

May 8, 2018

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

Subject: Revised Supplemental Investigation Work Plan – 222 Maspeth Avenue Property
Former Equity Works Manufactured Gas Plant (MGP) Site
Brooklyn, New York
NYSDEC Site No.: 224050, Order on Consent Index #: A2-0552-0606

Dear Mr. Pratt:

National Grid is re-submitting the following Revised Supplemental Investigation Work Plan for the 222 Maspeth Avenue property located in Brooklyn, New York. This Work Plan incorporates edits to address the agency's comments dated April 9, 2018 and subsequent modifications discussed in our conference call on April 27, 2018. The 222 Maspeth Avenue property is located within the footprint of the former Equity Manufactured Gas Plant (MPG) site (Site) which consists of three adjoining properties – 222 Maspeth Avenue, 252 Maspeth Avenue, and 254 Maspeth Avenue. This supplemental investigation 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, and in accordance with applicable guidelines of the NYSDEC and the New York State Department of Health (NYSDOH). The supplemental investigation activities will provide additional information in proximity to the former holder area that was not previously accessible due to former site operations.

Site History and Description

The Site was historically the location of a MGP operated by The Equity Gas Works Company from 1893 until 1903 and The Brooklyn Union Gas Company (BUG), a predecessor company to National Grid, from 1903 until 1929. BUG maintained ownership of the property until September of 1951. The Site currently houses a waste recycling facility and a bus storage/parking operation. The 222 Maspeth Avenue parcel is currently operated by Cooper Tank Recycling (Cooper Tank). The entire Site is now owned by third parties as shown below.

Owner's Name and Address	Status
222 Maspeth Avenue Inc.	Lot used as a waste recycling/ waste transfer station, although active recycling operations are currently on hold. Currently one enclosed building housing offices and one open building (no walls, with roof) housing permanent waste recycling equipment (a two story conveyor belt system building underlain by concrete recycling bins) is present on the lot. The lot operated by Cooper Tank Recycling Co. is currently being used to fabricate and rehabilitate roll-off boxes and dumpsters.
Giovanna Bordone	Currently one building is located on the lot (approximately 2,500 square feet). Currently used as a bus storage and parking facility.
254 Maspeth Ave, LLC.	Currently used for storage of empty roll-offs and vehicle parking for Cooper Tank personnel and rental parking space leased to third parties by Cooper Tank. The NAPL IRM equipment compound is also staged on this parcel.

A Remedial Investigation (RI) of the Site was completed in 2015 and the RI report was approved by the NYSDEC in 2016. A NAPL recovery IRM comprised of 23 recovery wells is currently active on the site. Work is being conducted by National Grid.

Supplemental Investigation Scope of Work

A supplemental investigation is proposed to further evaluate subsurface conditions within and adjacent to former MGP structures on the 222 Maspeth Avenue parcel. Specifically, the work will include:

- Geophysical surveying as part of utility pre-clearance prior to borehole advancement.
- Advancement of soil borings to intersect the first NAPL confining unit in the subsurface identified as the “intermediate clay” layer or approximately 50 feet below ground surface (bgs) in areas if the intermediate clay is not encountered.
- Advancement of a subset of borings to the Gardiners Clay unit, a regional confining unit present at depths of 90 to 100 feet bgs beneath the Site.
- Visual and field screening to evaluate the presence of potential MGP residuals or other impacts, if encountered, and geotechnical sampling.
- Community air monitoring to monitor concentrations of VOCs and particulate matter less than 10 microns in size (PM-10) in accordance with NYSDEC and NYSDOH guidance.
- Surveying of all completed PDI soil boring locations.
- Management of investigation derived waste (IDW) at a National Grid approved off-site facility.

The rationale and the locations of the proposed soil borings are shown on Table 1 and 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.

Geophysical Survey/Utility Clearance

A utility mark-out and geophysical survey will be completed to identify subsurface utilities on 222 Maspeth Avenue property prior to intrusive activities in the proposed work areas outlined on Figure 1. Results may be used to modify the sample locations in consultation with NYSDEC if utilities are located in the proposed sampling areas. Techniques to be used may include radio frequency, M-scope electromagnetic instrument, EM-61 metal detector, and ground penetrating radar.

