From: Devin T Shay <DShay@gesonline.com>
Sent: Thursday, August 08, 2019 2:21 PM
To: Spellman, John (DEC); Stucker, Steven P. (Steven.Stucker@nationalgrid.com)
Subject: RE: National Grid - Hudson (#4-11-005)
Attachments: NGrid_Hudson_2019 Groundwater Monitoring Report.pdf

John –
We just finalized the report today. Please see the attached.

Thanks.
Devin

Devin T. Shay, PG
Program Manager / Principal Hydrogeologist

Office: 800.220.3069 ext. 4051
Mobile: 315.374.7648

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Safety. From start to finish.

From: Spellman, John (DEC) <john.spellman@dec.ny.gov>
Sent: Thursday, August 8, 2019 10:59 AM
To: Stucker, Steven P. (Steven.Stucker@nationalgrid.com) <Steven.Stucker@nationalgrid.com>
Cc: Devin T Shay <DShay@gesonline.com>
Subject: RE: National Grid - Hudson (#4-11-005)

Hi Steve,

The City of Hudson asked about the most recent report. When does National Grid expect to submit the 2019 report?

Thank you,

John

John Spellman, P.E.
Project Manager, Remedial Bureau C
Division of Environmental Remediation
New York State Department of Environmental Conservation
625 Broadway, Albany, NY 12233-7014
P: 518-402-9686| F: 518-402-9679 | john.spellman@dec.ny.gov

From: Devin T Shay <DShay@gesonline.com>
Sent: Tuesday, July 31, 2018 10:20 AM
To: Spellman, John (DEC) <john.spellman@dec.ny.gov>
Cc: Stucker, Steven P. (Steven.Stucker@nationalgrid.com) <Steven.Stucker@nationalgrid.com>
Subject: National Grid - Hudson (#4-11-005)

John –
Attached please find the Annual Report for the National Grid site in Hudson (#4-11-005).

Thanks,
Devin

Devin T. Shay, PG
Program Manager / Principal Hydrogeologist

Office: 800.220.3069 ext. 4051
Mobile: 315.374.7648
dshay@GESonline.com

Groundwater & Environmental Services, Inc.
5 Technology Place, Suite #4
East Syracuse, NY 13057

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nationalgrid

Steven P. Stucker, C.P.G.
Lead Engineer

August 8, 2019

Mr. John Spellman, PE
New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau C
625 Broadway
Albany, NY 12233-7013

Re: ***National Grid Hudson Water Street Site***
Hudson, New York
2019 Groundwater Monitoring Report

Dear Mr. Spellman:

Attached for your information is the 2019 Groundwater Monitoring Report detailing the annual groundwater monitoring event and OM&M activities conducted from July 1, 2018, to June 30, 2019, at the National Grid Hudson (Water Street) Site. Site activities were conducted in accordance with the NYSDEC-approved OM&M Plan (BBL/ARCADIS; January 2007) and the *Static Water Level Evaluation and Ground Water Monitoring Program Recommendation Memorandum* letter (dated August 15, 2007).

The groundwater quality has been steadily improving over the years based on the number and extent of chemical detections in the monitoring wells. Based on the annual groundwater sampling analysis report in 2019, MW-11 had detections of BTEX [totaling 6.8 µg/L]. No other detections of any compounds analyzed were noted in the remaining wells.

Please contact me at 315-428-5652 if you have any questions.

Sincerely,

for SPS

Steven P. Stucker, C.P.G.
Lead Engineer
Environmental Department

300 Erie Boulevard West, C-1, Syracuse, NY 13202
T: 315-428-5652 F: 315-428-3549 steven.stucker@us.ngrid.com www.nationalgrid.com

National Grid

2019 Groundwater Monitoring Report

National Grid Hudson Water Street Site
Water Street between Ferry Street and Broad Street
Hudson, NY 12534

August 2019

Version 1

2019 Groundwater Monitoring Report

National Grid Hudson Water Street Site
Water Street between Ferry Street & Broad Street
Hudson, NY 12534

Prepared for:
National Grid
300 Erie Boulevard West, C-1
Syracuse, NY 13202

Prepared by:
Groundwater & Environmental Services, Inc.
5 Technology Place, Suite 4
East Syracuse, NY 13057
TEL: 800-220-3069
www.gesonline.com

GES Project:
0603000.125340.221

Date:
August 8, 2019

Devin T. Shay, PG
Program Manager / Principal Hydrogeologist

Table of Contents

Figures

Tables

Appendices

Acronyms

AWQS	Ambient Water Quality Standards
BTEX	Benzene, Toluene, Ethylbenzene, and Total Xylenes
DNAPL	Dense Non-Aqueous Phase Liquid
DUSR	Data Usability Summary Report
GES	Groundwater & Environmental Services, Inc.
gpm	Gallons per Minute
IRM	Interim Remedial Measures
LNAPL	Light Non-Aqueous Phase Liquid
MGP	Manufactured Gas Plant
NYSDEC	New York State Department of Environmental Conservation
OM&M	Operation, Maintenance, and Monitoring
OU	Operable Unit
Pace	Pace Analytical Services, LLC
PAH	Polycyclic Aromatic Hydrocarbons
POTW	Publically Owned Treatment Works
QA/QC	Quality Assurance / Quality Control
ROD	Record of Decision
SMP	Site Management Plan
USEPA	United States Environmental Protection Agency
WPCF	Water Pollution Control Facility

1 Introduction

1.1 Overview

Groundwater & Environmental Services, Inc. (GES) has prepared this 2019 Groundwater Monitoring Report (covering July 1, 2018 – June 30, 2019) for the Hudson (Water Street) Site, Hudson, New York**.** This annual report includes the requirements associated with the operation, maintenance, and monitoring of the Remedial Action Plan (RAP) at Operable Unit (OU) 1 of the Hudson (Water Street) Former Manufactured Gas Plant (MGP) Site located in Hudson, New York. Please refer to the *Operation, Maintenance, and Monitoring Plan* (OM&M Plan), dated January 2007, and the CDM Smith memorandum dated July 30, 2007, for well monitoring, groundwater sampling, site inspection requirements, and associated detailed site conditions and groundwater flow pattern documentation.

Groundwater monitoring has been conducted at the Site in order to evaluate the effectiveness of remedial activities previously completed at the Site and to monitor long-term groundwater quality trends. Currently, groundwater sampling at the Former MGP Site is performed on an annual basis.

The following Operation, Maintenance, and Monitoring (OM&M) activities conducted during this reporting period are summarized below:

- Quarterly site inspections, including checks on the surface cap, riverbank protection, security fencing, steel sheeting retaining wall, and the groundwater monitoring wells.
- Annual groundwater level measurements.
- Annual dense non-aqueous phase liquid (DNAPL) monitoring and collection, if necessary.
- Annual groundwater sampling, analysis and data validation. Water samples are submitted to Pace Analytical Services, LLC (Pace) for laboratory analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX) and naphthalene for comparison to New York State Department of Environmental Conservation (NYSDEC) Ambient Water Quality Standards (AWQS).
- Any site maintenance that comes about as a result of the quarterly inspections.

