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File No. 28590-026

Ferry Landings, LLC
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Attention: Carl Monheit
Senior Director of Development and Chief Engineer

Subject: Tarrytown Former MGP Site
Post-Remediation Groundwater Monitoring - 2016 Data
Tarrytown, New York
Brownfield Site #C3600069

Ladies and Gentlemen:

We are pleased to submit this report which documents groundwater monitoring at the Tarrytown Former Manufactured Gas Plant (MGP) Site for 2016. The report also documents repair of the two up-gradient wells in 2016. Remediation ended and construction of the Hudson Harbor development began in 2005; site development continues to date. See Figure 1 for the site location.

PURPOSE

This report summarizes groundwater monitoring activities, which are requirements of the Site Management Plan (SMP), dated 10 August 2010 and approved by the New York State Department of Environmental Conservation (NYSDEC) on 26 August 2010.

GROUNDWATER MONITORING NETWORK

Five monitoring wells are used for post-remediation monitoring, two up-gradient and three down-gradient. The well locations are shown on Figure 2, as follows:

Up-gradient Wells
- MW-29: near the eastern site property line, northern location, and
- MW-12: near the eastern site property line, southern location.

Down-gradient Wells
- MW-20: near the western site property line (near Hudson River), northern location,
- MW-21: near the western site property line (near Hudson River), central location, and
- MW-24: near the western site property line (near Hudson River), southern location.

In addition, observation and recovery wells associated with the northern DNAPL recovery system and the western DNAPL recovery system are also located on site. These wells are specific to the DNAPL systems (performance and operation), and they are not associated with post remediation site groundwater monitoring.

GROUNDWATER MONITORING

Groundwater monitoring has occurred at the site during and since completion of remediation in 2005. During 2016, groundwater monitoring was performed in accordance with the Groundwater Monitoring Plan included in the SMP. Samples were collected using Operating Procedure OP3013 - Monitored Natural Attenuation Groundwater Sample Collection Procedure, 2003, which is appended to the NYSDEC-approved Groundwater Monitoring Plan.

Samples collected were analyzed for required parameters listed on the attached Table 1 (which was derived from Table 2 of the NYSDEC-approved Groundwater Monitoring Plan), including:

- Volatile organic compounds (VOCs) benzene, toluene, ethylbenzene, and xylenes (BTEX);
- Semi-volatile organic compounds (SVOCs) classified as polycyclic aromatic hydrocarbons (PAHs); and
- Attenuation Indicators iron, manganese, nitrate, nitrite, sulfate, Total Organic Carbon (TOC), Dissolved Organic Carbon (DOC), sulfide, Biochemical Oxygen Demand (BOD), and Chemical Oxygen Demand (COD).

Chemical analyses were performed by Phoenix Environmental Laboratories, Inc. (Phoenix), a NYSDOH Environmental Laboratory Approval Program (ELAP) certified laboratory.

Results for the 2006 through 2016 sampling rounds are on Table 2 (attached). Results are compared to the Class GA Groundwater values listed in Division of Water Technical and Operational Guidance Series 1.1.1, Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, NYSDEC, June 1998 (TOGS 1.1.1). A summary of analytes detected during the three most current sampling rounds at concentrations greater than the TOGS 1.1.1 Class GA Groundwater Standards and Guidance Values (the comparison criteria) are on Table 3 (attached). Appendix A contains the laboratory reports for the groundwater sampling analyses.

For five PAH compounds (Benz(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Chrysene, and Indeno(1,2,3-cd)pyrene), the laboratory method detection limit of 0.02 ug/L is greater than the TOGS 1.1.1 Class GA Groundwater comparison criterion (0.002 ug/L). Phoenix reported that concentrations of these PAHs less than the reporting limit of 0.02 ug/L cannot be measured in NYSDOH ELAP laboratories.

2016 RESULTS SUMMARY

The 2016 groundwater sampling round was performed on 15 and 16 November 2016 using low flow procedures. Well purging, sampling, sample containment, chain of custody and sample shipping procedures, and laboratory analyses were completed as required by the SMP. Results, compared to the TOGS 1.1.1 Class GA Groundwater standards and guidance values are provided in Table 2 and Table 3 (attached) and are summarized as follows:

MW-29 (up-gradient): Iron and manganese concentrations were greater than the comparison criteria; however, these concentrations were consistent with previous results. No VOC compounds were detected at concentrations greater than the comparison criteria, consistent with previous rounds. Concentrations of two PAH compounds (Benz(a)anthracene, and Chrysene) were greater than the comparison criteria; these SVOC concentrations were consistent with previous results. One other SVOC was detected at a concentration less than the comparison criterion.

MW-12 (up-gradient): Iron concentration was greater than the comparison criteria; however, the concentration was consistent with previous results. Manganese was detected at a concentration less than the comparison criterion. One VOC compound (o-Xylene) was detected at a concentration greater than the comparison criterion; the concentration was consistent with previous results. The total Xylene concentration was greater than the comparison criterion and was consistent with previous results. Three other VOC compounds were detected less than the comparison criteria. Two PAH compounds (Acenaphthene and Naphthalene) were detected at concentrations greater than the comparison criteria; these PAH concentrations were consistent with previous results. Two other SVOCs were detected at a concentration less than the comparison criteria.

MW-20 (down-gradient): No metals, VOCs or PAH compounds were detected at concentrations greater than the comparison criteria for the first time since 2007.

MW-21 (down-gradient): Iron and manganese were detected at concentrations greater than the comparison criterion; however, the concentrations are consistent with previous results. No VOC compounds were detected at concentrations greater than the comparison criteria. Benzene and MTBE were detected at a concentration less than the comparison criteria. One PAH compound (Benz(a)anthracene) concentration was detected at a concentration greater than the comparison criteria; however, the PAH concentration was consistent with previous results. Four other SVOCs were detected at a concentration less than the comparison criteria.

MW-24 (down-gradient): Iron was detected at a concentration slightly greater than the comparison criteria; this concentration is consistent with previous results. Manganese was detected at a concentration less than the comparison criterion. No VOCs or PAH compounds were detected at concentrations greater than the comparison criteria, which is consistent with previous results.

COMPARISON OF UP-GRADIENT TO DOWN-GRADIENT WELLS

In general, concentrations of parameters in the down-gradient wells were less than or equal to the up-gradient concentrations, specifically:

- Detected BTEX compound concentrations in up-gradient wells were greater than down-gradient wells.
- Concentrations of detected PAH compounds in up-gradient wells were greater than down-gradient wells.
- Iron and Manganese concentrations in up-gradient wells were greater than or equivalent to down gradient wells.

WELL REPAIRS

During paving the northeastern portion of the site (sometime between 15 January 2016 and 19 April 2016) it appears the two up gradient wells (MW-12 and MW-29) were damaged. The PVC risers were broken near the ground surface and the steel protector pipes were broken near the ground surface.

On 27 April 2016, wells MW-12 and MW-29 were repaired to restore the well function. To repair the wells, we removed the gravel and embedded stick-up cover, cut the top of the PVC smooth, and installed a road box (flush to the pavement) that was set into mortar. The top of PVC elevation was re-surveyed to provide an updated elevation.

RECOMMENDATIONS

Based on the 2016 sampling results and analyses completed over several years of groundwater monitoring which consistently indicate the site remedy is effective, we recommend sampling on a biennial basis continue.

SUMMARY

This groundwater monitoring report summarizes the data for 2016. Current and past concentrations of metals, VOCs, and PAHs have trended in a limited range, indicating a general consistent quality of up-gradient groundwater coming onto the site. The pattern of overall groundwater quality continues, such that detected up-gradient concentrations were generally greater for selected compounds than down-gradient concentrations. Overall, groundwater concentrations for detected compounds at the down-gradient wells are not considered to be related to the former Manufactured Gas Plant (MGP).

The objective of groundwater monitoring is to determine if groundwater quality meets NYS groundwater standards and guidance values, assess achievement of the remedial performance criteria and evaluate site information periodically to confirm that the remedy continues to be effective in protecting public health and the environment. Based on the results, while there are some exceedances

of groundwater standards and guidance values, the consistency of results over the period of monitoring and consistency of down-gradient versus up-gradient water quality indicates the remedy continues to be effective.

The SMP and the Environmental Easement specify that the use of untreated groundwater from the Site for any purpose is not permitted. There continue to be no groundwater uses at the Site; given the monitoring results to date, and without the potential exposure pathway of groundwater use, the remedy at the site remains protective of human health with respect to groundwater quality.

CLOSING

Once site development is completed and assuming groundwater quality results continue to indicate the site remedy is effective, we expect to recommend a request be submitted to the NYSDEC to cease groundwater monitoring and the monitoring wells be properly decommissioned.

In accordance with the 9 September 2015 NYS DEC approval of the 2014 groundwater monitoring round and our 28 August 2015 request for biennial groundwater sampling, groundwater monitoring will continue biennially (once every two years), until the NYSDEC approves an alternative schedule. The next groundwater monitoring round is scheduled for late 2018.

Sincerely yours,
HALEY & ALDRICH OF NEW YORK

Gary J. Fuerstenberg, P.E.
Senior Project Manager

Vincent B. Dick
Senior Vice President

Attachments:

Table 1 – Sampling Parameters and Recommended Analytical Methods
Table 2 – 2006 - 2016 Groundwater Monitoring Results
Table 3 – 2012 - 2016 Groundwater Monitoring Results Summary
Figure 1 – Project Locus
Figure 2 – Site Plan
Appendix A – Laboratory Reports for the Groundwater Analyses

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TABLES

Tarrytown Former MGP Site
Source: Site Management Plan Appendix F - Table 2

Table 1 - Sampling Parameters and Recommended Analytical Methods

Analyte	Analytical Method
BTEX	
Benzene	8260B
Toluene	8260B
Ethlybenzene	8260B
O-Xylene	8260B
M&P-Xylene	8260B
Polycyclic Aromatic Hydrocarbons (PAH)	
Acenaphthene	8270C
Acenapthylene	8270C
Anthracene	8270C
Benz(a)anthracene	8270C
Benzo(a)pyrene	8270C
Benzo(b)fluoranthene	8270C
Benzo(ghi)fluoranthene	8270C
Benzo(k)fluoranthene	8270C
Chysene	8270C
Dibenz(a,h)anthracene	8270C
Fluoranthene	8270C
Fluorene	8270C
Indeno(1,2,3-cd)pyrene	8270C
Napthalene	8270C
Phenanthrene	8270C
Pyrene	8270C
Attenuation Indicators	
FIELD PARAMETERS	
Dissolved Oxygen	Field Probe
Oxygen-Reduction Potential	Field Probe
pH	Field Probe
Specific Conductance	Field Probe
Temperature	Field Probe
Ferrous Iron (Fe^{+2})	Field Probe
Carbon Dioxide	Field Probe
Alkalinity	Field Probe
Turbidity	Field Probe
Laboratory Parameters	
Biochemical Oxygen Demand	5210B
Chemical Oxygen Demand	5520C, 5520D
Dissolved Organic Carbon	415.1
Total Organic Carbon	9060
Sulfate	375.4
Sulfide	376.1, 376.2
Nitrate	353.2
Nitrite	353.2
Total Iron	6010
Manganese	6010

Table - 2
Tarrytown Former MGP Site Groundwater Samples
2006 - 2014 Groundwater Monitoring Results
Tarrytown, New York

Parameter	NYSDEC TOGS 1.1.1 Class GA Groundwater[1]	MW-29 (Up-Gradient)									
	Date Sampled	8/17/2006	12/17/2007	7/28/2008	12/8/2009	12/21/2010	12/20/2011	5/29/2013	11/19/2013	11/10/2014	11/15/2016
BTEX	(ug/L)										
Benzene	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 0.70
Toluene	5	<1.0	<3.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 2.0
Ethyl Benzene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 2.0
o-Xylene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 2.0
p&m-Xylene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0	< 2.0
Xylene (Total)	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl Tert Butyl Ether (MTBE)	10[6]	<2.0	**3**	<2.0	<2.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0
PAH	(ug/L)										
Acenaphthene	20	<10	<10	<10	<10	<2.5	<2.5	<0.1	<0.1	**0.1**	< 0.10
Acenaphthylene	N/A[8,11]	<10	<10	<10	<0.3	<0.3	<0.3	<0.1	<0.1	**0.33**	< 0.10
Anthracene	50	<10	<10	<10	<10	<2.5	<2.5	<0.1	<0.1	**0.23**	**0.12**
Benz(a)anthracene	0.002	<10	<10	<10	<0.06	<0.02	<0.02	**0.06**	**0.02**	**0.25**	**0.03**
Benzo(a)pyrene	ND	<10	<10	<10	<0.2	<0.02	<0.02	**0.05**	<0.02	**0.4**	< 0.02
Benzo(b)fluoranthene	0.002	<10	<10	<10	<0.08	<0.02	<0.02	<0.02	<0.02	**0.51**	< 0.02
Benzo(g,h,i)perylene	N/A[8,11]	<10	<10	<10	<4	<2.5	<2.5	<0.1	<0.1	**0.29**	< 0.10
Benzo(k)fluoranthene	0.002	<10	<10	<10	<0.3	<0.02	<0.02	<0.02	<0.02	**0.22**	< 0.02
Chrysene	0.002	<10	<10	<10	<2	<0.02	<0.02	**0.05**	<0.02	**0.3**	**0.02**
Dibenz(a,h)anthracene	N/A[8,11]	<10	<10	<10	<0.2	<0.01	<0.01	<0.01	<0.01	<0.01	< 0.01
Fluoranthene	50	<10	<10	<10	<10	<2.5	<2.5	<0.1	<0.1	**0.63**	< 0.10
Fluorene	50	<10	<10	<10	<10	<2.5	<2.5	<0.1	<0.1	**0.13**	< 0.10
Indeno(1,2,3-cd)pyrene	0.002	<10	<10	<10	<0.2	<0.02	<0.02	**0.05**	<0.02	**0.23**	< 0.02
Naphthalene	10	<10	<10	<10	<10	<2.5	<2.5	**0.13**	<0.1	<0.1	< 0.10
Phenanthrene	50	<10	<10	<10	<0.07	<0.07	<0.07	<0.07	<0.07	**0.35**	< 0.07
Pyrene	50	<10	<10	<10	<10	<2.5	<2.5	<0.1	<0.1	**0.96**	< 0.10
ATTENUATION INDICATORS											
Field Parameters											
Dissolved Oxygen (mg/L)	N/A[10,11]							0.46	0.81	0.00	0.00
Oxygen-Reduction Potential (mV)	N/A[11]							-102	-22	-68	-89
pH (Standard)	6.5 - 8.5[10]							7.0	7.0	7.2	7.5
Specific Conductance (mS/cm)	N/A[11]							5.93	5.80	10.30	5.6
Temperature (°C)	N/A[11]							20.5	16.2	18.8	16.8
Turbidity (NTU)	5[10]							22.7	6.5	129.0	14.8
Laboratory Parameters	(mg/L)										
Nitrate as Nitrogen	10	**0.06**	<0.05	**0.06**	**0.54**	<0.05	**0.14**	<0.05	<0.05	<0.05	< 0.004
Nitrite as Nitrogen	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**7.35**	< 0.05
Nitrate and Nitrite as Nitrogen (Total)	10	**0.06**	ND	**0.06**	**0.54**	ND	**0.14**	ND	ND	**7.35**	ND
Sulfate	250	**30**	**30**	**37**	**210**	**51**	**47.4**	**54**	**113**	**780**	**102**
Total Organic Carbon	N/A[11]	**4.2**	**31**	**5.0**	**3.2**	**3.4**	**2.8**	**3.4**	**12**	**7.0**	**8.2**
Dissolved Organic Carbon	N/A[11]	**2.8**	**20**	**2.9**	**3.1**	**3.2**	**2.8**	**2.9**	**12**	**7.0**	**8.0**
Sulfide	1	<0.05	<0.2	<0.1	<0.1	NR	NR	<0.1	<0.1	<0.1	< 0.05
B.O.D./5 day	N/A[11]	<2.0	**7.4**	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	< 4.0
C.O.D.	N/A[11]	**12**	**45**	**54**	**76**	**75**	**52**	**53**	**72**	**104**	**103**
Total Iron	0.3	**1.05**	**12.8**	**7.14**	**15.7**	**5.97**	**9.40**	**4.92**	**5.39**	**9.46**	**4.63**
Manganese	0.3	**1.01**	**0.71**	**1.25**	**1.45**	**1.17**	**1.10**	**1.01**	**0.93**	**2.05**	**0.95**
Iron and Manganese (Total)	0.5	**2.06**	**13.51**	**8.39**	**17.15**	**7.14**	**10.50**	**5.93**	**6.32**	**11.51**	**5.58**

