



TETRA TECH EC, INC.

30 November 2005  
RAC II-2005-215

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

**SUBJECT: USEPA RAC II CONTRACT NUMBER 68-W-98-214  
WORK ASSIGNMENT NUMBER 109-RALR-0238  
VESTAL WATER SUPPLY WELL, OPERABLE UNIT 1  
SEPTEMBER 2005 PERFORMANCE MONITORING REPORT**

Dear Ms. Trocher:

I am pleased to provide the September 2005 Monthly Performance Monitoring Report for the Vestal Water Supply Well treatment facility.

#### **A. Monthly Operations**

The treatment system at the Vestal Water Supply Well operated for the entire month of September. A summary of the operation and maintenance activities performed during September is as follows:

- Routine inspections of the facility were performed;
- Pumps were checked and lubricated;
- Air filters were cleaned or replaced;
- Grass was mowed; and
- The monthly influent and effluent samples were collected.



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Tel 973.630.8000 Fax 973.630.8025  
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**B. Operational Data**

The following table presents operational data for the year 2005, arranged by month:

| Month                                      | Operating Days | Average flow Meter% | Average flow rate (gpm) | Amount of groundwater treated (mg) |
|--|----------------|---------------------|-------------------------|------------------------------------|
| January                                    | 31             | 47                  | 541                     | 24.2                               |
| February                                   | 28             | 46                  | 529                     | 21.3                               |
| March                                      | 31             | 45                  | 517.5                   | 22.4                               |
| April                                      | 17             | 48                  | 552                     | 13.5                               |
| May  | 31             | *                   | *                       | *                                  |
| June                                       | 30             | *                   | *                       | *                                  |
| July                                       | 29             | *                   | *                       | *                                  |
| August                                     | 29             | *                   | *                       | *                                  |
| September                                  | 30             | *                   | *                       | *                                  |
| Volume of groundwater treated for 2005     |                |                     |                         | 81.4*                              |
| Volume of groundwater treated for the OU-1 |                |                     |                         | 2684.8*                            |

\*The float control valve is not closing completely, preventing the flow meter from operating correctly. A replacement is being sought.

gpm - gallons per minute  
 mg - millions of gallons

**C. Comparison of Influent and Effluent Concentrations with Discharge Criteria**

The treatment plant influent and effluent analytical data received from the EPA-DESA laboratory for the month of September 2005 are included in Attachment 1. A summary of the data for the compounds detected in the plant influent and effluent is as follows:

| Compound                              | Discharge Criteria (ug/L) | Influent Concentration (ug/L) |       |       |        |        |        |        |       |       |     |     |     | Effluent Concentration (ug/L) September |
|---------------------------------------|---------------------------|-------------------------------|-------|-------|--------|--------|--------|--------|-------|-------|-----|-----|-----|---|
|                                       |                           | Jan                           | Feb   | Mar   | Apr    | May    | Jun    | Jul    | Aug   | Sep   | Oct | Nov | Dec |   |
| Vinyl Chloride                        | 2                         | 3.5                           | 3.9   | 3.4   | 4.4    | 4.1    | 3.7    | 3.5    | 3.3   | 4.5   |     |     |     | 0.5 U                                   |
| Chloroethane                          |                           | 0.5                           | 0.6   | 0.5   | 0.73   | 0.59   | 0.54   | 0.55   | 0.5U  | 0.5U  |     |     |     | 0.5 U                                   |
| 1,1-Dichloroethene*                   | 5                         | 13                            | 9.3   | 8.4   | 11     | 12     | 9.5    | 9.4    | 8.3   | 8.7   |     |     |     | 0.5 U                                   |
| 1,1,2 Trichloro-1,2,2-Trifluoroethane |                           | 3.1                           | 2.9   | 2.6   | 3.2    | 2.6    | 2.9    | 2.9    | 2.4   | 2.8   |     |     |     | 0.5 U                                   |
| Acetone                               |                           | 1.0 U                         | 2.3   | 1.0 U | 1.0U   | 1.0U   | 1.0 U  | 1.0U   | 5.0U  | 1.0U  |     |     |     | 1.0 U                                   |
| Trans 1,2-Dichloroethene*             | 5                         | 0.5 U                         | 0.5 U | 0.5 U | 0.5U   | 0.5U   | 0.5 U  | 0.5U   | 0.5U  | 0.5U  |     |     |     | 0.5 U                                   |
| Methyl Tert-Butyl Ether               |                           | 4.7                           | 4.3   | 4.3   | 3.9    | 4.2    | 3.9    | 4.2    | 3.7   | 3.6   |     |     |     | 1.8                                     |
| 1,1-Dichloroethane                    | 5                         | 18                            | 17    | 17    | 24     | 17     | 17     | 17     | 18    | 18    |     |     |     | 2.3                                     |
| Cis-1,2-Dichloroethene*               | 5                         | 50                            | 46    | 46    | 54     | 47     | 45     | 44     | 41    | 44    |     |     |     | 6.3                                     |
| Chloroform                            | 7                         | 0.5 U                         | 0.5 U | 0.5 U | 0.5U   | 0.5U   | 0.5 U  | 0.5U   | 0.5U  | 0.5U  |     |     |     | 0.5 U                                   |
| 1,1,1-Trichloroethane*                | 5                         | 110                           | 120   | 110   | 140    | 110    | 120    | 110    | 100   | 110   |     |     |     | 5.7                                     |
| Trichloroethene*                      | 5                         | 43                            | 40    | 40    | 47     | 39     | 38     | 36     | 35    | 36    |     |     |     | 3.0                                     |
| Total Volatile Organics*              | 100                       | 245.8                         | 246.3 | 232.2 | 288.23 | 236.49 | 240.54 | 227.55 | 211.7 | 227.6 |     |     |     | 19.1                                    |

