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# **Quarterly Groundwater Monitoring Report First Quarter (Q1) 2016**

### Sag Harbor Former MGP Site

Village of Sag Harbor Suffolk County, Long Island, New York Site ID No. 1-52-159

#### Submitted to:

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## 1. Sag Harbor Site and Adjacent Offsite Areas

#### First Quarter (Q1) 2016 Groundwater Monitoring Event Summary

Event Date: March 14, 15 and 23, 2016

Site Phase: Quarterly groundwater monitoring

Location: The location of the Sag Harbor Former MGP site is depicted on Figure 1.

#### **Monitoring Program**

Criteria to reduce the scope of the groundwater monitoring program based on historical and future analytical results were proposed, and subsequently approved by the New York State Department of Environmental Conservation (NYSDEC) on March 21, 2014. The criteria and the resulting reductions to the program were detailed in a follow-up letter to NYSDEC dated May 13, 2014. NYSDEC has required that several monitoring wells in the intermediate zone be exempt from reduction criteria and be sampled annually. These wells include SHMW-03I, SHMW-05I, and SHMW-08I.

Based on the established criteria, eight wells in the intermediate or deep zones were eliminated from the sampling program and five shallow wells were reduced to annual sampling. The reductions in the scope of work are shown in the table below. Going forward, the sampling list will be re-evaluated on a quarterly basis, with changes made, as appropriate.

	Sampling	Frequency		Samplin	g Frequency
Monitoring Well	Former	Current	Monitoring Well	Former	Current
SHMW-01SR	Quarterly	Annual	SHMW-02DR	Annual	Eliminated
SHMW-02S	Quarterly	Annual	SHMW-07IR	Annual	Eliminated
SHMW-03S	Quarterly	Annual	SHMW-10I	Annual	Eliminated
SHMW-10S	Quarterly	Annual	SHMW-11I	Annual	Eliminated
SHMW-13S	Quarterly	Annual	SHMW-12I	Annual	Eliminated
SHMW-01IR	Annual	Eliminated	SHMW-13I	Annual	Eliminated
SHMW-01D	Annual	Eliminated		•	

Implementation of the reduced sampling scope began in Q2 2014. Based on a review of seasonal data trends, the annual sampling rounds are to be conducted during the third quarter of each year. Seven wells were included in the Q1 2016 quarterly sampling list.



#### **Monitoring Well Network**

A total of 25 monitoring wells are currently located at or in the vicinity of the site (**Figure 2**). MW-05 was destroyed sometime between March and June 2007. Monitoring wells MW-01, MW-02, MW-03, MW-04, MW-06, SHMW-01S, SHMW-01I, SHMW-02I, SHMW-02D, SHMW-04S, SHMW-04I, SHMW-05S, SHMW-05I, SHMW-06S, and SHMW-06I were abandoned prior to the Q4 2008 sampling event due to the remediation activities being conducted at the site. Seven of the monitoring wells, including SHMW-01SR, SHMW-01IR, SHMW-02IR, SHMW-02DR, SHMW-04SR, SHMW-05SR, and SHMW-05IR were replaced as part of the post-remediation monitoring well replacement/installation program in Q4 2010.

Monitoring wells SHMW-02IR and SHMW-04SR were installed as larger diameter wells for potential dense non-aqueous phase liquid (DNAPL) recovery. In addition to the installation of the replacement monitoring wells listed above, new monitoring wells SHMW-01D and SHMW-02S were also installed as part of this program. Monitoring wells SHMW-07S and SHMW-07I, which were damaged presumably during the remedial activities, were abandoned during the replacement well installation program and reinstalled.

#### **Hydrological Data**

Groundwater levels were measured on March 14, 2016 at 24 of the 25 monitoring wells, during low and high tides. Monitoring well SHMW-02IR was repaired during Q3 2011, altering the survey point. As a result, a groundwater level measurement was not taken. Depth to groundwater measurements and calculated groundwater elevations are provided in **Table 1**. Shallow and intermediate groundwater contours for high and low tidal conditions are depicted on **Figures 3 through 6**.

The groundwater flow direction was generally to the west towards Sag Harbor Cove. The ranges in depth to water and water table elevation data, as well as calculated hydraulic gradients for the shallow and intermediate portions of the aquifer in Q1 2016, are provided in the following table:

Depth Zone		High Tide		Low Tide			
	Ran	ige		Rai			
	DTW <sup>1</sup>	WLE <sup>2</sup>	Gradient <sup>3</sup>	DTW <sup>1</sup>	WLE <sup>2</sup>	Gradient <sup>3</sup>	
Shallow	0.01 - 3.81	0.68 - 3.08	0.0039	0.83 - 4.70	0.05 - 2.60	0.0050	
Intermediate	0.01 – 4.15	0.99 - 2.60	0.0025	1.91 – 5.71	-0.16 – 2.28	0.0030	

#### Notes:

- 1: Depth to water Measured as feet below top of casing
- 2: Water level elevation Calculated as feet above mean sea level
- 3: Feet/Feet

#### **NAPL Thickness Data**

**Table 2** provides a summary of historical non-aqueous phase liquid (NAPL) data. In Q1 2016, all of the 25 monitoring wells were monitored for NAPL as part of the groundwater monitoring program. Evidence of light non-aqueous phase liquid (LNAPL) or DNAPL in the



monitoring wells during Q1 2016 was limited to approximately two inches of DNAPL in SHMW-07SR and approximately one inch of DNAPL in SHMW-02IR.

#### **Chemical Data**

In Q1 2016, a total of 7 wells were sampled for benzene, toluene, ethylbenzene, and total xylenes (BTEX) and methyl tert-butyl ether (MTBE) by Environmental Protection Agency (EPA) Method 8260, as well as polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270. Well sampling was performed on March 15 and 23, 2016 and included all wells on the quarterly sampling list.

Chemical data for Q1 2016 (Table 3) indicate:

- Total BTEX concentrations ranged from non-detect (ND) in SHMW-11S to 577 micrograms per liter (μg/L) in SHMW-07SR.
- Total PAH concentrations ranged from ND in SHMW-11S to 745 μg/L in monitoring well SHMW-07SR.
- MTBE detections were limited to an estimated concentration of 5 μg/L in monitoring well SHMW-08S.

#### **Data Trend Analysis**

In general, total BTEX and total PAH concentrations (see historical data in **Tables 4** and **5**) have been decreasing in shallow groundwater on and adjacent to the site. An analysis of the current and historical data in the recent quarterly sampling events is presented in the table below. Note that the Q3 2015 sampling event is the annual sampling event and includes the sampling of all site groundwater monitoring wells.

Shallow Zone	Historical		Q3 2015		Q4 2015		Q1 2016	
Shallow Zone	Max	Average	Max	Average	Max	Average	Max	Average
Total BTEX	25,860	780	1,938	192	1,362	275	577	166
Total PAHs	14,332	667	11,494	839	3,943	707	745	277

Note:

Concentrations in µg/L

Concentrations of total BTEX were at or near detection levels in three of the seven monitoring wells sampled during in Q1 2016 including SHMW-05SR (8  $\mu$ g/L), SHMW-08S (4  $\mu$ g/L), and SHMW-11S (ND).

Elevated total BTEX concentrations were identified in the remaining shallow wells in Q1 2016, including SHMW-04SR (328  $\mu$ g/L), SHMW-07SR (577  $\mu$ g/L), SHMW-09S (84  $\mu$ g/L), and SHMW-12S (159  $\mu$ g/L). The total BTEX concentrations in wells SHMW-04SR and SHMW-12S increased slightly and the concentration in wells SHMW-07SR and SHMW-09S decreased compared to the previous sampling event. Total BTEX concentrations in SHMW-04SR and SHMW-07SR, which have historically had the highest concentrations, have been



variable but generally decreasing since Q3 2014. The concentrations in all of the wells with elevated detections of total BTEX in Q1 2016 were below their respective historical means.

Total PAH detections at or near detection levels during Q1 2016 were limited to SHMW-11S (ND).

Elevated total PAH concentrations were identified in the remaining shallow wells in Q1 2016 including SHMW-04SR (359  $\mu$ g/L), SHMW-05SR (106  $\mu$ g/L), SHMW-07SR (745  $\mu$ g/L), SHMW-08S (132  $\mu$ g/L), SHMW-09S (373  $\mu$ g/L), and SHMW-12S (227  $\mu$ g/L). In comparison to the previous sampling event for each respective well, decreases were noted in SHMW-05SR, SHMW-07SR, SHMW-08S, and SHMW-12S. The decrease in SHMW-07SR was particularly significant. Total PAH concentration increases were limited to SHMW-04SR and SHMW-09S.

Similar to total BTEX, the highest concentrations of total PAHs have historically been identified in SHMW-04SR and SHMW-07SR. The concentration trend in SHMW-04SR has generally been decreasing in recent sampling events, but remains variable. Concentrations in SHMW-07SR have been extremely variable in recent sampling events, ranging from non-detect in Q1 2015 to a historical high of 14,332  $\mu$ g/L during Q2 2015, prior to decreases in the past three sampling events. All of the Q1 2016 concentrations of total PAH remained within their respective historical concentration range with the exception of SHMW-08S. The concentrations in several wells, including SHMW-04SR, SHMW-07SR, and SHMW-09S, were significantly below their respective historical mean concentrations.

#### **DNAPL Occurrence**

The historical NAPL data (**Table 2**) indicates that measurable quantities of NAPL have primarily been found in two onsite shallow monitoring wells (MW-02 and MW-05), one onsite intermediate well (SHMW-02I), and one offsite shallow well (SHMW-04S). Non-measurable (trace) amounts of NAPL have historically been found in two onsite shallow wells, MW-03 and MW-04, as well as in offsite shallow well SHMW-06S, and was intermittently found in SHMW-07S. All of the wells identified above in which NAPL has been historically detected were either destroyed or abandoned prior to, or during, remedial activities.

No measurable amounts of LNAPL and DNAPL had been observed in replacement monitoring wells SHMW-04SR and SHMW-07SR prior to recent gauging events. In recent events, DNAPL has been measured at a maximum thickness of approximately 1.5-inches in SHMW-04SR; however, this observance was isolated to one gauging event. As discussed above, approximately two-inches of DNAPL were observed at monitoring well SHMW-07SR during Q1 2016.

To date, no significant evidence of NAPL has been found in these monitoring wells or any of the remaining monitoring wells post remediation, excluding SHMW-02IR. DNAPL was measured in SHMW-02IR at a thickness of approximately one-inch in Q1 2016, which was a



significant decrease relative to the measured thickness of approximately 21 inches in early Q4 2015, prior to a product removal test as discussed in the Q4 2015 Quarterly Groundwater Monitoring Report. As mentioned above, SHMW-02IR was installed to replace SHMW-02I, which was abandoned prior to the Q4 2008 sampling event due to the remediation activities being conducted at the site. The DNAPL thickness in SHMW-02I was approximately 4 feet immediately prior to abandonment during the Q3 2008 monitoring event. SHMW-02IR was installed as a larger diameter well for potential DNAPL recovery.

#### **Future Plans**

- Continue quarterly groundwater and NAPL monitoring at onsite and offsite monitoring wells.
- Recover DNAPL from SHMW-02IR, if the measured DNAPL thickness is greater than approximately 2 inches.



