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New York State Department of Environmental Conservation

Site Number 7-04-009A

Vestal Water Supply Site Quarterly Report

Third Quarter 2011

March 2011

ARCADIS MALCOLM PIRNIE

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Vestal Water Supply Site
Quarterly Report

Third Quarter 2011

Site Number 7-04-009A

Prepared for:
New York State Department of
Environmental Conservation

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1. Introduction

The New York State Department of Environmental Conservation (NYSDEC) has issued a Work Assignment (# D004443-4) to Malcolm Pirnie, Inc. (Malcolm Pirnie) for Operation, Maintenance, and Monitoring at the Vestal Water Supply Site in New York State (Site # 7-04-009A). Malcolm Pirnie has prepared this Quarterly Report in accordance with the NYSDEC-approved Work Plan to summarize site activities.

2. Site Description

The Vestal Water Supply (Site 1-1) Site is located on Pumphouse Road, Vestal, Broome County, New York (Figure 2-1), along the southern bank of the Susquehanna River. Well 1-1 is located just south of the Susquehanna River and northwest of an industrial park located along Stage Road. Until 1980, Well 1-1 was the main source of water for Water District 1, which provides drinking water for several areas of the Town of Vestal. Currently, there are two other production wells, Wells 1-2A and 1-3 that function as the main source of water for Water District 1. Well 1-1A was installed in 1993 to replace Well 1-1 and is currently being used to pump and treat groundwater, which is then discharged to the Susquehanna River.

3. Operation and Maintenance

Malcolm Pirnie has maintained continuous operation of the groundwater treatment plant at the Vestal Water Supply Site. This includes the operation, maintenance, and influent/effluent sampling in accordance with the operations and maintenance (O&M) manual (Final Operation and Maintenance Manual, Long-Term Response, Operable Unit 1, Vestal Well 1-1 Site, Vestal, New York) (Tetra Tech EC, Inc., 2006) (Final O&M Manual). However, as indicated in the Work Assignment, no work was performed on the Vestal Water Supply (Site 1-1) soil vapor extraction system.

As part of managing the Vestal Water Supply Site, Malcolm Pirnie has a subcontract with Environmental Compliance, Inc. (ECI), who has unique knowledge of operating the groundwater treatment plant. ECI provides materials, labor, equipment, and supervision to maintain continuous operation of the groundwater treatment plant.

A variable frequency drive (VFD) was installed in February 2009 to provide soft-start operation for the Well 1-1A replacement well pump motor and reduced torque on the Certa-Lock® PVC drop pipe. The VFD also provides energy savings by allowing the well pump motor to be operated at a reduced speed. Compared to the full load rating of the pump motor and at an estimated energy cost of $0.083 per kilo-watt (KW) the VFD (at the current setting of 51 hertz) has the potential to provide an estimated annual energy cost savings up to $9,000.

3.1 System Operation

As indicated in the ECI Monthly Reports and O&M Logs (Appendix A), the groundwater treatment system was shut down for three days in July due to power disruptions. The system was also shut down for two days in August and five days in September at the request of the NYSDEC Division of Water (Division of Water) due to flooding on the Susquehanna River. During the September flood, the Division of Water cut the lock for the entry gate to gain access to the site. The Division of Water used the site as a staging area for flood control pumps. The entry gate lock was replaced by Malcolm Pirnie on September 29, 2011. The September flood caused the basement of the Well 1-1 pump house to flood. Water was subsequently pumped from the basement by ECI; no damage was reported.

Table 3-1 and Figure 3-1 summarize groundwater treatment system flow rates from the Monthly Reports and System O&M Logs. As shown in Table 3-1, the groundwater treatment system flow rate for Well 1-1A decreased from an average of 254 gallons per

minute (GPM) in July 2011 to an average of 234 GPM in September 2011. As shown on Table 3-1, approximately 29,179,000 gallons of water were treated during the third quarter 2011 operating period.

Due to continued reductions in yield, Well 1-1A will be developed quarterly as presented in the NYSDEC-approved budget addendum and Schedule 211 forms (June 2011). Quarterly well maintenance will proceed in the first quarter 2011.

The chain-link fencing in the entry gate to the treatment facility is damaged and needs to be repaired. The damage was noted during the Second Quarter, 2011. The cause of the damage is unknown, but appears to be the result of contact with heavy-equipment (possibly a front-end-loader). The repairs are scheduled to be performed by ECI during the fourth quarter, 2011.

3.2 Influent – Effluent Sampling

Third quarter 2011 influent and effluent groundwater samples were collected from the Well 1-1A treatment system in accordance with the Work Plan. Influent and effluent groundwater samples were sent to TestAmerica Laboratories following chain-of-custody protocols for analysis of volatile organic compounds (VOCs) by United States Environmental Protection Agency (USEPA) Method 8260B. The laboratory analytical reporting forms are provided in Appendix B. The laboratory analytical data for the treatment plan samples are summarized in Tables 3-2 (influent VOCs) and Table 3-3 (effluent VOCs); Figure 3-2 presents the Well 1-1A treatment plant total influent VOC concentrations over time.

As shown in Table 3-2, maximum influent sample concentrations of 1,1,1-trichloroethane (200 µg/L), 1,1-dichloroethane (24 µg/L) , 1,1-dichloroethene (17 µg/L), cis-1,2-dichloroethene (37 µg/L), trichloroethene (39 µg/L), and vinyl chloride (7.8 µg/L) occurred in August 2011. These results are consistent with previous sampling results. In each of the samples collected during the third quarter 2011, the concentrations of 1,1,1 trichloroethane, 1,1 dichloroethene, 1,1, dichloroethene, cis-1,2 dichloroethene, trichloroethene, and vinyl chloride exceeded the corresponding NYSDEC Class GA Standards. Figure 3-2 shows that the total VOC concentrations detected in the July, August, and September Well 1-1A influent samples (316 µg/L, 365 µg/L, and 230 µg/L, respectively) were within the range of previous sampling events.

Table 3-3 shows that VOCs were not detected in any of the third quarter 2011 effluent samples collected from the treatment system.

Based on influent sample concentrations and total flow volumes from the Well 1-1A treatment system, approximately 74 pounds of VOCs were removed by the treatment system during the third quarter 2011 operating period. This quantity is less than the second quarter 2011 removal mass of 118 pounds, primarily due to the reduction of flow through the treatment system caused by power disruptions and flooding during the third quarter 2011 operating period.

4. Groundwater Monitoring

Groundwater monitoring wells were sampled in accordance with the Work Plan during the second quarter, 2011. The results of the sampling event were submitted to the NYSDEC with the second quarter 2011 Vestal Water Supply Site Quarterly Report and Annual Groundwater Monitoring Summary. An iso-concentration map showing the total VOCs concentrations in June 2011 samples collected from the wells in the shallow groundwater monitoring well network is provided in Appendix C. The next annual groundwater monitoring event is scheduled for the third quarter of 2012.

5. Recommendations

Recommendations for revised instrumentation and controls have been presented to the NYSDEC in the PRR (Malcolm Pirnie, 2010).

The effluent discharge line from the clear well to the NYSDEC Flood Management Area has a significant accumulation of precipitate and should be replaced. A scope of work and bid proposal package was prepared and submitted to the NYSDEC in October 2011 for review.

Based on well inspections performed during the second quarter, 2011 (Vestal Water Supply Site Quarterly Report and Annual Groundwater Monitoring Summary, 2011), the protective casings for groundwater monitoring wells 4009-1 and 4009-6 are damaged and should be replaced.

Due to continued reductions in flow from Well 1-1A, AquaGard well maintenance should be performed quarterly.

6. Summary

The Vestal Well 1-1A groundwater treatment system was shut down for three days in July, two days in August and five days in September due to power disruptions and flooding. The system operated with minimal interruption during the remainder of the third quarter, 2011 operation and maintenance period. The average flow rate through the treatment system during this period was 244 GPM, a decrease of approximately 83 GPM from the previous quarter. Total flow through the treatment system from July to September 2011 was approximately 29.2-million gallons. Based on monthly influent and effluent sampling, the treatment system successfully removes VOCs from groundwater extracted from the capture zone. Approximately 74 pounds of VOCs were removed by the treatment system during the third quarter, 2011 operational period.

Due to continued reductions in well yield, Well 1-1A will be redeveloped quarterly, beginning with the fourth quarter, 2011

The next groundwater sampling event is scheduled to be completed during the third quarter, 2012.

7. References

ARCADIS / Malcolm Pirnie, 2011. Vestal Water Supply Site Quarterly Report and Annual Groundwater Monitoring Summary, Second Quarter 2011. Site Number 7-04-009A.

Malcolm Pirnie, 2010, Periodic Review Report, Vestal Water Supply Site, Site Number 7-04-009A.

Tetra Tech EC, Inc., 2006, Final Operation and Maintenance Manual, Long-Term Response, Operable Unit 1, Vestal Well 1-1 Site, Vestal, New York.

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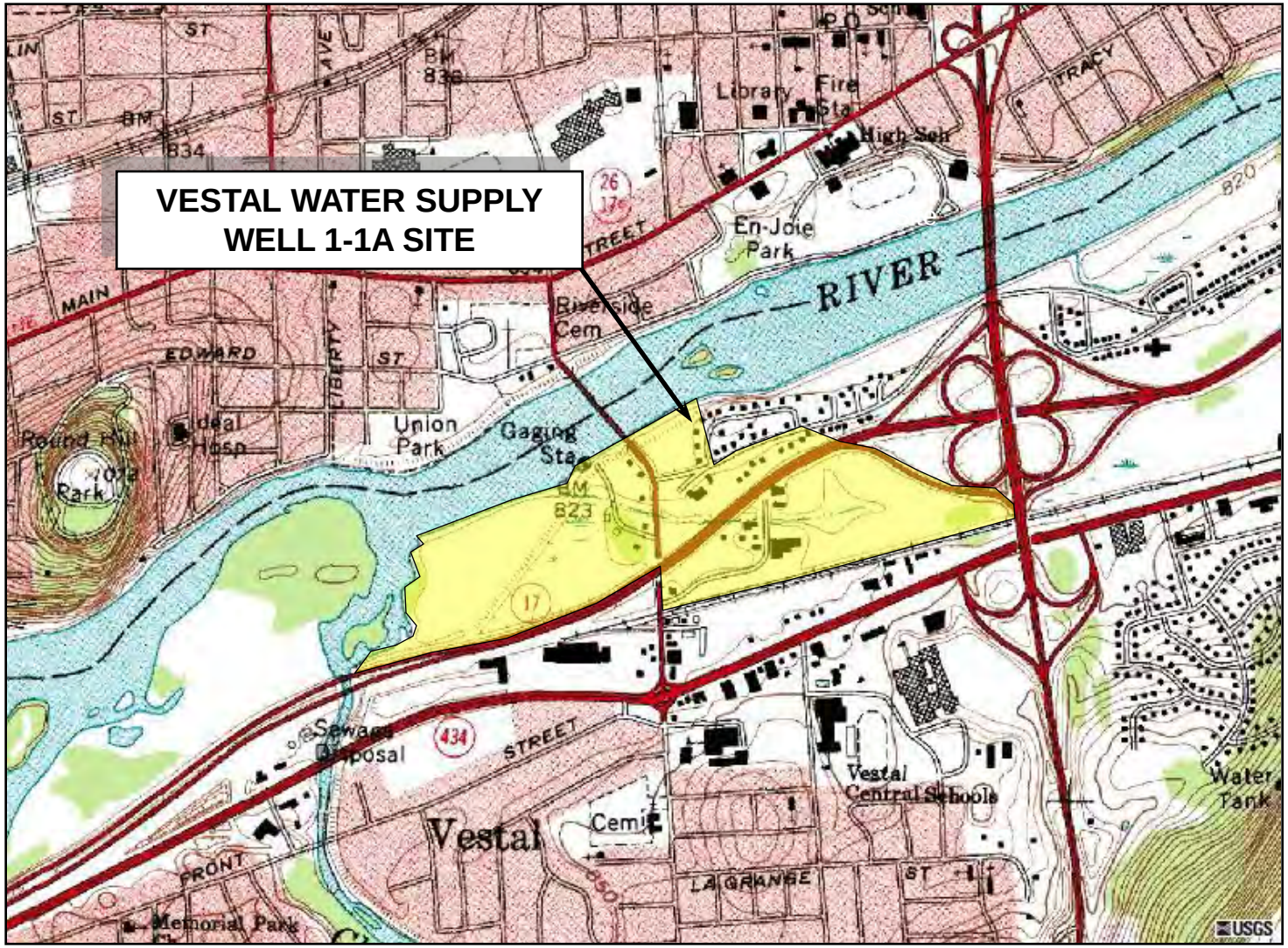
Figure 2-1
SITE LOCATION
Vestal Water Supply Site
Vestal, New York
Site Number 7-04-009A

0 2,000 ft



Source: USGS 7.5-minute Series Topographic Quadrangle, Endicott (1988).

Figure 3-1
Well 1-1A Treatment Plant Flow
Vestal Water Supply Site
NYSDEC Site Number 7-04-009A

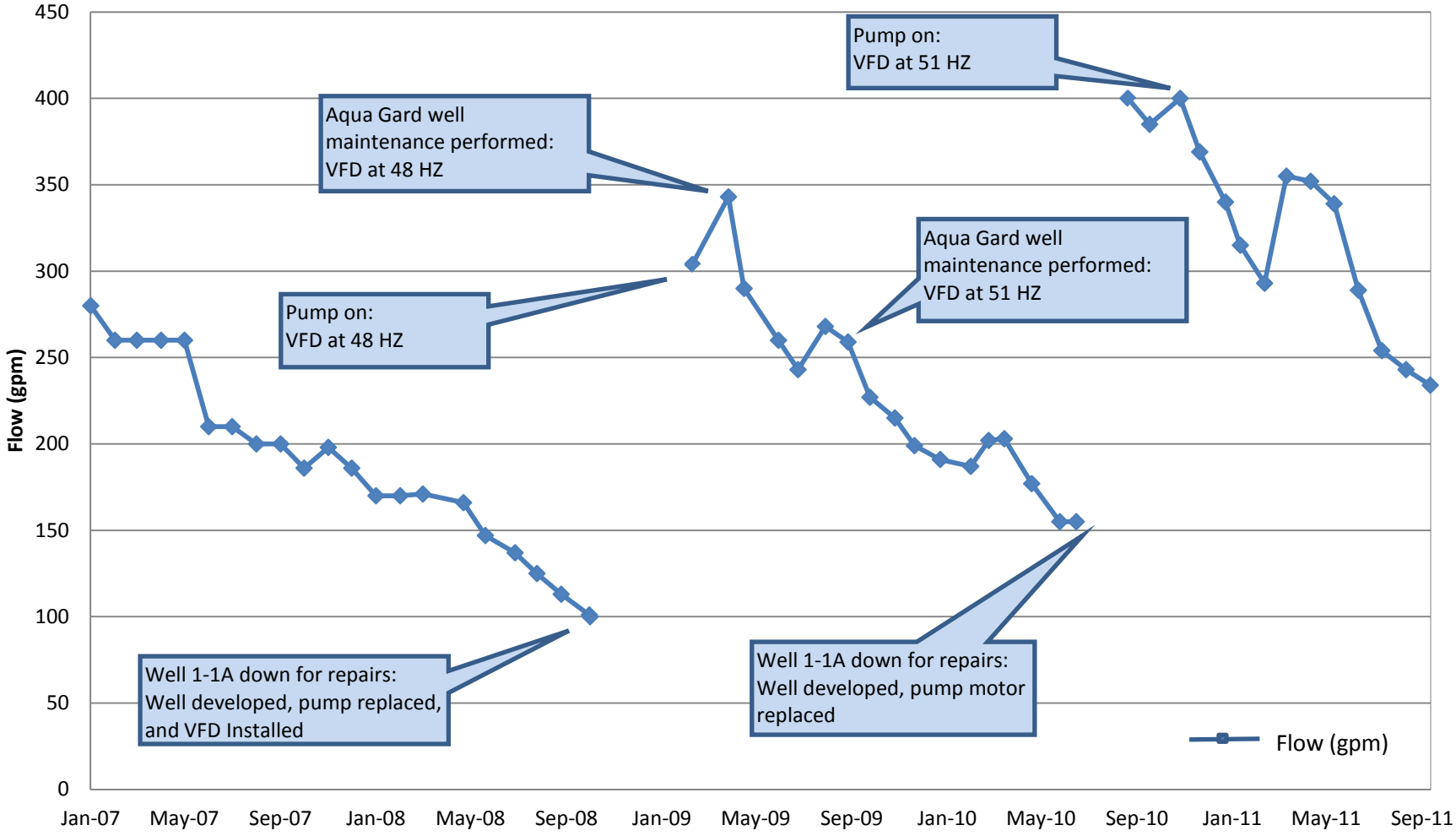


Figure 3-2
Well 1-1A Treatment Plant Total VOCs Concentrations
Vestal Water Supply Site
NYSDEC Site Number 7-04-009A

