First Half 2017
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
August 2017

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Project Number: 149322.750.004

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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 2017 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 2017 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 June 2017 is the subject of this report. The results of previous monitoring events have had, in general, 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, isomers of xylene (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 NAPL gauging and 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 2017 groundwater monitoring were conducted by Brown and Caldwell Associates (BC) on June 13 and 14, 2017. 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 the two staff gauges. Water level measurements and NAPL gauging were conducted using an electronic oil/water interface probe, and measurements were made 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. Piezometers installed during the 2012 pre-remedial design activities are not included in the current sampling program for the Site; these were installed to facilitate the collection hydraulic data in the fill and the outwash deposits underlying the Site. 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 blank sample was 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 June 13, 2017 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 the two surface water staff gauges in the Patchogue River. 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 the staff gauges, 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 June 13, 2017 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 June 2017 groundwater monitoring event. NAPL was identified in the following wells during the gauging activities:

- **MW-5:** Brown viscous NAPL with a strong mothball-like odor on the lower 0.3 feet of the threaded rod.
- **MW-6:** Sporadic NAPL blebs observed on measuring tape for oil/water interface probe; moderate mothball-like odor.
- **PZ-3A:** Black silt with a slight mothball-like odor on the lower 0.5 feet of the threaded rod; sporadic sheen/NAPL blebs throughout the silt.

NAPL has been observed in MW-5, MW-6, and PZ-3A during previous gauging events.

3.3 Groundwater Quality Data

Table 2 provides the results of the laboratory analyses of the groundwater samples collected during the June 2017 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 June 2017 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 June 2017 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 June 2017 monitoring event.

Section 4

Summary and Conclusions

As noted in previous monitoring events, NAPL was identified in monitoring wells MW-5 and MW-6, and in piezometer PZ-3A, during the June 2017 event. MW-5, MW-6, and PZ-3A 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 in groundwater samples from the ten monitoring wells sampled during the June 2017 monitoring event.

PAH compounds were either not detected or were detected at concentrations below the Class GA groundwater quality criteria in groundwater samples from the ten monitoring wells sampled during the June 2017 monitoring event. Monitoring will continue on a semi-annual basis in order to confirm these conditions continue to exist.

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 2017 SEMI-ANNUAL GROUNDWATER MONITORING EVENT
PATCHOGUE FORMER MGP SITE
PATCHOGUE, NEW YORK

		6/13/2017				
Location 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	5.94	5.53	NI	15.20	
MW-3	5.56	2.41	3.15	NI	10.40	
MW-4S	7.97	5.15	2.82	NI	12.25	
MW-4D	7.79	4.90	2.89	NI	26.65	
MW-5	8.66	4.72	3.94	16.22	16.52	Brown viscous NAPL with a strong mothball-like odor on the lower 0.3 ft. of the threaded rod. PID: 8.9 ppm at top of PVC well casing.
MW-6	5.03	0.65	4.38	NI	18.45	Sporadic NAPL blebs observed on measuring tape for oil/water interface probe; moderate mothball-like odor. Soft bottom.
MW-7S	8.45	4.58	3.87	NI	12.42	
MW-7D	8.31	4.41	3.90	NI	28.14	
MW-8S	5.08	0.89	4.19	NI	9.90	
MW-8D	4.98	0.82	4.16	NI	25.10	
MW-9S	4.47	1.61	2.86	NI	10.24	
MW-9D	4.66	1.53	3.13	NI	22.95	
PZ-1A	8.05	3.71	4.34	NI	10.00	
PZ-1B	8.91	4.62	4.29	NI	22.45	
PZ-2A	8.77	4.53	4.24	NI	8.05	
PZ-2B	8.29	4.00	4.29	NI	18.00	Moderate mothball-like odor upon removal of piezometer cap.
PZ-3A	8.78	5.07	3.71	8.45	8.95	Black silt with a slight mothball-like odor on the lower 0.5 ft. of the threaded rod; sporadic sheen/NAPL blebs throughout the silt.
PZ-3B	8.90	5.25	3.65	NI	21.23	
PZ-4A	4.79	1.83	2.96	NI	4.90	
SG-1	5.23	4.03	1.20	NI	NA	
SG-2	5.17	3.83	1.34	NI	NA	

Notes:
NAVD - North American Vertical Datum 1988
ft. - Feet
ppm - parts per million
BGS - Below Ground Surface
BTOC - Below Top of Casing
NAPL - Non-Aqueous Phase Liquid
PID - Photoionization Detector
PVC - Polyvinyl chloride
NA - Not Applicable
NI - NAPL Not Indicated by Oil/Water Interface Probe
MW - monitoring well
PZ - piezometer
SG - staff gauge
(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.

TABLE 2
GROUNDWATER ANALYSIS RESULTS
FIRST HALF 2017 SEMI-ANNUAL GROUNDWATER MONITORING EVENT
PATCHOGUE FORMER MGP SITE
PATCHOGUE, NEW YORK

Constituent	Class GA Groundwater Criteria TOGS 1.1.1 Guidance	NYS Part 703 Standard	Units	Loc ID Date	MW-1 6/13/2017	MW-1 DUP 6/13/2017	MW-3 6/14/2017	MW-4D 6/14/2017	MW-4S 6/14/2017	MW-7D 6/13/2017	MW-7S 6/13/2017	MW-8D 6/13/2017	MW-8S 6/13/2017	MW-9D 6/14/2017	MW-9S 6/14/2017
Volatile Organic Compounds (VOCs)															
BTEX Compounds															
Benzene	NE	1	µg/L		0.129 U	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U	0.129 U
Toluene	NE	5	µg/L		0.205 U	0.205 U	0.205 U	0.205 U	0.205 U	0.205 U	0.205 U	0.205 U	0.205 U	0.205 U	0.205 U
Ethylbenzene	NE	5	µg/L		0.244 U	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U
m&p-Xylenes	NE	5	µg/L		0.461 U	0.461 U	0.461 U	0.461 U	0.461 U	0.461 U	0.461 U	0.461 U	0.461 U	0.461 U	0.461 U
o-Xylene	NE	5	µg/L		0.244 U	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U
Xylenes, Total	NE	NE	µg/L		0.244 U	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U	0.244 U
Total BTEX[(a)]	NE	NE	µg/L		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Other VOCs															
Methyl Tertiary Butyl Ether	10	NE	µg/L		0.596 U	0.596 U	0.596 U	0.596 U	0.596 U	0.596 U	0.596 U	0.596 U	0.596 U	0.596 U	0.596 U
Semi-Volatile Organic Compounds (SVOCs)															
Polycyclic Aromatic Hydrocarbons (PAHs)															
Acenaphthene	20	NE	µg/L		0.613 U	0.613 U	0.613 U	0.613 U	0.613 U	0.613 U	0.613 U	0.613 U	0.613 U	0.613 U	1 J
Acenaphthylene	NE	NE	µg/L		0.271 U	0.271 U	0.271 U	0.271 U	0.271 U	0.271 U	0.271 U	0.271 U	0.271 U	0.271 U	0.271 U
Anthracene	50	NE	µg/L		0.319 U	0.319 U	0.319 U	0.319 U	0.319 U	0.319 U	0.319 U	0.319 U	0.319 U	0.319 U	0.319 U
Benzo(a)anthracene	0.002	NE	µg/L		0.472 U	0.472 U	0.472 U	0.472 U	0.472 U	0.472 U	0.472 U	0.472 U	0.472 U	0.472 U	0.472 U
Benzo(a)pyrene	NE	0	µg/L		0.351 U	0.351 U	0.351 U	0.351 U	0.351 U	0.351 U	0.351 U	0.351 U	0.351 U	0.351 U	0.351 U
Benzo(b)fluoranthene	0.002	NE	µg/L		0.423 U	0.423 U	0.423 U	0.423 U	0.423 U	0.423 U	0.423 U	0.423 U	0.423 U	0.423 U	0.423 U
Benzo(g,h,i)perylene	NE	NE	µg/L		0.495 U	0.495 U	0.495 U	0.495 U	0.495 U	0.495 U	0.495 UJ	0.495 U	0.495 U	0.495 U	0.495 U
Benzo(k)fluoranthene	0.002	NE	µg/L		0.433 U	0.433 U	0.433 U	0.433 U	0.433 U	0.433 U	0.433 UJ	0.433 U	0.433 U	0.433 U	0.433 U
Chrysene	0.002	NE	µg/L		0.431 U	0.431 U	0.431 U	0.431 U	0.431 U	0.431 U	0.431 U	0.431 U	0.431 U	0.431 U	0.431 U
Dibenzo(a,h)anthracene	NE	NE	µg/L		0.401 U	0.401 U	0.401 U	0.401 U	0.401 U	0.401 U	0.401 UJ	0.401 U	0.401 U	0.401 U	0.401 U
Fluoranthene	50	NE	µg/L		0.301 U	0.301 U	0.918 J	0.301 U	0.301 U	0.301 U	0.301 U	0.301 U	0.301 U	0.301 U	0.917 J
Fluorene	50	NE	µg/L		0.179 U	0.179 U	0.179 U	0.179 U	0.179 U	0.179 U	0.179 U	0.179 U	0.179 U	0.179 U	0.179 U
Indeno(1,2,3-cd)pyrene	0.002	NE	µg/L		0.429 U	0.429 U	0.429 U	0.429 U	0.429 U	0.429 U	0.429 UJ	0.429 U	0.429 U	0.429 U	0.429 U
Naphthalene	10	NE	µg/L		0.542 U	0.542 U	0.542 U	0.542 U	0.542 U	0.542 U	1.00 J	0.542 U	0.542 U	0.542 U	0.542 U
Phenanthrene	50	NE	µg/L		0.462 U	0.462 U	0.462 U	0.462 U	0.462 U	0.462 U	0.462 U	0.462 U	0.462 U	0.462 U	0.462 U
Pyrene	50	NE	µg/L		0.371 U	0.371 U	1.06 J	0.371 U	0.507 J	0.371 U	0.371 U	0.371 U	0.371 U	0.371 U	1.31 J
Total PAHs[(b)]	NE	NE	µg/L		ND	ND	1.98 J	ND	0.507 J	ND	1.00 J	ND	ND	ND	3.23 J

