

New York State Department of Environmental Conservation

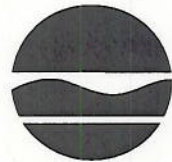
Division of Environmental Remediation

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Joe Martens
Commissioner

August 19, 2011

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

Re: Equity Former MGP Site
Remedial Investigation
Addendum No. 1 Work Plan, Site No. 224050

Dear Mr. Campbell:

The New York State Department of Environmental Conservation (Department) and the New York State Department of Health have reviewed the revised Equity Former MGP Site Remedial Investigation Addendum No 1 Work Plan, dated August 17, 2011. The revisions are acceptable and the Work Plan is hereby approved. Please note that based on analysis of the data generated in this Remedial Investigation Addendum, the evaluation of the off-site soil vapor in the adjacent properties may be required to identify the potential exposure to site contaminants via soil vapor. Please notify the Department 10 days prior to the commencement of field activities.

Sincerely,

A handwritten signature in black ink, appearing to read 'H. T. Willems'.

Henry T. Willems
Engineering Geologist 1

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



INTERNATIONAL YEAR
OF FORESTS 2011

August 17, 2011

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

**Subject: Remedial Investigation Work Plan Addendum (No. 1)
Equity Former Manufactured Gas Plant (MGP) Site
Brooklyn, New York
NYSDEC Site No.: 224050, Order on Consent Index #: A2-0552-0606**

Dear Mr. Willems:

National Grid is submitting the following Remedial Investigation (RI) Work Plan Addendum for the Equity former manufactured gas plant (MPG) site (the Site), located at 222 – 254 Maspeth Avenue in Brooklyn, New York. This addendum describes work to be performed at select areas within the site boundaries and at several off-site locations in both right-of-way areas and private property located at 300 Maspeth Avenue.

The former Equity MGP was operated by The Brooklyn Union Gas Company (BUG), a predecessor company to National Grid, from about 1903 until no later than 1932. As you are aware, the Remedial Investigation of the Site is being conducted by National Grid pursuant to a Multi-site Order on Consent and Administrative Settlement with the NYSDEC, Index # A2-0552-0606, executed on February 22, 2007 and modified on August 10, 2007, and in accordance with applicable guidelines of the NYSDEC and the New York State Department of Health (NYSDOH). Specifics of the RI scope of work are presented in the NYSDEC-approved work plan (Remedial Investigation Work Plan, Equity Former MGP Works) produced by AECOM in July 2009.

The scope of work presented in this letter addends the July 2009 NYSDEC-approved Remedial Investigation Work Plan (the RIWP). The purpose of the work described in this RIWP Addendum (No. 1) is to advance at least one test pit and 11 soil borings within the site footprint and adjacent areas to further delineate MGP residuals. Monitoring wells will be installed at select locations as outlined later in this submittal. The test pit will be advanced to one to two feet below the water table or to the base of former MGP structures. At each boring location, a deep soil boring will be advanced and continuously logged to delineate zones of deep soil impacts (MGP residuals) identified in various RI borings previously installed at the Site. Specifically, the primary objective for this work is to:

- Evaluate the presence and condition of the former tar tank and tar separator along the northern site boundary, and determine the quality of surrounding soils.
- Further delineate Dense Non-Aqueous Phase Liquid (DNAPL) and MGP residuals observed at depth at RI location SB-1 along Vandervoort Avenue to obtain a non MGP-impacted background sample/well. DNAPL and MGP residuals were observed during initial RI activities at this location from approximately 78 to 90 feet below ground surface (bgs).
- Further delineate DNAPL and MGP residuals observed at depth at RI locations near Maspeth Avenue. DNAPL and MGP residuals were observed during initial RI activities at multiple locations near the property boundary with Maspeth Avenue at intermediate depths (ranging from 10 to 40 feet bgs).

- Further delineate DNAPL and MGP residuals observed at depth at RI locations east of the property in the direction of deep groundwater flow. DNAPL and MGP residuals were observed during initial RI activities at locations near the property boundary with the 300 Maspeth Avenue property at depths (ranging from 1 to 41 feet bgs).
- Further delineate DNAPL and MGP residuals observed at depth at RI locations near the southern property boundary. DNAPL and MGP residuals were observed during initial RI activities at locations near the property boundary with the 222, 252, and 254 Maspeth Avenue parcels at depths (ranging from 14 to 53 feet bgs).
- Further delineate the presence or absence of the intermediate clay unit that appears to pinch out in the vicinity of the former gas holder at the 222 Maspeth Avenue parcel.
- Complete all proposed borings to the top of the suspected Gardiner's Clay unit assumed to be encountered in RI soil boring SB-1 at a depth of 97 feet bgs to ensure that no MGP residuals are migrating on this surface.

A summary of previously observed subsurface conditions across the Site, within or near the proposed investigation areas, is provided in attached cross-section A-A' (Figure 1). As shown on Figure 1, suspected MGP impacts were typically observed in two zones: 1) soils above the meadow mat and 2) soils at intermediate depths between the meadow mat and an interbedded clay unit. Copies of soil boring logs generated during initial RI work have been provided to you under separate cover.

