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2018 Annual Report Site Management Plan

**Nyack Manufactured Gas Plant Site
Village of Nyack, Rockland County, New York**

**NYSDEC Site Number: 344046
Index # D3-001-98-08**

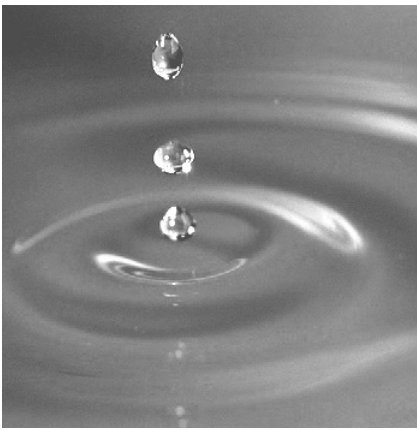
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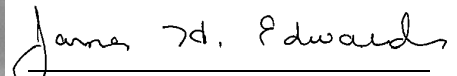
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December 14, 2018
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Engineer's Certification

I, Daniel Kopcow, P.E., certify that I am currently a NYS registered professional engineer as defined in 6 NYCRR Part 375, and that this Annual Report was prepared in accordance with the Site Management Plan (SMP) for the Nyack Former Manufactured Gas Plant (MGP) site, and all applicable statutes and regulations, and in substantial conformance with the New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation (DER) Technical Guidance for Site Investigation and Remediation (DER-10).



Engineer's Seal
GEI Consultants, Inc., P.C.

December 14, 2018
Date

It is a violation of Article 145 of New York State Education Law for any person to alter this document in any way without the express written verification of adoption by any New York State licensed engineer in accordance with Section 7209(2), Article 145, New York State Education Law.

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1. Introduction

This Site Management Plan (SMP) Annual Report for monitoring and inspection is required as an element of the post-remedial program at the Nyack Former Manufactured Gas Plant (MGP) site under the New York State Inactive Hazardous Waste Disposal Site Remedial Program administered by the New York State Department of Environmental Conservation (NYSDEC). The site was remediated in accordance with Order on Consent Index # D3-0001-98-08, Site #344046, which was executed on March 11, 1999.

1.1 General

Orange and Rockland Utilities, Inc. (O&R) entered into the above-referenced Order on Consent with the NYSDEC to remediate the former Nyack MGP site located along Gedney Street in the Village of Nyack, Rockland County, New York. The Order on Consent required the Remedial Party (O&R) to investigate and remediate impacted media at the site.

The remediation of the site has been performed, and the NYSDEC has approved the Final Engineering Report (FER) [GEI, 2016a]. Also approved by the NYSDEC was the SMP prepared by GEI in April 2016 [GEI, 2016b].

The SMP identifies the required post-remedial tasks, including: non-aqueous phase liquid (NAPL) gauging (and removal if identified), annual groundwater sampling, and an annual inspection of post-remedial engineering controls. The monitoring well decommissioning and well installations identified in the 2016 SMP were performed in 2017, and are not further discussed in this report.

In 2017, the ownership of the site changed to TZ Vista LLC (“TZ Vista”). TZ Vista is redeveloping the MGP site, together with the Hudson Vista parcel immediately to the south of the site. From discussions with the new Site Owner, it is GEI’s understanding that TZ Vista’s construction of the new residential and commercial facility will likely take place over a two-year period. Phase 1 construction includes construction activities predominately on the Hudson Vista parcel and was scheduled for 2018; however, it was observed that the construction has been delayed at the time of the 2018 site inspection. Phase 2 construction is planned for the MGP site, following completion of the Phase 1 activities. It is GEI’s understanding that the Site Owner is corresponding directly with the NYSDEC Division of Environmental Remediation (DER) regarding some of the elements identified in the MGP site SMP which are not the responsibility of the Remedial Party (O&R). Several of these elements are further discussed below.

1.2 Site Location and Description

The location of the site is shown on Figure 1. The current site plan is shown on Figure 2. The site was divided into two operable units (OUs) by the NYSDEC, for implementation of the remedy [NYSDEC, 2011]. The operable units include:

- **OU1** - The portion of the site above the 100-year flood line, including the Hudson Vista Associates Parcel lower parking lot.
- **OU2** - Land below the 100-year flood line, and above the mean high water mark of the Hudson River, and the Hudson River sediment which was impacted by MGP site-related residuals.

The remedial areas of the site located within the operable units are shown on Figure 3.

Eastern Parcel

The street address of the area of the former MGP operations is 55 Gedney Street, Nyack, New York (the “Eastern Parcel”). The Tax ID for the Eastern Parcel is 66.39-01-01.

The Eastern Parcel occupies an approximately 4-acre area in total, which includes about 2.17 acres of land, and 1.8 acres of submerged land in the Hudson River. It is bounded by the Nyack Boat Club to the north, the Hudson Vista Parcel to the south, the Hudson River to the east, and Gedney Street to the west.

The Eastern Parcel consists of an upper area along Gedney Street (the “Upper Terrace”) separated by a steep slope from a lower area along the Hudson River (the “Lower Terrace”).

Impacted soil and former MGP subsurface foundations in the Upper Terrace were addressed by excavation and off-site disposal. MGP-related constituents of concern (COC) remain in groundwater in the bedrock unit that is present approximately 20 feet below the ground surface of the Upper Terrace Area. A soil cover system was installed during implementation of the remedy in the Upper Terrace.

Impacted soil in the Lower Terrace and the Shoreline Area along the Hudson River were addressed by in-situ solidification (ISS). MGP-related COC remain in these areas; however, the ISS process has created a low permeability mass which has encapsulated the COC, which eliminates the potential for further NAPL mobility and continued contaminant migration to groundwater or the river. A soil cover system was installed during implementation of the remedy in the Lower Terrace. Riprap was installed to protect the shoreline from erosion for the Shoreline Area.

The Eastern Parcel is fenced to prevent trespassing. The Eastern Parcel, including the shoreline and off-shore portion of the Eastern Parcel, is subject to control under this SMP, as

shown on Figure 3. It is GEI's understanding that the Eastern Parcel will be redeveloped as a residential / commercial facility by the Site Owner.

Western Parcel

A single gas holder was formerly located on the parking lot parcel to the west of the Eastern Parcel (across Gedney Street). The Western Parcel has a Tax ID of 66.38-02-14, and a street address of 26 Lydecker Street, Nyack, New York.

The absence of MGP-related impact at the Western Parcel was demonstrated during the Remedial Investigation (RI), and remedial activities were not required for this parcel. SMP activities have not been required at the Western Parcel, other than a well decommissioning task performed in 2017. The Western Parcel is not further discussed in this report.

Hudson Vista

Impacted soil in the lower parking lot area of the Hudson Vista Parcel located immediately south of the Lower Terrace of the Eastern Parcel has been remediated through ISS of soils as a part of the OU1 remedial action. MGP-related COC remain in the subsurface of this area; however, the ISS process has encapsulated the COC within a low permeability mass. The ISS process eliminates the treated area as a source for future groundwater impact. The cover system in the Hudson Vista remedial area consists of the parking lot pavement, which was restored following the remedial action. The Hudson Vista Parcel's lower parking lot area is considered an off-site area, but is subject to the requirements of the SMP because MGP-related COC remain within the solidified soils in subsurface in parking lot area.

2. 2018 SMP Field Activities and Results

As specified in the SMP, the 2018 field activities required for the site include:

- The assessment of the presence or absence of light phase non-aqueous phase liquid (LNAPL), and dense phase non-aqueous phase liquid (DNAPL) at identified site well locations.
- Groundwater monitoring at identified site well locations.

2.1 2017 SMP Implementation Work Plan

To present the proposed scope of work for the 2017 SMP field activities to the NYSDEC, GEI (on behalf of O&R) prepared the work plan document entitled “*2017 Site Management Plan Implementation Work Plan, Nyack Former MGP Site, NYSDEC Site # 3-44-046*,” dated May 16, 2017 [GEI, 2017]. The NYSDEC indicated approval of the work plan in email correspondence to O&R dated July 13, 2017. For 2018, the NAPL gauging and groundwater sampling methods were consistent with the locations identified in the 2017 Work Plan. The methods used for the field activities were consistent with those described in the 2016 SMP [GEI, 2016b].

2.2 Reconnaissance and Observed Well Conditions

Details for the wells at the site are summarized on Table 1, and the well locations are shown on Figure 4. A reconnaissance was performed at the site in November 2018 to confirm the location and condition of each of the monitoring wells identified in the SMP. The conditions observed at each well, and also the activities performed at each location in 2018 are summarized as follows:

- **MW33D** – Well and surrounding conditions have not changed since December 2017. The Site Owner has performed excavation work in the area immediately to the south of (within 10 feet of) MW33D, as part of the Hudson Vista Phase 1 redevelopment (subsurface parking garage) construction. Due to the adjacent excavation, it is no longer safe to access the well, therefore sampling was not performed at this location.
- **MW41** – As described in the 2017 Annual Report, it appears the well surface cover was removed by soil placement and grading activities performed in the area. Based on the survey performed in December 2017, the current ground surface is approximately 2 feet lower now than it was at the time of the well installation. Because the well cannot be located, NAPL gauging and groundwater sampling was not performed at this location in 2018.

- **MW43** – The well was located and sampled in November 2018. The ground surface around the well has been raised by the addition of soil in the Lower Terrace. Also, the PVC well riser was extended higher to accommodate the added soil thickness. The ground surface of the well, and the new PVC riser elevation was surveyed in December 2017. The current elevation data is provided in Table 1.
- **MW44** – The well was located and gauged in November 2018. A measurable thickness (0.1 feet) of LNAPL was identified at this location. The LNAPL was removed, and a groundwater sample was collected after the well had stabilized.
- **MW45** – In December 2017, MW45 was found to be covered by a pile of soil which is estimated at 7-10 feet in height. Therefore, NAPL gauging and groundwater sampling was not possible at this well location in 2018.
- **MW46** – The well was located, gauged, and sampled in November 2018.
- **MW47** – The well was located, gauged, and sampled in November 2018. A trace amount of DNAPL blebs were observed in the monitoring well purge water at this location; however, a measurable thickness of DNAPL was not identified.

2.3 NAPL Monitoring and Removal

Table 2 summarizes the NAPL monitoring performed in 2018, and also for the post-remedial monitoring events performed in 2015 and 2017. For the gauging performed in 2018, only one well (MW44) was found to contain a measurable thickness of LNAPL. As shown on Table 2, the NAPL was removed on November 12, 2018, and a groundwater sample collected a week later on November 19, 2018.

2.4 Groundwater Elevation Monitoring

The results of the elevation monitoring performed on November 12, 2018 are provided in Table 1.

The elevation of groundwater (piezometric surface) was highest at well MW47 (16.77 feet NAVD88), which was installed along Gedney Street. The elevation of groundwater (water table) was found to be lowest at MW43 (2.44 feet NAVD88). The difference in elevation across the site was 14.33 feet. The results indicate that, consistent with the results of the RI, that groundwater flow is from the west to the east, across the site, towards the Hudson River. The inferred direction of groundwater flow is shown on Figure 4.

