First Half 2013
Semi-Annual Groundwater Monitoring Report
Patchogue Former MGP Site
NYSDEC Site No. 1-52-182
Village of Patchogue, Suffolk County, New York

Prepared for

National Grid USA, Hicksville,
New York

October 2013

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Project Number: 142128.610.004

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Section 1

Introduction

Brown and Caldwell Associates (BC) is pleased to submit this Semi-Annual Groundwater Monitoring Report to document the implementation and results of the groundwater monitoring activities conducted during the first half of 2013 (first and second quarters) at the Patchogue Former Manufactured Gas Plant (MGP) Site (hereinafter referred to as the "Site"). The groundwater monitoring events and the preparation of this deliverable are part of the routine groundwater monitoring program being conducted at the Site. This report has been prepared for submittal to the New York State Department of Environmental Conservation (NYSDEC) and includes the following:

- Description of the scope of the field activities, methods and procedures;
- Table summarizing results of the water level measurements and the gauging of the monitoring wells and piezometers for the presence of non-aqueous phase liquids (NAPLs) (see Table 1);
- Table summarizing the analytical results for groundwater samples obtained during the second quarter monitoring event including a comparison to the applicable groundwater quality criteria (see Table 2);
- Comparison of data from this monitoring period to data from previous periods (Tables 3 and 4);
- Discussion of the results and findings from the groundwater monitoring data;
- Potentiometric surface maps depicting generalized direction of groundwater flow based on groundwater elevation data from wells and piezometers, and surface water elevation data from staff gauges installed in the Patchogue River (Figures 1 and 2);
- Field Sampling Data Sheets (Appendix A);
- Laboratory Data Report (Appendix B);
- Data Usability Summary Report (Appendix C); and
- Electronic Data Deliverable (Appendix D).

1.1 Background

Groundwater monitoring events have been conducted at the Site since March 2008, including the two monitoring events conducted as part of the Remedial Investigation (RI) in March 2008 and July 2008. The March 2013 and June 2013 (first and second quarter 2013) groundwater monitoring events are the subject of this report. Up until the March 2010 monitoring event, the concentrations and areal distribution of constituents in groundwater had been fairly consistent. Site-related dissolved phase constituents [e.g., benzene, toluene, ethylbenzene, xylenes (BTEX), and polycyclic aromatic hydrocarbons (PAH)] were detected at concentrations above the Class GA groundwater quality criteria (i.e., standards from the 6 NYCRR Part 703 Standards and guidance values from the Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1) in a limited area near the center of the Site. These elevated concentrations did not extend downgradient to the wells closer to the Patchogue River. However, during the March 2010 and September 2010 monitoring events, detections of BTEX and PAH compounds were more widely distributed than during previous events. It was surmised that this change was the result of a temporary dewatering operation at a construction project at the wastewater treatment facility (WWTF) across the river from the Site. Based on the understanding of Site conditions, it was anticipated that when the dewatering operations had ceased, concentrations in groundwater would re-equilibrate with

steady-state (i.e., pre-dewatering) groundwater flow conditions, and eventually return to levels similar to those prior to dewatering. To confirm this, National Grid increased the frequency of the groundwater monitoring from semi-annually to quarterly. The subsequent six quarterly monitoring events did document the return of groundwater flow and groundwater quality to conditions consistent with those prior to the dewatering operations.

Based on this finding, in a May 24, 2012 email, National Grid proposed to NYSDEC that the frequency of groundwater sampling and analysis return to a semi-annual schedule with the schedule for water level monitoring and NAPL gauging remaining on a quarterly basis. NYSDEC agreed with this proposal in a May 24, 2012 email. This report is the second semi-annual monitoring report submitted under this revised schedule. The report presents the results of the water level and NAPL gauging conducted during the first and second quarters of 2013 as well as the analytical results for the groundwater samples collected during the second quarter of 2013.

Section 2

Scope of Work

Field activities for the first and second quarter 2013 were conducted by BC on March 25, 2013 (first quarter) and June 26 and 27, 2013 (second quarter). The activities conducted during these monitoring events are described below. Locations of the monitoring wells, piezometers and staff gauges referenced below are depicted on Figure 1 and 2.

As described in Section 1, monitoring activities conducted during the March 2013 (first quarter) event consisted solely of NAPL gauging and water level measurements; no groundwater samples were collected. The NAPL gauging and water level measurements were conducted on accessible monitoring well and piezometers. The piezometers were those installed in March and May of 2012 as part of the remedial design investigation activities pursuant to the "Remedial Design Work Plan, Patchogue Former Manufactured Gas Plant Site" (Brown and Caldwell Associates, February 2012). Access to monitoring wells MW-9S and MW-9D, located on an adjacent property, was blocked by a roll-off dumpster placed by the property owner. MW-3, also located on the adjacent property was under a pile of construction scaffolding. The roll-off and scaffolding could not be moved at that time. The level of the Patchogue River was also measured at the two staff gauge locations.

Activities conducted during the second quarter 2013 event began on June 26, 2013 with the performance of water level measurements and NAPL gauging on the piezometers and monitoring wells associated with the Site prior to groundwater sampling. Monitoring wells MW-9D and MW-3, located on the adjacent property, were not accessible during this monitoring event. MW-9 was blocked by a sea box container and MW-3 was under a pile of construction materials (bricks, scaffolding etc.), both placed by the property owner. The level of the Patchogue River was also measured at the two staff gauges. Water level measurements were made using an electronic oil/water interface probe, and measured to the nearest 0.01 foot. If NAPL was detected using the oil/water interface probe, a two-foot long threaded rod attached to a nylon mason line was lowered into the monitoring well or piezometer to confirm the presence of the NAPL. The threaded rod was lowered to the water-NAPL interface to measure the approximate thickness of the NAPL accumulation (MGP-related NAPL typically adheres to grooves in the threaded rod).

After the water level and NAPL gauging activities were conducted, groundwater samples were collected from eight monitoring wells on June 26 and 27, 2013. As mentioned above, wells MW-3 and MW-9D were not accessible during this event; therefore, a groundwater sample was not collected from these monitoring well. Monitoring wells MW-5 and MW-6 were not sampled during this monitoring period due to the presence of NAPL in these wells. The presence of NAPL in these wells is consistent with observations during previous quarterly NAPL gauging activities. The standard protocol is that if NAPL is observed in a well during gauging or sampling, groundwater samples are not submitted for laboratory analyses. Groundwater sampling was conducted using low flow purging and sampling techniques in accordance with the United States Environmental Protection Agency (USEPA) protocol (USEPA, July 1996, Revised January 2010). Samples were submitted to eurofins Lancaster Laboratories, Inc. (Lancaster) located in Lancaster, Pennsylvania. Lancaster is certified (Certification No. 10670) through the New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP).

The samples were analyzed for: BTEX compounds and methyl tertiary butyl ether (MTBE) using USEPA SW-846 Method 8260B; and PAHs using USEPA SW-846 Method 8270C. The groundwater samples were also analyzed in the field for pH, specific conductivity, temperature, turbidity, oxidation-reduction potential (ORP), and dissolved oxygen (see Appendix A for field data sheets).

The laboratory report from Lancaster is provided in Appendix B. The laboratory analytical data were provided to BC in electronic form by Lancaster and have been incorporated into an environmental database for the Site.

In addition to the samples described above, quality assurance/quality control (QA/QC) samples were also collected. The QA/QC samples included: trip blanks (one per cooler containing samples for BTEX and MTBE analysis), a field duplicate, and an equipment blank. Also, extra sample volume was collected from one location to provide for matrix spike/matrix spike duplicate (MS/MSD) analysis. The trip blanks were analyzed for BTEX and MTBE only. The other QA/QC samples were analyzed for BTEX, MTBE and PAHs.

Laboratory results for the groundwater sample analyses were forwarded to a data validator, Environmental Data Services, Inc. of Williamsburg, Virginia, for review and preparation of a Data Usability Summary Report (DUSR). The DUSR presents a summary of data usability including a discussion of qualified data. The DUSR is provided as Appendix C. As described in the DUSR, the data were considered by the validator to be valid and usable. An Electronic Data Deliverable (EDD) of the validated analytical data is provided in Appendix D.

Section 3

Results and Findings

3.1 Water Level Data

Table 1 provides the water level data and calculated water elevations from the March 25 and June 26, 2013 measurements. Figure 1 and 2 illustrate the elevation contours of the water table based on these data. The contours were developed using water level data from the shallow wells and piezometers at the Site (i.e., those with screens that straddle, or are just below, the water table), and the surface water staff gauges in the Patchogue River. These values are more representative of water table elevations than data from the deeper wells and piezometers. However, the groundwater elevation (hydraulic head) values for the wells and piezometers screened in deeper intervals are also posted on Figures 1 and 2. The water table is relatively shallow and is typically positioned in the fill that overlies the alluvial deposits and outwash deposits. The water table contours indicate that lateral groundwater flow is from northwest to southeast across the Site toward the Patchogue River. Comparisons of the groundwater elevations in the Site monitoring wells to the river elevations, as measured at the staff gauge locations, demonstrate that groundwater elevations are higher than the river level indicating that groundwater is discharging to the Patchogue River. The upward vertical hydraulic gradient measured at a well cluster adjacent to the river (MW-4S and D) provides further support to the conclusion that groundwater is discharging to the Patchogue River. The general configuration of the water table contours (as shown on Figure 1 and 2), developed using the March 25 and June 26, 2013 data, and the interpreted groundwater flow patterns, are consistent with those from previous rounds of water level measurements with one exception. The exception occurred during the March 2010 sampling event when the large-scale dewatering activities were being conducted on the WWTF site located east of the Site on the opposite side of the river (see discussion in Section 1.1). Operation of this dewatering system temporarily altered groundwater flow patterns and levels at the Site (see "Groundwater Monitoring Report, Second Semiannual 2010 Sampling Event" [GEI, November 2010]).

3.2 NAPL Gauging

Table 1 presents the results of the NAPL gauging conducted during the March and June 2013 quarterly groundwater monitoring events. NAPL was identified in the following wells during the gauging activities:

MW-5

- March 2013: Brown-black dense NAPL (DNAPL) blebs on lower 0.4 feet of threaded rod, strong tar-like odor.
- June 2013: Brown-black tacky DNAPL blebs on lower 0.55 feet of threaded rod, strong tar-like odor.

MW-6

- March 2013: Black NAPL blebs on lower 0.1 ft. of threaded rod, strong tar-like odor.
- June 2013: Black NAPL blebs on lower ¼ inch of threaded rod, strong tar-like odor.

NAPL had been observed in these two wells on occasion during previous gauging events.

3.3 Groundwater Quality Data

Table 2 provides the results of the laboratory analyses of the groundwater samples collected during the second quarter 2013 monitoring event and a comparison of the data to the New York State Class GA groundwater quality criteria, i.e., standards from the 6 NYCRR Part 703 Standards and guidance values from the Division of Water Technical and Operational Guidance Series (TOGS) 1.1.1. Comparisons of total BTEX and total PAH concentrations from this sampling event to previous sampling events are provided as Tables 3 and 4, respectively. As mentioned above, no groundwater samples were collected for laboratory analysis during the March (first quarter) 2013 groundwater monitoring event.

As previously stated, NAPL was identified in two of the 10 monitoring wells, MW-5 and MW-6. These two wells are located in the central part of the Site in the area of former MGP operations (refer to Figures 1 and 2). Therefore, groundwater samples were not collected from these two wells. Groundwater samples were also not collected from wells MW-3 and MW-9D (located on an adjacent property) as access to these wells was impeded by the presence of a sea box container and construction materials. Groundwater samples were collected from the remaining eight monitoring wells and submitted to the laboratory for analysis.

In general, the constituent concentrations in groundwater samples collected during the second quarter 2013 were consistent with those measured during previous monitoring events. In samples from most wells, no BTEX compounds were detected. However, benzene was detected in in groundwater sample collected at MW-4S and MW-7S, although these concentrations were below the Class GA groundwater quality criterion for benzene (1 µg/L). During the previous sampling round (November 2012), benzene was also detected in these same two monitoring wells, MW-4S and MW-7S, at concentrations greater than and equal to the Class GA groundwater quality criterion, respectively. No MGP-related structures or NAPL have been identified in the area hydraulically upgradient of these two monitoring wells. Additionally, none of the low molecular weight PAHs that have usually been associated with MGP-related dissolved phase impacts at this site (e.g., naphthalene, acenaphthene, acenaphthylene, and fluorene) were detected. Thus, the benzene detected at these two monitoring wells is not likely associated with MGP-related impacts. The concentration of these constituents will be further evaluated through continued groundwater monitoring.

At most locations, PAH compounds were either not detected or were detected at concentrations below the Class GA groundwater quality criteria. However, in samples collected from monitoring wells MW-1, MW-4D, MW-7S, MW-7D, MW-8D, and MW-9S, one or more PAH compounds were detected at low concentrations (i.e., slightly above the laboratory method detection limit) but above the Class GA groundwater quality criteria. The PAH compounds that were identified in the groundwater samples from these monitoring wells at concentrations above the Class GA groundwater quality criteria are: benzo(a)anthracene; benzo(b)fluoranthene; benzo(k)fluoranthene; benzo(a)pyrene; chrysene; and indeno(1,2,3-cd)pyrene. These constituents have very low aqueous solubilities, are not readily mobile in groundwater, and are unlikely to have migrated from the on-site source area. The presence of these constituents in upgradient wells MW-1 and MW-7S further supports that they are not related to former MGP operations. The criteria that were exceeded for five of these six PAHs are unpromulgated guidance values rather than Part 703 standards. The criteria for the sixth PAH, benzo(a)pyrene, is a Part 703 standard. The standard for benzo(a)pyrene was exceeded at concentrations below the method quantitation limit. The guidance value for the five PAHs, 0.002 µg/L, is nearly two orders of magnitude below the method detection limit. The standard for benzo(a)pyrene is “non-detect”. Therefore, any detection of these compounds in groundwater will result in an exceedance. The concentrations of these constituents will be further evaluated through continued groundwater monitoring.