Remedial investigation locations completed to date are shown on Figure 2. Proposed soil boring, test pit, and monitoring well locations are shown on attached Figure 3. The rationale and sampling analysis summary for each proposed boring is included on attached Table 1. Additional step-back borings may be required to fully delineate the extent of potential impacts during this phase of work or possibly later phases. If required, the location of these borings will be discussed with the NYSDEC prior to borehole advancement. Potential step back locations will be cleared using geophysical techniques during the initial pre-clearing activities to allow access to these locations during the same mobilization. All work will be performed in accordance with the procedures specified in the 2009 NYSDEC Approved RI Work Plan except where noted below.

RIWP Addendum Scope of Work

Test Pit Excavation

At least one test pit (TP-4) will be excavated with a backhoe or excavator to one to two feet into the water table to evaluate the presence and condition of the former tar tank and tar well. The proposed location and sampling rationale for test pit TP-4 is shown on Figure 3 and Table 1.

The test pits will be logged by a 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. Soils samples will be collected from the bucket of the excavator.

Soil removed during the excavation of the test pit will be temporarily stored on a sheet of plastic for return to the excavation. To the extent possible, clean soil will be segregated from impacted soil. Upon completion of each test pit, impacted soil (if any) and debris will be returned to the excavation first, followed by clean soil and any additional clean backfill needed to return the excavation to original grade.

Borehole Advancement and Monitoring Well Installation

In general, the target completion criteria for soil borings SB-19, SB-21, SB-23, SB-24, and SB-29 will be contact with the Gardiner's Clay and/or 10 feet into visually clean material. If impacts are not observed

within 10 ft of the Gardner's Clay, the boring will be terminated at the Gardner's Clay surface. The anticipated maximum completion depth for these soil borings is approximately 110 feet (Table 1). The anticipated completion depth of boring SB-20 is 140 ft bgs. The purpose of SB-20 is to determine the soil and groundwater quality above and below the Gardner's Clay. The final completion depth of boring SB-20 will be approximately ten feet into the Jameco Gravel. However, the thickness of the Gardner's Clay ranges from a few feet to over 200 ft. Therefore, if the SB-20 boring is advanced approximately 50 ft or more into the Gardner's Clay, a point at which migration of constituents across the extremely low porosity clay to the Jameco Gravel would be considered highly unlikely, the SB-20 boring may be terminated. The completion depths of borings SB-22, SB-25, SB-26, SB-27, and SB-28 will be determined based on the presence/absence of observed visual impacts above the Gardner's Clay at borings SB-19, SB-20, SB-21, SB-23, SB-24, SB-29, and SB-30. If no visual impacts are observed above the Gardner's Clay at SB-29, boring SB-16C will not be advanced. The advancement and completion depths of soil borings SB-31 and SB-32 will be contingent based on the presence or absence of observed impacts at soil borings SB-21 and SB-26. See Table 1 for specifics of the decision logic. If visual impacts are observed at borings SB-21 and SB-22, additional borings may be installed along Rewe Street, located southeast of the Site.

Prior to advancement, each boring location will be cleared for utilities following National Grid pre-clear protocols and low energy excavation techniques. Geophysical clearance may also be performed to identify any subsurface utilities in the proposed investigation areas. Once cleared, soil borings will be advanced by sonic drilling techniques, which allows for greater drilling efficiencies and well installation options. The actual drilling locations and screen intervals will be determined based upon field conditions encountered and subsurface utility clearance activities. Soils will be logged continuously and screened with a photoionization detector (PID) from ground surface to the terminus of the borehole. Soil borings SB-20, SB-23, SB-24, SB-25, and SB-26 will be converted to monitoring wells. Targeted screen depth intervals and rationale for the monitoring wells are provided in Table 1. Each monitoring well will be constructed with 2-inch diameter, 0.010-inch slot well screen or 0.020-inch slot well screen if NAPL is observed in soils in the screen interval during drilling. An exception may be the well diameter and slot-size for MW-8J, which may be larger, based on the anticipated gravel matrix of the Jameco formation. Well components will be generally constructed of PVC, except where DNAPL is present in the soil column, at which interval(s) well materials may be constructed of stainless steel.

The newly installed monitoring wells will be developed no sooner than 24 hours following installation. Each monitoring well will be developed using alternative surging and pumping methods as outlined in the existing 2009 RI Work Plan.

Soil Sampling

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

- In the upper 5 foot zone (select locations)
- At the depth interval exhibiting the highest PID readings or visual evidence of impacts. If no impacts are noted, this sample will be collected from an interval with elevated impacts from a nearby boring; and
- At the first clean interval or the base of the borehole.

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

- Volatile organic compounds (VOCs) by EPA Method 8260B
- Semi-volatile organic compounds (SVOCs) by EPA Method 8270C

- Resource Conservation Recovery Act (RCRA) 8 Metals by EPA Methods 6010B (inductively coupled plasma (ICP) - metals) and 7470A (mercury), and
- Free Cyanide (extraction by EPA method 9014A and analysis by Microdiffusion, ASTM International method D4282-02)

Groundwater Gauging and Sampling

The newly installed monitoring wells will be gauged and sampled following EPA's low-flow groundwater sampling procedures in accordance with the RI Work Plan. Each monitoring well will be gauged with an oil-water interface probe to detect the presence of DNAPL. If DNAPL is present, a groundwater sample will not be collected.

Field measurements will be collected during the sampling of each monitoring well. The following parameters will be monitored: salinity, pH, specific conductance, dissolved oxygen (DO), oxidation reduction potential (ORP), temperature, and turbidity.

