nationalgrid

Sarah Aldridge
Project Manager
Site Investigation and Remediation

September 8, 2016

Ms. Elizabeth B. Lukowski
Engineering Geologist I
New York State Department of Environmental Conservation
Division of Environmental Remediation, Remedial Bureau C, Section A
625 Broadway, 11th Floor
Albany, NY 12233-7014

Subject: First Half 2016 Semi-Annual Groundwater Monitoring Report
Patchogue Former MGP Site
Patchogue, Suffolk County, New York
Site No. 1-52-182

Dear Ms. Lukowski:

This letter serves to transmit one hard copy and one CD containing an electronic copy of the First Half 2016 Semi-Annual Groundwater Monitoring Report for the Patchogue Former Manufactured Gas Plant (MGP) located in Patchogue, Suffolk County, New York (Site No. 1-52-182).

If you should have any questions, comments or require any additional information, please do not hesitate to contact me (516-545-2586).

Sincerely,

Sarah Aldridge
Project Manager, Site Investigation and Remediation

cc: Jacquelyn Nealon, NYSDOH (1 hard copy)
Amy Juchatz, SCDHS (1 hard copy)
Ralph Milito, SCDHS (electronic copy via email)

First Half 2016
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
September 2016

First Half 2016
Semi-Annual Groundwater Monitoring Report
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Village of Patchogue, Suffolk County, New York

Prepared for
National Grid USA
175 East Old Country Road
Hicksville, New York 11801

September 2016

Project Number: 149322.730.004

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Section 1

Introduction

This Semi-Annual Groundwater Monitoring Report documents the implementation and summarizes the results of the groundwater monitoring activities conducted during the first half of 2016 at the Patchogue Former Manufactured Gas Plant (MGP) Site (hereinafter referred to as the "Site"). The groundwater monitoring activities included the performance of the water level measurements, non-aqueous phase liquid (NAPL) gauging and groundwater sampling activities.

The groundwater monitoring event and the preparation of this report 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 the results of the water level measurements and the gauging of the monitoring wells and piezometers for the presence of NAPL (see Table 1);
- Table summarizing the analytical results for the groundwater samples obtained during the first half 2016 monitoring event including a comparison to the applicable groundwater quality criteria (see Table 2);
- Comparison of data from this monitoring period to data from historical monitoring events (Tables 3 and 4);
- Discussion of the results and findings from the groundwater monitoring data;
- A water table elevation contour map depicting the generalized direction of groundwater flow based on groundwater elevation data obtained from monitoring wells and piezometers, as well as surface water elevation data obtained from staff gauges installed in the Patchogue River (Figure 1);
- 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 two monitoring events conducted as part of the Remedial Investigation (RI) in March 2008 and July 2008. The groundwater monitoring event conducted in May/June 2016 is the subject of this report. The results of previous monitoring events have had fairly consistent concentrations and areal distribution of constituents in groundwater. Prior to the March 2010 groundwater monitoring event, site-related dissolved phase constituents [e.g., benzene, toluene, ethylbenzene, xylenes (BTEX) and polycyclic aromatic hydrocarbons (PAHs)] 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 conducted by

the Village of Patchogue at their wastewater treatment facility (WWTF) directly 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 documented 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 the NYSDEC that the frequency of groundwater sampling and analysis return to a semi-annual basis with the schedule for water level monitoring and NAPL gauging remaining on a quarterly basis. NYSDEC agreed with this proposal. Collection of water level data remained on a quarterly schedule to provide additional water level data from the piezometers that had been installed in the first half of 2012 in support of the Pre-Remedial Design Investigation. Subsequently, in an October 8, 2013 letter to the NYSDEC, National Grid proposed that that the frequency of all components of the groundwater monitoring program (i.e., water level measurements, NAPL gauging and groundwater sampling) be returned to the semi-annual schedule. This proposal was made because the data from the water level measurements and NAPL gauging, including data from the newer piezometers, continued to indicate very consistent findings from quarter to quarter and confirmed the understanding of groundwater flow conditions and NAPL occurrence at the Site. The NYSDEC concurred with this proposal in a December 9, 2013 email.

Section 2

Scope of Work

Field activities for the first half 2016 groundwater monitoring were conducted by Brown and Caldwell Associates (BC) on May 31 and June 1, 2016. The activities conducted during this monitoring event are described below. Locations of the monitoring wells, piezometers and staff gauges referenced below are depicted on Figure 1.

Prior to groundwater sampling, water level measurements and NAPL gauging was performed in the piezometers and monitoring wells associated with the Site. The level of the Patchogue River was measured at one of the two staff gauges (SG-2 was inaccessible due to a downed tree in the river during the monitoring event). Water level measurements and NAPL gauging were made using an electronic oil/water interface probe, and measured to the nearest 0.01 foot. At the locations where NAPL was detected using the oil/water interface probe, a 3-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 bottom of the monitoring well to measure the approximate thickness of the NAPL accumulation.

Groundwater sampling was conducted at ten monitoring wells following the water level and NAPL gauging activities. 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 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 Aqua Pro-Tech Laboratories (APL) located in Fairfield, New Jersey. APL is certified (Certification No. 11634) through the New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP).

The groundwater 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 APL is provided in Appendix B. Laboratory analytical data were provided to BC in electronic form by APL and have been incorporated into the environmental database maintained by BC 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 Newport News, 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, prepared in accordance with NYSDEC requirements, 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 May 31, 2016 measurements. Figure 1 illustrates the elevation contours of the water table based on these data. The contours were developed using water level elevation data from the shallow monitoring wells and shallow piezometers at the Site (i.e., those with screens that straddle, or are just below, the water table) and one (SG-1) of the two surface water staff gauges in the Patchogue River. The surface water level was not measured at SG-2 as it was inaccessible due to a downed tree in the Patchogue River. The accessibility of SG-2 will be reevaluated during the next groundwater monitoring event (December 2016). At that time, recommendations will be made to either omit the surface water measurements at this staff gauge from future monitoring events or to install a new staff gauge at a more accessible location. The water level elevations used for contouring are representative of water table elevations at the Site. The groundwater elevation (hydraulic head) values for the wells and piezometers screened in deeper intervals are also depicted for reference on Figure 1. The water table is relatively shallow and is typically positioned in the fill that overlies the native 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 monitoring wells to the river elevation, as measured at staff gauge SG-1, 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 well pairs adjacent to the river (well pairs MW-4S and MW-4D, and MW-9S and MW-9D) is indicative of a discharge area and provides further support to the conclusion that groundwater is discharging to the Patchogue River. The general configuration of the water table contours, developed using the May 31, 2016 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 in the monitoring wells and piezometers associated with the Site during the May/June 2016 groundwater monitoring event. NAPL was identified in the following wells during the gauging activities:

- **MW-5:** NAPL with moth ball-like odor on the lower 0.32 feet of the threaded rod.
- **MW-6:** Sporadic NAPL blebs on the 3-foot threaded rod, however NAPL was not detected on the oil/Water interface probe.

NAPL had been observed in MW-5 and MW-6 in previous gauging events.

3.3 Groundwater Quality Data

Table 2 provides the results of the laboratory analyses of the groundwater samples collected during the May/June 2016 monitoring event and a comparison of the data to the New York State Class GA groundwater quality criteria. 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 previously stated, NAPL was identified in two of the 12 monitoring wells (MW-5 and MW-6) associated with the Site. These two wells are located in the central part of the Site in the area of former MGP operations (refer to Figure 1). As discussed in Section 2, because they contained NAPL, groundwater samples were not collected from MW-5 and MW-6. Groundwater samples were collected from the remaining ten monitoring wells and submitted to the laboratory for analysis.

The constituent concentrations in groundwater samples collected during the May/June 2016 monitoring event were consistent with those measured during previous monitoring events. No MTBE or BTEX compounds were detected at any of the ten monitoring wells sampled during the May/June 2016 monitoring event. PAH compounds were either not detected or were detected at concentrations below the Class GA groundwater quality criteria at all ten monitoring wells sampled during the May/June 2016 monitoring event.

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 May/June 2016 event. MW-5 and MW-6 are located in the center of the Site in the area of former MGP operations where NAPL has been identified in the soil.

No MTBE or BTEX compounds were detected at any of the monitoring wells sampled during the May/June 2016 monitoring event.

PAH compounds were either not detected or were detected at concentrations below the Class GA groundwater quality criteria at all ten monitoring wells that sampled during the May/June 2016 monitoring event. Monitoring will continue on a semi-annual basis in order to confirm these conditions.

Due to the presence of the large tree impeding access to SG-2, a new staff gauge will be installed, surveyed and monitoring during the second-half 2016 groundwater monitoring event.

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.

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.

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 2016
PATCHOGUE FORMER MGP SITE
PATCHOGUE, NEW YORK

		5/31/2016				
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	5.89	5.58	NI	15.19	
MW-3	5.56	2.43	3.13	NI	10.4	
MW-4S	7.97	5.17	2.80	NI	12.23	
MW-4D	7.79	4.91	2.88	NI	26.65	
MW-5	8.66	4.71	3.95	10.18	10.5	NAPL on lower 0.32' of threaded rod.
MW-6	5.03	0.57	4.46	NI	18.4	Sporadic NAPL blebs on 3-foot threaded rod. Used threaded rod due to historical NAPL detections at this well.
MW-7S	8.45	4.54	3.91	NI	12.46	
MW-7D	8.31	4.4	3.91	NI	28.2	
MW-8S	5.08	0.88	4.20	--	--	
MW-8D	4.98	0.8	4.18	--	--	
MW-9S	4.47	1.62	2.85	NI	10.22	
MW-9D	4.66	1.52	3.14	NI	22.9	
SG-1	5.23	4.16	1.07	NI	--	
SG-2	5.17	--	--	--	--	Could not be accessed during the June 2016 monitoring event due to a downed tree in the Patchogue River.
PZ-1A	8.05	3.7	4.35	NI	10.03	
PZ-1B	8.91	4.61	4.30	NI	22.49	
PZ-2A	8.77	4.47	4.30	NI	8.05	
PZ-2B	8.29	3.99	4.30	NI	18	
PZ-3A	8.78	4.92	3.86	NI	8.86	Slight moth ball-like odor on oil/water interface probe. Black silt with sheen on lower 0.3' of threaded rod.
PZ-3B	8.9	5.26	3.64	NI	21.21	Slight fuel-like odor on oil/water interface probe.
PZ-4A	4.79	1.73	3.06	NI	4.88	

Notes:
NAVD - North American Vertical Datum
BGS - Below Ground Surface
BTOC - Below Top of Casing
NAPL - Non-aqueous phase liquid
NI - NAPL Not Indicated by Oil/Water Interface Probe
(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)". Above ground casing at MW-5 was lowered during utility corridor construction activities and was resurveyed in September 2015.
(--) - Not Measured

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

Constituent	Class GA Groundwater Criteria		Loc ID	MW-1	MW-3	MW-4D	MW-4S	MW-7D
	TOGS 1.1.1 Guidance	NYS Part 703 Standard	Sample Date	6/1/2016	6/1/2016	6/1/2016	6/1/2016	5/31/2016
			Units					
Volatile Organic Compounds (VOCs)								
BTEX								
Benzene	NE	1	µg/L	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U
Ethylbenzene	NE	5	µg/L	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U
Xylenes, m & p	NE	5	µg/L	0.461 U	0.461 U	0.461 U	0.461 U	0.461 U
1,2-Dimethylbenzene (o-Xylene)	NE	5	µg/L	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U
Toluene	NE	5	µg/L	0.205 U	0.205 U	0.205 U	0.205 U	0.205 U
Xylenes, total	NE	5	µg/L	0.705 U	0.705 U	0.705 U	0.705 U	0.705 U
Total BTEX	NE	NE	µg/L	ND	ND	ND	ND	ND
Other VOCs								
tert-Butyl methyl ether (MTBE)	10	NE	µg/L	0.596 U	0.596 U	0.596 U	0.596 U	0.596 U
tert-Butyl alcohol	NE	NE	µg/L	8.170 U	8.170 U	8.170 U	8.170 U	8.170 U
Semi-Volatile Organic Compounds (SVOCs)								
Polycyclic Aromatic Hydrocarbons (PAHs)								
Acenaphthene	20	NE	µg/L	0.681 U	0.652 U	0.674 U	0.613 U	0.659 U
Acenaphthylene	NE	NE	µg/L	0.301 U	0.288 U	0.298 U	0.271 U	0.291 U
Anthracene	50	NE	µg/L	0.354 U	0.339 U	0.351 U	0.319 U	0.343 U
Benzo(a)anthracene	0.002	NE	µg/L	0.524 U	0.502 U	0.519 U	0.472 U	0.508 U
Benzo(a)pyrene	NE	0	µg/L	0.390 U	0.373 U	0.386 U	0.351 U	0.377 U
Benzo(b)fluoranthene	0.002	NE	µg/L	0.470 U	0.450 U	0.465 U	0.423 U	0.455 U
Benzo(g,h,i)perylene	NE	NE	µg/L	0.550 U	0.527 U	0.544 U	0.495 U	0.532 U
Benzo(k)fluoranthene	0.002	NE	µg/L	0.481 U	0.461 U	0.476 U	0.433 U	0.466 U
Chrysene	0.002	NE	µg/L	0.479 U	0.459 U	0.474 U	0.431 U	0.463 U
Dibenz(a,h)anthracene	NE	NE	µg/L	0.446 U	0.427 U	0.441 U	0.401 U	0.431 U
Fluoranthene	50	NE	µg/L	0.334 U	0.804 J	0.331 U	0.301 U	0.324 U
Fluorene	50	NE	µg/L	0.199 U	0.190 U	0.197 U	0.179 U	0.192 U
Indeno(1,2,3-c,d)pyrene	0.002	NE	µg/L	0.477 U	0.456 U	0.471 U	0.429 U	0.461 U