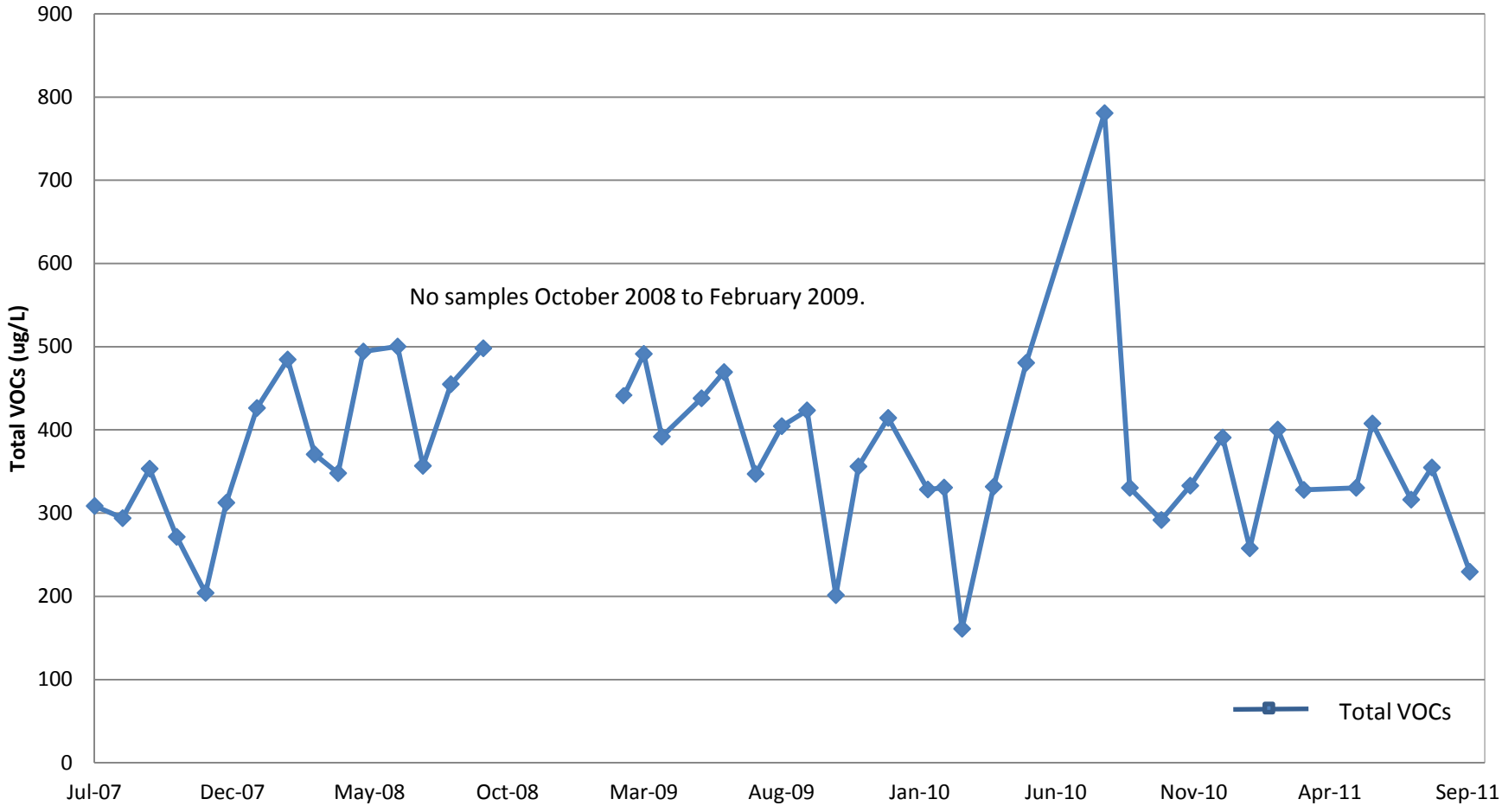


TABLE 3-1
WELL 1-1A FLOW SUMMARY
VESTAL WATER SUPPLY
VESTAL, NEW YORK
NYSDEC SITE NO. 7-04-009A

Date	System Operation[1] (days/month)	Pumping Rate[1] (gpm)	Total Flow[2] (gallons)	Quarterly Flow (gallons)
January-07	31	280	12,499,200	33,840,000
February-07	28	260	10,483,200	
March-07	29 (3)	260	10,857,600	
April-07	30	260	11,232,000	31,910,400
May-07	31	260	11,606,400	
June-07	30	210	9,072,000	
July-07	31	210	9,374,400	26,942,400
August-07	31	200	8,928,000	
September-07	30	200	8,640,000	
October-07	31	186	8,303,040	24,874,560
November-07	29	198	8,268,480	
December-07	31	186	8,303,040	
January-08	31	170	7,588,800	22,321,440
February-08	29	170	7,099,200	
March-08	31	171	7,633,440	
April-08	30	166	7,171,200	19,651,680
May-08	31	147	6,562,080	
June-08	30	137	5,918,400	
July-08	31	125	5,580,000	14,987,520
August-08	31	113	5,044,320	
September-08	30	101	4,363,200	
October-08	6 (4)	100	864,000	864,000
November-08	0 (4)	0	0	
December-08	0 (4)	0	0	
January-09	0 (4)	0	0	22,641,120
February-09	19 (4)	304	8,317,440	
March-09	29 (3)	343	14,323,680	
April-09	30	290	12,528,000	34,257,600
May-09	30 (5)	260	11,232,000	
June-09	30	243	10,497,600	
July-09	29 (4)	268	11,191,680	31,160,160
August-09	29 (5)	259	10,815,840	
September-09	28 (5)	227	9,152,640	
October-09	31	215	9,597,600	26,720,640
November-09	30 (5)	199	8,596,800	
December-09	31	191	8,526,240	

TABLE 3-1
WELL 1-1A FLOW SUMMARY
VESTAL WATER SUPPLY
VESTAL, NEW YORK
NYSDEC SITE NO. 7-04-009A

Date	System Operation[1] (days/month)		Pumping Rate[1] (gpm)	Total Flow[2] (gallons)	Quarterly Flow (gallons)
January-10	25	(3)	187	6,732,000	23,938,560
February-10	28		202	8,144,640	
March-10	31		203	9,061,920	
April-10	30		177	7,646,400	16,128,000
May-10	31		155	6,919,200	
June-10	7	(4)	155	1,562,400	
July-10	0	(4)	0	0	23,544,000
August-10	12	(4)	400	6,912,000	
September-10	30		385	16,632,000	
October-10	31		400	17,856,000	47,911,680
November-10	28	(5)	369	14,878,080	
December-10	31		340	15,177,600	
January-11	31		315	14,061,600	40,278,240
February-11	27	(5)	293	11,391,840	
March-11	29	(3)	355	14,824,800	
April-11	26	(3)	352	13,178,880	39,820,320
May-11	29	(3)	339	14,156,640	
June-11	30		289	12,484,800	
July-11	29	(5)	254	10,607,040	29,178,720
August-11	29	(3)	243	10,147,680	
September-11	25	(3)	234	8,424,000	
Total Flow (2007)				**117,567,360**	
Total Flow (2008)				**65,750,400**	
Total Flow (2009)				**93,790,080**	
Total Flow (2010)				**111,522,240**	
Total Flow (2011)				**109,277,280**	

Notes:
1 - From Environmental Compliance, Inc. O&M Reports and Malcolm Pirnie, Inc. field notes.
2 - Calculated assuming system operating 24-hours per day
3 - System shut down for flooding
4 - System shut down for repairs
5 - System down due to power failure
gpm - Gallons per minute

TABLE 3-2
SUMMARY OF GROUNDWATER TREATMENT SYSTEM VOCS (INFLUENT)
VESTAL WATER SUPPLY
VESTAL, NEW YORK
NYSDEC SITE #7-04-009A

Sample ID Sampling Date Matrix Units	NYSDEC GA Standard ug/L	WELL 1A-INF 7/27/2007 WATER ug/L	WELL 1A-INF 8/27/2007 WATER ug/L	WELL 1A-INF 9/26/2007 WATER ug/L	WELL 1A-INF 10/26/2007 WATER ug/L	WELL 1A-INF 11/27/2007 WATER ug/L	WELL 1A-INF 12/20/2007 WATER ug/L	WELL 1A-INF 1/23/2008 WATER ug/L	WELL 1A-INF 2/26/2008 WATER ug/L	WELL 1A-INF 3/27/2008 WATER ug/L	WELL 1A-INF 4/22/2008 WATER ug/L	WELL 1A-INF 5/20/2008 WATER ug/L	WELL 1A-INF 6/27/2008 WATER ug/L
VOCs													
1,1,1-Trichloroethane	5	**170**	**160**	**200**	**140**	**110**	**170**	**230**	**250**	**180**	**180**	**300 E**	**290**
1,1,2,2-Tetrachloroethane	5	10 U	5 U	20 U	5 U	10 U	20 U	10 U	10 U	5 U	10 U	10 U	20 U
1,1,2-Trichloroethane	1	10 U	5 U	20 U	5 U	10 U	20 U	10 U	10 U	5 U	10 U	10 U	20 U
1,1-Dichloroethane	5	**20**	**19**	**23**	**22**	**15**	**24**	**30**	**31**	**27**	**26**	**27**	**28**
1,1-Dichloroethene	5	**12**	**10**	**14 J**	**11**	**8.2 J**	**13 J**	**18 M**	**18**	**17**	**9.7 J**	**17**	**20 J**
1,2-Dichloroethane	0.6	10 U	5 U	20 U	5 U	10 U	20 U	10 U	10 U	5 U	10 U	10 U	20 U
1,2-Dichloropropane	5	10 U	5 U	20 U	5 U	10 U	20 U *	10 U	10 U	5 U	10 U	10 U	20 U
2-Hexanone		20 U	10 U	40 U	10 U	20 U	40 U	20 U *	20 U	10 U	20 U	10 U	40 U
Acetone		20 U	10 U	40 U	10 U	20 U	40 UM	20 U *	20 U	10 U	20 U	0.5 J B	11 J B
Benzene	1	10 U	0.39 J	20 U	5 U	10 U	20 U	0.6 J	10 U	0.38 J	10 U	10 U	20 U
Bromodichloromethane	50	10 U	5 U	20 U	5 U	10 U	20 U	10 U	10 U	5 U	10 U	10 U	20 U
Bromoform		10 U	5 U	20 U	5 U	10 U	20 U	10 U	10 U	5 U	10 U	10 U	20 U
Bromomethane	5	10 U	5 U	20 U	5 U	10 U	20 U	10 U *	10 U	5 U	10 U	10 U	20 U
Carbon disulfide		10 U	5 U	20 U	5 U	10 U	20 U	10 U	10 U	5 U	10 U	10 U	20 U
Carbon tetrachloride	5	10 U	5 U	20 U	5 U	10 U	20 U	10 U	**35**	5 U	10 U	10 U	20 U
Chlorobenzene	5	10 U	5 U	20 U	5 U	10 U	20 U	10 U	10 U	5 U	10 U	10 U	20 U
Chloroethane	5	10 U	5 U	20 U	5 U	10 U	20 U *	10 U	10 U	0.79 J	10 U	10 U	20 U
Chloroform	7	10 U	5 U	20 U	5 U	10 U	20 U	10 U	10 U	5 U	10 U	10 U	20 U
Chloromethane		10 U	5 U	20 U	5 U *	10 U	20 U *	10 U	10 U	5 U	10 U	10 U	20 U
cis-1,2-Dichloroethene	5	**55**	**54**	**58**	**50**	**39**	**57**	**71**	**73**	**76**	**72**	**78**	**77**
cis-1,3-Dichloropropene	0.4	10 U	5 U	20 U	5 U	10 U	20 U	10 U	10 U	5 U	10 U	10 U	20 U
Dibromochloromethane	50	10 U	5 U	20 U	5 U	10 U	20 U	10 U	10 U	5 U	10 U	10 U	20 U
Ethylbenzene	5	10 U	5 U	20 U	5 U	10 U	20 U	10 U	10 U	5 U	10 U	10 U	20 U
Methyl Ethyl Ketone	50	20 U	10 U	40 U	10 U	20 U	40 U	20 U *	20 U	10 U	20 U	10 U	40 U
Methyl Isobutyl Ketone		20 U	10 U	40 U	10 U	20 U	40 U	20 U	20 U	10 U	20 U	10 U	40 U
Methylene Chloride	5	10 U	5 U	20 U *	5 U	10 U M	2.2 JMB	0.94 J	10 U	5 U	2.2 J B	0.32 JB	3.5 J B
Styrene	5	10 U	5 U	20 U	5 U	10 U	20 U	10 U	10 U	5 U	10 U	10 U	20 U
Tetrachloroethene	5	1.3 J	5 U	20 U	0.97 J	10 U	20 U	10 U	10 U	5 U	10 U	10 U	20 U
Toluene	5	10 U	0.15 J	20 U	5 U	10 U	20 U	10 U	10 U	5 U	10 U	10 U	20 U
trans-1,2-Dichloroethene	5	10 U	5 U	20 U	5 U	10 U	20 U	10 U	10 U	5 U	10 U	10 U	20 U
trans-1,3-Dichloropropene	0.4	10 U	5 U	20 U	5 U	10 U	20 U	10 U	10 U	5 U	10 U	10 U	20 U
Trichloroethene	5	**46**	**47**	**53**	**41 B**	**29**	**37**	**62**	**69**	**62**	**54 * B**	**65**	**64**
Vinyl chloride	2	**4.3 J**	**3.4 J**	**5.4 J**	**6.5 ***	**2.9 J**	**9.3 JM**	**11**	**8.6 J**	**7.5**	**4.1 J**	**6.4 J**	**6.7 J**
Xylenes, Total	5	10 U	5 U	20 U	5 U	10 U	20 U	2.8 J	10 U	5 U	10 U	10 U	20 U
Total VOCs		309	294	353	271	204	313	426	485	371	348	494	500

Notes

- Concentration exceeds corresponding NYSDEC Class GA Standard.

U - Not detected at the indicated concentration.
J - Estimated concentration.
M - Manual integrated compound.
B - Analyte found in associated blank as well as the sample.
E - Concentration exceeds instrument calibration range.
* - MS or MSD exceeded control limits.

TABLE 3-2
SUMMARY OF GROUNDWATER TREATMENT SYSTEM VOCS (INFLUENT)
VESTAL WATER SUPPLY
VESTAL, NEW YORK
NYSDEC SITE #7-04-009A

Sample ID Sampling Date Matrix Units	NYSDEC GA Standard ug/L	WELL 1A-INF 7/25/2008 WATER ug/L	WELL 1A-INF 8/25/2008 WATER ug/L	WELL 1A-INF 9/30/2008 WATER ug/L	WELL 1A-INF 3/5/2009 WATER ug/L	WELL 1A-INF 3/27/2009 WATER ug/L	WELL 1A-INF 4/16/2009 WATER ug/L	WELL 1A-INF 5/30/2009 WATER ug/L	WELL 1A-INF 6/24/2009 WATER ug/L	WELL 1A-INF 7/29/2009 WATER ug/L	WELL 1A-INF 8/27/2009 WATER ug/L	WELL 1A-INF 9/24/2009 WATER ug/L	WELL 1A-INF 10/26/2009 WATER ug/L
VOCs													
1,1,1-Trichloroethane	5	**220**	**270**	**300**	**260**	**280**	**220**	**250**	**270**	**190**	**220**	**230**	**110**
1,1,2,2-Tetrachloroethane	5	20 U	20 U	25 U	25 U	2 U	10 U	20 U	2 U	2 U	2 U	10 U	10 U
1,1,2-Trichloroethane	1	20 U	20 U	25 U *	25 U	2 U	10 U	20 U	2 U	2 U	2 U	10 U	10 U
1,1-Dichloroethane	5	**23**	**27**	**28**	**28**	**31**	**25**	**27**	**27**	**21**	**23**	**26**	**14**
1,1-Dichloroethene	5	**13 J**	**19 J**	**19 J**	**19 J**	**22 ***	**20**	**24 ***	**22**	**18 ***	**19**	**19**	**8.7 J**
1,2-Dichloroethane	0.6	20 U	20 U	25 U	25 U	2 U	10 U	20 U	2 U	2 U	2 U	10 U	10 U
1,2-Dichloropropane	5	20 U	20 U	25 U	25 U	2 U	10 U	20 U	2 U	2 U	2 U	10 U	10 U
2-Hexanone		40 U	40 U	50 U	50 U	8 U	20 U	40 U	8 U	8 U	8 U	20 U	20 U
Acetone		40 U	4.7 J	5.2 J	50 U	2.3 J *	20 U *	12 J	10	13 B	23	20 U	4.2 J
Benzene	1	20 U	20 U	25 U	25 U	2 U	10 U	20 U	2 U	2 U	2 U	10 U	10 U
Bromodichloromethane	50	20 U	20 U	25 U	25 U	2 U	10 U	20 U	2 U	2 U	2 U	10 U	10 U
Bromoform		20 U	20 U	25 U	25 U	2 U	10 U	20 U	2 U	2 U	2 U	10 U	10 U
Bromomethane	5	20 U	20 U	25 U	25 U	4 U	10 U	20 U	4 U	4 U	4 U	10 U	10 U
Carbon disulfide		20 U	20 U	25 U	25 U	2 U	10 U	20 U	2 U	2 U	2 U	10 U	10 U
Carbon tetrachloride	5	20 U	20 U	25 U	25 U	2 U	10 U	20 U	2 U	2 U	2 U	10 U	10 U
Chlorobenzene	5	20 U	20 U	25 U	25 U	2 U	10 U	20 U	2 U	2 U	2 U	10 U	10 U
Chloroethane	5	20 U	20 U	25 U	25 U	4 U	10 U	20 U	4 U *	4 U *	4 U	10 U	10 U
Chloroform	7	20 U	20 U	25 U *	25 U	0.67 J B	10 U	20 U	2 U	2 U	2 U	10 U	10 U
Chloromethane		20 U	20 U	25 U	25 U	2 U	10 U	20 U	2 U *	2 U	2 U	10 U	10 U
cis-1,2-Dichloroethene	5	**50**	**68**	**75**	**65**	**63**	**60**	**53**	**55**	**49**	**51**	**70**	**31**
cis-1,3-Dichloropropene	0.4	20 U	20 U	25 U	25 U	2 U	10 U	20 U	2 U	2 U	2 U	10 U	10 U
Dibromochloromethane	50	20 U	20 U	25 U	25 U	2 U	10 U	20 U	2 U	2 U	2 U	10 U	10 U
Ethylbenzene	5	20 U	20 U	25 U	25 U	2 U	10 U	20 U	2 U	2 U	2 U	10 U	10 U
Methyl Ethyl Ketone	50	40 U	40 U	50 U	50 U	8 U	20 U	40 U	8 U	8 U	8 U	20 U	20 U
Methyl Isobutyl Ketone		40 U	40 U	50 U	50 U	8 U	20 U	40 U	8 U	8 U	8 U	20 U	20 U
Methylene Chloride	5	20 U	20 U	25 U	25 U	**7.9 J B**	**2.3 J B**	**11 J B**	**14**	**9.1**	4.9 J B	3.9 J B	10 U
Styrene	5	20 U *	20 U	25 U	25 U	2 U	10 U	20 U	2 U	2 U	2 U	10 U	10 U
Tetrachloroethene	5	20 U	20 U	25 U	25 U	2 U	10 U	20 U	2 U	2 U	2 U	10 U	10 U
Toluene	5	20 U	20 U	25 U	25 U	2 U	10 U	20 U	2 U	2 U	2 U	10 U	10 U
trans-1,2-Dichloroethene	5	20 U	20 U	25 U	25 U	0.51 J	10 U	20 U	1.5 J	2 U *	2 U	10 U	10 U
trans-1,3-Dichloropropene	0.4	20 U	20 U	25 U	25 U	2 U	10 U	20 U	2 U	2 U	2 U	10 U	10 U
Trichloroethene	5	**45**	**59**	**64**	**59**	**58**	**55**	**50**	**59**	**47**	**56**	**66**	**29**
Vinyl chloride	2	**5.8 J**	**7.2 J**	**6.9 J**	**10 J**	**14**	**9.6 J**	**11 J**	**11**	2 U	**7.6**	**8.6 J**	**4.5 J**
Xylenes, Total	5	20 U	20 U	25 U	25 U	**12**	10 U	20 U	4 U	4 U	4 U	10 U	10 U
Total VOCs		357	455	498	441	491	392	438	470	347	405	424	201

Notes

- Concentration exceeds corresponding NYSDEC Class GA Standard.