Notes:
BTEX - benzene, toluene, ethylbenzene and isomers of xylene.
U - The analyte was analyzed for, but was not detected above the sample reporting limit. Value shown is representative of method detection limit for the analyzed constituent.
J - Estimated concentration. The result is below the reporting limit but above the method detection limit.
UJ - The analyte was not detected above the sample reporting limit; and the reporting limit is approximate.
µg/L - micrograms per liter
ND - Not detected.
NE - Not established.
(a) - To calculate total BTEX concentration, a value of zero is used for non-detect values.
(b) - To calculate total PAH concentration, a value of zero is used for non-detect values.

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 June 2017.

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

Sampling Date	Total BTEX Concentrations (µg/L) [a]														
	Monitoring Well/Piezometer														
	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
Dec-16	0	-- [b]	-- [b]	0	0	0	NS	NS	0	0	0	0	0	0	NS
Jun-17	0	-- [b]	-- [b]	0	0	0	NS	NS	0	0	0	0	0	0	NS
Minimum	0	0	0	0	0	0	637	0	0	0	0	0	0	0	0
Maximum	1.7	0	0	0	12	0	1257	57	1.3	9	0	0	27	0	0
Mean	0.1	0	0	0	0.7	0	913	10	0.2	0.5	0	0	2	0	0

Notes:
BTEX - Benzene, toluene, ethylbenzene and isomers of xylene
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

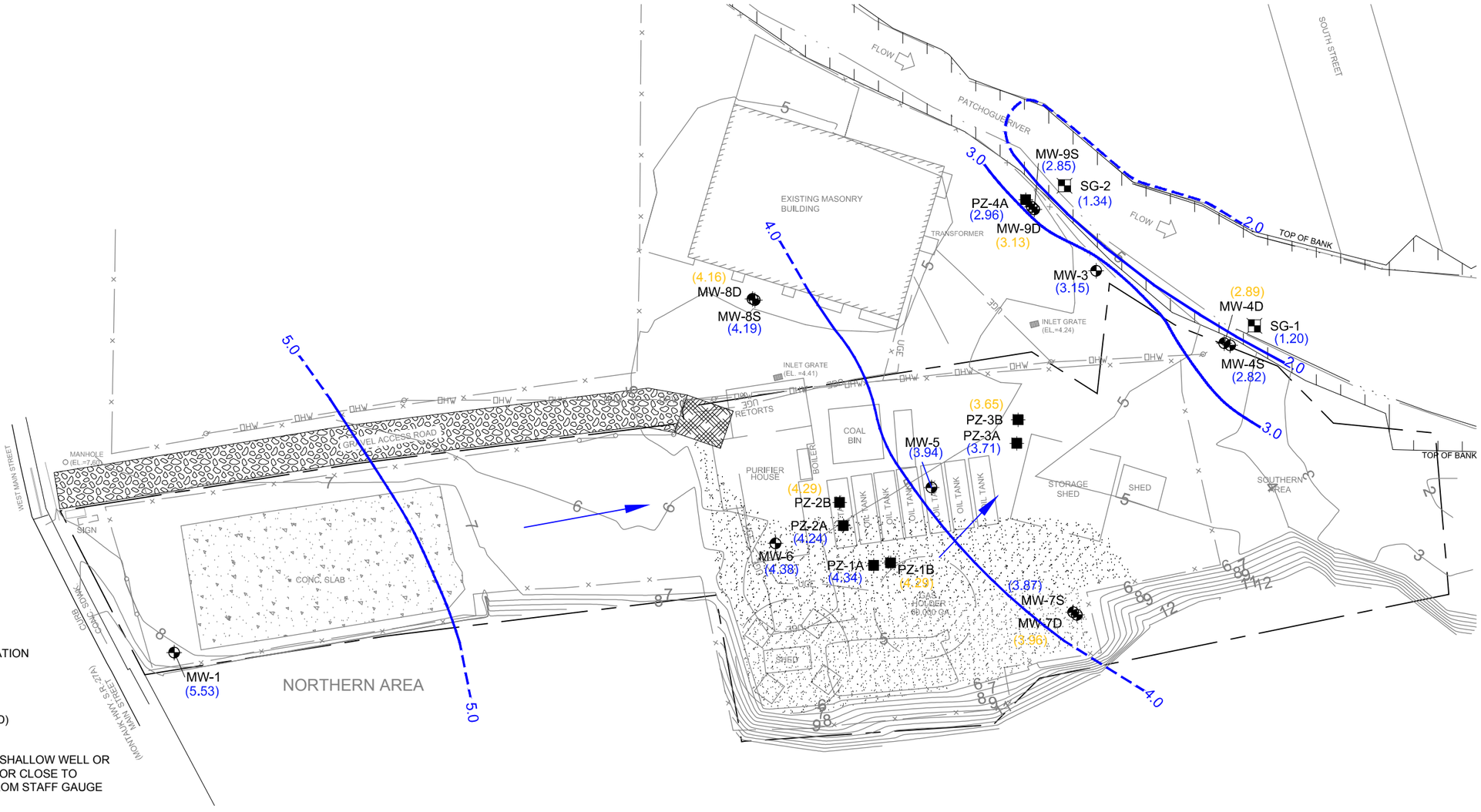
Sampling Date	Total PAH Concentrations (µg/L) [a]														
	Monitoring Well/Piezometer														
	MW-1	MW-2S	MW-2D	MW-3	MW-4S	MW-4D	MW-5	MW-6	MW-7S	MW-7D	MW-8S	MW-8D	MW-9S	MW-9D	PZ-4A
Mar-08	0	0	0	0.76	0.6	4.3	1774	214	NS	NS	NS	NS	NS	NS	NI
Jul-08	NS	0.7	0	0	8	0	1799	154	0	0.47	0	0	12	0	NI
Mar-09	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	0.9	0	0	0	3.9	0	NS
Jun-16	0	-- [b]	-- [b]	1.9	0.8	0	NS	NS	2.5	0	0	0	5.9	0	NS
Dec-16	0	-- [b]	-- [b]	0.02	0	0.1	NS	NS	0	0	0	0	5.5	0.07	NS
Jun-17	0	-- [b]	-- [b]	2.0	0.5	0	NS	NS	1	0	0	0	3.2	0	NS
Min	0	0	0	0	0	0	1774	0	0	0	0	0	0	0	0.3
Max	22	0.7	0.6	128	8	39	3373	214	3	2.6	22	1.2	396	5	0.3
Mean	1.1	0.1	0.1	10	0.6	5	2413	67	0.7	0.2	2.1	0.1	30	0.9	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