## **Tables**



Table 1. Water Level Measurements and Calculated Groundwater Elevations Sag Harbor Former MGP Site Groundwater Monitoring Program - Q1 2016

	Top of Casing			3/14	1/2016	
Well ID	Elevation (ft)*	Tide	Time	Depth to	Groundwater	Notes
	Elevation (II)			Water (ft)	Elevation (ft)	
SHMW-01SR	3.71	High	1532	2.33	1.38	Well replaced in Q4 2010
OF INVIVE OF TORK	5.71	Low	933	2.71	1.00	Well replaced III Q+ 2010
SHMW-01IR	3.81	High	1533	2.24	1.57	Well replaced in Q4 2010
Ormana orma	0.01	Low	934	2.85	0.96	Well replaced in Q1 2010
SHMW-01D	3.67	High	1531	1.38	2.29	Well installed in Q4 2010
OF HAVE OF D	5.07	Low	933	2.41	1.26	Well installed in Q+ 2010
SHMW-02S	3.95	High	1529	1.34	2.61	Well installed in Q4 2010
01111111 020	0.00	Low	928	2.45	1.50	Wolf installed in Q1 2010
SHMW-02IR	3.92	High	NM	NM	NC	Survey point altered
OF HAVE OZITO	0.02	Low	NM	NM	NC	Curvey point antorea
SHMW-02DR	3.66	High	1530	1.98	1.68	Well replaced in Q4 2010
OTHINIV OZDIK	0.00	Low	930	2.40	1.26	Won replaced in Q 1 2010
SHMW-03S	3.83	High	1542	3.01	0.82	
01111111 000	0.00	Low	944	3.36	0.47	
SHMW-03I	3.85	High	1547	1.91	1.94	
OI 111111 001	0.00	Low	943	3.10	0.75	
SHMW-04SR	3.90	High	1535	3.22	0.68	Well replaced in Q4 2010
	0.00	Low	936	3.30	0.60	
SHMW-05SR	5.03	High	1538	3.62	1.41	Well replaced in Q4 2010
	0.00	Low	930	3.03	2.00	
SHMW-05IR	4.96	High	1535	3.35	1.61	Well replaced in Q4 2010
G		Low	940	3.98	0.98	
SHMW-07SR	3.48	High	1607	0.40	3.08	
		Low	1005	1.04	2.44	
SHMW-07IR	3.38	High	1606	1.41	1.97	
		Low	1003	2.06	1.32	
SHMW-08S	3.69	High	1609	0.79	2.90	
		Low	1007	1.09	2.60	
SHMW-08I	3.79	High	1610	1.51	2.28	
		Low	1009	2.45	1.34	
SHMW-09S	3.06	High	1558	1.80	1.26	
		Low	957	1.84	1.22	
SHMW-09I	2.82	High	1600	1.70	1.12	
		Low	958	1.91	0.91	
SHMW-10S	4.75	High	1552	3.81	0.94	
		Low	948 1554	4.70	0.05	
SHMW-10I	4.75	High		3.76	0.99	
		Low High	948 1550	4.91 3.11	-0.16 2.21	
SHMW-11S	5.32	Low	954	3.11	1.98	
		Low High	954 1548	4.15	1.98	
SHMW-11I	5.63	Low	952	5.71	-0.08	
		High	1603	0.01	1.97	
SHMW-12S	1.98	Low	959	+0.04	2.02	Artesian
		High	1604	0.01	1.98	
SHMW-12I	1.99	Low	1000	+0.10	2.09	Artesian
		High	1613	0.55	2.81	
SHMW-13S	3.36	Low	1012	0.83	2.53	
		High	1612	1.09	2.55	
SHMW-13I	3.50	піуп	1010	1.09	1.51	

General Notes:

\* Elevations were re-surveyed in November 2010.

NM = Not Measured

NC = Not Calculated

Table 2. Summary of Historical NAPL Observations Sag Harber Former MGP Site Groundwater Monitoring Program - Q1 2016

Well ID	May 2002 Observations	May 2004 Observations	Aug 2004 Observations	Oct 2004 Observations	Nov 2004 Observations	Dec 2004 Observations	Jan 2005 Observations	Feb 2005 Observations	Mar 2005 Observations
MW-01	None Observed	Odor	None Observed	Not Checked	NR	NR	NR	NR	NR
MW-02	Approx. 0.16' of DNAPL, sheen on surface	Approx. 0.15' of DNAPL, sheen on surface	Approx. 0.29' of DNAPL	Approx. 0.2' of DNAPL	Approx. 0.01' of DNAPL, 1.0' intermittent DNAPL	Approx. 0.1' of DNAPL	Approx. 0.11' of DNAPL	Approx. 0.16' of DNAPL	Approx. 0.15' of DNAPL
MW-03	Intermittent DNAPL for 1.5'	Approx. 0.03' of DNAPL, naphthalene-like odor	NR	Trace DNAPL at bottom of tape	Trace DNAPL at bottom of tape	Trace DNAPL at bottom of tape	Trace DNAPL at bottom of tape	Trace DNAPL at bottom of tape	Trace DNAPL at bottom of tape
MW-04	None Observed	Approx. 0.02' of DNAPL, naphthalene- like odor	NR	Trace DNAPL at bottom of tape	None Observed	None Observed	Trace DNAPL at bottom of tape	Not Checked (under snow pile)	None Observed
MW-05	Blebs of LNAPL	Approx. 1.0' of DNAPL, naphthalene- like odor	Approx. 0.75' of DNAPL	Approx. 4.5' of LNAPL/NAPL	Approx. 0.35' of DNAPL, 3.6' intermittent DNAPL	Trace DNAPL at bottom of tape, bubbles in WC	Trace DNAPL at bottom of tape	Approx. 0.6' of DNAPL, approx. 0.02' of LNAPL	Sporadic DNAPL, approx. 0.1' of LNAPL.
MW-06	None Observed	Slight naphthalene- like odor	NR	NR	NR	NR	NR	NR	NR
SHMW-01S/01SR	None Observed	Slight naphthalene- like odor	NR	NR	NR	NR	NR	NR	NR
SHMW-01I/01IR	None Observed	None Observed	NR	NR	NR	NR	NR	NR	NR
SHMW-01D	NI	NI	NI	NI	NI	NI	NI	NI	NI
SHMW-02S	NI	NI	NI	NI	NI	NI	NI	NI	NI
SHMW-02I/02IR	None Observed	Approx. 4.9' of DNAPL, sheen	Approx. 4.7' of DNAPL	Approx. 4.9' of DNAPL	Approx. 1.0' of DNAPL, 3.0' intermittent DNAPL	Approx. 0.6' of DNAPL	Approx. 0.65' of DNAPL	Approx. 0.5' of DNAPL	Approx. 0.45' of DNAPL
SHMW-02D/02DR	None Observed	None Observed	NR	NR	NR	NR	NR	NR	NR
SHMW-03S	None Observed	Odor	NR	NR	NR	NR	NR	NR	NR
SHMW-03I	None Observed	None Observed	NR	NR	NR	NR	NR	NR	NR
SHMW-04S/04SR	None Observed	Approx. 0.6' of DNAPL, naphthalene- like odor	NR	Approx. 0.7' of DNAPL, 2.3' intermittent DNAPL	Approx. 0.55' of DNAPL	Approx. 0.29' of DNAPL	Approx. 0.35' of DNAPL	Approx. 0.22' of DNAPL	Approx. 0.25' of DNAPL
SHMW-04I	None Observed	None Observed	NR	NR	NR	NR	NR	NR	NR
SHMW-05S/05SR	None Observed	Blebs of DNAPL in purge water, odor	NR	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed

Table 2. Summary of Historical NAPL Observations Sag Harber Former MGP Site Groundwater Monitoring Program - Q1 2016

Well ID	May 2002 Observations	May 2004 Observations	Aug 2004 Observations	Oct 2004 Observations	Nov 2004 Observations	Dec 2004 Observations	Jan 2005 Observations	Feb 2005 Observations	Mar 2005 Observations
SHMW-05I/05IR	None Observed	None Observed	NR						
SHMW-06S	Slight sheen and naphthalene-like odor	Naphthalene-like odor	NR						
SHMW-06I	None Observed	None Observed	NR						
SHMW-07S/07SR	Sheen and naphthalene-like odor	Slight odor	NR						
SHMW-07I/07IR	None Observed	None Observed	NR						
SHMW-08S	None Observed	None Observed	NR						
SHMW-08I	None Observed	None Observed	NR						
SHMW-09S	None Observed	Slight naphthalene- like odor	NR						
SHMW-09I	None Observed	None Observed	NR						
SHMW-10S	None Observed	None Observed	NR						
SHMW-10I	None Observed	None Observed	NR						
SHMW-11S	None Observed	None Observed	NR						
SHMW-11I	None Observed	None Observed	NR						
SHMW-12S	None Observed	Sheen, strong sulfur- like odor	NR						
SHMW-12I	None Observed	None Observed	NR						
SHMW-13S	None Observed	None Observed	NR						
SHMW-13I	None Observed	None Observed	NR						

Table 2. Summary of Historical NAPL Observations Sag Harber Former MGP Site Groundwater Monitoring Program - Q1 2016

Well ID	Apr/Q1 2005 Observations	Jun/Q2 2005 Observations	Sep/Q3 2005 Observations	Dec/Q4 2005 Observations	Mar/Q1 2006 Observations	Jun/Q2 2006 Observations	Sep/Q3 2006 Observations	Dec/Q4 2006 Observations	Mar/Q1 2007 Observations
MW-01	NR	NR	NR	NR	NR	NR	NR	NR	NR
MW-02	Approx. 0.15' of DNAPL	Trace DNAPL at bottom of tape	Approx. 0.13' of DNAPL	Approx. 0.09' DNAPL, naphthalene-like odor	Approx. 0.01' DNAPL	Approx. 0.12 ' of DNAPL	Approx. 0.15' DNAPL	Approx. 0.10' DNAPL	Approx.0.20' DNAPL
MW-03	Trace DNAPL at bottom of tape	Trace DNAPL at bottom of tape	Trace DNAPL at bottom of tape	None, naphthalene- like odor	No DNAPL observed	Trace DNAPL (coating on tubes)	Trace DNAPL (coating on tubes)	No DNAPL observed	Trace DNAPL (coating on tubes)
MW-04	None Observed	None Observed	Trace DNAPL at bottom of tape	Trace DNAPL at bottom of tape	Trace DNAPL	Trace DNAPL	Trace DNAPL (coating on tubes)	Trace DNAPL (coating on tubes)	Trace DNAPL (coating on tubes)
MW-05	Sporadic DNAPL, approx. 0.1' of LNAPL.	Approx. 3.0' of DNAPL	Approx. 0.75' of DNAPL, approx. 0.12' of LNAPL	DNAPL blebs in purge H2O, 0.5' DNAPL coating on tubes	Approx. 0.15' of DNAPL, approx. 0.1' of LNAPL	Approx. 0.22' DNAPL; 0.05' of LNAPL	Approx. 0.55' DNAPL; 0.06' of LNAPL	Trace LNAPL; DNAPL in purge water (not measurable)	Trace LNAPL; DNAPL in purge water (not measurable)
MW-06	NR	NR	NR	NR	NR	NR	NR	NR	None Observed
SHMW-01S/01SR	NR	NR	NR	NR	NR	NR	NR	NR	None Observed
SHMW-01I/01IR	NR	NR	NR	NR	NR	NR	NR	NR	None Observed
SHMW-01D	NI	NI	NI	NI	NI	NI	NI	NI	NI
SHMW-02S	NI	NI	NI	NI	NI	NI	NI	NI	NI
SHMW-02I/02IR	Approx. 1.1' of DNAPL	Approx. 0.75' of DNAPL	Approx. 0.4' of DNAPL	Approx. 1.3' of DNAPL, naphthalene- like odor	Approx. 0.35' of DNAPL	Approx. 0.43' of DNAPL	Approx. 0.5' of DNAPL	Trace DNAPL (coating on tubes)	Trace DNAPL (coating on tubes)
SHMW-02D/02DR	NR	NR	NR	NR	NR	NR	NR	NR	None Observed
SHMW-03S	NR	NR	NR	NR	NR	NR	NR	NR	None Observed
SHMW-03I	NR	NR	NR	NR	NR	NR	NR	NR	None Observed
SHMW-04S/04SR	Approx. 0.25' of DNAPL	Approx. 0.90' of DNAPL	Approx. 0.26' of DNAPL	Approx. 0.5' DNAPL, naphthalene-like odor	Approx. 0.25' of DNAPL	Approx. 0.5' of DNAPL	Approx. 0.25' of DNAPL	Approx. 0.30' of DNAPL	Approx.0.40' DNAPL
SHMW-04I	NR	NR	NR	NR	NR	NR	NR	NR	None Observed
SHMW-05S/05SR	None Observed	None Observed	None Observed	None Observed	No DNAPL observed	None Observed	None Observed	None Observed	None Observed