Notes:
(A) Concentrations shown in bold were detected.
(B) <0.1, for example, means the analyte was not detected and the detection limit was 0.1.
(C) Concentrations greater than the NYSDEC TOGS 1.1.1 standards and guidance values are shaded gray.
Footnotes:
(1)NYSDEC Division of Water Technical Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998.
(6) 10 NYCRR Part 5-Subpart 5-1 Public Water Systems - Tables
(8) Not regulated by the Principal Organic Contaminant (POC) Groundwater Standard (TOGS 1.1.1 page 5).
(10) 6 NYCRR 703.3 Water quality standards for pH, dissolved oxygen, dissolved solids, odor, color and turbidity.
(11) N/A - No Class GA groundwater standard or guidance value.
Acronyms:
BTEX = volatile organic compounds: Benzene, Toluene, Ethylbenzene, and Xylene
ND - A non-detectable concentration by the approved analytical methods referenced in 6 NYCRR Part 700.3.
NR = Not Reported
NYSDEC = New York State Department of Environmental Conservation
PAH = semi-volatile organic compounds classified as Polycyclic Aromatic Hydrocarbons.
SVOC = Semivolatile Organic Compound
VOC = Volatile Organic Compound

Table - 2
Tarrytown Former MGP Site Groundwater Samples
2006 - 2014 Groundwater Monitoring Results
Tarrytown, New York

Parameter	NYSDEC TOGS 1.1.1 Class GA Groundwater[1]	MW-12 (Up-Gradient)								
	Date Sampled	8/17/2006	12/17/2007	12/8/2009	12/20/2010	12/21/2011	5/29/2013	11/19/2013	11/10/2014	11/16/2016
BTEX	(ug/L)									
Benzene	1	<1.0	<1.0	<1.0	<10	<1.0	<1.0	< 2.0	<1.0	< 0.70
Toluene	5	**1.6**	<5.0	<1.0	<10	<1.0	<1.0	< 2.0	<1.0	**0.7**
Ethyl Benzene	5	**20**	**9.6**	**2.6**	<10	**1.2**	**4**	< 2.0	**1.2**	**1.6**
o-Xylene	5	**39**	**14**	**16**	<10	**7.9**	<2	**9.4**	**3.8**	**7.9**
p&m-Xylene	5	**14**	**6.1**	**4.5**	<10	**2.3**	**5.9**	< 4.0	<2.0	**3.7**
Xylene (Total)	5	**53**	**20.1**	**20.5**	ND	**10.2**	**5.9**	**9.4**	**3.8**	**11.6**
Methyl Tert Butyl Ether (MTBE)	10[6]	<2.0	<2.0	<2.0	<10	<2.0	**5.9**	< 4.0	<2.0	< 2.0
PAH	(ug/L)									
Acenaphthene	20	**41**	**18**	**77**	**57**	**51**	<50	**72**	**36**	**54**
Acenaphthylene	N/A[8,11]	<10	<10	5	**8.1**	**7.3**	<50	**4.9**	**3**	< 7.0
Anthracene	50	<10	<10	<10	<2.5	<2.8	<50	**1.5**	**1.3**	< 7.0
Benz(a)anthracene	0.002	<10	<10	<0.06	**0.084**	**0.089**	<50	**0.06**	**0.04**	< 3.4
Benzo(a)pyrene	ND	<10	<10	<0.2	**0.068**	**0.078**	<50	<0.02	<0.02	< 3.2
Benzo(b)fluoranthene	0.002	<10	<10	<0.08	**0.074**	**0.089**	<50	**0.03**	<0.02	< 3.4
Benzo(g,h,i)perylene	N/A[8,11]	<10	<10	<4	<2.5	<2.8	<50	<0.1	<0.01	< 5.0
Benzo(k)fluoranthene	0.002	<10	<10	<0.3	**0.023**	<0.022	<50	<0.02	<0.02	< 3.4
Chrysene	0.002	<10	<10	<2	**0.067**	**0.078**	<50	**0.04**	**0.03**	< 3.4
Dibenz(a,h)anthracene	N/A[8,11]	<10	<10	<0.2	**0.015**	**<0.011**	<50	<0.01	<0.01	< 7.0
Fluoranthene	50	<10	<10	<10	<2.5	<2.8	<50	**0.2**	**0.19**	< 7.0
Fluorene	50	**13**	<10	<10	**13**	**8.8**	<50	**14**	**8.7**	**13**
Indeno(1,2,3-cd)pyrene	0.002	<10	<10	<0.2	**0.045**	**0.056**	<50	<0.02	<0.02	< 3.4
Naphthalene	10	**600**	**280**	**400**	**44**	**110**	**290**	**96**	**53**	**88**
Phenanthrene	50	**11**	<10	**3.9**	**6.4**	**3**	<50	**7**	**4.7**	**11**
Pyrene	50	<10	<10	<10	<2.5	<2.8	<50	**0.27**	**0.28**	< 7.0
ATTENUATION INDICATORS										
Field Parameters										
Dissolved Oxygen (mg/L)	N/A[10,11]						0.54	0.91	0.00	7.23
Oxygen-Reduction Potential (mV)	N/A[11]						-148	-13	-132	-117
pH (Standard)	6.5 - 8.5[10]						6.8	6.9	7.3	7.3
Specific Conductance (mS/cm)	N/A[11]						1.06	0.95	0.69	2.08
Temperature (°C)	N/A[11]						16.4	15.7	19.5	17.5
Turbidity (NTU)	5[10]						3.2	0.0	4.8	0.0
Laboratory Parameters	(mg/L)									
Nitrate as Nitrogen	10	**0.05**	<0.05	<0.05	**0.05**	<0.05	<0.05	<0.05	<0.05	< 0.004
Nitrite as Nitrogen	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	< 0.05
Nitrate and Nitrite as Nitrogen (Total)	10	**0.05**	ND	ND	**0.05**	ND	ND	ND	ND	ND
Sulfate	250	**34**	**110**	<3.0	**7.1**	**13.1**	<3.0	**10.3**	<3.0	< 3.0
Total Organic Carbon	N/A[11]	**20**	**93**	**17**	**23**	**15**	**20**	**18**	**15**	**18.8**
Dissolved Organic Carbon	N/A[11]	**15**	**90**	**15**	**19**	**14**	**18**	**15**	**12**	**14.9**
Sulfide	1	<0.05	0.21	<0.1	NR	NR	0.1	<0.1	<0.1	**0.06**
B.O.D./5 day	N/A[11]	**8.7**	**16**	**8.3**	<4.0	<4.0	**12**	**7.6**	**7.8**	**5.8**
C.O.D.	N/A[11]	**51**	**100**	**55**	**68**	**43**	**62**	**52**	**46**	**63**
Total Iron	0.3	**17.2**	**52.5**	**17.2**	**22.9**	**23.0**	**27.8**	**15.8**	**18.1**	**32.2**
Manganese	0.3	**0.31**	**0.50**	**0.27**	**0.22**	**0.26**	**0.17**	**0.16**	**0.18**	**0.24**
Iron and Manganese (Total)	0.5	**17.51**	**53.00**	**17.47**	**23.12**	**23.26**	**27.97**	**15.96**	**18.28**	**32.44**

Notes:
(A) Concentrations shown in bold were detected.
(B) < 0.1, for example, means the analyte was not detected and the detection limit was 0.1.
(C) Concentrations greater than the NYSDEC TOGS 1.1.1 standards and guidance values are shaded gray.
Footnotes:
(1)NYSDEC Division of Water Technical Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998.
(6) 10 NYCRR Part 5-Subpart 5-1 Public Water Systems - Tables
(8) Not regulated by the Principal Organic Contaminant (POC) Groundwater Standard (TOGS 1.1.1 page 5).
(10) 6 NYCRR 703.3 Water quality standards for pH, dissolved oxygen, dissolved solids, odor, color and turbidity.
(11) N/A - No Class GA groundwater standard or guidance value.
Acronyms:
BTEX = volatile organic compounds: Benzene, Toluene, Ethylbenzene, and Xylene
ND - A non-detectable concentration by the approved analytical methods referenced in 6 NYCRR Part 700.3.
NR = Not Reported
NYSDEC = New York State Department of Environmental Conservation
PAH = semi-volatile organic compounds classified as Polycyclic Aromatic Hydrocarbons.
SVOC = Semivolatile Organic Compound
VOC = Volatile Organic Compound

Table - 2
Tarrytown Former MGP Site Groundwater Samples
2006 - 2014 Groundwater Monitoring Results
Tarrytown, New York

Parameter	NYSDEC TOGS 1.1.1 Class GA Groundwater[1]	MW-20 (Down-Gradient)													
	Date Sampled	8/17/2006	12/18/2007	12/18/2007 duplicate	7/29/2008	12/8/2009	12/8/2009 duplicate	12/22/2010	12/19/2011	5/30/2013	11/19/2013	11/19/2013 duplicate	11/11/2014	11/11/2014 duplicate	11/15/2016
BTEX	**(ug/L)**														
Benzene	1	<1.0	<1.0	<1.0	**3.1**	<1.0	<1.0	<1.0	<1.0	<0.7	<1.0	< 1.0	< 1.0	< 1.0	< 0.70
Toluene	5	<1.0	<3.0	<3.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 2.0
Ethyl Benzene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 1.0	< 1.0	< 1.0	< 2.0
o-Xylene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 2.0
p&m-Xylene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	< 2.0
Xylene (Total)	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl Tert Butyl Ether (MTBE)	10[6]	<2.0	**2.8**	2.8	<2.0	<2.0	<2.0	<1.0	<2.0	<2.0	<2.0	< 2.0	< 2.0	< 2.0	< 2.0
PAH	**(ug/L)**														
Acenaphthene	20	<10	<10	<10	<10	<10	<10	<2.5	<2.5	**0.91**	<0.1	<0.1	<0.1	<0.1	< 0.10
Acenaphthylene	N/A[8,11]	<10	<10	<10	<10	<0.3	<0.3	<0.3	<0.3	**0.29**	<0.1	<0.1	<0.1	<0.1	< 0.10
Anthracene	50	<10	<10	<10	<10	<10	<10	<2.5	<2.5	<0.1	<0.1	<0.1	<0.1	<0.1	< 0.10
Benz(a)anthracene	0.002	<10	<10	<10	<10	<0.06	<0.06	**0.023**	**0.09**	**0.06**	**0.02**	<0.02	**0.02**	**0.02**	< 0.02
Benzo(a)pyrene	ND	<10	<10	<10	<10	<0.2	<0.2	<0.02	**0.11**	**0.05**	<0.02	<0.02	<0.02	<0.02	< 0.02
Benzo(b)fluoranthene	0.002	<10	<10	<10	<10	<0.08	<0.08	<0.02	**0.13**	**0.04**	<0.02	<0.02	**0.02**	<0.02	< 0.02
Benzo(g,h,i)perylene	N/A[8,11]	<10	<10	<10	<10	<4	<4.0	<2.5	<2.5	<0.1	<0.1	<0.1	<0.1	<0.1	< 0.10
Benzo(k)fluoranthene	0.002	<10	<10	<10	<10	<0.3	<0.3	<0.02	**0.05**	<0.02	<0.02	<0.02	<0.02	<0.02	< 0.02
Chrysene	0.002	<10	<10	<10	<10	<2	<2	<0.02	**0.07**	**0.05**	<0.02	<0.02	<0.02	<0.02	< 0.02
Dibenz(a,h)anthracene	N/A[8,11]	<10	<10	<10	<10	<0.2	<0.2	<0.01	**0.01**	**0.01**	<0.01	<0.01	<0.01	<0.01	< 0.01
Fluoranthene	50	<10	<10	<10	<10	<10	<10	<2.5	<2.5	**0.24**	<0.1	<0.1	<0.1	<0.1	< 0.10
Fluorene	50	<10	<10	<10	<10	<10	<10	<2.5	<2.5	**0.1**	<0.1	<0.1	<0.1	<0.1	< 0.10
Indeno(1,2,3-cd)pyrene	0.002	<10	<10	<10	<10	<0.2	<0.2	<0.02	**0.06**	<0.02	<0.02	<0.02	<0.02	<0.02	< 0.02
Naphthalene	10	<10	<10	<10	<10	<10	<10	<2.5	<2.5	<0.1	<0.1	<0.1	<0.1	<0.1	< 0.10
Phenanthrene	50	<10	<10	<10	<10	<0.07	<0.07	<0.07	**0.07**	**0.07**	<0.07	<0.07	<0.07	<0.07	< 0.07
Pyrene	50	<10	<10	<10	<10	<10	<10	<2.5	<2.5	**0.17**	<0.1	<0.1	<0.1	<0.1	< 0.10
ATTENUATION INDICATORS															
Field Parameters															
Dissolved Oxygen (mg/L)	N/A[10,11]									0.40	1.69	0.00	0.00	0.00	5.56
Oxygen-Reduction Potential (mV)	N/A[11]									-205	92	99	99	99	175
pH (Standard)	6.5 - 8.5[10]									8.1	8.7	8.0	8.0	8.0	8.2
Specific Conductance (mS/cm)	N/A[11]									4.77	8.32	13.30	13.30	13.30	19.5
Temperature (°C)	N/A[11]									21.8	14.0	16.9	16.9	16.9	12.5
Turbidity (NTU)	5[10]									152.0	21.2	5.4	5.4	5.4	15.2
Laboratory Parameters	**(mg/L)**														
Nitrate as Nitrogen	10	<0.05	<0.05	<0.05	**0.05**	**0.55**	**0.54**	NR	**0.39**	**0.07**	**0.27**	**0.23**	**0.57**	**0.6**	< 0.1
Nitrite as Nitrogen	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.78**
Nitrate and Nitrite as Nitrogen (Total)	10	ND	ND	ND	**0.05**	**0.55**	**0.54**	NR	**0.39**	**0.07**	**0.27**	**0.23**	**0.57**	**0.6**	**0.78**
Sulfate	250	**34**	**240**	**240**	**240**	**210**	**210**	**390**	**60.8**	**173**	**364**	**369**	**523**	**400**	**712**
Total Organic Carbon	N/A[11]	**3.5**	**12**	**5.7**	**4.6**	**3.2**	**3.2**	**3.5**	**4.1**	**3.3**	**2.7**	**2.4**	**2.7**	**2.6**	**2.9**
Dissolved Organic Carbon	N/A[11]	**2.2**	**11**	**4.9**	**3.9**	**3.3**	**3.1**	**3.0**	**3.3**	**3.2**	**2.6**	**2.4**	**2.7**	**2.3**	**2.7**
Sulfide	1	<0.05	<0.2	<0.2	<0.1	<0.1	<0.1	NR	NR	<0.01	<0.1	<0.1	<0.1	<0.1	< 0.05
B.O.D./5 day	N/A[11]	<2.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<40	<4.0	<4.0	<4.0	<4.0	<4.0	< 4.0
C.O.D.	N/A[11]	**120**	**58**	**52**	**69**	**67**	**76**	**110**	**28**	**66**	**100**	**100**	**125**	**161**	**228**
Total Iron	0.3	**0.06**	**0.14**	**0.13**	**0.37**	**0.32**	**0.32**	**0.44**	**18.40**	**1.68**	**0.24**	**0.23**	**0.34**	**0.31**	**0.28**
Manganese	0.3	**0.01**	**0.03**	**0.03**	**0.08**	**0.02**	**0.02**	**0.02**	**1.83**	**0.14**	**0.03**	**0.04**	**0.05**	**0.05**	**0.04**
Iron and Manganese (Total)	0.5	**0.06**	**0.17**	**0.16**	**0.44**	**0.34**	**0.34**	**0.46**	**20.23**	**1.82**	**0.27**	**0.26**	**0.39**	**0.35**	**0.32**

