ID: VF071316.D

Level (low/med): Date Received: 7/7/2004

% Moisture: not dec. 100 Date Analyzed: 7/13/2004

GC Column: RTX624 ID: 0.53 Dilution Factor: 5.0

Soil Extract Volume: Soil Aliquot Volume:

Number TICS found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND	RT	EST. CONC.	Q

Comments:

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-132-070604

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3439 SAS No.: S3439 SDG No.: S3439

Matrix (soil/water): WATER Lab Sample ID: S3439-06

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071013.D

Level (low/med): Date Received: 7/7/04

% Moisture: not dec. 100 Date Analyzed: 7/10/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
76-13-1	1,1,2-Trichlorotrifluoroethan	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
67-64-1	Acetone	2.5	U
75-15-0	Carbon disulfide	0.50	U
1634-04-4	Methyl tert-butyl Ether	0.50	U
79-20-9	Methyl Acetate	0.50	U
75-09-2	Methylene Chloride	0.27 50	JB U
156-60-5	trans-1,2-Dichloroethene	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
110-82-7	Cyclohexane	0.50	U
78-93-3	2-Butanone	2.5	U
56-23-5	Carbon Tetrachloride	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
74-97-5	Bromochloromethane	0.50	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
108-87-2	Methylcyclohexane	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
123-91-1	1,4-Dioxane	10	U R
75-27-4	Bromodichloromethane	0.50	U
108-10-1	4-Methyl-2-Pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	t-1,3-Dichloropropene	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-132-070604

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3439 SAS No.: S3439 SDG No.: S3439

Matrix (soil/water): WATER Lab Sample ID: S3439-06

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071013.D

Level (low/med): Date Received: 7/7/04

% Moisture: not dec. 100 Date Analyzed: 7/10/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
591-78-6	2-Hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethyl Benzene	0.50	U
136777-61-2	m&p-xylenes	0.50	U
95-47-6	o-xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropylbenzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VE-132-070604

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3439 SAS No.: S3439 SDG No.: S3439

Matrix (soil/water): WATER Lab Sample ID: S3439-06

Sample wt/vol: 25.0 (g/mL) mL Lab File ID: VF071013.D

Level (low/med): Date Received: 7/7/2004

% Moisture: not dec. 100 Date Analyzed: 7/10/2004

GC Column: RTX624 ID: 0.53 Dilution Factor: 1.0

Soil Extract Volume: Soil Aliquot Volume:

Number TICS found: 0 CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND	RT	EST. CONC.	Q

Comments:

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-FB-070604B

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3439 SAS No.: S3439 SDG No.: S3439

Matrix (soil/water): WATER Lab Sample ID: S3439-07

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071012.D

Level (low/med): Date Received: 7/7/04

% Moisture: not dec. 100 Date Analyzed: 7/10/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS No.	Compound	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
76-13-1	1,1,2-Trichlorotrifluoroethan	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
67-64-1	Acetone	2.5	U
75-15-0	Carbon disulfide	0.50	U
1634-04-4	Methyl tert-butyl Ether	0.50	U
79-20-9	Methyl Acetate	0.50	U
75-09-2	Methylene Chloride	0.49	JB
156-60-5	trans-1,2-Dichloroethene	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
110-82-7	Cyclohexane	0.50	U
78-93-3	2-Butanone	2.5	U
56-23-5	Carbon Tetrachloride	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
74-97-5	Bromochloromethane	0.50	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
108-87-2	Methylcyclohexane	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
123-91-1	1,4-Dioxane	10	UJ R
75-27-4	Bromodichloromethane	0.50	U
108-10-1	4-Methyl-2-Pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	t-1,3-Dichloropropene	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U

7/10/04

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-FB-070604B

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3439 SAS No.: S3439 SDG No.: S3439

Matrix (soil/water): WATER Lab Sample ID: S3439-07

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071012.D

Level (low/med): Date Received: 7/7/04

% Moisture: not dec. 100 Date Analyzed: 7/10/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
591-78-6	2-Hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethyl Benzene	0.50	U
136777-61-2	m&p-xylenes	0.50	U
95-47-6	o-xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropylbenzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	U

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VE-FB-070604B

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3439 SAS No.: S3439 SDG No.: S3439

Matrix (soil/water): WATER Lab Sample ID: S3439-07

Sample wt/vol: 25.0 (g/mL) mL Lab File ID: VF071012.D

Level (low/med): Date Received: 7/7/2004

% Moisture: not dec. 100 Date Analyzed: 7/10/2004

GC Column: RTX624 ID: 0.53 Dilution Factor: 1.0

Soil Extract Volume: Soil Aliquot Volume:

Number TICS found: 0 CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND	RT	EST. CONC.	Q

Comments:

Chemtech

Summary Sheet
SW-846

SDG No.: S3439 Order ID: S3439

Client: Tetra Tech FW Inc.. Project ID: FOST03

Sample ID	Client ID	Matrix	Parameter	Concentration	C	RDL	MDL	Units
Client ID:	TRIPBLANK							
S3439-05	TRIPBLANK	WATER	Acetone	29	EB	2.5	1.2	ug/L
S3439-05	TRIPBLANK	WATER	Carbon disulfide	1.4		0.50	0.21	ug/L
S3439-05	TRIPBLANK	WATER	Methylene Chloride	0.70	B	0.50	0.36	ug/L
			Total VOC's:	31.10				
			Total TIC's:	0.00				
			Total VOC's and TIC's:	31.10				
Client ID:	TRIPBLANKDL							
S3439-05DL	TRIPBLANKDL	WATER	Acetone	42	DB	12	6.0	ug/L
S3439-05DL	TRIPBLANKDL	WATER	Methylene Chloride	4.0	DB	2.5	1.8	ug/L
			Total VOC's:	46.00				
			Total TIC's:	0.00				
			Total VOC's and TIC's:	46.00				
Client ID:	VE-129-070604							
S3439-03	VE-129-070604	WATER	1,1,2-Trichlorotrifluoroethane	2.5		0.50	0.23	ug/L
S3439-03	VE-129-070604	WATER	1,1-Dichloroethene	4.1		0.50	0.20	ug/L
S3439-03	VE-129-070604	WATER	Methylene Chloride	0.66	B	0.50	0.36	ug/L
S3439-03	VE-129-070604	WATER	1,1-Dichloroethane	5.9		0.50	0.21	ug/L
S3439-03	VE-129-070604	WATER	cis-1,2-Dichloroethene	38	E	0.50	0.27	ug/L
S3439-03	VE-129-070604	WATER	1,1,1-Trichloroethane	56	E	0.50	0.22	ug/L
S3439-03	VE-129-070604	WATER	Trichloroethene	26	E	0.50	0.19	ug/L
			Total VOC's:	133.16				
			Total TIC's:	0.00				
			Total VOC's and TIC's:	133.16				
Client ID:	VE-129-070604DL							
S3439-03DL	VE-129-070604DL	WATER	1,1-Dichloroethene	3.1	JD	5.0	2.0	ug/L
S3439-03DL	VE-129-070604DL	WATER	Methylene Chloride	5.5	D	5.0	3.6	ug/L
S3439-03DL	VE-129-070604DL	WATER	1,1-Dichloroethane	6.4	D	5.0	2.1	ug/L
S3439-03DL	VE-129-070604DL	WATER	cis-1,2-Dichloroethene	52	D	5.0	2.7	ug/L
S3439-03DL	VE-129-070604DL	WATER	1,1,1-Trichloroethane	37	D	5.0	2.2	ug/L
S3439-03DL	VE-129-070604DL	WATER	Trichloroethene	24	D	5.0	1.9	ug/L
			Total VOC's:	128.00				
			Total TIC's:	0.00				
			Total VOC's and TIC's:	128.00				

Note: The asterisk "*" flag next to a parameter signifies a TIC parameter.

Chemtech

Summary Sheet
SW-846

SDG No.: S3439 Order ID: S3439

Client: Tetra Tech FW Inc.. Project ID: FOST03

Sample ID	Client ID	Matrix	Parameter	Concentration	C	RDL	MDL	Units
Client ID:	VE-129A-070604							
S3439-02	VE-129A-070604	WATER	1,1,2-Trichlorotrifluoroethane	0.75		0.50	0.23	ug/L
S3439-02	VE-129A-070604	WATER	1,1-Dichloroethene	1.9		0.50	0.20	ug/L
S3439-02	VE-129A-070604	WATER	Carbon disulfide	1.2		0.50	0.21	ug/L
S3439-02	VE-129A-070604	WATER	Methylene Chloride	1.5	B	0.50	0.36	ug/L
S3439-02	VE-129A-070604	WATER	1,1-Dichloroethane	9.0		0.50	0.21	ug/L
S3439-02	VE-129A-070604	WATER	Carbon Tetrachloride	1.4		0.50	0.17	ug/L
S3439-02	VE-129A-070604	WATER	cis-1,2-Dichloroethene	20		0.50	0.27	ug/L
S3439-02	VE-129A-070604	WATER	1,1,1-Trichloroethane	8.8		0.50	0.22	ug/L
S3439-02	VE-129A-070604	WATER	Trichloroethene	4.0		0.50	0.19	ug/L
S3439-02	VE-129A-070604	WATER	Ethane, 1,2-dichloro-1,1,2-tri	* 0.57	J	0	0	ug/L
			Total VOC's:	48.55				
			Total TIC's:	0.57				
			Total VOC's and TIC's:	49.12				
Client ID:	VE-132-070604							
S3439-06	VE-132-070604	WATER	Methylene Chloride	0.27	JB	0.50	0.36	ug/L
			Total VOC's:	0.27				
			Total TIC's:	0.00				
			Total VOC's and TIC's:	0.27				
Client ID:	VE-FB-070604							
S3439-01	VE-FB-070604	WATER	Methylene Chloride	0.38	JB	0.50	0.36	ug/L
			Total VOC's:	0.38				
			Total TIC's:	0.00				
			Total VOC's and TIC's:	0.38				
Client ID:	VE-FB-070604B							
S3439-07	VE-FB-070604B	WATER	Methylene Chloride	0.49	JB	0.50	0.36	ug/L
			Total VOC's:	0.49				
			Total TIC's:	0.00				
			Total VOC's and TIC's:	0.49				

Note: The asterisk "*" flag next to a parameter signifies a TIC parameter.

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-FB-070604

Lab Name: Chemtech Consulting Group Contract: Tetra Tech FW Inc..

Lab Code: CHEMED Case No.: S3439 NRAS No.: S3439 SDG NO.: S3439

Matrix (soil/water): WATER Lab Sample ID: S3439-01

Level (low/med): LOW Date Received: 7/7/2004

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	200.000	U		P
7440-36-0	Antimony	60.000	U		P
7440-38-2	Arsenic	10.000	U		P
7440-39-3	Barium	200.000	U	N	P
7440-41-7	Beryllium	5.000	U		P
7440-43-9	Cadmium	5.000	U		P
7440-70-2	Calcium	211.000	J		P
7440-47-3	Chromium	6.220	J		P
7440-48-4	Cobalt	50.000	U		P
7440-50-8	Copper	25.000	U		P
7439-89-6	Iron	51.400	J		P
7439-92-1	Lead	15.600			P
7439-95-4	Magnesium	5000.000	U		P
7439-96-5	Manganese	2.320	J		P
7439-97-6	Mercury	0.200	U		CV
7440-02-0	Nickel	40.000	U		P
7440-09-7	Potassium	5000.000	U		P
7782-49-2	Selenium	35.000	U		P
7440-22-4	Silver	10.000	U	J	P
7440-23-5	Sodium	5000.000	U		P
7440-28-0	Thallium	25.000	U		P
7440-62-2	Vanadium	50.000	U		P
7440-66-6	Zinc	39.200	J		P

CW 1/31/05

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-129A-070604

Lab Name: Chemtech Consulting Group Contract: Tetra Tech FW Inc..

Lab Code: CHEMED Case No.: S3439 NRAS No.: S3439 SDG NO.: S3439

Matrix (soil/water): WATER Lab Sample ID: S3439-02

Level (low/med): LOW Date Received: 7/7/2004

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	151.000	J		P
7440-36-0	Antimony	60.000	U		P
7440-38-2	Arsenic	10.000	U		P
7440-39-3	Barium	64.200	J	N J	P
7440-41-7	Beryllium	5.000	U		P
7440-43-9	Cadmium	5.000	U		P
7440-70-2	Calcium	133000.000			P
7440-47-3	Chromium	16.700			P
7440-48-4	Cobalt	50.000	U		P
7440-50-8	Copper	5.560	J		P
7439-89-6	Iron	10100.000			P
7439-92-1	Lead	~~13.900~~			P
7439-95-4	Magnesium	23200.000			P
7439-96-5	Manganese	405.000			P
7439-97-6	Mercury	0.200	U		CV
7440-02-0	Nickel	15.000	J		P
7440-09-7	Potassium	2670.000	J		P
7782-49-2	Selenium	35.000	U		P
7440-22-4	Silver	10.000	U	J	P
7440-23-5	Sodium	93200.000		J	P
7440-28-0	Thallium	25.000	U		P
7440-62-2	Vanadium	50.000	U		P
7440-66-6	Zinc	30.000	J		P

EP 1/31/05

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments: _____

Summary Sheet
SW-846

SDG No.: S3439 Order ID: S3439

Client: Tetra Tech FW Inc.. Project ID: FOST03

Sample ID	Client ID	Matrix	Parameter	Concentration	C	RDL	MDL	Units
Client ID:	**TRIPBLANK**							
S3439-05	TRIPBLANK	WATER	Acetone	29	EB	2.5	1.2	ug/L
S3439-05	TRIPBLANK	WATER	Carbon disulfide	1.4		0.50	0.21	ug/L
S3439-05	TRIPBLANK	WATER	Methylene Chloride	0.70	B	0.50	0.36	ug/L
			Total VOC's:	31.10				
			Total TIC's:	0.00				
			Total VOC's and TIC's:	31.10				
Client ID:	**TRIPBLANKDL**							
S3439-05DL	TRIPBLANKDL	WATER	Acetone	42	DB	12	6.0	ug/L
S3439-05DL	TRIPBLANKDL	WATER	Methylene Chloride	4.0	DB	2.5	1.8	ug/L
			Total VOC's:	46.00				
			Total TIC's:	0.00				
			Total VOC's and TIC's:	46.00				
Client ID:	**VE-129-070604**							
S3439-03	VE-129-070604	WATER	1,1,2-Trichlorotrifluoroethane	2.5		0.50	0.23	ug/L
S3439-03	VE-129-070604	WATER	1,1-Dichloroethene	4.1		0.50	0.20	ug/L
S3439-03	VE-129-070604	WATER	Methylene Chloride	0.66	B	0.50	0.36	ug/L
S3439-03	VE-129-070604	WATER	1,1-Dichloroethane	5.9		0.50	0.21	ug/L
S3439-03	VE-129-070604	WATER	cis-1,2-Dichloroethene	38	E	0.50	0.27	ug/L
S3439-03	VE-129-070604	WATER	1,1,1-Trichloroethane	56	E	0.50	0.22	ug/L
S3439-03	VE-129-070604	WATER	Trichloroethene	26	E	0.50	0.19	ug/L
			Total VOC's:	133.16				
			Total TIC's:	0.00				
			Total VOC's and TIC's:	133.16				
Client ID:	**VE-129-070604DL**							
S3439-03DL	VE-129-070604DL	WATER	1,1-Dichloroethene	3.1	JD	5.0	2.0	ug/L
S3439-03DL	VE-129-070604DL	WATER	Methylene Chloride	5.5	D	5.0	3.6	ug/L
S3439-03DL	VE-129-070604DL	WATER	1,1-Dichloroethane	6.4	D	5.0	2.1	ug/L
S3439-03DL	VE-129-070604DL	WATER	cis-1,2-Dichloroethene	52	D	5.0	2.7	ug/L
S3439-03DL	VE-129-070604DL	WATER	1,1,1-Trichloroethane	37	D	5.0	2.2	ug/L
S3439-03DL	VE-129-070604DL	WATER	Trichloroethene	24	D	5.0	1.9	ug/L
			Total VOC's:	128.00				
			Total TIC's:	0.00				
			Total VOC's and TIC's:	128.00				

Note: The asterisk "*" flag next to a parameter signifies a TIC parameter.

Chemtech

Summary Sheet
SW-846

SDG No.: S3439 Order ID: S3439

Client: Tetra Tech FW Inc.. Project ID: FOST03

Sample ID	Client ID	Matrix	Parameter	Concentration	C	RDL	MDL	Units
Client ID:	VE-129A-070604							
S3439-02	VE-129A-070604	WATER	1,1,2-Trichlorotrifluoroethane	0.75		0.50	0.23	ug/L
S3439-02	VE-129A-070604	WATER	1,1-Dichloroethene	1.9		0.50	0.20	ug/L
S3439-02	VE-129A-070604	WATER	Carbon disulfide	1.2		0.50	0.21	ug/L
S3439-02	VE-129A-070604	WATER	Methylene Chloride	1.5	B	0.50	0.36	ug/L
S3439-02	VE-129A-070604	WATER	1,1-Dichloroethane	9.0		0.50	0.21	ug/L
S3439-02	VE-129A-070604	WATER	cis-1,2-Dichloroethene	20		0.50	0.27	ug/L
S3439-02	VE-129A-070604	WATER	1,1,1-Trichloroethane	8.8		0.50	0.22	ug/L
S3439-02	VE-129A-070604	WATER	Trichloroethene	4.0		0.50	0.19	ug/L
S3439-02	VE-129A-070604	WATER	Ethane, 1,2-dichloro-1,1,2-tri	* 0.57	J	0	0	ug/L
			Total VOC's:	47.15				
			Total TIC's:	0.57				
			Total VOC's and TIC's:	47.72				
Client ID:	VE-132-070604							
S3439-06	VE-132-070604	WATER	Methylene Chloride	0.27	JB	0.50	0.36	ug/L
			Total VOC's:	0.27				
			Total TIC's:	0.00				
			Total VOC's and TIC's:	0.27				
Client ID:	VE-FB-070604							
S3439-01	VE-FB-070604	WATER	Methylene Chloride	0.38	JB	0.50	0.36	ug/L
			Total VOC's:	0.38				
			Total TIC's:	0.00				
			Total VOC's and TIC's:	0.38				
Client ID:	VE-FB-070604B							
S3439-07	VE-FB-070604B	WATER	Methylene Chloride	0.49	JB	0.50	0.36	ug/L
			Total VOC's:	0.49				
			Total TIC's:	0.00				
			Total VOC's and TIC's:	0.49				

Note: The asterisk "*" flag next to a parameter signifies a TIC parameter.

Hit Summary Sheet
SW-846

SDG No.: S3439 Order ID: S3439

Client: Tetra Tech FW Inc.. Project ID: Vestal Well 1 1 Site

Sample ID	Client ID	Matrix	Parameter	Concentration	C	RDL	MDL	Units
Client ID:	VE-129-070604							
S3439-03	VE-129-070604	WATER	Aluminum	207.000		200.000	48.60	ug/L
S3439-03	VE-129-070604	WATER	Barium	66.200	J	200.000	21.30	ug/L
S3439-03	VE-129-070604	WATER	Calcium	129000.000		5000.00	33.40	ug/L
S3439-03	VE-129-070604	WATER	Chromium	8.700	J	10.000	2.400	ug/L
S3439-03	VE-129-070604	WATER	Iron	1160.000		100.000	35.20	ug/L
S3439-03	VE-129-070604	WATER	Lead	3.360	J	10.000	2.700	ug/L
S3439-03	VE-129-070604	WATER	Magnesium	22400.000		5000.00	39.30	ug/L
S3439-03	VE-129-070604	WATER	Manganese	34.600		15.000	1.300	ug/L
S3439-03	VE-129-070604	WATER	Nickel	7.940	J	40.000	4.900	ug/L
S3439-03	VE-129-070604	WATER	Potassium	2960.000	J	5000.00	595.0	ug/L
S3439-03	VE-129-070604	WATER	Sodium	91400.000		5000.00	400.0	ug/L
S3439-03	VE-129-070604	WATER	Zinc	36.800	J	60.000	3.200	ug/L
Client ID:	VE-129A-070604							
S3439-02	VE-129A-070604	WATER	Aluminum	151.000	J	200.000	48.60	ug/L
S3439-02	VE-129A-070604	WATER	Barium	64.200	J	200.000	21.30	ug/L
S3439-02	VE-129A-070604	WATER	Calcium	133000.000		5000.00	33.40	ug/L
S3439-02	VE-129A-070604	WATER	Chromium	16.700		10.000	2.400	ug/L
S3439-02	VE-129A-070604	WATER	Copper	5.560	J	25.000	4.900	ug/L
S3439-02	VE-129A-070604	WATER	Iron	10100.000		100.000	35.20	ug/L
S3439-02	VE-129A-070604	WATER	Lead	13.900		10.000	2.700	ug/L
S3439-02	VE-129A-070604	WATER	Magnesium	23200.000		5000.00	39.30	ug/L
S3439-02	VE-129A-070604	WATER	Manganese	406.000		15.000	1.300	ug/L
S3439-02	VE-129A-070604	WATER	Nickel	15.000	J	40.000	4.900	ug/L
S3439-02	VE-129A-070604	WATER	Potassium	2670.000	J	5000.00	595.0	ug/L
S3439-02	VE-129A-070604	WATER	Sodium	93200.000		5000.00	400.0	ug/L
S3439-02	VE-129A-070604	WATER	Zinc	30.000	J	60.000	3.200	ug/L
Client ID:	VE-129-D-070604							
S3439-04	VE-129-D-070604	WATER	Calcium	105000.000		5000.00	33.40	ug/L
S3439-04	VE-129-D-070604	WATER	Cobalt	2.760	J	50.000	1.300	ug/L
S3439-04	VE-129-D-070604	WATER	Iron	823.000		100.000	35.20	ug/L
S3439-04	VE-129-D-070604	WATER	Magnesium	17800.000		5000.00	39.30	ug/L
S3439-04	VE-129-D-070604	WATER	Manganese	29.600		15.000	1.300	ug/L
S3439-04	VE-129-D-070604	WATER	Potassium	1950.000	J	5000.00	595.0	ug/L
S3439-04	VE-129-D-070604	WATER	Sodium	40900.000		5000.00	400.0	ug/L
S3439-04	VE-129-D-070604	WATER	Zinc	122.000		60.000	3.200	ug/L

Hit Summary Sheet
SW-846

SDG No.: S3439 Order ID: S3439

Client: -Tetra Tech FW Inc.. Project ID: Vestal Well 1 1 Site

Sample ID	Client ID	Matrix	Parameter	Concentration	C	RDL	MDL	Units
Client ID:	VE-FB-070604							
S3439-01	VE-FB-070604	WATER	Calcium	211.000	J	5000.00	33.40	ug/L
S3439-01	VE-FB-070604	WATER	Chromium	6.220	J	10.000	2.400	ug/L
S3439-01	VE-FB-070604	WATER	Iron	51.400	J	100.000	35.20	ug/L
S3439-01	VE-FB-070604	WATER	Lead	15.600		10.000	2.700	ug/L
S3439-01	VE-FB-070604	WATER	Manganese	2.320	J	15.000	1.300	ug/L
S3439-01	VE-FB-070604	WATER	Zinc	39.200	J	60.000	3.200	ug/L

Subj:	**S3459 and S3439**
Date:	2/3/05 3:30:43 AM Eastern Standard Time
From:	Auseal
To:	mildred@chemtech.net

Mildred,
Please include a revised narrative with a comment addressing analytes that exceeded %RSD and %D criteria (bromomethane and benzene) with resubmittals previously requested for project numbers **S3459** and **S3439**.
Thank you.

Celia Minch
873 Chivas Dr.
Toms River, NJ 08753

TETRA TECH FW, INC

873 Chivas Drive, Toms River, NJ 08753
Tel 732-270-0988 Fax 732-270-1902

FAX

To M. Reyes

Date 2/28/05

Phone 908 - 789 - 8900

No. of pages (including cover sheet) 4

Fax 908 - 789 - 8922

From C. Minch

Mildred,

S3459, S3439, S3352 - metals

The issue regarding the MDL for Hg is still unresolved. Originally Form 2B reported the value of the final CRQL standard as 0.19U with a %R entered and the MDL reported as 0.200 on Form 9 (see copies of both forms). When I questioned the inconsistency, I mentioned that you can not report a value less than the MDL. Since the MDL was reported as 0.07 on Form 9 in S5687, I asked that the MDL be verified and that revised forms be submitted once all information was confirmed. What I received was a revised Form 2B showing a positive value of 0.19, but did not receive a revised Form 9 showing a MDL $\leq$ 0.19. Report the MDL on Form 9 to 2 decimal places to avoid confusion (i.e. 0.19 not 0.2). Please re-evaluate all data and resubmit forms that substantiate the information reported on both of them for each data set. Thank you.

Celia

CHEMTECH 284 Sheffield Street • Mountainside, NJ 07092 Phone: 908.789.8900 Fax: 908.789.8922

ANALYTICAL RESULTS SUMMARY

PROJECT NAME: Vestal Well 1 1 Site

TETRA TECH FW INC..
1000 AMERICAN ROAD
MORRIS PLAINS, NJ 07950
9736308000

CHEMTECH PROJECT NO. S3459
ATTENTION: Heidemarie Roldan

Hit Summary Sheet
SW-846

SDG No.: S3459 Order ID: S3459

Client: Tetra Tech FW Inc.. Project ID: Vestal Well 1 1 Site

Sample ID	Client ID	Matrix	Parameter	Concentration	C	RDL	MDL	Units
Client ID:	VE-124-070704							
S3459-04	VE-124-070704	WATER	Calcium	102000.000		5000.00	33.40	ug/L
S3459-04	VE-124-070704	WATER	Cobalt	2.880	J	50.000	1.300	ug/L
S3459-04	VE-124-070704	WATER	Iron	800.000		100.000	35.20	ug/L
S3459-04	VE-124-070704	WATER	Magnesium	17300.000		5000.00	39.30	ug/L
S3459-04	VE-124-070704	WATER	Manganese	28.100		15.000	1.300	ug/L
S3459-04	VE-124-070704	WATER	Potassium	1970.000	J	5000.00	595.0	ug/L
S3459-04	VE-124-070704	WATER	Sodium	40300.000		5000.00	400.0	ug/L
S3459-04	VE-124-070704	WATER	Zinc	129.000		60.000	3.200	ug/L
Client ID:	VE-FB-070704							
S3459-03	VE-FB-070704	WATER	Arsenic	4.100	J	10.000	2.900	ug/L
S3459-03	VE-FB-070704	WATER	Calcium	211.000	J	5000.00	33.40	ug/L
S3459-03	VE-FB-070704	WATER	Chromium	5.580	J	10.000	2.400	ug/L
S3459-03	VE-FB-070704	WATER	Iron	51.400	J	100.000	35.20	ug/L
S3459-03	VE-FB-070704	WATER	Manganese	2.120	J	15.000	1.300	ug/L
S3459-03	VE-FB-070704	WATER	Zinc	28.100	J	60.000	3.200	ug/L

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-132A-070604

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3459 SAS No.: S3459 SDG No.: S3459

Matrix (soil/water): WATER Lab Sample ID: S3459-01

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071217.D

Level (low/med): - Date Received: 7/8/04

% Moisture: not dec. 100 Date Analyzed: 7/12/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl chloride	0.50	U
74-83-9	Bromomethane	0.50	U J
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
76-13-1	1,1,2-Trichlorotrifluoroethan	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
67-64-1	Acetone	2.4	J J J
75-15-0	Carbon disulfide	0.50	U
1634-04-4	Methyl tert-butyl Ether	0.50	U
79-20-9	Methyl Acetate	0.50	U
75-09-2	Methylene Chloride	0.50 0.48	J J
156-60-5	trans-1,2-Dichloroethene	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
110-82-7	Cyclohexane	0.50	U
78-93-3	2-Butanone	2.5	U
56-23-5	Carbon Tetrachloride	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
74-97-5	Bromochloromethane	0.50	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
108-87-2	Methylcyclohexane	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
123-91-1	1,4-Dioxane	10	U R
75-27-4	Bromodichloromethane	0.50	U
108-10-1	4-Methyl-2-Pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	t-1,3-Dichloropropene	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-132A-070604

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3459 SAS No.: S3459 SDG No.: S3459

Matrix (soil/water): WATER Lab Sample ID: S3459-01

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071217.D

Level (low/med): Date Received: 7/8/04

% Moisture: not dec. 100 Date Analyzed: 7/12/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
79-00-5	1,1,2-Trichloroethane	0.50	U
591-78-6	2-Hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethyl Benzene	0.50	U
136777-61-2	m&p-xylenes	0.50	U
95-47-6	o-xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropylbenzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VE-132A-070604

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3459 SAS No.: S3459 SDG No.: S3459

Matrix (soil/water): WATER Lab Sample ID: S3459-01

Sample wt/vol: 25.0 (g/mL) mL Lab File ID: VF071217.D

Level (low/med): Date Received: 7/8/04

% Moisture: not dec. 100 Date Analyzed: 7/12/04

GC Column: RTX624 ID: 0.53 Dilution Factor: 1.0

Soil Extract Volume: Soil Aliquot Volume:

Number TICS found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND	RT	EST. CONC.	Q

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

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Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3459 SAS No.: S3459 SDG No.: S3459

Matrix (soil/water): WATER Lab Sample ID: S3459-02

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071305.D

Level (low/med): Date Received: 7/8/04

% Moisture: not dec. 100 Date Analyzed: 7/13/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS No.	Compound	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
76-13-1	1,1,2-Trichlorotrifluoroethan	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
67-64-1	Acetone	5.8	B
75-15-0	Carbon disulfide	0.50	U
1634-04-4	Methyl tert-butyl Ether	0.50	U
79-20-9	Methyl Acetate	0.50	U
75-09-2	Methylene Chloride	3.2	B
156-60-5	trans-1,2-Dichloroethene	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
110-82-7	Cyclohexane	0.50	U
78-93-3	2-Butanone	2.5	U
56-23-5	Carbon Tetrachloride	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
74-97-5	Bromochloromethane	0.50	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
108-87-2	Methylcyclohexane	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
123-91-1	1,4-Dioxane	10	U
75-27-4	Bromodichloromethane	0.50	U
108-10-1	4-Methyl-2-Pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	t-1,3-Dichloropropene	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIPBLANK

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3459 SAS No.: S3459 SDG No.: S3459

Matrix (soil/water): WATER Lab Sample ID: S3459-02

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071305.D

Level (low/med): Date Received: 7/8/04

% Moisture: not dec. 100 Date Analyzed: 7/13/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
79-00-5	1,1,2-Trichloroethane	0.50	U
591-78-6	2-Hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethyl Benzene	0.50	U
136777-61-2	m&p-xylenes	0.50	U
95-47-6	o-xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropylbenzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TRIPBLANK

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3459 SAS No.: S3459 SDG No.: S3459

Matrix (soil/water): WATER Lab Sample ID: S3459-02

Sample wt/vol: 25.0 (g/mL) mL Lab File ID: VF071305.D

Level (low/med): Date Received: 7/8/04

% Moisture: not dec. 100 Date Analyzed: 7/13/04

GC Column: RTX624 ID: 0.53 Dilution Factor: 1.0

Soil Extract Volume: Soil Aliquot Volume:

Number TICS found: 0 CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND	RT	EST. CONC.	Q

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-FB-070704

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3459 SAS No.: S3459 SDG No.: S3459