0 60 120

SCALE IN FEET



LEGEND:

- PROPERTY LINE
- FENCE
- TOPOGRAPHIC CONTOUR
- SHALLOW MONITORING WELL LOCATION
- PIEZOMETER LOCATION
- STAFF GAUGE LOCATION
- 4 — WATER TABLE CONTOUR (FT., NAVD) DASHED WHERE INFERRED
- (5.53) — GROUNDWATER ELEVATION FROM SHALLOW WELL OR PIEZOMETER (SCREENED ACROSS OR CLOSE TO WATER TABLE) OR RIVER LEVEL FROM STAFF GAUGE (FT., NAVD88)
- (4.16) — GROUNDWATER ELEVATION (FT., NAVD 88) FROM DEEP MONITORING WELL OR PIEZOMETER (SCREENED BELOW WATER TABLE)
- (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'

149322

DATE: August 22, 2017

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

WATER TABLE ELEVATION CONTOUR MAP
JUNE 13, 2017

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-1
Sample I.D.: (If different from well no.)

Project: Pathmark
Personnel: TMB AST

Date: 6/13/17 Time: 1345
Weather: Sun Air Temp.: 95°

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: 59 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: 300 ml/min Elapsed Time: 30 min Volume Pumped: 3 gal
Was well Evacuated? ☐ Yes ☑ No Number of Well Volumes Removed: NA
PURGING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned

SAMPLING DATA:

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

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

SAMPLING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned
Metals samples field filtered? ☐ Yes ☑ No Method:
APPEARANCE: ☑ Clear ☐ Turbid ☐ Color: ☐ Contains Immiscible Liquid
FIELD DETERMINATIONS: See attached form for field parameter data.

DUP : ☐ No ☑ Yes Name: Dup-20170613
MS/MSD : ☑ No ☐ Yes Name:

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

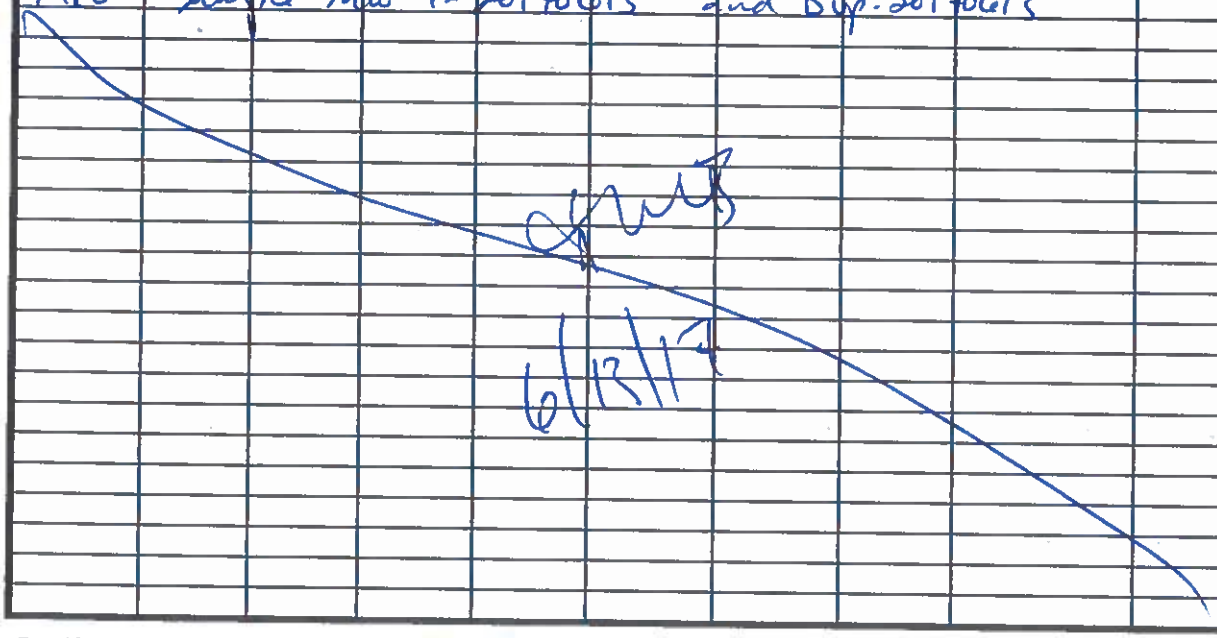
Signature: Date: 6/13/17

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 AJT
Purge/Sample Depth: ~ 9.5'
Project Number: 149322
Date: 6/13/17
Well ID: MW-1
Sample ID: MW-1-20170613

Actual Time	Certified Parameters					ORP (mV)	DTW (ft)	Pumping Rate (mL/min)	Comments
	pH	Temp (°C)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)				
1345	6.66	23.53	1.56	3.23	211	-21	6.00	300	
1348	6.69	22.90	0.66	2.56	196	-99	6.01		
1351	6.74	22.56	0.00	3.07	192	-111	6.02		
1354	6.75	22.25	0.00	3.14	206	-114	6.04		
1357	6.76	21.98	0.00	3.19	250	-115	6.05		empty bowl
1400	6.90	15.25	0.00	0.96	64.8	-120	6.03		
1403	6.80	14.20	3.84	0.00	60.1	-110	6.02		
1406	6.76	13.58	3.84	0.00	76.4	-109	6.03		
1409	6.76	13.52	3.93	0.00	67.9	-110	6.03		
1412	6.76	13.51	3.96	0.00	57.4	-111	6.04		
1415	6.78	13.41	3.98	0.00	52.4	-112	6.04		
1418	Sample MW-1-20170613 and Dup-20170613								



6/13/17

Certified Sample Information:
Time of Sample: 1418
Analyst Signature:

Instrument Data:
Manufacturer/Model:
Serial No. Unit:
Serial No. Handheld:
Calibration Date/Time:

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-75
Sample I.D.: (If different from well no.)