1.2 Site Description

The Hudson (Water Street) Former Manufactured Gas Plant Site located in Hudson, New York is comprised of approximately two acres of land and is owned by the City of Hudson (refer to **Figure 1 – Site Location Map** and **Figure 2 – Post Remediation Site Conditions** with current groundwater table elevations). The remedial action plan in place at the site was substantially completed in December 2006 and the OM&M Plan was finalized in January 2007 to provide a method for monitoring its effectiveness.

The objective of the post-construction groundwater monitoring task within the OM&M plan is to characterize post-remedy groundwater flow patterns and assess the quality of shallow groundwater as it leaves the site. Groundwater samples are analyzed for BTEX and naphthalene.

2 Quarterly Site Inspections and Groundwater Monitoring Activities

2.1 Quarterly Site Inspections

GES conducted quarterly site inspections during this reporting period. These quarterly inspections include checking the surface cap, riverbank protection, security fencing, steel sheeting retaining wall, and the groundwater monitoring wells.

In general, the Site is in good condition and in compliance.

Attachment A includes the Quarterly Site Inspection Forms.

2.2 Groundwater Well Gauging

Groundwater level measurements are collected at the Site to accomplish the following:

- To determine the general groundwater flow direction on site.

Annual gauging field data is presented in **Table 2**. In general, site groundwater flows radially outward from the former gas holder area toward the Hudson River, consistent with past groundwater elevation data.

2.3 Annual DNAPL Monitoring and Collection

Annual DNAPL monitoring was conducted at RW-1, RW-2, and CW-01A. No DNAPL product was recovered in any of the wells. No odors were noted. Annual DNAPL monitoring and recovery tables are included as part of **Attachment B**. To date, no DNAPL has been recovered from these passive wells.

2.4 Groundwater Well Sampling and Analysis

Groundwater samples were collected from monitoring wells MW-03, MW-05, MW-06 and MW-11 on June 13, 2019. The wells were purged using a peristaltic pump. Field Measurements of pH, conductivity, turbidity, dissolved oxygen, temperature, total dissolved solids and oxidation-reduction potential were recorded using a Horiba U-52 water quality meter during sample collection. Samples were collected once field parameters stabilized. Field monitoring data and the chain-of-custody record are included in **Attachment B**.

Four aqueous field samples, a field duplicate, and trip blank were analyzed for BTEX (USEPA Method 8260C) and naphthalene. The samples were analyzed by Pace in accordance with the NYSDEC Analytical Services Protocol. Analytical results are summarized in **Table 1**. The Analytical Lab Report and Data Usability Summary Report are presented in **Appendix C.**

2.5 Site Maintenance

Site inspections during this reporting period indicated no maintenance was required on site. Photographs from quarterly site visits are included in **Attachment D**.

3 Conclusions and Recommendations

3.1 Conclusions

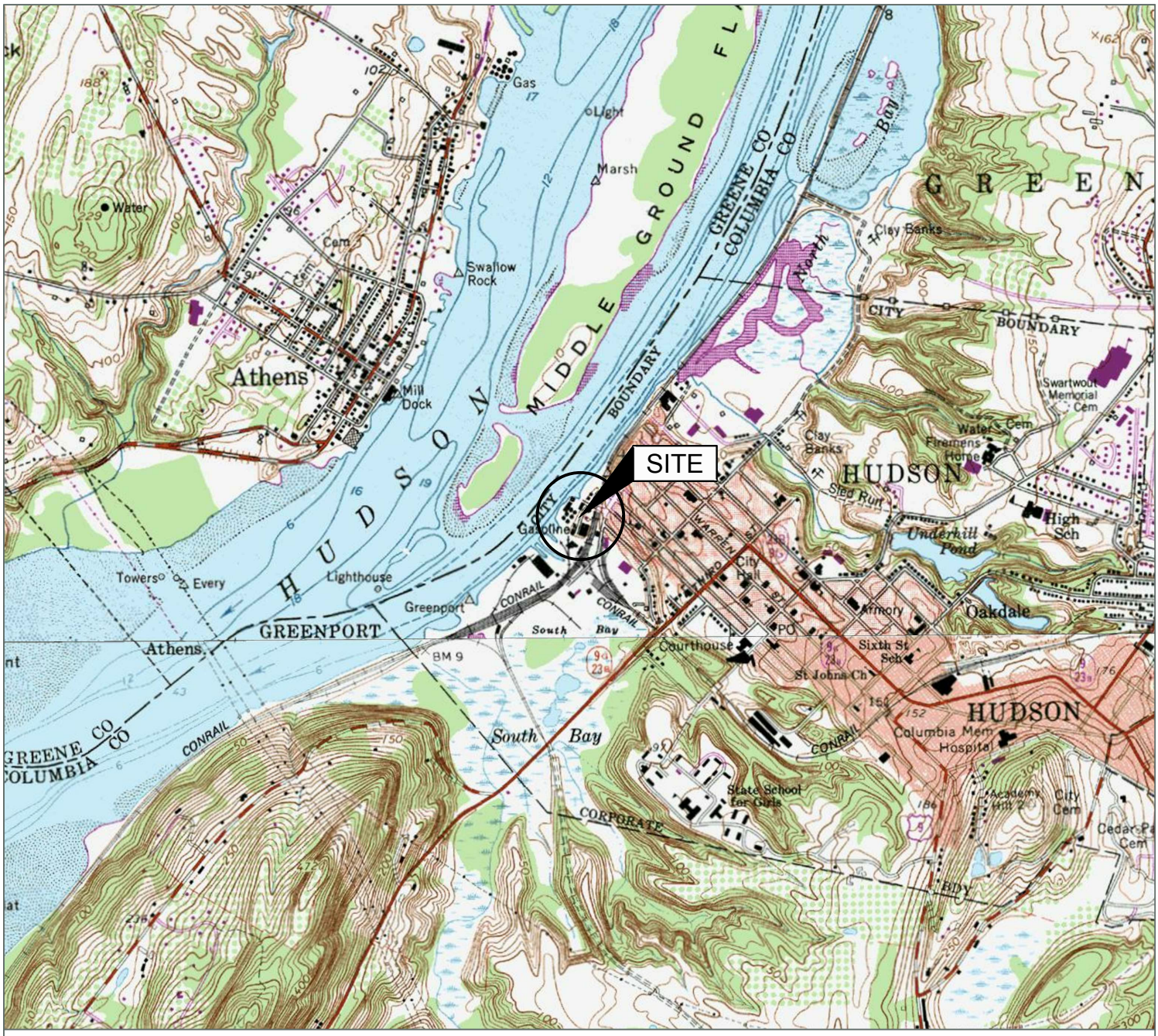
Based on the results of the past year's activities, the following conclusions were made:

- Quarterly site inspections demonstrate that the site is in good condition and in compliance.
- Annual static water level measurements show that the groundwater direction is radially outward from the former gas holder area.
- Annual DNAPL monitoring indicated no collectable product.
- MW-11 had a total BTEX concentration of 6.8 micrograms per liter (µg/L). This is the only well with a detected concentration of any parameter analyzed. Reference **Table 1** for historical data.