2.5 Groundwater Sampling

Four wells (MW43, MW44, MW46, and MW47) were purged and sampled on November 19, 2018 according to the methods described in the SMP.

2.5.1 Groundwater Analyses and Results

Groundwater samples were analyzed by Test America (TA) Laboratory for benzene, toluene, ethyl benzene and xylenes (BTEX) by EPA Method 8260C, and polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270D. The results of the analyses are presented in Table 3, and also on chemical summary boxes included on Figure 5. The figure and the table summarize post-remedial data collected from 2015 to 2018. The laboratory chain-of-custody record and the Form I laboratory report sheets for the 2018 analyses are included in Appendix A.

Data to show potential decreasing or increasing trends for COC at the wells is included in Table 3 and on Figure 5.

- **MW43** – Similar concentrations of COC have been detected for the post-remedial sampling events performed at this location.
- **MW44** – Concentrations of COC have decreased from 2015, and have been similar during the period of 2017 to 2018. LNAPL continues to be identified at this well location; however, it appears that the LNAPL thickness is decreasing over the monitoring period.
- **MW46** – A slight decreasing trend for COC was identified for the sampling performed in 2017 to 2018.
- **MW47** – An increasing trend for COC was identified at this well location from 2017 to 2018. It is possible that groundwater conditions are continuing to stabilize at this new (2017) bedrock well location.

The annual monitoring required at these well locations will continue to evaluate increasing or decreasing trends for COC at the site.

2.6 Soil Vapor Intrusion

Post-remedial soil vapor intrusion (SVI) monitoring has not been performed at the site. It is GEI's understanding that the site is being redeveloped by the Site Owner, and the Site Owner will provide the NYSDEC with a Soil Vapor Intrusion Monitoring Plan, and will collect any samples required in the SMP and plan. It is GEI's understanding that the building to be constructed at the site by the Site Owner includes controls to address the potential for vapor intrusion of MGP-related COC to indoor air.

3. Environmental Controls / Institutional Controls and Site Inspection

3.1 General

Because COC in soil, bedrock, groundwater, and sediment remain in the subsurface of the site, Engineering Controls and Institutional Controls (EC/ICs) are required to protect human health and the environment.

3.2 Engineering Controls

The ECs identified in the SMP, and the results of the inspection performed by GEI, are discussed below. The 2018 SMP Annual Inspection Form is included in Appendix B.

3.2.1 Cover System Monitoring

An annual site inspection was performed on November 19, 2018 to observe the condition of the cover systems at: the Upper Terrace, the ISS mass in the Lower Terrace, and the ISS area on the Hudson Vista Associates Parcel. The locations of each of these remedial areas are shown on Figure 6. Photographs taken during the site inspection are included in the Photographic Record.

As indicated in the site inspection form, the cover system in each of the identified remedial areas remains in place, and continues to be effective at preventing direct exposure to COC present in the subsurface.

3.2.2 Storm Sewer and Water Service

Two site utilities were discussed in the 2016 SMP document. An underground Village of Nyack storm sewer line is present near the southern property line of the Eastern Parcel, terminating at an outfall on the Hudson Vista Associates Parcel. A Village of Nyack water line is present at the fire hydrant located at the western side of the Eastern Parcel. These features were observed to be present, and not disturbed at the time of the November 19, 2018 site inspection.

3.3 Shoreline Area

Along the Lower Terrace shoreline, the ISS materials are protected from contact by site uses and erosion by the installation of riprap during the remedial action, and by the placement of additional riprap at the shoreline by the Site Owner. All riprap areas were observed by GEI to be in good condition. Evidence of movement or undermining was not observed.

It is GEI's understanding that the Site Owner plans to install additional shore protection features during redevelopment, and that the Site Owner has proposed the methods and materials to be utilized to the NYSDEC DER.

3.4 Off-shore Area

The area off-shore (east) from the Lower Terrace protected shoreline is a mix of sandy and silty native sediments. The sediment has been dredged to elevation -6 to -10 feet in accordance with the Record of Decision (ROD) [NYSDEC, 2011]. As specified in the SMP, to prevent these materials from being exposed at the sediment-water interface, the sediment surface should not be dredged, excavated, or deeply disturbed.

Evidence of dredging, the excavation of sediment, or other activities that may result in the disruption of the sediment remedial area was not observed during the site inspection performed by GEI on November 19, 2018.

3.5 Institutional Controls

The Eastern Parcel has a series of ICs in the form of site restrictions. Adherence to these ICs is required by the Environmental Easement. Site restrictions that apply to the Eastern Parcel, as defined in the SMP, are:

- The property may only be used for restricted residential use, commercial use and/or industrial use provided that the long-term Engineering and Institutional Controls included in this SMP are employed.
- The property may not be used for a higher level of use, such as unrestricted residential use without additional remediation and amendment of the Environmental Easement, as approved by the NYSDEC.
- All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with this SMP.
- The use of the groundwater underlying the property is prohibited without treatment rendering it safe for intended use.
- The potential for vapor intrusion must be evaluated for any buildings developed in the area of the site, and potential impacts that are identified must be monitored or mitigated.
- Vegetable gardens and farming on the property are prohibited.

Based on the inspection of the site performed by GEI, and on correspondence with O&R, the Site Owner, and the NYSDEC, the ICs, as identified in the SMP, adhere to the requirements of the Environmental Easement, remain in place, and are effective for OU1 and OU2 of the site. The site remedy continues to be protective of public health and the environment as described in the Remedial Action Work Plan (RAWP) and FER.

4. Conclusions

4.1 2018 SMP Annual Report Conclusions

Conclusions for this Annual Report are:

- **Site Ownership:** The ownership of the site continues to be TZ Vista LLC. Significant change in site conditions from December 2017 was not observed. Construction for parcel redevelopment appears to have been delayed.
- **Media Monitoring:** Media monitoring tasks identified in the SMP were performed in 2018, including: NAPL gauging and removal, and groundwater sampling.
- **Engineering Controls:** The inspection of the site was performed in 2018, as specified in the SMP.
 - The inspection confirmed the effectiveness of the engineering controls required by the remedial program.
 - The engineering controls employed at the Nyack MGP site are unchanged from the date the control was put in place, or last approved by the NYSDEC. As reported in 2017, additional materials have been added by the Site Owner to the cover areas.
- **Institutional Controls:** Conclusions for the ICs, based on the inspection of the site performed by GEI, and on correspondence with O&R, the Site Owner, and the NYSDEC include:
 - The institutional controls employed at the Nyack MGP site are unchanged from the date the control was put in place, or last approved by the NYSDEC.
 - Nothing has occurred that would impair the ability of the control to protect the public health and environment.
 - Nothing has occurred that would constitute a violation or failure to comply with any site management plan for this control.
 - Access to the site will continue to be provided to the NYSDEC to evaluate the remedy, including access to evaluate the continued maintenance of this control.
 - Use of the site is compliant with the environmental easement.

4.2 2019 SMP Implementation

The field activities and annual inspection for the implementation of the SMP that are the responsibility of O&R as the Remedial Party will be proposed and implemented in 2019 in consultation with the NYSDEC DER. An updated schedule for the field activities will be provided to, and discussed with the NYSDEC, following approval of this report by the NYSDEC.

5. References

GEI Consultants, Inc., P.C. (GEI), 2016a. Final Engineering Report, Nyack Manufactured Gas Plant Site, Rockland County, New York, NYSDEC Site Number 344046, May 2016.

GEI, 2016b. Site Management Plan, Nyack Former Manufactured Gas Plant Site, Rockland County, New York, NYSDEC Site Number 344046, April 2016.

GEI, 2017. 2017 Site Management Plan Implementation Work Plan, Nyack Former MGP Site, NYSDEC Site # 3-44-046, dated May 16, 2017.

New York State Department of Environmental Conservation (NYSDEC), 2004. Record of Decision, Nyack Gas Plant Site Operable Unit No. 1 Former Plant Site, Nyack, Rockland County, New York, Site Number 344046, March 2004.

NYSDEC, 2011. Record of Decision, OR – Nyack, MGP, Operable Unit Number: 02. Nyack, Rockland County, Site No. 344046, March 2011.

Tables

Table i
Acronym and NYSDEC Reference Key
for Analytical Summary Tables

Groundwater Notes:

NYSDEC References:

GW STD - New York Groundwater Guidance or Standard Values - NYSDEC, Division of Water, TOGS (1.1.1) [NYSDEC, 1998], with Addendums.

s = Standard Value

g = Guidance Value

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Bold value - analyte estimated or detected at a concentration greater than the method detection limit.

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Gray Shaded value - analyte estimated or detected at concentration greater than the NYSDEC Groundwater Standard or Guidance Values.

Units for groundwater samples:

µg/L = micrograms/Liter = parts per billion

mg/L = milligrams/Liter = parts per million

Laboratory or Validation Qualifiers:

B = For organics analysis - compound was found in the associated blank sample. For metals analysis - the result is an estimated quantity.

B = For inorganic analysis - analyte detected in the associated method blank.

E = Analyte concentration exceeded the calibration range of the instrument.

F = MS and/or MSD Recovery is outside acceptance limits.

F1 = MS and/or MSD Recovery is outside acceptance limits.

F2 = MS/MSD RPD exceeds control limits.

J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

J- = The result is an estimated quantity, likely to be biased low. The associated numerical value is the approximate concentration of the analyte in the sample.

J+ = The result is an estimated quantity, likely to be biased high. The associated numerical value is the approximate concentration of the analyte in the sample.

N = Tentative identification. Consider present. Special methods may be needed to confirm its presence or absence in future sampling events.

R = The data are unusable. The sample results are rejected due to serious deficiencies in the ability to meet quality control criteria.

U = The analyte was analyzed for, but was not detected above the level reported.

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

BW - Analyte detected in the associated method blank and post-digest spike recovery furnace analysis was out of 85-115 percent control limit, while sample absorbance was less than 50 percent of spike absorbance.

BWN - Analyte detected in the associated method blank and post-digest spike recovery furnace analysis was out of 85-115 percent control limit, while sample absorbance was less than 50 percent of spike absorbance. Analyte is presumptively present.

UW - Not detected at or above the reporting limit shown and post-digest spike recovery furnace analysis was out of 85-115 percent control limit, while sample absorbance was less than 50 percent of spike absorbance.

JB - Estimated value and the analyte was detected in the associated method blank.

* = LCS or LCSD is outside acceptance limits.

Other Notes:

NA = Not analyzed for, Not applicable

ND = Not detected. Total concentration is listed as ND because no compounds were detected in the group (such as for Total BTEX).

NE = Not established

NL = Not Listed

PAHs - polycyclic aromatic hydrocarbons

SVOCs - semi-volatile organic compounds

TAL - Target Analyte List

TCL - Target Compound List

BTEX and Total PAHs are calculated using detects only.

Total VOCs includes all BTEX compounds.

Total SVOCs includes all PAH compounds.