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

Constituent	Class GA Groundwater Criteria		Loc ID	MW-1	MW-3	MW-4D	MW-4S	MW-7D
	TOGS 1.1.1 Guidance	NYS Part 703 Standard	Sample Date Units	6/1/2016	6/1/2016	6/1/2016	6/1/2016	5/31/2016
Naphthalene	10	NE	µg/L	0.602 U	0.577 U	0.596 U	0.542 U	0.583 U
Phenanthrene	50	NE	µg/L	0.513 U	0.491 U	0.508 U	0.462 U	0.497 U
Pyrene	50	NE	µg/L	0.412 U	1.100 J	0.408 U	0.765 J	0.399 U
Total PAHs	NE	NE	µg/L	ND	1.904 J	ND	0.765 J	ND

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

Constituent	Class GA Groundwater Criteria		Loc ID	MW-7D DUP	MW-7S	MW-8D	MW-8S	MW-9D	MW-9D
	TOGS 1.1.1 Guidance	NYS Part 703 Standard	Sample Date Units	5/31/2016	5/31/2016	6/1/2016	6/1/2016	5/31/2016	6/1/2016
Volatile Organic Compounds (VOCs)									
BTEX									
Benzene	NE	1	µg/L	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U
Ethylbenzene	NE	5	µg/L	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U
Xylenes, m & p	NE	5	µg/L	0.461 U	0.461 U	0.461 U	0.461 U	0.461 U	0.461 U
1,2-Dimethylbenzene (o-Xylene)	NE	5	µg/L	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U
Toluene	NE	5	µg/L	0.205 U	0.205 U	0.205 U	0.205 U	0.205 U	0.205 U
Xylenes, total	NE	5	µg/L	0.705 U	0.705 U	0.705 U	0.705 U	0.705 U	0.705 U
Total BTEX	NE	NE	µg/L	ND	ND	ND	ND	ND	ND
Other VOCs									
tert-Butyl methyl ether (MTBE)	10	NE	µg/L	0.596 U	0.596 U	0.596 U	0.596 U	0.596 U	0.596 U
tert-Butyl alcohol	NE	NE	µg/L	8.170 U	8.170 U	8.170 U	8.170 U	8.170 U	8.170 U
Semi-Volatile Organic Compounds (SVOCs)									
Polycyclic Aromatic Hydrocarbons (PAHs)									
Acenaphthene	20	NE	µg/L	0.613 U	0.626 U	0.681 U	0.697 U	0.689 U	2.640
Acenaphthylene	NE	NE	µg/L	0.271 U	0.277 U	0.301 U	0.308 U	0.304 U	0.285 U
Anthracene	50	NE	µg/L	0.319 U	0.326 U	0.354 U	0.362 U	0.358 U	0.336 U
Benzo(a)anthracene	0.002	NE	µg/L	0.472 U	0.482 U	0.524 U	0.536 U	0.530 U	0.497 U
Benzo(a)pyrene	NE	0	µg/L	0.351 U	0.358 U	0.390 U	0.399 U	0.394 U	0.369 U
Benzo(b)fluoranthene	0.002	NE	µg/L	0.423 U	0.432 U	0.470 U	0.481 U	0.475 U	0.445 U
Benzo(g,h,i)perylene	NE	NE	µg/L	0.495 U	0.505 UJ	0.550 U	0.562 U	0.556 U	0.521 U
Benzo(k)fluoranthene	0.002	NE	µg/L	0.433 U	0.442 U	0.481 U	0.492 U	0.487 U	0.456 U
Chrysene	0.002	NE	µg/L	0.431 U	0.440 U	0.479 U	0.490 U	0.484 U	0.454 U
Dibenz(a,h)anthracene	NE	NE	µg/L	0.401 U	0.409 U	0.446 U	0.456 U	0.451 U	0.422 U
Fluoranthene	50	NE	µg/L	0.301 U	0.307 U	0.334 U	0.342 U	0.338 U	0.982 J
Fluorene	50	NE	µg/L	0.179 U	0.183 U	0.199 U	0.203 U	0.201 U	0.543 J
Indeno(1,2,3-c,d)pyrene	0.002	NE	µg/L	0.429 U	0.438 U	0.477 U	0.488 U	0.482 U	0.452 U

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

Constituent	Class GA Groundwater Criteria		Loc ID	MW-7D DUP	MW-7S	MW-8D	MW-8S	MW-9D	MW-9D
	TOGS 1.1.1 Guidance	NYS Part 703 Standard	Sample Date Units	5/31/2016	5/31/2016	6/1/2016	6/1/2016	5/31/2016	6/1/2016
Naphthalene	10	NE	µg/L	0.542 U	2.530	0.602 U	0.616 U	0.609 U	0.571 U
Phenanthrene	50	NE	µg/L	0.462 U	0.471 U	0.513 U	0.525 U	0.519 U	0.715 J
Pyrene	50	NE	µg/L	0.371 U	0.379 U	0.412 U	0.422 U	0.417 U	1.550 J
Total PAHs	NE	NE	µg/L	ND	2.530	ND	ND	ND	6.430 J

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.
Boxed concentrations are above New York State Class GA Groundwater Quality Criteria (Standards or Guidance values).
(No concentrations were above these criteria in samples collected in May/June 2016)

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

Sampling Date	Total BTEX Concentrations (µg/L) [a]														
	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	PZ-4A
Mar-08	0	0	0	0	3.4	0	1016	57	NS	NS	NS	NS	NS	NS	NI
Jul-08	NS	0	0	0	0	0	678	0	0	0	0	0	0	0	NI
Mar-09	0	0	0	0	0	0	975	0	0	1	0	0	0	0	NI
Sep-09	0	0	0	0	0	0	1257	1	0	0	0	0	0	0	NI
Mar-10	0	0	0	0	0	0	637	2	0	9	0	0	0	0	NI
Sep-10	0	0	0	0	0	0	NS	0	0	0	0	0	27	0	NI
Jan-11	1.7	0	0	0	0	0	NS	NS	0	0	0	0	1	0	NI
Apr-11	0	0	0	0	0	0	NS	NS	0	0	0	0	0	0	NI
Aug-11	0	0	0	0	0	0	NS	NS	0	0	0	0	0	0	NI
Nov-11	0	0	0	0	0	0	NS	NS	0	0	0	0	0	0	NI
Feb-12	0	0	0	0	0	0	NS	NS	0	0	0	0	0	0	NI
May-12	0	0	0	0	0	0	NS	NS	0	0	0	0	0	0	NI
Nov-12	0	-- [b]	-- [a]	0	12	0	NS	NS	1	0	0	0	NS	NS	NI
Jun-13	0	-- [b]	-- [b]	0	0.8	0	NS	NS	0.7	0	0	0	0	NS	NI
Dec-13	0	-- [b]	-- [b]	NS	0	0	NS	NS	0.8	0	0	0	NS	NS	NI
Jun-14	0	-- [b]	-- [b]	0	0	0	NS	NS	0.8	0	0	0	NS	NS	0
Dec-14	0	-- [b]	-- [b]	0	0	0	NS	NS	1.3	0	0	0	0	0	NS
Jun-15	0	-- [b]	-- [b]	0	0	0	NS	NS	0	0	0	0	0	0	NS
Dec-15	0	-- [b]	-- [b]	0	0	0	NS	NS	0.5	0	0	0	0	0	NS
Jun-16	0	-- [b]	-- [b]	0	0	0	NS	NS	0	0	0	0	0	0	NS
Minimum	0.0	0.0	0.0	0.0	0.0	0.0	637.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum	1.7	0.0	0.0	0.0	12.0	0.0	1257.0	57.3	1.3	9.0	0.0	0.0	27.0	0.0	0.0
Mean	0.1	0.0	0.0	0.0	0.8	0.0	912.6	10.1	0.3	0.5	0.0	0.0	1.8	0.0	0.0

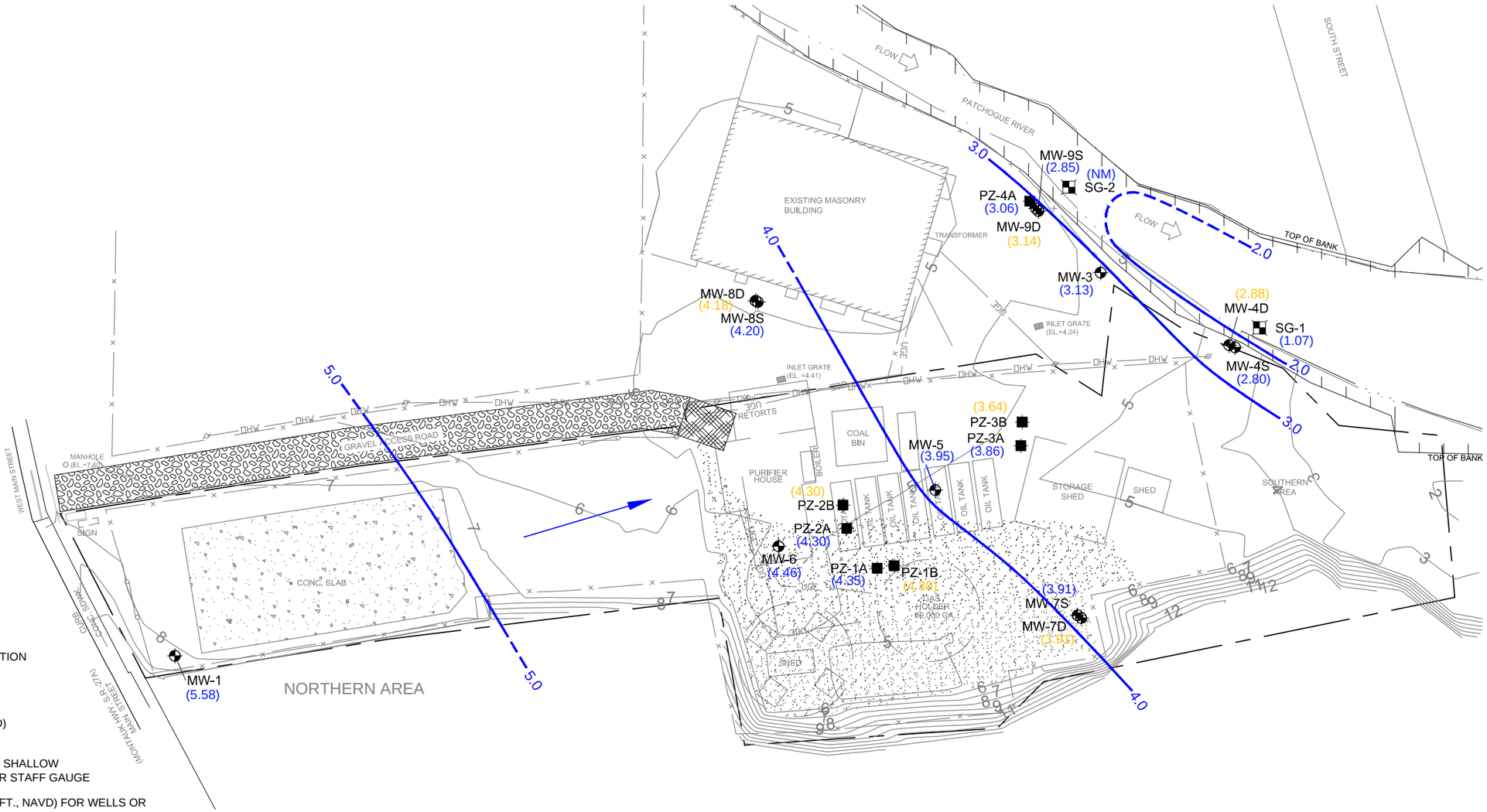
Notes:
BTEX - Benzene, toluene, ethylbenzene and xylene isomers
µg/L - micrograms per liter
NS - Not sampled.
NI - Piezometer not installed at time of sampling.
(a) - To calculate Total BTEX concentration, a value of zero is used for non-detect values.
(b) - Monitoring well was decommissioned on 6/4/12 as part of the Utility Corridor Construction activities. See "Construction Completion Report, Utility Corridor Work Plan Implementation (Brown and Caldwell, December 2012)".