Table 2. Summary of Historical NAPL Observations Sag Harber Former MGP Site Groundwater Monitoring Program - Q1 2016

Well ID	Apr/Q1 2005 Observations	Jun/Q2 2005 Observations	Sep/Q3 2005 Observations	Dec/Q4 2005 Observations	Mar/Q1 2006 Observations	Jun/Q2 2006 Observations	Sep/Q3 2006 Observations	Dec/Q4 2006 Observations	Mar/Q1 2007 Observations
SHMW-05I/05IR	NR	NR	NR	NR	NR	NR	NR	NR	None Observed
SHMW-06S	NR	NR	Trace DNAPL at bottom of tape	Approx. 0.10' DNAPL, naphthalene-like odor	Trace DNAPL	Approx. 0.2' of DNAPL	Approx. 0.2' of DNAPL	Trace DNAPL (coating on tubes)	Trace DNAPL (coating on tubes)
SHMW-06I	NR	NR	NR	NR	NR	NR	NR	NR	None Observed
SHMW-07S/07SR	NR	NR	NR	NR	NR	NR	NR	NR	None Observed
SHMW-07I/07IR	NR	NR	NR	NR	NR	NR	NR	NR	None Observed
SHMW-08S	NR	NR	NR	NR	NR	NR	NR	NR	None Observed
SHMW-08I	NR	NR	NR	NR	NR	NR	NR	NR	None Observed
SHMW-09S	NR	NR	NR	NR	NR	NR	NR	NR	None Observed
SHMW-09I	NR	NR	NR	NR	NR	NR	NR	NR	None Observed
SHMW-10S	NR	NR	NR	NR	NR	NR	NR	NR	None Observed
SHMW-10I	NR	NR	NR	NR	NR	NR	NR	NR	None Observed
SHMW-11S	NR	NR	NR	NR	NR	NR	NR	NR	None Observed
SHMW-11I	NR	NR	NR	NR	NR	NR	NR	NR	None Observed
SHMW-12S	NR	NR	NR	NR	NR	NR	NR	NR	None Observed
SHMW-12I	NR	NR	NR	NR	NR	NR	NR	NR	None Observed
SHMW-13S	NR	NR	NR	NR	NR	NR	NR	NR	None Observed
SHMW-13I	NR	NR	NR	NR	NR	NR	NR	NR	None Observed

Table 2. Summary of Historical NAPL Observations Sag Harber Former MGP Site Groundwater Monitoring Program - Q1 2016

Well ID	Jun/Q2 2007 Observations	Sep/Q3 2007 Observations	Dec/Q4 2007 Observations	Mar/Q1 2008 Observations	Jun/Q2 2008 Observations	Sep/Q3 2008 Obsevations	Dec/Q4 2008 Obsevations	Mar/Q1 2009 Observations	Jun/Q2 2009 Observations
MW-01	NR	NR	None Observed	None Observed	Trace DNAPL	Trace DNAPL (at bottom of tubing)	Well Inaccessible or Abandoned	Well Abandoned	Well Abandoned
MW-02	Approx.0.07' DNAPL	Approx. 0.11' DNAPL	Approx. ~0.08'	Trace DNAPL	Moderate DNAPL; not measureable	Trace DNAPL	Well Inaccessible or Abandoned	Well Abandoned	Well Abandoned
MW-03	None Observed	Trace DNAPL (coating on tubes)	Trace	Trace DNAPL (On bottom 1.5' of tubes)	Trace DNAPL	Trace DNAPL (0.05' at bottom of tubing)	Well Inaccessible or Abandoned	Well Abandoned	Well Abandoned
MW-04	Trace DNAPL (coating on tubes)	Trace DNAPL (coating on tubes)	Approx. ~0.02'	NR	Trace DNAPL	Trace DNAPL (at bottom of tubing)	Well Inaccessible or Abandoned	Well Abandoned	Well Abandoned
MW-05	Well Destroyed	Well Destroyed	Well Destroyed	Well Destroyed	Well Destroyed	Well Destroyed	Well Destroyed	Well Destroyed	Well Destroyed
MW-06	NR	NR	None Observed	None Observed	None Observed	None Observed	Well Inaccessible or Abandoned	Well Abandoned	Well Abandoned
SHMW-01S/01SR	NR	NR	None Observed	None Observed	None Observed	None Observed	Well Inaccessible or Abandoned	Well Abandoned	Well Abandoned
SHMW-01I/01IR	NR	NR	None Observed	NR	NR	NR	Well Inaccessible or Abandoned	Well Abandoned	Well Abandoned
SHMW-01D	NI	NI	NI	NI	NI	NI	NI	NI	NI
SHMW-02S	NI	NI	NI	NI	NI	NI	NI	NI	NI
SHMW-02I/02IR	Trace DNAPL (coating on tubes)	Trace DNAPL (coating on tubes)	Approx. ~0.60'	Approx. 3' DNAPL	Approx. 1.5' DNAPL	Approx. 4' DNAPL	Well Inaccessible or Abandoned	Well Abandoned	Well Abandoned
SHMW-02D/02DR	NR	NR	None Observed	NR	NR	NR	Well Inaccessible or Abandoned	Well Abandoned	Well Abandoned
SHMW-03S	NR	NR	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed
SHMW-03I	NR	NR	None Observed	NR	NR	NR	None Observed	NR	None Observed
SHMW-04S/04SR	Approx.0.50' DNAPL	Approx. 0.5' DNAPL	Approx. ~0.61'	Approx. 1.05' DNAPL	Approx.0.6' DNAPL	Approx.0.75' DNAPL	Well Inaccessible or Abandoned	Well Abandoned	Well Abandoned
SHMW-04I	NR	NR	None Observed	NR	NR	NR	Well Inaccessible or Abandoned	Well Abandoned	Well Abandoned
SHMW-05S/05SR	None Observed	NR	None Observed	None Observed	None Observed	None Observed	Well Inaccessible or Abandoned	Well Abandoned	Well Abandoned

Table 2. Summary of Historical NAPL Observations Sag Harber Former MGP Site Groundwater Monitoring Program - Q1 2016

Well ID	Jun/Q2 2007 Observations	Sep/Q3 2007 Observations	Dec/Q4 2007 Observations	Mar/Q1 2008 Observations	Jun/Q2 2008 Observations	Sep/Q3 2008 Obsevations	Dec/Q4 2008 Obsevations	Mar/Q1 2009 Observations	Jun/Q2 2009 Observations
SHMW-05I/05IR	NR	NR	None Observed	NR	NR	NR	Well Inaccessible or Abandoned	Well Abandoned	Well Abandoned
SHMW-06S	Trace DNAPL (coating on tubes)	Trace DNAPL (coating on tubes)	Trace	Trace DNAPL (on tubing)	Trace DNAPL	Trace DNAPL (on tubing)	Well Inaccessible or Abandoned	Well Abandoned	Well Abandoned
SHMW-06I	NR	NR	None Observed	NR	NR	NR	Well Inaccessible or Abandoned	Well Abandoned	Well Abandoned
SHMW-07S/07SR	NR	NR	Trace	NR	NR	Trace DNAPL (on side of tubing approx 1' off bottom)	Well Inaccessible or Abandoned	Well Inaccessible	None Observed
SHMW-07I/07IR	NR	NR	None Observed	NR	NR	NR	Well Inaccessible or Abandoned	Well Inaccessible	None Observed
SHMW-08S	NR	NR	None Observed	None Observed	None Observed	None Observed	Well Inaccessible or Abandoned	Well Inaccessible	None Observed
SHMW-08I	NR	NR	None Observed	NR	NR	NR	Well Inaccessible or Abandoned	Well Inaccessible	None Observed
SHMW-09S	NR	NR	None Observed	None Observed	None Observed	None Observed	None Observed	Well Inaccessible	None Observed
SHMW-09I	NR	NR	None Observed	NR	NR	NR	NR	NR	NR
SHMW-10S	NR	NR	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed
SHMW-10I	NR	NR	None Observed	NR	NR	NR	NR	NR	NR
SHMW-11S	NR	NR	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed
SHMW-11I	NR	NR	None Observed	NR	NR	NR	NR	NR	NR
SHMW-12S	NR	NR	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed
SHMW-12I	NR	NR	None Observed	NR	NR	NR	NR	NR	NR
SHMW-13S	NR	NR	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed
SHMW-13I	NR	NR	None Observed	NR	NR	NR	NR	NR	NR

Table 2. Summary of Historical NAPL Observations Sag Harber Former MGP Site Groundwater Monitoring Program - Q1 2016

Well ID	Sep/Q3 2009 Observations	Dec/Q4 2009 Observations	Mar/Q1 2010 Observations	Jun/Q2 2010 Observations	Sep/Q3 2010 Observations	Dec/Q4 2010 Observations	Mar/Q1 2011 Observations	Jun/Q2 2011 Observations	Sep/Q3 2011 Observations
MW-01	Well Abandoned	Well Abandoned	Well Abandoned	Well Abandoned					
MW-02	Well Abandoned	Well Abandoned	Well Abandoned	Well Abandoned					
MW-03	Well Abandoned	Well Abandoned	Well Abandoned	Well Abandoned					
MW-04	Well Abandoned	Well Abandoned	Well Abandoned	Well Abandoned					
MW-05	Well Destroyed	Well Destroyed	Well Destroyed	Well Destroyed					
MW-06	Well Abandoned	Well Abandoned	Well Abandoned	Well Abandoned					
SHMW-01S/01SR	Well Abandoned	None Observed	None Observed	None Observed	None Observed				
SHMW-01I/01IR	Well Abandoned	None Observed	None Observed	None Observed	None Observed				
SHMW-01D	NI	NI	NI	NI	NI	None Observed	None Observed	None Observed	None Observed
SHMW-02S	NI	NI	NI	NI	NI	None Observed	None Observed	None Observed	None Observed
SHMW-02I/02IR	Well Abandoned	None Observed	Well Damaged	Well Damaged	Well Damaged				
SHMW-02D/02DR	Well Abandoned	None Observed	None Observed	None Observed	None Observed				
SHMW-03S	None Observed	None Observed	None Observed	None Observed					
SHMW-03I	NR	None Observed	None Observed	None Observed	None Observed				
SHMW-04S/04SR	Well Abandoned	Trace LNAPL - DNAPL observed on tubing	Trace LNAPL - DNAPL observed on tubing	Trace LNAPL - DNAPL observed on tubing	None Observed				
SHMW-04I	Well Abandoned	Well Abandoned	Well Abandoned	Well Abandoned					
SHMW-05S/05SR	Well Abandoned	None Observed	None Observed	None Observed	None Observed				

Table 2. Summary of Historical NAPL Observations Sag Harber Former MGP Site Groundwater Monitoring Program - Q1 2016

