Melissa Reindl
Project Scientist
Site Investigation and Remediation

June 22, 2016

Mr. William Wu
New York State Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-7013

Subject: **Remedial Investigation Work Plan Addendum (No. 1)**
National Grid K – Inwood Holder
Nassau County, Site ID: 130121
Order on Consent Index # A2-0552-0606

Dear Mr. Wu:

National Grid is submitting the following Remedial Investigation Work Plan (RIWP) Addendum for the National Grid K – Inwood Holder Manufactured Gas Plant (MPG) site (the Site), located at the intersection of Sheridan Boulevard and Nassau Avenue, Inwood in Nassau County, New York. This addendum describes work to be performed in a small area east of SB-47 to further delineate denser than water non-aqueous phase liquid (DNAPL) saturation observed at SB-47 from 23.5 to 35 feet below ground surface (bgs).

The former Inwood Gas Holder Site was formerly utilized as a remote gas distribution holder with no manufactured gas production facilities. Construction of the 6-million cubic foot holder and associated structures began in 1923 and appears to have been complete and operational by 1940. The holder was constructed to supplement the Long Island Lighting Company's (LILCO) low pressure gas system during the winter when demand was higher. The holder was demolished in 1993, and the contents (oil, oil emulsion, seal water, and tank bottom sediments) were removed for off-site disposal.

As you are aware, the Remedial Investigation of the Site is being conducted by National Grid pursuant to a Multi-site Order on Consent and Administrative Settlement with the New York State Department of Environmental Conservation (NYSDEC), Index # A2-0552-0606, executed on February 22, 2007 and modified on August 10, 2007, and in accordance with applicable guidelines of the NYSDEC and the New York State Department of Health (NYSDOH). The Draft Remedial Investigation (RI) Report for the site was submitted to the NYSDEC and NYSDOH on May 6, 2014. The NYSDEC transmitted comments to National Grid in a letter dated January 14, 2015 providing conditional approval of the RI pending report modifications included in the letter. National Grid responded to those comments in a letter to the NYSDEC dated January 28, 2015 and the RI report was finalized and submitted to NYSDEC on February 25, 2015.

The purpose of the work described in this RIWP Addendum (No. 1) pursuant to NYSDEC's comments to the RI dated January 14, 2015, is to further delineate MGP residuals through the advancement of three soil borings in the area east of SB-47 in order to delineate the DNAPL saturation observed in that boring from 23.5 to 35 feet below grade surface (bgs).

Remedial investigation locations completed to date and proposed soil borings are shown on Figure 1. The rationale and sampling analysis summary for each proposed boring is included on Table 1. All work will be performed in accordance with the procedures specified in the *Supplemental Remedial*

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Investigation Work Plan, Former Inwood Gas Holder Site, Inwood, New York, NYSDEC Site No.: 1-30-121, Index # A2-0552-0606 (RI Work Plan), dated June 6, 2011.

RIWP Addendum Scope of Work

Soil Boring Advancement

In general, the target completion criteria for soil borings SB-100, SB-101, and SB-102 will be to delineate the possible DNAPL saturated zone above the clay layer from 23.5 to 35 ft bgs surrounding SB-47. The three new soil borings, SB-101 to SB-103, shall be bored to a minimum depth of 35 feet bgs, shall extend past the impacted soils, at a minimum, 5 feet into clean soils, and shall be terminated at a depth within the clay layer (Table 1). If additional borings are required to complete the delineation they will be discussed and the location(s) approved by NYSDEC prior to advancement.

Prior to advancement, each boring location will be cleared for utilities following National Grid and AECOM utility pre-clear protocols/standard operating procedures (SOP) and low energy/soft-dig excavation techniques. A third party geophysical survey clearance subcontractor will be contracted to identify marked and unmarked subsurface utilities, and any possible obstructions in the proposed investigation areas. If any soil boring location need to be significantly modified based on access due to subsurface and overhead utilities, Figure 1 will be revised and provided for approval.

Once the locations are cleared to a minimum of 5 ft bgs, soil borings will be advanced a direct –push drill rig. Soils will be logged continuously and screened with a photoionization detector (PID) from ground surface to the terminus of the borehole.

Soil Sampling

A minimum of three soil samples will be collected from each borehole during soil boring advancement (see Table 1). Soil samples may be collected at the following depth intervals based on field observations:

- In the first five feet of the borehole,
- At a depth interval consistent with the observed impacts in SB-47 or any interval showing the highest level of impacts in the borehole, and;
- The bottom of the borehole (top of the clay interval “clean zone”).

Actual soil sampling depths may be adjusted based on field conditions or in consultation with NYSDEC. Soil samples will be analyzed for:

- Benzene, Toluene, ethylbenzene, and xylene (BTEX) by EPA Method 8021B
- Semi-volatile organic compounds (PAH) by EPA Method 8270C
- Resource Conservation and Recovery Act (RCRA) 8 Metals by EPA SW-846 Method 6000-7000 Series
- Total Cyanide by EPA Method 9012B

Quality Assurance and Quality Control

Quality assurance and quality control (QA/QC) samples of will be collected and submitted in accordance with the RIWP.