Matrix (soil/water): WATER Lab Sample ID: S3459-03

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071215.D

Level (low/med): Date Received: 7/8/04

% Moisture: not dec. 100 Date Analyzed: 7/12/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS No.	Compound	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl chloride	0.50	U
74-83-9	Bromomethane	0.50	U J
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
76-13-1	1,1,2-Trichlorotrifluoroethan	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
67-64-1	Acetone	2.5	U
75-15-0	Carbon disulfide	0.50	U
1634-04-4	Methyl tert-butyl Ether	0.50	U
79-20-9	Methyl Acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
110-82-7	Cyclohexane	0.50	U
78-93-3	2-Butanone	2.5	U
56-23-5	Carbon Tetrachloride	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
74-97-5	Bromochloromethane	0.50	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
108-87-2	Methylcyclohexane	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
123-91-1	1,4-Dioxane	10	U R
75-27-4	Bromodichloromethane	0.50	U
108-10-1	4-Methyl-2-Pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	t-1,3-Dichloropropene	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U

CW 7/12/04

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-FB-070704

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3459 SAS No.: S3459 SDG No.: S3459

Matrix (soil/water): WATER Lab Sample ID: S3459-03

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071215.D

Level (low/med): Date Received: 7/8/04

% Moisture: not dec. 100 Date Analyzed: 7/12/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
79-00-5	1,1,2-Trichloroethane	0.50	U
591-78-6	2-Hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethyl Benzene	0.50	U
136777-61-2	m&p-xylenes	0.50	U
95-47-6	o-xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropylbenzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VE-FB-070704

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3459 SAS No.: S3459 SDG No.: S3459

Matrix (soil/water): WATER Lab Sample ID: S3459-03

Sample wt/vol: 25.0 (g/mL) mL Lab File ID: VF071215.D

Level (low/med): Date Received: 7/8/04

% Moisture: not dec. 100 Date Analyzed: 7/12/04

GC Column: RTX624 ID: 0.53 Dilution Factor: 1.0

Soil Extract Volume: Soil Aliquot Volume:

Number TICS found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND	RT	EST. CONC.	Q

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-124-070704

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3459 SAS No.: S3459 SDG No.: S3459

Matrix (soil/water): WATER Lab Sample ID: S3459-04

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071306.D

Level (low/med): Date Received: 7/8/04

% Moisture: not dec. 100 Date Analyzed: 7/13/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl chloride	0.50	U
74-83-9	Bromomethane	0.50	U J
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
76-13-1	1,1,2-Trichlorotrifluoroethan	0.50	U
75-35-4	1,1-Dichloroethene	0.24	J
67-64-1	Acetone	2.5 ~~1.9~~	JB UJ
75-15-0	Carbon disulfide	0.50	U
1634-04-4	Methyl tert-butyl Ether	0.50	U
79-20-9	Methyl Acetate	0.50	U
75-09-2	Methylene Chloride	0.83	B UJ
156-60-5	trans-1,2-Dichloroethene	0.50	U
75-34-3	1,1-Dichloroethane	0.90	
110-82-7	Cyclohexane	0.50	U
78-93-3	2-Butanone	2.5	U
56-23-5	Carbon Tetrachloride	0.50	U
156-59-2	cis-1,2-Dichloroethene	1.1	
74-97-5	Bromochloromethane	0.50	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	3.6	
108-87-2	Methylcyclohexane	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
123-91-1	1,4-Dioxane	10	U R
75-27-4	Bromodichloromethane	0.50	U
108-10-1	4-Methyl-2-Pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	t-1,3-Dichloropropene	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-124-070704

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3459 SAS No.: S3459 SDG No.: S3459

Matrix (soil/water): WATER Lab Sample ID: S3459-04

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071306.D

Level (low/med): Date Received: 7/8/04

% Moisture: not dec. 100 Date Analyzed: 7/13/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
79-00-5	1,1,2-Trichloroethane	0.50	U
591-78-6	2-Hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethyl Benzene	0.50	U
136777-61-2	m&p-xylenes	0.50	U
95-47-6	o-xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropylbenzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	U

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VE-124-070704

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3459 SAS No.: S3459 SDG No.: S3459

Matrix (soil/water): WATER Lab Sample ID: S3459-04

Sample wt/vol: 25.0 (g/mL) mL Lab File ID: VF071306.D

Level (low/med): Date Received: 7/8/04

% Moisture: not dec. 100 Date Analyzed: 7/13/04

GC Column: RTX624 ID: 0.53 Dilution Factor: 1.0

Soil Extract Volume: Soil Aliquot Volume:

Number TICS found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND	RT	EST. CONC.	Q

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-125-070704

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3459 SAS No.: S3459 SDG No.: S3459

Matrix (soil/water): WATER Lab Sample ID: S3459-07

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071307.D

Level (low/med): Date Received: 7/8/04

% Moisture: not dec. 100 Date Analyzed: 7/13/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl chloride	0.50	U
74-83-9	Bromomethane	0.50	U J
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
76-13-1	1,1,2-Trichlorotrifluoroethan	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
67-64-1	Acetone	2.5	U
75-15-0	Carbon disulfide	0.38	J
1634-04-4	Methyl tert-butyl Ether	0.50	U
79-20-9	Methyl Acetate	0.50	U
75-09-2	Methylene Chloride	0.76	B U J
156-60-5	trans-1,2-Dichloroethene	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
110-82-7	Cyclohexane	0.50	U
78-93-3	2-Butanone	2.5	U
56-23-5	Carbon Tetrachloride	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
74-97-5	Bromochloromethane	0.50	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
108-87-2	Methylcyclohexane	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
123-91-1	1,4-Dioxane	10	U R
75-27-4	Bromodichloromethane	0.50	U
108-10-1	4-Methyl-2-Pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	t-1,3-Dichloropropene	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-125-070704

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3459 SAS No.: S3459 SDG No.: S3459

Matrix (soil/water): WATER Lab Sample ID: S3459-07

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071307.D

Level (low/med): Date Received: 7/8/04

% Moisture: not dec. 100 Date Analyzed: 7/13/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
79-00-5	1,1,2-Trichloroethane	0.50	U
591-78-6	2-Hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethyl Benzene	0.50	U
136777-61-2	m&p-xylenes	0.50	U
95-47-6	o-xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropylbenzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VE-125-070704

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3459 SAS No.: S3459 SDG No.: S3459

Matrix (soil/water): WATER Lab Sample ID: S3459-07

Sample wt/vol: 25.0 (g/mL) mL Lab File ID: VF071307.D

Level (low/med): Date Received: 7/8/04

% Moisture: not dec. 100 Date Analyzed: 7/13/04

GC Column: RTX624 ID: 0.53 Dilution Factor: 1.0

Soil Extract Volume: Soil Aliquot Volume:

Number TICS found: 0 CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND	RT	EST. CONC.	Q

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-125A-070704

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3459 SAS No.: S3459 SDG No.: S3459

Matrix (soil/water): WATER Lab Sample ID: S3459-08

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071308.D

Level (low/med): Date Received: 7/8/04

% Moisture: not dec. 100 Date Analyzed: 7/13/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl chloride	0.50	U
74-83-9	Bromomethane	0.50	U J
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
76-13-1	1,1,2-Trichlorotrifluoroethan	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
67-64-1	Acetone	2.5	U
75-15-0	Carbon disulfide	0.50	U
1634-04-4	Methyl tert-butyl Ether	0.50	U
79-20-9	Methyl Acetate	0.50	U
75-09-2	Methylene Chloride	0.81	B UJ
156-60-5	trans-1,2-Dichloroethene	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
110-82-7	Cyclohexane	0.50	U
78-93-3	2-Butanone	2.5	U
56-23-5	Carbon Tetrachloride	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
74-97-5	Bromochloromethane	0.50	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.49	J
108-87-2	Methylcyclohexane	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
123-91-1	1,4-Dioxane	10	U
75-27-4	Bromodichloromethane	0.50	U
108-10-1	4-Methyl-2-Pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	t-1,3-Dichloropropene	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-125A-070704

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3459 SAS No.: S3459 SDG No.: S3459

Matrix (soil/water): WATER Lab Sample ID: S3459-08

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071308.D

Level (low/med): Date Received: 7/8/04

% Moisture: not dec. 100 Date Analyzed: 7/13/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
79-00-5	1,1,2-Trichloroethane	0.50	U
591-78-6	2-Hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethyl Benzene	0.50	U
136777-61-2	m&p-xylenes	0.50	U
95-47-6	o-xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropylbenzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VE-125A-070704

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3459 SAS No.: S3459 SDG No.: S3459

Matrix (soil/water): WATER Lab Sample ID: S3459-08

Sample wt/vol: 25.0 (g/mL) mL Lab File ID: VF071308.D

Level (low/med): Date Received: 7/8/04

% Moisture: not dec. 100 Date Analyzed: 7/13/04

GC Column: RTX624 ID: 0.53 Dilution Factor: 1.0

Soil Extract Volume: Soil Aliquot Volume:

Number TICS found: 0 CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND	RT	EST. CONC.	Q

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-EB42-070704

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3459 SAS No.: S3459 SDG No.: S3459

Matrix (soil/water): WATER Lab Sample ID: S3459-09

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071216.D

Level (low/med): Date Received: 7/8/04

% Moisture: not dec. 100 Date Analyzed: 7/12/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS No.	Compound	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
76-13-1	1,1,2-Trichlorotrifluoroethan	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
67-64-1	Acetone	2.5	U
75-15-0	Carbon disulfide	0.50	U
1634-04-4	Methyl tert-butyl Ether	0.50	U
79-20-9	Methyl Acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
110-82-7	Cyclohexane	0.50	U
78-93-3	2-Butanone	2.5	U
56-23-5	Carbon Tetrachloride	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
74-97-5	Bromochloromethane	0.50	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.67	
108-87-2	Methylcyclohexane	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
123-91-1	1,4-Dioxane	10	U
75-27-4	Bromodichloromethane	0.50	U
108-10-1	4-Methyl-2-Pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	t-1,3-Dichloropropene	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-EB42-070704

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3459 SAS No.: S3459 SDG No.: S3459

Matrix (soil/water): WATER Lab Sample ID: S3459-09

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071216.D

Level (low/med): Date Received: 7/8/04

% Moisture: not dec. 100 Date Analyzed: 7/12/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS No.	Compound	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
79-00-5	1,1,2-Trichloroethane	0.50	U
591-78-6	2-Hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethyl Benzene	0.50	U
136777-61-2	m&p-xylenes	0.50	U
95-47-6	o-xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropylbenzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VE-EB42-070704

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3459 SAS No.: S3459 SDG No.: S3459

Matrix (soil/water): WATER Lab Sample ID: S3459-09

Sample wt/vol: 25.0 (g/mL) mL Lab File ID: VF071216.D

Level (low/med): Date Received: 7/8/04

% Moisture: not dec. 100 Date Analyzed: 7/12/04

GC Column: RTX624 ID: 0.53 Dilution Factor: 1.0

Soil Extract Volume: Soil Aliquot Volume:

Number TICS found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND	RT	EST. CONC.	Q

Comments:

IA-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-FB-070704

Lab Name: Chemtech Consulting Group Contract: Tetra Tech FW Inc..

Lab Code: CHEMED Case No.: S3459 NRAS No.: S3459 SDG NO.: S3459

Matrix (soil/water): WATER Lab Sample ID: S3459-03

Level (low/med): LOW Date Received: 7/8/2004

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	200.000	U		P
7440-36-0	Antimony	60.000	U		P
7440-38-2	Arsenic	4.100	J		P
7440-39-3	Barium	200.000	U	N	P
7440-41-7	Beryllium	5.000	U		P
7440-43-9	Cadmium	5.000	U		P
7440-70-2	Calcium	211.000	J		P
7440-47-3	Chromium	5.580	J		P
7440-48-4	Cobalt	50.000	U		P
7440-50-8	Copper	25.000	U		P
7439-89-6	Iron	51.400	J		P
7439-92-1	Lead	10.000	U		P
7439-95-4	Magnesium	5000.000	U		P
7439-96-5	Manganese	2.120	J		P
7439-97-6	Mercury	0.200	U		CV
7440-02-0	Nickel	40.000	U		P
7440-09-7	Potassium	5000.000	U		P
7782-49-2	Selenium	35.000	U		P
7440-22-4	Silver	10.000	U	J	P
7440-23-5	Sodium	5000.000	U		P
7440-28-0	Thallium	25.000	U		P
7440-62-2	Vanadium	50.000	U		P
7440-66-6	Zinc	28.100	J		P

Color Before: _____ Clarity Before: _____ Texture: _____

Color After: _____ Clarity After: _____ Artifacts: _____

Comments: _____

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-124-070704

Lab Name: Chemtech Consulting Group Contract: Tetra Tech FW Inc..

Lab Code: CHEMED Case No.: S3459 NRAS No.: S3459 SDG NO.: S3459

Matrix (soil/water): WATER Lab Sample ID: S3459-04

Level (low/med): LOW Date Received: 7/8/2004

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	200.000	U		P
7440-36-0	Antimony	60.000	U		P
7440-38-2	Arsenic	10.000	U		P
7440-39-3	Barium	200.000	U	N	P
7440-41-7	Beryllium	5.000	U		P
7440-43-9	Cadmium	5.000	U		P
7440-70-2	Calcium	102000.000			P
7440-47-3	Chromium	10.000	U		P
7440-48-4	Cobalt	2.880	J		P
7440-50-8	Copper	25.000	U		P
7439-89-6	Iron	800.000			P
7439-92-1	Lead	10.000	U		P
7439-95-4	Magnesium	17300.000			P
7439-96-5	Manganese	28.100			P
7439-97-6	Mercury	0.200	U		CV
7440-02-0	Nickel	40.000	U		P
7440-09-7	Potassium	1970.000	J		P
7782-49-2	Selenium	35.000	U		P
7440-22-4	Silver	10.000	U	J	P
7440-23-5	Sodium	40300.000		J	P
7440-28-0	Thallium	25.000	U		P
7440-62-2	Vanadium	50.000	U		P
7440-66-6	Zinc	129.000			P

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:

CLP DATA ASSESSMENT

Functional Guidelines for Evaluating Organic Analysis

WORK ORDER NO.: S3477

LABORATORY: Chemtech SITE: Vestal Well

DATA ASSESSMENT

The current SOP No. HW-13 (Revision 3), July 2001 for Organic Data Review for Low Concentration Water has been applied.

All data were found to be valid and acceptable except those analytes which have been rejected, "R" (unusable). Due to various QC problems some analytes may have been qualified with a "J" (estimated), "N" (presumptive evidence for the presence of the material), "U" (non-detect), or "JN" (presumptive evidence for the presence of the material at an estimated value) flag. All action is detailed on the attached sheets.

The "R" flag means that the associated value is unusable. In other words, significant data bias is evident and the reported analyte concentration is unreliable.

Reviewer's Signature: Cecelia A. Munch Date: 2/22/05

Verified By: _____ Date: _____

CLP DATA ASSESSMENT

1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as estimated, "J", or unusable, "R", if the holding times are grossly exceeded.

The following action was taken in the samples and analytes shown due to excessive holding time.

All samples were analyzed within specified holding times, therefore, no action was required.

2. SURROGATES:

All samples are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate concentrations were outside contract specifications, qualifications were applied to the samples and analytes as shown below.

The positive result for trans-1,2-dichloroethene was estimated (J) in sample VE-S11-070804 due to high recovery of the associated surrogate. Since the value for cis-1,2-dichloroethene was obtained from the dilution analysis, no action was taken.

CLP DATA ASSESSMENT

3. MATRIX SPIKE/SPIKE DUPLICATE, MS/MSD:

The MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD may be used in conjunction with other QC criteria for additional qualification of data.

Spike analyses were not designated on a sample from this SDG. The MS/MSD reported were satisfactory.

4. BLANK CONTAMINATION:

Quality assurance (QA) blanks, i.e., method, trip, field, or rinse blanks are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field and rinse blanks measure cross-contamination of samples during field operations. If the concentration of the analyte is less than the blank contaminant level (2 or 10 times for common contaminants), the analytes are qualified as non-detects, "U". The following analytes in the sample shown were qualified with "U" for these reasons:

A) Method blank contamination:
acetone: VE-S7-070804DL, VE-S2-070804DL, VE-S11-070804DL

B) Field or rinse blank contamination:

C) Trip blank contamination:
methylene chloride: VE-S7-070804, VE-S7-070804DL, VE-S2-070804, VE-S2-070804DL, VE-S11-070804, VE-S11-070804DL, VE-S6-070804, VE-S6-070804DL, VE-EB31-070804, VE-EB31-070804DL, VE-EB33-070804DL*

* the methylene chloride reported in this sample is most likely due to laboratory contamination even though the associated method blank was clean, since methylene chloride was not reported in the original sample.

CLP DATA ASSESSMENT

5. MASS SPECTROMETER TUNING:

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances. The tuning standard for volatile organics is (BFB) Bromofluorobenzene and for semi-volatiles Decafluorotriphenyl-phosphine (DFTPP).

If the mass calibration is in error, all associated data will be classified as unusable "R".

All criteria were met.

CLP DATA ASSESSMENT

6. CALIBRATION:

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

A) Response Factor GC/MS:

The response factor measures the instrument's response to specific chemical compounds. The response factor for the Target Compound List (TCL) must be ≥ 0.05 ($\geq$ 0.01 for poor performers) in both initial and continuing calibrations. A value < 0.05, $<$ 0.01 for poor performers, indicates a serious detection and quantitation problem (poor sensitivity). Analytes detected in the sample will be qualified as estimated, "J". All non-detects for that compound will be qualified as unusable (R).

1,4-Dioxane was qualified as unusable (R) in all samples due to low response factors in the initial and continuing calibration standards.

CLP DATA ASSESSMENT

7. CALIBRATION:

B) Percent Relative Standard Deviation (%RSD) and Percent Difference (%D):

Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor of the continuing calibration check to the mean response factor (RRF) from the initial calibration. Percent D is a measure of the instrument's daily performance. Percent RSD and %D must be $\leq$ 30%, $\leq$ 50% for the poor performers. A value outside of these limits indicates potential detection and quantitation errors. For these reasons, all positive results are flagged as estimated, "J" and non-detects are flagged "UJ". If %RSD and %D grossly exceed QC criteria, non-detects data may be qualified "R".

For the PEST/PCB fraction, if %RSD exceeds 20% for all analytes except for the two surrogates (which must not exceed 30% RSD), qualify all associated positive results "J" and non-detects "UJ".

The following analytes in the sample shown were qualified for %RSD and %D:

The positive results for the following compounds were estimated in the samples indicated for exceeding %RSD OR %D criteria.
%RSD:
methylene chloride: VE-S7-070804, VE-S7-070804DL, VE-S2-070804, VE-S2-070804DL, VE-S11-070804, VE-S11-070804DL, VE-S6-070804, VE-S6-070804DL, VE-EB31-070804, VE-EB31-070804DL, VE-EB33-070804DL, Trip Blank
acetone: VE-S7-070804DL, VE-S2-070804DL, VE-S11-070804DL, TRIP BLANK
benzene: VE-S2-070804, VE-S11-070804

%D:
bromomethane: all samples
chloromethane: VE-FB-070804, VE-EB31-070804, VE-EB33-070804

CLP DATA ASSESSMENT

8. INTERNAL STANDARDS PERFORMANCE GC/MS:

Internal standards (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during every experimental run. The internal standard area count must fall within the limits of ± 40% of the associated continuing calibration standard. The retention time of the internal standard must not vary more than ±30 seconds from the associated continuing calibration standard. If the area count is outside the (± 40%) range of the associated standard, all of the positive results for compounds quantitated using that IS are qualified as estimated, "J", and all non-detects as "UJ", or "R" if there is a severe loss of sensitivity.

If an internal standard retention time varies by more than 30 seconds, the reviewer will use professional judgement to determine either partial or total rejection of the data for that sample fraction.

All internal standards were within limits.

CLP DATA ASSESSMENT

9. COMPOUND IDENTIFICATION:

A) Volatile and Semi-Volatile Fractions:

TCL compounds are identified on the GC/MS by using the analyte's relative retention time (RRT) and by comparison to the ion spectra obtained from known standards. For the results to be a positive hit, the sample peak must be within ± 0.06 RRT units of the standard compound and have an ion spectra which has a ratio of the primary and secondary m/e intensities within 20% of that in the standard compound. For the tentatively identified compounds (TIC) the ion spectra must match accurately. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications.

N/A

B) Pesticide Fraction:

The retention times of reported compounds must fall within the calculated retention time (RT) windows for the two chromatographic columns and a GC/MS confirmation is required if the concentration exceeds 10ng/ml in the final sample extract.

N/A

CLP DATA ASSESSMENT

10. CONTRACT PROBLEMS NON-COMPLIANCE:

11. FIELD DOCUMENTATION:

12. OTHER PROBLEMS:

13. This package contains re-extractions, reanalyses or dilutions. Upon reviewing the QA results, the following Form 1(s) are identified as not to be used.

VE-EB31-070804DL	(VF071208)
VE-S6-070804DL	(VF071310)
VE-S7-070804DL	(VF071313)
VE-S2-070804DL	(VF071314)
VE-S11-070804DL	(VF071312)
VE-EB33-070804DL	(VF071207)

DPO: [ ]ACTION [ ]FYI REGION II

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY

Work Order No.: S3477

LABORATORY: Chemtech DATA USER: EPA Region II

SOW: OLM03.2 REVIEW COMPLETION DATE: 2/22/05

NO. OF SAMPLES: 8 WATER ____ SOIL ____ OTHER

REVIEWER: [ ] ESD [ ] ESAT [ ] OTHER, CONTRACTOR TtFW

QC ITEM	VOA	BNA	PCB		
HOLDING TIMES	O				
GC-MS PERFORMANCE	O				
INITIAL CALIBRATIONS	X				
CONTINUING CALIBRATIONS	X				
FIELD BLANKS(F = N/A)	O				
LABORATORY BLANKS	O				
SURROGATES	O				
MATRIX SPIKE/DUPLICATES	O				
QC SAMPLES(LCS, PVS)	N/A				
INTERNAL STANDARDS	O				
COMPOUND IDENTIFICATION	O				
COMPOUND QUANTITATION	O				
SYSTEM PERFORMANCE	O				
OVERALL ASSESSMENT	M				

O = No problems or minor problems that do not affect data usability.
X = No more than about 5% of the data points are qualified as either estimated or unusable.
M = More than about 5% of the data points are qualified as either estimated or unusable.
Z = More than about 5% of the data points are qualified as unusable.

DPO ACTION ITEMS:

AREAS OF CONCERN:

DATA REJECTION SUMMARY

Type of Review: Level 4 Date: 2/22/05 Work Order No.: S3477

Site Name: Vestal Well Lab Name: Chemtech

Reviewer's Initials: CMC Number of Samples: 8W

Analytes Rejected Due to Exceeding Review Criteria For:

No. of Compounds/No. of Fractions (Samples)

	Surrogates	Holding Time	Calibration	Contamination	ID	Internal Standards	Other	Total # of Samples	Total # Rejected/Total # in All Samples
VOA(52)	0	0	14	0	0	0		14	14 / 728 = 2 %
ACID(14)									/ = %
B/N(51)									/ = %
PEST(21)									/ = %
PCB(7)									/ = %

NOTE: ASTERISK (*) INDICATES ADDITIONAL EXCEEDANCES OF REVIEW CRITERIA.

Analytes Estimated Due to Exceeding Review Criteria For:

No. of Compounds/No. of Fractions (Samples)

	Surrogates	Holding Time	Calibration	Contamination	ID	Internal Standards	Other	Total # of Samples	Total # Estimated/Total # in All Samples
VOA(52)	1	0	35	14	0	0		14	50 / 728 = 7 %
ACID(14)									/ = %
B/N(51)									/ = %
PEST(21)									/ = %
PCB(7)									/ = %

NOTE: ASTERISK (*) INDICATES ADDITIONAL EXCEEDANCES OF REVIEW CRITERIA.

Subj: **Vestal S3477**
Date: 2/3/05 5:33:13 PM Eastern Standard Time
From: Auseal
To: mildred@chemtech.net

Mildred,
The following issues require resolution before I can complete my review of the Vestal Well data package identified below.

S3477
Volatiles
1. Please revise and resubmit 2 copies of all field and QC (MS/MSD, LCS, blanks) sample summaries (Form 1) with 1,1,2-trichloro-1,2,2-trifluoroethane added to the target list. Somehow it was omitted in this package.
2. All results reported on all Form 1 summaries are high by a factor of 5. Revise and resubmit for all analyses.
3. Resubmit internal standard summaries with the correct limits identified (± 40%). they are presently listed as -50%/+100%.
4. Resubmit Form 1E for file VF071209 with TICs deleted.
5. Resubmit a revised narrative including a comment addressing analytes that exceeded %RSD and %D criteria and surrogate outlier in sample VE-S11-070804.

Please forward a hardcopy of all resubmittals to my attention by 2/10/05.
Thank you.
Celia Minch
873 Chivas Dr.
Toms River, NJ 08753

TETRA TECH FW, INC

873 Chivas Drive, Toms River, NJ 08753
Tel 732-270-0988 **Fax** 732-270-1902

FAX

To M. Reyes

Phone 908 - 789 - 8900

Fax 908 - 789 - 8922

Date 2/22/05

No. of pages (including cover sheet) 1

From C. Minch

Mildred,

S3477 - volatiles

Revise and resubmit all sample TIC summaries (Form 1E). Values are still high by a factor of 5.
Thank you.

Celia

TETRA TECH FW, INC

873 Chivas Drive, Toms River, NJ 08753
Tel 732-270-0988 **Fax** 732-270-1902

FAX

To M. Reves

Date 2/28/05

Phone 908 - 789 - 8900

No. of pages (including cover sheet) 1

Fax 908 - 789 - 8922

From C. Minch

Mildred,

S3477

Even though the TICs were originally reported in error for sample –03, a revised Form 1E is still required to indicate that no TICs were found in the sample.
Thank you.

Celia

CHEMTECH 284 Sheffield Street • Mountainside, NJ 07092 Phone: 908.789.8900 Fax: 908.789.8922

ANALYTICAL RESULTS SUMMARY

PROJECT NAME: Vestal Well 1 1 Site

TETRA TECH FW INC..
1000 AMERICAN ROAD
MORRIS PLAINS, NJ 07950
9736308000

CHEMTECH PROJECT NO. S3477
ATTENTION: Heidemarie Roldan

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-FB-070804

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-01

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071112.D

Level (low/med): Date Received: 7/9/04

% Moisture: not dec. 100 Date Analyzed: 7/12/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U J
75-01-4	Vinyl chloride	0.50	U
74-83-9	Bromomethane	0.50	U J
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
76-13-1	1,1,2-Trichlorotrifluoroethan	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
67-64-1	Acetone	2.5	U
75-15-0	Carbon disulfide	0.50	U
1634-04-4	Methyl tert-butyl Ether	0.50	U
79-20-9	Methyl Acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
110-82-7	Cyclohexane	0.50	U
78-93-3	2-Butanone	2.5	U
56-23-5	Carbon Tetrachloride	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
74-97-5	Bromochloromethane	0.50	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
108-87-2	Methylcyclohexane	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
123-91-1	1,4-Dioxane	10	U R
75-27-4	Bromodichloromethane	0.50	U
108-10-1	4-Methyl-2-Pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	t-1,3-Dichloropropene	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-FB-070804

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-01

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071112.D

Level (low/med): Date Received: 7/9/04

% Moisture: not dec. 100 Date Analyzed: 7/12/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
79-00-5	1,1,2-Trichloroethane	0.50	U
591-78-6	2-Hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethyl Benzene	0.50	U
136777-61-2	m&p-xylenes	0.50	U
95-47-6	o-xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropylbenzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VE-FB-070804

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-01

Sample wt/vol: 25.0 (g/mL) mL Lab File ID: VF071112.D

Level (low/med): Date Received: 7/9/2004

% Moisture: not dec. 100 Date Analyzed: 7/12/2004

GC Column: RTX624 ID: 0.53 Dilution Factor: 1.0

Soil Extract Volume: Soil Aliquot Volume:

Number TICS found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NO.	COMPOUND	RT	EST. CONC.	Q
1.	67630	Isopropyl Alcohol	4.19	0.93	J

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-EB31-070804

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-02

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071114.D

Level (low/med): USE Date Received: 7/9/04

% Moisture: not dec. 100 Date Analyzed: 7/12/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS No.	Compound	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U J
75-01-4	Vinyl chloride	20	
74-83-9	Bromomethane	0.50	U J
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
76-13-1	1,1,2-Trichlorotrifluoroethan	12	
75-35-4	1,1-Dichloroethene	0.50	U
67-64-1	Acetone	2.5	U
75-15-0	Carbon disulfide	0.50	U
1634-04-4	Methyl tert-butyl Ether	0.42	J
79-20-9	Methyl Acetate	0.50	U
75-09-2	Methylene Chloride	0.50 ~~0.34~~	JB J
156-60-5	trans-1,2-Dichloroethene	1.8	
75-34-3	1,1-Dichloroethane	4.1	
110-82-7	Cyclohexane	0.50	U
78-93-3	2-Butanone	2.5	U
56-23-5	Carbon Tetrachloride	0.50	U
156-59-2	cis-1,2-Dichloroethene	~~75 J2~~ *	E
74-97-5	Bromochloromethane	0.50	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	J
108-87-2	Methylcyclohexane	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	4.1	
78-87-5	1,2-Dichloropropane	0.50	U
123-91-1	1,4-Dioxane	10	U R
75-27-4	Bromodichloromethane	0.50	U
108-10-1	4-Methyl-2-Pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	t-1,3-Dichloropropene	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U

* FROM DILUTION

CAR 8/22/05

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-EB31-070804

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-02

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071114.D

Level (low/med): USE Date Received: 7/9/04

% Moisture: not dec. 100 Date Analyzed: 7/12/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
79-00-5	1,1,2-Trichloroethane	0.50	U
591-78-6	2-Hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.50	U
127-18-4	Tetrachloroethene	0.51	
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethyl Benzene	0.55	
136777-61-2	m&p-xylenes	0.50	U
95-47-6	o-xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropylbenzene	0.92	
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	U

CW 3/22/05

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VE-EB31-070804

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-02

Sample wt/vol: 25.0 (g/mL) mL Lab File ID: VF071114.D

Level (low/med): Date Received: 7/9/2004

% Moisture: not dec. 100 Date Analyzed: 7/12/2004

GC Column: RTX624 ID: 0.53 Dilution Factor: 1.0

Soil Extract Volume: Soil Aliquot Volume:

Number TICS found: 8 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NO.	COMPOUND	RT	EST. CONC.	Q
1.	354234	Ethane, 1,2-dichloro-1,1,2-t	3.44	15	J
2.	103651	Benzene, propyl-	18.42	6.7	J
3.	611143	Benzene, 1-ethyl-2-methyl-	19.31	3.9	J
4.	526738	Benzene, 1,2,3-trimethyl-	19.74	9.4	J
5.	108678	Benzene, 1,3,5-trimethyl-	20.72	3.5	J
6.	1074175	Benzene, 1-methyl-2-propyl-	20.10	3.2	J
7.	874419	Benzene, 1-ethyl-2,4-dimethy	22.16	2.8	J
8.	527844	Benzene, 1-methyl-2-(1-methy	22.35	1.9	J