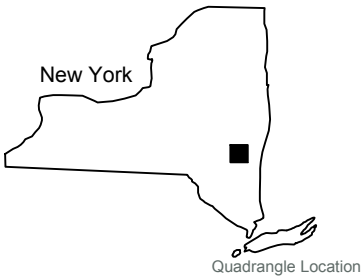
3.2 Recommendations

It is recommended that all OM&M activities continue, with the next report due in July 2020.

Figures



Source:
USGS 7.5 Minute Series
Topographic Quadrangle, 1980
Hudson North, New York
Contour Interval = 10'



Site Location Map

National Grid
Water Street
Hudson, New York

Drawn
W.G.S.
Designed

Approved

Date
7/6/18
Figure
1

N

Scale In Feet
0 2000

GES
Groundwater & Environmental Services, Inc.

M:\Graphics\0600-Syracuse\Misc\National Grid\Hudson\Hudson SLM.dwg, 7/6/2018 10:05:21 AM

LEGEND

- PROPERTY BOUNDARY
- MONITORING WELL
- RECOVERY WELL
- (7.17) GROUNDWATER ELEVATION (ft. amsl)
- ft. amsl FEET ABOVE MEAN SEA LEVEL

HUDSON RIVER

HUDSON RIVER (2.67)

(2.16) RW1

RW2 (2.52)

MW02 (2.40)

(6.72) MW03

WATER STREET

OW01

MW04

MW06 (6.29)

CW01A (7.17)

BRICK WAREHOUSE

MW11 (6.63)

(7.04) OW4

(6.87) OW2

OW3

MW05 (6.62)

MW10 (5.79)

MW07 (4.20)

MW09A (2.60)

MW08A (2.92)

OLD BRIDGE

LANDS OF CSX TRANSPORTATION

PROPOSED ACCESS LOCATION

CATCH BASIN #2
RIM = 6.15' 12"RCP
INV(S) = 3.55' 12"RCP
INV(N) = 3.50'

CATCH BASIN #1
RIM = 6.14
SILTED, TOP OF SILT = 4.5'

Groundwater Elevation Map
June 13, 2019

National Grid
Water Street
Hudson, New York

Drawn W.G.S.
Designed

Approved

Date 7/16/19
Figure

N

Scale In Feet
0 60

GES
Groundwater & Environmental Services, Inc.

M:\Graphics\0600-SyracuseMisc\National Grid\Hudson\Hudson SM.dwg, Template B, WSHEA

Tables

Table 1

Groundwater Analytical Data
MW-03

Parameter	EPA - Maximum Allowable (µg/L)	NYSDEC AWQS (µg/L)	Reporting Level (µg/L)	06/01/09	06/02/10	06/07/11	06/12/12	06/11/13	06/09/14	06/02/15	06/06/16	06/22/17	06/14/18	06/13/19
Benzene	5	1	1	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)
Toluene	1000	5	1	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)
Ethylbenzene	700	5	1	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)
Xylene (total)	10000	5	3	ND (<2.0)	ND (<2.0)	ND (<2.0)	ND (<2.0)	ND (<2.0)	ND (<2.0)	ND (<2.0)	ND (<2.0)	ND (<3.0)	ND (<3.0)	ND (<3.0)
Naphthalene	N/A	10	1	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	1.1	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<2.0)	ND (<2.0)	ND (<2.0)

All values reported in µg/L.
NYSDEC = New York State Department of Environmental Conservation
AWQS = Ambient Water Quality Standards
ND (<#) = Not detected above laboratory reporting limits (indicated by #)
NR = Not Reported
Bolded = values indicate exceedance of the NYSDEC AWQS

Table 1

Groundwater Analytical Data
MW-05

Parameter	EPA - Maximum Allowable (µg/L)	NYSDEC AWQS (µg/L)	Reporting Level (µg/L)	06/01/09	06/02/10	06/07/11	06/12/12	06/11/13	06/09/14	06/02/15	06/06/16	06/22/17	06/14/18	06/13/19
Benzene	5	1	1	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)
Toluene	1000	5	1	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)
Ethylbenzene	700	5	1	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)
Xylene (total)	10000	5	3	ND (<2.0)	ND (<2.0)	ND (<2.0)	ND (<2.0)	ND (<2.0)	ND (<2.0)	ND (<2.0)	ND (<2.0)	ND (<3.0)	ND (<3.0)	ND (<3.0)
Naphthalene	N/A	10	1	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<2.0)	ND (<2.0)	ND (<2.0)

All values reported in µg/L.
NYSDEC = New York State Department of Environmental Conservation
AWQS = Ambient Water Quality Standards
ND (<#) = Not detected above laboratory reporting limits (indicated by #)
NR = Not Reported
Bolded = values indicate exceedance of the NYSDEC AWQS

Table 1

Groundwater Analytical Data
MW-06

Parameter	EPA - Maximum Allowable (µg/L)	NYSDEC AWQS (µg/L)	Reporting Level (µg/L)	06/01/09	06/02/10	06/07/11	06/12/12	06/11/13	06/09/14	06/02/15	06/06/16	06/22/17	06/14/18	06/13/19
Benzene	5	1	1	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)
Toluene	1000	5	1	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)
Ethylbenzene	700	5	1	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)
Xylene (total)	10000	5	3	ND (<2.0)	ND (<2.0)	ND (<2.0)	ND (<2.0)	ND (<2.0)	ND (<2.0)	ND (<2.0)	ND (<2.0)	ND (<3.0)	ND (<3.0)	ND (<3.0)
Naphthalene	N/A	10	1	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<2.0)	ND (<2.0)	ND (<2.0)

All values reported in µg/L.
NYSDEC = New York State Department of Environmental Conservation
AWQS = Ambient Water Quality Standards
ND (<#) = Not detected above laboratory reporting limits (indicated by #)
NR = Not Reported
Bolded = values indicate exceedance of the NYSDEC AWQS

Table 1

Groundwater Analytical Data
MW-11

Parameter	EPA - Maximum Allowable (µg/L)	NYSDEC AWQS (µg/L)	Reporting Level (µg/L)	06/01/09	06/02/10	06/07/11	06/12/12	06/11/13	06/09/14	06/02/15	06/06/16	06/22/17	06/14/18	06/13/19
Benzene	5	1	1	4.6	**12**	3	2.9	ND (<1.0)	1.9	ND (<4.0)	**5.8**	2.6	**21.7**	**4.3**
Toluene	1000	5	1	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<4.0)	ND (<4.0)	ND (<1.0)	ND (<1.0)	ND (<1.0)
Ethylbenzene	700	5	1	4.9	12	7	1.8	ND (<1.0)	1.1	ND (<4.0)	ND (<4.0)	ND (<1.0)	10.4	2.5
Xylene (total)	10000	5	3	ND (<2.0)	4.6	3.3	ND (<2.0)	ND (<2.0)	ND (<2.0)	ND (<8.0)	ND (<8.0)	ND (<3.0)	4.5	ND (<3.0)
Naphthalene	N/A	10	1	ND (<1.0)	2.6	2.5	ND (<1.0)	ND (<1.0)	ND (<1.0)	ND (<4.0)	ND (<4.0)	ND (<2.0)	3.3	ND (<2.0)