Project: Patchogue
Personnel: TMB AJT

Date: 6/13/17 Time: 1500
Weather: Sun Air Temp.: 95°

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: 4.62 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: 200ml/min Elapsed Time: 40 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:
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-75-20170613-MS/MSD

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

Signature: Date: 6/13/17

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:	149322.
Client:	National Grid	Date:	6/13/17
Personnel:	TMB AST	Well ID:	MW-75
Purge/Sample Depth:	~10'	Sample ID:	MW-75-20170613

Actual Time	Certified Parameters					ORP (mV)	DTW (ft)	Pumping Rate (mL/min)	Comments
	pH	Temp (°C)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)				
1500	7.19	20.58	0.378	0.49	105	-170	4.62	200	
1503	7.18	18.70	0.375	0.00	102	-176	↓	↓	
1506	7.21	17.09	0.376	0.00	99.3	-182			
1509	7.25	15.11	0.384	0.00	109	-188			
1512	7.21	15.19	0.386	0.00	111	-189	↓	↓	Empty bottles
1515	7.12	16.95	0.346	0.98	125	-153	4.68	200	
1518	7.27	16.86	0.347	0.00	106	-174	↓	↓	
1521	7.28	16.33	0.352	0.00	97.0	-180			
1524	7.27	14.01	0.368	0.00	106	-182	4.70	↓	empty bottles
1527	7.14	9.66	0.424	0.00	22.7	-163	↓	200	
1530	7.24	9.03	0.431	0.00	14.4	-173	4.72	↓	
1533	7.28	8.86	0.431	0.00	11.3	-181	↓		
1536	7.28	8.89	0.431	0.00	10.3	-180	4.75		
1539	Sample MW-75-20170613 + MS/MSD								

Certified Sample Information:
Time of Sample: 1539 Analyst Signature:

Instrument Data:
Manufacturer/Model:
Serial No. Unit: Serial No. Handheld:
Calibration Date/Time:

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.: (if different from well no.)

Project: Patchogue
Personnel: MJS AJT

Date: 6/13/17 Time: 1600
Weather: Sun Air Temp.: 95°

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: 9.41 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: 250 ml/min Elapsed Time: 30min Volume Pumped: 2.5gal
Was well Evacuated? ☐ Yes ☑ No Number of Well Volumes Removed: NA
PURGING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned

SAMPLING DATA:

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

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

SAMPLING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned
Metals samples field filtered? ☐ Yes ☑ No Method:
APPEARANCE: ☑ Clear ☐ Turbid ☐ Color: ☐ Contains Immiscible Liquid
FIELD DETERMINATIONS: 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: 6/13/17

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:	Patcheague	Project Number:	149322
Client:	National Grid	Date:	6/13/17
Personnel:	TMB AJT	Well ID:	MW-7D
Purge/Sample Depth:	~22'	Sample ID:	MW-7D-20170613

Actual Time	Certified Parameters					ORP (mV)	DTW (ft)	Pumping Rate (mL/min)	Comments
	pH	Temp (°C)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)				
1600	6.99	12.45	0.443	1.70	24.4	-28	4.40	250	
1603	6.81	11.17	0.455	0.60	31.7	-29	4.43	↓	
1606	6.38	9.90	0.470	0.00	101.5	50	4.43	↓	
1609	6.15	9.46	0.479	0.00	68.8	85	4.47	250	
1612	6.05	9.28	0.483	0.00	72.2	100	4.48	↓	
1615	6.00	9.01	0.488	0.00	63.5	114	↓	↓	
1618	6.01	8.86	0.488	0.00	64.8	125	↓	↓	
1621	5.96	8.86	0.492	0.00	53.6	130	4.49	250	
1624	5.92	8.82	0.491	0.00	52.0	133	↓	↓	
1627	5.95	8.90	0.491	0.00	46.8	139	↓	↓	
1630	5.97	8.88	0.490	0.00	43.0	142	4.49	250	
1633	Sample MW-7D-20170613								

Certified Sample Information:
Time of Sample: 1633 Analyst Signature:

Instrument Data:
Manufacturer/Model:
Serial No. Unit: Serial No. Handheld:
Calibration Date/Time:

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.: (If different from well no.)

Project: Patchogue
Personnel: TMB AJT

Date: 6/13/17 Time: 1650
Weather: Sun Air Temp.: 95°

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: 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:
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: 6/13/17

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:	149327
Client:	National Grid	Date:	6/13/17
Personnel:	TMB AJT	Well ID:	MW-8S
Purge/Sample Depth:	~ 7'	Sample ID:	MW-8S-20170613

Actual Time	Certified Parameters					ORP (mV)	DTW (ft)	Pumping Rate (mL/min)	Comments
	pH	Temp (°C)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)				
1650	6.51	13.92	0.569	0.00	229	-78	0.88	250	
1653	6.53	13.61	0.569	0.00	235	-84	0.88		
1656	6.59	13.15	0.580	0.00	192	-92	0.89		
1659	6.64	12.58	0.588	0.00	181	-98	0.89		
1702	6.70	12.24	0.588	0.00	167	-99	0.90		
1705	6.71	12.26	0.585	0.00	142	-97	0.90		
1708	6.74	12.15	0.584	0.00	145	-95	0.90		VI EMPTY CHAMBER
1711	6.69	12.67	0.571	0.00	87.0	-92	0.90		
1714	6.72	12.26	0.580	0.00	32.4	-92	0.90		
1717	6.74	12.24	0.580	0.00	28.1	-92	0.90		
1720	6.73	12.23	0.580	0.00	25.8	-92	0.90		
1723	Collect Sample		MW-8S-20170613						
					AJT				
					6/13/17				

Certified Sample Information:
Time of Sample: 1723 Analyst Signature:

Instrument Data:
Manufacturer/Model:
Serial No. Unit: Serial No. Handheld:
Calibration Date/Time:

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.: (if different from well no.)

Project: Patchogue
Personnel: TMB AMT

Date: 6/13/17 Time: 1734
Weather: Sun Air Temp.: 95°

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: 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: 0.5 gal
Was well Evacuated? ☐ Yes ☑ No Number of Well Volumes Removed: NA
PURGING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned

SAMPLING DATA:

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

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

SAMPLING EQUIPMENT: ☐ Dedicated ☐ Prepared Off-Site ☑ Field Cleaned
Metals samples field filtered? ☐ Yes ☑ No Method:
APPEARANCE: ☑ Clear ☐ Turbid ☐ Color: ☐ Contains Immiscible Liquid
FIELD DETERMINATIONS: 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: 6/13/17

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:	Fatcheague	Project Number:	149322
Client:	National Grid	Date:	6/13/17
Personnel:	TMB AJT	Well ID:	MW-8D
Purge/Sample Depth:	~ 22'	Sample ID:	MW-8D-20170613

Actual Time	Certified Parameters					ORP (mV)	DTW (ft)	Pumping Rate (mL/min)	Comments
	pH	Temp (°C)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)				
1734	6.61	13.70	0.482	1.03	52.2	-20	0.83	250	
1737	6.50	12.49	0.493	0.00	39.4	27	↓	↓	
1740	6.49	12.21	0.495	0.00	38.5	33	0.83		
1743	6.41	11.90	0.495	0.00	42.3	50	↓		
1746	6.40	11.85	0.496	0.00	44.3	55			
1749	6.41	11.84	0.496	0.00	44.5	64	↓		
1752	6.38	11.69	0.498	0.00	40.9	70	0.83		
1755	6.35	11.62	0.499	0.00	31.2	78	↓		
1758	6.40	11.59	0.499	0.00	27.2	82			
1801	6.35	11.66	0.499	0.00	23.4	84	↓		
1804	6.35	11.59	0.502	0.00	18.3	88	0.183	↓	
1807	Sample MW-8D-20170613								

Certified Sample Information:
Time of Sample: 1807 Analyst Signature:

Instrument Data:
Manufacturer/Model:
Serial No. Unit: Serial No. Handheld:
Calibration Date/Time:

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.: (If different from well no.)