Borehole Advancement

Eleven soil borings (SB-100 through SB-110) are proposed at the locations outlined on Figure 1 and Table 1. Locations of soil borings may be adjusted in the field following completion of geophysical surveying efforts. Any significant alterations to the proposed soil boring program will be confirmed with NYSDEC prior to advancement. The target completion depths for soil borings vary from the base of the former Gas Holder No. 1 at depths of approximately 25 to 30 feet bgs, the top of the “intermediate clay” unit if detected, or a maximum depth of approximately 50 ft bgs based on existing data in the area, or the Gardiners Clay present at depths of 90 to 100 feet bgs (Table 1). The purpose of the investigation is to identify the presence or absence of potential MGP residuals, or other impacts at locations:

- within and proximate to known former MGP structures;
- near areas with documented residuals in the subsurface above the “intermediate clay” unit and near the area where the intermediate clay unit pinches out;
- near areas with documented residuals in the subsurface above the Gardiners Clay unit; and/or
- adjacent to existing buildings and structures at the Site.

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. Once the locations are cleared by soft-dig methods to a minimum of 5 ft bgs, soil borings will be advanced by sonic drilling methods. During borehole advancement, isolation casing will be advanced as needed to isolate any zones of residual NAPL and prevent downward migration of impacts in the borehole. A subset of the borings will be completed using split spoon samples to perform standard penetration testing, collection of USCS - Unified Soil Classification System grain size and Atterberg limits, and for Shelby tube samples to collect physical properties including density and strength of the intermediate clay unit (if present) as outlined on Table 1. Soils will be logged continuously for visual impacts and screened with a photoionization detector (PID) from ground surface to the terminus of the borehole. Additional samples may be collected for laboratory analysis if it is determined necessary and following agreement with NYSDEC.

Following borehole advancement to the target depth, a determination will be made in consultation with NYSDEC if any of the borings should be completed as potential new NAPL recovery wells based on subsurface findings. If conversion to a recovery well is not warranted,

soil borings will be tremie-grouted to approximately one-foot below the top of the concrete slab and completed to grade with concrete to match existing surface conditions.

Community Air Monitoring

A Community Air Monitoring Plan (CAMP) has been developed for this project and will be followed during all invasive fieldwork (soil boring advancement). 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 at two locations around the work area, with a focus towards areas of occupied space. Included in the CAMP is a description of methods that may be used to control odors during the PDI if needed. The CAMP is part of the approved 2009 approved RI Work Plan for the Site.

Site Survey

Following completion of the PDI, all investigation locations will be surveyed for elevation and location using a licensed New York surveyor. 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.

Investigation Derived Waste Management

All Investigation Derived Waste (IDW) generated during the PDI will be collected in properly labeled 55-gallon drums, roll-offs, or a frac tank. Subsequently, the waste will be characterized by laboratory analyses and properly disposed in accordance with management of IDW procedures outlined in 2009 NYSDEC approved Field Sampling and Analytical Plan (FSAP).

Deliverables

Following completion of the investigation a letter report will be provided that includes a summary of field work along with tabular summaries of data collected, updates to the existing top of the intermediate clay contour map, updated geologic cross-sections, subsurface boring logs, and laboratory results as an attachment. The report will also include a recommendation for further Interim Remedial Actions (IRMs) if warranted.

Schedule

Field work can commence following the approval of this PDI Work Plan and following coordination with the property owner.

If you have any questions, comments, or require any additional information, please do not hesitate to contact me (718) 608-5102 or at brian.bermingham@nationalgrid.com.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'B. Bermingham', with a horizontal line extending to the right.

Brian Bermingham, P.E
Project Manager

Enclosure

Cc: A. Demarco, NYSDOH

Table

Table 1
Summary of Soil Boring Locations and Rationale
Supplemental Investigation
Former Equity Works MGP Site, Brooklyn, New York