Section 4

Summary and Conclusions

As noted in previous monitoring events, NAPL was identified in two of the monitoring wells, MW-5 and MW-6 during the first quarter (March) and second quarter (June) 2013. Both MW-5 and MW-6 are located in the center of the Site in the area of former MGP operations. BTEX compounds were not detected, consistent with previous monitoring periods, in most of the Site monitoring wells. However, benzene was detected in samples from MW-4S and upgradient well MW-7S at concentrations below the Class GA groundwater quality criteria. MW-4S is located adjacent to the Patchogue River and south of the area of the former MGP operations. No MGP-related structures or NAPL have been identified in the area hydraulically-upgradient of MW-4S. MW-7S is positioned upgradient of MW-4S on the upgradient side of the Site. Additionally, none of the low molecular weight PAHs that have usually been associated with MGP-related dissolved phase impacts at this site (e.g., naphthalene, acenaphthene, acenaphthylene, and fluorene) were detected. Thus, these benzene detections are not considered to be associated with MGP-related impacts.

At two of the eight wells, PAH compounds were either not detected or were detected at concentrations below the Class GA groundwater quality criteria. However, in samples collected from monitoring wells, MW-1, MW-4D, MW-7S, MW-7D, MW-8D, and MW-9S, one or more PAH compounds were detected at low concentrations (i.e., slightly above the method detection limit) but above the Class GA groundwater quality criteria. The criteria for these compounds are extremely low, approximately two orders of magnitude below the laboratory method detection limit. The six PAH compounds that were identified at concentrations above the Class GA groundwater quality criteria have very low aqueous solubilities, are not readily mobile in groundwater, and are unlikely to have migrated from the on-site source area. The presence of these constituents in upgradient wells further supports that they are not related to former MGP operations. The detections of low level concentrations of these low solubility PAHs has occurred in previous monitoring events at various wells locations at the Site. This will continue to be evaluated through continued groundwater monitoring.

In the monitoring events since the September 2010 event, the concentrations of BTEX and PAHs in the shallow groundwater and the areal distribution of these concentrations are generally similar to those from monitoring events which occurred prior to March 2010. This indicates that constituent concentrations in groundwater have decreased and have generally re-equilibrated with the steady state groundwater flow conditions that existed prior to the operation of the large scale temporary construction dewatering system (see Section 1.1) that affected the results of the March and September 2010 monitoring events, as anticipated. No dissolved phase impacts are identified in groundwater downgradient of the MGP-impacts identified in the soil in the area of former MGP operations. Monitoring will continue in order to confirm these conditions.

Section 5

References

Brown and Caldwell Associates, December 2012, Construction Completion Report Utility Corridor Work Plan Implementation, Patchogue Former MGP Site, Village of Patchogue, Suffolk County, New York, Site ID No. 1-52-182.

Brown and Caldwell Associates, February 2012. Remedial Design Work Plan, Patchogue Former MGP Site, Village of Patchogue, Suffolk County, New York, Site ID No. 1-52-182.

GEI, November 2010. Groundwater Monitoring Report, Second Semiannual 2010 Sampling Event, Patchogue Former MGP Site, Town of Brookhaven, Suffolk County, Long Island, New York, Site ID No. 1-52-182.

NYSDEC, November 2009. CP-43: Groundwater Monitoring Wells Decommissioning Policy.

USEPA, July 1996; Revised January 2010. Low-Stress (low flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells.

Tables

TABLE 1
WATER ELEVATIONS AND NAPL MONITORING DATA
FIRST HALF 2013
PATCHOGUE FORMER MGP SITE
PATCHOGUE, NEW YORK

	3/25/2013					
Well ID	Top of Casing Elevation [(a)] (ft., NAVD)	Depth to Water (ft., BTOC)	Water Elevation (ft., NAVD)	Depth to NAPL (ft., BTOC)	Total Depth of Well (ft., BGS)	Remarks
MW-1	11.47	6.07	5.40	ND	15.29	
MW-3	5.56	--	--	--	--	No access to monitoring well
MW-4S	7.97	5.22	2.75	ND	12.24	
MW-4D	7.79	5.01	2.78	ND	26.79	
MW-5	8.13	1.19[(b)]	3.71	16.25	16.65	0.4' of NAPL on bottom of threaded rod.
MW-6	5.01	0.75	4.26	21.78	21.8	NAPL blebs on bottom 0.1' of threaded rod.
MW-7S	8.45	4.66	3.79	ND	12.52	
MW-7D	8.31	4.51	3.80	ND	28.28	
MW-8S	5.08	1.05	4.03	ND	10.08	
MW-8D	4.98	0.95	4.03	ND	25.26	
MW-9S	4.47	--	--	--	--	No access to monitoring well
MW-9D	4.66	--	--	--	--	No access to monitoring well
SG-1	5.23	4.08	1.15	--	NA	
SG-2	5.17	3.83	1.34	--	NA	
PZ-1A	8.05		4.21			
		3.84		ND	10.01	
PZ-1B	8.91	4.75	4.16	ND	22.57	
PZ-2A	8.77	4.63	4.14	ND	5.14	
PZ-2B	8.29	4.11	4.18	ND	18.12	
PZ-3A	8.78	5.12	3.66	ND	8.96	
PZ-3B	8.90	5.37	3.53	ND	21.33	
PZ-4B	4.79	1.83	2.96	ND	4.97	

Notes:
NAVD - North American Vertical Datum
BGS - Below Ground Surface
BTOC - Below Top of Casing
NAPL - Non-aqueous phase liquid
NA - Not applicable
ND - Not Detected
(a) - Monitoring wells resurveyed on 7/3/12 following utility corridor construction activities. See "Construction Completion Report, Utility Corridor Work Plan Implementation (Brown and Caldwell, December 2012)".
(b) - Depth to water measured from ground surface.

TABLE 1
WATER ELEVATIONS AND NAPL MONITORING DATA
FIRST HALF 2013
PATCHOGUE FORMER MGP SITE
PATCHOGUE, NEW YORK

Well ID	Top of Casing Elevation [(a)] (ft., NAVD)	6/26/2013 Depth to Water (ft., BTOC)	Water Elevation (ft., NAVD)	Depth to NAPL (ft., BTOC)	Total Depth of Well (ft., BGS)	Remarks
MW-1	11.47	5.77	5.70	ND	15.3	
MW-3	5.56	--	--	--	--	No access to monitoring well
MW-4S	7.97	4.90	3.07	ND	12.32	
MW-4D	7.79	4.70	3.09	ND	26.68	
MW-5	8.13	1.00[(b)]	3.90	8.9	13.25	Black tacky NAPL coating 0.55' of threaded rod.
MW-6	5.01	0.40	4.61	8.2	18.5	Black NAPL blebs on bottom 1/4" of threaded rod – tacky
MW-7S	8.45	4.38	4.07	ND	12.46	
MW-7D	8.31	4.18	4.13	ND	28.2	
MW-8S	5.08	0.80	4.28	ND	10	
MW-8D	4.98	0.64	4.34	ND	25.1	
MW-9S	4.47	1.64	2.83	ND	4.95	
MW-9D	4.66	--	--	--	--	No access to monitoring well
SG-1	5.23	3.81	1.42	--	NA	
SG-2	5.17	3.66	1.51	--	NA	
PZ-1A	8.05	5.17	--	--	--	Water level taken from top of stickup which was not surveyed. Therefore, the water elevation at this piezometer was not calculated .
PZ-1B	8.91	4.47	4.44	ND	22.53	
PZ-2A	8.77	4.64	4.13	ND	8.15	
PZ-2B	8.29	3.8	4.49	ND	18	
PZ-3A	8.78	5.06	3.72	ND	8.92	
PZ-3B	8.90	5.1	3.80	ND	21.28	
PZ-4B	4.79	--	--	--	--	

Notes:
NAVD - North American Vertical Datum
BGS - Below Ground Surface
BTOC - Below Top of Casing
NAPL - Non-aqueous phase liquid
NA - Not applicable
ND - Not Detected
(a) - Monitoring wells resurveyed on 7/3/12 following utility corridor construction activities. See "Construction Completion Report, Utility Corridor Work Plan Implementation (Brown and Caldwell, December 2012)".
(b) - Depth to water measured from ground surface.

TABLE 2
GROUNDWATER ANALYSIS RESULTS
PATCHOGUE FORMER MGP SITE
PATCHOGUE, NEW YORK

Constituent	Class GA Groundwater Criteria TOGS 1.1.1 Guidance	NYS Part 703 Standard	Units	Loc ID Date	MW-1 6/26/2013	MW-3 6/27/2013	MW-4S 6/27/2013	MW-4D 6/27/2013	MW-7S 6/27/2013
Volatile Organic Compounds									
BTEX									
Benzene	NE	1	µg/L		0.5 U	NS	0.8 J	0.5 U	0.7 J
Toluene	NE	5	µg/L		0.7 U	NS	0.7 U	0.7 U	0.7 U
Ethylbenzene	NE	5	µg/L		0.8 U	NS	0.8 U	0.8 U	0.8 U
m&p-Xylenes	NE	5	µg/L		0.8 U	NS	0.8 U	0.8 U	0.8 U
o-Xylene	NE	5	µg/L		0.8 U	NS	0.8 U	0.8 U	0.8 U
Xylenes, Total	NE	NE	µg/L		0.8 U	NS	0.8 U	0.8 U	0.8 U
Total BTEX	NE	NE	µg/L		ND	NS	0.8	ND	0.7
Other VOCs									
Methyl Tertiary Butyl Ether	10	NE	µg/L		0.5 U	NS	0.5 U	0.5 U	0.5 U
Semi-Volatile Organic Compounds (SVOCs)									
Polycyclic Aromatic Hydrocarbons (PAHs)									
Acenaphthene	20	NE	µg/L		0.1 U	NS	0.1 U	0.1 U	0.1 U
Acenaphthylene	NE	NE	µg/L		0.1 U	NS	0.1 U	0.4 J	0.1 U
Anthracene	50	NE	µg/L		0.1 U	NS	0.2 J	0.1 U	0.2 J
Benzo(a)anthracene	0.002	NE	µg/L		**0.1 J**	NS	0.1 U	**0.3 J**	**0.1 J**
Benzo(a)pyrene	NE	0	µg/L		0.1 U	NS	0.1 U	**0.3 J**	0.1 U
Benzo(b)fluoranthene	0.002	NE	µg/L		**0.1 J**	NS	0.1 U	**0.3 J**	0.1 U
Benzo(g,h,i)perylene	NE	NE	µg/L		0.1 U	NS	0.1 U	0.2 J	0.1 U
Benzo(k)fluoranthene	0.002	NE	µg/L		0.1 U	NS	0.1 U	**0.2 J**	0.1 U
Chrysene	0.002	NE	µg/L		**0.2 J**	NS	0.1 U	**0.3 J**	0.1 U
Dibenzo(a,h)anthracene	NE	NE	µg/L		0.1 U	NS	0.1 U	0.1 U	0.1 U
Fluoranthene	50	NE	µg/L		0.1 J	NS	0.1 U	0.4 J	0.1 U
Fluorene	50	NE	µg/L		0.1 U	NS	0.1 U	0.2 J	0.1 U
Indeno(1,2,3-cd)pyrene	0.002	NE	µg/L		0.1 U	NS	0.1 U	**0.2 J**	0.1 U

TABLE 2
GROUNDWATER ANALYSIS RESULTS
PATCHOGUE FORMER MGP SITE
PATCHOGUE, NEW YORK

	Class GA Groundwater Criteria								
	TOGS 1.1.1	NYS Part 703		Loc ID	MW-1	MW-3	MW-4S	MW-4D	MW-7S
Constituent	Guidance	Standard	Units	Date	6/26/2013	6/27/2013	6/27/2013	6/27/2013	6/27/2013
Naphthalene	10	NE	µg/L		0.1 J	NS	0.1 U	0.2 J	1
Phenanthrene	50	NE	µg/L		0.1 U	NS	0.1 U	0.3 J	0.1 U
Pyrene	50	NE	µg/L		0.2 J	NS	0.1 J	0.4 J	0.1 U
Total PAHs	NE	NE	µg/L		0.8	NS	0.3	3.7	1.3