Well ID	Sep/Q3 2009 Observations	Dec/Q4 2009 Observations	Mar/Q1 2010 Observations	Jun/Q2 2010 Observations	Sep/Q3 2010 Observations	Dec/Q4 2010 Observations	Mar/Q1 2011 Observations	Jun/Q2 2011 Observations	Sep/Q3 2011 Observations
SHMW-05I/05IR	Well Abandoned	Well Abandoned	Well Abandoned	Well Abandoned	Well Abandoned	None Observed	None Observed	None Observed	None Observed
SHMW-06S	Well Abandoned	Well Abandoned	Well Abandoned	Well Abandoned	Well Abandoned	Well Abandoned	Well Abandoned	Well Abandoned	Well Abandoned
SHMW-06I	Well Abandoned	Well Abandoned	Well Abandoned	Well Abandoned	Well Abandoned	Well Abandoned	Well Abandoned	Well Abandoned	Well Abandoned
SHMW-07S/07SR	Trace DNAPL (on side of tubing)	None Observed	None Observed	Well Inaccessible	Well Inaccessible	Trace LNAPL - DNAPL observed on tubing	Trace LNAPL - DNAPL observed on tubing	Trace LNAPL - DNAPL observed on tubing	None Observed
SHMW-07I/07IR	NR	None Observed (approximately 10 feet of sand present in well)	None Observed (approximately 10 feet of sand present in well)	Well Inaccessible	Well Inaccessible	None Observed	None Observed	None Observed	None Observed
SHMW-08S	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed
SHMW-08I	NR	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed
SHMW-09S	None Observed	None Observed	Well Inaccessible	None Observed	None Observed	No access	No access	No access	No access
SHMW-09I	NR	None Observed	None Observed	None Observed	None Observed	No access	No access	No access	No access
SHMW-10S	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed
SHMW-10I	NR	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed
SHMW-11S	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed
SHMW-11I	NR	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed
SHMW-12S	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed
SHMW-12I	NR	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed
SHMW-13S	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed
SHMW-13I	NR	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed	None Observed

Table 2. Summary of Historical NAPL Observations Sag Harber Former MGP Site Groundwater Monitoring Program - Q1 2016

Well ID	Dec/Q4 2011 Observations	Mar/Q1 2012 Observations	Jun/Q2 2012 Observations	Sep/Q3 2012 Observations	Dec/Q4 2012 Observations	Mar/Q1 2013 Observations	Jun/Q2 2013 Observations	Sep/Q3 2013 Observations	Dec/Q4 2013 Observations
MW-01	Well Abandoned								
MW-02	Well Abandoned								
MW-03	Well Abandoned								
MW-04	Well Abandoned								
MW-05	Well Destroyed								
MW-06	Well Abandoned								
SHMW-01S/01SR	None Observed								
SHMW-01I/01IR	None Observed								
SHMW-01D	None Observed								
SHMW-02S	None Observed								
SHMW-02I/02IR	None Observed	Approx. 6" of DNAPL							
SHMW-02D/02DR	None Observed								
SHMW-03S	None Observed								
SHMW-03I	None Observed								
SHMW-04S/04SR	None Observed								
SHMW-04I	Well Abandoned								
SHMW-05S/05SR	None Observed								

Table 2. Summary of Historical NAPL Observations Sag Harber Former MGP Site Groundwater Monitoring Program - Q1 2016

Well ID	Dec/Q4 2011 Observations	Mar/Q1 2012 Observations	Jun/Q2 2012 Observations	Sep/Q3 2012 Observations	Dec/Q4 2012 Observations	Mar/Q1 2013 Observations	Jun/Q2 2013 Observations	Sep/Q3 2013 Observations	Dec/Q4 2013 Observations
SHMW-05I/05IR	None Observed								
SHMW-06S	Well Abandoned								
SHMW-06I	Well Abandoned								
SHMW-07S/07SR	None Observed								
SHMW-07I/07IR	None Observed								
SHMW-08S	None Observed								
SHMW-08I	None Observed								
SHMW-09S	No access	None Observed	None Observed	None Observed					
SHMW-09I	No access	None Observed	None Observed	None Observed					
SHMW-10S	None Observed								
SHMW-10I	None Observed								
SHMW-11S	None Observed								
SHMW-11I	None Observed								
SHMW-12S	None Observed								
SHMW-12I	None Observed								
SHMW-13S	None Observed								
SHMW-13I	None Observed								

Table 2. Summary of Historical NAPL Observations Sag Harber Former MGP Site Groundwater Monitoring Program - Q1 2016

Well ID	Mar/Q1 2014 Observations	Jun/Q2 2014 Observations	Sep/Q3 2014 Observations	Dec/Q4 2014 Observations	Mar/Q1 2015 Observations	June/Q2 2015 Observations	Sep/Q3 2015 Observations	Dec/Q4 2015 Observations	Mar/Q1 2016 Observations
MW-01	Well Abandoned	Well Abandoned	Well Abandoned	Well Abandoned					
MW-02	Well Abandoned	Well Abandoned	Well Abandoned	Well Abandoned					
MW-03	Well Abandoned	Well Abandoned	Well Abandoned	Well Abandoned					
MW-04	Well Abandoned	Well Abandoned	Well Abandoned	Well Abandoned					
MW-05	Well Destroyed	Well Destroyed	Well Destroyed	Well Destroyed					
MW-06	Well Abandoned	Well Abandoned	Well Abandoned	Well Abandoned					
SHMW-01S/01SR	None Observed	None Observed	None Observed	None Observed					
SHMW-01I/01IR	None Observed	None Observed	None Observed	None Observed					
SHMW-01D	None Observed	None Observed	None Observed	None Observed					
SHMW-02S	None Observed	None Observed	None Observed	None Observed					
SHMW-02I/02IR	None Observed	None Observed	None Observed	None Observed	Approx. 14" of DNAPL	Approx. 19" of DNAPL	Approx. 18" of DNAPL	Approx. 1" of DNAPL	Approx. 1" of DNAPL
SHMW-02D/02DR	None Observed	None Observed	None Observed	None Observed					
SHMW-03S	None Observed	None Observed	None Observed	None Observed					
SHMW-03I	None Observed	None Observed	None Observed	None Observed					
SHMW-04S/04SR	None Observed	None Observed	None Observed	None Observed	Approx. 1.5" of DNAPL	None Observed	None Observed	None Observed	None Observed
SHMW-04I	Well Abandoned	Well Abandoned	Well Abandoned	Well Abandoned					
SHMW-05S/05SR	None Observed	None Observed	None Observed	None Observed					

Table 2. Summary of Historical NAPL Observations Sag Harber Former MGP Site Groundwater Monitoring Program - Q1 2016

Well ID	Mar/Q1 2014 Observations	Jun/Q2 2014 Observations	Sep/Q3 2014 Observations	Dec/Q4 2014 Observations	Mar/Q1 2015 Observations	June/Q2 2015 Observations	Sep/Q3 2015 Observations	Dec/Q4 2015 Observations	Mar/Q1 2016 Observations
SHMW-05I/05IR	None Observed	None Observed	None Observed	None Observed					
SHMW-06S	Well Abandoned	Well Abandoned	Well Abandoned	Well Abandoned					
SHMW-06I	Well Abandoned	Well Abandoned	Well Abandoned	Well Abandoned					
SHMW-07S/07SR	None Observed	DNAPL Blebs on tubing	DNAPL Blebs on tubing	Approx. 1" of DNAPL	None Observed	DNAPL Blebs on tubing	DNAPL Blebs on tubing	DNAPL Blebs on tubing	Approx. 2" of DNAPL
SHMW-07I/07IR	None Observed	None Observed	None Observed	None Observed					
SHMW-08S	None Observed	None Observed	None Observed	None Observed					
SHMW-08I	None Observed	None Observed	None Observed	None Observed					
SHMW-09S	None Observed	Approx. 0.25" of DNAPL	None Observed	None Observed	None Observed				
SHMW-09I	None Observed	None Observed	None Observed	None Observed					
SHMW-10S	None Observed	None Observed	None Observed	None Observed					
SHMW-10I	None Observed	None Observed	None Observed	None Observed					
SHMW-11S	None Observed	None Observed	None Observed	None Observed					
SHMW-11I	None Observed	None Observed	None Observed	None Observed					
SHMW-12S	None Observed	None Observed	None Observed	None Observed					
SHMW-12I	None Observed	None Observed	None Observed	None Observed					
SHMW-13S	None Observed	None Observed	None Observed	None Observed					
SHMW-13I	None Observed	None Observed	None Observed	None Observed					

General Notes:

DNAPL = Dense Non-aqueous Phase Liquid
LNAPL = Light Non-aqueous Phase Liquid WC = Water Column NR = Gauging Not Required NI = Not Installed

Table 3. Summary of BTEX, MTBE, and PAH Results Sag Harbor Former MGP Site Groundwater Monitoring Program - Q1 2016

		L	ocation Name	SHMW-04SR	SHMW-04SR	SHMW-05SR	SHMW-07SR	SHMW-08S	SHMW-09S	SHMW-11S	SHMW-12S
	1	1	Sample Date	3/15/2016	3/15/2016	3/15/2016	3/15/2016	3/15/2016	3/23/2016	3/15/2016	3/15/2016
					DUP-01						
Analyte	Units	CAS No.	NYS AWQS								
BTEX	μg/L				I.						
Benzene		71-43-2	1	29	29	6	210	4	57	1 U	130
Toluene		108-88-3	5	9	9	1 U	7	1 U	1 U	1 U	1 U
Ethylbenzene		100-41-4	5	160	160	1 U	230	1 U	10	1 U	9
Total Xylene		1330-20-7	5	130	130	2	130	1 U	17	1 U	20
Total BTEX (ND=0)		TBTEX_ND0	NE	328	328	8	577	4	84	ND	159
Other VOCs	μg/L				•	•					
Methyl tert-butyl ether (MTBE)		1634-04-4	10*	10 U	10 U	10 U	10 U	5 J	10 U	10 U	10 U
NYSDEC PAH17	μg/L				•	•					
Acenaphthene		83-32-9	20*	59	75 J	25 J	54	23	45	10 U	4 J
Acenaphthylene		208-96-8	NE	2 J	2 J	10 U	3 J	1 J	10 U	10 U	10 U
Anthracene		120-12-7	50*	4 J	5 J	10 U	18	4 J	2 J	10 U	10 U
Benzo(a)anthracene		56-55-3	0.002*	10 U	10 U	10 U	11	10 U	10 U	10 U	10 U
Benzo(b)fluoranthene		205-99-2	0.002*	10 U	10 U	10 U	7 J	10 U	10 U	10 U	10 U
Benzo(k)fluoranthene		207-08-9	0.002*	10 U	10 U	10 U	2 J	10 U	10 U	10 U	10 U
Benzo(g,h,i)perylene		191-24-2	NE	10 U	10 U	10 U	4 J	10 U	10 U	10 U	10 U
Benzo(a)pyrene		50-32-8	ND	10 U	10 U	10 U	9 J	10 U	10 U	10 U	10 U
Chrysene		218-01-9	0.002*	10 U	10 U	10 U	11	10 U	10 U	10 U	10 U
Dibenz(a,h)anthracene		53-70-3	NE	10 U							
Fluoranthene		206-44-0	50*	3 J	3 J	10 U	28	3 J	10 U	10 U	10 U
Fluorene		86-73-7	50*	16	18	5 J	22	11	10	10 U	10 U
Indeno(1,2,3-cd)pyrene		193-39-5	0.002*	10 U	10 U	10 U	3 J	10 U	10 U	10 U	10 U
2-Methylnaphthalene		91-57-6	NE	19	24	6 J	46	3 J	7 J	10 U	3 J
Naphthalene		91-20-3	10*	230	250	66	420	61	300	10 U	220
Phenanthrene		85-01-8	50*	23	27	4 J	74	23	9 J	10 U	10 U
Pyrene		129-00-0	50*	3 J	3 J	10 U	33	3 J	10 U	10 U	10 U
Total PAH (17) (ND=0)		TPAH17_ND0	NE	359	407	106	745	132	373	ND	227

μg/L = micrograms per liter or parts per billion (ppb)

BTEX = benzene, toluene, ethylbenzene, and xylenes

PAH = polycyclic aromatic hydrocarbons

VOCs = volatile organic compounds

Total BTEX and Total PAHs are calculated using detects only.