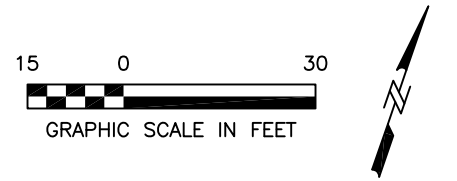
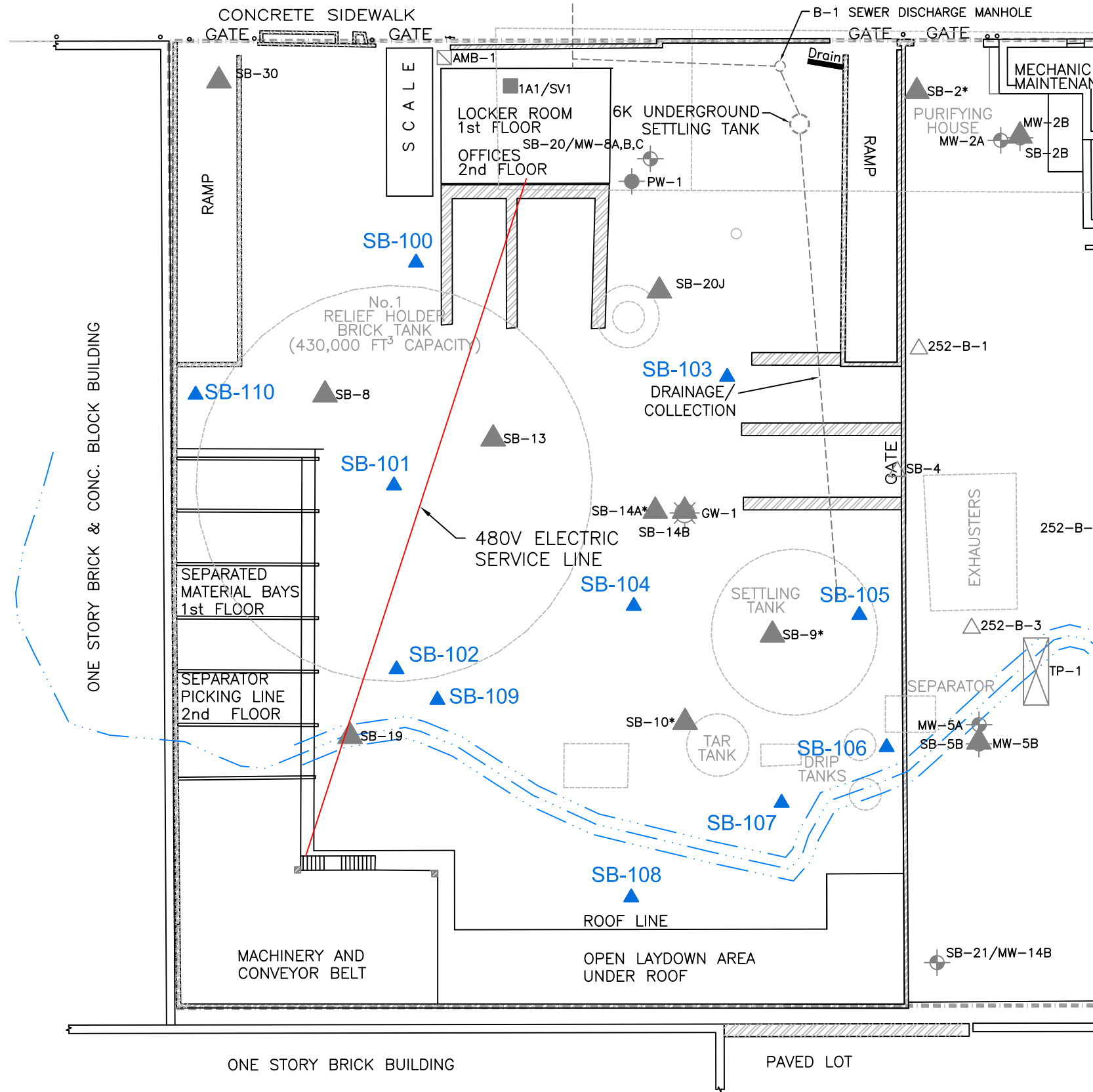
Sample ID	Completion Depth*	Sample Depth* (bgs)	No. of Samples	Analyses	Rationale
SB-100	Est. 50 feet max	TBD	2	SPT, USCS	Evaluate conditions adjacent to northern edge of of former Gas Holder No. 1 in previously uninvestigated area and determine if intermediate clay is present in this area. Collect geotechnical samples to evaluate subsurface soil properties.
SB-101	Est. 30 feet max	TBD	--	Visual	Evaluate former Gas Holder No. 1 contents and bottom depth in center of former structure.
SB-102	Est. 30 feet max	TBD	--	Visual	Evaluate former Gas Holder No. 1 contents and bottom depth near southern edge of former structure.
SB-103	Est. 50 feet max	TBD	3	SPT, USCS, Shelby Tube	Evaluate conditions in previously uninvestigated area east of former Gas Holder No. 1 and to determine elevation of intermediate clay in this area. Collect geotechnical samples to evaluate subsurface soil properties.
SB-104	Est. 100 feet max	TBD	--	Visual	Evaluate conditions in previously uninvestigated area southeast of former Gas Holder No. 1 and west of former relief holder/tar tank/settling tank to and determine elevation of intermediate clay and Gardiners Clay in this area.
SB-105	Est. 50 feet max	TBD	--	Visual	Evaluate presence/absence of former structure and subsurface conditions in previously uninvestigated area within former relief holder/tar tank/settling tank and to determine elevation of intermediate clay in this area.
SB-106	Est. 50 feet max	TBD	2	SPT, USCS	Evaluate conditions in previously uninvestigated area adjacent to former drip tanks and seperator and determine elevation of intermediate clay in this area. Collect geotechnical samples to evaluate subsurface soil properties.
SB-107	Est. 50 feet max	TBD	--	Visual	Evaluate conditions in previously uninvestigated area adjacent to former drip tanks and tar tank and determine elevation of intermediate clay in this area.
SB-108	Est. 50 feet max	TBD	--	Visual	Evaluate conditions in previously uninvestigated area south of former drip tanks and tar tank and determine elevation of intermediate clay in this area.
SB-109	Est. 100 feet max	TBD	3	SPT, USCS, Shelby Tube	Evaluate conditions in previously uninvestigated area between former Gas Holder No. 1 and former tar tank and determine elevation of intermediate clay and Gardiners Clay in this area. Collect geotechnical samples to evaluate subsurface soil properties to the intermediate clay surface (if present) or to a depth of 50 feet bgs.
SB-110	Est. 100 feet max	TBD	2	SPT, USCS	Evaluate conditions adjacent to western edge of of former Gas Holder No. 1 adjacent to 1 Rewe Street building to the Gardiners Clay. Collect geotechnical samples to evaluate subsurface soil properties to the intermediate clay surface.