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-EB31-070804DL

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-02DL

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071208.D

Level (low/med): Date Received: 7/9/04

% Moisture: not dec. 100 Date Analyzed: 7/12/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 5.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	2.5	UD
74-87-3	Chloromethane	2.5	UD
75-01-4	Vinyl chloride	19	D
74-83-9	Bromomethane	2.5	UD J
75-00-3	Chloroethane	2.5	UD
75-69-4	Trichlorofluoromethane	2.5	UD
76-13-1	1,1,2-Trichlorotrifluoroethan	11	D
75-35-4	1,1-Dichloroethene	2.5	UD
67-64-1	Acetone	12	UD
75-15-0	Carbon disulfide	2.5	UD
1634-04-4	Methyl tert-butyl Ether	2.5	UD
79-20-9	Methyl Acetate	2.5	UD
75-09-2	Methylene Chloride	2.8	B UJ
156-60-5	trans-1,2-Dichloroethene	2.5	UD
75-34-3	1,1-Dichloroethane	4.0	D
110-82-7	Cyclohexane	2.5	UD
78-93-3	2-Butanone	12	UD
56-23-5	Carbon Tetrachloride	2.5	UD
156-59-2	cis-1,2-Dichloroethene	75	D
74-97-5	Bromochloromethane	2.5	UD
67-66-3	Chloroform	2.5	UD
71-55-6	1,1,1-Trichloroethane	2.5	UD
108-87-2	Methylcyclohexane	2.5	UD
71-43-2	Benzene	2.5	UD
107-06-2	1,2-Dichloroethane	2.5	UD
79-01-6	Trichloroethene	4.8	D
78-87-5	1,2-Dichloropropane	2.5	UD
123-91-1	1,4-Dioxane	50	UD R
75-27-4	Bromodichloromethane	2.5	UD
108-10-1	4-Methyl-2-Pentanone	12	UD
108-88-3	Toluene	2.5	UD
10061-02-6	t-1,3-Dichloropropene	2.5	UD
10061-01-5	cis-1,3-Dichloropropene	2.5	UD

GW 2/22/05

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-EB31-070804DL

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-02DL

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071208.D

Level (low/med): Date Received: 7/9/04

% Moisture: not dec. 100 Date Analyzed: 7/12/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 5.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
79-00-5	1,1,2-Trichloroethane	2.5	UD
591-78-6	2-Hexanone	12	UD
124-48-1	Dibromochloromethane	2.5	UD
106-93-4	1,2-Dibromoethane	2.5	UD
127-18-4	Tetrachloroethene	2.5	UD
108-90-7	Chlorobenzene	2.5	UD
100-41-4	Ethyl Benzene	2.5	UD
136777-61-2	m&p-xylenes	2.5	UD
95-47-6	o-xylene	2.5	UD
100-42-5	Styrene	2.5	UD
75-25-2	Bromoform	2.5	UD
98-82-8	Isopropylbenzene	2.5	UD
79-34-5	1,1,2,2-Tetrachloroethane	2.5	UD
541-73-1	1,3-Dichlorobenzene	2.5	UD
106-46-7	1,4-Dichlorobenzene	2.5	UD
95-50-1	1,2-Dichlorobenzene	2.5	UD
96-12-8	1,2-Dibromo-3-Chloropropane	2.5	UD
120-82-1	1,2,4-Trichlorobenzene	2.5	UD
87-61-6	1,2,3-Trichlorobenzene	2.5	UD

CW 3/22/05

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VE-EB31-070804DL

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-02DL

Sample wt/vol: 25.0 (g/mL) mL Lab File ID: VF071208.D

Level (low/med): Date Received: 7/9/2004

% Moisture: not dec. 100 Date Analyzed: 7/12/2004

GC Column: RTX624 ID: 0.53 Dilution Factor: 5.0

Soil Extract Volume: Soil Aliquot Volume:

Number TICS found: 5 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NO.	COMPOUND	RT	EST. CONC.	Q
1.	354234	Ethane, 1,2-dichloro-1,1,2-t	3.44	15	JD
2.	611143	Benzene, 1-ethyl-2-methyl-	19.32	3.5	JD
3.	95636	Benzene, 1,2,4-trimethyl-	19.74	8.1	JD
4.	135988	Benzene, (1-methylpropyl)-	20.10	3.1	JD
5.	620144	Benzene, 1-ethyl-3-methyl-	20.72	2.8	JD

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-S6-070804

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-03

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071209.D

Level (low/med): Date Received: 7/9/04

% Moisture: not dec. 100 Date Analyzed: 7/12/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl chloride	0.50	U
74-83-9	Bromomethane	0.50	U J
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
76-13-1	1,1,2-Trichlorotrifluoroethan	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
67-64-1	Acetone	2.5	U
75-15-0	Carbon disulfide	0.50	U
1634-04-4	Methyl tert-butyl Ether	0.50	U
79-20-9	Methyl Acetate	0.50	U
75-09-2	Methylene Chloride	0.50 ~~0.29~~	JUJ
156-60-5	trans-1,2-Dichloroethene	0.50	U
75-34-3	1,1-Dichloroethane	0.36	J
110-82-7	Cyclohexane	0.50	U
78-93-3	2-Butanone	2.5	U
56-23-5	Carbon Tetrachloride	0.50	U
156-59-2	cis-1,2-Dichloroethene	23	
74-97-5	Bromochloromethane	0.50	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
108-87-2	Methylcyclohexane	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	55	E
78-87-5	1,2-Dichloropropane	0.50	U
123-91-1	1,4-Dioxane	10	UR
75-27-4	Bromodichloromethane	0.50	U
108-10-1	4-Methyl-2-Pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	t-1,3-Dichloropropene	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U

CH 8/12/05

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-S6-070804

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-03

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071209.D

Level (low/med): Date Received: 7/9/04

% Moisture: not dec. 100 Date Analyzed: 7/12/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
79-00-5	1,1,2-Trichloroethane	0.50	U
591-78-6	2-Hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethyl Benzene	0.50	U
136777-61-2	m&p-xylenes	0.50	U
95-47-6	o-xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropylbenzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VE-S6-070804

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-03

Sample wt/vol: 50.0 (g/mL) mL Lab File ID: VF071209.D

Level (low/med): Date Received: 7/9/2004

% Moisture: not dec. 100 Date Analyzed: 7/12/2004

GC Column: RTX624 ID: 0.53 Dilution Factor: 1.0

Soil Extract Volume: Soil Aliquot Volume:

Number TICS found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) mg/L

CAS NO.	COMPOUND	RT	EST. CONC.	Q

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-S6-070804DL

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-03DL

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071310.D

Level (low/med): Date Received: 7/9/04

% Moisture: not dec. 100 Date Analyzed: 7/13/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 10.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	5.0	UD
74-87-3	Chloromethane	5.0	UD
75-01-4	Vinyl chloride	5.0	UD
74-83-9	Bromomethane	5.0	UD J
75-00-3	Chloroethane	5.0	UD
75-69-4	Trichlorofluoromethane	5.0	UD
76-13-1	1,1,2-Trichlorotrifluoroethan	5.0	UD
75-35-4	1,1-Dichloroethene	5.0	UD
67-64-1	Acetone	25	UD
75-15-0	Carbon disulfide	5.0	UD
1634-04-4	Methyl tert-butyl Ether	5.0	UD
79-20-9	Methyl Acetate	5.0	UD
75-09-2	Methylene Chloride	15	~~B~~ UJ
156-60-5	trans-1,2-Dichloroethene	5.0	UD
75-34-3	1,1-Dichloroethane	5.0	UD
110-82-7	Cyclohexane	5.0	UD
78-93-3	2-Butanone	25	UD
56-23-5	Carbon Tetrachloride	5.0	UD
156-59-2	cis-1,2-Dichloroethene	20	D
74-97-5	Bromochloromethane	5.0	UD
67-66-3	Chloroform	5.0	UD
71-55-6	1,1,1-Trichloroethane	5.0	UD
108-87-2	Methylcyclohexane	5.0	UD
71-43-2	Benzene	5.0	UD
107-06-2	1,2-Dichloroethane	5.0	UD
79-01-6	Trichloroethene	39	D
78-87-5	1,2-Dichloropropane	5.0	UD
123-91-1	1,4-Dioxane	100	UD R
75-27-4	Bromodichloromethane	5.0	UD
108-10-1	4-Methyl-2-Pentanone	25	UD
108-88-3	Toluene	5.0	UD
10061-02-6	t-1,3-Dichloropropene	5.0	UD
10061-01-5	cis-1,3-Dichloropropene	5.0	UD

EV 7/22/05

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-S6-070804DL

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-03DL

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071310.D

Level (low/med): Date Received: 7/9/04

% Moisture: not dec. 100 Date Analyzed: 7/13/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 10.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS No.	Compound	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
79-00-5	1,1,2-Trichloroethane	5.0	UD
591-78-6	2-Hexanone	25	UD
124-48-1	Dibromochloromethane	5.0	UD
106-93-4	1,2-Dibromoethane	5.0	UD
127-18-4	Tetrachloroethene	5.0	UD
108-90-7	Chlorobenzene	5.0	UD
100-41-4	Ethyl Benzene	5.0	UD
136777-61-2	m&p-xylenes	5.0	UD
95-47-6	o-xylene	5.0	UD
100-42-5	Styrene	5.0	UD
75-25-2	Bromoform	5.0	UD
98-82-8	Isopropylbenzene	5.0	UD
79-34-5	1,1,2,2-Tetrachloroethane	5.0	UD
541-73-1	1,3-Dichlorobenzene	5.0	UD
106-46-7	1,4-Dichlorobenzene	5.0	UD
95-50-1	1,2-Dichlorobenzene	5.0	UD
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	UD
120-82-1	1,2,4-Trichlorobenzene	5.0	UD
87-61-6	1,2,3-Trichlorobenzene	5.0	UD

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VE-S6-070804DL

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-03DL

Sample wt/vol: 25.0 (g/mL) mL Lab File ID: VF071310.D

Level (low/med): Date Received: 7/9/2004

% Moisture: not dec. 100 Date Analyzed: 7/13/2004

GC Column: RTX624 ID: 0.53 Dilution Factor: 10.0

Soil Extract Volume: Soil Aliquot Volume:

Number TICS found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND	RT	EST. CONC.	Q

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-S7-070804

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-04

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071210.D

Level (low/med): Date Received: 7/9/04

% Moisture: not dec. 100 Date Analyzed: 7/12/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS No.	Compound	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl chloride	24	
74-83-9	Bromomethane	0.50	U J
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
76-13-1	1,1,2-Trichlorotrifluoroethan	0.50	U
75-35-4	1,1-Dichloroethene	2.5	
67-64-1	Acetone	2.5	U
75-15-0	Carbon disulfide	0.50	U
1634-04-4	Methyl tert-butyl Ether	0.50	U
79-20-9	Methyl Acetate	0.50	U
75-09-2	Methylene Chloride	0.50 0.26	J U
156-60-5	trans-1,2-Dichloroethene	0.76	
75-34-3	1,1-Dichloroethane	22	
110-82-7	Cyclohexane	0.50	U
78-93-3	2-Butanone	2.5	U
56-23-5	Carbon Tetrachloride	0.50	U
156-59-2	cis-1,2-Dichloroethene	44	E
74-97-5	Bromochloromethane	0.50	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	32	E
108-87-2	Methylcyclohexane	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	18	
78-87-5	1,2-Dichloropropane	0.50	U
123-91-1	1,4-Dioxane	10	U R
75-27-4	Bromodichloromethane	0.50	U
108-10-1	4-Methyl-2-Pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	t-1,3-Dichloropropene	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-S7-070804

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-04

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071210.D

Level (low/med): Date Received: 7/9/04

% Moisture: not dec. 100 Date Analyzed: 7/12/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
79-00-5	1,1,2-Trichloroethane	0.50	U
591-78-6	2-Hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethyl Benzene	0.50	U
136777-61-2	m&p-xylenes	0.50	U
95-47-6	o-xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropylbenzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VE-S7-070804

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-04

Sample wt/vol: 25.0 (g/mL) mL Lab File ID: VF071210.D

Level (low/med): Date Received: 7/9/2004

% Moisture: not dec. 100 Date Analyzed: 7/12/2004

GC Column: RTX624 ID: 0.53 Dilution Factor: 1.0

Soil Extract Volume: Soil Aliquot Volume:

Number TICS found: 1 CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NO.	COMPOUND	RT	EST. CONC.	Q
1.	354234	Ethane, 1,2-dichloro-1,1,2-t	3.43	1.5	J

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-S7-070804DL

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-04DL

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071313.D

Level (low/med): Date Received: 7/9/04

% Moisture: not dec. 100 Date Analyzed: 7/13/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 10.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	5.0	UD
74-87-3	Chloromethane	5.0	UD
75-01-4	Vinyl chloride	17	D
74-83-9	Bromomethane	5.0	UD J
75-00-3	Chloroethane	5.0	UD
75-69-4	Trichlorofluoromethane	5.0	UD
76-13-1	1,1,2-Trichlorotrifluoroethan	5.0	UD
75-35-4	1,1-Dichloroethene	2.6	JD
67-64-1	Acetone	46	DB JJ
75-15-0	Carbon disulfide	5.0	UD
1634-04-4	Methyl tert-butyl Ether	5.0	UD
79-20-9	Methyl Acetate	5.0	UD
75-09-2	Methylene Chloride	14	~~DB~~ UJ
156-60-5	trans-1,2-Dichloroethene	5.0	UD
75-34-3	1,1-Dichloroethane	30	D
110-82-7	Cyclohexane	5.0	UD
78-93-3	2-Butanone	25	UD
56-23-5	Carbon Tetrachloride	5.0	UD
156-59-2	cis-1,2-Dichloroethene	69	D
74-97-5	Bromochloromethane	5.0	UD
67-66-3	Chloroform	5.0	UD
71-55-6	1,1,1-Trichloroethane	28	D
108-87-2	Methylcyclohexane	5.0	UD
71-43-2	Benzene	5.0	UD
107-06-2	1,2-Dichloroethane	5.0	UD
79-01-6	Trichloroethene	22	D
78-87-5	1,2-Dichloropropane	5.0	UD
123-91-1	1,4-Dioxane	100	~~UD~~ R
75-27-4	Bromodichloromethane	5.0	UD
108-10-1	4-Methyl-2-Pentanone	25	UD
108-88-3	Toluene	5.0	UD
10061-02-6	t-1,3-Dichloropropene	5.0	UD
10061-01-5	cis-1,3-Dichloropropene	5.0	UD

CW 2/22/05

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-S7-070804DL

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-04DL

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071313.D

Level (low/med): Date Received: 7/9/04

% Moisture: not dec. 100 Date Analyzed: 7/13/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 10.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
79-00-5	1,1,2-Trichloroethane	5.0	UD
591-78-6	2-Hexanone	25	UD
124-48-1	Dibromochloromethane	5.0	UD
106-93-4	1,2-Dibromoethane	5.0	UD
127-18-4	Tetrachloroethene	5.0	UD
108-90-7	Chlorobenzene	5.0	UD
100-41-4	Ethyl Benzene	5.0	UD
136777-61-2	m&p-xylenes	5.0	UD
95-47-6	o-xylene	5.0	UD
100-42-5	Styrene	5.0	UD
75-25-2	Bromoform	5.0	UD
98-82-8	Isopropylbenzene	5.0	UD
79-34-5	1,1,2,2-Tetrachloroethane	5.0	UD
541-73-1	1,3-Dichlorobenzene	5.0	UD
106-46-7	1,4-Dichlorobenzene	5.0	UD
95-50-1	1,2-Dichlorobenzene	5.0	UD
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	UD
120-82-1	1,2,4-Trichlorobenzene	5.0	UD
87-61-6	1,2,3-Trichlorobenzene	5.0	UD

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VE-S7-070804DL

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-04DL

Sample wt/vol: 25.0 (g/mL) mL Lab File ID: VF071313.D

Level (low/med): Date Received: 7/9/2004

% Moisture: not dec. 100 Date Analyzed: 7/13/2004

GC Column: RTX624 ID: 0.53 Dilution Factor: 10.0

Soil Extract Volume: Soil Aliquot Volume:

Number TICS found: 0 CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND	RT	EST. CONC.	Q

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-S2-070804

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-05

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071211.D

Level (low/med): USE Date Received: 7/9/04

% Moisture: not dec. 100 Date Analyzed: 7/12/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS No.	Compound	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl chloride	23 ~~49~~	E
74-83-9	Bromomethane	0.50	U J
75-00-3	Chloroethane	1.4	
75-69-4	Trichlorofluoromethane	0.50	U
76-13-1	1,1,2-Trichlorotrifluoroethan	7.4	
75-35-4	1,1-Dichloroethene	9.1	
67-64-1	Acetone	2.5	U
75-15-0	Carbon disulfide	0.50	U
1634-04-4	Methyl tert-butyl Ether	0.39	J
79-20-9	Methyl Acetate	0.50	U
75-09-2	Methylene Chloride	0.50 ~~0.38~~	J D5
156-60-5	trans-1,2-Dichloroethene	1.2	
75-34-3	1,1-Dichloroethane	41 ~~33~~	E
110-82-7	Cyclohexane	0.50	U
78-93-3	2-Butanone	2.5	U
56-23-5	Carbon Tetrachloride	0.50	U
156-59-2	cis-1,2-Dichloroethene	260 ~~160~~	E
74-97-5	Bromochloromethane	0.50	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	15	
108-87-2	Methylcyclohexane	0.50	U
71-43-2	Benzene	0.85	J
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	47 ~~45~~	E
78-87-5	1,2-Dichloropropane	0.50	U
123-91-1	1,4-Dioxane	10	U R
75-27-4	Bromodichloromethane	0.50	U
108-10-1	4-Methyl-2-Pentanone	2.5	U
108-88-3	Toluene	1.1	
10061-02-6	t-1,3-Dichloropropene	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U

EW 9/22/05

* FROM DILUTION

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-S2-070804

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-05

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071211.D

Level (low/med): Date Received: 7/9/04

% Moisture: not dec. 100 Date Analyzed: 7/12/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
79-00-5	1,1,2-Trichloroethane	0.50	U
591-78-6	2-Hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethyl Benzene	0.50	U
136777-61-2	m&p-xylenes	0.50	U
95-47-6	o-xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropylbenzene	0.54	
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	U

CM 2/22/05

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VE-S2-070804

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-05

Sample wt/vol: 25.0 (g/mL) mL Lab File ID: VF071211.D

Level (low/med): Date Received: 7/9/2004

% Moisture: not dec. 100 Date Analyzed: 7/12/2004

GC Column: RTX624 ID: 0.53 Dilution Factor: 1.0

Soil Extract Volume: Soil Aliquot Volume:

Number TICS found: 1 CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

	CAS NO.	COMPOUND	RT	EST. CONC.	Q
1.	354234	Ethane, 1,2-dichloro-1,1,2-t	3.43	4.3	J

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-S2-070804DL

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-05DL

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071314.D

Level (low/med): Date Received: 7/9/04

% Moisture: not dec. 100 Date Analyzed: 7/13/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 50.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	25	UD
74-87-3	Chloromethane	25	UD
75-01-4	Vinyl chloride	25	D
74-83-9	Bromomethane	25	UD J
75-00-3	Chloroethane	25	UD
75-69-4	Trichlorofluoromethane	25	UD
76-13-1	1,1,2-Trichlorotrifluoroethan	25	UD
75-35-4	1,1-Dichloroethene	25	UD
67-64-1	Acetone	240	~~DB~~ UJ
75-15-0	Carbon disulfide	25	UD
1634-04-4	Methyl tert-butyl Ether	25	UD
79-20-9	Methyl Acetate	25	UD
75-09-2	Methylene Chloride	79	~~DB~~ UJ
156-60-5	trans-1,2-Dichloroethene	25	UD
75-34-3	1,1-Dichloroethane	41	D
110-82-7	Cyclohexane	25	UD
78-93-3	2-Butanone	120	UD
56-23-5	Carbon Tetrachloride	25	UD
156-59-2	cis-1,2-Dichloroethene	260	D
74-97-5	Bromochloromethane	25	UD
67-66-3	Chloroform	25	UD
71-55-6	1,1,1-Trichloroethane	11	JD
108-87-2	Methylcyclohexane	25	UD
71-43-2	Benzene	25	UD
107-06-2	1,2-Dichloroethane	25	UD
79-01-6	Trichloroethene	47	D
78-87-5	1,2-Dichloropropane	25	UD
123-91-1	1,4-Dioxane	500	~~UD~~ R
75-27-4	Bromodichloromethane	25	UD
108-10-1	4-Methyl-2-Pentanone	120	UD
108-88-3	Toluene	25	UD
10061-02-6	t-1,3-Dichloropropene	25	UD
10061-01-5	cis-1,3-Dichloropropene	25	UD

@ 2/22/05

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-S2-070804DL

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-05DL

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071314.D

Level (low/med): Date Received: 7/9/04

% Moisture: not dec. 100 Date Analyzed: 7/13/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 50.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
79-00-5	1,1,2-Trichloroethane	25	UD
591-78-6	2-Hexanone	120	UD
124-48-1	Dibromochloromethane	25	UD
106-93-4	1,2-Dibromoethane	25	UD
127-18-4	Tetrachloroethene	25	UD
108-90-7	Chlorobenzene	25	UD
100-41-4	Ethyl Benzene	25	UD
136777-61-2	m&p-xylenes	25	UD
95-47-6	o-xylene	25	UD
100-42-5	Styrene	25	UD
75-25-2	Bromoform	25	UD
98-82-8	Isopropylbenzene	25	UD
79-34-5	1,1,2,2-Tetrachloroethane	25	UD
541-73-1	1,3-Dichlorobenzene	25	UD
106-46-7	1,4-Dichlorobenzene	25	UD
95-50-1	1,2-Dichlorobenzene	25	UD
96-12-8	1,2-Dibromo-3-Chloropropane	25	UD
120-82-1	1,2,4-Trichlorobenzene	25	UD
87-61-6	1,2,3-Trichlorobenzene	25	UD

7/14/05

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VE-S2-070804DL

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-05DL

Sample wt/vol: 25.0 (g/mL) mL Lab File ID: VF071314.D

Level (low/med): Date Received: 7/9/2004

% Moisture: not dec. 100 Date Analyzed: 7/13/2004

GC Column: RTX624 ID: 0.53 Dilution Factor: 50.0

Soil Extract Volume: Soil Aliquot Volume:

Number TICS found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND	RT	EST. CONC.	Q

Comments:

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIPBLANK

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-06

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071206.D

Level (low/med): Date Received: 7/9/04

% Moisture: not dec. 100 Date Analyzed: 7/12/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl chloride	0.50	U
74-83-9	Bromomethane	0.50	U J
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
76-13-1	1,1,2-Trichlorotrifluoroethan	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
67-64-1	Acetone	4.7	J
75-15-0	Carbon disulfide	0.50	U
1634-04-4	Methyl tert-butyl Ether	0.50	U
79-20-9	Methyl Acetate	0.50	U
75-09-2	Methylene Chloride	2.9	J
156-60-5	trans-1,2-Dichloroethene	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
110-82-7	Cyclohexane	0.50	U
78-93-3	2-Butanone	2.5	U
56-23-5	Carbon Tetrachloride	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
74-97-5	Bromochloromethane	0.50	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
108-87-2	Methylcyclohexane	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
123-91-1	1,4-Dioxane	10	U K
75-27-4	Bromodichloromethane	0.50	U
108-10-1	4-Methyl-2-Pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	t-1,3-Dichloropropene	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U

EW 2/22/05

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

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Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-06

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071206.D

Level (low/med): Date Received: 7/9/04

% Moisture: not dec. 100 Date Analyzed: 7/12/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS No.	Compound	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
79-00-5	1,1,2-Trichloroethane	0.50	U
591-78-6	2-Hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethyl Benzene	0.50	U
136777-61-2	m&p-xylenes	0.50	U
95-47-6	o-xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropylbenzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	U

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

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Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-06

Sample wt/vol: 25.0 (g/mL) mL Lab File ID: VF071206.D

Level (low/med): Date Received: 7/9/2004

% Moisture: not dec. 100 Date Analyzed: 7/12/2004

GC Column: RTX624 ID: 0.53 Dilution Factor: 1.0

Soil Extract Volume: Soil Aliquot Volume:

Number TICS found: 0 CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND	RT	EST. CONC.	Q

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-S11-070804

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-07

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071212.D

Level (low/med): USE Date Received: 7/9/04

% Moisture: not dec. 100 Date Analyzed: 7/12/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl chloride	11	
74-83-9	Bromomethane	0.50	U J
75-00-3	Chloroethane	3.3	
75-69-4	Trichlorofluoromethane	0.50	U
76-13-1	1,1,2-Trichlorotrifluoroethan	100 * 81	E
75-35-4	1,1-Dichloroethene	54 * 38	E
67-64-1	Acetone	2.5	U
75-15-0	Carbon disulfide	0.50	U
1634-04-4	Methyl tert-butyl Ether	1.1	
79-20-9	Methyl Acetate	0.50	U
75-09-2	Methylene Chloride	1.4	U J
156-60-5	trans-1,2-Dichloroethene	3.0	J
75-34-3	1,1-Dichloroethane	95 * 68	E
110-82-7	Cyclohexane	0.50	U
78-93-3	2-Butanone	2.5	U
56-23-5	Carbon Tetrachloride	0.50	U
156-59-2	cis-1,2-Dichloroethene	670 * 340	E
74-97-5	Bromochloromethane	0.50	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	910 * 370	E
108-87-2	Methylcyclohexane	0.50	U
71-43-2	Benzene	0.25	J J
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	220 * 140	E
78-87-5	1,2-Dichloropropane	0.50	U
123-91-1	1,4-Dioxane	10	UR
75-27-4	Bromodichloromethane	0.50	U
108-10-1	4-Methyl-2-Pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	t-1,3-Dichloropropene	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U

(CW 7/22/05

* FROM DILUTION

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-S11-070804

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-07

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071212.D

Level (low/med): Date Received: 7/9/04

% Moisture: not dec. 100 Date Analyzed: 7/12/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS No.	Compound	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
79-00-5	1,1,2-Trichloroethane	0.50	U
591-78-6	2-Hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.50	U
127-18-4	Tetrachloroethene	1.6	
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethyl Benzene	0.50	U
136777-61-2	m&p-xylenes	0.50	U
95-47-6	o-xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropylbenzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET

TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VE-S11-070804

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-07

Sample wt/vol: 25.0 (g/mL) mL Lab File ID: VF071212.D

Level (low/med): Date Received: 7/9/2004

% Moisture: not dec. 100 Date Analyzed: 7/12/2004

GC Column: RTX624 ID: 0.53 Dilution Factor: 1.0

Soil Extract Volume: Soil Aliquot Volume:

Number TICS found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NO.	COMPOUND	RT	EST. CONC.	Q
1.	354234	Ethane, 1,2-dichloro-1,1,2-t	3.44	3.2	J

Comments:

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-S11-070804DL

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-07DL

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071312.D

Level (low/med): Date Received: 7/9/04

% Moisture: not dec. 100 Date Analyzed: 7/13/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 50.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS No.	Compound	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	25	UD
74-87-3	Chloromethane	25	UD
75-01-4	Vinyl chloride	17	JD
74-83-9	Bromomethane	25	UD J
75-00-3	Chloroethane	25	UD
75-69-4	Trichlorofluoromethane	25	UD
76-13-1	1,1,2-Trichlorotrifluoroethan	100	D
75-35-4	1,1-Dichloroethene	54	D
67-64-1	Acetone	160	~~DB~~ UJ
75-15-0	Carbon disulfide	25	UD
1634-04-4	Methyl tert-butyl Ether	25	UD
79-20-9	Methyl Acetate	25	UD
75-09-2	Methylene Chloride	26	~~DB~~ UJ CM 3/22/05
156-60-5	trans-1,2-Dichloroethene	25	UD
75-34-3	1,1-Dichloroethane	75	D
110-82-7	Cyclohexane	25	UD
78-93-3	2-Butanone	120	UD
56-23-5	Carbon Tetrachloride	25	UD
156-59-2	cis-1,2-Dichloroethene	670	D
74-97-5	Bromochloromethane	25	UD
67-66-3	Chloroform	25	UD
71-55-6	1,1,1-Trichloroethane	910	D
108-87-2	Methylcyclohexane	25	UD
71-43-2	Benzene	25	UD
107-06-2	1,2-Dichloroethane	25	UD
79-01-6	Trichloroethene	220	D
78-87-5	1,2-Dichloropropane	25	UD
123-91-1	1,4-Dioxane	500	~~UD~~ K
75-27-4	Bromodichloromethane	25	UD
108-10-1	4-Methyl-2-Pentanone	120	UD
108-88-3	Toluene	25	UD
10061-02-6	t-1,3-Dichloropropene	25	UD
10061-01-5	cis-1,3-Dichloropropene	25	UD

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-S11-070804DL

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-07DL

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071312.D

Level (low/med): Date Received: 7/9/04

% Moisture: not dec. 100 Date Analyzed: 7/13/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 50.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS No.	Compound	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
79-00-5	1,1,2-Trichloroethane	25	UD
591-78-6	2-Hexanone	120	UD
124-48-1	Dibromochloromethane	25	UD
106-93-4	1,2-Dibromoethane	25	UD
127-18-4	Tetrachloroethene	25	UD
108-90-7	Chlorobenzene	25	UD
100-41-4	Ethyl Benzene	25	UD
136777-61-2	m&p-xylenes	25	UD
95-47-6	o-xylene	25	UD
100-42-5	Styrene	25	UD
75-25-2	Bromoform	25	UD
98-82-8	Isopropylbenzene	25	UD
79-34-5	1,1,2,2-Tetrachloroethane	25	UD
541-73-1	1,3-Dichlorobenzene	25	UD
106-46-7	1,4-Dichlorobenzene	25	UD
95-50-1	1,2-Dichlorobenzene	25	UD
96-12-8	1,2-Dibromo-3-Chloropropane	25	UD
120-82-1	1,2,4-Trichlorobenzene	25	UD
87-61-6	1,2,3-Trichlorobenzene	25	UD

CA 2/22/05

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VE-S11-070804DL

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-07DL

Sample wt/vol: 25.0 (g/mL) mL Lab File ID: VF071312.D

Level (low/med): Date Received: 7/9/2004

% Moisture: not dec. 100 Date Analyzed: 7/13/2004

GC Column: RTX624 ID: 0.53 Dilution Factor: 50.0

Soil Extract Volume: Soil Aliquot Volume:

Number TICS found: 1 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NO.	COMPOUND	RT	EST. CONC.	Q
1.	354234	Ethane, 1,2-dichloro-1,1,2-t	3.46	96	JD

Comments:

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-EB33-070804

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-08

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071113.D

Level (low/med): USE Date Received: 7/9/04

% Moisture: not dec. 100 Date Analyzed: 7/12/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U J
75-01-4	Vinyl chloride	2.0	
74-83-9	Bromomethane	0.50	U J
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
76-13-1	1,1,2-Trichlorotrifluoroethan	0.47	J
75-35-4	1,1-Dichloroethene	2.1	
67-64-1	Acetone	2.5	U
75-15-0	Carbon disulfide	0.50	U
1634-04-4	Methyl tert-butyl Ether	0.20	J
79-20-9	Methyl Acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.39	J
75-34-3	1,1-Dichloroethane	4.1	
110-82-7	Cyclohexane	0.50	U
78-93-3	2-Butanone	2.5	U
56-23-5	Carbon Tetrachloride	0.50	U
156-59-2	cis-1,2-Dichloroethene	11	
74-97-5	Bromochloromethane	0.50	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.29	J
108-87-2	Methylcyclohexane	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	50 ~~45~~	E
78-87-5	1,2-Dichloropropane	0.50	U
123-91-1	1,4-Dioxane	10	U R
75-27-4	Bromodichloromethane	0.50	U
108-10-1	4-Methyl-2-Pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	t-1,3-Dichloropropene	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U

CW 2/10/05

* FROM DILUTION

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-EB33-070804

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-08

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071113.D

Level (low/med): Date Received: 7/9/04

% Moisture: not dec. 100 USE Date Analyzed: 7/12/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
79-00-5	1,1,2-Trichloroethane	0.50	U
591-78-6	2-Hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethyl Benzene	0.50	U
136777-61-2	m&p-xylenes	0.50	U
95-47-6	o-xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropylbenzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VE-EB33-070804

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-08

Sample wt/vol: 25.0 (g/mL) mL Lab File ID: VF071113.D

Level (low/med): Date Received: 7/9/2004

% Moisture: not dec. 100 Date Analyzed: 7/12/2004

GC Column: RTX624 ID: 0.53 Dilution Factor: 1.0

Soil Extract Volume: Soil Aliquot Volume:

Number TICS found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND	RT	EST. CONC.	Q