Groundwater samples will be collected from the newly installed monitoring wells at least two weeks after well development. Groundwater samples will be collected using low flow groundwater sampling procedures. Groundwater samples will be analyzed for:

- VOCs by EPA Method 8260B
- SVOCs by EPA Method 8270C
- RCRA 8 Metals by EPA Methods 6010B (ICP - metals) and 7471A (mercury), and
- Total cyanide by EPA Method 9012B.

Quality Assurance and Quality Control

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

Community Air Monitoring Plan

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

Surveying

A survey of the investigation sampling points will be conducted at the end of the fieldwork by a licensed NY-State surveying contractor. All horizontal locations will be reported in the New York State Plane Coordinate System, Long Island Zone (NAD83) in feet. All vertical measurements will be reported in NAVD88 in feet, to the nearest 0.1 ft. and 0.01 ft. for soil borings and monitoring wells respectively.

Schedule

Field work can commence following the approval of this Work Plan addendum and following coordination with property owner and receipt of right-of-way work permits. AECOM and their drilling subcontractor are ready to initiate field activities as early as late August/early September 2011 pending site access. If the

Mr. Hank Willems
August 17, 2011
Page 5

proposed work is sufficient to complete the delineation of MGP residuals in combination with data derived from the original July 2009 RIWP, the data will be presented in a single, all-inclusive RI Report.

Yours sincerely,



Donald Campbell

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

Tables

Table 1
Remedial Investigation Addendum Sample Locations, Rationale, and Analyses Summary
Equity Former MGP Site, Brooklyn, New York

Location ID	Sample ID	Completion Depth ^A	Sample Depth (bgs)	No. of Samples	Analyses	Rationale
Subsurface Soil						
SB-16C	SB-16C (depth)	Est. 110 feet max ^B	Zone of worst-case impacts, and first clean or bottom	2	VOCs, SVOCs, RCRA 8 Metals, and Free CN	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 Gardner's Clay observed at SB-1C, and downgradient from primary MGP structures at the 222 Maspeth Ave parcel.
SB-19	SB-19 (depth)	Est. 110 feet max	Upper 5 feet, zone of worst-case impacts, and first clean or bottom	3	VOCs, SVOCs, RCRA 8 Metals, and Free CN	Adjacent to former MGP relief holder and within the estimated historical drainage channel to determine presence and elevations of meadow mat (peat), presence or absence of interbedded clay formations, presence or absence of the gravel unit observed at SB-1 and SB-6, and elevation of the Gardner's Clay, as well as to evaluate the presence/absence and distribution of MGP residuals observed at SB-1, SB-9, and SB-10, and SB-14.
SB-20	SB-20 (depth)	Est. 140 feet max	Upper 5 feet, zone of worst-case impacts, and first clean or bottom	3	VOCs, SVOCs, RCRA 8 Metals, and Free CN	North of former relief holder and northwest of former settling tank, as well as adjacent to onsite water supply well PW-1 to determine presence and elevations of meadow mat (peat), interbedded clay formations the Gardner's Clay, and the Jameco Gravel, and evaluate the presence/absence and distribution of MGP residuals observed at PW-1, SB-14, and SB-2B.
SB-21	SB-21 (depth)	Est. 110 feet max	Upper 5 feet, zone of worst-case impacts, and first clean or bottom	3	VOCs, SVOCs, RCRA 8 Metals, and Free CN	East of the former settling tank, drip tanks, and separator, and along the southern property boundary, to determine presence and elevations of meadow mat (peat), interbedded clay formations and the Gardner's Clay, and evaluate the presence/absence and distribution of MGP residuals observed at SB-5B, SB-11, and
SB-22	SB-22 (depth)	Est. 110 feet max ^C	Upper 5 feet, zone of worst-case impacts, and first clean or bottom	3	VOCs, SVOCs, RCRA 8 Metals, and Free CN	East of the former tar tank and boiler house, and along the southern property boundary, to determine presence and elevations of meadow mat (peat), interbedded clay formations, and evaluate the presence/absence and distribution of MGP residuals observed SB-11 and SB-17.
SB-23	SB-23 (depth)	Est. 110 feet max	Zone of worst-case impacts, and first clean or bottom	2	VOCs, SVOCs, RCRA 8 Metals, and Free CN	West of Vandervoort Avenue and MW-1 to determine the presence and elevations of meadow mat (peat), interbedded clay formations, and the Gardner's Clay, and evaluate the presence/absence and distribution of MGP residuals observed at SB-1C.
SB-24	SB-24 (depth)	Est. 110 feet max	Zone of worst-case impacts, and first clean or bottom	2	VOCs, SVOCs, RCRA 8 Metals, and Free CN	West of Vandervoort Avenue and MW-6 to determine the presence and elevations of meadow mat (peat), interbedded clay formations, and the Gardner's Clay, and evaluate the presence/absence and distribution of MGP residuals observed at SB-1C.
SB-25	SB-25 (depth)	Est. 110 feet max ^D	Zone of worst-case impacts, and first clean or bottom	2	VOCs, SVOCs, RCRA 8 Metals, and Free CN	In the FedEx Loading Dock area east of SB-7B to determine presence and elevation of meadow mat (peat) and interbedded clay formations, and the Gardner's Clay, and evaluate the presence/absence and distribution MGP residuals/dissolved phase impacts.
SB-26	SB-26 (depth)	Est. 110 feet max ^E	Zone of worst-case impacts, and first clean or bottom	2	VOCs, SVOCs, RCRA 8 Metals, and Free CN	In the FedEx Parking Lot area down gradient of MW-3 to determine presence and elevation of meadow mat (peat) and interbedded clay formations, and evaluate the presence/absence and distribution of MGP residuals.
SB-27	SB-27 (depth)	Est. 110 feet max ^F	Zone of worst-case impacts, and first clean or bottom	2	VOCs, SVOCs, RCRA 8 Metals, and Free CN	Northwest of Maspeth Avenue between SB-2 and PW-1 to determine the presence and elevations of the meadow mat (peat), interbedded clay formations, and the Gardner's Clay, and evaluate the presence/absence of DNAPL and other MGP residuals observed at PW-1 and SB-2.
SB-28	SB-28 (depth)	Est. 110 feet max ^G	Zone of worst-case impacts, and first clean or bottom	2	VOCs, SVOCs, RCRA 8 Metals, and Free CN	Northwest of Maspeth Avenue between SB-2 and SB-3 to determine the presence and elevations of the meadow mat (peat), interbedded clay formations, and the Gardner's Clay, and evaluate the presence/absence of DNAPL and other MGP residuals observed at SB-2 and SB-3.
SB-29	SB-29 (depth)	Est. 110 feet max	Zone of worst-case impacts, and first clean or bottom	3	VOCs, SVOCs, RCRA 8 Metals, and Free CN	North of the former settling tank, drip tanks, and separator, to determine presence and elevations of meadow mat (peat), interbedded clay formations and the Gardner's Clay, and evaluate the presence/absence and distribution of MGP residuals observed at SB-5B, SB-9, SB-14, SB-15.
SB-30	SB-30 (depth)	Est. 110 feet max	Zone of worst-case impacts, and first clean or bottom	3	VOCs, SVOCs, RCRA 8 Metals, and Free CN	West of former relief holder and former settling tank to determine presence and elevations of meadow mat (peat), interbedded clay formations, and the Gardner's Clay, as well as to evaluate the presence/absence and distribution of MGP residuals observed at PW-1 and SB-14.
SB-31	SB-31 (depth)	Est. 110 feet max ^H	Zone of worst-case impacts, and first clean or bottom	2	VOCs, SVOCs, RCRA 8 Metals, and Free CN	Contingency boring in the FedEx Loading Dock area down gradient of MW-3 to determine presence and elevation of meadow mat (peat) and interbedded clay formations, and evaluate the presence/absence and distribution of MGP residuals if observed at SB-26.
SB-32	SB-32 (depth)	Est. 110 feet max ^I	Zone of worst-case impacts, and first clean	2	VOCs, SVOCs, RCRA 8 Metals, and Free CN	Contingency boring in the ally Southeast of the site to evaluate the presence/absence and distribution of MGP residuals if observed at SB-21.
TP-4	TP-4 (date)	Water Table	Zone of worst-case impacts and first clean or bottom	2	VOCs, SVOCs, TAL Metals, and Free Cn	Evaluate former tar separator and tar tank underlying the boiler house along the northern site boundary near the buried stream channel.