NYS AWQS - New York State Ambient Water Quality Standards and Guidance Values for GA groundwater

\* indicates the value is a guidance value and not a standard

MGP = Manufactured Gas Plant

ND = not detected

NE = not established

NYSDEC = New York State Department of Environmental Conservation

Bolding indicates a detected result concentration

Gray shading and bolding indicates that the detected result value exceeds the NYS AWQS

Validator Qualifiers:

J = estimated value

U = indicates not detected to the reporting limit

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**Table 4. Summary of Historical Total BTEX Results** Sag Harbor Former MGP Site **Groundwater Monitoring Program - Q1 2016** 

	Screen								Total I	STEX Cond	centrations	(μg/L)							
Well No.										Sampli	ng Date								
Well No.	Interval (feet)	1995	20	000	2002	20	04		20	05			20	06			20	07	
	` '	Nov	Mar	Apr	May	May	Aug	Mar/Apr	Jun	Sep	Dec	Mar	Jun	Sep	Dec	Mar	Jun	Sep	Dec
MW-01	1.50 - 7.32	2,720	10	68	9	4	0	0	12	67	0	21	47	310	190	160	240	150	270
MW-02	0.50 - 7.25	5,429	8,840	7,940	5,840	13,287	8,740	7,333	13,010		13,720	7,591		14,174	12,267	8,678	12,810	15,181	98
MW-03	2.17 - 10.17	1,222	668	1,553	1,363	2,573		2,050	2,867	560	2,622	4,880	1,971	4,965	2,398	1,680	2,930	3,225	2,831
MW-04	1.25 - 6.81	864	35		10	208		0	0	225	299	268	193	181	101	0	51	89	66
MW-05	2.46 - 7.46	9,100	170	5	102	11,600	2,938	2,697	18,900			-			-				
MW-06	2.47 - 7.47	334	47	30	91	49	-	33	55	39	36	74	37	11	54	0	37	31	0
SHMW-01S/01SR	1.0 - 6.0			1,413	874	2,102	-	1,367	1,810	406	1,313	2,562	2,085	5,183	2,915	691	2,460	2,600	1,684
SHMW-01I/01IR	35.0 - 45.0			5	0	0					0				0	0		-	
SHMW-01D	65.0 - 75.0				-		-					-			-				
SHMW-02S	1.0 - 6.0																	-	
SHMW-02I/02IR	35.0 - 45.0			26	0	1,179	16	20	20	19	25	0	0	0	0		11	12	15
SHMW-02D/02DR	65.0 - 75.0			5	4	0					0				0			-	0
SHMW-03S	2.0 - 12.0			63	0	110		48	53	46	75	131	67	97	13	122	80	12	50
SHMW-03I	35.0 - 45.0			0	52	0					0				0			-	0
SHMW-04S/04SR	2.0 - 12.0			7,940	3,154	12,180		9,369	17,730	8,960	21,920	25,860	9,361	18,398	10,489	6,883	20,488	16,120	10,378
SHMW-04I	35.0 - 45.0			5	0	0					0				0			-	0
SHMW-05S/05SR	2.0 - 12.0			37	69	83		107	282	2,960	115	202	45	43	26	35	458	676	98
SHMW-05I/05IR	35.0 - 45.0			0	0	0					0				0			-	0
SHMW-06S	2.0 - 6.0			2,392	2,463	3,057		2,630	1,950		2,910	2,622	1,702	4,289	2,196	1,475	2,285	2,162	1,565
SHMW-06I	35.0 - 45.0			0	0	0	-			-	0				0				0
SHMW-07S/07SR	1.0 - 11.0			2,011	1,562	414		1,482	3,340	2,458	1,722	1,400	1,060		1,137	185		2,139	726
SHMW-07I/07IR	35.0 - 45.0			0	0	0					0		-		0			-	0
SHMW-08S	1.0 - 7.0			5	2	9	-	0	14	0	15	11	0	19	0	0	0	0	12
SHMW-08I	35.0 - 45.0			0	0	0					0				0			-	0
SHMW-09S	2.0 - 12.0			1,024	506	1,100		500	1,000		920	1,130	770	768	500	418	1,240	178	600
SHMW-09I	35.0 -45.0			0	0	0					0	-	-		0			-	0
SHMW-10S	5.0 -15.0				0	0		0	0	0	0	0	0	0	0	0	0	0	0
SHMW-10I	35.5 - 45.5				0	0					0				0				0
SHMW-11S	3.5 - 13.5				0	0		0	0	0	0	0	0	0	0	0	0	0	0
SHMW-11I	35.0 - 45.0				0	0					0		-		0	-		-	0
SHMW-12S	1.5 - 6.5				0	344		142	930	69	290	140	463	581	182	85	623	81	0
SHMW-12I	35.0 - 45.0				0	0	-			-	0	-	-		0	-		-	23
SHMW-13S	1.5 - 6.5				0	0		0	0	0	0	0	0	0	0	0	0	0	0
SHMW-13I	35.0 - 45.0				0	0	-				0		-		0	-			0

**Table 4. Summary of Historical Total BTEX Results** Sag Harbor Former MGP Site **Groundwater Monitoring Program - Q1 2016** 

	Caraan								Total I	BTEX Cond	centrations	(µg/L)							
Well No.	Screen									Sampli	ng Date								
well no.	Interval (feet)		20	008			20	009			20	)10			20	11		20	12
	(leet)	Mar	Jun	Sep	Dec	Mar	Jun	Sep	Dec	Mar	Jun	Sep	Dec	Mar	Jun	Sep	Dec	Mar	Jun
MW-01	1.50 - 7.32	337	141	208															
MW-02	0.50 - 7.25	8,865	7,415	2,240	-														
	2.17 - 10.17	2,842	2,241	2,875	-														
MW-04	1.25 - 6.81		15	79		-								-					
MW-05	2.46 - 7.46																		
MW-06	2.47 - 7.47	1	33	7	-														
SHMW-01S/01SR	1.0 - 6.0	1,595	306	243									0	1	0	0	3	0	0
SHMW-01I/01IR	35.0 - 45.0												0				3		
SHMW-01D	65.0 - 75.0				-								0				3		
SHMW-02S	1.0 - 6.0												3	0	3	0	5	1	0
SHMW-02I/02IR	35.0 - 45.0	18	41	29									4	0			14		
SHMW-02D/02DR	65.0 - 75.0												0	-			0		
SHMW-03S	2.0 - 12.0	3	0	5	13	111	24	4	9	40	5	0	9	24	2	3	18	0	1
SHMW-03I	35.0 - 45.0				0		0		0				0				0		
SHMW-04S/04SR	2.0 - 12.0	7,567	8,059	7,561									2,717	702	469	292	572	391	709
SHMW-04I	35.0 - 45.0																		
SHMW-05S/05SR	2.0 - 12.0	77	83	64									20	22	25	27	45	25	29
SHMW-05I/05IR	35.0 - 45.0												0				0		
SHMW-06S	2.0 - 6.0	1,296	1,343	1,298															
SHMW-06I	35.0 - 45.0																		
SHMW-07S/07SR	1.0 - 11.0		1,075	1,374			1,500	3,472	2,183	1,825	3,946		858	455	1,172	607	700	1,418	670
SHMW-07I/07IR	35.0 - 45.0												0				11		
SHMW-08S	1.0 - 7.0	8	9	10			5	5	4	6	13	4	9	7	10	5	9	5	7
SHMW-08I	35.0 - 45.0						0		0				0				5		
SHMW-09S	2.0 - 12.0	1,039	1,298	671	483		584	455	224										
SHMW-09I	35.0 -45.0				0		0		0										
SHMW-10S	5.0 -15.0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SHMW-10I	35.5 - 45.5				0		0		0				0				5		
SHMW-11S	3.5 - 13.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0
SHMW-11I	35.0 - 45.0				0	-	0		0				0				0		
SHMW-12S	1.5 - 6.5	166	482	111	279	28	315	45	58	222	217	8	70	82	672	473	337	127	434
SHMW-12I	35.0 - 45.0				0				2				0				6		
SHMW-13S	1.5 - 6.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	12	0
SHMW-13I	35.0 - 45.0				0		0		0				0				0		

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**Table 4. Summary of Historical Total BTEX Results** Sag Harbor Former MGP Site **Groundwater Monitoring Program - Q1 2016** 

	0								Total I	BTEX Cond	entrations	s (µg/L)							
	Screen								S	ampling Da	te								
Well No.	Interval	20	)12		20	13			20	)14			20	15		2016	Min	Max	Mean
	(feet)	Sep	Dec	Mar	Jun	Sep	Dec	Mar	Jun	Sep	Dec	Mar	Jun	Sep	Dec	Mar			
MW-01	1.50 - 7.32										-			-			0	2,720	236
MW-02	0.50 - 7.25										-			-			98	15,181	9,129
MW-03	2.17 - 10.17										-			-			560	4,965	2,416
MW-04	1.25 - 6.81										-			-			0	864	149
MW-05	2.46 - 7.46										-			-			5	18,900	5,689
MW-06	2.47 - 7.47																0	334	50
SHMW-01S/01SR	1.0 - 6.0	0	0	1	8	0	0	0		0				0			0	5,183	930
SHMW-01I/01IR	35.0 - 45.0		0				1				-			-			0	5	1
SHMW-01D	65.0 - 75.0		0				0				-			-			0	3	1
SHMW-02S	1.0 - 6.0	0	0	0	5	0	0	0		0	-			0			0	5	1
SHMW-02I/02IR	35.0 - 45.0		0				11			0	-			115			0	1,179	63
SHMW-02D/02DR	65.0 - 75.0		0				0										0	5	1
SHMW-03S	2.0 - 12.0	1	0	6	0	0	2	3		5	-			47			0	131	31
SHMW-03I	35.0 - 45.0		0				4			0	-			0			0	52	4
SHMW-04S/04SR	2.0 - 12.0	654	449	158	14	949	1,846	145	504	900	302	369	428	504	297	328	14	25,860	5,903
SHMW-04I	35.0 - 45.0																0	5	1
SHMW-05S/05SR	2.0 - 12.0	28	16	16	683	17	21	13	12	15	9	12	7	14	20	8	7	2,960	164
SHMW-05I/05IR	35.0 - 45.0		0				0			0	-			0			0	0	0
SHMW-06S	2.0 - 6.0										-			1			1,296	4,289	2,214
SHMW-06I	35.0 - 45.0																0	0	0
SHMW-07S/07SR	1.0 - 11.0	2,822	251	1,289	852	972	1,305	769	1991	3,508	840	0	1,777	1,938	1,362	577	0	3,946	1,456
SHMW-07I/07IR	35.0 - 45.0		0				0	-			-			-			0	11	1
SHMW-08S	1.0 - 7.0	2	6	5	6	4	3	8	4	2	5	10	4	5	5	4	0	19	6
SHMW-08I	35.0 - 45.0		0				0			0				0			0	5	0
SHMW-09S	2.0 - 12.0	130	165	167	198	118	93	155	193	136	53	92	136	102	86	84	53	1,298	481
SHMW-09I	35.0 -45.0	0	0				2			4	-			408			0	408	30
SHMW-10S	5.0 -15.0	0	0	0	0	0	0	0		0	-			0			0	1	0
SHMW-10I	35.5 - 45.5		0				0				-						0	5	0
SHMW-11S	3.5 - 13.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0
SHMW-11I	35.0 - 45.0		0				0							-			0	0	0
SHMW-12S	1.5 - 6.5	41	19	87	175	142	26	67	175	56	159	82	407	136	154	159	0	930	212
SHMW-12I	35.0 - 45.0		0				0										0	23	3
SHMW-13S	1.5 - 6.5	0	0	0	0	0	0	0		0				0			0	12	0
SHMW-13I	35.0 - 45.0		0				0										0	0	0
		NOTES:										•					•	•	

#### NOTES:

-- not analyzed or not applicable

μg/L - micrograms per liter

BTEX - benzene, toluene, ethylbenzene, and xylenes

Table 5. Summary of Historical Total PAH Results Sag Harbor Former MGP Site Groundwater Monitoring Program - Q1 2016