U - Not detected at the indicated concentration.
J - Estimated concentration.
M - Manual integrated compound.
B - Analyte found in associated blank as well as the sample.
E - Concentration exceeds instrument calibration range.
* - MS or MSD exceeded control limits.

TABLE 3-2
SUMMARY OF GROUNDWATER TREATMENT SYSTEM VOCS (INFLUENT)
VESTAL WATER SUPPLY
VESTAL, NEW YORK
NYSDEC SITE #7-04-009A

Sample ID Sampling Date Matrix Units	NYSDEC GA Standard ug/L	WELL 1A-INF 11/20/2009 WATER ug/L	WELL 1A-INF 12/23/2009 WATER ug/L	WELL 1A-INF 2/5/2010 WATER ug/L	WELL 1A-INF 2/23/2010 WATER ug/L	WELL 1A-INF 3/15/2010 WATER ug/L	WELL 1A-INF 4/19/2010 WATER ug/L	WELL 1A-INF 5/25/2010 WATER ug/L	WELL 1A-INF 8/20/2010 WATER ug/L	WELL 1A-INF 9/17/2010 WATER ug/L	WELL 1A-INF 10/22/2010 WATER ug/L	WELL 1A-INF 11/23/2010 WATER ug/L	WELL 1A-INF 12/29/2010 WATER ug/L
VOCs													
1,1,1-Trichloroethane	5	**200**	**240**	**170**	**170**	**91**	**180**	**270**	**420**	**180**	**150**	**180**	**220**
1,1,2,2-Tetrachloroethane	5	20 U	20 U	5 U	5 U	5 U	5 U	10 U	20 U	5 U	5 U	10 U	20 U
1,1,2-Trichloroethane	1	20 U	20 U	5 U	5 U	5 U	5 U	10 U	20 U	5 U	5 U	10 U	20 U
1,1-Dichloroethane	5	**24**	**27**	**23**	**22**	**14**	**22**	**30**	**48**	**23**	**18**	**23**	**28**
1,1-Dichloroethene	5	**16 J**	**20**	**16**	**17**	**7.5**	**16**	**21**	**34**	**15**	**15**	**14**	**19 J**
1,2-Dichloroethane	0.6	20 U	20 U	5 U	5 U	5 U *	5 U	10 U	20 U	5 U	5 U	10 U	20 U
1,2-Dichloropropane	5	20 U	20 U	5 U	5 U	5 U	5 U	10 U	20 U	5 U	5 U	10 U	20 U
2-Hexanone		40 U	40 U *	10 U	10 U	10 U	10 U	20 U	40 U	10 U	10 U	20 U	40 U
Acetone		40 U	5.8 J	10 U	10 U	10 U	10 U	20 U	40 U	10 U	10 U	2.6 J	40 U
Benzene	1	20 U	20 U	5 U	5 U	5 U	5 U	10 U	20 U	5 U	5 U	10 U	20 U
Bromodichloromethane	50	20 U	20 U	5 U	5 U	5 U	5 U	10 U	20 U	5 U	5 U	10 U	20 U
Bromoform		20 U	20 U	5 U	5 U	5 U	5 U	10 U	20 U	5 U	5 U	10 U	20 U
Bromomethane	5	20 U	20 U	5 U	5 U	5 U	5 U	10 U	20 U	5 U	5 U	10 U	20 U
Carbon disulfide		20 U	20 U	5 U	5 U	5 U	5 U	10 U	20 U	5 U	5 U	10 U	20 U
Carbon tetrachloride	5	20 U	20 U	5 U	5 U	5 U	5 U	10 U	20 U	5 U	5 U	10 U	20 U
Chlorobenzene	5	20 U	20 U	5 U	5 U	5 U	5 U	10 U	20 U	5 U	5 U	10 U	20 U
Chloroethane	5	20 U	20 U	5 U	5 U	5 U *	5 U	10 U	20 U	5 U	5 U	10 U	20 U
Chloroform	7	20 U	20 U	5 U	5 U	5 U	5 U	10 U	20 U	5 U	5 U	10 U	20 U
Chloromethane		20 U	20 U	5 U	5 U	5 U	5 U	10 U	20 U	5 U *	5 U *	10 U	20 U
cis-1,2-Dichloroethene	5	**54**	**55**	**56**	**57**	**22**	**53**	**75**	**140**	**52**	**47**	**48**	**57**
cis-1,3-Dichloropropene	0.4	20 U	20 U	5 U	5 U	5 U	5 U	10 U	20 U	5 U	5 U	10 U	20 U
Dibromochloromethane	50	20 U	20 U	5 U	5 U	5 U	5 U	10 U	20 U	5 U	5 U	10 U	20 U
Ethylbenzene	5	20 U	20 U	5 U	5 U	5 U	5 U	10 U	20 U	5 U	5 U	10 U	20 U
Methyl Ethyl Ketone	50	40 U	40 U	10 U	10 U	10 U	10 U	20 U	40 U	10 U	10 U	20 U	40 U
Methyl Isobutyl Ketone		40 U	40 U	10 U	10 U	10 U	10 U	20 U	40 U *	10 U	10 U	20 U	40 U
Methylene Chloride	5	20 U	20 U	5 U	5 U	5 U	5 U	1.6 J B	4.7 J B	5 U	5 U	10 U	20 U
Styrene	5	20 U	20 U	5 U	5 U	5 U	5 U	10 U	20 U	5 U	5 U	10 U	20 U
Tetrachloroethene	5	20 U	20 U	5 U	5 U	5 U	5 U	10 U	20 U	5 U	5 U	10 U	20 U
Toluene	5	20 U	20 U	5 U	5 U	5 U	5 U	10 U	20 U	5 U	5 U	10 U	20 U
trans-1,2-Dichloroethene	5	20 U	20 U	5 U	5 U	5 U	5 U	10 U	20 U	5 U	5 U	10 U	20 U
trans-1,3-Dichloropropene	0.4	20 U	20 U	5 U	5 U	5 U	5 U	10 U	20 U	5 U	5 U	10 U	20 U
Trichloroethene	5	**53**	**58**	**56**	**58**	**23**	**52**	**71**	**120**	**51**	**47**	**49**	**58**
Vinyl chloride	2	**9.1 J**	**8.6 J**	**7.4**	**6.7**	**3.5 J**	**8.8**	**12**	**14 J**	**9.4**	**9.7**	**9 J**	**8.8 J**
Xylenes, Total	5	20 U	20 U	5 U	5 U	5 U	5 U	10 U	20 U	5 U	5 U	10 U	20 U
Total VOCs		356	414	328	331	161	332	481	781	330	292	333	391

Notes

- Concentration exceeds corresponding NYSDEC Class GA Standard.

U - Not detected at the indicated concentration.
J - Estimated concentration.
M - Manual integrated compound.
B - Analyte found in associated blank as well as the sample.
E - Concentration exceeds instrument calibration range.
* - MS or MSD exceeded control limits.

TABLE 3-2
SUMMARY OF GROUNDWATER TREATMENT SYSTEM VOCS (INFLUENT)
VESTAL WATER SUPPLY
VESTAL, NEW YORK
NYSDEC SITE #7-04-009A

Sample ID Sampling Date Matrix Units	NYSDEC GA Standard ug/L	WELL 1A-INF 1/28/2011 WATER ug/L	WELL 1A-INF 2/28/2011 WATER ug/L	WELL 1A-INF 3/29/2011 WATER ug/L	WELL 1A-INF 5/26/2011 WATER ug/L	WELL 1A-INF 6/13/2011 WATER ug/L	WELL 1A-INF 7/26/2011 WATER ug/L	WELL 1A-INF 8/18/2011 WATER ug/L	WELL 1A-INF 9/29/2011 WATER ug/L
VOCs									
1,1,1-Trichloroethane	5	**140**	**220**	**170**	**180**	**240**	**180**	**200**	**120**
1,1,2,2-Tetrachloroethane	5	10	20 U	5 U	5 U	2 U	10 U	10 U	5 U
1,1,2-Trichloroethane	1	10	20 U	5 U	5 U	2 U	10 U	10 U	5 U
1,1-Dichloroethane	5	**19**	**27**	**25**	**23**	**26**	**20**	**24**	**17**
1,1-Dichloroethene	5	**13**	**22**	**18**	**15**	**20**	**13**	**17**	**11**
1,2-Dichloroethane	0.6	10 U	20 U	5 U	5 U	2 U	10 U	10 U	5 U
1,2-Dichloropropane	5	10 U	20 U	5 U	5 U	2 U	10 U	10 U	5 U
2-Hexanone		20 U	40 U	10 U	10 U	8 U	20 U	20 U	10 U
Acetone		3.1 J	14 J B	10 U	10 U	4.8 J B	20 U	11 J	10 U
Benzene	1	10 U	20 U	5 U	5 U	2 U	10 U	10 U	5 U
Bromodichloromethane	50	10 U	20 U	5 U	5 U	2 U	10 U	10 U	5 U
Bromoform		10 U	20 U	5 U	5 U	2 U	10 U	10 U	5 U
Bromomethane	5	10 U	20 U	5 U*	5 U	4 U	10 U	10 U	5 U
Carbon disulfide		10 U	20 U	5 U	5 U	2 U	10 U	10 U	5 U
Carbon tetrachloride	5	10 U	20 U	5 U	5 U	2 U *	10 U	10 U *	5 U
Chlorobenzene	5	10 U	20 U	5 U	5 U	2 U	10 U	10 U	5 U
Chloroethane	5	10 U	20 U	5 U	5 U	4 U	10 U	10 U	5 U
Chloroform	7	10 U	20 U	5 U	5 U	0.71 J B	10 U	10 U	5 U
Chloromethane		10 U	20 U	5 U	5 U	2 U	10 U	10 U	5 U
cis-1,2-Dichloroethene	5	**39**	**63**	**53**	**52**	**52**	**46**	**51**	**37**
cis-1,3-Dichloropropene	0.4	10 U	20 U	5 U	5 U	2 U	10 U	10 U	5 U
Dibromochloromethane	50	10 U	20 U	5 U	5 U	2 U	10 U	10 U	5 U
Ethylbenzene	5	10 U	20 U	5 U	5 U	2 U	10 U	10 U	5 U
Methyl Ethyl Ketone	50	20 U	40 U	10 U	10 U	8 U	20 U	20 U	10 U
Methyl Isobutyl Ketone		20 U	40 U	10 U	10 U	8 U	20 U	9.7 J	10 U
Methylene Chloride	5	2.5 J B	3.4 J B	5 U	5 U	8 U	10 U	4 J B	5 U
Styrene	5	10 U	20 U	5 U	5 U	2 U	10 U	10 U	5 U
Tetrachloroethene	5	10 U	20 U	5 U	5 U	2 U *	10 U	10 U	5 U
Toluene	5	10 U	20 U	5 U	5 U	2 U *	10 U	10 U	5 U
trans-1,2-Dichloroethene	5	10 U	20 U	5 U	5 U	2 U	10 U	10 U	5 U
trans-1,3-Dichloropropene	0.4	10 U	20 U	5 U	5 U	2 U	10 U	10 U	5 U
Trichloroethene	5	**40**	**62**	**53**	**54**	**61**	**51**	**55**	**39**
Vinyl chloride	2	**6.7 J**	**6.4 J**	**8.9**	**6.4**	**8.7**	**6.2 J**	**7.8 J**	**5.5**
Xylenes, Total	5	10 U	20 U	5 U	5 U	4 U	10 U	10 U	5 U
Total VOCs		258	400	328	330	408	316	355	230

Notes

- Concentration exceeds corresponding NYSDEC Class GA Standard.

U - Not detected at the indicated concentration.
J - Estimated concentration.
M - Manual integrated compound.
B - Analyte found in associated blank as well as the sample.
E - Concentration exceeds instrument calibration range.
* - MS or MSD exceeded control limits.

TABLE 3-3
SUMMARY OF GROUNDWATER TREATMENT SYSTEM VOCS (EFFLUENT)
VESTAL WATER SUPPLY
VESTAL, NEW YORK
NYSDEC SITE #7-04-009A

Sample ID Sampling Date Matrix Units	NYSDEC GA Standard ug/L	WELL 1A-EFF 7/27/2007 WATER ug/L	WELL 1A-EFF 8/27/2007 WATER ug/L	WELL 1A-EFF 9/26/2007 WATER ug/L	WELL 1A-EFF 10/26/2007 WATER ug/L	WELL 1A-EFF 11/27/2007 WATER ug/L	WELL 1A-EFF 12/20/2007 WATER ug/L	WELL 1A-EFF 1/23/2008 WATER ug/L	WELL 1A-EFF 2/26/2008 WATER ug/L	WELL 1A-EFF 3/27/2008 WATER ug/L	WELL 1A-EFF 4/22/2008 WATER ug/L	WELL 1A-EFF 5/20/2008 WATER ug/L	WELL 1A-EFF 6/27/2008 WATER ug/L
1,1,1-Trichloroethane	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U
1,1,2,2-Tetrachloroethane	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U
1,1,2-Trichloroethane	1	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U
1,1-Dichloroethane	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U
1,1-Dichloroethene	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U *
1,2-Dichloroethane	0.6	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U
1,2-Dichloropropane	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U
2-Hexanone		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone		10 U	10 U	10 U	10 U	10 U	10 UM	10 U	10 U	10 U	1.8 J	1.2 J B	10 U
Benzene	1	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U
Bromodichloromethane	50	5 U	5 U	5 U	5 U	5 U	5 U	5 U *	5 U	5 U	5 U	10 U	5 U
Bromoform		5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U
Bromomethane	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U *	5 U	5 U	5 U	10 U	5 U
Carbon disulfide		5 U	5 U	5 U	5 U	5 U	5 U	5 U *	5 U	5 U	5 U	10 U	5 U *
Carbon tetrachloride	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U
Chlorobenzene	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U
Chloroethane	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U *
Chloroform	7	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U
Chloromethane		5 U	5 U	5 U	5 U *	5 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U
cis-1,2-Dichloroethene	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	0.3 J	5 U
cis-1,3-Dichloropropene	0.4	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U
Dibromochloromethane	50	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U
Ethylbenzene	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U
Methyl Ethyl Ketone	50	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methyl Isobutyl Ketone		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylene Chloride	5	5 U	5 U	5 U *	5 U	5 U	0.38 JB	5 U	5 U	1.2 JB	5 U	0.34 J B	5 U
Styrene	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U
Tetrachloroethene	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U
Toluene	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U
trans-1,2-Dichloroethene	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U
trans-1,3-Dichloropropene	0.4	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U
Trichloroethene	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	1.1 J*B	10 U	5 U
Vinyl chloride	2	5 U	5 U	5 U	5 U *	5 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U
Xylenes, Total	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	5 U

Notes
U - Not detected at the indicated concentration.
J - Estimated concentration.
M - Manual integrated compound.
B - Analyte found in associated blank as well as the sample.
* - MS or MSD exceeded control limits.