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-EB33-070804DL

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-08DL

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071207.D

Level (low/med): Date Received: 7/9/04

% Moisture: not dec. 100 Date Analyzed: 7/12/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 10.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS No.	Compound	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	5.0	UD
74-87-3	Chloromethane	5.0	UD
75-01-4	Vinyl chloride	2.5	JD
74-83-9	Bromomethane	5.0	UD J
75-00-3	Chloroethane	5.0	UD
75-69-4	Trichlorofluoromethane	5.0	UD
76-13-1	1,1,2-Trichlorotrifluoroethan	5.0	UD
75-35-4	1,1-Dichloroethene	5.0	UD
67-64-1	Acetone	25	UD
75-15-0	Carbon disulfide	5.0	UD
1634-04-4	Methyl tert-butyl Ether	5.0	UD
79-20-9	Methyl Acetate	5.0	UD
75-09-2	Methylene Chloride	5.0	~~JD~~ UJ
156-60-5	trans-1,2-Dichloroethene	5.0	UD
75-34-3	1,1-Dichloroethane	4.2	JD
110-82-7	Cyclohexane	5.0	UD
78-93-3	2-Butanone	25	UD
56-23-5	Carbon Tetrachloride	5.0	UD
156-59-2	cis-1,2-Dichloroethene	12	D
74-97-5	Bromochloromethane	5.0	UD
67-66-3	Chloroform	5.0	UD
71-55-6	1,1,1-Trichloroethane	5.0	UD
108-87-2	Methylcyclohexane	5.0	UD
71-43-2	Benzene	5.0	UD
107-06-2	1,2-Dichloroethane	5.0	UD
79-01-6	Trichloroethene	50	D
78-87-5	1,2-Dichloropropane	5.0	UD
123-91-1	1,4-Dioxane	100	~~UD~~ UJ
75-27-4	Bromodichloromethane	5.0	UD
108-10-1	4-Methyl-2-Pentanone	25	UD
108-88-3	Toluene	5.0	UD
10061-02-6	t-1,3-Dichloropropene	5.0	UD
10061-01-5	cis-1,3-Dichloropropene	5.0	UD

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-EB33-070804DL

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-08DL

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071207.D

Level (low/med): Date Received: 7/9/04

% Moisture: not dec. 100 Date Analyzed: 7/12/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 10.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS No.	Compound	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
79-00-5	1,1,2-Trichloroethane	5.0	UD
591-78-6	2-Hexanone	25	UD
124-48-1	Dibromochloromethane	5.0	UD
106-93-4	1,2-Dibromoethane	5.0	UD
127-18-4	Tetrachloroethene	5.0	UD
108-90-7	Chlorobenzene	5.0	UD
100-41-4	Ethyl Benzene	5.0	UD
136777-61-2	m&p-xylenes	5.0	UD
95-47-6	o-xylene	5.0	UD
100-42-5	Styrene	5.0	UD
75-25-2	Bromoform	5.0	UD
98-82-8	Isopropylbenzene	5.0	UD
79-34-5	1,1,2,2-Tetrachloroethane	5.0	UD
541-73-1	1,3-Dichlorobenzene	5.0	UD
106-46-7	1,4-Dichlorobenzene	5.0	UD
95-50-1	1,2-Dichlorobenzene	5.0	UD
96-12-8	1,2-Dibromo-3-Chloropropane	5.0	UD
120-82-1	1,2,4-Trichlorobenzene	5.0	UD
87-61-6	1,2,3-Trichlorobenzene	5.0	UD

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VE-EB33-070804DL

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3477 SAS No.: S3477 SDG No.: S3477

Matrix (soil/water): WATER Lab Sample ID: S3477-08DL

Sample wt/vol: 25.0 (g/mL) mL Lab File ID: VF071207.D

Level (low/med): Date Received: 7/9/2004

% Moisture: not dec. 100 Date Analyzed: 7/12/2004

GC Column: RTX624 ID: 0.53 Dilution Factor: 10.0

Soil Extract Volume: Soil Aliquot Volume:

Number TICS found: 0 CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND	RT	EST. CONC.	Q

Comments:

Summary Sheet
SW-846

SDG No.: S3477 Order ID: S3477

Client: Tetra Tech FW Inc.. Project ID: FOST03

Sample ID	Client ID	Matrix	Parameter	Concentration	C	RDL	MDL	Units
Client ID:	TRIPBLANK							
S3477-06	TRIPBLANK	WATER	Acetone	4.7		2.5	1.2	ug/L
S3477-06	TRIPBLANK	WATER	Methylene Chloride	2.9		0.50	0.36	ug/L
			Total VOC's:	7.60				
			Total TIC's:	0.00				
			Total VOC's and TIC's:	7.60				
Client ID:	VE-EB31-070804							
S3477-02	VE-EB31-070804	WATER	Vinyl chloride	20		0.50	0.11	ug/L
S3477-02	VE-EB31-070804	WATER	1,1,2-Trichlorotrifluoroethane	12		0.50	0.23	ug/L
S3477-02	VE-EB31-070804	WATER	Methyl tert-butyl Ether	0.42	J	0.50	0.21	ug/L
S3477-02	VE-EB31-070804	WATER	Methylene Chloride	0.34	JB	0.50	0.36	ug/L
S3477-02	VE-EB31-070804	WATER	trans-1,2-Dichloroethene	1.8		0.50	0.25	ug/L
S3477-02	VE-EB31-070804	WATER	1,1-Dichloroethane	4.1		0.50	0.21	ug/L
S3477-02	VE-EB31-070804	WATER	cis-1,2-Dichloroethene	72	E	0.50	0.27	ug/L
S3477-02	VE-EB31-070804	WATER	1,1,1-Trichloroethane	0.50	J	0.50	0.22	ug/L
S3477-02	VE-EB31-070804	WATER	Trichloroethene	4.1		0.50	0.19	ug/L
S3477-02	VE-EB31-070804	WATER	Tetrachloroethene	0.51		0.50	0.20	ug/L
S3477-02	VE-EB31-070804	WATER	Ethyl Benzene	0.55		0.50	0.18	ug/L
S3477-02	VE-EB31-070804	WATER	Isopropylbenzene	0.92		0.50	0.18	ug/L
S3477-02	VE-EB31-070804	WATER	Ethane, 1,2-dichloro-1,1,2-tri	* 15	J	0	0	ug/L
S3477-02	VE-EB31-070804	WATER	Benzene, propyl-	* 6.7	J	0	0	ug/L
S3477-02	VE-EB31-070804	WATER	Benzene, 1-ethyl-2-methyl-	* 3.9	J	0	0	ug/L
S3477-02	VE-EB31-070804	WATER	Benzene, 1,2,3-trimethyl-	* 9.4	J	0	0	ug/L
S3477-02	VE-EB31-070804	WATER	Benzene, 1,3,5-trimethyl-	* 3.5	J	0	0	ug/L
S3477-02	VE-EB31-070804	WATER	Benzene, 1-methyl-2-propyl-	* 3.2	J	0	0	ug/L
S3477-02	VE-EB31-070804	WATER	Benzene, 1-ethyl-2,4-dimethyl	* 2.8	J	0	0	ug/L
S3477-02	VE-EB31-070804	WATER	Benzene, 1-methyl-2-(1-meth	* 1.9	J	0	0	ug/L
			Total VOC's:	117.24				
			Total TIC's:	46.40				
			Total VOC's and TIC's:	163.64				

Note: The asterisk "*" flag next to a parameter signifies a TIC parameter.

Chemtech

Summary Sheet
SW-846

SDG No.: S3477 Order ID: S3477

Client: Tetra Tech FW Inc.. Project ID: FOST03

Sample ID	Client ID	Matrix	Parameter	Concentration	C	RDL	MDL	Units
Client ID:	VE-EB31-070804DL							
S3477-02DL	VE-EB31-070804DL	WATER	Vinyl chloride	19	D	2.5	0.55	ug/L
S3477-02DL	VE-EB31-070804DL	WATER	1,1,2-Trichlorotrifluoroethane	11	D	2.5	1.2	ug/L
S3477-02DL	VE-EB31-070804DL	WATER	Methylene Chloride	2.8	D	2.5	1.8	ug/L
S3477-02DL	VE-EB31-070804DL	WATER	1,1-Dichloroethane	4.0	D	2.5	1.0	ug/L
S3477-02DL	VE-EB31-070804DL	WATER	cis-1,2-Dichloroethene	75	D	2.5	1.4	ug/L
S3477-02DL	VE-EB31-070804DL	WATER	Trichloroethene	4.8	D	2.5	0.95	ug/L
S3477-02DL	VE-EB31-070804DL	WATER	Ethane, 1,2-dichloro-1,1,2-tri	* 15	JD	0	0	ug/L
S3477-02DL	VE-EB31-070804DL	WATER	Benzene, 1-ethyl-2-methyl-	* 3.5	JD	0	0	ug/L
S3477-02DL	VE-EB31-070804DL	WATER	Benzene, 1,2,4-trimethyl-	* 8.1	JD	0	0	ug/L
S3477-02DL	VE-EB31-070804DL	WATER	Benzene, (1-methylpropyl)-	* 3.1	JD	0	0	ug/L
S3477-02DL	VE-EB31-070804DL	WATER	Benzene, 1-ethyl-3-methyl-	* 2.8	JD	0	0	ug/L
			Total VOC's:	116.60				
			Total TIC's:	32.50				
			Total VOC's and TIC's:	149.10				
Client ID:	VE-EB33-070804							
S3477-08	VE-EB33-070804	WATER	Vinyl chloride	2.0		0.50	0.11	ug/L
S3477-08	VE-EB33-070804	WATER	1,1,2-Trichlorotrifluoroethane	0.47	J	0.50	0.23	ug/L
S3477-08	VE-EB33-070804	WATER	1,1-Dichloroethene	2.1		0.50	0.20	ug/L
S3477-08	VE-EB33-070804	WATER	Methyl tert-butyl Ether	0.20	J	0.50	0.21	ug/L
S3477-08	VE-EB33-070804	WATER	trans-1,2-Dichloroethene	0.39	J	0.50	0.25	ug/L
S3477-08	VE-EB33-070804	WATER	1,1-Dichloroethane	4.1		0.50	0.21	ug/L
S3477-08	VE-EB33-070804	WATER	cis-1,2-Dichloroethene	11		0.50	0.27	ug/L
S3477-08	VE-EB33-070804	WATER	1,1,1-Trichloroethane	0.29	J	0.50	0.22	ug/L
S3477-08	VE-EB33-070804	WATER	Trichloroethene	45	E	0.50	0.19	ug/L
			Total VOC's:	65.55				
			Total TIC's:	0.00				
			Total VOC's and TIC's:	65.55				
Client ID:	VE-EB33-070804DL							
S3477-08DL	VE-EB33-070804DL	WATER	Vinyl chloride	2.5	JD	5.0	1.1	ug/L
S3477-08DL	VE-EB33-070804DL	WATER	Methylene Chloride	5.0	JD	5.0	3.6	ug/L
S3477-08DL	VE-EB33-070804DL	WATER	1,1-Dichloroethane	4.2	JD	5.0	2.1	ug/L
S3477-08DL	VE-EB33-070804DL	WATER	cis-1,2-Dichloroethene	12	D	5.0	2.7	ug/L
S3477-08DL	VE-EB33-070804DL	WATER	Trichloroethene	50	D	5.0	1.9	ug/L
			Total VOC's:	73.70				
			Total TIC's:	0.00				
			Total VOC's and TIC's:	73.70				

Note: The asterisk "*" flag next to a parameter signifies a TIC parameter.

Chemtech

Summary Sheet
SW-846

SDG No.: S3477 Order ID: S3477

Client: Tetra Tech FW Inc.. Project ID: FOST03

Sample ID	Client ID	Matrix	Parameter	Concentration	C	RDL	MDL	Units
Client ID:	VE-FB-070804							
S3477-01	VE-FB-070804	WATER	Isopropyl Alcohol	* 0.93	J	0	0	ug/L
			Total VOC's:	0.00				
			Total TIC's:	0.93				
			Total VOC's and TIC's:	0.93				
Client ID:	VE-S11-070804							
S3477-07	VE-S11-070804	WATER	Vinyl chloride	11		0.50	0.11	ug/L
S3477-07	VE-S11-070804	WATER	Chloroethane	3.3		0.50	0.18	ug/L
S3477-07	VE-S11-070804	WATER	1,1,2-Trichlorotrifluoroethane	81	E	0.50	0.23	ug/L
S3477-07	VE-S11-070804	WATER	1,1-Dichloroethene	38	E	0.50	0.20	ug/L
S3477-07	VE-S11-070804	WATER	Methyl tert-butyl Ether	1.1		0.50	0.21	ug/L
S3477-07	VE-S11-070804	WATER	Methylene Chloride	1.4		0.50	0.36	ug/L
S3477-07	VE-S11-070804	WATER	trans-1,2-Dichloroethene	3.0		0.50	0.25	ug/L
S3477-07	VE-S11-070804	WATER	1,1-Dichloroethane	68	E	0.50	0.21	ug/L
S3477-07	VE-S11-070804	WATER	cis-1,2-Dichloroethene	340	E	0.50	0.27	ug/L
S3477-07	VE-S11-070804	WATER	1,1,1-Trichloroethane	370	E	0.50	0.22	ug/L
S3477-07	VE-S11-070804	WATER	Benzene	0.25	J	0.50	0.20	ug/L
S3477-07	VE-S11-070804	WATER	Trichloroethene	140	E	0.50	0.19	ug/L
S3477-07	VE-S11-070804	WATER	Tetrachloroethene	1.6		0.50	0.20	ug/L
S3477-07	VE-S11-070804	WATER	Ethane, 1,2-dichloro-1,1,2-tri	* 3.2	J	0	0	ug/L
			Total VOC's:	1058.65				
			Total TIC's:	3.20				
			Total VOC's and TIC's:	1061.85				
Client ID:	VE-S11-070804DL							
S3477-07DL	VE-S11-070804DL	WATER	Vinyl chloride	17	JD	25	5.5	ug/L
S3477-07DL	VE-S11-070804DL	WATER	1,1,2-Trichlorotrifluoroethane	100	D	25	12	ug/L
S3477-07DL	VE-S11-070804DL	WATER	1,1-Dichloroethene	54	D	25	10	ug/L
S3477-07DL	VE-S11-070804DL	WATER	Acetone	160	DB	120	60	ug/L
S3477-07DL	VE-S11-070804DL	WATER	Methylene Chloride	26	DB	25	18	ug/L
S3477-07DL	VE-S11-070804DL	WATER	1,1-Dichloroethane	75	D	25	10	ug/L
S3477-07DL	VE-S11-070804DL	WATER	cis-1,2-Dichloroethene	670	D	25	14	ug/L
S3477-07DL	VE-S11-070804DL	WATER	1,1,1-Trichloroethane	910	D	25	11	ug/L
S3477-07DL	VE-S11-070804DL	WATER	Trichloroethene	220	D	25	9.5	ug/L
S3477-07DL	VE-S11-070804DL	WATER	Ethane, 1,2-dichloro-1,1,2-tri	* 96	JD	0	0	ug/L
			Total VOC's:	2232.00				
			Total TIC's:	96.00				
			Total VOC's and TIC's:	2328.00				

Note: The asterisk "*" flag next to a parameter signifies a TIC parameter.

Summary Sheet
SW-846

SDG No.: S3477 Order ID: S3477

Client: Tetra Tech FW Inc.. Project ID: FOST03

Sample ID	Client ID	Matrix	Parameter	Concentration	C	RDL	MDL	Units
Client ID:	VE-S2-070804							
S3477-05	VE-S2-070804	WATER	Vinyl chloride	49	E	0.50	0.11	ug/L
S3477-05	VE-S2-070804	WATER	Chloroethane	1.4		0.50	0.18	ug/L
S3477-05	VE-S2-070804	WATER	1,1,2-Trichlorotrifluoroethane	7.4		0.50	0.23	ug/L
S3477-05	VE-S2-070804	WATER	1,1-Dichloroethene	9.1		0.50	0.20	ug/L
S3477-05	VE-S2-070804	WATER	Methyl tert-butyl Ether	0.39	J	0.50	0.21	ug/L
S3477-05	VE-S2-070804	WATER	Methylene Chloride	0.38	J	0.50	0.36	ug/L
S3477-05	VE-S2-070804	WATER	trans-1,2-Dichloroethene	1.2		0.50	0.25	ug/L
S3477-05	VE-S2-070804	WATER	1,1-Dichloroethane	33	E	0.50	0.21	ug/L
S3477-05	VE-S2-070804	WATER	cis-1,2-Dichloroethene	160	E	0.50	0.27	ug/L
S3477-05	VE-S2-070804	WATER	1,1,1-Trichloroethane	15		0.50	0.22	ug/L
S3477-05	VE-S2-070804	WATER	Benzene	0.85		0.50	0.20	ug/L
S3477-05	VE-S2-070804	WATER	Trichloroethene	45	E	0.50	0.19	ug/L
S3477-05	VE-S2-070804	WATER	Toluene	1.1		0.50	0.19	ug/L
S3477-05	VE-S2-070804	WATER	Isopropylbenzene	0.54		0.50	0.18	ug/L
S3477-05	VE-S2-070804	WATER	Ethane, 1,2-dichloro-1,1,2-tri	* 4.3	J	0	0	ug/L
			Total VOC's:	324.36				
			Total TIC's:	4.30				
			Total VOC's and TIC's:	328.66				
Client ID:	VE-S2-070804DL							
S3477-05DL	VE-S2-070804DL	WATER	Vinyl chloride	25	D	25	5.5	ug/L
S3477-05DL	VE-S2-070804DL	WATER	Acetone	240	DB	120	60	ug/L
S3477-05DL	VE-S2-070804DL	WATER	Methylene Chloride	79	DB	25	18	ug/L
S3477-05DL	VE-S2-070804DL	WATER	1,1-Dichloroethane	41	D	25	10	ug/L
S3477-05DL	VE-S2-070804DL	WATER	cis-1,2-Dichloroethene	260	D	25	14	ug/L
S3477-05DL	VE-S2-070804DL	WATER	1,1,1-Trichloroethane	11	JD	25	11	ug/L
S3477-05DL	VE-S2-070804DL	WATER	Trichloroethene	47	D	25	9.5	ug/L
			Total VOC's:	703.00				
			Total TIC's:	0.00				
			Total VOC's and TIC's:	703.00				
Client ID:	VE-S6-070804							
S3477-03	VE-S6-070804	WATER	Methylene Chloride	0.29	J	0.50	0.36	ug/L
S3477-03	VE-S6-070804	WATER	1,1-Dichloroethane	0.36	J	0.50	0.21	ug/L
S3477-03	VE-S6-070804	WATER	cis-1,2-Dichloroethene	23		0.50	0.27	ug/L
S3477-03	VE-S6-070804	WATER	Trichloroethene	55	E	0.50	0.19	ug/L
			Total VOC's:	78.65				
			Total TIC's:	0.00				
			Total VOC's and TIC's:	78.65				

Note: The asterisk "*" flag next to a parameter signifies a TIC parameter.

Chemtech

Summary Sheet
SW-846

SDG No.: S3477 Order ID: S3477

Client: Tetra Tech FW Inc.. Project ID: FOST03

Sample ID	Client ID	Matrix	Parameter	Concentration	C	RDL	MDL	Units
Client ID:	VE-S6-070804DL							
S3477-03DL	VE-S6-070804DL	WATER	Methylene Chloride	15	DB	5.0	3.6	ug/L
S3477-03DL	VE-S6-070804DL	WATER	cis-1,2-Dichloroethene	20	D	5.0	2.7	ug/L
S3477-03DL	VE-S6-070804DL	WATER	Trichloroethene	39	D	5.0	1.9	ug/L
			Total VOC's:	74.00				
			Total TIC's:	0.00				
			Total VOC's and TIC's:	74.00				
Client ID:	VE-S7-070804							
S3477-04	VE-S7-070804	WATER	Vinyl chloride	24		0.50	0.11	ug/L
S3477-04	VE-S7-070804	WATER	1,1-Dichloroethene	2.5		0.50	0.20	ug/L
S3477-04	VE-S7-070804	WATER	Methylene Chloride	0.26	J	0.50	0.36	ug/L
S3477-04	VE-S7-070804	WATER	trans-1,2-Dichloroethene	0.76		0.50	0.25	ug/L
S3477-04	VE-S7-070804	WATER	1,1-Dichloroethane	22		0.50	0.21	ug/L
S3477-04	VE-S7-070804	WATER	cis-1,2-Dichloroethene	44	E	0.50	0.27	ug/L
S3477-04	VE-S7-070804	WATER	1,1,1-Trichloroethane	32	E	0.50	0.22	ug/L
S3477-04	VE-S7-070804	WATER	Trichloroethene	18		0.50	0.19	ug/L
S3477-04	VE-S7-070804	WATER	Ethane, 1,2-dichloro-1,1,2-tri	* 1.5	J	0	0	ug/L
			Total VOC's:	143.52				
			Total TIC's:	1.50				
			Total VOC's and TIC's:	145.02				
Client ID:	VE-S7-070804DL							
S3477-04DL	VE-S7-070804DL	WATER	Vinyl chloride	17	D	5.0	1.1	ug/L
S3477-04DL	VE-S7-070804DL	WATER	1,1-Dichloroethene	2.6	JD	5.0	2.0	ug/L
S3477-04DL	VE-S7-070804DL	WATER	Acetone	46	DB	25	12	ug/L
S3477-04DL	VE-S7-070804DL	WATER	Methylene Chloride	14	DB	5.0	3.6	ug/L
S3477-04DL	VE-S7-070804DL	WATER	1,1-Dichloroethane	30	D	5.0	2.1	ug/L
S3477-04DL	VE-S7-070804DL	WATER	cis-1,2-Dichloroethene	69	D	5.0	2.7	ug/L
S3477-04DL	VE-S7-070804DL	WATER	1,1,1-Trichloroethane	28	D	5.0	2.2	ug/L
S3477-04DL	VE-S7-070804DL	WATER	Trichloroethene	22	D	5.0	1.9	ug/L
			Total VOC's:	228.60				
			Total TIC's:	0.00				
			Total VOC's and TIC's:	228.60				

Note: The asterisk "*" flag next to a parameter signifies a TIC parameter.

CLP DATA ASSESSMENT

Functional Guidelines for Evaluating Organic Analysis

WORK ORDER NO.: S3521

LABORATORY: Chemtech SITE: Vestal Well

DATA ASSESSMENT

The current SOP No. HW-13 (Revision 3), July 2001 for Organic Data Review for Low Concentration Water has been applied.

All data were found to be valid and acceptable except those analytes which have been rejected, "R" (unusable). Due to various QC problems some analytes may have been qualified with a "J" (estimated), "N" (presumptive evidence for the presence of the material), "U" (non-detect), or "JN" (presumptive evidence for the presence of the material at an estimated value) flag. All action is detailed on the attached sheets.

The "R" flag means that the associated value is unusable. In other words, significant data bias is evident and the reported analyte concentration is unreliable.

Reviewer's Signature: Cecelia Marsh Date: 2/22/05

Verified By: _____ Date: _____

CLP DATA ASSESSMENT

1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as estimated, "J", or unusable, "R", if the holding times are grossly exceeded.

The following action was taken in the samples and analytes shown due to excessive holding time.

All samples were analyzed within specified holding times, therefore, no action was required.

2. SURROGATES:

All samples are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate concentrations were outside contract specifications, qualifications were applied to the samples and analytes as shown below.

All surrogates were within specified limits.

CLP DATA ASSESSMENT

3. MATRIX SPIKE/SPIKE DUPLICATE, MS/MSD:

The MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD may be used in conjunction with other QC criteria for additional qualification of data.

Spike analyses were not designated on a sample from this SDG. The MS/MSD reported were satisfactory.

4. BLANK CONTAMINATION:

Quality assurance (QA) blanks, i.e., method, trip, field, or rinse blanks are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field and rinse blanks measure cross-contamination of samples during field operations. If the concentration of the analyte is less than the blank contaminant level (2 or 10 times for common contaminants), the analytes are qualified as non-detects, "U". The following analytes in the sample shown were qualified with "U" for these reasons:

A) Method blank contamination:

B) Field or rinse blank contamination:

C) Trip blank contamination:
methylene chloride: VE-S8-070904, VE-S1-070904
acetone: VE-S8-070904

CLP DATA ASSESSMENT

5. MASS SPECTROMETER TUNING:

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances. The tuning standard for volatile organics is (BFB) Bromofluorobenzene and for semi-volatiles Decafluorotriphenyl-phosphine (DFTPP).

If the mass calibration is in error, all associated data will be classified as unusable "R".

All criteria were met.

CLP DATA ASSESSMENT

6. CALIBRATION:

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

A) Response Factor GC/MS:

The response factor measures the instrument's response to specific chemical compounds. The response factor for the Target Compound List (TCL) must be ≥ 0.05 ($\geq$ 0.01 for poor performers) in both initial and continuing calibrations. A value < 0.05, $<$ 0.01 for poor performers, indicates a serious detection and quantitation problem (poor sensitivity). Analytes detected in the sample will be qualified as estimated, "J". All non-detects for that compound will be qualified as unusable (R).

1,4-Dioxane was qualified as unusable (R) in all samples due to low response factors in the initial and continuing calibration standards.

CLP DATA ASSESSMENT

7. CALIBRATION:

B) Percent Relative Standard Deviation (%RSD) and Percent Difference (%D):

Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor of the continuing calibration check to the mean response factor (RRF) from the initial calibration. Percent D is a measure of the instrument's daily performance. Percent RSD and %D must be $\leq$ 30%, $\leq$ 50% for the poor performers. A value outside of these limits indicates potential detection and quantitation errors. For these reasons, all positive results are flagged as estimated, "J" and non-detects are flagged "UJ". If %RSD and %D grossly exceed QC criteria, non-detects data may be qualified "R".

For the PEST/PCB fraction, if %RSD exceeds 20% for all analytes except for the two surrogates (which must not exceed 30% RSD), qualify all associated positive results "J" and non-detects "UJ".

The following analytes in the sample shown were qualified for %RSD and %D:

The positive results for the following compounds were estimated in the samples indicated for exceeding %RSD criteria.
methylene chloride: all samples
acetone: VE-S8-070904, TRIP BLANK

CLP DATA ASSESSMENT

8. INTERNAL STANDARDS PERFORMANCE GC/MS:

Internal standards (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during every experimental run. The internal standard area count must fall within the limits of ± 40% of the associated continuing calibration standard. The retention time of the internal standard must not vary more than ±30 seconds from the associated continuing calibration standard. If the area count is outside the (± 40%) range of the associated standard, all of the positive results for compounds quantitated using that IS are qualified as estimated, "J", and all non-detects as "UJ", or "R" if there is a severe loss of sensitivity.

If an internal standard retention time varies by more than 30 seconds, the reviewer will use professional judgement to determine either partial or total rejection of the data for that sample fraction.

All internal standards were within limits.

CLP DATA ASSESSMENT

9. COMPOUND IDENTIFICATION:

A) Volatile and Semi-Volatile Fractions:

TCL compounds are identified on the GC/MS by using the analyte's relative retention time (RRT) and by comparison to the ion spectra obtained from known standards. For the results to be a positive hit, the sample peak must be within ± 0.06 RRT units of the standard compound and have an ion spectra which has a ratio of the primary and secondary m/e intensities within 20% of that in the standard compound. For the tentatively identified compounds (TIC) the ion spectra must match accurately. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications.

N/A

B) Pesticide Fraction:

The retention times of reported compounds must fall within the calculated retention time (RT) windows for the two chromatographic columns and a GC/MS confirmation is required if the concentration exceeds 10ng/ml in the final sample extract.

N/A

CLP DATA ASSESSMENT

10. CONTRACT PROBLEMS NON-COMPLIANCE:

11. FIELD DOCUMENTATION:

12. OTHER PROBLEMS:

13. This package contains re-extractions, reanalyses or dilutions. Upon reviewing the QA results, the following Form 1(s) are identified as not to be used.

none

DPO: [ ]ACTION [ ]FYI REGION II

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY

Work Order No.: S3521

LABORATORY: Chemtech DATA USER: EPA Region II

SOW: OLM03.2 REVIEW COMPLETION DATE: 2/22/05

NO. OF SAMPLES: 4 WATER ____ SOIL ____ OTHER

REVIEWER: [ ] ESD [ ] ESAT [ ] OTHER, CONTRACTOR TtFW

QC ITEM	VOA	BNA	PCB		
HOLDING TIMES	O				
GC-MS PERFORMANCE	O				
INITIAL CALIBRATIONS	x				
CONTINUING CALIBRATIONS	O				
FIELD BLANKS(F = N/A)	O				
LABORATORY BLANKS	O				
SURROGATES	O				
MATRIX SPIKE/DUPLICATES	O				
QC SAMPLES(LCS, PVS)	N/A				
INTERNAL STANDARDS	O				
COMPOUND IDENTIFICATION	O				
COMPOUND QUANTITATION	O				
SYSTEM PERFORMANCE	O				
OVERALL ASSESSMENT	x				

O = No problems or minor problems that do not affect data usability.
X = No more than about 5% of the data points are qualified as either estimated or unusable.
M = More than about 5% of the data points are qualified as either estimated or unusable.
Z = More than about 5% of the data points are qualified as unusable.

DPO ACTION ITEMS:

AREAS OF CONCERN:

DATA REJECTION SUMMARY

Type of Review: Level 4 Date: 2/22/05 Work Order No.: S3521

Site Name: Vestal Well Lab Name: Chemtech

Reviewer's Initials: CW Number of Samples: 4W

Analytes Rejected Due to Exceeding Review Criteria For:

No. of Compounds/No. of Fractions (Samples)

	Surrogates	Holding Time	Calibration	Contamination	ID	Internal Standards	Other	Total # of Samples	Total # Rejected/Total # in All Samples
VOA(52)	0	0	4	0	0	0		4	4 / 208 = 2 %
ACID(14)									/ = %
B/N(51)									/ = %
PEST(21)									/ = %
PCB(7)									/ = %

NOTE: ASTERISK (*) INDICATES ADDITIONAL EXCEEDANCES OF REVIEW CRITERIA.

Analytes Estimated Due to Exceeding Review Criteria For:

No. of Compounds/No. of Fractions (Samples)

	Surrogates	Holding Time	Calibration	Contamination	ID	Internal Standards	Other	Total # of Samples	Total # Estimated/Total # in All Samples
VOA(52)	0	0	6	3	0	0		4	9 / 208 = 4 %
ACID(14)									/ = %
B/N(51)									/ = %
PEST(21)									/ = %
PCB(7)									/ = %

NOTE: ASTERISK (*) INDICATES ADDITIONAL EXCEEDANCES OF REVIEW CRITERIA.

Subj: **S3521**
Date: 2/3/05 8:33:58 PM Eastern Standard Time
From: Auseal
To: mildred@chemtech.net

Mildred,
The following issues require resolution before I can complete my review of the Vestal Well data package identified below.

S3521
Volatiles
1. Resubmit internal standard summaries with the correct limits identified (± 40%). they are presently listed as -50%/+100%.
2. Resubmit a revised narrative including a comment addressing analytes that exceeded %RSD (benzene and bromomethane).