All values reported in µg/L.
NYSDEC = New York State Department of Environmental Conservation
AWQS = Ambient Water Quality Standards
ND (<#) = Not detected above laboratory reporting limits (indicated by #)
NR = Not Reported
Bolded = values indicate exceedance of the NYSDEC AWQS

Table 2

Water Level Elevations

Well ID.	Water Level Elevation (feet amsl)									
	06/11/07	06/20/07	06/26/07	07/24/07	08/14/07	08/19/07	09/13/07	12/01/07	03/10/08	06/10/08
MW-02	1.73	1.95	0.95	1.79	1.96	1.77	1.72	1.23	1.32	1.77
MW-03	6.66	6.72	5.28	6.87	7.10	6.96	6.60	6.59	6.91	6.71
MW-05	6.67	6.97	5.70	6.82	7.02	6.87	6.90	7.12	6.99	6.88
MW-06	6.29	6.64	6.32	6.35	6.47	6.30	6.24	6.16	5.81	6.29
MW-07	3.84	4.09	3.86	3.54	3.56	3.39	3.65	4.76	6.09	3.84
MW-08A	2.89	3.46	2.51	2.62	2.74	2.52	2.61	2.88	3.52	2.80
MW-09A	2.92	3.15	2.84	3.11	3.25	3.25	3.13	2.85	2.86	2.95
MW-10*	6.99	7.08	6.52	7.57	6.49	6.31	7.17	6.59	7.94	6.42
MW-11	6.77	6.76	6.45	6.63	6.21	6.04	6.80	7.15	8.71	6.82
OW-2	6.93	7.10	5.88	6.97	7.12	6.99	7.25	7.22	7.10	7.00
OW-4	7.14	7.33	6.66	7.18	7.32	7.16	7.24	7.38	7.31	7.21
Hudson River	0.84	2.19	0.54	0.49	-0.86	1.29	-0.21	-0.74	-0.51	2.39
CW-01A	7.55	n/a	n/a	n/a	n/a	n/a	8.02	7.67	8.89	7.97
RW-1	1.49	n/a	n/a	n/a	n/a	n/a	1.05	0.17	0.99	2.27
RW-2	0.96	n/a	n/a	n/a	n/a	n/a	0.85	-0.54	-0.14	2.40

Notes:
* = Estimated elevation; well paved over during surveying but uncovered presently and can be monitored.
amsl = Above Mean Sea Level

Table 2

Water Level Elevations

Well ID.	Water Level Elevation (feet amsl)									
	09/16/08	12/03/08	03/04/09	06/01/09	09/09/09	12/14/09	03/08/10	06/02/10	09/14/10	12/01/10
MW-02	1.70	1.36	0.54	1.90	1.92	1.75	1.17	1.98	1.97	1.59
MW-03	7.01	6.83	6.07	6.77	7.49	7.02	6.67	6.97	7.05	6.91
MW-05	7.48	7.39	6.47	6.65	7.63	7.40	6.92	6.81	7.37	7.18
MW-06	6.57	6.24	5.39	6.36	6.79	6.36	5.78	6.22	6.00	6.20
MW-07	4.41	4.92	4.27	4.05	4.67	4.94	5.19	3.83	3.64	4.29
MW-08A	2.94	2.91	2.36	2.75	2.76	2.91	3.31	2.61	1.54	1.96
MW-09A	3.17	2.80	2.22	2.90	3.17	3.02	2.75	2.88	3.20	2.98
MW-10*	6.94	6.31	5.36	5.72	6.79	7.89	5.77	5.75	6.91	5.92
MW-11	7.22	7.75	7.17	6.80	6.71	7.65	8.09	6.27	5.85	6.87
OW-2	7.62	7.45	6.57	6.78	7.82	7.47	7.02	6.90	7.00	7.25
OW-4	7.70	7.52	6.76	7.06	7.89	7.60	7.19	7.11	7.16	7.43
Hudson River	1.57	-0.87	1.79	1.03	0.61	-0.23	-0.81	1.49	2.54	3.53
CW-01A	8.02	8.26	7.87	7.67	7.40	8.27	8.67	6.65	7.92	n/a
RW-1	0.77	0.24	1.11	1.51	0.14	-0.05	0.44	1.87	2.23	3.92
RW-2	0.78	-0.66	1.77	1.19	0.48	-0.39	-0.80	1.61	2.54	3.46

Notes:
* = Estimated elevation; well paved over during surveying but uncovered presently and can be monitored.
amsl = Above Mean Sea Level

Table 2

Water Level Elevations

Well ID.	Water Level Elevation (feet amsl)									
	03/09/11	06/07/11	09/13/11	11/15/11	03/19/12	06/12/12	09/17/12	12/03/12	03/06/13	06/11/13
MW-02	0.67	2.50	3.43	1.75	1.08	2.03	1.68	1.34	1.00	2.30
MW-03	6.05	7.27	8.44	7.69	6.65	6.97	7.35	6.70	6.65	7.15
MW-05	6.35	6.92	7.82	7.85	6.74	6.77	7.12	7.07	6.62	6.89
MW-06	5.42	6.64	7.45	6.54	5.64	6.39	6.56	6.04	5.65	6.84
MW-07	5.86	4.02	5.71	4.51	4.17	3.84	4.28	4.12	4.64	5.22
MW-08A	3.66	2.83	4.10	2.86	2.51	2.71	2.84	2.66	2.76	4.01
MW-09A	2.40	3.05	4.10	3.17	2.52	3.00	3.00	2.68	2.50	3.25
MW-10*	5.91	5.81	6.58	6.47	5.27	5.79	6.23	5.38	5.07	5.56
MW-11	8.75	6.57	7.84	6.87	6.84	6.50	6.69	6.65	6.87	8.89
OW-2	6.44	7.17	8.02	8.03	6.82	6.87	7.32	7.28	6.72	7.06
OW-4	6.71	7.46	8.26	7.94	7.00	7.12	7.51	7.26	6.91	7.38
Hudson River	0.57	0.87	3.25	-1.21	2.48	1.99	-1.39	0.00	2.89	1.69
CW-01A	n/a	n/a	8.60	7.49	7.61	7.45	7.62	7.07	8.15	9.25
RW-1	1.33	1.67	3.06	-0.39	2.09	1.50	-0.61	0.92	2.27	2.31
RW-2	0.78	1.06	2.38	-1.00	2.46	1.93	-1.11	0.06	2.84	1.76

Notes:
* = Estimated elevation; well paved over during surveying but uncovered presently and can be monitored.
amsl = Above Mean Sea Level

