

August 14, 2013

Mr. Henry Willems
New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau C, 11th Floor
625 Broadway
Albany, New York 12233-7014

**Subject: Remedial Investigation Work Plan Addendum (No. 3)
Equity Works Former Manufactured Gas Plant (MGP) Site
Brooklyn, New York
NYSDEC Site No.: 224050, Order on Consent Index #: A2-0552-0606**

Dear Mr. Willems:

National Grid is submitting the following Remedial Investigation Work Plan (RIWP) Addendum (No. 3) for the Equity Works former manufactured gas plant (MPG) site (the Site), located at 222–254 Maspeth Avenue in Brooklyn, New York. This addendum describes work to be performed at the private properties located at 300 Maspeth Avenue and 7-9 Rewe Street. Work may also be performed at 340 Maspeth Avenue and 15 Rewe Street contingent on observations and results from 300 Maspeth Avenue.

The former Equity MGP was operated by The Brooklyn Union Gas Company (BUG), a predecessor company to National Grid, from approximately 1893 to 1929. 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 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). Specifics of the RI scope of work are presented in the NYSDEC-approved work plan (Remedial Investigation Work Plan, Equity Former MGP Works) produced by AECOM in July 2009.

National Grid submitted the Remedial Investigation Work Plan Addendum No. 1, No.2, and No. 2 Modification to the NYSDEC in August 2011, April 2012, and May 2013, respectively, to addend the July 2009 RIWP. The purpose of the work described in this RIWP Addendum (No. 3) is to investigate former tidal channels that were filled as the area was developed from the late 1800s through the mid-1900s, and determine the presence or absence of MGP residuals in these former channel areas. The locations of the tidal channels are based on the historic drawings in National Grid's library, and on a 1924 aerial photograph. Additional work includes:

- Traditional surveying/locating the formal tidal channels based on historical reference documentation
- Geophysical surveys, where they can be performed without interference, of the tidal channels to determine if former channel morphology is present in the subsurface and comparison of data to the traditional survey to best target areas for subsurface investigation

- Advancement of soil borings to approximately 30 feet along transects across the targeted former tidal channel areas prioritized by location/sequence starting with two transects at the current FedEx facility at 300 Maspeth Avenue and one transect at the current 7-9 Rewe Street property
- Field screening and soil sampling, as required, to evaluate the presence of potential MGP residuals or other impacts, if encountered
- Survey of soil boring locations following advancement
- Management of investigation derived waste (IDW) at an approved off-site facility

Remedial investigation locations completed to date, the proposed soil boring transects, contingent soil boring transects, and the former tidal channels are shown on Figure 1. All work will be performed in accordance with the procedures specified in the 2009 NYSDEC Approved RI Work Plan except where noted below.

RIWP Addendum Scope of Work

Field Survey and Geophysical Survey

A traditional field survey will be performed to locate on the ground surface the anticipated locations of the former tidal channels in the highlighted areas shown on Figure 1. Mark-outs will be based on historic drawings in National Grid's library, and on 1924 and 1931 aerial photographs of the site area. The traditional survey will be followed by a comprehensive geophysical survey to identify possible subsurface signatures of buried tidal channel morphology, where they can be performed without interference. The geophysical survey will also provide information on potential buried utilities in the proposed work areas outlined on Figure 1. Results may be used to modify the location of soil borings to better target any identified former tidal channel areas. Techniques to be used include:

- Electrical Resistivity
- Radio frequency, M-scope electromagnetic instrument, EM-61 metal detector, and ground penetrating radar – for utility clearance

Borehole Advancement

Up to 25 soil borings are anticipated to be completed. Specific numbers and locations of soil borings may be adjusted in the field following completion of surveying efforts. Any significant alterations to the proposed soil boring program will be confirmed with NYSDEC prior to advancement. In general, the target completion criteria for soil borings will be the bottom of the meadow mat, or approximately 30 ft bgs based on existing data in the area. The purpose of the borings is to identify the locations of the historic tidal channels, meadow mat thickness and composition, and the presence or absence of MGP residuals along these channels. Borings will be advanced along transects across the tidal channels at a spacing of approximately 15 to 30 feet depending on the transect location and the estimated width of the former channels (tighter spacing for narrower channels). Additional borings may be added along any transect if field observations indicate greater resolution is required. Locations of transects and tidal channels are shown on Figure 1.

As shown on Figure 1, a total of 20 soil borings are anticipated in the primary transects 1 through 3. If gross impacts, consisting of non-aqueous phase liquid (NAPL) globules, coatings, or saturation, are observed, additional soil borings may be completed along the extended transect to define to the extent possible the impacts.

Also shown on Figure 1 are contingent transects. Some or all of these transects will only be completed, in a second future mobilization, if there are gross impacts (as described above) noted in the primary

transects 1 through 3. If no impacts are noted in transects 1 through 3, contingent transects will not be completed unless tighter delineation is considered. For example, transect 7 may be completed as a "step-in" transect if no impacts are noted at transects 1 or 2. If required, spacing of soil borings within contingent transects would be within the 15 to 30 foot spacing proposed at transects 1 through 3 depending on the width of the former channel. Furthermore, additional data will be obtained from soil boring (SB-G), to be advanced at transect 3 prior to this work being performed, and from soil boring SB-J and SB-I, to be advanced at contingent transects 4 and 5, respectively, prior to this work. If gross impacts (as described above) are noted during work at transects 1 through 3, above the peat, the number and spacing of additional borings within each of these transects will be adjusted in an attempt to determine the horizontal extent of impacts on either side of the boring(s).