Table 1
Monitoring Well and Sample Summary
2018 Groundwater Elevation Monitoring Results
2018 Laboratory Analyses
Nyack MGP Site 2018 SMP Annual Report

Well Construction Summary											Laboratory Analyses		
Designation	Rationale / Zone Monitored	Installation Date	Ground Surface Elevation (Feet NAVD88)	Top of PVC Riser Elevation (Feet NAVD88)	Northing (NAD83)	Easting (NAD83)	Screened Interval (Elevation NAVD88)	Comment	Depth to Water 11/12/2018 (Feet)	Water Elevation (Feet NAVD88) 11/12/2018	Sample Depth	BTEX	NYSDEC 17 PAHS
Existing Monitoring Wells													
MW33D	Groundwater at south site boundary, cross gradient location.	8/31/2004	25.33	25.16	822865.99	653222.97	-0.16 to 15.16	Not accessible for sampling	NM	NM	NA	NA	NA
MW41	Groundwater at Upper Terrace.	5/19/2008	34.07	33.79	823022.67	653236.45	-0.71 to 14.29	Not accessible for sampling	NM	NM	NA	NA	NA
MW43	Down gradient groundwater.	5/22/2008	8.60	9.04	823061.51	653448.31	-19.22 to -14.22	NA	6.60	2.44	Center of saturated screened interval	X	X
MW44	Groundwater at Upper Terrace.	5/20/2008	33.84	33.55	823072.61	653244.4	1.55 to 16.55	NA	24.43	9.12	Center of saturated screened interval	X	X
MW45	Groundwater at Lower Terrace; down gradient location.	5/23/2008	14.15	13.84	822983.34	653307.75	-13.66 to 1.34	Not accessible for sampling	NM	NM	NA	NA	NA
MW46	Groundwater at cross gradient location.	12/5/2017	27.00	26.73	823178.96	653260.92	16.0 to 8.0	NA	21.15	5.58	Center of saturated screened interval	X	X
MW47	Groundwater at site boundary at Gedney Street.	12/6/2017	34.20	33.87	823089.60	653160.11	19.7 to -2.3	NA	17.10	16.77	Center of saturated screened interval	X	X

NM - Not Measured
NA = Not Applicable
Horizontal Coordinates are New York State Plane, Central Zone, NAD83 North American Datum 1983 (NAD83).
Vertical Coordinates are North American Datum 1988 (NAVD88)

Table 2
SMP Post - Remedial [2015-2018] NAPL Gauging and Removal Summary
Nyack MGP Site

Well ID	MW41 (Note 1)												
Date	2/27/2015	3/13/2015		3/20/2015		3/27/2015		4/10/2015		5/22/2015		7/17/2015	
Before or After NAPL Pump Out	Before Purging	Before Purging	After	Before Purging	After	Before Purging	After	Before Purging	After	Before Purging	After	Before Purging	After
Depth to LNAPL	21.27	NP	NP	NP	NP	NP	NP	20.46	NP	20.70	NP	20.94	NP
Depth to Water	21.29	20.80	20.92	20.31	20.39	20.36	20.54	20.46	20.63	20.71	21.25	20.95	22.42
Depth to DNAPL	*NA	33.66	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Depth to Bottom of Well	34.25	34.25	34.25	34.25	34.25	34.25	34.25	34.25	34.25	34.24	34.24	34.25	34.25
LNAPL thickness	0.02	NP	NP	NP	NP	NP	NP	<0.01	NP	~0.01	NP	~0.01	NP
DNAPL thickness	*NA	0.59	NP	**	NP	**	NP	blebs	NP	Blebs	NP	Blebs	NP

Well ID	MW44																
Date	2/27/2015	3/13/2015		3/20/2015		3/27/2015		4/10/2015		5/22/2015		7/17/2015		9/20/2017		11/12/2018	
Before or After NAPL Pump Out	Before Purging	Before Purging	After	Before Purging	After	Before Purging	After	Before Purging	After	Before Purging	After	Before Purging	After	Before Purging	After	Before Purging	After
Depth to LNAPL	26.12	25.13	25.41	24.43	NP	24.53	NP	24.59	NP	25.25	NP	25.52	NP	27.44	NP	24.42	24.42
Depth to Water	27.35	25.23	25.42	24.57	25.21	24.65	25.38	24.69	25.03	25.35	26.05	25.62	28.06	25.94	25.94	24.43	24.43
Depth to DNAPL	*NA	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
Depth to Bottom of Well	32.33	32.33	32.33	32.33	32.33	32.33	32.33	32.33	32.33	32.30	32.30	32.30	32.30	32.30	32.30	32.30	32.30
LNAPL thickness	1.23	0.10	0.01	0.14	NP	0.12	NP	0.10	NP	~0.10	NP	~0.10	NP	1.50	NP	0.01	NP
DNAPL thickness	*NA	No Measurable Layer - blebs	No Measurable Layer - blebs	No Measurable Layer - blebs	NP	No Measurable Layer - blebs	NP	No Measurable Layer - blebs	NP	NP	NP	NP	NP	NP	NP	No Measurable Layer - blebs	No Measurable Layer - blebs

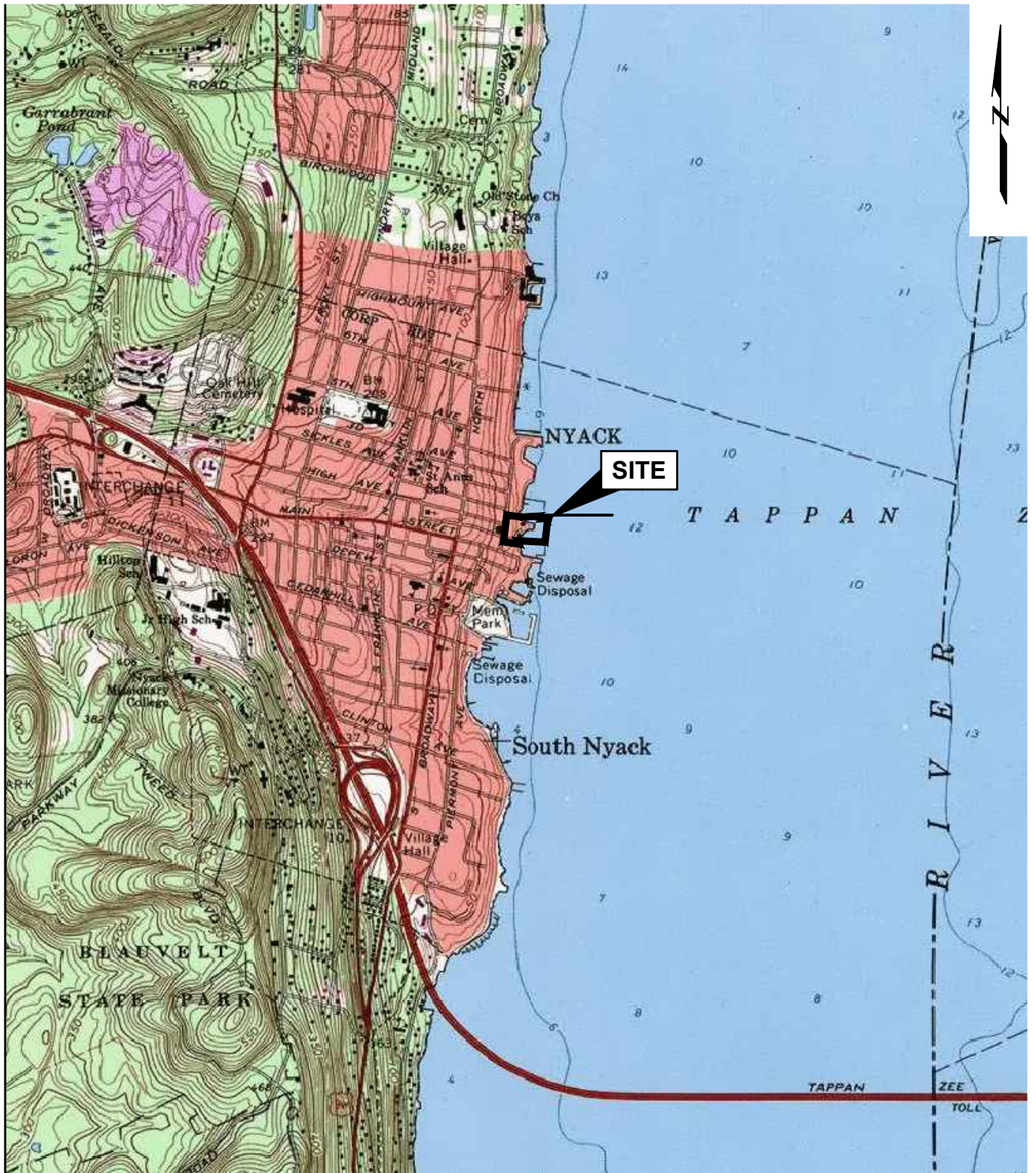
Well ID	MW47	
Date	11/12/2018	
Before or After NAPL Pump Out	Before Purging	After
Depth to LNAPL	NP	NP
Depth to Water	17.1	17.1
Depth to DNAPL	38	NP
Depth to Bottom of Well	38	38
LNAPL thickness	NP	NP
DNAPL thickness	No Measurable Layer - blebs	No Measurable Layer - blebs

All depths and measurements of NAPL thickness are in feet.
NP = Not Present
Note 1: Well MW41 could not be located in 2017 or 2018.

Table 3
2015 - 2018 Groundwater Sample Results
Site Management Plan
Nyack MGP Site