Please forward a hardcopy of all resubmittals to my attention by 2/9/05.
Thank you.
Celia Minch
873 Chivas Dr.
Toms River, NJ 08753

CHEMTECH 284 Sheffield Street • Mountainside, NJ 07092 Phone: 908.789.8900 Fax: 908.789.8922

ANALYTICAL RESULTS SUMMARY

PROJECT NAME: Vestal Well 1 1 Site

TETRA TECH FW INC..
1000 AMERICAN ROAD
MORRIS PLAINS, NJ 07950
9736308000

CHEMTECH PROJECT NO.	S3521
ATTENTION:	Heidemarie Roldan

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-FB-070904

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3521 SAS No.: S3521 SDG No.: S3521

Matrix (soil/water): WATER Lab Sample ID: S3521-01

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071506.D

Level (low/med): Date Received: 7/10/02

% Moisture: not dec. 100 Date Analyzed: 7/15/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
76-13-1	1,1,2-Trichlorotrifluoroethan	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
67-64-1	Acetone	2.5	U
75-15-0	Carbon disulfide	0.50	U
1634-04-4	Methyl tert-butyl Ether	0.50	U
79-20-9	Methyl Acetate	0.50	U
75-09-2	Methylene Chloride	0.43	JB J
156-60-5	trans-1,2-Dichloroethene	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
110-82-7	Cyclohexane	0.50	U
78-93-3	2-Butanone	2.5	U
56-23-5	Carbon Tetrachloride	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
74-97-5	Bromochloromethane	0.50	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
108-87-2	Methylcyclohexane	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
123-91-1	1,4-Dioxane	10	U R
75-27-4	Bromodichloromethane	0.50	U
108-10-1	4-Methyl-2-Pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	t-1,3-Dichloropropene	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-FB-070904

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3521 SAS No.: S3521 SDG No.: S3521

Matrix (soil/water): WATER Lab Sample ID: S3521-01

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071506.D

Level (low/med): Date Received: 7/10/02

% Moisture: not dec. 100 Date Analyzed: 7/15/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
591-78-6	2-Hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethyl Benzene	0.50	U
136777-61-2	m&p-xylenes	0.50	U
95-47-6	o-xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropylbenzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VE-FB-070904

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3521 SAS No.: S3521 SDG No.: S3521

Matrix (soil/water): WATER Lab Sample ID: S3521-01

Sample wt/vol: 25.0 (g/mL) mL Lab File ID: VF071506.D

Level (low/med): Date Received: 7/10/2002

% Moisture: not dec. 100 Date Analyzed: 7/15/2004

GC Column: RTX624 ID: 0.53 Dilution Factor: 1.0

Soil Extract Volume: Soil Aliquot Volume:

Number TICS found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND	RT	EST. CONC.	Q

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-S8-070904

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3521 SAS No.: S3521 SDG No.: S3521

Matrix (soil/water): WATER Lab Sample ID: S3521-02

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071507.D

Level (low/med): Date Received: 7/10/02

% Moisture: not dec. 100 Date Analyzed: 7/15/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
76-13-1	1,1,2-Trichlorotrifluoroethan	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
67-64-1	Acetone	4.7	B J
75-15-0	Carbon disulfide	0.50	U
1634-04-4	Methyl tert-butyl Ether	0.50	U
79-20-9	Methyl Acetate	0.50	U
75-09-2	Methylene Chloride	0.36	JB J
156-60-5	trans-1,2-Dichloroethene	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
110-82-7	Cyclohexane	0.50	U
78-93-3	2-Butanone	2.5	U
56-23-5	Carbon Tetrachloride	0.50	U
156-59-2	cis-1,2-Dichloroethene	1.4	
74-97-5	Bromochloromethane	0.50	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
108-87-2	Methylcyclohexane	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.71	
78-87-5	1,2-Dichloropropane	0.50	U
123-91-1	1,4-Dioxane	10	U R
75-27-4	Bromodichloromethane	0.50	U
108-10-1	4-Methyl-2-Pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	t-1,3-Dichloropropene	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-S8-070904

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3521 SAS No.: S3521 SDG No.: S3521

Matrix (soil/water): WATER Lab Sample ID: S3521-02

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071507.D

Level (low/med): Date Received: 7/10/02

% Moisture: not dec. 100 Date Analyzed: 7/15/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
591-78-6	2-Hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.50	U
127-18-4	Tetrachloroethene	0.46	J
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethyl Benzene	0.50	U
136777-61-2	m&p-xylenes	0.50	U
95-47-6	o-xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropylbenzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VE-S8-070904

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3521 SAS No.: S3521 SDG No.: S3521

Matrix (soil/water): WATER Lab Sample ID: S3521-02

Sample wt/vol: 25.0 (g/mL) mL Lab File ID: VF071507.D

Level (low/med): Date Received: 7/10/2002

% Moisture: not dec. 100 Date Analyzed: 7/15/2004

GC Column: RTX624 ID: 0.53 Dilution Factor: 1.0

Soil Extract Volume: Soil Aliquot Volume:

Number TICS found: 6 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

	CAS NO.	COMPOUND	RT	EST. CONC.	Q
1.	41977473	Bicyclo[4.1.0]heptane, 3-met	16.35	1.2	J N
2.	10494878	Ethylidenecycloheptane	17.77	1.1	J
3.	98066	Benzene, tert-butyl-	19.57	0.69	J
4.	280659	Bicyclo[3.3.1]nonane	19.83	1.1	J
5.	281232	Adamantane	22.24	1.5	J
6.	17498714	Benzene, (2-methyl-1-methyle	22.72	1.5	J

Comments:

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-S1-070904

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3521 SAS No.: S3521 SDG No.: S3521

Matrix (soil/water): WATER Lab Sample ID: S3521-03

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071508.D

Level (low/med): Date Received: 7/10/02

% Moisture: not dec. 100 Date Analyzed: 7/15/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
76-13-1	1,1,2-Trichlorotrifluoroethan	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
67-64-1	Acetone	2.5	U
75-15-0	Carbon disulfide	0.50	U
1634-04-4	Methyl tert-butyl Ether	2.6	
79-20-9	Methyl Acetate	0.50	U
75-09-2	Methylene Chloride	0.42	JB UJ
156-60-5	trans-1,2-Dichloroethene	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
110-82-7	Cyclohexane	0.50	U
78-93-3	2-Butanone	2.5	U
56-23-5	Carbon Tetrachloride	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.23	J
74-97-5	Bromochloromethane	0.50	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
108-87-2	Methylcyclohexane	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.36	J
78-87-5	1,2-Dichloropropane	0.50	U
123-91-1	1,4-Dioxane	10	U
75-27-4	Bromodichloromethane	0.50	U
108-10-1	4-Methyl-2-Pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	t-1,3-Dichloropropene	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VE-S1-070904

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3521 SAS No.: S3521 SDG No.: S3521

Matrix (soil/water): WATER Lab Sample ID: S3521-03

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071508.D

Level (low/med): Date Received: 7/10/02

% Moisture: not dec. 100 Date Analyzed: 7/15/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS No.	Compound	(ug/L or ug/Kg) ug/L	Q
591-78-6	2-Hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethyl Benzene	0.50	U
136777-61-2	m&p-xylenes	0.50	U
95-47-6	o-xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropylbenzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VE-S1-070904

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3521 SAS No.: S3521 SDG No.: S3521

Matrix (soil/water): WATER Lab Sample ID: S3521-03

Sample wt/vol: 25.0 (g/mL) mL Lab File ID: VF071508.D

Level (low/med): Date Received: 7/10/2002

% Moisture: not dec. 100 Date Analyzed: 7/15/2004

GC Column: RTX624 ID: 0.53 Dilution Factor: 1.0

Soil Extract Volume: Soil Aliquot Volume:

Number TICS found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND	RT	EST. CONC.	Q

Comments:

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIPBLANK

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3521 SAS No.: S3521 SDG No.: S3521

Matrix (soil/water): WATER Lab Sample ID: S3521-04

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071505.D

Level (low/med): Date Received: 7/10/02

% Moisture: not dec. 100 Date Analyzed: 7/15/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS No.	Compound	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
76-13-1	1,1,2-Trichlorotrifluoroethan	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
67-64-1	Acetone	5.6	B J
75-15-0	Carbon disulfide	0.50	U
1634-04-4	Methyl tert-butyl Ether	0.50	U
79-20-9	Methyl Acetate	0.50	U
75-09-2	Methylene Chloride	5.0	B J
156-60-5	trans-1,2-Dichloroethene	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
110-82-7	Cyclohexane	0.50	U
78-93-3	2-Butanone	2.5	U
56-23-5	Carbon Tetrachloride	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
74-97-5	Bromochloromethane	0.50	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
108-87-2	Methylcyclohexane	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
123-91-1	1,4-Dioxane	10	U R
75-27-4	Bromodichloromethane	0.50	U
108-10-1	4-Methyl-2-Pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	t-1,3-Dichloropropene	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIPBLANK

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3521 SAS No.: S3521 SDG No.: S3521

Matrix (soil/water): WATER Lab Sample ID: S3521-04

Sample wt/vol: 25.0 (g/mL) ml Lab File ID: VF071505.D

Level (low/med): Date Received: 7/10/02

% Moisture: not dec. 100 Date Analyzed: 7/15/04

GC Column: RTX624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS No.	Compound	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/L	Q
591-78-6	2-Hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U
106-93-4	1,2-Dibromoethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethyl Benzene	0.50	U
136777-61-2	m&p-xylenes	0.50	U
95-47-6	o-xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropylbenzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
87-61-6	1,2,3-Trichlorobenzene	0.50	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TRIPBLANK

Lab Name: Chemtech Contract: FOST03

Lab Code: CTECH Case No.: S3521 SAS No.: S3521 SDG No.: S3521

Matrix (soil/water): WATER Lab Sample ID: S3521-04

Sample wt/vol: 25.0 (g/mL) mL Lab File ID: VF071505.D

Level (low/med): Date Received: 7/10/2002

% Moisture: not dec. 100 Date Analyzed: 7/15/2004

GC Column: RTX624 ID: 0.53 Dilution Factor: 1.0

Soil Extract Volume: Soil Aliquot Volume:

Number TICS found: 0 CONCENTRATION UNITS:
(ug/L or ug/Kg) ug/L

CAS NO.	COMPOUND	RT	EST. CONC.	Q

Comments:

Summary Sheet
SW-846

SDG No.: S3521 **Order ID:** S3521

Client: Tetra Tech FW Inc.. **Project ID:** FOST03

Sample ID	Client ID	Matrix	Parameter		Concentration	C	RDL	MDL	Units
Client ID:	**TRIPBLANK**								
S3521-04	TRIPBLANK	WATER	Acetone		5.6	B	2.5	1.2	ug/L
S3521-04	TRIPBLANK	WATER	Methylene Chloride		5.0	B	0.50	0.36	ug/L
			Total VOC's:		10.60				
			Total TIC's:		0.00				
			Total VOC's and TIC's:		10.60				
Client ID:	**VE-FB-070904**								
S3521-01	VE-FB-070904	WATER	Methylene Chloride		0.43	JB	0.50	0.36	ug/L
			Total VOC's:		0.43				
			Total TIC's:		0.00				
			Total VOC's and TIC's:		0.43				
Client ID:	**VE-S1-070904**								
S3521-03	VE-S1-070904	WATER	Methyl tert-butyl Ether		2.6		0.50	0.21	ug/L
S3521-03	VE-S1-070904	WATER	Methylene Chloride		0.42	JB	0.50	0.36	ug/L
S3521-03	VE-S1-070904	WATER	cis-1,2-Dichloroethene		0.23	J	0.50	0.27	ug/L
S3521-03	VE-S1-070904	WATER	Trichloroethene		0.36	J	0.50	0.19	ug/L
			Total VOC's:		3.61				
			Total TIC's:		0.00				
			Total VOC's and TIC's:		3.61				
Client ID:	**VE-S8-070904**								
S3521-02	VE-S8-070904	WATER	Acetone		4.7	B	2.5	1.2	ug/L
S3521-02	VE-S8-070904	WATER	Methylene Chloride		0.36	JB	0.50	0.36	ug/L
S3521-02	VE-S8-070904	WATER	cis-1,2-Dichloroethene		1.4		0.50	0.27	ug/L
S3521-02	VE-S8-070904	WATER	Trichloroethene		0.71		0.50	0.19	ug/L
S3521-02	VE-S8-070904	WATER	Tetrachloroethene		0.46	J	0.50	0.20	ug/L
S3521-02	VE-S8-070904	WATER	Bicyclo[4.1.0]heptane, 3-meth	*	1.2	J	0	0	ug/L
S3521-02	VE-S8-070904	WATER	Ethylidenecycloheptane	*	1.1	J	0	0	ug/L
S3521-02	VE-S8-070904	WATER	Benzene, tert-butyl-	*	0.69	J	0	0	ug/L
S3521-02	VE-S8-070904	WATER	Bicyclo[3.3.1]nonane	*	1.1	J	0	0	ug/L
S3521-02	VE-S8-070904	WATER	Adamantane	*	1.5	J	0	0	ug/L
S3521-02	VE-S8-070904	WATER	Benzene, (2-methyl-1-methyle	*	1.5	J	0	0	ug/L
			Total VOC's:		7.63				
			Total TIC's:		7.09				
			Total VOC's and TIC's:		14.72				

Note: The asterisk "*" flag next to a parameter signifies a TIC parameter.

Title: Evaluation of Metals Data for the Contract Laboratory Program
Appendix A.2: Data Assessment Narrative

Date: Jan. 1992
Number: HW-2
Revision: 11

Project # S5687 **Matrix:** **Soil** _____

Site Vestal Well **Lab** Chemtech **Water** 2

Contractor TtFW **Reviewer** C. Minch **Other** _____

A.2.1 **Validation Flags-** The following flags have been applied in red by the data validator and must be considered by the data user.

J- This flag indicates the result qualified as **estimated**

Red- Line- A red-line drawn through a sample result indicates **unusable** value. The red-lined data are known to contain significant errors based on documented information and must not be used by the data user.

Fully Usable Data- The results that do not carry "J" or "red-line" are fully **usable**.

Contractual Qualifiers- The legend of contractual qualifiers applied by the lab on Form I's is found on page B-20 of SOW ILM01.0.

A.2.2 The data assessment is given below and on the attached sheets.

Silver was estimated (UJ) in both samples due to low spike recovery.

Zinc and arsenic were estimated (J/UJ) in the effluent sample due to low recovery in the associated CRI standard. Cadmium exceeded recovery criteria in the CRI standard associated with the influent sample, but no action was required.

The serial dilution exceeded criteria for Na and was estimated (J) in both samples. Potassium also exceeded criteria, but no action was required.

A.2.3 Contract-Problem/Non-Compliance

The spike analysis failed recovery criteria for Ag.
Arsenic, Zn, and Cd failed CRI criteria.
Sodium and K exceeded serial dilution criteria.

MMB/ESAT Reviewer: _____ Date: _____
Signature

Contractor Reviewer: Cecelia A. Marsh Date: 2/22/05
Signature

Verified by: _____ Date: _____

Title: Evaluation of Metals Data for the Contract Laboratory Program
Appendix A.3: Contract Non-Compliance (SMO Report)

Date: Jan. 1992
Number: HW-2
Revision: 11

CONTRACT NON-COMPLIANCE
(SMO REPORT)

Regional Review of Uncontrolled Hazardous Waste
Site Contract Laboratory Data Package

PROJECT NO. S5687

The hardcopied (laboratory name) Chemtech
Inorganic data package received at Region II has been reviewed and the quality assurance and performance data summarized. The data reviewed included:
Sample No: Treatment Plant Effluent, Treatment Plant Influent

Conc. & Matrix: 2 water

Contract No.(___) requires that specific analytical work be done and that associated reports be provided by the contractor to the Regions, EMSL-LV, and SMO. The general criteria used to determine the performance were based on an examination of:

- Data Completeness
- Matrix Spike Results
- Calibration Standards Results
- Duplicate Analysis Results
- Blank Analysis Results
- MSA Results

Items of non-compliance with the above contract are described below.

Comments:

The spike analysis failed recovery criteria for Ag.
Arsenic, Zn, and Cd failed CRI criteria.
Sodium and K exceeded serial dilution criteria.

CM
Reviewer's Initials

2/22/05
Date

Title: Evaluation of Metals Data for the Contract Laboratory Program
Appendix A.5: CLP Data Assessment Summary Form (Inorganics)

Date: Jan. 1992
Number: HW-2
Revision: 11

CLP DATA ASSESSMENT SUMMARY FORM (INORGANICS)

Type of Review: Level 4 Date: 2/22/05 Project No.: S5687

Site: Vestal Well Lab Name: Chemtech

Reviewer's Initials: CW Number of Samples: 2W

Analytes Rejected Due to Exceeding Review Criteria

	Holding Time	Calibration	Prep Blank	Field Blank	Interference	Matrix Spike	Duplicates		Detection Limits	LCS	Serial Dilution	MSA	Total Analytes	Rejected
							Lab	Field						
ICP													44	0
Flame AA														
Furnace AA														
Mercury													2	0
Total													46	0
Other														

Analytes Flagged as Estimated (J) Due to Exceeding Criteria For:

	Holding Time	CRDL/CRI Calibration	Prep Blank	Field Blank	Interference	Matrix Spike	Duplicates		Matrix Spike	LCS	Serial Dilution	MSA	Total Analytes	Estimated
							Lab	Field						
ICP		2							2		2		44	4
Flame AA														
Furnace AA														
Mercury													2	0
Total		2							2		2		46	6
Other														

Note:
Asterisk (*) indicates additional exceedances of review criteria.

Title: Evaluation of Metals Data for the Contract Laboratory Program
Appendix A.6: CLP Data Assessment Checklist

Inorganic Analysis

Date: Jan. 1992
Number: HW-2
Revision: 11

INORGANIC REGIONAL DATA ASSESSMENT Region II

PROJECT NO S5687 SITE Vestal Well

LABORATORY Chemtech NO. OF SAMPLES/MATRIX 2W

SDG# REVIEWER (IF NOT ESD) TtFW

SOW# ILM04.0 REVIEWER'S NAME C. Minch

DPO: ACTION FYI COMPLETION DATE 2/22/05

DATA ASSESSMENT SUMMARY

		ICP	AA	Hg	CN
1.	HOLDING TIMES	O		O	
2.	CALIBRATIONS	O		O	
3.	BLANKS	O		O	
4.	ICS	O		O	
5.	LCS	O		O	
6.	DUPLICATE ANALYSIS	O		O	
7.	MATRIX SPIKE	O		O	
8.	MSA	-		-	
9.	SERIAL DILUTION	O		O	
10.	SAMPLE VERIFICATION	O		O	
11.	OTHER QC	-		-	
12.	OVERALL ASSESSMENT	O		O	

O = Data has no problems/or qualified due to minor problems.
M = Data qualified due to major problems.
Z = Data unacceptable.
X = Problems, but do not affect data.

ACTION ITEMS:
Arsenic, cadmium, and zinc failed CRI criteria. Silver estimated due to low spike recovery. Sodium estimated for exceeding serial dilution criteria.

AREAS OF CONCERN:

NOTABLE PERFORMANCE:

TETRA TECH FW, INC

873 Chivas Drive, Toms River, NJ 08753
Tel 732-270-0988 Fax 732-270-1902

FAX

To M. Reyes

Phone 908 - 789 - 8900

Fax 908 - 789 - 8922

Date 2/28/05

No. of pages (including cover sheet) 4

From C. Minch

Mildred,

S5687 - metals

The issue regarding the MDL for Hg is still unresolved. Originally the MDL was listed on Form 9 as 0.07 acquired on 1/20/04 and the CRQL standard concentration was reported as 0.17, which was fine. However, now you are saying that the MDL was incorrect on Form 9 and is actually 0.19 and that a corrected form has been submitted. Well, the revised form does not list 0.19, but shows 0.2. In addition, if the MDL is now 0.19, Form 2B needs revision because you can not report a value less than the MDL (see copies of both forms). Please re-evaluate all data and resubmit forms with correct information that substantiates the data reported on both of them. Report the MDL on Form 9 to 2 decimal places to avoid confusion (i.e. 0.19 not 0.2).

Do not hesitate to call if you have any questions.

Thank you.

Celia

CHEMTECH 284 Sheffield Street • Mountainside, NJ 07092 Phone: 908-789-8900 Fax: 908-789-8922

ANALYTICAL RESULTS SUMMARY

PROJECT NAME: Vestal Well 1 1 Site

TETRA TECH FW INC..
1000 AMERICAN ROAD
MORRIS PLAINS, NJ 07950
9736308000

CHEMTECH PROJECT NO. **S5687**
ATTENTION: **Heidemarie Roldan**

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

TREATMENTPLANTEFFLUE
NM

Lab Name: Chemtech Consulting Group Contract: Tetra Tech FW Inc..

Lab Code: CHEMED Case No.: S5687 NRAS No.: S5687 SDG NO.: S5687

Matrix (soil/water): WATER Lab Sample ID: S5687-01

Level (low/med): LOW Date Received: 11/11/2004

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	81.0	J		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U	J	P
7440-39-3	Barium	43.9	J		P
7440-41-7	Beryllium	5.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	91400			P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-50-8	Copper	25.0	U		P
7439-89-6	Iron	100	U		P
7439-92-1	Lead	10.0	U		P
7439-95-4	Magnesium	13800			P
7439-96-5	Manganese	130			P
7439-97-6	Mercury	0.200	U		CV
7440-02-0	Nickel	40.0	U		P
7440-09-7	Potassium	1760	J		P
7782-49-2	Selenium	35.0	U		P
7440-22-4	Silver	10.0	U	N J	P
7440-23-5	Sodium	40700		E J	P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	1.1	J		P
7440-66-6	Zinc	5.2	J	J	P

EM 4/4/05

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

1A-IN

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

TREATMENTPLANTINFLUE

Lab Name: Chemtech Consulting Group Contract: Tetra Tech FW Inc..

Lab Code: CHEMED Case No.: S5687 NRAS No.: S5687 SDG NO.: S5687

Matrix (soil/water): WATER Lab Sample ID: S5687-02

Level (low/med): LOW Date Received: 11/11/2004

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	91.6	J		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	41.7	J		P
7440-41-7	Beryllium	5.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	81800			P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-50-8	Copper	5.8	J		P
7439-89-6	Iron	100	U		P
7439-92-1	Lead	10.0	U		P
7439-95-4	Magnesium	12300			P
7439-96-5	Manganese	167			P
7439-97-6	Mercury	0.200	U		CV
7440-02-0	Nickel	40.0	U		P
7440-09-7	Potassium	1580	J		P
7782-49-2	Selenium	35.0	U		P
7440-22-4	Silver	10.0	U	N	P
7440-23-5	Sodium	35300		E	P
7440-28-0	Thallium	25.0	U		P
7440-62-2	Vanadium	0.96	J		P
7440-66-6	Zinc	14.2	J		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

Hit Summary Sheet
SW-846

SDG No.: S5687 **Order ID:** S5687

Client: Tetra Tech FW Inc.. **Project ID:** Vestal Well 1 1 Site

Sample ID	Client ID	Matrix	Parameter	Concentration	C	RDL	MDL	Units
Client ID:	**TREATMENTPLANTEFFLUENT**							
S5687-01	TREATMENTPLAN	WATER	Aluminum	81.0	J	200	14.0	ug/L
S5687-01	TREATMENTPLAN	WATER	Barium	43.9	J	200	7.4	ug/L
S5687-01	TREATMENTPLAN	WATER	Calcium	91400		5000	6.1	ug/L
S5687-01	TREATMENTPLAN	WATER	Magnesium	13800		5000	13.9	ug/L
S5687-01	TREATMENTPLAN	WATER	Manganese	130		15.0	0.46	ug/L
S5687-01	TREATMENTPLAN	WATER	Potassium	1760	J	5000	52.2	ug/L
S5687-01	TREATMENTPLAN	WATER	Sodium	40700		5000	706	ug/L
S5687-01	TREATMENTPLAN	WATER	Vanadium	1.1	J	50.0	0.85	ug/L
S5687-01	TREATMENTPLAN	WATER	Zinc	5.2	J	60.0	0.59	ug/L
Client ID:	**TREATMENTPLANTINFLUENT**							
S5687-02	TREATMENTPLAN	WATER	Aluminum	91.6	J	200	14.0	ug/L
S5687-02	TREATMENTPLAN	WATER	Barium	41.7	J	200	7.4	ug/L
S5687-02	TREATMENTPLAN	WATER	Calcium	81800		5000	6.1	ug/L
S5687-02	TREATMENTPLAN	WATER	Copper	5.8	J	25.0	2.5	ug/L
S5687-02	TREATMENTPLAN	WATER	Magnesium	12300		5000	13.9	ug/L
S5687-02	TREATMENTPLAN	WATER	Manganese	167		15.0	0.46	ug/L
S5687-02	TREATMENTPLAN	WATER	Potassium	1580	J	5000	52.2	ug/L
S5687-02	TREATMENTPLAN	WATER	Sodium	35300		5000	706	ug/L
S5687-02	TREATMENTPLAN	WATER	Vanadium	0.96	J	50.0	0.85	ug/L
S5687-02	TREATMENTPLAN	WATER	Zinc	14.2	J	60.0	0.59	ug/L

APPENDIX D
Statistical Trend Analyses Data and Charts

Mann-Kendall Statistical Test

(For Groundwater Sampling Trend Analysis)

Instructions: Do not change formulas or other information in cells with a blue background, only cells with a yellow background are used for data entry. To use the spreadsheet, **provide at least four rounds** and **not more than ten rounds of data** that is **not seasonally affected**. Use consistent units. The spreadsheet contains several error checks, and a data entry error may cause **"DATA ERR"** or **"DATE ERR"** to be displayed. Dates that are not consecutive will show an error message and will not display the test results. The spreadsheet tests the data for both increasing and decreasing trends at both 80 percent and 90 percent confidence levels. If an increasing or decreasing trend is not present, an additional coefficient of variation test is used to test for stability, as proposed by Wiedemeier et al, 1999. For additional information, refer to the Interim Guidance on Natural Attenuation from the governing regulatory agencies for the site and applicable guidance for recommendations on data entry for non-detect values (**See protocol at bottom of worksheet**).

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Site Name =	Vestal Well 1-1 Site	Site ID No. =	Well Number =	**Influent**

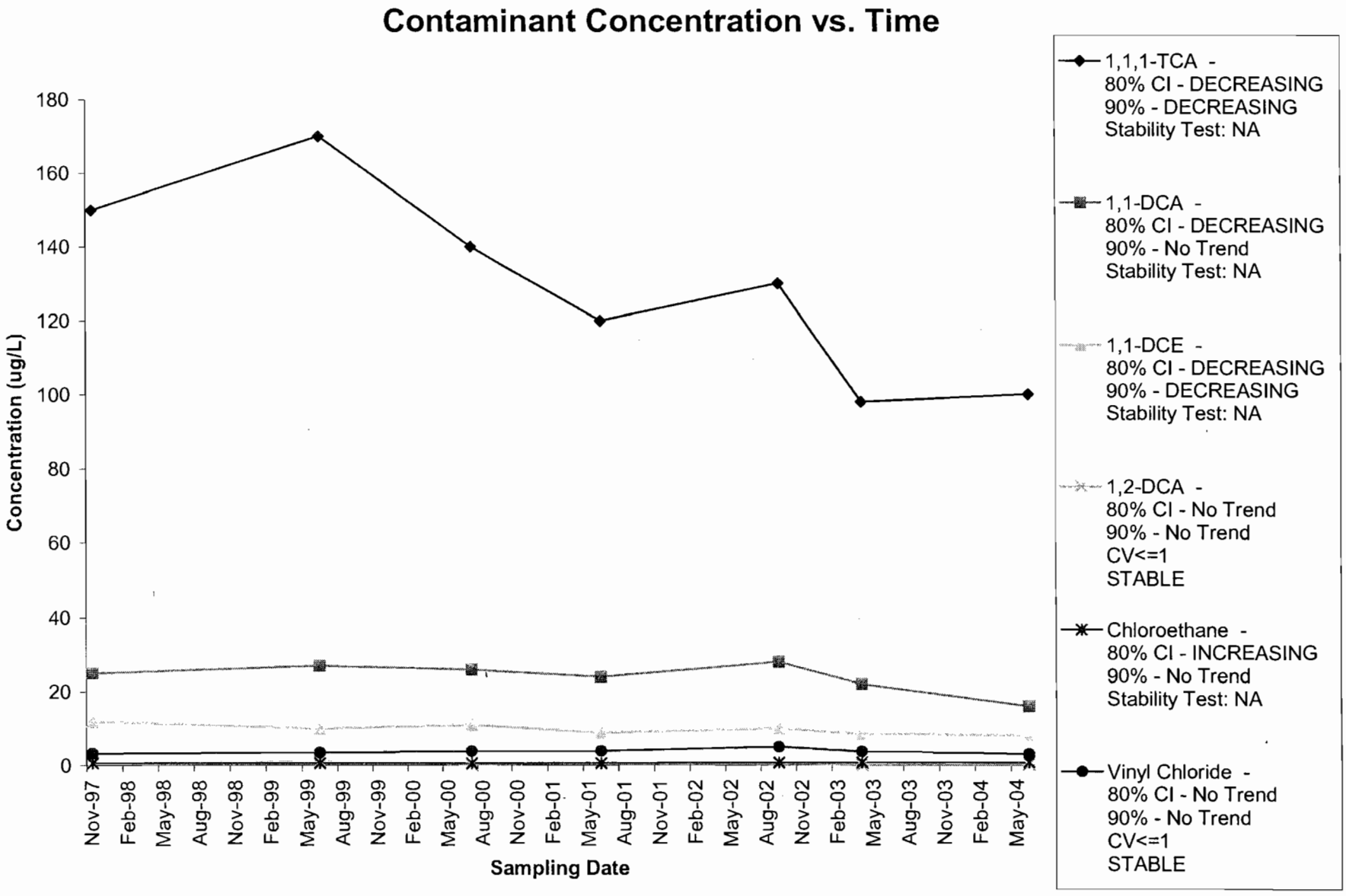
	Compound ->	**1,1,1-TCA**	**1,1-DCA**	**1,1-DCE**	**1,2-DCA**	**Chloroethane**	**Vinyl Chloride**
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data - 0 if ND)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	11/11/1997	150	25	12	0.7	0.6	3.2
2	06/07/1999	170	27	10	1	0.6	3.5
3	07/13/2000	140	26	11	0.2	0.6	3.9
4	06/06/2001	120	24	8.9	0.5	0.5	3.9
5	09/12/2002	130	28	10	0.5	0.7	5
6	04/01/2003	98	22	8.5		0.7	3.7
7	06/01/2004	100	16	8.1		0.7	3
8							
9							
10							
	Mann Kendall Statistic (S) =	-15	-9	-16	-3	9	2
	Number of Rounds (n) =	7	7	7	5	7	7
	Average =	129.71	24.00	9.79	0.58	0.63	3.74
	Standard Deviation =	26.215	4.041	1.399	0.295	0.076	0.650
	Coefficient of Variation(CV)=	0.202	0.168	0.143	0.509	0.120	0.174

Error Check, Blank if No Errors Detected						
Trend = 80% Confidence Level	**DECREASING**	**DECREASING**	**DECREASING**	**No Trend**	**INCREASING**	**No Trend**
Trend = 90% Confidence Level	**DECREASING**	**No Trend**	**DECREASING**	**No Trend**	**No Trend**	**No Trend**
Stability Test, If No Trend Exists at 80% Confidence Level	**NA**	**NA**	**NA**	**CV<=1 STABLE**	**NA**	**CV<=1 STABLE**

Data Entry By =	LB	Date =	05/18/2005	Checked By =	DC

TETRA TECH FW, INC.

Influent Mann-Kendall Test (1 of 2)



Influent-A Mann-Kendall Test.xls

Mann-Kendall Statistical Test

(For Groundwater Sampling Trend Analysis)

Instructions: Do not change formulas or other information in cells with a blue background, only cells with a yellow background are used for data entry. To use the spreadsheet, **provide at least four rounds** and **not more than ten rounds of data** that is **not seasonally affected**. Use consistent units. The spreadsheet contains several error checks, and a data entry error may cause "**DATA ERR**" or "**DATE ERR**" to be displayed. Dates that are not consecutive will show an error message and will not display the test results. The spreadsheet tests the data for both increasing and decreasing trends at both 80 percent and 90 percent confidence levels. If an increasing or decreasing trend is not present, an additional coefficient of variation test is used to test for stability, as proposed by Wiedemeier et al, 1999. For additional information, refer to the Interim Guidance on Natural Attenuation from the governing regulatory agencies for the site and applicable guidance for recommendations on data entry for non-detect values (**See protocol at bottom of worksheet**).