Note:

- ug/L = micrograms per liter
- \* = Site Contaminant of Concern
- U = Below Reporting Limit
- NS = Not Sampled

**D. Next Month's Activities**

The following activities are planned for October 2005:

- Repair flow meter valve;
- Restore phone service; and
- Perform monthly performance monitoring sampling.

**E. Summary and Recommendations**

Based on the treatment plant influent and effluent data summarized above, it can be concluded the treated water continues to meet the discharge limits. Please feel free to contact me at (973) 630-8197 if you should have any questions.

Sincerely,



Heidemarie Roldan  
Project Manager

Attachment

cc: M. Dunham (NYSDEC)



**ATTACHMENT A**



**Case Narrative:**  
**Vestal 1-1. #05090011**

The National Environmental Laboratory Accreditation Conference (NELAC) is a voluntary environmental laboratory accreditation association of State and Federal agencies. NELAC established and promoted a national accreditation program that provides a uniform set of standards for the generation of environmental data that are of known and defensible quality. The EPA Region 2 Laboratory is NELAC accredited. The Laboratory tests that are accredited have met all the requirements established under the NELAC Standards.

Comment(s):

None

Reporting Limit(s):

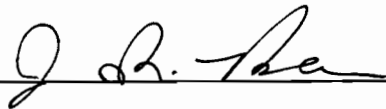
The Laboratory was able to achieve the Contract Required Quantitation Limits (CRQLs) for each analyte requested except for the following analyte(s):

Volatile Organic Compounds: The CRQL for Methyl Acetate in water is 0.5 ug/L (OLC03.2). The Laboratory's Reporting Limit was raised to 1.0 ug/L due to problems associated with the initial calibration curve.

Method(s):

Low Level Volatile Organic Analysis, ESAT-SOP-132 (GC/MS Method).

Approval: \_\_\_\_\_



Date: \_\_\_\_\_

11-7-05



U.S. Environmental Protection Agency  
Region 2 Laboratory  
2890 Woodbridge Avenue  
Edison, NJ 08837