TABLE 2
GROUNDWATER ANALYSIS RESULTS
PATCHOGUE FORMER MGP SITE
PATCHOGUE, NEW YORK

Constituent	Class GA Groundwater Criteria TOGS 1.1.1 Guidance	NYS Part 703 Standard	Units	Loc ID Date	MW-7D 6/27/2013	MW-8S 6/27/2013	MW-8S DUP 6/27/2013	MW-8D 6/27/2013	MW-9S 6/27/2013	MW-9D 6/27/2013
Volatile Organic Compounds										
BTEX										
Benzene	NE	1	µg/L		0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NS
Toluene	NE	5	µg/L		0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	NS
Ethylbenzene	NE	5	µg/L		0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	NS
m&p-Xylenes	NE	5	µg/L		0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	NS
o-Xylene	NE	5	µg/L		0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	NS
Xylenes, Total	NE	NE	µg/L		0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	NS
Total BTEX	NE	NE	µg/L		ND	ND	ND	ND	ND	NS
Other VOCs										
Methyl Tertiary Butyl Ether	10	NE	µg/L		0.5 U	0.5 U	0.5 U	0.5 U	NS	NS
Semi-Volatile Organic Compounds (SVOCs)										
Polycyclic Aromatic Hydrocarbons (PAHs)										
Acenaphthene	20	NE	µg/L		0.09 U	0.4 J	0.3 J	0.1 U	0.2 J	NS
Acenaphthylene	NE	NE	µg/L		0.09 U	0.09 U	0.09 U	0.1 U	0.1 U	NS
Anthracene	50	NE	µg/L		0.09 U	0.09 U	0.09 U	0.1 U	0.2 J	NS
Benzo(a)anthracene	0.002	NE	µg/L		0.09 U	0.09 U	0.09 U	**0.1 J**	**0.2 J**	NS
Benzo(a)pyrene	NE	0	µg/L		**0.1 J**	0.09 U	0.09 U	0.1 U	**0.2 J**	NS
Benzo(b)fluoranthene	0.002	NE	µg/L		**0.1 J**	0.09 U	0.09 U	0.1 U	**0.2 J**	NS
Benzo(g,h,i)perylene	NE	NE	µg/L		0.09 U	0.09 U	0.09 U	0.1 U	0.1 U	NS
Benzo(k)fluoranthene	0.002	NE	µg/L		**0.1 J**	0.09 U	0.09 U	0.1 U	**0.1 J**	NS
Chrysene	0.002	NE	µg/L		**0.1 J**	0.09 U	0.09 U	0.1 U	**0.1 J**	NS
Dibenzo(a,h)anthracene	NE	NE	µg/L		0.09 U	0.09 U	0.09 U	0.1 U	0.1 U	NS
Fluoranthene	50	NE	µg/L		0.09 U	0.09 U	0.09 U	0.2 J	0.3 J	NS
Fluorene	50	NE	µg/L		0.09 U	0.09 U	0.09 U	0.1 U	0.1 U	NS
Indeno(1,2,3-cd)pyrene	0.002	NE	µg/L		0.09 U	0.09 U	0.09 U	0.1 U	0.1 U	NS

TABLE 2
GROUNDWATER ANALYSIS RESULTS
PATCHOGUE FORMER MGP SITE
PATCHOGUE, NEW YORK

Constituent	Class GA Groundwater Criteria TOGS 1.1.1 Guidance	NYS Part 703 Standard	Units	Loc ID Date	MW-7D 6/27/2013	MW-8S 6/27/2013	MW-8S DUP 6/27/2013	MW-8D 6/27/2013	MW-9S 6/27/2013	MW-9D 6/27/2013
Naphthalene	10	NE	µg/L		0.09 U	0.09 U	0.09 U	0.1 U	0.1 J	NS
Phenanthrene	50	NE	µg/L		0.09 U	0.09 U	0.09 U	0.2 J	0.2 J	NS
Pyrene	50	NE	µg/L		0.09 U	0.09 U	0.09 U	0.1 J	0.4 J	NS
Total PAHs	NE	NE	µg/L		0.4	0.4	0.3	0.6	2	NS

Notes:
J - Estimated concentration. The result is below the practical quantitation limit but above the method detection limit.
U - The analyte was analyzed for, but was not detected.
µg/L - micrograms per liter
ND - Not detected.
NE - Not established.
NS- Not sampled
Boxed concentrations are above New York State Class GA Groundwater Quality Standards or Guidance values.

TABLE 3
SUMMARY OF HISTORICAL BTEX CONCENTRATIONS
PATCHOGUE FORMER MGP SITE
PATCHOGUE, NEW YORK

Sampling Date	Total BTEX Concentrations (µg/L)													
	Monitoring Well													
	MW-1	MW-2S	MW-2D	MW-3	MW-4S	MW-4D	MW-5	MW-6	MW-7S	MW-7D	MW-8S	MW-8D	MW-9S	MW-9D
Mar-08	0	0	0	0	3.4	0	1016	57	NS	NS	NS	NS	NS	NS
Jul-08	NS	0	0	0	0	0	678	0	0	0	0	0	0	0
Mar-09	0	0	0	0	0	0	975	0	0	1	0	0	0	0
Sep-09	0	0	0	0	0	0	1257	1	0	0	0	0	0	0
Mar-10	0	0	0	0	0	0	637	2	0	9	0	0	0	0
Sep-10	0	0	0	0	0	0	NS	0	0	0	0	0	27	0
Jan-11	1.7	0	0	0	0	0	NS	NS	0	0	0	0	1	0
Apr-11	0	0	0	0	0	0	NS	NS	0	0	0	0	0	0
Aug-11	0	0	0	0	0	0	NS	NS	0	0	0	0	0	0
Nov-11	0	0	0	0	0	0	NS	NS	0	0	0	0	0	0
Feb-12	0	0	0	0	0	0	NS	NS	0	0	0	0	0	0
May-12	0	0	0	0	0	0	NS	NS	0	0	0	0	0	0
Nov-12	0	-- [(a)]	-- [(a)]	0	12	0	NS	NS	1	0	0	0	NS	NS
Jun-13	0	-- [(a)]	-- [(a)]	0	0.8	0	NS	NS	0.7	0	0	0	0	NS
Minimum	0	0	0	0	0	0	637	0	0	0	0	0	0	0
Maximum	1.7	0	0	0	12	0	1257	57	1	9	0	0	27	0
Mean	0.1	0	0	0	1.2	0	913	10	0	0.8	0	0	2.3	0

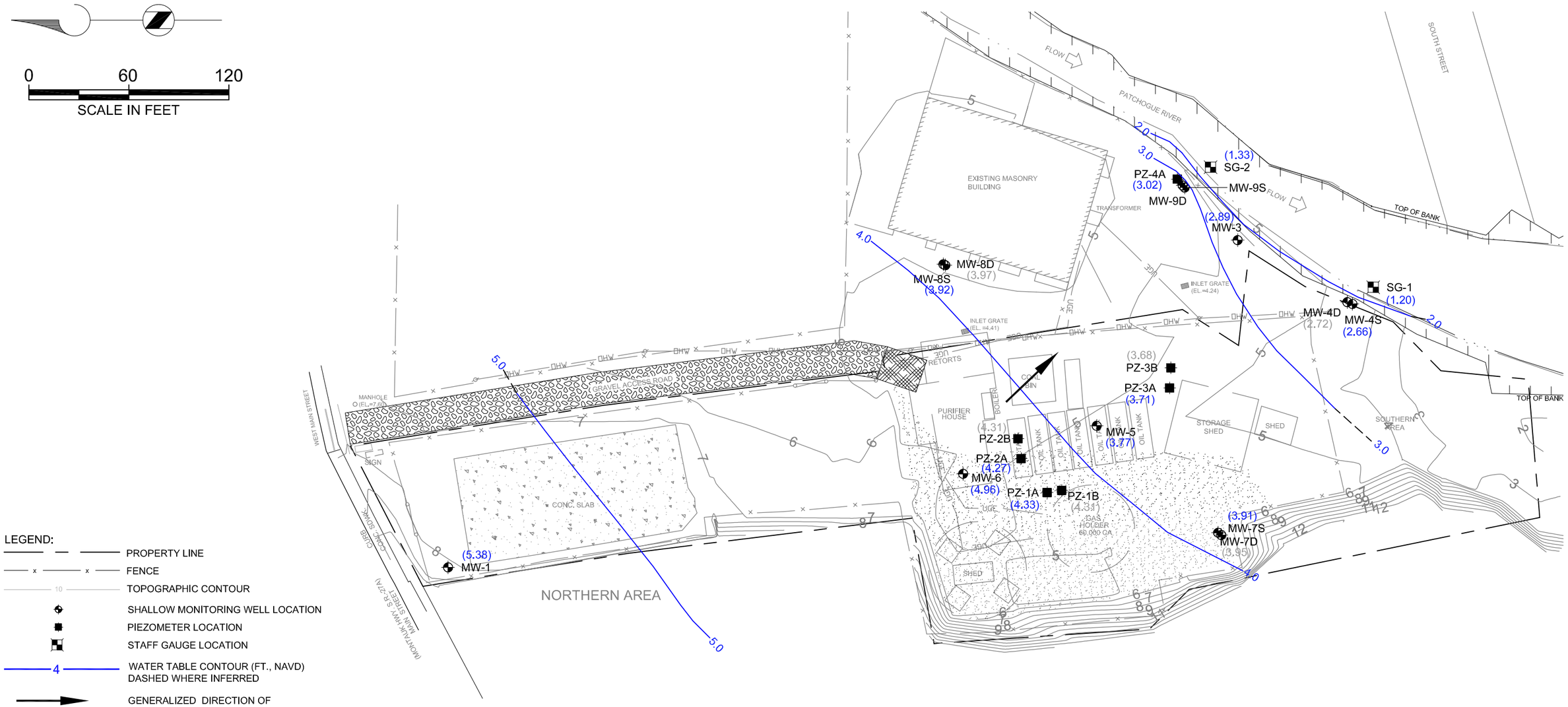
Notes:
BTEX - Benzene, toluene, ethylbenzene and xylene isomers
µg/L - micrograms per liter
NS - Not sampled.
(a) - Monitoring well was decommissioned on 6/4/12 as part of the Utility Corridor Construction activities.
To calculate Total BTEX concentration, a value of zero is used for non-detect values.

TABLE 4
SUMMARY OF HISTORICAL PAH CONCENTRATIONS
PATCHOGUE FORMER MGP SITE
PATCHOGUE, NEW YORK

Sampling Date	Total PAH Concentrations (µg/L)													
	Monitoring Well													
	MW-1	MW-2S	MW-2D	MW-3	MW-4S	MW-4D	MW-5	MW-6	MW-7S	MW-7D	MW-8S	MW-8D	MW-9S	MW-9D
Mar-08	0	0	0	0.76	0.6	4.3	1774	214	NS	NS	NS	NS	NS	NS
Jul-08	NS	0.7	0	0	8.0	0	1799	154	0	0.47	0	0	12.0	0
Mar-09	0	0	0	0	0	0	2730	0	0	0	0	0	0	0
Sep-09	0	0	0	0	0	0	3373	1	0	0	0	0	0	0
Mar-10	0	0	0	0	0	39	2390	17	0	0	22	0	2	0
Sep-10	0	0	0	128	0	6	NS	14	0	0	11	0	396	0
Jan-11	22	0	0	17	0	12	NS	NS	0	0	6	0	42	5
Apr-11	0	0	0	6	0	20	NS	NS	0	0	0	0	9	0
Aug-11	0	0	0.1	14	0.1	0	NS	NS	0	0	0.4	0	16	1.2
Nov-11	0	0	0.2	10	0.4	0	NS	NS	0	0	0.8	0.2	8	3.4
Feb-12	0.2	0	0	6	0.6	4	NS	NS	0.1	0	0.6	0	5	2.9
May-12	0.4	0.1	0.6	5	0	5.8	NS	NS	0.1	0.3	1	0	6	2.8
Nov-12	0.1	-- [(a)]	-- [(a)]	5.6	0.4	11.7	NS	NS	2.5	2.6	0.8	1.2	NS	NS
Jun-13	0.8	-- [(a)]	-- [(a)]	NS	0.3	3.7	NS	NS	1.3	0.4	0.4	0.6	2	NS
Min	0	0	0	0	0	0	1774	0	0	0	0	0	0	0
Max	22	0.7	0.6	128	8.0	39	3373	214	2.5	2.6	22	1.2	396	5
Mean	1.8	0.1	0	15	0.7	7.6	2413	67	0	0	3.3	0	42	1.4

Notes:
PAH - Polycyclic aromatic hydrocarbons
µg/L - micrograms per liter
NS - Not sampled.
(a) - Monitoring well was decommissioned on 6/4/12 as part of the Utility Corridor Construction activities.
To calculate Total PAH concentration, a value of zero is used for non-detect values.

Figures



LEGEND:

- PROPERTY LINE
- FENCE
- TOPOGRAPHIC CONTOUR
- SHALLOW MONITORING WELL LOCATION
- PIEZOMETER LOCATION
- STAFF GAUGE LOCATION
- 4 — WATER TABLE CONTOUR (FT., NAVD) DASHED WHERE INFERRED
- GENERALIZED DIRECTION OF GROUNDWATER FLOW
- (4.33) — WATER ELEVATION (FT., NAVD) FOR SHALLOW MONITORING WELL, PIEZOMETER OR STAFF GAUGE
- (3.73) — GROUNDWATER HEAD ELEVATION (FT., NAVD) FOR WELLS OR PIEZOMETERS SCREENED BELOW WATER TABLE (FROM DEEP MONITORING WELL OR PIEZOMETER)

NOTES:

1. BASE MAP INFORMATION OBTAINED FROM TETRA TECH EC, INC. DRAWING ENTITLED "CONCEPTUAL SITE MODEL", DATED DECEMBER 17, 2008.