Table 2

Water Level Elevations

Well ID.	Water Level Elevation (feet amsl)										
	09/16/13	12/10/13	03/09/14	06/09/14	09/08/14	12/01/14	06/02/15	06/06/16	06/22/17	06/14/18	06/13/19
MW-02	1.77	2.05	n/a	2.17	1.70	1.17	1.61	2.03	2.33	2.30	2.40
MW-03	7.05	6.57	6.24	7.04	6.95	6.90	6.67	7.77	7.44	6.17	6.72
MW-05	6.92	6.57	6.39	6.67	6.75	6.92	6.37	6.62	6.99	6.37	6.62
MW-06	6.38	6.58	5.38	6.64	6.29	6.27	6.34	6.24	7.10	6.39	6.29
MW-07	3.70	4.07	3.65	3.96	3.73	4.61	3.97	4.02	4.44	3.69	4.20
MW-08A	2.65	2.86	2.90	2.84	2.58	3.06	2.86	2.96	3.04	2.96	2.92
MW-09A	2.97	2.83	2.28	2.82	2.92	2.95	2.60	3.05	2.98	3.00	2.60
MW-10*	5.67	5.29	4.75	6.47	6.79	6.27	6.18	6.49	5.71	5.54	5.79
MW-11	6.11	6.99	7.47	6.52	5.74	7.70	7.10	6.75	7.09	6.02	6.63
OW-2	7.07	6.56	6.41	6.82	6.82	7.02	6.52	6.72	7.04	6.54	6.87
OW-4	7.20	6.81	6.56	7.14	7.01	7.18	6.74	6.91	7.32	6.80	7.04
Hudson River	1.69	0.87	n/a	1.49	1.51	2.29	1.87	0.49	1.85	-1.46	2.67
CW-01A	6.89	8.09	n/a	7.27	5.99	8.54	8.15	8.23	8.02	6.62	7.17
RW-1	1.09	1.37	1.14	1.05	1.07	1.81	1.24	0.43	0.50	0.59	2.16
RW-2	1.56	0.96	0.11	1.38	1.66	2.21	1.76	0.36	0.64	-0.94	2.52

Notes:
* = Estimated elevation; well paved over during surveying but uncovered presently and can be monitored.
amsl = Above Mean Sea Level

Appendix A – Quarterly Inspection Forms

Site Inspection
Hudson-Water Street
Operable Unit 1
Hudson, New York

Date: 9/20/2018
Technician: KL
Time: 10:30
Weather: PC 64

Surface Cover Areas			
Excessive Settlement Observed	YES	NO	COMMENTS:
Cracks or Potholes Observed	YES	NO	
Depressions and/or Rutting Observed	YES	NO	
Exposed subbase materials Observed	YES	NO	

Erosion Controls (Rip-Rap or Sod)			
Exposed or damaged Geotextile layer(s) Observed	YES	NO	COMMENTS:
Excessive Settlement Observed	YES	NO	
Stressed Vegetation Observed	YES	NO	

Steel Sheetpile Retaining Wall			
Settlement of Wall	YES	NO	COMMENTS:
Subsidence or Cracking of Soils Behind the Wall	YES	NO	
Cracking or Separation of Wall Joints	YES	NO	

Trees, Shrubs and other Planting Materials			
Strong Growth Observed	YES	NO	COMMENTS:

Surface Water Quality					
Sheens Observed On:	Rip-Rap	NONE	MINOR	SIGNIFICANT	COMMENTS:
	Sheetpile Wall	NONE	MINOR	SIGNIFICANT	
	Other Water Surfaces	NONE	MINOR	SIGNIFICANT	

General Comments:

Site Inspection
Hudson-Water Street
Operable Unit 1
Hudson, New York

Date: 12/5/2018 Time: 13:00
Technician: TB Weather: Cloudy 32

Surface Cover Areas			
Excessive Settlement Observed	YES	NO	COMMENTS:
Cracks or Potholes Observed	YES	NO	
Depressions and/or Rutting Observed	YES	NO	
Exposed subbase materials Observed	YES	NO	

Erosion Controls (Rip-Rap or Sod)			
Exposed or damaged Geotextile layer(s) Observed	YES	NO	COMMENTS:
Excessive Settlement Observed	YES	NO	
Stressed Vegetation Observed	YES	NO	

Steel Sheetpile Retaining Wall			
Settlement of Wall	YES	NO	COMMENTS:
Subsidence or Cracking of Soils Behind the Wall	YES	NO	
Cracking or Separation of Wall Joints	YES	NO	

Trees, Shrubs and other Planting Materials			
Strong Growth Observed	YES	NO	COMMENTS:

Surface Water Quality					
Sheens Observed On:	Rip-Rap	NONE	MINOR	SIGNIFICANT	COMMENTS:
	Sheetpile Wall	NONE	MINOR	SIGNIFICANT	
	Other Water Surfaces	NONE	MINOR	SIGNIFICANT	

General Comments:

Site Inspection
Hudson-Water Street
Operable Unit 1
Hudson, New York

Date: 3/27/2019 Time: 10:45
Technician: KL Weather: Sunny 38

Surface Cover Areas			
Excessive Settlement Observed	YES	NO	COMMENTS:
Cracks or Potholes Observed	YES	NO	
Depressions and/or Rutting Observed	YES	NO	
Exposed subbase materials Observed	YES	NO	

Erosion Controls (Rip-Rap or Sod)			
Exposed or damaged Geotextile layer(s) Observed	YES	NO	COMMENTS:
Excessive Settlement Observed	YES	NO	
Stressed Vegetation Observed	YES	NO	

Steel Sheetpile Retaining Wall			
Settlement of Wall	YES	NO	COMMENTS:
Subsidence or Cracking of Soils Behind the Wall	YES	NO	
Cracking or Separation of Wall Joints	YES	NO	

Trees, Shrubs and other Planting Materials			
Strong Growth Observed	YES	NO	COMMENTS:

Surface Water Quality					
Sheens Observed On:	Rip-Rap	NONE	MINOR	SIGNIFICANT	COMMENTS:
	Sheetpile Wall	NONE	MINOR	SIGNIFICANT	
	Other Water Surfaces	NONE	MINOR	SIGNIFICANT	

General Comments:

Site Inspection
Hudson-Water Street
Operable Unit 1
Hudson, New York

Date: 6/13/2019 Time: 11:26
Technician: KL Weather: Rain 58

Surface Cover Areas			
Excessive Settlement Observed	YES	NO	COMMENTS:
Cracks or Potholes Observed	YES	NO	
Depressions and/or Rutting Observed	YES	NO	
Exposed subbase materials Observed	YES	NO	

Erosion Controls (Rip-Rap or Sod)			
Exposed or damaged Geotextile layer(s) Observed	YES	NO	COMMENTS:
Excessive Settlement Observed	YES	NO	
Stressed Vegetation Observed	YES	NO	

Steel Sheetpile Retaining Wall			
Settlement of Wall	YES	NO	COMMENTS:
Subsidence or Cracking of Soils Behind the Wall	YES	NO	
Cracking or Separation of Wall Joints	YES	NO	

Trees, Shrubs and other Planting Materials			
Strong Growth Observed	YES	NO	COMMENTS:

Surface Water Quality					
Sheens Observed On:	Rip-Rap	NONE	MINOR	SIGNIFICANT	COMMENTS:
	Sheetpile Wall	NONE	MINOR	SIGNIFICANT	
	Other Water Surfaces	NONE	MINOR	SIGNIFICANT	

General Comments:

Appendix B – Well Sampling Field Data

National Grid
Water Street-Operable Unit 1
Hudson, New York

Annual Groundwater Sampling
June 13, 2019

Well ID.	Sample?	Well Size	Well Material	Stickup-Flush	DTP	DTW	DTB	Sump ?	Comments
MW-02	No	2"	PVC	Flush	NP	3.70	20.50	No	
MW-03	Yes	2"	PVC	Flush	NP	2.25	25.50	No	
MW-05	Yes	2"	PVC	Stickup	NP	5.95	28.10	No	Duplicate Sample
MW-06	Yes	2"	PVC	Stickup	NP	5.55	26.10	Yes	MS/MSD
MW-07	No	2"	PVC	Stickup	NP	4.74	24.55	Yes	
MW-08A	No	2"	PVC	Flush	NP	3.44	25.85	No	
MW-09A	No	2"	PVC	Stickup	NP	5.80	25.07	Yes	
MW-10	No	2"	PVC	Flush	NP	2.90	28.70	Yes	
MW-11	Yes	2"	PVC	Flush	NP	2.94	8.10	Yes	
OW-2	No	2"	PVC	Stickup	NP	5.95	27.55	Yes	
OW-4	No	2"	PVC	Stickup	NP	5.62	28.05	Yes	
Hudson River	No				NP	2.52	N/C	No	Chiseled square adjacent to the 8th railing post on top of the sheetpile wall.
CW-01A	No	4"	Steel	Flush	NP	2.50	30.90	Yes	
RW-1	No	4"	PVC	Flush	NP	2.93	26.50	Yes	
RW-2	No	4"	PVC	Flush	NP	2.44	22.35	Yes	

Purged water stored onsite in a labeled drum.

National Grid
Water Street, Hudson, New York

Sampling Personnel: K
Date: 6/13/19
Job Number: 06-03040-125340-221
Weather: Rain 58°
Well Id. **MW-03**
Time In: 10:30 Time Out:

Well Information

		TOC	Other
Depth to Water:	(feet)	2.25	
Depth to Product:	(feet)		
Depth to Bottom:	(feet)	25.50	
Length of Water Column:	(feet)	23.25	
Volume of Water in Well:	(gal)	3.72	
Three Well Volumes:	(gal)	11.16	

Well Type: Flushmount [X] Stick-Up [ ]
Well Locked: Yes [X] No [ ]
Measuring Point Marked: Yes [X] No [ ]
Well Material: PVC [X] SS [ ] Other:
Well Diameter: 1" [ ] 2" [X] Other:
Comments:

Purging Information

Purging Method:		Bailer [ ]	Peristaltic [X]	Grundfos Pump [ ]	
Tubing/Bailer Material:		Teflon [ ]	Stainless St. [ ]	Polyethylene [X]	
Sampling Method:		Bailer [ ]	Peristaltic [X]	Grundfos Pump [ ]	
Average Pumping Rate:	(ml/min)				
Duration of Pumping:	(min)				
Total Volume Removed:	(gal)				

Did well go dry? Yes [ ] No [ ]
Horiba U-52 Water Quality Meter Used? Yes [X] No [ ]

Conversion Factors				
gal/ft. of water	1" ID	2" ID	4" ID	6" ID
	0.04	0.16	0.66	1.47
1 gallon=3.785L=3785mL=1337cu. feet				

Time	DTW (feet)	Temp (°C)	pH	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
10:45	3.07	15.74	7.26	-114	1.11	28.6	0.70	0.712
10:50	4.51	15.13	7.17	-125	1.11	8.6	0.50	0.711
10:55	6.03	14.92	7.16	-125	1.12	7.6	0.84	0.714
11:00	7.02	14.87	7.15	-125	1.12	9.3	0.40	0.714
11:05	9.02	14.66	7.11	-126	1.12	7.5	0.18	0.719
11:10	9.99	14.75	7.11	-120	1.13	6.8	0.16	0.720
11:15	10.92	14.73	7.11	-118	1.13	5.0	0.08	0.721

Sampling Information:

USEPA SW-846 Method 8260 VOC's BTEX Including Naphthalene 3 - 40 mL vials Yes [X] No [ ]

Sample ID: **MW-03-0419** Duplicate? Yes [ ] No [X]
Sample Time: 11:15 MS/MSD? Yes [ ] No [X]

Shipped: Pace Courier Pickup [X]
Drop-off Albany Service Center [ ]

Comments/Notes:

Laboratory: Pace Analytical Greensburg, PA

National Grid
Water Street, Hudson, New York

Sampling Personnel: PD
Job Number: 06-03040-125340-221
Well Id. **MW-05**

Date: 6/13/19
Weather: 60° - RAIN
Time In: 0950 Time Out: 1050

Well Information

		TOC	Other
Depth to Water:	(feet)	5.95	
Depth to Product:	(feet)	NP	
Depth to Bottom:	(feet)	28.10	
Length of Water Column:	(feet)	22.15	
Volume of Water in Well:	(gal)	3.5	
Three Well Volumes:	(gal)	10.6	

Well Type: Flushmount ☐ Stick-Up ☒
Well Locked: Yes ☒ No ☐
Measuring Point Marked: Yes ☒ No ☐
Well Material: PVC ☒ SS ☐ Other:
Well Diameter: 1" ☐ 2" ☒ Other:
Comments:

Purging Information

Purging Method:		Bailer ☐	Peristaltic ☒	Grundfos Pump ☐	
Tubing/Bailer Material:		Teflon ☐	Stainless St. ☐	Polyethylene ☒	
Sampling Method:		Bailer ☐	Peristaltic ☒	Grundfos Pump ☐	
Average Pumping Rate:	(ml/min)	~200			
Duration of Pumping:	(min)	30			
Total Volume Removed:	(gal)	25			

Did well go dry? Yes ☐ No ☒

Horiba U-52 Water Quality Meter Used? Yes ☒ No ☐

Conversion Factors				
gal/ft. of water	1" ID	2" ID	4" ID	6" ID
	0.04	0.16	0.66	1.47
1 gallon=3.785L=3785mL=1337cu. feet				

Time	DTW (feet)	Temp (°C)	pH	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
0955	8.40	11.46	6.80	-120	0.849	21	0.00	0.543
1000	9.90	11.32	6.81	-117	0.840	21	0.00	0.538
1005	11.95	11.20	6.81	-109	0.840	18	0.00	0.538
1010	13.90	11.20	6.81	-105	0.841	20	0.00	0.538
1015	15.70	11.23	6.80	-102	0.840	22	0	0.537
1020	17.40	11.20	6.81	-100	0.839	23	0	0.537
1025	19.05	11.22	6.82	-98	0.837	25	0	0.536

Sampling Information:

USEPA SW-846 Method 8260 VOC's BTEX Including Naphthalene 6 - 40 mL vials Yes ☒ No ☐

Sample ID: **MW-05-0419** Duplicate? Yes ☒ No ☐ **FD-0419** Shipped: Pace Courier Pickup ☒
Sample Time: 1025 MS/MSD? Yes ☐ No ☒ Drop-off Albany Service Center ☐

Comments/Notes:

Laboratory: Pace Analytical Greensburg, PA

National Grid
Water Street, Hudson, New York

Sampling Personnel: PD
Job Number: 06-03040-125340-221
Well Id. **MW-06**

Date: 6/13/19
Weather: 60° - RAIN
Time In: 1100 Time Out: 1205

Well Information

		TOC	Other
Depth to Water:	(feet)	5.55	
Depth to Product:	(feet)	NP	
Depth to Bottom:	(feet)	26.10	
Length of Water Column:	(feet)	20.58	
Volume of Water in Well:	(gal)	3.2	
Three Well Volumes:	(gal)	9.8	