- Notes**
- No. - number
 - ID - identification
 - ft - feet
 - MGP - Manufactured Gas Plant
 - EST. - Estimated
 - bgs - Below ground surface
 - SB - Soil Boring (Subsurface Soil)
 - MW - Monitoring Well
 - * - Well designated "J" for Jameco Gravel.
 - Resource Conservation and Recovery Act.
 - VOCs - Volatile Organic Compounds
 - CN - Cyanide
 - SVOCs - Semi-Volatile Organic Compounds
- A - Depths may be adjusted in the field based on stratigraphy and observed impacts. Borings will be advanced to 10 feet into clean soils. If impacts are not observed within 10 ft of the Gardner's Clay, the boring will be terminated at the Gardner's Clay surface.
- Blue grey shading indicates completion depths are conditional based on observations at other borings. See below:
- B - SB-16C will be not be advanced if impacts are not observed between the intermediate clay and the Gardner's Clay at SB-29.
- C - SB-22 will be advanced to the intermediate clay if impacts are not observed between the intermediate clay and the Gardner's Clay at SB-29 / SB-16 and SB-21.
- D - SB-25 will be advanced to approximately 80 ft bgs (10 ft into the sand unit below the intermediate clay for the purpose of installing well MW-25C) if impacts are not observed between the intermediate clay and the Gardner's Clay at SB-22 (see note C).
- E - SB-26 will be advanced to approximately 80 ft bgs (10 ft into the sand unit below the intermediate clay for the purpose of installing well MW-26C) if impacts are not observed between the intermediate clay and the Gardner's Clay at SB-29 / SB-16C and (see note B).
- F - SB-27 will be advanced to the intermediate clay if impacts are not observed between the intermediate clay and the Gardner's Clay at SB-20 and SB-30
- G - SB-28 will be advanced to the intermediate clay if impacts are not observed between the intermediate clay and the Gardner's Clay at SB-26.
- H - SB-31 will be not be advanced if impacts are not observed at soil boring SB-26.
- I - SB-32 will be not be advanced if impacts are not observed at soil boring SB-21. Boring SB-31 will be advanced to the intermediate clay if impacts are not observed between the intermediate clay and the Gardner's Clay at SB-21 and SB-22.