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Site Name =	Vestal Well 1-1 Site	Site ID No. =	Well Number =	**Influent**

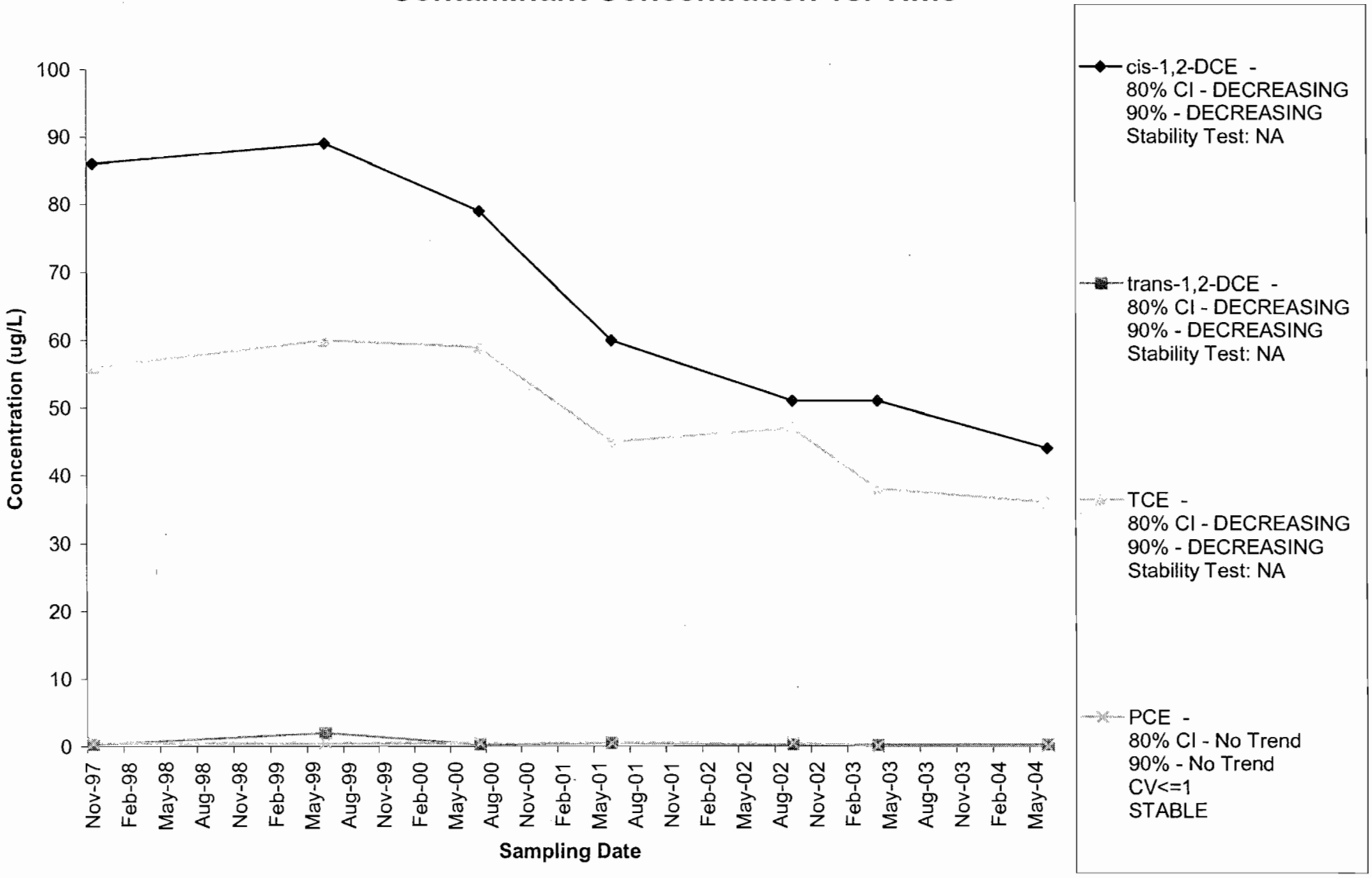
	Compound ->	**cis-1,2-DCE**	**trans-1,2-DCE**	**TCE**	**PCE**		
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data - 0 if ND)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	11/11/1997	86	0.3	56	0.5		
2	06/07/1999	89	2	60	0.5		
3	07/13/2000	79	0.3	59	0.5		
4	06/06/2001	60	0.5	45	0.5		
5	09/12/2002	51	0.3	47	0.5		
6	04/01/2003	51	0.2	38			
7	06/01/2004	44	0.25	36			
8							
9							
10							
	Mann Kendall Statistic (S) =	-18	-10	-15	0	0	0
	Number of Rounds (n) =	7	7	7	5	0	0
	Average =	65.71	0.55	48.71	0.50	#DIV/0!	#DIV/0!
	Standard Deviation =	18.563	0.646	9.827	0.000	#DIV/0!	#DIV/0!
	Coefficient of Variation(CV)=	0.282	1.175	0.202	0.000	#DIV/0!	#DIV/0!
Error Check, Blank If No Errors Detected						**N<4**	**N<4**
Trend = 80% Confidence Level		**DECREASING**	**DECREASING**	**DECREASING**	**No Trend**	**N<4**	**N<4**
Trend = 90% Confidence Level		**DECREASING**	**DECREASING**	**DECREASING**	**No Trend**	**N<4**	**N<4**
Stability Test, If No Trend Exists at 80% Confidence Level		**NA**	**NA**	**NA**	**CV<=1 STABLE**	**n<4 n<4**	**n<4 n<4**

Data Entry By =	LB	Date =	05/18/2005	Checked By =	DC

TETRA TECH FW INC.

Influent Mann-Kendall Test (2 of 2)

Contaminant Concentration vs. Time



Influent-B Mann-Kendall Test.xls

Mann-Kendall Statistical Test

(For Groundwater Sampling Trend Analysis)

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Error Messages: There is a section below the data entry screen that describes data entry errors in more detail and which cell has that error. Thus a user can determine what and where their error is very quickly. Note that a space is seen as text in Excel formulae.

Data Entry and Error Messages: When there are less than four rounds of data entered, instead of getting an "**ERROR**" message, only "**n<4**" is displayed. But, if **text**, a **zero** or a **negative number** is inadvertently entered, the "**ERROR**" message is displayed. Thus, during data entry, an "ERROR" message is only displayed when there actually is an error. Note that the **date must be entered before sample results collected on that date are entered** to avoid an error message.

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Site Name =	Vestal Well 1-1 Site	Site ID No. =	Well Number =	**EB-31**

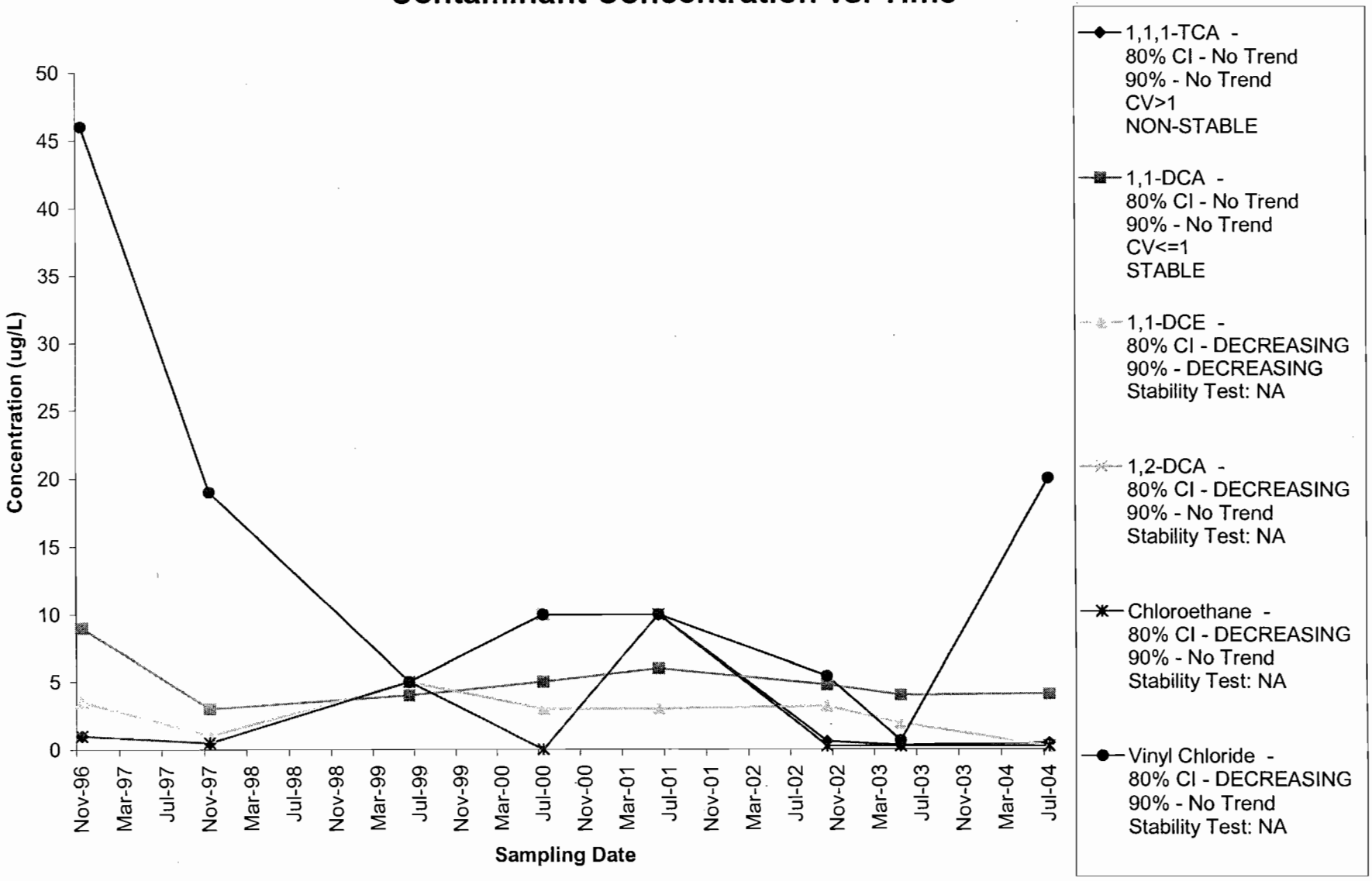
	Compound ->	**1,1,1-TCA**	**1,1-DCA**	**1,1-DCE**	**1,2-DCA**	**Chloroethane**	**Vinyl Chloride**
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data - 0 if ND)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	11/13/1996	1	9	3.5	1	1	46
2	11/14/1997	0.5	3	1	0.5	0.5	19
3	06/10/1999	5	4	5	5	5	5
4	07/12/2000	10	5	3	10		10
5	06/19/2001	10	6	3	10	10	10
6	10/16/2002	0.6	4.79	3.2	0.25	0.25	5.42
7	05/21/2003	0.316	4.02	1.95	0.25	0.25	0.655
8	07/08/2004	0.5	4.1	0.25	0.25	0.25	20
9							
10							
	Mann Kendall Statistic (S) =	-6	-2	-11	-8	-8	-9
	Number of Rounds (n) =	8	8	8	8	7	8
	Average =	3.49	4.99	2.61	3.41	2.46	14.51
	Standard Deviation =	4.302	1.844	1.500	4.369	3.740	14.381
	Coefficient of Variation(CV)=	1.233	0.370	0.574	1.283	1.518	0.991
Error Check, Blank if No Errors Detected							
Trend = 80% Confidence Level		**No Trend**	**No Trend**	**DECREASING**	**DECREASING**	**DECREASING**	**DECREASING**
Trend = 90% Confidence Level		**No Trend**	**No Trend**	**DECREASING**	**No Trend**	**No Trend**	**No Trend**
Stability Test, If No Trend Exists at 80% Confidence Level		**CV>1 NON-STABLE**	**CV<=1 STABLE**	**NA**	**NA**	**NA**	**NA**

Data Entry By =	LB	Date =	05/18/2005	Checked By =	DC

TETRA TECH FW, INC.

EB-31 Mann-Kendall Test (1 of 2)

Contaminant Concentration vs. Time



EB-31-A Mann-Kendall Test.xls

Mann-Kendall Statistical Test

(For Groundwater Sampling Trend Analysis)

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Site Name =	Vestal Well 1-1 Site	Site ID No. =	Well Number =	**EB-31**

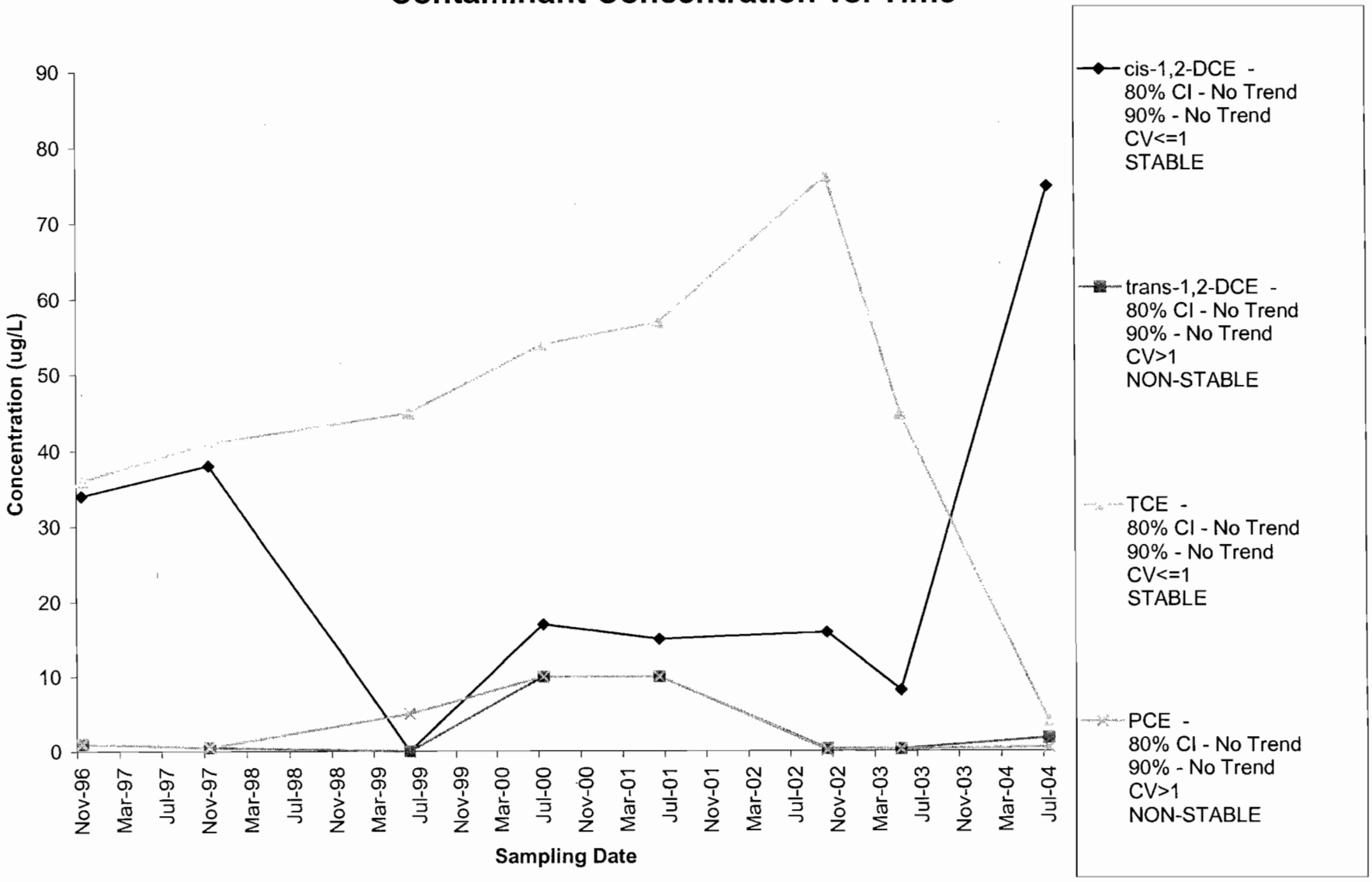
	Compound ->	**cis-1,2-DCE**	**trans-1,2-DCE**	**TCE**	**PCE**		
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data - 0 if ND)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	11/13/1996	34	1	36	1		
2	11/14/1997	38	0.5	41	0.5		
3	06/10/1999			45	5		
4	07/12/2000	17	10	54	10		
5	06/19/2001	15	10	57	10		
6	10/16/2002	15.9	0.334	76.3	0.137		
7	05/21/2003	8.2	0.311	44.9	0.25		
8	07/08/2004	75	1.8	4.1	0.51		
9							
10							
	Mann Kendall Statistic (S) =	-5	-4	6	-3	0	0
	Number of Rounds (n) =	7	7	8	8	0	0
	Average =	29.01	3.42	44.79	3.42	#DIV/0!	#DIV/0!
	Standard Deviation =	22.972	4.524	20.613	4.355	#DIV/0!	#DIV/0!
	Coefficient of Variation(CV)=	0.792	1.322	0.460	1.272	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected						**N<4**	**N<4**
Trend = 80% Confidence Level		**No Trend**	**No Trend**	**No Trend**	**No Trend**	**N<4**	**N<4**
Trend = 90% Confidence Level		**No Trend**	**No Trend**	**No Trend**	**No Trend**	**N<4**	**N<4**
Stability Test, If No Trend Exists at 80% Confidence Level		**CV<=1 STABLE**	**CV>1 NON-STABLE**	**CV<=1 STABLE**	**CV>1 NON-STABLE**	**n<4 n<4**	**n<4 n<4**

Data Entry By =	LB	Date =	05/18/2005	Checked By =	DC

TETRA TECH FW, INC.

EB-31 Mann-Kendall Test (2 of 2)

Contaminant Concentration vs. Time



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(For Groundwater Sampling Trend Analysis)

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Site Name =	Vestal Well 1-1 Site	Site ID No. =	Well Number =	**EB-33**

	Compound ->	**1,1,1-TCA**	**1,1-DCA**	**1,1-DCE**	**1,2-DCA**	**Chloroethane**	**Vinyl Chloride**
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data - 0 if ND)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	11/14/1996	18	50	4.5	0.5	0.5	15
2	11/13/1997	22	39	6.9	0.5	0.5	8.9
3	06/09/1999	7	23	3	5	5	5
4	07/13/2000	6	14	50		50	8
5	06/19/2001	25	11	25	25	25	24
6	10/16/2002	1.42	9.78	0.25	0.25	0.25	118
7	05/21/2003	0.85	5.1	0.25	0.25	0.25	14.6
8	07/08/2004	0.29	4.1	2.1	0.25	0.25	2
9							
10							
	Mann Kendall Statistic (S) =	-18	-28	-9	-7	-8	-2
	Number of Rounds (n) =	8	8	8	7	8	8
	Average =	10.07	19.50	11.50	4.54	10.22	24.44
	Standard Deviation =	10.068	16.751	17.519	9.189	18.187	38.420
	Coefficient of Variation(CV)=	1.000	0.859	1.523	2.026	1.780	1.572

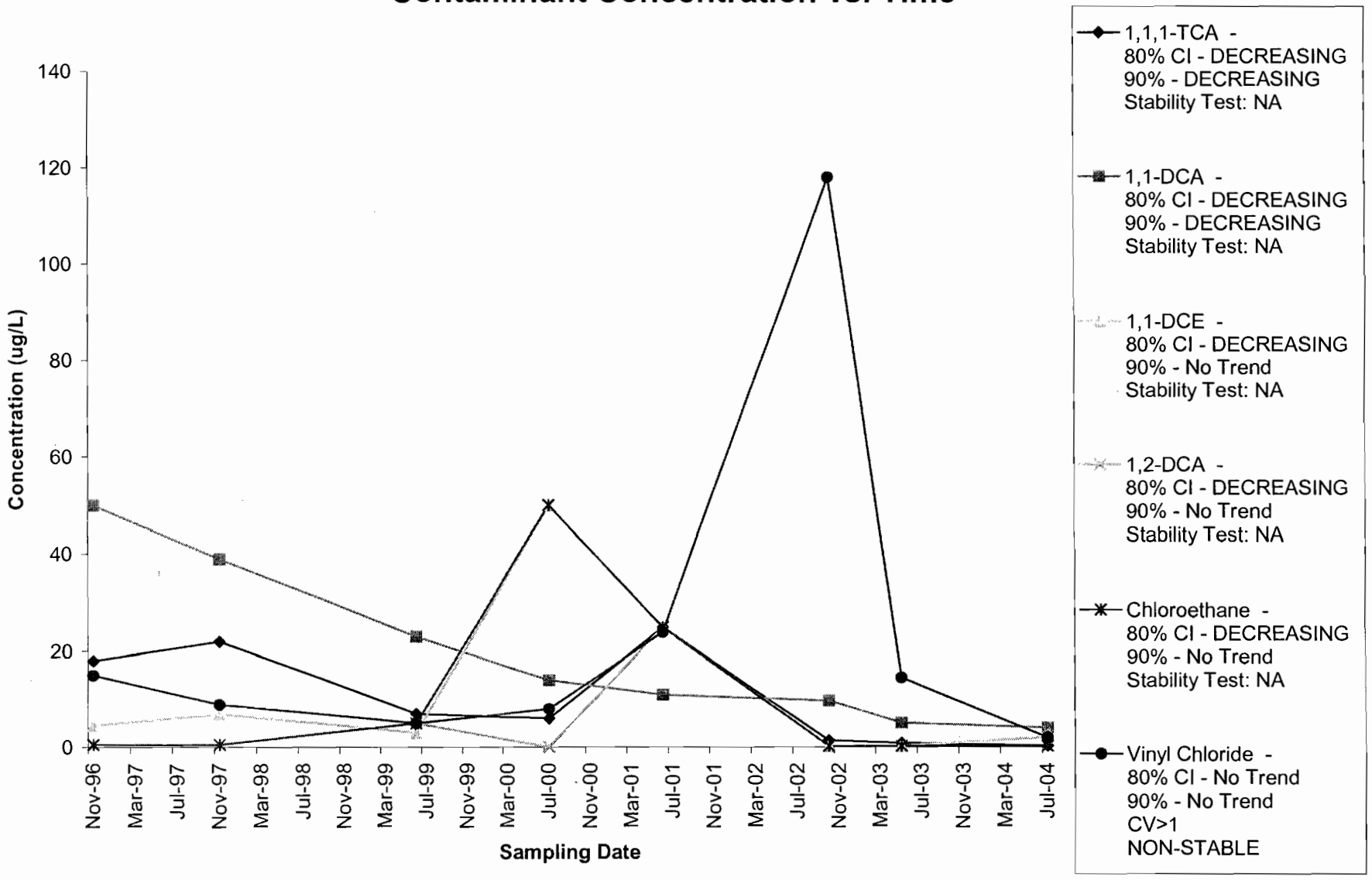
Error Check, Blank if No Errors Detected						
Trend = 80% Confidence Level	**DECREASING**	**DECREASING**	**DECREASING**	**DECREASING**	**DECREASING**	**No Trend**
Trend = 90% Confidence Level	**DECREASING**	**DECREASING**	**No Trend**	**No Trend**	**No Trend**	**No Trend**
Stability Test, If No Trend Exists at 80% Confidence Level	**NA**	**NA**	**NA**	**NA**	**NA**	**CV>1 NON-STABLE**

Data Entry By =	LB	Date =	05/18/2005	Checked By =	DC

TETRA TECH FW, INC.

EB-33 Mann-Kendall Test (1 of 2)

Contaminant Concentration vs. Time



Mann-Kendall Statistical Test

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To avoid biasing the Mann-Kendall test, **the same value for all ND results must be entered** in the spreadsheet for a given compound. This is to make sure that any identified trends are data trends and not trends of laboratory detection limits. **SEE PROTOCOL AT BOTTOM OF WORKSHEET !**

Site Name =	Vestal Well 1-1 Site	Site ID No. =	Well Number =	**EB-33**

	Compound ->	**1,1,1-TCA**	**1,1-DCA**	**1,1-DCE**	**1,2-DCA**	**Chloroethane**	**Vinyl Chloride**
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data - 0 if ND)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	11/14/1996	18	50	4.5	0.5	0.5	15
2	11/13/1997	22	39	6.9	0.5	0.5	8.9
3	06/09/1999	7	23	3	5	5	5
4	07/13/2000	6	14	50		50	8
5	06/19/2001	25	11	25	25	25	24
6	10/16/2002	1.42	9.78	0.25	0.25	0.25	118
7	05/21/2003	0.85	5.1	0.25	0.25	0.25	14.6
8	07/08/2004	0.29	4.1	2.1	0.25	0.25	2
9							
10							

	Mann Kendall Statistic (S) =	-18	-28	-9	-7	-8	-2
	Number of Rounds (n) =	8	8	8	7	8	8
	Average =	10.07	19.50	11.50	4.54	10.22	24.44
	Standard Deviation =	10.068	16.751	17.519	9.189	18.187	38.420
	Coefficient of Variation(CV)=	1.000	0.859	1.523	2.026	1.780	1.572

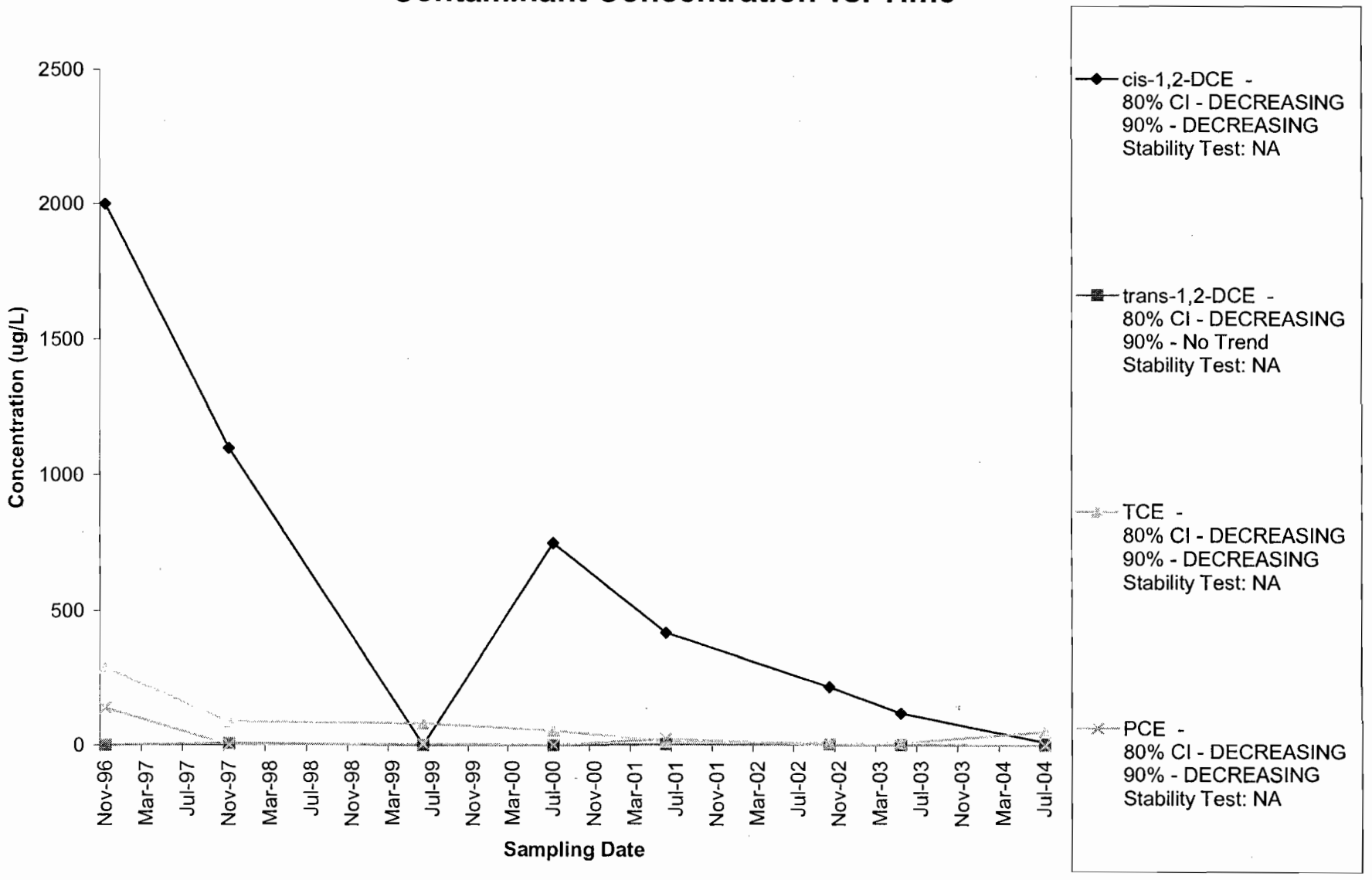
Error Check, Blank if No Errors Detected						
Trend = 80% Confidence Level	**DECREASING**	**DECREASING**	**DECREASING**	**DECREASING**	**DECREASING**	**No Trend**
Trend = 90% Confidence Level	**DECREASING**	**DECREASING**	**No Trend**	**No Trend**	**No Trend**	**No Trend**
Stability Test, If No Trend Exists at 80% Confidence Level	**NA**	**NA**	**NA**	**NA**	**NA**	**CV>1 NON-STABLE**

Data Entry By =	LB	Date =	05/18/2005	Checked By =	DC

TETRA TECH FW, INC.

EB-33 Mann-Kendall Test (2 of 2)

Contaminant Concentration vs. Time



EB-33-B Mann-Kendall Test.xls

Mann-Kendall Statistical Test

(For Groundwater Sampling Trend Analysis)

Instructions: Do not change formulas or other information in cells with a blue background, only cells with a yellow background are used for data entry. To use the spreadsheet, **provide at least four rounds** and **not more than ten rounds of data** that is **not seasonally affected**. Use consistent units. The spreadsheet contains several error checks, and a data entry error may cause "**DATA ERR**" or "**DATE ERR**" to be displayed. Dates that are not consecutive will show an error message and will not display the test results. The spreadsheet tests the data for both increasing and decreasing trends at both 80 percent and 90 percent confidence levels. If an increasing or decreasing trend is not present, an additional coefficient of variation test is used to test for stability, as proposed by Wiedemeier et al, 1999. For additional information, refer to the Interim Guidance on Natural Attenuation from the governing regulatory agencies for the site and applicable guidance for recommendations on data entry for non-detect values (**See protocol at bottom of worksheet**).

Error Messages: There is a section below the data entry screen that describes data entry errors in more detail and which cell has that error. Thus a user can determine what and where their error is very quickly. Note that a space is seen as text in Excel formulae.

Data Entry and Error Messages: When there are less than four rounds of data entered, instead of getting an "**ERROR**" message, only "**n<4**" is displayed. But, if **text**, a **zero** or a **negative number** is inadvertently entered, the "**ERROR**" message is displayed. Thus, during data entry, an "ERROR" message is only displayed when there actually is an error. Note that the **date must be entered before sample results collected on that date are entered** to avoid an error message.