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

Sampling Date	Total PAH Concentrations (µg/L) [a]														
	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	PZ-4A
Mar-08	0	0	0	0.76	0.6	4.3	1774	214	NS	NS	NS	NS	NS	NS	NI
Jul-08	NS	0.7	0	0	8.0	0	1799	154	0	0.47	0	0	12.0	0	NI
Mar-09	0	0	0	0	0	0	2730	0	0	0	0	0	0	0	NI
Sep-09	0	0	0	0	0	0	3373	1	0	0	0	0	0	0	NI
Mar-10	0	0	0	0	0	39	2390	17	0	0	22	0	2	0	NI
Sep-10	0	0	0	128	0	6	NS	14	0	0	11	0	396	0	NI
Jan-11	22	0	0	17	0	12	NS	NS	0	0	6	0	42	5	NI
Apr-11	0	0	0	6	0	20	NS	NS	0	0	0	0	9	0	NI
Aug-11	0	0	0.1	14	0.1	0	NS	NS	0	0	0.4	0	16	1.2	NI
Nov-11	0	0	0.2	10	0.4	0	NS	NS	0	0	0.8	0.2	8	3.4	NI
Feb-12	0.2	0	0	6	0.6	4	NS	NS	0.1	0	0.6	0	5	2.9	NI
May-12	0.4	0.1	0.6	5	0	5.8	NS	NS	0.1	0.3	1	0	6	2.8	NI
Nov-12	0.1	-- [b]	-- [b]	5.6	0.4	11.7	NS	NS	2.5	2.6	0.8	1.2	NS	NS	NI
Jun-13	0.8	-- [b]	-- [b]	NS	0.3	3.7	NS	NS	1.3	0.4	0.4	0.6	2	NS	NI
Dec-13	0	-- [b]	-- [b]	NS	0	2.5	NS	NS	0.8	0.4	0.3	0	NS	NS	NI
Jun-14	0	-- [b]	-- [b]	2.2	0.9	0	NS	NS	0.8	0.3	0.2	0	NS	NS	0.3
Dec-14	0.1	-- [b]	-- [b]	1.2	0.4	0	NS	NS	3	0	0.1	0	21.4	0.3	NS
Jun-15	0	-- [b]	-- [b]	1.1	0.9	0	NS	NS	0.9	0	0.3	0	10.4	0.3	NS
Dec-15	0	-- [b]	-- [b]	0	0	0	NS	NS	0.935	0	0	0	3.924	0	NS
Jun-16	0	-- [b]	-- [b]	1.904	0.765	0	NS	NS	2.53	0	0	0	5.887	0	NS
Min	0.0	0.0	0.0	0.0	0.0	0.0	1773.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Max	22.0	0.7	0.6	128.0	8.0	39.0	3373.0	214.2	3.0	2.6	22.0	1.2	396.0	5.0	0.3
Mean	1.2	0.1	0.1	11.0	0.7	5.4	2413.1	66.7	0.7	0.2	2.3	0.1	33.7	1.1	0.3

Notes:
PAH - Polycyclic aromatic hydrocarbons
µg/L - micrograms per liter
NS - Not sampled.
NI - Piezometer not installed at time of sampling.
(a) - To calculate Total PAH concentration, a value of zero is used for non-detect values.
(b) - Monitoring well was decommissioned on 6/4/12 as part of the Utility Corridor Construction activities. See "Construction Completion Report, Utility Corridor Work Plan Implementation (Brown and Caldwell, December 2012)".

Figures



LEGEND:

— — —	PROPERTY LINE
—x—x—	FENCE
—10—	TOPOGRAPHIC CONTOUR
◐	SHALLOW MONITORING WELL LOCATION
■	PIEZOMETER LOCATION
▚	STAFF GAUGE LOCATION
—4—	WATER TABLE CONTOUR (FT., NAVD) DASHED WHERE INFERRED
(4.20)	WATER ELEVATION (FT., NAVD) FOR SHALLOW MONITORING WELL, PIEZOMETER OR STAFF GAUGE
(3.64)	GROUNDWATER HEAD ELEVATION (FT., NAVD) FOR WELLS OR PIEZOMETERS SCREENED BELOW WATER TABLE (FROM DEEP MONITORING WELL OR PIEZOMETER)
(NM)	NOT MEASURED
——→	GENERALIZED DIRECTION OF GROUNDWATER FLOW

NOTES:

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

Brown AND Caldwell

SCALE: 1" = 60'
142128
DATE: August 23, 2016

NATIONAL GRID
PATCHOGUE FORMER MGP SITE
VILLAGE OF PATCHOGUE, NEW YORK

WATER TABLE ELEVATION CONTOUR MAP
MAY 31, 2016

FIGURE
1

Appendix A: Field Sampling Data Sheets

Brown AND Caldwell

Upper Saddle River, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number: MW-7S
Sample I.D.: MW-7S-20160531 (if different from well no.)

Project: ~~EQUIP~~ NGS - Patchogue
Personnel: TJP/TMB

Date: 05/31/16 Time: 1430
Weather: Sunny Air Temp.: 75°

WELL DATA:

Casing Diameter: 4" ☐ Stainless Steel ☑ Steel ☐ PVC ☐ Teflon® ☐ Other: _____
Intake Diameter: 2" ☐ Stainless Steel ☐ Galv. Steel ☑ PVC ☐ Teflon® ☐ Open rock
DEPTH TO : Static Water Level: 4.71 ft Bottom of Well: _____ 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: _____ To be purged: _____

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: 250 ml/min Elapsed Time: 30 min Volume Pumped: 2.5 gal
Was well Evacuated? ☐ Yes ☑ No Number of Well Volumes Removed: _____
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: N/A
APPEARANCE: ☐ Clear ☐ Turbid ☐ Color: _____ ☐ Contains Immiscible Liquid
FIELD DETERMINATIONS: See attached form for field parameter data.

DUP : ☑ No ☐ Yes Name: _____
MS/MSD ☐ No ☑ Yes Name: MW-7S-20160531 MS/MSD

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

Signature: _____ Date: 05/31/16

Brown AND Caldwell

2 Park Way, Upper Saddle River, NJ 07458
Phone (201) 574-4700 Fax (201) 236-1607

NJ FIELD LAB ID# 02023
LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: NG-Patchogue
Client: National Grid
Personnel: TJP/TMB
Purge/Sample Depth:

Project Number:
Date: 05/31/16
Well ID: MW-7S
Sample ID: MW-7S-20160531

Actual Time	Certified Parameters					ORP (mV)	DTW (ft)	Pumping Rate (mL/min)	Comments
	pH	Temp (°C)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)				
1438	6.92	15.50	0.453	13.00	156	-137	4.75	250	
1441	6.78	14.11	0.459	9.17	112	-146	4.76		
1444	6.67	13.78	0.461	8.01	106	-151	4.78		
1447	6.65	13.67	0.463	6.50	65.5	-154	4.78		
1450	6.62	13.56	0.463	5.79	58.2	-159	"		
1453	6.60	13.48	0.464	5.05	40.7	-159	"		
1456	6.57	13.38	0.463	4.54	39.2	-161	"		
1459	6.55	13.31	0.462	3.81	42.1	-162	"		
1502	6.52	13.12	0.478	3.34	728	-161	"		
1505	6.52	13.13	0.469	2.92	32.6	-163	"		
1508	6.52	13.15	0.468	2.65	24.0	-164	4.76		
1511	Sample		MW-7S-20160531				MS/MSD		collected

TJP 05/31/16

Certified Sample Information:
Time of Sample: 1511
Analyst Signature:

Instrument Data:
Manufacturer/Model: Horiba U-52
Serial No. Unit:
Calibration Date/Time: 05/31/16 0900
Serial No. Handheld: TJCK2CTA

Are low-flow parameters subject to field lab certification? ☐ Yes ☒ No (not required for CERCLA sites or sites outside of NJ)

If yes, low-flow data must be accompanied by a completed "Field Calibration Record, Horiba U-52" form or equivalent.

Brown AND Caldwell

Upper Saddle River, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number: MW-7D

Sample I.D.: MW-7D-20160531 (if different from well no.)

Project: Paterson

Personnel: MWB TJP

Date: 5/31/16 Time: 1530

Weather: sun Air Temp.: 75°

WELL DATA:

Casing Diameter: 6" ☐ Stainless Steel ☑ Steel ☐ PVC ☐ Teflon® ☐ Other: _____

Intake Diameter: 2" ☐ Stainless Steel ☐ Galv. Steel ☑ PVC ☐ Teflon® ☐ Open rock

DEPTH TO : Static Water Level: 4.45 ft Bottom of Well: _____ 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: 250 ml/min Elapsed Time: 45 min Volume Pumped: 3.5 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: N/A

APPEARANCE: ☑ Clear ☐ Turbid ☐ Color: _____ ☐ Contains Immiscible Liquid

FIELD DETERMINATIONS: See attached form for field parameter data.

DUP : ☐ No ☑ Yes Name: Dup-20160531

MS/MSD : ☑ No ☐ Yes Name: _____

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

Signature: [signature] Date: 5/31/16

Brown AND Caldwell

2 Park Way, Upper Saddle River, NJ 07458
Phone (201) 574-4700 Fax: (201) 236-1607

NJ FIELD LAB ID# 02023
LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: Patchogue
Client: National Grid
Personnel: TMB TJP
Purge/Sample Depth:

Project Number:
Date: 5/31/16
Well ID: MW-7D
Sample ID: MW-7D-20160531

Actual Time	Certified Parameters: pH	Temp (°C)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)	ORP (mV)	DTW (ft)	Pumping Rate (mL/min)	Comments
1530	5.75	14.93	0.489	8.79	115	199	4.45	250	
1533	5.78	14.72	0.491	0.54	118	197			
1536	5.66	14.57	0.496	0.27	151	188			
1539	5.62	14.54	0.497	0.18	141	171			
1542	5.57	14.53	0.500	0.14	148	167			
1545	5.60	14.77	0.500	0.46	220	192			Emptied Horiba
1548	5.19	14.77	0.502	0.13	210	180			
1551	5.27	14.63	0.502	0.09	200	166			
1554	5.36	14.57	0.503	0.07	191	154			
1557	5.41	14.59	0.503	0.06	179	149			
1600	5.41	14.68	0.503	0.05	154	142			
1603	5.43	14.64	0.503	0.04	134	139			
1606	5.40	14.58	0.503	0.03	114	139			
1609	5.38	14.54	0.504	0.02	98.9	140			
1612	5.35	14.59	0.503	0.02	91.3	141	4.45	↓	
1615	Sample		MW-7D-20160531				Dup-20160531		

TMB

5/31/16

Certified Sample Information:
Time of Sample: 1615
Analyst Signature:

Instrument Data:
Manufacturer/Model: Horiba U-52
Serial No. Unit:
Serial No. Handheld: TJK2CTA
Calibration Date/Time: 05/31/16 0900

Are low-flow parameters subject to field lab certification? ☐ Yes ☒ No (not required for CERCLA sites or sites outside of NJ)

If yes, low-flow data must be accompanied by a completed "Field Calibration Record, Horiba U-52" form or equivalent.

Brown AND Caldwell

Upper Saddle River, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number: MW-9D
Sample I.D.: MW-9D-20160531 (if different from well no.)

Project: Patchogue
Personnel: MWB / TJP

Date: 5/31/16 Time: 1048
Weather: SM Air Temp.: 75°

WELL DATA:

Casing Diameter: 8" ☐ Stainless Steel ☑ Steel ☐ PVC ☐ Teflon® ☐ Other:
Intake Diameter: 2" ☐ Stainless Steel ☐ Galv. Steel ☑ PVC ☐ Teflon® ☐ Open rock
DEPTH TO : Static Water Level: 1.61 ft Bottom of Well: 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: 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: N/A
APPEARANCE: ☑ Clear ☐ Turbid ☐ Color: ☐ Contains Immiscible Liquid
FIELD DETERMINATIONS: See attached form for field parameter data.

DUP : ☑ No ☐ Yes Name:
MS/MSD : ☑ No ☐ Yes Name:

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

Signature: Date: 5/31/16

Brown AND Caldwell

2 Park Way, Upper Saddle River, NJ 07458
Phone: (201) 574-4700 Fax: (201) 236-1607

NJ FIELD LAB ID# 02023
LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name:	Patchogue	Project Number:	
Client:	National Grid	Date:	5/31/16
Personnel:	TMB NP	Well ID:	MW-9D
Purge/Sample Depth:		Sample ID:	MW-9D-20160531

Actual Time	Certified Parameters					ORP (mV)	DTW (ft)	Pumping Rate (mL/min)	Comments
	pH	Temp (°C)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)				
1648	4.94	17.91	0.546	1.25	380	305	1.61	200	
1651	4.68	17.12	0.548	0.37	510	287		↓	
1654	4.58	16.94	0.547	0.34	138	308			
1657	4.53	16.93	0.548	0.20	200	301			
1700	4.52	16.98	0.546	1.31	230	300			
1703	4.57	17.10	0.546	2.08	271	300			
1706	4.51	17.25	0.545	3.51	308	295			
1709	4.51	17.40	0.544	4.21	335	295			
1712	4.48	17.31	0.544	4.06	306	292	1.59		
1715	4.46	17.29	0.544	3.60	243	289			
1718	4.43	17.30	0.545	3.17	188	286			
1721	Sample MW-9D-20160531								
	→ taken w/ high turb as crew & being asked to leave back lot by "Above All" storefront crew - OK per ATC								

TMB 5/31/16

Certified Sample Information:
Time of Sample: 1721 — Analyst Signature: [signature]

Instrument Data:
Manufacturer/Model: Horiba U-52
Serial No. Unit: — Serial No. Handheld: TJCK2CTA
Calibration Date/Time: 05/31/16 0900

Are low-flow parameters subject to field lab certification? ☐ Yes ☒ No (not required for CERCLA sites or sites outside of NJ)

If yes, low-flow data must be accompanied by a completed "Field Calibration Record, Horiba U-52" form or equivalent.

Brown AND Caldwell

Upper Saddle River, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number: MW-8S
Sample I.D.: MW-8S-20160601 (If different from well no.)

Project: Parkwood
Personnel: THB TJP

Date: 6/1/16 Time: 0756
Weather: Sun Air Temp.: 71°

WELL DATA:

Casing Diameter: 4" ☐ Stainless Steel ☑ Steel ☐ PVC ☐ Teflon® ☐ Other:
Intake Diameter: 2" ☐ Stainless Steel ☐ Galv. Steel ☑ PVC ☐ Teflon® ☐ Open rock
DEPTH TO : Static Water Level: 0.95 ft Bottom of Well: 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: 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: See attached form for field parameter data.