	Screen								Total	PAH Conc	entrations	(μg/L)							
Well No.	Interval									Sampli	ng Date								
well No.	(feet)	1995	20	000	2002	20	04		20	05			20	006			20	07	
	(leet)	Nov	Mar	Apr	May	May	Aug	Mar/Apr	June	Sept	Dec	March	June	Sept	Dec	March	June	Sept	Dec
MW-01	1.50 - 7.32	4,906	1,548	257	402	30	24	0	61	200	0	0	0	97	95	0	54	87	39
MW-02	0.50 - 7.25	6,991	5,511	5,114	10,729	25,167	4,414	5,809	10,504		6,919	5,209		0	8,617	3,150	7,421	5,398	165
MW-03	2.17 - 10.17	7,034	3,065	3,433	3,774	3,522		2,272	4,557	516	92	1,256	565	4,831	6,212	349	489	463	2,904
MW-04	1.25 - 6.81	3,612	75		0	90		0	22	1,098	103	11	37	66	31	0	66	238	6
MW-05	2.46 - 7.46	16,386	779	101	1,160	431,600	2,049	918	188,200										
MW-06	2.47 - 7.47	5,416	894	653	258	33		90	79	204	0	22	0	0	645	35	46	17	0
SHMW-01S/01SR	1.0 - 6.0			4,147	2,663	2,424		1,989	2,185	840	0	42	115	3,989	3,874	0	1,058	1,691	42
SHMW-01I/01IR	35.0 - 45.0			32	0	0					0				0				
SHMW-01D	65.0 - 75.0																		
SHMW-02S	1.0 - 6.0																		
SHMW-02I/02IR	35.0 - 45.0			266	0	580,200	41	185	124	271	30	74	32	91	89	0	10	175	32
SHMW-02D/02DR	65.0 - 75.0	-		308	76	89					0				0				15
SHMW-03S	2.0 - 12.0			422	0	295		79	130	117	339	0	0	147	118	430	191	12	154
SHMW-03I	35.0 - 45.0			2	320	0				-	0				0				0
SHMW-04S/04SR	2.0 - 12.0			4,275	5,107	5,965		3,959	6,669	4,684	5,879	2,364	3,572	4,196	6,250	2,632	3,999	4,693	4,305
SHMW-04I	35.0 - 45.0	-		18	0	0				-	0				0				0
SHMW-05S/05SR	2.0 - 12.0	-		13	170	94		82	91	26	53	17	11	11	110	0	0	14	8
SHMW-05I/05IR	35.0 - 45.0			0	17	0					0				0				0
SHMW-06S	2.0 - 6.0			4,130	4,694	3,024		3,162	2,366		4,157	120	201	3,900	4,062	1,703	3,574	4,368	380
SHMW-06I	35.0 - 45.0	-		2	0	0				-	0				0				0
SHMW-07S/07SR	1.0 - 11.0	-		7,211	6,585	2,708		3,224	4,604	6,187	3,507	2,004	3,119		3,721	0		3,902	4
SHMW-07I/07IR	35.0 - 45.0			0	0	0					0				2,212				0
SHMW-08S	1.0 - 7.0			110	71	94		25	70	33	83	112	57	77	99	13	90	10	13
SHMW-08I	35.0 - 45.0			13	0	0					0				0				0
SHMW-09S	2.0 - 12.0			1,787	2,472	1,697		1,463	1,600	-	2,609	94	1,935	1,138	2,737	48	206	2,246	130
SHMW-09I	35.0 -45.0			3	0	0					0				0				0
SHMW-10S	5.0 -15.0				22	6		0	0	0	0	0	0	0	0	0	0	0	1
SHMW-10I	35.5 - 45.5				0	0					0				0				0
SHMW-11S	3.5 - 13.5				0	3		173	0	0	0	0	0	0	0	0	0	0	0
SHMW-11I	35.0 - 45.0	-			0	0				-	0				0				4
SHMW-12S	1.5 - 6.5	-			60	218		71	600	230	260	110	470	310	280	15	560	0	155
SHMW-12I	35.0 - 45.0				0	0				-	0				0				20
SHMW-13S	1.5 - 6.5				0	0		0	0	0	0	0	0	0	0	0	0	0	0
SHMW-13I	35.0 - 45.0				0	0					0				0				0

Table 5. Summary of Historical Total PAH Results Sag Harbor Former MGP Site Groundwater Monitoring Program - Q1 2016

	Screen							Total		entrations	(µg/L)						
Well No.	Interval								Sampli	ng Date							
Well No.	(feet)		20	008			20	009			20	10			20	)11	
	(ICCI)	March	June	Sep	Dec	March	June	Sept	Dec	March	June	Sept	Dec	March	June	Sept	Dec
MW-01	1.50 - 7.32	145	2	35													
MW-02	0.50 - 7.25	400	3,455	3,488													
MW-03	2.17 - 10.17	508	96	1,109					-			-					
MW-04	1.25 - 6.81		0	22													
MW-05	2.46 - 7.46																
MW-06	2.47 - 7.47	0	0	10					-			-					
SHMW-01S/01SR	1.0 - 6.0	0	0	0					-			-	0	0	0	0	4
SHMW-01I/01IR	35.0 - 45.0								-			-	0				0
SHMW-01D	65.0 - 75.0												0				0
SHMW-02S	1.0 - 6.0								-			-	0	0	0	0	0
SHMW-02I/02IR	35.0 - 45.0	8	42	209					-			-	9	3			0
SHMW-02D/02DR	65.0 - 75.0												0				0
SHMW-03S	2.0 - 12.0	0	0	17	29	0	20	0	0	0	22	0	0	2	7	25	22
SHMW-03I	35.0 - 45.0				0	-	0		0			-	0				0
SHMW-04S/04SR	2.0 - 12.0	0	1,328	1,868					-			-	3,598	1,440	978	811	942
SHMW-04I	35.0 - 45.0																
SHMW-05S/05SR	2.0 - 12.0	2	0	31									0	4	167	273	131
SHMW-05I/05IR	35.0 - 45.0												0				0
SHMW-06S	2.0 - 6.0	0	44	5,848					-			-					
SHMW-06I	35.0 - 45.0																
SHMW-07S/07SR	1.0 - 11.0		54	3,252			2,919	4,722	5,286	3,410	4,547		1,456	0	1,736	885	955
SHMW-07I/07IR	35.0 - 45.0												0				4
SHMW-08S	1.0 - 7.0	14	21	55			59	60	112	129	201	34	3	11	185	195	35
SHMW-08I	35.0 - 45.0						1		0			-	0				0
SHMW-09S	2.0 - 12.0	0	92	485	503		68	39	389								
SHMW-09I	35.0 -45.0				0		0		0								
SHMW-10S	5.0 -15.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
SHMW-10I	35.5 - 45.5				0		0		0			-	0				0
SHMW-11S	3.5 - 13.5	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	4
SHMW-11I	35.0 - 45.0				0		0		0			-	0				0
SHMW-12S	1.5 - 6.5	9	137	259	280	0	332	4	216	177	585	3	0	0	584	739	513
SHMW-12I	35.0 - 45.0				0				0				0				2
SHMW-13S	1.5 - 6.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2
SHMW-13I	35.0 - 45.0				0		0		0			-	0				1

Table 5. Summary of Historical Total PAH Results Sag Harbor Former MGP Site Groundwater Monitoring Program - Q1 2016

	Screen							Total	PAH Conc	entrations	(µg/L)						
Well No.									Sampli	ng Date							
well no.	Interval (feet)		20	)12			20	)13	·		20	)14			20	)15	
	(leet)	March	June	Sept	Dec	March	June	Sept	Dec	March	June	Sept	Dec	March	June	Sept	Dec
MW-01	1.50 - 7.32																
MW-02	0.50 - 7.25																
MW-03	2.17 - 10.17																
MW-04	1.25 - 6.81																
MW-05	2.46 - 7.46																
MW-06	2.47 - 7.47		-														
SHMW-01S/01SR	1.0 - 6.0	7	21	0	0	8	0	0	0	67		0					
SHMW-01I/01IR	35.0 - 45.0				0				0								
SHMW-01D	65.0 - 75.0				0				0								
SHMW-02S	1.0 - 6.0	5	0	0	0	5	0	0	0	0		0				23	
SHMW-02I/02IR	35.0 - 45.0				56				245			11				25	
SHMW-02D/02DR	65.0 - 75.0				0				0								
SHMW-03S	2.0 - 12.0	6	10	22	2	23	14	16	6	5		3				16	
SHMW-03I	35.0 - 45.0				0				4			0				0	
SHMW-04S/04SR	2.0 - 12.0	581	1,296	1,195	639	402	100	1,875	1,916	190	523	1,637	309	571	551	886	112
SHMW-04I	35.0 - 45.0																
SHMW-05S/05SR	2.0 - 12.0	309	219	420	20	107	175	155	291	171	153	367	121	94	94	208	308
SHMW-05I/05IR	35.0 - 45.0				0				0			0				0	
SHMW-06S	2.0 - 6.0																
SHMW-06I	35.0 - 45.0																
SHMW-07S/07SR	1.0 - 11.0	927	444	4,342	419	2,620	950	4,030	1,381	1733	5945	12,876	904	0	14,332	11,494	3,943
SHMW-07I/07IR	35.0 - 45.0				0				1								
SHMW-08S	1.0 - 7.0	152	111	113	182	95	151	180	148	147	174	250	160	116	213	140	157
SHMW-08I	35.0 - 45.0				0				0			0				0	
SHMW-09S	2.0 - 12.0			787	690	721	575	603	211	560	832	1,315	360	529	909	121	107
SHMW-09I	35.0 -45.0			0	0				2			2				3	
SHMW-10S	5.0 -15.0	0	3	0	0	0	0	0	1	0		0				0	
SHMW-10I	35.5 - 45.5				0				0								
SHMW-11S	3.5 - 13.5	6	0	0	2	1	0	7	16	1	0	1	201	2	1	5	3
SHMW-11I	35.0 - 45.0				0				1								
SHMW-12S	1.5 - 6.5	154	361	217	104	62	410	604	133	0	353	493	247	76	523	502	317
SHMW-12I	35.0 - 45.0		ł		0				0								
SHMW-13S	1.5 - 6.5	2	0	0	0	0	0	0	0	0		1				0	
SHMW-13I	35.0 - 45.0		-		0				0								

 $H: \label{lem:hamil} H: \label{lem:hamil} H: \label{lem:hamil} PROC \label{lem:hamiltoning} \label{lem:hamiltoning} With Repts \label{lem:hamiltoning} A constant \label{lem:hamiltoning} With \label{lem:hamiltoning} H: \label{lem:hamiltoning} With \label{lem:hamiltoning} With$ 

Table 5. Summary of Historical Total PAH Results Sag Harbor Former MGP Site Groundwater Monitoring Program - Q1 2016