**Data Report: Vestal Well 1-1 [09/05]**

**Project Number: 05090011**

**Program: Y206E**

**Project Leader: L. Arabia**

| Remark Codes | Explanation  |
|--------------|--|
| U            | THE ANALYTE WAS NOT DETECTED AT OR ABOVE THE REPORTING LIMIT.  |
| J            | THE IDENTIFICATION OF THE ANALYTE IS ACCEPTABLE; THE REPORTED VALUE IS AN ESTIMATE.  |
| UJ           | THE ANALYTE WAS NOT DETECTED AT OR ABOVE THE REPORTING LIMIT. THE REPORTING LIMIT IS AN ESTIMATE.  |
| N            | THERE IS PRESUMPTIVE EVIDENCE THAT THE ANALYTE IS PRESENT; THE ANALYTE IS REPORTED AS A TENTATIVE IDENTIFICATION.  |
| NJ           | THERE IS PRESUMPTIVE EVIDENCE THAT THE ANALYTE IS PRESENT; THE ANALYTE IS REPORTED AS A TENTATIVE IDENTIFICATION. THE REPORTED VALUE IS AN ESTIMATE.             |
| R            | THE PRESENCE OR ABSENCE OF THE ANALYTE CANNOT BE DETERMINED FROM THE DATA DUE TO SEVERE QUALITY CONTROL PROBLEMS. THE DATA ARE REJECTED AND CONSIDERED UNUSABLE. |
| K            | THE IDENTIFICATION OF THE ANALYTE IS ACCEPTABLE; THE REPORTED VALUE MAY BE BIASED HIGH. THE ACTUAL VALUE IS EXPECTED TO BE LESS THAN THE REPORTED VALUE.         |
| L            | THE IDENTIFICATION OF THE ANALYTE IS ACCEPTABLE; THE REPORTED VALUE MAY BE BIASED LOW. THE ACTUAL VALUE IS EXPECTED TO BE GREATER THAN THE REPORTED VALUE.       |
| NV           | NOT VALIDATED  |
| INC          | RESULT NOT ENTERED   |





U.S. EPA Region 2 Laboratory  
Data Report

Survey Name: Vestal Well 1-1 [09/05]

Project Number: 05090011

\*Sorted By Sample ID

AG04090

Field/Station ID: INFLUENT  
Matrix: Aqueous

Date Received: 9/9/2005

Sample Description:

Analysis Type: VOA GCMS LOW LEVEL DRINKING WATER

| CAS Number | Analyte Name                          | Result | Remark Codes | Units |
|------------|---------------------------------------|--------|--------------|-------|
| 75-43-4    | DICHLORODIFLUOROMETHANE               | ---    | 0.50U        | ug/L  |
| 000074873  | CHLOROMETHANE                         | ---    | 0.50U        | ug/L  |
| 000075014  | VINYL CHLORIDE                        | ---    | 0.50U        | ug/L  |
| 000074839  | BROMOMETHANE                          | ---    | 0.50U        | ug/L  |
| 000075000  | PERCHLOROETHYLENE                     | ---    | 0.50U        | ug/L  |
| 000075694  | TRICHLOROFLUOROMETHANE                | ---    | 0.50U        | ug/L  |
| 76-13-1    | 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE | 2.8    |              | ug/L  |
| 000075150  | CARBON DISULFIDE                      | ---    | 0.50U        | ug/L  |
| 000067641  | ACETONE                               | ---    | 1.0U         | ug/L  |
| 79-20-9    | METHYL ACETATE                        | ---    | 1.0U         | ug/L  |
| 000075092  | METHYLENE CHLORIDE                    | ---    | 0.50U        | ug/L  |
| 000156605  | TRANS-1,2-DICHLOROETHENE              | ---    | 0.50U        | ug/L  |
| 001634044  | METHYL TERT-BUTYL ETHER               | 3.6    |              | ug/L  |
| 000075343  | 1,1-DICHLOROETHANE                    | ---    | 0.50U        | ug/L  |
| 000156592  | CIS-1,2-DICHLOROETHENE                | 44     |              | ug/L  |
| 59-420-7   | 2,2-DICHLOROPROPANE                   | ---    | 0.50U        | ug/L  |
| 000078933  | 2-BUTANONE                            | ---    | 1.0U         | ug/L  |
| 000074975  | BROMOCHLOROMETHANE                    | ---    | 0.50U        | ug/L  |
| 000067663  | CHLOROFORM                            | ---    | 0.50U        | ug/L  |
| 71-55-6    | 1,1,1-TRICHLOROETHANE                 | ---    | 0.50U        | ug/L  |
| 110-82-7   | CYCLOHEXANE                           | ---    | 0.50U        | ug/L  |
| 000056239  | CARBON TETRACHLORIDE                  | ---    | 0.50U        | ug/L  |
| 000563586  | 1,1-DICHLOROPROPENE                   | ---    | 0.50U        | ug/L  |
| 000071432  | BENZENE                               | ---    | 0.50U        | ug/L  |
| 000107062  | 1,2-DICHLOROETHANE                    | ---    | 0.50U        | ug/L  |
| 025323891  | TRICHLOROETHENE                       | ---    | 0.50U        | ug/L  |
| 108-87-2   | METHYLCYCLOHEXANE                     | ---    | 0.50U        | ug/L  |
| 000070377  | 1,1-DICHLOROPROPANE                   | ---    | 0.50U        | ug/L  |
| 000074953  | DIBROMOMETHANE                        | ---    | 0.50U        | ug/L  |
| 000075274  | BROMODICHLOROETHANE                   | ---    | 0.50U        | ug/L  |
| 010061015  | CIS-1,3-DICHLOROPROPENE               | ---    | 0.50U        | ug/L  |
| 000108101  | 2-METHYL-2-BENZENONE                  | ---    | 0.50U        | ug/L  |
| 000108883  | TOLUENE                               | ---    | 0.50U        | ug/L  |
| 010061026  | TRANS-1,3-DICHLOROPROPENE             | ---    | 0.50U        | ug/L  |
| 000079005  | 1,1,2-TRICHLOROETHANE                 | ---    | 0.50U        | ug/L  |
| 000127184  | TETRACHLOROETHENE                     | ---    | 0.50U        | ug/L  |
| 000142289  | 1,3-DICHLOROPROPANE                   | ---    | 0.50U        | ug/L  |
| 000124481  | DIBROMOCHLOROMETHANE                  | ---    | 0.50U        | ug/L  |
| 000106934  | 1,2-DIBROMOETHANE                     | ---    | 0.50U        | ug/L  |
| 000591786  | 2-HEXANONE                            | ---    | 1.0U         | ug/L  |
| 000108907  | CHLOROBENZENE                         | ---    | 0.50U        | ug/L  |