TABLE 3-3
SUMMARY OF GROUNDWATER TREATMENT SYSTEM VOCS (EFFLUENT)
VESTAL WATER SUPPLY
VESTAL, NEW YORK
NYSDEC SITE #7-04-009A

Sample ID Sampling Date Matrix Units	NYSDEC GA Standard ug/L	WELL 1A-EFF 7/25/2008 WATER ug/L	WELL 1A-EFF 8/25/2008 WATER ug/L	WELL 1A-EFF 9/30/2008 WATER ug/L	WELL 1A-EFF 3/5/2009 WATER ug/L	WELL 1A-EFF 3/27/2009 WATER ug/L	WELL 1A-EFF 4/16/2009 WATER ug/L	WELL 1A-EFF 5/30/2009 WATER ug/L	WELL 1A-EFF 6/24/2009 WATER ug/L	WELL 1A-EFF 7/29/2009 WATER ug/L	WELL 1A-EFF 8/27/2009 WATER ug/L	WELL 1A-EFF 9/24/2009 WATER ug/L	WELL 1A-EFF 10/26/2009 WATER ug/L
1,1,1-Trichloroethane	5	5 U	5 U	5 U	1.5 J	0.5 U	5 U	5 U	5 U	0.96	0.5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	5	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U	0.5 U	0.5 U	5 U	5 U
1,1,2-Trichloroethane	1	5 U	5 U	5 U *	5 U	0.5 U	5 U	5 U	5 U	0.5 U	0.5 U	5 U	5 U
1,1-Dichloroethane	5	5 U	5 U	5 U	5 U	0.27 J	5 U	5 U	5 U	0.5 U	0.5 U	5 U	5 U
1,1-Dichloroethene	5	5 U	5 U	5 U	5 U	0.16 J *	5 U	5 U *	5 U *	0.5 U *	0.5 U	5 U	5 U
1,2-Dichloroethane	0.6	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U	0.5 U	0.5 U	5 U	5 U
1,2-Dichloropropane	5	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U	0.5 U	0.5 U	5 U	5 U
2-Hexanone		10 U	10 U	10 U	10 U	2 U	10 U	10 U	10 U *	2 U	2 U	10 U	10 U
Acetone		1 J B	10 U	10 U	1.1 J	2 U *	10 U *	10 U	10 U	1.8 J B	2 U	10 U	10 U
Benzene	1	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U	0.5 U	0.5 U	5 U	5 U
Bromodichloromethane	50	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U	0.5 U	0.5 U	5 U	5 U
Bromoform		5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U	0.5 U	0.5 U	5 U	5 U
Bromomethane	5	5 U	5 U	5 U	5 U	1 U	5 U	5 U	5 U	1 U	1 U	5 U	5 U
Carbon disulfide		5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U	0.5 U	0.5 U	5 U	5 U
Carbon tetrachloride	5	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U	0.5 U	0.5 U	5 U	5 U
Chlorobenzene	5	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U	0.5 U	0.5 U	5 U	5 U
Chloroethane	5	5 U	5 U	5 U	5 U	1 U	5 U	5 U	5 U	1 U *	1 U	5 U	5 U
Chloroform	7	5 U	5 U	5 U *	5 U	0.5 U	5 U	5 U	5 U	0.5 U	0.5 U	5 U	5 U
Chloromethane		5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U *	0.5 U	0.5 U	5 U	5 U
cis-1,2-Dichloroethene	5	5 U	5 U	5 U	5 U	0.82	5 U	5 U	5 U	0.45 J	0.46 J	5 U	5 U
cis-1,3-Dichloropropene	0.4	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U	0.5 U	0.5 U	5 U	5 U
Dibromochloromethane	50	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U	0.5 U	0.5 U	5 U	5 U
Ethylbenzene	5	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U	0.5 U	0.5 U	5 U	5 U
Methyl Ethyl Ketone	50	10 U	10 U	10 U	10 U	2 U	10 U	10 U	10 U	2 U	2 U	10 U	10 U
Methyl Isobutyl Ketone		10 U	10 U	10 U	10 U	2 U	10 U	10 U	10 U	2 U	2 U	10 U	10 U
Methylene Chloride	5	5 U	5 U	5 U	5 U	2 U	5 U	5 U	5 U	2 U	2 U	5 U	5 U
Styrene	5	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U	0.5 U	0.5 U	5 U	5 U
Tetrachloroethene	5	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U	0.5 U	0.5 U	5 U	5 U
Toluene	5	5 U	5 U	5 U	5 U	0.33 J	5 U	5 U	5 U	0.5 U	0.5 U	5 U	5 U
trans-1,2-Dichloroethene	5	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U *	0.5 U *	0.5 U	5 U	5 U
trans-1,3-Dichloropropene	0.4	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U	0.5 U	0.5 U	5 U	5 U
Trichloroethene	5	5 U	5 U	5 U	5 U	0.5 J	5 U	5 U	5 U	0.37 J	0.29 J	5 U	5 U
Vinyl chloride	2	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U	0.5 U	0.5 U	5 U	5 U
Xylenes, Total	5	5 U	5 U	5 U	5 U	3.4	5 U	5 U	5 U	1 U	1 U	5 U	5 U

Notes
U - Not detected at the indicated concentration.
J - Estimated concentration.
M - Manual integrated compound.
B - Analyte found in associated blank as well as the sample.
* - MS or MSD exceeded control limits.

TABLE 3-3
SUMMARY OF GROUNDWATER TREATMENT SYSTEM VOCS (EFFLUENT)
VESTAL WATER SUPPLY
VESTAL, NEW YORK
NYSDEC SITE #7-04-009A

Sample ID Sampling Date Matrix Units	NYSDEC GA Standard ug/L	WELL 1A-EFF 11/20/2009 WATER ug/L	WELL 1A-EFF 12/23/2009 WATER ug/L	WELL 1A-EFF 2/5/2010 WATER ug/L	WELL 1A-EFF 2/23/2010 WATER ug/L	WELL 1A-EFF 3/15/2010 WATER ug/L	WELL 1A-EFF 4/19/2010 WATER ug/L	WELL 1A-EFF 5/25/2010 WATER ug/L	WELL 1A-EFF 8/20/2010 WATER ug/L	WELL 1A-EFF 9/17/2010 WATER ug/L	WELL 1A-EFF 10/22/2010 WATER ug/L	WELL 1A-EFF 11/23/2010 WATER ug/L	WELL 1A-EFF 12/29/2010 WATER ug/L
1,1,1-Trichloroethane	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	2.1 J	5 U	5 U	5 U	3 J
1,1,2,2-Tetrachloroethane	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	1	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethane	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,1-Dichloroethene	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloroethane	0.6	5 U	5 U	5 U	5 U	5 U *	5 U	5 U	5 U	5 U	5 U	5 U	5 U
1,2-Dichloropropane	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
2-Hexanone		10 U	10 U *	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Acetone		10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Benzene	1	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromodichloromethane	50	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromoform		5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Bromomethane	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Carbon disulfide		5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Carbon tetrachloride	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chlorobenzene	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chloroethane	5	5 U	5 U	5 U	5 U	5 U *	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chloroform	7	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chloromethane		5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U *	5 U *	5 U	5 U
cis-1,2-Dichloroethene	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	2 J	5 U	5 U	5 U	2.3 J
cis-1,3-Dichloropropene	0.4	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Dibromochloromethane	50	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Ethylbenzene	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Methyl Ethyl Ketone	50	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methyl Isobutyl Ketone		10 U	10 U *	10 U	10 U	10 U	10 U	10 U	10 U *	10 U	10 U	10 U	10 U
Methylene Chloride	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Styrene	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Tetrachloroethene	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Toluene	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
trans-1,2-Dichloroethene	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
trans-1,3-Dichloropropene	0.4	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Trichloroethene	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	0.67 J	5 U	5 U	5 U	1.4 J
Vinyl chloride	2	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Xylenes, Total	5	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U

Notes
U - Not detected at the indicated concentration.
J - Estimated concentration.
M - Manual integrated compound.
B - Analyte found in associated blank as well as the sample.
* - MS or MSD exceeded control limits.

TABLE 3-3
SUMMARY OF GROUNDWATER TREATMENT SYSTEM VOCS (EFFLUENT)
VESTAL WATER SUPPLY
VESTAL, NEW YORK
NYSDEC SITE #7-04-009A

Sample ID Sampling Date Matrix Units	NYSDEC GA Standard ug/L	WELL 1A-EFF 1/28/2011 WATER ug/L	WELL 1A-EFF 2/28/2011 WATER ug/L	WELL 1A-EFF 3/29/2011 WATER ug/L	WELL 1A-EFF 5/26/2011 WATER ug/L	WELL 1A-EFF 6/16/2011 WATER ug/L	WELL 1A-EFF 7/26/2011 WATER ug/L	WELL 1A-EFF 8/18/2011 WATER ug/L	WELL 1A-EFF 9/29/2011 WATER ug/L
1,1,1-Trichloroethane	5	5 U	5 U	5 U	5 U	0.99	5 U	5 U	5 U
1,1,2,2-Tetrachloroethane	5	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U
1,1,2-Trichloroethane	1	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U
1,1-Dichloroethane	5	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U
1,1-Dichloroethene	5	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U
1,2-Dichloroethane	0.6	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U
1,2-Dichloropropane	5	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U
2-Hexanone		10 U	10 U	10 U	10 U	2 U	10 U	10 U	10 U
Acetone		10 U	10 U	10 U	10 U	2 U	10 U	10 U	10 U
Benzene	1	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U
Bromodichloromethane	50	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U
Bromoform		5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U
Bromomethane	5	5 U	5 U	5 U	5 U	1 U	5 U	5 U	5 U
Carbon disulfide		5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U
Carbon tetrachloride	5	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U *	5 U
Chlorobenzene	5	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U
Chloroethane	5	5 U	5 U	5 U	5 U	1 U	5 U	5 U	5 U
Chloroform	7	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U
Chloromethane		5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U
cis-1,2-Dichloroethene	5	5 U	5 U	5 U	5 U	0.32 J	5 U	5 U	5 U
cis-1,3-Dichloropropene	0.4	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U
Dibromochloromethane	50	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U
Ethylbenzene	5	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U
Methyl Ethyl Ketone	50	10 U	10 U	10 U	10 U	2 U	10 U	10 U	10 U
Methyl Isobutyl Ketone		10 U	10 U	10 U	10 U	2 U	10 U	10 U	10 U
Methylene Chloride	5	5 U	5 U	5 U	5 U	2 U	5 U	5 U	5 U
Styrene	5	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U
Tetrachloroethene	5	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U
Toluene	5	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U
trans-1,2-Dichloroethene	5	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U
trans-1,3-Dichloropropene	0.4	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U
Trichloroethene	5	5 U	5 U	5 U	5 U	0.19 J	5 U	5 U	5 U
Vinyl chloride	2	5 U	5 U	5 U	5 U	0.5 U	5 U	5 U	5 U
Xylenes, Total	5	5 U	5 U	5 U	5 U	1 U	5 U	5 U	5 U

Notes
U - Not detected at the indicated concentration.
J - Estimated concentration.
M - Manual integrated compound.
B - Analyte found in associated blank as well as the sample.
* - MS or MSD exceeded control limits.

ARCADIS MALCOLM PIRNIE

Appendix A

Monthly Reports and System Operation and Maintenance Logs

ENVIRONMENTAL COMPLIANCE, INC.
101 Mount Bethel Rd.
Warren, New Jersey 07059
908-754-1700
908-754-1866 (fax)
http://www.eci-nj.com
j.jimenez@eci-nj.com (email)

Vestal Well 1-1 Monthly Report
July 2011

SECTION I – SUMMARY OF ACTIVITIES

System went down three times during month due to power disruptions caused by thunderstorms. System was restarted by following day in each instance. Otherwise system operated continuously without any issues. Actual flow meter recordings ranged between 257 GPM at beginning of month and 250 GPM at end of the month.

SECTION II – MONTHLY OPERATIONS & MAINTENANCE

- Checked and adjusted belts
- Lubricated equipment, as needed
- Routine inspection of site
- Cleaned up grounds
- Mowed and trimmed lawn

SECTION III – REPAIR WORK COMPLETED

- None

SECTION IV – REPAIR WORK NEEDED

- None

SECTION V – RECOMMENDATIONS

- None

ENVIRONMENTAL COMPLIANCE, INC.
101 Mount Bethel Rd.
Warren, New Jersey 07059
908-754-1700
908-754-1866 (fax)
http://www.eci-nj.com
j.jimenez@eci-nj.com (email)

Vestal Well 1-1 Monthly Report
August 2011

SECTION I – SUMMARY OF ACTIVITIES

System operated continuously entire month except for two (2) days down due to flooding. Actual flow meter recordings ranged between 238 GPM and 251 GPM.

SECTION II – MONTHLY OPERATIONS & MAINTENANCE

- Checked and adjusted belts
- Lubricated equipment, as needed
- Routine inspection of site
- Cleaned up grounds
- Mowed and trimmed lawn

SECTION III – REPAIR WORK COMPLETED

- None

SECTION IV – REPAIR WORK NEEDED

- None

SECTION V – RECOMMENDATIONS

- None

ENVIRONMENTAL COMPLIANCE, INC.
101 Mount Bethel Rd.
Warren, New Jersey 07059
908-754-1700
908-754-1866 (fax)
http://www.eci-nj.com
j.jimenez@eci-nj.com (email)

Vestal Well 1-1 Monthly Report
September 2011

SECTION I – SUMMARY OF ACTIVITIES

System was down for five (5) days due to flooding caused by heavy rains. Basement was flooded with approximately 40 inches of water which was pumped out by Richard Green. NYSDEC cut off lock from gate and installed pumps on site. Lock was replaced by Jeremy Wyckoff. Rest of time system operated without issues at a rate of 230 GPM to 242 GPM.

SECTION II – MONTHLY OPERATIONS & MAINTENANCE

- Checked and adjusted belts
- Lubricated equipment, as needed
- Routine inspection of site
- Cleaned up grounds
- Mowed and trimmed lawn
- Pumped out water in basement

SECTION III – REPAIR WORK COMPLETED

- None

SECTION IV – REPAIR WORK NEEDED

- None

SECTION V – RECOMMENDATIONS

- None

ENVIRONMENTAL COMPLIANCE, INC. **VESTAL WELL 1-1 MONTHLY O & M LOG** **July 2011**

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
TIME																															
WELL HOUSE	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X	
PRE LUBE LINE																															
PUMP MOTOR OIL																															
CHEMICAL BUILDING																															
SUMP PUMP	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X	
DISCHARGE VALVES	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X	
FLOW METER (GPM)*				257							255										253						250				
CHLORINE ROOM																															
GENERAL CONDITION	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X	
TOWER PACKING INSP.	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X	
MAIN PUMPHOUSE																															
BLOWER AND MOTOR	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X	
BLOWER AIR FILTERS	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X	
ALARM / CONTROL PANEL	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X	
CLEARWELL LEVEL	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X	
OTHER*																															
GROUNDS	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X	
INGROUND TANK LEVEL	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X	

***Unadjusted Meter Reading**

ENVIRONMENTAL COMPLIANCE, INC.										VESTAL WELL 1-1 MONTHLY O & M LOG								August 2011													
DAY	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**
TIME																															
WELL HOUSE	X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X
PRE LUBE LINE																															
PUMP MOTOR OIL																															
CHEMICAL BUILDING																															
SUMP PUMP	X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X
DISCHARGE VALVES	X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X
FLOW METER (GPM)*				243								240								238								251		
CHLORINE ROOM																															
GENERAL CONDITION	X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X
TOWER PACKING INSP.	X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X
MAIN PUMPHOUSE																															
BLOWER AND MOTOR	X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X
BLOWER AIR FILTERS	X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X
ALARM / CONTROL PANEL	X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X
CLEARWELL LEVEL	X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X
OTHER*																															
GROUNDS	X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X
INGROUND TANK LEVEL	X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X

***Unadjusted Meter Reading**

ENVIRONMENTAL COMPLIANCE, INC.					VESTAL WELL 1-1 MONTHLY O & M LOG														September 2011											
DAY	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**
TIME																															
WELL HOUSE	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	
PRE LUBE LINE																															
PUMP MOTOR OIL																															
CHEMICAL BUILDING																															
SUMP PUMP	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	
DISCHARGE VALVES	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	
FLOW METER (GPM)*		232							230						232												242				
CHLORINE ROOM																															
GENERAL CONDITION	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	
TOWER PACKING INSP.	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	
MAIN PUMPHOUSE																															
BLOWER AND MOTOR	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	
BLOWER AIR FILTERS	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	
ALARM / CONTROL PANEL	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	
CLEARWELL LEVEL	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	
OTHER*																															
GROUNDS	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	
INGROUND TANK LEVEL	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	

***Unadjusted Meter Reading**

ARCADIS MALCOLM PIRNIE

Appendix B

Analytical Reporting Forms

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 220-16116-1

Job Description: NYSDEC Standby - Vestal Water Supply

For:
Malcolm Pirnie, Inc.
855 Route 146
Suite 210
Clifton Park, NY 12065

Attention: Mr. Jeremy Wyckoff

Approved for release.
Joan Widomski
Project Manager I
8/8/2011 3:46 PM

Designee for
Jackie Trudell
Project Manager I
jackie.trudell@testamericainc.com
08/08/2011

The test results in this report meet all NELAP requirements unless specified within the case narrative. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Project Manager.

TestAmerica Connecticut Certifications and Approvals: CTDOH PH-047, MADEP CT023, RIDOH A43, NYDOH 10602, NY NELAP 10602, NHDES 2528, NJDEP CT410, ME DOH CT023, UT DOH 2032614458

TestAmerica Laboratories, Inc.
TestAmerica Connecticut 128 Long Hill Cross Road, Shelton, CT 06484
Tel (203) 929-8140 Fax (203) 929-8142 www.testamericainc.com

ACCREDITED IN ACCORDANCE WITH nelac

Job Number: 220-16116-1

Job Description: NYSDEC Standby - Vestal Water Supply

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed within the body of this report. Release of the data contained in this sample data package and in the electronic data deliverable has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Approved for release.
Joan Widomski
Project Manager I
8/8/2011 3:46 PM

Designee for
Jackie Trudell

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Table of Contents

Comments
No additional comments.