To avoid biasing the Mann-Kendall test, **the same value for all ND results must be entered** in the spreadsheet for a given compound. This is to make sure that any identified trends are data trends and not trends of laboratory detection limits. **SEE PROTOCOL AT BOTTOM OF WORKSHEET !**

Site Name =	Vestal Well 1-1 Site	Site ID No. =	Well Number =	**EB-41**

	Compound ->	**1,1,1-TCA** Concentration (leave blank if no data - 0 if ND)	**1,1-DCA** Concentration (leave blank if no data)	**1,1-DCE** Concentration (leave blank if no data)	**1,2-DCA** Concentration (leave blank if no data)	**Chloroethane** Concentration (leave blank if no data)	**Vinyl Chloride** Concentration (leave blank if no data)
Event Number	Sampling Date (most recent last)						
1	11/15/1996	0.5	0.5	0.5	0.5	0.5	0.5
2	11/14/1997	0.5	0.5	0.5	0.5	0.5	0.5
3	06/10/1999	5	5	5	5	5	5
4	07/13/2000	10					
5	06/20/2001	10	10	10	10	10	10
6	10/16/2002	0.893	0.717	0.25	0.25	0.25	0.191
7	05/21/2003	0.25	0.349	0.25	0.25	0.25	0.25
8	06/29/2004	0.25	0.37	0.25	0.25	0.25	0.25
9							
10							

Mann Kendall Statistic (S) =	-5	-4	-7	-7	-7	-5
Number of Rounds (n) =	8	7	7	7	7	7
Average =	3.42	2.49	2.39	2.39	2.39	2.38
Standard Deviation =	4.353	3.716	3.777	3.777	3.777	3.783
Coefficient of Variation(CV)=	1.271	1.492	1.579	1.579	1.579	1.587

Error Check, Blank if No Errors Detected

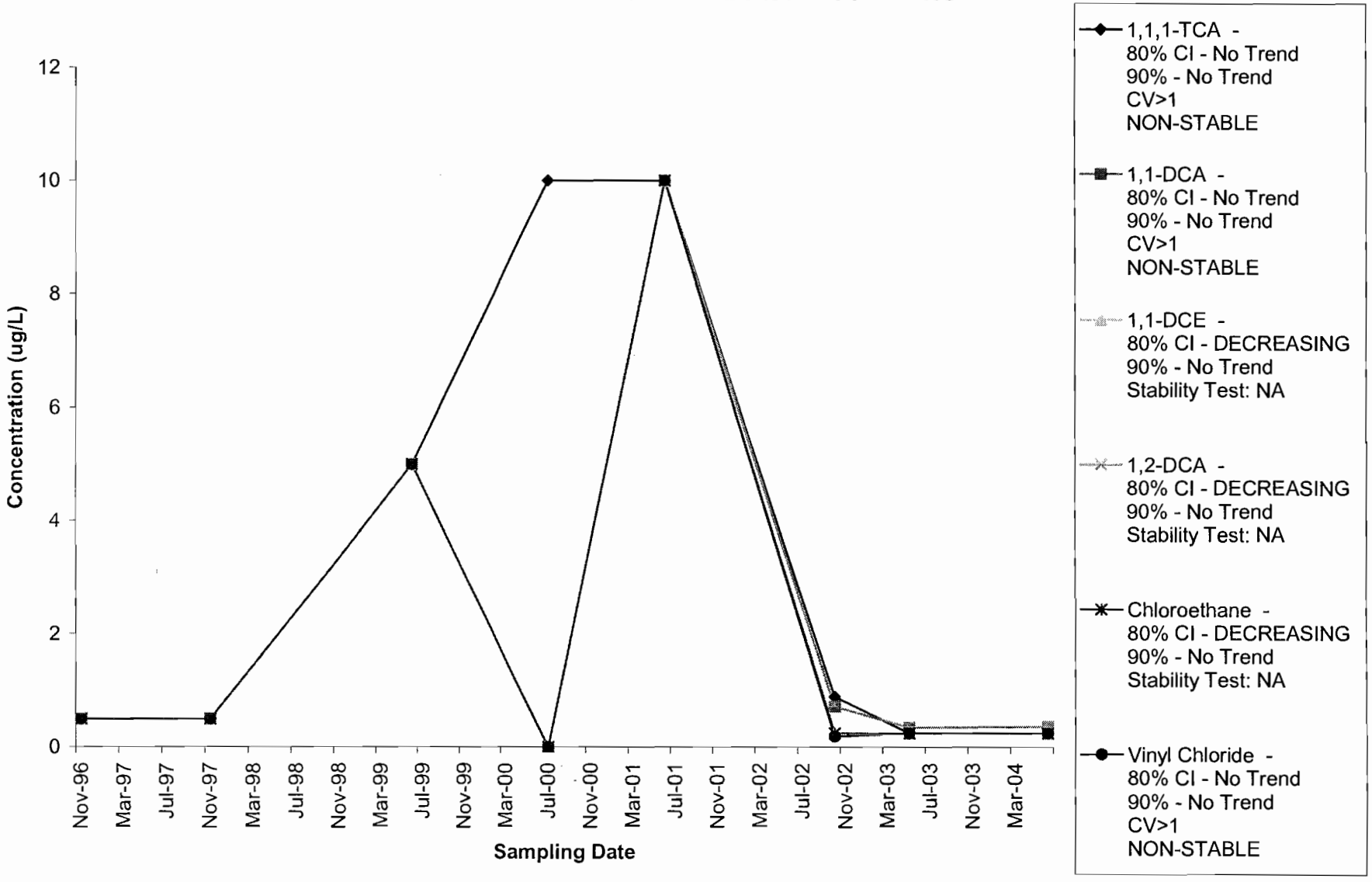
Trend = 80% Confidence Level	**No Trend**	**No Trend**	**DECREASING**	**DECREASING**	**DECREASING**	**No Trend**
Trend = 90% Confidence Level	**No Trend**	**No Trend**	**No Trend**	**No Trend**	**No Trend**	**No Trend**
Stability Test, If No Trend Exists at 80% Confidence Level	**CV>1 NON-STABLE**	**CV>1 NON-STABLE**	**NA**	**NA**	**NA**	**CV>1 NON-STABLE**

Data Entry By =	LB	Date =	05/18/2005	Checked By =	DC

TETRA TECH FW, INC.

EB-41 Mann-Kendall Test (1 of 2)

Contaminant Concentration vs. Time



EB-41-A Mann-Kendall Test.xls

Mann-Kendall Statistical Test

(For Groundwater Sampling Trend Analysis)

Instructions: Do not change formulas or other information in cells with a blue background, only cells with a yellow background are used for data entry. To use the spreadsheet, **provide at least four rounds** and **not more than ten rounds of data** that is **not seasonally affected**. Use consistent units. The spreadsheet contains several error checks, and a data entry error may cause "**DATA ERR**" or "**DATE ERR**" to be displayed. Dates that are not consecutive will show an error message and will not display the test results. The spreadsheet tests the data for both increasing and decreasing trends at both 80 percent and 90 percent confidence levels. If an increasing or decreasing trend is not present, an additional coefficient of variation test is used to test for stability, as proposed by Wiedemeier et al, 1999. For additional information, refer to the Interim Guidance on Natural Attenuation from the governing regulatory agencies for the site and applicable guidance for recommendations on data entry for non-detect values (**See protocol at bottom of worksheet**).

Error Messages: There is a section below the data entry screen that describes data entry errors in more detail and which cell has that error. Thus a user can determine what and where their error is very quickly. Note that a space is seen as text in Excel formulae.

Data Entry and Error Messages: When there are less than four rounds of data entered, instead of getting an "**ERROR**" message, only "**n<4**" is displayed. But, if **text**, a **zero** or a **negative number** is inadvertently entered, the "**ERROR**" message is displayed. Thus, during data entry, an "ERROR" message is only displayed when there actually is an error. Note that the **date must be entered before sample results collected on that date are entered** to avoid an error message.

To avoid biasing the Mann-Kendall test, **the same value for all ND results must be entered** in the spreadsheet for a given compound. This is to make sure that any identified trends are data trends and not trends of laboratory detection limits. **SEE PROTOCOL AT BOTTOM OF WORKSHEET !**

Site Name =	Vestal Well 1-1 Site	Site ID No. =	Well Number =	**EB-41**

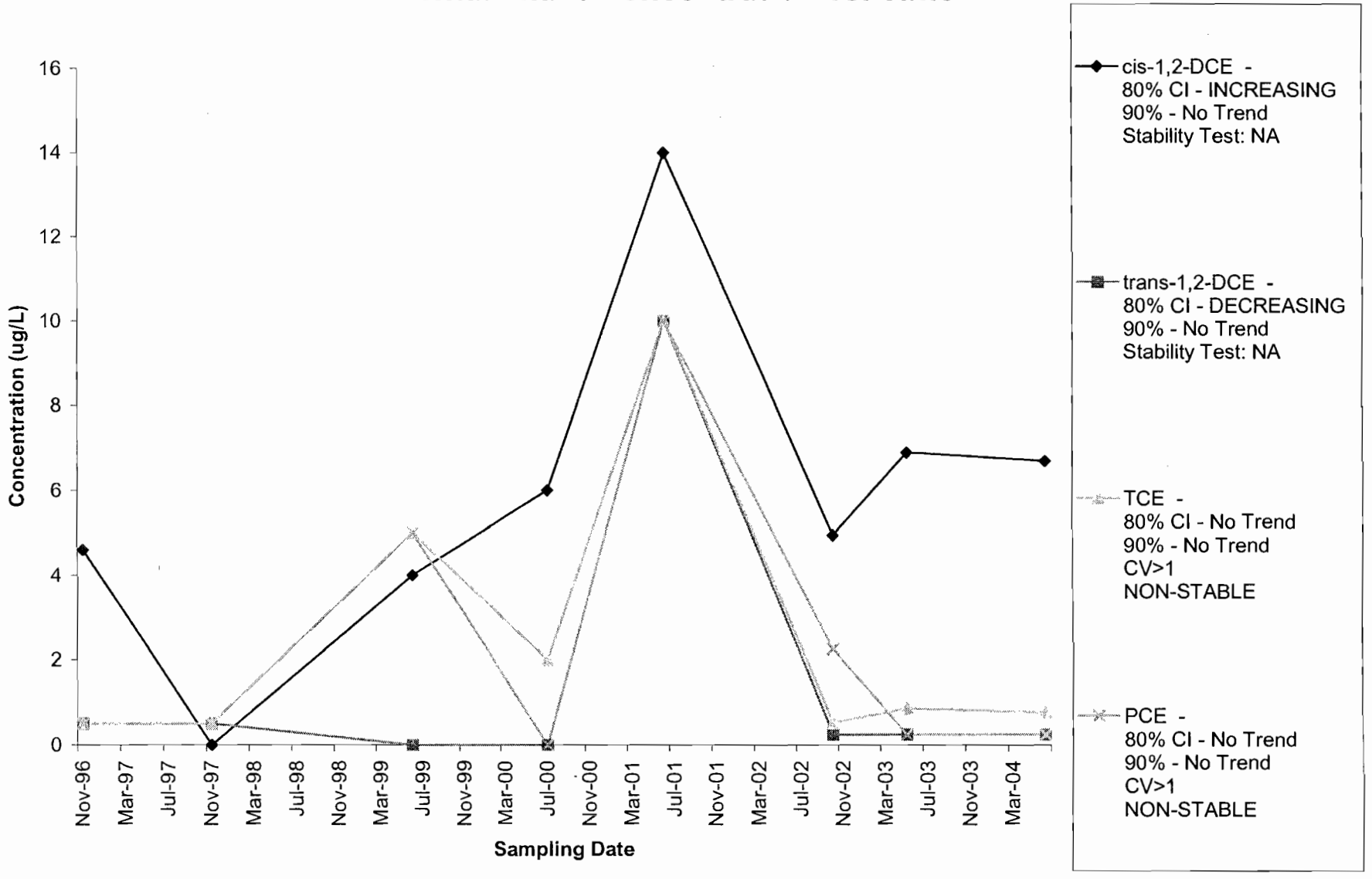
	Compound ->	**cis-1,2-DCE**	**trans-1,2-DCE**	**TCE**	**PCE**		
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data - 0 if ND)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	11/15/1996	4.6	0.5	0.5	0.5		
2	11/14/1997		0.5	0.5	0.5		
3	06/10/1999	4		5	5		
4	07/13/2000	6		2			
5	06/20/2001	14	10	10	10		
6	10/16/2002	4.94	0.25	0.524	2.25		
7	05/21/2003	6.9	0.25	0.86	0.25		
8	06/29/2004	6.7	0.25	0.77	0.25		
9							
10							
	Mann Kendall Statistic (S) =	9	-7	5	-5	0	0
	Number of Rounds (n) =	7	6	8	7	0	0
	Average =	6.73	1.96	2.52	2.68	#DIV/0!	#DIV/0!
	Standard Deviation =	3.382	3.941	3.388	3.662	#DIV/0!	#DIV/0!
	Coefficient of Variation(CV)=	0.502	2.013	1.345	1.367	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected						**N<4**	**N<4**
Trend = 80% Confidence Level		**INCREASING**	**DECREASING**	**No Trend**	**No Trend**	**N<4**	**N<4**
Trend = 90% Confidence Level		**No Trend**	**No Trend**	**No Trend**	**No Trend**	**N<4**	**N<4**
Stability Test, If No Trend Exists at 80% Confidence Level		**NA**	**NA**	**CV>1 NON-STABLE**	**CV>1 NON-STABLE**	**n<4 n<4**	**n<4 n<4**

Data Entry By =	LB	Date =	05/18/2005	Checked By =	DC

TETRA TECH FW, INC.

EB-41 Mann-Kendall Test (2 of 2)

Contaminant Concentration vs. Time



Mann-Kendall Statistical Test

(For Groundwater Sampling Trend Analysis)

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Error Messages: There is a section below the data entry screen that describes data entry errors in more detail and which cell has that error. Thus a user can determine what and where their error is very quickly. Note that a space is seen as text in Excel formulae.

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Site Name =	Vestal Well 1-1 Site	Site ID No. =	Well Number =	**S-2**

Event Number	Compound -> Sampling Date (most recent last)	**1,1,1-TCA** Concentration (leave blank if no data - 0 if ND)	**1,1-DCA** Concentration (leave blank if no data)	**1,1-DCE** Concentration (leave blank if no data)	**1,2-DCA** Concentration (leave blank if no data)	**Chloroethane** Concentration (leave blank if no data)	**Vinyl Chloride** Concentration (leave blank if no data)
1	11/14/1996	150	230	35	0.5	0.5	250
2	11/13/1997	56	72	13	0.5	2.9	71
3	06/09/1999	85	110	18	5	5	5
4	07/12/2000	190	180	33		5	310
5	06/19/2001	79	100	17	20	20	170
6	10/16/2002	46.3	66	14.3	0.25	0.25	117
7	05/22/2003	57.9	85.5	24.3	0.25	0.25	191
8	07/08/2004	15	41	9.1	0.25	1.4	25
9							
10							
	Mann Kendall Statistic (S) =	-14	-16	-10	-7	-2	-4
	Number of Rounds (n) =	8	8	8	7	8	8
	Average =	84.90	110.56	20.46	3.82	4.41	142.38
	Standard Deviation =	57.643	63.402	9.442	7.342	6.601	107.701
	Coefficient of Variation(CV)=	0.679	0.573	0.461	1.921	1.496	0.756

Error Check, Blank if No Errors Detected

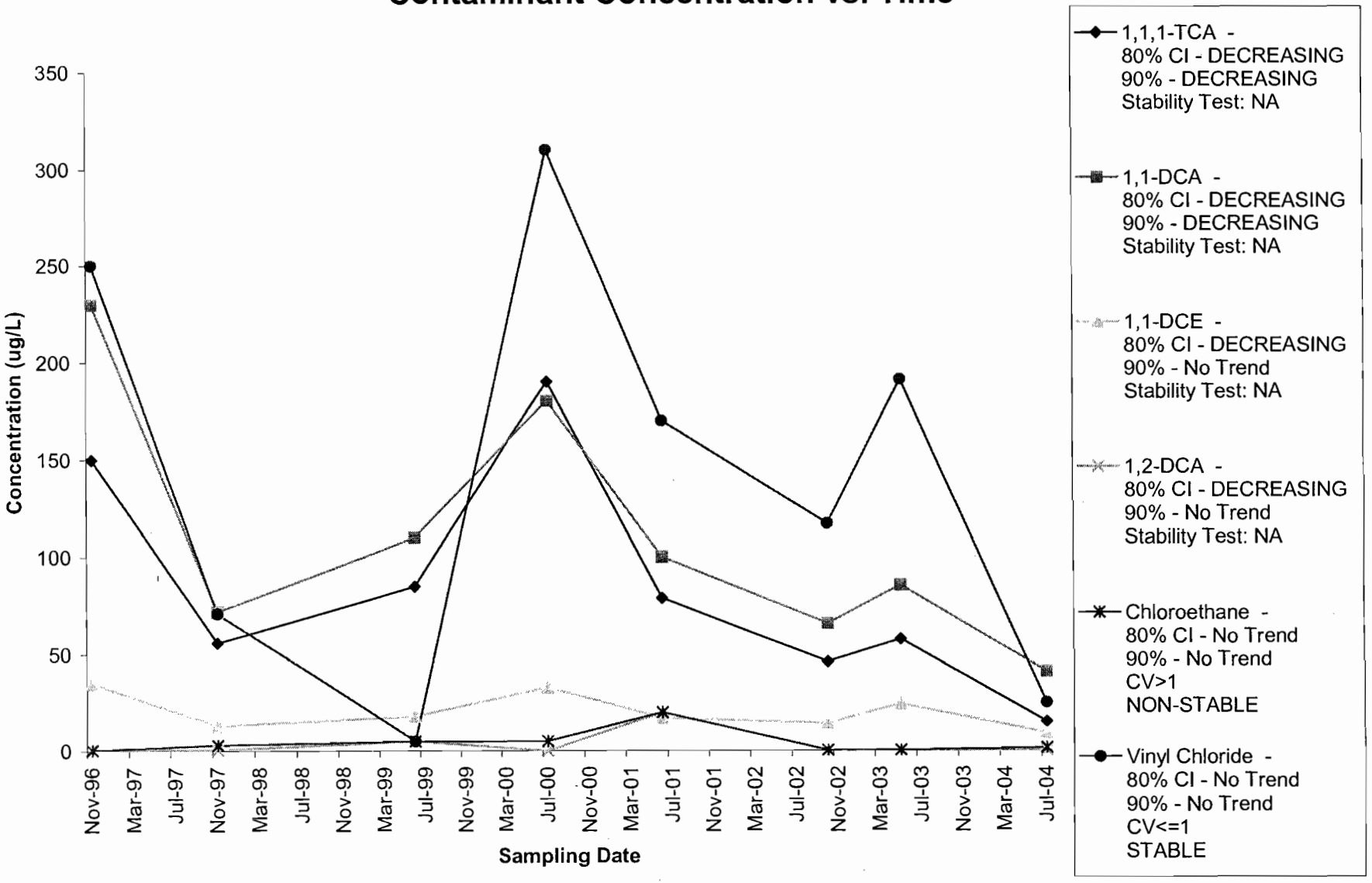
Trend = 80% Confidence Level	**DECREASING**	**DECREASING**	**DECREASING**	**DECREASING**	**No Trend**	**No Trend**
Trend = 90% Confidence Level	**DECREASING**	**DECREASING**	**No Trend**	**No Trend**	**No Trend**	**No Trend**
Stability Test, If No Trend Exists at 80% Confidence Level	**NA**	**NA**	**NA**	**NA**	**CV>1 NON-STABLE**	**CV<=1 STABLE**

Data Entry By =	LB	Date =	05/18/2005	Checked By =	DC

TETRA TECH FW, INC.

S-2 Mann-Kendall Test (1 of 2)

Contaminant Concentration vs. Time



S-2-A Mann-Kendall Test.xls

Mann-Kendall Statistical Test

(For Groundwater Sampling Trend Analysis)

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Site Name =	Vestal Well 1-1 Site	Site ID No. =	Well Number =	**S-2**

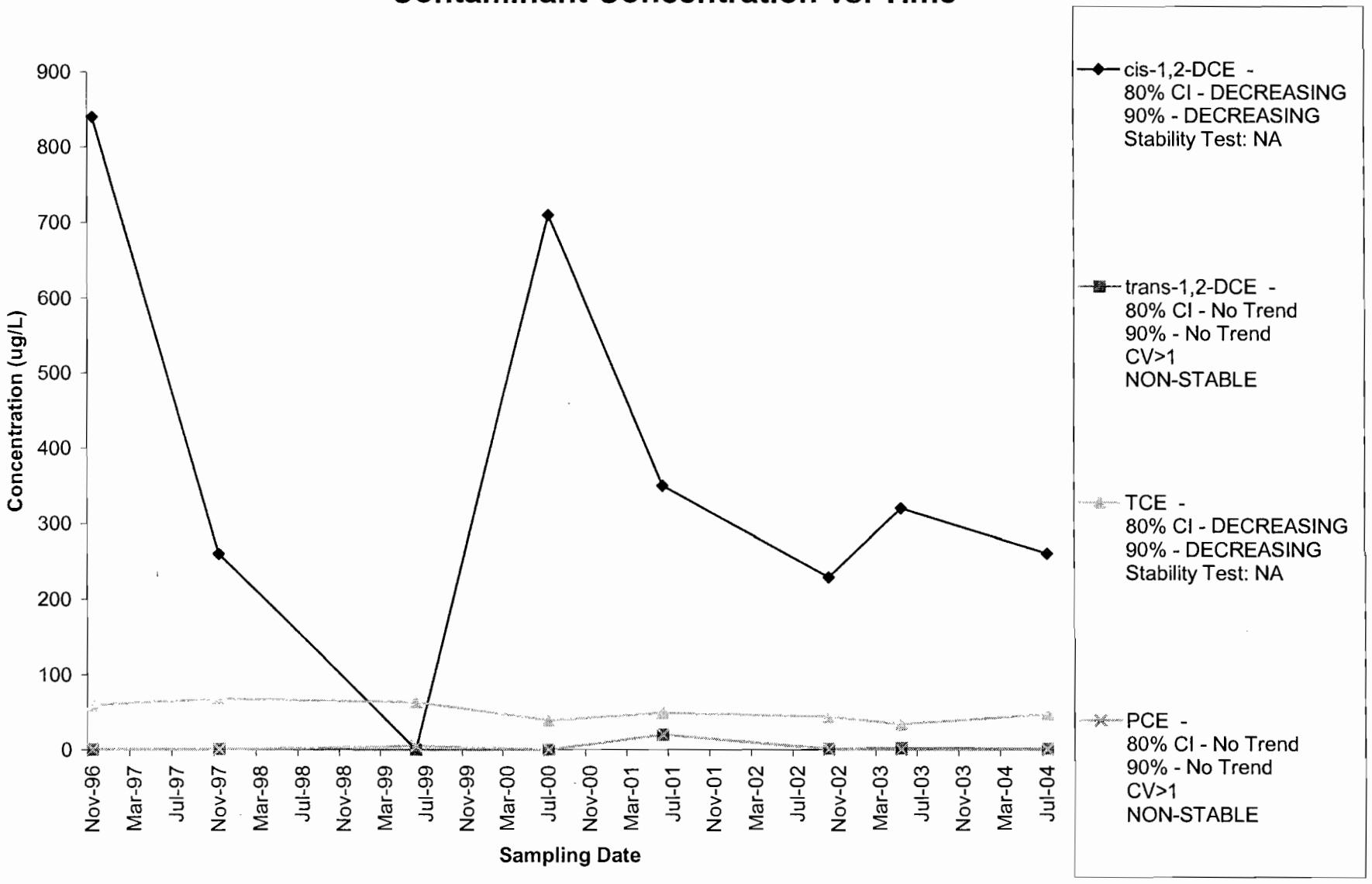
	Compound ->	**cis-1,2-DCE**	**trans-1,2-DCE**	**TCE**	**PCE**		
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data - 0 if ND)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	11/14/1996	840	0.5	60	0.5		
2	11/13/1997	260	1	68	0.5		
3	06/09/1999			63	5		
4	07/12/2000	710		39			
5	06/19/2001	350	20	49	20		
6	10/16/2002	229	1.36	43.9	0.65		
7	05/22/2003	320	1.83	34	0.25		
8	07/08/2004	260	1.2	47	0.25		
9							
10							
	Mann Kendall Statistic (S) =	-10	5	-14	-5	0	0
	Number of Rounds (n) =	7	6	8	7	0	0
	Average =	424.14	4.32	50.49	3.88	#DIV/0!	#DIV/0!
	Standard Deviation =	245.954	7.696	12.043	7.311	#DIV/0!	#DIV/0!
	Coefficient of Variation(CV)=	0.580	1.784	0.239	1.885	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected						**N<4**	**N<4**
Trend = 80% Confidence Level		**DECREASING**	**No Trend**	**DECREASING**	**No Trend**	**N<4**	**N<4**
Trend = 90% Confidence Level		**DECREASING**	**No Trend**	**DECREASING**	**No Trend**	**N<4**	**N<4**
Stability Test, If No Trend Exists at 80% Confidence Level		**NA**	**CV>1 NON-STABLE**	**NA**	**CV>1 NON-STABLE**	**n<4 n<4**	**n<4 n<4**

Data Entry By =	LB	Date =	05/18/2005	Checked By =	DC

TETRA TECH FW, INC.

S-2 Mann-Kendall Test (2 of 2)

Contaminant Concentration vs. Time



Mann-Kendall Statistical Test

(For Groundwater Sampling Trend Analysis)

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Site Name =	Vestal Well 1-1 Site	Site ID No. =	Well Number =	**S-7**

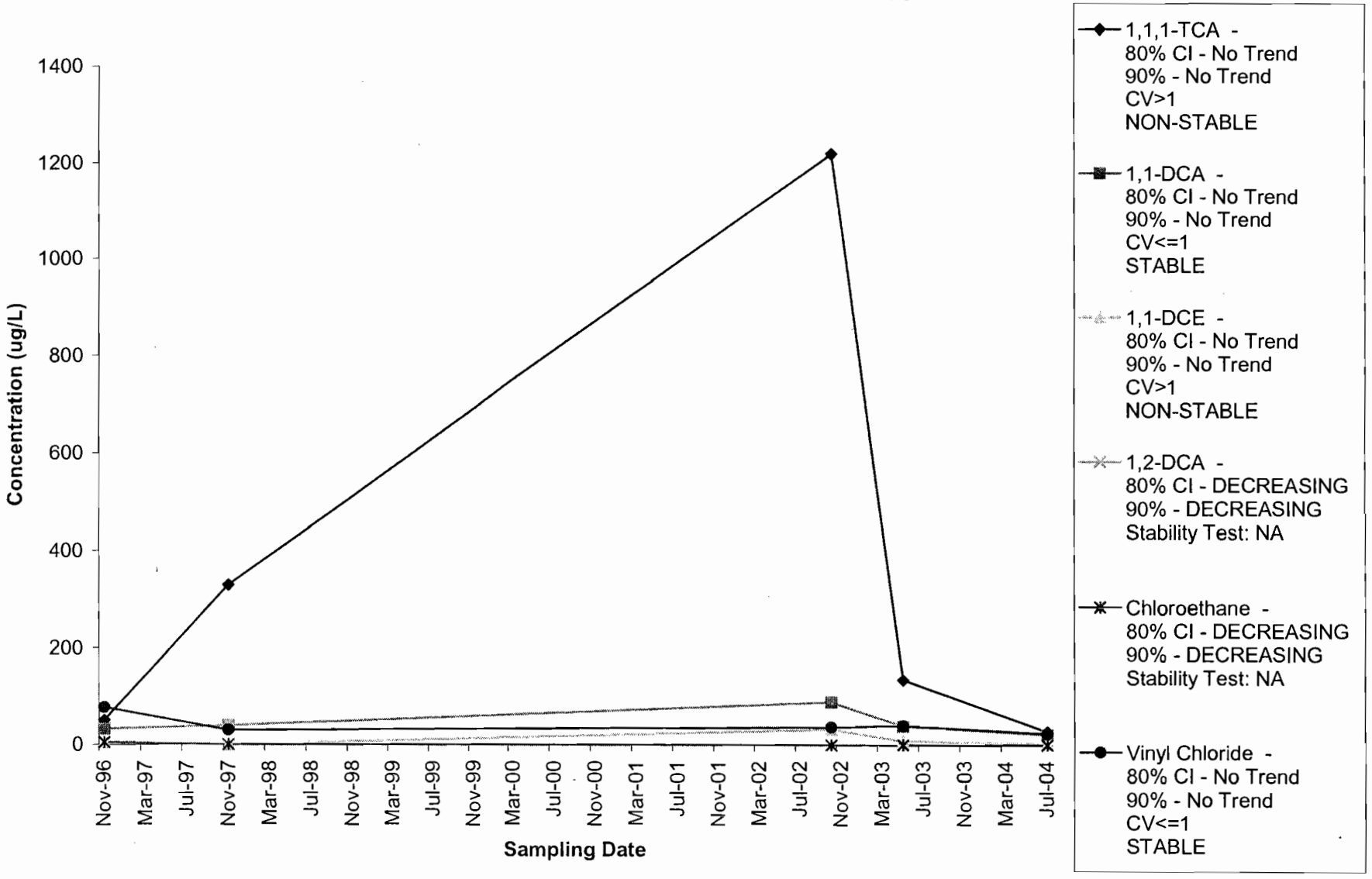
	Compound ->	**1,1,1-TCA**	**1,1-DCA**	**1,1-DCE**	**1,2-DCA**	**Chloroethane**	**Vinyl Chloride**
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data - 0 if ND)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	11/15/1996	51	33	5	5	5	78
2	11/14/1997	330	41	1.1	0.5	0.82	31
3	10/15/2002	1220	89	32.9	0.25	0.25	37.1
4	05/23/2003	135	39.3	8.27	0.25	0.25	40.3
5	07/08/2004	28	22	2.5	0.25	0.25	24
6							
7							
8							
9							
10							
	Mann Kendall Statistic (S) =	-2	-2	0	-7	-7	-4
	Number of Rounds (n) =	5	5	5	5	5	5
	Average =	352.80	44.86	9.95	1.25	1.31	42.08
	Standard Deviation =	499.142	25.775	13.113	2.099	2.075	21.023
	Coefficient of Variation(CV)=	1.415	0.575	1.317	1.679	1.579	0.500
Error Check, Blank if No Errors Detected							
Trend = 80% Confidence Level		**No Trend**	**No Trend**	**No Trend**	**DECREASING**	**DECREASING**	**No Trend**
Trend = 90% Confidence Level		**No Trend**	**No Trend**	**No Trend**	**DECREASING**	**DECREASING**	**No Trend**
Stability Test, If No Trend Exists at 80% Confidence Level		**CV>1 NON-STABLE**	**CV<=1 STABLE**	**CV>1 NON-STABLE**	**NA**	**NA**	**CV<=1 STABLE**

Data Entry By =	LB	Date =	05/18/2005	Checked By =	DC

TETRA TECH FW, INC.

S-7 Mann-Kendall Test (1 of 2)

Contaminant Concentration vs. Time



S-7-A Mann-Kendall Test.xls

Mann-Kendall Statistical Test

(For Groundwater Sampling Trend Analysis)

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Error Messages: There is a section below the data entry screen that describes data entry errors in more detail and which cell has that error. Thus a user can determine what and where their error is very quickly. Note that a space is seen as text in Excel formulae.

Data Entry and Error Messages: When there are less than four rounds of data entered, instead of getting an "**ERROR**" message, only "**n<4**" is displayed. But, if **text**, a **zero** or a **negative number** is inadvertently entered, the "**ERROR**" message is displayed. Thus, during data entry, an "ERROR" message is only displayed when there actually is an error. Note that the **date must be entered before sample results collected on that date are entered** to avoid an error message.