DUP : ☑ No ☐ Yes Name:
MS/MSD : ☑ No ☐ Yes Name:

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

Signature: Date: 6/1/16

Brown AND Caldwell

2 Park Way, Upper Saddle River, NJ 07458
Phone: (201) 574-4700 Fax: (201) 236-1607

NJ FIELD LAB ID# 02023
LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: Patchogue
Client: National Grid
Personnel: JMB TJP
Purge/Sample Depth:
Project Number:
Date: 6/1/16
Well ID: MW-8S
Sample ID: MW-8S-20160601

Actual Time	Certified Parameters: pH	Temp (°C)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)	ORP (mV)	DTW (ft)	Pumping Rate (mL/min)	Comments
0756	5.45	16.47	0.609	0.77	—	-7	0.95	200	
0759	5.51	15.45	0.627	0.03	—	-64			Emptied Horiba
0802	5.69	15.47	0.643	0.41	661	-65			
0805	5.70	15.22	0.649	0.00	497	-77			
0808	5.73	15.17	0.651	0.00	347	-85			
0811	5.76	15.13	0.652	0.00	216	-92			
0814	5.78	15.11	0.651	0.00	145	-96			
0817	5.79	15.10	0.649	0.00	91.3	-100			
0820	5.80	15.10	0.648	0.00	68.1	-102			
0823	5.81	15.08	0.650	0.00	58.7	-103			
0826	5.81	15.07	0.650	0.00	46.4	-105			
0829	Sample MW-8S-20160601								

JMB 6/1/16

Certified Sample Information:
Time of Sample: 0829
Analyst Signature: JMB

Instrument Data:
Manufacturer/Model: Horiba U-52
Serial No. Unit:
Serial No. Handheld: TJCK2CTA
Calibration Date/Time: 06/01/16 0730

Are low-flow parameters subject to field lab certification? ☐ Yes ☒ No (not required for CERCLA sites or sites outside of NJ)

If yes, low-flow data must be accompanied by a completed "Field Calibration Record, Horiba U-52" form or equivalent.

Brown AND Caldwell

Upper Saddle River, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number: MW-8D
Sample I.D.: MW-8D-20160601 (if different from well no.)

Project: Patchogue
Personnel: TMB TJP

Date: 6/1/16 Time: 0839
Weather: Sun Air Temp.: 72°

WELL DATA:

Casing Diameter: 8" ☐ Stainless Steel ☑ Steel ☐ PVC ☐ Teflon® ☐ Other: ____
Intake Diameter: 2" ☐ Stainless Steel ☐ Galv. Steel ☑ PVC ☐ Teflon® ☐ Open rock
DEPTH TO : Static Water Level: ____ ft Bottom of Well: ____ 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: 250ml/min Elapsed Time: 40 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: N/A
APPEARANCE: ☑ Clear ☐ Turbid ☐ Color: ____ ☐ Contains Immiscible Liquid
FIELD DETERMINATIONS: See attached form for field parameter data.

DUP : ☑ No ☐ Yes Name: ____
MS/MSD : ☑ No ☐ Yes Name: ____

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

Signature: [signature] Date: 6/1/16

Brown AND Caldwell

2 Park Way, Upper Saddle River, NJ 07458
Phone (201) 574-4700 Fax (201) 236-1607

KVA

148795

NJ FIELD LAB ID# 02023
LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name:	Patcheague	Project Number:	
Client:	TWB / TJP	Date:	6/1/16
Personnel:	National Grid	Well ID:	MW-8D
Purge/Sample Depth:		Sample ID:	MW-8D-20160601

Actual Time	Certified Parameters: pH	Temp (°C)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)	ORP (mV)	DTW (ft)	Pumping Rate (mL/min)	Comments
0839	5.73	16.34	0.661	1.28	363	80		200	
0842	5.50	16.00	0.662	0.25	335	107			
0845	5.55	15.71	0.663	0.13	309	106			
0848	5.69	15.40	0.664	0.04	291	105			Emptied Horiba
0851	5.78	15.41	0.684	0.09	216	127			
0854	5.78	15.35	0.686	0.19	185	122			
0857	5.78	15.36	0.682	0.02	161	119			
0900	5.75	15.35	0.678	0.00	148	119			
0903	5.75	15.33	0.676	0.00	130	119			
0906	5.72	15.33	0.676	0.00	107	119			
0909	5.72	15.32	0.676	0.00	98.4	120			
0912	5.70	15.36	0.674	0.00	91.3	120			
0915	5.68	15.32	0.678	0.00	86.2	125			
0918	Sample	MW-8D-20160601							

6/1/16

Certified Sample Information:
Time of Sample: 0918

Analyst Signature:

Instrument Data:
Manufacturer/Model: Horiba U-52
Serial No. Unit:
Serial No. Handheld: TJCK2CTM
Calibration Date/Time: 6/01/16 0730

Are low-flow parameters subject to field lab certification? ☐ Yes ☒ No (not required for CERCLA sites or sites outside of NJ)

If yes, low-flow data must be accompanied by a completed "Field Calibration Record, Horiba U-52" form or equivalent.

Brown AND Caldwell

Upper Saddle River, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number: MW-9S
Sample I.D.: MW-9S-20160601 (if different from well no.)

Project: Patchogue
Personnel: TMB TJP

Date: 6/1/16 Time: 0935
Weather: Sun Air Temp.: 71°

WELL DATA:

Casing Diameter: 8" ☐ Stainless Steel ☑ Steel ☐ PVC ☐ Teflon® ☐ Other: ____
Intake Diameter: 2" ☐ Stainless Steel ☐ Galv. Steel ☑ PVC ☐ Teflon® ☐ Open rock
DEPTH TO : Static Water Level: 1.62 ft Bottom of Well: ____ 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: 250 ml/min Elapsed Time: 30 min Volume Pumped: 2.5 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: N/A
APPEARANCE: ☑ Clear ☐ Turbid ☐ Color: ____ ☐ Contains Immiscible Liquid
FIELD DETERMINATIONS: See attached form for field parameter data.

DUP : ☑ No ☐ Yes Name: ____
MS/MSD : ☑ No ☐ Yes Name: ____

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

Signature: [signature] Date: 6/1/16

Brown AND Caldwell

2 Park Way, Upper Saddle River, NJ 07458
Phone: (201) 574-4700 Fax: (201) 236-1607

NJ FIELD LAB ID# 02023
LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: Patchogue
Client: National Grid
Personnel: TMB TJP
Purge/Sample Depth:

Project Number:
Date: 6/1/16
Well ID: MW-95
Sample ID: MW-95-20160601

Actual Time	Certified Parameters: pH	Temp (°C)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)	ORP (mV)	DTW (ft)	Pumping Rate (mL/min)	Comments
0935	5.86	16.56	0.563	1.51	500	-105	1.62	250	
0938	5.88	15.84	0.618	0.22	518	-122	"		
0941	5.90	15.51	0.635	0.01	500	-133	"		exceeded limits
0944	5.91	15.30	0.622	0.03	257	-131	"		
0947	5.85	15.28	0.614	0.00	179	-133	"		
0950	5.84	15.21	0.609	0.00	131	-135	"		
0953	5.86	15.20	0.606	0.00	109	-137	"		
0956	5.91	15.18	0.602	0.00	75.4	-138	"		
0959	5.96	15.18	0.599	0.00	46.6	-142	"		
1002	5.97	15.16	0.598	0.00	40.0	-143	"		
1005	5.99	15.18	0.599	0.00	31.4	-144	"		
1008	Sample		MW-95-20160601						

TMB 6/1/16

Certified Sample Information:
Time of Sample: 1008
Analyst Signature: TMB

Instrument Data:
Manufacturer/Model: Horiba U-52
Serial No. Unit:
Serial No. Handheld: TJCK2CTN
Calibration Date/Time: 06/01/16 0730

Are low-flow parameters subject to field lab certification? ☐ Yes ☒ No (not required for CERCLA sites or sites outside of NJ)

If yes, low-flow data must be accompanied by a completed "Field Calibration Record, Horiba U-52" form or equivalent.

Brown AND Caldwell

Upper Saddle River, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number: MW-3
Sample I.D.: MW-3-20160601 (if different from well no.)

Project: Patchogue
Personnel: TMB TJP

Date: 6/1/16 Time: 1022
Weather: Sun Air Temp.: 72°

WELL DATA:

Casing Diameter: 8" ☐ Stainless Steel ☑ Steel ☐ PVC ☐ Teflon® ☐ Other: ____
Intake Diameter: 2" ☐ Stainless Steel ☐ Galv. Steel ☑ PVC ☐ Teflon® ☐ Open rock
DEPTH TO : Static Water Level: 2.41 ft Bottom of Well: ____ 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: 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: N/A
APPEARANCE: ☑ Clear ☐ Turbid ☐ Color: ____ ☐ Contains Immiscible Liquid
FIELD DETERMINATIONS: See attached form for field parameter data.

DUP : ☑ No ☐ Yes Name: ____
MS/MSD : ☑ No ☐ Yes Name: ____

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

Signature: [signature] Date: 6/1/16

Brown AND Caldwell

2 Park Way, Upper Saddle River, NJ 07458
Phone: (201) 574-4700 Fax: (201) 236-1607

NJ FIELD LAB ID# 02023
LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: Patchogue
Client: National Grid
Personnel: TMB TJP
Purge/Sample Depth:

Project Number:
Date: 6/1/16
Well ID: MW-3
Sample ID: MW-3-20160601

Actual Time	Certified Parameters: pH	Temp (°C)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)	ORP (mV)	DTW (ft)	Pumping Rate (mL/min)	Comments
1022	6.06	15.82	0.6606	1.48	35.5	-24	2.44	200	
1025	6.07	15.57	0.6624	0.49	36.7	-38			
1028	6.09	15.33	0.1640	0.15	31.9	-50			
1031	6.11	15.26	0.640	0.08	21.6	-45			
1034	6.11	15.26	0.638	0.05	17.1	-41			
1037	6.12	15.23	0.638	0.02	12.3	-34			
1040	6.11	15.25	0.637	0.00	7.4	-23			
1043	6.13	15.29	0.638	0.00	6.6	-17			
1046	6.11	15.34	0.638	0.00	6.2	-14	2.44		
1049	6.11	15.34	0.637	0.00	5.5	-13			
1052	6.12	15.20	0.638	0.00	5.1	-16			
1055	Sample MW-3-20160601								

6/1/16

Certified Sample Information:
Time of Sample: 1055
Analyst Signature:

Instrument Data:
Manufacturer/Model: Horiba U-52
Serial No. Unit:
Serial No. Handheld: TJ2CTA
Calibration Date/Time: 06/01/16 0730

Are low-flow parameters subject to field lab certification? ☐ Yes ☒ No (not required for CERCLA sites or sites outside of NJ)

If yes, low-flow data must be accompanied by a completed "Field Calibration Record, Horiba U-52" form or equivalent.

Brown AND Caldwell

Upper Saddle River, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number: MW-4D
Sample I.D.: MW-4D-20160601 (if different from well no.)

Project: Patchogue
Personnel: TMB TJP

Date: 6/1/16 Time: 1108
Weather: Sun Air Temp.: 75°

WELL DATA:

Casing Diameter: 6" ☐ Stainless Steel ☑ Steel ☐ PVC ☐ Teflon® ☐ Other: ____
Intake Diameter: 2" ☐ Stainless Steel ☐ Galv. Steel ☑ PVC ☐ Teflon® ☐ Open rock
DEPTH TO : Static Water Level: 4.91 ft Bottom of Well: ____ 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: 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: N/A
APPEARANCE: ☑ Clear ☐ Turbid ☐ Color: ____ ☐ Contains Immiscible Liquid
FIELD DETERMINATIONS: See attached form for field parameter data.

DUP : ☑ No ☐ Yes Name: ____
MS/MSD : ☑ No ☐ Yes Name: ____

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

Signature: [signature] Date: 6/1/16

Brown AND Caldwell

2 Park Way, Upper Saddle River, NJ 07458
Phone: (201) 574-4700 Fax: (201) 236-1607

NJ FIELD LAB ID# 02023
LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: Parkwood
Client: National Grid
Personnel: TMB TJP
Purge/Sample Depth:

Project Number:
Date: 6/1/16
Well ID: MW-4D
Sample ID: MW-4D-20160601

Actual Time	Certified Parameters: pH	Temp (°C)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)	ORP (mV)	DTW (ft)	Pumping Rate (mL/min)	Comments
1108	5.92	18.54	0.601	1.36	5.4	182	4.93	200	
1111	5.60	18.20	0.602	0.67	7.16	173			
1114	5.48	17.88	0.605	0.32	6.9	166			
1117	5.35	17.92	0.609	0.20	7.3	163			
1120	5.35	17.78	0.612	0.15	6.9	161			
1123	5.31	17.81	0.613	0.10	5.9	161			
1126	5.28	17.59	0.615	0.07	5.3	161			
1129	5.27	17.53	0.615	0.06	5.2	160			
1132	5.24	17.63	0.615	0.04	4.9	161			
1135	5.23	17.61	0.615	0.05	5.0	161			
1138	5.23	17.76	0.614	0.04	4.8	161	4.93		
1141	Sample MW-4D-20160601								

TMB
6/1/16

Certified Sample Information:

Time of Sample: 1141
Analyst Signature: TMB

Instrument Data:

Manufacturer/Model: Horiba U-52
Serial No. Unit:
Serial No. Handheld: TJCK2CTh
Calibration Date/Time: 06/01/16 0730

Are low-flow parameters subject to field lab certification? ☐ Yes ☒ No (not required for CERCLA sites or sites outside of NJ)

If yes, low-flow data must be accompanied by a completed "Field Calibration Record, Horiba U-52" form or equivalent.

Brown AND Caldwell

Upper Saddle River, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number: MW-4S
Sample I.D.: MW-4S-20160601 (if different from well no.)

Project: Patchogue
Personnel: TMB TJP

Date: 6/1/16 Time: 1152
Weather: sun Air Temp.: 75°

WELL DATA:

Casing Diameter: 4" ☐ Stainless Steel ☑ Steel ☐ PVC ☐ Teflon® ☐ Other:
Intake Diameter: 2" ☐ Stainless Steel ☐ Galv. Steel ☑ PVC ☐ Teflon® ☐ Open rock
DEPTH TO : Static Water Level: 5.15 ft Bottom of Well: 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: 30 min Volume Pumped: 8 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: N/A
APPEARANCE: ☑ Clear ☐ Turbid ☐ Color: ☐ Contains Immiscible Liquid
FIELD DETERMINATIONS: See attached form for field parameter data.