	Sample Name	MW33D	MW33D	MW41	MW43	MW43	MW43	MW44	MW44	MW44	MW45	MW46	MW46	MW47	MW47
	Sample Date	7/17/2015	9/19/2017	2/27/2015	2/27/2015	9/19/2017	11/19/2018	2/27/2015	12/20/2017	11/19/2018	2/27/2015	12/20/2017	11/19/2018	12/20/2017	11/19/2018
Analyte	CAS No.														
BTEX (ug/L)															
Benzene	71-43-2	1.6	15	2000	7.6	7.3	4.80	8900	1300	2,800	1	5900	1,900.00	410	360
Toluene	108-88-3	1 U	3.1	59	0.52 J	0.51 J	0.8 J	460 J	32	1,400	0.2 U	8.3	310.00	390	850
Ethylbenzene	100-41-4	0.48	50	1500	2.1	1.3	0.46 U	35200	790	57 U	1.4	650	57 U	290	360
Total Xylene	1330-20-7	2.3	33	1190	1.47	0.83 J	0.46 U	36200	700	1,400	0.26	790	230 J	540	1,400
Total BTEX	NA	4.38	101	4,749	11.69	9.94	5.60	80,760	2,822	5,600	2.66	7,348	2,440	1,630	2,970
NYSDEC PAH17 (ug/L)															
Acenaphthene	83-32-9	10.1 U	39	620 JD	3.3 J	1.8 U	1.9 U	22400 D	130	220	1.2 U	37	47	47	1,400
Acenaphthylene	208-96-8	10.1 U	1.4 J	98.2 JD	1.2 U	1.8 U	1.9 U	5700	26	29	1.2 U	4	5	21	510
Anthracene	120-12-7	10.1 U	6.6	310 D	1.2 U	1.8 U	1.9 U	15100 JD	69	91	1.2 U	5.3	5	7.3	1,200
Benzo(a)anthracene	56-55-3	10.1 U	3	210 D	1.2 U	1.8 U	1.9 U	9700 D	74	89	1.2 U	1.3 J	1.8 U	2.2	910
Benzo(b)fluoranthene	205-99-2	10.1 U	1.3 J	140 D	1.2 U	1.8 U	1.9 U	9300	44	68	1.2 U	1.9 U	1.8 U	1 J	820
Benzo(k)fluoranthene	207-08-9	10.1 U	1.8 U	120	1.2 U	1.8 U	1.9 U	1700	17	53	1.2 U	1.9 U	1.8 U	1.9 U	580
Benzo(g,h,i)perylene	191-24-2	10.1 U	0.81 J	180	1.2 U	1.8 U	1.9 U	4500	28	35	1.2 U	1.9 U	1.8 U	0.84 J	450
Benzo(a)pyrene	50-32-8	10.1 U	1.8	160 D	1.2 U	1.8 U	1.9 U	10200	58	14	1.2 U	1.9 U	1.8 U	1.6 J	180
Chrysene	218-01-9	10.1 U	2.4	170 D	1.2 U	1.8 U	1.9 U	10200	69	75	1.2 U	1.1 J	1.8 U	1.6 J	790
Dibenz(a,h)anthracene	53-70-3	10.1 U	1.8 U	46.4	1.2 U	1.8 U	1.9 U	1000 J	1.9 U	7	1.2 U	1.9 U	1.8 U	1.9 U	86
Fluoranthene	206-44-0	10.1 U	6.7	360 D	1.2 U	1.8 U	1.9 U	16400 D	140	140	1.2 U	3.4	2	5.7	1,700
Fluorene	86-73-7	10.1 U	13	340 D	1.2 U	1.8 U	1.9 U	19600 JD	77	120	1.2 U	16	18	23	1,300
Indeno(1,2,3-cd)pyrene	193-39-5	10.1 U	1.8 U	160	1.2 U	1.8 U	1.9 U	2900	18	22	1.2 U	1.9 U	1.8 U	1.9 U	270
2-Methylnaphthalene	91-57-6	10.1 U	1.8 U	1100 JD	1.2 U	1.8 U	1.9 U	45000 D	190	510	1.2 U	100	120	110	2,300
Naphthalene	91-20-3	10.1 U	19	4500 D	1.2 U	2.7	1.6 J	167900 D	1300	4,000	5 J	1100	740	2100	6,400
Phenanthrene	85-01-8	10.1 U	27	1000 JD	1.2 U	1.8 U	1.9 U	42900 D	300	390	1.2 U	24	25	36	5,300
Pyrene	129-00-0	10.1 U	10	560 D	1.2 U	1.8 U	1.9 U	28500 JD	170	220	1.2 U	4.6	26	7.8	3,000
Total PAH17	NA	ND	132	10,075	3	2.7	1.6	413,000	2,710	6,083	5	1,297	1,423	2,365	26,696

Figures



SOURCE:

U.S.G.S. TOPOGRAPHIC MAP CREATED WITH TOPO! © ©2004
NATIONAL GEOGRAPHIC (www.nationalgeographic.com/topo)

0 2000' 4000'
SCALE: 1" = 2000'

2018 Site Management Plan Annual Report
Nyack Former MGP Site
Nyack, New York

Orange and Rockland Utilities, Inc.
Spring Valley, New York

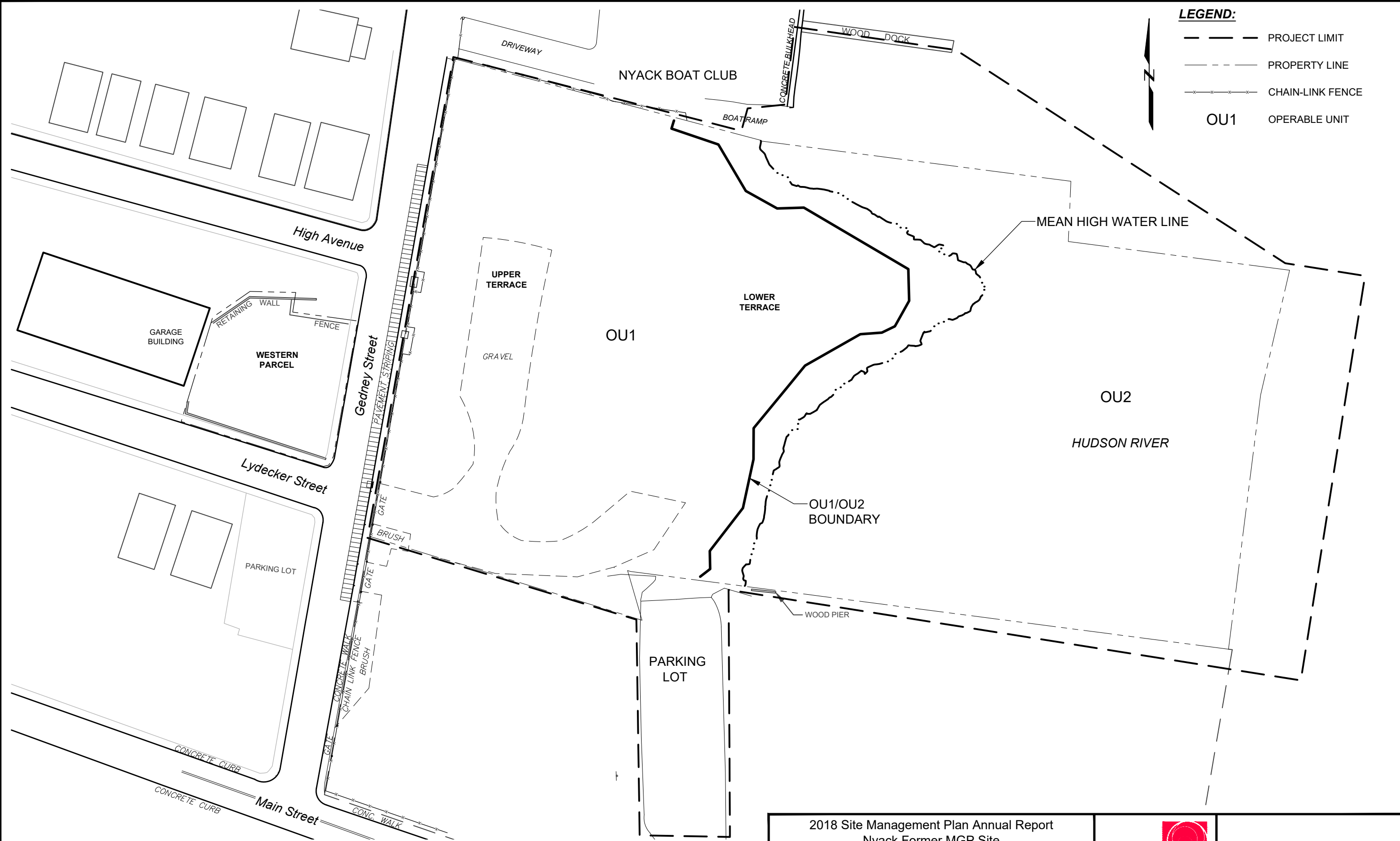


Project 1804168

SITE LOCATION MAP

December 2018

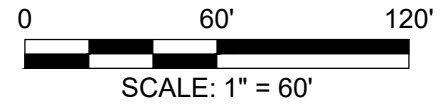
Fig. 1



LEGEND:

- PROJECT LIMIT
- - - PROPERTY LINE
- x-x-x- CHAIN-LINK FENCE
- OU1 OPERABLE UNIT

SOURCE:
BASEMAP FROM SURVEY BY THEW ASSOCIATES
LAND SURVEYORS, REV 2: 12/21/2017.




