

December 21, 2018

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

Re: Supplemental Investigation Report – 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:

Enclosed is the Supplemental Investigation (SI) Report for the former Equity Works MGP Site located at 222-254 Maspeth Avenue in Brooklyn, New York (the “Site”). The SI summarizes the scope and results of the environmental sampling work that was performed at the 222 Maspeth Avenue property.

If you have any questions or require additional information, please feel free to contact me at 718-608-5102 or by e-mail at [brian.bermingham@nationalgrid.com](mailto:brian.bermingham@nationalgrid.com).

Sincerely,



Brian Bermingham, P.E.  
Project Manager

Enclosure

cc: A. DeMarco (NYSDOH)  
W. Ryan (National Grid)  
T. Leissing (National Grid)  
P. Cox (AECOM)

# Supplemental Investigation Report – 222 Maspeth Avenue

Former Equity Works MGP Site  
222-254 Maspeth Avenue Brooklyn, Kings County, New York  
NYSDEC Site No.: 224050  
Order of Consent Index #: A2-0552-0606

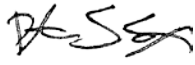
National Grid

December 21, 2018

## Quality information

### Prepared by

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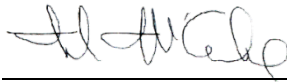


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Peter S. Cox, PG  
Project Manager

### Approved by

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## List of Acronyms

BUG	The Brooklyn Union Gas Company
CAMP	Community Air Monitoring Program
FS	Feasibility Study
ft bgs	feet below ground surface
FWRIA	Fish and Wildlife Resources Impact Analysis
IDW	investigation derived waste
IRM	Interim Remedial Measures
MGP	manufactured gas plant
NAPL	non-aqueous phase liquid
NAVD88	North American Vertical Datum from 1988
NCP	National Contingency Plan
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
PCBs	polychlorinated biphenyls
PID	photoionization detector
PPE	personal protective equipment
RI	Remedial Investigation
QHHEA	Qualitative Human Health Exposure Assessment
SI	Supplemental Investigation
SRI	Supplemental Remedial Investigation
SVOCs	semivolatile organic compounds
USCS	Unified Soil Classification System
USEPA	United States Environmental Protection Agency
VOC	volatile organic compound
SPT	standard penetration test
TFS	tons per square foot
ISMP	Interim Site Management Plan

## Professional Certification

I, Peter S. Cox, certify that I am currently a Qualified Environmental Professional as defined in 6NYCRR Part 375 and that this Supplemental Remedial Investigation Report was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the Department of Environmental Remediation (DER) Technical Guidance for Site Investigation and Remediation (DER-10) and that all activities were performed in full accordance with the DER-approved work plan and any DER-approved modifications.

Signature  Date December 21, 2018

## Executive Summary

This Supplemental Investigation (SI) report presents the results of the subsurface investigation at the 222 Maspeth Avenue parcel of the former Equity Works Manufactured Gas Plant (MGP) (the “Equity Site”), located at 222 - 254 Maspeth Avenue in Brooklyn, Kings County, New York. The former MGP property is currently owned by third parties and houses bus parking operations, construction equipment and materials staging, and construction and demolition (C&D) support services/storage. While the 222 Maspeth Ave parcel was previously investigated during the RI Phase (AECOM, 2016), the current property owner’s operations (24/6 C&D waste recycling operations) during the RI phase made full access to the parcel difficult. The supplemental investigation activities provides additional information in proximity to the former No. 1 relief holder area that was not previously fully accessible during the RI due to former site operations.

The SI was performed in accordance with Order on Consent and Administrative Settlement #A2-0552-0606 between The Brooklyn Union Gas Company (now d/b/a National Grid NY) and the New York State Department of Environmental Conservation (NYSDEC). The Order on Consent was executed in February 2007 in accordance with applicable guidelines of the NYSDEC, the New York State Department of Health (NYSDOH), the United States Environmental Protection Agency (USEPA), and the National Contingency Plan (NCP). The SI was conducted to complete investigation of subsurface soils within the 222 Maspeth Avenue parcel in proximity to the former No. 1 relief holder to identify the presence or absence of potential MGP residuals or other non-MGP impacts in the following areas:

- within and proximate to suspected former MGP structures,
- near impacted subsurface areas above the “intermediate clay” unit described in the RI Report and near the area where the intermediate clay was not observed,
- near impacted subsurface areas above the Gardiners Clay unit as described in the RI Report; and/or
- adjacent to existing buildings and structures at the Site.

A total of 11 soil borings were advanced using sonic drilling methods. A subset of the soil borings were sampled using continuous split spoon samples with standard penetration testing, including collection of representative soil samples for Unified Soil Classification System (USCS) grain size and Atterberg limits, and Shelby tube samples for analysis of physical properties including density and strength of the intermediate clay unit.

The information presented in this report will guide the completion of the Feasibility Study (FS) evaluation to address any identified impacts and protect human health and the environment. All work was completed in accordance with the NYSDEC-approved SI Work Plan for 222 Maspeth Avenue dated May 8, 2018 (AECOM, 2018).

## Site History

The area prior to development of the MGP was a mixture of tidal channels and marshland that extended to the west to approximately the current location of Vandervoort Avenue. Prior to the mid-1800s, Newtown Creek and its tributaries were used for agriculture and commerce transport. In 1854, the country’s first kerosene refinery was constructed along Newtown Creek and by 1870 over 50 petroleum refineries were located along the creek ([NYSDEC, <http://nysdecgreenpoint.com/ProjectHistory.aspx>). Kerosene was originally produced using coal, not oil, as a starting material in the distillation process (Gesner, 1865). By the 1880s the Creek and its tributaries were constructed to their current configuration. In circa 1880 to 1900, channel improvements and land side improvements supported an expansion of industrialization along the Creek and by 1900 most of Newtown Creek contained bulkheads (New York State Department of Transportation [NYSDOT], 2005). The Equity Site is located northwest of the English Kills tributary of Newtown Creek. Newtown Creek is presently a Superfund Site and impacts to the Creek are subject to



federal investigation. The Equity Site is also adjacent to and surrounded to the north by the former Greenpoint MGP.

Historical Atlas Reports for the City of Brooklyn were also reviewed from 1886 prior to MGP construction. Businesses that were in operation close to or adjacent to the Site prior to the operation of the MGP included the Lawrence Rope Works that formerly included a tar house in the location of the current Brooklyn Truck Wash property (184 Maspeth Avenue) that operated from 1886-1893 and the Bushwick Chemical Works, located at the intersection of Vandervoort Avenue and Metropolitan Avenues, that operated from 1886-1899.

The Site was historically the location of a MGP operated by The Equity Gas Works Company from 1892 until 1903 and then The Brooklyn Union Gas Company (BUG) 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.

Historical Atlas Reports for the City of Brooklyn were also reviewed during the time period when the MGP operated. Businesses that were in operation during this period included the Chapman Docks/Marvel Oil Company (1929) and the Chapman Docks/EV Crandall Putty Manufacturing Company/Hobin Hunter Feitner Lumber Company (1929-1951) located at the current 300 Maspeth Avenue parcel and the former Department of Sewers (1921-1968), Standard Rope & Twine Company (1899-1916), and the Banner Silk Dying Company (1929) all located at the current 184 Maspeth Avenue address. Chapman Docks/Marvel Oil Company, Standard Rope & Twine Company, and the Banner Silk Dying Company all likely used petroleum and the Standard Rope & Twine Company and the Banner Silk Dying Company likely used solvents and dyes in addition to petroleum.

Lastly, historical Atlas Reports for the City of Brooklyn were reviewed for the time period following MGP operation. Businesses that were in operation on the Site or in close proximity or adjacent to the Site following cessation of MGP operations included the former Fontana Transfer Station (2005) located on-Site at 254 Maspeth Avenue, the former BCF Oil storage and waste recycling facility located at 360 Maspeth Avenue, the former Sinclair Refining Company housing bulk storage of fuel oil located on the north side of Grand Street abutting English Kills, the former Great Eastern Fuel Oil Company housing bulk storage of fuels located southeast of Metropolitan Avenue abutting English Kills, The Newtown Creek Development Corporation/Salwen Paper Company, Inc. (1965-2003) located at 1 Rewe Street, Rockower-Sigawel Associates (2005) located at 1 Rewe Street, The Newtown Creek Development Corporation/Lack Carpet Company (1965-1982) located at 7-9 Rewe Street, The Chapman Docks Company/Crandall Oil & Putty Manufacturing Company (1929-1951) located at 7-9 Rewe Street and 300 Maspeth Avenue, The Chapman Docks Company/Unknown Oil Storage (1951) located at 7-9 Rewe Street and 300 Maspeth Avenue, The Lignum Chemical Works (1933) located along Vandervoort Avenue west of the Site, The Brooklyn Truck Wash (2001 to present) located at 184 Maspeth Avenue, The Royal Yarn Dying Corporation (1951-1994) located along Vandervoort Avenue west of the Site, and The Vander Dyeing & Finishing Corporation (2005) located along Vandervoort Avenue west of the Site. The dye industry at this time was a coal tar based industry, therefore, dye residues have the potential to be mistaken for MGP residues. In addition, the other historical and current properties listed above all had or have the potential to use or store petroleum, solvents, dyes, PCBs, and other unknown chemicals.

## Prior Environmental Activities

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 interim remedial measure (IRM) comprised of 23 recovery wells is currently active on the site. Work is being conducted by National Grid.

## Key Findings

The SI was conducted over a single mobilization between July 30, 2018 and August 20, 2018. The scope of work included the advancement of 11 soil borings and the visual inspection and geotechnical sampling and analysis of subsurface soils. A Community Air Monitoring Program (CAMP) was conducted in accordance with regulatory guidance during all intrusive activities. Two soil borings advanced within the former gas holder foundation beneath 222 Maspeth Avenue were converted to additional recovery wells (SB-101/RW-24 and SB-102/RW-25). Monitoring and manual removal of accumulated NAPL that is observed within these wells will be performed as part of National Grid's ongoing NAPL recovery program being performed at the Site.

The key findings of the SI work are as follows:

- Based on the visual observations, impacts, v were evident in subsurface soil at three general depth intervals beneath the 222 Maspeth Avenue parcel including 1) within fill above the meadow mat representing the former ground surface prior to development, 2) within the intermediate sand unit underlying the meadow mat and overlying the lower conductivity intermediate clay unit, with the exception of two borings (SB-109 and SB-110) which are west of where the intermediate clay unit was not observed beneath the 222 Maspeth Avenue parcel, and 3) within the lower sand unit underlying the intermediate clay and overlying the lower conductivity lower clay and/or Gardiners Clay.
- Subsurface findings collected during the SI are consistent, but further refine, the extent of impacts documented during the RI within and adjacent to suspected former MGP structures beneath the 222 Maspeth Avenue parcel.
- The vertical and horizontal extents of the visible impacts beneath the 222 Maspeth Avenue parcel have been refined and are delineated.
- The findings from this SI confirm the findings of the RI (AECOM, 2016) and show that the NAPL presence beneath the 222 Maspeth Avenue parcel is aligned with the topography of the various subsurface lower permeability units.
- The findings from this SI do not change the qualitative human health exposure assessment (QHHEA) presented in the RI (AECOM, 2016) which concluded that the principal potential exposure pathway to MGP residuals is associated with construction workers who may perform excavation work on and off the Site. The potential risk can be mitigated through the use of appropriately trained staff using a site-specific health and safety plan and following guidelines outlined in the Interim Site Management Plan (AECOM, 2012).

With the observations and data presented in this report, an evaluation of conditions within the investigation area has been performed fulfilling the requirements of the Supplemental Investigation Work Plan (AECOM, 2018). Following approval of this report by the NYSDEC and NYSDOH, an FS evaluation of remedial options will be completed and submitted for NYSDEC review.

## 1. Introduction

The former Equity Manufactured Gas Plant (MGP) was located at 222-254 Maspeth Avenue in Brooklyn, Kings County, New York (Figure 1-1). A Remedial Investigation (RI) of the former Equity MGP was completed by AECOM on behalf of National Grid, between 2009 and 2015. Results of the RI are presented in the NYSDEC-approved 2016 Remedial Investigation Report (AECOM, 2016).

The portion of the Equity Site evaluated during this SI included the 222 Maspeth Avenue parcel. While this parcel was previously investigated during the RI, the current property owner's operations (24/6 C&D waste recycling operations) during the RI phase made full access to the parcel difficult. The investigation findings outlined in this report provide additional information at the 222 Maspeth Avenue parcel in proximity to the former No. 1 relief holder area that was not previously accessible during the RI due to former site operations. In response to lesser owner activity at the 222 Maspeth Avenue parcel starting in the spring of 2018, a Supplemental Investigation (SI) Work Plan for 222 Maspeth Avenue was submitted and approved by the New York State Department of Environmental Conservation (NYSDEC) in May 2018 (AECOM, 2018).

The SI was performed in accordance with Order on Consent and Administrative Settlement #A2-0552-0606 between The Brooklyn Union Gas Company (BUG, now d/b/a National Grid NY) and the NYSDEC. The fieldwork for the SI was performed under NYSDEC oversight using procedures described in the NYSDEC-approved Work Plan (AECOM, 2018). Field work was also completed in accordance with the Remedial Investigation Work Plan, Equity Former MGP Site, Brooklyn, New York, NYSDEC Site No.: 224050, Index # A2-0552-0606 (RIWP), dated July 2009 (AECOM, 2009). This SI report outlines the results of the SI of subsurface soils beneath a portion of the former MGP located at 222 Maspeth Avenue.

### 1.1 Supplemental Investigation Objectives

The objectives of the SI were to complete an investigation of subsurface soils within the 222 Maspeth Avenue parcel in proximity to the former No. 1 relief holder to identify the presence or absence of potential MGP residuals or other non-MGP impacts in the following areas of the Site:

- within and proximate to suspected former MGP structures,
- near areas with documented MGP residuals in the subsurface above the "intermediate clay" unit and near the area where the intermediate clay unit was not observed,
- near areas with documented residuals in the subsurface above the Gardiners Clay unit; and/or
- adjacent to existing buildings and structures at the Site.

A subset of the soil borings were advanced using continuous split spoon samples with standard penetration testing, including collection of representative soil samples for Unified Soil Classification System (USCS) grain size and Atterberg limits, and Shelby tube samples for analysis of physical properties including density and strength of the intermediate clay unit.

The information presented in this report will be used to guide the completion of the Feasibility Study (FS) evaluation to address any identified impacts and protect human health and the environment. The FS will be prepared in a manner consistent with NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation.

### 1.2 Scope of Work

The scope of work for the SI, as defined in the NYSDEC-approved Work Plan, included:

- Pre-investigation coordination/meeting to facilitate implementation of the investigation
- Geophysical surveying as part of utility pre-clearance prior to borehole advancement

- Community air monitoring during subsurface drilling activities
- 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 lower clay or 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
- Surveying of all soil boring locations
- Investigation derived waste management at a National Grid approved off-site disposal facility

### 1.3 Report Organization

This SI Report is organized into five sections following this introduction.

- Section 2 describes the SI field investigation activities.
- Section 3 summarizes subsurface environmental observations and SI geotechnical results.
- Section 4 presents a summary and conclusions of the SI findings, including a summary of visible impacts.
- Section 5 presents recommendations.
- Section 6 provides a list of references cited in this report.

Tables and figures are included in sections that immediately follow the report text.

Appendices to this SI Report include the following:

- Appendix A – Soil Boring Logs
- Appendix B – Air Quality Monitoring Records
- Appendix C – Geotechnical Laboratory Results
- Appendix E – Site Photographs

## 2. Investigation Activities

This section provides a description of the activities performed during the SI and the methods used for conducting the fieldwork. Unless otherwise noted in the following sections, the procedures used were consistent with the methods and procedures described in the NYSDEC-approved Work Plan. Each field activity performed during the investigation, grouped by field task, is described in the following sections.

### 2.1 Subsurface Utility Location

Subsurface utilities were located prior to starting the subsurface investigation work. Dig Safe New York was contacted to conduct the initial location of utility lines. Following the utility mark out, each sampling location was scanned using ground penetrating radar and electromagnetic (EM) survey methods by SET Geophysics, Inc. to confirm the location of marked utilities and/or to identify other unmarked utilities. Finally, prior to advancing soil borings, each location was pre-cleared using soft dig techniques (hand augering) to a depth of 5 feet prior to borehole advancement.

### 2.2 Soil Borings and Subsurface Soil Sampling

A total of 11 soil borings were advanced by Glacier Drilling using sonic drilling methods from July 30<sup>th</sup> to August 17<sup>th</sup>, 2018. The drilling was observed by an AECOM geologist. The 11 test borings (SB-100 through SB-110) ranged in depth from 26.5 to 100 feet below ground surface (bgs). All test borings were advanced using sonic drilling methods and sampled continuously to the completion depth. Minor adjustments to boring locations based on access limitations were pre-approved with NYSDEC on-site personnel.

Continuous soil samples were collected using a disposable plastic liner bag within the sonic tooling at five foot intervals. Soil samples were screened using a properly calibrated 10.6 eV photoionization detector (PID) and were logged by the on-site geologist. A subset of the borings were completed using split spoon samples to perform standard penetration testing, a 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. At borings with no geotechnical samples, soils were logged continuously for visible and olfactory impacts. SI boring logs are included in Appendix A.

Locations of borings completed during the RI are provided on Figure 2-1. The specific boring locations for the SI (i.e., within the investigation area) are shown on Figure 2-2. Sample details including sample ID, sample date, sample collection method, rationale, and laboratory analysis are summarized on Table 2-1. Suspected former MGP structures assumed to be within and adjacent to the investigation area are shown on Figure 2-3. The results of observations made during soil boring advancement are discussed in Section 3. Geotechnical analytical results are also discussed in Section 3.

Sampling tools were decontaminated between sample intervals and between borehole locations in accordance with field procedures in the RIWP (AECOM, 2009). Upon completion, borings were backfilled with grout, tremied to the surface. Soil cuttings were placed in an on-site roll-off, labeled, and later disposed at a National Grid approved off-site facility. Following boring activities each location was surveyed as described in Section 2.5.

### 2.3 Community Air Monitoring

Community air monitoring was performed to provide real-time measurements of total volatile organic compounds (VOCs) and particulate (airborne dust) concentrations in air between the work zone and the mall area on the eastern end of the building occupied by various businesses. The procedures followed methods described in the Community Air Monitoring Program (CAMP) included in the Work Plan. Additionally, site personnel monitored the perimeter of the work zone to determine if any odors were being

produced as a result of the subsurface sampling activities. The program was designed to provide air monitoring for releases of airborne constituents potentially resulting from the investigation activities.

Total VOCs and particulates were monitored with a PID and dust meter, respectively, located within and between the work area and mall area on the eastern end of the building occupied by various businesses. The VOC and particulate levels at each location were recorded on field forms every 15 minutes, and are included in Appendix B. The PIDs and dust meters were also set to log information continuously throughout the work day. The specific action levels for VOCs and particulates are provided in the CAMP.

During the 16 days of intrusive field work, no exceedances of CAMP action levels were observed that were associated with AECOM's field activities and therefore no response actions were necessary. Periodic dust exceedances were observed in the downwind monitoring station during four days of the work; however, these exceedances were not sustained and were attributed to dusty site conditions and Cooper Tank activities (forklift traffic, welding and metal cutting). A summary of the CAMP data is provided in Appendix B.

## 2.4 Analytical Program

The geotechnical laboratory samples for each media and the analyses performed are summarized on Table 2-1. Geotechnical laboratory analysis of soil samples collected during the SI was completed by TerraSense, LLC of Totowa, New Jersey. Laboratory results are provided in Appendix C.

## 2.5 Survey

Each investigation location was surveyed by Geod Consultants, Inc. of New Jersey following completion of the RI Addendum. The survey included reference points with elevations that were tied to the NAVD88 (GPS derived) for vertical elevations, to the nearest 0.01 foot. These reference points were used to determine the ground surface elevations for each soil boring location. The datum used for the horizontal measurements obtained during the survey was the NAD 83-CORS (NYE 3101) to the nearest 0.01 foot. A summary of coordinates and elevations for the RI locations is provided in Table 2-2.

## 2.6 Investigation-Derived Waste Management (IDW)

Three types of IDW were generated during the SI activities including:

- Soil
  - soil from the soil borings
- Water
  - decontamination wash-water and recovery well development water
- PPE/poly/rags
  - personal protective equipment (PPE)
  - miscellaneous sampling equipment and plastic sheeting.

All IDW generated was placed in drums and properly labeled. The soil and water were sampled for waste profiling purposes. All IDW was transported off site under manifest to a permitted disposal facility for proper disposal.



### 3. Subsurface Environmental Observations and SI Results

This section presents a summary of subsurface field observations and the results of the geotechnical laboratory analyses performed for the SI samples. A discussion of the results of the geotechnical analyses is provided in the section following the description of observed subsurface conditions.

#### 3.1 Subsurface Visible Impacts

The observations of visible and olfactory impacts related to the presence of potential residual materials in the subsurface are summarized on Table 3-1. Data from this table and from data collected historically and during the RI were used to illustrate the distribution of visible and olfactory impacts noted during the RI and SI as shown on the cross-sections (Figures 3-1 through 3-4) and in plan-view above the various low conductivity soil units on Figures 3-5 through 3-8. The visible impacts were grouped into color categories for illustration on the geologic cross sections. The color coded visible impact areas represent where impacts were observed in individual borings at specific depths. Zones of non-aqueous phase liquid (NAPL) saturation represent areas where the entirety of the pore space of the soil matrix appears to be filled with NAPL. In summary, the plan view figures and the cross sections provide a generalization of the subsurface visible impacts observed in the SI Investigation Area.

Visible impacts were observed during the SI in the subsurface at the following depth intervals:

- Within fill above the meadow mat representing the former ground surface prior to development, with the exception of SB-108 and SB-110 (Figure 2-2, Figure 3-1, and Figure 3-5). Visible impacts within the fill and above the meadow mat are also illustrated on the geologic cross sections, including A-A' (Figure 3-2), B-B' (Figure 3-3), and H-H' (Figure 3-4) and the geologic boring logs (Appendix A).
- Within the intermediate sand unit underlying the meadow mat and overlying the lower conductivity intermediate clay unit, with the exception of the borings SB-109 and SB-110 which are west of where the intermediate clay unit was not observed (Figure 2-2, Figure 3-1, and Figure 3-6). Visible impacts within the intermediate sand unit and above the intermediate clay unit are also illustrated on the geologic cross sections, including A-A' (Figure 3-2), B-B' (Figure 3-3), and H-H' (Figure 3-4) and the geologic boring logs (Appendix A).
- Within the lower sand unit underlying the intermediate clay and overlying the lower conductivity lower clay and or Gardiners Clay at one of the three deep borings advanced to these depth intervals (SB-109 (Figure 2-2, Figure 3-1, and Figure 3-7). At borings SB-104 and SB-110, no visible impacts were noted at these depth intervals. Visible impacts within the lower sands and above the lower clay and/or Gardiners Clay unit are also illustrated on the geologic cross sections, including A-A' (Figure 3-2), B-B' (Figure 3-3), and H-H' (Figure 3-4) and the geologic boring logs (Appendix A). Please note that cross sections G through G from the 2016 RI (AECOM, 2016) were not updated as part of the SI work.

These findings are consistent with findings developed during the RI and presented in the RI Report (AECOM, 2016).

Historical non-MGP businesses also operated in areas adjacent to the Site prior to, during, and after the timeframe of MGP operation. All of these businesses used or produced waste similar to those impacts described above, including:

- **Prior to MGP Operation:** Prior to the mid-1800s, Newtown Creek and its tributaries were used for agriculture and commerce transport. In 1854, the country's first kerosene refinery was constructed along Newtown Creek and by 1870 over 50 petroleum refineries were located along the creek (NYSDEC, <http://nysdecgreenpoint.com/ProjectHistory.aspx>). Kerosene was originally produced using coal, not oil, as a starting material in the distillation process (Gesner, 1865). By the 1880s Newtown Creek and its tributaries were constructed to their current configuration. In circa 1880 to 1900, channel improvements and land side improvements supported an expansion of

industrialization along the Creek and by 1900 most of Newtown Creek contained bulkheads (NYSDOT, 2005). Businesses that were in operation close to or adjacent to the Site prior to the operation of the MGP included the Lawrence Rope Works that operated from 1886 to 1893 and formerly included a tar house in the location of the current Brooklyn Truck Wash property (184 Maspeth Avenue) and the Bushwick Chemical Works, located at the intersection of Vandervoort Avenue and Metropolitan Avenues, that operated from 1886-1899.

- **During MGP Operation:** As outlined in the RI (AECOM, 2016), businesses that were in operation close to or adjacent to the Site during the operation of the MGP included the Chapman Docks/Marvel Oil Company (1929) located at the current 300 Maspeth Avenue parcel and the former Department of Sewers (1921-1968), Standard Rope & Twine Company (1899-1916), and the Banner Silk Dying Company (1929) all located at the current 184 Maspeth Avenue address. Chapman Docks/Marvel Oil Company, Standard Rope & Twine Company, and the Banner Silk Dying Company all likely used petroleum and the Standard Rope & Twine Company and the Banner Silk Dying Company likely used solvents and dyes in addition to petroleum.
- **Following MGP Operation:** Businesses that were in operation on the Site or in close proximity or adjacent to the Site following cessation of MGP operations included the former Fontana Transfer Station (2005) located on-Site at 254 Maspeth Avenue, the former BCF Oil storage and waste recycling facility located at 360 Maspeth Avenue, the former BCF Oil storage and waste recycling facility located at 360 Maspeth Avenue, the former Sinclair Refining Company housing bulk storage of fuel oil located on the north side of Grand Street abutting English Kills, the former Great Eastern Fuel Oil Company housing bulk storage of fuels located southeast of Metropolitan Avenue abutting English Kills, the Newtown Creek Development Corporation/Salwen Paper Company, Inc. (1965-2003) located at 1 Rewe Street, Rockower-Sigawel Associates (2005) located at 1 Rewe Street, The Newtown Creek Development Corporation/Lack Carpet Company (1965-1982) located at 7-9 Rewe Street, The Chapman Docks Company/Crandall Oil & Putty Manufacturing Company (1929-1951) located at 7-9 Rewe Street and 300 Maspeth Avenue, The Chapman Docks Company/Unknown Oil Storage (1951) located at 7-9 Rewe Street and 300 Maspeth Avenue, The Lignum Chemical Works (1933) located along Vandervoort Avenue west of the Site, The Brooklyn Truck Wash (2001 to present) located at 184 Maspeth Avenue, The Royal Yarn Dying Corporation (1951-1994) located along Vandervoort Avenue west of the Site, and The Vander Dyeing & Finishing Corporation (2005) located along Vandervoort Avenue west of the Site (AECOM, 2016). These properties all had or have the potential to use or store petroleum, solvents, dyes, polychlorinated biphenyls (PCBs), and other unknown chemicals.

## 3.2 Soil Geotechnical Analytical Results

Continuous standard penetration test (SPT) split-spoon soil samples were collected per ASTM D1586 at borings SB-100, SB-103, SB-106, SB-109, and SB-110. Core Barrel Soil samples were collected at 5-foot intervals per ASTM D4823 at borings SB-101, SB-102, SB-104, SB-105, SB-107, and SB-108. Samples were logged by an AECOM engineer in accordance with ASTM D2488 – Standard Practice for Description and Identification of Soils. The boring logs are included as Appendix A.

Five soil samples collected during the subsurface investigation were submitted for grain size analysis to provide subsurface information for the fill and sand layers (Table 2-1). These samples were taken from borings SB-103 (11-13 feet below ground surface [ft bgs]), SB-106 (33-35 ft bgs), SB-109 (11-13 and 59-61 ft bgs), and SB-110 (67-69 ft bgs). Two Shelby tube samples were tested for Atterberg Limits to provide subsurface information for the intermediate clay layer. These samples were taken from borings SB-100 (38.1 ft bgs) and SB-103 (40.8 ft bgs). Two samples were also analyzed for undrained shear strength by unconsolidated undrained triaxial testing (ASTM D2850). The soil samples were tested by TerraSense, LLC in Totowa, New Jersey. The geotechnical laboratory test report is provided as Appendix C.

Subsurface conditions encountered during the investigation include the following:



- Fill was observed for the ground surface to approximately 19 feet bgs. The fill consisted of very loose to medium dense silty sand and clayey sand (USCS designations SM and SC).
- An organic soil layer two to seven feet thick was observed below the fill. The soil consisted of very soft to soft peat and organic clay (USCS designation OL\OH). This unit was identified as the Meadow Mat in the RI (AECOM, 2016).
- A shallow sand layer approximately 8 feet thick was observed below the meadow mat. The sand ranged from loose to dense with USCS designations of SP and SW.
- In geotechnical borings SB 100, 103 and 106 a clay layer approximately 10 feet thick was observed below the sand. This unit was identified as the Intermediate Clay in the RI (AECOM, 2016). The clay was generally medium stiff to stiff and had USCS designations ranging from CH to CL. The clay had an undrained shear strength ranging from 0.59 to 0.7 tons per square foot (TFS) based on laboratory testing. The Intermediate Clay unit was not encountered in SB-109 and 110.
- A sand layer approximately 40 feet thick was observed below the intermediate clay (the sand layer was continuous from the meadow mat in SB-109 and 110). The sand was generally medium dense to dense and had USCS designations of SM, SP, and SW. Some silt (ML) and gravely sand (GW) was also observed in this interval.
- In boring SB109 and 110, a stiff clay (CL) was observed below the sand. This clay unit was identified as either the Lower Clay Lens in the RI (where encountered) or the Gardiners Clay.

Bedrock was not encountered at any of the eleven test boring locations completed during the SI. Groundwater was typically observed at approximately 8 feet below ground at all borings outside former MGP structures. It should be noted that groundwater levels may fluctuate with precipitation, season, construction activities, run-off controls, and other factors. As a result, water levels may vary from those observed during this SI.

## 4. Summary and Conclusions

This section summarizes the Supplemental Investigation findings for the Site. An overview of the nature and extent of impacts and potential source areas are identified.

### 4.1 Visible Impacts

Visible impacts were observed during the SI in the subsurface at the following depth intervals:

- Within fill above the meadow mat representing the former ground surface prior to development, with the exception of two borings (SB-108 and SB-110) where no visible impacts were noted at this depth interval.
- Within the intermediate sand unit underlying the meadow mat and overlying the lower conductivity intermediate clay unit, with the exception of the borings SB-109 and SB-110 which are west of where the intermediate clay unit pinches out.
- Within the lower sand unit underlying the intermediate clay and overlying the lower conductivity lower clay and or Gardiners Clay at one of the three deep borings (SB-109) advanced below the intermediate clay unit. At borings SB-104 and SB-110, no visible impacts were noted at depth below the intermediate clay unit.

The horizontal and vertical extent of impacts observed during the SI activities has been further refined and delineated using the combined SI and RI datasets.