Receipt
All samples were received in good condition within temperature requirements.

GC/MS VOA
No analytical or quality issues were noted.

FORMULAS FOR NYSDEC SAMPLE CALCULATIONS

Volatiles

(Ax)(IS)(DF)
(AIS)(RRF)(V)(% solids) = C

(AX)(IS)(VT)(1000)(DF)
(AIS)(RRF)(VA)(V)(% solids) = C (for medium level soils)

SemiVolatiles

(AX)(IS)(VE)(DF)(GPC factor is 2 if needed)
(AIS)(RRF)(volume injected)(V)(% solids) = C

Pesticides

(AX)(VE)(DF)
(RRF)(V)(% solids)(volume injected) = C

PCBs for compound/retention time

(AX)(VE)(DF)
(RRF of compound at the stated retention time)(V)(% solids)(volume injected) = C

DRO/CTETPH

(AX)(VE)(DF)
(RRF)(V)(% solids)(volume injected) = C

AX = area of the target Ion
AIS = Area of Internal standard
C = concentration as ug/L or ug/Kg
DF = dilution
IS = Internal standard concentration (ng)
RRF = average RF (from initial cal except CLP methods from continuing cal)
V = sample volume for liquids in mls or sample weight for solids in grams
VA = volume of aliquot for medium level soils
VE = volume of concentrated extract
VT = volume of methanol for volatile medium level soils

SAMPLE SUMMARY

Client: Malcolm Pirnie, Inc. Job Number: 220-16116-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
220-16116-1	Well 1-1A EFF	Water	07/26/2011 0945	07/27/2011 0950
220-16116-2	Well 1-1A INF	Water	07/26/2011 0950	07/27/2011 0950
220-16116-3TB	Trip Blank	Water	07/26/2011 0945	07/27/2011 0950

EXECUTIVE SUMMARY - Detections

Client: Malcolm Pirnie, Inc. Job Number: 220-16116-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
220-16116-2	**WELL 1-1A INF**					
1,1-Dichloroethane		20		10	ug/L	8260B
1,1-Dichloroethene		13		10	ug/L	8260B
1,1,1-Trichloroethane		180		10	ug/L	8260B
Trichloroethene		51		10	ug/L	8260B
Vinyl chloride		6.2	J	10	ug/L	8260B
cis-1,2-Dichloroethene		46		10	ug/L	8260B
220-16116-3TB	**TRIP BLANK**					
Methylene Chloride		1.9	J B	5.0	ug/L	8260B

METHOD SUMMARY

Client: Malcolm Pirnie, Inc. Job Number: 220-16116-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Volatile Organic Compounds (GC/MS)	TAL CT	SW846 8260B	
Purge and Trap	TAL CT		SW846 5030B

Lab References:

TAL CT = TestAmerica Connecticut

Method References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

METHOD / ANALYST SUMMARY

Client: Malcolm Pirnie, Inc. Job Number: 220-16116-1

Method	Analyst	Analyst ID
SW846 8260B	Kostrzewska, Barbara	BK

Client: Malcolm Pirnie, Inc. Job Number: 220-16116-1

Client Sample ID: Well 1-1A EFF

Lab Sample ID: 220-16116-1 Date Sampled: 07/26/2011 0945
Client Matrix: Water Date Received: 07/27/2011 0950

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	220-53407	Instrument ID:	MSV
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	V2555.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/28/2011 0251			Final Weight/Volume:	5 mL
Prep Date:	07/28/2011 0251				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	10	U	1.0	10
Benzene	5.0	U	0.74	5.0
Bromodichloromethane	5.0	U	0.48	5.0
Bromoform	5.0	U	0.46	5.0
Bromomethane	5.0	U	2.1	5.0
Methyl Ethyl Ketone	10	U	1.1	10
Carbon disulfide	5.0	U	0.90	5.0
Carbon tetrachloride	5.0	U	1.1	5.0
Chlorobenzene	5.0	U	0.72	5.0
Chloroethane	5.0	U	1.1	5.0
Chloroform	5.0	U	0.67	5.0
Chloromethane	5.0	U	1.1	5.0
Dibromochloromethane	5.0	U	0.55	5.0
1,1-Dichloroethane	5.0	U	1.0	5.0
1,2-Dichloroethane	5.0	U	0.72	5.0
1,1-Dichloroethene	5.0	U	0.83	5.0
1,2-Dichloropropane	5.0	U	0.71	5.0
cis-1,3-Dichloropropene	5.0	U	0.28	5.0
trans-1,3-Dichloropropene	5.0	U	0.57	5.0
Ethylbenzene	5.0	U	0.87	5.0
2-Hexanone	10	U	1.1	10
Methylene Chloride	5.0	U	0.78	5.0
methyl isobutyl ketone	10	U	0.38	10
Styrene	5.0	U	0.64	5.0
1,1,2,2-Tetrachloroethane	5.0	U	0.81	5.0
Tetrachloroethene	5.0	U	0.81	5.0
Toluene	5.0	U	0.72	5.0
1,1,1-Trichloroethane	5.0	U	0.69	5.0
1,1,2-Trichloroethane	5.0	U	0.65	5.0
Trichloroethene	5.0	U	0.62	5.0
Vinyl chloride	5.0	U	0.99	5.0
Xylenes, Total	5.0	U	2.3	5.0
cis-1,2-Dichloroethene	5.0	U	0.99	5.0
trans-1,2-Dichloroethene	5.0	U	0.76	5.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	85		65 - 136
4-Bromofluorobenzene	93		51 - 142
Dibromofluoromethane	85		68 - 132
Toluene-d8 (Surr)	81		63 - 127

Client: Malcolm Pirnie, Inc. Job Number: 220-16116-1

Client Sample ID: Well 1-1A INF

Lab Sample ID: 220-16116-2 Date Sampled: 07/26/2011 0950
Client Matrix: Water Date Received: 07/27/2011 0950

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	220-53443	Instrument ID:	MSV
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	V2586.D
Dilution:	2.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/28/2011 2216			Final Weight/Volume:	5 mL
Prep Date:	07/28/2011 2216				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	20	U	2.1	20
Benzene	10	U	1.5	10
Bromodichloromethane	10	U	0.96	10
Bromoform	10	U	0.92	10
Bromomethane	10	U	4.2	10
Methyl Ethyl Ketone	20	U	2.2	20
Carbon disulfide	10	U	1.8	10
Carbon tetrachloride	10	U	2.1	10
Chlorobenzene	10	U	1.4	10
Chloroethane	10	U	2.1	10
Chloroform	10	U	1.3	10
Chloromethane	10	U	2.2	10
Dibromochloromethane	10	U	1.1	10
1,1-Dichloroethane	20		2.1	10
1,2-Dichloroethane	10	U	1.4	10
1,1-Dichloroethene	13		1.7	10
1,2-Dichloropropane	10	U	1.4	10
cis-1,3-Dichloropropene	10	U	0.56	10
trans-1,3-Dichloropropene	10	U	1.1	10
Ethylbenzene	10	U	1.7	10
2-Hexanone	20	U	2.2	20
Methylene Chloride	10	U	1.6	10
methyl isobutyl ketone	20	U	0.76	20
Styrene	10	U	1.3	10
1,1,2,2-Tetrachloroethane	10	U	1.6	10
Tetrachloroethene	10	U	1.6	10
Toluene	10	U	1.4	10
1,1,1-Trichloroethane	180		1.4	10
1,1,2-Trichloroethane	10	U	1.3	10
Trichloroethene	51		1.2	10
Vinyl chloride	6.2	J	2.0	10
Xylenes, Total	10	U	4.5	10
cis-1,2-Dichloroethene	46		2.0	10
trans-1,2-Dichloroethene	10	U	1.5	10

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	84		65 - 136
4-Bromofluorobenzene	86		51 - 142
Dibromofluoromethane	79		68 - 132
Toluene-d8 (Surr)	77		63 - 127

Client: Malcolm Pirnie, Inc. Job Number: 220-16116-1

Client Sample ID: Trip Blank

Lab Sample ID: 220-16116-3TB Date Sampled: 07/26/2011 0945
Client Matrix: Water Date Received: 07/27/2011 0950

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	220-53407	Instrument ID:	MSV
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	V2546.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	07/27/2011 2246			Final Weight/Volume:	5 mL
Prep Date:	07/27/2011 2246				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	10	U	1.0	10
Benzene	5.0	U	0.74	5.0
Bromodichloromethane	5.0	U	0.48	5.0
Bromoform	5.0	U	0.46	5.0
Bromomethane	5.0	U	2.1	5.0
Methyl Ethyl Ketone	10	U	1.1	10
Carbon disulfide	5.0	U	0.90	5.0
Carbon tetrachloride	5.0	U	1.1	5.0
Chlorobenzene	5.0	U	0.72	5.0
Chloroethane	5.0	U	1.1	5.0
Chloroform	5.0	U	0.67	5.0
Chloromethane	5.0	U	1.1	5.0
Dibromochloromethane	5.0	U	0.55	5.0
1,1-Dichloroethane	5.0	U	1.0	5.0
1,2-Dichloroethane	5.0	U	0.72	5.0
1,1-Dichloroethene	5.0	U	0.83	5.0
1,2-Dichloropropane	5.0	U	0.71	5.0
cis-1,3-Dichloropropene	5.0	U	0.28	5.0
trans-1,3-Dichloropropene	5.0	U	0.57	5.0
Ethylbenzene	5.0	U	0.87	5.0
2-Hexanone	10	U	1.1	10
Methylene Chloride	1.9	J B	0.78	5.0
methyl isobutyl ketone	10	U	0.38	10
Styrene	5.0	U	0.64	5.0
1,1,2,2-Tetrachloroethane	5.0	U	0.81	5.0
Tetrachloroethene	5.0	U	0.81	5.0
Toluene	5.0	U	0.72	5.0
1,1,1-Trichloroethane	5.0	U	0.69	5.0
1,1,2-Trichloroethane	5.0	U	0.65	5.0
Trichloroethene	5.0	U	0.62	5.0
Vinyl chloride	5.0	U	0.99	5.0
Xylenes, Total	5.0	U	2.3	5.0
cis-1,2-Dichloroethene	5.0	U	0.99	5.0
trans-1,2-Dichloroethene	5.0	U	0.76	5.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	83		65 - 136
4-Bromofluorobenzene	87		51 - 142
Dibromofluoromethane	84		68 - 132
Toluene-d8 (Surr)	85		63 - 127

Client: Malcolm Pirnie, Inc. Job Number: 220-16116-1

Surrogate Recovery Report

8260B Volatile Organic Compounds (GC/MS)

Client Matrix: Water

Lab Sample ID	Client Sample ID	DBFM %Rec	DCA %Rec	TOL %Rec	BFB %Rec
220-16116-1	Well 1-1A EFF	85	85	81	93
220-16116-2	Well 1-1A INF	79	84	77	86
220-16116-3	Trip Blank	84	83	85	87
MB 220-53407/11		88	83	87	88
MB 220-53443/3		82	86	78	88
LCS 220-53407/10		85	80	85	87
LCS 220-53443/2		79	84	86	92

Surrogate	Acceptance Limits
DBFM = Dibromofluoromethane	68-132
DCA = 1,2-Dichloroethane-d4 (Surr)	65-136
TOL = Toluene-d8 (Surr)	63-127
BFB = 4-Bromofluorobenzene	51-142

Client: Malcolm Pirnie, Inc. Job Number: 220-16116-1

Method Blank - Batch: 220-53407

Method: 8260B
Preparation: 5030B

Lab Sample ID:	MB 220-53407/11	Analysis Batch:	220-53407	Instrument ID:	MSV
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	V2545.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/27/2011 2219	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	07/27/2011 2219				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Acetone	10	U	1.0	10
Benzene	5.0	U	0.74	5.0
Bromodichloromethane	5.0	U	0.48	5.0
Bromoform	5.0	U	0.46	5.0
Bromomethane	5.0	U	2.1	5.0
Methyl Ethyl Ketone	10	U	1.1	10
Carbon disulfide	5.0	U	0.90	5.0
Carbon tetrachloride	5.0	U	1.1	5.0
Chlorobenzene	5.0	U	0.72	5.0
Chloroethane	5.0	U	1.1	5.0
Chloroform	5.0	U	0.67	5.0
Chloromethane	5.0	U	1.1	5.0
Dibromochloromethane	5.0	U	0.55	5.0
1,1-Dichloroethane	5.0	U	1.0	5.0
1,2-Dichloroethane	5.0	U	0.72	5.0
1,1-Dichloroethene	5.0	U	0.83	5.0
1,2-Dichloropropane	5.0	U	0.71	5.0
cis-1,3-Dichloropropene	5.0	U	0.28	5.0
trans-1,3-Dichloropropene	5.0	U	0.57	5.0
Ethylbenzene	5.0	U	0.87	5.0
2-Hexanone	10	U	1.1	10
Methylene Chloride	1.88	J	0.78	5.0
methyl isobutyl ketone	10	U	0.38	10
Styrene	5.0	U	0.64	5.0
1,1,2,2-Tetrachloroethane	5.0	U	0.81	5.0
Tetrachloroethene	5.0	U	0.81	5.0
Toluene	5.0	U	0.72	5.0
1,1,1-Trichloroethane	5.0	U	0.69	5.0
1,1,2-Trichloroethane	5.0	U	0.65	5.0
Trichloroethene	5.0	U	0.62	5.0
Vinyl chloride	5.0	U	0.99	5.0
Xylenes, Total	5.0	U	2.3	5.0
cis-1,2-Dichloroethene	5.0	U	0.99	5.0
trans-1,2-Dichloroethene	5.0	U	0.76	5.0

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	83	65 - 136
4-Bromofluorobenzene	88	51 - 142
Dibromofluoromethane	88	68 - 132
Toluene-d8 (Surr)	87	63 - 127

Client: Malcolm Pirnie, Inc. Job Number: 220-16116-1

Lab Control Sample - Batch: 220-53407

Method: 8260B
Preparation: 5030B

Lab Sample ID:	LCS 220-53407/10	Analysis Batch:	220-53407	Instrument ID:	MSV
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	V2542.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/27/2011 2057	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	07/27/2011 2057				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Acetone	10.0	8.48	85	41 - 150	J
Benzene	10.0	10.6	106	66 - 131	
Bromodichloromethane	10.0	9.74	97	78 - 120	
Bromoform	10.0	9.49	95	66 - 120	
Bromomethane	10.0	8.31	83	47 - 150	
Methyl Ethyl Ketone	10.0	8.69	87	42 - 150	J
Carbon disulfide	10.0	9.82	98	55 - 150	
Carbon tetrachloride	10.0	10.9	109	69 - 135	
Chlorobenzene	10.0	9.67	97	68 - 120	
Chloroethane	10.0	11.0	110	49 - 150	
Chloroform	10.0	9.53	95	77 - 126	
Chloromethane	10.0	9.13	91	33 - 150	
Dibromochloromethane	10.0	9.10	91	75 - 120	
1,1-Dichloroethane	10.0	9.70	97	75 - 130	
1,2-Dichloroethane	10.0	9.60	96	73 - 127	
1,1-Dichloroethene	10.0	11.1	111	65 - 142	
1,2-Dichloropropane	10.0	9.68	97	69 - 129	
cis-1,3-Dichloropropene	10.0	9.60	96	63 - 120	
trans-1,3-Dichloropropene	10.0	9.50	95	73 - 120	
Ethylbenzene	10.0	10.3	103	62 - 120	
2-Hexanone	10.0	8.25	83	46 - 150	J
Methylene Chloride	10.0	10.7	107	56 - 138	
methyl isobutyl ketone	10.0	9.21	92	70 - 122	J
Styrene	10.0	10.2	102	47 - 120	
1,1,2,2-Tetrachloroethane	10.0	9.22	92	75 - 124	
Tetrachloroethene	10.0	9.04	90	50 - 120	
Toluene	10.0	10.0	100	66 - 120	
1,1,1-Trichloroethane	10.0	9.78	98	73 - 135	
1,1,2-Trichloroethane	10.0	11.3	113	76 - 125	
Trichloroethene	10.0	11.0	110	60 - 122	
Vinyl chloride	10.0	10.7	107	61 - 150	
Xylenes, Total	30.0	30.2	101	58 - 120	
cis-1,2-Dichloroethene	10.0	10.0	100	65 - 120	
trans-1,2-Dichloroethene	10.0	9.93	99	58 - 120	

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	80	65 - 136
4-Bromofluorobenzene	87	51 - 142
Dibromofluoromethane	85	68 - 132
Toluene-d8 (Surr)	85	63 - 127