Project: Parkwayne
Personnel: TMB AJT

Date: 6/14/17 Time: 0878
Weather: overcast Air Temp.: 70°

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: 5.2 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: 6/14/17

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, AJT
Purge/Sample Depth: ~ 8'
Project Number: 149322
Date: 6/14/17
Well ID: MW-45
Sample ID: MW-45-20170614

Actual Time	Certified Parameters					ORP (mV)	DTW (ft)	Pumping Rate (mL/min)	Comments
	pH	Temp (°C)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)				
0828	7.00	10.84	0.512	13.63	389	-120	5.20	200	
0831	7.04	10.21	0.514	13.02	371	-128	5.21		
0834	7.03	10.09	0.516	12.92	354	-130	5.23		Capital Horiba
0837	7.07	10.13	0.510	12.90	208	-126			
0840	7.16	9.64	0.513	12.21	200	-139			
0843	7.15	9.44	0.513	11.60	165	-144		200	empty horiba
0846	7.20	9.25	0.516	0.00	62.8	-144			
0849	7.19	9.22	0.517	0.00	56.1	-146	5.24		
0852	7.19	9.23	0.517	0.00	55.6	-150		200	
0855	7.19	9.12	0.516	0.00	48.0	-153			
0858	7.22	8.96	0.517	0.00	39.7	-153			
0901	Sample MW-45-20170614								

Quick 6/14/17

Certified Sample Information:
Time of Sample: 0901
Analyst Signature:

Instrument Data:
Manufacturer/Model:
Serial No. Unit:
Serial No. Handheld:
Calibration Date/Time:

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.: (if different from well no.)

Project: Paterson
Personnel: TWD ATT

Date: 6/14/17 Time: 0933
Weather: Sun Air Temp.: 70°

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: 4.85 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:
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: 6/14/17

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:	Patcheogue	Project Number:	149322
Client:	National Grid	Date:	6/14/17
Personnel:	TMB, AJT	Well ID:	MW-4D
Purge/Sample Depth:	~97	Sample ID:	

Actual Time	Certified Parameters: pH	Temp (°C)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)	ORP (mV)	DTW (ft)	Pumping Rate (mL/min)	Comments
0933	6.51	11.39	0.655	1.24	8.5	166	4.85	250	
0936	6.27	10.92	0.677	0.00	6.9	175			
0939	6.16	10.41	0.683	0.00	4.7	98			
0942	6.02	10.31	0.680	0.00	6.3	119			
0945	6.00	10.12	0.685	0.00	8.0	132			
0948	5.94	10.07	0.682	0.00	9.0	142		250	
0951	5.95	10.00	0.679	0.00	10.9	150			
0954	5.91	10.10	0.680	0.00	11.4	157			
0957	5.93	10.12	0.680	0.00	11.1	166		230	
1000	5.92	10.08	0.678	0.00	11.3	168			
1003	5.93	10.06	0.678	0.00	11.4	170	4.85		
1006	Sample MW-4D + 20170614								

Certified Sample Information:
Time of Sample: 1006 Analyst Signature:

Instrument Data:
Manufacturer/Model:
Serial No. Unit: Serial No. Handheld:
Calibration Date/Time:

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.: (If different from well no.)

Project: Petrochem
Personnel: MB AJT

Date: 6/14/17 Time: 1022
Weather: Sun Air Temp.: 70°

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: 2.35 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: 6/14/17

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:	149327
Client:	National Grid	Date:	6/14/17
Personnel:	TMB, AJT	Well ID:	MW-3
Purge/Sample Depth:	~ 7'	Sample ID:	MW-3-20170614

Actual Time	Certified Parameters					ORP (mV)	DTW (ft)	Pumping Rate (mL/min)	Comments
	pH	Temp (°C)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)				
1026	6.44	12.23	0.571	1.91	9.4	67	2.38	200	
1029	6.70	11.88	0.580	2.14	7.5	3	↓	↓	
1032	6.83	11.60	0.584	2.21	6.4	-17	↓	↓	
1035	6.88	11.54	0.590	2.34	6.5	-32	↓	200	
1038	6.94	11.45	0.591	2.81	5.6	-38	2.39	↓	
1041	7.04	11.34	0.591	3.15	6.8	-41	↓	↓	
1044	7.08	11.32	0.591	3.08	7.4	-36	↓	↓	
1047	7.11	11.31	0.590	2.90	5.1	-47	2.40	200	
1050	7.12	11.26	0.591	2.98	7.7	-30	↓	↓	
1053	7.13	11.26	0.590	2.96	7.5	-29	↓	↓	
1056	7.13	11.27	0.590	3.02	7.3	-26	2.42	↓	
1059	Sample MW-3-20170614								

Certified Sample Information:
Time of Sample: 1059 Analyst Signature:

Instrument Data:
Manufacturer/Model:
Serial No. Unit: Serial No. Handheld:
Calibration Date/Time:

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.: (If different from well no.)

Project: Patchogue
Personnel: TMB AJT

Date: 6/14/17 Time: 1118
Weather: Sun Air Temp.: 70°

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: 1.52 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: _____
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: 6/14/17

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 AJT
Purge/Sample Depth: 7

Project Number: 149322
Date: 6/14/17
Well ID: MW-9S
Sample ID: MW-9S-20170614

Actual Time	Certified Parameters: pH	Temp (°C)	Cond (µS/cm)	DO (mg/L)	Turbidity (NTU)	ORP (mV)	DTW (ft)	Pumping Rate (mL/min)	Comments
1118	6.90	12.70	0.533	0.00	121	-120	1.63	250	
1121	6.99	12.24	0.539	0.00	124	-131	↓	↓	
1124	7.03	11.48	0.541	0.00	105	-146	↓	↓	
1127	7.08	11.28	0.536	0.00	109	-150	1.61	↓	empty horiba
1130	6.92	11.06	0.537	0.00	110	-129	↓	250	
1133	6.99	10.86	0.528	0.00	100	-141	↓	↓	
1136	7.05	10.83	0.527	0.00	99.4	-147	1.57	↓	empty horiba
1139	7.00	11.05	0.514	0.00	36.0	-118	↓	↓	
1142	6.89	10.85	0.527	0.00	35.7	-130	1.55	↓	
1145	6.98	10.82	0.529	0.00	36.9	-136	↓	250	
1148	7.05	10.76	0.530	0.00	35.8	-142	1.53		
1151	Sample MW-9S-20170614								

TMB 6/14/17

Certified Sample Information:
Time of Sample: 1151
Analyst Signature:

Instrument Data:
Manufacturer/Model:
Serial No. Unit:
Serial No. Handheld:
Calibration Date/Time:

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.: (If different from well no.)