Notes:
(A) Concentrations shown in bold were detected.
(B) <0.1, for example, means the analyte was not detected and the detection limit was 0.1.
(C) Concentrations greater than the NYSDEC TOGS 1.1.1 standards and guidance values are shaded gray.
Footnotes:
(1)NYSDEC Division of Water Technical Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998.
(6) 10 NYCRR Part 5-Subpart 5-1 Public Water Systems - Tables
(8) Not regulated by the Principal Organic Contaminant (POC) Groundwater Standard (TOGS 1.1.1 page 5).
(10) 6 NYCRR 703.3 Water quality standards for pH, dissolved oxygen, dissolved solids, odor, color and turbidity.
(11) N/A - No Class GA groundwater standard or guidance value.
Acronyms:
BTEX = volatile organic compounds: Benzene, Toluene, Ethylbenzene, and Xylene
ND - A non-detectable concentration by the approved analytical methods referenced in 6 NYCRR Part 700.3.
NR = Not Reported
NYSDEC = New York State Department of Environmental Conservation
PAH = semi-volatile organic compounds classified as Polycyclic Aromatic Hydrocarbons.
SVOC = Semivolatile Organic Compound
VOC = Volatile Organic Compound

Table - 2
Tarrytown Former MGP Site Groundwater Samples
2006 - 2014 Groundwater Monitoring Results
Tarrytown, New York

Parameter	NYSDEC TOGS 1.1.1 Class GA Groundwater[1]	MW-21 (Down-Gradient)											
	Date Sampled	8/17/2006	12/18/2007	7/30/2008	12/8/2009	12/22/2010	12/19/2011	12/19/2011 duplicate	5/30/2013	5/30/2013 duplicate	11/19/2013	11/11/2014	11/16/2016
BTEX	**(ug/L)**												
Benzene	1	<1.0	<1.0	**1.4**	<1.0	<1.0	<1.0	<1.0	<0.7	<0.7	<1.0	**1.5**	**0.53**
Toluene	5	<1.0	<3.0	<1.0	<1.0	**4.9**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 2.0
Ethyl Benzene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 2.0
o-Xylene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	< 2.0
p&m-Xylene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0	<1.0	<2.0	< 2.0
Xylene (Total)	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl Tert Butyl Ether (MTBE)	10[6]	<2.0	<2.0	<2.0	<2.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	**1.2**
PAH	**(ug/L)**												
Acenaphthene	20	<11	<10	<10	<10	<50	<2.5	<2.5	<0.1	<0.1	<0.1	**0.6**	**0.27**
Acenaphthylene	N/A[8,11]	<11	<10	<10	<0.3	<50	<0.3	<0.3	**0.14**	**0.14**	**0.13**	**0.1**	**0.16**
Anthracene	50	<11	<10	<10	<10	<50	<2.5	<2.5	**0.17**	**0.17**	**0.2**	**0.12**	< 0.10
Benz(a)anthracene	0.002	<11	<10	<10	<0.06	<50	**0.05**	**0.03**	<0.02	<0.02	<0.02	**0.02**	**0.03**
Benzo(a)pyrene	ND	<11	<10	<10	<0.2	<50	**0.04**	<0.02	<0.02	<0.02	<0.02	<0.02	< 0.02
Benzo(b)fluoranthene	0.002	<11	<10	<10	<0.08	<50	**0.04**	**0.02**	<0.02	<0.02	<0.02	<0.02	< 0.02
Benzo(g,h,i)perylene	N/A[8,11]	<11	<10	<10	<4	<50	<2.5	<2.5	<0.1	<0.1	<0.1	<0.1	< 0.10
Benzo(k)fluoranthene	0.002	<11	<10	<10	<0.3	<50	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	< 0.02
Chrysene	0.002	<11	<10	<10	<2	<50	**0.03**	<0.02	<0.02	<0.02	<0.02	<0.02	< 0.02
Dibenz(a,h)anthracene	N/A[8,11]	<11	<10	<10	<0.2	<50	<0.01	<0.01	0.14	<0.01	<0.01	<0.01	< 0.01
Fluoranthene	50	<11	<10	<10	<10	<50	<2.5	<2.5	<0.1	**0.33**	**0.12**	**0.15**	**0.43**
Fluorene	50	<11	<10	<10	<10	<50	<2.5	<2.5	<0.1	<0.1	<0.1	<0.1	< 0.10
Indeno(1,2,3-cd)pyrene	0.002	<11	<10	<10	<0.2	<50	**0.02**	<0.02	<0.02	<0.02	<0.02	<0.02	< 0.02
Naphthalene	10	<11	<10	<10	<10	<50	<2.5	<2.5	<0.1	**0.15**	<0.1	<0.1	< 0.10
Phenanthrene	50	<11	<10	<10	<0.07	<50	0.08	<0.07	<0.07	<0.07	<0.07	<0.07	**0.3**
Pyrene	50	<11	<10	<10	<10	<50	<2.5	<2.5	**0.17**	**0.37**	**0.23**	**0.23**	**0.66**
ATTENUATION INDICATORS													
Field Parameters													
Dissolved Oxygen (mg/L)	N/A[10,11]								0.53	0.53	0.74	0.00	0.00
Oxygen-Reduction Potential (mV)	N/A[11]								-310	-310	-119	-340	-260
pH (Standard)	6.5 - 8.5[10]								7.3	7.3	6.6	8.0	7.6
Specific Conductance (mS/cm)	N/A[11]								2.99	2.99	4.29	2.99	3.21
Temperature (°C)	N/A[11]								24.9	24.9	14.0	18.6	15.6
Turbidity (NTU)	5[10]								24.6	24.6	8.2	0.0	0.0
Laboratory Parameters	**(mg/L)**												
Nitrate as Nitrogen	10	**0.05**	<0.05	<0.05	<0.05	NR	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	< 0.004
Nitrite as Nitrogen	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.05	<0.01	<0.01	< 0.05
Nitrate and Nitrite as Nitrogen (Total)	10	**0.05**	ND	ND	ND	NR	ND	ND	ND	ND	ND	ND	ND
Sulfate	250	**350**	**460**	**360**	**360**	**640**	**474**	**479**	**155**	**163**	**496**	**43.6**	**353**
Total Organic Carbon	N/A[11]	**6.0**	**12**	**11**	**11**	**9.1**	**12**	**13**	**14**	**13**	**8.1**	**14**	**15.2**
Dissolved Organic Carbon	N/A[11]	**4.5**	**12**	**9.8**	**9.8**	**9.0**	**12**	**12**	**13**	**13**	**11**	**15**	**14.1**
Sulfide	1	<0.05	<0.2	**0.38**	**0.38**	NR	NR	NR	**3.1**	**3**	<0.1	<0.1	**1.61**
B.O.D./5 day	N/A[11]	<2.0	6.4	<4.0	<4.0	19	<4.0	<4.0	11	11	<4.0	10	**6.5**
C.O.D.	N/A[11]	**38**	**27**	**54**	**54**	**82**	**82**	**66**	**66**	**64**	**52**	**50**	**54**
Total Iron	0.3	**2.74**	**2.42**	**1.32**	**12.70**	**15.80**	**15.40**	**15.0**	**1.88**	**2.10**	**9.01**	**0.62**	**10.80**
Manganese	0.3	**0.43**	**0.44**	**0.38**	**1.54**	**1.49**	**1.08**	**1.09**	**0.31**	**0.33**	**0.89**	**0.14**	**0.77**
Iron and Manganese (Total)	0.5	**3.17**	**2.86**	**1.70**	**14.24**	**17.29**	**16.48**	**16.09**	**2.19**	**2.43**	**9.90**	**0.76**	**11.57**

Notes:
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VOC = Volatile Organic Compound

Table - 2
Tarrytown Former MGP Site Groundwater Samples
2006 - 2014 Groundwater Monitoring Results
Tarrytown, New York

Parameter	NYSDEC TOGS 1.1.1 Class GA Groundwater[1]	MW-24 (Down-Gradient)											
	Date Sampled	8/17/2006	8/17/2006 duplicate	12/18/2007	7/30/2008	7/30/2008 duplicate	12/8/2009	12/22/2010	12/19/2011	5/30/2013	11/20/2013	11/11/2014	11/16/2016
BTEX	**(ug/L)**												
Benzene	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.7	<1.0	<1.0	< 0.70
Toluene	5	<1.0	<1.0	<3.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 2.0
Ethyl Benzene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 2.0
o-Xylene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	< 2.0
p&m-Xylene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<2.0	<2.0	<2.0	< 2.0
Xylene (Total)	5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl Tert Butyl Ether (MTBE)	10[6]	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0
PAH	**(ug/L)**												
Acenaphthene	20	<50	<10	<10	<10	<10	<10	<2.5	<2.5	<0.1	< 0.1	< 0.1	< 0.10
Acenaphthylene	N/A[8,11]	<50	<10	<10	<10	<10	<0.3	<0.3	<0.3	<0.1	<0.1	<0.1	< 0.10
Anthracene	50	<50	<10	<10	<10	<10	<10	<2.5	<2.5	<0.1	<0.1	<0.1	< 0.10
Benz(a)anthracene	0.002	<50	<10	<10	<10	<10	<0.06	**0.024**	<0.02	<0.02	<0.02	<0.02	< 0.02
Benzo(a)pyrene	ND	<50	<10	<10	<10	<10	<0.2	<0.02	<0.02	<0.02	<0.02	<0.02	< 0.02
Benzo(b)fluoranthene	0.002	<50	<10	<10	<10	<10	<0.08	<0.02	<0.02	<0.02	<0.02	<0.02	< 0.02
Benzo(g,h,i)perylene	N/A[8,11]	<50	<10	<10	<10	<10	<4	<2.5	<2.5	<0.1	<0.1	<0.1	< 0.10
Benzo(k)fluoranthene	0.002	<50	<10	<10	<10	<10	<0.3	<0.02	<0.02	<0.02	<0.02	<0.02	< 0.02
Chrysene	0.002	<50	<10	<10	<10	<10	<2	<0.02	<0.02	<0.02	<0.02	<0.02	< 0.02
Dibenz(a,h)anthracene	N/A[8,11]	<50	<10	<10	<10	<10	<0.2	<0.01	<0.01	<0.01	<0.01	<0.01	< 0.01
Fluoranthene	50	<50	<10	<10	<10	<10	<10	<2.5	<2.5	<0.1	<0.1	<0.1	< 0.10
Fluorene	50	<50	<10	<10	<10	<10	<10	<2.5	<2.5	<0.1	<0.1	<0.1	< 0.10
Indeno(1,2,3-cd)pyrene	0.002	<50	<10	<10	<10	<10	<0.2	<0.02	<0.02	<0.02	<0.02	<0.02	< 0.02
Naphthalene	10	<50	<10	<10	<10	<10	<10	<2.5	<2.5	<0.1	<0.1	<0.1	< 0.10
Phenanthrene	50	<50	<10	<10	<10	<10	<0.07	<0.07	<0.07	<0.07	<0.07	<0.07	< 0.07
Pyrene	50	<50	<10	<10	<10	<10	<10	<2.5	<2.5	<0.1	<0.1	<0.1	< 0.10
ATTENUATION INDICATORS													
Field Parameters													
Dissolved Oxygen (mg/L)	N/A[10,11]									7.47	6.87	4.81	9.33
Oxygen-Reduction Potential (mV)	N/A[11]									94	205	64	30
pH (Standard)	6.5 - 8.5[10]									7.7	7.7	8.0	8.1
Specific Conductance (mS/cm)	N/A[11]									3.41	8.05	13.60	14.77
Temperature (°C)	N/A[11]									21.5	11.7	18.1	17.1
Turbidity (NTU)	5[10]									17.6	28.1	4.4	26.0
Laboratory Parameters	**(mg/L)**												
Nitrate as Nitrogen	10	**0.08**	**0.08**	**0.07**	**0.2**	**0.2**	**0.05**	NR	**0.43**	**0.59**	**0.63**	**0.81**	< 0.004
Nitrite as Nitrogen	1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**1.39**
Nitrate and Nitrite as Nitrogen (Total)	10	**0.08**	**0.08**	**0.07**	**0.2**	**0.2**	**0.05**	NR	**0.43**	**0.59**	**0.63**	**0.81**	**1.39**
Sulfate	250	**320**	**290**	**280**	**330**	**340**	**240**	**340**	**95**	**141**	**327**	<3.0	**646**
Total Organic Carbon	N/A[11]	**3.3**	**3.3**	**8.6**	**3.9**	**5.1**	**8.0**	**3.6**	**3.5**	**2.8**	**2.6**	**2.6**	**2.7**
Dissolved Organic Carbon	N/A[11]	**2.2**	**2.8**	**5.7**	**2.6**	**3.0**	**7.9**	**2.9**	**3.5**	**2.2**	**2.6**	**2.4**	**2.5**
Sulfide	1	<0.05	<0.05	<0.2	<0.1	<0.1	<0.1	NR	NR	<0.1	<0.1	<0.1	< 0.05
B.O.D./5 day	N/A[11]	<2.0	<2.0	<4.0	<4.0	<4.0	**4.2**	<4.0	<4.0	<4.0	<4.0	<4.0	< 4.0
C.O.D.	N/A[11]	**69**	**46**	**70**	**110**	**83**	**37**	**110**	<10	**58**	**89**	**180**	**194**
Total Iron	0.3	**0.07**	**0.06**	**0.11**	ND	ND	**0.22**	**0.08**	**1.00**	**0.23**	**0.68**	**0.09**	**0.76**
Manganese	0.3	**0.01**	**0.01**	**0.03**	**0.01**	**0.01**	**0.02**	**0.00**	**0.05**	**0.01**	**0.03**	**0.00**	**0.05**
Iron and Manganese (Total)	0.5	**0.08**	**0.07**	**0.14**	**0.01**	**0.01**	**0.24**	**0.08**	**1.04**	**0.23**	**0.72**	**0.10**	**0.81**

Notes:
(A) Concentrations shown in bold were detected.
(B) <0.1, for example, means the analyte was not detected and the detection limit was 0.1.
(C) Concentrations greater than the NYSDEC TOGS 1.1.1 standards and guidance values are shaded gray.
Footnotes:
(1)NYSDEC Division of Water Technical Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998.
(6) 10 NYCRR Part 5-Subpart 5-1 Public Water Systems - Tables
(8) Not regulated by the Principal Organic Contaminant (POC) Groundwater Standard (TOGS 1.1.1 page 5).
(10) 6 NYCRR 703.3 Water quality standards for pH, dissolved oxygen, dissolved solids, odor, color and turbidity.
(11) N/A - No Class GA groundwater standard or guidance value.
Acronyms:
BTEX = volatile organic compounds: Benzene, Toluene, Ethylbenzene, and Xylene
ND - A non-detectable concentration by the approved analytical methods referenced in 6 NYCRR Part 700.3.
NR = Not Reported
NYSDEC = New York State Department of Environmental Conservation
PAH = semi-volatile organic compounds classified as Polycyclic Aromatic Hydrocarbons.
SVOC = Semivolatile Organic Compound
VOC = Volatile Organic Compound