DUP : ☑ No ☐ Yes Name:
MS/MSD : ☑ No ☐ Yes Name:

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

Signature: Date: 6/1/16

Brown AND Caldwell

2 Park Way, Upper Saddle River, NJ 07458
Phone (201) 574-4700 Fax (201) 236-1607

NJ FIELD LAB ID# 02023
LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: Patchogue
Client: National Grid
Personnel: TMB TJB
Purge/Sample Depth:

Project Number:
Date: 6/1/16
Well ID: MW-4S
Sample ID: MW-4S-20160601

Actual Time	Certified Parameters: pH	Temp (°C)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)	ORP (mV)	DTW (ft)	Pumping Rate (mL/min)	Comments
1152	5.76	18.58	0.537	0.68	427	-94	5.21	200	
1155	5.93	17.48	0.538	0.18	366	-122			
1158	6.03	17.08	0.538	0.02	225	-137			
1201	6.08	16.83	0.536	0.00	177	-142			
1204	6.11	16.74	0.534	0.00	144	-144			
1207	6.13	16.73	0.531	0.00	115	-144			
1210	6.16	16.64	0.529	0.00	82.3	-145			
1213	6.17	16.82	0.528	0.00	63.9	-145			
1216	6.17	16.85	0.527	0.00	61.1	-146			
1219	6.18	16.87	0.527	0.00	49.8	-146			
1222	6.18	17.02	0.527	0.00	41.8	-147			
1225	Sample MW-4S-20160601								

TMB

6/1/16

Certified Sample Information:
Time of Sample: 1225
Analyst Signature:

Instrument Data:
Manufacturer/Model: Horiba U-52
Serial No. Unit:
Serial No. Handheld: TJCK2CTA
Calibration Date/Time: 06/01/16 0730

Are low-flow parameters subject to field lab certification? ☐ Yes ☒ No (not required for CERCLA sites or sites outside of NJ)

If yes, low-flow data must be accompanied by a completed "Field Calibration Record, Horiba U-52" form or equivalent.

Brown AND Caldwell

Upper Saddle River, NJ Office

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number: MW-1
Sample I.D.: MW-1-20160601 (if different from well no.)

Project: NGC-Patchogue
Personnel: TJP/TMB

Date: 06/01/16 Time: 1350
Weather: Sunny Air Temp.: 72

WELL DATA:

Casing Diameter: 4" ☐ Stainless Steel ☑ Steel ☐ PVC ☐ Teflon® ☐ Other: ____
Intake Diameter: 2" ☐ Stainless Steel ☐ Galv. Steel ☑ PVC ☐ Teflon® ☐ Open rock
DEPTH TO : Static Water Level: 5.95 ft Bottom of Well: ____ 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: ____ To be purged: ____

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: 190 ml/min Elapsed Time: 33 Volume Pumped: 1.5 gal
Was well Evacuated? ☐ Yes ☑ No Number of Well Volumes Removed: ____
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: N/A
APPEARANCE: ☐ Clear ☑ Turbid ☐ Color: ____ ☐ Contains Immiscible Liquid
FIELD DETERMINATIONS: See attached form for field parameter data.

DUP : ☑ No ☐ Yes Name: ____
MS/MSD: ☑ No ☐ Yes Name: ____

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

Signature: [signature] Date: 06/01/16

Brown AND Caldwell

2 Park Way, Upper Saddle River, NJ 07458
Phone: (201) 574-4700 Fax: (201) 236-1607

NJ FIELD LAB ID# 02023
LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: NG-Paldrogue
Client: National Grid
Personnel: TJP / TMB
Purge/Sample Depth:

Project Number:
Date: 06/01/16
Well ID: MW-1
Sample ID: MW-1-20160601

Actual Time	Certified Parameters: pH	Temp (°C)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)	ORP (mV)	DTW (ft)	Pumping Rate (mL/min)	Comments
1400	5.56	25.06	2.29	1.33	184	-81	5.95	190	
1403	5.57	23.57	2.57	0.57	257	-87	5.98		
1406	5.58	23.50	2.75	0.37	300	-87	5.98		Emptied Manifold
1409	5.70	23.64	2.79	1.57	196	-70	5.98		
1412	5.66	23.27	2.82	3.89	174	-75	5.98		
1415	5.65	23.42	2.85	3.28	167	-79	5.98		
1418	5.65	23.45	2.86	3.62	135	-83	5.98		
1421	5.64	24.43	2.87	2.04	114	-87	5.98		
1424	5.65	24.86	2.87	1.68	102	-89	5.98		
1427	5.64	24.81	2.85	1.41	86.2	-90	5.98		
1430	5.65	25.13	2.85	1.19	84.7	-91	5.98		
1433	5.64	25.33	2.85	1.10	70.1	-92	5.98		
1436	Sample MW-1-20160601 collected								

TJP 06/01/16

Certified Sample Information:
Time of Sample: 1436
Analyst Signature:

Instrument Data:
Manufacturer/Model: Horiba U-52
Serial No. Unit:
Serial No. Handheld: TJCK2CTPA
Calibration Date/Time: 06/01/16 0730

Are low-flow parameters subject to field lab certification? ☐ Yes ☒ No (not required for CERCLA sites or sites outside of NJ)

If yes, low-flow data must be accompanied by a completed "Field Calibration Record, Horiba U-52" form or equivalent.

Appendix B: Laboratory Reports (CD-ROM)

Appendix C: Data Usability Summary Report (DUSR)

ENVIRONMENTAL
Data Services, Inc.

DATA USABILITY SUMMARY REPORT
NATIONAL GRID, PATCHOGUE, NEW YORK

Client: Brown and Caldwell, Upper Saddle River, New Jersey
SDG: 6060058
Laboratory: Aqua Pro-Tech Laboratories, Fairfield, New Jersey
Site: National Grid, Patchogue, New York
Date: August 9, 2016

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	MW-7S-20160531	6060058-01	Water
1MS	MW-7S-20160531MS	6060058-01MS	Water
1MSD	MW-7S-20160531MSD	6060058-01MSD	Water
2	MW-7D-20160531	6060058-02	Water
3	DUP-20160531	6060058-03	Water
4	MW-9D-20160531	6060058-04	Water
5	FB-20160531	6060058-05	Water
6	MW-8S-20160601	6060058-06	Water
7	MW-8D-20160601	6060058-07	Water
8	FB-20160601	6060058-08	Water
9	MW-9S-20160601	6060058-09	Water
10	MW-3-20160601	6060058-10	Water
11	MW-4D-20160601	6060058-11	Water
12	MW-4S-20160601	6060058-12	Water
13	MW-1-20160601	6060058-13	Water
14*	TB-20160601	6060058-14	Water

* - VOC only

A Data Usability Summary Review was performed on the analytical data for eleven water samples, two aqueous field blank samples, and one aqueous trip blank sample collected on May 31-June 1, 2016 by Brown and Caldwell at the National Grid, 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 4, September 2014: Validating Volatile Organic Compounds by SW-846 Method 8260B & 8260C;
- 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 as qualified for the following deficiencies.

- Benzo(g,h,i)perylene was qualified as estimated in one sample due to low MS/MSD recoveries.

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
FB-20160531	None - ND	-	-	-	-
FB-20160601	None - ND	-	-	-	-
TB-20160601	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-7D-20160531 ug/L	DUP-20160531 ug/L	RPD	Qualifier
None	ND	ND	-	-

Semivolatile Organic 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 following table presents MS/MSD samples that exhibited percent recoveries (%R) outside the QC limits and/or relative percent differences (RPD) above QC limits. A low %R may indicate a potential low bias while a high %R may indicate a potential high bias. For a low %R, positive results are considered estimated and qualified (J) while non-detects are estimated and qualified (UJ). For a high %R, positive results are considered estimated and qualified (J). Results are valid and usable, however possibly biased.

MS/MSD Sample ID	Compound	MS %R/MSD %R/ RPD	Qualifier
1	Benzo(g,h,i)perylene	44.5%/43.4%/OK	J/UJ

Laboratory Control Samples

- The LCS samples 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
FB-20160531	None - ND	-	-	-	-
FB-20160601	None - ND	-	-	-	-

GC/MS Tuning

- All criteria were met.

Initial Calibration

- All %RSD and mean 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-7D-20160531 ug/L	DUP-20160531 ug/L	RPD	Qualifier
None	ND	ND	-	-

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

Signed: Nancy Weaver Dated: 8/10/16

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.

ANALYSIS DATA SHEET

Volatile Organics - GC/MS - SW 846 8260B

Client: Brown and Caldwell USR
Client Sample ID: MW-7S-20160531
Lab Sample ID: 6060058-01
Project: Patchogue
Work Order: 6060058

Date Sampled:	05/31/16 15:11	Prep Date:	06/08/16 22:00	File ID:	4V21566.D
Init/Final Vol:	5 mL / 5 mL	Prep Batch:	B6F0909	Analyzed:	06/08/16 22:00
Dilution:	1	Matrix:	Ground Water	Sequence:	S6F1004
		Prep Method:	PURGE & TRAP 8000		

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
71-43-2	Benzene	ND	0.129	1.00	U
100-41-4	EthylBenzene	ND	0.244	1.00	U
179601-23-1	m+p-Xylenes	ND	0.461	2.00	U
1634-04-4	Methyl tert-Butyl Ether	ND	0.596	1.00	U
95-47-6	o-Xylene	ND	0.244	1.00	U
75-65-0	tert-Butyl alcohol	ND	8.17	10.0	U
108-88-3	Toluene	ND	0.205	1.00	U
1330-20-7	Total Xylenes	ND	0.705	1.00	U

ND - Indicates compound analyzed for but not detected
J - Indicates estimated value
B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard
D - Indicates result is based on a dilution
P - Greater than 25% diff between 2 GC columns
MDL - Minimum detection limit
RL - Reporting limit

MW 819116

11.2.

2

ANALYSIS DATA SHEET

Volatile Organics - GC/MS - SW 846 8260B

Client: Brown and Caldwell USR
Client Sample ID: MW-7D-20160531
Lab Sample ID: 6060058-02
Project: Patchogue
Work Order: 6060058

Date Sampled:	05/31/16 16:15	Prep Date:	06/06/16 15:39	File ID:	4V21537.D
Init/Final Vol:	5 mL / 5 mL	Prep Batch:	B6F1026	Analyzed:	06/06/16 15:39
Dilution:	1	Matrix:	Ground Water	Sequence:	S6F1002
		Prep Method:	PURGE & TRAP 8000		

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
71-43-2	Benzene	ND	0.129	1.00	U
100-41-4	EthylBenzene	ND	0.244	1.00	U
179601-23-1	m+p-Xylenes	ND	0.461	2.00	U
1634-04-4	Methyl tert-Butyl Ether	ND	0.596	1.00	U
95-47-6	o-Xylene	ND	0.244	1.00	U
75-65-0	tert-Butyl alcohol	ND	8.17	10.0	U
108-88-3	Toluene	ND	0.205	1.00	U
1330-20-7	Total Xylenes	ND	0.705	1.00	U

E

11.2

ND - Indicates compound analyzed for but not detected
J - Indicates estimated value
B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard

D - Indicates result is based on a dilution
P - Greater than 25% diff between 2 GC columns
MDL - Minimum detection limit
RL - Reporting limit

MW 8/9/16

3

ANALYSIS DATA SHEET

Volatile Organics - GC/MS - SW 846 8260B

Client:	**Brown and Caldwell USR**
Client Sample ID:	**DUP-20160531**
Lab Sample ID:	**6060058-03**
Project:	**Patchogue**
Work Order:	**6060058**

Date Sampled:	05/31/16 00:00	Prep Date:	06/06/16 16:05	File ID:	4V21538.D
Init/Final Vol:	5 mL / 5 mL	Prep Batch:	B6F1026	Analyzed:	06/06/16 16:05
Dilution:	1	Matrix:	Ground Water	Sequence:	S6F1002
		Prep Method:	PURGE & TRAP 8000		

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
71-43-2	Benzene	ND	0.129	1.00	U
100-41-4	EthylBenzene	ND	0.244	1.00	U
179601-23-1	m+p-Xylenes	ND	0.461	2.00	U
1634-04-4	Methyl tert-Butyl Ether	ND	0.596	1.00	U
95-47-6	o-Xylene	ND	0.244	1.00	U
75-65-0	tert-Butyl alcohol	ND	8.17	10.0	U
108-88-3	Toluene	ND	0.205	1.00	U
1330-20-7	Total Xylenes	ND	0.705	1.00	U

11.2

ND - Indicates compound analyzed for but not detected
J - Indicates estimated value
B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard

D - Indicates result is based on a dilution
P - Greater than 25% diff between 2 GC columns
MDL - Minimum detection limit
RL - Reporting limit

NW 8/9/16

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ANALYSIS DATA SHEET

Volatile Organics - GC/MS - SW 846 8260B

Client: Brown and Caldwell USR
Client Sample ID: MW-9D-20160531
Lab Sample ID: 6060058-04
Project: Patchogue
Work Order: 6060058

Date Sampled:	05/31/16 17:21	Prep Date:	06/06/16 16:30	File ID:	4V21539.D
Init/Final Vol:	5 mL / 5 mL	Prep Batch:	B6F1026	Analyzed:	06/06/16 16:30
Dilution:	1	Matrix:	Ground Water	Sequence:	S6F1002
		Prep Method:	PURGE & TRAP 8000		

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
71-43-2	Benzene	ND	0.129	1.00	U
100-41-4	EthylBenzene	ND	0.244	1.00	U
179601-23-1	m+p-Xylenes	ND	0.461	2.00	U
1634-04-4	Methyl tert-Butyl Ether	ND	0.596	1.00	U
95-47-6	o-Xylene	ND	0.244	1.00	U
75-65-0	tert-Butyl alcohol	ND	8.17	10.0	U
108-88-3	Toluene	ND	0.205	1.00	U
1330-20-7	Total Xylenes	ND	0.705	1.00	U

11.2.