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Community Air Monitoring Plan

A Community Air Monitoring Plan (CAMP) has been developed for this project that will be followed during all invasive fieldwork (soil borings). The CAMP will monitor concentrations of VOCs and particulate matter less than 10 microns in size (PM-10) in accordance with NYSDEC and NYSDOH guidance. The CAMP will monitor these parameters upwind and downwind of the work area. Included in the CAMP is a description of methods that may be used to control odors during the RI if needed. The CAMP is included in the approved RI Work Plan for the site.

Surveying

A survey of the investigation sampling points will be conducted at the end of the fieldwork by a licensed NY-State surveying contractor. All horizontal locations will be reported in the New York State Plane Coordinate System, Long Island Zone (NAD83) in feet. All vertical measurements will be reported in NAVD88 in feet, to the nearest 0.1 ft. for the soil borings.

Schedule

Field work can commence following the approval of this Work Plan addendum. If the proposed work is sufficient to complete the delineation of MGP residuals in combination with data derived from the original June 2011 RIWP, the results will be presented in a letter report addendum to the original RI Report.

Yours sincerely,

Melissa Reindl
Project Scientist
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Enclosures
cc:
D. Hettrick, NYSDOH

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Table

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Table 1
Remedial Investigation Addendum Sample Locations, Rationale, and Analyses Summary
Former Inwood Gas Holder Site
Inwood, New York

Location ID	Sample ID	Proposed Completion Depth[A]	Proposed Sample Depth (bgs)	Proposed No. of Samples	Collected Sampled Depth (bgs)	Analyses	Rationale
RI Addendum Locations							
SB-101	SB-101 (depth)	Est. 35 feet	Upper 5 feet, zone of worst-case impacts, and first clean or bottom	3	(0-5') (20-25') (30-35')	BTEX, PAHs, RCRA 8 Metals, and Total CN	East of soil boring SB-47 to evaluate the presence/absence of MGP residuals above the clay unit.
SB-102	SB-102 (depth)	Est. 35 feet	Upper 5 feet, zone of worst-case impacts, and first clean or bottom	3	(0-5') (20-25') (30-35')	BTEX, PAHs, RCRA 8 Metals, and Total CN	Southeast to soil boring SB-47 to evaluate the presence/absence of MGP residuals above the clay unit.
SB-103	SB-103 (depth)	Est. 35 feet	Upper 5 feet, zone of worst-case impacts, and first clean or bottom	3	(0-5') (20-25') (30-35')	BTEX, PAHs, RCRA 8 Metals, and Total CN	South to soil boring SB-47 to evaluate the presence/absence of MGP residuals above the clay unit.

Notes
1. ft - feet
2. MGP - Manufactured Gas Plant
3. EST. - Estimated
4. bgs - Below ground surface
5. SB - Soil Boring (Subsurface Soil)
6. Resource Conservation and Recovery Act.
7. VOCs - Volatile Organic Compounds
8. PAHs - poly-aromatic hydrocarbons
9. RCRA 8 - Resource Conservation and Recovery Act
10. CN - Cyanide

Figure

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Nassau Avenue

Boulevard

Sheridan

SB-51 SB-6 SB-50 SB-24 SB-5 SB-25 SB-7 SB-26 -27.49 SB-30 TP-16 SB-2 -29.06 SB-1 SB-31 SB-52 -27.9 TP-17 SB-3 SB-54 -28.64 TP-18 SB-4 SB-29 SB-18 SB-49 -28.7 SB-43 -27.9 TP-11 SB-40 SB-42 SB-39 SB-41 SB-16 -27.45 TP-13 SB-19 -31.75 SB-35 SB-17 TP-14 SB-11 SB-38 TP-15 SB-36 SB-37 SB-21 -31.95 SB-48 -29.71 SB-14 -27.94 TP-12 SB-20 -26.03 SB-15 SB-34 SB-22 SB-23 SB-45 SB-44 SB-13 -26.21 SB-32 (15'-20', 22.5'-25') SB-33 (17'-22') SB-27 -24.64 SB-47 -32.58 SB-101 SB-102 SB-103 SB-9 SB-10 SB-46 SB-12 SB-28 -27.6 SB-53 -27.13 SB-8 -28.61

-28 -30 -32

(16.5'-17.5') (17.5'-25') (24'-24.5') (24.5'-27.5') (15'-24' 30'-35' 40'-45') (15'-23' (23'-24' (24'-26' (20'-21.5') (21.5'-23.5') (23.5'-35')

Legend

Visual and Olfactory Impacts

- Tar Saturated
- Coated Material, Lenses
- Blebs, Globs, Sheen
- Staining, Odor
- Petroleum Impacts, Saturation and Sheens
- Petroleum Impacts Staining and Odors
- Proposed Step-Back Boring (SB-47 Area)
- Top Of 20-Foot Clay
- -27.13 Elevation of Top of Clay
- Soil Boring
- Test Pit
- Property Boundary
- Access Road
- Waterfront
- Historic Structures
- Approximate Limit of Clearing
- Curblines
- Building
- (17'-22') Depth of Impacts Observed in feet Below Ground Surface

AECOM

1 Inch = 120 Feet

0 60 120 240 Feet

N

National Grid
Former Inwood Gas Holder Site
Nassau Ave/Sheridan Blvd
Inwood, NY

Proposed Step-Back Boring Locations SB-47 Area

Date: 11/6/2015	Drawn: JB	Job #: 60137359		Figure 1

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