Table 3
Tarrytown Former MGP Site Groundwater Samples
2012-2016 Groundwater Monitoring Results Summary
Tarrytown, New York

Parameter	NYSDEC TOGS 1.1.1 Groundwater Standards	MW-29 (Up-Gradient)				MW-12 (Up-Gradient)				MW-20 (Down-Gradient)						MW-21 (Down-Gradient)					MW-24 (Down-Gradient)			
	Date Sampled	5/2013	11/2013	11/2014	11/1516	5/2013	11/2013	11/2014	11/1516	5/2013	11/2013	11/2013 duplicate	11/2014	11/2014 duplicate	11/1516	5/2013	5/2013 duplicate	11/2013	11/2014	11/1516	5/2013	11/2013	11/2014	11/1516
VOCs	**(ug/L)**																							
Benzene	1	<1.0	< 1.0	<1.0	<0.7	<1.0	<2.0	<1.0	<0.7	<0.7	<1.0	<1.0	< 1.0	< 1.0	<0.7	<0.7	<0.7	<1.0	**1.5**	**0.53**	<0.7	<1.0	<1.0	<0.7
o-Xylene	5	<1.0	< 1.0	<1.0	<2.0	<2	**9.4**	**3.8**	**7.9**	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<2.0	<1.0	<2.0	<1.0	<1.0	<1.0	<2.0
p&m-Xylene	5	<2.0	< 2.0	<2.0	<2.0	**5.9**	<4.0	<2.0	**3.7**	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<1.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Xylene (Total)	5	ND	ND	ND	ND	**17.9**	**9.4**	**3.8**	**11.6**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl Tert Butyl Ether (MTBE)	10	<2.0	<2.0	<2.0	<2.0	**5.9**	< 4.0	<2.0	< 2.0	<2.0	<2.0	< 2.0	< 2.0	< 2.0	< 2.0	<2.0	<2.0	<2.0	<2.0	**1.2**	<2.0	<2.0	<2.0	<2.0
PAH	**(ug/L)**																							
Acenaphthene	20	<0.1	<0.1	**0.1**	<0.1	<50	**72**	**36**	**54**	**0.91**	<0.1	< 0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	**0.6**	**0.27**	<0.1	<0.1	< 0.1	<0.1
Benz(a)anthracene	0.002	**0.06**	**0.02**	**0.25**	**0.03**	<50	**0.06**	**0.04**	<3.4	**0.06**	**0.02**	<0.02	**0.02**	**0.02**	<0.02	<0.02	<0.02	<0.02	**0.02**	**0.03**	<0.02	<0.02	<0.02	<0.02
Benzo(a)pyrene	ND	0.05	<0.02	**0.4**	<0.02	<50	<0.02	<0.02	<3.2	**0.05**	<0.02	< 0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Benzo(b)fluoranthene	0.002	<0.02	<0.02	**0.51**	<0.02	<50	**0.03**	<0.02	<3.4	**0.04**	<0.02	<0.02	**0.02**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Benzo(k)fluoranthene	0.002	<0.02	<0.02	**0.22**	<0.02	<50	<0.02	<0.02	<3.4	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Chrysene	0.002	**0.05**	<0.02	**0.3**	**0.02**	<50	**0.04**	**0.03**	<3.4	**0.05**	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Indeno(1,2,3-cd)pyrene	0.002	**0.05**	<0.02	**0.23**	<0.02	<50	<0.02	<0.02	<3.4	<0.02	<0.02	<0.02	<0.02	<0.02	<0.2	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.2
Naphthalene	10	**0.13**	<0.1	<0.1	<0.1	**290**	**96**	**53**	**88**	<0.1	<0.1	< 0.1	<0.1	<0.1	<0.1	<0.1	**0.15**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Metals	**(mg/L)**																							
Total Iron	0.3	**4.92**	**5.39**	**9.46**	**4.63**	**27.8**	**15.8**	**18.1**	**32.2**	**1.68**	**0.239**	**0.227**	**0.342**	**0.305**	**0.28**	**1.88**	**2.1**	**9.01**	**0.62**	**10.8**	**0.226**	**0.683**	**0.093**	**0.76**
Manganese	0.3	**1.01**	**0.929**	**2.05**	**0.95**	**0.166**	**0.155**	**0.183**	**0.24**	**0.139**	**0.034**	**0.036**	**0.052**	**0.047**	**0.04**	**0.313**	**0.33**	**0.894**	**0.143**	**0.77**	**0.006**	**0.033**	**0.004**	**0.05**
Iron and Manganese (Total)	0.5	**5.93**	**6.319**	**11.51**	**5.58**	**27.966**	**15.955**	**18.283**	**32.44**	**1.819**	**0.273**	**0.263**	**0.394**	**0.352**	**0.32**	**2.193**	**2.43**	**9.904**	**0.763**	**11.57**	**0.232**	**0.716**	**0.097**	**0.81**

Notes:
(A) Reference: NYSDEC Division of Water Technical Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations. June 1998.
(B) Concentrations shown in bold were detected.
(C) <0.1, for example, means the analyte was not detected and the detection limit was 0.1.
(D) Concentrations greater than the NYSDEC TOGS 1.1.1 standards and guidance values are shaded gray.

Acronyms:
BTEX = volatile organic compounds: Benzene, Toluene, Ethylbenzene, and Xylene
ND - A non-detectable concentration by the approved analytical methods referenced in 6 NYCRR Part 700.3.
NYSDEC = New York State Department of Environmental Conservation
PAH = semi-volatile organic compounds classified as Polycyclic Aromatic Hydrocarbons.
SVOC = Semivolatile Organic Compound
VOC = Volatile Organic Compound

FIGURES

NEW YORK

USGS TOPOGRAPHIC QUADRANGLE:
WHITEPLAINS, NEW YORK

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SCALE IN FEET

HALEY & ALDRICH

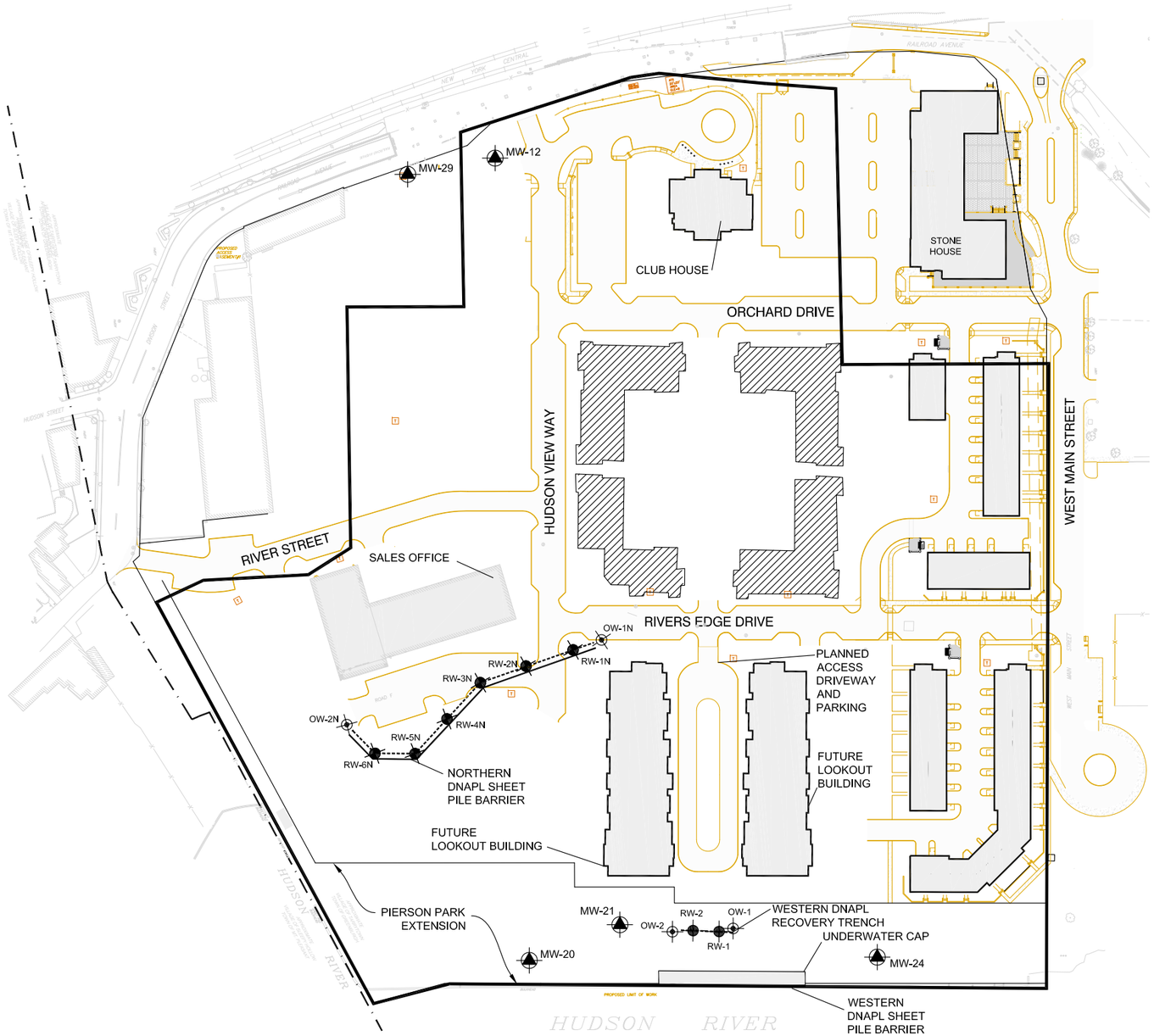
TARRYTOWN FORMER MGP SITE
TARRYTOWN, NEW YORK
FERRY LANDINGS, LLC
NYSDEC SITE NO. C360064

SITE LOCUS

SCALE: AS SHOWN
MAY 2013

FIGURE 1

G:\Projects\28590\Global\GIS\Map Documents\2013_0509_TJV_Locus_AP_D2.mxd



LEGEND:

- GROUNDWATER MONITORING WELL
- DNAPL RECOVERY WELL
- DNAPL OBSERVATION WELL
- APPROXIMATE AREA ENCOMPASSED BY THE BROWNFIELD CLEAN-UP AGREEMENT #C36OO64
- FUTURE CARRIAGE HOUSE
- EXISTING BUILDINGS
- ROADS AND PARKING AREAS

NOTES:

1. BASEMAP BASED ON CAD DRAWING ENTTILED "PH1_10399-08_PHASE.DWG" DATED 1 JULY 2009 FROM CHAZEN COMPANIES OF GLENN FALLS, NEW YORK AND "PARKING ALLOCATION DIAGRAM" DATED 7 MARCH 2013 FROM LESSARD GROUP, INC., VIENNA, VIRGINIA.

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0 80 160 240 320
APPROXIMATE SCALE IN FEET

HALEY & ALDRICH

TARRYTOWN FORMER MGP SITE
TARRYTOWN, NEW YORK
FERRY LANDINGS, LLC
NYSDEC SITE NO. C360064

SITE PLAN

SCALE: AS SHOWN
JULY 2013

FIGURE 2

G:\PROJECTS\28590\GLOBAL\CAD\DRAWINGS\2013_0516_TJV_SITEPLAN_BL_D1.DWG

APPENDIX A

Laboratory Reports

PHOENIX
Environmental Laboratories, Inc.

Tuesday, November 22, 2016

Attn:Gary J. Fuerstenberg, P.E.
Haley & Aldrich
100 Corporate Place
Suite 105
Rocky Hill, CT 06067-1803

Project ID: TARRYTOWN NY FORMER MGP SITE
Sample ID#s: BV83580

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext. 200.

Sincerely yours,

Phyllis Shiller
Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #MA-CT-007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B
NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
VT Lab Registration #VT11301

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

NY # 11301

SDG Comments

November 22, 2016

SDG I.D.: GBV83580

SIM Analysis:
The lowest possible reporting limit under SIM conditions is 0.02 ug/L. The NY TOGS GA criteria for some PAHs is 0.002 ug/L. This level can not be achieved.

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

November 22, 2016

FOR: Attn:Gary J. Fuerstenberg, P.E.
Haley & Aldrich
100 Corporate Place
Suite 105
Rocky Hill, CT 06067-1803

Sample Information		Custody Information		Date	Time
Matrix:	GROUND WATER	Collected by:		11/15/16	11:15
Location Code:	HALEY-NY	Received by:	SW	11/15/16	17:47
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	28590-026				

Laboratory Data

SDG ID: GBV83580
Phoenix ID: BV83580

Project ID: TARRYTOWN NY FORMER MGP SITE
Client ID: MW-20

Parameter	Result	RL/ PQL	LOD/ MDL	Units	Dilution	Date/Time	By	Reference
Iron	0.284	0.010		mg/L	1	11/17/16	TH	SW6010C
Manganese	0.039	0.001		mg/L	1	11/17/16	TH	SW6010C
B.O.D./5 day	< 4.0	4.0		mg/L	2	11/15/16 17:47	RVM/RS	SM5210B-01
C.O.D.	228	10		mg/L	1	11/21/16	MSF	SM5220D-97
Dissolved Organic Carbon	2.7	1.0		mg/L	1	11/17/16	RWR	SM5310C-00
Nitrite as Nitrogen	< 0.100	0.100		mg/L	25	11/16/16 20:10	BS/EG	E300.0
Nitrate as Nitrogen	0.78	0.05		mg/L	1	11/16/16 00:49	BS/EG	E300.0
Sulfate	712	75.0		mg/L	25	11/16/16	BS/EG	E300.0
Sulfide	< 0.05	0.05		mg/L	1	11/16/16	GD	SM4500S-D-00
Total Organic Carbon	2.9	1.0		mg/L	1	11/17/16	RWR	SM5310C-00
Semi-Volatile Extraction	Completed					11/15/16	P/D	SW3520C
Total Metals Digestion	Completed					11/16/16	AG	
Aromatic Volatiles								
Benzene	ND	0.70	0.50	ug/L	1	11/16/16	HM	SW8260C
Ethylbenzene	ND	2.0	0.50	ug/L	1	11/16/16	HM	SW8260C
m&p-Xylene	ND	2.0	0.50	ug/L	1	11/16/16	HM	SW8260C
Methyl t-butyl ether (MTBE)	ND	2.0	0.50	ug/L	1	11/16/16	HM	SW8260C
o-Xylene	ND	2.0	0.50	ug/L	1	11/16/16	HM	SW8260C
Toluene	ND	2.0	0.50	ug/L	1	11/16/16	HM	SW8260C
QA/QC Surrogates								
% 1,2-dichlorobenzene-d4	97			%	1	11/16/16	HM	70 - 130 %
% Bromofluorobenzene	93			%	1	11/16/16	HM	70 - 130 %
% Dibromofluoromethane	97			%	1	11/16/16	HM	70 - 130 %
% Toluene-d8	98			%	1	11/16/16	HM	70 - 130 %
Semivolatiles by SIM								
2-Methylnaphthalene	ND	0.10		ug/L	1	11/17/16	DD	SW8270D (SIM)