Brown AND Caldwell

DATE: March 11, 2013

WATER TABLE CONTOUR MAP
JULY 18, 2012

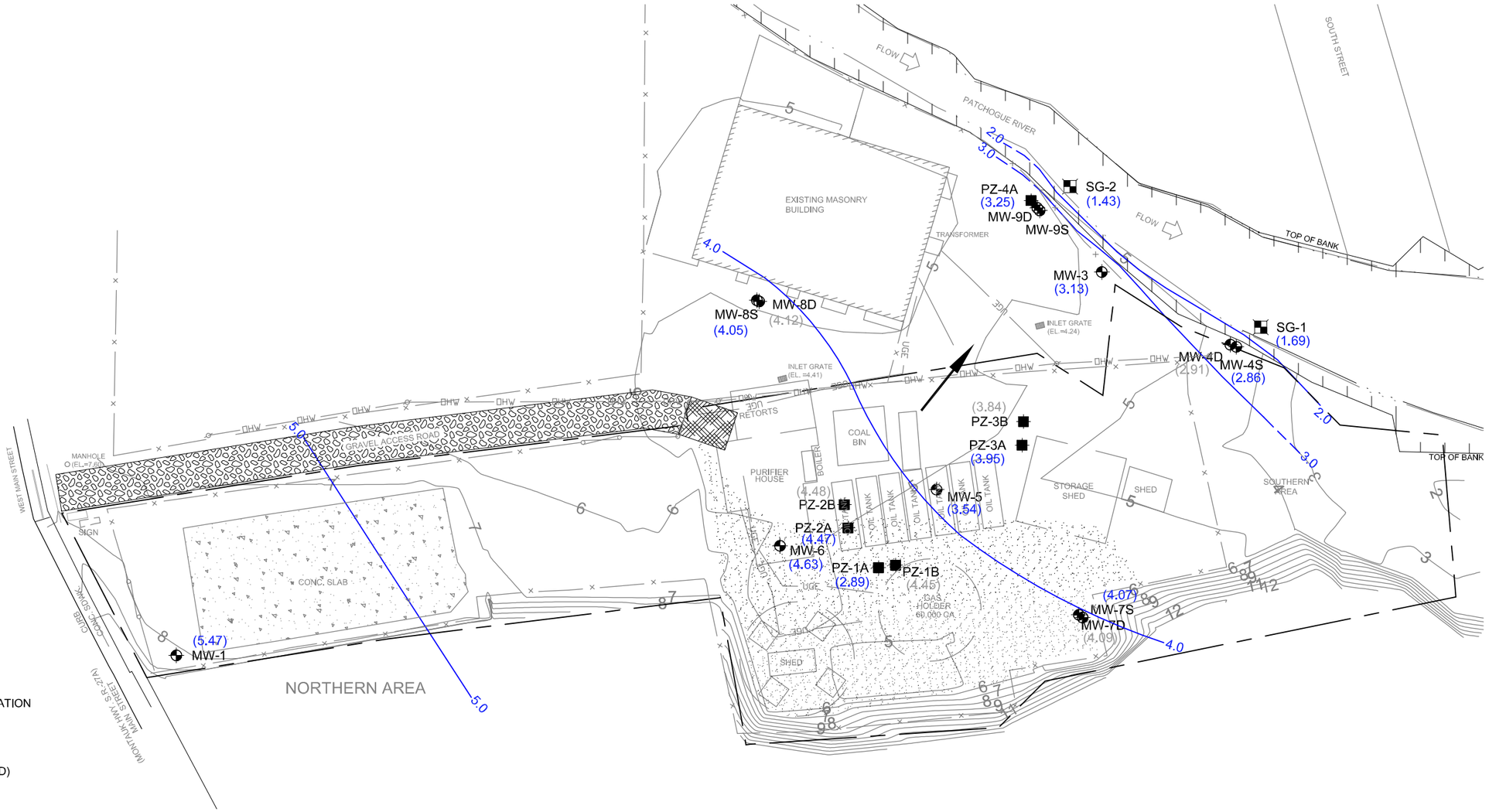
FIGURE

1

Path: P:\DRAFTING\NATIONAL_GRID\Patchogue\Quarterly-GW-Contour-Map\November-13-2012 File Name: FIG-1 Plot Date: March 11, 2013 10:20 AM Cadd User: James, Richard

0 60 120

SCALE IN FEET



LEGEND:

- PROPERTY LINE
- FENCE
- TOPOGRAPHIC CONTOUR
- SHALLOW MONITORING WELL LOCATION
- PIEZOMETER LOCATION
- STAFF GAUGE LOCATION
- 4 — WATER TABLE CONTOUR (FT., NAVD) DASHED WHERE INFERRED
- GENERALIZED DIRECTION OF GROUNDWATER FLOW
- (4.47) — WATER ELEVATION (FT., NAVD) FOR SHALLOW MONITORING WELL, PIEZOMETER OR STAFF GAUGE
- (3.76) — GROUNDWATER HEAD ELEVATION (FT., NAVD) FOR WELLS OR PIEZOMETERS SCREENED BELOW WATER TABLE (FROM DEEP MONITORING WELL OR PIEZOMETER)

NOTES:

1. BASE MAP INFORMATION OBTAINED FROM TETRA TECH EC, INC. DRAWING ENTITLED "CONCEPTUAL SITE MODEL", DATED DECEMBER 17, 2008.

Brown AND Caldwell

DATE: March 11, 2013

WATER TABLE CONTOUR MAP
NOVEMBER 13, 2012

FIGURE

2

Appendix A: Field Sampling Data Sheets

BROWN AND CALDWELL

Allendale, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number: MW-1
Sample I.D.: MW-1 (if different from well no.)

Project: Patchogue-MGP
Personnel: BM AT

Date: 6/26/13 Time: 1630
Weather: Overcast Air Temp.: 85°F

WELL DATA:

Casing Diameter: 2" ☐ Stainless Steel ☐ Steel ☒ PVC ☐ Teflon® ☐ Other: _____
Intake Diameter: 2" ☐ Stainless Steel ☒ Galv. Steel ☐ PVC ☐ Teflon® ☐ Open rock
DEPTH TO : Static Water Level: 5.77 ft Bottom of Well: 15.30 ft
DATUM: ☐ Top of Protective Casing ☒ Top of Well Casing ☐ Other:
CONDITION: Is Well clearly labeled? ☒ Yes ☐ No Is well clean to bottom? ☒ Yes ☐ No
Is Prot. Casing/Surface Mount in Good Cond.? (not bent or corroded) ☒ Yes ☐ No
Does Weep Hole adequately drain well head? ☒ Yes ☐ No
Is Concrete Pad Intact? (not cracked or frost heaved) ☒ Yes ☐ No
Is Padlock Functional? ☒ Yes ☐ No ☐ NA Is Inner Casing Intact? ☒ Yes ☐ No
Is Inner Casing Properly Capped and Vented? ☒ Yes ☐ No
VOLUME OF WATER: Standing in well: NA To be purged: NA

PURGE DATA:

METHOD: ☐ Bailer, Size: ____ ☒ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump
☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

MATERIALS: Pump/Bailer: ☐ Teflon® ☒ Stainless Steel ☐ PVC ☐ Other: _____
Tubing/Rope: ☐ Teflon® ☒ Polyethylene ☐ Polypropylene ☐ Other: _____

Pumping Rate: 150 mL/min Elapsed Time: 30 min Volume Pumped: 1.5 gal
Was well Evacuated? ☐ Yes ☒ No Number of Well Volumes Removed: NA
PURGING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☒ Field Cleaned

SAMPLING DATA:

METHOD: ☐ Bailer, Size: ____ ☒ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump
☐ Syringe Sampler ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

MATERIALS: Pump/Bailer: ☐ Teflon® ☒ Stainless Steel
Tubing/Rope: ☐ Teflon® ☒ Polyethylene
SAMPLING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned
Metals samples field filtered? ☐ Yes ☒ No Method: _____
APPEARANCE: ☒ Clear ☐ Turbid ☐ Color: _____ ☐ Contains Immiscible Liquid
FIELD DETERMINATIONS: pH: 6.97 Meter Model: Horiba U-52 Meter S/N: _____
Temperature: 18.31 Spec. Cond.: 1.87 Meter Model: _____ Meter S/N: _____
ORP: 142 DO: 1.42 Turbidity: 63.0
DUP : ☒ No ☐ Yes Name: _____
MS/MSD : ☒ No ☐ Yes Name: _____
Field Lab Results: ☐ N/A pH: _____ DO: _____ Temperature: _____

I certify that this sample was collected and handled in accordance with applicable regulatory and project protocols.
Signature: _____ Date: 6/26/13

P:\Office\Field_Lab\Field_Data_Sheets\Well_Info_Sheet.doc

BROWN AND CALDWELL

LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: Fitchburg MGP
Personnel: NMM, AT
Purge/Sample Depth: 10.3'
Project Number: 142128
Well ID: MW-1
Sample ID: MW-1

Actual Time	pH	Temp (°C)	ORP (mV)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)	Comments
1630	6.96	19.10	-57	1.63	2.36	142	5.77	150	
1633	6.96	17.33	-76	1.79	1.57	174			
1636	6.96	17.91	-94	1.82	1.20	160			
1639	6.96	18.03	-103	1.84	1.12	149			
1642	6.96	18.00	-111	1.85	1.04	130	5.82	150	
1645	6.96	18.10	-117	1.86	1.54	125			
1648	6.96	18.32	-123	1.87	1.50	109			
1651	6.96	18.49	-128	1.87	1.46	97			
1654	6.97	18.31	-133	1.87	1.43	78.5	5.82		
1657	6.97	18.31	-138	1.87	1.45	72.0			
1700	6.97	18.31	-142	1.87	1.42	63.0			
1703	SAMPLE			Collected					

AT 6/26/13

BROWN AND CALDWELL — Allendale, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number: MW-4S
Sample I.D.: MW-4S (if different from well no.)

Project: Patchogue MGP
Personnel: NPB AT

Date: 6/27/13 Time: 1621
Weather: Overcast Air Temp.: 85

WELL DATA:

Casing Diameter: 2" ☐ Stainless Steel ☐ Steel ☑ PVC ☐ Teflon® ☐ Other: _____
Intake Diameter: 2" ☐ Stainless Steel ☑ Galv. Steel ☐ PVC ☐ Teflon® ☐ Open rock
DEPTH TO : Static Water Level: 4.90 ft Bottom of Well: 12.24 ft
DATUM: ☐ Top of Protective Casing ☑ Top of Well Casing ☐ Other:
CONDITION: Is Well clearly labeled? ☑ Yes ☐ No Is well clean to bottom? ☑ Yes ☐ No
Is Prot. Casing/Surface Mount in Good Cond.? (not bent or corroded) ☑ Yes ☐ No
Does Weep Hole adequately drain well head? ☑ Yes ☐ No
Is Concrete Pad Intact? (not cracked or frost heaved) ☑ Yes ☐ No
Is Padlock Functional? ☐ Yes ☒ No ☐ NA Is Inner Casing Intact? ☑ Yes ☐ No Rusted
Is Inner Casing Properly Capped and Vented? ☑ Yes ☐ No
Lock
VOLUME OF WATER: Standing in well: NA To be purged: NA

PURGE DATA:

METHOD: ☐ Bailer, Size: ____ ☑ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

MATERIALS: Pump/Bailer: ☐ Teflon® ☑ Stainless Steel ☐ PVC ☐ Other: _____
Tubing/Rope: ☐ Teflon® ☑ Polyethylene ☐ Polypropylene ☐ Other: _____

Pumping Rate: 200 mL/min Elapsed Time: 30 min Volume Pumped: 2 gal
Was well Evacuated? ☐ Yes ☑ No Number of Well Volumes Removed: NA
PURGING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned

SAMPLING DATA:

METHOD: ☐ Bailer, Size: ____ ☑ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Syringe Sampler ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

MATERIALS: Pump/Bailer: ☐ Teflon® ☑ Stainless Steel
Tubing/Rope: ☐ Teflon® ☑ Polyethylene

SAMPLING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned
Metals samples field filtered? ☐ Yes ☒ No Method: _____
APPEARANCE: ☑ Clear ☐ Turbid ☐ Color: _____ ☐ Contains Immiscible Liquid
FIELD DETERMINATIONS: pH: 6.46 Meter Model: Horiba U-52 Meter S/N: _____
Temperature: 20.22 Spec. Cond.: 0.387 Meter Model: " Meter S/N: _____
ORP: 19 DO: 0.39 Turbidity: 20.5
DUP : ☒ No ☐ Yes Name: _____
MS/MSD : ☒ No ☐ Yes Name: _____
Field Lab Results: ☒ N/A pH: _____ DO: _____ Temperature: _____

I certify that this sample was collected and handled in accordance with applicable regulatory and project protocols
Signature: Andrew Tarmey Date: 6/27/13

P:\Office\Field_Lab\Field_Data Sheets\Well_Info_Sheet.doc

BROWN AND CALDWELL

LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: Patchogue MGP
Personnel: NPB AT
Purge/Sample Depth: 7.3'

Project Number: 142128
Well ID: MW-4S
Sample ID: MW-4S

Actual Time	pH	Temp (°C)	ORP (mV)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)	Comments
1621	6.54	21.55	-25	0.401	2.80	640	4.90	200	
1624	6.55	20.89	-30	0.396	1.30	550			
1627	6.57	20.64	-26	0.392	0.78	400			
1630	6.51	20.72	-21	0.390	0.68	288			
1633	6.48	20.53	-6	0.389	0.57	120			
1636	6.47	20.42	-3	0.389	0.55	110		200	
1639	6.47	20.42	3	0.387	0.49	72.0			
1642	6.42	20.41	6	0.387	0.46	63.6			
1645	6.45	20.36	12	0.387	0.42	35.3			
1648	6.45	20.17	15	0.387	0.40	29.3			
1651	6.40	20.22	19	0.387	0.39	20.5			
1654	SAMPLES	Collected							

AT 6/27/13

BROWN AND CALDWELL

Allendale, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number: MW-7S
Sample I.D.: MW-7S (if different from well no.)