Table 1
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Equity Former MGP Site, Brooklyn, New York

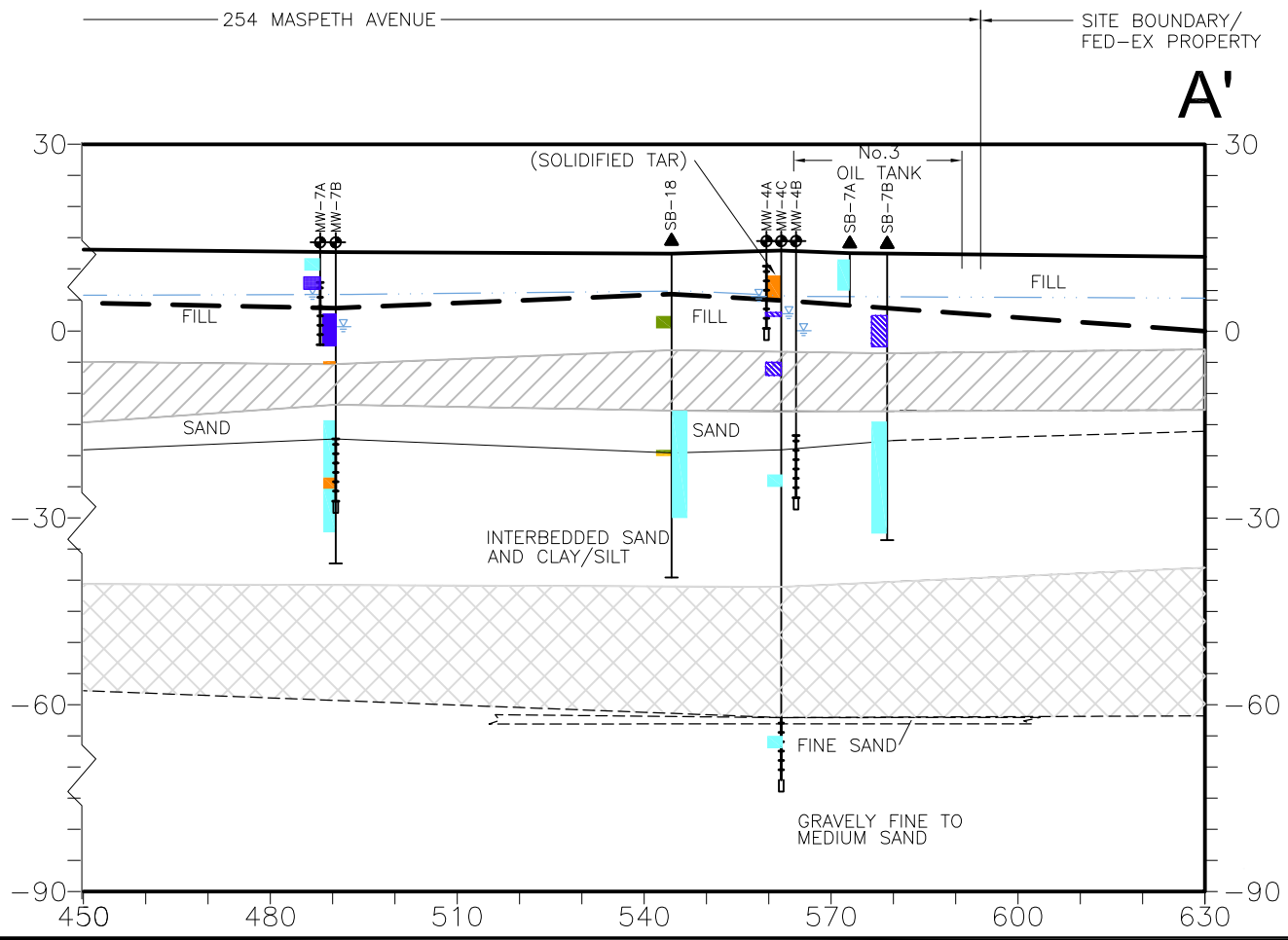
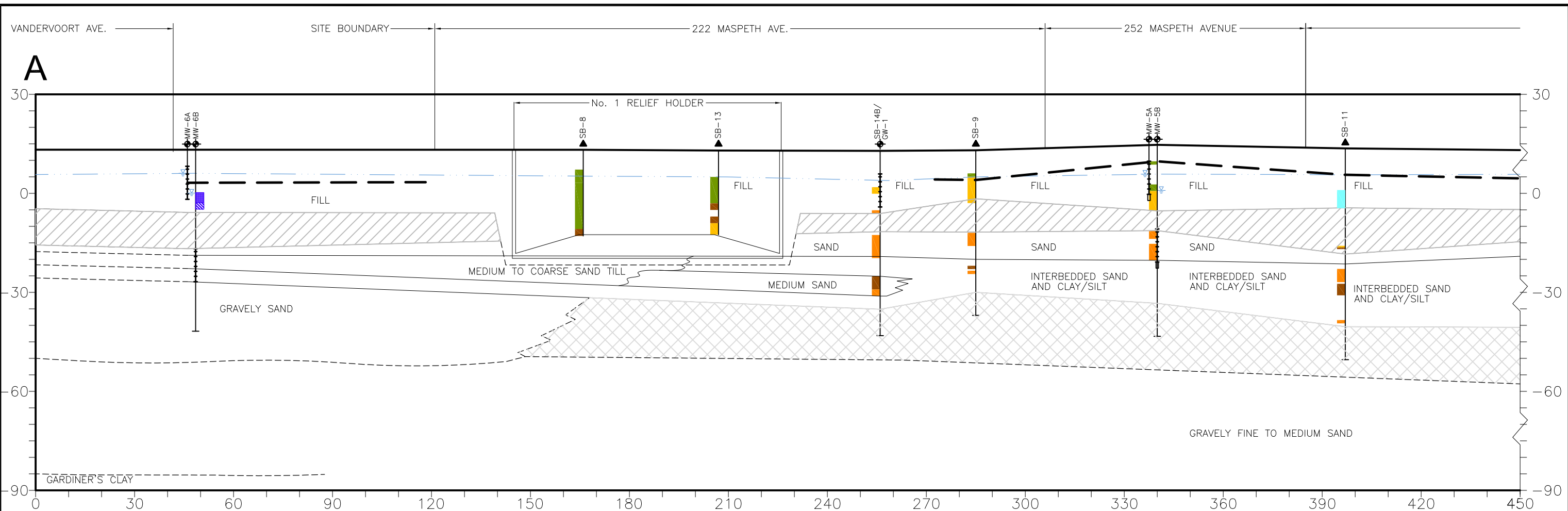
Location ID	Sample ID	Completion Depth ^A	Sample Depth (bgs)	No. of Samples	Analyses	Rationale
Groundwater						
MW-8/ SB-20	MW-8A (date)	~17 ft bgs	A ~ 5-15 ft bgs	1	VOCs, SVOCs, RCRA 8 Metals, and Total CN	Adjacent to onsite water supply well PW-1, north of former relief holder, and northwest of former settling tank to determine hydraulic gradients and evaluate the presence/absence and distribution of MGP residuals noted at PW-1. Determine water quality of the Jameco Gravel unit below the Gardner's Clay. ^J
	MW-8B (date)	~42 ft bgs	B ~ 30-40 ft bgs	1		
	MW-8C (date)	~82 ft bgs	C ~ 70-80 ft bgs	1		
	MW-8J ^J (date)	~140 ft bgs	J* ~130-140 ft bgs	1		
MW-9/ SB-23	MW-9C (date)	~82 ft bgs	C ~ 70-80 ft bgs	1	VOCs, SVOCs, RCRA 8 Metals, and Total CN	West of Vandervoort Avenue and MW-1 to determine hydraulic gradients and potential effect of off-site water well extraction, and evaluate the presence/absence and distribution of MGP residuals noted at MW-1C.