Project ID: TARRYTOWN NY FORMER MGP SITE
Client ID: MW-20

Phoenix I.D.: BV83580

Parameter	Result	RL/ PQL	LOD/ MDL	Units	Dilution	Date/Time	By	Reference
Acenaphthene	ND	0.10		ug/L	1	11/17/16	DD	SW8270D (SIM)
Acenaphthylene	ND	0.10		ug/L	1	11/17/16	DD	SW8270D (SIM)
Anthracene	ND	0.10		ug/L	1	11/17/16	DD	SW8270D (SIM)
Benz(a)anthracene	ND	0.02		ug/L	1	11/17/16	DD	SW8270D (SIM)
Benzo(a)pyrene	ND	0.02		ug/L	1	11/17/16	DD	SW8270D (SIM)
Benzo(b)fluoranthene	ND	0.02		ug/L	1	11/17/16	DD	SW8270D (SIM)
Benzo(ghi)perylene	ND	0.10		ug/L	1	11/17/16	DD	SW8270D (SIM)
Benzo(k)fluoranthene	ND	0.02		ug/L	1	11/17/16	DD	SW8270D (SIM)
Chrysene	ND	0.02		ug/L	1	11/17/16	DD	SW8270D (SIM)
Dibenz(a,h)anthracene	ND	0.01		ug/L	1	11/17/16	DD	SW8270D (SIM)
Fluoranthene	ND	0.10		ug/L	1	11/17/16	DD	SW8270D (SIM)
Fluorene	ND	0.10		ug/L	1	11/17/16	DD	SW8270D (SIM)
Indeno(1,2,3-cd)pyrene	ND	0.02		ug/L	1	11/17/16	DD	SW8270D (SIM)
Naphthalene	ND	0.10		ug/L	1	11/17/16	DD	SW8270D (SIM)
Phenanthrene	ND	0.07		ug/L	1	11/17/16	DD	SW8270D (SIM)
Pyrene	ND	0.10		ug/L	1	11/17/16	DD	SW8270D (SIM)
QA/QC Surrogates								
% 2-Fluorobiphenyl	77			%	1	11/17/16	DD	30 - 130 %
% Nitrobenzene-d5	81			%	1	11/17/16	DD	30 - 130 %
% Terphenyl-d14	113			%	1	11/17/16	DD	30 - 130 %

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected at RL/PQL
BRL=Below Reporting Level LOD=Limit of Detection MDL=Method Detection Limit1
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

Volatile Comment:
Where the LOD justifies lowering the RL/PQL, the RL/PQL of some compounds are evaluated below the lowest calibration standard in order to meet criteria.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

Phyllis Shiller, Laboratory Director
November 22, 2016
Reviewed and Released by: Bobbi Aloisa, Vice President

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

NY # 11301

QA/QC Report

November 22, 2016

QA/QC Data

SDG I.D.: GBV83580

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 366872 (mg/L), QC Sample No: BV83580 (BV83580)													
ICP Metals - Aqueous													
Iron	BRL	0.010	0.284	0.285	0.40	95.2			98.0			75 - 125	20
Manganese	BRL	0.001	0.039	0.036	8.00	95.9			101			75 - 125	20

Environmental Laboratories, Inc.
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Tel. (860) 645-1102 Fax (860) 645-0823

NY # 11301

QA/QC Report

November 22, 2016

QA/QC Data

SDG I.D.: GBV83580

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
QA/QC Batch 366986 (mg/kg), QC Sample No: BV83111 (BV83580)														
Nitrate as Nitrate	BRL			0.0562		98.8			92.0			90 - 110	30	
Nitrite as Nitrogen	BRL	0.01	<0.01	<0.01	NC	106			98.9			85 - 115	20	
QA/QC Batch 366897 (mg/L), QC Sample No: BV83203 (BV83580)														
Sulfide	BRL	0.05	0.11	0.10	NC	91.9			75.4			85 - 115	20	m
QA/QC Batch 366857 (mg/L), QC Sample No: BV83358 (BV83580)														
B.O.D./5 day	BRL	2.0	4.4	4.8	NC	108			107			70 - 130	20	
QA/QC Batch 367319 (mg/L), QC Sample No: BV85383 (BV83580)														
C.O.D.	BRL	10	44	46	NC	97.5			96.8			85 - 115	20	
Comment:														
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.														
QA/QC Batch 367212 (mg/L), QC Sample No: BV86305 (BV83580)														
Nitrate as Nitrogen	BRL	0.05	0.35	0.35	0	99.3			96.7			85 - 115	20	
Nitrite as Nitrogen	BRL	0.01	<0.01	<0.01	NC	101			104			85 - 115	20	
Sulfate	BRL	3.0	16.2	16.3	0.60	99.9			103			90 - 110	20	
Comment:														
Additional criteria: LCS acceptance range is 85-115%. MS acceptance range is 90-110% for water matrix.														
QA/QC Batch 367257 (mg/L), QC Sample No: BV86305 (BV83580)														
Total Organic Carbon	BRL	1.0	5.6	5.8	3.50	103			113			85 - 115	20	
Comment:														
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.														

m = This parameter is outside laboratory MS/MSD specified recovery limits.

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

NY # 11301

QA/QC Report

November 22, 2016

QA/QC Data

SDG I.D.: GBV83580

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
QA/QC Batch 366828 (ug/L), QC Sample No: BV83113 (BV83580)											
Semivolatiles by SIM - Ground Water											
2-Methylnaphthalene	ND	0.05	111			78	88	12.0	30 - 130	20	
Acenaphthene	ND	0.05	94			69	74	7.0	30 - 130	20	
Acenaphthylene	ND	0.04	85			75	81	7.7	30 - 130	20	
Anthracene	ND	0.02	100			78	75	3.9	30 - 130	20	
Benz(a)anthracene	ND	0.02	89			74	52	34.9	30 - 130	20	r
Benzo(a)pyrene	ND	0.02	85			67	33	68.0	30 - 130	20	r
Benzo(b)fluoranthene	ND	0.02	91			76	40	62.1	30 - 130	20	r
Benzo(ghi)perylene	ND	0.02	97			72	32	76.9	30 - 130	20	r
Benzo(k)fluoranthene	ND	0.02	93			77	38	67.8	30 - 130	20	r
Chrysene	ND	0.02	99			75	49	41.9	30 - 130	20	r
Dibenz(a,h)anthracene	ND	0.01	103			80	33	83.2	30 - 130	20	r
Fluoranthene	ND	0.04	101			111	106	4.6	30 - 130	20	
Fluorene	ND	0.05	92			74	81	9.0	30 - 130	20	
Indeno(1,2,3-cd)pyrene	ND	0.02	98			74	32	79.2	30 - 130	20	r
Naphthalene	ND	0.05	79			49	58	16.8	30 - 130	20	
Phenanthrene	ND	0.05	90			76	76	0.0	30 - 130	20	
Pyrene	ND	0.02	103			115	107	7.2	30 - 130	20	
% 2-Fluorobiphenyl	84	%	82			62	70	12.1	30 - 130	20	
% Nitrobenzene-d5	95	%	79			47	55	15.7	30 - 130	20	
% Terphenyl-d14	97	%	105			104	62	50.6	30 - 130	20	r

Comment:

LCSD not reported for this batch.

Additional 8270 criteria:20% of compounds can be outside of acceptance criteria as long as recovery is at least 10%. (Acid surrogates acceptance range for aqueous samples: 15-110%, for soils 30-130%)

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
QA/QC Batch 366919 (ug/L), QC Sample No: BV83287 (BV83580)											
Volatiles - Ground Water											
Benzene	ND	0.70	79	85	7.3				70 - 130	30	
Ethylbenzene	ND	1.0	86	89	3.4				70 - 130	30	
m&p-Xylene	ND	1.0	85	88	3.5				70 - 130	30	
Methyl t-butyl ether (MTBE)	ND	1.0	77	96	22.0				70 - 130	30	
o-Xylene	ND	1.0	86	91	5.6				70 - 130	30	
Toluene	ND	1.0	79	85	7.3				70 - 130	30	
% 1,2-dichlorobenzene-d4	97	%	96	97	1.0				70 - 130	30	
% Bromofluorobenzene	93	%	97	101	4.0				70 - 130	30	
% Dibromofluoromethane	97	%	90	98	8.5				70 - 130	30	
% Toluene-d8	98	%	99	99	0.0				70 - 130	30	

Comment:

A LCS and LCS Duplicate were performed instead of a matrix spike and matrix spike duplicate.

Additional 8260 criteria: 10% of LCS/LCSD compounds can be outside of acceptance criteria as long as recovery is 40-160%.

QA/QC Data

SDG I.D.: GBV83580

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits

r = This parameter is outside laboratory RPD specified recovery limits.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference

Phyllis Shiller, Laboratory Director
November 22, 2016

Tuesday, November 22, 2016

Criteria: NY: GW

State: NY

Sample Criteria Exceedances Report

GBV83580 - HALEY-NY

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units
BV83580	$8100SIMR	Indeno(1,2,3-cd)pyrene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	0.02	0.002	0.002	ug/L
BV83580	$8100SIMR	Chrysene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	0.02	0.002	0.002	ug/L
BV83580	$8100SIMR	Benzo(k)fluoranthene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	0.02	0.002	0.002	ug/L
BV83580	$8100SIMR	Benzo(b)fluoranthene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	0.02	0.002	0.002	ug/L
BV83580	$8100SIMR	Benzo(a)pyrene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	0.02	0.002	0.002	ug/L
BV83580	$8100SIMR	Benz(a)anthracene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	0.02	0.002	0.002	ug/L
BV83580	$8100SIMR	Indeno(1,2,3-cd)pyrene	NY / TOGS - Water Quality / GA Criteria	ND	0.02	0.002	0.002	ug/L
BV83580	$8100SIMR	Chrysene	NY / TOGS - Water Quality / GA Criteria	ND	0.02	0.002	0.002	ug/L
BV83580	$8100SIMR	Benzo(k)fluoranthene	NY / TOGS - Water Quality / GA Criteria	ND	0.02	0.002	0.002	ug/L
BV83580	$8100SIMR	Benzo(b)fluoranthene	NY / TOGS - Water Quality / GA Criteria	ND	0.02	0.002	0.002	ug/L
BV83580	$8100SIMR	Benz(a)anthracene	NY / TOGS - Water Quality / GA Criteria	ND	0.02	0.002	0.002	ug/L
BV83580	SO4-IC	Sulfate	NY / TOGS - Water Quality / GA Criteria	712	75.0	250	250	mg/L

Environmental Laboratories, Inc.
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Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

NY Temperature Narration

November 22, 2016

SDG I.D.: GBV83580

The samples in this delivery group were received at 4°C.
(Note acceptance criteria is above freezing up to 6°C)

PHOENIX Environmental Laboratories, Inc.

CHAIN OF COUSTODY RECORD

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: info@phoenixlabs.com Fax (860) 645-0823
Client Services (860) 645-8726

Cooler: Yes [X] No [ ]
Coolant: IPK [X] ICE [ ] No [ ]
Temp 4 °C Pg 1 of 1

Data Delivery:
[ ] Fax #: 585-486-8202
[X] Email: TVogler@haleyaldrich.com

Customer: Haley & Aldrich, Inc
Address: ~~100 Corporate Place~~ ~~Suite 105~~ 200 Town Centre Dr.
Suite 2
Rochester, NY 14623-4264

Project: Tarrytown, NY, Former MGP Site
Report to: Thomas J. Vogler
Invoice to: Haley & Aldrich, Inc
Phone #: (585) 321-4202
Fax #: (585) 486-8202
Project P.O: 28590-026

This section MUST be completed with Bottle Quantities.

Client Sample - Information - Identification

Sampler's Signature: [signature] Date: 11/15/16

Matrix Code:
DW=Drinking Water GW=Ground Water SW=Surface Water WW=Waste Water
RW=Raw Water SE=Sediment SL=Sludge S=Soil SD=Solid W=Wipe
OIL=Oil B=Bulk L=Liquid

Analysis Request

PHOENIX USE ONLY SAMPLE #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	VOCs 8260-BTEX	PAHs by 8270	Total Fe, Mn	BOD by 5210	Sulfate by 375.4	Sulfide by 376.1/376.2	Nitrate by 353.2	Nitrite by 353.2	COD by 5220C/5220D	TOC by 9060	DOC by 415.1	GL Amber AS 4oz	Soil VOA Vials [ ] methanol [ ] H2O	GL Soil container ( ) oz	40 ml VOA Vial [ ] As is [X] HCl	GL Amber 1000ml [X] As is [ ] H2SO4	PL As is [X] 250ml [ ] 500ml [ ] 1000ml	PL H2SO4 [X] 250ml [ ] 500ml	PL HNO3 250ml	PL NaOH 250ml	~~Bacteria (as is)~~ SS	~~Bacteria (w/thio)~~ PL AS IS 500 mL	GL Amb 4oz H2SO4
~~83580~~	MW-20	GW	11/15/16	1115	X	X	X	X	X	X	X	X	X	X	X	1			3	2	1	1	1	1	1	1	12

Relinquished by:	Accepted by:	Date:	Time:
[signature]	[signature]	11-15-16	3:00
[signature]	CParadine	11/15/16	1747

Comments, Special Requirements or Regulations:
Detection limits per NYS TOGS 1.1.1 for class GA Groundwater criteria

Turnaround:
[ ] 1 Day*
[ ] 2 Days*
[ ] 3 Days*
[ ] Standard
[ ] Other
* SURCHARGE APPLIES

RI
[ ] Direct Exposure (Residential)
[ ] GW
[ ] Other

CT
[ ] RCP Cert
[ ] GW Protection
[ ] SW Protection
[ ] GA Mobility
[ ] GB Mobility
[ ] Residential DEC
[ ] I/C DEC
[ ] Other

MA
[ ] MCP Certification
[ ] GW-1
[ ] GW-2
[ ] GW-3
[ ] S-1
[ ] S-2
[ ] S-3
[ ] MWRA eSMART
[ ] Other

State where samples were collected: NY

Data Format
[ ] Excel
[ ] PDF
[ ] GIS/Key
[ ] EQuIS
[X] Other

Data Package
[ ] Tier II Checklist
[ ] Full Data Package*
[ ] Phoenix Std Report
[ ] Other
* SURCHARGE APPLIES

GBV83580

Tarrytown Former MGP Site
Site Management Plan Appendix F - Table 2

Table 2 - Sampling Parameters and Recommended Analytical Methods

Analyte	Analytical Method
[redacted]	
Benzene	8260B
Toluene	8260B
Ethlybenzene	8260B
O-Xylene	8260B
M&P-Xylene	8260B
[redacted]	
[redacted]	
Acenaphthene	8270C
Acenapthylene	8270C
Anthracene	8270C
Benz(a)anthracene	8270C
Benzo(a)pyrene	8270C
Benzo(b)fluoranthene	8270C
Benzo(ghi)fluoranthene	8270C
Chysene	8270C
Dibenz(a,h)anthracene	8270C
Fluoranthene	8270C
Fluorene	8270C
Indeno(1,2,3-cd)pyrene	8270C
Napthalene	8270C
Phenanthrene	8270C
Pyrene	8270C
[redacted]	
Attenuation Indicators	
FIELD PARAMETERS	
Dissolved Oxygen	Field Probe
Oxygen-Reduction Potential	Field Probe
pH	Field Probe
Specific Conductance	Field Probe
Temperature	Field Probe
Ferrous Iron (Fe^{+2})	Field Probe
Carbon Dioxide	Field Probe
Alkalinity	Field Probe
Turbidity	Field Probe
[redacted]	
Biochemical Oxygen Demand	5210B
Chemical Oxygen Demand	5520C, 5520D
Dissolved Organic Carbon	415.1
Total Organic Carbon	9060
Sulfate	375.4
Sulfide	376.1, 376.2
Nitrate	353.2
Nitrite	353 .2
Total Iron	6010
Manganese	6010

PHOENIX
Environmental Laboratories, Inc.