### 4.2 Soil Geotechnical Analytical Results

Geotechnical analysis of representative soils from the fill, intermediate sand, and intermediate clay units were collected during the SI, including continuous SPT split-spoon soil samples per ASTM D1586 at borings SB-100, SB-103, SB-106, SB-109, and SB-110. In addition, all subsurface soil samples were logged by an AECOM engineer in accordance with ASTM D2488 – Standard Practice for Description and Identification of Soils (Appendix A).

Five soil samples were also submitted for grain size analysis to provide subsurface information for the fill and sand layers (Table 2-1). These samples were taken from borings SB-103 (11-13 ft bgs), SB-106 (33-35 ft bgs), SB-109 (11-13 and 59-61 ft bgs), and SB-110 (67-69 ft bgs). Lastly, two Shelby tube samples were tested for Atterberg Limits and for undrained shear strength by unconsolidated undrained triaxial testing (ASTM D2850) to provide subsurface information for the intermediate clay layer. These samples were taken from borings SB-100 (38.1 ft bgs) and SB-103 (40.8 ft bgs). The soil samples were tested by TerraSense, LLC in Totowa, New Jersey (Appendix C).

Subsurface conditions encountered during the investigation include the following:

- Fill was observed from the ground surface to approximately 19 feet bgs. The fill consisted of very loose to medium dense silty sand and clayey sand (USCS designations SM and SC).
- An organic soil layer two to seven feet thick was observed below the fill. The soil consisted of very soft to soft peat and organic clay (USCS designation OL/OH). This unit was identified as the Meadow Mat in the RI (AECOM, 2016).
- A shallow sand layer approximately 8 feet thick was observed below the meadow mat. The sand ranged from loose to dense with USCS designations of SP and SW.
- In geotechnical borings SB 100, 103 and 106 a clay layer approximately 10 feet thick was observed below the sand. This unit was identified as the Intermediate Clay in the RI (AECOM, 2016). The clay was generally medium stiff to stiff and had USCS designations ranging from CH to CL. The clay had an undrained shear strength ranging from 0.59 to 0.7 TFS based on laboratory testing. The Intermediate Clay unit was not encountered in SB-109 and 110.

- A sand layer approximately 40 feet thick was observed below the intermediate clay (the sand layer was continuous from the meadow mat in SB-109 and 110). The sand was generally medium dense to dense and had USCS designations of SM, SP, and SW. Some silt (ML) and gravelly sand (GW) was also observed in this interval.
- In boring SB109 and 110, a stiff clay (CL) was observed below the sand. This clay unit was identified as either the Lower Clay Lens in the RI (where encountered) or the Gardiners Clay.

Bedrock was not encountered at any of the eleven test boring locations completed during the SI. Groundwater was typically observed at approximately 8 feet below ground at all borings outside of the suspected former MGP structures. It should be noted that groundwater levels may fluctuate with precipitation, season, construction activities, run-off controls, and other factors. As a result, water levels may vary from those observed during this SI.

### 4.3 Qualitative Human Health Exposure Assessment

Findings from the SI work recently completed do not change the Qualitative Human Health Exposure Assessment (QHEA) conclusions presented in the RI (AECOM, 2016). Complete exposure pathways were not identified for Site and off-Site commercial/ industrial workers, visitors and trespassers.

Current site and off-site construction workers who perform excavation work on or adjacent to the Site may have the potential for exposure to volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, and/or pesticides in subsurface soil and groundwater if subsurface excavation work is performed adjacent to or at the Site. Only properly trained field personnel should complete the subsurface work in potentially impacted areas under the requirements of a site-specific health and safety plan and the current Interim Site Management Plan [ISMP] (AECOM, 2012).

### 4.4 Fish and Wildlife Resource Impacts Analysis (FWRIA)

An evaluation of the need for an FWRIA was completed as part of the RI (AECOM, 2016). Conditions that would warrant a revision of the analysis performed during the RI (AECOM, 2016) were not observed during SI activities, therefore, a FWRIA was not performed as part of this SI.

### 4.5 Conclusions

The objectives of the SI Work Plan were completed and the nature and extent of subsurface impacts within the former gas holder and adjacent to suspected former MGP structures on the 222 Maspeth Avenue parcel have been further refined.

In response to NAPL impacts noted within the former No. 1 relief holder foundation, two borings (SB-101 and SB-102) were converted to 6-inch NAPL recovery wells (RW-24 and RW-25, respectively). These wells will be incorporated into the existing NAPL recovery program, including periodic gauging and removal of accumulated NAPL within the recovery wells. Other boring locations containing subsurface residuals are covered by the developed property or near existing NAPL recovery wells and do not present an open exposure pathway as the residuals are isolated from human contact.

## 5. Recommendations

Following approval of this report by the NYSDEC and NYSDOH, an FS evaluation of remedial options will be finalized and submitted to the agency for review.

## 6. References

AECOM, 2009. Remedial Investigation Work Plan, Equity Former MGP Site, Brooklyn, New York, NYSDEC Site No.: 224046, Index # A2-0552-0606, July 2009.

AECOM, Inc., 2012. Interim Site Management Plan, Equity Works Former Manufactured Gas Plant Site, Brooklyn, New York, NYSDEC Site No.: 224050, Order on Consent Index #: A2-0552-0606. November 28, 2012.

AECOM, 2016. Remedial Investigation Report, Former Equity Works MGP Site, 222-254 Maspeth Avenue, Brooklyn Kings County, NY. NYSDEC Site No.: 224050, Order of Consent Index #: A2-0552-0606, March 2016.

AECOM, 2018. Revised Supplemental Investigation Work Plan – 222 Maspeth Avenue Property, Former Equity Works MGP Site, Brooklyn, NY. NYSDEC Site No. 224050, May 2018.

Gesner, G.W. 1865. A practical treatise on coal, petroleum, and other distilled oils, second edition.

New York State Department of Transportation (NYSDOT), 2005, Newtown Creek Navigation Analysis, Kosciuszko Bridge Project, September 22, 2005. Order on Consent and Administrative Settlement, Index # A2-0552-0606, March 2007, modified in August 2007.

## Tables

**Table 2-1**  
**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, Shelby Tube	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	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
  2. ID - identification
  3. ft - feet
  4. EST. - Estimated
  5. bgs - Below ground surface
  6. TBD - To be determined based on field findings
  7. SPT - Standard Penetration Testing, ASTM D1586 (continuous field data, no laboratory analysis required)
  8. USCS - Unified Soil Classification System (ASTM 2487) with grain size (ASTM D6913) and Atterberg limits (ASTM D4318) on fraction passing #40 sieve.
  9. Shelby Tube - ASTM 1587 from intermediate clay for unconsolidated undrained strength and Atterberg Limits.
  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).

**Table 2-2**  
**Summary of Soil Boring Location, Coordinates, and Elevations**  
**Supplemental Investigation**  
**Former Equity Works MGP Site, Brooklyn, New York**

<b>Point</b>	<b>Northing</b>	<b>Easting</b>	<b>Description</b>	<b>Ground</b>	<b>Rim</b>	<b>PVC</b>
1116	686588.05	649012.77	MW SB101 RW24	13.44	13.44	12.80
1118	686554.14	649028.02	MW SB102 RW25	13.04	13.04	12.55
1119	686552.09	649028.99	SB 102	12.96		
1120	686534.03	649040.12	SB 109	13.14		
1121	686519.82	649079.10	SB 108	13.44		
1122	686624.89	648973.58	SB 110	13.42		
1123	686640.76	649082.10	SB 103	12.95		
1124	686596.06	649127.11	SB 105	13.01		
1125	686567.33	649142.63	SB 106	12.83		
1126	686643.13	649003.85	SB 100	13.78		
1127	686545.87	649124.65	SB 107	12.54		
1128	686574.67	649074.05	SB 104	12.48		

# Project No: 2893  
# Client: AECOM  
# Location: Brooklyn, NY

# Horizontal Datum: NAD 83-CORS (NYE 3101)  
# Vertical Datum: NAVD 88 (GPS Derived)  
# Units: U.S. Survey Feet



**Table 3-1  
Summary of Supplemental Investigation Visible and Olfactory Impacts  
Former Equity Works MGP Site  
Brooklyn, New York**

Boring ID	Property (Address)	Location (On/Off-Site)	Installed By	Completion Date	Ground Surface Elevation NAVD88	Top of impact (ft bgs)	Bottom of Impact (ft bgs)	Impact Code	Impacts - original
SB-100	222 Maspeth Ave	On-Site	National Grid (AECOM)	8/17/2018		0	8.5	None	
						8.5	9	Moderate naphthalene-like odor	
						9	11	None	
						11	12	Sheen	
						12	17	Light NAPL coating	
						17	17.5	Strong naphthalene-like odor	
						17.5	19	Heavy NAPL coating	
						19	21	Strong naphthalene-like odor	
						21	27	None	
						27	29	NAPL stained	
						29	32	Heavy NAPL coating	
						32	33	NAPL stained	
						33	34.25	Light NAPL coating	
						34.25	34.5	NAPL saturated	
	34.5	35	Slight naphthalene-like odor						
	35	39	None						
SB-101 (RW-24)	222 Maspeth Ave	On-Site	National Grid (AECOM)	8/14/2018		0	5	Strong naphthalene-like odor	
						5	20	Heavy NAPL coating	
						20	26.75	Saturated with black, viscous NAPL	
SB-102 (RW-25)	222 Maspeth Ave	On-Site	National Grid (AECOM)	8/13/2018		0	5	None	
						5	7.5	Strong naphthalene-like odor	
						7.5	8	Pockets of NAPL saturation	
						8	20	Heavy NAPL coating	
						20	26.5	Saturated with black, viscous NAPL	
SB-103	222 Maspeth Ave	On-Site	National Grid (AECOM)	8/10/2018		0	9	None	
						9	11	Strong naphthalene-like odor	
						11	13	Sheen, strong naphthalene-like odor	
						13	19	None	
						19	21	Sheen, strong naphthalene-like odor	
						21	27	None	
						27	32	Sheen, slight naphthalene-like odor	
						32	32.5	NAPL stained	
						32.5	35	Moderate naphthalene-like odor	
						35	36	Light NAPL coating	
						36	41	None	
SB-104	222 Maspeth Ave	On-Site	National Grid (AECOM)	8/6/2018		0	5	None	
						5	5.5	Strong naphthalene-like odor	
						5.5	30	None	
						30	32	NAPL saturated	
						32	37	Strong naphthalene-like odor	
						37	39	Heavy NAPL coating	
						39	50	None	
						50	60	Slight naphthalene-like odor	
						60	80	None	
						80	85	Moderate naphthalene-like odor	
						85	86.5	NAPL stained	
						86.5	89	Slight naphthalene-like odor	
						89	100	None	
SB-105	222 Maspeth Ave	On-Site	National Grid (AECOM)	7/30/2018		0	8.5	None	
						8.5	9	Sheen	
						9	12	Strong naphthalene-like odor	
						12	13.5	Sheen	
						13.5	14	None	
						14	15	Strong naphthalene-like odor	
						15	15.5	None	
						15.5	18	Streaks of NAPL coating	
						18	20	Strong naphthalene-like odor	
						20	30	Heavy NAPL coating	
						30	35	Strong naphthalene-like odor	
						35	36.5	Heavy NAPL coating	
						36.5	40	Moderate naphthalene-like odor	
						40	45	None	
					SB-106	222 Maspeth Ave	On-Site	National Grid (AECOM)	8/1/2018
	9	11	Moderate naphthalene-like odor						
	11	17	Sheen, strong naphthalene-like odor						
	17	19	Heavy NAPL coating						
	19	23	Strong naphthalene-like odor						
	23	24.5	None						
	24.5	25	Moderate naphthalene-like odor						
	25	28	Layers of light NAPL coating						
	28	33	Strong naphthalene-like odor						
	33	37	None						
	37	37.5	Heavy NAPL coating						
	37.5	42	Moderate naphthalene-like odor						
	42	44	Light NAPL coating						
	44	45	Slight naphthalene-like odor						
	45	47	None						









**Table 3-1  
Summary of Supplemental Investigation Visible and Olfactory Impacts  
Former Equity Works MGP Site  
Brooklyn, New York**

Boring ID	Property (Address)	Location (On/Off-Site)	Installed By	Completion Date	Ground Surface Elevation NAVD88	Top of impact (ft bgs)	Bottom of Impact (ft bgs)	Impact Code	Impacts - original	
SB-107	222 Maspeth Ave	On-Site	National Grid (AECOM)	7/31/2018		0	5	None		
						5	9	Slight heavy petroleum odor		
						9	11	None		
						11	15	Light NAPL coating		
						15	25.5	None		
						25.5	30	Layers of NAPL staining		
						30	33	Heavy NAPL coating		
						33	37	NAPL stained		
						37	39	3" layer of NAPL coating		
SB-108	222 Maspeth Ave	On-Site	National Grid (AECOM)	8/2/2018		39	50	None		
						0	26.5	None		
						26.5	27	Moderate naphthalene-like odor		
						27	30	Light NAPL coating		
						30	33	NAPL stained		
						33	35	NAPL-coated cobble		
						35	40	None		
						0	19	None		
						19	21	Moderate naphthalene-like odor		
SB-109	222 Maspeth Ave	On-Site	National Grid (AECOM)	8/9/2018		21	26	None		
						26	27	Light NAPL coating		
						27	35	NAPL stained		
						35	37	Heavy NAPL coating		
						37	39	NAPL stained		
						39	70	None		
						70	71	Heavy NAPL coating		
						71	73	20-30 2mm blebs of NAPL in spoon		
						73	83	None		
						83	85	Heavy NAPL coating		
						85	91	None		
SB-110	222 Maspeth Ave	On-Site	National Grid (AECOM)	8/16/2018		0	4	Slight naphthalene-like odor		
						4	10	None		
						10	11	Strong naphthalene-like odor		
						11	13	None		
						13	16.75	Strong naphthalene-like odor		
						16.75	25	None		
						25	29	Slight naphthalene-like odor		
						29	31	None		
						31	35	Strong naphthalene-like odor		
						35	39	Heavy NAPL coating		
						39	85.25	None		
TP-1	252 Maspeth Ave	On-Site	National Grid (AECOM)	10/8/2009		10.45		None		
						10.45	7	10	Strong naphthalene-like odor	
						10.45	10	12	None	
						10.45	12	13.9	Mild to trace naphthalene-like odor	
TP-2	254 Maspeth Ave	On-Site	National Grid (AECOM)	10/6/2009		12.51	0	1	Strong naphthalene-like odor, 1x1' area of solidified NAPL in the north corner	
						12.51	1	4	Pockets (0.25x0.25' to 2x3') of viscous NAPL in north corner, strong naphthalene-like odor	
						12.51	4	6	Pocket (2x2') of solidified NAPL in north corner, strong naphthalene-like odor	
						12.51	6	8	None	
						12.51	8	8.5	Some oil on the water surface, yellow, moderate fuel oil-like odor, concrete slab	
TP-2B	254 Maspeth Ave	On-Site	National Grid (AECOM)	9/9/2011		12.50	0	2.85	None	
						12.50	2.85	3	Few hardened NAPL balls on the southern wall	
						12.50	3	4	None	
						12.50	4	4.5	Spots of NAPL	
TP-2C	254 Maspeth Ave	On-Site	National Grid (AECOM)	9/9/2011		12.50	4.5	7.5	None	
						12.50	0	2.85	None	
						12.50	4.5	7.5	Very slight sheen on ground water	
TP-3	254 Maspeth Ave	On-Site	National Grid (AECOM)	10/7/2009		13.12	0	7	None	
						13.12	7	7.5	Trace odor (petroleum)	
						13.00	0	2	None	
TP-4	254 Maspeth Ave	On-Site	National Grid (AECOM)	9/9/2011		13.00	2	4	Few hardened NAPL pieces	
						13.00	4	6.9	None	
						13.00			None	
						13.00	6.9	7.25	Hydrocarbon-like odor (diesel-like), oil-like material in soil and on groundwater	

Notes:

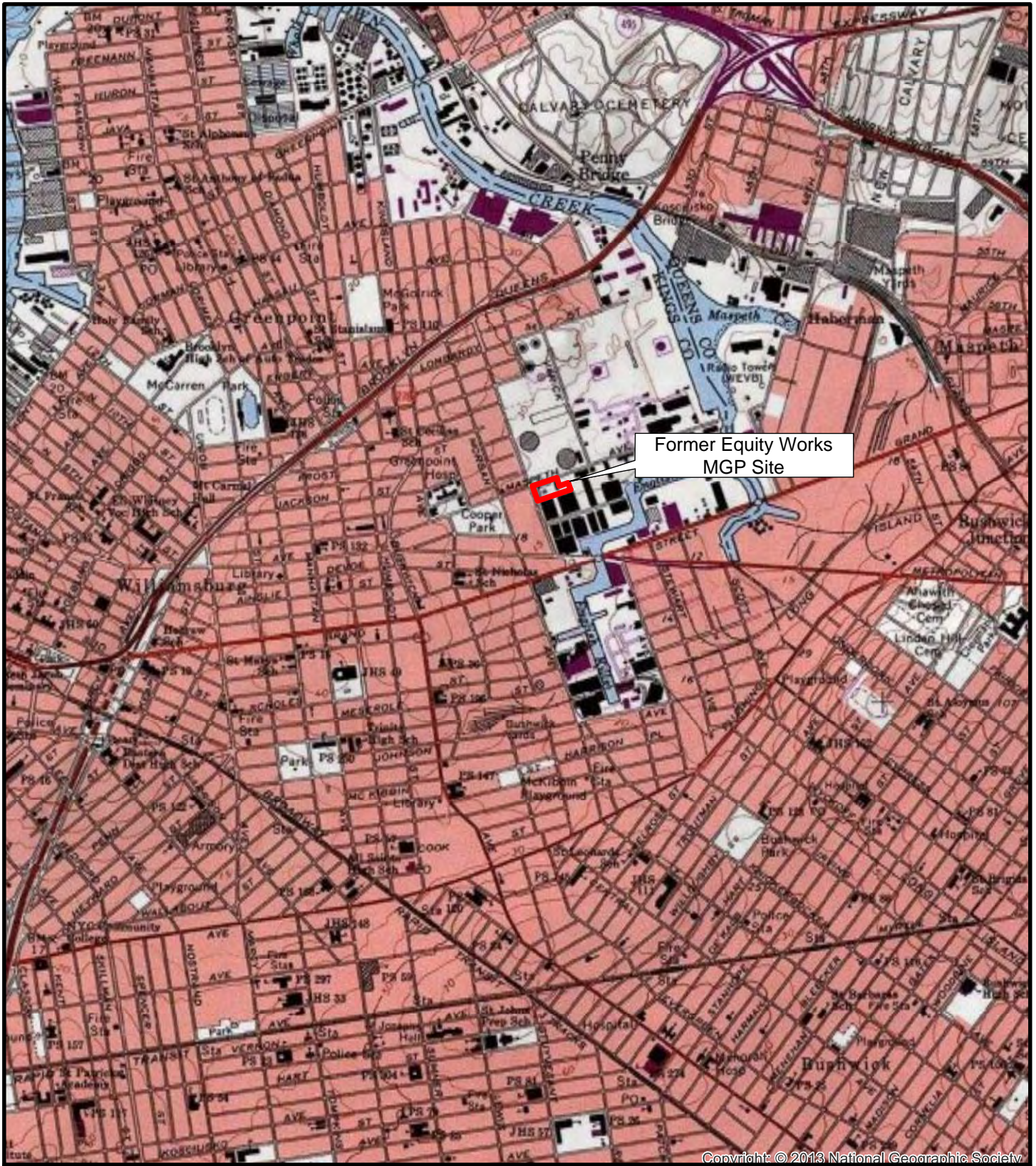
mm = millimeter  
 (") - inches  
 (') - feet  
 NR - No Recovery  
 ND - Not Documented  
 ft bgs - feet below ground surface  
 NAPL - non-aqueous phase liquid  
 NAVD 88 - North American Vertical Datum of 1988  
 Ground Surface Elevations in italics are estimated based on neighboring points.

**Impact Code Key**

	R	NAPL Saturated
	P	Coated Material, Lenses
	O	Blebs, Globbs, Sheen
	Y	Staining, odor
	B	Hardened NAPL
	BI	Petroleum Impacts, Saturation and Sheen
	LB	Petroleum Impacts, Staining and odor
	G	No Observed Impacts

## Figures





Former Equity Works  
MGP Site

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W E  
S

# AECOM

AECOM Environment  
125 Broad Street  
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www.aecom.com

National Grid  
Former Equity Works MGP Site, Brooklyn NY

Data Source: USGS Topographic Quadrangle - Brooklyn, 2009

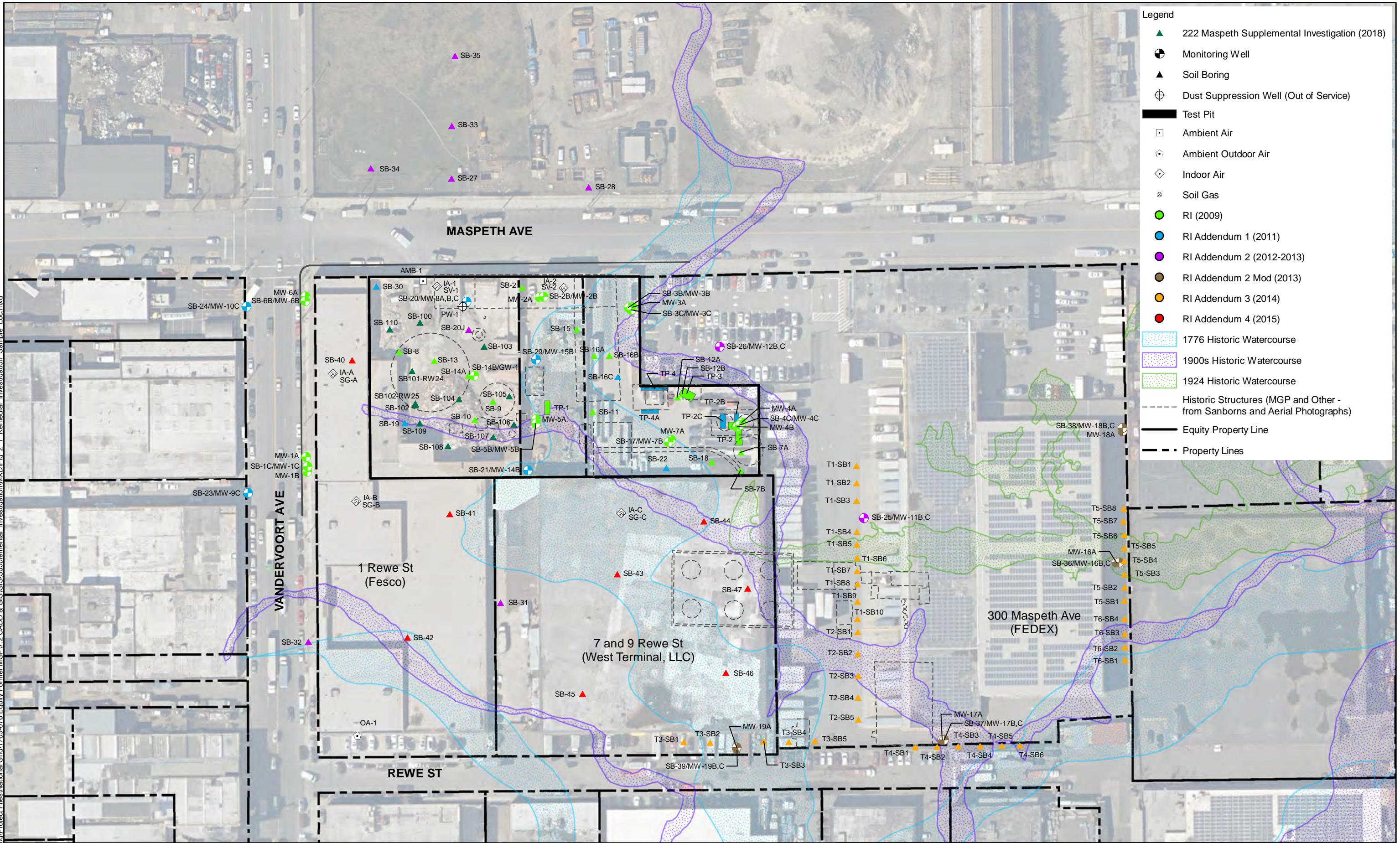
Scale:	Date:	Project Number:
1"=2000'	December 2013	60137362

## Site Location Map

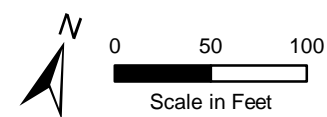
Figure 1-1



Path: P:\Jobs\Rem\_Enq\Project Files\National Grid\1765-076 Equity Former MGP\7.2 CADD & GIS\GIS\Supplemental\_ Investigation\MXD\Fig. 2.1 Remedial Investigation Sample Loc.mxd



- Legend**
- ▲ 222 Maspeth Supplemental Investigation (2018)
  - Monitoring Well
  - ▲ Soil Boring
  - ⊕ Dust Suppression Well (Out of Service)
  - Test Pit
  - Ambient Air
  - ◇ Ambient Outdoor Air
  - ◇ Indoor Air
  - ⊗ Soil Gas
  - RI (2009)
  - RI Addendum 1 (2011)
  - RI Addendum 2 (2012-2013)
  - RI Addendum 2 Mod (2013)
  - RI Addendum 3 (2014)
  - RI Addendum 4 (2015)
  - ▨ 1776 Historic Watercourse
  - ▨ 1900s Historic Watercourse
  - ▨ 1924 Historic Watercourse
  - - - Historic Structures (MGP and Other - from Sanborns and Aerial Photographs)
  - Equity Property Line
  - - - Property Lines



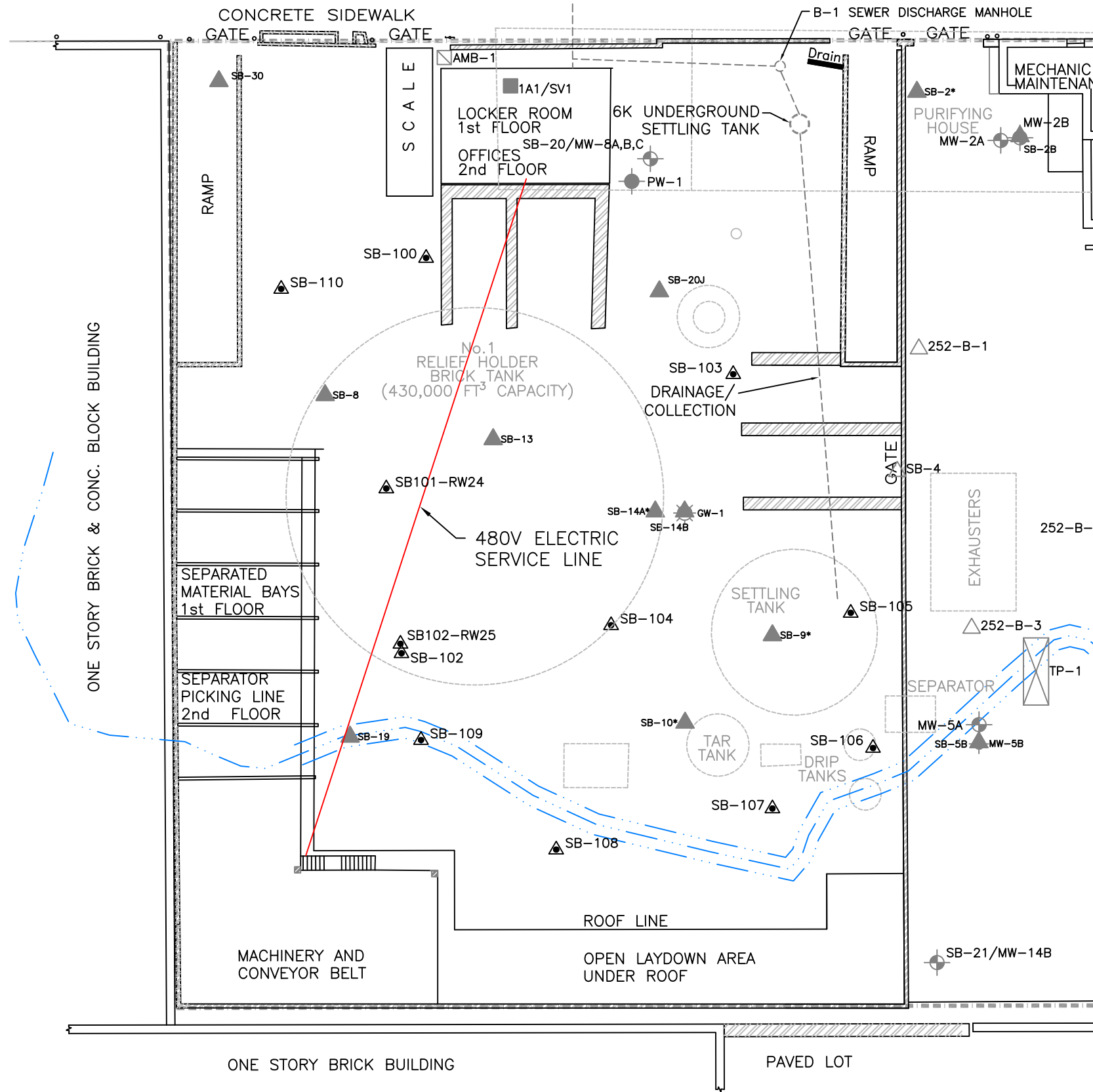
NATIONAL GRID  
FORMER EQUITY WORKS MGP SITE  
BROOKLYN, NY  
60137362.400

DATE: 10/29/2018 DRWN: JB

FIGURE 2-1  
REMEDIAL INVESTIGATION  
SAMPLE LOCATIONS



File: P:\Jobs\Rem\_Eng\Project Files\National Grid\1765-076 Equity Former MGP\7.2 CAD & GIS\2018 Supplemental\_Investigation\_Loc.dwg Layout: FIG 2-2 SI User: bourdeauj Plotted: Oct 29, 2018 - 12:37pm



**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:**

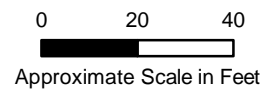
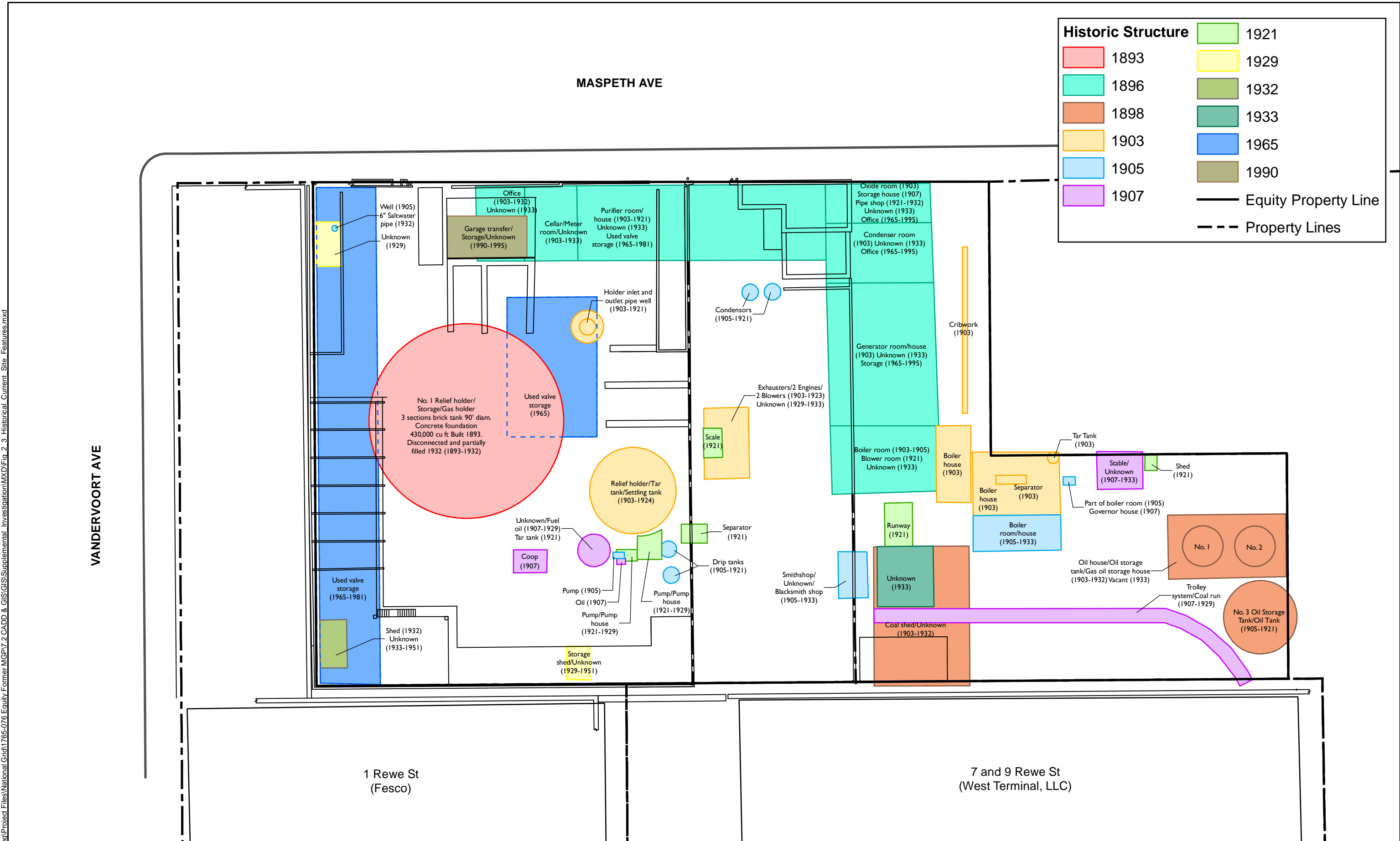
	SITE BOUNDARY
	ROADWAY EASEMENT
	CURB
	BUILDING WALL
	CONCRETE WALL
	FENCE
	WATER UTILITY WITH ACCESS WAY
	WATER UTILITY VALVE
	HYDRANT
	UNDERGROUND ELECTRIC UTILITY VAULT
	60" SEWER UTILITY WITH ACCESS WAY
	12" SEWER UTILITY WITH ACCESS WAY
	BOLLARDS
	ELECTRIC UTILITY POLE
	RI MONITORING WELL
	RI SOIL 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
	SUPPLEMENTAL INVESTIGATION LOCATION

**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.) OFFICE BUILDING AND SCALE ON 222 MASPETH AVE. ADJUSTED FROM MONTRÖSE SURVEY BASED ON FIELD OBSERVATIONS.  
 \* LOCATIONS BASED ON FIELD TIE-INS BY AECOM.