MW-10/ SB-24	MW-10C (date)	~82 ft bgs	C ~ 70-80 ft bgs	1	VOCs, SVOCs, RCRA 8 Metals, and Total CN	West of Vandervoort Avenue and MW-6 to determine hydraulic gradients and potential effect of off-site water well extraction, and evaluate the presence/absence and distribution of MGP residuals noted at MW-1C.
MW-11/ SB-25	MW-11B (date)	~42 ft bgs	B ~ 30-40 ft bgs	1	VOCs, SVOCs, RCRA 8 Metals, and Total CN	In the FedEx Loading Dock area east of SB-7B to determine hydraulic gradients, and evaluate the presence/absence and distribution of MGP residuals/dissolved phase impacts.
	MW-11C (date)	~82 ft bgs	C ~ 70-80 ft bgs	1		
MW-12/ SB-26	MW-12B (date)	~42 ft bgs	B ~ 30-40 ft bgs	1	VOCs, SVOCs, RCRA 8 Metals, and Total CN	In the FedEx Loading Dock area down gradient of MW-3 to determine hydraulic gradients, and evaluate the presence/absence and distribution of MGP residuals/dissolved phase impacts.
	MW-12C (date)	~82 ft bgs	C ~ 70-80 ft bgs	1		
MW-13/ SB-31	MW-13B (date) ^K	~42 ft bgs	B ~ 30-40 ft bgs	1	VOCs, SVOCs, RCRA 8 Metals, and Total CN	In the FedEx Loading Dock area down gradient of MW-3 to determine hydraulic gradients, and evaluate the presence/absence and distribution of MGP residuals/dissolved phase impacts.
	MW-13C (date) ^K	~82 ft bgs	C ~ 70-80 ft bgs	1		