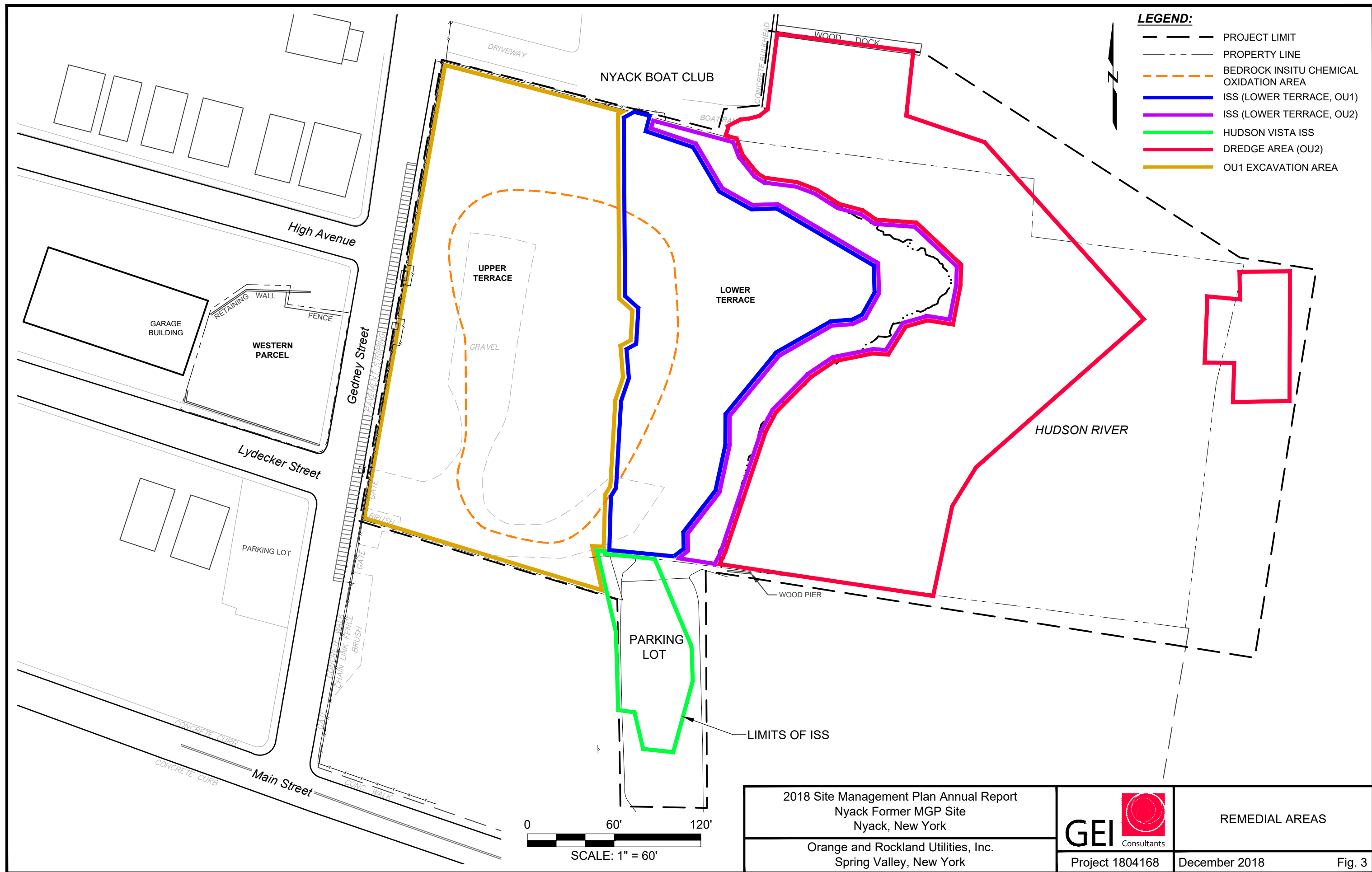
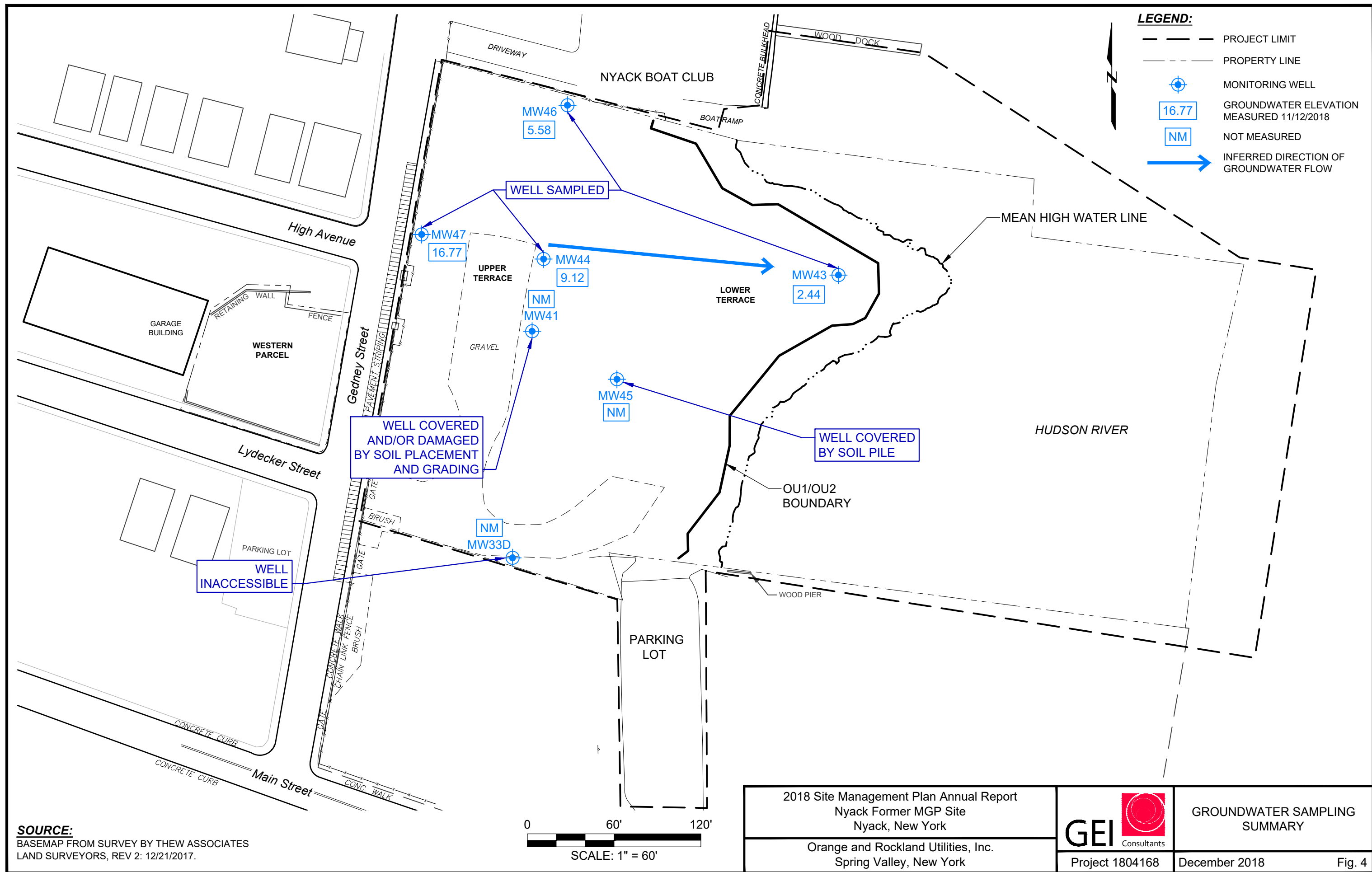
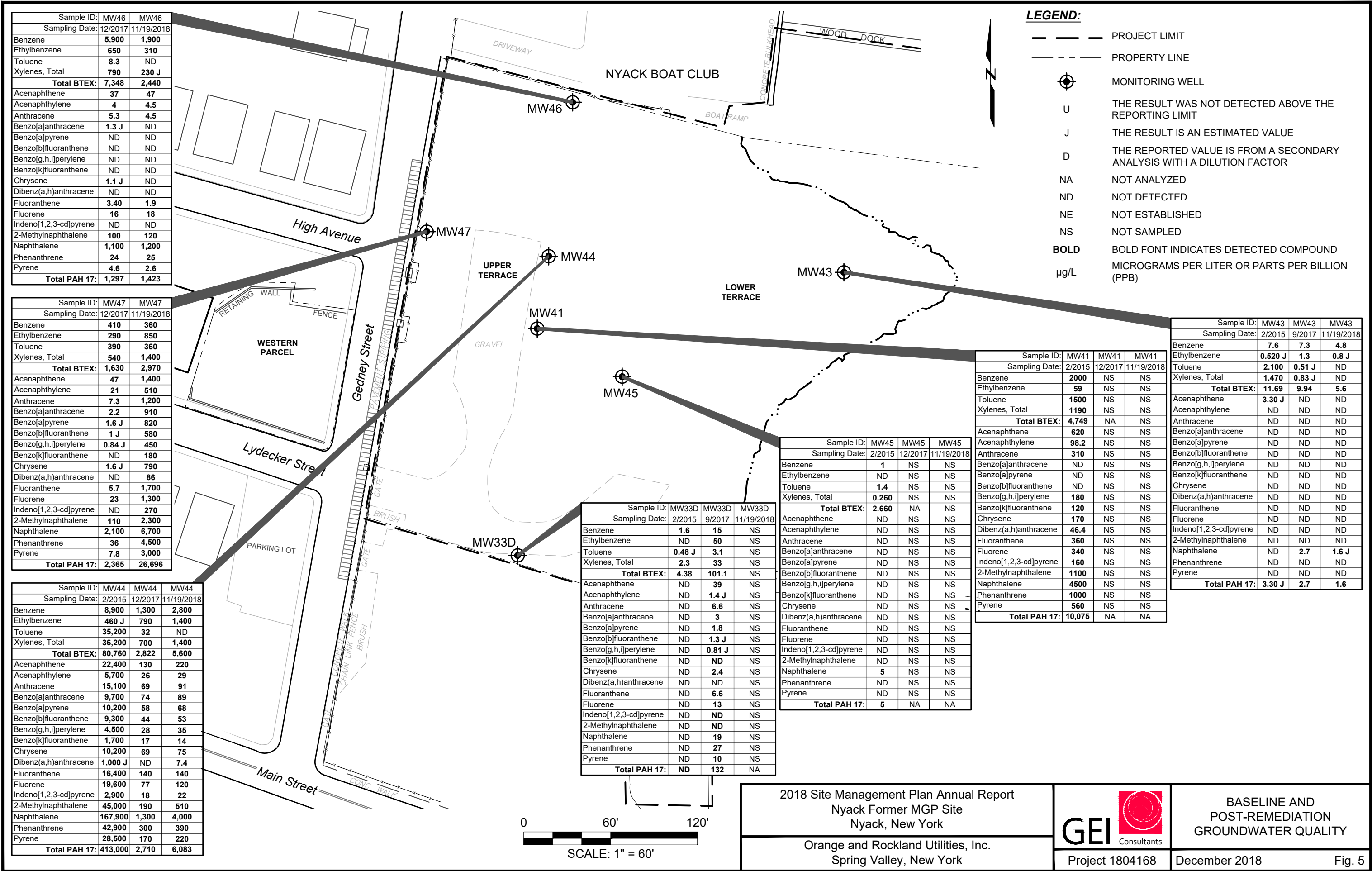
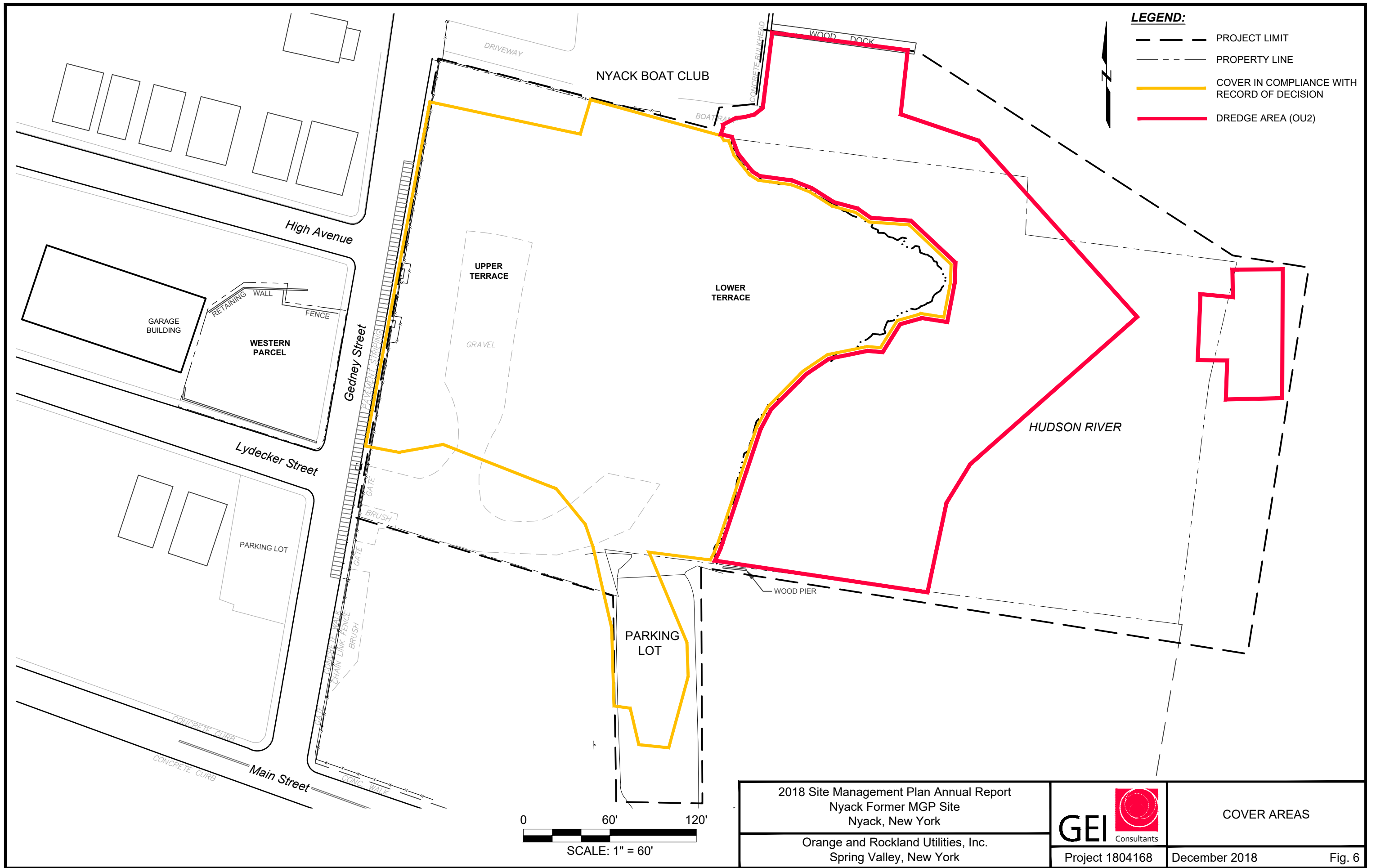
2018 Site Management Plan Annual Report Nyack Former MGP Site Nyack, New York		SITE PLAN	
		Project 1804168	December 2018

Fig. 2










2018 Site Management Plan Annual Report Nyack Former MGP Site Nyack, New York Orange and Rockland Utilities, Inc. Spring Valley, New York		COVER AREAS	
		Project 1804168	December 2018

Fig. 6

Photographic Record

PHOTOGRAPHIC RECORD

Company: Orange and Rockland Utilities, Inc.
Project: Nyack Former MGP Site



Photo No.: 1
Photographer: D. Kopcow
Date: 11/19/2018
Direction:

Comments:
Upper Terrace, gravel cover at
access road.