Wednesday, November 23, 2016

Attn:Gary J. Fuerstenberg, P.E.
Haley & Aldrich
100 Corporate Place
Suite 105
Rocky Hill, CT 06067-1803

Project ID: TARRYTOWN NY FORMER MGP SITE
Sample ID#s: BV86314 - BV86317

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext. 200.

Sincerely yours,

Phyllis Shiller
Laboratory Director

NELAC - #NY11301
CT Lab Registration #PH-0618
MA Lab Registration #MA-CT-007
ME Lab Registration #CT-007
NH Lab Registration #213693-A,B
NJ Lab Registration #CT-003
NY Lab Registration #11301
PA Lab Registration #68-03530
RI Lab Registration #63
VT Lab Registration #VT11301

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

NY # 11301

SDG Comments

November 23, 2016

SDG I.D.: GBV86314

SIM Analysis:
The lowest possible reporting limit under SIM conditions is 0.02 ug/L. The NY TOGS GA criteria for some PAHs is 0.002 ug/L. This level can not be achieved.

Environmental Laboratories, Inc.
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ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

November 23, 2016

FOR: Attn:Gary J. Fuerstenberg, P.E.
Haley & Aldrich
100 Corporate Place
Suite 105
Rocky Hill, CT 06067-1803

Sample Information		Custody Information		Date	Time
Matrix:	GROUND WATER	Collected by:		11/16/16	8:56
Location Code:	HALEY-NY	Received by:	SW	11/16/16	17:24
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	28590-026				

Laboratory Data

SDG ID: GBV86314
Phoenix ID: BV86314

Project ID: TARRYTOWN NY FORMER MGP SITE
Client ID: MW-12

Parameter	Result		RL/ PQL	LOD/ MDL	Units	Dilution	Date/Time	By	Reference	
Iron	32.2		0.010		mg/L	1	11/19/16	LK	SW6010C	B
Manganese	0.241		0.001		mg/L	1	11/19/16	LK	SW6010C	
B.O.D./5 day	5.8		4.0		mg/L	2	11/17/16 06:00	KDB/RM	SM5210B-01	
C.O.D.	63		10		mg/L	1	11/21/16	MSF	SM5220D-97	
Dissolved Organic Carbon	14.9		1.0		mg/L	1	11/18/16	RWR	SM5310C-00	
Nitrite as Nitrogen	< 0.004		0.004		mg/L	1	11/17/16 09:57	BS/EG	E300.0	
Nitrate as Nitrogen	< 0.05		0.05		mg/L	1	11/17/16 09:57	BS/EG	E300.0	
Sulfate	< 3.0		3.0		mg/L	1	11/17/16	BS/EG	E300.0	
Sulfide	0.06		0.05		mg/L	1	11/18/16	GD	SM4500S-D-00	
Total Organic Carbon	18.8		1.0		mg/L	1	11/18/16	RWR	SM5310C-00	
Semi-Volatile Extraction	Completed						11/16/16	P/D	SW3520C	
Total Metals Digestion	Completed						11/17/16	AG		
Aromatic Volatiles										
Benzene	ND		0.70	0.50	ug/L	1	11/16/16	HM	SW8260C	
Ethylbenzene	1.6	J	2.0	0.50	ug/L	1	11/16/16	HM	SW8260C	
m&p-Xylene	3.7		2.0	0.50	ug/L	1	11/16/16	HM	SW8260C	
Methyl t-butyl ether (MTBE)	ND		2.0	0.50	ug/L	1	11/16/16	HM	SW8260C	
o-Xylene	7.9		2.0	0.50	ug/L	1	11/16/16	HM	SW8260C	
Toluene	0.70	J	2.0	0.50	ug/L	1	11/16/16	HM	SW8260C	
QA/QC Surrogates										
% 1,2-dichlorobenzene-d4	100				%	1	11/16/16	HM	70 - 130 %	
% Bromofluorobenzene	95				%	1	11/16/16	HM	70 - 130 %	
% Dibromofluoromethane	102				%	1	11/16/16	HM	70 - 130 %	
% Toluene-d8	96				%	1	11/16/16	HM	70 - 130 %	
Polynuclear Aromatic HC										
2-Methylnaphthalene	8.1		7.0		ug/L	2	11/18/16	DD	SW8270D	

Project ID: TARRYTOWN NY FORMER MGP SITE
Client ID: MW-12

Phoenix I.D.: BV86314

Parameter	Result	RL/ PQL	LOD/ MDL	Units	Dilution	Date/Time	By	Reference
Acenaphthene	54	7.0		ug/L	2	11/18/16	DD	SW8270D
Acenaphthylene	ND	7.0		ug/L	2	11/18/16	DD	SW8270D
Anthracene	ND	7.0		ug/L	2	11/18/16	DD	SW8270D
Benz(a)anthracene	ND	3.4		ug/L	2	11/18/16	DD	SW8270D
Benzo(a)pyrene	ND	3.2		ug/L	2	11/18/16	DD	SW8270D
Benzo(b)fluoranthene	ND	3.4		ug/L	2	11/18/16	DD	SW8270D
Benzo(ghi)perylene	ND	5.0		ug/L	2	11/18/16	DD	SW8270D
Benzo(k)fluoranthene	ND	3.4		ug/L	2	11/18/16	DD	SW8270D
Chrysene	ND	3.4		ug/L	2	11/18/16	DD	SW8270D
Dibenz(a,h)anthracene	ND	7.0		ug/L	2	11/18/16	DD	SW8270D
Fluoranthene	ND	7.0		ug/L	2	11/18/16	DD	SW8270D
Fluorene	13	7.0		ug/L	2	11/18/16	DD	SW8270D
Indeno(1,2,3-cd)pyrene	ND	3.4		ug/L	2	11/18/16	DD	SW8270D
Naphthalene	88	5.0		ug/L	2	11/18/16	DD	SW8270D
Phenanthrene	11	7.0		ug/L	2	11/18/16	DD	SW8270D
Pyrene	ND	7.0		ug/L	2	11/18/16	DD	SW8270D
QA/QC Surrogates								
% 2-Fluorobiphenyl	Diluted Out			%	2	11/18/16	DD	30 - 130 %
% Nitrobenzene-d5	Diluted Out			%	2	11/18/16	DD	30 - 130 %
% Terphenyl-d14	Diluted Out			%	2	11/18/16	DD	30 - 130 %

B = Present in blank, no bias suspected.

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected at RL/PQL
BRL=Below Reporting Level J=Estimated Below RL LOD=Limit of Detection MDL=Method Detection Limit1
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

Volatile Comment:
Where the LOD justifies lowering the RL/PQL, the RL/PQL of some compounds are evaluated below the lowest calibration standard in order to meet criteria.

Semi-Volatile Comment:
Due to a matrix interference and/or the presence of a large amount of non-target material in the sample, a dilution was required resulting in an elevated RL for the semivolatile analysis.

Semi-Volatile Comment:
Where the LOD justifies lowering the RL/PQL, the RL/PQL of some compounds are evaluated below the lowest calibration standard in order to meet criteria.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

Phyllis Shiller, Laboratory Director
November 23, 2016
Reviewed and Released by: Ethan Lee, Project Manager

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

November 23, 2016

FOR: Attn:Gary J. Fuerstenberg, P.E.
Haley & Aldrich
100 Corporate Place
Suite 105
Rocky Hill, CT 06067-1803

Sample Information		Custody Information		Date	Time
Matrix:	GROUND WATER	Collected by:		11/16/16	15:15
Location Code:	HALEY-NY	Received by:	SW	11/16/16	17:24
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	28590-026				

Laboratory Data

SDG ID: GBV86314
Phoenix ID: BV86315

Project ID: TARRYTOWN NY FORMER MGP SITE
Client ID: MW-29

Parameter	Result	RL/ PQL	LOD/ MDL	Units	Dilution	Date/Time	By	Reference	
Iron	4.63	0.010		mg/L	1	11/19/16	LK	SW6010C	B
Manganese	0.950	0.001		mg/L	1	11/19/16	LK	SW6010C	
B.O.D./5 day	< 4.0	4.0		mg/L	2	11/17/16 06:00	KDB/RM	SM5210B-01	
C.O.D.	103	10		mg/L	1	11/22/16	MSF	SM5220D-97	
Dissolved Organic Carbon	8.0	1.0		mg/L	1	11/18/16	RWR	SM5310C-00	
Nitrite as Nitrogen	< 0.004	0.004		mg/L	1	11/17/16 10:07	BS/EG	E300.0	
Nitrate as Nitrogen	< 0.05	0.05		mg/L	1	11/17/16 10:07	BS/EG	E300.0	
Sulfate	102	6.0		mg/L	2	11/17/16	BS/EG	E300.0	
Sulfide	< 0.05	0.05		mg/L	1	11/18/16	GD	SM4500S-D-00	
Total Organic Carbon	8.2	1.0		mg/L	1	11/18/16	RWR	SM5310C-00	
Semi-Volatile Extraction	Completed					11/16/16	P/D	SW3520C	
Total Metals Digestion	Completed					11/17/16	AG		
Aromatic Volatiles									
Benzene	ND	0.70	0.50	ug/L	1	11/16/16	HM	SW8260C	
Ethylbenzene	ND	2.0	0.50	ug/L	1	11/16/16	HM	SW8260C	
m&p-Xylene	ND	2.0	0.50	ug/L	1	11/16/16	HM	SW8260C	
Methyl t-butyl ether (MTBE)	ND	2.0	0.50	ug/L	1	11/16/16	HM	SW8260C	
o-Xylene	ND	2.0	0.50	ug/L	1	11/16/16	HM	SW8260C	
Toluene	ND	2.0	0.50	ug/L	1	11/16/16	HM	SW8260C	
QA/QC Surrogates									
% 1,2-dichlorobenzene-d4	97			%	1	11/16/16	HM	70 - 130 %	
% Bromofluorobenzene	95			%	1	11/16/16	HM	70 - 130 %	
% Dibromofluoromethane	103			%	1	11/16/16	HM	70 - 130 %	
% Toluene-d8	98			%	1	11/16/16	HM	70 - 130 %	
Semivolatiles by SIM									
2-Methylnaphthalene	ND	0.10		ug/L	1	11/18/16	DD	SW8270D (SIM)	

Project ID: TARRYTOWN NY FORMER MGP SITE
Client ID: MW-29

Phoenix I.D.: BV86315

Parameter	Result	RL/ PQL	LOD/ MDL	Units	Dilution	Date/Time	By	Reference
Acenaphthene	ND	0.10		ug/L	1	11/18/16	DD	SW8270D (SIM)
Acenaphthylene	ND	0.10		ug/L	1	11/18/16	DD	SW8270D (SIM)
Anthracene	0.12	0.10		ug/L	1	11/18/16	DD	SW8270D (SIM)
Benz(a)anthracene	0.03	0.02		ug/L	1	11/18/16	DD	SW8270D (SIM)
Benzo(a)pyrene	ND	0.02		ug/L	1	11/18/16	DD	SW8270D (SIM)
Benzo(b)fluoranthene	ND	0.02		ug/L	1	11/18/16	DD	SW8270D (SIM)
Benzo(ghi)perylene	ND	0.10		ug/L	1	11/18/16	DD	SW8270D (SIM)
Benzo(k)fluoranthene	ND	0.02		ug/L	1	11/18/16	DD	SW8270D (SIM)
Chrysene	0.02	0.02		ug/L	1	11/18/16	DD	SW8270D (SIM)
Dibenz(a,h)anthracene	ND	0.01		ug/L	1	11/18/16	DD	SW8270D (SIM)
Fluoranthene	ND	0.10		ug/L	1	11/18/16	DD	SW8270D (SIM)
Fluorene	ND	0.10		ug/L	1	11/18/16	DD	SW8270D (SIM)
Indeno(1,2,3-cd)pyrene	ND	0.02		ug/L	1	11/18/16	DD	SW8270D (SIM)
Naphthalene	ND	0.10		ug/L	1	11/18/16	DD	SW8270D (SIM)
Phenanthrene	ND	0.07		ug/L	1	11/18/16	DD	SW8270D (SIM)
Pyrene	ND	0.10		ug/L	1	11/18/16	DD	SW8270D (SIM)
QA/QC Surrogates								
% 2-Fluorobiphenyl	89			%	1	11/18/16	DD	30 - 130 %
% Nitrobenzene-d5	93			%	1	11/18/16	DD	30 - 130 %
% Terphenyl-d14	107			%	1	11/18/16	DD	30 - 130 %

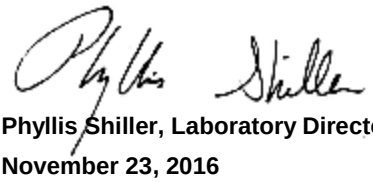
B = Present in blank, no bias suspected.

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected at RL/PQL
BRL=Below Reporting Level LOD=Limit of Detection MDL=Method Detection Limit1
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

Volatile Comment:
Where the LOD justifies lowering the RL/PQL, the RL/PQL of some compounds are evaluated below the lowest calibration standard in order to meet criteria.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.



Phyllis Shiller, Laboratory Director
November 23, 2016
Reviewed and Released by: Ethan Lee, Project Manager

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ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

November 23, 2016

FOR: Attn:Gary J. Fuerstenberg, P.E.
Haley & Aldrich
100 Corporate Place
Suite 105
Rocky Hill, CT 06067-1803

Sample Information		Custody Information		Date	Time
Matrix:	GROUND WATER	Collected by:		11/16/16	10:50
Location Code:	HALEY-NY	Received by:	SW	11/16/16	17:24
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	28590-026				

Laboratory Data

SDG ID: GBV86314
Phoenix ID: BV86316

Project ID: TARRYTOWN NY FORMER MGP SITE
Client ID: MW-21

Parameter	Result		RL/ PQL	LOD/ MDL	Units	Dilution	Date/Time	By	Reference	
Iron	10.8		0.010		mg/L	1	11/19/16	LK	SW6010C	B
Manganese	0.772		0.001		mg/L	1	11/19/16	LK	SW6010C	
B.O.D./5 day	6.5		4.0		mg/L	2	11/17/16 06:00	KDB/RM	SM5210B-01	
C.O.D.	54		10		mg/L	1	11/21/16	MSF	SM5220D-97	
Dissolved Organic Carbon	14.1		1.0		mg/L	1	11/18/16	RWR	SM5310C-00	
Nitrite as Nitrogen	< 0.004		0.004		mg/L	1	11/17/16 10:16	BS/EG	E300.0	
Nitrate as Nitrogen	< 0.05		0.05		mg/L	1	11/17/16 10:16	BS/EG	E300.0	
Sulfate	353		30.0		mg/L	10	11/17/16	BS/EG	E300.0	
Sulfide	1.61		0.38		mg/L	7.5	11/18/16	GD	SM4500S-D-00	
Total Organic Carbon	15.2		1.0		mg/L	1	11/18/16	RWR	SM5310C-00	
Semi-Volatile Extraction	Completed						11/16/16	P/D	SW3520C	
Total Metals Digestion	Completed						11/17/16	AG		
Aromatic Volatiles										
Benzene	0.53	J	0.70	0.50	ug/L	1	11/16/16	HM	SW8260C	
Ethylbenzene	ND		2.0	0.50	ug/L	1	11/16/16	HM	SW8260C	
m&p-Xylene	ND		2.0	0.50	ug/L	1	11/16/16	HM	SW8260C	
Methyl t-butyl ether (MTBE)	1.2	J	2.0	0.50	ug/L	1	11/16/16	HM	SW8260C	
o-Xylene	ND		2.0	0.50	ug/L	1	11/16/16	HM	SW8260C	
Toluene	ND		2.0	0.50	ug/L	1	11/16/16	HM	SW8260C	
QA/QC Surrogates										
% 1,2-dichlorobenzene-d4	98				%	1	11/16/16	HM	70 - 130 %	
% Bromofluorobenzene	95				%	1	11/16/16	HM	70 - 130 %	
% Dibromofluoromethane	100				%	1	11/16/16	HM	70 - 130 %	
% Toluene-d8	99				%	1	11/16/16	HM	70 - 130 %	
Semivolatiles by SIM										
2-Methylnaphthalene	ND		0.10		ug/L	1	11/18/16	DD	SW8270D (SIM)	