Project: Patchogue MGP
Personnel: NP/BT

Date: 6/27/13 Time: 0835
Weather: Ft. Cloudy Air Temp.: 65F

WELL DATA:

Casing Diameter: 2" ☐ Stainless Steel ☐ Steel ☑ PVC ☐ Teflon® ☐ Other: _____
Intake Diameter: 2" ☐ Stainless Steel ☑ Galv. Steel ☐ PVC ☐ Teflon® ☐ Open rock
DEPTH TO : Static Water Level: 4.41 ft Bottom of Well: 12.5 ft
DATUM: ☐ Top of Protective Casing ☑ Top of Well Casing ☐ Other:
CONDITION: Is Well clearly labeled? ☑ Yes ☐ No Is well clean to bottom? ☑ Yes ☐ No
Is Prot. Casing/Surface Mount in Good Cond.? (not bent or corroded) ☑ Yes ☐ No
Does Weep Hole adequately drain well head? ☑ Yes ☐ No
Is Concrete Pad Intact? (not cracked or frost heaved) ☑ Yes ☐ No
Is Padlock Functional? ☑ Yes ☐ No ☐ NA Is Inner Casing Intact? ☑ Yes ☐ No
Is Inner Casing Properly Capped and Vented? ☑ Yes ☐ No
VOLUME OF WATER: Standing in well: NA To be purged: NA

PURGE DATA:

METHOD: ☐ Bailer, Size: _____ ☑ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump
☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

MATERIALS: Pump/Bailer: ☐ Teflon® ☑ Stainless Steel ☐ PVC ☐ Other: _____
Tubing/Rope: ☐ Teflon® ☑ Polyethylene ☐ Polypropylene ☐ Other: _____

Pumping Rate: 150 Elapsed Time: 30min Volume Pumped: 1.5gal
Was well Evacuated? ☐ Yes ☑ No Number of Well Volumes Removed: NA
PURGING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned

SAMPLING DATA:

METHOD: ☐ Bailer, Size: _____ ☑ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump
☐ Syringe Sampler ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

MATERIALS: Pump/Bailer: ☐ Teflon® ☑ Stainless Steel
Tubing/Rope: ☐ Teflon® ☑ Polyethylene
SAMPLING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned
Metals samples field filtered? ☐ Yes ☐ No Method: _____
APPEARANCE: ☑ Clear ☐ Turbid ☐ Color: _____ ☐ Contains Immiscible Liquid
FIELD DETERMINATIONS: pH: 6.78 Meter Model: Horiba U-52 Meter S/N: _____
Temperature: 16.59 Spec. Cond.: 0.650 Meter Model: 2100 Meter S/N: _____
ORP: -162 DO: 1.43 Turbidity: 28.3
DUP : ☑ No ☐ Yes Name: _____
MS/MSD: ☑ No ☐ Yes Name: _____
Field Lab Results: ☐ N/A pH: _____ DO: _____ Temperature: _____

I certify that this sample was collected and handled in accordance with applicable regulatory and project protocols.
Signature: _____ Date: 6/27/13

BROWN AND CALDWELL

LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: Patchogue MGP
Personnel: NM JT
Purge/Sample Depth: 7.5'
Project Number: 142128
Well ID: MW-7S
Sample ID: MW-7S

Actual Time	pH	Temp (°C)	ORP (mV)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)	Comments
0835	6.44	18.92	-137	0.624	1.79	102	4.41	150	
0838	6.62	17.16	-152	0.610	1.27	122			
0841	6.66	17.37	-155	0.611	1.27	117			
0844	6.71	16.93	-159	0.610	1.30	101			
0847	6.74	16.67	-161	0.614	1.32	88.9			
0850	6.75	16.57	-160	0.615	1.34	76.5	4.53	150	
0853	6.75	16.45	-160	0.617	1.44	67.5			
0856	6.77	16.44	-161	0.622	1.46	54.1	4.57		
0859	6.77	16.54	-162	0.623	1.45	43.9			
0902	6.77	16.50	-161	0.627	1.46	33.4			
0905	6.78	16.59	-162	0.630	1.43	28.3			
0908	Sample Collected								

6/12/13

BROWN AND CALDWELL

Allendale, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number: MW-7D
Sample I.D.: MW-7D (if different from well no.)

Project: Pathogene WBP
Personnel: NPM ST
Date: 6/27/13 Time: 0938
Weather: overcast Air Temp.: 78

WELL DATA:

Casing Diameter: 2" ☐ Stainless Steel ☐ Steel ☑ PVC ☐ Teflon® ☐ Other: ______
Intake Diameter: 2" ☐ Stainless Steel ☑ Galv. Steel ☐ PVC ☐ Teflon® ☐ Open rock
DEPTH TO: Static Water Level: 4.27 ft Bottom of Well: 28.3 ft
DATUM: ☐ Top of Protective Casing ☑ Top of Well Casing ☐ Other:
CONDITION: Is Well clearly labeled? ☑ Yes ☐ No Is well clean to bottom? ☑ Yes ☐ No
Is Prot. Casing/Surface Mount in Good Cond.? (not bent or corroded) ☑ Yes ☐ No
Does Weep Hole adequately drain well head? ☑ Yes ☐ No
Is Concrete Pad Intact? (not cracked or frost heaved) ☑ Yes ☐ No
Is Padlock Functional? ☐ Yes ☐ No ☐ NA Is Inner Casing Intact? ☑ Yes ☐ No
Is Inner Casing Properly Capped and Vented? ☑ Yes ☐ No
VOLUME OF WATER: Standing in well: NA To be purged: NA

PURGE DATA:

METHOD: ☐ Bailer, Size: ____ ☑ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: ______

MATERIALS: (Pump)/Bailer: ☐ Teflon® ☑ Stainless Steel ☐ PVC ☐ Other: ______
(Tubing)/Rope: ☐ Teflon® ☑ Polyethylene ☐ Polypropylene ☐ Other: ______

Pumping Rate: 200 mL/min Elapsed Time: ~1 Hr Volume Pumped: 500 mL
Was well Evacuated? ☐ Yes ☑ No Number of Well Volumes Removed: NA
PURGING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned

SAMPLING DATA:

METHOD: ☐ Bailer, Size: ____ ☑ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump ☐ Syringe Sampler ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: ______

MATERIALS: (Pump)/Bailer: ☐ Teflon® ☑ Stainless Steel
(Tubing)/Rope: ☐ Teflon® ☑ Polyethylene

SAMPLING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned
Metals samples field filtered? ☐ Yes ☑ No Method: ______
APPEARANCE: ☑ Clear ☐ Turbid ☐ Color: ______ ☐ Contains Immiscible Liquid
FIELD DETERMINATIONS: pH: 6.12 Meter Model: Horiba U-52 Meter S/N: ______
Temperature: 17.62 Spec. Cond.: 0.309 Meter Model: " " Meter S/N: ______
ORP: 108 DO: 2.33 Turbidity: 125
DUP: ☑ No ☐ Yes Name: ______
MS/MSD: ☑ No ☐ Yes Name: ______
Field Lab Results: ☑ N/A pH: ______ DO: ______ Temperature: ______

I certify that this sample was collected and handled in accordance with applicable regulatory and project protocols

Signature: [signature] Date: 6/27/13

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BROWN AND CALDWELL

LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: Patchway MGP
Personnel: NH, AT
Purge/Sample Depth: 23.5'
Project Number: 142128
Well ID: MW-7D
Sample ID: MW-7D

Actual Time	pH	Temp (°C)	ORP (mV)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)	Comments
0938	6.54	15.21	65	0.322	7.05	616	4.27	200	
0941	6.37	16.87	72	0.312	3.32	769			
0944	6.27	16.50	72	0.310	2.63	972			
0947	6.20	16.34	71	0.319	2.26	945			
0950	6.17	15.92	71	0.209	2.13	871			
0953	6.17	16.04	74	0.320	2.19	760	4.33		Rinsed
0956	6.16	15.99	75	0.321	2.04	760			
0959	6.12	16.37	77	0.317	1.61	710			
1002	6.12	16.96	76	0.317	1.70	665			
1005	6.11	17.17	77	0.319	1.68	625			
1008	6.11	17.17	78	0.320	1.64	612			
1011	6.11	17.09	78	0.319	1.77	575			
1014	6.10	16.82	81	0.318	1.66	530	4.34	200	
1017	6.19	16.95	78	0.315	2.60	500			Rinsed
1020	6.14	16.99	83	0.316	2.08	430			
1023	6.11	17.05	84	0.316	1.89	420			
1025	6.10	16.99	86	0.316	1.84	390			
1028	6.10	17.00	88	0.316	1.74	350			
1031	6.15	16.88	91	0.313	2.51	305			Rinsed
1034	6.10	17.06	93	0.313	3.18	275			
1037	6.10	17.07	96	0.314	2.25	225			
1040	6.11	17.13	98	0.313	2.11	190			
1043	6.11	17.10	101	0.314	1.92	175			
1046	6.10	17.19	103	0.313	1.97	158			
1049	6.10	17.30	103	0.313	1.96	150			Rinsed
1052	6.12	17.02	108	0.309	2.33	125			~~Rinsed~~ (AT)
1055	SAMPLE collected								Water Looks clear

BROWN AND CALDWELL

Allendale, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number: MW-8S
Sample I.D.: MW-8S (if different from well no.)

Project: Patchogue MCP
Personnel: NPB AT

Date: 6/27/13 Time: 1408
Weather: Overcast Air Temp.: 85

WELL DATA:

Casing Diameter: 2" ☐ Stainless Steel ☐ Steel ☑ PVC ☐ Teflon® ☐ Other: _____
Intake Diameter: 2" ☐ Stainless Steel ☑ Galv. Steel ☐ PVC ☐ Teflon® ☐ Open rock
DEPTH TO : Static Water Level: 0.18 ft Bottom of Well: 10.1 ft
DATUM: ☐ Top of Protective Casing ☑ Top of Well Casing ☐ Other:
CONDITION: Is Well clearly labeled? ☑ Yes ☐ No Is well clean to bottom? ☑ Yes ☐ No
Is Prot. Casing/Surface Mount in Good Cond.? (not bent or corroded) ☑ Yes ☐ No
Does Weep Hole adequately drain well head? ☑ Yes ☐ No
Is Concrete Pad Intact? (not cracked or frost heaved) ☑ Yes ☐ No
Is Padlock Functional? ☐ Yes ☐ No ☑ NA Is Inner Casing Intact? ☑ Yes ☐ No
Is Inner Casing Properly Capped and Vented? ☑ Yes ☐ No
VOLUME OF WATER: Standing in well: NA To be purged: NA

PURGE DATA:

METHOD: ☐ Bailer, Size: ____ ☑ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump
☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

MATERIALS: Pump/Bailer: ☐ Teflon® ☑ Stainless Steel ☐ PVC ☐ Other: _____
Tubing/Rope: ☐ Teflon® ☑ Polyethylene ☐ Polypropylene ☐ Other: _____

Pumping Rate: 300 mL/min Elapsed Time: 30 min Volume Pumped: 3 gal
Was well Evacuated? ☐ Yes ☑ No Number of Well Volumes Removed: NA
PURGING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned

SAMPLING DATA:

METHOD: ☐ Bailer, Size: ____ ☑ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump
☐ Syringe Sampler ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

MATERIALS: Pump/Bailer: ☐ Teflon® ☑ Stainless Steel
Tubing/Rope: ☐ Teflon® ☑ Polyethylene

SAMPLING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned
Metals samples field filtered? ☐ Yes ☑ No Method: _____
APPEARANCE: ☑ Clear ☐ Turbid ☐ Color: _____ ☐ Contains Immiscible Liquid
FIELD DETERMINATIONS: pH: 6.25 Meter Model: Horiba U-52 Meter S/N: _____
Temperature: 17.92 Spec. Cond.: 0.529 Meter Model: _____ Meter S/N: _____
ORP: -80 (AT) DO: 1.64 Turbidity: 21.0
DUP : ~~☐ No~~ ☑ Yes Name: DUP062713
MS/MSD : ☑ No ☐ Yes Name: _____
Field Lab Results: ☑ N/A pH: _____ DO: _____ Temperature: _____

I certify that this sample was collected and handled in accordance with applicable regulatory and project protocols.
Signature: Andrew Newkirk Date: 6/27/13

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BROWN AND CALDWELL

LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: Patchogue MGP
Personnel: NPB AT
Purge/Sample Depth: 75'

Project Number: 142128
Well ID: MW-85
Sample ID: MW-85

Actual Time	pH	Temp (°C)	ORP (mV)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)	Comments
1408	6.20	22.87	-19	0.352	3.77	112	0.8	300	
1411	6.10	21.65	-36	0.414	3.19	205	0.85		
1414	6.11	19.48	-56	0.487	2.56	565			
1417	6.18	18.65	-74	0.549	2.29	525			
1420	6.21	18.45	-77	0.565	2.08	415			
1423	6.23	18.04	-77	0.575	1.86	256			
1426	6.23	17.82	-79	0.578	1.81	175			
1429	6.24	17.80	-80	0.578	1.71	115	0.85	300	
1431	6.23	17.95	-79	0.579	1.66	94.2			
1434	6.24	17.98	-80	0.579	1.57	45.3			
1437	6.25	17.92	-80	0.579	1.64	21.0			
1440	SAMPLE Collected								
				AT	6/27/13				

BROWN AND CALDWELL

Allendale, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number: MW-8D
Sample I.D.: MW-8D (if different from well no.)