Mean   Mean		C	Total PA	AH Concer	trations (µ	g/L)
MW-01	Well No	Screen	Sampling Date			
MW-01	Well No.		2016	Min	Max	Mean
MW-02         0.50 - 7.25          0         25,167         6,235           MW-03         2.17 - 10.17          92         7,034         2,352           MW-04         1.25 - 6.81          0         3,612         304           MW-05         2.46 - 7.46          101         431,600         80,149           MW-06         2.47 - 7.47          0         5,416         420           SHMW-01S/01SR         1.0 - 6.0          0         4,147         763           SHMW-01I/01IR         35.0 - 45.0          0         32         4           SHMW-02S         1.0 - 6.0          0         0         0           SHMW-02I/02IR         35.0 - 45.0          0         23         2           SHMW-02D/02DR         65.0 - 75.0          0         308         49           SHMW-03S         2.0 - 12.0          0         430         64           SHMW-03I         35.0 - 45.0          0         320         22           SHMW-04S/04SR         2.0 - 12.0         359         0         6,669         2,316 <tr< td=""><td></td><td>(ieet)</td><td>March</td><td></td><td></td><td></td></tr<>		(ieet)	March			
MW-03         2.17 - 10.17          92         7,034         2,352           MW-04         1.25 - 6.81          0         3,612         304           MW-05         2.46 - 7.46          101         431,600         80,149           MW-06         2.47 - 7.47          0         5,416         420           SHMW-01I/01IR         35.0 - 45.0          0         4,147         763           SHMW-01D         65.0 - 75.0          0         0         0         0           SHMW-02I/02IR         35.0 - 45.0          0         23         2         4           SHMW-02I/02IR         35.0 - 45.0          0         23         2         2           SHMW-02I/02IR         35.0 - 45.0          0         308         49         49           SHMW-03S         2.0 - 12.0          0         430         64         44           SHMW-04I         35.0 - 45.0          0         320         22         2           SHMW-04I         35.0 - 45.0          0         18         3         3           SHMW-05I/05IR <td>MW-01</td> <td>1.50 - 7.32</td> <td></td> <td>0</td> <td>4,906</td> <td>380</td>	MW-01	1.50 - 7.32		0	4,906	380
MW-04         1.25 - 6.81          0         3,612         304           MW-05         2.46 - 7.46          101         431,600         80,149           MW-06         2.47 - 7.47          0         5,416         420           SHMW-01S/01SR         1.0 - 6.0          0         4,147         763           SHMW-01I/01IR         35.0 - 45.0          0         32         4           SHMW-01D         65.0 - 75.0          0         0         0           SHMW-02P         1.0 - 6.0          0         23         2           SHMW-02P         1.0 - 6.0          0         23         2           SHMW-02P         35.0 - 45.0          0         580,200         22,393           SHMW-02D/02DR         65.0 - 75.0          0         350,200         22,393           SHMW-03I         35.0 - 45.0          0         380,200         22,393           SHMW-03I         35.0 - 45.0          0         430         64           SHMW-04I         35.0 - 45.0          0         18         3	MW-02	0.50 - 7.25		0	25,167	6,235
MW-05         2.46 - 7.46          101         431,600         80,149           MW-06         2.47 - 7.47          0         5,416         420           SHMW-01S/01SR         1.0 - 6.0          0         4,147         763           SHMW-01I/01IR         35.0 - 45.0          0         32         4           SHMW-01D         65.0 - 75.0          0         0         0         0           SHMW-02D/02IR         35.0 - 45.0          0         580,200         22,393           SHMW-02I/02IR         35.0 - 45.0          0         308         49           SHMW-03I         35.0 - 45.0          0         308         49           SHMW-03I         35.0 - 45.0          0         320         22           SHMW-04S/04SR         2.0 - 12.0         359         0         6,669         2,316           SHMW-05I/05IR         35.0 - 45.0          0         18         3           SHMW-05I/05IR         35.0 - 45.0          0         17         1         1           SHMW-06S         2.0 - 6.0          0 <t< td=""><td>MW-03</td><td>2.17 - 10.17</td><td></td><td>92</td><td>7,034</td><td>2,352</td></t<>	MW-03	2.17 - 10.17		92	7,034	2,352
MW-06         2.47 - 7.47          0         5,416         420           SHMW-01S/01SR         1.0 - 6.0          0         4,147         763           SHMW-01I/01IR         35.0 - 45.0          0         32         4           SHMW-01D         65.0 - 75.0          0         0         0           SHMW-02S         1.0 - 6.0          0         23         2           SHMW-02I/02IR         35.0 - 45.0          0         580,200         22,393           SHMW-02D/02DR         65.0 - 75.0          0         308         49           SHMW-03S         2.0 - 12.0          0         430         64           SHMW-04S/04SR         2.0 - 12.0         359         0         6,669         2,316           SHMW-04I         35.0 - 45.0          0         18         3           SHMW-05I/05IR         35.0 - 45.0          0         18         3           SHMW-05I/05IR         35.0 - 45.0          0         5,848         2,690           SHMW-06I         35.0 - 45.0          0         2         0      <	MW-04	1.25 - 6.81		0	3,612	304
SHMW-01S/01SR         1.0 - 6.0          0         4,147         763           SHMW-01I/01IR         35.0 - 45.0          0         32         4           SHMW-01D         65.0 - 75.0          0         0         0           SHMW-02S         1.0 - 6.0          0         23         2           SHMW-02I/02IR         35.0 - 45.0          0         580,200         22,393           SHMW-02D/02DR         65.0 - 75.0          0         308         49           SHMW-03S         2.0 - 12.0          0         430         64           SHMW-03I         35.0 - 45.0          0         320         22           SHMW-04I/04SR         2.0 - 12.0         359         0         6,669         2,316           SHMW-04I         35.0 - 45.0          0         18         3           SHMW-05I/05IR         35.0 - 45.0          0         17         1           SHMW-06S         2.0 - 6.0          0         5,848         2,690           SHMW-06I         35.0 - 45.0          0         2         0	MW-05	2.46 - 7.46		101	431,600	80,149
SHMW-01I/01IR         35.0 - 45.0          0         32         4           SHMW-01D         65.0 - 75.0          0         0         0           SHMW-02S         1.0 - 6.0          0         23         2           SHMW-02I/02IR         35.0 - 45.0          0         580,200         22,393           SHMW-02D/02DR         65.0 - 75.0          0         308         49           SHMW-03S         2.0 - 12.0          0         430         64           SHMW-03I         35.0 - 45.0          0         320         22           SHMW-04I/04SR         2.0 - 12.0         359         0         6,669         2,316           SHMW-05I/05IR         35.0 - 45.0          0         18         3           SHMW-06I/05IR         35.0 - 45.0          0         17         1           SHMW-06I         35.0 - 45.0          0         2         0           SHMW-07S/07SR         1.0 - 11.0         745         0         14,332         3,407           SHMW-08I         35.0 - 45.0          0         2,212         222	MW-06			0	5,416	420
SHMW-01D         65.0 - 75.0          0         0         0           SHMW-02S         1.0 - 6.0          0         23         2           SHMW-02I/02IR         35.0 - 45.0          0         580,200         22,393           SHMW-02D/02DR         65.0 - 75.0          0         308         49           SHMW-03S         2.0 - 12.0          0         430         64           SHMW-04S/04SR         2.0 - 12.0         359         0         6,669         2,316           SHMW-04S/04SR         2.0 - 12.0         359         0         6,669         2,316           SHMW-04I         35.0 - 45.0          0         18         3           SHMW-05I/05IR         35.0 - 45.0          0         18         3           SHMW-06S         2.0 - 6.0          0         17         1           SHMW-06I         35.0 - 45.0          0         5,848         2,690           SHMW-07I/07IR         35.0 - 45.0          0         2         0           SHMW-07I/07IR         35.0 - 45.0          0         2,212         222	SHMW-01S/01SR	1.0 - 6.0		0	4,147	763
SHMW-02S         1.0 - 6.0          0         23         2           SHMW-02I/02IR         35.0 - 45.0          0         580,200         22,393           SHMW-02D/02DR         65.0 - 75.0          0         308         49           SHMW-03S         2.0 - 12.0          0         430         64           SHMW-03I         35.0 - 45.0          0         320         22           SHMW-04S/04SR         2.0 - 12.0         359         0         6,669         2,316           SHMW-04I         35.0 - 45.0          0         18         3           SHMW-05I/05IR         35.0 - 45.0          0         17         1           SHMW-06IS         35.0 - 45.0          0         17         1           SHMW-06I         35.0 - 45.0          0         2         0           SHMW-07I/07IR         35.0 - 45.0          0         2,848         2,690           SHMW-07I/07IR         35.0 - 45.0          0         2,212         222           SHMW-08I         35.0 - 45.0          0         2,212         222	SHMW-01I/01IR	35.0 - 45.0		0	32	4
SHMW-02I/02IR         35.0 - 45.0          0         580,200         22,393           SHMW-02D/02DR         65.0 - 75.0          0         308         49           SHMW-03S         2.0 - 12.0          0         430         64           SHMW-03I         35.0 - 45.0          0         320         22           SHMW-04S/04SR         2.0 - 12.0         359         0         6,669         2,316           SHMW-04II         35.0 - 45.0          0         18         3           SHMW-05I/05IR         2.0 - 12.0         106         0         420         116           SHMW-05I/05IR         35.0 - 45.0          0         17         1           SHMW-06I         35.0 - 45.0          0         5,848         2,690           SHMW-07I/07IR         35.0 - 45.0          0         2,212         22           SHMW-07I/07IR         35.0 - 45.0          0         2,212         22           SHMW-08I         35.0 - 45.0          0         13         1           SHMW-08I         35.0 - 45.0          0         13         1	SHMW-01D	65.0 - 75.0		0	0	
SHMW-02D/02DR         65.0 - 75.0          0         308         49           SHMW-03S         2.0 - 12.0          0         430         64           SHMW-03I         35.0 - 45.0          0         320         22           SHMW-04I/04SR         2.0 - 12.0         359         0         6,669         2,316           SHMW-04I         35.0 - 45.0          0         18         3           SHMW-05I/05IR         35.0 - 45.0          0         17         1           SHMW-06S         2.0 - 6.0          0         5,848         2,690           SHMW-06I         35.0 - 45.0          0         2         0           SHMW-07S/07SR         1.0 - 11.0         745         0         14,332         3,407           SHMW-07I/07IR         35.0 - 45.0          0         2,212         222           SHMW-08I         35.0 - 45.0          0         13         1           SHMW-08I         35.0 - 45.0          0         13         1           SHMW-09S         2.0 - 12.0         373         0         2,737         845	SHMW-02S	1.0 - 6.0		0	23	2
SHMW-03S         2.0 - 12.0          0         430         64           SHMW-03I         35.0 - 45.0          0         320         22           SHMW-04S/04SR         2.0 - 12.0         359         0         6,669         2,316           SHMW-04I         35.0 - 45.0          0         18         3           SHMW-05S/05SR         2.0 - 12.0         106         0         420         116           SHMW-05I/05IR         35.0 - 45.0          0         17         1           SHMW-06S         2.0 - 6.0          0         5,848         2,690           SHMW-06I         35.0 - 45.0          0         2         0           SHMW-07S/07SR         1.0 - 11.0         745         0         14,332         3,407           SHMW-07I/07IR         35.0 - 45.0          0         2,212         222           SHMW-08S         1.0 - 7.0         132         3         250         102           SHMW-08I         35.0 - 45.0          0         13         1           SHMW-09S         2.0 - 12.0         373         0         2,737         845 <t< td=""><td>SHMW-02I/02IR</td><td>35.0 - 45.0</td><td></td><td>0</td><td>580,200</td><td>22,393</td></t<>	SHMW-02I/02IR	35.0 - 45.0		0	580,200	22,393
SHMW-03I         35.0 - 45.0          0         320         22           SHMW-04S/04SR         2.0 - 12.0         359         0         6,669         2,316           SHMW-04I         35.0 - 45.0          0         18         3           SHMW-05S/05SR         2.0 - 12.0         106         0         420         116           SHMW-05I/05IR         35.0 - 45.0          0         17         1           SHMW-06S         2.0 - 6.0          0         5,848         2,690           SHMW-06I         35.0 - 45.0          0         2         0           SHMW-07I/07IR         35.0 - 45.0          0         2,212         222           SHMW-08S         1.0 - 7.0         132         3         250         102           SHMW-08I         35.0 - 45.0          0         13         1           SHMW-09S         2.0 - 12.0         373         0         2,737         845           SHMW-09I         35.0 - 45.0          0         3         1           SHMW-10S         5.0 - 15.0          0         22         1           S	SHMW-02D/02DR	65.0 - 75.0		0	308	49