Project ID: TARRYTOWN NY FORMER MGP SITE
Client ID: MW-21

Phoenix I.D.: BV86316

Parameter	Result	RL/ PQL	LOD/ MDL	Units	Dilution	Date/Time	By	Reference
Acenaphthene	0.27	0.10		ug/L	1	11/18/16	DD	SW8270D (SIM)
Acenaphthylene	0.16	0.10		ug/L	1	11/18/16	DD	SW8270D (SIM)
Anthracene	ND	0.10		ug/L	1	11/18/16	DD	SW8270D (SIM)
Benz(a)anthracene	0.03	0.02		ug/L	1	11/18/16	DD	SW8270D (SIM)
Benzo(a)pyrene	ND	0.02		ug/L	1	11/18/16	DD	SW8270D (SIM)
Benzo(b)fluoranthene	ND	0.02		ug/L	1	11/18/16	DD	SW8270D (SIM)
Benzo(ghi)perylene	ND	0.10		ug/L	1	11/18/16	DD	SW8270D (SIM)
Benzo(k)fluoranthene	ND	0.02		ug/L	1	11/18/16	DD	SW8270D (SIM)
Chrysene	ND	0.02		ug/L	1	11/18/16	DD	SW8270D (SIM)
Dibenz(a,h)anthracene	ND	0.01		ug/L	1	11/18/16	DD	SW8270D (SIM)
Fluoranthene	0.43	0.10		ug/L	1	11/18/16	DD	SW8270D (SIM)
Fluorene	ND	0.10		ug/L	1	11/18/16	DD	SW8270D (SIM)
Indeno(1,2,3-cd)pyrene	ND	0.02		ug/L	1	11/18/16	DD	SW8270D (SIM)
Naphthalene	ND	0.10		ug/L	1	11/18/16	DD	SW8270D (SIM)
Phenanthrene	0.30	0.07		ug/L	1	11/18/16	DD	SW8270D (SIM)
Pyrene	0.66	0.10		ug/L	1	11/18/16	DD	SW8270D (SIM)
QA/QC Surrogates								
% 2-Fluorobiphenyl	81			%	1	11/18/16	DD	30 - 130 %
% Nitrobenzene-d5	88			%	1	11/18/16	DD	30 - 130 %
% Terphenyl-d14	111			%	1	11/18/16	DD	30 - 130 %

B = Present in blank, no bias suspected.

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected at RL/PQL
BRL=Below Reporting Level J=Estimated Below RL LOD=Limit of Detection MDL=Method Detection Limit1
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

Volatile Comment:
Where the LOD justifies lowering the RL/PQL, the RL/PQL of some compounds are evaluated below the lowest calibration standard in order to meet criteria.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
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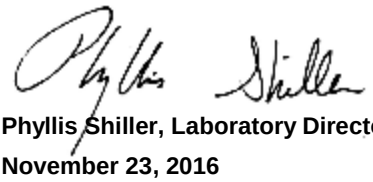

Phyllis Shiller, Laboratory Director
November 23, 2016
Reviewed and Released by: Ethan Lee, Project Manager

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ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

Analysis Report

November 23, 2016

FOR: Attn:Gary J. Fuerstenberg, P.E.
Haley & Aldrich
100 Corporate Place
Suite 105
Rocky Hill, CT 06067-1803

Sample Information		Custody Information		Date	Time
Matrix:	GROUND WATER	Collected by:		11/16/16	13:50
Location Code:	HALEY-NY	Received by:	SW	11/16/16	17:24
Rush Request:	Standard	Analyzed by:	see "By" below		
P.O.#:	28590-026				

Laboratory Data

SDG ID: GBV86314
Phoenix ID: BV86317

Project ID: TARRYTOWN NY FORMER MGP SITE
Client ID: MW-24

Parameter	Result	RL/ PQL	LOD/ MDL	Units	Dilution	Date/Time	By	Reference	
Iron	0.762	0.010		mg/L	1	11/19/16	LK	SW6010C	B
Manganese	0.045	0.001		mg/L	1	11/19/16	LK	SW6010C	
B.O.D./5 day	< 4.0	4.0		mg/L	2	11/17/16 06:00	KDB/RM	SM5210B-01	
C.O.D.	194	10		mg/L	1	11/21/16	MSF	SM5220D-97	
Dissolved Organic Carbon	2.5	1.0		mg/L	1	11/18/16	RWR	SM5310C-00	
Nitrite as Nitrogen	< 0.004	0.004		mg/L	1	11/17/16 10:26	BS/EG	E300.0	
Nitrate as Nitrogen	1.39	0.05		mg/L	1	11/17/16 10:26	BS/EG	E300.0	
Sulfate	646	75.0		mg/L	25	11/17/16	BS/EG	E300.0	
Sulfide	< 0.05	0.05		mg/L	1	11/18/16	GD	SM4500S-D-00	
Total Organic Carbon	2.7	1.0		mg/L	1	11/18/16	RWR	SM5310C-00	
Semi-Volatile Extraction	Completed					11/16/16	P/D	SW3520C	
Total Metals Digestion	Completed					11/17/16	AG		
Aromatic Volatiles									
Benzene	ND	0.70	0.50	ug/L	1	11/16/16	HM	SW8260C	
Ethylbenzene	ND	2.0	0.50	ug/L	1	11/16/16	HM	SW8260C	
m&p-Xylene	ND	2.0	0.50	ug/L	1	11/16/16	HM	SW8260C	
Methyl t-butyl ether (MTBE)	ND	2.0	0.50	ug/L	1	11/16/16	HM	SW8260C	
o-Xylene	ND	2.0	0.50	ug/L	1	11/16/16	HM	SW8260C	
Toluene	ND	2.0	0.50	ug/L	1	11/16/16	HM	SW8260C	
QA/QC Surrogates									
% 1,2-dichlorobenzene-d4	100			%	1	11/16/16	HM	70 - 130 %	
% Bromofluorobenzene	98			%	1	11/16/16	HM	70 - 130 %	
% Dibromofluoromethane	100			%	1	11/16/16	HM	70 - 130 %	
% Toluene-d8	97			%	1	11/16/16	HM	70 - 130 %	
Semivolatiles by SIM									
2-Methylnaphthalene	ND	0.10		ug/L	1	11/18/16	DD	SW8270D (SIM)	

Project ID: TARRYTOWN NY FORMER MGP SITE
Client ID: MW-24

Phoenix I.D.: BV86317

Parameter	Result	RL/ PQL	LOD/ MDL	Units	Dilution	Date/Time	By	Reference
Acenaphthene	ND	0.10		ug/L	1	11/18/16	DD	SW8270D (SIM)
Acenaphthylene	ND	0.10		ug/L	1	11/18/16	DD	SW8270D (SIM)
Anthracene	ND	0.10		ug/L	1	11/18/16	DD	SW8270D (SIM)
Benz(a)anthracene	ND	0.02		ug/L	1	11/18/16	DD	SW8270D (SIM)
Benzo(a)pyrene	ND	0.02		ug/L	1	11/18/16	DD	SW8270D (SIM)
Benzo(b)fluoranthene	ND	0.02		ug/L	1	11/18/16	DD	SW8270D (SIM)
Benzo(ghi)perylene	ND	0.10		ug/L	1	11/18/16	DD	SW8270D (SIM)
Benzo(k)fluoranthene	ND	0.02		ug/L	1	11/18/16	DD	SW8270D (SIM)
Chrysene	ND	0.02		ug/L	1	11/18/16	DD	SW8270D (SIM)
Dibenz(a,h)anthracene	ND	0.01		ug/L	1	11/18/16	DD	SW8270D (SIM)
Fluoranthene	ND	0.10		ug/L	1	11/18/16	DD	SW8270D (SIM)
Fluorene	ND	0.10		ug/L	1	11/18/16	DD	SW8270D (SIM)
Indeno(1,2,3-cd)pyrene	ND	0.02		ug/L	1	11/18/16	DD	SW8270D (SIM)
Naphthalene	ND	0.10		ug/L	1	11/18/16	DD	SW8270D (SIM)
Phenanthrene	ND	0.07		ug/L	1	11/18/16	DD	SW8270D (SIM)
Pyrene	ND	0.10		ug/L	1	11/18/16	DD	SW8270D (SIM)
QA/QC Surrogates								
% 2-Fluorobiphenyl	82			%	1	11/18/16	DD	30 - 130 %
% Nitrobenzene-d5	84			%	1	11/18/16	DD	30 - 130 %
% Terphenyl-d14	101			%	1	11/18/16	DD	30 - 130 %

B = Present in blank, no bias suspected.

RL/PQL=Reporting/Practical Quantitation Level (Equivalent to NELAC LOQ, Limit of Quantitation) ND=Not Detected at RL/PQL
BRL=Below Reporting Level LOD=Limit of Detection MDL=Method Detection Limit1
QA/QC Surrogates: Surrogates are compounds (preceeded with a %) added by the lab to determine analysis efficiency. Surrogate results(%) listed in the report are not "detected" compounds.

Comments:

Volatile Comment:
Where the LOD justifies lowering the RL/PQL, the RL/PQL of some compounds are evaluated below the lowest calibration standard in order to meet criteria.

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.
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Phyllis Shiller, Laboratory Director
November 23, 2016
Reviewed and Released by: Ethan Lee, Project Manager

Ver 1

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Environmental Laboratories, Inc.
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ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

QA/QC Report

November 23, 2016

QA/QC Data

SDG I.D.: GBV86314

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 367238 (mg/L), QC Sample No: BV86072 (BV86314, BV86315)													
ICP Metals - Aqueous													
Iron	0.065	0.010	<0.010	0.014	NC	103			102			75 - 125	20
Manganese	BRL	0.001	0.002	0.002	NC	102			101			75 - 125	20
QA/QC Batch 367260 (mg/L), QC Sample No: BV86359 (BV86316, BV86317)													
ICP Metals - Aqueous													
Iron	0.013	0.010	0.060	0.051	16.2	105			107			75 - 125	20
Manganese	BRL	0.001	0.588	0.567	3.60	102			107			75 - 125	20

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NY # 11301

QA/QC Report

November 23, 2016

QA/QC Data

SDG I.D.: GBV86314

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
QA/QC Batch 367209 (mg/L), QC Sample No: BV85603 (BV86314, BV86315, BV86316, BV86317)														
Nitrate as Nitrogen	BRL	0.05	1.54	1.45	6.00	102			95.9			90 - 110	20	
Nitrite as Nitrogen	BRL	0.004	<0.004	<0.004	NC	99.7			99.3			90 - 110	20	
Sulfate	BRL	3.0	9.6	9.0	NC	103			99.7			90 - 110	20	
QA/QC Batch 367519 (mg/L), QC Sample No: BV86069 (BV86314, BV86315, BV86316, BV86317)														
C.O.D.	BRL	10	<10	<10	NC	102			103			85 - 115	20	
Comment:														
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.														
QA/QC Batch 367108 (mg/L), QC Sample No: BV86327 (BV86314, BV86315, BV86316, BV86317)														
B.O.D./5 day	BRL	2.0	<4.0	<4.0	NC	99.3			110			70 - 130	20	
QA/QC Batch 367374 (mg/L), QC Sample No: BV86477 (BV86315, BV86316)														
Nitrate as Nitrogen	BRL	0.05	<0.05	<0.05	NC	103			100			90 - 110	20	
Nitrite as Nitrogen	BRL	0.004	<0.004	<0.004	NC	104			94.9			90 - 110	20	
Sulfate	BRL	3.0	14.9	15.4	NC	97.9			101			90 - 110	20	
QA/QC Batch 367439 (mg/L), QC Sample No: BV86578 (BV86314, BV86315, BV86316, BV86317)														
Total Organic Carbon	BRL	1.0	2.6	2.6	NC	103			101			85 - 115	20	
Comment:														
Additional: LCS acceptance range is 85-115% MS acceptance range 75-125%.														
QA/QC Batch 367375 (mg/L), QC Sample No: BV87249 (BV86317)														
Nitrate as Nitrogen	BRL	0.05	0.10	0.10	NC	102			99.7			90 - 110	20	
Nitrite as Nitrogen	BRL	0.004	<0.004	<0.004	NC	103			99.1			90 - 110	20	
Sulfate	BRL	3.0	6.9	6.5	NC	98.0			98.3			90 - 110	20	
QA/QC Batch 367390 (mg/L), QC Sample No: BV87351 (BV86314, BV86315, BV86316, BV86317)														
Sulfide	BRL	0.05	0.12	0.12	NC	105			80.7			85 - 115	20	m

m = This parameter is outside laboratory MS/MSD specified recovery limits.

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QA/QC Report

November 23, 2016

QA/QC Data

SDG I.D.: GBV86314

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits	
QA/QC Batch 367060 (ug/L), QC Sample No: BV85570 (BV86314, BV86315, BV86316, BV86317)											
Semivolatiles by SIM - Ground Water											
2-Methylnaphthalene	ND	0.05	90	98	8.5				30 - 130	20	
Acenaphthene	ND	0.05	83	86	3.6				30 - 130	20	
Acenaphthylene	ND	0.04	76	78	2.6				30 - 130	20	
Anthracene	ND	0.02	96	94	2.1				30 - 130	20	
Benz(a)anthracene	ND	0.02	88	85	3.5				30 - 130	20	
Benzo(a)pyrene	ND	0.02	85	80	6.1				30 - 130	20	
Benzo(b)fluoranthene	ND	0.02	90	83	8.1				30 - 130	20	
Benzo(ghi)perylene	ND	0.02	96	94	2.1				30 - 130	20	
Benzo(k)fluoranthene	ND	0.02	91	89	2.2				30 - 130	20	
Chrysene	ND	0.02	97	94	3.1				30 - 130	20	
Dibenz(a,h)anthracene	ND	0.01	104	97	7.0				30 - 130	20	
Fluoranthene	ND	0.04	97	93	4.2				30 - 130	20	
Fluorene	ND	0.05	86	88	2.3				30 - 130	20	
Indeno(1,2,3-cd)pyrene	ND	0.02	97	94	3.1				30 - 130	20	
Naphthalene	ND	0.05	50	69	31.9				30 - 130	20	r
Phenanthrene	ND	0.05	86	84	2.4				30 - 130	20	
Pyrene	ND	0.02	99	96	3.1				30 - 130	20	
% 2-Fluorobiphenyl	84	%	72	79	9.3				30 - 130	20	
% Nitrobenzene-d5	99	%	55	70	24.0				30 - 130	20	r
% Terphenyl-d14	99	%	102	97	5.0				30 - 130	20	

Comment:

Additional 8270 criteria:20% of compounds can be outside of acceptance criteria as long as recovery is at least 10%. (Acid surrogates acceptance range for aqueous samples: 15-110%, for soils 30-130%)

QA/QC Batch 367162 (ug/L), QC Sample No: BV86314 (BV86314, BV86315, BV86316, BV86317)											
Volatiles - Ground Water											
Benzene	ND	0.70	90	89	1.1				70 - 130	30	
Ethylbenzene	ND	1.0	98	94	4.2				70 - 130	30	
m&p-Xylene	ND	1.0	95	91	4.3				70 - 130	30	
Methyl t-butyl ether (MTBE)	ND	1.0	99	98	1.0				70 - 130	30	
o-Xylene	ND	1.0	94	92	2.2				70 - 130	30	
Toluene	ND	1.0	91	92	1.1				70 - 130	30	
% 1,2-dichlorobenzene-d4	107	%	100	100	0.0				70 - 130	30	
% Bromofluorobenzene	95	%	101	98	3.0				70 - 130	30	
% Dibromofluoromethane	99	%	99	99	0.0				70 - 130	30	
% Toluene-d8	99	%	99	100	1.0				70 - 130	30	

Comment:

A LCS and LCS Duplicate were performed instead of a matrix spike and matrix spike duplicate.