Well Type: Flushmount [ ] Stick-Up [X]
Well Locked: Yes [X] No [ ]
Measuring Point Marked: Yes [X] No [ ]
Well Material: PVC [X] SS [ ] Other:
Well Diameter: 1" [ ] 2" [X] Other:
Comments:

Purging Information

Purging Method:		Bailer [ ]	Peristaltic [X]	Grundfos Pump [ ]	
Tubing/Bailer Material:		Teflon [ ]	Stainless St. [ ]	Polyethylene [X]	
Sampling Method:		Bailer [ ]	Peristaltic [X]	Grundfos Pump [ ]	
Average Pumping Rate:	(ml/min)	~220			
Duration of Pumping:	(min)	30			
Total Volume Removed:	(gal)	~25			

Did well go dry? Yes [ ] No [X]

Horiba U-52 Water Quality Meter Used? Yes [X] No [ ]

Conversion Factors				
gal/ft. of water	1" ID	2" ID	4" ID	6" ID
	0.04	0.16	0.66	1.47
1 gallon=3.785L=3785mL=1337cu. feet				

Time	DTW (feet)	Temp (°C)	pH	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
1105	8.60	12.09	6.34	-71	1.18	0	0.	0.753
1110	10.70	11.97	6.34	-76	1.18	0.7	0	0.753
1115	12.40	11.95	6.36	-78	1.18	0	0	0.753
1120	13.10	11.90	6.36	-79	1.18	0	0	0.753
1125	14.60	11.88	6.36	-80	1.18	0	0	0.753
1130	15.05	11.85	6.37	-81	1.18	0.5	0	0.735
1135	15.65	11.85	6.38	-82	1.18	0	0	

Sampling Information:

USEPA SW-846 Method 8260 VOC's BTEX Including Naphthalene 9 - 40 mL vials Yes [X] No [ ]

MW-06-MS-0419 **MW-06-MSD-0419**

Sample ID: **MW-06-0419** Duplicate? Yes [ ] No [X]
Sample Time: 1135 MS/MSD? Yes [X] No [ ]

Shipped: Pace Courier Pickup [X]
Drop-off Albany Service Center [ ]

Laboratory: Pace Analytical Greensburg, PA

Comments/Notes:
NONE

National Grid
Water Street, Hudson, New York

Sampling Personnel: KL
Job Number: 06-03040-125340-221
Well Id. **MW-11**

Date: 6/13/19
Weather: RAIN 59°
Time In: 9:45 Time Out: 10:35

Well Information

		TOC	Other
Depth to Water:	(feet)	2.94	
Depth to Product:	(feet)		
Depth to Bottom:	(feet)	8.10	
Length of Water Column:	(feet)		
Volume of Water in Well:	(gal)		
Three Well Volumes:	(gal)		

Well Type: Flushmount [X] Stick-Up [ ]
Well Locked: Yes [X] No [ ]
Measuring Point Marked: Yes [X] No [ ]
Well Material: PVC [X] SS [ ] Other: ____
Well Diameter: 1" [ ] 2" [X] Other: ____
Comments:

Purging Information

Purging Method:	Bailer [ ]	Peristaltic [X]	Grundfos Pump [ ]		
Tubing/Bailer Material:	Teflon [ ]	Stainless St. [ ]	Polyethylene [X]		
Sampling Method:	Bailer [ ]	Peristaltic [X]	Grundfos Pump [ ]		
Average Pumping Rate:	(ml/min)				
Duration of Pumping:	(min)				
Total Volume Removed:	(gal)				

Did well go dry? Yes [ ] No [ ]

Horiba U-52 Water Quality Meter Used? Yes [X] No [ ]

Conversion Factors				
gal/ft. of water	1" ID	2" ID	4" ID	6" ID
	0.04	0.16	0.66	1.47
1 gallon=3.785L=3785mL=1337cu. feet				

Time	DTW (feet)	Temp (°C)	pH	ORP (mV)	Conductivity (mS/cm)	Turbidity (NTU)	DO (mg/L)	TDS (g/L)
09:50	3.00	15.47	7.02	-77	2.31	54.5	0.10	1.49
09:55	3.00	15.03	6.97	-76	2.11	48.7	0.53	1.35
10:00	3.00	15.18	6.93	-76	2.04	35.1	0.72	1.30
10:05	3.00	15.25	6.91	-75	2.01	22.0	0.41	1.29
10:10	3.00	15.19	6.92	-77	2.03	9.6	0.40	1.30
10:15	3.00	15.15	6.92	-78	2.03	4.5	0.47	1.30
10:20	3.00	15.17	6.93	-78	2.03	2.9	0.39	1.30

Sampling Information:

USEPA SW-846 Method 8260 VOC's BTEX Including Naphthalene 3 - 40 mL vials Yes [X] No [ ]

Sample ID: **MW-11-0419** Duplicate? Yes [ ] No [X]
Sample Time: 10:20 MS/MSD? Yes [ ] No [X]

Shipped: Pace Courier Pickup [X]
Drop-off Albany Service Center [ ]

Laboratory: Pace Analytical Greensburg, PA

Comments/Notes:

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Pace Analytical
www.pacelabs.com

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: GES - Syracuse	Report To: Devin Shay (GES) dshay@gesonline.com	Attention: Accounts Payable via email at ges-invoices@gesonline.com
Address: 5 Technology Place, Suite 4	Report To: Tim Beaumont (GES) tbeaumont@gesonline.com	Company Name: Groundwater & Environmental Services, Inc.
East Syracuse, New York 13057		Address: 5 Technology Place, Suite 4, East Syracuse, NY 13057
Email To: dshay@gesonline.com	Purchase Order No.:	Pace Quote Reference:
Phone: 800.220.3069 x4051 Fax: None	Project Name: National Grid - Water Street Hudson NY	Pace Project Manager: Rachel Christner
Requested Due Date/TAT: Standard	Project Number: 06-03040-125340-221-1106	Pace Profile #: Annual GWS

REGULATORY AGENCY: NPDES / GROUND WATER / DRINKING WATER / UST / RCRA / OTHER________

SITE LOCATION: GA IL IN MI NC OH SC WI OTHER___

Filtered (Y/N)

Requested Analysis: BTEX (8260) + Napthalene

Section D Required Client Information — SAMPLE ID. One Character per box. (A-Z, 0-9 / ,-) Samples IDs MUST BE UNIQUE

Valid Matrix Codes — MATRIX / CODE: DRINKING WATER DW; WATER WT; WASTE WATER WW; PRODUCT P; SOIL/SOLID SL; OIL OL; WIPE WP; AIR AR; OTHER OT; TISSUE TS

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	TIME	COLLECTED GRAB DATE	TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	NaOH and Zn Acetate	Benzylkonium Chloride	BTEX (8260) + Napthalene
1	MW-3-0419	WT	G			6/13/19	11:15	KL	3				3					3
2	MW-5-0419	WT	G				10:25	PD	3				3					3
3	MW-6-0419	WT	G				11:35		3				3					3
4	MW-6-MS-0419	WT	G				11:35		3				3					3
5	MW-6-MSD-0419	WT	G				11:35		3				3					3
6	MW-11-0419	WT	G				10:20	KL	3				3					3
7	Field Duplicate - 0419	WT	G				—		3				3					3
8	Trip Blank	WT	G						2				2					2
9		WT	G															
10		WT	G															
11		WT	G															
12		WT	G															
13		WT	Lab															

Additional Comments:

SAMPLES WILL ARRIVE IN # ____ COOLERS.