Project: Patchogue MGP
Personnel: NB/BT

Date: 6/27/13 Time: 1503
Weather: Overcast Air Temp.: 85

WELL DATA:

Casing Diameter: 2" ☐ Stainless Steel ☐ Steel ☑ PVC ☐ Teflon® ☐ Other: _____
Intake Diameter: 2" ☐ Stainless Steel ☑ Galv. Steel ☐ PVC ☐ Teflon® ☐ Open rock
DEPTH TO : Static Water Level: 9.65 ft Bottom of Well: 25.3 ft
DATUM: ☐ Top of Protective Casing ☑ Top of Well Casing ☐ Other:
CONDITION: Is Well clearly labeled? ☑ Yes ☐ No Is well clean to bottom? ☑ Yes ☐ No
Is Prot. Casing/Surface Mount in Good Cond.? (not bent or corroded) ☑ Yes ☐ No
Does Weep Hole adequately drain well head? ☑ Yes ☐ No
Is Concrete Pad Intact? (not cracked or frost heaved) ☑ Yes ☐ No
Is Padlock Functional? ☑ Yes ☐ No ☐ NA Is Inner Casing Intact? ☑ Yes ☐ No
Is Inner Casing Properly Capped and Vented? ☑ Yes ☐ No
VOLUME OF WATER: Standing in well: NA To be purged: NA

PURGE DATA:

METHOD: ☐ Bailer, Size: _____ ☑ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump
☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

MATERIALS: Pump/Bailer: ☐ Teflon® ☑ Stainless Steel ☐ PVC ☐ Other: _____
Tubing/Rope: ☐ Teflon® ☑ Polyethylene ☐ Polypropylene ☐ Other: _____

Pumping Rate: 300 Elapsed Time: 50 min Volume Pumped: 3 gal
Was well Evacuated? ☐ Yes ☑ No Number of Well Volumes Removed: NA
PURGING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned

SAMPLING DATA:

METHOD: ☐ Bailer, Size: _____ ☑ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump
☐ Syringe Sampler ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

MATERIALS: Pump/Bailer: ☐ Teflon® ☑ Stainless Steel
Tubing/Rope: ☐ Teflon® ☑ Polyethylene

SAMPLING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned
Metals samples field filtered? ☐ Yes ☐ No Method: _____
APPEARANCE: ☑ Clear ☐ Turbid ☐ Color: _____ ☐ Contains Immiscible Liquid
FIELD DETERMINATIONS: pH: 6.11 Meter Model: Horiba U-52 Meter S/N: _____
Temperature: 15.79 Spec. Cond.: 0.453 Meter Model: " " Meter S/N: _____
ORP: 78 DO: 1.02 Turbidity: 38.9
DUP : ☑ No ☐ Yes Name: _____
MS/MSD : ☐ No ☑ Yes Name: MW-8D MS/MSD
Field Lab Results: ☑ N/A pH: _____ DO: _____ Temperature: _____

I certify that this sample was collected and handled in accordance with applicable regulatory and project protocols.
Signature: _____ Date: 6/27/13

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BROWN AND CALDWELL

LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: Patchogue MGP
Personnel: NH, JT
Purge/Sample Depth: 20'
Project Number: 142128
Well ID: MW-8D
Sample ID: MW-8D

Actual Time	pH	Temp (°C)	ORP (mV)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)	Comments
1503	6.29	19.38	-46	0.540	1.65	207	0.65	300	
1506	6.27	17.82	0	0.497	2.03	183			
1509	6.27	17.43	25	0.455	1.64	182			
1512	6.24	16.83	46	0.446	1.47	205	0.65	300	
1515	6.23	16.72	46	0.448	1.47	230			
1518	6.21	16.21	51	0.450	1.47	245	0.70		Rinse 1/2 through cell
1521	6.24	16.06	54	0.447	2.02	258			
1524	6.17	15.82	67	0.450	0.84	183			
1527	6.15	15.78	72	0.451	0.98	154	0.75		
1530	6.13	15.81	75	0.450	0.97	119			
1533	6.11	15.79	78	0.453	1.00	88.9			
1536	Sample Collected								

6/27/13

BROWN AND CALDWELL

Allendale, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number: MW-9S
Sample I.D.: MW-9S (if different from well no.)

Project: Patchogue MGP
Personnel: Ryan AT

Date: 6/27/13 Time: 1126
Weather: Overcast Air Temp.: 80

WELL DATA:

Casing Diameter: 2" ☐ Stainless Steel ☐ Steel ☑ PVC ☐ Teflon® ☐ Other: _____
Intake Diameter: 2" ☐ Stainless Steel ☐ Galv. Steel ☐ PVC ☐ Teflon® ☐ Open rock
DEPTH TO : Static Water Level: 1.64 ft Bottom of Well: 4.95' ft
DATUM: ☐ Top of Protective Casing ☑ Top of Well Casing ☐ Other:
CONDITION: Is Well clearly labeled? ☑ Yes ☐ No Is well clean to bottom? ☑ Yes ☐ No
Is Prot. Casing/Surface Mount in Good Cond.? (not bent or corroded) ☑ Yes ☐ No
Does Weep Hole adequately drain well head? ☑ Yes ☐ No
Is Concrete Pad Intact? (not cracked or frost heaved) ☑ Yes ☐ No
Is Padlock Functional? ☐ Yes ☐ No ☑ NA Is Inner Casing Intact? ☑ Yes ☐ No
Is Inner Casing Properly Capped and Vented? ☑ Yes ☐ No
VOLUME OF WATER: Standing in well: NA To be purged: NA

PURGE DATA:

METHOD: ☐ Bailer, Size: ____ ☑ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump
☐ Centrifugal Pump ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

MATERIALS: Pump/Bailer: ☐ Teflon® ☑ Stainless Steel ☐ PVC ☐ Other: _____
Tubing/Rope: ☐ Teflon® ☑ Polyethylene ☐ Polypropylene ☐ Other: _____

Pumping Rate: 150 Elapsed Time: 30min Volume Pumped: 1.5 Gal
Was well Evacuated? ☐ Yes ☑ No Number of Well Volumes Removed: NA
PURGING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned

SAMPLING DATA:

METHOD: ☐ Bailer, Size: ____ ☑ Bladder Pump ☐ 2" Submersible Pump ☐ 4" Submersible Pump
☐ Syringe Sampler ☐ Peristaltic Pump ☐ Inertial Lift Pump ☐ Other: _____

MATERIALS: Pump/Bailer: ☐ Teflon® ☑ Stainless Steel
Tubing/Rope: ☐ Teflon® ☑ Polyethylene
SAMPLING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned
Metals samples field filtered? ☐ Yes ☑ No Method: _____
APPEARANCE: ☑ Clear ☐ Turbid ☐ Color: _____ ☐ Contains Immiscible Liquid
FIELD DETERMINATIONS: pH: 6.21 Meter Model: Horiba U-52 Meter S/N: _____
Temperature: 21.95 Spec. Cond.: 0.726 Meter Model: " Meter S/N: _____
ORP: -103 DO: 0.77 Turbidity: 27.7
DUP : ☑ No ☐ Yes Name: _____
MS/MSD ☑ No ☐ Yes Name: _____
Field Lab Results: ☑ N/A pH: _____ DO: _____ Temperature: _____

I certify that this sample was collected and handled in accordance with applicable regulatory and project protocols.
Signature: _____ Date: 6/27/13

BROWN AND CALDWELL

LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: Patchogue MGP
Personnel: NM AT
Purge/Sample Depth: 4.0'
Project Number: 142128
Well ID: MW-95
Sample ID: MW-95

Actual Time	pH	Temp (°C)	ORP (mV)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)	Comments
1126	6.17	21.73	-96	0.671	1.86	423	1.9	150	
1129	6.19	21.54	-97	0.679	1.24	334			
1132	6.19	21.45	-102	0.671	0.99	229	2.15		
1135	6.20	21.40	-100	0.692	0.88	106			
1138	6.19	21.56	-99	0.695	0.89	72.5	2.2	150	
1141	6.20	21.75	-100	0.700	0.91	52.9			
1144	6.20	21.94	-100	0.706	0.84	43.6			
1147	6.20	22.17	-101	0.712	0.85	38.9			
1150	6.20	22.01	-101	0.715	0.80	33.6	2.55		
1153	6.21	21.92	-102	0.725	0.77	28.8			
1156	6.21	21.95	-103	0.726	0.72	29.7			
1159	Sample Collected								

NM 6/27/13

22'

Appendix B: Laboratory Reports (CD-ROM)

Appendix C: Data Usability Summary Report (DUSR)

ENVIRONMENTAL
Data Services, Inc.

DATA USABILITY SUMMARY REPORT
PATCHOGUE, NEW YORK

Client: Brown and Caldwell, Upper Saddle River, New Jersey
SDG: PCH13
Laboratory: Lancaster Laboratories, Lancaster, Pennsylvania
Site: Patchogue, New York
Date: September 1, 2013

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	MW-1 GRAB GROUNDWATER	7113055	Water
2	MW-7S GRAB GROUNDWATER	7113056	Water
3	MW-7D GRAB GROUNDWATER	7113057	Water
4	MW-9S GRAB GROUNDWATER	7113058	Water
5	FB062713 GRAB WATER	7113059	Water
6	MW-8S GRAB GROUNDWATER	7113060	Water
7	DUP062713 GRAB GROUNDWATER	7113061	Water
8	MW-8D GRAB GROUNDWATER	7113062	Water
8MS	MW-8D GRAB GROUNDWATERMS	7113063	Water
8MSD	MW-8D GRAB GROUNDWATERMSD	7113064	Water
9	MW-4S GRAB GROUNDWATER	7113065	Water
10	MW-49 GRAB GROUNDWATER	7113066	Water
11*	TRIPBLANK WATER	7113067	Water

* - VOC only

A Data Usability Summary Review was performed on the analytical data for nine water samples, one aqueous field blank sample, and one aqueous trip blank sample June 26-27, 2013 by Brown and Caldwell at the Patchogue, New York Site. The samples were analyzed under Environmental Protection Agency (USEPA) *"Test Methods for the Evaluation of Solid Waste, USEPA SW-846, Third Edition, September 1986, with revisions".*

Specific method references are as follows:

Analysis	*Method References*
VOC (BTEX and MTBE)	USEPA SW-846 Method 8260B
SVOC (PAH)	USEPA SW-846 Method 8270C

The data have been validated according to the protocols and quality control (QC) requirements of the analytical methods and the USEPA Region II Data Review Standard Operating Procedures (SOPs) as follows:

- SOP Number HW-24, Revision 2, August 2008: Validating Volatile Organic Compounds by SW-846 Method 8260B;
- SOP Number HW-22, Revision 4, August 2008: Validating Semivolatile Organic Compounds by SW-846 Method 8270D;

- and the reviewer's professional judgment.

The following items/criteria were reviewed:

Organics

- Data Completeness
- Holding times and sample preservation
- Surrogate Spike recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Laboratory Control Sample (LCS) recoveries
- Method blank and field blank contamination
- Gas Chromatography (GC)/Mass Spectroscopy (MS) tuning
- Initial and continuing calibration summaries
- Compound Quantitation
- Internal standard area and retention time summary forms
- Field Duplicate sample precision

Overall Usability Issues:

There were no rejections of data.

Overall the data is acceptable for the intended purposes. There were no qualifications.

Data Completeness

- The data is a complete Category B data package as defined under the requirements for the NYS Department of Environmental Conservation Analytical Services Protocol.

Volatile Organic Compounds (BTEX and MTBE)

Holding Times

- All samples were analyzed within 14 days for preserved water samples.

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- The MS/MSD sample exhibited acceptable percent recoveries (%R) and/or relative percent differences (RPD).

Laboratory Control Samples

- The LCS sample exhibited acceptable %R values.

Method Blank

- The method blanks were free of contamination.

Field Blank

- The following table summarizes field blank contamination.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
FB062713 GRAB WATER	None - ND	-	-	-	-
TRIP BLANK WATER	None - ND	-	-	-	-

GC/MS Tuning

- All criteria were met.

Initial Calibration

- All %RSD and average RRF criteria were met.

Continuing Calibration

- All %D and RRF criteria were met.

Compound Quantitation

- All criteria were met.

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

Field Duplicate Sample Precision

- Field duplicate results are summarized below. The precision was acceptable.

VOC				
Compound	MW-8S GRAB GROUNDWATER ug/L	DUP062713 GRAB GROUNDWATER ug/L	RPD	Qualifier
None	ND	ND	-	-

Semivolatile Organics Compounds (PAH)

Holding Times

- All samples were extracted within 7 days for water samples and analyzed within 40 days.

Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- The MS/MSD sample exhibited acceptable percent recoveries (%R) and/or relative percent differences (RPD).

Laboratory Control Samples

- The LCS sample exhibited acceptable %R values.

Method Blank

- The method blanks were free of contamination.

Field Blanks

- The following table summarizes field blank contamination.

Blank ID	Compound	Conc. ug/L	Action Level ug/L	Qualifier	Affected Samples
FB062713 GRAB WATER	ND	-	-	-	-

GC/MS Tuning

- All criteria were met.

Initial Calibration

- All %RSD and average RRF criteria were met.

Continuing Calibration

- All %D and RRF criteria were met.

Compound Quantitation

- All criteria were met.

Internal Standard (IS) Area Performance

- All internal standards met response and retention time (RT) criteria.

Field Duplicate Sample Precision

- Field duplicate results are summarized below. The precision was acceptable.

PAH				
Compound	MW-8S GRAB GROUNDWATER ug/L	DUP062713 GRAB GROUNDWATER ug/L	RPD	Qualifier
Acenaphthene	0.4	0.3	29%	None

Please contact the undersigned at (757) 564-0090 if you have any questions or need further information.

Signed: Nancy Weaver Dated: 9/4/13

Nancy Weaver
Senior Chemist

Data Qualifiers

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ = The analyte was not detected above the sample reporting limit; and the reporting limit is approximate.

U = The analyte was analyzed for, but was not detected above the sample reporting limit.