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. The AECOM Underground Utility Preclearance SOP was recently updated in 2012 from the original identified in the RIWP (2009). The traditional survey and the geophysical survey will be completed by subcontractors as specified above.

Once the locations are cleared by soft-dig methods to a minimum of 5 ft bgs, soil borings will be advanced by sonic, hollow stem auger, and/or direct-push drilling methods. The actual drilling locations will be determined based upon field conditions encountered and subsurface utility clearance. Soils will be logged continuously and screened with a photoionization detector (PID) from ground surface to the terminus of the borehole.

Soil Sampling

Soil samples are not anticipated to be collected during soil boring advancement, unless gross impacts (non-aqueous phase liquid (NAPL) globules, coatings, or saturation) are noted. At locations where gross impacts are noted, soil samples may be collected at the following depth intervals based on field observations:

- At depth intervals exhibiting potential impacts, including evidence from PID readings and/or visual observation; and
- At the first clean interval beneath where a potentially impacted sample is collected, or the base of the borehole.

Multiple samples may be collected from a soil boring if gross impacts are observed at multiple depth intervals separated by clean intervals, based upon field observations (e.g. PID readings).

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

- Volatile organic compounds (VOCs) by EPA Method 8260B
- Semi-volatile organic compounds (SVOCs) by EPA Method 8270C
- Total Petroleum Hydrocarbons (TPH) by GC/FID by EPA Method 8015C
- TAL Metals by EPA Method 6010
- Polychlorinated biphenyls (PCBs) by EPA Method 8082A

Community Air Monitoring Plan

A Community Air Monitoring Plan (CAMP) has been developed for this project and will be followed during all invasive fieldwork (soil borings, borings for well installations, and test pitting). Invasive fieldwork planned as part of the scope of this RIWP Addendum (No. 3) is soil boring and sampling. 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 part of the approved RI Work Plan for the Site.

Surveying

A survey of the soil boring locations 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 soil borings.

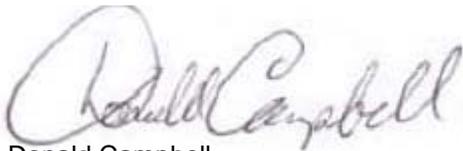
Schedule

Field work can commence following the approval of this Work Plan addendum and following coordination with property owner(s). AECOM and their drilling, geophysical, and surveying subcontractors are ready to initiate field activities with two weeks of NYSDEC approval.

If work is required at any of the contingency transects (4, 5, 6, 7, 8, 9, 10 and/or 11, as shown on the attached Figure), work would be completed in additional mobilization(s) following receipt and analysis of results from the initial transects. Completion of any additional work would be dependent upon site access, including new access agreements for transects 8, 9, 10 or 11. Therefore the additional mobilization(s) would follow receipt of new signed access agreement(s).

If the proposed work is sufficient to complete the delineation of MGP residuals (if present in the former tidal channels), the data from this work plan will be combined with data derived from the original July 2009 RIWP, the August 2011 RIWP Addendum (No. 1), and the April 2012 RIWP Addendum (No. 2) and the May 2013 No. 2 Mod, and presented in a single, all-inclusive RI Report.

Yours sincerely,



Donald Campbell

Cc: A. Hecht (National Grid) – electronic file only
J. Parkinson (National Grid) – electronic file only
C. Rooney (National Grid) – electronic file only
J. Giordano (National Grid) – electronic file only
T. Campbell (National Grid) – electronic file only
A. DeMarco (NYSDOH) – electronic file only
P. Cox (AECOM) – electronic file only

Donald P. Campbell
Lead Engineer
Site Investigation and Remediation



Figure



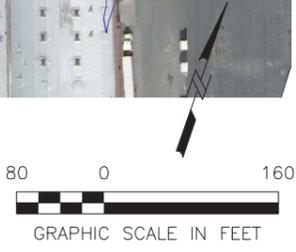
LEGEND:

	PROPERTY LINE		FENCE
	ROADWAY EASEMENT		HISTORIC STRUCTURES
	CURB		1776 HISTORIC WATERCOURSE
	BUILDING WALL		1900s HISTORIC WATERCOURSE
	CONCRETE WALL		1924 HISTORIC WATERCOURSE
			1931 DREDGING CHANNEL

	254-B-6		PREVIOUS INVESTIGATION SAMPLE LOCATION
	PDI-8		PRE-DESIGN INVESTIGATION LOCATION ABANDONED
	MW-1		MONITORING WELL
	SB-4		SOIL BORING
	TP-4		TEST PIT
			COLORLED SAMPLING LOCATIONS ARE FROM GANNETT FLEMING

	SB-	TIER I CONTINGENCY RI ADDENDUM LOCATIONS
	SB-	TIER II CONTINGENCY RI ADDENDUM LOCATIONS
	SB-	TIER III CONTINGENCY RI ADDENDUM LOCATIONS

	SOIL BORING TRANSECT
	SOIL BORING TRANSECT CONTINGENT ON TRANSECTS 1, 2, & 3
	SOIL BORING TRANSECT CONTINGENT ON TRANSECTS 4, 5, & 6



NATIONAL GRID EQUITY FORMER MGP SITE, BROOKLYN NY 60137362-400		FORMER TIDAL CHANNEL INVESTIGATION AREAS
DATE: 07/12/2013	DRWN: BcV/C-MA	FIGURE 1