Photo No.: 2
Photographer: D. Kopcow
Date: 11/19/2018
Direction:

Comments:
Upper Terrace cover

PHOTOGRAPHIC RECORD

Company: Orange and Rockland Utilities, Inc.
Project: Nyack Former MGP Site



Photo No.: 3
Photographer: D. Kopcow
Date: 11/19/2018
Direction:

Comments:
Upper Terrace cover



Photo No.: 4
Photographer: D. Kopcow
Date: 11/19/2018
Direction:

Comments:
Upper Terrace cover

PHOTOGRAPHIC RECORD

Company: Orange and Rockland Utilities, Inc.
Project: Nyack Former MGP Site



Photo No.: 5
Photographer: D. Kopcow
Date: 11/19/2018
Direction:

Comments:
Lower Terrace cover



Photo No.: 6
Photographer: D. Kopcow
Date: 11/19/2018
Direction:

Comments:
Lower Terrace cover

PHOTOGRAPHIC RECORD

Company: Orange and Rockland Utilities, Inc.
Project: Nyack Former MGP Site



Photo No.: 7
Photographer: D. Kopcow
Date: 11/19/2018
Direction:

Comments:
Lower Terrace cover



Photo No.: 8
Photographer: D. Kopcow
Date: 11/19/2018
Direction:

Comments:
Lower Terrace cover

PHOTOGRAPHIC RECORD

Company: Orange and Rockland Utilities, Inc.
Project: Nyack Former MGP Site



Photo No.: 9
Photographer: D. Kopcow
Date: 11/19/2018
Direction:

Comments:
Lower Terrace cover, former
Hudson Vista parking lot
cover, rip-rap



Photo No.: 10
Photographer: D. Kopcow
Date: 11/19/2018
Direction:

Comments:
Lower Terrace cover and rip-
rap

Company: Orange and Rockland Utilities, Inc.
Project: Nyack Former MGP Site



Photo No.: 11
Photographer: D. Kopcow
Date: 11/19/2018
Direction:

Comments:
Lower Terrace cover, rip-rap
on jetty, Hudson River dredge
area



Photo No.: 12
Photographer: D. Kopcow
Date: 11/19/2018
Direction:

Comments:
Jetty area soil cover, rip-rap,
and Hudson River dredge area

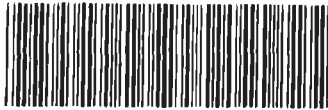
Appendix A

Laboratory Chain-of-Custody Record and Form I Reports

TestAmerica Pittsburgh
301 Alpha Drive RIDC Park
Pittsburgh, PA 15238
Phone (412) 963-7058 Fax (412) 963-2468

Chain of Custody Record

TestAmerica

Client Information Client Contact: James Edwards Company: GEI Consultants, Inc. Address: 1301 Trumansburg Road Suite N City: Ithaca State, Zip: NY, 14850 Phone: [blank] Email: jedwards@geiconsultants.com Project Name: 1804168, Nyack Site: [blank]		Due Date Requested: [blank] TAT Requested (days): [blank] PO #: [blank] Purchase Order not required WO #: [blank] Project #: 18016296 SSOW#: [blank]		Lab P/N: Dunlap, David A E-Mail: david.dunlap@testamericainc.com		Carrier Tracking Notes: [blank]		DOC No: 180-47637-10107.1 Page: Page 1 of 1 Job #: [blank]	
Sample Identification Sample Date: 11/19/18 Sample Time: 1300 Sample Type (C=comp, G=grab): G Matrix (W=water, S=solid, D=dredge, BT=bottom, A=air): Water		Field Filtered Sample (Yes or No): <input checked="" type="checkbox"/> Yes Perform MS/MSD (Yes or No): <input checked="" type="checkbox"/> Yes 8260C, LL, BTEX 8270D - PAHs & 2-methylnaphthalene		Analysis Requested Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Anchor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: [blank]		Total Number of Containers: 1 Spec: [blank]		180-84257 Chain of Custody 	
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For [blank] Months		Special Instructions/QC Requirements: [blank]		Method of Shipment: FedEx		Date: 11/19/18 16:30 Company: GEI Received by: [Signature] Date/Time: 11-21-18 9:00 Company: JAFIT	
Empty Kit Relinquished by: [Signature] Relinquished by: [Signature] Relinquished by: [Signature]		Date: 11/19/18 16:30 Company: GEI Received by: [Signature] Date/Time: 11-21-18 9:00 Company: JAFIT		Date: 11/19/18 16:30 Company: GEI Received by: [Signature] Date/Time: 11-21-18 9:00 Company: JAFIT		Date: 11/19/18 16:30 Company: GEI Received by: [Signature] Date/Time: 11-21-18 9:00 Company: JAFIT		Date: 11/19/18 16:30 Company: GEI Received by: [Signature] Date/Time: 11-21-18 9:00 Company: JAFIT	
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Custody Seal No.: [blank]		Cooler Temperature(s) °C and Other Remarks: [blank]		Date: 11/19/18 16:30 Company: GEI Received by: [Signature] Date/Time: 11-21-18 9:00 Company: JAFIT		Date: 11/19/18 16:30 Company: GEI Received by: [Signature] Date/Time: 11-21-18 9:00 Company: JAFIT		Date: 11/19/18 16:30 Company: GEI Received by: [Signature] Date/Time: 11-21-18 9:00 Company: JAFIT	

Client Sample Results

Client: GEI Consultants, Inc.
Project/Site: 1804168, Nyack

TestAmerica Job ID: 180-84257-1

Method: EPA 8260C - Volatile Organic Compounds (GC/MS)

Client Sample ID: MW43						Lab Sample ID: 180-84257-1			
Date Collected: 11/19/18 15:00						Matrix: Water			
Date Received: 11/21/18 09:00									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	4.8		1.0	0.60	ug/L			11/28/18 16:29	1
Ethylbenzene	0.80	J	1.0	0.51	ug/L			11/28/18 16:29	1
Toluene	ND		1.0	0.46	ug/L			11/28/18 16:29	1
Xylenes, Total	ND		2.0	0.89	ug/L			11/28/18 16:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		58 - 124					11/28/18 16:29	1
Dibromofluoromethane (Surr)	105		64 - 125					11/28/18 16:29	1
1,2-Dichloroethane-d4 (Surr)	110		65 - 127					11/28/18 16:29	1
Toluene-d8 (Surr)	98		69 - 115					11/28/18 16:29	1

Client Sample Results

Client: GEI Consultants, Inc.
Project/Site: 1804168, Nyack

TestAmerica Job ID: 180-84257-1

Method: EPA 8260C - Volatile Organic Compounds (GC/MS)

Client Sample ID: MW44

Date Collected: 11/19/18 10:45

Date Received: 11/21/18 09:00

Lab Sample ID: 180-84257-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	2800		130	75	ug/L			11/28/18 20:14	125
Ethylbenzene	1400		130	63	ug/L			11/28/18 20:14	125
Toluene	ND		130	57	ug/L			11/28/18 20:14	125
Xylenes, Total	1400		250	110	ug/L			11/28/18 20:14	125
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		58 - 124					11/28/18 20:14	125
Dibromofluoromethane (Surr)	116		64 - 125					11/28/18 20:14	125
1,2-Dichloroethane-d4 (Surr)	124		65 - 127					11/28/18 20:14	125
Toluene-d8 (Surr)	103		69 - 115					11/28/18 20:14	125

Client Sample Results

Client: GEI Consultants, Inc.
Project/Site: 1804168, Nyack

TestAmerica Job ID: 180-84257-1

Method: EPA 8260C - Volatile Organic Compounds (GC/MS)

Client Sample ID: MW46

Date Collected: 11/19/18 14:00

Date Received: 11/21/18 09:00

Lab Sample ID: 180-84257-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1900		130	75	ug/L			11/28/18 20:42	125
Ethylbenzene	310		130	63	ug/L			11/28/18 20:42	125
Toluene	ND		130	57	ug/L			11/28/18 20:42	125
Xylenes, Total	230	J	250	110	ug/L			11/28/18 20:42	125

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	111		58 - 124		11/28/18 20:42	125
Dibromofluoromethane (Surr)	119		64 - 125		11/28/18 20:42	125
1,2-Dichloroethane-d4 (Surr)	124		65 - 127		11/28/18 20:42	125
Toluene-d8 (Surr)	108		69 - 115		11/28/18 20:42	125

TestAmerica Pittsburgh

Client Sample Results

Client: GEI Consultants, Inc.
Project/Site: 1804168, Nyack

TestAmerica Job ID: 180-84257-1

Method: EPA 8260C - Volatile Organic Compounds (GC/MS)

Client Sample ID: MW47

Date Collected: 11/19/18 13:10

Date Received: 11/21/18 09:00

Lab Sample ID: 180-84257-4

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	360	F1	50	30	ug/L			11/29/18 13:36	50
Ethylbenzene	850	F1	50	25	ug/L			11/29/18 13:36	50
Toluene	360	F1	50	23	ug/L			11/29/18 13:36	50
Xylenes, Total	1400	F1	100	45	ug/L			11/29/18 13:36	50
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		58 - 124					11/29/18 13:36	50
Dibromofluoromethane (Surr)	109		64 - 125					11/29/18 13:36	50
1,2-Dichloroethane-d4 (Surr)	115		65 - 127					11/29/18 13:36	50
Toluene-d8 (Surr)	110		69 - 115					11/29/18 13:36	50