Please send reports to: dshay@gesonline.com, tbeaumont@gesonline.com

NERegion@gesonline.com, ges@equisonline.com

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS		
[signature]	6/13/19	1600	[signature] (KL)				Y/N	Y/N
							Y/N	Y/N
							Y/N	Y/N
							Y/N	Y/N

SAMPLER NAME AND SIGNATURE: KEGAN LEW [signature] 6/13/19

Appendix C – Data Usability Summary Report and Analytical Data

Groundwater
& Environmental Services, Inc.

1750 Kraft Drive, Suite 2700 • Blacksburg, Virginia 24060 • (866) 756 0788

July 23, 2019

Devin Shay
Groundwater & Environmental Services, Inc.
5 Technology Place, Suite 4
East Syracuse, New York 13057

RE: Data Usability Summary Report for National Grid: Water Street, Hudson, NY Site Data Package Pace Analytical Job No. **30299965**

Groundwater & Environmental Services, Inc. (GES) reviewed one data package (Laboratory Project Number **30299965**) from Pace Analytical Services, Inc., for the analysis of groundwater samples collected on June 13, 2019 from monitoring wells located at the National Grid: Water Street, Hudson, NY Site. Four aqueous samples and a field duplicate were analyzed for select volatile organic compounds (VOCs). Methodologies utilized were USEPA SW846 methods 8260C, with additional QC requirements of the NYSDEC ASP.

The data were reported as part of a complete full deliverable type B data validation. This usability report is generated from review of the following:

- Laboratory Narrative Discussion
- Custody Documentation
- Holding Times
- Surrogate and Internal Standard Recoveries
- Matrix Spike Recoveries/Duplicate: (MS/MSD) Correlations
- Field Duplicate Correlations
- Laboratory Control Sample (LCS)
- Preparation/Calibration Blanks
- Calibration/Low Level Standard Responses
- Instrumental Tunes
- Instrument MDLs
- Sample Quantitation and Identification

All items are determined to be acceptable for the DUSR level review and sample results are usable as reported. No data was qualified.

The laboratory case narratives and sample identification summary forms are attached to this text, and should be reviewed in conjunction with this report.

Table 1. Laboratory – Field Cross Reference

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Comments
30299965001	MW-3-0419	Water	06/13/19 11:15	06/15/19 10:30	
30299965002	MW-5-0419	Water	06/13/19 10:25	06/15/19 10:30	
30299965003	MW-6-0419	Water	06/13/19 11:35	06/15/19 10:30	MS/MSD
30299965004	MW-6-MS-0419	Water	06/13/19 11:35	06/15/19 10:30	
30299965005	MW-6-MSD-0419	Water	06/13/19 11:35	06/15/19 10:30	
30299965006	MW-11-0419	Water	06/13/19 10:20	06/15/19 10:30	
30299965007	Field Duplicate - 0419	Water	06/13/19 00:01	06/15/19 10:30	
30299965008	Trip Blank	Water	06/13/19 00:01	06/15/19 10:30	

BTEX and TCL Volatiles by EPA 8260C/NYSDEC ASP

Sample holding times were met and instrumental tune fragmentations were within acceptance ranges. There were no positive detections in the field blank, trip blank, or method blank.

Calibrations standards show acceptable responses within analytical protocol and validation action limits. The blind field duplicate correlations were not calculated for MW-5-0419 and the duplicate sample, as neither sample reported above detection level concentrations.

The MS/MSD recoveries and relative percent differences are within laboratory specification. No qualification was necessary.

Data Package Completeness

Complete NYSDEC Category B deliverables were included in the laboratory data package, all information required for validation of the data is present.

Please do not hesitate to contact me if you have comments or questions regarding this report.

Bonnie Janowiak, Ph.D.
Senior Project Chemist
708 N Main St, Suite 201
Blacksburg, VA 24060

VALIDATION DATA QUALIFIER DEFINITIONS

U The analyte was analyzed for, but was not detected above the level of the associated reported quantitation limit.

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

J- The analyte was positively identified; the associated numerical value is an estimated quantity that may be biased low.

J+ The analyte was positively identified; the associated numerical value is an estimated quantity that may be biased high.

UJ The analyte was analyzed for, but was not detected. The associated reported quantitation limit is approximate and may be inaccurate or imprecise.

NJ The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value.

R The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control limits. The analyte may or may not be present.

Sample Summaries

and

Laboratory Case Narratives

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

SAMPLE SUMMARY

Project: National Grid-Water Street, Hu
Pace Project No.: 30299965

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30299965001	**MW-3-0419**	Water	06/13/19 11:15	06/15/19 10:30
30299965002	**MW-5-0419**	Water	06/13/19 10:25	06/15/19 10:30
30299965003	**MW-6-0419**	Water	06/13/19 11:35	06/15/19 10:30
30299965004	**MW-6-MS-0419**	Water	06/13/19 11:35	06/15/19 10:30
30299965005	**MW-6-MSD-0419**	Water	06/13/19 11:35	06/15/19 10:30
30299965006	**MW-11-0419**	Water	06/13/19 10:20	06/15/19 10:30
30299965007	**Field Duplicate - 0419**	Water	06/13/19 00:01	06/15/19 10:30
30299965008	**Trip Blank**	Water	06/13/19 00:01	06/15/19 10:30

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SAMPLE ANALYTE COUNT

Project: National Grid-Water Street, Hu
Pace Project No.: 30299965

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
30299965001	**MW-3-0419**	EPA 8260C	JAS	11	PASI-PA
30299965002	**MW-5-0419**	EPA 8260C	JAS	11	PASI-PA
30299965003	**MW-6-0419**	EPA 8260C	JAS	11	PASI-PA
30299965004	**MW-6-MS-0419**	EPA 8260C	JAS	11	PASI-PA
30299965005	**MW-6-MSD-0419**	EPA 8260C	JAS	11	PASI-PA
30299965006	**MW-11-0419**	EPA 8260C	JAS	11	PASI-PA
30299965007	**Field Duplicate - 0419**	EPA 8260C	JAS	11	PASI-PA
30299965008	**Trip Blank**	EPA 8260C	JAS	11	PASI-PA

Pace Analytical Services, LLC
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Greensburg, PA 15601
(724)850-5600

PROJECT NARRATIVE

Project: National Grid-Water Street, Hu
Pace Project No.: 30299965

Method: **EPA 8260C**
Description: 8260C MSV
Client: Groundwater & Environmental Services, Inc. (Syracuse)
Date: June 20, 2019

General Information:
8 samples were analyzed for EPA 8260C. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

Appendix D – Photograph Log

Site Photo – December 2018

Site Photo – December 2018

Site Photo – December 2018

Site Photo – December 2018

Site Photo – June 2019

Site Photo – June 2019