SHMW-04S/04SR         2.0 - 12.0         359         0         6,669         2,316           SHMW-04I         35.0 - 45.0          0         18         3           SHMW-05S/05SR         2.0 - 12.0         106         0         420         116           SHMW-05I/05IR         35.0 - 45.0          0         17         1           SHMW-06S         2.0 - 6.0          0         5,848         2,690           SHMW-06I         35.0 - 45.0          0         2         0           SHMW-07I/07IR         35.0 - 45.0          0         2,212         222           SHMW-08S         1.0 - 7.0         132         3         250         102           SHMW-08I         35.0 - 45.0          0         13         1           SHMW-09S         2.0 - 12.0         373         0         2,737         845           SHMW-09I         35.0 - 45.0          0         3         1           SHMW-10S         5.0 - 15.0          0         3         1           SHMW-10I         35.5 - 45.5          0         0         0           SHMW-	SHMW-03S	2.0 - 12.0		0	430	64
SHMW-04I         35.0 - 45.0          0         18         3           SHMW-05S/05SR         2.0 - 12.0         106         0         420         116           SHMW-05I/05IR         35.0 - 45.0          0         17         1           SHMW-06S         2.0 - 6.0          0         5,848         2,690           SHMW-06I         35.0 - 45.0          0         2         0           SHMW-07S/07SR         1.0 - 11.0         745         0         14,332         3,407           SHMW-07I/07IR         35.0 - 45.0          0         2,212         222           SHMW-08I         35.0 - 45.0          0         13         1           SHMW-08I         35.0 - 45.0          0         13         1           SHMW-09S         2.0 - 12.0         373         0         2,737         845           SHMW-09I         35.0 - 45.0          0         3         1           SHMW-10S         5.0 - 15.0          0         22         1           SHMW-11I         35.5 - 45.5          0         0         0           SHMW-	SHMW-03I	35.0 - 45.0		0	320	22
SHMW-05S/05SR         2.0 - 12.0         106         0         420         116           SHMW-05I/05IR         35.0 - 45.0          0         17         1           SHMW-06S         2.0 - 6.0          0         5,848         2,690           SHMW-06I         35.0 - 45.0          0         2         0           SHMW-07S/07SR         1.0 - 11.0         745         0         14,332         3,407           SHMW-07I/07IR         35.0 - 45.0          0         2,212         222           SHMW-08S         1.0 - 7.0         132         3         250         102           SHMW-08I         35.0 - 45.0          0         13         1           SHMW-09S         2.0 - 12.0         373         0         2,737         845           SHMW-09I         35.0 - 45.0          0         3         1           SHMW-10S         5.0 - 15.0          0         22         1           SHMW-10I         35.5 - 45.5          0         0         0           SHMW-11S         3.5 - 13.5         0         0         201         9           SHMW	SHMW-04S/04SR	2.0 - 12.0	359	0	6,669	2,316
SHMW-05I/05IR         35.0 - 45.0          0         17         1           SHMW-06S         2.0 - 6.0          0         5,848         2,690           SHMW-06I         35.0 - 45.0          0         2         0           SHMW-07S/07SR         1.0 - 11.0         745         0         14,332         3,407           SHMW-07I/07IR         35.0 - 45.0          0         2,212         222           SHMW-08S         1.0 - 7.0         132         3         250         102           SHMW-08I         35.0 - 45.0          0         13         1           SHMW-09S         2.0 - 12.0         373         0         2,737         845           SHMW-10S         5.0 - 15.0          0         3         1           SHMW-10S         5.0 - 15.0          0         22         1           SHMW-10I         35.5 - 45.5          0         0         0           SHMW-11S         3.5 - 13.5         0         0         201         9           SHMW-11S         35.0 - 45.0          0         4         0           SHWW-12I	SHMW-04I	35.0 - 45.0		0	18	3
SHMW-06S         2.0 - 6.0          0         5,848         2,690           SHMW-06I         35.0 - 45.0          0         2         0           SHMW-07S/07SR         1.0 - 11.0         745         0         14,332         3,407           SHMW-07I/07IR         35.0 - 45.0          0         2,212         222           SHMW-08S         1.0 - 7.0         132         3         250         102           SHMW-08I         35.0 - 45.0          0         13         1           SHMW-09S         2.0 - 12.0         373         0         2,737         845           SHMW-09I         35.0 - 45.0          0         3         1           SHMW-10S         5.0 - 15.0          0         22         1           SHMW-10I         35.5 - 45.5          0         0         0           SHMW-11S         3.5 - 13.5         0         0         201         9           SHMW-11I         35.0 - 45.0          0         4         0           SHMW-12S         1.5 - 6.5         227         0         739         254           SHWW-12I	SHMW-05S/05SR	2.0 - 12.0	106	0	420	116
SHMW-06I         35.0 - 45.0          0         2         0           SHMW-07S/07SR         1.0 - 11.0         745         0         14,332         3,407           SHMW-07I/07IR         35.0 - 45.0          0         2,212         222           SHMW-08S         1.0 - 7.0         132         3         250         102           SHMW-08I         35.0 - 45.0          0         13         1           SHMW-09S         2.0 - 12.0         373         0         2,737         845           SHMW-09I         35.0 - 45.0          0         3         1           SHMW-10S         5.0 - 15.0          0         22         1           SHMW-10I         35.5 - 45.5          0         0         0           SHMW-11S         3.5 - 13.5         0         0         201         9           SHMW-12S         1.5 - 6.5         227         0         739         254           SHMW-12I         35.0 - 45.0          0         20         2           SHMW-13S         1.5 - 6.5          0         3         0           SHMW-13I         <	SHMW-05I/05IR	35.0 - 45.0		0	17	1
SHMW-07S/07SR         1.0 - 11.0         745         0         14,332         3,407           SHMW-07I/07IR         35.0 - 45.0          0         2,212         222           SHMW-08S         1.0 - 7.0         132         3         250         102           SHMW-08I         35.0 - 45.0          0         13         1           SHMW-09S         2.0 - 12.0         373         0         2,737         845           SHMW-09I         35.0 - 45.0          0         3         1           SHMW-10S         5.0 - 15.0          0         22         1           SHMW-10I         35.5 - 45.5          0         0         0           SHMW-11S         3.5 - 13.5         0         0         201         9           SHMW-11I         35.0 - 45.0          0         4         0           SHMW-12S         1.5 - 6.5         227         0         739         254           SHMW-13I         35.0 - 45.0          0         3         0           SHMW-13I         35.0 - 45.0          0         1         0	SHMW-06S	2.0 - 6.0		0	5,848	2,690
SHMW-07I/07IR         35.0 - 45.0          0         2,212         222           SHMW-08S         1.0 - 7.0         132         3         250         102           SHMW-08I         35.0 - 45.0          0         13         1           SHMW-09S         2.0 - 12.0         373         0         2,737         845           SHMW-09I         35.0 - 45.0          0         3         1           SHMW-10S         5.0 - 15.0          0         22         1           SHMW-10I         35.5 - 45.5          0         0         0           SHMW-11S         3.5 - 13.5         0         0         201         9           SHMW-11I         35.0 - 45.0          0         4         0           SHMW-12S         1.5 - 6.5         227         0         739         254           SHMW-13I         35.0 - 45.0          0         3         0           SHMW-13I         35.0 - 45.0          0         3         0	SHMW-06I	35.0 - 45.0		0	2	0
SHMW-08S         1.0 - 7.0         132         3         250         102           SHMW-08I         35.0 - 45.0          0         13         1           SHMW-09S         2.0 - 12.0         373         0         2,737         845           SHMW-09I         35.0 - 45.0          0         3         1           SHMW-10S         5.0 - 15.0          0         22         1           SHMW-10I         35.5 - 45.5          0         0         0           SHMW-11S         3.5 - 13.5         0         0         201         9           SHMW-11I         35.0 - 45.0          0         4         0           SHMW-12S         1.5 - 6.5         227         0         739         254           SHMW-13I         35.0 - 45.0          0         3         0           SHMW-13I         35.0 - 45.0          0         3         0	SHMW-07S/07SR	1.0 - 11.0	745	0	14,332	3,407
SHMW-08I         35.0 - 45.0          0         13         1           SHMW-09S         2.0 - 12.0         373         0         2,737         845           SHMW-09I         35.0 - 45.0          0         3         1           SHMW-10S         5.0 - 15.0          0         22         1           SHMW-10I         35.5 - 45.5          0         0         0           SHMW-11S         3.5 - 13.5         0         0         201         9           SHMW-11I         35.0 - 45.0          0         4         0           SHMW-12S         1.5 - 6.5         227         0         739         254           SHMW-12I         35.0 - 45.0          0         20         2           SHMW-13S         1.5 - 6.5          0         3         0           SHMW-13I         35.0 - 45.0          0         1         0	SHMW-07I/07IR	35.0 - 45.0		0	2,212	222
SHMW-09S         2.0 - 12.0         373         0         2,737         845           SHMW-09I         35.0 - 45.0          0         3         1           SHMW-10S         5.0 - 15.0          0         22         1           SHMW-10I         35.5 - 45.5          0         0         0           SHMW-11S         3.5 - 13.5         0         0         201         9           SHMW-11I         35.0 - 45.0          0         4         0           SHMW-12S         1.5 - 6.5         227         0         739         254           SHMW-13I         35.0 - 45.0          0         3         0           SHMW-13I         35.0 - 45.0          0         3         0	SHMW-08S	1.0 - 7.0	132	3	250	102
SHMW-09I         35.0 - 45.0          0         3         1           SHMW-10S         5.0 - 15.0          0         22         1           SHMW-10I         35.5 - 45.5          0         0         0           SHMW-11S         3.5 - 13.5         0         0         201         9           SHMW-11I         35.0 - 45.0          0         4         0           SHMW-12S         1.5 - 6.5         227         0         739         254           SHMW-12I         35.0 - 45.0          0         20         2           SHMW-13S         1.5 - 6.5          0         3         0           SHMW-13I         35.0 - 45.0          0         1         0	SHMW-08I	35.0 - 45.0		0	13	1
SHMW-10S         5.0-15.0          0         22         1           SHMW-10I         35.5-45.5          0         0         0           SHMW-11S         3.5-13.5         0         0         201         9           SHMW-11I         35.0-45.0          0         4         0           SHMW-12S         1.5-6.5         227         0         739         254           SHMW-12I         35.0-45.0          0         20         2           SHMW-13S         1.5-6.5          0         3         0           SHMW-13I         35.0-45.0          0         1         0	SHMW-09S	2.0 - 12.0	373	0	2,737	845
SHMW-10I         35.5 - 45.5          0         0         0           SHMW-11S         3.5 - 13.5         0         0         201         9           SHMW-11I         35.0 - 45.0          0         4         0           SHMW-12S         1.5 - 6.5         227         0         739         254           SHMW-12I         35.0 - 45.0          0         20         2           SHMW-13S         1.5 - 6.5          0         3         0           SHMW-13I         35.0 - 45.0          0         1         0	SHMW-09I	35.0 -45.0		0	3	
SHMW-11S         3.5 - 13.5         0         0         201         9           SHMW-11I         35.0 - 45.0          0         4         0           SHMW-12S         1.5 - 6.5         227         0         739         254           SHMW-12I         35.0 - 45.0          0         20         2           SHMW-13S         1.5 - 6.5          0         3         0           SHMW-13I         35.0 - 45.0          0         1         0	SHMW-10S	5.0 -15.0			22	1
SHMW-11I         35.0 - 45.0          0         4         0           SHMW-12S         1.5 - 6.5         227         0         739         254           SHMW-12I         35.0 - 45.0          0         20         2           SHMW-13S         1.5 - 6.5          0         3         0           SHMW-13I         35.0 - 45.0          0         1         0	SHMW-10I	35.5 - 45.5		0	0	
SHMW-12S         1.5 - 6.5         227         0         739         254           SHMW-12I         35.0 - 45.0          0         20         2           SHMW-13S         1.5 - 6.5          0         3         0           SHMW-13I         35.0 - 45.0          0         1         0	SHMW-11S	3.5 - 13.5	0	0	201	9
SHMW-12I         35.0 - 45.0          0         20         2           SHMW-13S         1.5 - 6.5          0         3         0           SHMW-13I         35.0 - 45.0          0         1         0		35.0 - 45.0				
SHMW-13S         1.5 - 6.5          0         3         0           SHMW-13I         35.0 - 45.0          0         1         0		1.5 - 6.5	227	0	739	254
SHMW-13I 35.0 - 45.0 0 1 0	SHMW-12I	35.0 - 45.0		0		
	SHMW-13S	1.5 - 6.5		0		0
	SHMW-13I	35.0 - 45.0		0	1	0

#### NOTES:

-- not analyzed or not applicable μg/L - micrograms per liter

PAH - polycyclic aromatic hydrocarbons

# **Figures**