Client: Malcolm Pirnie, Inc. Job Number: 220-16116-1

Method Blank - Batch: 220-53443

Method: 8260B
Preparation: 5030B

Lab Sample ID:	MB 220-53443/3	Analysis Batch:	220-53443	Instrument ID:	MSV
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	V2566.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/28/2011 1312	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	07/28/2011 1312				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Acetone	10	U	1.0	10
Benzene	5.0	U	0.74	5.0
Bromodichloromethane	5.0	U	0.48	5.0
Bromoform	5.0	U	0.46	5.0
Bromomethane	5.0	U	2.1	5.0
Methyl Ethyl Ketone	10	U	1.1	10
Carbon disulfide	5.0	U	0.90	5.0
Carbon tetrachloride	5.0	U	1.1	5.0
Chlorobenzene	5.0	U	0.72	5.0
Chloroethane	5.0	U	1.1	5.0
Chloroform	5.0	U	0.67	5.0
Chloromethane	5.0	U	1.1	5.0
Dibromochloromethane	5.0	U	0.55	5.0
1,1-Dichloroethane	5.0	U	1.0	5.0
1,2-Dichloroethane	5.0	U	0.72	5.0
1,1-Dichloroethene	5.0	U	0.83	5.0
1,2-Dichloropropane	5.0	U	0.71	5.0
cis-1,3-Dichloropropene	5.0	U	0.28	5.0
trans-1,3-Dichloropropene	5.0	U	0.57	5.0
Ethylbenzene	5.0	U	0.87	5.0
2-Hexanone	10	U	1.1	10
Methylene Chloride	0.911	J	0.78	5.0
methyl isobutyl ketone	10	U	0.38	10
Styrene	5.0	U	0.64	5.0
1,1,2,2-Tetrachloroethane	5.0	U	0.81	5.0
Tetrachloroethene	5.0	U	0.81	5.0
Toluene	5.0	U	0.72	5.0
1,1,1-Trichloroethane	5.0	U	0.69	5.0
1,1,2-Trichloroethane	5.0	U	0.65	5.0
Trichloroethene	5.0	U	0.62	5.0
Vinyl chloride	5.0	U	0.99	5.0
Xylenes, Total	5.0	U	2.3	5.0
cis-1,2-Dichloroethene	5.0	U	0.99	5.0
trans-1,2-Dichloroethene	5.0	U	0.76	5.0

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	86	65 - 136
4-Bromofluorobenzene	88	51 - 142
Dibromofluoromethane	82	68 - 132
Toluene-d8 (Surr)	78	63 - 127

Client: Malcolm Pirnie, Inc. Job Number: 220-16116-1

Lab Control Sample - Batch: 220-53443

Method: 8260B
Preparation: 5030B

Lab Sample ID:	LCS 220-53443/2	Analysis Batch:	220-53443	Instrument ID:	MSV
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	V2563.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	07/28/2011 1150	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	07/28/2011 1150				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Acetone	10.0	8.42	84	41 - 150	J
Benzene	10.0	9.75	97	66 - 131	
Bromodichloromethane	10.0	10.1	101	78 - 120	
Bromoform	10.0	9.72	97	66 - 120	
Bromomethane	10.0	10.5	105	47 - 150	
Methyl Ethyl Ketone	10.0	10.2	102	42 - 150	
Carbon disulfide	10.0	10.9	109	55 - 150	
Carbon tetrachloride	10.0	10.8	108	69 - 135	
Chlorobenzene	10.0	9.13	91	68 - 120	
Chloroethane	10.0	13.2	132	49 - 150	
Chloroform	10.0	9.21	92	77 - 126	
Chloromethane	10.0	12.1	121	33 - 150	
Dibromochloromethane	10.0	9.21	92	75 - 120	
1,1-Dichloroethane	10.0	9.95	100	75 - 130	
1,2-Dichloroethane	10.0	10.3	103	73 - 127	
1,1-Dichloroethene	10.0	11.4	114	65 - 142	
1,2-Dichloropropane	10.0	8.44	84	69 - 129	
cis-1,3-Dichloropropene	10.0	9.48	95	63 - 120	
trans-1,3-Dichloropropene	10.0	9.04	90	73 - 120	
Ethylbenzene	10.0	9.31	93	62 - 120	
2-Hexanone	10.0	9.46	95	46 - 150	J
Methylene Chloride	10.0	11.2	112	56 - 138	
methyl isobutyl ketone	10.0	10.4	104	70 - 122	
Styrene	10.0	9.08	91	47 - 120	
1,1,2,2-Tetrachloroethane	10.0	10.5	105	75 - 124	
Tetrachloroethene	10.0	9.31	93	50 - 120	
Toluene	10.0	9.60	96	66 - 120	
1,1,1-Trichloroethane	10.0	10.3	103	73 - 135	
1,1,2-Trichloroethane	10.0	10.4	104	76 - 125	
Trichloroethene	10.0	10.1	101	60 - 122	
Vinyl chloride	10.0	10.9	109	61 - 150	
Xylenes, Total	30.0	26.9	90	58 - 120	
cis-1,2-Dichloroethene	10.0	9.14	91	65 - 120	
trans-1,2-Dichloroethene	10.0	9.98	100	58 - 120	

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	84	65 - 136
4-Bromofluorobenzene	92	51 - 142
Dibromofluoromethane	79	68 - 132
Toluene-d8 (Surr)	86	63 - 127

DATA REPORTING QUALIFIERS

Client: Malcolm Pirnie, Inc. Job Number: 220-16116-1

Lab Section	Qualifier	Description
GC/MS VOA		
	U	Analyzed for but not detected.
	J	Indicates an estimated value.
	B	The analyte was found in an associated blank, as well as in the sample.

Client: Malcolm Pirnie, Inc. Job Number: 220-16116-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS VOA					
Analysis Batch:220-53407					
LCS 220-53407/10	Lab Control Sample	T	Water	8260B	
MB 220-53407/11	Method Blank	T	Water	8260B	
220-16116-1	Well 1-1A EFF	T	Water	8260B	
220-16116-3TB	Trip Blank	T	Water	8260B	
Analysis Batch:220-53443					
LCS 220-53443/2	Lab Control Sample	T	Water	8260B	
MB 220-53443/3	Method Blank	T	Water	8260B	
220-16116-2	Well 1-1A INF	T	Water	8260B	

Report Basis
T = Total

Client: Malcolm Pirnie, Inc. Job Number: 220-16116-1

Laboratory Chronicle

Lab ID: 220-16116-1 **Client ID: Well 1-1A EFF**

Sample Date/Time: 07/26/2011 09:45 Received Date/Time: 07/27/2011 09:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	220-16116-A-1		220-53407		07/28/2011 02:51	1	TAL CT	BK
A:8260B	220-16116-A-1		220-53407		07/28/2011 02:51	1	TAL CT	BK

Lab ID: 220-16116-2 **Client ID: Well 1-1A INF**

Sample Date/Time: 07/26/2011 09:50 Received Date/Time: 07/27/2011 09:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	220-16116-C-2		220-53443		07/28/2011 22:16	2	TAL CT	BK
A:8260B	220-16116-C-2		220-53443		07/28/2011 22:16	2	TAL CT	BK

Lab ID: 220-16116-3 **Client ID: Trip Blank**

Sample Date/Time: 07/26/2011 09:45 Received Date/Time: 07/27/2011 09:50

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	220-16116-A-3		220-53407		07/27/2011 22:46	1	TAL CT	BK
A:8260B	220-16116-A-3		220-53407		07/27/2011 22:46	1	TAL CT	BK

Lab ID: MB **Client ID: N/A**

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	MB 220-53407/11		220-53407		07/27/2011 22:19	1	TAL CT	BK
A:8260B	MB 220-53407/11		220-53407		07/27/2011 22:19	1	TAL CT	BK
P:5030B	MB 220-53443/3		220-53443		07/28/2011 13:12	1	TAL CT	BK
A:8260B	MB 220-53443/3		220-53443		07/28/2011 13:12	1	TAL CT	BK

Lab ID: LCS **Client ID: N/A**

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	LCS 220-53407/10		220-53407		07/27/2011 20:57	1	TAL CT	BK
A:8260B	LCS 220-53407/10		220-53407		07/27/2011 20:57	1	TAL CT	BK
P:5030B	LCS 220-53443/2		220-53443		07/28/2011 11:50	1	TAL CT	BK
A:8260B	LCS 220-53443/2		220-53443		07/28/2011 11:50	1	TAL CT	BK

Lab References:
TAL CT = TestAmerica Connecticut

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 220-16305-1

Job Description: NYSDEC Standby - Vestal Water Supply

For:
Malcolm Pirnie, Inc.
855 Route 146
Suite 210
Clifton Park, NY 12065

Attention: Mr. Jeremy Wyckoff

Approved for release.
Cheryl Cascella
Project Manager I
9/2/2011 2:55 PM

Designee for
Jackie Trudell
Project Manager I
jackie.trudell@testamericainc.com
09/02/2011

The test results in this report meet all NELAP requirements unless specified within the case narrative. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Project Manager.

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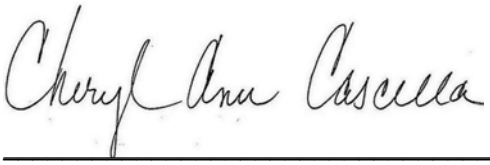
TestAmerica Laboratories, Inc.
TestAmerica Connecticut 128 Long Hill Cross Road, Shelton, CT 06484
Tel (203) 929-8140 Fax (203) 929-8142 www.testamericainc.com

ACCREDITED IN ACCORDANCE WITH nelac

Job Number: 220-16305-1

Job Description: NYSDEC Standby - Vestal Water Supply

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed within the body of this report. Release of the data contained in this sample data package and in the electronic data deliverable has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.



Approved for release.
Cheryl Cascella
Project Manager I
9/2/2011 2:55 PM

Designee for
Jackie Trudell

Table of Contents

Table of Contents

Job Narrative
220-16305-1

Comments
No additional comments.

Receipt
Chain of Custody was received without analysis selected. Client was contacted and instructed lab to analyze the samples for TCL VOCs.

The following volatile sample was received with headspace in 2 of 2 sample vials: Trip Blank (220-16305-3) (220-16305-A-3 and 220-16305-B-3) Client was contacted and instructed the lab to proceed with analysis.

All other samples were received in good condition within temperature requirements.

GC/MS VOA
No analytical or quality issues were noted.

FORMULAS FOR NYSDEC SAMPLE CALCULATIONS

Volatiles

$$\frac{(Ax)(IS)(DF)}{(AIS)(RRF)(V)(\%\ solids)} = C$$

$$\frac{(AX)(IS)(VT)(1000)(DF)}{(AIS)(RRF)(VA)(V)(\%\ solids)} = C \quad \text{(for medium level soils)}$$

SemiVolatiles

$$\frac{(AX)(IS)(VE)(DF)(GPC\ factor\ is\ 2\ if\ needed)}{(AIS)(RRF)(volume\ injected)(V)(\%\ solids)} = C$$

Pesticides

$$\frac{(AX)(VE)(DF)}{(RRF)(V)(\%\ solids)(volume\ injected)} = C$$

PCBs for compound/retention time

$$\frac{(AX)(VE)(DF)}{(RRF\ of\ compound\ at\ the\ stated\ retention\ time)(V)(\%\ solids)(volume\ injected)} = C$$

DRO/CTETPH

$$\frac{(AX)(VE)(DF)}{(RRF)(V)(\%\ solids)(volume\ injected)} = C$$

AX = area of the target Ion
AIS = Area of Internal standard
C = concentration as ug/L or ug/Kg
DF = dilution
IS = Internal standard concentration (ng)
RRF = average RF (from initial cal except CLP methods from continuing cal)
V = sample volume for liquids in mls or sample weight for solids in grams
VA = volume of aliquot for medium level soils
VE = volume of concentrated extract
VT = volume of methanol for volatile medium level soils

SAMPLE SUMMARY

Client: Malcolm Pirnie, Inc. Job Number: 220-16305-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
220-16305-1	Well 1-1A Inf	Water	08/18/2011 1455	08/19/2011 0932
220-16305-2	Well 1-1A Eff	Water	08/18/2011 1305	08/19/2011 0932
220-16305-3TB	Trip Blank	Water	08/18/2011 1305	08/19/2011 0932

EXECUTIVE SUMMARY - Detections

Client: Malcolm Pirnie, Inc. Job Number: 220-16305-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
220-16305-1	**WELL 1-1A INF**					
Acetone		11	J	20	ug/L	8260B
1,1-Dichloroethane		24		10	ug/L	8260B
1,1-Dichloroethene		17		10	ug/L	8260B
Methylene Chloride		4.0	J B	10	ug/L	8260B
methyl isobutyl ketone		9.7	J	20	ug/L	8260B
1,1,1-Trichloroethane		200		10	ug/L	8260B
Trichloroethene		55		10	ug/L	8260B
Vinyl chloride		7.8	J	10	ug/L	8260B
cis-1,2-Dichloroethene		51		10	ug/L	8260B
220-16305-3TB	**TRIP BLANK**					
Methylene Chloride		4.8	J B	5.0	ug/L	8260B

METHOD SUMMARY

Client: Malcolm Pirnie, Inc. Job Number: 220-16305-1

Description	Lab Location	Method	Preparation Method
Matrix Water			
Volatile Organic Compounds (GC/MS)	TAL CT	SW846 8260B	
Purge and Trap	TAL CT		SW846 5030B

Lab References:

TAL CT = TestAmerica Connecticut

Method References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

METHOD / ANALYST SUMMARY

Client: Malcolm Pirnie, Inc. Job Number: 220-16305-1

Method	Analyst	Analyst ID
SW846 8260B	Kostrzewska, Barbara	BK

Client: Malcolm Pirnie, Inc. Job Number: 220-16305-1

Client Sample ID: Well 1-1A Inf

Lab Sample ID: 220-16305-1 Date Sampled: 08/18/2011 1455
Client Matrix: Water Date Received: 08/19/2011 0932

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	220-54151	Instrument ID:	MSB
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	B2953.D
Dilution:	2.0			Initial Weight/Volume:	5 mL
Analysis Date:	08/22/2011 1606			Final Weight/Volume:	5 mL
Prep Date:	08/22/2011 1606				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	11	J	2.1	20
Benzene	10	U	1.5	10
Bromodichloromethane	10	U	0.96	10
Bromoform	10	U	0.92	10
Bromomethane	10	U	4.2	10
Methyl Ethyl Ketone	20	U	2.2	20
Carbon disulfide	10	U	1.8	10
Carbon tetrachloride	10	U *	2.1	10
Chlorobenzene	10	U	1.4	10
Chloroethane	10	U	2.1	10
Chloroform	10	U	1.3	10
Chloromethane	10	U	2.2	10
Dibromochloromethane	10	U	1.1	10
1,1-Dichloroethane	24		2.1	10
1,2-Dichloroethane	10	U	1.4	10
1,1-Dichloroethene	17		1.7	10
1,2-Dichloropropane	10	U	1.4	10
cis-1,3-Dichloropropene	10	U	0.56	10
trans-1,3-Dichloropropene	10	U	1.1	10
Ethylbenzene	10	U	1.7	10
2-Hexanone	20	U	2.2	20
Methylene Chloride	4.0	J B	1.6	10
methyl isobutyl ketone	9.7	J	0.76	20
Styrene	10	U	1.3	10
1,1,2,2-Tetrachloroethane	10	U	1.6	10
Tetrachloroethene	10	U	1.6	10
Toluene	10	U	1.4	10
1,1,1-Trichloroethane	200		1.4	10
1,1,2-Trichloroethane	10	U	1.3	10
Trichloroethene	55		1.2	10
Vinyl chloride	7.8	J	2.0	10
Xylenes, Total	10	U	4.5	10
cis-1,2-Dichloroethene	51		2.0	10
trans-1,2-Dichloroethene	10	U	1.5	10

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	94		65 - 136
4-Bromofluorobenzene	81		51 - 142
Dibromofluoromethane	91		68 - 132
Toluene-d8 (Surr)	79		63 - 127

Client: Malcolm Pirnie, Inc. Job Number: 220-16305-1

Client Sample ID: Well 1-1A Eff

Lab Sample ID: 220-16305-2 Date Sampled: 08/18/2011 1305
Client Matrix: Water Date Received: 08/19/2011 0932

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	220-54151	Instrument ID:	MSB
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	B2948.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	08/22/2011 1402			Final Weight/Volume:	5 mL
Prep Date:	08/22/2011 1402				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	10	U	1.0	10
Benzene	5.0	U	0.74	5.0
Bromodichloromethane	5.0	U	0.48	5.0
Bromoform	5.0	U	0.46	5.0
Bromomethane	5.0	U	2.1	5.0
Methyl Ethyl Ketone	10	U	1.1	10
Carbon disulfide	5.0	U	0.90	5.0
Carbon tetrachloride	5.0	U *	1.1	5.0
Chlorobenzene	5.0	U	0.72	5.0
Chloroethane	5.0	U	1.1	5.0
Chloroform	5.0	U	0.67	5.0
Chloromethane	5.0	U	1.1	5.0
Dibromochloromethane	5.0	U	0.55	5.0
1,1-Dichloroethane	5.0	U	1.0	5.0
1,2-Dichloroethane	5.0	U	0.72	5.0
1,1-Dichloroethene	5.0	U	0.83	5.0
1,2-Dichloropropane	5.0	U	0.71	5.0
cis-1,3-Dichloropropene	5.0	U	0.28	5.0
trans-1,3-Dichloropropene	5.0	U	0.57	5.0
Ethylbenzene	5.0	U	0.87	5.0
2-Hexanone	10	U	1.1	10
Methylene Chloride	5.0	U	0.78	5.0
methyl isobutyl ketone	10	U	0.38	10
Styrene	5.0	U	0.64	5.0
1,1,2,2-Tetrachloroethane	5.0	U	0.81	5.0
Tetrachloroethene	5.0	U	0.81	5.0
Toluene	5.0	U	0.72	5.0
1,1,1-Trichloroethane	5.0	U	0.69	5.0
1,1,2-Trichloroethane	5.0	U	0.65	5.0
Trichloroethene	5.0	U	0.62	5.0
Vinyl chloride	5.0	U	0.99	5.0
Xylenes, Total	5.0	U	2.3	5.0
cis-1,2-Dichloroethene	5.0	U	0.99	5.0
trans-1,2-Dichloroethene	5.0	U	0.76	5.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	109		65 - 136
4-Bromofluorobenzene	88		51 - 142
Dibromofluoromethane	105		68 - 132
Toluene-d8 (Surr)	89		63 - 127