NATIONAL GRID EQUITY FORMER MGP SITE, BROOKLYN NY SUPPLEMENTAL INVESTIGATION 60137362.350		SUPPLEMENTAL INVESTIGATION LOCATIONS 222 MASPETH AVE. FIGURE 2-2
DATE: 10/29/2018	DRWN: JB	

Path: P:\Jobs\Rem\_Eng\Project\_Files\National Grid\1765-076 Equity Former MGP\7.2 CADD & GIS\GIS\Supplemental\_Investigation\MXD\Fig. 2.3 Historical\_Current\_Site\_Features.mxd



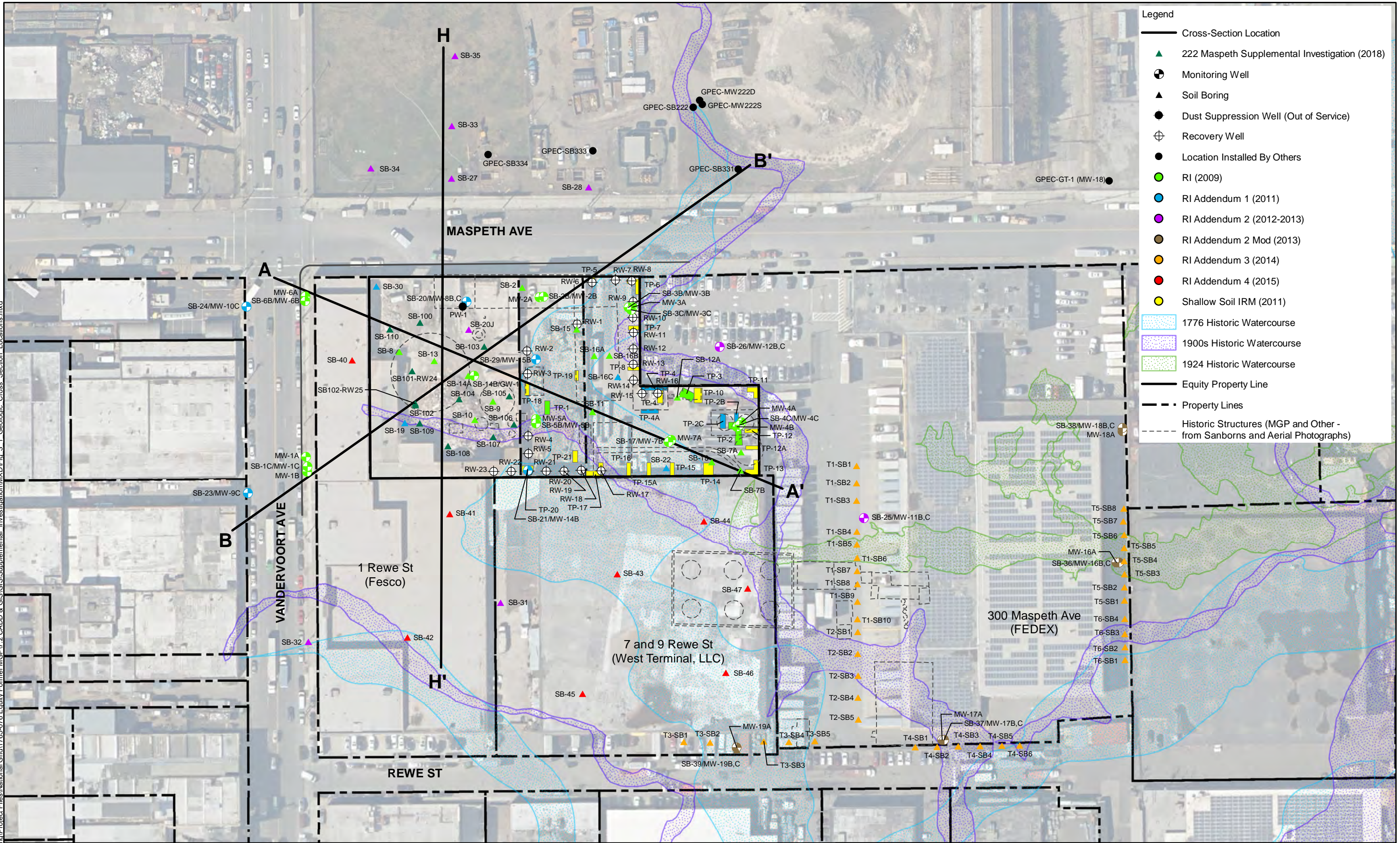
NATIONAL GRID  
FORMER EQUITY WORKS MGP SITE  
BROOKLYN, NY  
60137362.350

DATE: 10/29/2018 DRWN: JB

FIGURE 2-3  
HISTORICAL AND CURRENT  
SITE FEATURES MAP

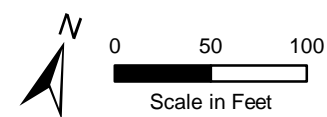


Path: P:\Jobs\Rem\_Enq\Project\_Files\National Grid\1765-076 Equity Former MGP\7.2 CADD & GIS\GIS\Supplemental\_Investigation\MXD\Fig\_3\_1\_Geologic\_Cross\_Section\_Locations.mxd



**Legend**

- Cross-Section Location
- ▲ 222 Maspeth Supplemental Investigation (2018)
- ⊕ Monitoring Well
- ▲ Soil Boring
- Dust Suppression Well (Out of Service)
- ⊕ Recovery Well
- Location Installed By Others
- RI (2009)
- RI Addendum 1 (2011)
- RI Addendum 2 (2012-2013)
- RI Addendum 2 Mod (2013)
- RI Addendum 3 (2014)
- RI Addendum 4 (2015)
- Shallow Soil IRM (2011)
- 1776 Historic Watercourse
- 1900s Historic Watercourse
- 1924 Historic Watercourse
- Equity Property Line
- - - Property Lines
- - - Historic Structures (MGP and Other - from Sanborns and Aerial Photographs)

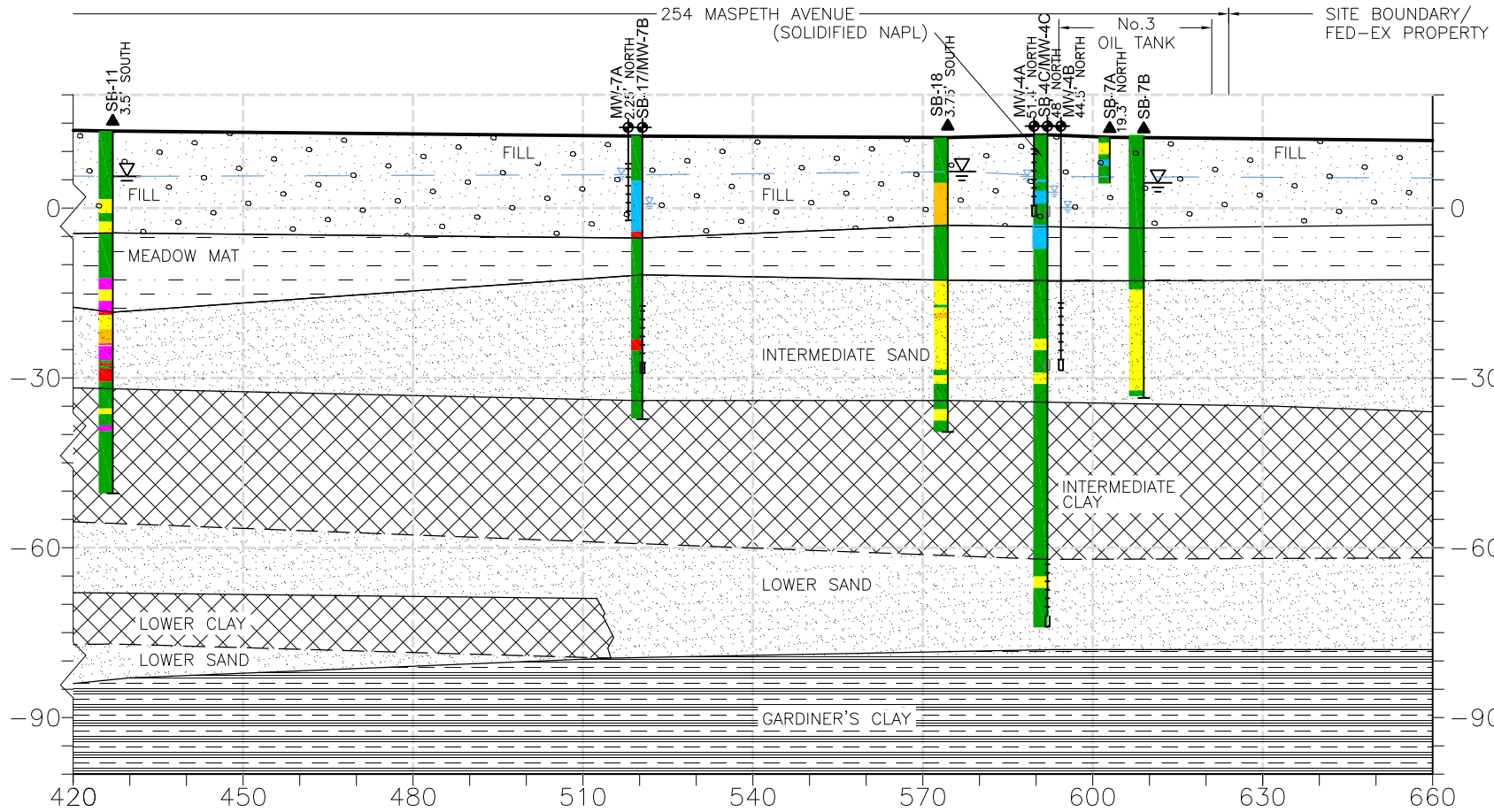
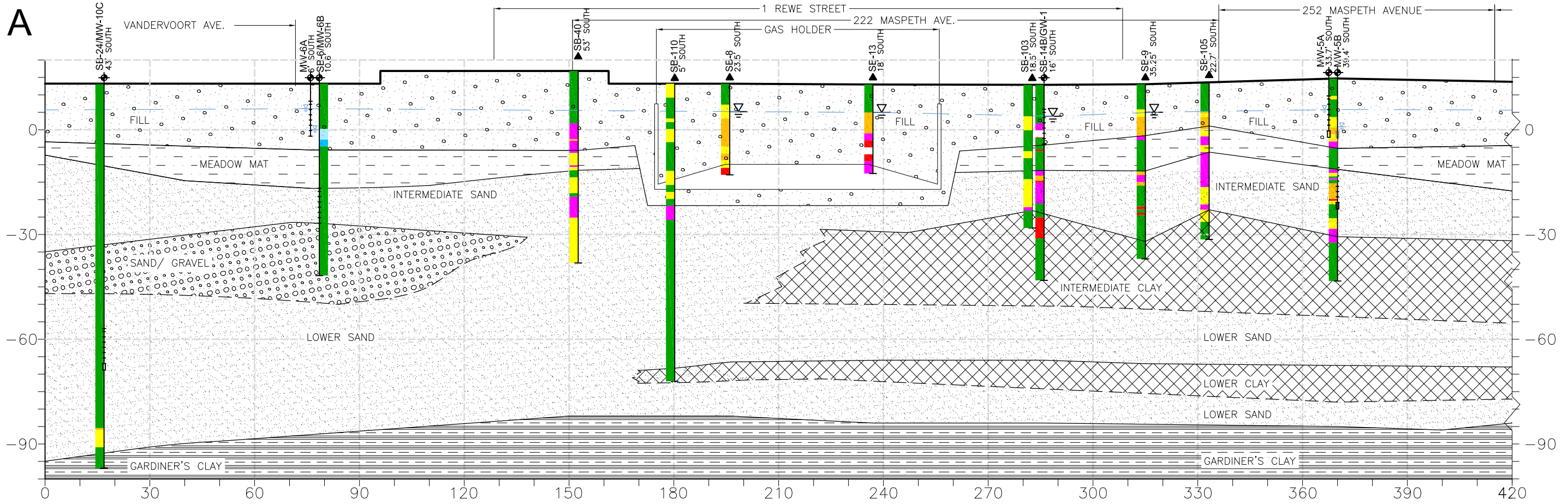


NATIONAL GRID  
FORMER EQUITY WORKS MGP SITE  
BROOKLYN, NY  
60137362.400

DATE: 10/29/2018 DRWN: JB

FIGURE 3-1  
GEOLOGIC CROSS-SECTION LOCATIONS





A'

LEGEND:

	NAPL SATURATED
	NAPL COATED MATERIAL, LENSES
	NAPL BLEBS, GLOBS, SHEENS
	STAINING ODOR
	SOLID NAPL
	INDUSTRIAL IMPACTS - (PETROLEUM OR OTHER UNNATURAL) SATURATION & SHEENS
	INDUSTRIAL IMPACTS - (PETROLEUM OR OTHER UNNATURAL) STAINING & ODORS
	NO OBSERVED IMPACTS
	MW-4A RI MONITORING WELL
	SB-4 RI SOIL BORING

	FILL		INTERBEDDED SAND, SILT AND CLAY
	MEADOW MAT		GARDINERS CLAY
	SAND/GRAVEL		CLAY

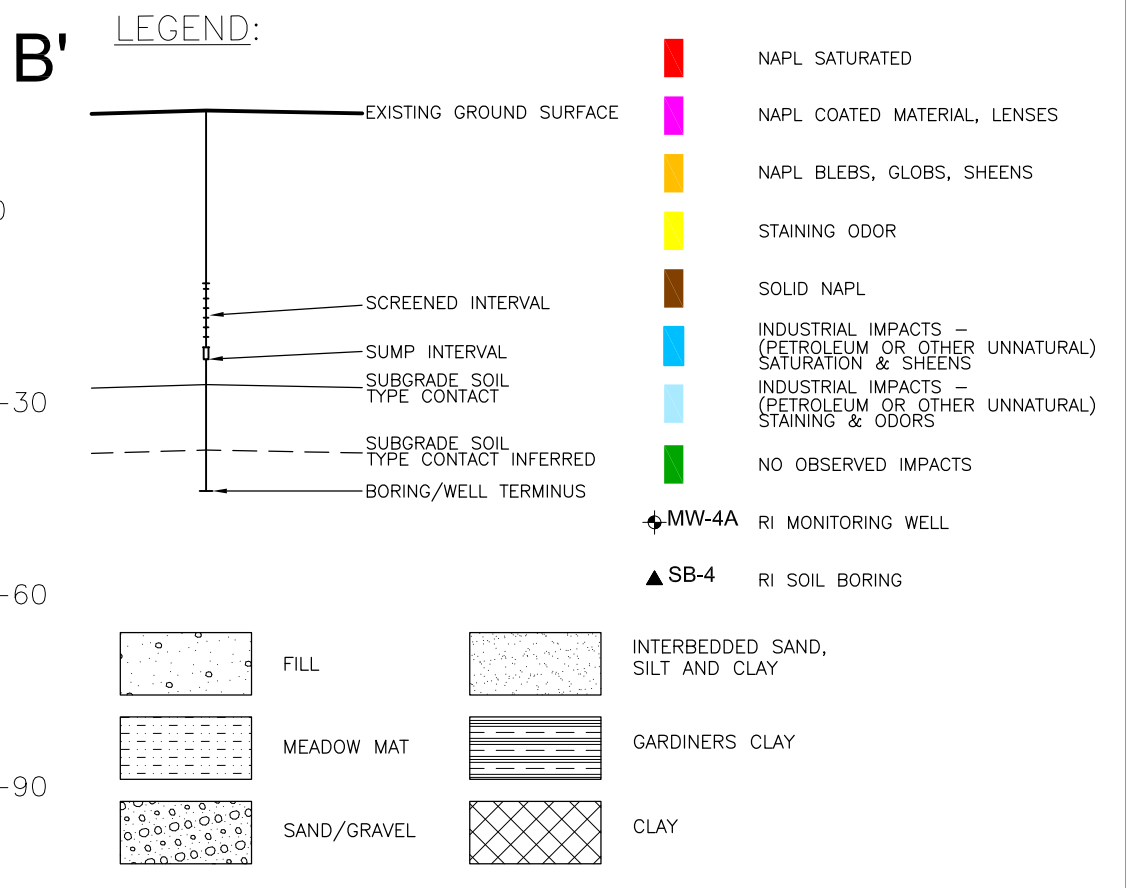
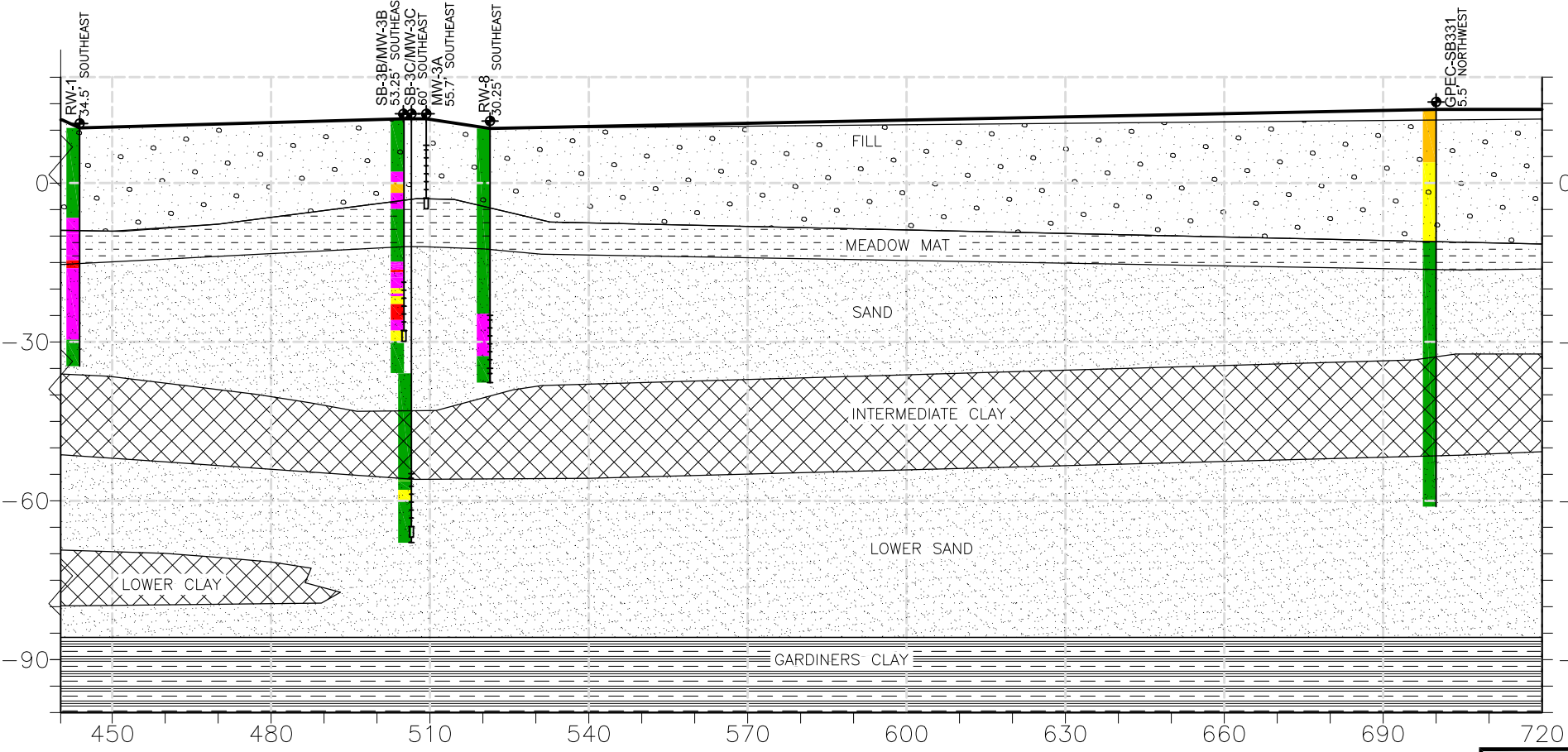
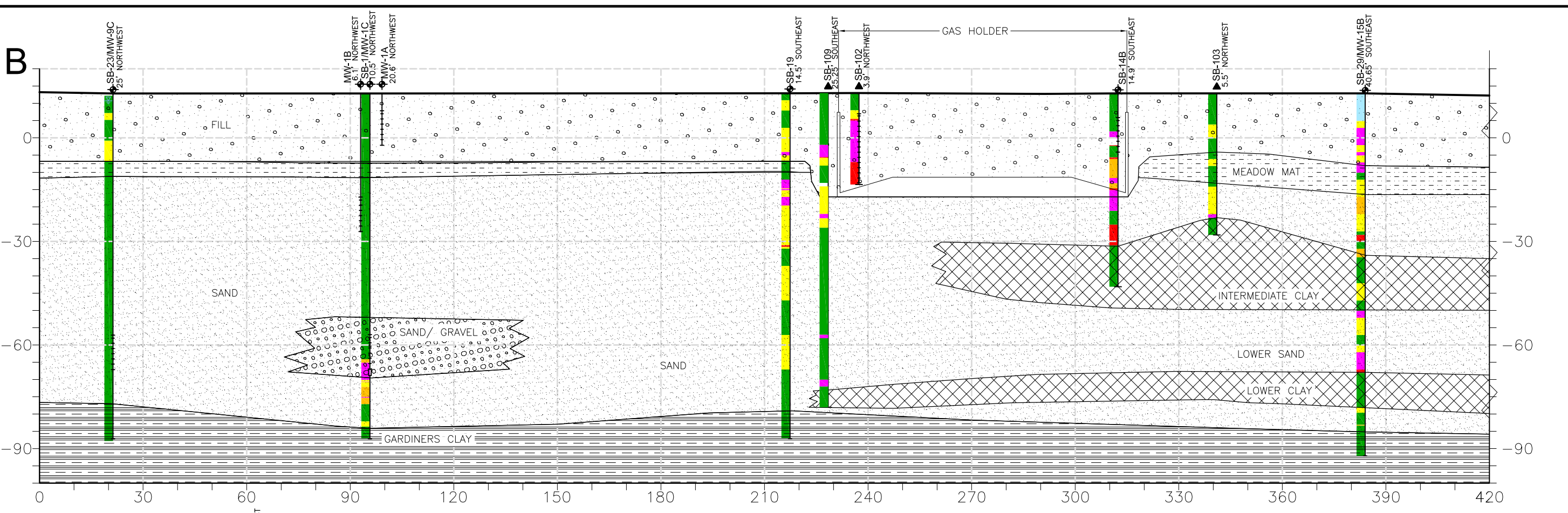
  

	EXISTING GROUND SURFACE
	SCREENED INTERVAL
	SUMP INTERVAL
	SUBGRADE SOIL TYPE CONTACT
	SUBGRADE SOIL TYPE CONTACT INFERRED
	BORING/WELL TERMINUS

**NOTE:**  
Monitoring wells MW-6A, MW-5A, MW-7A, MW-4A, and MW-4B have been added to the cross-section adjacent to the deeper well pair/triplet for comparison. These locations were graphically adjusted for clarity and do not represent field locations.  
MW-4C is offset by 35' from the cross-section. Lithology from -30 to -74 feet has been projected onto the cross-section.  
\* Gardiners Clay at SB-6B based on stratigraphy at SB-1C.

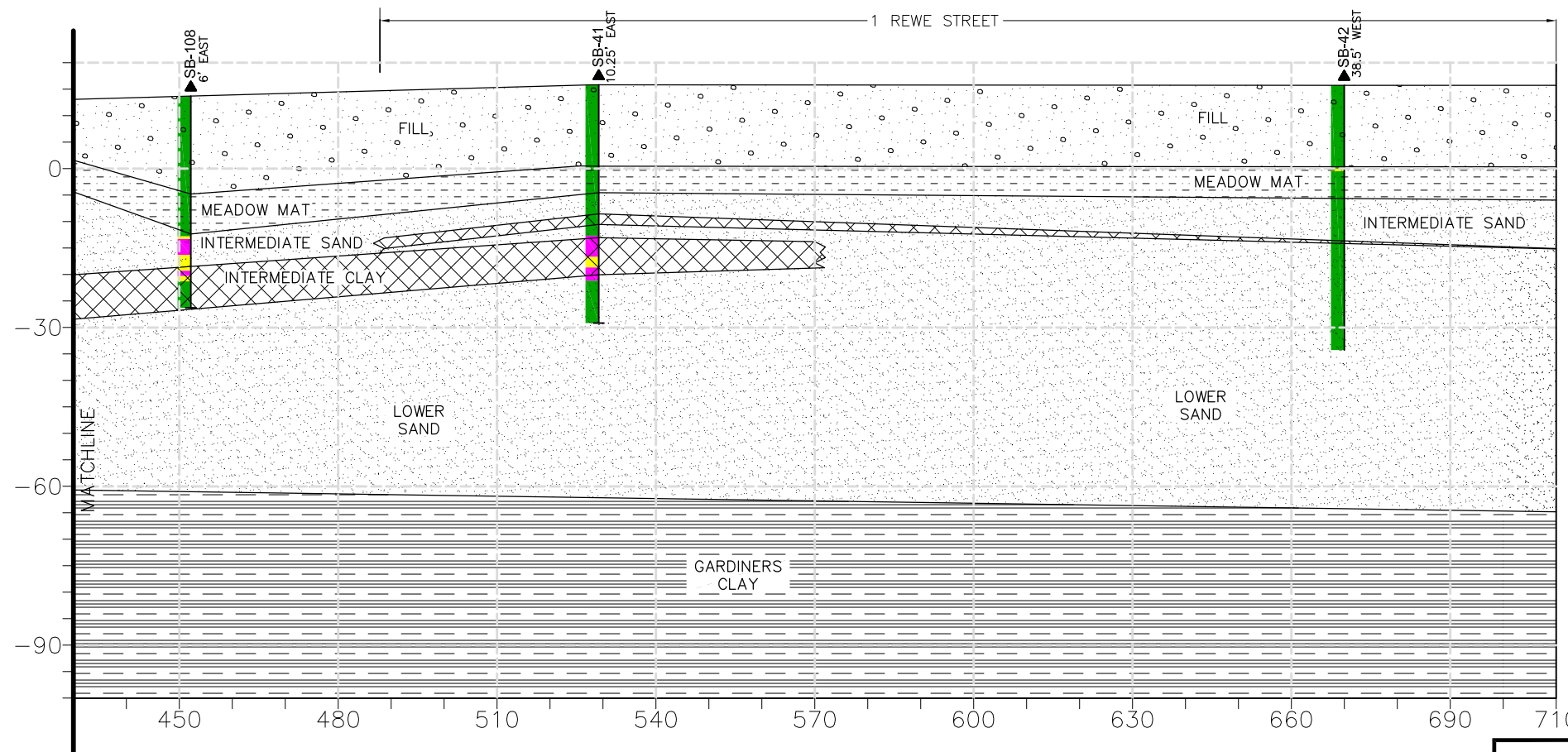
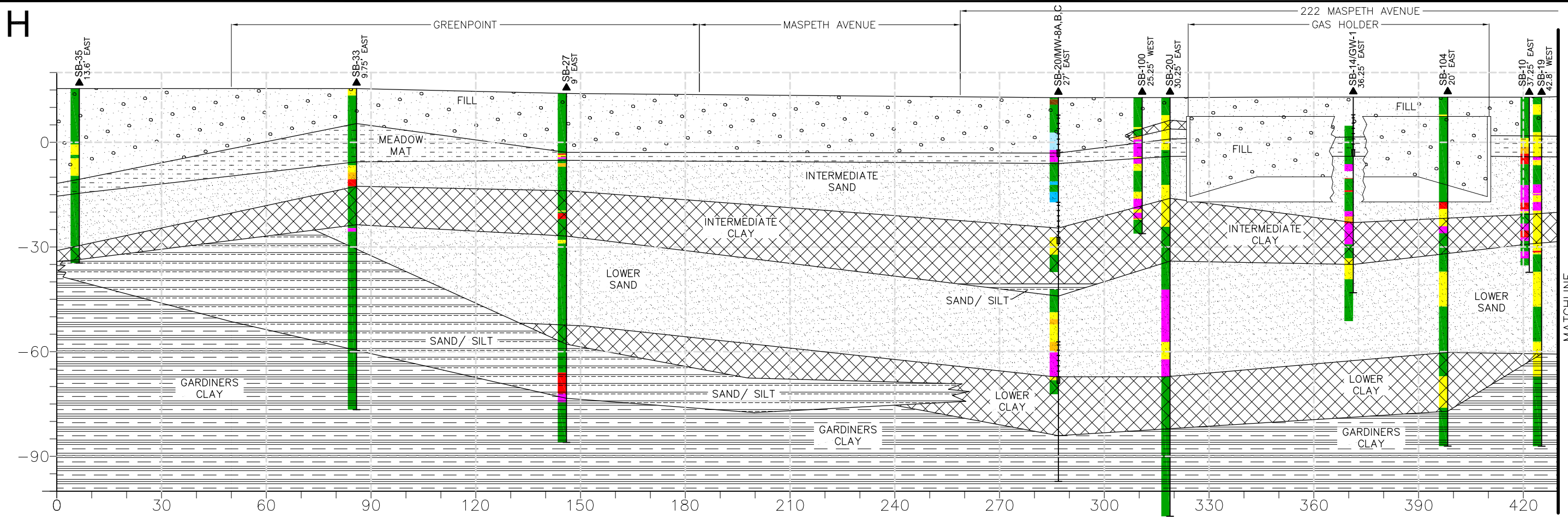
NATIONAL GRID FORMER EQUITY WORKS MGP SITE, BROOKLYN NY		GEOLOGIC CROSS SECTION A-A'	
60137362-400			
DATE: 10/25/18	DRWN: RCW		FIGURE 3-2







File: P:\Jobs\Rem\_Eng\Project Files\National Grid\1765-076 Equity Former MGP 7.2 CADD & GIS\2018-222 Maspeth Supplemental R\60137362-350-XHH-2018.dwg Layout: XSECT-HH'1 User: warrenr Plotted: Oct 3



**LEGEND:**

- █ NAPL SATURATED
- █ NAPL COATED MATERIAL, LENSES
- █ NAPL BLEBS, GLOBS, SHEENS
- █ STAINING ODOR
- █ SOLID NAPL
- █ INDUSTRIAL IMPACTS - (PETROLEUM OR OTHER UNNATURAL) SATURATION & SHEENS
- █ INDUSTRIAL IMPACTS - (PETROLEUM OR OTHER UNNATURAL) STAINING & ODORS
- █ NO OBSERVED IMPACTS

- EXISTING GROUND SURFACE
- SCREENED INTERVAL
- SUMP INTERVAL
- SUBGRADE SOIL TYPE CONTACT
- - - SUBGRADE SOIL TYPE CONTACT INFERRED
- BORING/WELL TERMINUS

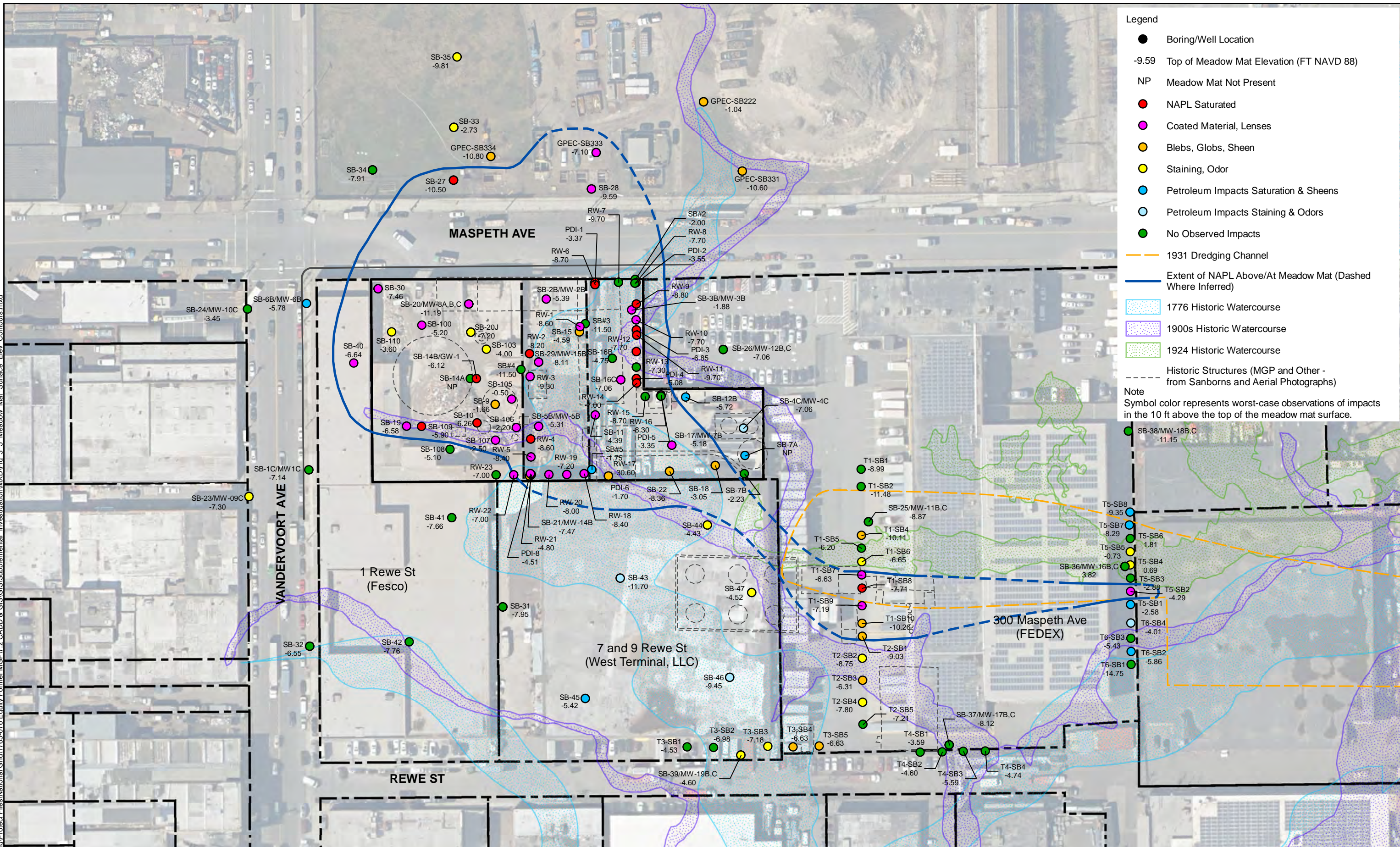
	FILL		INTERBEDDED SAND, SILT AND CLAY		MW-4A RI MONITORING WELL
	MEADOW MAT		GARDINERS CLAY		SB-4 RI SOIL BORING
	SAND/GRAVEL		GARDINERS CLAY		
	SAND/SILT				

**NOTE:**  
1. SB-14/GW-1 LOCATED OUTSIDE HOLDER WALL. SB-104 LOCATED DIRECTLY ON HOLDER WALL. REFER TO CROSS SECTION LOCATION FIGURE.





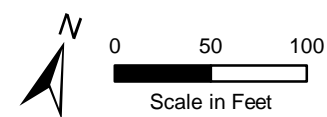
Path: P:\Jobs\Rem\_Enq\Project Files\National Grid\1765-076 Equity Former MGP\7.2 CADD & GIS\GIS\Supplemental\_ Investigation\MXD\Fig 3.5 Meadow Mat Surface Elev. Contours.mxd



**Legend**

- Boring/Well Location
- 9.59 Top of Meadow Mat Elevation (FT NAVD 88)
- NP Meadow Mat Not Present
- NAPL Saturated
- Coated Material, Lenses
- Blebs, Globes, Sheen
- Staining, Odor
- Petroleum Impacts Saturation & Sheens
- Petroleum Impacts Staining & Odors
- No Observed Impacts
- 1931 Dredging Channel
- Extent of NAPL Above/At Meadow Mat (Dashed Where Inferred)
- 1776 Historic Watercourse
- 1900s Historic Watercourse
- 1924 Historic Watercourse
- Historic Structures (MGP and Other - from Sanborns and Aerial Photographs)

**Note**  
Symbol color represents worst-case observations of impacts in the 10 ft above the top of the meadow mat surface.



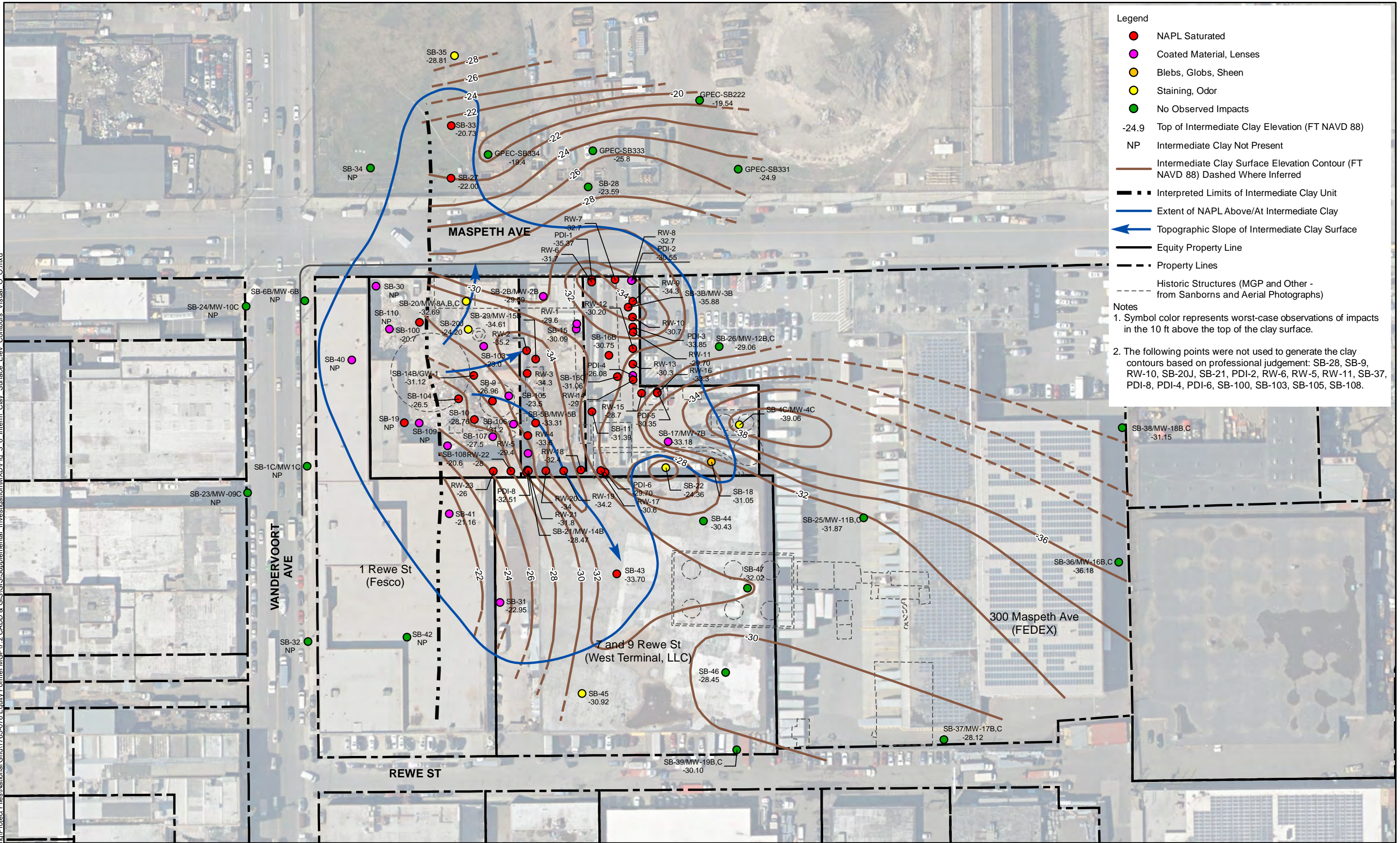
NATIONAL GRID  
FORMER EQUITY WORKS MGP SITE  
BROOKLYN, NY  
60137362.350

DATE: 10/29/2018 DRWN: JB

FIGURE 3-5  
MEADOW MAT SURFACE  
ELEVATIONS AND  
VISUAL/OLFACTORY  
OBSERVATIONS



Path: P:\Jobs\Rem\_Eng\Project\_Files\National Grid\1765-076 Equity Former MGP\7.2 CADD & GIS\GIS\Supplemental\_Investigation\MXD\Fig\_3\_6 Intern. Clay Surface Elev. Contours\_Visual\_O.mxd

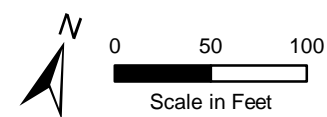


**Legend**

- NAPL Saturated
- Coated Material, Lenses
- Blebs, Globbs, Sheen
- Staining, Odor
- No Observed Impacts
- 24.9 Top of Intermediate Clay Elevation (FT NAVD 88)
- NP Intermediate Clay Not Present
- Intermediate Clay Surface Elevation Contour (FT NAVD 88) Dashed Where Inferred
- Interpreted Limits of Intermediate Clay Unit
- Extent of NAPL Above/At Intermediate Clay
- ← Topographic Slope of Intermediate Clay Surface
- Equity Property Line
- Property Lines
- Historic Structures (MGP and Other - from Sanborns and Aerial Photographs)

**Notes**

1. Symbol color represents worst-case observations of impacts in the 10 ft above the top of the clay surface.
2. The following points were not used to generate the clay contours based on professional judgement: SB-28, SB-9, RW-10, SB-20J, SB-21, PDI-2, RW-6, RW-5, RW-11, SB-37, PDI-8, PDI-4, PDI-6, SB-100, SB-103, SB-105, SB-108.



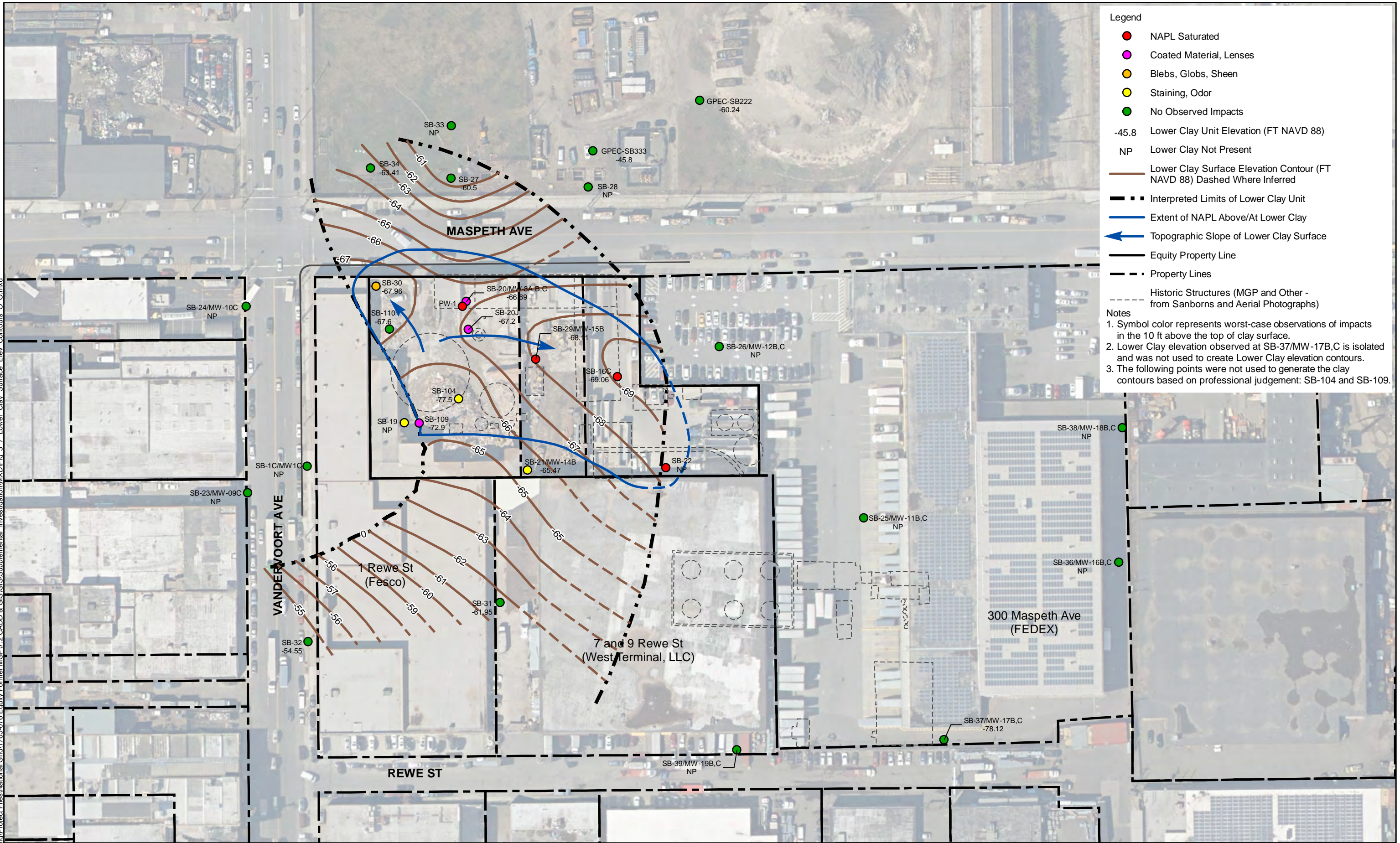
NATIONAL GRID  
FORMER EQUITY WORKS MGP SITE  
BROOKLYN, NY  
60137362.400

DATE: 10/29/2018 DRWN: JB

FIGURE 3-6  
INTERMEDIATE CLAY SURFACE  
ELEVATION CONTOURS AND  
VISUAL/OLFACTORY OBSERVATIONS



Path: P:\Jobs\Rem\_Eng\Project\_Files\National Grid\1765-076 Equity Former MGP\7.2 CADD & GIS\GIS\Supplemental\_Investigation\MXD\Fig\_3.7 Lower Clay Surface Elev. Contours\_0.mxd

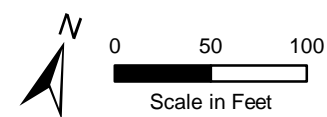


**Legend**

- NAPL Saturated
- Coated Material, Lenses
- Blebs, Globbs, Sheen
- Staining, Odor
- No Observed Impacts
- 45.8 Lower Clay Unit Elevation (FT NAVD 88)
- NP Lower Clay Not Present
- Lower Clay Surface Elevation Contour (FT NAVD 88) Dashed Where Inferred
- Interpreted Limits of Lower Clay Unit
- Extent of NAPL Above/At Lower Clay
- ← Topographic Slope of Lower Clay Surface
- Equity Property Line
- - - Property Lines
- - - Historic Structures (MGP and Other - from Sanborns and Aerial Photographs)

**Notes**

1. Symbol color represents worst-case observations of impacts in the 10 ft above the top of clay surface.
2. Lower Clay elevation observed at SB-37/MW-17B,C is isolated and was not used to create Lower Clay elevation contours.
3. The following points were not used to generate the clay contours based on professional judgement: SB-104 and SB-109.



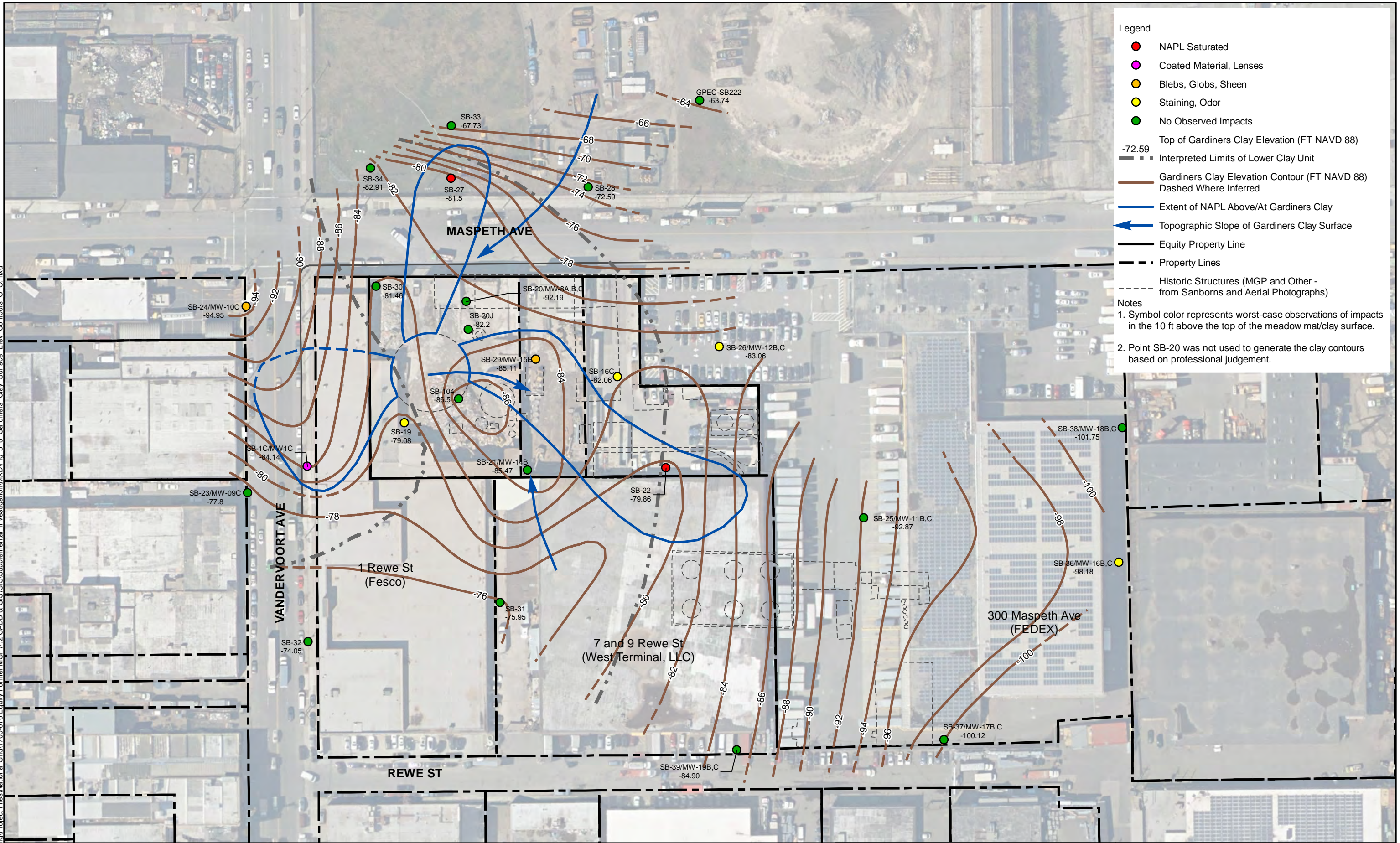
NATIONAL GRID  
 FORMER EQUITY WORKS MGP SITE  
 BROOKLYN, NY  
 60137362.350

DATE: 10/29/2018 | DRWN: JB

FIGURE 3-7  
 LOWER CLAY SURFACE ELEVATION CONTOURS  
 AND VISUAL/OLFACTORY OBSERVATIONS



Path: P:\Jobs\Rem\_Eng\Project Files\National Grid\1765-076 Equity Former MGP\7.2 CADD & GIS\GIS\Supplemental\_Investigation\MXD\Fig 3.8 Gardiners Clay Surface Elev. Contours O.mxd



**Legend**

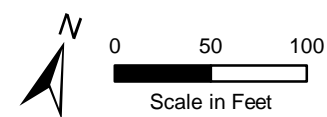
- NAPL Saturated
- Coated Material, Lenses
- Blebs, Globbs, Sheen
- Staining, Odor
- No Observed Impacts

Top of Gardiners Clay Elevation (FT NAVD 88)  
 -72.59

- Interpreted Limits of Lower Clay Unit
- Gardiners Clay Elevation Contour (FT NAVD 88)  
Dashed Where Inferred
- Extent of NAPL Above/At Gardiners Clay
- ← Topographic Slope of Gardiners Clay Surface
- Equity Property Line
- Property Lines
- Historic Structures (MGP and Other - from Sanborns and Aerial Photographs)

**Notes**

1. Symbol color represents worst-case observations of impacts in the 10 ft above the top of the meadow mat/clay surface.
2. Point SB-20 was not used to generate the clay contours based on professional judgement.



NATIONAL GRID  
 FORMER EQUITY WORKS MGP SITE  
 BROOKLYN, NY  
 60137362.400

DATE: 10/29/2018 | DRWN: JB

FIGURE 3-8  
 GARDINERS CLAY SURFACE  
 ELEVATION CONTOURS AND  
 VISUAL/OLFACTORY  
 OBSERVATIONS



## Appendix A Soil Boring Logs



# Legend



NAPL SATURATED



NAPL COATED MATERIAL



SOLID NAPL



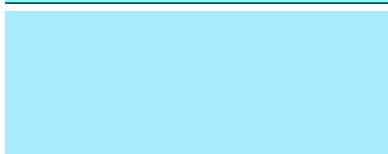
NAPL BLEBS, GLOBS, SHEEN



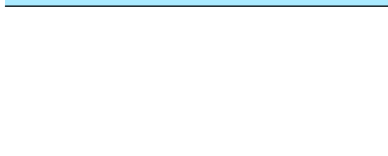
STAINING, ODOR



INDUSTRIAL IMPACTS - (PETROLEUM OR OTHER UNNATURAL) SATURATION & SHEENS



INDUSTRIAL IMPACTS - (PETROLEUM OR OTHER UNNATURAL) STAINING & ODORS



WOOD CHIPS/BLUE DISCOLORATION/SULFER-LIKE ODOR



NO OBSERVED IMPACTS

Note: In instances where multiple impacts are present, a combination of colors should be used (such as a color with cross hatching) to clearly identify where these co-mingled impacts are present.

**IMPACTS COLOR LEGEND**

**nationalgrid**

**April 2016**

<b>Client:</b> National Grid	<b>Location:</b> 222 Maspeth Avenue		
<b>Project:</b> Equity Former MGP Site	<b>Northing:</b> 686643.1	<b>Easting:</b> 649003.9	<b>Logged By:</b> S. Wright
<b>Project #:</b> 60137362	<b>Ground Elevation (NAVD 88):</b> 13.8		<b>Drilling Company:</b> Glacier
<b>Start Date:</b> 8/16/2018	<b>Drilling Method:</b> Sonic/Split Spoon		<b>Water Level (ft):</b> 8
<b>Finish Date:</b> 8/17/2018	<b>Borehole Diameter:</b> 4		<b>Total Depth (ft):</b> 39

Depth (ft bgs)	Percent Recovery	Blowcounts (per 6")	PID (ppm)	Visible and Olfactory Impacts	Graphic	USCS Code	Soil and Rock Description Classification Scheme: USCS	Lab Sample ID
0								
2	NA	NA	1.6			CONCRETE	Concrete slab	
4			0			FILL	Black f-c SAND some Silt, some f-Gravel, cobbles, wood debris, brick/concrete fragments, moist, no odor	
6	12	5, 3, 2, 1	0			Grayish brown f-c SAND, some f-c Gravel, little Silt, brick/concrete fragments, dry, no odor		
8	17	2, 1, 1, 1	0			Same as above, moist, no odor		
10	0	WH/24"	NA			NR	No recovery	
12	22	2, 1, 3, 2	570				Grayish brown silty fine SAND, little f-c Gravel, brick fragments, wet, sheen, 1/2" band of light NAPL coating @12', strong naph-like odor	
14	12	1, 3, 7, 3	453			Same as above, wet, light NAPL coating @ 14.75-15', strong naph-like odor		
16	7	15, 15, 3, 2	1000+			Same as above, wet, light NAPL coating, strong naph-like odor		
18	22	WH/24"	1000+			FILL	Same as above, wet, heavy NAPL coating @ 17.5-19', strong naph-like odor	
20	14	1, 1, 1, 1	341			PT	Dark gray fibrous PEAT, trace Clay, heavy NAPL coating on top of peat, strong naph-like odor	

**Remarks:** Boring Terminated (ft): 39.0

**AECOM**  
 500 Enterprise Dr, Suite 1A  
 Rocky Hill, CT 06067  
 Phone: (860) 263-5800  
 Fax: (860) 263-5777

NA - Not Applicable / SAA - Same as Above / bgs - below ground surface / NAPL - Non-aqueous phase liquid  
 Northing and Easting coordinates referenced to New York State Plane NAD83 East.  
 WH = Weight of Hammer



# Boring and Well Construction Log

BORING #: SB-100

Sheet 2 of 2

<b>Client:</b> National Grid	<b>Location:</b> 222 Maspeth Avenue		
<b>Project:</b> Equity Former MGP Site	<b>Northing:</b> 686643.1	<b>Easting:</b> 649003.9	<b>Logged By:</b> S. Wright
<b>Project #:</b> 60137362	<b>Ground Elevation (NAVD 88):</b> 13.8		<b>Drilling Company:</b> Glacier
<b>Start Date:</b> 8/16/2018	<b>Drilling Method:</b> Sonic/Split Spoon		<b>Water Level (ft):</b> 8
<b>Finish Date:</b> 8/17/2018	<b>Borehole Diameter:</b> 4		<b>Total Depth (ft):</b> 39

Depth (ft bgs)	Percent Recovery	Blowcounts (per 6")	PID (ppm)	Visible and Olfactory Impacts	Graphic	USCS Code	Soil and Rock Description Classification Scheme: USCS	Lab Sample ID
20								
22	14	1, 1, 1, 1	341				Dark brown fibrous PEAT, little Clay, wet, strong natural sulfur odor	
24	24	4, 4, 4, 4	2.2			PT	Same as above, wet, strong natural sulfur odor	
26	6	1, 1, 1, 1	3.8			NR	Too little recovery to classify	
28	1	2, 5, 8, 11	NA					
30	12	12, 12, 6, 8	785				Gray to dark gray f-c SAND, wet, stained with NAPL, strong naph-like odor	
32	13	8, 7, 10, 13	1000+			SW	Gray to black f-m SAND, wet, light NAPL coating @ 29-30', heavy NAPL coating @ 30-31', strong naph-like odor	
34	13	6, 15, 10, 5	1000+				Gray to black f-m SAND, wet, heavy NAPL coating @ 31-32', stained with NAPL @ 32-33', strong naph-like odor	
36	21	7, 4, 9, 8	1000+				Gray to brown f-c SAND, little f-c Gravel, wet, light NAPL coating !@ 33-34.25', NAPL-saturated @ 34.25-34.5', strong naph-like odor	
38			30.6			CL	Brownish gray CLAY, little Silt, wet, slight naph-like odor Gray CLAY, little Silt, dense, wet, no odor	
39	24	3, 4, 3, 3	9.9					
40	NA	NA	NA			NR	Shelby Tube sample collected	

**Remarks:** Boring Terminated (ft): 39.0

**AECOM**  
 500 Enterprise Dr, Suite 1A  
 Rocky Hill, CT 06067  
 Phone: (860) 263-5800  
 Fax: (860) 263-5777

NA - Not Applicable / SAA - Same as Above / bgs - below ground surface / NAPL - Non-aqueous phase liquid  
 Northing and Easting coordinates referenced to New York State Plane NAD83 East.  
 WH = Weight of Hammer



# Boring and Well Construction Log

BORING #: SB-101 / RW-24

Sheet 1 of 2

<b>Client:</b> National Grid	<b>Location:</b> 222 Maspeth Avenue	<b>Logged By:</b> S. Wright
<b>Project:</b> Equity Former MGP Site	<b>Northing:</b> 686588.1 <b>Easting:</b> 649012.8	<b>Drilling Company:</b> Glacier
<b>Project #:</b> 60137362	<b>Ground Elevation (NAVD 88):</b> 13.4	<b>Water Level (ft):</b> 8
<b>Start Date:</b> 8/14/2018	<b>Drilling Method:</b> Sonic/Core Barrel	<b>Screen Interval::</b> 6.8-26.75
<b>Finish Date:</b> 8/14/2018	<b>Borehole Diameter:</b> 8	<b>Total Depth (ft):</b> 26.8

Depth (ft bgs)	Recovery (ft/ft)	Blowcounts (per 6")	PID (ppm)	Visible/Olfactory Observations	USCS Code	USCS Pattern	Soil and Rock Description Classification Scheme: USCS	Lab Sample Interval	Well	Well Construction
0										
0-2					CONCRETE		Concrete slab			Expandable J-Plug
2-4	NA	NA	407				Black f-c SAND, some Silt, some f-c Gravel, wood debris, brick fragments, wire, moist, strong naphthalene-like odor			6" SCH 40 PVC Riser
4-6										Bentonite Seal
6-12	12	NA	1000+				Black SILT, some f-c Sand, some f-c Gravel, cobbles, brick fragments, wood fragments, moist to wet, heavy NAPL coating, strong naph-like odor			Filter Pack - Silt Beads
12-14	30	NA	620				Black f-c SAND, some f-c Gravel, little Silt, wet, light NAPL coating, strong naph-like odor			
14-16					FILL		Gray coarse GRAVEL, dry, no odor			
16-18	42	NA	1000+				Black fine SAND, little Silt, wet, heavy NAPL coating, strong naph-like odor			
18-20			1000+				Black f-c SAND, some f-c Gravel, large cobble, brick fragments, glass, wood, wet, heavy NAPL coating, strong naph-like odor			20-slot Continuous Wire-Wrap Stainless Steel Screen

- Notes:**
- 1.) NA - Not Applicable
  - 2.) ft - feet
  - 3.) bgs - below ground surface
  - 4.) SAA - Same As Above
  - 5.) ppm - parts per million
  - 6.) NAVD 88 - North American Vertical Datum of 1988
  - 7.) PID - Photo Ionization Meter
  - 8.) U.S.C.S. - Unified Soil Classification System
  - 9.) WOR - Weight of Rods (drilling)
  - 10.) WHO - Weight of Hammer
  - 11.) NR - No Recovery

**AECOM**  
 250 Apollo Drive  
 Chelmsford, MA 01824  
 Phone: 978.905.2100  
 Fax: 978.905.2101

(Continued Next Page)



# Boring and Well Construction Log

BORING #: SB-101 / RW-24

Sheet 2 of 2

<b>Client:</b> National Grid	<b>Location:</b> 222 Maspeth Avenue	<b>Logged By:</b> S. Wright
<b>Project:</b> Equity Former MGP Site	<b>Northing:</b> 686588.1 <b>Easting:</b> 649012.8	<b>Drilling Company:</b> Glacier
<b>Project #:</b> 60137362	<b>Ground Elevation (NAVD 88):</b> 13.4	<b>Water Level (ft):</b> 8
<b>Start Date:</b> 8/14/2018	<b>Drilling Method:</b> Sonic/Core Barrel	<b>Screen Interval::</b> 6.8-26.75
<b>Finish Date:</b> 8/14/2018	<b>Borehole Diameter:</b> 8	<b>Total Depth (ft):</b> 26.8

Depth (ft bgs)	Recovery (ft/ft)	Blowcounts (per 6")	PID (ppm)	Visible/Olfactory Observations	USCS Code	USCS Pattern	Soil and Rock Description Classification Scheme: USCS	Lab Sample Interval	Well	Well Construction
20										
22							Same as above, wet, saturated with black NAPL, strong naph-like odor			
24	24	NA	1000+				Gray coarse GRAVEL, dry, no odor			
26							Holder Bottom			

6-inch Stainless Steel Cap

**Notes:**

- Definitions:
- 1.) NA - Not Applicable
  - 2.) ft - feet
  - 3.) bgs - below ground surface
  - 4.) SAA - Same As Above
  - 5.) ppm - parts per million
  - 6.) NAVD 88 - North American Vertical Datum of 1988
  - 7.) PID - Photo Ionization Meter
  - 8.) U.S.C.S. - Unified Soil Classification System
  - 9.) WOR - Weight of Rods (drilling)
  - 10.) WHO - Weight of Hammer
  - 11.) NR - No Recovery

**AECOM**  
 250 Apollo Drive  
 Chelmsford, MA 01824  
 Phone: 978.905.2100  
 Fax: 978.905.2101



# Boring and Well Construction Log

BORING #: SB-102 / RW-25

Sheet 1 of 2

<b>Client:</b> National Grid	<b>Location:</b> 222 Maspeth Avenue	<b>Logged By:</b> S. Wright
<b>Project:</b> Equity Former MGP Site	<b>Northing:</b> 686552.1 <b>Easting:</b> 649029.0	<b>Drilling Company:</b> Glacier
<b>Project #:</b> 60137362	<b>Ground Elevation (NAVD 88):</b> 13.0	<b>Water Level (ft):</b> 8
<b>Start Date:</b> 8/13/2018	<b>Drilling Method:</b> Sonic/Core Barrel	<b>Screen Interval::</b> 6-26
<b>Finish Date:</b> 8/13/2018	<b>Borehole Diameter:</b> 8	<b>Total Depth (ft):</b> 26.5

Depth (ft bgs)	Recovery (ft/ft)	Blowcounts (per 6")	PID (ppm)	Visible/Olfactory Observations	USCS Code	USCS Pattern	Soil and Rock Description Classification Scheme: USCS	Lab Sample Interval	Well	Well Construction
0					CONCRETE		Concrete slab			Expandable J-Plug
2	NA	NA	3.3				Black f-c SAND, some Silt, some f-c Gravel, wood debris, brick/concrete fragments, moist, no odor			6" SCH 40 PVC Riser
4										Bentonite Seal
6			481				Dark gray f-c SAND, some Silt, some f-c Gravel, cobbles, brick fragments, moist to wet, pockets of NAPL saturation @ 7.5-8', heavy NAPL coating @ 8-10', strong naph-like odor			Filter Pack - Silt Beads
8	55	NA	1000+				Black f-c SAND, some Silt, some f-c Gravel, brick fragments, wet, heavy NAPL coating, strong naph-like odor			
10							Gray f-c GRAVEL, dry no odor			
12	52	NA	1000+				Gray and brown f-c SAND, some Silt, some f-c Gravel, brick debris, wet, heavy NAPL coating, seams of NAPL saturation, strong naph-like odor			20-slot Continuous Wire-Wrap Stainless Steel Screen
14			1000+		FILL					
16			1000+				Very dark gray to black SILT, little f-c Sand, little f-c Gravel, brick fragments, coal fragments, wet, heavy NAPL coating, seams of NAPL saturation, strong naph-like odor			
18	48	NA	1000+							
20										

- Notes:**
- Definitions:
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  - 2.) ft - feet
  - 3.) bgs - below ground surface
  - 4.) SAA - Same As Above
  - 5.) ppm - parts per million
  - 6.) NAVD 88 - North American Vertical Datum of 1988
  - 7.) PID - Photo Ionization Meter
  - 8.) U.S.C.S. - Unified Soil Classification System
  - 9.) WOR - Weight of Rods (drilling)
  - 10.) WHO - Weight of Hammer
  - 11.) NR - No Recovery

**AECOM**  
 250 Apollo Drive  
 Chelmsford, MA 01824  
 Phone: 978.905.2100  
 Fax: 978.905.2101

(Continued Next Page)



# Boring and Well Construction Log

BORING #: SB-102 / RW-25  
Sheet 2 of 2

<b>Client:</b> National Grid	<b>Location:</b> 222 Maspeth Avenue	<b>Logged By:</b> S. Wright
<b>Project:</b> Equity Former MGP Site	<b>Northing:</b> 686552.1 <b>Easting:</b> 649029.0	<b>Drilling Company:</b> Glacier
<b>Project #:</b> 60137362	<b>Ground Elevation (NAVD 88):</b> 13.0	<b>Water Level (ft):</b> 8
<b>Start Date:</b> 8/13/2018	<b>Drilling Method:</b> Sonic/Core Barrel	<b>Screen Interval::</b> 6-26
<b>Finish Date:</b> 8/13/2018	<b>Borehole Diameter:</b> 8	<b>Total Depth (ft):</b> 26.5

Depth (ft bgs)	Recovery (ft/ft)	Blowcounts (per 6")	PID (ppm)	Visible/Olfactory Observations	USCS Code	USCS Pattern	Soil and Rock Description Classification Scheme: USCS	Lab Sample Interval	Well	Well Construction	
20											
22	40	NA	1000+				Same as above, very soft, wet, saturated with black viscous NAPL, strong naph-like odor				
24							Gray f-c GRAVEL, dry no odor				
30											
26	30	NA	1000+					Same as above, wet, saturated with black viscous NAPL, strong naph-like odor			
							Holder Bottom				

6-inch Stainless Steel Cap

**Notes:**

- Definitions:
- 1.) NA - Not Applicable
  - 2.) ft - feet
  - 3.) bgs - below ground surface
  - 4.) SAA - Same As Above
  - 5.) ppm - parts per million
  - 6.) NAVD 88 - North American Vertical Datum of 1988
  - 7.) PID - Photo Ionization Meter
  - 8.) U.S.C.S. - Unified Soil Classification System
  - 9.) WOR - Weight of Rods (drilling)
  - 10.) WHO - Weight of Hammer
  - 11.) NR - No Recovery

**AECOM**  
250 Apollo Drive  
Chelmsford, MA 01824  
Phone: 978.905.2100  
Fax: 978.905.2101



# Boring and Well Construction Log

BORING #: SB-103

Sheet 1 of 3

<b>Client:</b> National Grid	<b>Location:</b> 222 Maspeth Avenue		
<b>Project:</b> Equity Former MGP Site	<b>Northing:</b> 686640.8	<b>Easting:</b> 649082.1	<b>Logged By:</b> S. Wright
<b>Project #:</b> 60137362	<b>Ground Elevation (NAVD 88):</b> 13.0		<b>Drilling Company:</b> Glacier
<b>Start Date:</b> 8/9/2018	<b>Drilling Method:</b> Sonic/Split Spoon		<b>Water Level (ft):</b> 8
<b>Finish Date:</b> 8/10/2018	<b>Borehole Diameter:</b> 4		<b>Total Depth (ft):</b> 41

Depth (ft bgs)	Percent Recovery	Blowcounts (per 6")	PID (ppm)	Visible and Olfactory Impacts	Graphic	USCS Code	Soil and Rock Description Classification Scheme: USCS	Lab Sample ID	
0									
						CONCRETE	Concrete slab		
2	NA	NA	1.1			FILL	Gray f-c GRAVEL, dry no odor Black f-c SAND, some Silt, little f-c Gravel, cobbles, approx. 50% wood debris, wire, brick/concrete fragments, moist, moderate naphthalene-like odor		
4								Grayish brown f-c SAND, some Silt, some f-c Gravel, cobbles, dry, no odor	
6	14	2,6,6,8	1.2					Dark gray f-c SAND, some Silt, some f-c Gravel, cobbles, concrete fragments, black cinders, moist, no odor	
8	15	6,5,19,14	2					Black SILT, some f-c Sand, some f-c Gravel, coal fragments, wet, strong naph-like odor	
10	17	9,13,7,7	111					Grayish brown to black SILT, some f-c Sand, some f-c Gravel, coal fragments, wet, moderate naph-like odor	
12	18	2,1,1,1	104						
14	0	1,WH/18"	NA			NR	No recovery		
16	3	4,2,1,1	6.4			FILL	Cobble and peat in tip of spoon		
18	18	1,1,1,1	80.9			PT/OL	Interbedded brown fibrous PEAT and dark gray CLAY, wet strong natural sulfur odor		
20	22	1,WH,1,WH	211			PT	Dark gray and brown fibrous PEAT, wet, sheen, strong naph-like odor		

**Remarks:** Boring Terminated (ft): 41.0

**AECOM**  
 500 Enterprise Dr, Suite 1A  
 Rocky Hill, CT 06067  
 Phone: (860) 263-5800  
 Fax: (860) 263-5777

NA - Not Applicable / SAA - Same as Above / bgs - below ground surface / NAPL - Non-aqueous phase liquid  
 Northing and Easting coordinates referenced to New York State Plane NAD83 East.  
 WH = Weight of Hammer

(Continued Next Page)





# Boring and Well Construction Log

BORING #: SB-103

Sheet 2 of 3

<b>Client:</b> National Grid	<b>Location:</b> 222 Maspeth Avenue		
<b>Project:</b> Equity Former MGP Site	<b>Northing:</b> 686640.8	<b>Easting:</b> 649082.1	<b>Logged By:</b> S. Wright
<b>Project #:</b> 60137362	<b>Ground Elevation (NAVD 88):</b> 13.0		<b>Drilling Company:</b> Glacier
<b>Start Date:</b> 8/9/2018	<b>Drilling Method:</b> Sonic/Split Spoon		<b>Water Level (ft):</b> 8
<b>Finish Date:</b> 8/10/2018	<b>Borehole Diameter:</b> 4		<b>Total Depth (ft):</b> 41

Depth (ft bgs)	Percent Recovery	Blowcounts (per 6")	PID (ppm)	Visible and Olfactory Impacts	Graphic	USCS Code	Soil and Rock Description Classification Scheme: USCS	Lab Sample ID
20								
22	22	1,WH,1,WH	211			PT	Dark brown fibrous PEAT, wet, strong natural sulfur odor	
24	24	1,1,1,1	71.4				Dark brown friable PEAT, wet, strong natural sulfur odor	
24	18	4,3,2,2	95.6					
			90.8					
26	13	2,1,3,5	85			SP	Gray fine SAND, little Silt, wet, strong natural sulfur odor Gray fine SAND, little Silt, trace f-c Gravel, wet, strong natural sulfur odor	
28	16	2,3,5,5	44.2				Same as above, wet, sheen, slight naph-like odor	
30	14	3,3,3,4	55.2				Same as above, wet, two 2mm bands of NAPL staining @ 30.75', slight naph-like odor	
32	22	5,6,7,8	72.9				Same as above, wet, NAPL staining @ 32-32.5', moderate naph-like odor	
34	18	2,4,6,10	68.2				Gray fine SAND, little Silt, trace f-c Gravel, wet, moderate naph-like odor	
36	17	5,6,5,4	258				Same as above, wet, light NAPL coating, strong naph-like odor	
			27.7					
38	23	4,4,6,7	1.3			CL	Gray CLAY, little Silt, wet, no odor Same as above, less Silt, wet, no odor	
40	NA	NA	NA				Shelby Tube sample collected	

**Remarks:** Boring Terminated (ft): 41.0

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# Boring and Well Construction Log

BORING #: SB-103

Sheet 3 of 3

<b>Client:</b> National Grid		<b>Location:</b> 222 Maspeth Avenue	
<b>Project:</b> Equity Former MGP Site		<b>Northing:</b> 686640.8	<b>Easting:</b> 649082.1
<b>Project #:</b> 60137362		<b>Ground Elevation (NAVD 88):</b> 13.0	<b>Logged By:</b> S. Wright
<b>Start Date:</b> 8/9/2018		<b>Drilling Method:</b> Sonic/Split Spoon	<b>Drilling Company:</b> Glacier
<b>Finish Date:</b> 8/10/2018		<b>Borehole Diameter:</b> 4	<b>Water Level (ft):</b> 8
			<b>Total Depth (ft):</b> 41

Depth (ft bgs)	Percent Recovery	Blowcounts (per 6")	PID (ppm)	Visible and Olfactory Impacts	Graphic	USCS Code	Soil and Rock Description Classification Scheme: USCS	Lab Sample ID
40	NA	NA	NA			CL		

**Remarks:** Boring Terminated (ft): 41.0

**AECOM**  
 500 Enterprise Dr, Suite 1A  
 Rocky Hill, CT 06067  
 Phone: (860) 263-5800  
 Fax: (860) 263-5777

NA - Not Applicable / SAA - Same as Above / bgs - below ground surface / NAPL - Non-aqueous phase liquid  
 Northing and Easting coordinates referenced to New York State Plane NAD83 East.  
 WH = Weight of Hammer


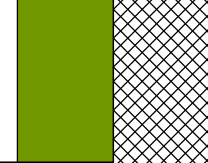










# Boring and Well Construction Log

BORING #: SB-104

Sheet 1 of 5

<b>Client:</b> National Grid	<b>Location:</b> 222 Maspeth Avenue		
<b>Project:</b> Equity Former MGP Site	<b>Northing:</b> 686574.7	<b>Easting:</b> 649074.1	<b>Logged By:</b> S. Wright
<b>Project #:</b> 60137362	<b>Ground Elevation (NAVD 88):</b> 12.5		<b>Drilling Company:</b> Glacier
<b>Start Date:</b> 8/3/2018	<b>Drilling Method:</b> Sonic/Core Barrel		<b>Water Level (ft):</b> 8
<b>Finish Date:</b> 8/6/2018	<b>Borehole Diameter:</b> 6		<b>Total Depth (ft):</b> 100

Depth (ft bgs)	Percent Recovery	Blowcounts (per 6")	PID (ppm)	Visible and Olfactory Impacts	Graphic	USCS Code	Soil and Rock Description Classification Scheme: USCS	Lab Sample ID
0								
2	NA	NA	0			CONCRETE	Concrete slab	
4						FILL	Black SILT, some f-c Sand, some f-c Gravel, cobbles, brick/concrete debris, wood fragments, plastic debris, moist, no odor	
6			142				Same as above, moist, strong naph-like odor	
8	60	NA	0				Red brick and mortar debris, dry, no odor (holder wall)	
10							Same as above (holder wall)	
12	60	NA	0			WALL		
14								
16							Same as above (holder wall)	
18	60	NA	0					
20								

**Remarks:** Boring Terminated (ft): 100.0

**AECOM**  
 500 Enterprise Dr, Suite 1A  
 Rocky Hill, CT 06067  
 Phone: (860) 263-5800  
 Fax: (860) 263-5777

NA - Not Applicable / SAA - Same as Above / bgs - below ground surface / NAPL - Non-aqueous phase liquid  
 Northing and Easting coordinates referenced to New York State Plane NAD83 East.  
 WH = Weight of Hammer

(Continued Next Page)



# Boring and Well Construction Log

BORING #: SB-104

Sheet 2 of 5

<b>Client:</b> National Grid	<b>Location:</b> 222 Maspeth Avenue		
<b>Project:</b> Equity Former MGP Site	<b>Northing:</b> 686574.7	<b>Easting:</b> 649074.1	<b>Logged By:</b> S. Wright
<b>Project #:</b> 60137362	<b>Ground Elevation (NAVD 88):</b> 12.5		<b>Drilling Company:</b> Glacier
<b>Start Date:</b> 8/3/2018	<b>Drilling Method:</b> Sonic/Core Barrel		<b>Water Level (ft):</b> 8
<b>Finish Date:</b> 8/6/2018	<b>Borehole Diameter:</b> 6		<b>Total Depth (ft):</b> 100

Depth (ft bgs)	Percent Recovery	Blowcounts (per 6")	PID (ppm)	Visible and Olfactory Impacts	Graphic	USCS Code	Soil and Rock Description Classification Scheme: USCS	Lab Sample ID
20								
22	60	NA	0			WALL	Same as above (holder wall)	
24							Same as above (holder wall)	
26	60	NA	0			WALL	Same as above (holder wall)	
28							Same as above (holder wall)	
30						CONCRETE	Concrete slab	
32	30	NA	1000+			SW	Gray f-c SAND, trace Silt, wet, saturated with NAPL, strong naph-like odor	
34			176			SP	Gray silty fine SAND, wet, strong naphthalene-like odor	
36	30	NA	151			SW	Same as above, wet, strong natural sulfur odor	
38			1000+			SW	Gray f-c SAND, trace Silt, wet, heavy NAPL coating, strong naph-like odor	
40			8.4			CL	Dark gray CLAY, dense, wet, no odor	

**Remarks:** Boring Terminated (ft): 100.0

**AECOM**  
 500 Enterprise Dr, Suite 1A  
 Rocky Hill, CT 06067  
 Phone: (860) 263-5800  
 Fax: (860) 263-5777

NA - Not Applicable / SAA - Same as Above / bgs - below ground surface / NAPL - Non-aqueous phase liquid  
 Northing and Easting coordinates referenced to New York State Plane NAD83 East.  
 WH = Weight of Hammer

(Continued Next Page)



# Boring and Well Construction Log

BORING #: SB-104

Sheet 3 of 5

<b>Client:</b> National Grid	<b>Location:</b> 222 Maspeth Avenue		
<b>Project:</b> Equity Former MGP Site	<b>Northing:</b> 686574.7	<b>Easting:</b> 649074.1	<b>Logged By:</b> S. Wright
<b>Project #:</b> 60137362	<b>Ground Elevation (NAVD 88):</b> 12.5		<b>Drilling Company:</b> Glacier
<b>Start Date:</b> 8/3/2018	<b>Drilling Method:</b> Sonic/Core Barrel		<b>Water Level (ft):</b> 8
<b>Finish Date:</b> 8/6/2018	<b>Borehole Diameter:</b> 6		<b>Total Depth (ft):</b> 100

Depth (ft bgs)	Percent Recovery	Blowcounts (per 6")	PID (ppm)	Visible and Olfactory Impacts	Graphic	USCS Code	Soil and Rock Description Classification Scheme: USCS	Lab Sample ID														
40																						
42	60	NA	0	[Green Bar]	[Diagonal Hatching]	CL	Same as above, wet, no odor															
44			0																			
46	60	NA	0						[Diagonal Hatching]	CL	Same as above, wet, no odor, trace f-c Gravel @ 48-50'											
48			0																			
50			0																			
52			20.5																			
54	30	NA	20.7										[Yellow Bar]	[Dotted Pattern]	SW	Gray silty fine SAND, wet, slight naph-like odor						
56			19.4																			
58	30	NA	18.8															[Dotted Pattern]	SW	SW	Gray f-m SAND, trace Silt, wet, slight naph-like odor	
60			18.8																			

**Remarks:** Boring Terminated (ft): 100.0

**AECOM**  
 500 Enterprise Dr, Suite 1A  
 Rocky Hill, CT 06067  
 Phone: (860) 263-5800  
 Fax: (860) 263-5777

NA - Not Applicable / SAA - Same as Above / bgs - below ground surface / NAPL - Non-aqueous phase liquid  
 Northing and Easting coordinates referenced to New York State Plane NAD83 East.  
 WH = Weight of Hammer

(Continued Next Page)





# Boring and Well Construction Log

BORING #: SB-104

Sheet 4 of 5

<b>Client:</b> National Grid	<b>Location:</b> 222 Maspeth Avenue		
<b>Project:</b> Equity Former MGP Site	<b>Northing:</b> 686574.7	<b>Easting:</b> 649074.1	<b>Logged By:</b> S. Wright
<b>Project #:</b> 60137362	<b>Ground Elevation (NAVD 88):</b> 12.5		<b>Drilling Company:</b> Glacier
<b>Start Date:</b> 8/3/2018	<b>Drilling Method:</b> Sonic/Core Barrel		<b>Water Level (ft):</b> 8
<b>Finish Date:</b> 8/6/2018	<b>Borehole Diameter:</b> 6		<b>Total Depth (ft):</b> 100

Depth (ft bgs)	Percent Recovery	Blowcounts (per 6")	PID (ppm)	Visible and Olfactory Impacts	Graphic	USCS Code	Soil and Rock Description Classification Scheme: USCS	Lab Sample ID				
60												
62	54	NA	0			SW	Brownish gray f-c SAND, little f-c Gravel, trace Silt, wet no odor					
64			0				Same as above, wet, no odor					
66	48	NA	0				Same as above, wet, no odor					
68			0				Same as above, wet, no odor					
70	60	NA	0				Same as above, wet, no odor					
72			0				Same as above, wet, no odor					
74			0				Brown f-c SAND, little f-c Gravel, trace Silt, wet, no odor					
76	56	NA	0							SW	Same as above, wet, no odor	
78			0								Brown f-c GRAVEL, some f-c Sand, trace Silt, cobbles, wet, no odor	
80			0								Brown f-c SAND, some f-c Gravel, little Silt, cobbles, wet, no odor	

**Remarks:** Boring Terminated (ft): 100.0

**AECOM**  
 500 Enterprise Dr, Suite 1A  
 Rocky Hill, CT 06067  
 Phone: (860) 263-5800  
 Fax: (860) 263-5777

NA - Not Applicable / SAA - Same as Above / bgs - below ground surface / NAPL - Non-aqueous phase liquid  
 Northing and Easting coordinates referenced to New York State Plane NAD83 East.  
 WH = Weight of Hammer

(Continued Next Page)



# Boring and Well Construction Log

BORING #: SB-104

Sheet 5 of 5

<b>Client:</b> National Grid	<b>Location:</b> 222 Maspeth Avenue		
<b>Project:</b> Equity Former MGP Site	<b>Northing:</b> 686574.7	<b>Easting:</b> 649074.1	<b>Logged By:</b> S. Wright
<b>Project #:</b> 60137362	<b>Ground Elevation (NAVD 88):</b> 12.5		<b>Drilling Company:</b> Glacier
<b>Start Date:</b> 8/3/2018	<b>Drilling Method:</b> Sonic/Core Barrel		<b>Water Level (ft):</b> 8
<b>Finish Date:</b> 8/6/2018	<b>Borehole Diameter:</b> 6		<b>Total Depth (ft):</b> 100

Depth (ft bgs)	Percent Recovery	Blowcounts (per 6")	PID (ppm)	Visible and Olfactory Impacts	Graphic	USCS Code	Soil and Rock Description Classification Scheme: USCS	Lab Sample ID			
80											
82	60	NA	44.5	[Yellow shaded area]	[Diagonal hatching pattern]	SW	Brownish gray f-c SAND, little f-c Gravel, trace Silt, wet, moderate naph-like odor				
84			50.7								
86	60	NA	161						ML	Gray SILT, trace fine Sand, wet, slight naph-like odor	
88			24.3								
90			18.5			SW	Gray f-c SAND, trace f-c Gravel, trace Silt, wet, slight naph-like odor				
90			6.3			ML/CL	Dark gray SILT and CLAY, wet, no odor				
92	60	NA	0			[Green shaded area]	[Diagonal hatching pattern]		CL	Light gray and red CLAY, dense, wet, no odor	
94			0								
96	0	CL	Gray CLAY, some Peat, dense, wet, no odor Dark gray CLAY, cobble @ 96.5', dense, wet, no odor								
96	0										
98	0										
98	0										
100	1.1	LIGNITE	Black LIGNITE, wet, no odor								
100	0	CL	Light gray CLAY, soft, wet, no odor								

**Remarks:** Boring Terminated (ft): 100.0

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 Northing and Easting coordinates referenced to New York State Plane NAD83 East.  
 WH = Weight of Hammer



# Boring and Well Construction Log

BORING #: SB-105

Sheet 1 of 3

<b>Client:</b> National Grid	<b>Location:</b> 222 Maspeth Avenue		
<b>Project:</b> Equity Former MGP Site	<b>Northing:</b> 686596.1	<b>Easting:</b> 649127.1	<b>Logged By:</b> S. Wright
<b>Project #:</b> 60137362	<b>Ground Elevation (NAVD 88):</b> 13.0		<b>Drilling Company:</b> Glacier
<b>Start Date:</b> 7/30/2018	<b>Drilling Method:</b> Sonic/Core Barrel		<b>Water Level (ft):</b> 8
<b>Finish Date:</b> 7/30/2018	<b>Borehole Diameter:</b> 6		<b>Total Depth (ft):</b> 45

Depth (ft bgs)	Percent Recovery	Blowcounts (per 6")	PID (ppm)	Visible and Olfactory Impacts	Graphic	USCS Code	Soil and Rock Description Classification Scheme: USCS	Lab Sample ID
0								
						CONCRETE	Concrete slab	
						FILL	Dark brown f-c GRAVEL, some f-c Sand, dry, no odor	
2						CONCRETE	Concrete slab	
4	NA	NA	2.3				Black f-c SAND, some f-c Gravel, some Silt, numerous cobbles, brick fragments, wood fragments, moist, no odor	
6			1.2				Same as above, moist to wet, sheen @ 8.5-9', slight naphthalene-like odor	
8	54	NA	13.4			FILL		
10							Same as above, numerous coal fragments, sheen, strong naph-like odor	
12	48	NA	208					
14			103			PT	Black friable PEAT, wet, strong naph-like odor Dark brown friable PEAT, wet, strong naph-like odor	
16							Same as above, wet, strong naph-like odor	
18	56	NA	949			SP	Gray f-m SAND, little f-c Gravel, little Silt, wet, streaks of light NAPL coating, strong naph-like odor	
20			193			PT	Dark brown friable PEAT, wet, strong naph-like odor	

**Remarks:** Boring Terminated (ft): 45.0

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 WH = Weight of Hammer

(Continued Next Page)



# Boring and Well Construction Log

BORING #: SB-105

Sheet 2 of 3

<b>Client:</b> National Grid	<b>Location:</b> 222 Maspeth Avenue		
<b>Project:</b> Equity Former MGP Site	<b>Northing:</b> 686596.1	<b>Easting:</b> 649127.1	<b>Logged By:</b> S. Wright
<b>Project #:</b> 60137362	<b>Ground Elevation (NAVD 88):</b> 13.0		<b>Drilling Company:</b> Glacier
<b>Start Date:</b> 7/30/2018	<b>Drilling Method:</b> Sonic/Core Barrel		<b>Water Level (ft):</b> 8
<b>Finish Date:</b> 7/30/2018	<b>Borehole Diameter:</b> 6		<b>Total Depth (ft):</b> 45

Depth (ft bgs)	Percent Recovery	Blowcounts (per 6")	PID (ppm)	Visible and Olfactory Impacts	Graphic	USCS Code	Soil and Rock Description Classification Scheme: USCS	Lab Sample ID
20								
22	12	NA	884				Gray fine SAND, little Silt, wet, heavy NAPL coating, strong naph-like odor	
24								
26						SP	Same as above, wet, heavy NAPL coating, strong naph-like odor	
28	12	NA	898					
30								
32	48	NA	416			SW	Gray f-m SAND, trace Silt, wet, strong naph-like odor	
34			390			SP	Gray fine SAND, little Silt, wet, strong naph-like odor	
36			1000+			SW	Gray f-m SAND, trace Silt, wet, heavy NAPL coating, strong naph-like odor	
38	60	NA	47.8			CL	Gray CLAY, little f-c Gravel, trace f-c Sand, medium dense, moderate naph-like odor	
40								

**Remarks:** Boring Terminated (ft): 45.0

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 WH = Weight of Hammer

(Continued Next Page)



# Boring and Well Construction Log

BORING #: SB-105

Sheet 3 of 3

<b>Client:</b> National Grid	<b>Location:</b> 222 Maspeth Avenue		
<b>Project:</b> Equity Former MGP Site	<b>Northing:</b> 686596.1	<b>Easting:</b> 649127.1	<b>Logged By:</b> S. Wright
<b>Project #:</b> 60137362	<b>Ground Elevation (NAVD 88):</b> 13.0		<b>Drilling Company:</b> Glacier
<b>Start Date:</b> 7/30/2018	<b>Drilling Method:</b> Sonic/Core Barrel		<b>Water Level (ft):</b> 8
<b>Finish Date:</b> 7/30/2018	<b>Borehole Diameter:</b> 6		<b>Total Depth (ft):</b> 45

Depth (ft bgs)	Percent Recovery	Blowcounts (per 6")	PID (ppm)	Visible and Olfactory Impacts	Graphic	USCS Code	Soil and Rock Description Classification Scheme: USCS	Lab Sample ID
40	60	NA	0			CL	Gray CLAY, dense, wet, no odor	
42			0					
44			0					

**Remarks:** Boring Terminated (ft): 45.0

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# Boring and Well Construction Log

BORING #: SB-106

Sheet 1 of 3

<b>Client:</b> National Grid	<b>Location:</b> 222 Maspeth Avenue		
<b>Project:</b> Equity Former MGP Site	<b>Northing:</b> 686567.3	<b>Easting:</b> 649142.6	<b>Logged By:</b> S. Wright
<b>Project #:</b> 60137362	<b>Ground Elevation (NAVD 88):</b> 12.8		<b>Drilling Company:</b> Glacier
<b>Start Date:</b> 8/1/2018	<b>Drilling Method:</b> Sonic/Split Spoon		<b>Water Level (ft):</b> 8
<b>Finish Date:</b> 8/1/2018	<b>Borehole Diameter:</b> 4		<b>Total Depth (ft):</b> 47

Depth (ft bgs)	Percent Recovery	Blowcounts (per 6")	PID (ppm)	Visible and Olfactory Impacts	Graphic	USCS Code	Soil and Rock Description Classification Scheme: USCS	Lab Sample ID
0								
2	NA	NA	0			CONCRETE	Concrete slab	
4			0			FILL	Black BRICK AND CONCRETE DEBRIS, some f-c Sand, some Silt, little f-c Gravel, ceramic and wood fragments, moist, no odor	
6	4	50/6"	16.7			CONCRETE	Black WOOD DEBRIS, little brown f-c Sand, moist, no odor Concrete slab	
8	18	4,7,4,3	8.7			FILL	Black SILT, some f-c Sand, little f-c Gravel, wood fragments, moist to wet, no odor	
10	24	2,8,23,18	79.7			FILL	Same as above, wet, sheen, moderate naphthalene-like odor	
12	8	5,7,6,40	152			FILL	Black f-c GRAVEL, some f-c Sand, little Silt, brick and wood fragments, wet, sheen strong naph-like odor	
14	4	84,9,3,4	98.4			FILL	Same as above (wood stuck in tip of spoon), wet, discontinuous sheen, moderate naph-like odor	
16	6	3,1,1,2	1000+			FILL	Black f-c Gravel, some f-c Sand, wood fragments, numerous coal fragments, wet, sheen, strong naph-like odor	
18	8	1,1,2,2	1000+			OL/PT	Dark gray organic CLAY with friable Peat, wet, heavy NAPL coating on top of clay, sheen, strong naph-like odor	
20	24	1,WH,1,WH	757			OL	Dark gray organic CLAY, little friable Peat, soft, wet, strong naph-like odor	

**Remarks:** Boring Terminated (ft): 47.0

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 Northing and Easting coordinates referenced to New York State Plane NAD83 East.  
 WH = Weight of Hammer

(Continued Next Page)



# Boring and Well Construction Log

BORING #: SB-106

Sheet 2 of 3

<b>Client:</b> National Grid	<b>Location:</b> 222 Maspeth Avenue		
<b>Project:</b> Equity Former MGP Site	<b>Northing:</b> 686567.3	<b>Easting:</b> 649142.6	<b>Logged By:</b> S. Wright
<b>Project #:</b> 60137362	<b>Ground Elevation (NAVD 88):</b> 12.8		<b>Drilling Company:</b> Glacier
<b>Start Date:</b> 8/1/2018	<b>Drilling Method:</b> Sonic/Split Spoon		<b>Water Level (ft):</b> 8
<b>Finish Date:</b> 8/1/2018	<b>Borehole Diameter:</b> 4		<b>Total Depth (ft):</b> 47

Depth (ft bgs)	Percent Recovery	Blowcounts (per 6")	PID (ppm)	Visible and Olfactory Impacts	Graphic	USCS Code	Soil and Rock Description Classification Scheme: USCS	Lab Sample ID
20								
22	24	1,WH,1,WH	757			OL	Same as above, wet, strong naph-like odor	
24	24	3,2,3,4	264			OL	Same as above, strong natural sulfur odor	
24	24	1,2,4,6	16.5			PT	Dark brown friable PEAT, wet, moderate natural sulfur odor	
26	18	14,17,14,13	744			SW	Gray f-c SAND, trace Silt, wet, layers lightly coated with NAPL, strong naph-like odor	
28	16	4,7,10,11	339			SP	Gray fine SAND, some Silt, wet, bands of light NAPL coating, strong naph-like odor	
30	14	3,6,6,13	37			ML	Gray SILT, trace fine Sand, wet, strong naph-like odor Gray SILT, little fine Sand, wet, slight naph-like odor	
32	24	13,16,14,12	38.9				Gray silty fine SAND, wet, slight naph-like odor	
34	10	5,13,16,19	0			SP	Same as above, wet, no odor	
36	16	16,12,15,19	11.6				Same as above, trace coarse Sand, wet, no odor	
38	18	5,5,7,9	128			SW	Gray/brown f-c SAND, trace f-c Gravel, trace Silt, wet, heavy NAPL coating, strong naph-like odor	
40	18	4,4,8,9	64.4			ML/CL	Gray interbedded SILT and CLAY, wet, moderate naph-like odor	

**Remarks:** Boring Terminated (ft): 47.0

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(Continued Next Page)

<b>Client:</b> National Grid	<b>Location:</b> 222 Maspeth Avenue		
<b>Project:</b> Equity Former MGP Site	<b>Northing:</b> 686567.3	<b>Easting:</b> 649142.6	<b>Logged By:</b> S. Wright
<b>Project #:</b> 60137362	<b>Ground Elevation (NAVD 88):</b> 12.8		<b>Drilling Company:</b> Glacier
<b>Start Date:</b> 8/1/2018	<b>Drilling Method:</b> Sonic/Split Spoon		<b>Water Level (ft):</b> 8
<b>Finish Date:</b> 8/1/2018	<b>Borehole Diameter:</b> 4		<b>Total Depth (ft):</b> 47

Depth (ft bgs)	Percent Recovery	Blowcounts (per 6")	PID (ppm)	Visible and Olfactory Impacts	Graphic	USCS Code	Soil and Rock Description Classification Scheme: USCS	Lab Sample ID
40	18	4,4,8,9	64.4	Yellow		ML/CL	Same as above, wet, moderate naph-like odor	
42	24	10,16,20,22	61.2					
44	20	6,12,8,8	698	Magenta		SP	Gray fine SAND, some Silt, trace f-c Gravel, wet, light NAPL coating, strong naph-like odor	
			605			SW	Gray f-m SAND, little Silt, wet, light NAPL coating, strong naph-like odor	
46	24	4,5,6,7	20.3	Yellow		CL	Gray CLAY, dense, wet, slight naph-like odor	
			8.3			CL	Gray CLAY, dense, wet, no odor	

**Remarks:** Boring Terminated (ft): 47.0

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# Boring and Well Construction Log

BORING #: SB-107

Sheet 1 of 3

<b>Client:</b> National Grid	<b>Location:</b> 222 Maspeth Avenue		
<b>Project:</b> Equity Former MGP Site	<b>Northing:</b> 686545.9	<b>Easting:</b> 649124.7	<b>Logged By:</b> S. Wright
<b>Project #:</b> 60137362	<b>Ground Elevation (NAVD 88):</b> 12.5		<b>Drilling Company:</b> Glacier
<b>Start Date:</b> 7/31/2018	<b>Drilling Method:</b> Sonic/Core Barrel		<b>Water Level (ft):</b> 8
<b>Finish Date:</b> 7/31/2018	<b>Borehole Diameter:</b> 6		<b>Total Depth (ft):</b> 50

Depth (ft bgs)	Percent Recovery	Blowcounts (per 6")	PID (ppm)	Visible and Olfactory Impacts	Graphic	USCS Code	Soil and Rock Description Classification Scheme: USCS	Lab Sample ID
0								
2	NA	NA	0			CONCRETE	Concrete slab	
4							Black f-c SAND, some f-c Gravel, some Silt, numerous cobbles, brick/ceramic/wood fragments, ash/cinders, moist, no odor	
6							Black FABRIC, wire, plastic debris, fiberglass, moist to wet, slight heavy petroleum odor	
8	60	NA	3.4			FILL		
10			1.1				Gray f-c SAND, some f-c Gravel, some Silt, concrete fragments, wet, no odor	
12	60	NA	1000+				Black f-c GRAVEL, some f-c Sand, cobbles, brick/wood/coal fragments, light NAPL coating @ 11-14', heavy NAPL coating @ 14-15', strong naphthalene-like odor	
14			1000+					
16			81.2				Brown/gray fibrous PEAT and organic Clay, wet strong natural sulfur odor	
18	56	NA				PT/OL		
20			9.1					

**Remarks:** Boring Terminated (ft): 50.0

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 WH = Weight of Hammer

(Continued Next Page)



# Boring and Well Construction Log

BORING #: SB-107

Sheet 2 of 3

<b>Client:</b> National Grid	<b>Location:</b> 222 Maspeth Avenue		
<b>Project:</b> Equity Former MGP Site	<b>Northing:</b> 686545.9	<b>Easting:</b> 649124.7	<b>Logged By:</b> S. Wright
<b>Project #:</b> 60137362	<b>Ground Elevation (NAVD 88):</b> 12.5		<b>Drilling Company:</b> Glacier
<b>Start Date:</b> 7/31/2018	<b>Drilling Method:</b> Sonic/Core Barrel		<b>Water Level (ft):</b> 8
<b>Finish Date:</b> 7/31/2018	<b>Borehole Diameter:</b> 6		<b>Total Depth (ft):</b> 50

Depth (ft bgs)	Percent Recovery	Blowcounts (per 6")	PID (ppm)	Visible and Olfactory Impacts	Graphic	USCS Code	Soil and Rock Description Classification Scheme: USCS	Lab Sample ID
20								
22	54	NA	21.4	[Green Block]	[Horizontal Lines]	OL	Gray organic CLAY, trace fibrous Peat, soft, trace shell fragments, wet, moderate natural sulfur odor	
24			13.3					
26	42	NA	301	[Yellow Block]	[Diagonal Lines]	SW	Dark brown friable PEAT, wet, strong natural sulfur odor Same as above, wet strong natural sulfur odor Gray f-m SAND, trace Silt, trace f-c Gravel, wet, layers stained with NAPL, strong naph-like odor	
28			362					
30	60	NA	385	[Magenta Block]	[Diagonal Lines]	SW	Same as above, wet, heavy NAPL coating, strong naph-like odor	
32								
34	56	NA	360	[Yellow Block]	[Vertical Lines]	ML	Gray SILT, trace fine Sand, wet, stained with NAPL, strong naph-like odor Same as above, wet, stained with NAPL, strong naph-like odor	
36			244					
38			470	[Magenta Block]	[Dotted Pattern]	SP	Gray silty fine SAND, wet, heavy NAPL coating @ 38.75-39', strong naph-like odor	
40			187	[Green Block]		CL/SP	Interbedded gray CLAY and fine SAND, wet, sand is lightly coated with NAPL, strong naph-like odor	

**Remarks:** Boring Terminated (ft): 50.0

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 WH = Weight of Hammer

(Continued Next Page)





# Boring and Well Construction Log

BORING #: SB-107

Sheet 3 of 3

<b>Client:</b> National Grid	<b>Location:</b> 222 Maspeth Avenue		
<b>Project:</b> Equity Former MGP Site	<b>Northing:</b> 686545.9	<b>Easting:</b> 649124.7	<b>Logged By:</b> S. Wright
<b>Project #:</b> 60137362	<b>Ground Elevation (NAVD 88):</b> 12.5		<b>Drilling Company:</b> Glacier
<b>Start Date:</b> 7/31/2018	<b>Drilling Method:</b> Sonic/Core Barrel		<b>Water Level (ft):</b> 8
<b>Finish Date:</b> 7/31/2018	<b>Borehole Diameter:</b> 6		<b>Total Depth (ft):</b> 50

Depth (ft bgs)	Percent Recovery	Blowcounts (per 6")	PID (ppm)	Visible and Olfactory Impacts	Graphic	USCS Code	Soil and Rock Description Classification Scheme: USCS	Lab Sample ID
40	60	NA	3.8			CL	Gray CLAY, medium dense, wet, no odor	
42			3.2				Same as above, wet, no odor	
44	60	NA	2.1					
46			2					
48								
50								

**Remarks:** Boring Terminated (ft): 50.0

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 WH = Weight of Hammer



# Boring and Well Construction Log

BORING #: SB-108

Sheet 1 of 2

<b>Client:</b> National Grid	<b>Location:</b> 222 Maspeth Avenue		
<b>Project:</b> Equity Former MGP Site	<b>Northing:</b> 686519.8	<b>Easting:</b> 649079.1	<b>Logged By:</b> S. Wright
<b>Project #:</b> 60137362	<b>Ground Elevation (NAVD 88):</b> 13.4		<b>Drilling Company:</b> Glacier
<b>Start Date:</b> 8/2/2018	<b>Drilling Method:</b> Sonic/Core Barrel		<b>Water Level (ft):</b> 8
<b>Finish Date:</b> 8/2/2018	<b>Borehole Diameter:</b> 6		<b>Total Depth (ft):</b> 40

Depth (ft bgs)	Percent Recovery	Blowcounts (per 6")	PID (ppm)	Visible and Olfactory Impacts	Graphic	USCS Code	Soil and Rock Description Classification Scheme: USCS	Lab Sample ID	
0									
						CONCRETE	Concrete slab		
2	NA	NA	0			FILL	Black WOOD AND CONCRETE DEBRIS, some f-c Sand, some f-c Gravel, little Silt, cobbles, brick fragments, wire, plastic debris, moist, no odor		
4									
6			0					Black SILT, some f-c Sand, some f-c Gravel, cobbles, brick and concrete fragments, moist, no odor	
8	60	NA	0						
10			0						
12	54	NA	0					Grayish brown silty f-c SAND, some f-c Gravel, cobbles, numerous coal fragments @ 12.5-13', wet, no odor	
14			0						
16			0					Same as above, few wood fragments, wet, no odor	
18	60	NA	0						
			0						Black SILT, some f-c Sand, some f-c Gravel, glass fragments, wet, no odor
20						PT	Gray/brown friable PEAT, little Clay, wet, slight natural sulfur odor		

**Remarks:** Boring Terminated (ft): 40.0

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# Boring and Well Construction Log

BORING #: SB-108

Sheet 2 of 2

<b>Client:</b> National Grid	<b>Location:</b> 222 Maspeth Avenue		
<b>Project:</b> Equity Former MGP Site	<b>Northing:</b> 686519.8	<b>Easting:</b> 649079.1	<b>Logged By:</b> S. Wright
<b>Project #:</b> 60137362	<b>Ground Elevation (NAVD 88):</b> 13.4		<b>Drilling Company:</b> Glacier
<b>Start Date:</b> 8/2/2018	<b>Drilling Method:</b> Sonic/Core Barrel		<b>Water Level (ft):</b> 8
<b>Finish Date:</b> 8/2/2018	<b>Borehole Diameter:</b> 6		<b>Total Depth (ft):</b> 40

Depth (ft bgs)	Percent Recovery	Blowcounts (per 6")	PID (ppm)	Visible and Olfactory Impacts	Graphic	USCS Code	Soil and Rock Description Classification Scheme: USCS	Lab Sample ID
20								
22	54	NA	0.2	[Green]	[Horizontal dashes]	OL	Gray CLAY with little friable Peat, wet, moderate natural sulfur odor	
24			0.2			PT	Dark brown friable PEAT, wet, moderate natural sulfur odor	
26	60	NA	12.4	[Green]	[Horizontal dashes]	OL	Gray CLAY with little friable Peat, wet, no odor	
28			99.4			PT	Dark brown friable PEAT, wet strong naph-like odor	
30			656			SW	Gray f-c SAND, trace Silt, wet, layers lightly coated with NAPL, strong naph-like odor	
32	550	Gray f-c SAND, wet, stained with NAPL @ 30-33', light NAPL coating @ 33-34', strong naph-like odor						
34			274	[Green]	[Diagonal lines]		Gray CLAY, dense, wet, strong naph-like odor, cobble lightly coated with NAPL in top of clay unit	
36	54	NA	10.1	[Green]	[Diagonal lines]	CL	Gray CLAY, dense, wet, no odor	
38			1.9					
40								

**Remarks:** Boring Terminated (ft): 40.0

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 Northing and Easting coordinates referenced to New York State Plane NAD83 East.  
 WH = Weight of Hammer



# Boring and Well Construction Log

BORING #: SB-109

Sheet 1 of 5

<b>Client:</b> National Grid	<b>Location:</b> 222 Maspeth Avenue		
<b>Project:</b> Equity Former MGP Site	<b>Northing:</b> 686534.0	<b>Easting:</b> 649040.1	<b>Logged By:</b> S. Wright
<b>Project #:</b> 60137362	<b>Ground Elevation (NAVD 88):</b> 13.1		<b>Drilling Company:</b> Glacier
<b>Start Date:</b> 8/8/2018	<b>Drilling Method:</b> Sonic/Split Spoon		<b>Water Level (ft):</b> 8
<b>Finish Date:</b> 8/9/2018	<b>Borehole Diameter:</b> 4		<b>Total Depth (ft):</b> 91

Depth (ft bgs)	Percent Recovery	Blowcounts (per 6")	PID (ppm)	Visible and Olfactory Impacts	Graphic	USCS Code	Soil and Rock Description Classification Scheme: USCS	Lab Sample ID
0								
2						CONCRETE	Concrete slab	
4	NA	NA	1.3				Black WOOD DEBRIS, some Silt, some f-c Sand, little f-c Gravel, moist, strong organic odor	
6	12	2,8,6,4	2.3				Dark gray to black SILT, little f-c Sand, brick fragments, dry, no odor	
8	4	3,2,1,1	5.8				Same as above, moist, no odor	
10	24	WH/18",1	0				Gray SILT, some f-c Sand, wet, no odor	
12	21	2,2,2,2	0			FILL	Same as above, brick fragments, wet, no odor	
14	14	WH,1,1,2	12.3				Same as above, no brick, wet, no odor	
16	16	3,2,1,1	1000+				Dark gray f-m SAND, trace Silt, clay in tip of spoon, wet, light NAPL coating, strong naphthalene-like odor	
18	16	2,2,2,2	1000+				Same as above, wet, light NAPL coating @ 17-18.5', NAPL-saturated @ 18.5-18.75', strong naph-like odor	
20	10	1,1,1,1	102			OL	Dark gray organic CLAY, little friable Peat, trace shell fragments, wet, moderate naph-like odor	

**Remarks:** Boring Terminated (ft): 91.0

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(Continued Next Page)





# Boring and Well Construction Log

BORING #: SB-109

Sheet 2 of 5

<b>Client:</b> National Grid	<b>Location:</b> 222 Maspeth Avenue		
<b>Project:</b> Equity Former MGP Site	<b>Northing:</b> 686534.0	<b>Easting:</b> 649040.1	<b>Logged By:</b> S. Wright
<b>Project #:</b> 60137362	<b>Ground Elevation (NAVD 88):</b> 13.1		<b>Drilling Company:</b> Glacier
<b>Start Date:</b> 8/8/2018	<b>Drilling Method:</b> Sonic/Split Spoon		<b>Water Level (ft):</b> 8
<b>Finish Date:</b> 8/9/2018	<b>Borehole Diameter:</b> 4		<b>Total Depth (ft):</b> 91

Depth (ft bgs)	Percent Recovery	Blowcounts (per 6")	PID (ppm)	Visible and Olfactory Impacts	Graphic	USCS Code	Soil and Rock Description Classification Scheme: USCS	Lab Sample ID
20								
22	10	1,1,1,1	102			OL	Same as above, wet, moderate natural sulfur odor	
24	12	1,1,1,1	11.4				Same as above, no peat, no shells, wet, moderate natural sulfur odor	
26	19	1,1,3,2	110			SP	Gray silty fine SAND, wet, slight natural sulfur odor	
28	24	4,5,9,10	49.8			OL	Dark gray organic CLAY, wet, moderate natural sulfur odor	
30	24	1000+					Gray f-m SAND, trace Silt, light NAPL coating, strong naph-like odor	
32	14	3,4,5,7	1000+				Same as above, wet, stained with NAPL, strong naph-like odor	
34	13	6,6,9,12	1000+			SW	Same as above, wet, stained with NAPL, strong naph-like odor	
36	18	9,5,10,8	336				Gray f-c SAND, trace Silt, wet, strong naph-like odor	
38	10	4,2,6,13	205				Gray silty fine SAND, wet, NAPL-stained, strong naph-like odor Gray f-c SAND, trace f-c Gravel, trace Silt, wet, NAPL staining in tip of spoon, strong naph-like odor	
40	19	4,15,10,9	428			ML/SM	Gray silty fine SAND, wet, heavy NAPL coating, strong naph-like odor Brown interbedded SILT and fine SAND, wet, band of light NAPL coating @ 36-36.5', moderate naph-like odor	
42	24	7,9,12,9	1000+			SP	Gray fine SAND, little Silt, wet, NAPL-stained, strong naph-like odor	
44	2	4,12,7,7	18.1			NR	Too little recovery to classify	

**Remarks:** Boring Terminated (ft): 91.0

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 Northing and Easting coordinates referenced to New York State Plane NAD83 East.  
 WH = Weight of Hammer

(Continued Next Page)

<b>Client:</b> National Grid	<b>Location:</b> 222 Maspeth Avenue		
<b>Project:</b> Equity Former MGP Site	<b>Northing:</b> 686534.0	<b>Easting:</b> 649040.1	<b>Logged By:</b> S. Wright
<b>Project #:</b> 60137362	<b>Ground Elevation (NAVD 88):</b> 13.1		<b>Drilling Company:</b> Glacier
<b>Start Date:</b> 8/8/2018	<b>Drilling Method:</b> Sonic/Split Spoon		<b>Water Level (ft):</b> 8
<b>Finish Date:</b> 8/9/2018	<b>Borehole Diameter:</b> 4		<b>Total Depth (ft):</b> 91

Depth (ft bgs)	Percent Recovery	Blowcounts (per 6")	PID (ppm)	Visible and Olfactory Impacts	Graphic	USCS Code	Soil and Rock Description Classification Scheme: USCS	Lab Sample ID
40	2	4,12,7,7	18.1			NR		
42	7	5,9,6,11	0			SW	Brown f-c SAND, some f-c Gravel, cobbles, wet, no odor	
44	12	12,6,10,22	0			ML	Brown SILT, little fine Sand, wet, no odor	
46	8	27,23,27,10	0				Gray f-c GRAVEL, some f-c Sand, trace Silt, cobbles, wet, no odor	
48	4	8,9,12,13	0			GW	Same as above, wet, no odor	
50	4	13,15,9,7	0			GW	Same as above, wet, no odor	
52	4	7,6,6,6	0				Too little recovery to classify	
54	0	NA	NA				No recovery	
56	0	NA	NA				No recovery	
58	8	13,9,5,7	0				Grayish brown f-c SAND, little f-c Gravel, wet, no odor	
60	12	6,6,5,6	0	SW		Brown f-c SAND, trace fine Gravel, wet, no odor		

**Remarks:** Boring Terminated (ft): 91.0

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 WH = Weight of Hammer



# Boring and Well Construction Log

BORING #: SB-109

Sheet 4 of 5

<b>Client:</b> National Grid	<b>Location:</b> 222 Maspeth Avenue		
<b>Project:</b> Equity Former MGP Site	<b>Northing:</b> 686534.0	<b>Easting:</b> 649040.1	<b>Logged By:</b> S. Wright
<b>Project #:</b> 60137362	<b>Ground Elevation (NAVD 88):</b> 13.1		<b>Drilling Company:</b> Glacier
<b>Start Date:</b> 8/8/2018	<b>Drilling Method:</b> Sonic/Split Spoon		<b>Water Level (ft):</b> 8
<b>Finish Date:</b> 8/9/2018	<b>Borehole Diameter:</b> 4		<b>Total Depth (ft):</b> 91

Depth (ft bgs)	Percent Recovery	Blowcounts (per 6")	PID (ppm)	Visible and Olfactory Impacts	Graphic	USCS Code	Soil and Rock Description Classification Scheme: USCS	Lab Sample ID	
60									
62	12	6,6,5,6	0			SW	Same as above, wet, no odor		
64	16	8,9,6,10	0				Same as above, wet, no odor, small cobble in tip of spoon		
66	8	3,4,9,10	0				Too little recovery to classify		
68	2	10,10,6,8	NA			NR	Too little recovery to classify		
70	2	5,2,4,4	NA				SW		Gray f-c SAND, little f-c Gravel, wet, heavy NAPL coating @ 70-71', strong naph-like odor
72	9	13,10,13,14	1000+						NR
74	<1	7,15,18,18	NA				SW		Grayish brown f-c SAND, some f-c Gravel, trace Silt, cobbles, wet, no odor
76	7	8,9,8,10	0						Same as above, wet, no odor
78	12	9,10,10,13	0						No recovery
80	0	9,16,14,16	NA						NR
80	0	NA	NA			NR	No recovery		

**Remarks:** Boring Terminated (ft): 91.0

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 WH = Weight of Hammer

(Continued Next Page)



# Boring and Well Construction Log

BORING #: SB-109

Sheet 5 of 5

<b>Client:</b> National Grid	<b>Location:</b> 222 Maspeth Avenue		
<b>Project:</b> Equity Former MGP Site	<b>Northing:</b> 686534.0	<b>Easting:</b> 649040.1	<b>Logged By:</b> S. Wright
<b>Project #:</b> 60137362	<b>Ground Elevation (NAVD 88):</b> 13.1		<b>Drilling Company:</b> Glacier
<b>Start Date:</b> 8/8/2018	<b>Drilling Method:</b> Sonic/Split Spoon		<b>Water Level (ft):</b> 8
<b>Finish Date:</b> 8/9/2018	<b>Borehole Diameter:</b> 4		<b>Total Depth (ft):</b> 91

Depth (ft bgs)	Percent Recovery	Blowcounts (per 6")	PID (ppm)	Visible and Olfactory Impacts	Graphic	USCS Code	Soil and Rock Description Classification Scheme: USCS	Lab Sample ID
80	0	NA	NA			NR	No recovery	
82	0	NA	NA					
84	18	6,8,10,14	1000+			SW	Gray and brown f-c SAND, trace f-c Gravel, trace Clay, wet, bands of light NAPL coating @83-84', black heavy NAPL coating @ 34', strong naph-like odor	
86	20	4,4,4,4	0				Same as above, wet, no odor	
88	6	4,5,7,9	0			CL	Very dark gray CLAY, little Silt, dense, wet, no odor	
			0				Very dark gray CLAY, trace coarse Gravel, dense, wet, no odor	
90	18	4,6,4,4	0				Same as above, dense, wet, no odor	

**Remarks:** Boring Terminated (ft): 91.0

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# Boring and Well Construction Log

BORING #: SB-110

Sheet 1 of 5

<b>Client:</b> National Grid	<b>Location:</b> 222 Maspeth Avenue		
<b>Project:</b> Equity Former MGP Site	<b>Northing:</b> 686624.9	<b>Easting:</b> 648973.6	<b>Logged By:</b> S. Wright
<b>Project #:</b> 60137362	<b>Ground Elevation (NAVD 88):</b> 13.4		<b>Drilling Company:</b> Glacier
<b>Start Date:</b> 8/15/2018	<b>Drilling Method:</b> Sonic/Split Spoon		<b>Water Level (ft):</b> 8
<b>Finish Date:</b> 8/16/2018	<b>Borehole Diameter:</b> 4		<b>Total Depth (ft):</b> 85.25

Depth (ft bgs)	Percent Recovery	Blowcounts (per 6")	PID (ppm)	Visible and Olfactory Impacts	Graphic	USCS Code	Soil and Rock Description Classification Scheme: USCS	Lab Sample ID	
0									
						CONCRETE	Concrete slab		
2	NA	NA	28.6			FILL	Black f-c SAND, some Silt, some f-c Gravel, cobbles, wood debris, brick/concrete fragments, moist, slight naphthalene-like odor		
4			3.3				Dark grayish brown f-c SAND, some f-c Gravel, little Silt, brick/concrete fragments, dry, no odor		
6	8	2,3,4,3	4.7				Black ASH/CINDERS, little f-c Sand, little f-c Gravel, wet, no odor		
8	22	3,1,2,1	26.9				Dark gray to black SILT, little f-c Sand, moist, no odor		
10	12	2,1,1,1	761				Black f-c SAND, little f-c Gravel, cinders, wet, no odor		
			401				Same as above, wood debris, metal and coal fragments, wet, strong naph-like odor		
12	0	1,WH/18"					Grayish brown SILT, some fine Sand, little f-c Gravel, wet, strong naph-like odor		
							NR	No recovery	
14	14	1,WH/18"	274				FILL	Grayish brown SILT, some fine Sand, little f-c Gravel, wet, strong naph-like odor	
16	21	2,1,1,1	263				FILL	Grayish brown f-c SAND, some Silt, little f-c Gravel, wet strong naph-like odor	
18	0	2,4,2,3	NA		PT	Black friable PEAT, wet, strong natural sulfur odor			
					NR	No recovery			
20	24	1,1,1,2	0.5		PT	Dark brown fibrous PEAT, trace Clay, wet, strong natural sulfur odor			

**Remarks:** Boring Terminated (ft): 85.3

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 WH = Weight of Hammer

(Continued Next Page)



# Boring and Well Construction Log

BORING #: SB-110

Sheet 2 of 5

<b>Client:</b> National Grid	<b>Location:</b> 222 Maspeth Avenue		
<b>Project:</b> Equity Former MGP Site	<b>Northing:</b> 686624.9	<b>Easting:</b> 648973.6	<b>Logged By:</b> S. Wright
<b>Project #:</b> 60137362	<b>Ground Elevation (NAVD 88):</b> 13.4		<b>Drilling Company:</b> Glacier
<b>Start Date:</b> 8/15/2018	<b>Drilling Method:</b> Sonic/Split Spoon		<b>Water Level (ft):</b> 8
<b>Finish Date:</b> 8/16/2018	<b>Borehole Diameter:</b> 4		<b>Total Depth (ft):</b> 85.25

Depth (ft bgs)	Percent Recovery	Blowcounts (per 6")	PID (ppm)	Visible and Olfactory Impacts	Graphic	USCS Code	Soil and Rock Description Classification Scheme: USCS	Lab Sample ID
20								
22	24	1,1,1,2	0.5	Green		PT	Same as above, wet, strong natural sulfur odor	
24	21	2,1,1,1	6.6				Same as above, wet, strong natural sulfur odor	
26	22	1,1,1,1	3.9				Black friable PEAT, wet, strong natural sulfur odor	
28	16	7,8,9,9	157				Yellow	
30	21	11,11,10,8	112	Same as above, wet, moderate naph-like odor				
32	6	7,8,11,11	4.2	Green		SP	Grayish brown silty fine SAND, little f-c Gravel, wet, slight naph-like odor	
34	9	11,14,15,11	51.4				Same as above, some f-c Gravel, wet, no odor	
36	9	12,13,11,7	5.4				Dark gray silty fine SAND, trace coarse Sand, wet, slight naph-like odor	
38	8	13,10,3,7	694	Magenta		SW	Grayish brown silty fine SAND and f-c GRAVEL, cobbles, wet, no odor, black f-c Sand in tip of spoon, NAPL-stained with strong naph-like odor	
40	18	5,8,9,7	1000+				Black f-c SAND, some f-c Gravel, wet, heavy NAPL coating, strong naph-like odor	
42	8	12,5,3,3	15.2				Same as above, heavy NAPL coating, strong naph-like odor	
44				Green		SW	Gray f-c SAND, some f-c Gravel, wet, no odor	

**Remarks:** Boring Terminated (ft): 85.3

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NA - Not Applicable / SAA - Same as Above / bgs - below ground surface / NAPL - Non-aqueous phase liquid  
 Northing and Easting coordinates referenced to New York State Plane NAD83 East.  
 WH = Weight of Hammer

(Continued Next Page)



# Boring and Well Construction Log

BORING #: SB-110

Sheet 3 of 5

<b>Client:</b> National Grid	<b>Location:</b> 222 Maspeth Avenue		
<b>Project:</b> Equity Former MGP Site	<b>Northing:</b> 686624.9	<b>Easting:</b> 648973.6	<b>Logged By:</b> S. Wright
<b>Project #:</b> 60137362	<b>Ground Elevation (NAVD 88):</b> 13.4		<b>Drilling Company:</b> Glacier
<b>Start Date:</b> 8/15/2018	<b>Drilling Method:</b> Sonic/Split Spoon		<b>Water Level (ft):</b> 8
<b>Finish Date:</b> 8/16/2018	<b>Borehole Diameter:</b> 4		<b>Total Depth (ft):</b> 85.25

Depth (ft bgs)	Percent Recovery	Blowcounts (per 6")	PID (ppm)	Visible and Olfactory Impacts	Graphic	USCS Code	Soil and Rock Description Classification Scheme: USCS	Lab Sample ID			
40	8	12,5,3,3	15.2			SW	Brownish gray f-c SAND, trace f-c Gravel, wet, no odor				
42	9	12,5,3,3	13.7								
44	14	2,2,2,4	20.1								
46	11	5,4,3,6	0								
48	19	5,6,5,6	0								
50	11	1,2,3,3	0								
52	0	4,5,4,6	NA						NR	No recovery	
54	17	3,6,6,6	0							SW	Brownish gray f-c SAND, little f-c Gravel, wet, no odor
56	11	4,4,4,8	0								
58	18	6,4,3,7	0								
60	6	9,3,3,5	0								

**Remarks:** Boring Terminated (ft): 85.3

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(Continued Next Page)



# Boring and Well Construction Log

BORING #: SB-110

Sheet 4 of 5

<b>Client:</b> National Grid	<b>Location:</b> 222 Maspeth Avenue		
<b>Project:</b> Equity Former MGP Site	<b>Northing:</b> 686624.9	<b>Easting:</b> 648973.6	<b>Logged By:</b> S. Wright
<b>Project #:</b> 60137362	<b>Ground Elevation (NAVD 88):</b> 13.4		<b>Drilling Company:</b> Glacier
<b>Start Date:</b> 8/15/2018	<b>Drilling Method:</b> Sonic/Split Spoon		<b>Water Level (ft):</b> 8
<b>Finish Date:</b> 8/16/2018	<b>Borehole Diameter:</b> 4		<b>Total Depth (ft):</b> 85.25

Depth (ft bgs)	Percent Recovery	Blowcounts (per 6")	PID (ppm)	Visible and Olfactory Impacts	Graphic	USCS Code	Soil and Rock Description Classification Scheme: USCS	Lab Sample ID
60	6	9,3,3,5	0			SW		
62	0	4,4,4,6	NA			NR	No recovery	
64	18	3,6,8,10	0			SW	Brownish gray f-c SAND, some f-c Gravel, wet, no odor	
66	13	3,4,6,7	0				Same as above, little f-c Gravel, wet, no odor	
68	24	2,3,5,9	0				Brownish gray f-c SAND, trace f-c Gravel, wet, no odor	
70	14	6,6,8,10	0				Brown f-c SAND, little f-c Gravel, wet, no odor	
72	18	6,8,12,17	0				Same as above, wet, no odor	
74	16	4,6,9,13	0			SP	Gray fine SAND, little Silt, wet, no odor	
			0				Gray to brown fine SAND, little Silt, wet, no odor	
76	19	8,11,14,21	0				Dark brown fine SAND, little Silt, wet, no odor	
78	14	11,17,22,26	0				Same as above, trace coarse Gravel, wet, no odor	
80	22	9,19,25,27	0				Dark brown fine SAND, little Silt, little f-c Gravel, wet, no odor	

**Remarks:** Boring Terminated (ft): 85.3

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(Continued Next Page)





# Boring and Well Construction Log

BORING #: SB-110

Sheet 5 of 5

<b>Client:</b> National Grid	<b>Location:</b> 222 Maspeth Avenue		
<b>Project:</b> Equity Former MGP Site	<b>Northing:</b> 686624.9	<b>Easting:</b> 648973.6	<b>Logged By:</b> S. Wright
<b>Project #:</b> 60137362	<b>Ground Elevation (NAVD 88):</b> 13.4		<b>Drilling Company:</b> Glacier
<b>Start Date:</b> 8/15/2018	<b>Drilling Method:</b> Sonic/Split Spoon		<b>Water Level (ft):</b> 8
<b>Finish Date:</b> 8/16/2018	<b>Borehole Diameter:</b> 4		<b>Total Depth (ft):</b> 85.25

Depth (ft bgs)	Percent Recovery	Blowcounts (per 6")	PID (ppm)	Visible and Olfactory Impacts	Graphic	USCS Code	Soil and Rock Description Classification Scheme: USCS	Lab Sample ID
80								
	22	9,19,25,27	0			SP	Gray fine SAND, some Silt, wet, no odor	
82							Same as above, cobble @ 81.5', wet, no odor	
	19	9,13,8,7	0			CL	Dark gray CLAY, little Silt, 1/2" lens of f-c Sand @ 82.75', wet, no odor	
84							Same as above, wet, no odor	
	24	8,14,19,27	0			Light gray and red CLAY, dense, wet, no odor		
							Very dark gray to light gray CLAY, little Silt, dense, wet, no odor	
	3	100/3"	0				Light gray CLAY, little Silt, wet, no odor. Refusal on Presumed Cobble	

**Remarks:** Boring Terminated (ft): 85.3

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## Appendix B Air Quality Monitoring Records

**Air Monitoring Data - 222 Maspeth Ave Supplemental Investigation  
National Grid Equity Site, 222 Maspeth Avenue, Brooklyn, NY**

Date	Weather (°F)	PID		Dust Trak		Notes
		Exceedance	Duration	Exceedance	Duration	
7/30/2018	80s, sunny	NRE	NA	NRE	NA	No CAMP issues. Periodic elevated downwind Dust Trak readings throughout the day due to wind-blown dust. Elevated readings were not sustainable and not a result of drilling activities.
7/31/2018	80s, sunny	NRE	NA	NRE	NA	
8/1/2018	80s, rain	NRE	NA	NRE	NA	No CAMP issues.
8/2/2018	80s, sunny	NRE	NA	NRE	NA	No CAMP issues.
8/3/2018	80s, sunny	NRE	NA	NRE	NA	No CAMP issues.
8/6/2018	90s, sunny	NRE	NA	NRE	NA	No CAMP issues.
8/7/2018	90s, sunny	NA	NA	NA	NA	No CAMP performed (no field work) Periodic elevated downwind Dust Trak readings throughout the day due to wind-blown dust. Elevated readings were not sustainable and not a result of drilling activities.
8/8/2018	80s, sunny	NRE	NA	NRE	NA	
8/9/2018	80s, sunny	NRE	NA	NRE	NA	No CAMP issues.
8/10/2018	80s, sunny	NRE	NA	NRE	NA	No CAMP issues.
8/13/2018	80s, rain	NRE	NA	NRE	NA	No CAMP issues.
8/14/2018	80s, sunny	NRE	NA	NRE	NA	No CAMP issues. Periodic elevated downwind Dust Trak readings throughout the day due to wind-blown dust. Elevated readings were not sustainable and not a result of drilling activities.
8/15/2018	90s, sunny	NRE	NA	NRE	NA	Periodic elevated downwind Dust Trak readings throughout the day due to wind-blown dust. Elevated readings were not sustainable and not a result of drilling activities.
8/16/2018	90s, sunny	NRE	NA	NRE	NA	No downwind PID data saved (logging not turned on). No exceedances observed in manual readings.
8/17/2018	90s, sunny	NRE	NA	NRE	NA	
8/20/2018	70s, sunny	NRE	NA	NRE	NA	No CAMP issues.

Notes

NRE - No Reportable Exceedance

N/A - Not Applicable

Indicates that any downwind measurements exceeding the upwind measurements per the CAMP were less than 15 minutes in duration, and therefore not reportable

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Client: NATIONAL GRID

Location: EQUITY MGP

Date: 7-30-18

Field Personnel: S. WRIGHT

Project:

Project Number: 60137362

Weather: 80s, SUN

Ambient Noise: FORKLIFT

Community Air Monitoring Plan / Noise Field Log

Time	Upwind PID	Upwind Dust Trak	Work Area PID	Downwind PID	Downwind Dust Trak	dB Readings <sup>1</sup>	Comments
1030	0.2	0.036	0.0	0.0	0.044	-	CORING CONCRETE @ SB-105
1300	0.0	0.032	0.0	0.0	0.038	-	SETTING UP FOR DRILLING SB-105
1330	0.0	0.064	0.0	0.0	0.128	-	DRILLING SB-105
1400	0.0	0.049	0.0	0.0	0.041	-	" " "
1430	0.0	0.047	0.0	0.0	0.62	-	" "
1500	0.0	0.044	0.0	0.0	0.053	-	" "

NOTE: CLOUD OF DUST GENERATED WHEN STARTING VAC @ ~ 1045, LASTED ONLY ~ 1-2 MIN.

Additional Notes:  
1 - Calibrated to A-scale slow-mode



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Client: NATIONAL GRID  
Location: EQUITY MGP  
Date: 7-31-18  
Field Personnel: S. WRIGHT

Project:

Project Number: 60137362

Weather: BOS, SUN

Ambient Noise: FORKLIFT

### Community Air Monitoring Plan / Noise Field Log

Time	Upwind PID	Upwind Dust Trak	Work Area PID	Downwind PID	Downwind Dust Trak	dB Readings <sup>1</sup>	Comments
0945	0.0	0.036	0.0	0.0	0.063	-	STARTING CURING CONCRETE @
1015	0.0	0.056	0.0	0.0	0.032	-	PRE-CLEARING SB-107 SB-107
1100	0.0	0.033	0.0	0.0	0.034	-	DRILLING SB-107
1130	0.0	0.021	0.0	0.0	0.063	-	" "
1245	0.0	0.020	0.0	0.0	0.045	-	RESUMING DRILLING @ SB-107
1345	0.0	0.040	0.0	0.0	0.032	-	DRILLING SB-107
1445	0.0	0.110	0.0	0.0	0.033	-	SB-107 GROUTED

Additional Notes:  
1 - Calibrated to A-scale slow-mode

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Client: NAT. GRID  
 Location: EDUITY MGP  
 Date: 8-1-18  
 Field Personnel: S. WRIGHT

Project:

Project Number: 60137362

Weather: \_\_\_\_\_

Ambient Noise: FORKLIFT

### Community Air Monitoring Plan / Noise Field Log

Time	Upwind PID	Upwind Dust Trak	Work Area PID	Downwind PID	Downwind Dust Trak	dB Readings <sup>1</sup>	Comments
1300	0.0	0.037	0.0	0.0	0.090	—	RESUMING DRILLING SB-106
1315	0.0	0.030	0.0	0.0	0.040	—	DRILLING SB-106
1330	0.0	0.026	0.0	0.0	0.043	—	" "
1345	0.0	0.035	0.0	0.0	0.046	—	" "
1400	0.0	0.038	0.0	0.0	0.047	—	" "
1430	0.0	0.016	0.0	0.0	0.071	—	" "
1445	0.0	0.019	0.0	0.0	0.055	—	" "
1500	0.0	0.017	0.0	0.0	0.057	—	" "
1600	0.0	0.014	0.0	0.0*	0.033	—	FINISHED GROUTING SB-106

\* PID BATTERY DEAD @ 1600, USED WORK AREA PID FOR FINAL READING.

Additional Notes:  
 1 – Calibrated to A-scale slow-mode

Client: NAT GRID  
 Location: EQUITY MGP  
 Date: 8-2-18  
 Field Personnel: S. WRIGHT

Project:

Project Number: 60137362  
 Weather: 80S, SUN  
 Ambient Noise: FORKLIFT

### Community Air Monitoring Plan / Noise Field Log

Time	Upwind PID	Upwind Dust Trak	Work Area PID	Downwind PID	Downwind Dust Trak	dB Readings <sup>1</sup>	Comments
0900	0.0	0.020	0.0	0.0	0.041	—	STARTING CURING CONCRETE @ SB-102
0930	0.0	0.017	0.0	0.0	0.027	—	HAND-CLEARING SB-108**
1015	0.0	0.023	0.0	0.0	0.190	—	DRILLING SB-108**
1045	0.0	0.030	0.0	0.0	0.054	—	" " "
1145	0.0	0.022	0.0	0.0	0.030	—	" " "
1315	0.0	0.022	0.0	0.0	0.57	—	GROUTING SB-108
1330	0.0	0.021	0.0	0.0	0.064	—	" " "
1400	0.0	0.019	0.0	0.0	0.051	—	COMPLETED GRROUTING
1445	0.0	0.016	0.0	0.0	0.043	—	DECON/PATCHING HOLES**
1600	0.0	0.042	0.0	0.0	0.247	—	CURING CONCRETE @ SB-104
1630	0.0	0.011	0.0	0.0	0.043	—	PRE-CLEARING SB-104
1700	0.0	0.029	0.0	0.0	0.037	—	SHUTTING DOWN FOR DAY

\* BRIEF BURST OF DUST WHEN VAC TURNED ON @ 0920.  
 \*\* WIND IS BLOWING DUST FROM GROUND THRU WORK AREA AND BY DW STATION.  
 Additional Notes:  
 1 - Calibrated to A-scale slow-mode  
 NO DRILLING/GRROUTING BETWEEN ~~1400~~ 1600

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Client: NAT. GRID  
Location: EDUITY MGP  
Date: 8-3-18  
Field Personnel: S. WRIGHT

Project:

Project Number: 60137362

Weather: EOS, SUN

Ambient Noise: FORKLIFT

### Community Air Monitoring Plan / Noise Field Log

Time	Upwind PID	Upwind Dust Trak	Work Area PID	Downwind PID	Downwind Dust Trak	dB Readings <sup>1</sup>	Comments
0915	0.0 <del>0</del>	0.019	0.0	0.0	0.214*	—	STARTING DRILLING @ SB-104
0945	0.0	0.017	0.0	0.0	0.097	—	DRILLING SB-104
1045	0.0	0.017	0.0	0.0	0.088	—	" "
1130	0.0	0.016	0.0	0.0	0.043	—	CLEANING UP FOR DAY.

\* BRIEF SPIKE WHEN CLEANING DUST OFF OF TOP OF CASE,

Additional Notes:  
1 - Calibrated to A-scale slow-mode



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Client: WAT. GRID  
 Location: EDUITY MGP  
 Date: 8-6-18  
 Field Personnel: S. WRIGHT

Project:

Project Number: 60137362  
 Weather: 90, SUN  
 Ambient Noise: FORKLIFT

Community Air Monitoring Plan / Noise Field Log

Time	Upwind PID	Upwind <del>*</del> Dust Trak	Work Area PID	Downwind PID	Downwind <del>**</del> Dust Trak	dB Readings <sup>1</sup>	Comments
							RESUMING
1045	0.0	0.407	0.0	0.0	0.202	✓	<del>STARTING</del> DRILLING @ SB-104
1100	12.2	0.351	0.0	0.0	0.097	—	ADVANCING CASING @ SB-104
1115	0.0	0.338	0.0	0.0	0.069	—	" " "
1200	0.0	0.397	0.0	0.0	0.108	—	DRILLING @ SB-104
1245	0.0	0.109	0.0	0.0	0.207	—	RESUMING DRILLING @ SB-104
1300	0.0	0.065	0.0	0.0	0.084	—	DRILLING SB-104
1345	0.0	0.014	0.0	0.0	0.070	—	" "
1415	0.0	0.014	0.0	0.0	0.072	—	" "
1530	0.0	0.040	0.0	0.0	0.078	—	GROUTING SB-104
1600	0.0	0.032	0.0	0.0	0.111	—	" "
1630	0.0	0.025	0.0	0.0	0.243	—	" "
1645	0.0	0.040	0.0	0.0	0.120	—	" "
1700	0.0	0.070	0.0	0.0	0.125	—	FINISHED GROUTING

\* U/W D. TRAK GIVING HIGH READINGS DESPITE DUST NO LONGER BLOWING OVER IT. RE-CAL'D IT DURING LUNCH BREAK. SEEMS TO BE WORKING PROPERLY NOW.  
 \*\* WIND IS KICKING UP DUST FROM DRIED PUDGES → BLOWING OVER DW STATION FROM 1200-1700

Additional Notes:  
 1 - Calibrated to A-scale slow-mode

Client: NAT. GRID  
 Location: EQUITY MBP  
 Date: 8-8-18  
 Field Personnel: S. WRIGHT

Project:

Project Number: 60137362  
 Weather: 80s, SUN  
 Ambient Noise: FORKLIFT

### Community Air Monitoring Plan / Noise Field Log

Time	Upwind PID	Upwind Dust Trak	Work Area PID	Downwind PID	Downwind Dust Trak	dB Readings <sup>1</sup>	Comments
0945	0.0	0.148	0.0	0.0	0.041	-	CORING @ SB-109
1000	0.0	0.120	0.0	0.0	0.032	-	PRE-CLEAR SB-109
1015	0.0	0.117	0.0	0.0	0.034	-	" " "
1030	0.0	0.112	0.0	0.0	0.035	-	STARTING DRILLING @ SB-109
1045	0.0	0.105	0.0	0.0	0.037	-	DRILLING SB-109
1100	0.0	0.073	0.0	0.0	0.050	-	" "
1300	0.0	0.028	0.0	0.0	0.040	-	" "
1315	0.0	0.033	0.0	0.0	0.034	-	" "
1430	0.0	0.060	0.0	0.0	0.071	-	" "
1515	0.0	0.064	0.0	0.0	0.133	-	" "
1630	0.0	0.053	0.0	0.0	0.061	-	CLEANING UP FOR DAY.

Additional Notes:  
 1 - Calibrated to A-scale slow-mode

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Client: NAT. GRID  
 Location: ERVITY MGP  
 Date: 8-9-18  
 Field Personnel: S. WRIGHT

Project:

Project Number: 60137362  
 Weather: 80s, SUN  
 Ambient Noise: FORKLIFT

### Community Air Monitoring Plan / Noise Field Log

Time	Upwind PID	Upwind Dust Trak	Work Area PID	Downwind PID	Downwind Dust Trak	dB Readings <sup>1</sup>	Comments
0830	0.0	0.168	0.0	0.0	0.057	-	<del>STARTING</del> RESUMING DRILLING @ SB-109
0845	0.0	0.131	0.0	0.0	0.038	-	DRILLING SB-109
0900	0.0	0.120	0.0	0.0	0.040	-	" "
0915	0.0	0.105	0.0	0.0	0.043	-	" "
0930	0.0	0.136	0.0	0.0	0.048	-	" "
1000	0.0	0.079	0.0	0.0	0.093	-	" "
1030	0.0	0.071	0.0	0.0	0.034	-	" "
1045	0.0	0.051	0.0	0.0	0.061	-	" "
1145	0.0	0.047	0.0	0.0	0.032	-	" "
1400	0.0	0.027	0.0	0.0	0.032	-	GRROUTING SB-109
1445	0.0	0.026	0.0	0.0	0.034	-	DECON EQUIPMENT
1545	0.0	0.027	0.0	0.0	0.026	-	CORING CONCRETE @ SB-103
1630	0.0	0.047	0.0	0.0	0.032	-	PRE-CLEARING SB-103
1730	0.0	0.054	0.0	0.0	0.044	-	DRILLING SB-103

NOTE: WIND IS KICKING UP DUST OCCASIONALLY, MOST IS OVER LW STATION BUT ALSO DW STATION,

Additional Notes:  
 1 - Calibrated to A-scale slow-mode

AECOM

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Client: NYP, GRID

Location: EQUITY MGP

Date: 8-10-18

Field Personnel: S. WRIGHT

Project:

Project Number: 60137362

Weather: 80S, SUN

Ambient Noise: FOCKLIA

### Community Air Monitoring Plan / Noise Field Log

Time	Upwind PID	Upwind Dust Trak	Work Area PID	Downwind PID	Downwind Dust Trak	dB Readings <sup>1</sup>	Comments
<u>0800</u>	<u>0.0</u>	<u>0.288</u>	<u>0.0</u>	<u>0.0</u>	<u>0.054</u>	<u>-</u>	<u>DRIVING SB-103</u>
<u>0945</u>	<u>0.0</u>	<u>0.190</u>	<u>0.0</u>	<u>0.0</u>	<u>0.065</u>	<u>-</u>	<u>" "</u>
<u>1015</u>	<u>0.0</u>	<u>0.171</u>	<u>0.0</u>	<u>0.0</u>	<u>0.053</u>	<u>-</u>	<u>DRIVING SMCLEY TUBE</u>
<u>1115</u>	<u>0.0</u>	<u>0.114</u>	<u>0.0</u>	<u>0.0</u>	<u>0.049</u>	<u>-</u>	<u>GROUTING SB-103</u>
<u>1130</u>	<u>0.0</u>	<u>0.091</u>	<u>0.0</u>	<u>0.0</u>	<u>0.047</u>		<u>" "</u>

Additional Notes:  
1 - Calibrated to A-scale slow-mode



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Client: NAT. GRID  
Location: EQUITY MGP  
Date: 8-13-18  
Field Personnel: S. WRIGHT

Project:

Project Number: 60137362  
Weather: 80, RAIN  
Ambient Noise: FORKLIFT

### Community Air Monitoring Plan / Noise Field Log

Time	Upwind PID	Upwind Dust Trak	Work Area PID	Downwind PID	Downwind Dust Trak	dB Readings <sup>1</sup>	Comments
1130	0.106	0.0	0.0	0.0	0.036	-	DRILLING SB-102
1200	0.105	0.0	0.0	0.0	0.057	-	" "
1330	0.102	0.1	0.0	0.0	0.032	-	GROUTING SB-102
1400	0.091	0.0	0.0	0.0	0.044	-	" "
1445	0.098	0.0	0.0	0.0	0.038	-	FINISHED GROUTING SB-102

Additional Notes:  
1 - Calibrated to A-scale slow-mode

Client: NAT. GRID  
 Location: EQUITY MGP  
 Date: 8-14-18  
 Field Personnel: S. WRIGHT

Project:

Project Number: 7362  
60130360  
 Weather: \_\_\_\_\_  
 Ambient Noise: FORKLIFT

### Community Air Monitoring Plan / Noise Field Log

Time	Upwind PID	Upwind Dust Trak	Work Area PID	Downwind PID	Downwind Dust Trak	dB Readings <sup>1</sup>	Comments
0845	0.0	0.226	0.0	0.0	0.014	-	CORING CONCRETE SB-101
0900	0.0	0.087	0.0	0.0	0.017	-	PRE-CLEARING SB-101
0930	0.0	0.050	0.0	0.0	0.030	-	DRILLING SB-101
0945	0.0	0.051	0.0	0.0	0.034	-	" "
1130	0.0	0.018	0.0	0.0	0.021	-	DRIVING CASING @ SB-101
1345	0.0	0.008	0.0	0.0	0.037	-	INSTALLING WELL @ SB-101
1400	0.0	0.010	0.0	0.0	0.037	-	" " "
1445	0.0	0.016	0.0	0.0	0.058	-	" " "

Additional Notes:  
 1 - Calibrated to A-scale slow-mode

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Client: NAT. GRID  
 Location: EQUITY MGP  
 Date: 8-15-18  
 Field Personnel: S. WRIGHT

Project:

Project Number: 60137362  
 Weather: 72S, SUN  
 Ambient Noise: FORKLIFT

### Community Air Monitoring Plan / Noise Field Log

Time	Upwind PID	Upwind Dust Trak	Work Area PID	Downwind PID	Downwind Dust Trak	dB Readings <sup>1</sup>	Comments
0900	0.0	0.168	0.0	0.0	0.045	-	DRILLING FOR SB-102 REC. WELL
0915	0.0	0.163	0.0	0.0	0.063	-	" " " "
0930	0.0	0.173	0.0	0.0	0.053	-	" " " "
0945	0.1	0.158	0.0	0.0	0.087	-	" " " "
1015	0.2	0.153	0.0	0.0	0.053	-	INSTALLING WELL @ SB-102
1100	0.1	0.123	0.0	0.0	0.069	-	" " " "
1145	0.0	0.102	0.0	0.0	0.046	-	DECON SB-102 EQUIPMENT
1300	0.0	0.111	0.0	0.0	0.062	-	CORING/PRE-CLEANING SB-100
1315	0.0	0.151	0.0	0.0	0.068	-	" " " "
1345	0.0	0.131	0.0	0.0	0.068	-	" " " " SB-110
1400	0.0	0.119	0.0	0.0	0.089	-	" " " "
1415	0.0	0.118	0.0	0.0	0.068	-	SETTING UP TO DRILL @ SB-110
1515	0.0	0.104	0.0	0.0	0.062	-	DRILLING SB-110
1530	0.0	0.105	0.0	0.0	0.064	-	" "
1615	0.0	0.107	0.0	0.0	0.063	-	" "
1645	0.0	0.143	0.0	0.0	0.098	-	" "
1715	0.0	0.126	0.0	0.0	0.071	-	" "

NOTE: WIND HAS BEEN KICKING UP DUST SINCE 1200, OCCASIONALLY BLOWS OVER DW STATION.

Additional Notes:  
 1 - Calibrated to A-scale slow-mode

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Client: NAT. GRID

Location: EQWITU MGP

Date: 8-16-18

Field Personnel: S. WRIGHT

Project:

Project Number: 60137362

Weather: 90s, SUN

Ambient Noise: FORKLIFT

### Community Air Monitoring Plan / Noise Field Log

Time	Upwind PID	Upwind Dust Trak	Work Area PID	Downwind PID	Downwind Dust Trak	dB Readings <sup>1</sup>	Comments
0845	0.0	0.082	0.0	0.0	0.089	-	DRILLING SB-110
0900	0.0	0.084	0.0	0.0	0.117	-	" "
1000	0.2	0.071	0.0	0.0	0.086	-	" "
1015	0.1	0.074	0.0	0.0	0.087	-	" "
1030	0.1	0.077	0.0	0.0	0.085	-	" "
1045	0.1	0.080	0.0	0.0	0.086	-	" "
1130	0.0	0.075	0.0	0.0	0.086	-	" "
1145	0.0	0.086	0.0	0.0	0.176	-	" "
1200	0.0	0.080	0.0	0.0	0.082	-	" "
1215	0.0	0.086	0.0	0.0	0.085	-	" "
1345	0.0	0.069	0.0	0.0	0.084	-	" "
1400	0.0	0.063	0.0	0.0	0.087	-	" "
1430	0.0	0.063	0.0	0.0	0.080	-	" "
1500	0.0	0.070	0.0	0.0	0.088	-	" "

NOTE: COOPER IS SPOT WELDING NEAR PDU STATION @ 1130 - 1200

Additional Notes:  
1 - Calibrated to A-scale slow-mode

AECOM

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Client: NAT. GRID  
Location: EQUITY MGP  
Date: 8-17-18  
Field Personnel: S. WRIGLEY

Project:

Project Number: 60137362  
Weather: 90s, SUN  
Ambient Noise: FORKLIFT

### Community Air Monitoring Plan / Noise Field Log

Time	Upwind PID	Upwind Dust Trak	Work Area PID	Downwind PID *	Downwind Dust Trak	dB Readings <sup>1</sup>	Comments
0900	0.0	0.431	0.0	0.0	0.018	-	DRILLING SB-100
1000	0.1	0.401	0.0	0.0	0.020	-	" "
1030	0.3	0.376	0.0	0.0	0.021	-	" "
1100	0.0	0.366	0.0	0.0	0.080	-	GRINDING SB-100
1200	0.0	0.345	0.0	0.0	0.023	-	" "

NOTE: COOPER IS WORKING ON RILLOFF NEAR UPWIND STATION (GRINDING).  
\* DISCOVERED DW PID WASNT LOGGING @ END OF DAY.

Additional Notes:  
1 - Calibrated to A-scale slow-mode



Client: NHTL GRID  
 Location: EQUITY MGP  
 Date: 8-20-18  
 Field Personnel: S WRIGHT

Project:

Project Number: 60137361  
 Weather: 70S, SUN  
 Ambient Noise: FORKLIFT

### Community Air Monitoring Plan / Noise Field Log

Time	Upwind PID	Upwind Dust Trak	Work Area PID	Downwind PID	Downwind Dust Trak	dB Readings <sup>1</sup>	Comments
0845	0.0	0.281	0.0	0.0	0.016	-	DEVELOPING SB-101
0930	0.1	0.275	0.0	0.0	0.050	-	" "
1000	0.1	0.274	0.0	0.0	0.020	-	DEVELOPING SB-102
1045	0.1	0.269	0.0	0.0	0.019	-	" "
1115	0.2	0.275	0.0	0.0	0.018	-	" "

NOTE: COOPER WORKING ON ROLLOFF NEAR UPWIND STATION AGAIN, LOTS OF FORKLIFT TRAFFIC.

Additional Notes:  
 1 - Calibrated to A-scale slow-mode

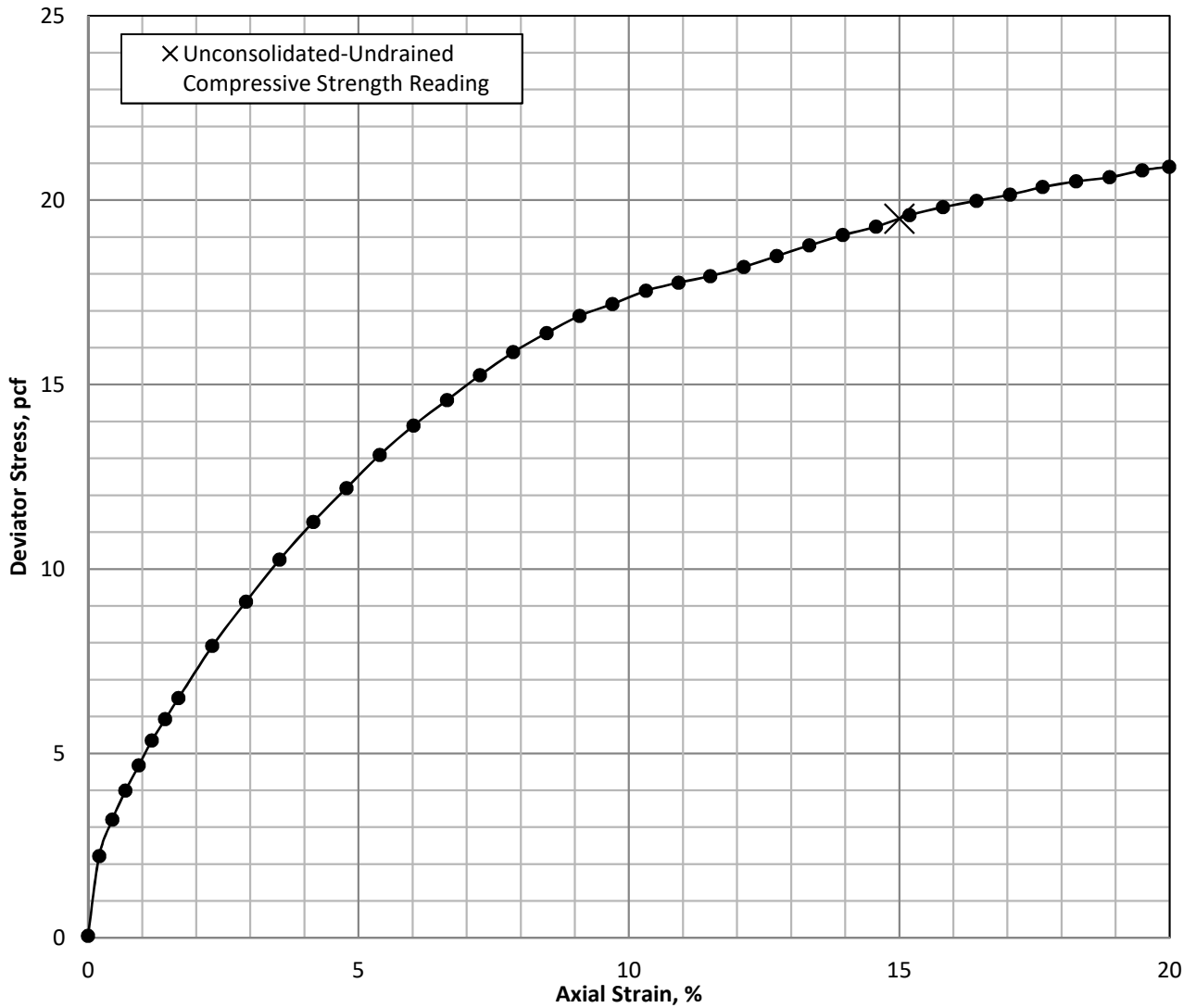
## Appendix C Geotechnical Laboratory Results

**AECOM #60137362**  
**Equity MGP**  
**LABORATORY TESTING DATA SUMMARY**

BORING NO.	SAMPLE NO.	DEPTH (ft)	IDENTIFICATION TESTS							STRENGTH			REMARKS
			WATER CONTENT (%)	LIQUID LIMIT (-)	PLASTIC LIMIT (-)	PLAS. INDEX (-)	USCS SYMB. (1)	TOTAL UNIT WEIGHT (pcf)	DRY UNIT WEIGHT (pcf)	Type Test @ STRESS (psi)	PEAK DEVIATOR STRESS (psi)	AXIAL STRAIN @ PEAK STRESS (%)	
SB-103		39-41						126.3					
SB-103		39.4	26.1										
SB-103		39.95	22.7										
SB-103		40.5	19.0										
SB-103	C	40.8	28.4	37	20	17	CL	124.5	96.9	UU@16	19.5	15.0	UU-J222b

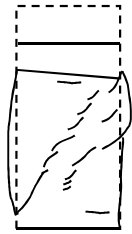
Note: (1) USCS symbol based on visual observation and Atterberg limits reported.

**UNCONSOLIDATED-UNDRAINED COMPRESSIVE STRENGTH TEST, ASTM METHOD D2850**



Specimen and Material Property Information											
Sample Type: Intact tube sample											
Description and/or Classification: CL, brown clay											
Cell Pressure (pcf)	Water Content (%) <sup>(1)</sup>	Wet Unit Weight (pcf)	Dry Unit Weight (pcf) <sup>(1)</sup>	Void Ratio (-)	Saturation (%) <sup>(2)</sup>	Length (inch)	Diameter (inch)	L/D (-)	LL/PL (-)	PI (-)	Specific Gravity (-) <sup>(2)</sup>
0 (Initial)	28.4	124.5	96.9	0.81	99.1	5.980	2.860	2.1	37	17	2.81
16.0	28.4	124.9	97.3	0.80	99.9	5.973	2.857	2.1	20		

Failure Summary			
U-U Compressive Strength (pcf)	U-U Shear Strength, $s_u$ (pcf)	Strain to Peak (%)	Strain Rate (%/min)
19.5	9.75	15.0	0.74



**FAILURE SKETCH**

**Remarks and Notes:**  
 (1) Water Content determined after shear from partial specimen.  
 (2) Assumed specific gravity

Tested by: BB                      Reviewed by: GET  
 Test Date: 8/10/2018              Review Date: 8/29/2018

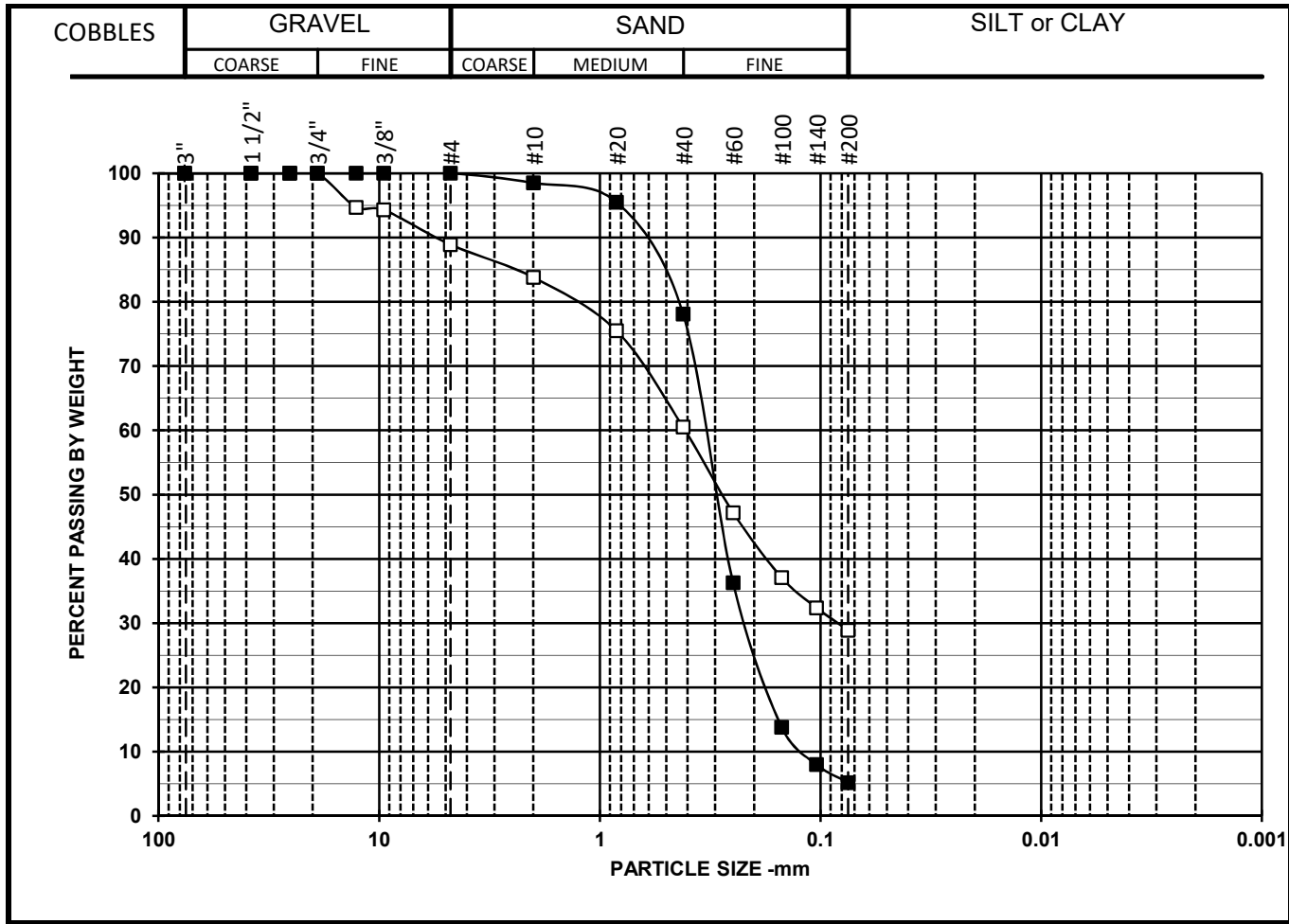
<b>AECOM</b> Project # 60137362 TerraSense, LLC Project # T60137362	<b>Equity MGP</b>	<b>UNCONSOLIDATED-UNDRAINED COMPRESSION TEST</b>  Boring: SB-103 Sample: Section: C Depth: 40.80 ft.
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**AECOM #60137362**  
**Equity MGP**  
**LABORATORY TESTING DATA SUMMARY**

BORING NO.	SAMPLE NO.	DEPTH (ft)	IDENTIFICATION TESTS							STRENGTH			REMARKS	
			WATER CONTENT (%)	LIQUID LIMIT (-)	PLASTIC LIMIT (-)	PLAS. INDEX (-)	USCS SYMB. (1)	SIEVE MINUS NO. 200 (%)	TOTAL UNIT WEIGHT (pcf)	DRY UNIT WEIGHT (pcf)	Type Test @ STRESS (psi)	PEAK DEVIATOR STRESS (psi)		AXIAL STRAIN @ PEAK STRESS (%)
SB-100		37-39							114.3					
SB-100		37.25	49.5											
SB-100		37.8	46.9											
SB-100	B	38.1	40.8	53	22	31	CH		114.3	81.1	UU@19	16.3	5.9	UU236a
SB-103		11-13	9.2				SM	28.9						
SB-106		33-35	0.3				SP-SM	5.2						
SB-109		11-13	17.2	22	18	4	SC-SM	24.7						
SB-109		59-61	18.8				SP	2.6						
SB-110		67-69	14.7				SP	3.6						

Note: (1) USCS symbol based on visual observation and Sieve and Atterberg limits reported.





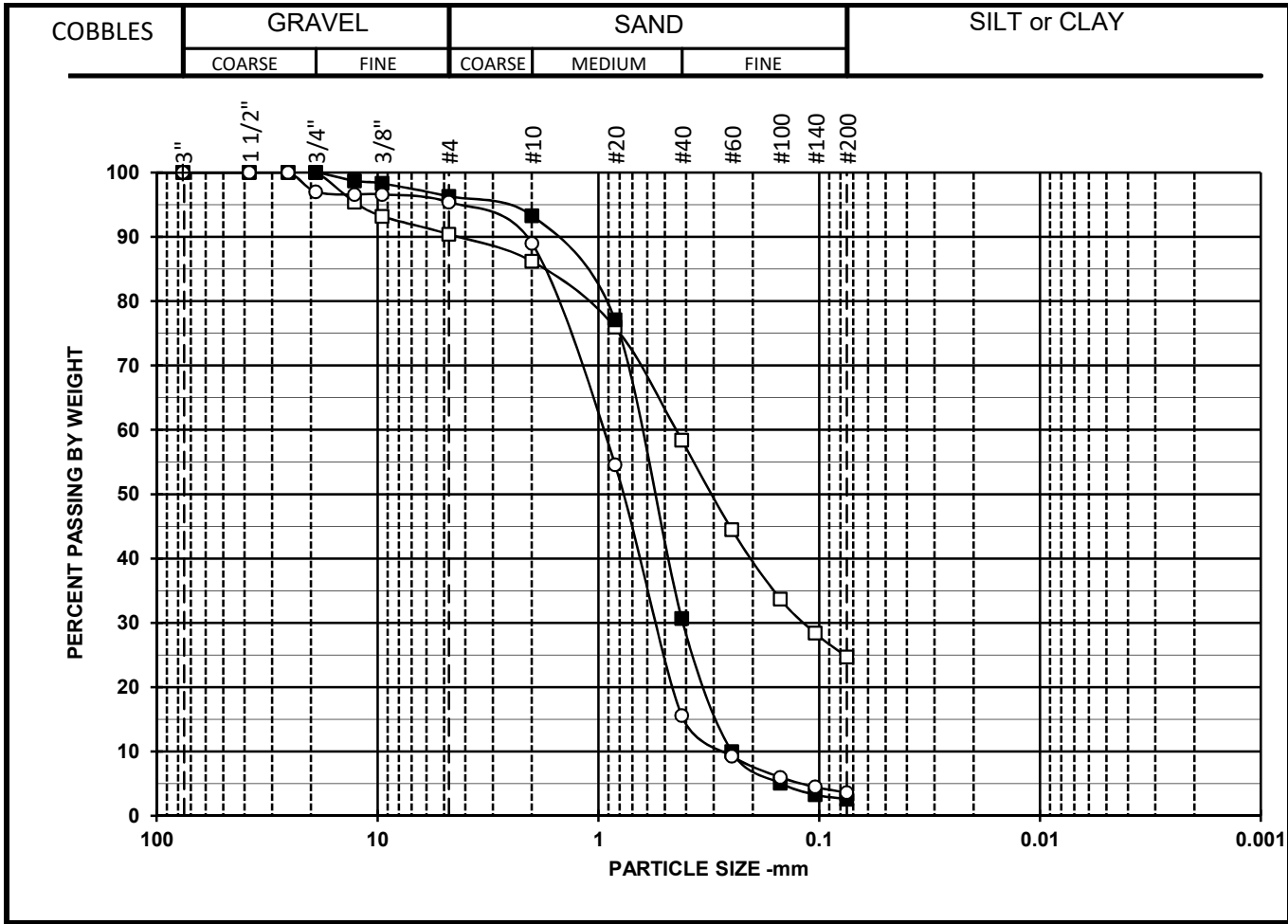
Symbol	□	■	○
Boring	SB-103	SB-106	
Sample			
Depth	11-13	33-35	
% +3"	0.0	0.0	
% Gravel	11.1	0.0	
% SAND	60.0	94.8	
%C SAND	5.1	1.5	
%M SAND	23.3	20.4	
%F SAND	31.6	72.9	
% FINES	28.9	5.2	
D <sub>100</sub> (mm)	19.050	4.750	
D <sub>60</sub> (mm)	0.411	0.334	
D <sub>30</sub> (mm)	0.083	0.216	
D <sub>10</sub> (mm)		0.118	
Cc		1.200	
Cu		2.8	

Sieve	Percent Finer Data	
Size/ID #	SB-103 (%)	SB-106 (%)
6"	100.0	100.0
4"	100.0	100.0
3"	100.0	100.0
1 1/2"	100.0	100.0
1"	100.0	100.0
3/4"	100.0	100.0
1/2"	94.7	100.0
3/8"	94.3	100.0
#4	88.9	100.0
#10	83.8	98.5
#20	75.5	95.5
#40	60.5	78.1
#60	47.2	36.3
#100	37.1	13.8
#140	32.4	8.0
#200	28.9	5.2
5 μm	9.2	0.3
2 μm		
1 μm		

SYMBOL	w (%)	LL	PL	PI	USCS	AASHTO	USCS DESCRIPTION AND REMARKS	DATE
□	9.2				SM		Brown, Silty sand	08/24/18
■	0.3				SP-SM		Gray, Poorly graded sand with silt	08/24/18
○								

<b>AECOM</b>	#60137362	<b>Equity MGP</b>
<b>TerraSense, LLC</b>	#T60137362	

**PARTICLE SIZE DISTRIBUTION**



Symbol	□	■	○
Boring	SB-109	SB-109	SB-110
Sample			
Depth	11-13	59-61	67-69
% +3"	0.0	0.0	0.0
% Gravel	9.6	3.7	4.6
% SAND	65.7	93.7	91.8
%C SAND	4.2	3.0	6.4
%M SAND	27.8	62.6	73.4
%F SAND	33.7	28.1	12.0
% FINES	24.7	2.6	3.6
D <sub>100</sub> (mm)	19.050	19.050	25.400
D <sub>60</sub> (mm)	0.446	0.650	0.963
D <sub>30</sub> (mm)	0.116	0.412	0.542
D <sub>10</sub> (mm)		0.249	0.264
Cc		1.000	1.200
Cu		2.6	3.7

Sieve	Percent Finer Data		
Size/ID #	□	■	○
6"	100.0	100.0	100.0
4"	100.0	100.0	100.0
3"	100.0	100.0	100.0
1 1/2"	100.0	100.0	100.0
1"	100.0	100.0	100.0
3/4"	100.0	100.0	97.0
1/2"	95.4	98.7	96.6
3/8"	93.2	98.3	96.6
#4	90.4	96.3	95.4
#10	86.2	93.3	89.0
#20	76.0	77.1	54.6
#40	58.4	30.7	15.6
#60	44.5	10.0	9.3
#100	33.7	5.1	6.0
#140	28.4	3.3	4.5
#200	24.7	2.6	3.6
5μ m			
2μ m			
1μ m			

SYMBOL	w (%)	LL	PL	PI	USCS	AASHTO	USCS DESCRIPTION AND REMARKS	DATE
□	17.2	22	18	4	SC-SM		Brown, Silty, clayey sand	08/28/18
■	18.8				SP		Dark brown, Poorly graded sand	08/24/18
○	14.7				SP		Yellowish brown, Poorly graded sand	08/24/18

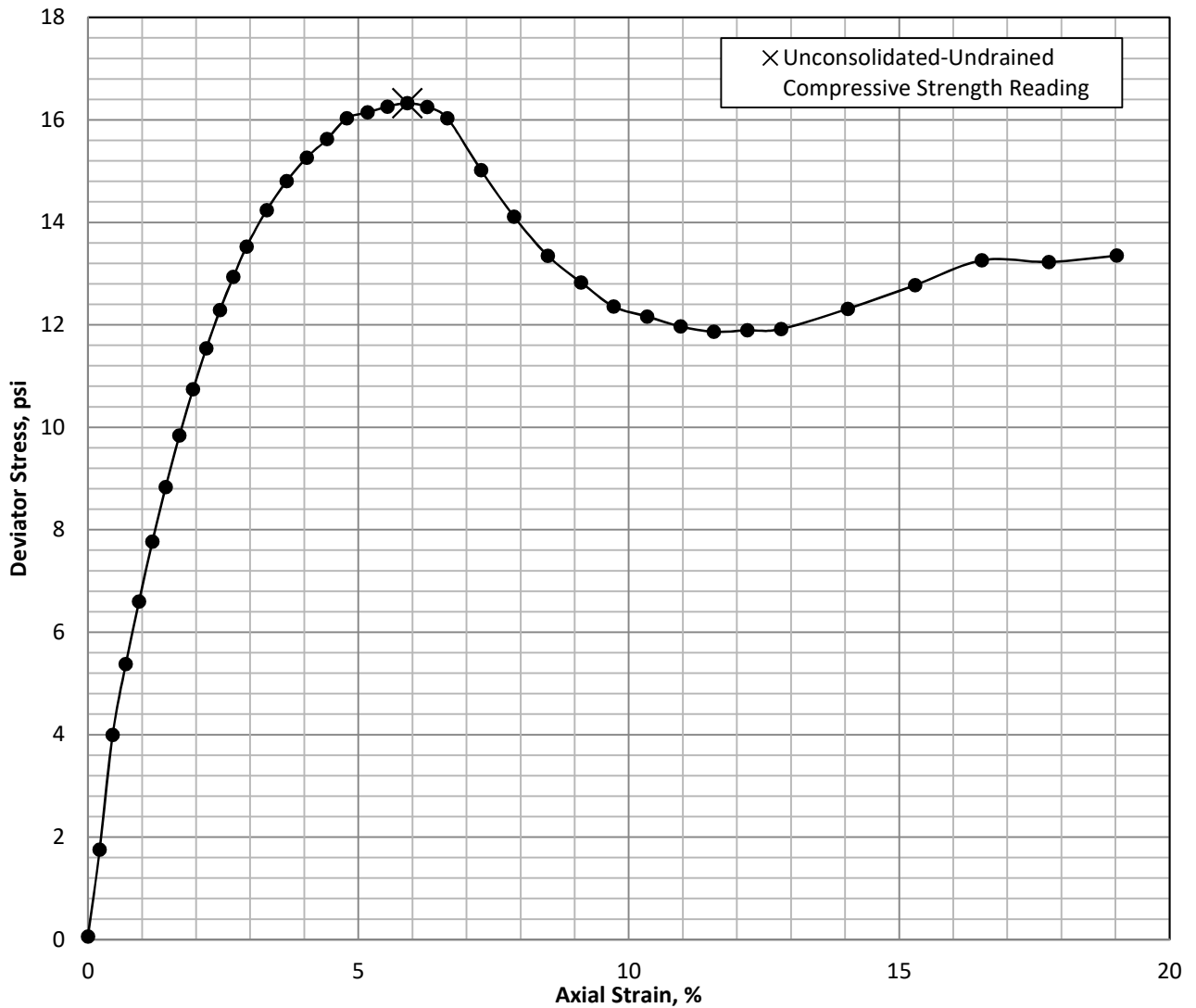
**AECOM** #60137362

**TerraSense, LLC** #T60137362

Equity MGP

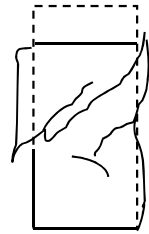
**PARTICLE SIZE DISTRIBUTION**

**UNCONSOLIDATED-UNDRAINED COMPRESSIVE STRENGTH TEST, ASTM METHOD D2850**



Specimen and Material Property Information											
Sample Type: Intact tube sample											
Description and/or Classification: CH, brown fat clay											
Cell Pressure (psi)	Water Content (%) <sup>(1)</sup>	Wet Unit Weight (pcf)	Dry Unit Weight (pcf) <sup>(1)</sup>	Void Ratio (-)	Saturation (%) <sup>(2)</sup>	Length (inch)	Diameter (inch)	L/D (-)	LL/PL (-)	PI (-)	Specific Gravity (-) <sup>(2)</sup>
0 (Initial)	40.8	114.3	81.1	1.15	99.1	5.984	2.866	2.1	53	31	2.80
19.0	40.8	114.9	81.5	1.14	100.0	5.974	2.861	2.1	22		

Failure Summary			
U-U Compressive Strength (psi)	U-U Shear Strength, $s_u$ (psi)	Strain to Peak (%)	Strain Rate (%/min)
16.3	8.15	5.9	0.74



**FAILURE SKETCH**

**Remarks and Notes:**  
 (1) Water Content determined after shear from partial specimen.  
 (2) Assumed specific gravity

Tested by: BB  
 Test Date: 8/24/2018

Reviewed by: CMJ  
 Review Date: 9/6/2018

<b>AECOM</b> Project # 60137362	<b>Equity MGP</b>	<b>UNCONSOLIDATED-UNDRAINED COMPRESSION TEST</b>
<b>TerraSense, LLC</b> Project # T60137362		<b>Boring: SB-100 Sample: Section: B Depth: 38.1 ft.</b>

## Appendix D Site Photographs



125 Broad St, 16<sup>th</sup> Fl  
New York, NY 10004  
Phone: 212-377-8400

# PHOTOGRAPHIC DOCUMENTATION

**CLIENT NAME:**

National Grid

**PROJECT NAME:**

National Grid Equity

**AECOM PROJECT NO.:**

60137362

**Photo No.**  
1

**Date:**  
Jul/Aug  
2018

**Description:**

View of the entrance to 222 Maspeth Avenue as well general conditions on the northwestern portion of the lot in vicinity of SB-100 location.



**Photo No.**  
2

**Date:**  
Jul/Aug  
2018

**Description:**

General conditions on the southwestern portion of 222 Maspeth in vicinity of SB-102 and SB-109 locations.







125 Broad St, 16<sup>th</sup> Fl  
New York, NY 10004  
Phone: 212-377-8400

# PHOTOGRAPHIC DOCUMENTATION

**CLIENT NAME:**

National Grid

**PROJECT NAME:**

National Grid Equity

**AECOM PROJECT NO.:**

60137362

**Photo No.**  
3

**Date:**  
Jul/Aug  
2018

**Description:**

General conditions on the northeastern portion of 222 Maspeth in vicinity of SB-103 location.



**Photo No.**  
4

**Date:**  
Jul/Aug  
2018

**Description:**

General conditions on the central and southeastern portions of 222 Maspeth in vicinity of SB-104 and SB-107 locations.





125 Broad St, 16<sup>th</sup> Fl  
New York, NY 10004  
Phone: 212-377-8400

# PHOTOGRAPHIC DOCUMENTATION

**CLIENT NAME:**

National Grid

**PROJECT NAME:**

National Grid Equity

**AECOM PROJECT NO.:**

60137362

**Photo No.**  
5

**Date:**  
Jul/Aug  
2018

**Description:**

General conditions on the southern portion of 222 Maspeth in vicinity of SB-108 location.



**Photo No.**  
6

**Date:**  
Jul/Aug  
2018

**Description:**

Drill rig setup on the northwestern portion of 222 Maspeth (SB-110 location).





**CLIENT NAME:**

National Grid

**PROJECT NAME:**

National Grid Equity

**AECOM PROJECT NO.:**

60137362

**Photo No.**

7

**Date:**

Jul/Aug  
2018

**Description:**

Drill rig setup on the western portion of 222 Maspeth (SB-101 location).



**Photo No.**

8

**Date:**

Jul/Aug  
2018

**Description:**

Drill rig setup on the central portion of 222 Maspeth (SB-104 location).





125 Broad St, 16<sup>th</sup> Fl  
New York, NY 10004  
Phone: 212-377-8400

# PHOTOGRAPHIC DOCUMENTATION

**CLIENT NAME:**

National Grid

**PROJECT NAME:**

National Grid Equity

**AECOM PROJECT NO.:**

60137362

**Photo No.**  
9

**Date:**  
Jul/Aug  
2018

**Description:**

Drill rig setup on the southern portion of 222 Maspeth (SB-108 location).



**Photo No.**  
10

**Date:**  
Jul/Aug  
2018

**Description:**

Drill rig setup on the eastern portion of 222 Maspeth (SB-101 location).





**CLIENT NAME:**

National Grid

**PROJECT NAME:**

National Grid Equity

**AECOM PROJECT NO.:**

60137362

**Photo No.**  
11

**Date:**  
Jul/Aug  
2018

**Description:**

Example of NAPL saturation at RW-25/SB-102 location (24-26 feet below grade, above bottom of gas holder).



**Photo No.**  
12

**Date:**  
Jul/Aug  
2018

**Description:**

Example of NAPL coating and sheen at SB-105 location (15-17 feet below grade).





**CLIENT NAME:**

National Grid

**PROJECT NAME:**

National Grid Equity

**AECOM PROJECT NO.:**

60137362

**Photo No.**  
13

**Date:**  
Jul/Aug  
2018

**Description:**

Example of NAPL saturation at SB-104 location (30-32 feet below grade).



**Photo No.**  
14

**Date:**  
Jul/Aug  
2018

**Description:**

Example of black viscous NAPL present at RW-25/SB-102 location (24-26 feet below grade, above bottom of former gas holder).