Project: Patchogue
Personnel: TMB AJT

Date: 6/14/17 Time: 1200
Weather: Sun Air Temp.: 70°

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: 1.45 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: 200 ml/min Elapsed Time: 30 min Volume Pumped: 2gal
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: 6/14/17

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:	Pathmark	Project Number:	149322
Client:	National Grid	Date:	6/14/17
Personnel:	TMB AJT	Well ID:	MW-9D
Purge/Sample Depth:	~ 27	Sample ID:	MW-9D-20170614

Actual Time	Certified Parameters					ORP (mV)	DTW (ft)	Pumping Rate (mL/min)	Comments
	pH	Temp (°C)	Cond (mS/cm)	DO (mg/L)	Turbidity (NTU)				
1200	6.09	11.62	0.429	0.96	33.1	40	1.45	200	
1203	5.40	11.12	0.440	0.00	22.4	113		↓	
1206	5.27	10.93	0.444	0.00	18.2	133			
1209	5.27	10.78	0.446	0.00	15.2	151		↓	
1212	5.29	10.71	0.448	0.00	16.3	170		200	
1215	5.26	10.64	0.449	0.00	15.2	186	↓	↓	
1218	5.23	10.63	0.450	0.00	15.7	196	1.45		
1221	5.23	10.62	0.449	0.00	16.2	206	1.47	↓	
1224	5.20	10.59	0.450	0.00	16.0	211	1.48	200	
1227	5.22	10.54	0.450	0.00	14.7	219	1.50	↓	
1230	5.21	10.57	0.450	0.00	14.5	224	1.51	↓	
1233	Sample MW-9D-20170614								

Certified Sample Information:
Time of Sample: 1233 Analyst Signature:

Instrument Data:
Manufacturer/Model:
Serial No. Unit: Serial No. Handheld:
Calibration Date/Time:

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

ENVIRONMENTAL
Data Services, Inc.

DATA USABILITY SUMMARY REPORT
NATIONAL GRID, PATCHOGUE, NEW YORK

Client: Brown and Caldwell, Upper Saddle River, New Jersey
SDG: 7060508
Laboratory: Aqua Pro-Tech Laboratories, Fairfield, New Jersey
Site: National Grid, Patchogue, New York
Date: August 11, 2017

EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	MW-1-20170613	7060508-01	Water
2	DUP-20170613	7060508-02	Water
3	MW-7S-20170613	7060508-03	Water
3MS	MW-7S-20170613MS	7060508-03MS	Water
3MSD	MW-7S-20170613MSD	7060508-03MSD	Water
4	MW-7D-20170613	7060508-04	Water
5	MW-8S-20170613	7060508-05	Water
6	MW-8D-20170613	7060508-06	Water
7	MW-4S-20170614	7060508-07	Water
8	MW-4D-20170614	7060508-08	Water
9	MW-3-20170614	7060508-09	Water
10	MW-9S-20170614	7060508-10	Water
11	FB-20170614	7060508-11	Water
12	MW-9D-20170614	7060508-12	Water
13*	TRIP BLANK-20170614	7060508-13	Water

* - VOC only

A Data Usability Summary Review was performed on the analytical data for eleven water samples, on aqueous equipment blank sample, and one aqueous trip blank sample collected on June 13-14, 2017 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 & 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 Spectrometry (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.

- Four PAH compounds were 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 & 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 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	Affected Samples
3	MTBE	132%/OK/OK	None	Sample ND

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	Qualifier	Affected Samples
FB-20170614	None - ND	-	-	-
TRIP BLANK-20170614	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-1-20170613 ug/L	DUP-20170613 ug/L	RPD	Qualifier
None	ND	ND	-	-

Polynuclear Aromatic Hydrocarbons (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.

PAH by 8270C			
MS/MSD Sample ID	Compound	MS %R/MSD %R/ RPD	Qualifier
3	Benzo(g,h,i)perylene	60.2%/69.1%/OK	UJ
	Benzo(k)fluoranthene	65.8%/68.4%/OK	UJ
	Dibenzo(a,h)anthracene	59.4%/65.0%/OK	UJ
	Indeno(1,2,3-cd)pyrene	59.8%/64.9%/OK	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-20170614	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-1-20170613 ug/L	DUP-20170613 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: 8/14/17

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-1-20170613**
Lab Sample ID:	**7060508-01**
Project:	**Patchogue**
Work Order:	**7060508**

Date Sampled:	06/13/17 14:18	Prep Date:	06/20/17 14:27	File ID:	4V27819.D
Init/Final Vol:	5 mL / 5 mL	Prep Batch:	B7F2163	Analyzed:	06/20/17 14:27
Dilution:	1	Matrix:	Ground Water	Sequence:	S7F2120
		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
108-88-3	Toluene	ND	0.205	1.00	U
1330-20-7	Total Xylenes	ND	0.244	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

F-I

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13.2.

2

ANALYSIS DATA SHEET

Volatile Organics - GC/MS - SW 846 8260B

Client: Brown and Caldwell USR
Client Sample ID: Dup-20170613
Lab Sample ID: 7060508-02
Project: Patchogue
Work Order: 7060508

Date Sampled:	06/13/17 00:00	Prep Date:	06/20/17 14:53	File ID:	4V27820.D
Init/Final Vol:	5 mL / 5 mL	Prep Batch:	B7F2163	Analyzed:	06/20/17 14:53
Dilution:	1	Matrix:	Ground Water	Sequence:	S7F2120
		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
108-88-3	Toluene	ND	0.205	1.00	U
1330-20-7	Total Xylenes	ND	0.244	1.00	U

13
13.2

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

F-I

NW 8/11/17

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ANALYSIS DATA SHEET

Volatile Organics - GC/MS - SW 846 8260B

Client: Brown and Caldwell USR
Client Sample ID: MW-7S-20170613
Lab Sample ID: 7060508-03
Project: Patchogue
Work Order: 7060508

Date Sampled:	06/13/17 15:39	Prep Date:	06/20/17 15:18	File ID:	4V27821.D
Init/Final Vol:	5 mL / 5 mL	Prep Batch:	B7F2163	Analyzed:	06/20/17 15:18
Dilution:	1	Matrix:	Ground Water	Sequence:	S7F2120
		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
108-88-3	Toluene	ND	0.205	1.00	U
1330-20-7	Total Xylenes	ND	0.244	1.00	U

13

13.2

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

F-I

MW 8/11/17

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ANALYSIS DATA SHEET

Volatile Organics - GC/MS - SW 846 8260B

Client: Brown and Caldwell USR
Client Sample ID: MW-7D-20170613
Lab Sample ID: 7060508-04
Project: Patchogue
Work Order: 7060508

Date Sampled:	06/13/17 16:33	Prep Date:	06/20/17 15:44	File ID:	4V27822.D
Init/Final Vol:	5 mL / 5 mL	Prep Batch:	B7F2163	Analyzed:	06/20/17 15:44
Dilution:	1	Matrix:	Ground Water	Sequence:	S7F2120
		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
108-88-3	Toluene	ND	0.205	1.00	U
1330-20-7	Total Xylenes	ND	0.244	1.00	U

13

13.2.

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

F-I

NW 8/11/17

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ANALYSIS DATA SHEET

Volatile Organics - GC/MS - SW 846 8260B

Client: Brown and Caldwell USR
Client Sample ID: MW-8S-20170613
Lab Sample ID: 7060508-05
Project: Patchogue
Work Order: 7060508

Date Sampled:	06/13/17 17:23	Prep Date:	06/20/17 16:09	File ID:	4V27823.D
Init/Final Vol:	5 mL / 5 mL	Prep Batch:	B7F2163	Analyzed:	06/20/17 16:09
Dilution:	1	Matrix:	Ground Water	Sequence:	S7F2120
		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
108-88-3	Toluene	ND	0.205	1.00	U
1330-20-7	Total Xylenes	ND	0.244	1.00	U

13

13.2

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

F-I

MW 8/11/17

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ANALYSIS DATA SHEET

Volatile Organics - GC/MS - SW 846 8260B

Client: Brown and Caldwell USR
Client Sample ID: MW-8D-20170613
Lab Sample ID: 7060508-06
Project: Patchogue
Work Order: 7060508