Client: Malcolm Pirnie, Inc. Job Number: 220-16305-1

Client Sample ID: Trip Blank

Lab Sample ID: 220-16305-3TB Date Sampled: 08/18/2011 1305
Client Matrix: Water Date Received: 08/19/2011 0932

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	220-54151	Instrument ID:	MSB
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	B2946.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	08/22/2011 1313			Final Weight/Volume:	5 mL
Prep Date:	08/22/2011 1313				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	10	U	1.0	10
Benzene	5.0	U	0.74	5.0
Bromodichloromethane	5.0	U	0.48	5.0
Bromoform	5.0	U	0.46	5.0
Bromomethane	5.0	U	2.1	5.0
Methyl Ethyl Ketone	10	U	1.1	10
Carbon disulfide	5.0	U	0.90	5.0
Carbon tetrachloride	5.0	U *	1.1	5.0
Chlorobenzene	5.0	U	0.72	5.0
Chloroethane	5.0	U	1.1	5.0
Chloroform	5.0	U	0.67	5.0
Chloromethane	5.0	U	1.1	5.0
Dibromochloromethane	5.0	U	0.55	5.0
1,1-Dichloroethane	5.0	U	1.0	5.0
1,2-Dichloroethane	5.0	U	0.72	5.0
1,1-Dichloroethene	5.0	U	0.83	5.0
1,2-Dichloropropane	5.0	U	0.71	5.0
cis-1,3-Dichloropropene	5.0	U	0.28	5.0
trans-1,3-Dichloropropene	5.0	U	0.57	5.0
Ethylbenzene	5.0	U	0.87	5.0
2-Hexanone	10	U	1.1	10
Methylene Chloride	4.8	J B	0.78	5.0
methyl isobutyl ketone	10	U	0.38	10
Styrene	5.0	U	0.64	5.0
1,1,2,2-Tetrachloroethane	5.0	U	0.81	5.0
Tetrachloroethene	5.0	U	0.81	5.0
Toluene	5.0	U	0.72	5.0
1,1,1-Trichloroethane	5.0	U	0.69	5.0
1,1,2-Trichloroethane	5.0	U	0.65	5.0
Trichloroethene	5.0	U	0.62	5.0
Vinyl chloride	5.0	U	0.99	5.0
Xylenes, Total	5.0	U	2.3	5.0
cis-1,2-Dichloroethene	5.0	U	0.99	5.0
trans-1,2-Dichloroethene	5.0	U	0.76	5.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	106		65 - 136
4-Bromofluorobenzene	88		51 - 142
Dibromofluoromethane	101		68 - 132
Toluene-d8 (Surr)	90		63 - 127

Client: Malcolm Pirnie, Inc. Job Number: 220-16305-1

Surrogate Recovery Report

8260B Volatile Organic Compounds (GC/MS)

Client Matrix: Water

Lab Sample ID	Client Sample ID	DBFM %Rec	DCA %Rec	TOL %Rec	BFB %Rec
220-16305-1	Well 1-1A Inf	91	94	79	81
220-16305-2	Well 1-1A Eff	105	109	89	88
220-16305-3	Trip Blank	101	106	90	88
MB 220-54151/3		93	100	90	90
LCS 220-54151/2		97	100	92	93

Surrogate	Acceptance Limits
DBFM = Dibromofluoromethane	68-132
DCA = 1,2-Dichloroethane-d4 (Surr)	65-136
TOL = Toluene-d8 (Surr)	63-127
BFB = 4-Bromofluorobenzene	51-142

Client: Malcolm Pirnie, Inc. Job Number: 220-16305-1

Method Blank - Batch: 220-54151

Method: 8260B
Preparation: 5030B

Lab Sample ID:	MB 220-54151/3	Analysis Batch:	220-54151	Instrument ID:	MSB
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	B2945.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	08/22/2011 1248	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	08/22/2011 1248				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Acetone	10	U	1.0	10
Benzene	5.0	U	0.74	5.0
Bromodichloromethane	5.0	U	0.48	5.0
Bromoform	5.0	U	0.46	5.0
Bromomethane	5.0	U	2.1	5.0
Methyl Ethyl Ketone	10	U	1.1	10
Carbon disulfide	5.0	U	0.90	5.0
Carbon tetrachloride	5.0	U	1.1	5.0
Chlorobenzene	5.0	U	0.72	5.0
Chloroethane	5.0	U	1.1	5.0
Chloroform	5.0	U	0.67	5.0
Chloromethane	5.0	U	1.1	5.0
Dibromochloromethane	5.0	U	0.55	5.0
1,1-Dichloroethane	5.0	U	1.0	5.0
1,2-Dichloroethane	5.0	U	0.72	5.0
1,1-Dichloroethene	5.0	U	0.83	5.0
1,2-Dichloropropane	5.0	U	0.71	5.0
cis-1,3-Dichloropropene	5.0	U	0.28	5.0
trans-1,3-Dichloropropene	5.0	U	0.57	5.0
Ethylbenzene	5.0	U	0.87	5.0
2-Hexanone	10	U	1.1	10
Methylene Chloride	3.38	J	0.78	5.0
methyl isobutyl ketone	10	U	0.38	10
Styrene	5.0	U	0.64	5.0
1,1,2,2-Tetrachloroethane	5.0	U	0.81	5.0
Tetrachloroethene	5.0	U	0.81	5.0
Toluene	5.0	U	0.72	5.0
1,1,1-Trichloroethane	5.0	U	0.69	5.0
1,1,2-Trichloroethane	5.0	U	0.65	5.0
Trichloroethene	5.0	U	0.62	5.0
Vinyl chloride	5.0	U	0.99	5.0
Xylenes, Total	5.0	U	2.3	5.0
cis-1,2-Dichloroethene	5.0	U	0.99	5.0
trans-1,2-Dichloroethene	5.0	U	0.76	5.0

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	100	65 - 136
4-Bromofluorobenzene	90	51 - 142
Dibromofluoromethane	93	68 - 132
Toluene-d8 (Surr)	90	63 - 127

Client: Malcolm Pirnie, Inc. Job Number: 220-16305-1

Lab Control Sample - Batch: 220-54151

Method: 8260B
Preparation: 5030B

Lab Sample ID:	LCS 220-54151/2	Analysis Batch:	220-54151	Instrument ID:	MSB
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	B2942.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	08/22/2011 1133	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	08/22/2011 1133				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Acetone	20.0	16.0	80	41 - 150	
Benzene	20.0	23.2	116	66 - 131	
Bromodichloromethane	20.0	24.1	120	78 - 120	
Bromoform	20.0	22.7	114	66 - 120	
Bromomethane	20.0	18.3	92	47 - 150	
Methyl Ethyl Ketone	20.0	19.3	96	42 - 150	
Carbon disulfide	20.0	21.6	108	55 - 150	
Carbon tetrachloride	20.0	27.4	137	69 - 135	*
Chlorobenzene	20.0	22.1	110	68 - 120	
Chloroethane	20.0	20.8	104	49 - 150	
Chloroform	20.0	24.9	125	77 - 126	
Chloromethane	20.0	14.5	73	33 - 150	
Dibromochloromethane	20.0	22.7	113	75 - 120	
1,1-Dichloroethane	20.0	24.5	122	75 - 130	
1,2-Dichloroethane	20.0	25.4	127	73 - 127	
1,1-Dichloroethene	20.0	24.4	122	65 - 142	
1,2-Dichloropropane	20.0	22.4	112	69 - 129	
cis-1,3-Dichloropropene	20.0	23.0	115	63 - 120	
trans-1,3-Dichloropropene	20.0	23.4	117	73 - 120	
Ethylbenzene	20.0	22.9	114	62 - 120	
2-Hexanone	20.0	18.4	92	46 - 150	
Methylene Chloride	20.0	22.9	114	56 - 138	
methyl isobutyl ketone	20.0	20.7	103	70 - 122	
Styrene	20.0	21.9	109	47 - 120	
1,1,2,2-Tetrachloroethane	20.0	21.9	110	75 - 124	
Tetrachloroethene	20.0	22.8	114	50 - 120	
Toluene	20.0	22.2	111	66 - 120	
1,1,1-Trichloroethane	20.0	26.4	132	73 - 135	
1,1,2-Trichloroethane	20.0	22.0	110	76 - 125	
Trichloroethene	20.0	22.7	114	60 - 122	
Vinyl chloride	20.0	17.7	89	61 - 150	
Xylenes, Total	60.0	66.7	111	58 - 120	
cis-1,2-Dichloroethene	20.0	22.4	112	65 - 120	
trans-1,2-Dichloroethene	20.0	22.8	114	58 - 120	

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	100	65 - 136
4-Bromofluorobenzene	93	51 - 142
Dibromofluoromethane	97	68 - 132
Toluene-d8 (Surr)	92	63 - 127

DATA REPORTING QUALIFIERS

Client: Malcolm Pirnie, Inc. Job Number: 220-16305-1

Lab Section	Qualifier	Description
GC/MS VOA		
	U	Analyzed for but not detected.
	J	Indicates an estimated value.
	*	LCS or LCSD exceeds the control limits
	B	The analyte was found in an associated blank, as well as in the sample.

Client: Malcolm Pirnie, Inc. Job Number: 220-16305-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS VOA					
Analysis Batch:220-54151					
LCS 220-54151/2	Lab Control Sample	T	Water	8260B	
MB 220-54151/3	Method Blank	T	Water	8260B	
220-16305-1	Well 1-1A Inf	T	Water	8260B	
220-16305-2	Well 1-1A Eff	T	Water	8260B	
220-16305-3TB	Trip Blank	T	Water	8260B	

Report Basis
T = Total

Client: Malcolm Pirnie, Inc. Job Number: 220-16305-1

Laboratory Chronicle

Lab ID: 220-16305-1 **Client ID: Well 1-1A Inf**

Sample Date/Time: 08/18/2011 14:55 Received Date/Time: 08/19/2011 09:32

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	220-16305-A-1		220-54151		08/22/2011 16:06	2	TAL CT	BK
A:8260B	220-16305-A-1		220-54151		08/22/2011 16:06	2	TAL CT	BK

Lab ID: 220-16305-2 **Client ID: Well 1-1A Eff**

Sample Date/Time: 08/18/2011 13:05 Received Date/Time: 08/19/2011 09:32

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	220-16305-A-2		220-54151		08/22/2011 14:02	1	TAL CT	BK
A:8260B	220-16305-A-2		220-54151		08/22/2011 14:02	1	TAL CT	BK

Lab ID: 220-16305-3 **Client ID: Trip Blank**

Sample Date/Time: 08/18/2011 13:05 Received Date/Time: 08/19/2011 09:32

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	220-16305-A-3		220-54151		08/22/2011 13:13	1	TAL CT	BK
A:8260B	220-16305-A-3		220-54151		08/22/2011 13:13	1	TAL CT	BK

Lab ID: MB **Client ID: N/A**

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	MB 220-54151/3		220-54151		08/22/2011 12:48	1	TAL CT	BK
A:8260B	MB 220-54151/3		220-54151		08/22/2011 12:48	1	TAL CT	BK

Lab ID: LCS **Client ID: N/A**

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	LCS 220-54151/2		220-54151		08/22/2011 11:33	1	TAL CT	BK
A:8260B	LCS 220-54151/2		220-54151		08/22/2011 11:33	1	TAL CT	BK

Lab References:
TAL CT = TestAmerica Connecticut

ANALYTICAL REPORT

Job Number: 220-16654-1

Job Description: NYSDEC Standby - Vestal Water Supply

For:
Malcolm Pirnie, Inc. Invoice to Arcadis
855 Route 146
Suite 210
Clifton Park, NY 12065

Attention: Mr. Jeremy Wyckoff

Approved for release.
Joan Widomski
Project Manager I
10/13/2011 1:58 PM

Designee for
Jackie Trudell
Project Manager I
jackie.trudell@testamericainc.com
10/13/2011

TestAmerica Connecticut Certifications and Approvals: CTDOH PH-047, MADEP CT023, RIDOH A43, NYDOH 10602, NY NELAP 10602, NHDES 2528, NJDEP CT410, ME DOH CT023, UT DOH 2032614458

TestAmerica Laboratories, Inc.
TestAmerica Connecticut 128 Long Hill Cross Road, Shelton, CT 06484
Tel (203) 929-8140 Fax (203) 929-8142 www.testamericainc.com

Job Number: 220-16654-1

Job Description: NYSDEC Standby - Vestal Water Supply

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed within the body of this report. Release of the data contained in this sample data package and in the electronic data deliverable has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Approved for release.
Joan Widomski
Project Manager I
10/13/2011 1:58 PM

Designee for
Jackie Trudell

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Table of Contents

Job Narrative
220-16654-1

Comments
No additional comments.

Receipt
The container label for the following sample does not match the information listed on the Chain-of-Custody (COC): Well 1-1A INF (220-16654-1). The container labels list the collection time as 14:05, whereas the COC lists the collection time as 14:00. Client was contact and instructed the lab to use a collection time of 14:00.

The following samples were received at the laboratory outside the required temperature criteria: TB (220-16654-3), Well 1-1A EFF (220-16654-2), Well 1-1A INF (220-16654-1). The client was contacted regarding this issue, and the laboratory was instructed to proceed with analysis.

All other samples were received in good condition within temperature requirements.

GC/MS VOA
No analytical or quality issues were noted.

FORMULAS FOR NYSDEC SAMPLE CALCULATIONS

Volatiles

$$\frac{(Ax)(IS)(DF)}{(AIS)(RRF)(V)(\%\ solids)} = C$$

$$\frac{(AX)(IS)(VT)(1000)(DF)}{(AIS)(RRF)(VA)(V)(\%\ solids)} = C \quad \text{(for medium level soils)}$$

SemiVolatiles

$$\frac{(AX)(IS)(VE)(DF)(GPC\ factor\ is\ 2\ if\ needed)}{(AIS)(RRF)(volume\ injected)(V)(\%\ solids)} = C$$

Pesticides

$$\frac{(AX)(VE)(DF)}{(RRF)(V)(\%\ solids)(volume\ injected)} = C$$

PCBs for compound/retention time

$$\frac{(AX)(VE)(DF)}{(RRF\ of\ compound\ at\ the\ stated\ retention\ time)(V)(\%\ solids)(volume\ injected)} = C$$

DRO/CTETPH

$$\frac{(AX)(VE)(DF)}{(RRF)(V)(\%\ solids)(volume\ injected)} = C$$

AX = area of the target Ion
AIS = Area of Internal standard
C = concentration as ug/L or ug/Kg
DF = dilution
IS = Internal standard concentration (ng)
RRF = average RF (from initial cal except CLP methods from continuing cal)
V = sample volume for liquids in mls or sample weight for solids in grams
VA = volume of aliquot for medium level soils
VE = volume of concentrated extract
VT = volume of methanol for volatile medium level soils

SAMPLE SUMMARY

Client: Malcolm Pirnie, Inc. Invoice to Arcadis Job Number: 220-16654-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
220-16654-1	Well 1-1A INF	Water	09/29/2011 1400	09/30/2011 1020
220-16654-2	Well 1-1A EFF	Water	09/29/2011 1405	09/30/2011 1020
220-16654-3TB	TB	Water	09/29/2011 1400	09/30/2011 1020

EXECUTIVE SUMMARY - Detections

Client: Malcolm Pirnie, Inc. Invoice to Arcadis Job Number: 220-16654-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
220-16654-1	**WELL 1-1A INF**					
1,1-Dichloroethane		17		5.0	ug/L	8260B
1,1-Dichloroethene		11		5.0	ug/L	8260B
1,1,1-Trichloroethane		120		5.0	ug/L	8260B
Trichloroethene		39		5.0	ug/L	8260B
Vinyl chloride		5.5		5.0	ug/L	8260B
cis-1,2-Dichloroethene		37		5.0	ug/L	8260B
220-16654-3TB	**TB**					
Methylene Chloride		3.6	J B	5.0	ug/L	8260B

METHOD SUMMARY

Client: Malcolm Pirnie, Inc. Invoice to Arcadis | Job Number: 220-16654-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Volatile Organic Compounds (GC/MS)	TAL CT	SW846 8260B	
Purge and Trap	TAL CT		SW846 5030B

Lab References:

TAL CT = TestAmerica Connecticut

Method References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

METHOD / ANALYST SUMMARY

Client: Malcolm Pirnie, Inc. Invoice to Arcadis

Job Number: 220-16654-1

Method	Analyst	Analyst ID
SW846 8260B	Lynch, Eon	EL

Client: Malcolm Pirnie, Inc. Invoice to Arcadis | Job Number: 220-16654-1

Client Sample ID: **Well 1-1A INF**

Lab Sample ID: 220-16654-1 | Date Sampled: 09/29/2011 1400
Client Matrix: Water | Date Received: 09/30/2011 1020