ND - Indicates compound analyzed for but not detected
J - Indicates estimated value
B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard

D - Indicates result is based on a dilution
P - Greater than 25% diff between 2 GC columns
MDL - Minimum detection limit
RL - Reporting limit

MW 8/9/16

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ANALYSIS DATA SHEET

Volatile Organics - GC/MS - SW 846 8260B

Client: Brown and Caldwell USR
Client Sample ID: FB-20160531
Lab Sample ID: 6060058-05
Project: Patchogue
Work Order: 6060058

Date Sampled:	05/31/16 17:45	Prep Date:	06/06/16 16:55	File ID:	4V21540.D
Init/Final Vol:	5 mL / 5 mL	Prep Batch:	B6F1026	Analyzed:	06/06/16 16:55
Dilution:	1	Matrix:	Ground Water	Sequence:	S6F1002
		Prep Method:	PURGE & TRAP 8000		

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
71-43-2	Benzene	ND	0.129	1.00	U
100-41-4	EthylBenzene	ND	0.244	1.00	U
179601-23-1	m+p-Xylenes	ND	0.461	2.00	U
1634-04-4	Methyl tert-Butyl Ether	ND	0.596	1.00	U
95-47-6	o-Xylene	ND	0.244	1.00	U
75-65-0	tert-Butyl alcohol	ND	8.17	10.0	U
108-88-3	Toluene	ND	0.205	1.00	U
1330-20-7	Total Xylenes	ND	0.705	1.00	U

11.2.

ND - Indicates compound analyzed for but not detected
J - Indicates estimated value
B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard

D - Indicates result is based on a dilution
P - Greater than 25% diff between 2 GC columns
MDL - Minimum detection limit
RL - Reporting limit

MW 8/9/16

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ANALYSIS DATA SHEET

Volatile Organics - GC/MS - SW 846 8260B

Client:	**Brown and Caldwell USR**
Client Sample ID:	**MW-8S-20160601**
Lab Sample ID:	**6060058-06**
Project:	**Patchogue**
Work Order:	**6060058**

Date Sampled:	06/01/16 08:29	Prep Date:	06/06/16 17:20	File ID:	4V21541.D
Init/Final Vol:	5 mL / 5 mL	Prep Batch:	B6F1026	Analyzed:	06/06/16 17:20
Dilution:	1	Matrix:	Ground Water	Sequence:	S6F1002
		Prep Method:	PURGE & TRAP 8000		

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
71-43-2	Benzene	ND	0.129	1.00	U
100-41-4	EthylBenzene	ND	0.244	1.00	U
179601-23-1	m+p-Xylenes	ND	0.461	2.00	U
1634-04-4	Methyl tert-Butyl Ether	ND	0.596	1.00	U
95-47-6	o-Xylene	ND	0.244	1.00	U
75-65-0	tert-Butyl alcohol	ND	8.17	10.0	U
108-88-3	Toluene	ND	0.205	1.00	U
1330-20-7	Total Xylenes	ND	0.705	1.00	U

11.2

ND - Indicates compound analyzed for but not detected
J - Indicates estimated value
B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard

D - Indicates result is based on a dilution
P - Greater than 25% diff. between 2 GC columns
MDL - Minimum detection limit
RL - Reporting limit

MW 8 9 1 4

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ANALYSIS DATA SHEET

Volatile Organics - GC/MS - SW 846 8260B

Client: Brown and Caldwell USR
Client Sample ID: MW-8D-20160601
Lab Sample ID: 6060058-07
Project: Patchogue
Work Order: 6060058

Date Sampled:	06/01/16 09:18	Prep Date:	06/08/16 22:25	File ID:	4V21567.D
Init/Final Vol:	5 mL / 5 mL	Prep Batch:	B6F0909	Analyzed:	06/08/16 22:25
Dilution:	1	Matrix:	Ground Water	Sequence:	S6F1004
		Prep Method:	PURGE & TRAP 8000		

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
71-43-2	Benzene	ND	0.129	1.00	U
100-41-4	EthylBenzene	ND	0.244	1.00	U
179601-23-1	m+p-Xylenes	ND	0.461	2.00	U
1634-04-4	Methyl tert-Butyl Ether	ND	0.596	1.00	U
95-47-6	o-Xylene	ND	0.244	1.00	U
75-65-0	tert-Butyl alcohol	ND	8.17	10.0	U
108-88-3	Toluene	ND	0.205	1.00	U
1330-20-7	Total Xylenes	ND	0.705	1.00	U

11.2.

ND - Indicates compound analyzed for but not detected
J - Indicates estimated value
B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard

D - Indicates result is based on a dilution
P - Greater than 25% diff between 2 GC columns
MDL - Minimum detection limit
RL - Reporting limit

MW 819116

8

ANALYSIS DATA SHEET

Volatile Organics - GC/MS - SW 846 8260B

Client: Brown and Caldwell USR
Client Sample ID: FB-20160601
Lab Sample ID: 6060058-08
Project: Patchogue
Work Order: 6060058

Date Sampled:	06/01/16 09:25	Prep Date:	06/09/16 14:10	File ID:	4V21583.D
Init/Final Vol:	5 mL / 5 mL	Prep Batch:	B6F0929	Analyzed:	06/09/16 14:10
Dilution:	1	Matrix:	Ground Water	Sequence:	S6F1023
		Prep Method:	PURGE & TRAP 8000		

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
71-43-2	Benzene	ND	0.129	1.00	U
100-41-4	EthylBenzene	ND	0.244	1.00	U
179601-23-1	m+p-Xylenes	ND	0.461	2.00	U
1634-04-4	Methyl tert-Butyl Ether	ND	0.596	1.00	U
95-47-6	o-Xylene	ND	0.244	1.00	U
75-65-0	tert-Butyl alcohol	ND	8.17	10.0	U
108-88-3	Toluene	ND	0.205	1.00	U
1330-20-7	Total Xylenes	ND	0.705	1.00	U

11

11.2

ND - Indicates compound analyzed for but not detected
J - Indicates estimated value
B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard

D - Indicates result is based on a dilution
P - Greater than 25% diff between 2 GC columns
MDL - Minimum detection limit
RL - Reporting limit

MW 8/9/16

9

ANALYSIS DATA SHEET

Volatile Organics - GC/MS - SW 846 8260B

Client:	**Brown and Caldwell USR**
Client Sample ID:	**MW-9S-20160601**
Lab Sample ID:	**6060058-09**
Project:	**Patchogue**
Work Order:	**6060058**

Date Sampled:	06/01/16 10:08	Prep Date:	06/08/16 22:50	File ID:	4V21568.D
Init/Final Vol:	5 mL / 5 mL	Prep Batch:	B6F0909	Analyzed:	06/08/16 22:50
Dilution:	1	Matrix:	Ground Water	Sequence:	S6F1004
		Prep Method:	PURGE & TRAP 8000		

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
71-43-2	Benzene	ND	0.129	1.00	U
100-41-4	EthylBenzene	ND	0.244	1.00	U
179601-23-1	m+p-Xylenes	ND	0.461	2.00	U
1634-04-4	Methyl tert-Butyl Ether	ND	0.596	1.00	U
95-47-6	o-Xylene	ND	0.244	1.00	U
75-65-0	tert-Butyl alcohol	ND	8.17	10.0	U
108-88-3	Toluene	ND	0.205	1.00	U
1330-20-7	Total Xylenes	ND	0.705	1.00	U

11.2

ND - Indicates compound analyzed for but not detected
J - Indicates estimated value
B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard

D - Indicates result is based on a dilution
P - Greater than 25% diff between 2 GC columns
MDL - Minimum detection limit
RL - Reporting limit

MW 8/9/16

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ANALYSIS DATA SHEET

Volatile Organics - GC/MS - SW 846 8260B

Client:	**Brown and Caldwell USR**
Client Sample ID:	**MW-3-20160601**
Lab Sample ID:	**6060058-10**
Project:	**Patchogue**
Work Order:	**6060058**

Date Sampled:	06/01/16 10:55	Prep Date:	06/08/16 23:15	File ID:	4V21569.D
Init/Final Vol:	5 mL / 5 mL	Prep Batch:	B6F0909	Analyzed:	06/08/16 23:15
Dilution:	1	Matrix:	Ground Water	Sequence:	S6F1004
		Prep Method:	PURGE & TRAP 8000		

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
71-43-2	Benzene	ND	0.129	1.00	U
100-41-4	EthylBenzene	ND	0.244	1.00	U
179601-23-1	m+p-Xylenes	ND	0.461	2.00	U
1634-04-4	Methyl tert-Butyl Ether	ND	0.596	1.00	U
95-47-6	o-Xylene	ND	0.244	1.00	U
75-65-0	tert-Butyl alcohol	ND	8.17	10.0	U
108-88-3	Toluene	ND	0.205	1.00	U
1330-20-7	Total Xylenes	ND	0.705	1.00	U

11.2

ND - Indicates compound analyzed for but not detected
J - Indicates estimated value
B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard

D - Indicates result is based on a dilution
P - Greater than 25% diff between 2 GC columns
MDL - Minimum detection limit
RL - Reporting limit

NW 819116

11

ANALYSIS DATA SHEET

Volatile Organics - GC/MS - SW 846 8260B

Client:	**Brown and Caldwell USR**
Client Sample ID:	**MW-4D-20160601**
Lab Sample ID:	**6060058-11**
Project:	**Patchogue**
Work Order:	**6060058**

Date Sampled:	06/01/16 11:41	Prep Date:	06/08/16 23:40	File ID:	4V21570.D
Init/Final Vol:	5 mL / 5 mL	Prep Batch:	B6F0909	Analyzed:	06/08/16 23:40
Dilution:	1	Matrix:	Ground Water	Sequence:	S6F1004
		Prep Method:	PURGE & TRAP 8000		

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
71-43-2	Benzene	ND	0.129	1.00	U
100-41-4	EthylBenzene	ND	0.244	1.00	U
179601-23-1	m+p-Xylenes	ND	0.461	2.00	U
1634-04-4	Methyl tert-Butyl Ether	ND	0.596	1.00	U
95-47-6	o-Xylene	ND	0.244	1.00	U
75-65-0	tert-Butyl alcohol	ND	8.17	10.0	U
108-88-3	Toluene	ND	0.205	1.00	U
1330-20-7	Total Xylenes	ND	0.705	1.00	U

11

11.2

ND - Indicates compound analyzed for but not detected
J - Indicates estimated value
B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard

D - Indicates result is based on a dilution
P - Greater than 25% diff between 2 GC columns
MDL - Minimum detection limit
RL - Reporting limit

MW 8/9/16

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ANALYSIS DATA SHEET

Volatile Organics - GC/MS - SW 846 8260B

Client: Brown and Caldwell USR
Client Sample ID: MW-4S-20160601
Lab Sample ID: 6060058-12
Project: Patchogue
Work Order: 6060058

Date Sampled:	06/01/16 12:25	Prep Date:	06/09/16 00:05	File ID:	4V21571.D
Init/Final Vol:	5 mL / 5 mL	Prep Batch:	B6F0909	Analyzed:	06/09/16 00:05
Dilution:	1	Matrix:	Ground Water	Sequence:	S6F1004
		Prep Method:	PURGE & TRAP 8000		

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
71-43-2	Benzene	ND	0.129	1.00	U
100-41-4	EthylBenzene	ND	0.244	1.00	U
179601-23-1	m+p-Xylenes	ND	0.461	2.00	U
1634-04-4	Methyl tert-Butyl Ether	ND	0.596	1.00	U
95-47-6	o-Xylene	ND	0.244	1.00	U
75-65-0	tert-Butyl alcohol	ND	8.17	10.0	U
108-88-3	Toluene	ND	0.205	1.00	U
1330-20-7	Total Xylenes	ND	0.705	1.00	U

11

11.2

ND - Indicates compound analyzed for but not detected
J - Indicates estimated value
B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard

D - Indicates result is based on a dilution
P - Greater than 25% diff between 2 GC columns
MDL - Minimum detection limit
RL - Reporting limit

MW 8/9/16

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ANALYSIS DATA SHEET

Volatile Organics - GC/MS - SW 846 8260B

Client: Brown and Caldwell USR
Client Sample ID: MW-1-20160601
Lab Sample ID: 6060058-13
Project: Patchogue
Work Order: 6060058

Date Sampled:	06/01/16 14:36	Prep Date:	06/09/16 00:31	File ID:	4V21572.D
Init/Final Vol:	5 mL / 5 mL	Prep Batch:	B6F0909	Analyzed:	06/09/16 00:31
Dilution:	1	Matrix:	Ground Water	Sequence:	S6F1004
		Prep Method:	PURGE & TRAP 8000		

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
71-43-2	Benzene	ND	0.129	1.00	U
100-41-4	EthylBenzene	ND	0.244	1.00	U
179601-23-1	m+p-Xylenes	ND	0.461	2.00	U
1634-04-4	Methyl tert-Butyl Ether	ND	0.596	1.00	U
95-47-6	o-Xylene	ND	0.244	1.00	U
75-65-0	tert-Butyl alcohol	ND	8.17	10.0	U
108-88-3	Toluene	ND	0.205	1.00	U
1330-20-7	Total Xylenes	ND	0.705	1.00	U

11.2

ND - Indicates compound analyzed for but not detected
J - Indicates estimated value
B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard

D - Indicates result is based on a dilution
P - Greater than 25% diff between 2 GC columns
MDL - Minimum detection limit
RL - Reporting limit