Additional 8260 criteria: 10% of LCS/LCSD compounds can be outside of acceptance criteria as long as recovery is 40-160%.

r = This parameter is outside laboratory RPD specified recovery limits.

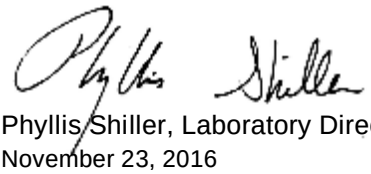
QA/QC Data

SDG I.D.: GBV86314

Parameter	Blank	Blk RL	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference
LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample Duplicate
MS - Matrix Spike
MS Dup - Matrix Spike Duplicate
NC - No Criteria
Intf - Interference



Phyllis Shiller, Laboratory Director
November 23, 2016

Wednesday, November 23, 2016

Criteria: NY: GW

State: NY

Sample Criteria Exceedances Report

GBV86314 - HALEY-NY

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units
BV86314	$8100WMR	Benzo(k)fluoranthene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	3.4	0.002	0.002	ug/L
BV86314	$8100WMR	Acenaphthene	NY / TAGM - Semi-Volatiles / Groundwater Standards	54	7.0	20	20	ug/L
BV86314	$8100WMR	Benz(a)anthracene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	3.4	0.002	0.002	ug/L
BV86314	$8100WMR	Naphthalene	NY / TAGM - Semi-Volatiles / Groundwater Standards	88	5.0	10	10	ug/L
BV86314	$8100WMR	Benzo(a)pyrene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	3.2	0.002	0.002	ug/L
BV86314	$8100WMR	Benzo(b)fluoranthene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	3.4	0.002	0.002	ug/L
BV86314	$8100WMR	Indeno(1,2,3-cd)pyrene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	3.4	0.002	0.002	ug/L
BV86314	$8100WMR	Chrysene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	3.4	0.002	0.002	ug/L
BV86314	$8100WMR	Naphthalene	NY / TAGM - Volatile Organics / Groundwater Standards	88	5.0	5	5	ug/L
BV86314	$8100WMR	Indeno(1,2,3-cd)pyrene	NY / TOGS - Water Quality / GA Criteria	ND	3.4	0.002	0.002	ug/L
BV86314	$8100WMR	Chrysene	NY / TOGS - Water Quality / GA Criteria	ND	3.4	0.002	0.002	ug/L
BV86314	$8100WMR	Benzo(b)fluoranthene	NY / TOGS - Water Quality / GA Criteria	ND	3.4	0.002	0.002	ug/L
BV86314	$8100WMR	Naphthalene	NY / TOGS - Water Quality / GA Criteria	88	5.0	10	10	ug/L
BV86314	$8100WMR	Benz(a)anthracene	NY / TOGS - Water Quality / GA Criteria	ND	3.4	0.002	0.002	ug/L
BV86314	$8100WMR	Acenaphthene	NY / TOGS - Water Quality / GA Criteria	54	7.0	20	20	ug/L
BV86314	$8100WMR	Benzo(k)fluoranthene	NY / TOGS - Water Quality / GA Criteria	ND	3.4	0.002	0.002	ug/L
BV86314	$BTEX-WMR	o-Xylene	NY / TAGM - Volatile Organics / Groundwater Standards	7.9	2.0	5	5	ug/L
BV86314	$BTEX-WMR	o-Xylene	NY / TOGS - Water Quality / GA Criteria	7.9	2.0	5	5	ug/L
BV86314	FE-WM	Iron	NY / TOGS - Water Quality / GA Criteria	32.2	0.010	0.3	0.3	mg/L
BV86315	$8100SIMR	Indeno(1,2,3-cd)pyrene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	0.02	0.002	0.002	ug/L
BV86315	$8100SIMR	Chrysene	NY / TAGM - Semi-Volatiles / Groundwater Standards	0.02	0.02	0.002	0.002	ug/L
BV86315	$8100SIMR	Benzo(k)fluoranthene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	0.02	0.002	0.002	ug/L
BV86315	$8100SIMR	Benzo(b)fluoranthene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	0.02	0.002	0.002	ug/L
BV86315	$8100SIMR	Benzo(a)pyrene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	0.02	0.002	0.002	ug/L
BV86315	$8100SIMR	Benz(a)anthracene	NY / TAGM - Semi-Volatiles / Groundwater Standards	0.03	0.02	0.002	0.002	ug/L
BV86315	$8100SIMR	Indeno(1,2,3-cd)pyrene	NY / TOGS - Water Quality / GA Criteria	ND	0.02	0.002	0.002	ug/L
BV86315	$8100SIMR	Benz(a)anthracene	NY / TOGS - Water Quality / GA Criteria	0.03	0.02	0.002	0.002	ug/L
BV86315	$8100SIMR	Benzo(b)fluoranthene	NY / TOGS - Water Quality / GA Criteria	ND	0.02	0.002	0.002	ug/L
BV86315	$8100SIMR	Benzo(k)fluoranthene	NY / TOGS - Water Quality / GA Criteria	ND	0.02	0.002	0.002	ug/L
BV86315	$8100SIMR	Chrysene	NY / TOGS - Water Quality / GA Criteria	0.02	0.02	0.002	0.002	ug/L
BV86315	FE-WM	Iron	NY / TOGS - Water Quality / GA Criteria	4.63	0.010	0.3	0.3	mg/L
BV86315	MN-WM	Manganese	NY / TOGS - Water Quality / GA Criteria	0.950	0.001	0.3	0.3	mg/L
BV86316	$8100SIMR	Benzo(k)fluoranthene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	0.02	0.002	0.002	ug/L
BV86316	$8100SIMR	Indeno(1,2,3-cd)pyrene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	0.02	0.002	0.002	ug/L
BV86316	$8100SIMR	Benz(a)anthracene	NY / TAGM - Semi-Volatiles / Groundwater Standards	0.03	0.02	0.002	0.002	ug/L
BV86316	$8100SIMR	Benzo(a)pyrene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	0.02	0.002	0.002	ug/L
BV86316	$8100SIMR	Benzo(b)fluoranthene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	0.02	0.002	0.002	ug/L
BV86316	$8100SIMR	Chrysene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	0.02	0.002	0.002	ug/L
BV86316	$8100SIMR	Chrysene	NY / TOGS - Water Quality / GA Criteria	ND	0.02	0.002	0.002	ug/L
BV86316	$8100SIMR	Indeno(1,2,3-cd)pyrene	NY / TOGS - Water Quality / GA Criteria	ND	0.02	0.002	0.002	ug/L

Wednesday, November 23, 2016

Criteria: NY: GW

State: NY

Sample Criteria Exceedances Report

GBV86314 - HALEY-NY

SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	RL Criteria	Analysis Units
BV86316	$8100SIMR	Benz(a)anthracene	NY / TOGS - Water Quality / GA Criteria	0.03	0.02	0.002	0.002	ug/L
BV86316	$8100SIMR	Benzo(b)fluoranthene	NY / TOGS - Water Quality / GA Criteria	ND	0.02	0.002	0.002	ug/L
BV86316	$8100SIMR	Benzo(k)fluoranthene	NY / TOGS - Water Quality / GA Criteria	ND	0.02	0.002	0.002	ug/L
BV86316	FE-WM	Iron	NY / TOGS - Water Quality / GA Criteria	10.8	0.010	0.3	0.3	mg/L
BV86316	MN-WM	Manganese	NY / TOGS - Water Quality / GA Criteria	0.772	0.001	0.3	0.3	mg/L
BV86316	SO4-IC	Sulfate	NY / TOGS - Water Quality / GA Criteria	353	30.0	250	250	mg/L
BV86317	$8100SIMR	Indeno(1,2,3-cd)pyrene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	0.02	0.002	0.002	ug/L
BV86317	$8100SIMR	Benz(a)anthracene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	0.02	0.002	0.002	ug/L
BV86317	$8100SIMR	Benzo(a)pyrene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	0.02	0.002	0.002	ug/L
BV86317	$8100SIMR	Benzo(b)fluoranthene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	0.02	0.002	0.002	ug/L
BV86317	$8100SIMR	Chrysene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	0.02	0.002	0.002	ug/L
BV86317	$8100SIMR	Benzo(k)fluoranthene	NY / TAGM - Semi-Volatiles / Groundwater Standards	ND	0.02	0.002	0.002	ug/L
BV86317	$8100SIMR	Benz(a)anthracene	NY / TOGS - Water Quality / GA Criteria	ND	0.02	0.002	0.002	ug/L
BV86317	$8100SIMR	Benzo(b)fluoranthene	NY / TOGS - Water Quality / GA Criteria	ND	0.02	0.002	0.002	ug/L
BV86317	$8100SIMR	Benzo(k)fluoranthene	NY / TOGS - Water Quality / GA Criteria	ND	0.02	0.002	0.002	ug/L
BV86317	$8100SIMR	Indeno(1,2,3-cd)pyrene	NY / TOGS - Water Quality / GA Criteria	ND	0.02	0.002	0.002	ug/L
BV86317	$8100SIMR	Chrysene	NY / TOGS - Water Quality / GA Criteria	ND	0.02	0.002	0.002	ug/L
BV86317	FE-WM	Iron	NY / TOGS - Water Quality / GA Criteria	0.762	0.010	0.3	0.3	mg/L
BV86317	SO4-IC	Sulfate	NY / TOGS - Water Quality / GA Criteria	646	75.0	250	250	mg/L

Environmental Laboratories, Inc.
587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045
Tel. (860) 645-1102 Fax (860) 645-0823

ACCREDITED IN ACCORDANCE WITH nelac NY # 11301

NY Temperature Narration

November 23, 2016

SDG I.D.: GBV86314

The samples in this delivery group were received at 4°C.
(Note acceptance criteria is above freezing up to 6°C)

CHAIN OF CUSTODY RECORD

PHOENIX *Environmental Laboratories, Inc.*

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040
Email: info@phoenixlabs.com Fax (860) 645-0823
Client Services (860) 645-8726

Cooler: Yes ☒ No ☐
Coolant: IPK ☐ ICE ☒ No ☐
Temp 4 °C Pg of

Data Delivery:
☐ Fax #: 585-486-8202
☒ Email: TVogler@haleyaldrich.com

Customer: Haley & Aldrich, Inc
Address: 200 Town Centre Dr. Suite 2
Rochester, NY 14623-4264

Project: Tarrytown, NY Former MGP Site Project P.O: 28590-026
Report to: Thomas J. Vogler
Invoice to: Haley & Aldrich, Inc.
Phone #: (585) 321-4202
Fax #: (586) 486-8202

This section MUST be completed with Bottle Quantities.

Client Sample - Information - Identification

Sampler's Signature: [signature] Date: 11/16/16

Matrix Code:
DW=Drinking Water GW=Ground Water SW=Surface Water WW=Waste Water
RW=Raw Water SE=Sediment SL=Sludge S=Soil SD=Solid W=Wipe
OIL=Oil B=Bulk L=Liquid

Analysis Request

PHOENIX USE ONLY SAMPLE #	Customer Sample Identification	Sample Matrix	Date Sampled	Time Sampled	VOCs 8260-BTEX	PAHs by 8270	Total Fe, Total Mn	BOD by 5210	Sulfate by 375.4	Sulfide by 376.1, 376.2	Nitrate by 353.2	Nitrite by 353.2	COD by 5520C, 5520D	TOC by 9060	DOC by 415.1	GI Amber As is 4oz	Soil VOA Vials [ ] methanol ( ) oz	GL Soil container ( ) oz [ ] H2O	40 ml VOA Vial [ ] As is ☒ HCl	GL Amber 1000ml ☒ As is [ ] H2SO4	PL As is ☒ 250ml [ ] 500ml [ ] 1000ml	PL H2SO4 ☒ 250ml [ ] 500ml	PL HNO3 250ml	PL NaOH 250ml	~~Bacteria (as is)~~ Pl As is 500 ml	~~Bacteria (within)~~ Gl Amber 4oz H2SO4	
86314	MW-12	GW	11/16/16	0856	X	X	X	X	X	X	X	X	X	X	X	1			3	2	1	1	1	1	1	1	12
86315	MW-29	GW	11/15/16	1515	X	X	X	X	X	X	X	X	X	X	X	1			3	2	1	1	1	1	1	1	12
86316	MW-21	GW	11/16/16	1050	X	X	X	X	X	X	X	X	X	X	X	1			3	2	1	1	1	1	1	1	12
86317	MW-24	GW	11/16/16	1350	X	X	X	X	X	X	X	X	X	X	X	1			3	2	1	1	1	1	1	1	12

Relinquished by:	Accepted by:	Date:	Time:
[signature]	[signature]	11/16/16	3:00
[signature]	Krystal Bunce	11/16	17:24

Comments, Special Requirements or Regulations:
Detection limits per NYS TOGS 1.1.1 for class GA Groundwater criteria

Turnaround:
☐ 1 Day*
☐ 2 Days*
☐ 3 Days*
☒ Standard
☐ Other
* SURCHARGE APPLIES

RI
☐ Direct Exposure (Residential)
☐ GW
☐ Other

CT
☐ RCP Cert
☐ GW Protection
☐ SW Protection
☐ GA Mobility
☐ GB Mobility
☐ Residential DEC
☐ I/C DEC
☐ Other

MA
☐ MCP Certification
☐ GW-1
☐ GW-2
☐ GW-3
☐ S-1
☐ S-2
☐ S-3
☐ MWRA eSMART
☐ Other

Data Format
☐ Excel
☐ PDF
☐ GIS/Key
☐ EQuIS
☒ Other

Data Package
☐ Tier II Checklist
☐ Full Data Package*
☐ Phoenix Std Report
☐ Other

State where samples were collected: NY

* SURCHARGE APPLIES

6BV860314

Tarrytown Former MGP Site
Site Management Plan Appendix F - Table 2

Table 2 - Sampling Parameters and Recommended Analytical Methods

Analyte	Analytical Method
[redacted]	
Benzene	8260B
Toluene	8260B
Ethlybenzene	8260B
O-Xylene	8260B
M&P-Xylene	8260B
[redacted]	
Acenaphthene	8270C
Acenapthylene	8270C
Anthracene	8270C
Benz(a)anthracene	8270C
Benzo(a)pyrene	8270C
Benzo(b)fluoranthene	8270C
Benzo(ghi)fluoranthene	8270C
Chysene	8270C
Dibenz(a,h)anthracene	8270C
Fluoranthene	8270C
Fluorene	8270C
Indeno(1,2,3-cd)pyrene	8270C
Napthalene	8270C
Phenanthrene	8270C
Pyrene	8270C
Attenuation Indicators	
FIELD PARAMETERS	
Dissolved Oxygen	Field Probe
Oxygen-Reduction Potential	Field Probe
pH	Field Probe
Specific Conductance	Field Probe
Temperature	Field Probe
Ferrous Iron (Fe^{+2})	Field Probe
Carbon Dioxide	Field Probe
Alkalinity	Field Probe
Turbidity	Field Probe
[redacted]	
Biochemical Oxygen Demand	5210B
Chemical Oxygen Demand	5520C, 5520D
Dissolved Organic Carbon	415.1
Total Organic Carbon	9060
Sulfate	375.4
Sulfide	376.1, 376.2
Nitrate	353.2
Nitrite	353 .2
Total Iron	6010
Manganese	6010