Notes

- | | |
|-------------------------------|--|
| 1. No. - number | 6. TBD - To be determined based on field findings |
| 2. ID - identification | 7. SPT - Standard Penetration Testing, ASTM D1586 (continuous field data, no laboratory analysis required) |
| 3. ft - feet | 8. USCS - Unified Soil Classification System (ASTM 2487) with grain size (ASTM D6913) and Atterberg limits (ASTM D4318) on fraction passing #40 sieve. |
| 4. EST. - Estimated | 9. Shelby Tube - ASTM 1587 from intermediate clay for unconsolidated undrained strength and Atterberg Limits. |
| 5. bgs - Below ground surface | 10. Number of samples = number of samples for laboratory analysis. |
- * - Depths may be adjusted in the field based on stratigraphy and observed impacts. Target depth is intermediate clay (if present).

Figure

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NOTES:
 1.) SITE FEATURES (BUILDINGS, WALLS, UTILITIES, ETC.) TAKEN FROM MONTRÖSE SURVEYING CO., LLC. OF RICHMOND HILL, NY. THOSE SURVEYS (MASPETH AVE 222 ON 9/21/04 AND MASPETH AVE 252 & 254 ON 3/10/06) PROVIDED BY COOPER TANK RECYCLING.
 2.) LOCATIONS OF HISTORIC MGP STRUCTURES BASED ON SANBORN FIRE INSURANCE MAPS.
 3.) LOCATION OF HISTORIC INVESTIGATION LOCATIONS BASED ON EEA INC., 2004 REPORT (254 MASPETH AVE) AND GANNETT FLEMING 2005 REPORT (252 MASPETH AVE).
 4.) SITE CHARACTERIZATION INVESTIGATION LOCATIONS SURVEYED BY GEOD CONSULTING ON DECEMBER 11 AND 12, 2009.
 5.) OFFICE BUILDING AND SCALE ON 222 MASPETH AVE. ADJUSTED FROM MONTRÖSE SURVEY BASED ON FIELD OBSERVATIONS.
 * LOCATIONS BASED ON FIELD TIE-INS BY AECOM.

LEGEND:

	SITE BOUNDARY
	ROADWAY EASEMENT
	CURB
	BUILDING WALL
	CONCRETE WALL
	FENCE
	WATER UTILITY WITH ACCESS WAY
	WATER UTILITY VALVE
	HYDRANT
	UNDERGROUND ELECTRIC UTILITY VAULT
	60" SEWER UTILITY WITH ACCESS WAY
	12" SEWER UTILITY WITH ACCESS WAY
	BOLLARDS
	ELECTRIC UTILITY POLE
	RI MONITORING WELL
	RI SOIL BORING
	RI TEST PIT
	AMBIENT AIR
	INDOOR AIR/SOIL VAPOR
	ON-SITE PUMPING WELL
	TEMPORARY MONITORING WELL
	PREVIOUS INVESTIGATION SAMPLE LOCATION
	HISTORIC STRUCTURE
	HISTORIC WATERCOURSE
	CURRENT FEATURE
	PROPOSED SOIL BORING

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 * LOCATIONS BASED ON FIELD TIE-INS BY AECOM.

NATIONAL GRID
 EQUITY FORMER MGP SITE, BROOKLYN NY
 SUPPLEMENTAL INVESTIGATION
 60137362.100
 DATE: 05/02/2018 DRWN: BcV/WMA

PROPOSED SUPPLEMENTAL
 INVESTIGATION LOCATIONS
 222 MASPETH AVE.
 FIGURE 1