MW 8/9/16

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ANALYSIS DATA SHEET

Volatile Organics - GC/MS - SW 846 8260B

Client:	**Brown and Caldwell USR**
Client Sample ID:	**TB-20160601**
Lab Sample ID:	**6060058-14**
Project:	**Patchogue**
Work Order:	**6060058**

Date Sampled:	06/01/16 00:00	Prep Date:	06/09/16 13:44	File ID:	4V21582.D
Init/Final Vol:	5 mL / 5 mL	Prep Batch:	B6F0929	Analyzed:	06/09/16 13:44
Dilution:	1	Matrix:	Ground Water	Sequence:	S6F1023
		Prep Method:	PURGE & TRAP 8000		

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
71-43-2	Benzene	ND	0.129	1.00	U
100-41-4	EthylBenzene	ND	0.244	1.00	U
179601-23-1	m+p-Xylenes	ND	0.461	2.00	U
1634-04-4	Methyl tert-Butyl Ether	ND	0.596	1.00	U
95-47-6	o-Xylene	ND	0.244	1.00	U
75-65-0	tert-Butyl alcohol	ND	8.17	10.0	U
108-88-3	Toluene	ND	0.205	1.00	U
1330-20-7	Total Xylenes	ND	0.705	1.00	U

11

11.2

ND - Indicates compound analyzed for but not detected
J - Indicates estimated value
B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard

D - Indicates result is based on a dilution
P - Greater than 25% diff between 2 GC columns
MDL - Minimum detection limit
RL - Reporting limit

NW 8/9/16

ANALYSIS DATA SHEET

Semivolatile Organics - GC/MS - SW 846 8270C

Client:	**Brown and Caldwell USR**
Client Sample ID:	**MW-7S-20160531**
Lab Sample ID:	**6060058-01**
Project:	**Patchogue**
Work Order:	**6060058**

Date Sampled:	05/31/16 15:11	Prep Date:	06/03/16 09:31	File ID:	CS11669.D
Init/Final Vol:	980 mL / 1 mL	Prep Batch:	B6F0307	Analyzed:	06/04/16 00:34
Dilution:	1	Matrix:	Ground Water	Sequence:	S6F0703
		Prep Method:	Sep Funnel MS 8000		

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
83-32-9	Acenaphthene	ND	0.626	2.04	U
208-96-8	Acenaphthylene	ND	0.277	2.04	U
120-12-7	Anthracene	ND	0.326	2.04	U
56-55-3	Benzo(a)anthracene	ND	0.482	2.04	U
50-32-8	Benzo(a)pyrene	ND	0.358	2.04	U
205-99-2	Benzo(b)fluoranthene	ND	0.432	2.04	U
191-24-2	Benzo(g,h,i)perylene	~~ND~~ U J	0.505	2.04	U
207-08-9	Benzo(k)fluoranthene	ND	0.442	2.04	U
218-01-9	Chrysene	ND	0.440	2.04	U
53-70-3	Dibenzo(a,h)anthracene	ND	0.409	2.04	U
206-44-0	Fluoranthene	ND	0.307	2.04	U
86-73-7	Fluorene	ND	0.183	2.04	U
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.438	2.04	U
91-20-3	Naphthalene	2.53	0.553	2.04	
85-01-8	Phenanthrene	ND	0.471	2.04	U
129-00-0	Pyrene	ND	0.379	2.04	U

ND - Indicates compound analyzed for but not detected
J - Indicates estimated value
B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard

D - Indicates result is based on a dilution
P - Greater than 25% diff between 2 GC columns
MDL - Minimum detection limit
RL - Reporting limit

NW 819116

9.2.

2

ANALYSIS DATA SHEET

Semivolatile Organics - GC/MS - SW 846 8270C

Client: Brown and Caldwell USR
Client Sample ID: MW-7D-20160531
Lab Sample ID: 6060058-02
Project: Patchogue
Work Order: 6060058

Date Sampled:	05/31/16 16:15	Prep Date:	06/03/16 09:31	File ID:	CS11670.D
Init/Final Vol:	930 mL / 1 mL	Prep Batch:	B6F0307	Analyzed:	06/04/16 01:02
Dilution:	1	Matrix:	Ground Water	Sequence:	S6F0703
		Prep Method:	Sep Funnel MS 8000		

9.2

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
83-32-9	Acenaphthene	ND	0.659	2.15	U
208-96-8	Acenaphthylene	ND	0.291	2.15	U
120-12-7	Anthracene	ND	0.343	2.15	U
56-55-3	Benzo(a)anthracene	ND	0.508	2.15	U
50-32-8	Benzo(a)pyrene	ND	0.377	2.15	U
205-99-2	Benzo(b)fluoranthene	ND	0.455	2.15	U
191-24-2	Benzo(g,h,i)perylene	ND	0.532	2.15	U
207-08-9	Benzo(k)fluoranthene	ND	0.466	2.15	U
218-01-9	Chrysene	ND	0.463	2.15	U
53-70-3	Dibenzo(a,h)anthracene	ND	0.431	2.15	U
206-44-0	Fluoranthene	ND	0.324	2.15	U
86-73-7	Fluorene	ND	0.192	2.15	U
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.461	2.15	U
91-20-3	Naphthalene	ND	0.583	2.15	U
85-01-8	Phenanthrene	ND	0.497	2.15	U
129-00-0	Pyrene	ND	0.399	2.15	U

ND - Indicates compound analyzed for but not detected
J - Indicates estimated value
B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard

D - Indicates result is based on a dilution
P - Greater than 25% diff. between 2 GC columns
MDL - Minimum detection limit
RL - Reporting limit

NW 819116

3

ANALYSIS DATA SHEET

Semivolatile Organics - GC/MS - SW 846 8270C

Client:	**Brown and Caldwell USR**
Client Sample ID:	**DUP-20160531**
Lab Sample ID:	**6060058-03**
Project:	**Patchogue**
Work Order:	**6060058**

Date Sampled:	05/31/16 00:00	Prep Date:	06/03/16 09:31	File ID:	CS11671.D
Init/Final Vol:	1000 mL / 1 mL	Prep Batch:	B6F0307	Analyzed:	06/04/16 01:30
Dilution:	1	Matrix:	Ground Water	Sequence:	S6F0703
		Prep Method:	Sep Funnel MS 8000		

9.2

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
83-32-9	Acenaphthene	ND	0.613	2.00	U
208-96-8	Acenaphthylene	ND	0.271	2.00	U
120-12-7	Anthracene	ND	0.319	2.00	U
56-55-3	Benzo(a)anthracene	ND	0.472	2.00	U
50-32-8	Benzo(a)pyrene	ND	0.351	2.00	U
205-99-2	Benzo(b)fluoranthene	ND	0.423	2.00	U
191-24-2	Benzo(g,h,i)perylene	ND	0.495	2.00	U
207-08-9	Benzo(k)fluoranthene	ND	0.433	2.00	U
218-01-9	Chrysene	ND	0.431	2.00	U
53-70-3	Dibenzo(a,h)anthracene	ND	0.401	2.00	U
206-44-0	Fluoranthene	ND	0.301	2.00	U
86-73-7	Fluorene	ND	0.179	2.00	U
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.429	2.00	U
91-20-3	Naphthalene	ND	0.542	2.00	U
85-01-8	Phenanthrene	ND	0.462	2.00	U
129-00-0	Pyrene	ND	0.371	2.00	U

ND - Indicates compound analyzed for but not detected
J - Indicates estimated value
B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard

D - Indicates result is based on a dilution
P - Greater than 25% diff between 2 GC columns
MDL - Minimum detection limit
RL - Reporting limit

NW 8/9/16

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ANALYSIS DATA SHEET

Semivolatile Organics - GC/MS - SW 846 8270C

Client: Brown and Caldwell USR
Client Sample ID: MW-9D-20160531
Lab Sample ID: 6060058-04
Project: Patchogue
Work Order: 6060058

Date Sampled:	05/31/16 17:21	Prep Date:	06/03/16 09:31	File ID:	CS11672.D
Init/Final Vol:	890 mL / 1 mL	Prep Batch:	B6F0307	Analyzed:	06/04/16 01:58
Dilution:	1	Matrix:	Ground Water	Sequence:	S6F0703
		Prep Method:	Sep Funnel MS 8000		

9.2.

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
83-32-9	Acenaphthene	ND	0.689	2.25	U
208-96-8	Acenaphthylene	ND	0.304	2.25	U
120-12-7	Anthracene	ND	0.358	2.25	U
56-55-3	Benzo(a)anthracene	ND	0.530	2.25	U
50-32-8	Benzo(a)pyrene	ND	0.394	2.25	U
205-99-2	Benzo(b)fluoranthene	ND	0.475	2.25	U
191-24-2	Benzo(g,h,i)perylene	ND	0.556	2.25	U
207-08-9	Benzo(k)fluoranthene	ND	0.487	2.25	U
218-01-9	Chrysene	ND	0.484	2.25	U
53-70-3	Dibenzo(a,h)anthracene	ND	0.451	2.25	U
206-44-0	Fluoranthene	ND	0.338	2.25	U
86-73-7	Fluorene	ND	0.201	2.25	U
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.482	2.25	U
91-20-3	Naphthalene	ND	0.609	2.25	U
85-01-8	Phenanthrene	ND	0.519	2.25	U
129-00-0	Pyrene	ND	0.417	2.25	U

ND - Indicates compound analyzed for but not detected
J - Indicates estimated value
B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard

D - Indicates result is based on a dilution
P - Greater than 25% diff between 2 GC columns
MDL - Minimum detection limit
RL - Reporting limit

MW 8/9/16

5

ANALYSIS DATA SHEET

Semivolatile Organics - GC/MS - SW 846 8270C

Client:	**Brown and Caldwell USR**
Client Sample ID:	**FB-20160531**
Lab Sample ID:	**6060058-05**
Project:	**Patchogue**
Work Order:	**6060058**

Date Sampled:	05/31/16 17:45	Prep Date:	06/03/16 09:31	File ID:	CS11673.D
Init/Final Vol:	960 mL / 1 mL	Prep Batch:	B6F0307	Analyzed:	06/04/16 02:26
Dilution:	1	Matrix:	Ground Water	Sequence:	S6F0703
		Prep Method:	Sep Funnel MS 8000		

9.2

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
83-32-9	Acenaphthene	ND	0.639	2.08	U
208-96-8	Acenaphthylene	ND	0.282	2.08	U
120-12-7	Anthracene	ND	0.332	2.08	U
56-55-3	Benzo(a)anthracene	ND	0.492	2.08	U
50-32-8	Benzo(a)pyrene	ND	0.366	2.08	U
205-99-2	Benzo(b)fluoranthene	ND	0.441	2.08	U
191-24-2	Benzo(g,h,i)perylene	ND	0.516	2.08	U
207-08-9	Benzo(k)fluoranthene	ND	0.451	2.08	U
218-01-9	Chrysene	ND	0.449	2.08	U
53-70-3	Dibenzo(a,h)anthracene	ND	0.418	2.08	U
206-44-0	Fluoranthene	ND	0.314	2.08	U
86-73-7	Fluorene	ND	0.186	2.08	U
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.447	2.08	U
91-20-3	Naphthalene	ND	0.565	2.08	U
85-01-8	Phenanthrene	ND	0.481	2.08	U
129-00-0	Pyrene	ND	0.386	2.08	U

ND - Indicates compound analyzed for but not detected
J - Indicates estimated value
B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard

D - Indicates result is based on a dilution
P - Greater than 25% diff between 2 GC columns
MDL - Minimum detection limit
RL - Reporting limit

NW 819116

b

ANALYSIS DATA SHEET

Semivolatile Organics - GC/MS - SW 846 8270C

Client:	**Brown and Caldwell USR**
Client Sample ID:	**MW-8S-20160601**
Lab Sample ID:	**6060058-06**
Project:	**Patchogue**
Work Order:	**6060058**

Date Sampled:	06/01/16 08:29	Prep Date:	06/03/16 09:31	File ID:	CS11674.D
Init/Final Vol:	880 mL / 1 mL	Prep Batch:	B6F0307	Analyzed:	06/04/16 02:54
Dilution:	1	Matrix:	Ground Water	Sequence:	S6F0703
		Prep Method:	Sep Funnel MS 8000		

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
83-32-9	Acenaphthene	ND	0.697	2.27	U
208-96-8	Acenaphthylene	ND	0.308	2.27	U
120-12-7	Anthracene	ND	0.362	2.27	U
56-55-3	Benzo(a)anthracene	ND	0.536	2.27	U
50-32-8	Benzo(a)pyrene	ND	0.399	2.27	U
205-99-2	Benzo(b)fluoranthene	ND	0.481	2.27	U
191-24-2	Benzo(g,h,i)perylene	ND	0.562	2.27	U
207-08-9	Benzo(k)fluoranthene	ND	0.492	2.27	U
218-01-9	Chrysene	ND	0.490	2.27	U
53-70-3	Dibenzo(a,h)anthracene	ND	0.456	2.27	U
206-44-0	Fluoranthene	ND	0.342	2.27	U
86-73-7	Fluorene	ND	0.203	2.27	U
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.488	2.27	U
91-20-3	Naphthalene	ND	0.616	2.27	U
85-01-8	Phenanthrene	ND	0.525	2.27	U
129-00-0	Pyrene	ND	0.422	2.27	U

ND - Indicates compound analyzed for but not detected
J - Indicates estimated value
B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard

D - Indicates result is based on a dilution
P - Greater than 25% diff between 2 GC columns
MDL - Minimum detection limit
RL - Reporting limit

NW819114

9.2.