R = The sample results is rejected due to serious deficiencies. The presence or absence of the analyte cannot be verified.

eurofins | Lancaster Laboratories Environmental

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Analysis Report

Sample Description: MW-1 Grab Groundwater
COC: 332951
Patchogue, NY

LL Sample # WW 7113055
LL Group # 1400827
Account # 09286

Project Name: Patchogue, NY

Collected: 06/26/2013 17:03 by NPB

Submitted: 06/29/2013 09:35
Reported: 07/12/2013 11:49

Brown & Caldwell
2 Park Way
Suite 2A
Upper Saddle River NJ 07458

PCH01 SDG#: PCH13-01

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	
10335	Benzene	71-43-2	N.D.		0.5	1
10335	Ethylbenzene	100-41-4	N.D.		0.8	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.		0.5	1
10335	Toluene	108-88-3	N.D.		0.7	1
10335	m+p-Xylene	179601-23-1	N.D.		0.8	1
10335	o-Xylene	95-47-6	N.D.		0.8	1
10335	Xylene (Total)	1330-20-7	N.D.		0.8	1
GC/MS Semivolatiles	**SW-846 8270C**		ug/l		ug/l	
07805	Acenaphthene	83-32-9	N.D.		0.1	1
07805	Acenaphthylene	208-96-8	N.D.		0.1	1
07805	Anthracene	120-12-7	N.D.		0.1	1
07805	**Benzo(a)anthracene**	56-55-3	**0.1**	J	0.1	1
07805	Benzo(a)pyrene	50-32-8	N.D.		0.1	1
07805	**Benzo(b)fluoranthene**	205-99-2	**0.1**	J	0.1	1
07805	Benzo(g,h,i)perylene	191-24-2	N.D.		0.1	1
07805	Benzo(k)fluoranthene	207-08-9	N.D.		0.1	1
07805	**Chrysene**	218-01-9	**0.2**	J	0.1	1
07805	Dibenz(a,h)anthracene	53-70-3	N.D.		0.1	1
07805	**Fluoranthene**	206-44-0	**0.1**	J	0.1	1
07805	Fluorene	86-73-7	N.D.		0.1	1
07805	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.1	1
07805	**Naphthalene**	91-20-3	**0.1**	J	0.1	1
07805	Phenanthrene	85-01-8	N.D.		0.1	1
07805	**Pyrene**	129-00-0	**0.2**	J	0.1	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	UST VOCs 8260 (Water)	SW-846 8260B	1	T131901AA	07/10/2013 00:52	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131901AA	07/10/2013 00:52	Sarah A Guill	1
07805	PAHs in Water by GC/MS	SW-846 8270C	1	13182WAG026	07/03/2013 09:49	Brian K Graham	1
07807	BNA Water Extraction	SW-846 3510C	1	13182WAG026	07/01/2013 22:30	Karen L Beyer	1

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Analysis Report

Sample Description: MW-7S Grab Groundwater
COC: 332951
Patchogue, NY

LL Sample # WW 7113056
LL Group # 1400827
Account # 09286

Project Name: Patchogue, NY

Collected: 06/27/2013 09:08 by NPB

Submitted: 06/29/2013 09:35
Reported: 07/12/2013 11:49

Brown & Caldwell
2 Park Way
Suite 2A
Upper Saddle River NJ 07458

PCH7S SDG#: PCH13-02

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	
10335	**Benzene**	71-43-2	**0.7**	**J**	0.5	1
10335	Ethylbenzene	100-41-4	N.D.		0.8	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.		0.5	1
10335	Toluene	108-88-3	N.D.		0.7	1
10335	m+p-Xylene	179601-23-1	N.D.		0.8	1
10335	o-Xylene	95-47-6	N.D.		0.8	1
10335	Xylene (Total)	1330-20-7	N.D.		0.8	1
GC/MS Semivolatiles	**SW-846 8270C**		ug/l		ug/l	
07805	Acenaphthene	83-32-9	N.D.		0.1	1
07805	Acenaphthylene	208-96-8	N.D.		0.1	1
07805	**Anthracene**	120-12-7	**0.2**	**J**	0.1	1
07805	**Benzo(a)anthracene**	56-55-3	**0.1**	**J**	0.1	1
07805	Benzo(a)pyrene	50-32-8	N.D.		0.1	1
07805	Benzo(b)fluoranthene	205-99-2	N.D.		0.1	1
07805	Benzo(g,h,i)perylene	191-24-2	N.D.		0.1	1
07805	Benzo(k)fluoranthene	207-08-9	N.D.		0.1	1
07805	Chrysene	218-01-9	N.D.		0.1	1
07805	Dibenz(a,h)anthracene	53-70-3	N.D.		0.1	1
07805	Fluoranthene	206-44-0	N.D.		0.1	1
07805	Fluorene	86-73-7	N.D.		0.1	1
07805	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.1	1
07805	**Naphthalene**	91-20-3	**1**		0.1	1
07805	Phenanthrene	85-01-8	N.D.		0.1	1
07805	Pyrene	129-00-0	N.D.		0.1	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	UST VOCs 8260 (Water)	SW-846 8260B	1	T131901AA	07/09/2013 19:58	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131901AA	07/09/2013 19:58	Sarah A Guill	1
07805	PAHs in Water by GC/MS	SW-846 8270C	1	13182WAG026	07/03/2013 10:12	Brian K Graham	1
07807	BNA Water Extraction	SW-846 3510C	1	13182WAG026	07/01/2013 22:30	Karen L Beyer	1

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Analysis Report

Sample Description: MW-7D Grab Groundwater
COC: 332951
Patchogue, NY

LL Sample # WW 7113057
LL Group # 1400827
Account # 09286

Project Name: Patchogue, NY

Collected: 06/27/2013 10:55 by NPB

Submitted: 06/29/2013 09:35
Reported: 07/12/2013 11:49

Brown & Caldwell
2 Park Way
Suite 2A
Upper Saddle River NJ 07458

PCH7D SDG#: PCH13-03

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**		**ug/l**	
10335	Benzene	71-43-2	N.D.		0.5	1
10335	Ethylbenzene	100-41-4	N.D.		0.8	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.		0.5	1
10335	Toluene	108-88-3	N.D.		0.7	1
10335	m+p-Xylene	179601-23-1	N.D.		0.8	1
10335	o-Xylene	95-47-6	N.D.		0.8	1
10335	Xylene (Total)	1330-20-7	N.D.		0.8	1
GC/MS Semivolatiles	**SW-846 8270C**		**ug/l**		**ug/l**	
07805	Acenaphthene	83-32-9	N.D.		0.09	1
07805	Acenaphthylene	208-96-8	N.D.		0.09	1
07805	Anthracene	120-12-7	N.D.		0.09	1
07805	Benzo(a)anthracene	56-55-3	N.D.		0.09	1
07805	**Benzo(a)pyrene**	50-32-8	**0.1**	**J**	0.09	1
07805	**Benzo(b)fluoranthene**	205-99-2	**0.1**	**J**	0.09	1
07805	Benzo(g,h,i)perylene	191-24-2	N.D.		0.09	1
07805	**Benzo(k)fluoranthene**	207-08-9	**0.1**	**J**	0.09	1
07805	**Chrysene**	218-01-9	**0.1**	**J**	0.09	1
07805	Dibenz(a,h)anthracene	53-70-3	N.D.		0.09	1
07805	Fluoranthene	206-44-0	N.D.		0.09	1
07805	Fluorene	86-73-7	N.D.		0.09	1
07805	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.09	1
07805	Naphthalene	91-20-3	N.D.		0.09	1
07805	Phenanthrene	85-01-8	N.D.		0.09	1
07805	Pyrene	129-00-0	N.D.		0.09	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	UST VOCs 8260 (Water)	SW-846 8260B	1	T131901AA	07/09/2013 20:22	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131901AA	07/09/2013 20:22	Sarah A Guill	1
07805	PAHs in Water by GC/MS	SW-846 8270C	1	13182WAG026	07/03/2013 10:36	Brian K Graham	1
07807	BNA Water Extraction	SW-846 3510C	1	13182WAG026	07/01/2013 22:30	Karen L Beyer	1

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Analysis Report

Sample Description: MW-9S Grab Groundwater
COC: 332951
Patchogue, NY

LL Sample # WW 7113058
LL Group # 1400827
Account # 09286

Project Name: Patchogue, NY

Collected: 06/27/2013 11:59 by NPB

Submitted: 06/29/2013 09:35
Reported: 07/12/2013 11:49

Brown & Caldwell
2 Park Way
Suite 2A
Upper Saddle River NJ 07458

PCH9S SDG#: PCH13-04

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	
10335	Benzene	71-43-2	N.D.		0.5	1
10335	Ethylbenzene	100-41-4	N.D.		0.8	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.		0.5	1
10335	Toluene	108-88-3	N.D.		0.7	1
10335	m+p-Xylene	179601-23-1	N.D.		0.8	1
10335	o-Xylene	95-47-6	N.D.		0.8	1
10335	Xylene (Total)	1330-20-7	N.D.		0.8	1
GC/MS Semivolatiles	**SW-846 8270C**		ug/l		ug/l	
07805	**Acenaphthene**	83-32-9	**0.2**	**J**	0.1	1
07805	Acenaphthylene	208-96-8	N.D.		0.1	1
07805	**Anthracene**	120-12-7	**0.2**	**J**	0.1	1
07805	**Benzo(a)anthracene**	56-55-3	**0.2**	**J**	0.1	1
07805	**Benzo(a)pyrene**	50-32-8	**0.2**	**J**	0.1	1
07805	**Benzo(b)fluoranthene**	205-99-2	**0.2**	**J**	0.1	1
07805	Benzo(g,h,i)perylene	191-24-2	N.D.		0.1	1
07805	**Benzo(k)fluoranthene**	207-08-9	**0.1**	**J**	0.1	1
07805	**Chrysene**	218-01-9	**0.1**	**J**	0.1	1
07805	Dibenz(a,h)anthracene	53-70-3	N.D.		0.1	1
07805	**Fluoranthene**	206-44-0	**0.3**	**J**	0.1	1
07805	Fluorene	86-73-7	N.D.		0.1	1
07805	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.1	1
07805	**Naphthalene**	91-20-3	**0.1**	**J**	0.1	1
07805	**Phenanthrene**	85-01-8	**0.2**	**J**	0.1	1
07805	**Pyrene**	129-00-0	**0.4**	**J**	0.1	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	UST VOCs 8260 (Water)	SW-846 8260B	1	T131901AA	07/09/2013 20:47	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131901AA	07/09/2013 20:47	Sarah A Guill	1
07805	PAHs in Water by GC/MS	SW-846 8270C	1	13182WAG026	07/03/2013 10:59	Brian K Graham	1
07807	BNA Water Extraction	SW-846 3510C	1	13182WAG026	07/01/2013 22:30	Karen L Beyer	1

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Analysis Report

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Sample Description: FB062713 Grab Water
COC: 332951
Patchogue, NY

LL Sample # WW 7113059
LL Group # 1400827
Account # 09286

Project Name: Patchogue, NY

Collected: 06/27/2013 14:25 by NPB

Submitted: 06/29/2013 09:35
Reported: 07/12/2013 11:49

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2 Park Way
Suite 2A
Upper Saddle River NJ 07458

PCHFB SDG#: PCH13-05FB

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Semivolatiles	**SW-846 8270C**		**ug/l**	**ug/l**	
07805	Acenaphthene	83-32-9	N.D.	0.1	1
07805	Acenaphthylene	208-96-8	N.D.	0.1	1
07805	Anthracene	120-12-7	N.D.	0.1	1
07805	Benzo(a)anthracene	56-55-3	N.D.	0.1	1
07805	Benzo(a)pyrene	50-32-8	N.D.	0.1	1
07805	Benzo(b)fluoranthene	205-99-2	N.D.	0.1	1
07805	Benzo(g,h,i)perylene	191-24-2	N.D.	0.1	1
07805	Benzo(k)fluoranthene	207-08-9	N.D.	0.1	1
07805	Chrysene	218-01-9	N.D.	0.1	1
07805	Dibenz(a,h)anthracene	53-70-3	N.D.	0.1	1
07805	Fluoranthene	206-44-0	N.D.	0.1	1
07805	Fluorene	86-73-7	N.D.	0.1	1
07805	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.1	1
07805	Naphthalene	91-20-3	N.D.	0.1	1
07805	Phenanthrene	85-01-8	N.D.	0.1	1
07805	Pyrene	129-00-0	N.D.	0.1	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07805	PAHs in Water by GC/MS	SW-846 8270C	1	13182WAG026	07/03/2013 15:16	Matthew S Woods	1
07807	BNA Water Extraction	SW-846 3510C	1	13182WAG026	07/01/2013 22:30	Karen L Beyer	1