TestAmerica Pittsburgh

Client Sample Results

Client: GEI Consultants, Inc.
Project/Site: 1804168, Nyack

TestAmerica Job ID: 180-84257-1

Method: EPA 8260C - Volatile Organic Compounds (GC/MS)

Client Sample ID: TRIP BLANK(11192018)

Date Collected: 11/19/18 00:00

Date Received: 11/21/18 09:00

Lab Sample ID: 180-84257-5

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		1.0	0.60	ug/L			11/23/18 16:34	1
Ethylbenzene	ND		1.0	0.51	ug/L			11/23/18 16:34	1
Toluene	ND		1.0	0.46	ug/L			11/23/18 16:34	1
Xylenes, Total	ND		2.0	0.89	ug/L			11/23/18 16:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	83		58 - 124		11/23/18 16:34	1
Dibromofluoromethane (Surr)	98		64 - 125		11/23/18 16:34	1
1,2-Dichloroethane-d4 (Surr)	114		65 - 127		11/23/18 16:34	1
Toluene-d8 (Surr)	90		69 - 115		11/23/18 16:34	1

TestAmerica Pittsburgh

Client Sample Results

Client: GEI Consultants, Inc.
Project/Site: 1804168, Nyack

TestAmerica Job ID: 180-84257-1

Method: EPA 8270D - Semivolatile Organic Compounds (GC/MS)

Client Sample ID: MW43

Date Collected: 11/19/18 15:00

Date Received: 11/21/18 09:00

Lab Sample ID: 180-84257-1

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		1.9	0.65	ug/L		11/23/18 10:37	11/28/18 18:53	1
Acenaphthylene	ND		1.9	0.65	ug/L		11/23/18 10:37	11/28/18 18:53	1
Anthracene	ND		1.9	0.49	ug/L		11/23/18 10:37	11/28/18 18:53	1
Benzo[a]anthracene	ND		1.9	0.75	ug/L		11/23/18 10:37	11/28/18 18:53	1
Benzo[a]pyrene	ND		1.9	0.53	ug/L		11/23/18 10:37	11/28/18 18:53	1
Benzo[b]fluoranthene	ND		1.9	0.97	ug/L		11/23/18 10:37	11/28/18 18:53	1
Benzo[g,h,i]perylene	ND		1.9	0.69	ug/L		11/23/18 10:37	11/28/18 18:53	1
Benzo[k]fluoranthene	ND		1.9	0.88	ug/L		11/23/18 10:37	11/28/18 18:53	1
Chrysene	ND		1.9	0.81	ug/L		11/23/18 10:37	11/28/18 18:53	1
Dibenz(a,h)anthracene	ND		1.9	0.72	ug/L		11/23/18 10:37	11/28/18 18:53	1
Fluoranthene	ND		1.9	0.60	ug/L		11/23/18 10:37	11/28/18 18:53	1
Fluorene	ND		1.9	0.69	ug/L		11/23/18 10:37	11/28/18 18:53	1
Indeno[1,2,3-cd]pyrene	ND		1.9	0.85	ug/L		11/23/18 10:37	11/28/18 18:53	1
2-Methylnaphthalene	ND		1.9	0.62	ug/L		11/23/18 10:37	11/28/18 18:53	1
Naphthalene	1.6	J	1.9	0.59	ug/L		11/23/18 10:37	11/28/18 18:53	1
Phenanthrene	ND		1.9	0.55	ug/L		11/23/18 10:37	11/28/18 18:53	1
Pyrene	ND		1.9	0.54	ug/L		11/23/18 10:37	11/28/18 18:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	77		37 - 105				11/23/18 10:37	11/28/18 18:53	1
Nitrobenzene-d5 (Surr)	79		38 - 105				11/23/18 10:37	11/28/18 18:53	1
Terphenyl-d14 (Surr)	35		21 - 119				11/23/18 10:37	11/28/18 18:53	1

TestAmerica Pittsburgh

Client Sample Results

Client: GEI Consultants, Inc.
Project/Site: 1804168, Nyack

TestAmerica Job ID: 180-84257-1

Method: EPA 8270D - Semivolatile Organic Compounds (GC/MS)

Client Sample ID: MW44

Date Collected: 11/19/18 10:45

Date Received: 11/21/18 09:00

Lab Sample ID: 180-84257-2

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	220		2.0	0.68	ug/L		11/23/18 10:37	11/28/18 19:19	1
Acenaphthylene	29		2.0	0.68	ug/L		11/23/18 10:37	11/28/18 19:19	1
Anthracene	91		2.0	0.51	ug/L		11/23/18 10:37	11/28/18 19:19	1
Benzo[a]anthracene	89		2.0	0.78	ug/L		11/23/18 10:37	11/28/18 19:19	1
Benzo[a]pyrene	68		2.0	0.55	ug/L		11/23/18 10:37	11/28/18 19:19	1
Benzo[b]fluoranthene	53		2.0	1.0	ug/L		11/23/18 10:37	11/28/18 19:19	1
Benzo[g,h,i]perylene	35		2.0	0.72	ug/L		11/23/18 10:37	11/28/18 19:19	1
Benzo[k]fluoranthene	14		2.0	0.92	ug/L		11/23/18 10:37	11/28/18 19:19	1
Chrysene	75		2.0	0.84	ug/L		11/23/18 10:37	11/28/18 19:19	1
Dibenz(a,h)anthracene	7.4		2.0	0.75	ug/L		11/23/18 10:37	11/28/18 19:19	1
Fluoranthene	140		2.0	0.63	ug/L		11/23/18 10:37	11/28/18 19:19	1
Fluorene	120		2.0	0.72	ug/L		11/23/18 10:37	11/28/18 19:19	1
Indeno[1,2,3-cd]pyrene	22		2.0	0.89	ug/L		11/23/18 10:37	11/28/18 19:19	1
2-Methylnaphthalene	520	E	2.0	0.65	ug/L		11/23/18 10:37	11/28/18 19:19	1
Naphthalene	1300	E	2.0	0.61	ug/L		11/23/18 10:37	11/28/18 19:19	1
Phenanthrene	440	E	2.0	0.57	ug/L		11/23/18 10:37	11/28/18 19:19	1
Pyrene	220		2.0	0.56	ug/L		11/23/18 10:37	11/28/18 19:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	65		37 - 105	11/23/18 10:37	11/28/18 19:19	1
Nitrobenzene-d5 (Surr)	71		38 - 105	11/23/18 10:37	11/28/18 19:19	1
Terphenyl-d14 (Surr)	71		21 - 119	11/23/18 10:37	11/28/18 19:19	1

TestAmerica Pittsburgh

Client Sample Results

Client: GEI Consultants, Inc.
Project/Site: 1804168, Nyack

TestAmerica Job ID: 180-84257-1

Method: EPA 8270D - Semivolatile Organic Compounds (GC/MS)

Client Sample ID: MW46						Lab Sample ID: 180-84257-3			
Date Collected: 11/19/18 14:00						Matrix: Water			
Date Received: 11/21/18 09:00									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	47		1.8	0.63	ug/L		11/23/18 10:37	11/28/18 19:46	1
Acenaphthylene	4.5		1.8	0.63	ug/L		11/23/18 10:37	11/28/18 19:46	1
Anthracene	4.5		1.8	0.47	ug/L		11/23/18 10:37	11/28/18 19:46	1
Benzo[a]anthracene	ND		1.8	0.72	ug/L		11/23/18 10:37	11/28/18 19:46	1
Benzo[a]pyrene	ND		1.8	0.51	ug/L		11/23/18 10:37	11/28/18 19:46	1
Benzo[b]fluoranthene	ND		1.8	0.93	ug/L		11/23/18 10:37	11/28/18 19:46	1
Benzo[g,h,i]perylene	ND		1.8	0.66	ug/L		11/23/18 10:37	11/28/18 19:46	1
Benzo[k]fluoranthene	ND		1.8	0.85	ug/L		11/23/18 10:37	11/28/18 19:46	1
Chrysene	ND		1.8	0.78	ug/L		11/23/18 10:37	11/28/18 19:46	1
Dibenz(a,h)anthracene	ND		1.8	0.69	ug/L		11/23/18 10:37	11/28/18 19:46	1
Fluoranthene	1.9		1.8	0.58	ug/L		11/23/18 10:37	11/28/18 19:46	1
Fluorene	18		1.8	0.66	ug/L		11/23/18 10:37	11/28/18 19:46	1
Indeno[1,2,3-cd]pyrene	ND		1.8	0.82	ug/L		11/23/18 10:37	11/28/18 19:46	1
2-Methylnaphthalene	120		1.8	0.60	ug/L		11/23/18 10:37	11/28/18 19:46	1
Naphthalene	740	E	1.8	0.57	ug/L		11/23/18 10:37	11/28/18 19:46	1
Phenanthrene	25		1.8	0.53	ug/L		11/23/18 10:37	11/28/18 19:46	1
Pyrene	2.6		1.8	0.52	ug/L		11/23/18 10:37	11/28/18 19:46	1
Surrogate	%Recovery	Qualifier	Limits						
2-Fluorobiphenyl	72		37 - 105				11/23/18 10:37	11/28/18 19:46	1
Nitrobenzene-d5 (Surr)	76		38 - 105				11/23/18 10:37	11/28/18 19:46	1
Terphenyl-d14 (Surr)	68		21 - 119				11/23/18 10:37	11/28/18 19:46	1

TestAmerica Pittsburgh

Client Sample Results

Client: GEI Consultants, Inc.
Project/Site: 1804168, Nyack

TestAmerica Job ID: 180-84257-1

Method: EPA 8270D - Semivolatile Organic Compounds (GC/MS)

Client Sample ID: MW47

Date Collected: 11/19/18 13:10

Date Received: 11/21/18 09:00

Lab Sample ID: 180-84257-4

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	1400		21	7.1	ug/L		11/23/18 10:37	11/28/18 20:12	10
Acenaphthylene	510		21	7.1	ug/L		11/23/18 10:37	11/28/18 20:12	10
Anthracene	1200		21	5.3	ug/L		11/23/18 10:37	11/28/18 20:12	10
Benzo[a]anthracene	910		21	8.2	ug/L		11/23/18 10:37	11/28/18 20:12	10
Benzo[a]pyrene	820		21	5.8	ug/L		11/23/18 10:37	11/28/18 20:12	10
Benzo[b]fluoranthene	580		21	11	ug/L		11/23/18 10:37	11/28/18 20:12	10
Benzo[g,h,i]perylene	450		21	7.5	ug/L		11/23/18 10:37	11/28/18 20:12	10
Benzo[k]fluoranthene	180		21	9.6	ug/L		11/23/18 10:37	11/28/18 20:12	10
Chrysene	790		21	8.8	ug/L		11/23/18 10:37	11/28/18 20:12	10
Dibenz[a,h]anthracene	86		21	7.8	ug/L		11/23/18 10:37	11/28/18 20:12	10
Fluoranthene	1700		21	6.5	ug/L		11/23/18 10:37	11/28/18 20:12	10
Fluorene	1300		21	7.5	ug/L		11/23/18 10:37	11/28/18 20:12	10
Indeno[1,2,3-cd]pyrene	270		21	9.2	ug/L		11/23/18 10:37	11/28/18 20:12	10
2-Methylnaphthalene	2300		21	6.7	ug/L		11/23/18 10:37	11/28/18 20:12	10
Naphthalene	6400	E	21	6.4	ug/L		11/23/18 10:37	11/28/18 20:12	10
Phenanthrene	5300	E	21	6.0	ug/L		11/23/18 10:37	11/28/18 20:12	10
Pyrene	3000		21	5.9	ug/L		11/23/18 10:37	11/28/18 20:12	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	74		37 - 105				11/23/18 10:37	11/28/18 20:12	10
Nitrobenzene-d5 (Surr)	63		38 - 105				11/23/18 10:37	11/28/18 20:12	10
Terphenyl-d14 (Surr)	87		21 - 119				11/23/18 10:37	11/28/18 20:12	10