Date Sampled:	06/13/17 18:07	Prep Date:	06/20/17 16:35	File ID:	4V27824.D
Init/Final Vol:	5 mL / 5 mL	Prep Batch:	B7F2163	Analyzed:	06/20/17 16:35
Dilution:	1	Matrix:	Ground Water	Sequence:	S7F2120
		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
108-88-3	Toluene	ND	0.205	1.00	U
1330-20-7	Total Xylenes	ND	0.244	1.00	U

13
13.2

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

F-I

MW 8/11/17

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ANALYSIS DATA SHEET

Volatile Organics - GC/MS - SW 846 8260B

Client: Brown and Caldwell USR
Client Sample ID: MW-4S-20170614
Lab Sample ID: 7060508-07
Project: Patchogue
Work Order: 7060508

Date Sampled:	06/14/17 09:01	Prep Date:	06/20/17 17:00	File ID:	4V27825.D
Init/Final Vol:	5 mL / 5 mL	Prep Batch:	B7F2163	Analyzed:	06/20/17 17:00
Dilution:	1	Matrix:	Ground Water	Sequence:	S7F2120
		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
108-88-3	Toluene	ND	0.205	1.00	U
1330-20-7	Total Xylenes	ND	0.244	1.00	U

13

13.2

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

F-I

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ANALYSIS DATA SHEET

Volatile Organics - GC/MS - SW 846 8260B

Client: Brown and Caldwell USR
Client Sample ID: MW-4D-20170614
Lab Sample ID: 7060508-08
Project: Patchogue
Work Order: 7060508

Date Sampled:	06/14/17 10:06	Prep Date:	06/20/17 17:26	File ID:	4V27826.D
Init/Final Vol:	5 mL / 5 mL	Prep Batch:	B7F2163	Analyzed:	06/20/17 17:26
Dilution:	1	Matrix:	Ground Water	Sequence:	S7F2120
		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
108-88-3	Toluene	ND	0.205	1.00	U
1330-20-7	Total Xylenes	ND	0.244	1.00	U

13
13.2

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

F-I

mr 8/11/17

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ANALYSIS DATA SHEET

Volatile Organics - GC/MS - SW 846 8260B

Client: Brown and Caldwell USR
Client Sample ID: MW-3-20170614
Lab Sample ID: 7060508-09
Project: Patchogue
Work Order: 7060508

Date Sampled:	06/14/17 10:59	Prep Date:	06/20/17 17:52	File ID:	4V27827.D
Init/Final Vol:	5 mL / 5 mL	Prep Batch:	B7F2163	Analyzed:	06/20/17 17:52
Dilution:	1	Matrix:	Ground Water	Sequence:	S7F2120
		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
108-88-3	Toluene	ND	0.205	1.00	U
1330-20-7	Total Xylenes	ND	0.244	1.00	U

13

13.2

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

F-I

MW 8/11/17

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ANALYSIS DATA SHEET

Volatile Organics - GC/MS - SW 846 8260B

Client: Brown and Caldwell USR
Client Sample ID: MW-9S-20170614
Lab Sample ID: 7060508-10
Project: Patchogue
Work Order: 7060508

Date Sampled:	06/14/17 11:51	Prep Date:	06/20/17 18:18	File ID:	4V27828.D
Init/Final Vol:	5 mL / 5 mL	Prep Batch:	B7F2163	Analyzed:	06/20/17 18:18
Dilution:	1	Matrix:	Ground Water	Sequence:	S7F2120
		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
108-88-3	Toluene	ND	0.205	1.00	U
1330-20-7	Total Xylenes	ND	0.244	1.00	U

13

13.2

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

F-I

NW 8/11/17

11

ANALYSIS DATA SHEET

Volatile Organics - GC/MS - SW 846 8260B

Client: Brown and Caldwell USR
Client Sample ID: FB-20170614
Lab Sample ID: 7060508-11
Project: Patchogue
Work Order: 7060508

Date Sampled:	06/14/17 12:00	Prep Date:	06/22/17 16:37	File ID:	4V27853.D
Init/Final Vol:	5 mL / 5 mL	Prep Batch:	B7F2331	Analyzed:	06/22/17 16:37
Dilution:	1	Matrix:	Ground Water	Sequence:	S7F2615
		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
108-88-3	Toluene	ND	0.205	1.00	U
1330-20-7	Total Xylenes	ND	0.244	1.00	U

13

13.2

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

F-I

MW 8/11/17

12

ANALYSIS DATA SHEET

Volatile Organics - GC/MS - SW 846 8260B

Client: Brown and Caldwell USR
Client Sample ID: MW-9D-20170614
Lab Sample ID: 7060508-12
Project: Patchogue
Work Order: 7060508

Date Sampled:	06/14/17 12:33	Prep Date:	06/22/17 17:02	File ID:	4V27854.D
Init/Final Vol:	5 mL / 5 mL	Prep Batch:	B7F2331	Analyzed:	06/22/17 17:02
Dilution:	1	Matrix:	Ground Water	Sequence:	S7F2615
		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
108-88-3	Toluene	ND	0.205	1.00	U
1330-20-7	Total Xylenes	ND	0.244	1.00	U

13

13.2

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

F-I

MW 8/11/17

13

ANALYSIS DATA SHEET

Volatile Organics - GC/MS - SW 846 8260B

Client: Brown and Caldwell USR
Client Sample ID: Trip Blank-20170614
Lab Sample ID: 7060508-13
Project: Patchogue
Work Order: 7060508

Date Sampled:	06/14/17 00:00	Prep Date:	06/22/17 16:11	File ID:	4V27852.D
Init/Final Vol:	5 mL / 5 mL	Prep Batch:	B7F2331	Analyzed:	06/22/17 16:11
Dilution:	1	Matrix:	Ground Water	Sequence:	S7F2615
		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
108-88-3	Toluene	ND	0.205	1.00	U
1330-20-7	Total Xylenes	ND	0.244	1.00	U

13

13.2.

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

F-I

9/11/17

ANALYSIS DATA SHEET

Semivolatile Organics - GC/MS - SW 846 8270C

Client:	**Brown and Caldwell USR**
Client Sample ID:	**MW-1-20170613**
Lab Sample ID:	**7060508-01**
Project:	**Patchogue**
Work Order:	**7060508**

Date Sampled:	06/13/17 14:18	Prep Date:	06/15/17 17:04	File ID:	AS00888.D
Init/Final Vol:	1000 mL / 1 mL	Prep Batch:	B7F1527	Analyzed:	06/16/17 23:00
Dilution:	1	Matrix:	Ground Water	Sequence:	S7F2002
		Prep Method:	Sep Funnel MS 8000		

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

F-I

12.2

mw 8/11/17

2

ANALYSIS DATA SHEET

Semivolatile Organics - GC/MS - SW 846 8270C

Client:	**Brown and Caldwell USR**
Client Sample ID:	**Dup-20170613**
Lab Sample ID:	**7060508-02**
Project:	**Patchogue**
Work Order:	**7060508**

Date Sampled:	06/13/17 00:00	Prep Date:	06/15/17 17:04	File ID:	AS00889.D
Init/Final Vol:	1000 mL / 1 mL	Prep Batch:	B7F1527	Analyzed:	06/16/17 23:27
Dilution:	1	Matrix:	Ground Water	Sequence:	S7F2002
		Prep Method:	Sep Funnel MS 8000		

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

12

12.2

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

F-I

MW 8/11/17

3

ANALYSIS DATA SHEET

Semivolatile Organics - GC/MS - SW 846 8270C

Client: Brown and Caldwell USR
Client Sample ID: MW-7S-20170613
Lab Sample ID: 7060508-03
Project: Patchogue
Work Order: 7060508

Date Sampled:	06/13/17 15:39	Prep Date:	06/15/17 17:04	File ID:	AS00890.D
Init/Final Vol:	1000 mL / 1 mL	Prep Batch:	B7F1527	Analyzed:	06/16/17 23:53
Dilution:	1	Matrix:	Ground Water	Sequence:	S7F2002
		Prep Method:	Sep Funnel MS 8000		

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~~ UJ	0.495	2.00	U
207-08-9	Benzo(k)fluoranthene	~~ND~~ UJ	0.433	2.00	U
218-01-9	Chrysene	ND	0.431	2.00	U
53-70-3	Dibenzo(a,h)anthracene	~~ND~~ UJ	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~~ UJ	0.429	2.00	U
91-20-3	Naphthalene	1.00	0.542	2.00	J
85-01-8	Phenanthrene	ND	0.462	2.00	U
129-00-0	Pyrene	ND	0.371	2.00	U

12

12.2.