Notes

<p>1. No. - number 2. ID - identification 3. ft - feet 4. MGP - Manufactured Gas Plant 5. EST. - Estimated 6. bgs - Below ground surface 7. SB - Soil Boring (Subsurface Soil) 8. MW - Monitoring Well 9. * - Well designated "J" for Jameco Gravel. 10. Resource Conservation and Recovery Act. 11. VOCs - Volatile Organic Compounds 12. CN - Cyanide</p>	<p>13. SVOCs - Semi-Volatile Organic Compounds A - Depths may be adjusted in the field based on stratigraphy and observed impacts. Borings will be advanced to 10 feet into clean soils. If impacts are not observed within 10 ft of the Gardner's Clay, the boring will be terminated at the Gardner's Clay surface. Blue grey shading indicates completion depths are conditional based on observations at other borings. See below: B - SB-16C will be <u>not</u> be advanced if impacts are <u>not</u> observed between the intermediate clay and the Gardner's Clay at SB-29. C - SB-22 will be advanced to the intermediate clay if impacts are <u>not</u> observed between the intermediate clay and the Gardner's Clay at SB-29 / SB-16 and SB-21. D - SB-25 will be advanced to approximately 80 ft bgs (10 ft into the sand unit below the intermediate clay for the purpose of installing well MW-25C) if impacts are not observed between the intermediate clay and the Gardner's Clay at SB-22 (see note C). E - SB-26 will be advanced to approximately 80 ft bgs (10 ft into the sand unit below the intermediate clay for the purpose of installing well MW-26C) if impacts are <u>not</u> observed between the intermediate clay and the Gardner's Clay at SB-29 / SB-16C and (see note B). F - SB-27 will be advanced to the intermediate clay if impacts are <u>not</u> observed between the intermediate clay and the Gardner's Clay at SB-20 and SB-30 G - SB-28 will be advanced to the intermediate clay if impacts are <u>not</u> observed between the intermediate clay and the Gardner's Clay at SB-26. H - SB-31 will be <u>not</u> be advanced if impacts are <u>not</u> observed at soil boring SB-26. Boring SB-31 will be advanced to the intermediate clay if impacts are not observed between the intermediate clay and the Gardner's Clay at SB-26. I - SB-32 will be <u>not</u> be advanced if impacts are <u>not</u> observed at soil boring SB-21. Boring SB-31 will be advanced to the intermediate clay if impacts are not observed between the intermediate clay and the Gardner's Clay at SB-21 and SB-22. J - The installation of Monitoring well MW-8J will be reevaluated and potentially eliminated from the scope if the Gardner's Clay thickness exceeds 50 ft at this location. K - MW-13B and MW-13C will not be installed if impacts are <u>not</u> observed at SB-26.</p>
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Figures

File: J:\Rem_Eng\Project Files\National Grid\1765-076 Equity Former MGP Site\11.0 CADD\6-2011\60137362-400-C02.dwg Layout: X@30 (RI-WP-Add) User: vershob Plotted: Jul 22, 2011 - 2:03pm



LEGEND:

- TAR SATURATED
- INTERBEDDED LENSES OF SATURATED TAR
- BLEBS, GLOBS, LENSES, COATINGS
- TAR SHEEN/STAINING
- TAR/NAPHTHALENE-LIKE ODORS
- PETROLEUM SHEEN/STAINING
- PETROLEUM ODORS
- MW-4A RI MONITORING WELL
- SB-4 RI SOIL BORING

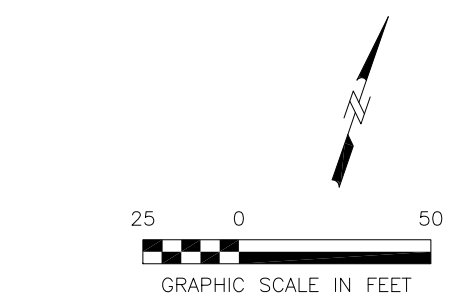
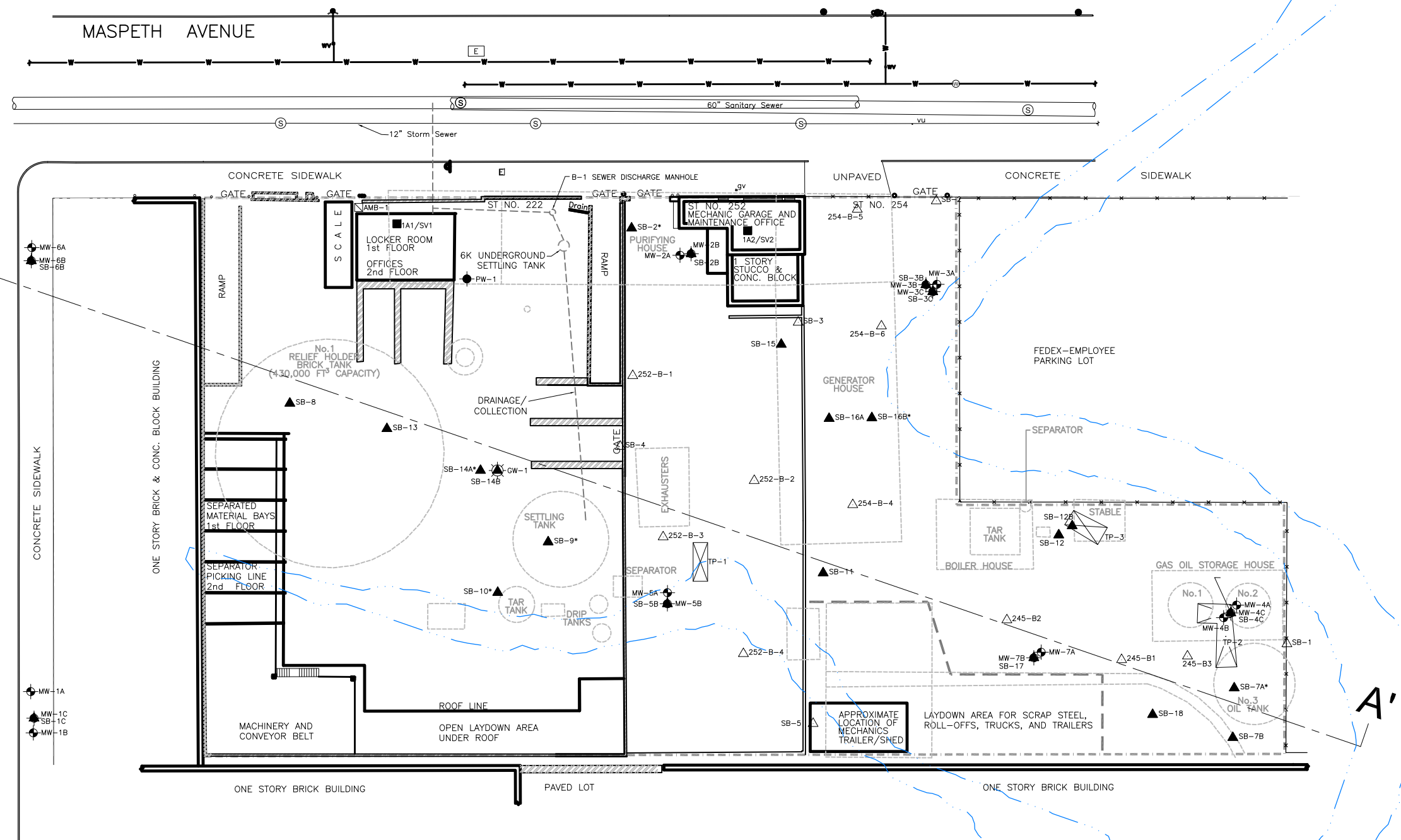
NOTE:
Monitoring wells MW-6A, MW-5A, MW-7A, MW-4A, and MW-4B have been added to the cross-section adjacent to the deeper well pair/triplet for comparison. These locations were graphically adjusted for clarity and do not represent field locations.
MW-4C is offset by 35' from the cross-section. Lithology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