Refer to Page 1 for an explanation of Remark Codes

Report Date: 10/31/2005 3:19PM



U.S. EPA Region 2 Laboratory  
Data Report

Survey Name: Vestal Well 1-1 [09/05]

Project Number: 05090011

\*Sorted By Sample ID

**AG04090**

Field/Station ID: INFLUENT  
Matrix: Aqueous

Date Received: 9/9/2005

Sample Description:

Analysis Type: VOA GCMS LOW LEVEL DRINKING WATER

| CAS Number | Analyte Name              | Result | Remark Codes | Units |
|------------|---------------------------|--------|--------------|-------|
| 100-41-4   | ETHYLBENZENE              | —      | 0.50U        | ug/L  |
| 000095476  | O-XYLENE                  | —      | 0.50U        | ug/L  |
| 000075252  | BROMOFORM                 | —      | 0.50U        | ug/L  |
| 000108861  | BROMOBENZENE              | —      | 0.50U        | ug/L  |
| 000079345  | 1,1,2,2-TETRACHLOROETHANE | —      | 0.50U        | ug/L  |
| 000095498  | 2-CHLOROTOLUENE           | —      | 0.50U        | ug/L  |
| 000108678  | 1,3,5-TRIMETHYLBENZENE    | —      | 0.50U        | ug/L  |
| 000095636  | 1,2,4-TRIMETHYLBENZENE    | —      | 0.50U        | ug/L  |
| 000541731  | 1,3-DICHLOROBENZENE       | —      | 0.50U        | ug/L  |
| 000095501  | 1,2-DICHLOROBENZENE       | —      | 0.50U        | ug/L  |
| 000104518  | N-BUTYLBENZENE            | —      | 0.50U        | ug/L  |
| 000120821  | 1,2,4-TRICHLOROBENZENE    | —      | 0.50U        | ug/L  |
| 000091203  | NAPHTHALENE               | —      | 0.50U        | ug/L  |
| 1330-20-7  | TOTAL XYLENES             | —      | 0.50U        | ug/L  |

**AG04091**

Field/Station ID: EFFLUENT  
Matrix: Aqueous

Date Received: 9/9/2005

Sample Description:



U.S. EPA Region 2 Laboratory  
Data Report

Survey Name: Vestal Well 1-1 [09/05]

Project Number: 05090011

\*Sorted By Sample ID

AG04091

Field/Station ID: EFFLUENT  
Matrix: Aqueous

Date Received: 9/9/2005

Sample Description:

Analysis Type: VOA GCMS LOW LEVEL DRINKING WATER

| CAS Number | Analyte Name              | Result | Remark Codes | Units |
|------------|---------------------------|--------|--------------|-------|
| 75-43-4    | DICHLORODIFLUOROMETHANE   | —      | 0.50U        | ug/L  |
| 000074875  | CHLOROMETHANE             | —      | 0.50U        | ug/L  |
| 000075014  | VINYL CHLORIDE            | —      | 0.50U        | ug/L  |
| 000074839  | BROMODIFLUOROMETHANE      | —      | 0.50U        | ug/L  |
| 000075003  | CHLOROETHANE              | —      | 0.50U        | ug/L  |
| 000075354  | 1,1-DICHLOROETHENE        | —      | 0.50U        | ug/L  |
| 000075150  | CARBON DISULFIDE          | —      | 0.50U        | ug/L  |
| 000067641  | ACETONE                   | —      | 1.0U         | ug/L  |
| 79-20-9    | METHYL ACETATE            | —      | 1.0U         | ug/L  |
| 000156605  | TRANS-1,2-DICHLOROETHENE  | —      | 0.50U        | ug/L  |
| 000075343  | 1,1-DICHLOROETHANE        | 2.3    |              | ug/L  |
| 594-20-7   | 2,2-DICHLOROPROPANE       | —      | 0.50U        | ug/L  |
| 000074975  | BROMOCHLOROMETHANE        | —      | 0.50U        | ug/L  |
| 71-55-6    | 1,1,1-TRICHLOROETHANE     | 5.7    |              | ug/L  |
| 000056235  | CARBON TETRACHLORIDE      | —      | 0.50U        | ug/L  |
| 000071432  | BENZENE                   | —      | 0.50U        | ug/L  |
| 025323891  | TRICHLOROETHENE           | 3.0    |              | ug/L  |
| 000078875  | 1,2-DICHLOROPROPANE       | —      | 0.50U        | ug/L  |
| 000075274  | BROMODICHLOROMETHANE      | —      | 0.50U        | ug/L  |
| 000108101  | 4-METHYL-2-PENTANONE      | —      | 1.0U         | ug/L  |
| 010061026  | TRANS-1,3-DICHLOROPROPENE | —      | 0.50U        | ug/L  |
| 000127184  | TETRACHLOROETHENE         | —      | 0.50U        | ug/L  |
| 000142289  | 1,1-DICHLOROPROPANE       | —      | 0.50U        | ug/L  |

Refer to Page 1 for an explanation of Remark Codes

Report Date: 10/31/2005 3:19PM

Page 4 of 5



U.S. EPA Region 2 Laboratory  
Data Report

Survey Name: Vestal Well 1-1 [09/05]

Project Number: 05090011

\*Sorted By Sample ID

**AG04091** Field/Station ID: EFFLUENT  
Matrix: Aqueous

Date Received: 9/9/2005

Sample Description:

Analysis Type: VOA GCMS LOW LEVEL DRINKING WATER

| CAS Number | Analyte Name                | Result | Remark Codes | Units |
|------------|-----------------------------|--------|--------------|-------|
| 000124481  | DIBROMOCHLOROMETHANE        | —      | 0.50U        | ug/L  |
| 000591786  | 2-HEXANONE                  | —      | 1.0U         | ug/L  |
| 000630206  | 1,1,1,2-TETRACHLOROETHANE   | —      | 0.50U        | ug/L  |
| 001330207  | M/P-XYLENE                  | —      | 0.50U        | ug/L  |
| 000100425  | STYRENE                     | —      | 0.50U        | ug/L  |
| 000098828  | ISOPROPYLBENZENE            | —      | 0.50U        | ug/L  |
| 000096184  | 1,2,3-TRICHLOROPROPANE      | —      | 0.50U        | ug/L  |
| 000103651  | N-PROPYLBENZENE             | —      | 0.50U        | ug/L  |
| 106-43-4   | 4-CHLOROTOLUENE             | —      | 0.50U        | ug/L  |
| 000098066  | TERT-BUTYLBENZENE           | —      | 0.50U        | ug/L  |
| 135-98-8   | SEC-BUTYLBENZENE            | —      | 0.50U        | ug/L  |
| 000106467  | 1,4-DICHLOROBENZENE         | —      | 0.50U        | ug/L  |
| 000099876  | 4-ISOPROPYLTOLUENE          | —      | 0.50U        | ug/L  |
| 000096128  | 1,2-DIBROMO-3-CHLOROPROPANE | —      | 0.50U        | ug/L  |
| 87-68-3    | HEXACHLOROBUTADIENE         | —      | 0.50U        | ug/L  |
| 000087616  | 1,2,3-TRICHLOROBENZENE      | —      | 0.50U        | ug/L  |

Project Approval: \_\_\_\_\_

*J. R. [Signature]*

Date: 11-7-05

Refer to Page 1 for an explanation of Remark Codes

Report Date: 10/31/2005 3:19PM