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

F-I

MW 8.11.17

4

ANALYSIS DATA SHEET

Semivolatile Organics - GC/MS - SW 846 8270C

Client:	**Brown and Caldwell USR**
Client Sample ID:	**MW-7D-20170613**
Lab Sample ID:	**7060508-04**
Project:	**Patchogue**
Work Order:	**7060508**

Date Sampled:	06/13/17 16:33	Prep Date:	06/16/17 17:04	File ID:	AS00891.D
Init/Final Vol:	1000 mL / 1 mL	Prep Batch:	B7F1527	Analyzed:	06/17/17 00:20
Dilution:	1	Matrix:	Ground Water	Sequence:	S7F2002
		Prep Method:	Sep Funnel MS 8000		

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

12

12.2

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

F-I

nes 8/11/17

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ANALYSIS DATA SHEET

Semivolatile Organics - GC/MS - SW 846 8270C

Client: Brown and Caldwell USR
Client Sample ID: MW-8S-20170613
Lab Sample ID: 7060508-05
Project: Patchogue
Work Order: 7060508

Date Sampled:	06/13/17 17:23	Prep Date:	06/16/17 17:04	File ID:	AS00892.D
Init/Final Vol:	1000 mL / 1 mL	Prep Batch:	B7F1527	Analyzed:	06/17/17 00:46
Dilution:	1	Matrix:	Ground Water	Sequence:	S7F2002
		Prep Method:	Sep Funnel MS 8000		

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

12

12.2.

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

F-I

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b

ANALYSIS DATA SHEET

Semivolatile Organics - GC/MS - SW 846 8270C

Client: Brown and Caldwell USR
Client Sample ID: MW-8D-20170613
Lab Sample ID: 7060508-06
Project: Patchogue
Work Order: 7060508

Date Sampled:	06/13/17 18:07	Prep Date:	06/16/17 17:04	File ID:	AS00893.D
Init/Final Vol:	1000 mL / 1 mL	Prep Batch:	B7F1527	Analyzed:	06/17/17 01:13
Dilution:	1	Matrix:	Ground Water	Sequence:	S7F2002
		Prep Method:	Sep Funnel MS 8000		

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

12

12.2.

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

F-I

ms 6/17/17

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ANALYSIS DATA SHEET

Semivolatile Organics - GC/MS - SW 846 8270C

Client: Brown and Caldwell USR
Client Sample ID: MW-4S-20170614
Lab Sample ID: 7060508-07
Project: Patchogue
Work Order: 7060508

Date Sampled:	06/14/17 09:01	Prep Date:	06/16/17 17:04	File ID:	AS00894.D
Init/Final Vol:	1000 mL / 1 mL	Prep Batch:	B7F1527	Analyzed:	06/17/17 01:39
Dilution:	1	Matrix:	Ground Water	Sequence:	S7F2002
		Prep Method:	Sep Funnel MS 8000		

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	0.507	0.371	2.00	J

12

12.2.

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

FM

NW 8/11/17

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ANALYSIS DATA SHEET

Semivolatile Organics - GC/MS - SW 846 8270C

Client: Brown and Caldwell USR
Client Sample ID: MW-4D-20170614
Lab Sample ID: 7060508-08
Project: Patchogue
Work Order: 7060508

Date Sampled:	06/14/17 10:06	Prep Date:	06/16/17 17:04	File ID:	AS00895.D
Init/Final Vol:	1000 mL / 1 mL	Prep Batch:	B7F1527	Analyzed:	06/17/17 02:06
Dilution:	1	Matrix:	Ground Water	Sequence:	S7F2002
		Prep Method:	Sep Funnel MS 8000		

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

12
12.2.

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
F-I
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 8/11/17

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ANALYSIS DATA SHEET

Semivolatile Organics - GC/MS - SW 846 8270C

Client: Brown and Caldwell USR
Client Sample ID: MW-3-20170614
Lab Sample ID: 7060508-09
Project: Patchogue
Work Order: 7060508

Date Sampled:	06/14/17 10:59	Prep Date:	06/16/17 17:04	File ID:	AS00914.D
Init/Final Vol:	1000 mL / 1 mL	Prep Batch:	B7F1527	Analyzed:	06/20/17 01:14
Dilution:	1	Matrix:	Ground Water	Sequence:	S7F2006
		Prep Method:	Sep Funnel MS 8000		

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	0.918	0.301	2.00	J
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	1.06	0.371	2.00	J

12 12.2.

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

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ANALYSIS DATA SHEET

Semivolatile Organics - GC/MS - SW 846 8270C

Client: Brown and Caldwell USR
Client Sample ID: MW-9S-20170614
Lab Sample ID: 7060508-10
Project: Patchogue
Work Order: 7060508

Date Sampled:	06/14/17 11:51	Prep Date:	06/16/17 17:04	File ID:	AS00915.D
Init/Final Vol:	1000 mL / 1 mL	Prep Batch:	B7F1527	Analyzed:	06/20/17 01:41
Dilution:	1	Matrix:	Ground Water	Sequence:	S7F2006
		Prep Method:	Sep Funnel MS 8000		

CAS NO.	COMPOUND	CONC. (ug/L)	MDL	RL	Q
83-32-9	Acenaphthene	1.00	0.613	2.00	J
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	0.917	0.301	2.00	J
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	1.31	0.371	2.00	J

12
12.2.

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

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ANALYSIS DATA SHEET

Semivolatile Organics - GC/MS - SW 846 8270C

Client: Brown and Caldwell USR
Client Sample ID: FB-20170614
Lab Sample ID: 7060508-11
Project: Patchogue
Work Order: 7060508

Date Sampled:	06/14/17 12:00	Prep Date:	06/16/17 17:04	File ID:	AS00916.D
Init/Final Vol:	1000 mL / 1 mL	Prep Batch:	B7F1527	Analyzed:	06/20/17 02:08
Dilution:	1	Matrix:	Ground Water	Sequence:	S7F2006
		Prep Method:	Sep Funnel MS 8000		

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

12

12.2.

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

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ANALYSIS DATA SHEET

Semivolatile Organics - GC/MS - SW 846 8270C

Client: Brown and Caldwell USR
Client Sample ID: MW-9D-20170614
Lab Sample ID: 7060508-12
Project: Patchogue
Work Order: 7060508

Date Sampled:	06/14/17 12:33	Prep Date:	06/16/17 17:04	File ID:	AS00917.D
Init/Final Vol:	1000 mL / 1 mL	Prep Batch:	B7F1527	Analyzed:	06/20/17 02:35
Dilution:	1	Matrix:	Ground Water	Sequence:	S7F2006
		Prep Method:	Sep Funnel MS 8000		

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

12
12.2.

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

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Appendix D: Electronic Data Deliverable (CD-ROM)