EXPLANATION:

- EXISTING GROUND SURFACE
- GROUNDWATER ELEVATION
- WATER TABLE SURFACE
- DIVIDE BETWEEN MODERN INDUSTRIAL FILL AND FILL WITH MGP RESIDUALS
- SCREENED INTERVAL
- SUMP INTERVAL
- SUBGRADE SOIL TYPE CONTACT
- SUBGRADE SOIL TYPE CONTACT INFERRED
- BORING/WELL TERMINUS
- MEADOW MAT (INTERBEDDED FIBROUS PEAT, ORGANIC AND MARINE CLAY AND FRIABLE PEAT - SEE LOGS FOR BORING SPECIFICS)
- HARD, PLASTIC, INTERBEDDED CLAY

NATIONAL GRID EQUITY FORMER MGP SITE, BROOKLYN NY RI WORK PLAN ADDENDUM (No.1) 60137362-400		CROSS SECTION A-A'
DATE: 07/22/2011	DRWN: BcV/WMA	FIGURE - 1





- 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.) 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
 - UNDERGROUND ELECTRIC UTILITY VAULT
 - 60" SEWER UTILITY WITH ACCESS WAY
 - 12" SEWER UTILITY WITH ACCESS WAY
 - BOLLARDS
 - ELECTRIC UTILITY POLE
 - RI MONITORING WELL
 - RI SOIL BORING
 - RI TEST PIT
 - AMBIENT AIR
 - INDOOR AIR/SOIL VAPOR
 - ON-SITE PUMPING WELL
 - TEMPORARY MONITORING WELL
 - PREVIOUS INVESTIGATION SAMPLE LOCATION
 - HISTORIC STRUCTURE
 - HISTORIC WATERCOURSE
 - CURRENT FEATURE

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 RI WORK PLAN ADDENDUM (No.1)
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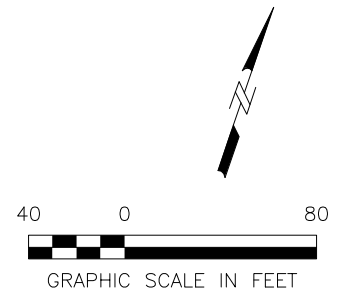
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CROSS SECTION A-A'
 LOCATION PLAN

FIGURE - 2



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- LEGEND:
- PROPERTY LINE
 - - - - - APPROXIMATE ADJACENT PROPERTY
 - - - - - ROADWAY EASEMENT
 - CURB
 - BUILDING WALL
 - ▨ CONCRETE WALL
 - FENCE
 - HISTORIC WATERCOURSE
 - - - - - HISTORIC STRUCTURE
 - - - - - CURRENT FEATURE
 - SB21 MW21 PROPOSED MONITORING WELL
 - ▲ SB-4 PROPOSED SOIL BORING
 - ▭ TP-4 PROPOSED TEST PIT
 - ⊕ MW-1 RI MONITORING WELL
 - ▲ SB-4 RI SOIL BORING
 - ▭ TP-3 RI TEST PIT
 - △ 254-B-6 PREVIOUS INVESTIGATION SAMPLE LOCATION

PROPOSED MONITORING WELL SCREEN INTERVALS:
 A ~ 5-15 FT BGS
 B ~ 30-40 FT BGS
 C ~ 70-80 FT BGS
 J ~ 140-150 FT BGS



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 60137362-400

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RECOMMENDED REMEDIAL INVESTIGATION
 ADDENDUM LOCATIONS

FIGURE - 3