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Site Name =	Vestal Well 1-1 Site	Site ID No. =	Well Number =	**S-7**

Event Number	Compound -> Sampling Date (most recent last)	**cis-1,2-DCE** Concentration (leave blank if no data - 0 if ND)	**trans-1,2-DCE** Concentration (leave blank if no data)	**TCE** Concentration (leave blank if no data)	**PCE** Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	11/15/1996	170	5	37	5		
2	11/14/1997	110	0.5	45	0.5		
3	10/15/2002	40.7	0.93	25.6	0.25		
4	05/23/2003	38.4	0.769	23.7	0.25		
5	07/08/2004	69	0.76	18	0.25		
6							
7							
8							
9							
10							

Mann Kendall Statistic (S) =	-6	-4	-8	-7	0	0
Number of Rounds (n) =	5	5	5	5	0	0
Average =	85.62	1.59	29.86	1.25	#DIV/0!	#DIV/0!
Standard Deviation =	55.313	1.911	10.920	2.099	#DIV/0!	#DIV/0!
Coefficient of Variation(CV)=	0.646	1.201	0.366	1.679	#DIV/0!	#DIV/0!

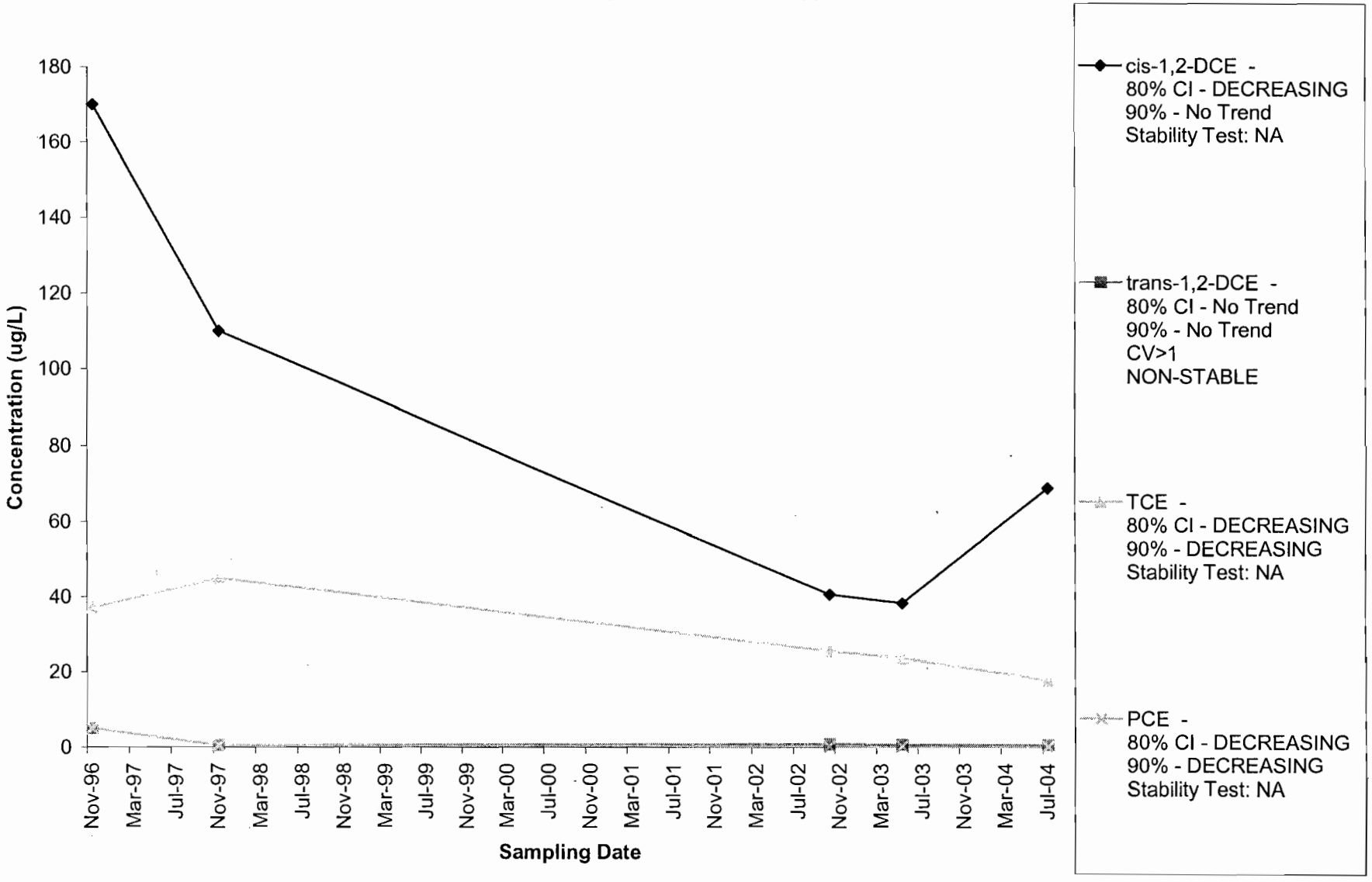
Error Check, Blank if No Errors Detected					**N<4**	**N<4**
Trend = 80% Confidence Level	**DECREASING**	**No Trend**	**DECREASING**	**DECREASING**	**N<4**	**N<4**
Trend = 90% Confidence Level	**No Trend**	**No Trend**	**DECREASING**	**DECREASING**	**N<4**	**N<4**
Stability Test, If No Trend Exists at 80% Confidence Level	**NA**	**CV>1 NON-STABLE**	**NA**	**NA**	**n<4 n<4**	**n<4 n<4**

Data Entry By =	LB	Date =	05/18/2005	Checked By =	DC

TETRA TECH FW, INC.

S-7 Mann-Kendall Test (2 of 2)

Contaminant Concentration vs. Time



S-7-B Mann-Kendall Test.xls

Mann-Kendall Statistical Test

(For Groundwater Sampling Trend Analysis)

Instructions: Do not change formulas or other information in cells with a blue background, only cells with a yellow background are used for data entry. To use the spreadsheet, **provide at least four rounds** and **not more than ten rounds of data** that is **not seasonally affected**. Use consistent units. The spreadsheet contains several error checks, and a data entry error may cause "**DATA ERR**" or "**DATE ERR**" to be displayed. Dates that are not consecutive will show an error message and will not display the test results. The spreadsheet tests the data for both increasing and decreasing trends at both 80 percent and 90 percent confidence levels. If an increasing or decreasing trend is not present, an additional coefficient of variation test is used to test for stability, as proposed by Wiedemeier et al, 1999. For additional information, refer to the Interim Guidance on Natural Attenuation from the governing regulatory agencies for the site and applicable guidance for recommendations on data entry for non-detect values (**See protocol at bottom of worksheet**).

Error Messages: There is a section below the data entry screen that describes data entry errors in more detail and which cell has that error. Thus a user can determine what and where their error is very quickly. Note that a space is seen as text in Excel formulae.

Data Entry and Error Messages: When there are less than four rounds of data entered, instead of getting an "**ERROR**" message, only "**n<4**" is displayed. But, if **text**, a **zero** or a **negative number** is inadvertently entered, the "**ERROR**" message is displayed. Thus, during data entry, an "ERROR" message is only displayed when there actually is an error. Note that the **date must be entered before sample results collected on that date are entered** to avoid an error message.

To avoid biasing the Mann-Kendall test, **the same value for all ND results must be entered** in the spreadsheet for a given compound. This is to make sure that any identified trends are data trends and not trends of laboratory detection limits. **SEE PROTOCOL AT BOTTOM OF WORKSHEET !**

Site Name =	Vestal Well 1-1 Site	Site ID No. =	Well Number =	**S-11**

	Compound ->	**1,1,1-TCA**	**1,1-DCA**	**1,1-DCE**	**1,2-DCA**	**Chloroethane**	**Vinyl Chloride**
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data - 0 if ND)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	11/14/1996	1600	40	55	0.5	0.5	18
2	11/13/1997	56	5.3	5.2	0.5	0.5	0.5
3	06/09/1999	110	9	4	5	5	5
4	07/12/2000	2000	52	35	2		3
5	06/19/2001	130	19	1	10	10	10
6	10/15/2002	106	29.6	3.73	0.25	0.25	1.19
7	05/21/2003	77.4	21.1	0.25	0.25	1.27	2.24
8	07/08/2004	910	75	54	0.25	3.3	11
9							
10							

Mann Kendall Statistic (S) =	-2	10	-10	-8	4	0
Number of Rounds (n) =	8	8	8	8	7	8
Average =	623.68	31.38	19.77	2.34	2.97	6.37
Standard Deviation =	786.102	23.438	24.191	3.500	3.562	6.111
Coefficient of Variation(CV)=	1.260	0.747	1.223	1.493	1.198	0.960

Error Check, Blank if No Errors Detected

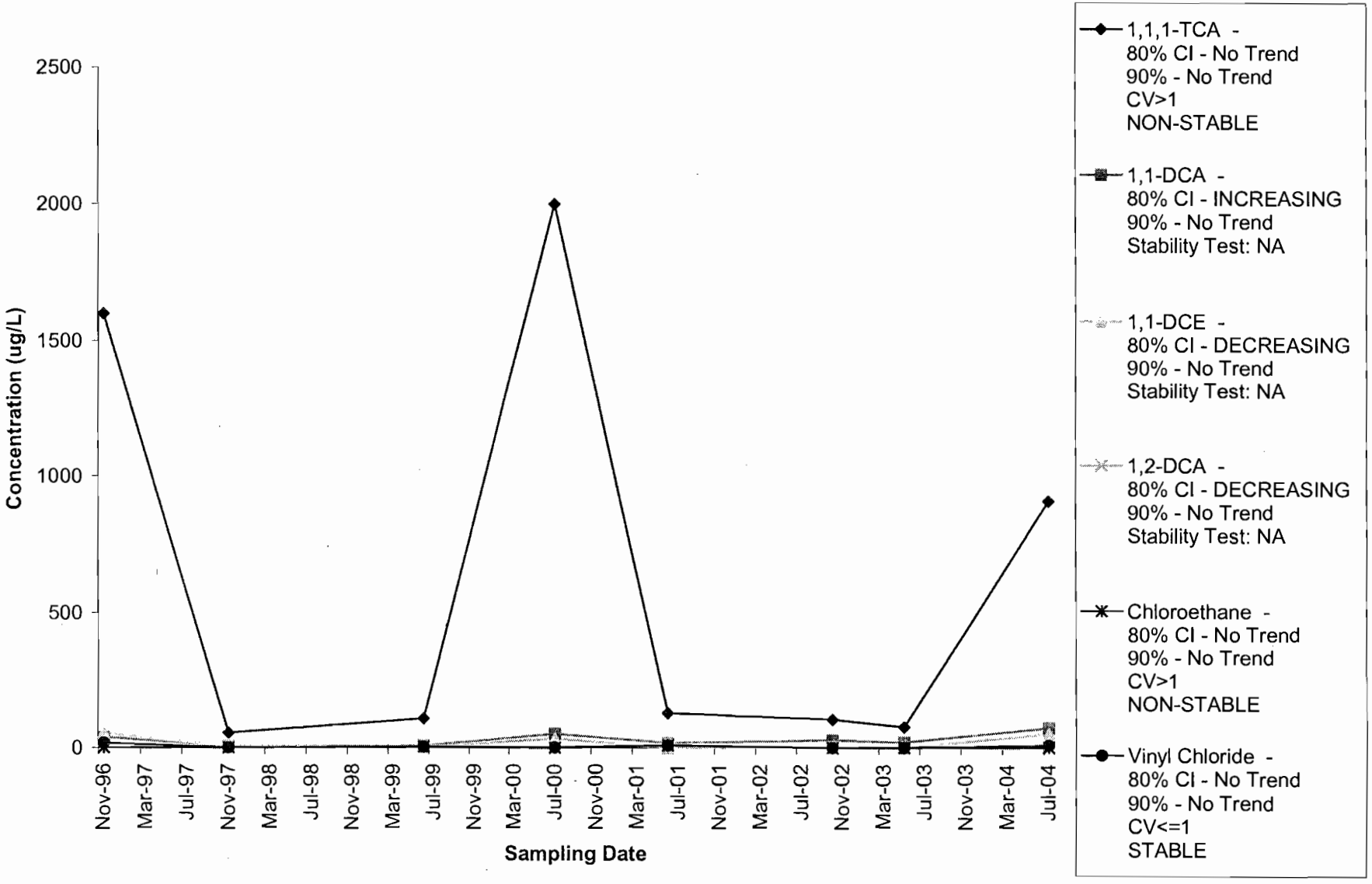
Trend = 80% Confidence Level	**No Trend**	**INCREASING**	**DECREASING**	**DECREASING**	**No Trend**	**No Trend**
Trend = 90% Confidence Level	**No Trend**	**No Trend**	**No Trend**	**No Trend**	**No Trend**	**No Trend**
Stability Test, If No Trend Exists at 80% Confidence Level	**CV>1 NON-STABLE**	**NA**	**NA**	**NA**	**CV>1 NON-STABLE**	**CV<=1 STABLE**

Data Entry By =	LB	Date =	05/18/2005	Checked By =	DC

TETRA TECH FW, INC.

S-11 Mann-Kendall Test (1 of 2)

Contaminant Concentration vs. Time



S-11-A Mann-Kendall Test.xls

Mann-Kendall Statistical Test

(For Groundwater Sampling Trend Analysis)

Instructions: Do not change formulas or other information in cells with a blue background, only cells with a yellow background are used for data entry. To use the spreadsheet, **provide at least four rounds** and **not more than ten rounds of data** that is **not seasonally affected**. Use consistent units. The spreadsheet contains several error checks, and a data entry error may cause "**DATA ERR**" or "**DATE ERR**" to be displayed. Dates that are not consecutive will show an error message and will not display the test results. The spreadsheet tests the data for both increasing and decreasing trends at both 80 percent and 90 percent confidence levels. If an increasing or decreasing trend is not present, an additional coefficient of variation test is used to test for stability, as proposed by Wiedemeier et al, 1999. For additional information, refer to the Interim Guidance on Natural Attenuation from the governing regulatory agencies for the site and applicable guidance for recommendations on data entry for non-detect values (**See protocol at bottom of worksheet**).

Error Messages: There is a section below the data entry screen that describes data entry errors in more detail and which cell has that error. Thus a user can determine what and where their error is very quickly. Note that a space is seen as text in Excel formulae.

Data Entry and Error Messages: When there are less than four rounds of data entered, instead of getting an "**ERROR**" message, only "**n<4**" is displayed. But, if **text**, a **zero** or a **negative number** is inadvertently entered, the "**ERROR**" message is displayed. Thus, during data entry, an "ERROR" message is only displayed when there actually is an error. Note that the **date must be entered before sample results collected on that date are entered** to avoid an error message.

To avoid biasing the Mann-Kendall test, **the same value for all ND results must be entered** in the spreadsheet for a given compound. This is to make sure that any identified trends are data trends and not trends of laboratory detection limits. **SEE PROTOCOL AT BOTTOM OF WORKSHEET !**

Site Name =	Vestal Well 1-1 Site	Site ID No. =	Well Number =	**S-11**

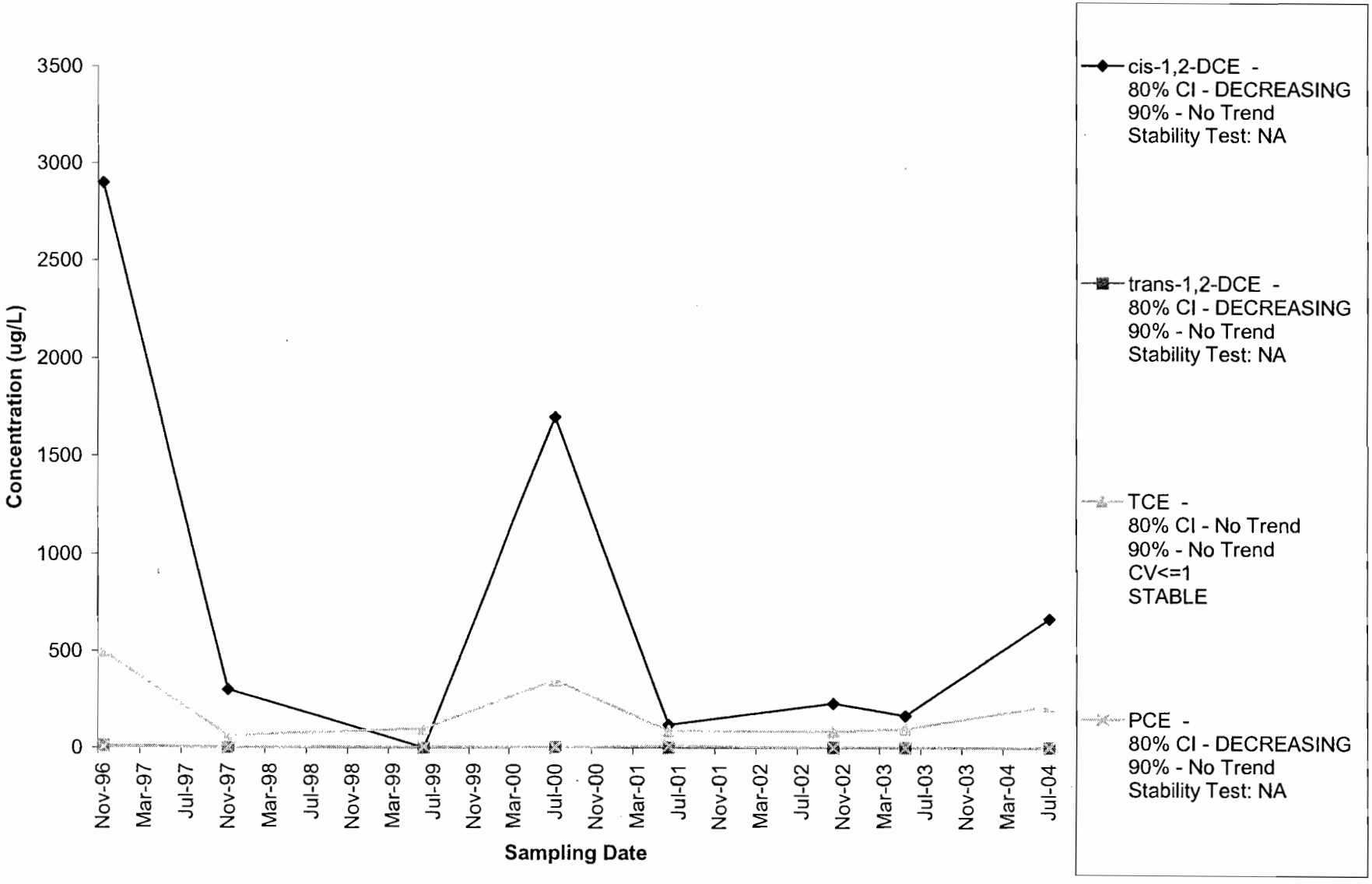
	Compound ->	**cis-1,2-DCE**	**trans-1,2-DCE**	**TCE**	**PCE**		
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data - 0 if ND)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	11/14/1996	2900	11	500	4.9		
2	11/13/1997	300	2.8	64	1.4		
3	06/09/1999			100	5		
4	07/12/2000	1700	4	350	3		
5	06/19/2001	120	1	90	10		
6	10/15/2002	232	2.53	86	1.71		
7	05/21/2003	167	1.69	98	1.02		
8	07/08/2004	670	3	220	1.6		
9							
10							
	Mann Kendall Statistic (S) =	-7	-7	-2	-8	0	0
	Number of Rounds (n) =	7	7	8	8	0	0
	Average =	869.86	3.72	188.50	3.58	#DIV/0!	#DIV/0!
	Standard Deviation =	1051.860	3.351	158.492	3.025	#DIV/0!	#DIV/0!
	Coefficient of Variation(CV)=	1.209	0.902	0.841	0.845	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected						**N<4**	**N<4**
Trend = 80% Confidence Level		**DECREASING**	**DECREASING**	**No Trend**	**DECREASING**	**N<4**	**N<4**
Trend = 90% Confidence Level		**No Trend**	**No Trend**	**No Trend**	**No Trend**	**N<4**	**N<4**
Stability Test, If No Trend Exists at 80% Confidence Level		**NA**	**NA**	**CV<=1 STABLE**	**NA**	**n<4 n<4**	**n<4 n<4**

Data Entry By =	LB	Date =	05/18/2005	Checked By =	DC

TETRA TECH FW, INC.

S-11 Mann-Kendall Test (2 of 2)

Contaminant Concentration vs. Time



S-11-B Mann-Kendall Test.xls

Mann-Kendall Statistical Test

(For Groundwater Sampling Trend Analysis)

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Site Name =	Vestal Well 1-1 Site	Site ID No. =	Well Number =	**1-29A**

	Compound ->	**1,1,1-TCA**	**1,1-DCA**	**1,1-DCE**	**1,2-DCA**	**Chloroethane**	**Vinyl Chloride**
Event Number	Sampling Date (most recent last)	Concentration (leave blank if no data - 0 if ND)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
1	11/12/1996	18	5	0.5	0.5	0.5	0.5
2	11/12/1997	45	10	2.6	0.5	0.5	0.5
3	06/08/1999	22	32	10	5	5	5
4	06/18/2001	12	10	2	10	10	10
5	10/15/2002	10.4	9.96	2.11	0.25	0.25	0.25
6	05/20/2003	9.93	9.45	2.26	0.25	0.25	0.25
7	07/06/2004	8.8	9	1.9	0.25	0.25	0.25
8							
9							
10							
	Mann Kendall Statistic (S) =	-17	-6	-1	-7	-7	-7
	Number of Rounds (n) =	7	7	7	7	7	7
	Average =	18.02	12.20	3.05	2.39	2.39	2.39
	Standard Deviation =	12.836	8.910	3.134	3.777	3.777	3.777
	Coefficient of Variation(CV)=	0.712	0.730	1.027	1.579	1.579	1.579

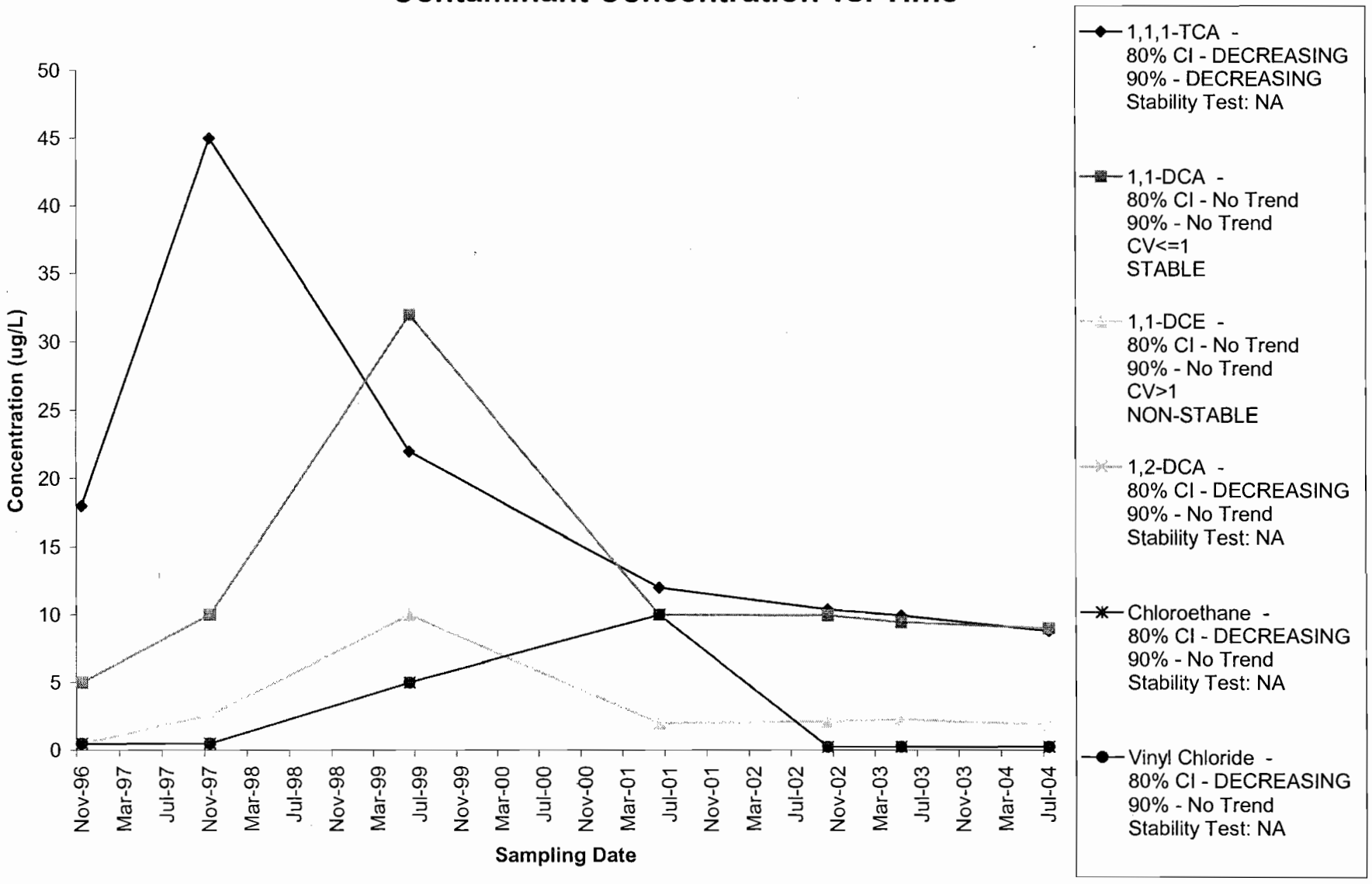
Error Check, Blank if No Errors Detected						
Trend = 80% Confidence Level	**DECREASING**	**No Trend**	**No Trend**	**DECREASING**	**DECREASING**	**DECREASING**
Trend = 90% Confidence Level	**DECREASING**	**No Trend**	**No Trend**	**No Trend**	**No Trend**	**No Trend**
Stability Test, If No Trend Exists at 80% Confidence Level	**NA**	**CV<=1 STABLE**	**CV>1 NON-STABLE**	**NA**	**NA**	**NA**

Data Entry By =	LB	Date =	05/18/2005	Checked By =	DC

TETRA TECH FW, INC.

1-29A Mann-Kendall Test (1 of 2)

Contaminant Concentration vs. Time



Mann-Kendall Statistical Test

(For Groundwater Sampling Trend Analysis)

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Site Name =	Vestal Well 1-1 Site	Site ID No. =	Well Number =	**1-29A**

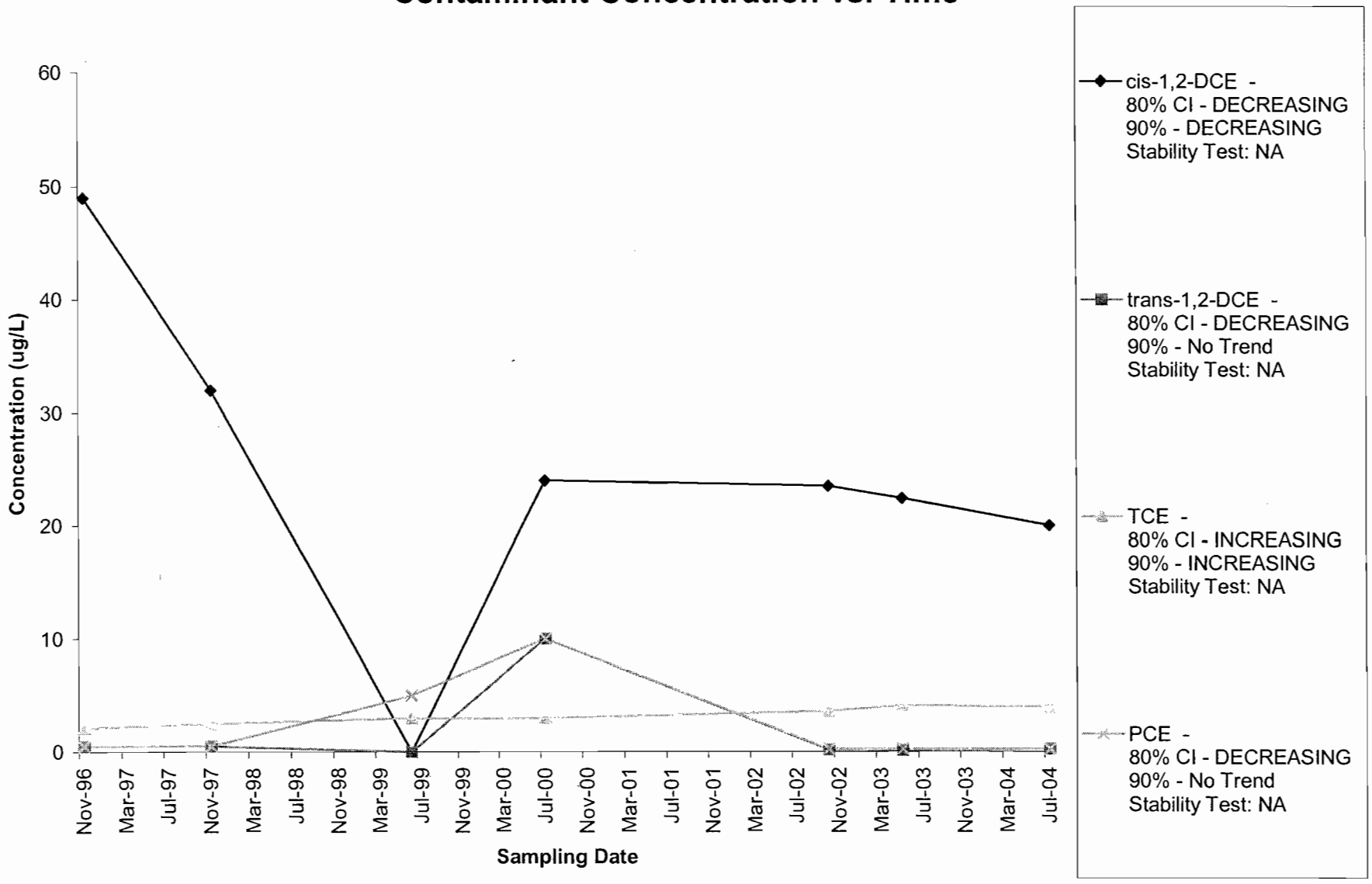
Event Number	Sampling Date (most recent last)	**cis-1,2-DCE** Concentration (leave blank if no data - 0 if ND)	**trans-1,2-DCE** Concentration (leave blank if no data)	**TCE** Concentration (leave blank if no data)	**PCE** Concentration (leave blank if no data)	Concentration (leave blank if no data)	Concentration (leave blank if no data)
Compound ->							
1	11/13/1996	49	0.5	2.1	0.5		
2	11/12/1997	32	0.5	2.5	0.5		
3	06/08/1999			3	5		
4	07/11/2000	24	10	3	10		
5	10/15/2002	23.5	0.17	3.61	0.25		
6	05/20/2003	22.4	0.132	4.12	0.25		
7	07/06/2004	20	0.25	4	0.25		
8							
9							
10							
	Mann Kendall Statistic (S) =	-15	-6	18	-7	0	0
	Number of Rounds (n) =	6	6	7	7	0	0
	Average =	28.48	1.93	3.19	2.39	#DIV/0!	#DIV/0!
	Standard Deviation =	10.837	3.959	0.757	3.777	#DIV/0!	#DIV/0!
	Coefficient of Variation(CV)=	0.380	2.056	0.237	1.579	#DIV/0!	#DIV/0!
Error Check, Blank if No Errors Detected						**N<4**	**N<4**
Trend = 80% Confidence Level		**DECREASING**	**DECREASING**	**INCREASING**	**DECREASING**	**N<4**	**N<4**
Trend = 90% Confidence Level		**DECREASING**	**No Trend**	**INCREASING**	**No Trend**	**N<4**	**N<4**
Stability Test, If No Trend Exists at 80% Confidence Level		**NA**	**NA**	**NA**	**NA**	**n<4** **n<4**	**n<4** **n<4**

Data Entry By =	LB	Date =	05/18/2005	Checked By =	DC

TETRA TECH FW, INC.

1-29A Mann-Kendall Test (2 of 2)

Contaminant Concentration vs. Time



1-29A-B Mann-Kendall Test.xls