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	220-55424	Instrument ID:	MSL
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	L0986.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/04/2011 1316			Final Weight/Volume:	5 mL
Prep Date:	10/04/2011 1316				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	10	U	1.0	10
Benzene	5.0	U	0.74	5.0
Bromodichloromethane	5.0	U	0.48	5.0
Bromoform	5.0	U	0.46	5.0
Bromomethane	5.0	U	2.1	5.0
Methyl Ethyl Ketone	10	U	1.1	10
Carbon disulfide	5.0	U	0.90	5.0
Carbon tetrachloride	5.0	U	1.1	5.0
Chlorobenzene	5.0	U	0.72	5.0
Chloroethane	5.0	U	1.1	5.0
Chloroform	5.0	U	0.67	5.0
Chloromethane	5.0	U	1.1	5.0
Dibromochloromethane	5.0	U	0.55	5.0
1,1-Dichloroethane	17		1.0	5.0
1,2-Dichloroethane	5.0	U	0.72	5.0
1,1-Dichloroethene	11		0.83	5.0
1,2-Dichloropropane	5.0	U	0.71	5.0
cis-1,3-Dichloropropene	5.0	U	0.28	5.0
trans-1,3-Dichloropropene	5.0	U	0.57	5.0
Ethylbenzene	5.0	U	0.87	5.0
2-Hexanone	10	U	1.1	10
Methylene Chloride	5.0	U	0.78	5.0
methyl isobutyl ketone	10	U	0.38	10
Styrene	5.0	U	0.64	5.0
1,1,2,2-Tetrachloroethane	5.0	U	0.81	5.0
Tetrachloroethene	5.0	U	0.81	5.0
Toluene	5.0	U	0.72	5.0
1,1,1-Trichloroethane	120		0.69	5.0
1,1,2-Trichloroethane	5.0	U	0.65	5.0
Trichloroethene	39		0.62	5.0
Vinyl chloride	5.5		0.99	5.0
Xylenes, Total	5.0	U	2.3	5.0
cis-1,2-Dichloroethene	37		0.99	5.0
trans-1,2-Dichloroethene	5.0	U	0.76	5.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	74		65 - 136
4-Bromofluorobenzene	83		51 - 142
Dibromofluoromethane	80		68 - 132
Toluene-d8 (Surr)	76		63 - 127

Client: Malcolm Pirnie, Inc. Invoice to Arcadis | Job Number: 220-16654-1

Client Sample ID: **Well 1-1A EFF**

Lab Sample ID: 220-16654-2 | Date Sampled: 09/29/2011 1405
Client Matrix: Water | Date Received: 09/30/2011 1020

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	220-55424	Instrument ID:	MSL
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	L0987.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/04/2011 1340			Final Weight/Volume:	5 mL
Prep Date:	10/04/2011 1340				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	10	U	1.0	10
Benzene	5.0	U	0.74	5.0
Bromodichloromethane	5.0	U	0.48	5.0
Bromoform	5.0	U	0.46	5.0
Bromomethane	5.0	U	2.1	5.0
Methyl Ethyl Ketone	10	U	1.1	10
Carbon disulfide	5.0	U	0.90	5.0
Carbon tetrachloride	5.0	U	1.1	5.0
Chlorobenzene	5.0	U	0.72	5.0
Chloroethane	5.0	U	1.1	5.0
Chloroform	5.0	U	0.67	5.0
Chloromethane	5.0	U	1.1	5.0
Dibromochloromethane	5.0	U	0.55	5.0
1,1-Dichloroethane	5.0	U	1.0	5.0
1,2-Dichloroethane	5.0	U	0.72	5.0
1,1-Dichloroethene	5.0	U	0.83	5.0
1,2-Dichloropropane	5.0	U	0.71	5.0
cis-1,3-Dichloropropene	5.0	U	0.28	5.0
trans-1,3-Dichloropropene	5.0	U	0.57	5.0
Ethylbenzene	5.0	U	0.87	5.0
2-Hexanone	10	U	1.1	10
Methylene Chloride	5.0	U	0.78	5.0
methyl isobutyl ketone	10	U	0.38	10
Styrene	5.0	U	0.64	5.0
1,1,2,2-Tetrachloroethane	5.0	U	0.81	5.0
Tetrachloroethene	5.0	U	0.81	5.0
Toluene	5.0	U	0.72	5.0
1,1,1-Trichloroethane	5.0	U	0.69	5.0
1,1,2-Trichloroethane	5.0	U	0.65	5.0
Trichloroethene	5.0	U	0.62	5.0
Vinyl chloride	5.0	U	0.99	5.0
Xylenes, Total	5.0	U	2.3	5.0
cis-1,2-Dichloroethene	5.0	U	0.99	5.0
trans-1,2-Dichloroethene	5.0	U	0.76	5.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	75		65 - 136
4-Bromofluorobenzene	82		51 - 142
Dibromofluoromethane	79		68 - 132
Toluene-d8 (Surr)	77		63 - 127

Client: Malcolm Pirnie, Inc. Invoice to Arcadis Job Number: 220-16654-1

Client Sample ID: TB

Lab Sample ID: 220-16654-3TB Date Sampled: 09/29/2011 1400
Client Matrix: Water Date Received: 09/30/2011 1020

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	220-55424	Instrument ID:	MSL
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	L0985.D
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	10/04/2011 1252			Final Weight/Volume:	5 mL
Prep Date:	10/04/2011 1252				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	10	U	1.0	10
Benzene	5.0	U	0.74	5.0
Bromodichloromethane	5.0	U	0.48	5.0
Bromoform	5.0	U	0.46	5.0
Bromomethane	5.0	U	2.1	5.0
Methyl Ethyl Ketone	10	U	1.1	10
Carbon disulfide	5.0	U	0.90	5.0
Carbon tetrachloride	5.0	U	1.1	5.0
Chlorobenzene	5.0	U	0.72	5.0
Chloroethane	5.0	U	1.1	5.0
Chloroform	5.0	U	0.67	5.0
Chloromethane	5.0	U	1.1	5.0
Dibromochloromethane	5.0	U	0.55	5.0
1,1-Dichloroethane	5.0	U	1.0	5.0
1,2-Dichloroethane	5.0	U	0.72	5.0
1,1-Dichloroethene	5.0	U	0.83	5.0
1,2-Dichloropropane	5.0	U	0.71	5.0
cis-1,3-Dichloropropene	5.0	U	0.28	5.0
trans-1,3-Dichloropropene	5.0	U	0.57	5.0
Ethylbenzene	5.0	U	0.87	5.0
2-Hexanone	10	U	1.1	10
Methylene Chloride	3.6	J B	0.78	5.0
methyl isobutyl ketone	10	U	0.38	10
Styrene	5.0	U	0.64	5.0
1,1,2,2-Tetrachloroethane	5.0	U	0.81	5.0
Tetrachloroethene	5.0	U	0.81	5.0
Toluene	5.0	U	0.72	5.0
1,1,1-Trichloroethane	5.0	U	0.69	5.0
1,1,2-Trichloroethane	5.0	U	0.65	5.0
Trichloroethene	5.0	U	0.62	5.0
Vinyl chloride	5.0	U	0.99	5.0
Xylenes, Total	5.0	U	2.3	5.0
cis-1,2-Dichloroethene	5.0	U	0.99	5.0
trans-1,2-Dichloroethene	5.0	U	0.76	5.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	72		65 - 136
4-Bromofluorobenzene	82		51 - 142
Dibromofluoromethane	78		68 - 132
Toluene-d8 (Surr)	74		63 - 127

Client: Malcolm Pirnie, Inc. Invoice to Arcadis

Job Number: 220-16654-1

Surrogate Recovery Report

8260B Volatile Organic Compounds (GC/MS)

Client Matrix: Water

Lab Sample ID	Client Sample ID	DBFM %Rec	DCA %Rec	TOL %Rec	BFB %Rec
220-16654-1	Well 1-1A INF	80	74	76	83
220-16654-2	Well 1-1A EFF	79	75	77	82
220-16654-3	TB	78	72	74	82
MB 220-55424/3		87	81	86	95
LCS 220-55424/2		85	76	79	88

Surrogate	Acceptance Limits
DBFM = Dibromofluoromethane	68-132
DCA = 1,2-Dichloroethane-d4 (Surr)	65-136
TOL = Toluene-d8 (Surr)	63-127
BFB = 4-Bromofluorobenzene	51-142

Client: Malcolm Pirnie, Inc. Invoice to Arcadis

Job Number: 220-16654-1

Method Blank - Batch: 220-55424

Method: 8260B
Preparation: 5030B

Lab Sample ID:	MB 220-55424/3	Analysis Batch:	220-55424	Instrument ID:	MSL
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	L0984.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/04/2011 1216	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	10/04/2011 1216				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Acetone	10	U	1.0	10
Benzene	5.0	U	0.74	5.0
Bromodichloromethane	5.0	U	0.48	5.0
Bromoform	5.0	U	0.46	5.0
Bromomethane	5.0	U	2.1	5.0
Methyl Ethyl Ketone	10	U	1.1	10
Carbon disulfide	5.0	U	0.90	5.0
Carbon tetrachloride	5.0	U	1.1	5.0
Chlorobenzene	5.0	U	0.72	5.0
Chloroethane	5.0	U	1.1	5.0
Chloroform	5.0	U	0.67	5.0
Chloromethane	5.0	U	1.1	5.0
Dibromochloromethane	5.0	U	0.55	5.0
1,1-Dichloroethane	5.0	U	1.0	5.0
1,2-Dichloroethane	5.0	U	0.72	5.0
1,1-Dichloroethene	5.0	U	0.83	5.0
1,2-Dichloropropane	5.0	U	0.71	5.0
cis-1,3-Dichloropropene	5.0	U	0.28	5.0
trans-1,3-Dichloropropene	5.0	U	0.57	5.0
Ethylbenzene	5.0	U	0.87	5.0
2-Hexanone	10	U	1.1	10
Methylene Chloride	3.20	J	0.78	5.0
methyl isobutyl ketone	10	U	0.38	10
Styrene	5.0	U	0.64	5.0
1,1,2,2-Tetrachloroethane	5.0	U	0.81	5.0
Tetrachloroethene	5.0	U	0.81	5.0
Toluene	5.0	U	0.72	5.0
1,1,1-Trichloroethane	5.0	U	0.69	5.0
1,1,2-Trichloroethane	5.0	U	0.65	5.0
Trichloroethene	5.0	U	0.62	5.0
Vinyl chloride	5.0	U	0.99	5.0
Xylenes, Total	5.0	U	2.3	5.0
cis-1,2-Dichloroethene	5.0	U	0.99	5.0
trans-1,2-Dichloroethene	5.0	U	0.76	5.0

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	81	65 - 136
4-Bromofluorobenzene	95	51 - 142
Dibromofluoromethane	87	68 - 132
Toluene-d8 (Surr)	86	63 - 127

Client: Malcolm Pirnie, Inc. Invoice to Arcadis

Job Number: 220-16654-1

Lab Control Sample - Batch: 220-55424

Method: 8260B
Preparation: 5030B

Lab Sample ID:	LCS 220-55424/2	Analysis Batch:	220-55424	Instrument ID:	MSL
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	L0982.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	10/04/2011 1107	Units:	ug/L	Final Weight/Volume:	5 mL
Prep Date:	10/04/2011 1107				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Acetone	20.0	24.0	120	41 - 150	
Benzene	20.0	18.5	92	66 - 131	
Bromodichloromethane	20.0	17.9	90	78 - 120	
Bromoform	20.0	15.0	75	66 - 120	
Bromomethane	20.0	15.4	77	47 - 150	
Methyl Ethyl Ketone	20.0	20.3	102	42 - 150	
Carbon disulfide	20.0	14.6	73	55 - 150	
Carbon tetrachloride	20.0	18.8	94	69 - 135	
Chlorobenzene	20.0	17.5	88	68 - 120	
Chloroethane	20.0	20.5	102	49 - 150	
Chloroform	20.0	19.0	95	77 - 126	
Chloromethane	20.0	17.7	89	33 - 150	
Dibromochloromethane	20.0	15.8	79	75 - 120	
1,1-Dichloroethane	20.0	19.8	99	75 - 130	
1,2-Dichloroethane	20.0	18.5	93	73 - 127	
1,1-Dichloroethene	20.0	20.1	100	65 - 142	
1,2-Dichloropropane	20.0	19.4	97	69 - 129	
cis-1,3-Dichloropropene	20.0	18.1	90	63 - 120	
trans-1,3-Dichloropropene	20.0	18.0	90	73 - 120	
Ethylbenzene	20.0	17.6	88	62 - 120	
2-Hexanone	20.0	18.2	91	46 - 150	
Methylene Chloride	20.0	20.8	104	56 - 138	
methyl isobutyl ketone	20.0	17.2	86	70 - 122	
Styrene	20.0	16.9	85	47 - 120	
1,1,2,2-Tetrachloroethane	20.0	17.5	88	75 - 124	
Tetrachloroethene	20.0	16.2	81	50 - 120	
Toluene	20.0	17.2	86	66 - 120	
1,1,1-Trichloroethane	20.0	19.5	98	73 - 135	
1,1,2-Trichloroethane	20.0	18.7	94	76 - 125	
Trichloroethene	20.0	18.8	94	60 - 122	
Vinyl chloride	20.0	17.7	88	61 - 150	
Xylenes, Total	60.0	52.9	88	58 - 120	
cis-1,2-Dichloroethene	20.0	19.1	96	65 - 120	
trans-1,2-Dichloroethene	20.0	18.5	93	58 - 120	

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	76	65 - 136
4-Bromofluorobenzene	88	51 - 142
Dibromofluoromethane	85	68 - 132
Toluene-d8 (Surr)	79	63 - 127

DATA REPORTING QUALIFIERS

Client: Malcolm Pirnie, Inc. Invoice to Arcadis Job Number: 220-16654-1

Lab Section	Qualifier	Description
GC/MS VOA		
	U	Analyzed for but not detected.
	J	Indicates an estimated value.
	B	The analyte was found in an associated blank, as well as in the sample.

Client: Malcolm Pirnie, Inc. Invoice to Arcadis

Job Number: 220-16654-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS VOA					
Analysis Batch:220-55424					
LCS 220-55424/2	Lab Control Sample	T	Water	8260B	
MB 220-55424/3	Method Blank	T	Water	8260B	
220-16654-1	Well 1-1A INF	T	Water	8260B	
220-16654-2	Well 1-1A EFF	T	Water	8260B	
220-16654-3TB	TB	T	Water	8260B	

Report Basis
T = Total

Client: Malcolm Pirnie, Inc. Invoice to Arcadis Job Number: 220-16654-1

Laboratory Chronicle

Lab ID: 220-16654-1 **Client ID: Well 1-1A INF**

Sample Date/Time: 09/29/2011 14:00 Received Date/Time: 09/30/2011 10:20

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	220-16654-B-1		220-55424		10/04/2011 13:16	1	TAL CT	EL
A:8260B	220-16654-B-1		220-55424		10/04/2011 13:16	1	TAL CT	EL

Lab ID: 220-16654-2 **Client ID: Well 1-1A EFF**

Sample Date/Time: 09/29/2011 14:05 Received Date/Time: 09/30/2011 10:20

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	220-16654-B-2		220-55424		10/04/2011 13:40	1	TAL CT	EL
A:8260B	220-16654-B-2		220-55424		10/04/2011 13:40	1	TAL CT	EL

Lab ID: 220-16654-3 **Client ID: TB**

Sample Date/Time: 09/29/2011 14:00 Received Date/Time: 09/30/2011 10:20

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	220-16654-C-3		220-55424		10/04/2011 12:52	1	TAL CT	EL
A:8260B	220-16654-C-3		220-55424		10/04/2011 12:52	1	TAL CT	EL

Lab ID: MB **Client ID: N/A**

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	MB 220-55424/3		220-55424		10/04/2011 12:16	1	TAL CT	EL
A:8260B	MB 220-55424/3		220-55424		10/04/2011 12:16	1	TAL CT	EL

Lab ID: LCS **Client ID: N/A**

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	LCS 220-55424/2		220-55424		10/04/2011 11:07	1	TAL CT	EL
A:8260B	LCS 220-55424/2		220-55424		10/04/2011 11:07	1	TAL CT	EL

Lab References:
TAL CT = TestAmerica Connecticut

ARCADIS MALCOLM PIRNIE

Appendix C

June 2011 Iso-Concentration Map

N.

N. MAIN ST.

OLD VESTAL RD.

GROUNDWATER TREATMENT PLANT

WELL 1-1A

WELL 1-1

SUSQUEHANNA RIVER

PUMPHOUSE RD.

WELL 1-3

WELL 1-2 & 1-2A

4009-10 **2**

4009-11A **1**

4009-11

4009-9 **5**

4009-15

4009-12

4009-12A **42**

4009-5 **98**

4009-4 **47**

4009-3 **141**

4009-16A

4009-16

4009-7 **674**

4009-8 **1692**

4009-18

4009-20

4009-21

4009-19

4009-17

4009-13A

4009-13

4009-14

4009-2 **33**

4009-1 **8**

STAGE RD.

4009-6

NYS RTE. 17

NYS RTE. 434

100

500

1000

1500

NOTE:
ALL CONCENTRATIONS MEASURED IN ug/l.

150 0 150 300

SCALE: 1" = 300'

LEGEND:

- TOTAL VOCS ISOCONCENTRATION LINE
- ESTIMATED ISOCONCENTRATION LINE (LIMITED DATA)
- 4009-2 — APPROXIMATE MONITORING WELL LOCATION
- **1037** — TOTAL VOCS CONCENTRATION
- RAILROAD TRACKS
- ROADWAY/DRIVEWAY
- BUILDING
- EDGE OF RIVER

ARCADIS
Infrastructure · Water · Environment · Buildings

NYSDEC STANDBY CONTRACT NO. D004443-4
NYSDEC SITE NO. 7-04-009
VESTAL WATER SUPPLY
VESTAL, NEW YORK

TOTAL VOC CONCENTRATIONS (JUNE 2011)

SCALE: 1" = 300'

ARCADIS-US, INC.
SEPTEMBER 2011
FIGURE 4-4