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Analysis Report

Sample Description: MW-8S Grab Groundwater
COC: 332951
Patchogue, NY

LL Sample # WW 7113060
LL Group # 1400827
Account # 09286

Project Name: Patchogue, NY

Collected: 06/27/2013 14:40 by NPB

Submitted: 06/29/2013 09:35
Reported: 07/12/2013 11:49

Brown & Caldwell
2 Park Way
Suite 2A
Upper Saddle River NJ 07458

PCH8S SDG#: PCH13-06

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**		**ug/l**	
10335	Benzene	71-43-2	N.D.		0.5	1
10335	Ethylbenzene	100-41-4	N.D.		0.8	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.		0.5	1
10335	Toluene	108-88-3	N.D.		0.7	1
10335	m+p-Xylene	179601-23-1	N.D.		0.8	1
10335	o-Xylene	95-47-6	N.D.		0.8	1
10335	Xylene (Total)	1330-20-7	N.D.		0.8	1
GC/MS Semivolatiles	**SW-846 8270C**		**ug/l**		**ug/l**	
07805	**Acenaphthene**	83-32-9	**0.4**	**J**	0.09	1
07805	Acenaphthylene	208-96-8	N.D.		0.09	1
07805	Anthracene	120-12-7	N.D.		0.09	1
07805	Benzo(a)anthracene	56-55-3	N.D.		0.09	1
07805	Benzo(a)pyrene	50-32-8	N.D.		0.09	1
07805	Benzo(b)fluoranthene	205-99-2	N.D.		0.09	1
07805	Benzo(g,h,i)perylene	191-24-2	N.D.		0.09	1
07805	Benzo(k)fluoranthene	207-08-9	N.D.		0.09	1
07805	Chrysene	218-01-9	N.D.		0.09	1
07805	Dibenz(a,h)anthracene	53-70-3	N.D.		0.09	1
07805	Fluoranthene	206-44-0	N.D.		0.09	1
07805	Fluorene	86-73-7	N.D.		0.09	1
07805	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.09	1
07805	Naphthalene	91-20-3	N.D.		0.09	1
07805	Phenanthrene	85-01-8	N.D.		0.09	1
07805	Pyrene	129-00-0	N.D.		0.09	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	UST VOCs 8260 (Water)	SW-846 8260B	1	T131901AA	07/09/2013 21:12	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131901AA	07/09/2013 21:12	Sarah A Guill	1
07805	PAHs in Water by GC/MS	SW-846 8270C	1	13182WAG026	07/03/2013 15:41	Matthew S Woods	1
07807	BNA Water Extraction	SW-846 3510C	1	13182WAG026	07/01/2013 22:30	Karen L Beyer	1

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Analysis Report

Sample Description: DUP062713 Grab Groundwater
COC: 332951
Patchogue, NY

LL Sample # WW 7113061
LL Group # 1400827
Account # 09286

Project Name: Patchogue, NY

Collected: 06/27/2013 by NPB

Submitted: 06/29/2013 09:35
Reported: 07/12/2013 11:49

Brown & Caldwell
2 Park Way
Suite 2A
Upper Saddle River NJ 07458

PCHFD SDG#: PCH13-07FD

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**		**ug/l**	
10335	Benzene	71-43-2	N.D.		0.5	1
10335	Ethylbenzene	100-41-4	N.D.		0.8	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.		0.5	1
10335	Toluene	108-88-3	N.D.		0.7	1
10335	m+p-Xylene	179601-23-1	N.D.		0.8	1
10335	o-Xylene	95-47-6	N.D.		0.8	1
10335	Xylene (Total)	1330-20-7	N.D.		0.8	1
GC/MS Semivolatiles	**SW-846 8270C**		**ug/l**		**ug/l**	
07805	**Acenaphthene**	83-32-9	**0.3**	**J**	0.1	1
07805	Acenaphthylene	208-96-8	N.D.		0.1	1
07805	Anthracene	120-12-7	N.D.		0.1	1
07805	Benzo(a)anthracene	56-55-3	N.D.		0.1	1
07805	Benzo(a)pyrene	50-32-8	N.D.		0.1	1
07805	Benzo(b)fluoranthene	205-99-2	N.D.		0.1	1
07805	Benzo(g,h,i)perylene	191-24-2	N.D.		0.1	1
07805	Benzo(k)fluoranthene	207-08-9	N.D.		0.1	1
07805	Chrysene	218-01-9	N.D.		0.1	1
07805	Dibenz(a,h)anthracene	53-70-3	N.D.		0.1	1
07805	Fluoranthene	206-44-0	N.D.		0.1	1
07805	Fluorene	86-73-7	N.D.		0.1	1
07805	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.1	1
07805	Naphthalene	91-20-3	N.D.		0.1	1
07805	Phenanthrene	85-01-8	N.D.		0.1	1
07805	Pyrene	129-00-0	N.D.		0.1	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	UST VOCs 8260 (Water)	SW-846 8260B	1	T131901AA	07/10/2013 01:16	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131901AA	07/10/2013 01:16	Sarah A Guill	1
07805	PAHs in Water by GC/MS	SW-846 8270C	1	13182WAG026	07/03/2013 16:04	Matthew S Woods	1
07807	BNA Water Extraction	SW-846 3510C	1	13182WAG026	07/01/2013 22:30	Karen L Beyer	1

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Analysis Report

Sample Description: MW-8D Grab Groundwater
COC: 332951
Patchogue, NY

LL Sample # WW 7113062
LL Group # 1400827
Account # 09286

Project Name: Patchogue, NY

Collected: 06/27/2013 15:36 by NPB

Submitted: 06/29/2013 09:35
Reported: 07/12/2013 11:49

Brown & Caldwell
2 Park Way
Suite 2A
Upper Saddle River NJ 07458

PCH8D SDG#: PCH13-08BKG

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	
10335	Benzene	71-43-2	N.D.		0.5	1
10335	Ethylbenzene	100-41-4	N.D.		0.8	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.		0.5	1
10335	Toluene	108-88-3	N.D.		0.7	1
10335	m+p-Xylene	179601-23-1	N.D.		0.8	1
10335	o-Xylene	95-47-6	N.D.		0.8	1
10335	Xylene (Total)	1330-20-7	N.D.		0.8	1
GC/MS Semivolatiles	**SW-846 8270C**		ug/l		ug/l	
07805	Acenaphthene	83-32-9	N.D.		0.1	1
07805	Acenaphthylene	208-96-8	N.D.		0.1	1
07805	Anthracene	120-12-7	N.D.		0.1	1
07805	**Benzo(a)anthracene**	56-55-3	**0.1**	**J**	0.1	1
07805	Benzo(a)pyrene	50-32-8	N.D.		0.1	1
07805	Benzo(b)fluoranthene	205-99-2	N.D.		0.1	1
07805	Benzo(g,h,i)perylene	191-24-2	N.D.		0.1	1
07805	Benzo(k)fluoranthene	207-08-9	N.D.		0.1	1
07805	Chrysene	218-01-9	N.D.		0.1	1
07805	Dibenz(a,h)anthracene	53-70-3	N.D.		0.1	1
07805	Fluoranthene	206-44-0	N.D.		0.1	1
07805	Fluorene	86-73-7	N.D.		0.1	1
07805	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.1	1
07805	Naphthalene	91-20-3	N.D.		0.1	1
07805	Phenanthrene	85-01-8	N.D.		0.1	1
07805	**Pyrene**	129-00-0	**0.1**	**J**	0.1	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	UST VOCs 8260 (Water)	SW-846 8260B	1	T131901AA	07/09/2013 22:49	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131901AA	07/09/2013 22:49	Sarah A Guill	1
07805	PAHs in Water by GC/MS	SW-846 8270C	1	13182WAG026	07/03/2013 04:02	Brian K Graham	1
07807	BNA Water Extraction	SW-846 3510C	1	13182WAG026	07/01/2013 22:30	Karen L Beyer	1

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Analysis Report

Sample Description: MW-4S Grab Groundwater
COC: 332951
Patchogue, NY

LL Sample # WW 7113065
LL Group # 1400827
Account # 09286

Project Name: Patchogue, NY

Collected: 06/27/2013 16:54 by NPB

Submitted: 06/29/2013 09:35
Reported: 07/12/2013 11:49

Brown & Caldwell
2 Park Way
Suite 2A
Upper Saddle River NJ 07458

PCH4S SDG#: PCH13-09

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l		ug/l	
10335	**Benzene**	71-43-2	**0.8**	**J**	0.5	1
10335	Ethylbenzene	100-41-4	N.D.		0.8	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.		0.5	1
10335	Toluene	108-88-3	N.D.		0.7	1
10335	m+p-Xylene	179601-23-1	N.D.		0.8	1
10335	o-Xylene	95-47-6	N.D.		0.8	1
10335	Xylene (Total)	1330-20-7	N.D.		0.8	1
GC/MS Semivolatiles	**SW-846 8270C**		ug/l		ug/l	
07805	Acenaphthene	83-32-9	N.D.		0.1	1
07805	Acenaphthylene	208-96-8	N.D.		0.1	1
07805	**Anthracene**	120-12-7	**0.2**	**J**	0.1	1
07805	Benzo(a)anthracene	56-55-3	N.D.		0.1	1
07805	Benzo(a)pyrene	50-32-8	N.D.		0.1	1
07805	Benzo(b)fluoranthene	205-99-2	N.D.		0.1	1
07805	Benzo(g,h,i)perylene	191-24-2	N.D.		0.1	1
07805	Benzo(k)fluoranthene	207-08-9	N.D.		0.1	1
07805	Chrysene	218-01-9	N.D.		0.1	1
07805	Dibenz(a,h)anthracene	53-70-3	N.D.		0.1	1
07805	Fluoranthene	206-44-0	N.D.		0.1	1
07805	Fluorene	86-73-7	N.D.		0.1	1
07805	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.		0.1	1
07805	Naphthalene	91-20-3	N.D.		0.1	1
07805	Phenanthrene	85-01-8	N.D.		0.1	1
07805	**Pyrene**	129-00-0	**0.1**	**J**	0.1	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	UST VOCs 8260 (Water)	SW-846 8260B	1	T131901AA	07/10/2013 00:03	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131901AA	07/10/2013 00:03	Sarah A Guill	1
07805	PAHs in Water by GC/MS	SW-846 8270C	1	13182WAG026	07/03/2013 16:27	Matthew S Woods	1
07807	BNA Water Extraction	SW-846 3510C	1	13182WAG026	07/01/2013 22:30	Karen L Beyer	1

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Analysis Report

Sample Description: MW-4D Grab Groundwater
COC: 332951
Patchogue, NY

LL Sample # WW 7113066
LL Group # 1400827
Account # 09286

Project Name: Patchogue, NY

Collected: 06/27/2013 16:50 by NPB

Submitted: 06/29/2013 09:35
Reported: 07/12/2013 11:49

Brown & Caldwell
2 Park Way
Suite 2A
Upper Saddle River NJ 07458

PCH4D SDG#: PCH13-10

CAT No.	Analysis Name	CAS Number	As Received Result		As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		**ug/l**		**ug/l**	
10335	Benzene	71-43-2	N.D.		0.5	1
10335	Ethylbenzene	100-41-4	N.D.		0.8	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.		0.5	1
10335	Toluene	108-88-3	N.D.		0.7	1
10335	m+p-Xylene	179601-23-1	N.D.		0.8	1
10335	o-Xylene	95-47-6	N.D.		0.8	1
10335	Xylene (Total)	1330-20-7	N.D.		0.8	1
GC/MS Semivolatiles	**SW-846 8270C**		**ug/l**		**ug/l**	
07805	Acenaphthene	83-32-9	N.D.		0.1	1
07805	**Acenaphthylene**	208-96-8	**0.4**	**J**	0.1	1
07805	Anthracene	120-12-7	N.D.		0.1	1
07805	**Benzo(a)anthracene**	56-55-3	**0.3**	**J**	0.1	1
07805	**Benzo(a)pyrene**	50-32-8	**0.3**	**J**	0.1	1
07805	**Benzo(b)fluoranthene**	205-99-2	**0.3**	**J**	0.1	1
07805	**Benzo(g,h,i)perylene**	191-24-2	**0.2**	**J**	0.1	1
07805	**Benzo(k)fluoranthene**	207-08-9	**0.2**	**J**	0.1	1
07805	**Chrysene**	218-01-9	**0.3**	**J**	0.1	1
07805	Dibenz(a,h)anthracene	53-70-3	N.D.		0.1	1
07805	**Fluoranthene**	206-44-0	**0.4**	**J**	0.1	1
07805	**Fluorene**	86-73-7	**0.2**	**J**	0.1	1
07805	**Indeno(1,2,3-cd)pyrene**	193-39-5	**0.2**	**J**	0.1	1
07805	**Naphthalene**	91-20-3	**0.2**	**J**	0.1	1
07805	**Phenanthrene**	85-01-8	**0.3**	**J**	0.1	1
07805	**Pyrene**	129-00-0	**0.4**	**J**	0.1	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	UST VOCs 8260 (Water)	SW-846 8260B	1	T131901AA	07/10/2013 00:28	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131901AA	07/10/2013 00:28	Sarah A Guill	1
07805	PAHs in Water by GC/MS	SW-846 8270C	1	13182WAG026	07/03/2013 16:50	Matthew S Woods	1
07807	BNA Water Extraction	SW-846 3510C	1	13182WAG026	07/01/2013 22:30	Karen L Beyer	1

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Analysis Report

Sample Description: Trip Blank Water
COC: 332949
Patchogue, NY

LL Sample # WW 7113067
LL Group # 1400827
Account # 09286

Project Name: Patchogue, NY

Collected: 06/26/2013

Submitted: 06/29/2013 09:35
Reported: 07/12/2013 11:49

Brown & Caldwell
2 Park Way
Suite 2A
Upper Saddle River NJ 07458

PCHTB SDG#: PCH13-11TB*

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS Volatiles	**SW-846 8260B**		ug/l	ug/l	
10335	Benzene	71-43-2	N.D.	0.5	1
10335	Ethylbenzene	100-41-4	N.D.	0.8	1
10335	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
10335	Toluene	108-88-3	N.D.	0.7	1
10335	m+p-Xylene	179601-23-1	N.D.	0.8	1
10335	o-Xylene	95-47-6	N.D.	0.8	1
10335	Xylene (Total)	1330-20-7	N.D.	0.8	1

General Sample Comments

State of New York Certification No. 10670

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10335	UST VOCs 8260 (Water)	SW-846 8260B	1	T131901AA	07/09/2013 19:34	Sarah A Guill	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	T131901AA	07/09/2013 19:34	Sarah A Guill	1

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Appendix D: Electronic Data Deliverable (CD-ROM)