TestAmerica Pittsburgh

Client Sample Results

Client: GEI Consultants, Inc.
Project/Site: 1804168, Nyack

TestAmerica Job ID: 180-84257-1

Method: EPA 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Client Sample ID: MW44						Lab Sample ID: 180-84257-2			
Date Collected: 11/19/18 10:45						Matrix: Water			
Date Received: 11/21/18 09:00									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	210		40	14	ug/L		11/23/18 10:37	11/29/18 13:55	20
Acenaphthylene	23	J	40	14	ug/L		11/23/18 10:37	11/29/18 13:55	20
Anthracene	93		40	10	ug/L		11/23/18 10:37	11/29/18 13:55	20
Benzo[a]anthracene	77		40	16	ug/L		11/23/18 10:37	11/29/18 13:55	20
Benzo[a]pyrene	58		40	11	ug/L		11/23/18 10:37	11/29/18 13:55	20
Benzo[b]fluoranthene	40		40	20	ug/L		11/23/18 10:37	11/29/18 13:55	20
Benzo[g,h,i]perylene	26	J	40	14	ug/L		11/23/18 10:37	11/29/18 13:55	20
Benzo[k]fluoranthene	22	J	40	18	ug/L		11/23/18 10:37	11/29/18 13:55	20
Chrysene	73		40	17	ug/L		11/23/18 10:37	11/29/18 13:55	20
Dibenz(a,h)anthracene	ND		40	15	ug/L		11/23/18 10:37	11/29/18 13:55	20
Fluoranthene	140		40	13	ug/L		11/23/18 10:37	11/29/18 13:55	20
Fluorene	110		40	14	ug/L		11/23/18 10:37	11/29/18 13:55	20
Indeno[1,2,3-cd]pyrene	ND		40	18	ug/L		11/23/18 10:37	11/29/18 13:55	20
2-Methylnaphthalene	510		40	13	ug/L		11/23/18 10:37	11/29/18 13:55	20
Naphthalene	4000		40	12	ug/L		11/23/18 10:37	11/29/18 13:55	20
Phenanthrene	390		40	11	ug/L		11/23/18 10:37	11/29/18 13:55	20
Pyrene	210		40	11	ug/L		11/23/18 10:37	11/29/18 13:55	20
Surrogate	%Recovery	Qualifier	Limits						
2-Fluorobiphenyl	61		37 - 105				11/23/18 10:37	11/29/18 13:55	20
Nitrobenzene-d5 (Surr)	55		38 - 105				11/23/18 10:37	11/29/18 13:55	20
Terphenyl-d14 (Surr)	64		21 - 119				11/23/18 10:37	11/29/18 13:55	20

Client Sample Results

Client: GEI Consultants, Inc.
Project/Site: 1804168, Nyack

TestAmerica Job ID: 180-84257-1

Method: EPA 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Client Sample ID: MW46

Date Collected: 11/19/18 14:00

Date Received: 11/21/18 09:00

Lab Sample ID: 180-84257-3

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	44		18	6.3	ug/L		11/23/18 10:37	11/29/18 14:22	10
Acenaphthylene	ND		18	6.3	ug/L		11/23/18 10:37	11/29/18 14:22	10
Anthracene	ND		18	4.7	ug/L		11/23/18 10:37	11/29/18 14:22	10
Benzo[a]anthracene	ND		18	7.2	ug/L		11/23/18 10:37	11/29/18 14:22	10
Benzo[a]pyrene	ND		18	5.1	ug/L		11/23/18 10:37	11/29/18 14:22	10
Benzo[b]fluoranthene	ND		18	9.3	ug/L		11/23/18 10:37	11/29/18 14:22	10
Benzo[g,h,i]perylene	ND		18	6.6	ug/L		11/23/18 10:37	11/29/18 14:22	10
Benzo[k]fluoranthene	ND		18	8.5	ug/L		11/23/18 10:37	11/29/18 14:22	10
Chrysene	ND		18	7.8	ug/L		11/23/18 10:37	11/29/18 14:22	10
Dibenz(a,h)anthracene	ND		18	6.9	ug/L		11/23/18 10:37	11/29/18 14:22	10
Fluoranthene	ND		18	5.8	ug/L		11/23/18 10:37	11/29/18 14:22	10
Fluorene	16	J	18	6.6	ug/L		11/23/18 10:37	11/29/18 14:22	10
Indeno[1,2,3-cd]pyrene	ND		18	8.2	ug/L		11/23/18 10:37	11/29/18 14:22	10
2-Methylnaphthalene	120		18	6.0	ug/L		11/23/18 10:37	11/29/18 14:22	10
Naphthalene	1200		18	5.7	ug/L		11/23/18 10:37	11/29/18 14:22	10
Phenanthrene	25		18	5.3	ug/L		11/23/18 10:37	11/29/18 14:22	10
Pyrene	ND		18	5.2	ug/L		11/23/18 10:37	11/29/18 14:22	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	80		37 - 105	11/23/18 10:37	11/29/18 14:22	10
Nitrobenzene-d5 (Surr)	77		38 - 105	11/23/18 10:37	11/29/18 14:22	10
Terphenyl-d14 (Surr)	76		21 - 119	11/23/18 10:37	11/29/18 14:22	10

TestAmerica Pittsburgh

Client Sample Results

Client: GEI Consultants, Inc.
Project/Site: 1804168, Nyack

TestAmerica Job ID: 180-84257-1

Method: EPA 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Client Sample ID: MW47

Date Collected: 11/19/18 13:10

Date Received: 11/21/18 09:00

Lab Sample ID: 180-84257-4

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	1200		100	35	ug/L		11/23/18 10:37	11/29/18 14:48	50
Acenaphthylene	410		100	35	ug/L		11/23/18 10:37	11/29/18 14:48	50
Anthracene	1000		100	27	ug/L		11/23/18 10:37	11/29/18 14:48	50
Benzo[a]anthracene	790		100	41	ug/L		11/23/18 10:37	11/29/18 14:48	50
Benzo[a]pyrene	710		100	29	ug/L		11/23/18 10:37	11/29/18 14:48	50
Benzo[b]fluoranthene	520		100	53	ug/L		11/23/18 10:37	11/29/18 14:48	50
Benzo[g,h,i]perylene	370		100	38	ug/L		11/23/18 10:37	11/29/18 14:48	50
Benzo[k]fluoranthene	180		100	48	ug/L		11/23/18 10:37	11/29/18 14:48	50
Chrysene	700		100	44	ug/L		11/23/18 10:37	11/29/18 14:48	50
Dibenz(a,h)anthracene	88 J		100	39	ug/L		11/23/18 10:37	11/29/18 14:48	50
Fluoranthene	1500		100	33	ug/L		11/23/18 10:37	11/29/18 14:48	50
Fluorene	1100		100	38	ug/L		11/23/18 10:37	11/29/18 14:48	50
Indeno[1,2,3-cd]pyrene	210		100	46	ug/L		11/23/18 10:37	11/29/18 14:48	50
2-Methylnaphthalene	2000		100	34	ug/L		11/23/18 10:37	11/29/18 14:48	50
Naphthalene	6700		100	32	ug/L		11/23/18 10:37	11/29/18 14:48	50
Phenanthrene	4500		100	30	ug/L		11/23/18 10:37	11/29/18 14:48	50
Pyrene	2500		100	29	ug/L		11/23/18 10:37	11/29/18 14:48	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	0	D X	37 - 105	11/23/18 10:37	11/29/18 14:48	50
Nitrobenzene-d5 (Surr)	0	D X	38 - 105	11/23/18 10:37	11/29/18 14:48	50
Terphenyl-d14 (Surr)	0	D X	21 - 119	11/23/18 10:37	11/29/18 14:48	50

TestAmerica Pittsburgh

Appendix B

2018 SMP Inspection Form

SITE INSPECTION FORM
Nyack Former Manufactured Gas Plant Site

SITE INSPECTION DATE: 11-19-18 **TIME OF ARRIVAL:** 4:00 PM

DEPARTURE: 5:00 PM

WEATHER: Cloudy, 30 degrees F

Orange and Rockland
Representative(s): None

INSPECTION TYPE: Annual Inspection or Emergency Inspection

(if emergency indicate event that required an inspection): Annual SMP Inspection for 2018

Engineering controls – cover and site utilities.

Are the Institutional Controls in place, performing properly, and remain effective?
Yes

Does the Site comply with NYSDEC-approved Site Management Plan? Yes

Has ownership of the property changed since the last inspection? No
(Verify with Real Estate and Survey Departments)

Owner continues to be TZ Vista.

Are there any changes to intended site use (Restricted Residential, Commercial Or Industrial) Yes

which would affect the SMP or institutional controls?

Yes, the site is planned to be developed by TZ Vista. It is GEI's understanding that development will be for commercial and residential use. The status for project approval is unknown. The schedule for development is unknown.

Is site used for agricultural purpose or vegetable gardens? Yes / (No)

SITE INSPECTION FORM
Nyack Former Manufactured Gas Plant Site

Is groundwater used as source of potable or process water onsite

Yes / ☒ No

If yes to the above – does water go through the necessary water quality treatment? NA

Is solidified material visible, or is there any evidence of damage to solidified soil from frost and wave action?

No

Are the Engineering Controls in place, performing properly, and remain effective?

Surface Cover Intact (i.e. no evidence of erosion, excavations), including concrete sidewalk and paved street west of the site?

☒ Yes / No

Engineering control cover remains and has been supplemented with additional cover as documented in the 2017 SMP Annual Report and the attached Photographic Record. The riprap along the shoreline including the Jetty area is intact. The utilities identified in the SMP for the site are intact.

GENERAL SITE OBSERVATIONS:

Have there been any changes to the property since the last inspection?

Yes / ☒ No

(i.e. new equipment, residential buildings or facilities, changes in site topography, erosion, etc.)

Site is being developed by TZ Vista; however, there does not appear to have been any construction activities at the site since the November 2017 site inspection.

Inspection. The schedule for property redevelopment is unknown.

NOTE:

Inspections should be made a minimum once a year and within 5 days of an emergency, such as a natural disaster or an unforeseen failure or damage to the building occurs. Inspections will be conducted by National Grid (or their agent) and results reported to NYSDEC.

COMPLETED BY: Daniel Kopcow, P.E., GEI
Consultants, Inc.
P.C.

SIGNATURE:

