WORKPLAN 224050. 2012-07-05.

ILM - WP

New York State Department of Environmental Conservation
Division of Environmental Remediation
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Joe Martens
Commissioner

July 5, 2012

Mr. Donald Campbell
National Grid
Site Investigation and Remediation
287 Maspeth Ave.
Brooklyn, NY 11201

Re: Equity Former MGP Site
Interim Remedial Measure
254 Maspeth Ave. Property, Work Plan
Site# 224050

Dear Mr. Campbell:

The New York State Department of Environmental Conservation (Department) and the New York State Department of Health (NYSDOH) have reviewed the Equity Former MGP Site 254 Maspeth Ave. Property Interim Remedial Measure Work Plan, dated December 16, 2011. The Work Plan is hereby approved with the following modifications:

- A demarcation layer shall be installed at the bottom of all excavation areas.
- A weekly Community Air Monitoring summary report shall be provided to the NYSDOH Project Manager. This report shall include: all air monitoring data from each station, meteorological data, a list of exceedances and a description of corrective actions taken following any exceedances and/or complaints

Please notify the Department 10 days prior to the commencement of field activities.

Sincerely,

Henry T. Willems
Engineering Geologist 1

ec: D. Campbell, National Grid
T. Bell, National Grid
G. Cross, NYSDEC
M. Ryan, NYSDEC
S. Arakhan, NYSDEC
A. DeMarco, NYSDOH
P. John, NYSDEC

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Donald Campbell
Project Manager

December 16, 2011

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

Subject: Pre-Design Investigation Report and Interim Remedial Measure Work Plan – 254 Maspeth Avenue Property
Equity Former Works Manufactured Gas Plant (MGP) Site
Brooklyn, New York
NYSDEC Site No.: 224050, Order on Consent Index #: A2-0552-0606

Dear Mr. Willems:

National Grid is submitting the following Pre-Design Investigation (PDI) Report and the Interim Remedial Measure (IRM) Work Plan for the 254 Maspeth Avenue property located in Brooklyn, New York (Figure 1). The 254 Maspeth Avenue property is located within the footprint of the Equity former Works Manufactured Gas Plant (MPG) site (the Site) which consists of three adjoining properties – 222 Maspeth Avenue, 252 Maspeth Avenue, and 254 Maspeth Avenue (Figure 2). This document presents the following:

- A brief background of the 254 Maspeth Avenue property;
- The results of the PDI completed at the 252 and the 254 Maspeth Avenue properties;
- The preliminary draft results for the portion of the Remedial Investigation Work Plan Addendum No. 1 completed at the 254 Maspeth Avenue property;
- The objectives of the IRM Work Plan; and
- A description of the IRM activities.

The PDI was completed pursuant to the New York State Department of Environmental Conservation (NYSDEC)-approved PDI Work Plan dated August 2011. The PDI activities were conducted in August and September 2011.

This IRM Work Plan was developed pursuant to a Multi-site Order on Consent and Administrative Settlement, Index # A2-0552-0606, between The Brooklyn Union Gas Company (now d/b/a National Grid) and the NYSDEC and in accordance with applicable guidelines of the NYSDEC and the New York State Department of Health (NYSDOH). The IRM activities are tentatively scheduled for winter (February) 2012 and consist of removal of soils above the groundwater surface (approximately the top 5 to 7 feet) on the 254 Maspeth Avenue property. The IRM will result in the removal of visible MGP-related impacts within the footprint of the proposed redevelopment construction activities for the 254 Maspeth Avenue property.

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Background

The historical and current structures located at the Site are shown on Figure 2. Information regarding past and current property use is summarized below:

Site History and Description

The Site was operated as a MGP from approximately 1893 to 1929, first by the Equity Gas Light Company and later by the Brooklyn Union Gas Company (BUG). Gas manufacturing used the carbureted water gas (aka Lowes) process. BUG sold the Site in September 1951. Subsequently, the Site was used for storage (pipe and valves) for the period of 1965 to 1981, and appears to have been vacant during the period of 1986 to 1988. The Site appears to have been used as a solid waste transfer facility from 1990 under the ownership of various parties.

A Remedial Investigation (RI) is currently being conducted at the Site by National Grid. Specifics of the RI scope of work are presented in the NYSDEC-approved RI Work Plan (AECOM, 2009). Based on historical information obtained during the RI, five former MGP era structures (former generator house, former boiler house, former tar tank, former tar separator, and former gas oil storage house) were present on the 254 Maspeth Avenue property. The locations of these former structures are shown on Figure 2. Foundations for each of the five former structures were encountered during the RI.

Current Property Layout

The Site currently houses a waste recycling facility and associated vehicle and equipment storage, with primary Site activities occurring at the 222 Maspeth Avenue parcel, currently operated by Cooper Tank Recycling (Cooper Tank). The entire Site is now owned by third parties as provided below:

- 222 Maspeth Avenue – This property is owned by 222 Maspeth Avenue, LLC and is currently used as an active waste recycling/waste transfer station. Currently one enclosed building housing offices and one open building (no walls, with roof) housing waste recycling operations are present on the lot. The lot is operated by Cooper Tank.
- 252 Maspeth Avenue – This property is owned by Giacomo and Giovanna Bordone and is currently leased by Cooper Tank. The property is used as a maintenance center for equipment and a two story concrete building is present on the north side, along Maspeth Avenue.
- 254 Maspeth Avenue – This property is currently owned by 254 Maspeth Avenue, LLC and leased to Cooper Tank for occasional storage of empty roll-offs, parking of tractor-trailers, and Cooper Tank employee vehicle parking. Two rectangular concrete scales for measuring truck tare weight were recently installed on the northern portion of the property. A storm water collection structure was also installed north of the truck scales.

The current operator of 254 Maspeth Avenue, Cooper Tank, is in the process of obtaining a NYSDEC Part 360 Permit for operating a recycling facility. This permit, which will include expansion of the current 222 Maspeth Avenue facility into the 252 and 254 Maspeth Avenue properties, requires construction of a minimum 8-inch thick concrete pad across the entire surface of the Site, a storm water collection system, and a 30-foot high wall along the perimeter of the 254 Maspeth Avenue property. These activities are expected to be invasive and could encounter residual MGP waste observed during the ongoing RI activities. As a result, National Grid and the NYSDEC have agreed that an IRM be conducted on the 254 Maspeth Avenue property. The IRM will remove visual MGP-residual impacts above the groundwater surface.

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Site Geology/Hydrogeology

During the RI, soils within the upper 15 to 20 feet of the 254 Maspeth Avenue were observed to consist of imported fill material made up of silt, sand and gravel mixed with slag, coal, brick, concrete, metal, ash, and clinkers. A layer of meadow mat (peat and clay) is present below the fill layer and acts to separate the underlying native soils from the overlying fill. Shallow groundwater is located at depths of approximately 5 to 7 feet (ft) below ground surface (bgs).

254 Maspeth Avenue Property Investigations

Several investigations have been conducted on the 254 Maspeth Avenue property to-date. These include:

- Previous investigation activities were conducted on portions of the 254 Maspeth Avenue property in 2004 and 2005 by the contemporary property owners, as listed below:
  - A Phase II Environmental Subsurface Investigation (ESI) was conducted in September 2004 by EEA Inc. (EEA) on behalf of Spencer Realty Corporation (the property owner) and Cooper Tank (the potential property buyer). EEA installed 6 soil borings on the property and collected soil samples which were analyzed for VOCs, SVOCs, and RCRA metals. SVOCs and various metals were detected in all six borings. VOCs were detected in two of the borings. The subsurface geology was characterized to the completion depth of the borings.
  - A Phase I Environmental Site Assessment (ESA) was conducted in October 2004 by Gannett Fleming Environmental (GFE) on behalf of Cooper Tank, who was the potential buyer of the property. GFE conducted a records search, interviews, and site visit. Surficial soil staining was observed on site.
  - For the 252 and 254 Maspeth Ave properties, GFE performed geotechnical investigation work on behalf of Cooper Tank in September 2006 (GFE, 2006). GFE installed five soil borings to investigate the geology below these properties.
- A RI was conducted by AECOM on behalf of National Grid from September 19, 2009 to February 12, 2010 on the 254 Maspeth Avenue property. Two test pits (TP-2 and TP-3) were excavated, 8 soil borings were completed, 8 monitoring wells installed, and surface soil, subsurface soil, and groundwater samples were collected and analyzed during the RI. The investigations confirmed that MGP-related compounds are present in the soil and groundwater beneath the 254 Maspeth Avenue parcel.
- The ongoing RI Addendum is being conducted by AECOM on behalf of National Grid that started on September 19, 2011 on the 254 Maspeth Avenue property. Two soil borings (SB-16C and SB-22) were completed. In addition, two test pits were completed (TP-4 and TP-4A) during PDI work performed in September 2011. A detailed description of the findings of the RI Addendum completed to date on the 254 Maspeth Avenue is provided in the next sections.

A summary of visual impacts and analytical soil data with PAH exceedances within the top 7 feet of the 254 Maspeth Avenue property is shown on Figure 3.

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RI Addendum

RI Addendum activities completed to date at the 254 Maspeth Avenue property were conducted to delineate impacts and to collect soil for analysis that provide information to support the understanding of subsurface conditions beneath the 254 Maspeth Avenue property. The test pits under the RI Addendum scope of work (TP-4, and TP-4A) were completed during the PDI activities. Field activities began on September 13, 2011 and are ongoing. Figure 3 includes the locations of the RI Addendum test pit and soil boring locations.

The objectives of the RI Addendum are listed below:

- Advance soil boring SB-16C located adjacent to soil boring SB-16B to determine the presence and elevation of the lower clay confining unit (Gardiner's Clay), and evaluate the presence/absence of MGP residuals above the Gardiner's Clay observed at SB-1C, and downgradient from primary MGP structures at the 222 Maspeth Avenue parcel.
- Advance SB-22 located east of the former tar tank and boiler house, along the southern property boundary, to determine the presence and elevations of the meadow mat (peat), interbedded clay formations, and evaluate the presence/absence and distribution of MGP residuals observed at SB-11 and SB-17.
- Advance test pit TP-4 (and TP-4A) to evaluate the former tar separator and tar tank underlying the boiler house along the northern site boundary near the buried stream channel.

Soil Boring and Test Pit Completion

Soil borings were advanced at locations presented in Figure 3 using sonic drilling methods under the supervision of AECOM personnel.

Two test pits (TP-4 and TP-4A) were excavated to evaluate the presence of former MGP structures, including the former tar well and the former tar separator adjacent to SB-12. Concrete foundations were observed within the northwest portion and along the northeastern wall of TP-4 indicating potential presence of foundations/walls of either the former boiler house, former tar separator and/or former tar well. Concrete foundations were also observed along the northwestern portion of TP-4A indicating the potential presence of the southwestern wall/foundation of either the former tar separator or the former boiler house. Hardened tar was observed in TP-4 from 2 ft bgs to the bottom of the test pit along with LNAPL emulsion of oil-like material (OLM) on the groundwater surface and strong diesel-type odor.

A summary of visual and olfactory impacts above the groundwater surface (the target excavation depth for the IRM) is presented below and shown in Figure 5:

- No visual or olfactory impacts were observed in test pit TP-4A.
- Coal cinders, an ash layer, and a few hardened tar pieces were observed from 2 to 4 ft bgs in test pit TP-4;
- A slight tar-like odor was detected from the 0 to 1.5 ft bgs in soil boring SB-16C.
- A slight petroleum-like odor from 1 to 2 ft bgs and slight fuel oil-like odor from 3.5 to 4 ft bgs were detected in soil boring SB-22.

The soil borings and test pits were logged by an AECOM geologist recording such data as the presence of fill material or subsurface structures, the nature of each geologic unit encountered, observations

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regarding moisture content, the results of PID readings, and visual and olfactory observations regarding the presence of hydrocarbon-like residuals. The test pit logs are included as Attachment A. Soil boring logs for recently installed soil boring SB-16C and SB-22 are in preparation.

Pre-Design Investigation Report

PDI activities were conducted to investigate and delineate visual impacts and to collect soil for pre-characterization analysis. Additional test pits completed on the 252 Maspeth Avenue property including TP-18, TP-19, TP-20, and TP-21 to determine if there were visual MGP-impacted soils at this parcel that needed consideration during planning of IRM activities at the 254 Maspeth Avenue parcel. The test pits under the RI Addendum scope of work (TP-4, and TP-4A) were also completed during the PDI activities. Field activities were completed between September 1, 2011 and September 9, 2011. Figure 4 provides the location of the PDI and RI investigation locations.

The objectives of the PDI are listed below:

- delineate the horizontal extent of the visually contaminated soils located around SB-4, TP-2, and SB-12;
- confirm the vertical extent of the visually contaminated soils to be removed;
- investigate the unsaturated soils located within the footprint of the proposed perimeter wall; and
- pre-characterize soils for disposal options.

Test Pit Completion

A total of twenty-one (21) test pits were excavated at locations presented in Figure 4 to delineate visually impacted soils observed at RI locations SB-4, TP-2, and SB-12 (Figure 3) and to investigate and delineate the presence of visually impacted soils, if any, along the footprint of the proposed perimeter wall of the 254 Maspeth Avenue property and within the 252 Maspeth Avenue property. Excavation was accomplished using a backhoe under the supervision of an AECOM geologist.

Seventeen (17) of the test pits were excavated on the 254 Maspeth Avenue property. Of these, fifteen (15) perimeter test pits (TP-5 through TP-12, TP-12A, TP-13, TP-14 TP-15, TP-15A, TP-16, andTP-17) were advanced to the groundwater surface (with the exception of TP-12, which was terminated above the groundwater surface due to nuisance odor conditions generated during excavation of this test pit) at an approximate spacing of 50 feet. Each test pit was approximately 5 feet wide along the perimeter wall and extended approximately 15 feet into the property from the property perimeter to account for potential footings of the proposed perimeter wall (the preliminary wall design is understood to extend this distance into the parcel from the property line). Two additional step-out locations (TP-12A and TP-15A) were excavated at 25 foot intervals along the perimeter due to the presence of visual MGP-residuals in TP-12 and TP-16. Two test pits (TP-2B and TP-2C) were excavated to evaluate the presence and extent of tar observed at RI location SB-4 and test pit TP-2. The test pits were advanced to the groundwater surface and were approximately 5 feet wide and 20 feet long.

Four (4) test pits (TP-18 through TP-21) were advanced to the groundwater surface within the 252 Maspeth Avenue property. Each test pit was approximately 5 feet wide along and extended approximately 15 feet in length. A summary of visual and olfactory impacts observed during this work is presented below and shown in Figure 5:

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- No visual or olfactory impacts were observed in test pits TP-2C, TP-5, TP-6, TP-7, TP-8, TP-09, TP-11, TP-12A, TP-13, TP-18, TP-19, TP-20, and TP-21;
- Only naphthalene-like odors were detected in test pits TP-14, TP-15, and TP-15A. No visual impacts were observed in these test pits;
- A sheen was observed in the groundwater in test pit TP-10;
- Highly weathered hardened tar, tar saturated lenses, and tar coated material were observed from 0.5 to 5.75 ft bgs in test pits TP-16 and TP-17;
- A layer of coal with few hardened tar balls was observed at 2.8 ft bgs and spots of seeping tar were noted at 4 ft bgs (when exposed to air) in test pit TP-2B;
- A Light non aqueous phase liquid (LNAPL) emulsion of OLM and strong diesel-type odor was also observed on the groundwater table of TP-2B, and
- Heavily tar-coated to tar saturated lenses were observed down to 4.75 ft bgs in test pit TP-12. This test pit was terminated at 5 ft bgs due to strong odors.

The test pits were logged by an AECOM geologist recording such data as the presence of fill material or subsurface structures, the nature of each geologic unit encountered, observations regarding moisture content, the results of PID readings, and visual and olfactory observations regarding the presence of hydrocarbon-like residuals. The test pit logs are included as Attachment A.

Soil removed during the excavation of the test pit was temporarily stored on a sheet of plastic. To the extent possible, visually un-impacted soil was segregated from visually impacted soil. Upon completion of each test pit, impacted soil and debris were returned to the excavation first, followed by existing surface soils removed from that excavation to return the excavation to original grade.

All Investigation Derived Waste (IDW) generated during the PDI was collected in properly labeled 55-gallon drums, characterized with laboratory analyses, and properly disposed in accordance with management of IDW procedures outlined in Field Sampling and Analytical Plan (FSAP) provided in the RI Work Plan (AECOM, 2009).

Ambient air quality and dust concentrations were monitored upwind and downwind of activities during all ground intrusive operations in accordance with the methods outlined in the PDI Work Plan. Data was collected using photoionization detectors (PIDs) and aerosol monitors. Real time volatile organic compound (VOC) and aerosol readings were recorded by AECOM personnel in 15 minute intervals and logged continuously by the apparatus. No exceedances of action levels were noted. Logged data has been reviewed and is provided as Attachment B.

IRM Soil Waste Characterization Sampling

Waste characterization sampling was performed as part of the September 2011 PDI activities. The number of samples and types of analyses performed was determined in consultation with the anticipated soil disposal facilities – Clean Earth of Southeast Pennsylvania, Inc. located in Morrisville, Pennsylvania and Bay Shore Recycling of New Jersey, Inc. located in Keasbey, New Jersey. The IRM excavated soils will be managed as industrial non-hazardous solid waste under NYSDEC Part 360 regulations.

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IRM Project Responsibilities

The principal organizations involved in designing and implementation of the proposed IRM will be National Grid, the NYSDEC, the NYSDOH, AECOM, the Mitigation Contractor(s), and the Property Owner.

National Grid

National Grid is responsible to the NYSDEC for the remedial design, implementation, and evaluation of this IRM in accordance with the Order on Consent [NYSDEC, 1998]. National Grid, through their consultant, AECOM, has the authority to monitor and control the quality of construction and related activities to ensure conformance with the engineering design plans and specifications. National Grid has the authority to select and dismiss the Contractor(s) used to assist them with fulfilling these responsibilities. National Grid also has the authority to select and accept or reject design plans, specifications, materials, and workmanship of the contractors and subcontractors.

NYSDEC and NYSDOH

The NYSDEC Division of Environmental Remediation and the NYSDOH will review National Grid's IRM Work Plan for substantial compliance with the agency's regulations. Any substantial deviations from the requirements or approved work plans will be submitted to the NYSDEC and NYSDOH for approval. The NYSDEC and NYSDOH must approve the IRM as meeting the remedial goals.

AECOM

AECOM is the engineer responsible for the IRM design and implementation. AECOM will be the field engineer/supervisor during the work and will make recommendations to National Grid regarding field decisions during construction. AECOM will collect any additional soil characterization samples if needed, implement the Community Air Monitoring Plan (CAMP), and will prepare a Completion Report for the IRM.

Remediation Contractors

The Remediation Contractors ("Contractors") referred to in this Work Plan will be selected by National Grid from qualified soil removal and disposal contractors. The Contractors will be responsible for the performance of the work in accordance with this Work Plan and contract documents including specifications and design drawings. The Contractor shall be responsible for the Health and Safety of Contractor's employees, its Subcontractors, suppliers, agents, inspectors, visitors, the general public, and any others associated with or interacting with Contractor who provides labor, goods, or other services on the Project site. The Contractors will report directly to AECOM either as AECOM subcontractors or National Grid contractors. The Contractors will be given a copy of the Crder on Consent and will be required to comply with it as a condition of their contracts.

Property Owner/Facility Operator

The IRM will be coordinated with the Property Owner and the Facility Operator so that the interference from installation of the IRM is to a minimum. The Property Owner and the Facility Operator will provide access to National Grid and others, in accordance with an access agreement, so that the IRM can be implemented as provided in this Work Plan. The Property Cwner and the Facility Operator have no responsibility for the remedial design, construction, and evaluation of the IRM. Once the IRM is completed, the Property Owner and the Facility Operator will be responsible for the proposed 254

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Maspeth Avenue property redevelopment activities in accordance with an NYSDEC-approved Interim Site Management Plan.

IRM Objectives

The objectives of this IRM are to:

- Remove, to the extent possible, visual MGP-residual impacts observed in soils above the water table (or to a minimum depth of 5 ft bgs if the water table is shallower) on the 254 Maspeth Avenue property; and
- Provide a safe working environment during the proposed redevelopment of the 254 Maspeth Avenue property.

Visual MGP-residual impacted soils are being targeted for the IRM, as they have been identified as sources that are readily recoverable. Cooper Tank, responsible for the proposed redevelopment of the 254 Maspeth Avenue property, has stated to National Grid that field activity during the proposed redevelopment will extend to a maximum depth of 5 ft bgs. As such, soils within the limits of the IRM will be removed to a minimum depth of 5 ft bgs irrespective of the depth of the water table. Any remaining MGP-residual impacts across the 254 Maspeth Avenue property will be accounted for in a Site Management Plan and/or final Remedial Design/ Cleanup Plan for the Site.

IRM Scope of Work

To achieve the IRM objectives, the proposed approach for the IRM includes removal of soils above the water table (or to a minimum of 5ft bgs) via excavation and transportation off-site for thermal treatment and disposal. The depths to groundwater encountered during RI and PDI investigation work on the 252 and 254 parcels are shown on Figure 6. The areas to be excavated are shown in Figure 7 and are as follows:

- Soils within Area A will be excavated to remove visual MGP-residual impacts observed during the RI Addendum including test pit TP-4;
- Soils within Area B will be excavated to remove visual MGP-residual impacts observed during the RI including test pit TP-3 and soil boring SB-12;
- Soils within Area C will be excavated to remove visual MGP-residual impacts observed during the RI including test pits TP-2, TP-2B and soil boring SB-4 and PDI test pit TP-12; and
- Soils within Area D will be excavated to remove visual MGP-residual impacts observed in soils within the PDI test pits TP-16 and TP-17.

The extent of each area of excavation was based on the nearest clean investigation location, if present, and may be expanded based on observations during the field work.

The proposed IRM will include the following components:

- mobilization and site preparation;
- air monitoring to evaluate potential fugitive emissions;
- excavation of identified shallow soils above the water table to limits shown in Figure 7;
- transportation and management of impacted material at an offsite permitted facility; and

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- surveying, backfilling, site restoration, and demobilization.

The work will be completed by a remedial contractor under the supervision of AECOM. AECOM will be on site during the fieldwork to document the removal activities and to perform the community air monitoring. Descriptions of each of the tasks that will be performed during implementation of the IRM are presented below.

Mobilization and Site Preparation

Mobilization will include all labor, materials, equipment, surveys, and other items required to obtain required permits; arrange for waste transportation; arrange for utility hook-ups (as needed); mobilize field office (if needed), stage necessary equipment and personnel; implement the Health and Safety Plan (HASP) and hold an onsite health and safety training session; setup an onsite decontamination facility; and maintain project records.

Site preparation activities will be conducted as part of the mobilization and include utility clearance, installation of a temporary construction fence as needed for the proper implementation of the IRM, installation of traffic controls, implementation of erosion and sedimentation controls, and installation of a decontamination/tracking pad.

Prior to the start of the excavation work, Dig Safely New York will be contacted and companies with subsurface utilities present will be requested to mark-out their utilities in the excavation area. Note that based on previous sampling performed in this area, subsurface utilities are not anticipated to be present in the excavation area.

The contractor performing the excavation activities will establish parking and equipment storage areas on the 254 Maspeth Avenue property. Use of this area for storage and parking will ensure that disruption to Cooper Tank will be minimized.

All necessary engineering odor controls will be installed prior to the start of excavation activities.

No New York State, or federal permits or approvals are known or believed to be required for the work. The work is being conducted under an Order on Consent with the NYSDEC.

Excavation

Excavation of shallow soil will be conducted in four discrete areas as shown in Figure 7. Excavations will extend to the groundwater surface, and, within the perimeter wall footprint, to a minimum depth of 5 ft bgs. The groundwater surface ranges between 5 and 7.5 ft bgs as observed during previous investigations on the 254 Maspeth Avenue property.

The extent of excavation as shown in Figure 7 is based on the results of the RI and PDI and may be modified in the field if additional visual impacts are observed on the sidewalls of the excavation.

- Areas A and B - Soils will be removed via straight-cut excavation down to the groundwater surface, and to a minimum depth of 5 ft bgs, without sloping or shoring.

- Area C - Soils within the perimeter wall footprint will removed via straight-cut excavation down to 5 ft bgs and shored via a 1H:1V (H=horizontal, V=vertical) from 5 feet bgs to the groundwater

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surface. Soils within the remainder of Area C will be removed to the groundwater surface via a 1H:1.5V sloping to ensure excavation stability.

- Area D - Soils within the perimeter wall footprint will removed via straight-cut excavation down to 5 ft bgs and shored via a 1H:1V (H=horizontal, V=vertical) from 5 ft bgs to the groundwater surface. Soils within the remainder of Area C will be removed to the groundwater surface via a 1H:1.5V sloping to ensure excavation stability.

Fill material is expected to be encountered throughout the depth of excavation. Additional soil pre-characterization analytical samples may be collected, if necessary, by AECOM according to the QAPP included in the RI Work Plan submitted to the NYSDEC in 2009. No post-excavation confirmation samples will collected.

Excavation will begin following site clearing and grading, if necessary, site preparation activities including implementation of erosion and sedimentation controls and installation of a decontamination pad, and implementation of a Community Air Monitoring Program (CAMP). Soils will be excavated with standard track-mounted equipment.

Waste Management

Onsite Waste Management

The soils within the excavation areas have already been pre-characterized as per off-site thermal treatment facility requirements. To the extent possible, excavated soil will be loaded directly into trucks for off-site transportation. However, because of construction sequencing and off-site disposal facility scheduling issues, and in order to consolidate large amounts of waste material for bulk truck shipments, it will likely be necessary to temporarily store waste material onsite prior to loading and shipment. In these instances, excavated soil will be stockpiled within the 254 Maspeth Avenue property limits. The stockpiles will be bermed and liners will be used to protect underlying materials from becoming impacted. Based on the available data, the composition of the excavated soils will meet the requirements of NYSDEC guidance, *Management Of Coal Tar Waste and Coal Tar Contaminated Soils and Sediment* [(DER - 4), NYSDEC 2002], and can be managed as solid wastes at approved offsite disposal facilities as non-hazardous industrial waste.

Any construction water generated during the implementation of the IRM will be collected and stored on the 254 Maspeth Avenue property for off-site disposal. Construction water will be analyzed and characterized according to receiving disposal facility requirements prior to transportation.

Construction and demolition (C&D) materials (e.g., concrete) removed during the excavation will be segregated, visually inspected, and decontaminated using scrapers, shovels, and a steam cleaner, as necessary, and loaded into roll-offs for off-site transportation and disposal.

On-site storage will take place in accordance with all laws and regulations dealing with the type of waste being stored. Liquid wastes will be stored in appropriate tanks or drums. Other (non-soil) solid materials will be stored in roll-off containers or covered stockpiles.

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Off-site Transportation

Excavated materials will be transported off-site in dump or tanker trucks to the receiving facilities (listed below). Transportation of impacted materials from the 254 Maspeth Avenue property will be performed in accordance with all regulatory requirements.

All haul trucks will be permitted waste transporters in the State of New York and have impermeable poly bed liners and impermeable poly covers that fully line the bed of the truck and can be overlapped to cover the top of the load to manage odors during transportation and, if there is the potential for liquids or tarry material leaking from the waste, they will have gasketed tailgates. The trucks may be sprayed, as necessary, with odor suppressive foam prior to covering to reduce vapor and odor emissions. The vehicles will be loaded in such a way as to avoid contamination of their exteriors, including tires. In the case when truck exteriors do become contaminated, they will be decontaminated prior to leaving the property. All trucks will be checked before leaving the 254 Maspeth Avenue property and all loose soil or other materials will be brushed off to prevent spreading to streets or other areas offsite.

Waste shipments will be documented using the required waste manifests. Other materials, including C&D debris and used personnel protective equipment that have no specific documentation requirements will be documented using waste tracking forms, bills of lading, and receipts. All shipments of waste from the 254 Maspeth Avenue property will be documented, describing the type and amount of material and the receiving facility.

Off-site Disposal or Treatment

The following facilities have been identified for the thermal desorption and disposal of soils impacted with MGP-residuals from the 254 Maspeth Avenue property:

- Bayshore Soil Management of New Jersey, LLC, located at 75 Crows Mill Road, Keasbey, NJ 08832.
- Clean Earth of Southeast Pennsylvania, Inc., located at 7 Steel Road East, Morrisville, Pennsylvania 19067.

These treatment facilities are suitable for the disposal of non-hazardous industrial waste and contaminated debris that has been crushed to appropriate size. Bayshore Soil Management has been identified as the primary off-site treatment facility for soil disposal. As previously mentioned, the soil has been characterized and accepted by Bayshore Soil Management for disposal. The pre-characterized soil analytical data will be provided to the selected Contractor for approval from the thermal treatment facility.

Debris which cannot be reduced to the appropriate size will be transported to an approved and licensed landfill disposal facility or recycling facility (Bayshore Recycling or similar). Plastic, PPE, and construction waste water will be transported and disposed offsite at an approved disposal facility (Clean Water of New York, Inc. or similar).

Site Restoration

Upon completion of excavation activities, the excavated areas will be backfilled to grade with either clean concrete, supplied by Cooper Tank, sized for use as backfill material or fill (from either off-site or on-site sources) that is clean as per NYSDEC 6 NYCRR Part 375 Subpart 6.7 (d), in 12-inch lifts and properly compacted. The top 5 ft of the excavated area within the perimeter wall footprint may be left open, if requested by Cooper Tank Inc. The concrete supplied by Cooper Tank will meet the requirements under

287 Maspeth Avenue, Brooklyn, NY 11211
T: 718. 963.5453 ■F: 718. 963.5611 ■Donald.Campbell@us.ngrid.com ■www.nationalgrid.com

Cooper Tank's existing facility permit (DEC No. 2-6101-00061/000001), Subpart 360-16.4 (c) (4) and any other applicable local laws and regulations. Any fill material brought on the 254 Maspeth Avenue property for use as backfill will be sampled at least once for each borrow source and submitted to NYSDEC for approval. All remnants of the IRM activities will be removed from the 254 Maspeth Avenue property after completion of IRM activities. Disturbed areas shall be re-graded to match the surrounding areas.

Environmental Controls

Environmental controls will ensure that the work activities do not spread impacted soil and MGP wastes outside the impacted areas and maintain the protection of human health and the environment throughout the remedial activity. Site control and safety procedures will be consistent with the procedures presented in the NYSDEC-approved Equity Former MGP Site RI Work Plan (July 2009).

Odor, Vapor, and Dust Control

Odor, vapor, and dust control will be required for this project due to the immediate proximity of commercial buildings. An odor and vapor suppressing foam (Rusmar AC-654 foam or similar) and plastic sheeting (or other approved methods, including BioSolve™ and similar products) will be available at all times during the remedial activity to contain air emission sources. The necessary application equipment and plastic sheeting will be brought on the 254 Maspeth Avenue property during mobilization, along with odor neutralization concentrate.

Air Monitoring

Site perimeter and work zone air monitoring will be performed per New York State Department of Health (NYSDOH) and Occupational Safety and Health Administration (OSHA) requirements, and according to the NYSDEC approved RI Work Plan site-specific HASP and CAMP.

Erosion and Sediment Control

The IRM activities will not disturb an area greater than one acre in size. Erosion will be prevented and sediment will be controlled during all onsite earthwork activities in accordance with the applicable New York State guidance. Stormwater run-off will be controlled to prevent contact with impacted soils. Stormwater that does contact impacted soils will be collected and disposed off-site. Hay bales, silt fence, and/or rip rap will be used as necessary to prevent erosion of exposed soils.

Decontamination pads will be used to remove mud from truck tires and prevent tracking of mud and impacted soil onto the streets.

Decontamination

During and upon completion of the excavation phases of the project, decontamination of equipment will be performed in order to prevent contaminated material from being spread offsite during waste hauling activities and to prevent the spreading of impacted material to un-impacted areas of the site. Trucks used for transport of excavated material will be decontaminated using dry decontamination methods (*i.e.*, removal of loose material with a broom or brush) to the extent practicable to limit the volume of decontamination water, which will require treatment and disposal. These methods, along with parking of trucks on plastic sheeting during loading, will effectively prevent the spread of contaminated materials onto roadways during transport to disposal facilities. Decontamination of the earth-moving equipment will

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occur at the completion of the excavation phase and prior to the handling of clean backfill or mobilization offsite. The method of equipment decontamination will consist of pressure washing to remove any impacted soil. Decontamination water generated during cleaning of tools and equipment will be temporarily stored on-site for later off-site disposal at an approved facility. Water generated from decontaminating personnel will be minimal due to the availability of disposable personal protective equipment (PPE) such as tyvek coveralls, booties, and nitrile gloves.

Following completion of the excavation work all excavation limits will be surveyed for elevation and location using a licensed New York surveyor.

Schedule

The IRM is tentatively scheduled for February 2012 and shall be implemented at a time that is acceptable to the owner of 254 Maspeth Avenue. The anticipated duration of field activities are as follows

- 3 days for mobilization and site preparation
- 12 days for excavation, offsite soil disposal, and backfilling
- 3 days for final grading, landscaping, and demobilization

Please note that backfilling within the perimeter wall footprint may be terminated at the design depth for the wall foundation (4.5 to 5 feet bgs) rather than backfilling to grade to facilitate Cooper Tank's subsequent construction of the perimeter wall foundation. National Grid intends to coordinate with Cooper Tank on their schedule for wall installation. Please also note that National Grid will keep the NYSDEC apprised of the final schedule and backfilling plans for completing the IRM prior to or during the work to ensure all parties are in agreement with the backfilling approach.

IRM Completion Report

Following the completion of the IRM, a report will be prepared and submitted to the NYSDEC as outlined in the Roles and Responsibilities section above. The report will include a discussion of the following:

- A discussion of the field activities performed at the property.
- A photographic record for the field activities.
- A description of changes made to the scope of work for the IRM.
- A summary of the quantity of soil removed from the property.
- A map showing the "as-built" limits of the excavation.
- A description of the site restoration activities.
- Documentation presenting information regarding the off-site transportation of soil, and the disposal facility receipts.

The IRM Completion Report will be certified by a professional engineer licensed in the State of New York.

Should you have any questions, comments, or require any additional information, please do not hesitate to contact me at (718) 963-5453, or via electronic mail at donald.campbell@us.ngrid.com.

Yours sincerely,

287 Maspeth Avenue, Brooklyn, NY 11211
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Donald Campbell
Project Manager

Cc: A. Demarco, NYSDOH (Electronic Copy Only)
T. Bell, National Grid (Electronic Copy Only)
F. Murphy, National Grid (Electronic Copy Only)
J. Giordano, National Grid (Electronic Copy Only)
P. Cox, AECOM (Electronic Copy Only)
S. Pandya, AECOM (Electronic Copy Only)

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AECOM

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New York, NY 10281
(212) 798-8500
www.aecom.com

National Grid
Equity Former MGP Site, Brooklyn NY
IRM Work Plan - 254 Maspeth Ave

Data Source: USGS Topographic Quadrangle - Brooklyn, 2009

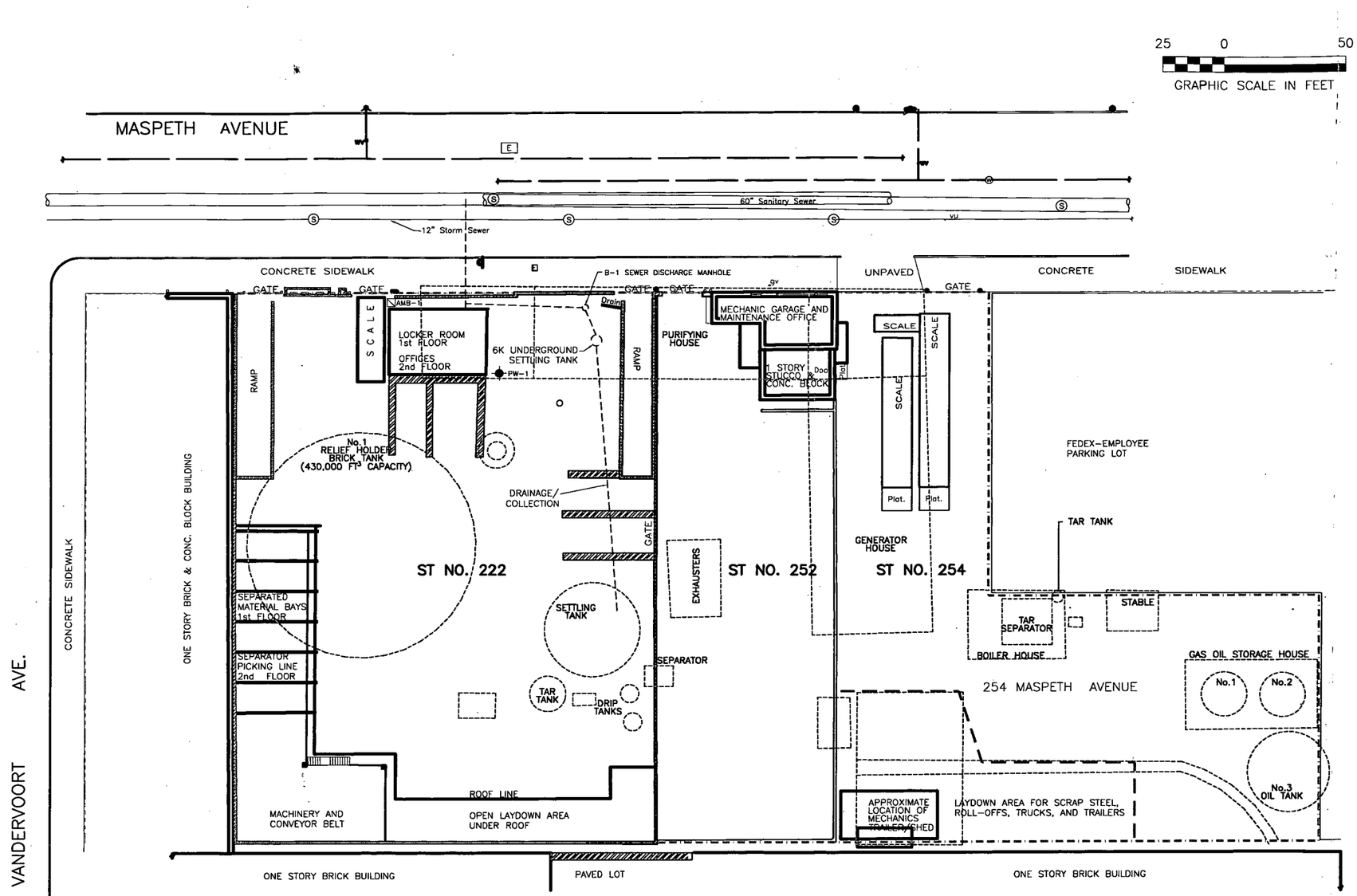
Scale:	Date:	Project Number:
1"=2000'	October 2011	60137362-660

Site Location Map

Figure - 1

\\usnycs01\gis\work\60137362\Mxd\

Figures



NOTES:
1.) SITE FEATURES (BUILDINGS, WALLS, UTILITIES, ETC.) TAKEN FROM MONTROSE 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 MONTROSE SURVEY BASED ON FIELD OBSERVATIONS.
* LOCATIONS BASED ON FIELD TIE-INS BY AECOM.

AECOM

NATIONAL GRID EQUITY FORMER MGP SITE, BROOKLYN NY IRM WORK PLAN - 254 MASPETH AVENUE 60137362-660			SITE LAYOUT
DATE: 11/18/2011	DRWN: BcV/WMA/XW		FIGURE - 2

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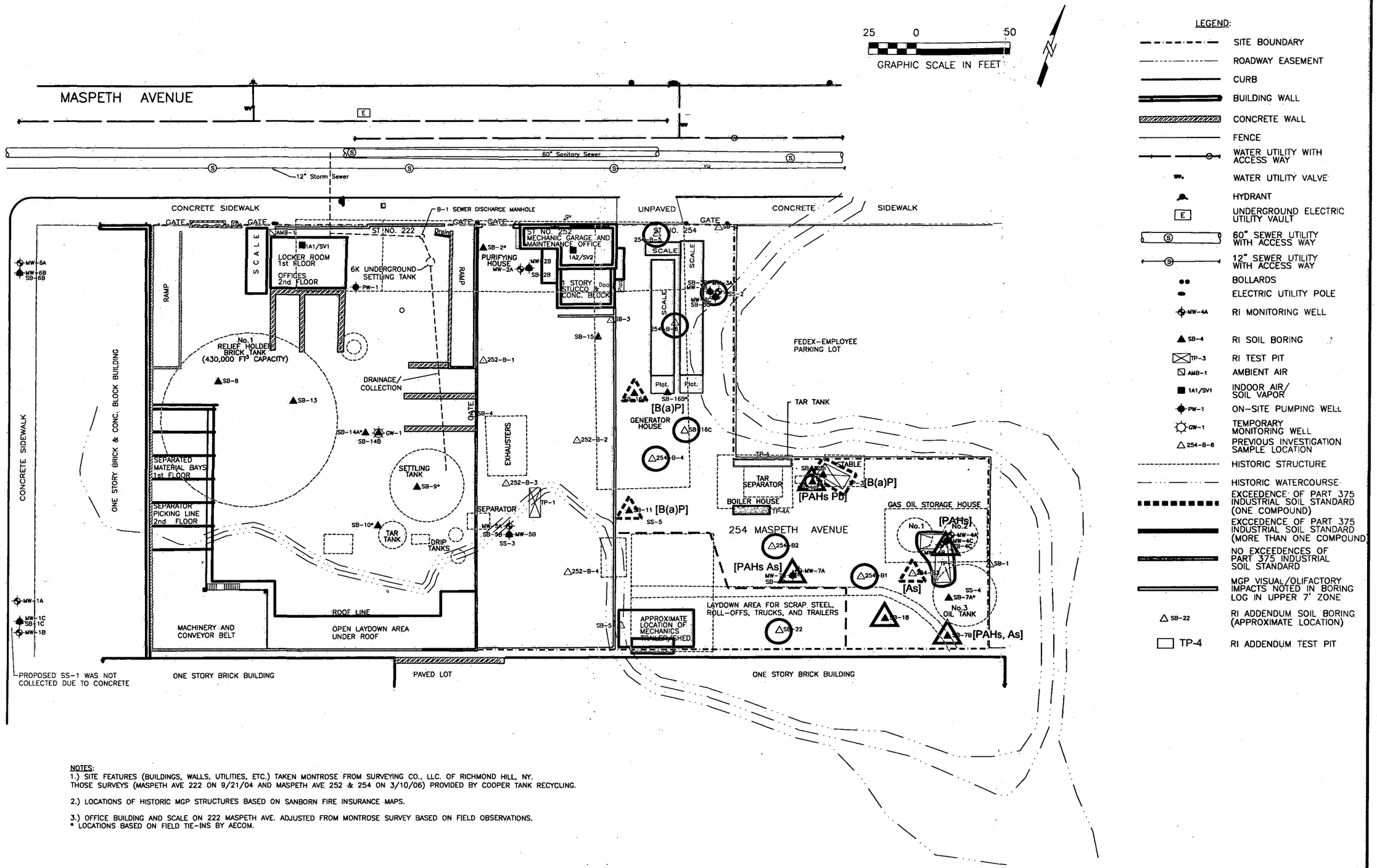


NOTES:
1.) SITE FEATURES (BUILDINGS, WALLS, UTILITIES, ETC.) TAKEN MONTROSE FROM SURVEYING CO., LLC. OF RICHMOND HILL, NY. THOSE SURVEYS (MASPETH AVE 222 ON 9/21/04 AND MASPETH AVE 252 & 254 ON 3/10/06) PROVIDED BY COOPER TANK RECYCLING.

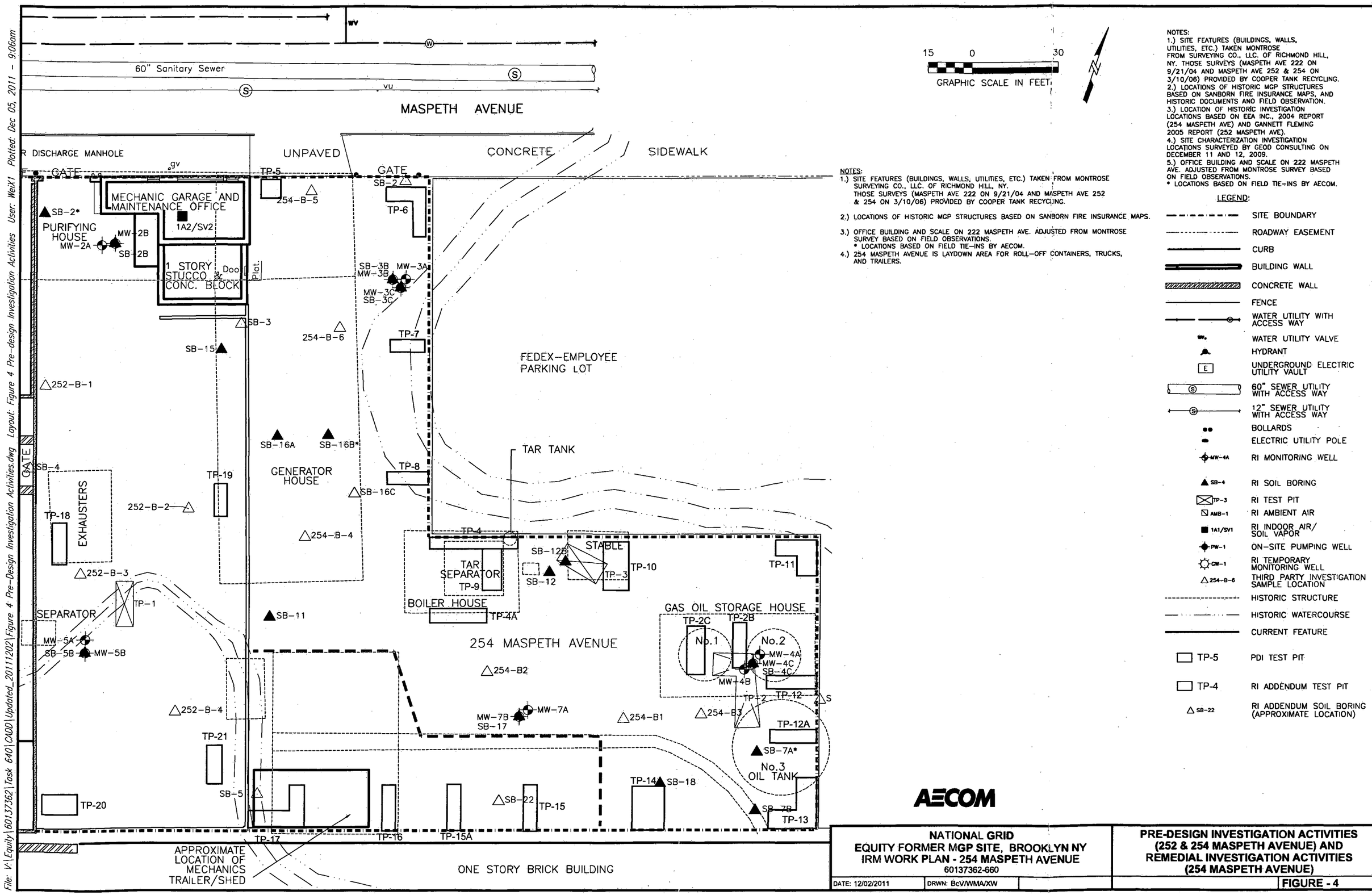
2.) LOCATIONS OF HISTORIC MGP STRUCTURES BASED ON SANBORN FIRE INSURANCE MAPS.

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

AECOM

NATIONAL GRID EQUITY FORMER MGP SITE, BROOKLYN NY IRM WORK PLAN - 254 MASPETH AVENUE 60137362-660		REMEDIAL INVESTIGATION AND PREVIOUS INVESTIGATION LOCATIONS WITH SOIL IMPACT SUMMARY (0-7' BGS) FOR 254 MASPETH AVENUE
DATE: 12/02/2011	DRWN: BcV/WMA/XW	FIGURE - 3

File: V:\Equity\60137362\Task 640\CADD\Updated_20111202\60137362-400-C04.dwg Layout: Figure - 3 Visual and Analytical Results User: WeiX1 Plotted: Dec 05, 2011 - 9:10am



15 0 30

GRAPHIC SCALE IN FEET

NOTES:
1.) SITE FEATURES (BUILDINGS, WALLS, UTILITIES, ETC.) TAKEN FROM MONTROSE 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 MONTROSE SURVEY BASED ON FIELD OBSERVATIONS.
* LOCATIONS BASED ON FIELD TIE-INS BY AECOM.

4.) 254 MASPETH AVENUE IS LAYDOWN AREA FOR ROLL-OFF CONTAINERS, TRUCKS, AND TRAILERS.

NOTES:
1.) SITE FEATURES (BUILDINGS, WALLS, UTILITIES, ETC.) TAKEN MONTROSE FROM 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, AND HISTORIC DOCUMENTS ANO FIELD OBSERVATION.
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 MONTROSE SURVEY BASED ON FIELD OBSERVATIONS.
* LOCATIONS BASED ON FIELD TIE-INS BY AECOM.

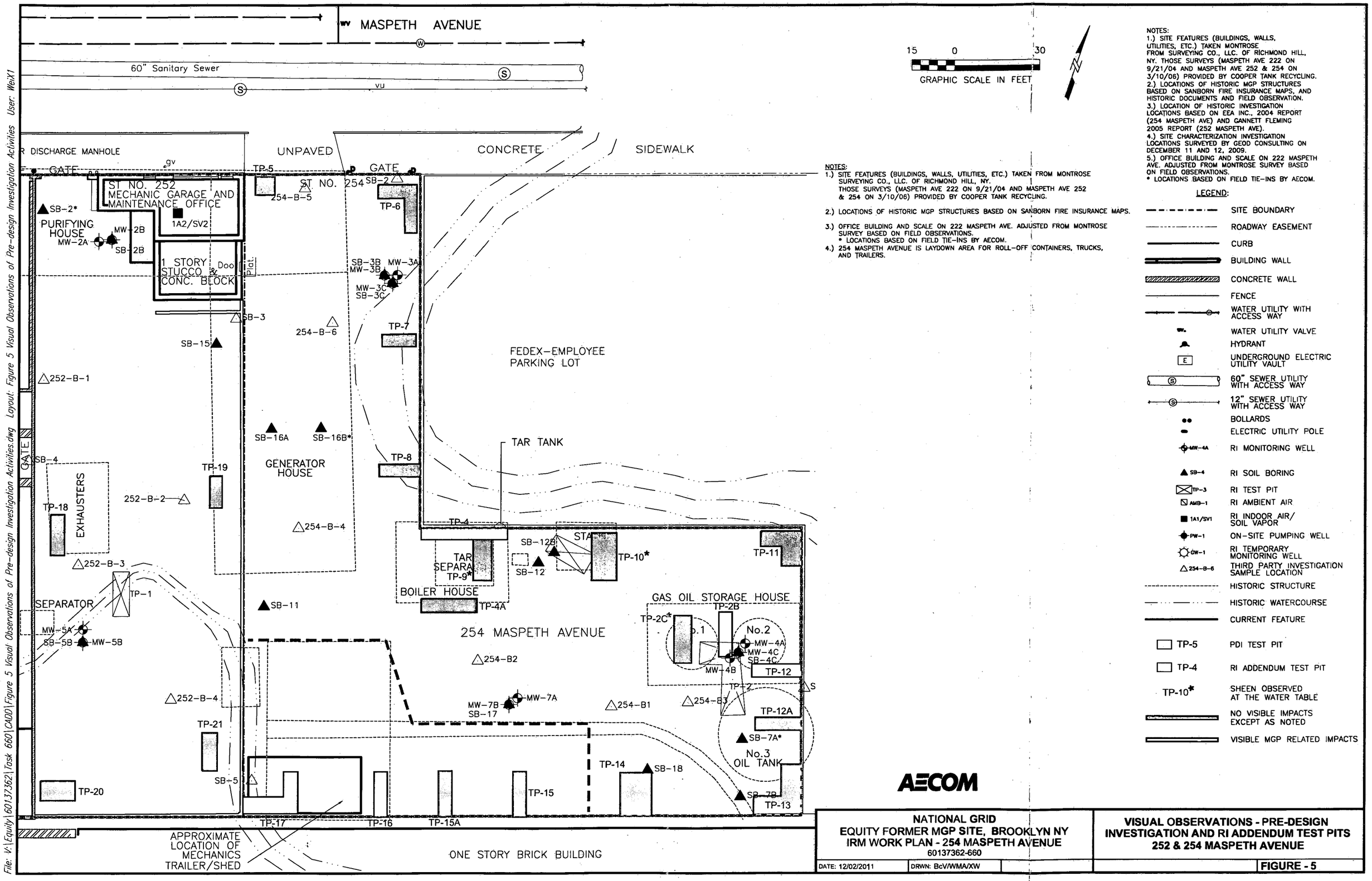
LEGEND:

- SITE BOUNDARY
- ROADWAY EASEMENT
- CURB
- BUILDING WALL
- CONCRETE WALL
- FENCE
- WATER UTILITY WITH ACCESS WAY
- WATER UTILITY VALVE
- HYDRANT
- E — UNDERGROUND ELECTRIC UTILITY VAULT
- S — 60" SEWER UTILITY WITH ACCESS WAY
- S — 12" SEWER UTILITY WITH ACCESS WAY
- BOLLARDS
- ELECTRIC UTILITY POLE
- MW-4A — RI MONITORING WELL
- SB-4 — RI SOIL BORING
- TP-3 — RI TEST PIT
- AMB-1 — RI AMBIENT AIR
- 1A1/SV1 — RI INDOOR AIR/ SOIL VAPOR
- PW-1 — ON-SITE PUMPING WELL
- GW-1 — RI TEMPORARY MONITORING WELL
- 254-B-6 — THIRD PARTY INVESTIGATION SAMPLE LOCATION
- HISTORIC STRUCTURE
- HISTORIC WATERCOURSE
- CURRENT FEATURE
- TP-5 — PDI TEST PIT
- TP-4 — RI ADDENDUM TEST PIT
- SB-22 — RI ADDENDUM SOIL BORING (APPROXIMATE LOCATION)

AECOM

NATIONAL GRID EQUITY FORMER MGP SITE, BROOKLYN NY IRM WORK PLAN - 254 MASPETH AVENUE 60137362-660			PRE-DESIGN INVESTIGATION ACTIVITIES (252 & 254 MASPETH AVENUE) AND REMEDIAL INVESTIGATION ACTIVITIES (254 MASPETH AVENUE)
DATE: 12/02/2011	DRWN: BcV/WMA/XW		FIGURE - 4

File: V:\Equity\60137362\Task 640\CADD\Updated_20111202\Figure 4 Pre-Design Investigation Activities.dwg Layout: Figure 4 Pre-design Investigation Activities User: WeiX1 Plotted: Dec 05, 2011 - 9:06am



NOTES:
1.) SITE FEATURES (BUILDINGS, WALLS, UTILITIES, ETC.) TAKEN FROM MONTROSE 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 MONTROSE SURVEY BASED ON FIELD OBSERVATIONS.
* LOCATIONS BASED ON FIELD TIE-INS BY AECOM.

4.) 254 MASPETH AVENUE IS LAYDOWN AREA FOR ROLL-OFF CONTAINERS, TRUCKS, AND TRAILERS.

NOTES:
1.) SITE FEATURES (BUILDINGS, WALLS, UTILITIES, ETC.) TAKEN MONTROSE FROM 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.
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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 MONTROSE SURVEY BASED ON FIELD OBSERVATIONS.
* LOCATIONS BASED ON FIELD TIE-INS BY AECOM.

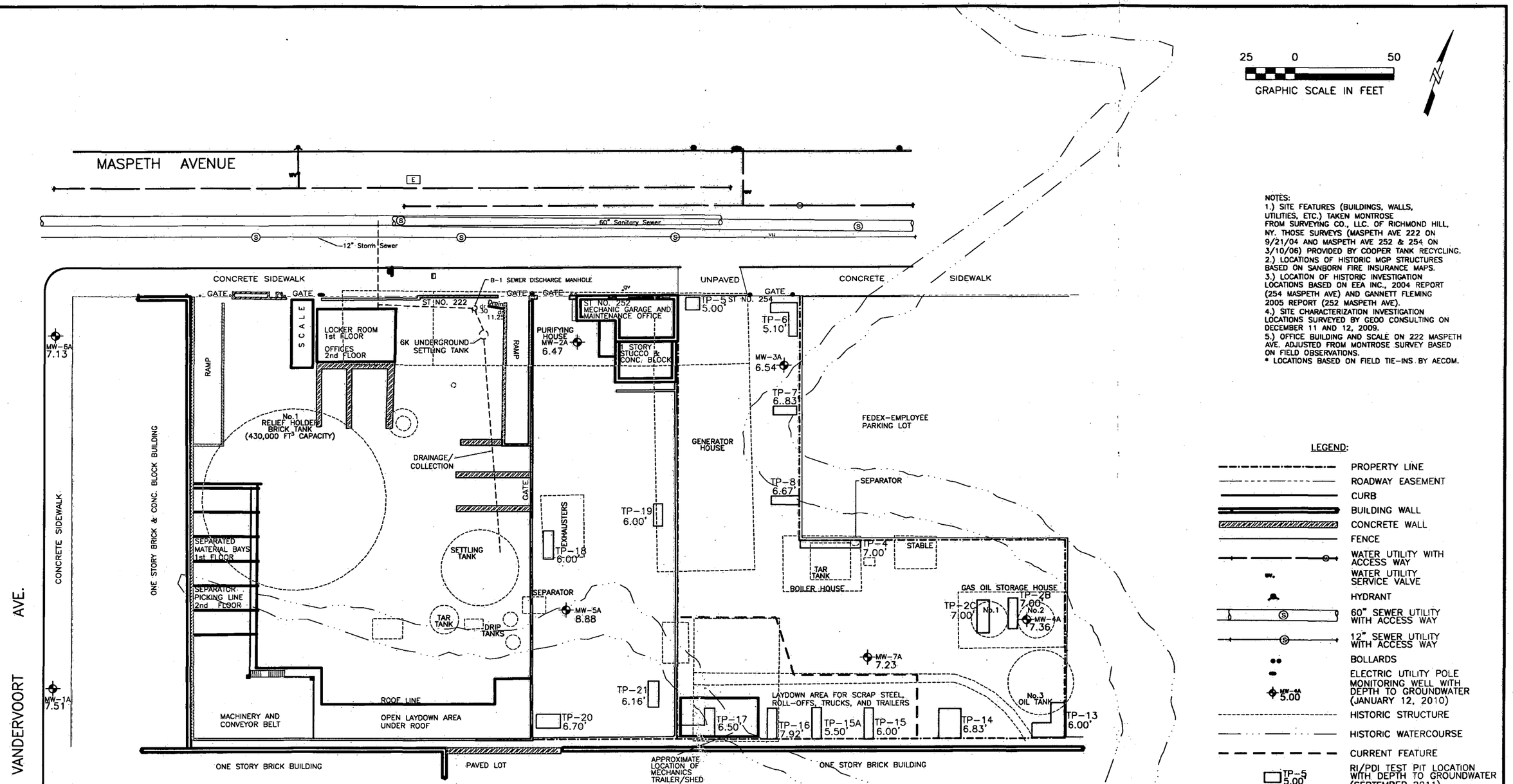
LEGEND:

- SITE BOUNDARY
- ROADWAY EASEMENT
- CURB
- BUILDING WALL
- CONCRETE WALL
- FENCE
- WATER UTILITY WITH ACCESS WAY
- WATER UTILITY VALVE
- HYDRANT
- E — UNDERGROUND ELECTRIC UTILITY VAULT
- 60" SEWER UTILITY WITH ACCESS WAY
- 12" SEWER UTILITY WITH ACCESS WAY
- BOLLARDS
- ELECTRIC UTILITY POLE
- MW-4A — RI MONITORING WELL
- SB-4 — RI SOIL BORING
- TP-3 — RI TEST PIT
- AMB-1 — RI AMBIENT AIR
- 1A1/SV1 — RI INDOOR AIR/ SOIL VAPOR
- PW-1 — ON-SITE PUMPING WELL
- GW-1 — RI TEMPORARY MONITORING WELL
- 254-B-6 — THIRD PARTY INVESTIGATION SAMPLE LOCATION
- HISTORIC STRUCTURE
- HISTORIC WATERCOURSE
- CURRENT FEATURE
- TP-5 — PDI TEST PIT
- TP-4 — RI ADDENDUM TEST PIT
- TP-10* — SHEEN OBSERVED AT THE WATER TABLE
- NO VISIBLE IMPACTS EXCEPT AS NOTED
- VISIBLE MGP RELATED IMPACTS

AECOM

NATIONAL GRID EQUITY FORMER MGP SITE, BROOKLYN NY IRM WORK PLAN - 254 MASPETH AVENUE 60137362-660		VISUAL OBSERVATIONS - PRE-DESIGN INVESTIGATION AND RI ADDENDUM TEST PITS 252 & 254 MASPETH AVENUE
DATE: 12/02/2011	DRWN: BcV/WMA/XW	FIGURE - 5

File: V:\Equity\60137362\Task 660\CADD\Figure 5 Visual Observations of Pre-design Investigation Activities.dwg Layout: Figure 5 Visual Observations of Pre-design Investigation Activities User: WeiX1



25 0 50

GRAPHIC SCALE IN FEET

NOTES:
1.) SITE FEATURES (BUILDINGS, WALLS, UTILITIES, ETC.) TAKEN MONTROSE FROM 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.
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4.) SITE CHARACTERIZATION INVESTIGATION LOCATIONS SURVEYED BY GEOO CONSULTING ON DECEMBER 11 AND 12, 2009.
5.) OFFICE BUILDING AND SCALE ON 222 MASPETH AVE. ADJUSTED FROM MONTROSE SURVEY BASED ON FIELD OBSERVATIONS.
* LOCATIONS BASED ON FIELD TIE-INS BY AECOM.

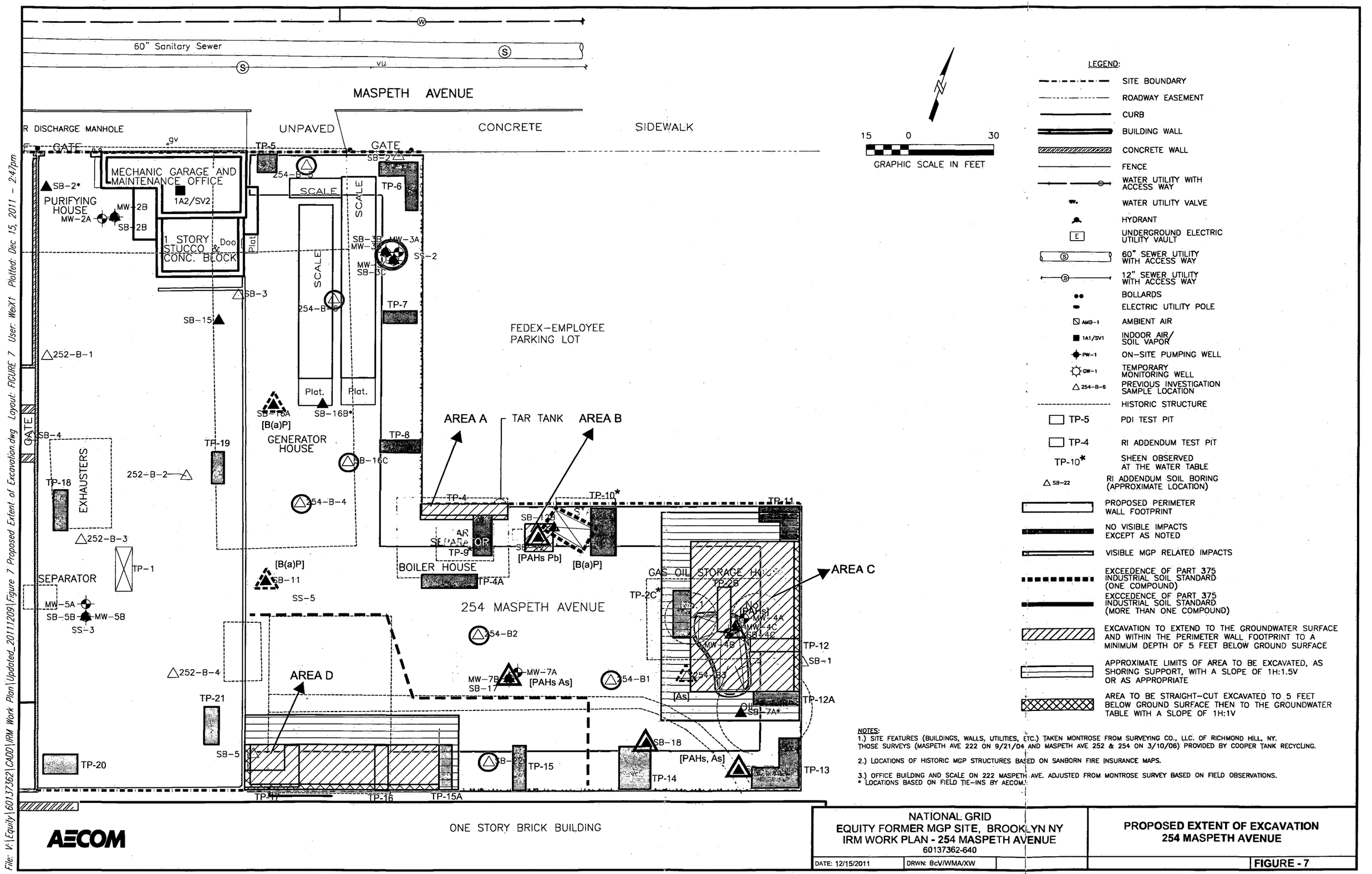
LEGEND:

- PROPERTY LINE
- ROADWAY EASEMENT
- CURB
- BUILDING WALL
- CONCRETE WALL
- FENCE
- WATER UTILITY WITH ACCESS WAY
- WATER UTILITY SERVICE VALVE
- HYDRANT
- 60" SEWER UTILITY WITH ACCESS WAY
- 12" SEWER UTILITY WITH ACCESS WAY
- BOLLARDS
- ELECTRIC UTILITY POLE
- MW-4A 5.00 — MONITORING WELL WITH DEPTH TO GROUNDWATER (JANUARY 12, 2010)
- HISTORIC STRUCTURE
- HISTORIC WATERCOURSE
- CURRENT FEATURE
- TP-5 5.00 — RI/PDI TEST PIT LOCATION WITH DEPTH TO GROUNDWATER (SEPTEMBER 2011)

AECOM

NATIONAL GRID EQUITY FORMER MGP SITE, BROOKLYN NY IRM WORKPLAN - 254 MASPETH AVENUE 60137362-660			DEPTH TO WATER BELOW GROUND SURFACE JANUARY 12, 2010 AND SEPTEMBER 2011
DATE: 12/09/2011	DRWN: BcV/WMA/XW		FIGURE - 6

File: V:\Equity\60137362\CADD\IRM Work Plan\Updated_20111209\Figure 6 Shallow Zone Groundwater Elevation Contours January.dwg Layout: FIGURE 6 User: WeiX1 Plotted: Dec 11, 2011 - 10:51am



NOTES:
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2.) LOCATIONS OF HISTORIC MGP STRUCTURES BASED ON SANBORN FIRE INSURANCE MAPS.

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

AECOM

NATIONAL GRID
EQUITY FORMER MGP SITE, BROOKLYN NY
IRM WORK PLAN - 254 MASPETH AVENUE
60137362-640

PROPOSED EXTENT OF EXCAVATION
254 MASPETH AVENUE

DATE: 12/15/2011 | DRWN: BcV/WMA/XW | **FIGURE - 7**

File: V:\Equity\60137362\CADD\IRM Work Plan\Updated_20111209\Figure 7 Proposed Extent of Excavation.dwg Layout: FIGURE 7 User: WeiX1 Plotted: Dec 15, 2011 - 2:47pm

Attachments

Attachment A
PDI Test Pit Logs

AECOM

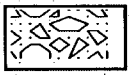
2 Technology Park Drive
Westford, Massachusetts 01886

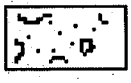
Boring Log Legend

Project Name: Equity Former MGP
Project Number: 60137362

Location: Brooklyn, NY
Client: National Grid

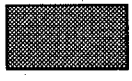
Stratigraphy

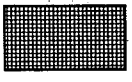

Fill


(GW) Well Graded Gravel

Meadow Mat


(PT) Fibrous and Friable Peat


(OH) Organic Clay

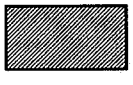

(SM) Silty Sand

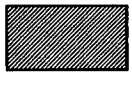

(SC) Clayey Sand


(SW) Well Graded Sand


(SP) Poorly Graded Sand

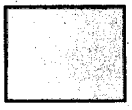

(ML) Sandy Silty


(CL) Clay and Silty Clay of Low Plasticity


(CH) Clay and Silty Clay of High Plasticity

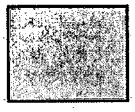
Visual Impacts

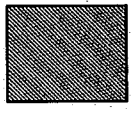

Tar Saturated


Interbedded Lenses of Saturated Tar

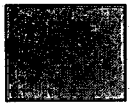

Blebs, Globs, Lenses, Coatings


Tar Sheen/Staining


Tar/Naphthalene-Like Odors


Petroleum Sheen/Staining


Petroleum Odors


Solid Tar


Purifier Material

Purifier Odors

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.) ND - Not Documented

AECOM

Test Pit Log

TP-2B

PROJECT NO: 60137362		TEST PIT DESIGNATION: TP-2B	SURFACE ELEVATION: TBD
CLIENT:	National Grid	SITE LOCATION OR AREA: Eastern side of site, near center	START DATE: 9/9/2011
SITE NAME:	Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/9/2011
GEOLOGIST:	Christie Battenhouse	OPERATOR: Dan Brunquell	START TIME: 07:45
DEPTH WATER ENCOUNTERED:	~7.0 ft bgs	TOTAL DEPTH: 7.5 ft bgs	FINISH TIME: 09:00

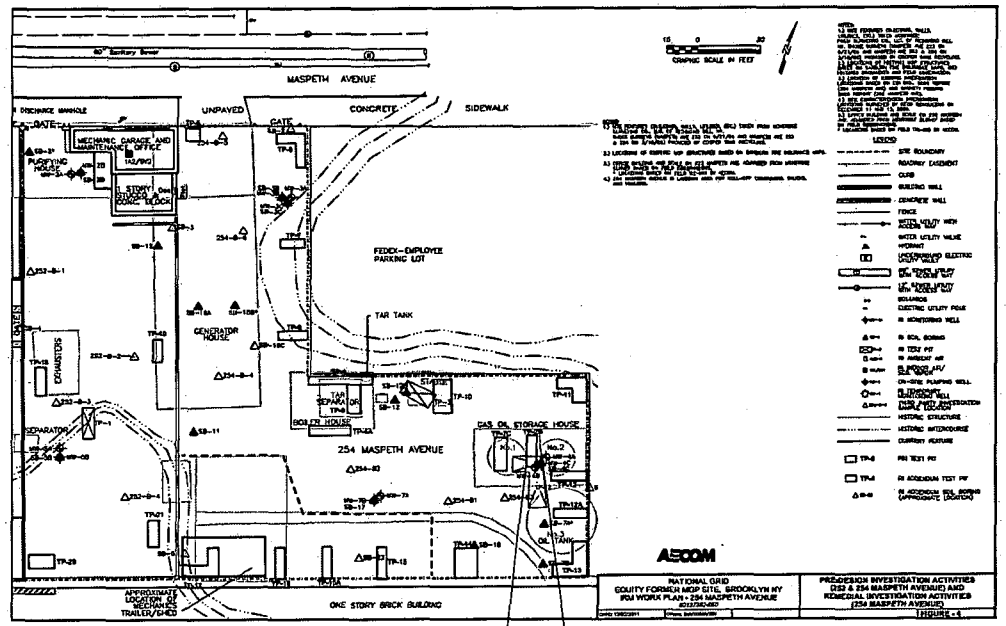
DEPTH (FEET)	VISUAL IMPACTS (FEET)	PID HEADSPACE (PPM)	SOIL STRATIG-RAPHY USCS	SOIL CLASS USCS	SOIL DESCRIPTION LOG	STRUCTURES ENCOUNTERED OR COMMENTS
1		0.0		FILL	0-7' SAND with bricks (fill): sand with bricks, brick layer top 2"-2' (all sides of test pit), discontinuous layers of cinder and ash on eastern and northern walls; pebbles, cobbles, boulders of rocks, bricks and concrete, glass, wood.	
2		0.1				
3		0.1			2'10" : Layer of coal with few hardened tar balls on southern wall (~3"x20" section).	
4		0.1				
5		0.2			4': Spots of tar seeping out (when exposed to air).	
6		0.1				
7		0.4				
		12.1			at 7': Groundwater observed. Strong to very strong diesel-like odor at water table; emulsion of LNAPL (oil-like material) on groundwater (stained gloves), soil did not stain gloves; oil-like material primarily on water table.	Collected two samples TP-2B (7-7.5)
					Test pit terminated at 7.5 ft bgs.	

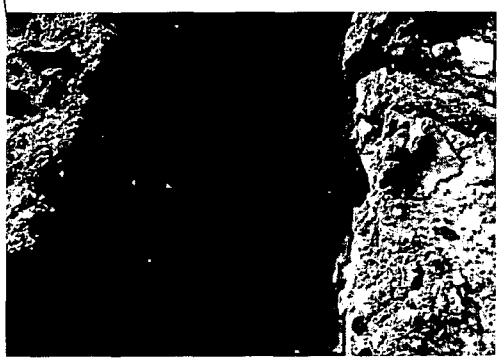
Definitions:

1.) NA - Not Applicable
2.) ft - feet
3.) SAA - Same As Above
4.) bgs - below ground surface
5.) ppm - parts per million
6.) PID - Photo Ionization Meter
7.) NAVD 88 - North American Vertical Datum of 1988
8.) U.S.C.S. - Unified Soil Classification System

AECOM	Test Pit Log	TP-2B
PROJECT NO: 60137362	TEST PIT DESIGNATION: TP-2B	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA: Eastern side of site, near center	START DATE: 9/9/2011
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/9/2011
GEOLOGIST: Christie Battenhouse	OPERATOR: Dan Brunquell	START TIME: 07:45
DEPTH WATER ENCOUNTERED: ~7.0 ft bgs	TOTAL DEPTH: 7.5 ft bgs	FINISH TIME: 09:00

(Plan view - Equity Former MGP Site)





AECOM

Test Pit Log

TP-2C

PROJECT NO: 60137362	TEST PIT DESIGNATION: TP-2C	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA: 18 ft West of tp-2B on eastern side of site.	START DATE: 9/9/2011
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/9/2011
GEOLOGIST: Christie Battenhouse	OPERATOR: Dan Brunquell	START TIME: 09:00
DEPTH WATER ENCOUNTERED: ~7 ft bgs	TOTAL DEPTH: 7.0 ft bgs	FINISH TIME: 09:40

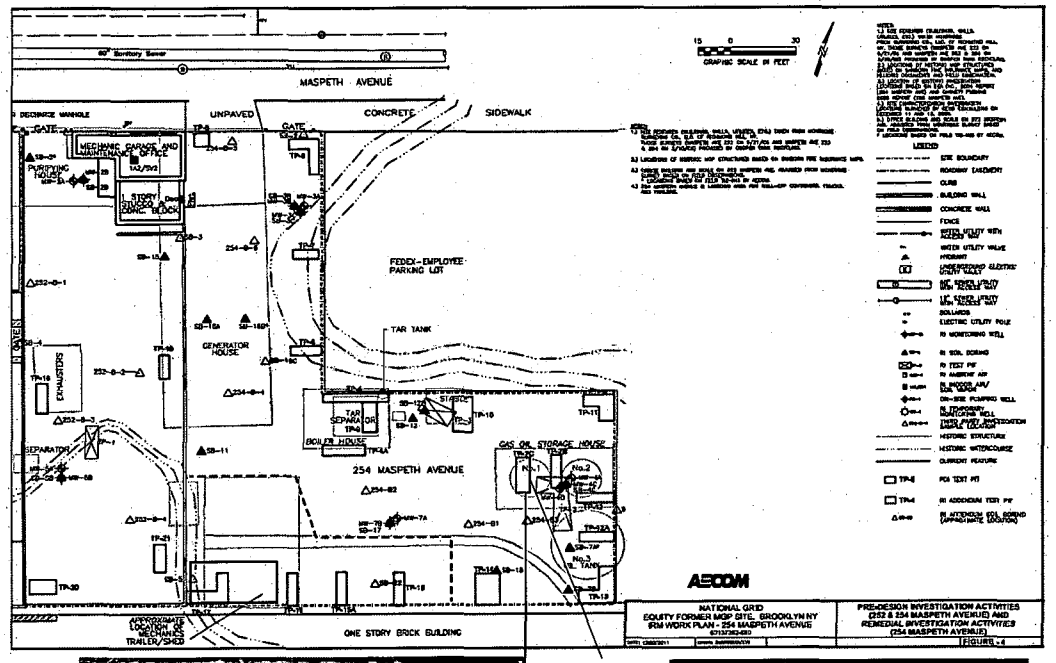
DEPTH (FEET)	VISUAL IMPACTS (FEET)	PID HEADSPACE (PPM)	SOIL STRATIG-RAPHY USCS	SOIL CLASS USCS	SOIL DESCRIPTION LOG	STRUCTURES ENCOUNTERED OR COMMENTS
0		0.0		FILL	0-3' SAND (fill): fine sand with pebbles/cobbles of bricks/rocks. 0-0.3' Northern wall, bricks/debris, concrete, cinders/ash, less debris on other walls. at 0.4': bricks on northern wall.	
1		0.0		CONC. FILL	1': on southern wall, concrete structure, to bottom of wall. 1'-7': CINDERS and ASH (fill): coal cinders and ash on eastern wall.	
2		0.1				
3		0.1			3-7':below brick layer, piece of historic pipe in eastern wall (not fully intact.)	
4		0.0				
5		0.0				
6		ND				No samples collected
7					7': Groundwater observed. No staining or odors in soil; slight to very slight sheen on groundwater.	
					Test pit terminated at 7 ft bgs.	

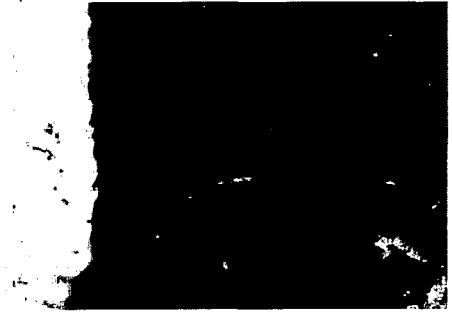
Definitions:

1.) NA - Not Applicable
2.) ft - feet
3.) SAA - Same As Above
4.) bgs - below ground surface
5.) ppm - parts per million
6.) PID - Photo Ionization Meter
7.) NAVD 88 - North American Vertical Datum of 1988
8.) U.S.C.S. - Unified Soil Classification System
9.) ND - Not Documented

AECOM	Test Pit Log	TP- 2C
PROJECT NO: 60137362	TEST PIT DESIGNATION: TP-2C	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA: 18 ft West of tp-2B on eastern side of site.	START DATE: 9/9/2011
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/9/2011
GEOLOGIST: Christie Battenhouse	OPERATOR: Dan Brunquell	START TIME: 09:00
DEPTH WATER ENCOUNTERED: ~7 ft bgs	TOTAL DEPTH: 7.0 ft bgs	FINISH TIME: 09:40

(Plan view - Equity Former MGP Site)





AECOM

Test Pit Log

TP-4

PROJECT NO: 60137362	TEST PIT DESIGNATION: TP-4	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA: 27' east of fence corner (at SW corner of FedEx parking lot)	START DATE: 9/9/11
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/9/11
GEOLOGIST: C. Battenhouse	OPERATOR: Dan Brunquell	START TIME: 1135
DEPTH WATER ENCOUNTERED: 7 ft bgs	TOTAL DEPTH: 7 ft bgs	FINISH TIME: 1500

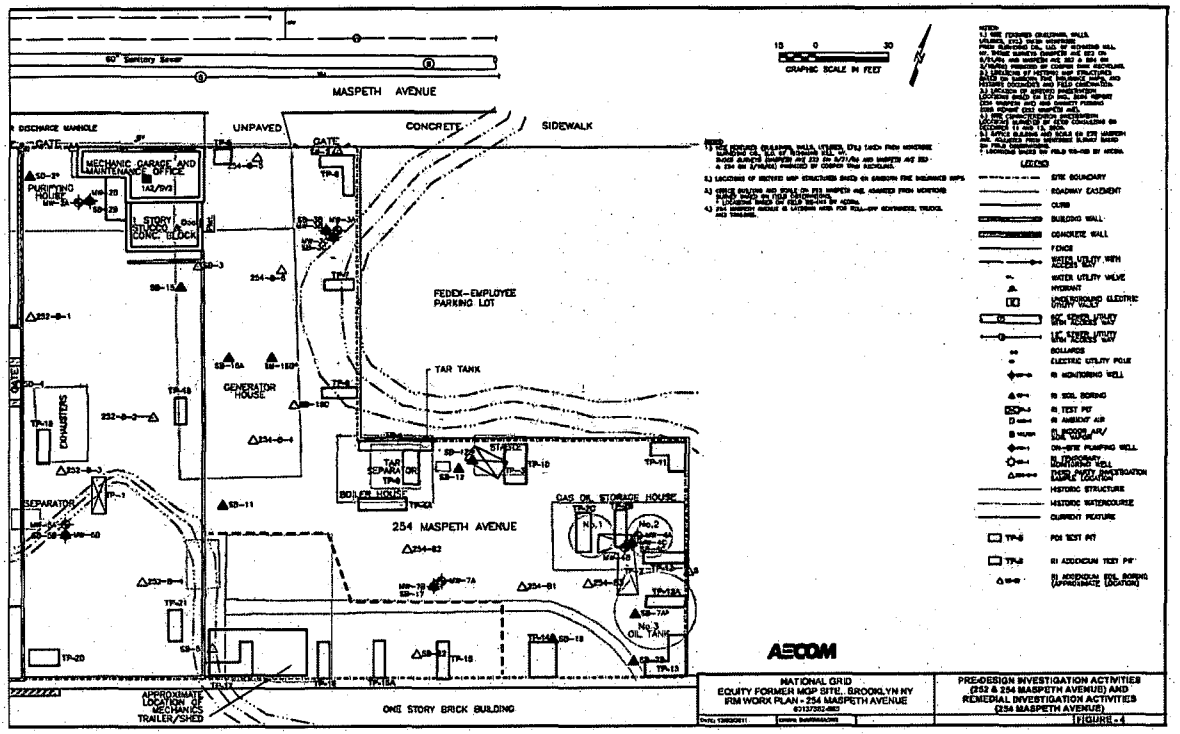
DEPTH (FEET)	VISUAL IMPACTS (FEET)	PID HEADSPACE (PPM)	SOIL STRATIG-RAPHY USCS	SOIL CLASS USCS	SOIL DESCRIPTION LOG	STRUCTURES ENCOUNTERED OR COMMENTS
0		0.0		FILL	0'-1.0' SAND (fill): with little silt, rocks, bricks, concrete, and glass; coal cinders and ash	
1		0.0			1': ~ 6" to 1' concrete layer from ~ 5' to 25' east of fence corner (possible bldg foundation or northern portion of wall of tar separator)	1': structure evident: concrete with wood supports at ~25 to 27' east of fence corner (possible remnants of tar tank)
2		1.0			2-4': coal cinders and ash layer; few hardened tar pieces	4': structure ends.
3		2.0				
4		2.0				
5		4.0				
6		161.5			~ 6.9-7': LNAPL seeping out on groundwater at bottom of test pit; strong to very strong HCLO (diesel-like) odor; OLM evident in soil (stained gloves when collecting sample).	Collected sample: TP-4 (6.5-7)
7					7.0': groundwater observed.	
					Test pit terminated at 7.25 ft bgs.	

Definitions:

1.) NA - Not Applicable
2.) ft - feet
3.) SAA - Same As Above
4.) bgs - below ground surface
5.) ppm - parts per million
6.) PID - Photo Ionization Meter
7.) NAVD 88 - North American Vertical Datum of 1988
8.) U.S.C.S. - Unified Soil Classification System

AECOM	Test Pit Log	TP- 4
PROJECT NO: 60137362	TEST PIT DESIGNATION:	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA:	START DATE:
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE:
GEOLOGIST:	OPERATOR: Dan Brunquell	START TIME:
DEPTH WATER ENCOUNTERED:	TOTAL DEPTH:	FINISH TIME:

(Plan view - Equity Former MGP Site)

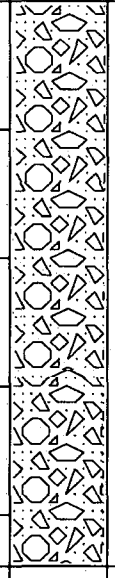


AECOM

Test Pit Log

TP-4A

PROJECT NO: 60137362	TEST PIT DESIGNATION: TP-4A	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA: 254 Maspeth Ave. 20' south of fence, 5' east of corner	START DATE: 9/9/11
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/9/11
GEOLOGIST: C. Battenhouse	OPERATOR: Dan Brunquell	START TIME: 1345
DEPTH WATER ENCOUNTERED: 4.5 ft bgs	TOTAL DEPTH: 4.5 ft bgs	FINISH TIME: 1640

DEPTH (FEET)	VISUAL IMPACTS (FEET)	PID HEADSPACE (PPM)	SOIL STRATIG-RAPHY USCS	SOIL CLASS USCS	SOIL DESCRIPTION LOG	STRUCTURES ENCOUNTERED OR COMMENTS
1		ND			No geological information available.	1': concrete footing/structure at corner of test pit.
2		ND				
3		ND				
4		ND				
		ND				
5						
6						
7						

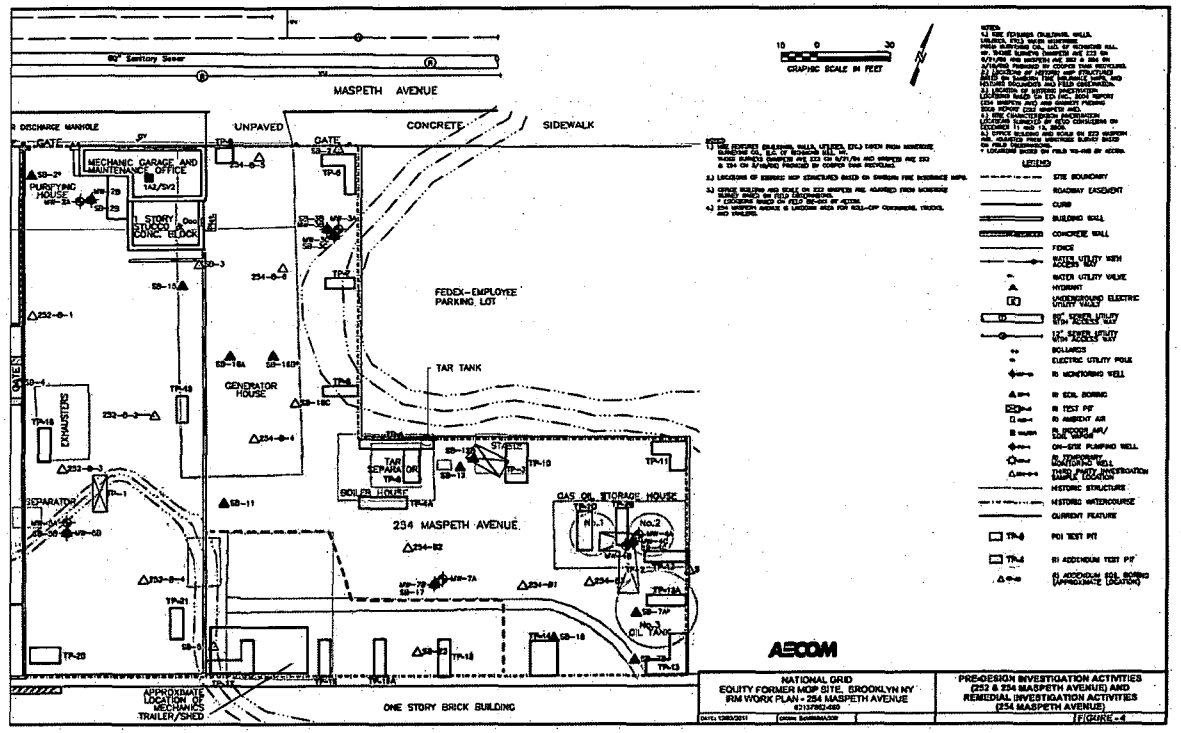
Definitions:

1.) NA - Not Applicable
2.) ft - feet
3.) SAA - Same As Above
4.) bgs - below ground surface
5.) ppm - parts per million
6.) PID - Photo Ionization Meter
7.) NAVD 88 - North American Vertical Datum of 1988
8.) U.S.C.S. - Unified Soil Classification System
9.) ND - Not Documented

AECOM	Test Pit Log	TP- 4A

PROJECT NO: 60137362	TEST PIT DESIGNATION:	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA:	START DATE:
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE:
GEOLOGIST:	OPERATOR: Dan Brunqaell	START TIME:
DEPTH WATER ENCOUNTERED:	TOTAL DEPTH:	FINISH TIME:

(Plan view - Equity Former MGP Site)

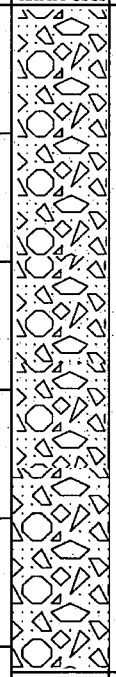


AECOM

Test Pit Log

TP-5

PROJECT NO: 60137362	TEST PIT DESIGNATION: TP-5	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA: Western corner of 254 Maspeth Ave.	START DATE: 9/1/2011
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/1/2011
GEOLOGIST: C. Battenhouse	OPERATOR: Dan Brunquell	START TIME: 13:30
DEPTH WATER ENCOUNTERED: 5.0 ft bgs	TOTAL DEPTH: 5.1 ft bgs	FINISH TIME: 14:20

DEPTH (FEET)	VISUAL IMPACTS (FEET)	PID HEADSPACE (PPM)	SOIL STRATIG-RAPHY USCS	SOIL CLASS USCS	SOIL DESCRIPTION LOG	STRUCTURES ENCOUNTERED OR COMMENTS
1	NA	0.0		FILL	0-5.4' FILL: brick, concrete, gravel, glass, slag, wood pieces (pebble to cobble sized), dry, no odor.	
2	NA	0.0				1.0-5.0' (on Northern wall): brick foundation
3	NA	0.0				
4	NA	0.0				
5	NA	0.0			Larger, boulder-sized pieces of concrete/rock.	
6					5.0': Groundwater observed, moist to wet at bottom.	
7						

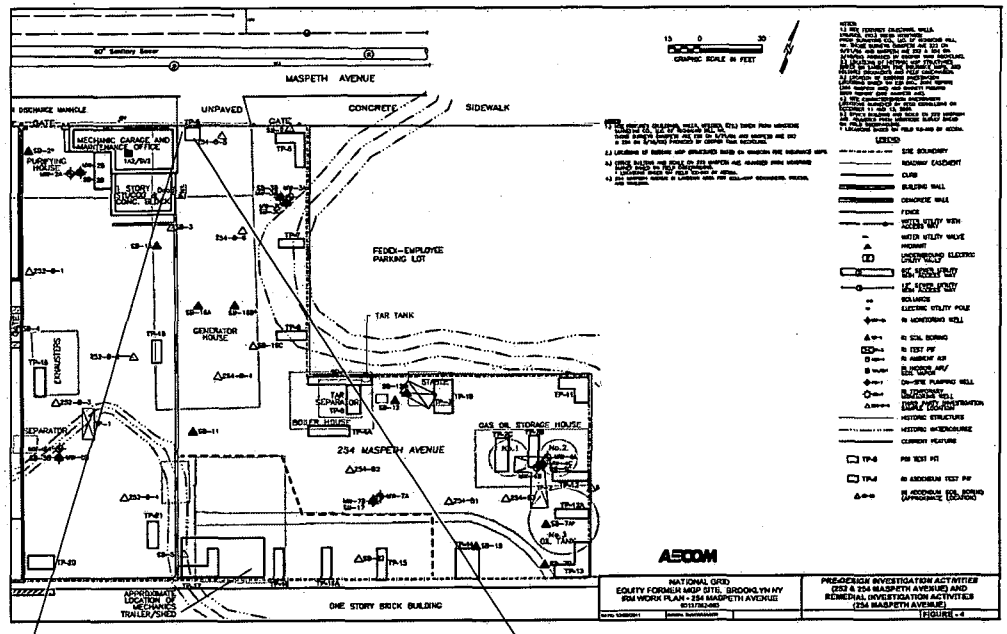
Test pit terminated at 5.4 ft bgs.

Definitions:

1.) NA - Not Applicable
2.) ft - feet
3.) SAA - Same As Above
4.) bgs - below ground surface
5.) ppm - parts per million
6.) PID - Photo Ionization Meter
7.) NAVD 88 - North American Vertical Datum of 1988
8.) U.S.C.S. - Unified Soil Classification System

AECOM	Test Pit Log	TP-5
PROJECT NO: 60137362	TEST PIT DESIGNATION: TP-5	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA: Western corner of 254 Maspeth Ave.	START DATE: 9/1/2011
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/1/2011
GEOLOGIST: C. Battenhouse	OPERATOR: Dan Brunquell	START TIME: 13:30
DEPTH WATER ENCOUNTERED: 5.0 ft bgs	TOTAL DEPTH: 5.1 ft bgs	FINISH TIME: 14:20

(Plan view - Equity Former MGP Site)



AECOM

Test Pit Log

TP-6

PROJECT NO: 60137362		TEST PIT DESIGNATION: TP-6	SURFACE ELEVATION: TBD
CLIENT:	National Grid	SITE LOCATION OR AREA: Entrance gate to 254 Maspeth Ave	START DATE: 9/1/2011
SITE NAME:	Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/1/2011
GEOLOGIST:	C. Battenhouse	OPERATOR: Dan Brunquell	START TIME: 15:00
DEPTH WATER ENCOUNTERED:	5.0 ft bgs	TOTAL DEPTH: 5.33 ft bgs	FINISH TIME: 16:30

DEPTH (FEET)	VISUAL IMPACTS (FEET)	PID HEADSPACE (PPM)	SOIL STRATIG-RAPHY USCS	SOIL CLASS USCS	SOIL DESCRIPTION LOG	STRUCTURES ENCOUNTERED OR COMMENTS
1		0.0		FILL	0-5.5' FILL: cobbles, bricks, glass, concrete, wood, cinders, (coal) ash, roofing material (possibly ACM) or old flooring, pebble to boulder sized pieces of concrete/rock, no odor or staining, dry, moist to wet at bottom.	
2		0.0				
3		0.0				2.0-5.0': bricks on northern side no apparent structure.
4		0.0				Collected sample TP-6 (3.5-4.5') from area of coal ash/cinders (on eastern side of test pit)
5		0.0			Larger (boulder-sized pieces of rock/concrete at 4.5 ft bgs).	
6		ND			Assumed roofing material/old flooring observed at 5.0 ft bgs (along northern side) -possible ACM, not observed on eastern Side. Apparent/suspected brick layer at bottom, bucket not able to get through. 5.1': Groundwater observed (eastern side) and 5.33' (northern side).	Brick layer suspected at 5.0 ft bgs
7						

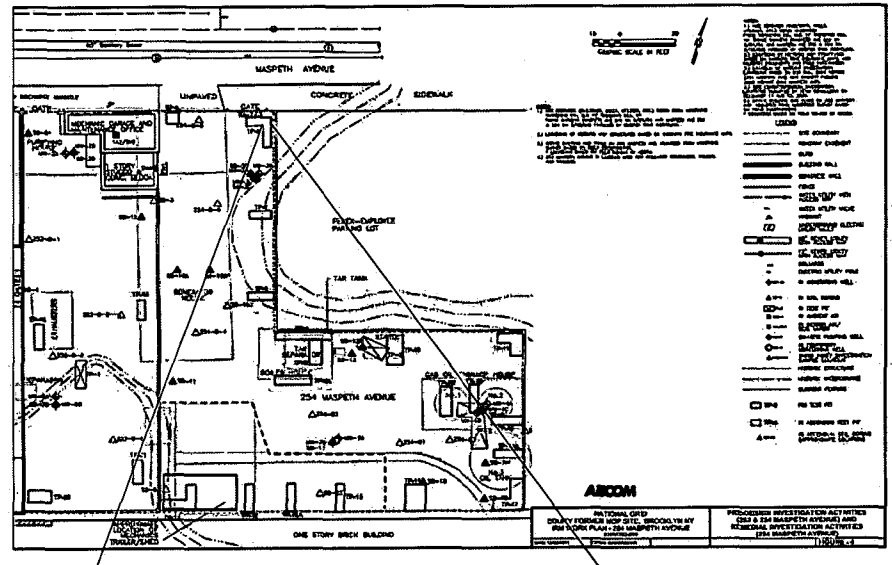
Test pit terminated at 5.5 ft bgs.

Definitions:

1.) NA - Not Applicable
2.) ft - feet
3.) SAA - Same As Above
4.) bgs - below ground surface
5.) ppm - parts per million
6.) PID - Photo Ionization Meter
7.) NAVD 88 - North American Vertical Datum of 1988
8.) U.S.C.S. - Unified Soil Classification System
9.) ND - Not Documented

AECOM	Test Pit Log	TP-6
PROJECT NO: 60137362	TEST PIT DESIGNATION: TP-5	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA: Western corner of 254 Maspeth Ave.	START DATE: 9/1/2011
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/1/2011
GEOLOGIST: C. Battenhouse	OPERATOR: Dan Brunquell	START TIME: 15:00
DEPTH WATER ENCOUNTERED: 5.0 ft bgs	TOTAL DEPTH: 5.1 ft bgs	FINISH TIME: 16:30

(Plan view - Equity Former MGP Site)



AECOM

Test Pit Log

TP-7

PROJECT NO: 60137362	TEST PIT DESIGNATION: TP-7	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA: Eastern fence next to weigh scales	START DATE: 9/2/2011
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/2/2011
GEOLOGIST: Christie Battenhouse	OPERATOR: Dan Brumquell	START TIME: 07:30
DEPTH WATER ENCOUNTERED: 6.83 ft bgs	TOTAL DEPTH: 6.83 ft bgs	FINISH TIME: 08:30

DEPTH (FEET)	VISUAL IMPACTS (FEET)	PID HEADSPACE (PPM)	SOIL STRATIG-RAPHY USCS	SOIL CLASS USCS	SOIL DESCRIPTION LOG	STRUCTURES ENCOUNTERED OR COMMENTS
1		ND		FILL	0-4' SAND (fill); sand and pieces of concrete, boulder sized rocks, brick pieces (pebble to cobble sized), <20%slag/ash, black/brown color, dry, no odors or staining.	
2		ND				
3		ND				
4		ND			3': fewer of the larger. boulder-sized pieces, moist.	
5		ND			4-6.83' SAND (fill): sand, moist, gravels, pieces of bricks, slag, ash, few boulders, reddish-black-brown color.	
6		ND				
7		ND			6.83': wet, groundwater observed seeping into test pit.	

Test pit terminated at 6.83 ft bgs.

Definitions:

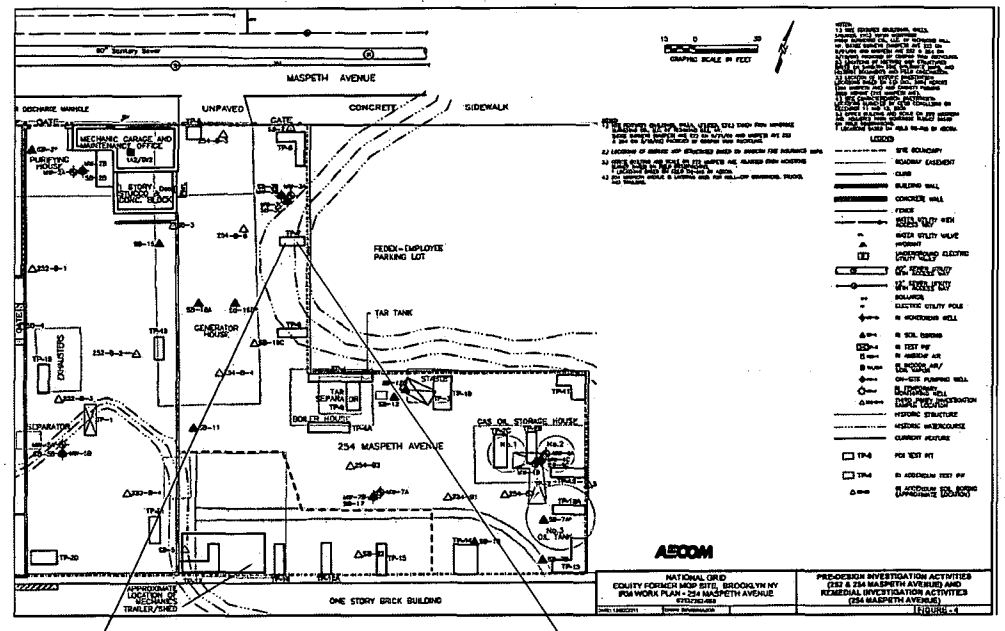
1.) NA - Not Applicable
2.) ft - feet
3.) SAA - Same As Above
4.) bgs - below ground surface
5.) ppm - parts per million
6.) PID - Photo Ionization Meter
7.) NAVD 88 - North American Vertical Datum of 1988
8.) U.S.C.S. - Unified Soil Classification System
9.) ND - Not documented

Test Pit Log

TP-7

PROJECT NO: 60137362	TEST PIT DESIGNATION: TP-7	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA: Eastern fence next to weigh scales	START DATE: 9/2/2011
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/2/2011
GEOLOGIST: C. Battenhouse	OPERATOR: Dan Brunquell	START TIME: 07:30
DEPTH WATER ENCOUNTERED: 6.83 ft bgs	TOTAL DEPTH: 6.83 ft bgs	FINISH TIME: 08:30

(Plan view - Equity Former MGP Site)



AECOM

Test Pit Log

TP-8

PROJECT NO: 60137362	TEST PIT DESIGNATION: TP-8	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA: Along Eastern wall	START DATE: 9/1/2011
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/1/2011
GEOLOGIST: J. Pfeiffer	OPERATOR: Dan Brunquell	START TIME: 11:35
DEPTH WATER ENCOUNTERED: 6.67 ft bgs	TOTAL DEPTH: 7.0 ft bgs	FINISH TIME: 12:10

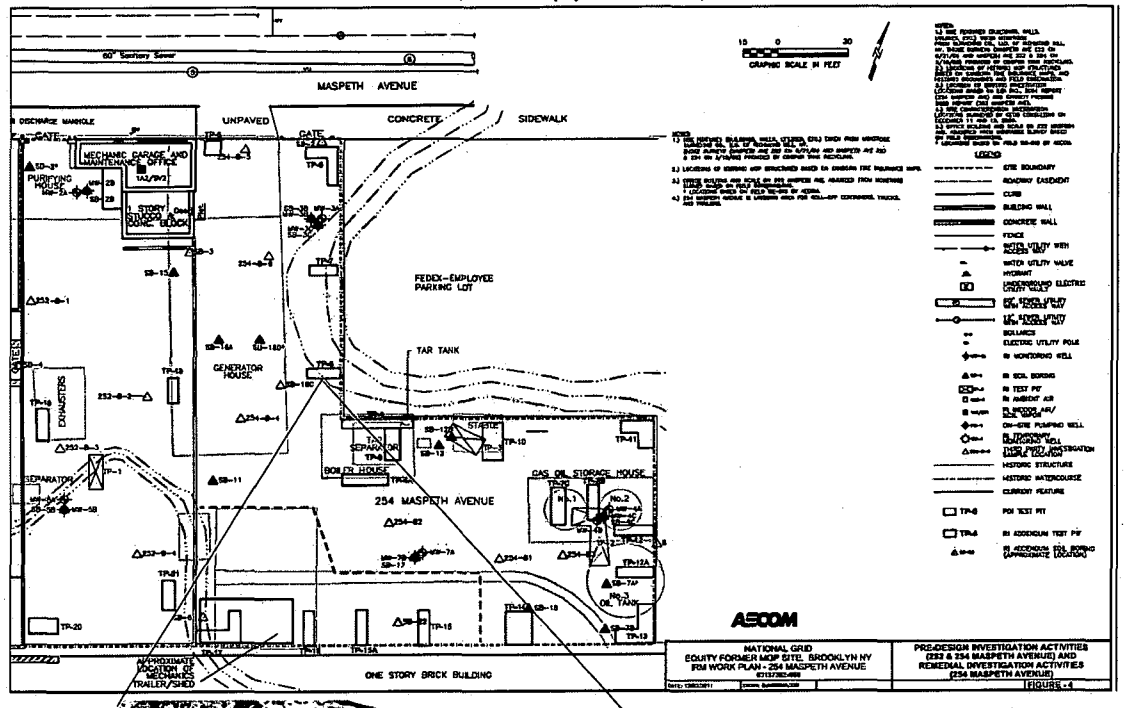
DEPTH (FEET)	VISUAL IMPACTS (FEET)	PID HEADSPACE (PPM)	SOIL STRATIG-RAPHY USCS	SOIL CLASS USCS	SOIL DESCRIPTION LOG	STRUCTURES ENCOUNTERED OR COMMENTS
1		0.0		FILL	0.0-7.0' SAND and GRAVEL (fill): sand and gravel, fill with large and small boulders, cobbles throughtout, slag pieces - largest is 1' in diameter, dry, brick bits and whole throughout 4" diameter pipe (fill) 3' length present, brown and black color.	
2		0.0				
3		0.0			2.7': Black coal, looks and feels like pumice rock. No odors, no visible impacts 1 ft thick lense across test pit.	
4		0.0				
5		0.0			4.9': Slag, black, no odor, no visible impacts, 1 ft thick across test pit.	
6		0.0				
7		0.0			6.67': Groundwater observed.	Collected Sample TP-8 (6.4-6.7') No sheen on water.
					Test pit terminated at 7.0 ft bgs.	

Definitions:

1.) NA - Not Applicable
2.) ft - feet
3.) SAA - Same As Above
4.) bgs - below ground surface
5.) ppm - parts per million
6.) PID - Photo Ionization Meter
7.) NAVD 88 - North American Vertical Datum of 1988
8.) U.S.C.S. - Unified Soil Classification System

AECOM	Test Pit Log	TP-8
PROJECT NO: 60137362	TEST PIT DESIGNATION: TP-8	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA: Along Eastern wall	START DATE: 9/1/2011
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/1/2011
GEOLOGIST: J. Pfeiffer	OPERATOR: Dan Brunquell	START TIME: 11:35
DEPTH WATER ENCOUNTERED: 6.67 ft bgs	TOTAL DEPTH: 7.0 ft bgs	FINISH TIME: 12:10

(Plan view - Equity Former MGP Site)



AECOM

Test Pit Log

TP-9

PROJECT NO: 60137362	TEST PIT DESIGNATION: TP-9	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA: North fence along FedEx parking lot	START DATE: 9/8/2011
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/8/2011
GEOLOGIST: S. Pandya, J. Ehlen	OPERATOR: Dan Brunquell	START TIME: 15:20
DEPTH WATER ENCOUNTERED: 7.0 ft bgs	TOTAL DEPTH: 7.0 ft bgs	FINISH TIME: 16:15

DEPTH (FEET)	VISUAL IMPACTS (FEET)	PID HEADSPACE (PPM)	SOIL STRATIG-RAPHY USCS	SOIL CLASS USCS	SOIL DESCRIPTION LOG	STRUCTURES ENCOUNTERED OR COMMENTS
1		ND		Fill	0-2' SAND (fill): sand, brick, pebbles, cobbles, concrete, light brown color.	
2		0.3				
3		0.3			2'-4': Black stained, weathered coal fragments throughout on north, south, east, west walls, no odors, no visible or olfactory impacts observed/detected, bricks observed in layers.	
4		0.3				
5		0.3			4'-7': cinder blocks, 1.8' lense of bricks, and .3-.5' lense of cobbles, fine sand, little silt, brown.	
6		0.3				
7		1.8				

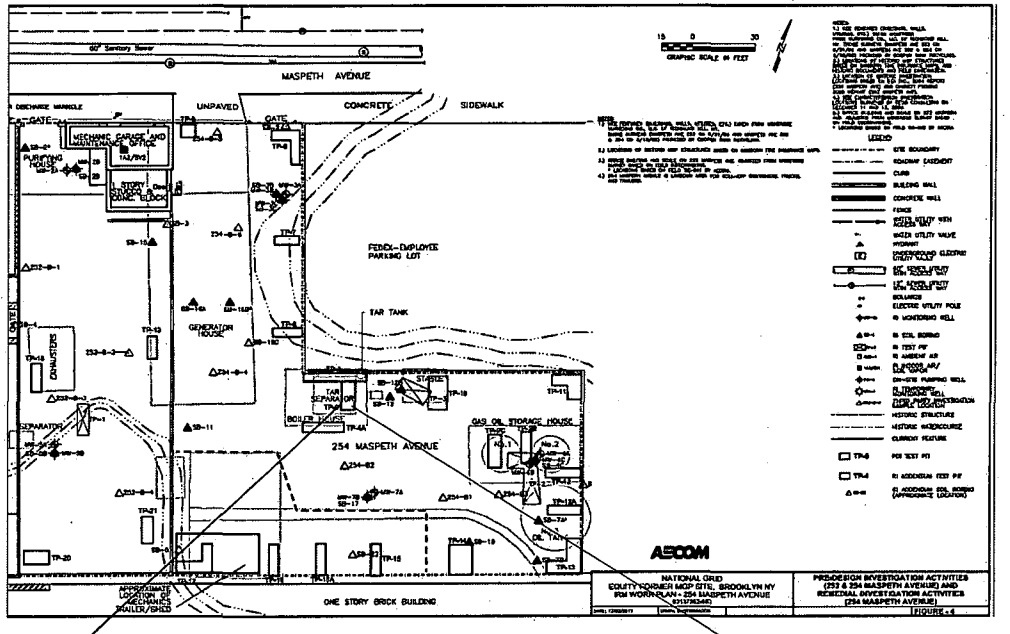
Test pit terminated at 7.0 ft bgs.

Definitions:

1.) NA - Not Applicable
2.) ft - feet
3.) SAA - Same As Above
4.) bgs - below ground surface
5.) ppm - parts per million
6.) PID - Photo Ionization Meter
7.) NAVD 88 - North American Vertical Datum of 1988
8.) U.S.C.S. - Unified Soil Classification System
9.) ND - Not Documented

AECOM	Test Pit Log	TP-9
PROJECT NO: 60137362	TEST PIT DESIGNATION: TP-9	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA: North fence along FedEx parking lot	START DATE: 9/8/2011
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/8/2011
GEOLOGIST: Jessica Ehlen/Shail Pandya	OPERATOR: Dan Brunquell	START TIME: 15:20
DEPTH WATER ENCOUNTERED: 7.0 ft bgs	TOTAL DEPTH: 7.0 ft bgs	FINISH TIME: 16:15

(Plan view - Equity Former MGP Site)



AECOM

Test Pit Log

TP-10

PROJECT NO: 60137362	TEST PIT DESIGNATION: TP-10	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA: North fence along FedEx parking lot	START DATE: 9/8/2011
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/8/2011
GEOLOGIST: S. Pandya, J. Ehlen	OPERATOR: Dan Brunquell	START TIME: 13:05
DEPTH WATER ENCOUNTERED: 7.0 ft bgs	TOTAL DEPTH: 7.0 ft bgs	FINISH TIME: 13:45

DEPTH (FEET)	VISUAL IMPACTS (FEET)	PID HEADSPACE (PPM)	SOIL STRATIG-RAPHY USCS	SOIL CLASS USCS	SOIL DESCRIPTION LOG	STRUCTURES ENCOUNTERED OR COMMENTS
1		ND		FILL	0-1' SAND (fill): sand with ~10% silt, cobbles, bricks, no odors, no visual impacts.	
2		ND			1'-7': SAND (fill): sand with ~10% silt, ~40% cobbles stones up to 1" in diameter, bricks, no odor, no visual impacts.	
3		ND				
4		ND				
5		ND				
6		ND				
7		3.2			6'-7': Black staining, no to very slight petroleum-like odors. Unknown staining to sheen on groundwater, no mgp related/tar-like material impacts observed.	

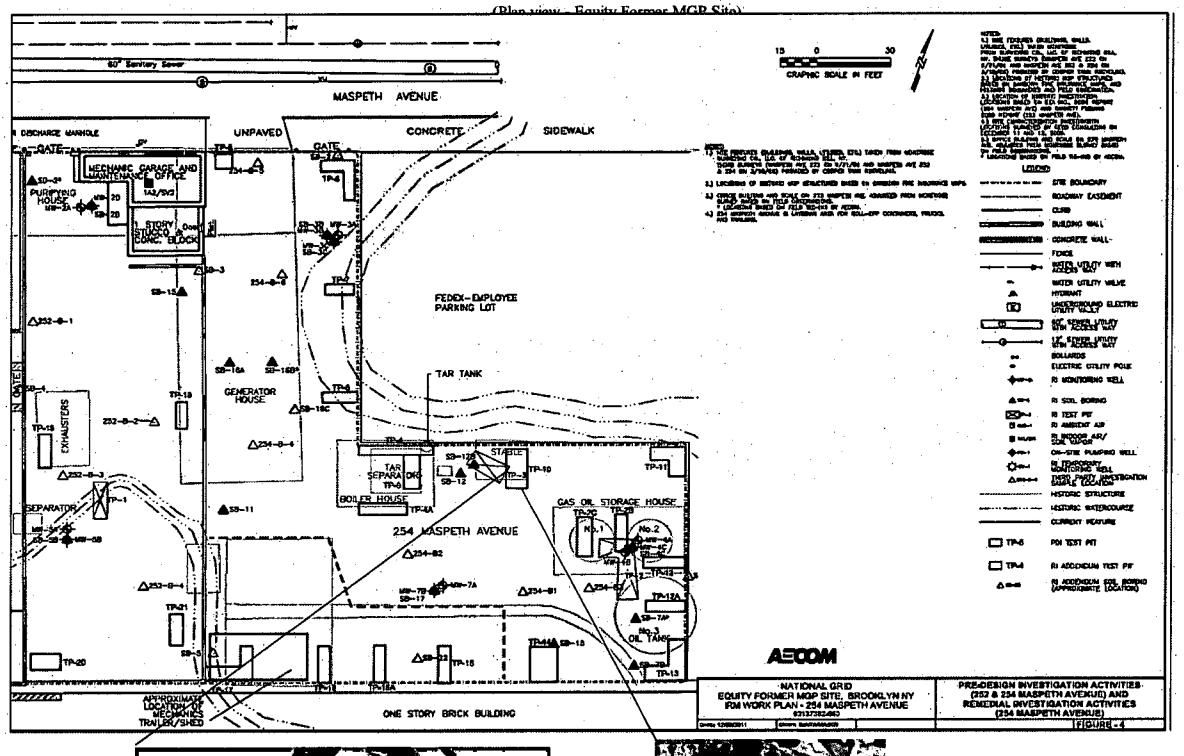
Test pit terminated at 7.0 ft bgs.

Definitions:

1.) NA - Not Applicable
2.) ft - feet
3.) SAA - Same As Above
4.) bgs - below ground surface
5.) ppm - parts per million
6.) PID - Photo Ionization Meter
7.) NAVD 88 - North American Vertical Datum of 1988
8.) U.S.C.S. - Unified Soil Classification System
9.) ND - Not Docmented

AECOM	Test Pit Log	TP-10
PROJECT NO: 60137362	TEST PIT DESIGNATION: TP-10	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA: North fence along FedEx parking lot	START DATE: 9/8/2011
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/8/2011
GEOLOGIST: Jessica Ehlen/Shail Pandya	OPERATOR: Dan Brunquell	START TIME: 13:05
DEPTH WATER ENCOUNTERED: 7.0 ft bgs	TOTAL DEPTH: 7.0 ft bgs	FINISH TIME: 13:45

(Plan view - Equity Former MGP Site)



AECOM

Test Pit Log

TP-11

PROJECT NO: 60137362	TEST PIT DESIGNATION: TP-11	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA: East corner by FedEx parking lot	START DATE: 9/8/2011
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/8/2011
GEOLOGIST: Christie Battenhouse/Jessica Ehlen	OPERATOR: Dan Brunquell	START TIME:
DEPTH WATER ENCOUNTERED:	TOTAL DEPTH: 7.33 ft bgs	FINISH TIME:

DEPTH (FEET)	VISUAL IMPACTS (FEET)	PID HEADSPACE (PPM)	SOIL STRATIG-RAPHY USCS	SOIL CLASS USCS	SOIL DESCRIPTION LOG	STRUCTURES ENCOUNTERED OR COMMENTS
1		0.0			0-7.33': SAND (fill): sand with pebbles, cobbles, bricks, concrete, brown, no odors or visual impacts.	
2		0.0				
3		0.0				
4		0.0				3.5-5': brick layer observed in east to west direction test pit 3.5-4': brick layer observed in north to south direction test pi
5		0.0				
6		0.0				
7		0.0			6-6.68': north to south direction test pit: layer of slag, cinders and ash observed on north wall	Collected sample TP-11 (6-6.63')

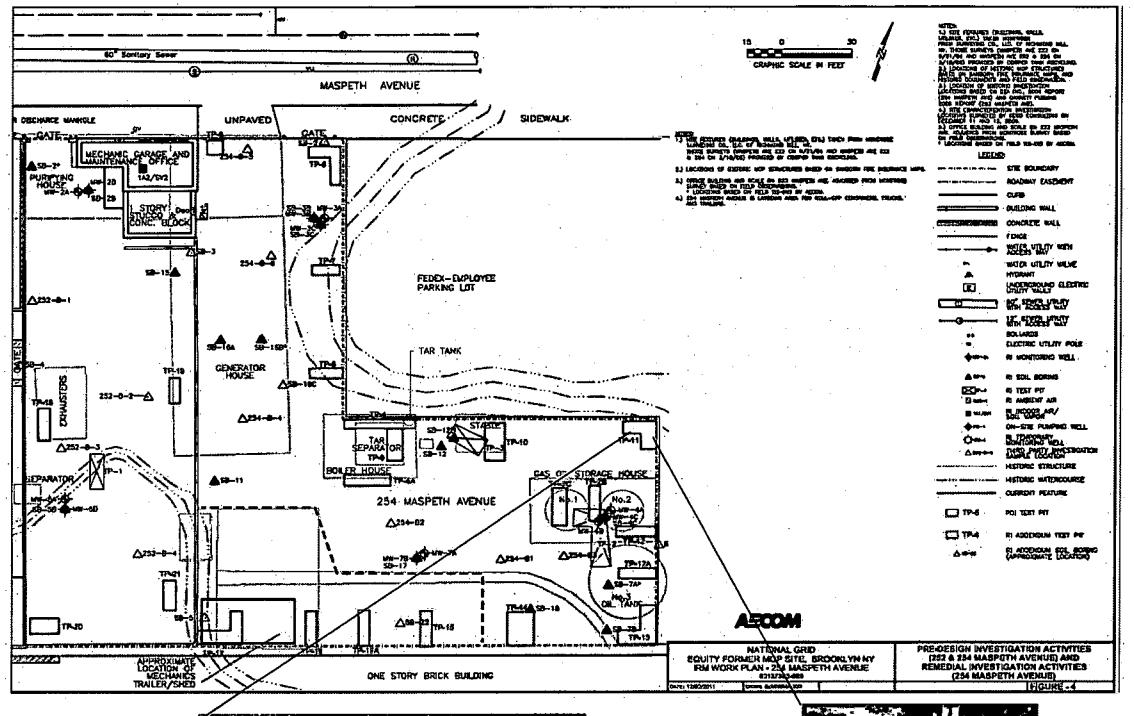
Test pit terminated at 7.33 ft bgs.

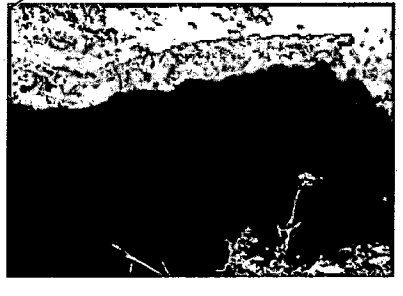
Definitions:

1.) NA - Not Applicable
2.) ft - feet
3.) SAA - Same As Above
4.) bgs - below ground surface
5.) ppm - parts per million
6.) PID - Photo Ionization Meter
7.) NAVD 88 - North American Vertical Datum of 1988
8.) U.S.C.S. - Unified Soil Classification System

AECOM	Test Pit Log	TP-11
PROJECT NO: 60137362	TEST PIT DESIGNATION: TP-11	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA: East corner by FedEx parking lot	START DATE: 9/8/2011
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/8/2011
GEOLOGIST: Christie Battenhouse/Jessica Ehlen	OPERATOR: Dan Brunquell	START TIME:
DEPTH WATER ENCOUNTERED:	TOTAL DEPTH: 7.33 ft bgs	FINISH TIME:

(Plan view - Equity Former MGP Site)





AECOM

Test Pit Log

TP-11A

PROJECT NO: 60137362	TEST PIT DESIGNATION: TP-11	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA: East corner by FedEx parking lot	START DATE: 9/8/2011
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/8/2011
GEOLOGIST: S. Pandya/J. Ehlen	OPERATOR: Dan Brunquell	START TIME: 1245
DEPTH WATER ENCOUNTERED:	TOTAL DEPTH: 1.0 ft bgs	FINISH TIME: 1250

DEPTH (FEET)	VISUAL IMPACTS (FEET)	PID HEADSPACE (PPM)	SOIL STRATIG-RAPHY USCS	SOIL CLASS USCS	SOIL DESCRIPTION LOG	STRUCTURES ENCOUNTERED OR COMMENTS
1		0.0			0.5-1.0': observe solid tar pieces.	(TP-11A is 13.0' between southern edge of TP-11 in N-S direction and TP-12).
2						
3						
4						
5						
6						
7						

Test pit terminated at 1.0 ft bgs.

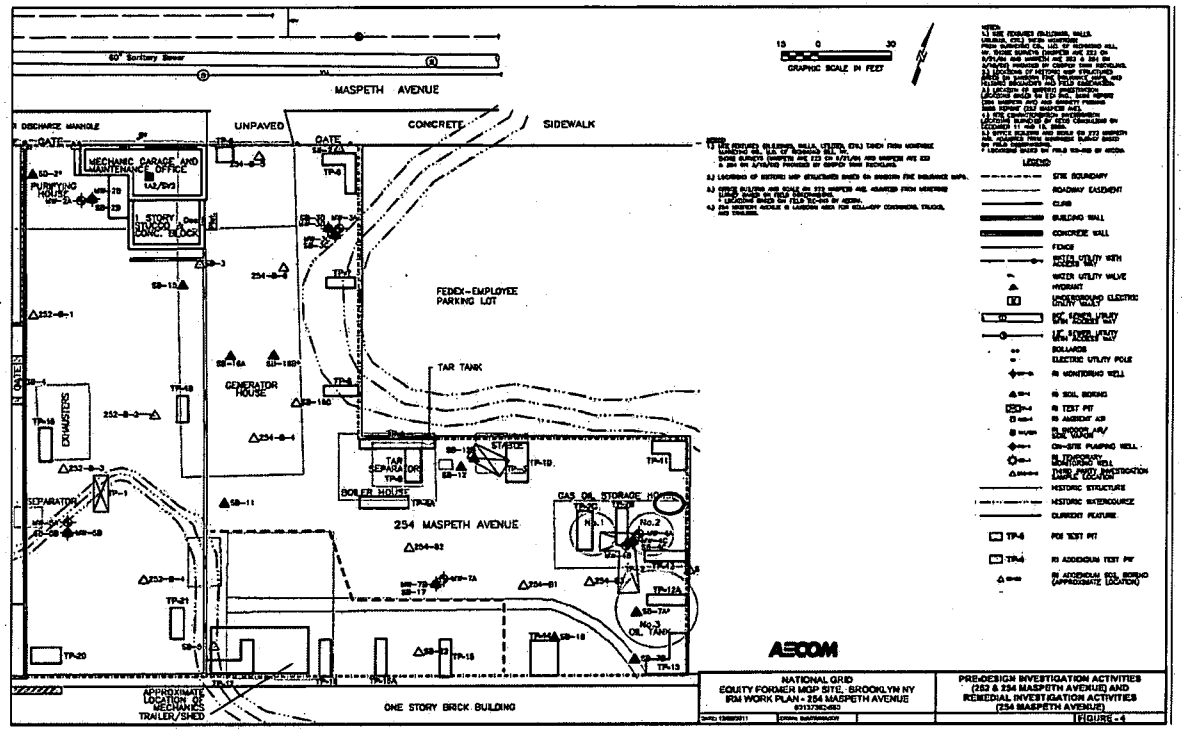
Definitions:

1.) NA - Not Applicable
2.) ft - feet
3.) SAA - Same As Above
4.) bgs - below ground surface
5.) ppm - parts per million
6.) PID - Photo Ionization Meter
7.) NAVD 88 - North American Vertical Datum of 1988
8.) U.S.C.S. - Unified Soil Classification System

AECOM	Test Pit Log	TP-11A

PROJECT NO: 60137362	TEST PIT DESIGNATION: TP-11	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA: East corner by FedEx parking lot	START DATE: 9/8/2011
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/8/2011
GEOLOGIST: S. Paodya, J. Ehlen	OPERATOR: Dan Brunquell	START TIME: 1245
DEPTH WATER ENCOUNTERED:	TOTAL DEPTH: 7.33 ft bgs	FINISH TIME: 1250

(Plan view - Equity Former MGP Site)



AECOM

Test Pit Log

TP-12

PROJECT NO: 60137362		TEST PIT DESIGNATION: TP-12	SURFACE ELEVATION: TBD
CLIENT:	National Grid	SITE LOCATION OR AREA: eastern edge of site; center of eastern fenceline	START DATE: 9/6/11
SITE NAME:	Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/6/11
GEOLOGIST:	C. Battenhouse	OPERATOR: Dan Brunquell	START TIME: 1445
DEPTH WATER ENCOUNTERED:	not encountered	TOTAL DEPTH: 5.0 ft bgs	FINISH TIME: 1545

DEPTH (FEET)	VISUAL IMPACTS (FEET)	PID HEADSPACE (PPM)	SOIL STRATIG-RAPHY USCS	SOIL CLASS USCS	SOIL DESCRIPTION LOG	STRUCTURES ENCOUNTERED OR COMMENTS
1		ND		FILL	0-5' SAND (fill): sand with <20% silt, bricks, and rocks. 0.5': heavily tar-coated to tar-saturated lense on western wall to (minimum of) 4.75' on eastern wall; soil appeared to be unimpacted under shallow lense on western wall (~0.5 to 2' bgs); impacts appear to continue down to bottom on the eastern wall.	
2		ND				
3		ND				
4		ND				
5		ND			Test pit terminated due to very strong odor.	Collected sample TP-12 (4-5)
6						
7						

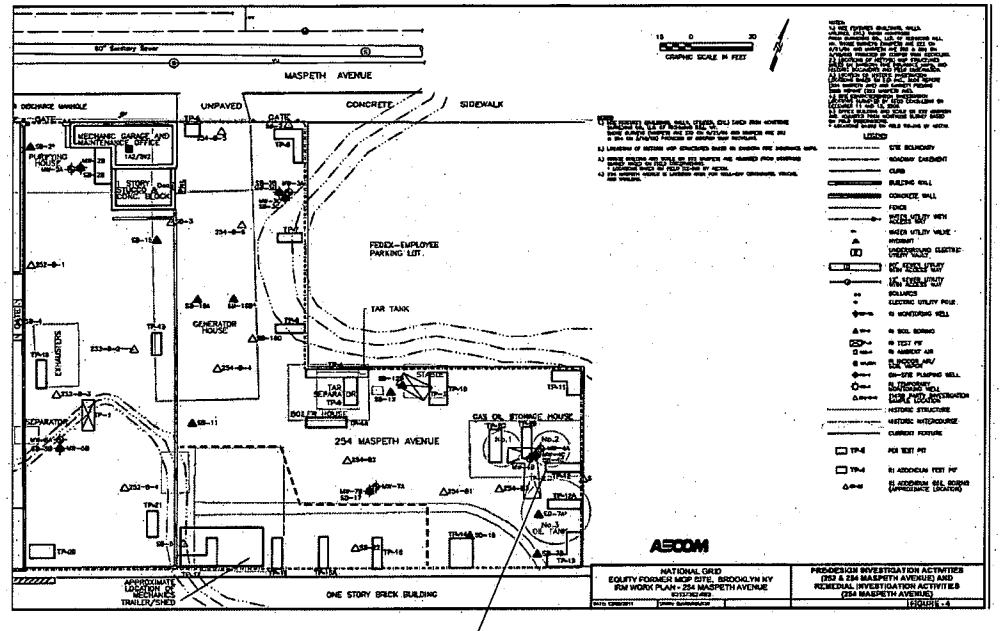
Test pit terminated at 5.0 ft bgs.

Definitions:

1.) NA - Not Applicable
2.) ft - feet
3.) SAA - Same As Above
4.) bgs - below ground surface
5.) ppm - parts per million
6.) PID - Photo Ionization Meter
7.) NAVD 88 - North American Vertical Datum of 1988
8.) U.S.C.S. - Unified Soil Classification System
9.) ND - Not Documented

AECOM	Test Pit Log	TP- 12
PROJECT NO: 60137362	TEST PIT DESIGNATION: TP-12	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA: eastern edge of site; center of eastern fenceline	START DATE: 9/6/11
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/6/11
GEOLOGIST: C. Battenhouse	OPERATOR: Dan Brunquell	START TIME: 1445
DEPTH WATER ENCOUNTERED: not encountered	TOTAL DEPTH: 5.0 ft bgs	FINISH TIME: 1545

(Plan view - Equity Former MGP Site)



AECOM

Test Pit Log

TP-12A

PROJECT NO: 60137362	TEST PIT DESIGNATION: TP-12A	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA: south-eastward out from NW corner of N-S portion of TP-13	START DATE: 9/8/11
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/8/11
GEOLOGIST: C. Battenhouse	OPERATOR: Dan Brunquell	START TIME: 0850
DEPTH WATER ENCOUNTERED: not encountered	TOTAL DEPTH: 5 ft bgs	FINISH TIME: 0930

DEPTH (FEET)	VISUAL IMPACTS (FEET)	PID HEADSPACE (PPM)	SOIL STRATIG-RAPHY USCS	SOIL CLASS USCS	SOIL DESCRIPTION LOG	STRUCTURES ENCOUNTERED OR COMMENTS
0-1		ND			0-5' SAND (fill): sand with mostly bricks, < 20% silt; dry to moist. Observed on all four walls of test pit; brick layer at 0.4' to approximately 3' bgs; bricks on bottom of test pit at 5' bgs. Excavator bucket unable to advance through this layer. No visual impacts or odor observed.	
1-2		ND			*TP-12A: ~19 ft south of TP-12. Impacts observed at approximately 0.5 ft bgs. Moved location approximately 7 ft further south and same impacts observed (sand saturated with tar at approximately 0.5 ft bgs.Moved another approximately 7 ft further south intersecting with the western end of TP-13.*	
2-3		ND				
3-4		ND				
4-5		ND				Collected sample TP-12A
5-6						
6-7						

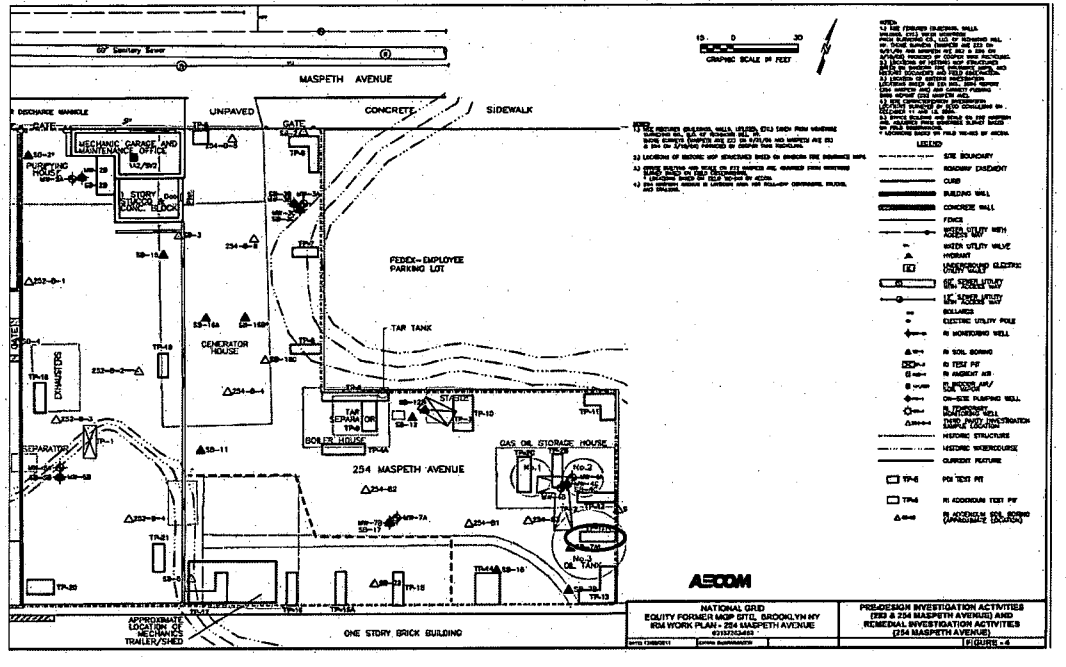
Test pit terminated at 5.0 ft bgs.

Definitions:

1.) NA - Not Applicable
2.) ft - feet
3.) SAA - Same As Above
4.) bgs - below ground surface
5.) ppm - parts per million
6.) PID - Photo Ionization Meter
7.) NAVD 88 - North American Vertical Datum of 1988
8.) U.S.C.S. - Unified Soil Classification System
9.) ND - Not Documented

AECOM	Test Pit Log	TP-12A
PROJECT NO: 60137362	TEST PIT DESIGNATION: TP-12A	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA: south-eastward out from NW corner of N-S portion of TP-13	START DATE: 9/8/11
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/8/11
GEOLOGIST: C. Battenhouse	OPERATOR: Dan Brunquell	START TIME: 0850
DEPTH WATER ENCOUNTERED: not encountered	TOTAL DEPTH: 5 ft bgs	FINISH TIME: 0930

(Plan view - Equity Former MGP Site)



AECOM

Test Pit Log

TP-13

PROJECT NO: 60137362	TEST PIT DESIGNATION: TP-13	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA: South east corner of site between fence and building	START DATE: 9/2/2011
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/2/2011
GEOLOGIST: C. Battenhouse	OPERATOR: Dan Brunquell	START TIME: 12:45
DEPTH WATER ENCOUNTERED: ~6 ft bgs	TOTAL DEPTH: 6.16 ft bgs	FINISH TIME: 13:35

DEPTH (FEET)	VISUAL IMPACTS (FEET)	PID HEADSPACE (PPM)	SOIL STRATIG-RAPHY USCS	SOIL CLASS USCS	SOIL DESCRIPTION LOG	STRUCTURES ENCOUNTERED OR COMMENTS
1		0.0		FILL	0-6' SAND (fill): sand with pebbles and cobbles, concrete, bricks (various size pieces), slag (ash-sand sized pieces), bricks (small to large throughout), dry to moist, no visible impacts observed or odors detected.	
2		0.0				1.5' bgs: possible footing, brick and mortar structure. Possib
3		0.0				
4		0.0				1.5-4' by 2.5' wide: Bottom edge of bricks, possible structure eastern and southern test pit wall.
5		ND				
6		ND				Collected sample TP-13 (5.5-6.0)
7					6.0': Groundwater observed at bottom, wet, past bricks, no staining of odor.	

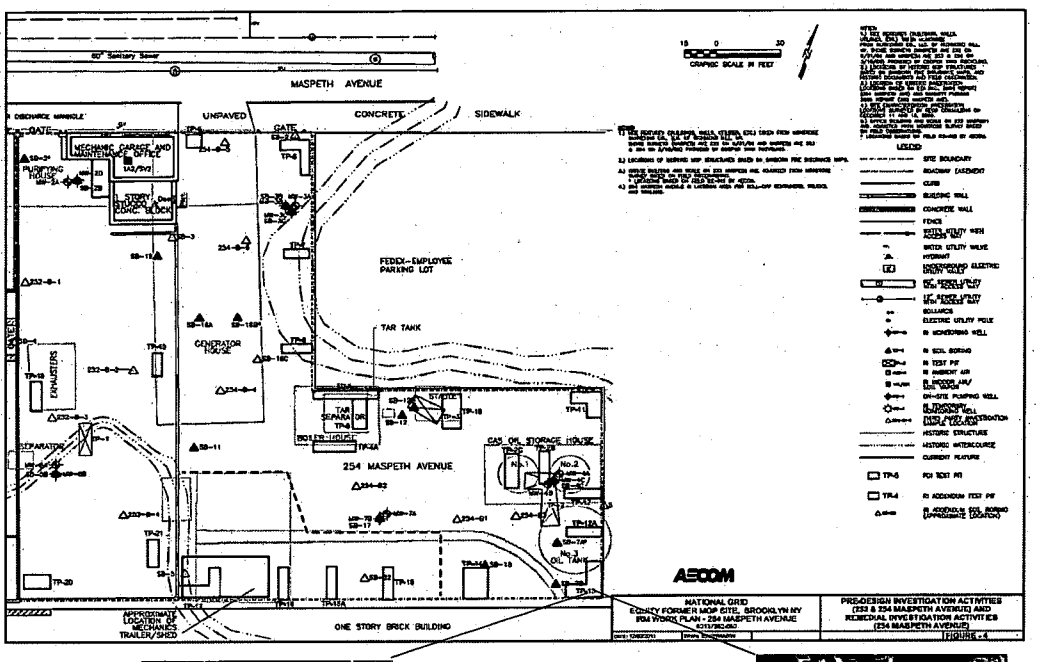
Test pit terminated at 6 ft bgs.

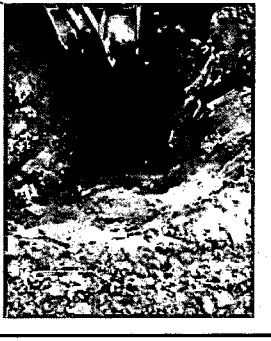
Definitions:

1.) NA - Not Applicable
2.) ft - feet
3.) SAA - Same As Above
4.) bgs - below ground surface
5.) ppm - parts per million
6.) PID - Photo Ionization Meter
7.) NAVD 88 - North American Vertical Datum of 1988
8.) U.S.C.S. - Unified Soil Classification System
9.) ND - Not Documented

AECOM	Test Pit Log	TP-13
PROJECT NO: 60137362	TEST PIT DESIGNATION: TP-13	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA: South east corner of site between fence and building	START DATE: 9/2/2011
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/2/2011
GEOLOGIST: C. Battenhouse	OPERATOR: Dan Brunquell	START TIME: 12:45
DEPTH WATER ENCOUNTERED: ~6 ft bgs	TOTAL DEPTH: 6.16 ft bgs	FINISH TIME: 13:35

(Plan view - Equity Former MGP Site)





AECOM

Test Pit Log

TP-14

PROJECT NO: 60137362	TEST PIT DESIGNATION: TP-14	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA: South side of site adjacent to building	START DATE: 9/2/2011
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/2/2011
GEOLOGIST: C. Battenhouse	OPERATOR: Dan Brunquell	START TIME: 14:20
DEPTH WATER ENCOUNTERED: 6.83 ft bgs	TOTAL DEPTH: 7.0 ft bgs	FINISH TIME: 15:25

DEPTH (FEET)	VISUAL IMPACTS (FEET)	PID HEADSPACE (PPM)	SOIL STRATIG-RAPHY USCS	SOIL CLASS USCS	SOIL DESCRIPTION LOG	STRUCTURES ENCOUNTERED OR COMMENTS
1		0.0		FILL	0-7' SAND (fill): sand, mixed urban debris including rugs, tires, plastic bags, wood pieces, bricks, cobbles, concrete (pebble to boulder sized), dry to moist, very slight naphthalene-like odor (possibly from wood debris).	
2		0.0				
3		0.0			2': large boulder, pieces of brickwith morter on southern side of test pit.	
4		0.0				
5		0.0			4': observe less amounts of urban debris, no visible impacts observed or odors detected.	
6		0.0				
7		ND			6.83': Groundwater observed.	

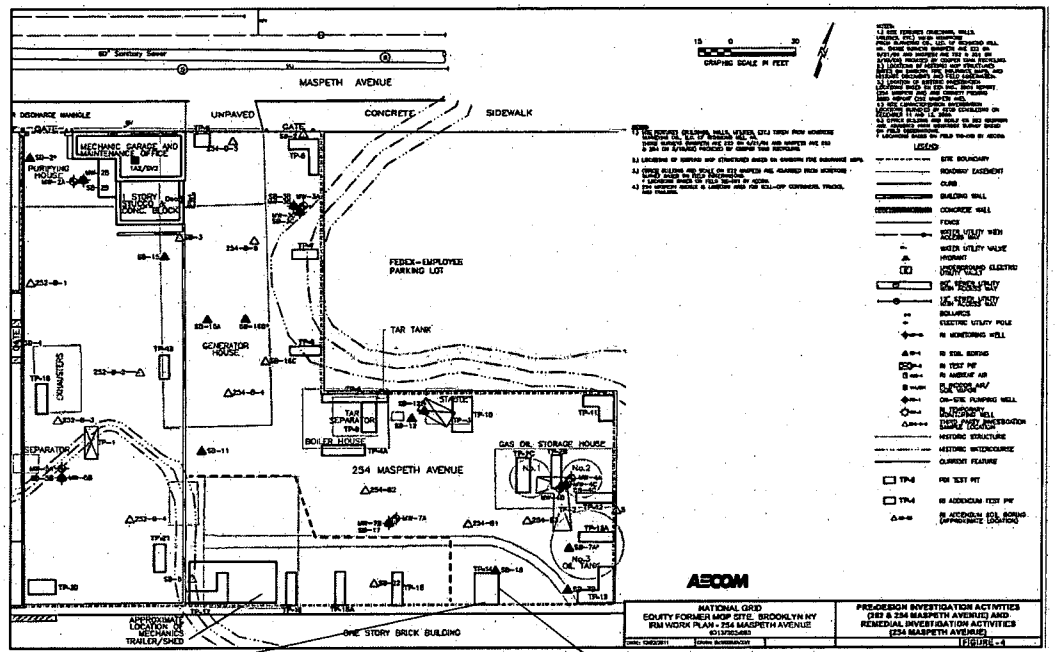
Test pit terminated at 7.0 ft bgs.

Definitions:

1.) NA - Not Applicable
2.) ft - feet
3.) SAA - Same As Above
4.) bgs - below ground surface
5.) ppm - parts per million
6.) PID - Photo Ionization Meter
7.) NAVD 88 - North American Vertical Datum of 1988
8.) U.S.C.S. - Unified Soil Classification System
9.) ND - Not Documented

AECOM	Test Pit Log	TP-14
PROJECT NO: 60137362	TEST PIT DESIGNATION: TP-14	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA: South side of site adjacent to building	START DATE: 9/2/2011
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/2/2011
GEOLOGIST: C. Battenhouse	OPERATOR: Dan Brunquell	START TIME: 14:20
DEPTH WATER ENCOUNTERED: 6.83 ft bgs	TOTAL DEPTH: 7.0 ft bgs	FINISH TIME: 15:25

(Plan view - Equity Former MGP Site)



AECOM

Test Pit Log

TP-15

PROJECT NO: 60137362		TEST PIT DESIGNATION: TP-15	SURFACE ELEVATION: TBD
CLIENT:	National Grid	SITE LOCATION OR AREA: SOUTH SIDE OF SITE, AGAINST TO BLDG ADJACENT TO SITE	START DATE: 9/7/2011
SITE NAME:	Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/7/2011
GEOLOGIST:	C. Battenhouse	OPERATOR: Dan Brunquell	START TIME: 0730
DEPTH WATER ENCOUNTERED:	6 ft bgs	TOTAL DEPTH: 6 ft bgs	FINISH TIME: 0815

DEPTH (FEET)	VISUAL IMPACTS (FEET)	PID HEADSPACE (PPM)	SOIL STRATIG-RAPHY USCS	SOIL CLASS USCS	SOIL DESCRIPTION LOG	STRUCTURES ENCOUNTERED OR COMMENTS
1		ND			0-6.0' SAND (fill): sand and rocks (pebble to boulder-size), mixed urban debris including; rugs, tires, plastic bags, wood pieces, bricks, cobbles, concrete (pebble to boulder sized), dry to moist, sulfur-like odor throughout. Increased amount of urban fill along northern and eastern walls of the test pit. No visible impacts observed or odors detected. The mixed urban debris appears to have been previously burned.	
2		ND			2.0': Blackish-colored layer observed (urban debris appears to have been burned or discolored from natural staining (possibly from sulfate reducing bacteria). Very slight Naphthalene-like odor (possibly from groundwater).	
3		ND				
4		ND				
5		ND				
6		ND			6.0': Groundwater observed.	
7						

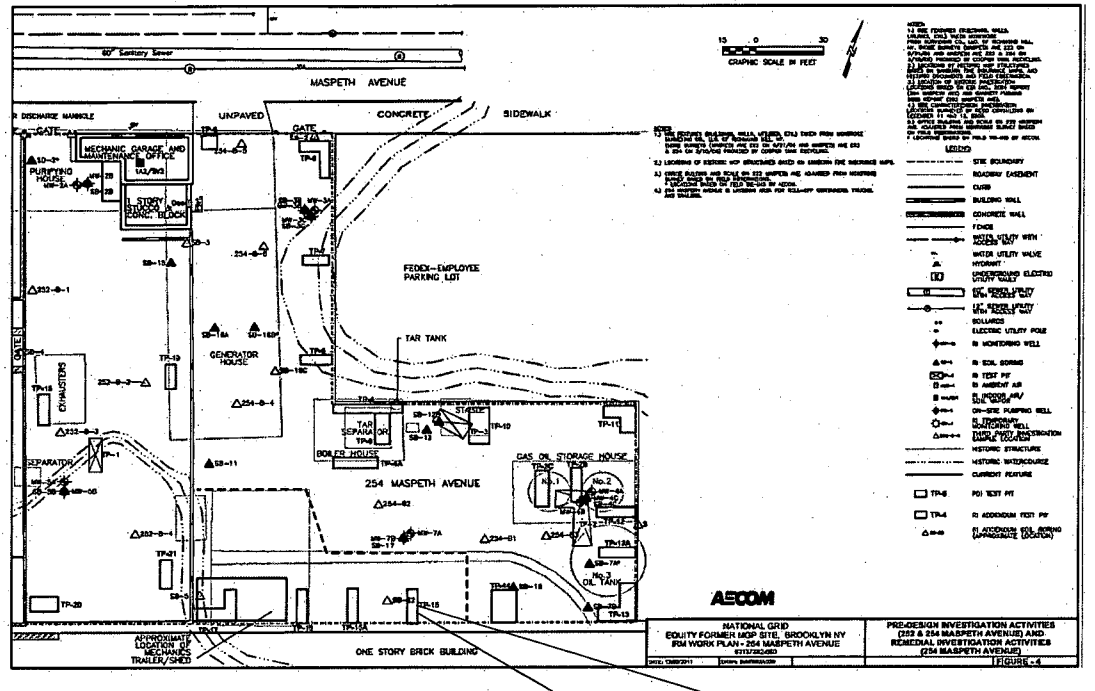
Test pit terminated at 6.0 ft bgs.

Definitions:

1.) NA - Not Applicable
2.) ft - feet
3.) SAA - Same As Above
4.) bgs - below ground surface
5.) ppm - parts per million
6.) PID - Photo Ionization Meter
7.) NAVD 88 - North American Vertical Datum of 1988
8.) U.S.C.S. - Unified Soil Classification System

AECOM	Test Pit Log	TP-15
PROJECT NO: 60137362	TEST PIT DESIGNATION: TP-15	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA: SOUTH SIDE OF SITE, AGAINST TO BLDG ADJACENT TO SITE	START DATE: 9/7/2011
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/7/2011
GEOLOGIST: C. Battenhouse	OPERATOR: Dan Brunquell	START TIME: 0730
DEPTH WATER ENCOUNTERED: 6 ft bgs	TOTAL DEPTH: 6 ft bgs	FINISH TIME: 0815

(Plan view - Equity Former MGP Site)

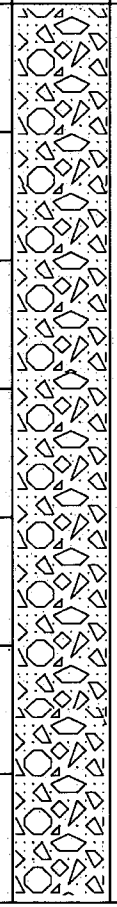


AECOM

Test Pit Log

TP-15A

PROJECT NO: 60137362	TEST PIT DESIGNATION: TP-15A	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA: South side of site; against bldg adjacent to site	START DATE: 9/7/2011
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/7/2011
GEOLOGIST: C. Battenhouse	OPERATOR: Dan Brunquell	START TIME: 0845
DEPTH WATER ENCOUNTERED: 6 ft bgs	TOTAL DEPTH: 6 ft bgs	FINISH TIME: 0945

DEPTH (FEET)	VISUAL IMPACTS (FEET)	PID HEADSPACE (PPM)	SOIL STRATIG-RAPHY USCS	SOIL CLASS USCS	SOIL DESCRIPTION LOG	STRUCTURES ENCOUNTERED OR COMMENTS
1		ND			0-6' SAND (fill): sand with pebbles, cobbles, bricks, mixed urban debris including: ceramic tile, netting, wood peices small and large seem to have been previously burned, rugs, tires, plastic (bags and pieces), wood (small and large pieces), concrete (smal and larger bolder size pieces), dry to moist, wet at bottom, very slight napthalene-like odor (most likely from groundwater); no visual impacts observed.	
2		ND				
3		ND				
4		ND				
5		ND				
6		ND			5.5': groundwater observed. Napthatlene-like odor detected (most likely from the groundwater).	
7		ND				

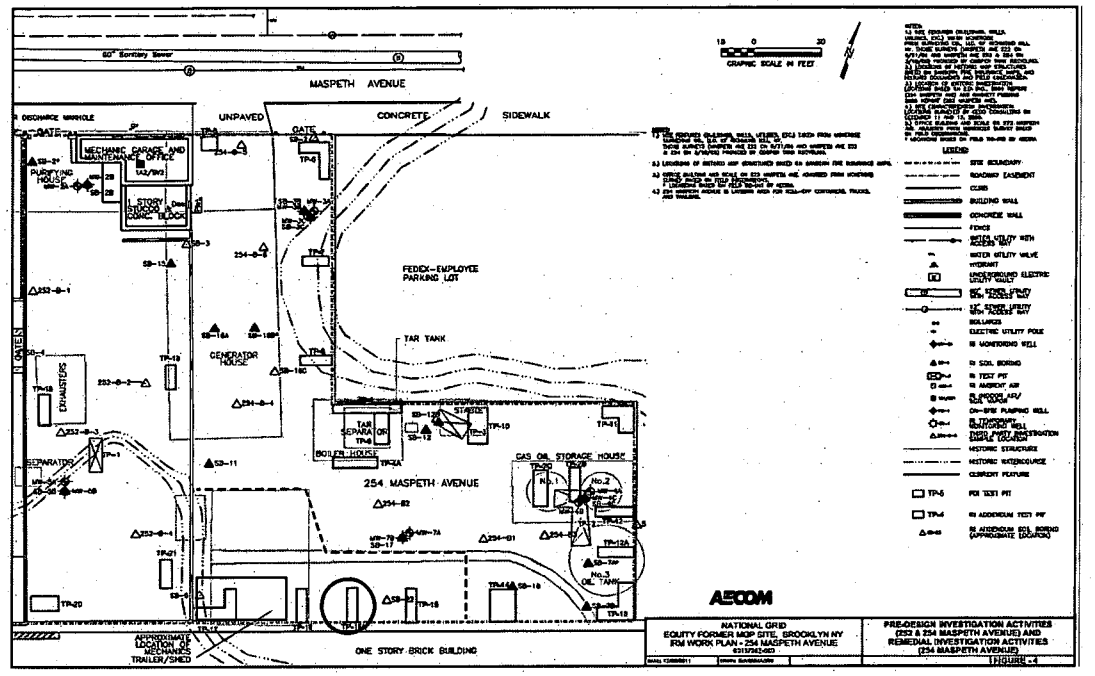
Test pit terminated at 7.0 ft bgs.

Definitions:

1.) NA - Not Applicable
2.) ft - feet
3.) SAA - Same As Above
4.) bgs - below ground surface
5.) ppm - parts per million
6.) PID - Photo Ionization Meter
7.) NAVD 88 - North American Vertical Datum of 1988
8.) U.S.C.S. - Unified Soil Classification System
9.) ND - Not Documented

AECOM	Test Pit Log	TP- 15A
PROJECT NO: 60137362	TEST PIT DESIGNATION: TP-16A	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA: South side of site; against bldg adjacent to site	START DATE: 9/7/2011
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/7/2011
GEOLOGIST: C. Battenhouse	OPERATOR: Dan Brumquell	START TIME: 0845
DEPTH WATER ENCOUNTERED: 6 ft bgs	TOTAL DEPTH: 6 ft bgs	FINISH TIME: 0945

(Plan view - Equity Former MGP Site)



AECOM

Test Pit Log

TP-16

PROJECT NO: 60137362		TEST PIT DESIGNATION: TP-16	SURFACE ELEVATION: TBD
CLIENT:	National Grid	SITE LOCATION OR AREA: Southern wall of site adjacent to building	START DATE: 9/2/2011
SITE NAME:	Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/2/2011
GEOLOGIST:	C.Battenhouse	OPERATOR: Dan Brunquell	START TIME: 09:30
DEPTH WATER ENCOUNTERED:	7.92 ft bgs	TOTAL DEPTH: 8.0 ft bgs	FINISH TIME: 10:45

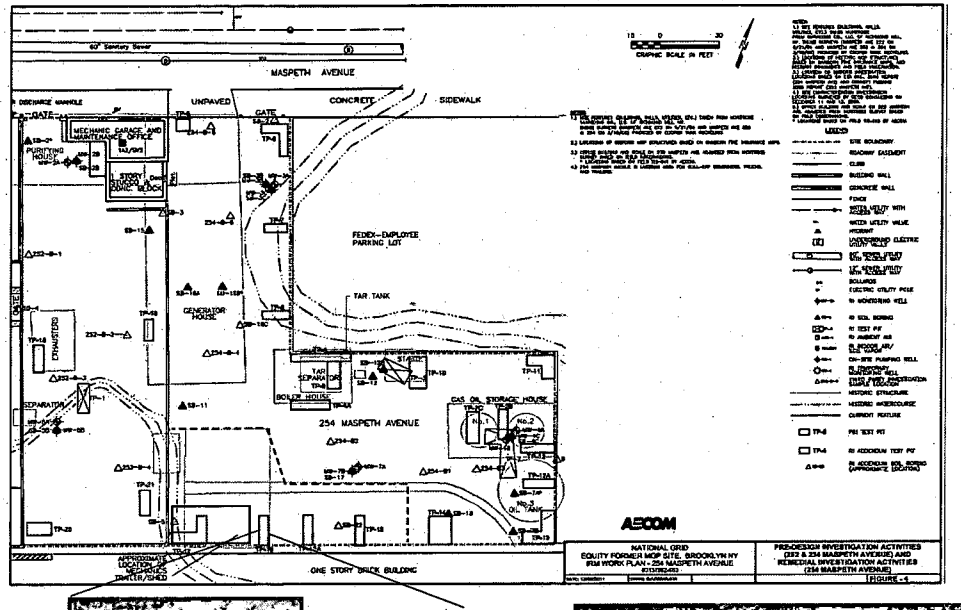
DEPTH (FEET)	VISUAL IMPACTS (FEET)	PID HEADSPACE (PPM)	SOIL STRATIG-RAPHY USCS	SOIL CLASS USCS	SOIL DESCRIPTION LOG	STRUCTURES ENCOUNTERED OR COMMENTS
1		0.2		FILL	0-5' SAND (fill): sand with pebbles and cobbles, concrete, brick, glass, < 5% boulder sized pieces, <20% silt, coal, ash, and slag (silt to sand-sized particles throughout).	
2		0.4			1.5-3' on western wall: small pocket (2' by 1.5') of weathered, solid tar; slight to moderate odor.	
3		0.3				
4		0.3				
5		3.5				
6		12.8			5-5.75': (western and southern wall) sand with silt, coated to pockets of saturation with tar (weathered to residual, more weathered on western side), strong to moderate odor (odor stronger where soil or slag was coated).	Collected sample TP-16 (5-6)
7		0.5			6.0-7.0': Moderate to slight odor detected.	
8		0.3			7.0-8.0': Slight odor detected.	
					7.92': Groundwater observed seeping in.	
					Test pit terminated at 8.0 ft bgs.	

Definitions:

1.) NA - Not Applicable
2.) ft - feet
3.) SAA - Same As Above
4.) bgs - below ground surface
5.) ppm - parts per million
6.) PID - Photo Ionization Meter
7.) NAVD 88 - North American Vertical Datum of 1988
8.) U.S.C.S. - Unified Soil Classification System

AECOM	Test Pit Log	TP-16
PROJECT NO: 60137362	TEST PIT DESIGNATION: TP-16	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA: Southern wall of site adjacent to building	START DATE: 9/2/2011
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/2/2011
GEOLOGIST: C. Battenhouse	OPERATOR: Dan Brunquell	START TIME: 09:30
DEPTH WATER ENCOUNTERED: 7.92 ft bgs	TOTAL DEPTH: 8.0 ft bgs	FINISH TIME: 10:45

(Plan view - Equity Former MGP Site)



AECOM

Test Pit Log

TP-17

PROJECT NO: 60137362	TEST PIT DESIGNATION: TP-17	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA: SW corner of site	START DATE: 9/7/2011
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/7/2011
GEOLOGIST: Christie Battenhouse	OPERATOR: Dan Brunquell	START TIME: 1015
DEPTH WATER ENCOUNTERED: 6.66 ft bgs	TOTAL DEPTH: 6.66 ft bgs	FINISH TIME: 1145

DEPTH (FEET)	VISUAL IMPACTS (FEET)	PID HEADSPACE (PPM)	SOIL STRATIG-RAPHY USCS	SOIL CLASS USCS	SOIL DESCRIPTION LOG	STRUCTURES ENCOUNTERED OR COMMENTS
1					0-6.66' SAND (fill): sand with pebbles, cobbles, boulders (small and large), bricks, pieces of metal (smal and large), wood chips and pieces, moderate to strong naphthalene-like/tar-like odor detected.	
2						
3						2.7' bgs: possible concrete footing or structure, starts at 2.6' bgs to at least 6.66' at bottom of test pit (on eastern wall)
4						
					4.5-5' east-west test pit: layer of hardened tar, visible on western, northern, and eastern walls and does not appear to extend to southern wall of this section of test pit	NW-SE test pit dimensions: 14.5' long, 5.0' wide, 6.5' deep; 2.5' from bldg on southern side of site
5					4.75-5.25' bgs layer of hardened tar-like material on eastern and western walls of test pit.	E-W test pit dimensions: 14.5' long, 3.66' wide, 6.66' deep; 4' east of wall on SW corner of site and 3' from bldg on southern side of site
6						Collected sample TP-17
					6.5-6.66': groundwater observed.	
7						

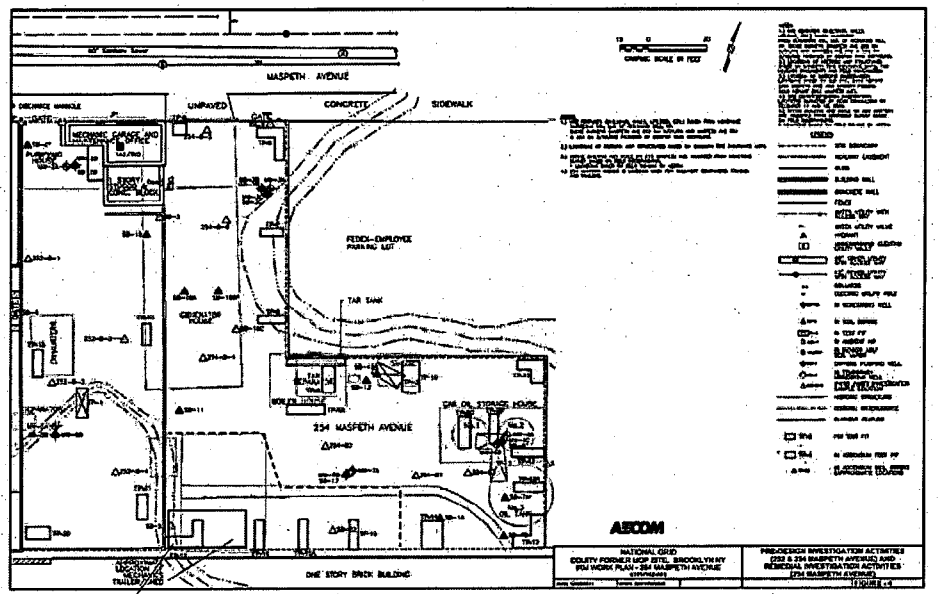
Test pit terminated at 6.66 ft bgs.

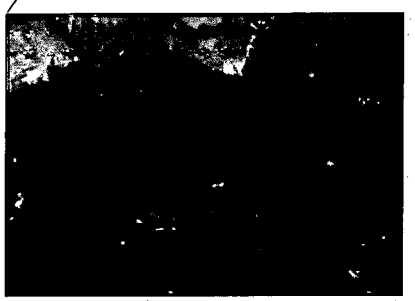
Definitions:

1.) NA - Not Applicable
2.) ft - feet
3.) SAA - Same As Above
4.) bgs - below ground surface
5.) ppm - parts per million
6.) PID - Photo Ionization Meter
7.) NAVD 88 - North American Vertical Datum of 1988
8.) U.S.C.S. - Unified Soil Classification System

AECOM	Test Pit Log	TP- 17
PROJECT NO: 60137362	TEST PIT DESIGNATION: TP-17	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA: SW corner of site	START DATE: 9/7/2011
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/7/2011
GEOLOGIST: C. Battenhouse	OPERATOR: Dan Brumquell	START TIME: 1015
DEPTH WATER ENCOUNTERED: 6.66 ft bgs	TOTAL DEPTH: 6.66 ft bgs	FINISH TIME: 1145

(Plan view - Equity Former MGP Site)





AECOM

2 Technology Park Drive
Westford, Massachusetts 01886

Boring Log Legend

Project Name: Equity Former MGP
Project Number: 60137362

Location: Brooklyn, NY
Client: National Grid

Stratigraphy

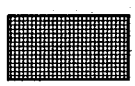
Fill

(GW) Well Graded Gravel

Meadow Mat

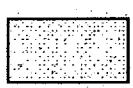
(PT) Fibrous and Friable Peat

(OH) Organic Clay

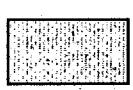


(SM) Silty Sand

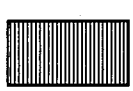
(SC) Clayey Sand



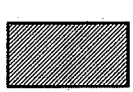
(SW) Well Graded Sand



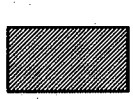
(SP) Poorly Graded Sand



(ML) Sandy Silty



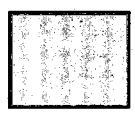
(CL) Clay and Silty Clay of Low Plasticity



(CH) Clay and Silty Clay of High Plasticity

Visual Impacts

Tar Saturated



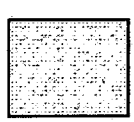
Interbedded Lenses of Saturated Tar

Blebs, Globs, Lenses, Coatings

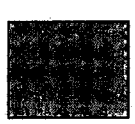
Tar Sheen/Staining

Tar/Naphthalene-Like Odors

Petroleum Sheen/Staining



Petroleum Odors



Solid Tar

Purifier Material

Purifier Odors

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.) ND - Not Documented

AECOM

Test Pit Log

TP-18

PROJECT NO: 60137362	TEST PIT DESIGNATION: TP-18	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA:	START DATE: 9/12/2011
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/12/2011
GEOLOGIST: Christie Battenhouse	OPERATOR: Dan Brunquell	START TIME: 09:05
DEPTH WATER ENCOUNTERED: 6.0 ft bgs	TOTAL DEPTH: 6.83 ft bgs	FINISH TIME: 09:55

DEPTH (FEET)	VISUAL IMPACTS (FEET)	PID HEADSPACE (PPM)	SOIL STRATIG-RAPHY USCS	SOIL CLASS USCS	SOIL DESCRIPTION LOG	STRUCTURES ENCOUNTERED OR COMMENTS
1		0.0		FILL	0-0.1' (Fill). 0.1-6.83' (Fill): burned debris (wood pieces, ships, plastic, rugs, concrete, metal pieces, glass, bricks).	Note: oil spills (fuel/oil) at surface in area. PID readings appear to be background due to fuel oil at surface and operational gases/odors and hydrogen sulfide odor.
2		0.2				
3		0.1			2': Slight sewage and hydrocarbon-like odor (hydraulic oil, not a tar-like odor); perched water at 2.0 ft bgs on western wall.	
4		0.2				
5		0.3			4': Perched water on eastern wall.	
6		0.2			5.75'-6.0': sand with silt layer; yellowish brown.	
7					6': groundwater on bottom, slight sheen noted on water, but appears to be biological. Could be due to fuel oil seeping in with perched groundwater.	
					Test pit terminated at 6.83 ft bgs.	

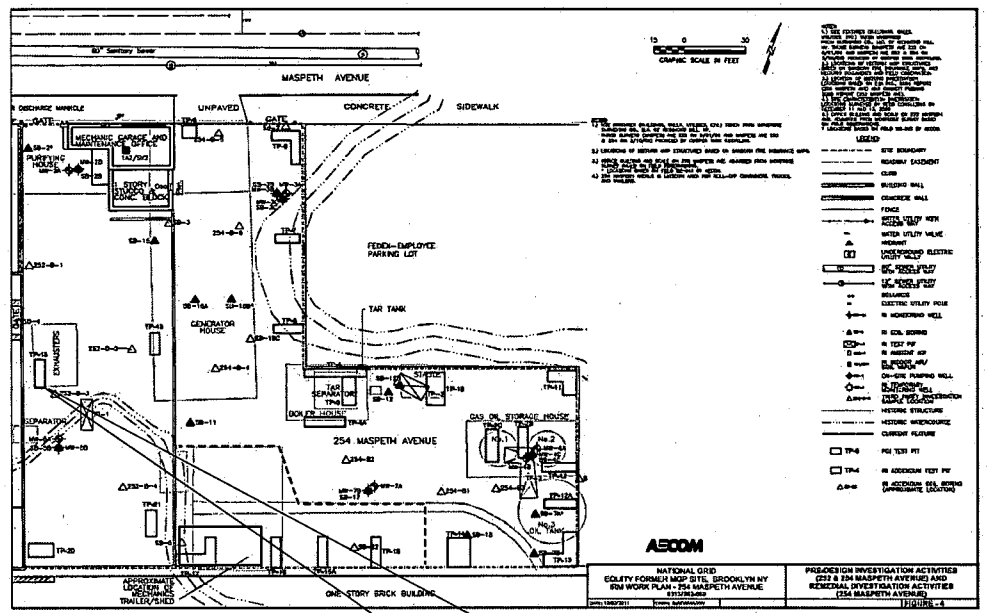
Definitions:

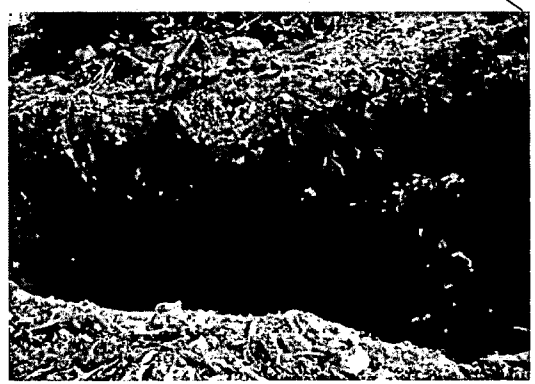
1.) NA - Not Applicable
2.) ft - feet
3.) SAA - Same As Above
4.) bgs - below ground surface
5.) ppm - parts per million
6.) PID - Photo Ionization Meter
7.) NAVD 88 - North American Vertical Datum of 1988
8.) U.S.C.S. - Unified Soil Classification System

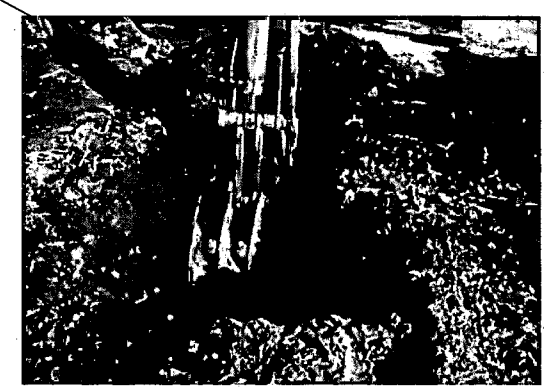
AECOM	Test Pit Log	TP-18

PROJECT NO: 60137362	TEST PIT DESIGNATION: TP-18	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA:	START DATE: 9/12/2011
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/12/2011
GEOLOGIST: Christie Battenhouse	OPERATOR: Dan Brunquell	START TIME: 09:05
DEPTH WATER ENCOUNTERED: 6 ft bgs	TOTAL DEPTH: 6.83 ft bgs	FINISH TIME: 09:55

(Plan view - Equity Former MGP Site)







AECOM

Test Pit Log

TP-19

PROJECT NO: 60137362	TEST PIT DESIGNATION: TP-19	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA: Eastern side (center) of 252 Maspeth Ave	START DATE: 9/12/11
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/12/11
GEOLOGIST: Christie Battenhouse	OPERATOR: Dan Brunquell	START TIME: 10:55
DEPTH WATER ENCOUNTERED: ~6 ft bgs	TOTAL DEPTH: 6.5 ft bgs	FINISH TIME: 11:40

DEPTH (FEET)	VISUAL IMPACTS (FEET)	PID HEADSPACE (PPM)	SOIL STRATIG-RAPHY USCS	SOIL CLASS USCS	SOIL DESCRIPTION LOG	STRUCTURES ENCOUNTERED OR COMMENTS
1		NA		FILL	0'-6.5' SAND (fill): sand with pebbles and cobbles of rocks, bricks, concrete, mixed in with burned debris (wood pieces/chips, metal pipes, flashing, rubber, rugs, plastic, black color due to burned debris and organics).	Rotten egg smell began as soon as ground broke
2		0.2				
3		1.0			2'-3': Perched water all the way down to ~6' (perched zones have a lot of water)	
4		0.1				
5		0.1			4': Debris larger at depth, lots of metal pipes, strapping, flashings, large chunks of concrete.	
6		0.0			5': Wood log (large piece).	
7		ND			~6': ground water encountered (perched zones above it make it hard to tell exactly where groundwater is).	

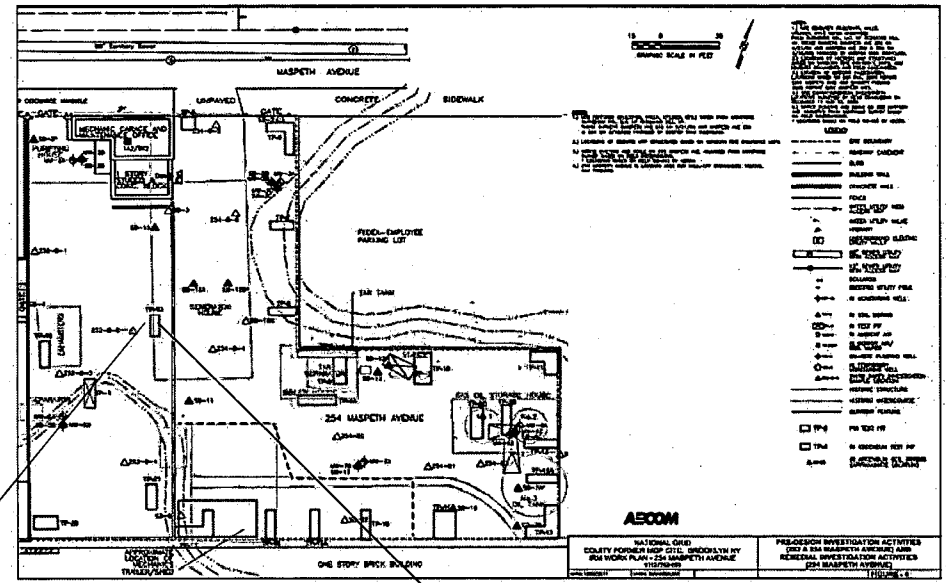
Test pit terminated at 6.5 ft bgs.

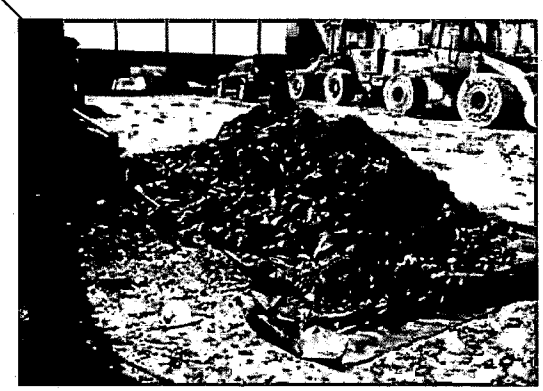
Definitions:

1.) NA - Not Applicable
2.) ft - feet
3.) SAA - Same As Above
4.) bgs - below ground surface
5.) ppm - parts per million
6.) PID - Photo Ionization Meter
7.) NAVD 88 - North American Vertical Datum of 1988
8.) U.S.C.S. - Unified Soil Classification System
9.) Not documented

AECOM	Test Pit Log	TP-19
PROJECT NO: 60137362	TEST PIT DESIGNATION: TP-19	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA: Eastern side (center) of 252 Maspeth Ave	START DATE: 9/12/11
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/12/11
GEOLOGIST:	OPERATOR: Dan Brunquell	START TIME: 10:55
DEPTH WATER ENCOUNTERED: ~6 ft bgs	TOTAL DEPTH: 6.5 ft bgs	FINISH TIME: 11:40

(Plan view - Equity Former MGP Site)





AECOM

Test Pit Log

TP-20

PROJECT NO: 60137362	TEST PIT DESIGNATION: TP-20	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA: Southwest corner of 252 Maspeth Ave	START DATE: 9/12/2011
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/12/2011
GEOLOGIST: C. Battenhouse	OPERATOR: Dan Brunquell	START TIME: 07:50
DEPTH WATER ENCOUNTERED: 6.7 ft bgs	TOTAL DEPTH: 6.58 ft bgs	FINISH TIME: 09:05

DEPTH (FEET)	VISUAL IMPACTS (FEET)	PID HEADSPACE (PPM)	SOIL STRATIG-RAPHY USCS	SOIL CLASS USCS	SOIL DESCRIPTION LOG	STRUCTURES ENCOUNTERED OR COMMENTS
1		0.0		FILL	0'-2' bgs: Fill; sand with pebbles, cobbles of rocks, bricks, concrete.	
2		0.0			2'-3': Large peices of concrete on northern wall. Sewage-like odor throughout	
3		0.0			~3': layer of burned wood chips/pieces on all walls and urban trash mixed in.	
4		0.0			4': a few pieces of steel cable and rubber.	
5		0.0			5': perched groundwater on western side, burned debris/wood chips to bottom (black color due to debris that is in contact with burned wood).	
6		0.0			6.7': groundwater observed.	
7					Test pit terminated at 6.7 ft bgs.	

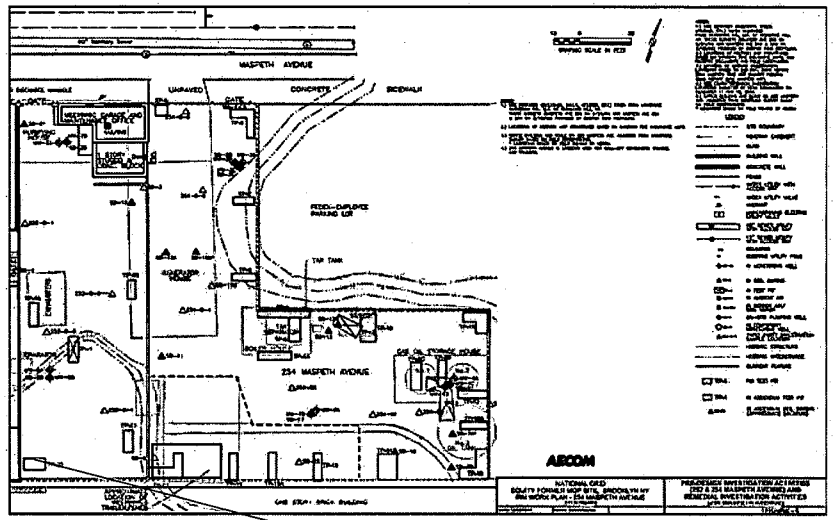
Definitions:

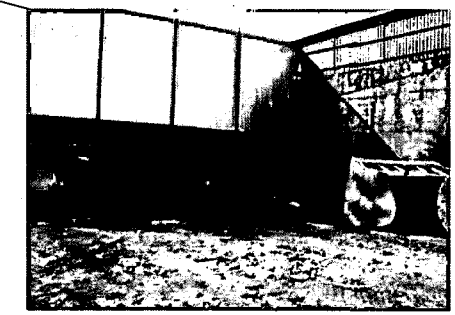
1.) NA - Not Applicable
2.) ft - feet
3.) SAA - Same As Above
4.) bgs - below ground surface
5.) ppm - parts per million
6.) PID - Photo Ionization Meter
7.) NAVD 88 - North American Vertical Datum of 1988
8.) U.S.C.S. - Unified Soil Classification System

AECOM	Test Pit Log	TP-20

PROJECT NO: 60137362	TEST PIT DESIGNATION: TP-20	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA: Southwest corner of 252 Maspeth Ave	START DATE: 9/12/2011
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/12/2011
GEOLOGIST: Christie Battenbouse	OPERATOR: Dan Brunquell	START TIME: 07:50
DEPTH WATER ENCOUNTERED: 6.58 ft bgs	TOTAL DEPTH: 6.58 ft bgs	FINISH TIME: 09:05

(Plan view - Equity Former MGP Site)





AECOM

Test Pit Log

TP-21

PROJECT NO: 60137362	TEST PIT DESIGNATION: TP-21	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA: South east corner of 252 Maspeth Ave	START DATE: 9/12/2011
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/12/2011
GEOLOGIST: Christie Battenhouse	OPERATOR: Dan Brunquell	START TIME: 11:55
DEPTH WATER ENCOUNTERED: 6.16 ft bgs	TOTAL DEPTH: 6.16 ft bgs	FINISH TIME: 12:25

DEPTH (FEET)	VISUAL IMPACTS (FEET)	PID HEADSPACE (PPM)	SOIL STRATIG-RAPHY USCS	SOIL CLASS USCS	SOIL DESCRIPTION LOG	STRUCTURES ENCOUNTERED OR COMMENTS
1		0.0		FILL	0-1' SAND (fill); with pebbles, cobbles, concrete pieces (1.5'x2.5') at ~0.5 ft bgs.	PID readings from hydrogen sulfide odor, not impacts.
2		0.2			2'-4' Fill, debris (trash, wood pieces, chunks, plastic tubs/sheets, newpaper, bricks, concrete, pebbles and cobbles of rock, hydrogen sulfide odor throughout.	
3		0.4				
4		1.0			4': debris black from burning or environment	
5		0.1				
6		0.1			6.16': groundwater encountered	
7					Test pit terminated at 6.16 ft bgs.	

Definitions:

1.) NA - Not Applicable
2.) ft - feet
3.) SAA - Same As Above
4.) bgs - below ground surface
5.) ppm - parts per million
6.) PID - Photo Ionization Meter
7.) NAVD 88 - North American Vertical Datum of 1988
8.) U.S.C.S. - Unified Soil Classification System

AECOM	Test Pit Log	TP-21

PROJECT NO: 60137362	TEST PIT DESIGNATION: TP-21	SURFACE ELEVATION: TBD
CLIENT: National Grid	SITE LOCATION OR AREA: South east corner of 252 Maspeth Ave	START DATE: 9/12/2011
SITE NAME: Equity Former MGP Site	EQUIPMENT USED: Backhoe	FINISH DATE: 9/12/2011
GEOLOGIST: Christie Battenhouse	OPERATOR: Dan Brunquell	START TIME: 11:55
DEPTH WATER ENCOUNTERED: 6.16 ft bgs	TOTAL DEPTH: 6.16 ft bgs	FINISH TIME: 12:25

(Plan view - Equity Former MGP Site)