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ANALYSIS DATA SHEET

Semivolatile Organics - GC/MS - SW 846 8270C

Client:	**Brown and Caldwell USR**
Client Sample ID:	**MW-8D-20160601**
Lab Sample ID:	**6060058-07**
Project:	**Patchogue**
Work Order:	**6060058**

Date Sampled:	06/01/16 09:18	Prep Date:	06/03/16 09:31	File ID:	CS11675.D
Init/Final Vol:	900 mL / 1 mL	Prep Batch:	B6F0307	Analyzed:	06/04/16 03:22
Dilution:	1	Matrix:	Ground Water	Sequence:	S6F0703
		Prep Method:	Sep Funnel MS 8000		

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9.2

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
83-32-9	Acenaphthene	ND	0.681	2.22	U
208-96-8	Acenaphthylene	ND	0.301	2.22	U
120-12-7	Anthracene	ND	0.354	2.22	U
56-55-3	Benzo(a)anthracene	ND	0.524	2.22	U
50-32-8	Benzo(a)pyrene	ND	0.390	2.22	U
205-99-2	Benzo(b)fluoranthene	ND	0.470	2.22	U
191-24-2	Benzo(g,h,i)perylene	ND	0.550	2.22	U
207-08-9	Benzo(k)fluoranthene	ND	0.481	2.22	U
218-01-9	Chrysene	ND	0.479	2.22	U
53-70-3	Dibenzo(a,h)anthracene	ND	0.446	2.22	U
206-44-0	Fluoranthene	ND	0.334	2 22	U
86-73-7	Fluorene	ND	0.199	2.22	U
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.477	2.22	U
91-20-3	Naphthalene	ND	0.602	2.22	U
85-01-8	Phenanthrene	ND	0.513	2.22	U
129-00-0	Pyrene	ND	0.412	2.22	U

ND - Indicates compound analyzed for but not detected
J - Indicates estimated value
B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard

D - Indicates result is based on a dilution
P - Greater than 25% diff between 2 GC columns
MDL - Minimum detection limit
RL - Reporting limit

NW 8/9/16

ANALYSIS DATA SHEET

Semivolatile Organics - GC/MS - SW 846 8270C

Client: Brown and Caldwell USR
Client Sample ID: FB-20160601
Lab Sample ID: 6060058-08
Project: Patchogue
Work Order: 6060058

Date Sampled:	06/01/16 09:25	Prep Date:	06/03/16 09:31	File ID:	CS11676.D
Init/Final Vol:	930 mL / 1 mL	Prep Batch:	B6F0307	Analyzed:	06/04/16 03:50
Dilution:	1	Matrix:	Ground Water	Sequence:	S6F0703
		Prep Method:	Sep Funnel MS 8000		

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
83-32-9	Acenaphthene	ND	0.659	2.15	U
208-96-8	Acenaphthylene	ND	0.291	2.15	U
120-12-7	Anthracene	ND	0.343	2.15	U
56-55-3	Benzo(a)anthracene	ND	0.508	2.15	U
50-32-8	Benzo(a)pyrene	ND	0.377	2.15	U
205-99-2	Benzo(b)fluoranthene	ND	0.455	2.15	U
191-24-2	Benzo(g,h,i)perylene	ND	0.532	2.15	U
207-08-9	Benzo(k)fluoranthene	ND	0.466	2.15	U
218-01-9	Chrysene	ND	0.463	2.15	U
53-70-3	Dibenzo(a,h)anthracene	ND	0.431	2.15	U
206-44-0	Fluoranthene	ND	0.324	2.15	U
86-73-7	Fluorene	ND	0.192	2.15	U
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.461	2.15	U
91-20-3	Naphthalene	ND	0.583	2.15	U
85-01-8	Phenanthrene	ND	0.497	2.15	U
129-00-0	Pyrene	ND	0.399	2.15	U

ND - Indicates compound analyzed for but not detected
J - Indicates estimated value
B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard

D - Indicates result is based on a dilution
P - Greater than 25% diff between 2 GC columns
MDL - Minimum detection limit
RL - Reporting limit

9.2.

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ANALYSIS DATA SHEET

Semivolatile Organics - GC/MS - SW 846 8270C

Client: Brown and Caldwell USR
Client Sample ID: MW-9S-20160601
Lab Sample ID: 6060058-09
Project: Patchogue
Work Order: 6060058

Date Sampled:	06/01/16 10:08	Prep Date:	06/03/16 09:31	File ID:	CS11677.D
Init/Final Vol:	950 mL / 1 mL	Prep Batch:	B6F0307	Analyzed:	06/04/16 04:18
Dilution:	1	Matrix:	Ground Water	Sequence:	S6F0703
		Prep Method:	Sep Funnel MS 8000		

9.2

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
83-32-9	Acenaphthene	2.64	0.645	2.11	
208-96-8	Acenaphthylene	ND	0.285	2.11	U
120-12-7	Anthracene	ND	0.336	2.11	U
56-55-3	Benzo(a)anthracene	ND	0.497	2.11	U
50-32-8	Benzo(a)pyrene	ND	0.369	2.11	U
205-99-2	Benzo(b)fluoranthene	ND	0.445	2.11	U
191-24-2	Benzo(g,h,i)perylene	ND	0.521	2.11	U
207-08-9	Benzo(k)fluoranthene	ND	0.456	2.11	U
218-01-9	Chrysene	ND	0.454	2.11	U
53-70-3	Dibenzo(a,h)anthracene	ND	0.422	2.11	U
206-44-0	Fluoranthene	0.982	0.317	2.11	J
86-73-7	Fluorene	0.543	0.188	2.11	J
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.452	2.11	U
91-20-3	Naphthalene	ND	0.571	2.11	U
85-01-8	Phenanthrene	0.715	0.486	2.11	J
129-00-0	Pyrene	1.55	0.391	2.11	J

ND - Indicates compound analyzed for but not detected
J - Indicates estimated value
B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard

D - Indicates result is based on a dilution
P - Greater than 25% diff between 2 GC columns
MDL - Minimum detection limit
RL - Reporting limit

MW819116

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ANALYSIS DATA SHEET

Semivolatile Organics - GC/MS - SW 846 8270C

Client: Brown and Caldwell USR
Client Sample ID: MW-3-20160601
Lab Sample ID: 6060058-10
Project: Patchogue
Work Order: 6060058

Date Sampled:	06/01/16 10:55	Prep Date:	06/03/16 09:31	File ID:	CS11689.D
Init/Final Vol:	940 mL / 1 mL	Prep Batch:	B6F0307	Analyzed:	06/06/16 20:21
Dilution:	1	Matrix:	Ground Water	Sequence:	S6F0908
		Prep Method:	Sep Funnel MS 8000		

9.2

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
83-32-9	Acenaphthene	ND	0.652	2.13	U
208-96-8	Acenaphthylene	ND	0.288	2.13	U
120-12-7	Anthracene	ND	0.339	2.13	U
56-55-3	Benzo(a)anthracene	ND	0.502	2.13	U
50-32-8	Benzo(a)pyrene	ND	0.373	2.13	U
205-99-2	Benzo(b)fluoranthene	ND	0.450	2.13	U
191-24-2	Benzo(g,h,i)perylene	ND	0.527	2 13	U
207-08-9	Benzo(k)fluoranthene	ND	0.461	2.13	U
218-01-9	Chrysene	ND	0.459	2.13	U
53-70-3	Dibenzo(a,h)anthracene	ND	0.427	2.13	U
206-44-0	Fluoranthene	0.804	0.320	2.13	J
86-73-7	Fluorene	ND	0.190	2.13	U
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.456	2.13	U
91-20-3	Naphthalene	ND	0.577	2.13	U
85-01-8	Phenanthrene	ND	0.491	2.13	U
129-00-0	Pyrene	1.10	0.395	2.13	J

ND - Indicates compound analyzed for but not detected
J - Indicates estimated value
B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard

D - Indicates result is based on a dilution
P - Greater than 25% diff between 2 GC columns
MDL - Minimum detection limit
RL - Reporting limit

NW 819116

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ANALYSIS DATA SHEET

Semivolatile Organics - GC/MS - SW 846 8270C

Client: Brown and Caldwell USR
Client Sample ID: MW-4D-20160601
Lab Sample ID: 6060058-11
Project: Patchogue
Work Order: 6060058

Date Sampled:	06/01/16 11:41	Prep Date:	06/03/16 09:31	File ID:	CS11690.D
Init/Final Vol:	910 mL / 1 mL	Prep Batch:	B6F0307	Analyzed:	06/06/16 20:50
Dilution:	1	Matrix:	Ground Water	Sequence:	S6F0908
		Prep Method:	Sep Funnel MS 8000		

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
83-32-9	Acenaphthene	ND	0.674	2.20	U
208-96-8	Acenaphthylene	ND	0.298	2.20	U
120-12-7	Anthracene	ND	0.351	2.20	U
56-55-3	Benzo(a)anthracene	ND	0.519	2.20	U
50-32-8	Benzo(a)pyrene	ND	0.386	2.20	U
205-99-2	Benzo(b)fluoranthene	ND	0.465	2.20	U
191-24-2	Benzo(g,h,i)perylene	ND	0.544	2.20	U
207-08-9	Benzo(k)fluoranthene	ND	0.476	2.20	U
218-01-9	Chrysene	ND	0.474	2.20	U
53-70-3	Dibenzo(a,h)anthracene	ND	0.441	2.20	U
206-44-0	Fluoranthene	ND	0.331	2.20	U
86-73-7	Fluorene	ND	0.197	2.20	U
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.471	2.20	U
91-20-3	Naphthalene	ND	0.596	2.20	U
85-01-8	Phenanthrene	ND	0.508	2.20	U
129-00-0	Pyrene	ND	0.408	2.20	U

ND - Indicates compound analyzed for but not detected
J - Indicates estimated value
B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard

D - Indicates result is based on a dilution
P - Greater than 25% diff between 2 GC columns
MDL - Minimum detection limit
RL - Reporting limit

MW819116

9.2.

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ANALYSIS DATA SHEET

Semivolatile Organics - GC/MS - SW 846 8270C

Client: Brown and Caldwell USR
Client Sample ID: MW-4S-20160601
Lab Sample ID: 6060058-12
Project: Patchogue
Work Order: 6060058

Date Sampled:	06/01/16 12:25	Prep Date:	06/03/16 09:31	File ID:	CS11691.D
Init/Final Vol:	1000 mL / 1 mL	Prep Batch:	B6F0307	Analyzed:	06/06/16 21:19
Dilution:	1	Matrix:	Ground Water	Sequence:	S6F0908
		Prep Method:	Sep Funnel MS 8000		

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9.2

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
83-32-9	Acenaphthene	ND	0.613	2.00	U
208-96-8	Acenaphthylene	ND	0.271	2.00	U
120-12-7	Anthracene	ND	0.319	2.00	U
56-55-3	Benzo(a)anthracene	ND	0.472	2.00	U
50-32-8	Benzo(a)pyrene	ND	0.351	2.00	U
205-99-2	Benzo(b)fluoranthene	ND	0.423	2.00	U
191-24-2	Benzo(g,h,i)perylene	ND	0.495	2.00	U
207-08-9	Benzo(k)fluoranthene	ND	0.433	2.00	U
218-01-9	Chrysene	ND	0.431	2.00	U
53-70-3	Dibenzo(a,h)anthracene	ND	0.401	2.00	U
206-44-0	Fluoranthene	ND	0.301	2.00	U
86-73-7	Fluorene	ND	0.179	2.00	U
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.429	2.00	U
91-20-3	Naphthalene	ND	0.542	2.00	U
85-01-8	Phenanthrene	ND	0.462	2.00	U
129-00-0	Pyrene	0.765	0.371	2.00	J

ND - Indicates compound analyzed for but not detected
J - Indicates estimated value
B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard

D - Indicates result is based on a dilution
P - Greater than 25% diff between 2 GC columns
MDL - Minimum detection limit
RL - Reporting limit

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ANALYSIS DATA SHEET

Semivolatile Organics - GC/MS - SW 846 8270C

Client:	**Brown and Caldwell USR**
Client Sample ID:	**MW-1-20160601**
Lab Sample ID:	**6060058-13**
Project:	**Patchogue**
Work Order:	**6060058**

Date Sampled:	06/01/16 14:36	Prep Date:	06/03/16 09:31	File ID:	CS11692.D
Init/Final Vol:	900 mL / 1 mL	Prep Batch:	B6F0307	Analyzed:	06/06/16 21:48
Dilution:	1	Matrix:	Ground Water	Sequence:	S6F0908
		Prep Method:	Sep Funnel MS 8000		

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9.2

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
83-32-9	Acenaphthene	ND	0.681	2.22	U
208-96-8	Acenaphthylene	ND	0.301	2.22	U
120-12-7	Anthracene	ND	0 354	2.22	U
56-55-3	Benzo(a)anthracene	ND	0.524	2.22	U
50-32-8	Benzo(a)pyrene	ND	0.390	2.22	U
205-99-2	Benzo(b)fluoranthene	ND	0.470	2.22	U
191-24-2	Benzo(g,h,i)perylene	ND	0.550	2.22	U
207-08-9	Benzo(k)fluoranthene	ND	0.481	2.22	U
218-01-9	Chrysene	ND	0.479	2.22	U
53-70-3	Dibenzo(a,h)anthracene	ND	0.446	2.22	U
206-44-0	Fluoranthene	ND	0.334	2.22	U
86-73-7	Fluorene	ND	0.199	2.22	U
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.477	2.22	U
91-20-3	Naphthalene	ND	0.602	2.22	U
85-01-8	Phenanthrene	ND	0.513	2.22	U
129-00-0	Pyrene	ND	0.412	2.22	U

ND - Indicates compound analyzed for but not detected
J - Indicates estimated value
B - Indicates compound found in associated blank
E - Concentration exceeds highest calibration standard

D - Indicates result is based on a dilution
P - Greater than 25% diff. between 2 GC columns
MDL - Minimum detection limit
RL - Reporting limit

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Appendix D: Electronic Data Deliverable (CD-ROM)