

Katherine Vater
Project Manager
Site Investigation and Remediation

March 3, 2017

Mr. William Wu
Environmental Engineer
New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau C, 11th Floor
625 Broadway
Albany, NY 12233

Re: Former Dangman Park Manufactured Gas Plant Site
IRM Premobilization Investigation Results
Brooklyn, New York
NYSDEC Site No. 224047
Index # A2-0552-0606

Dear Mr. Wu:

As a follow-up to our recent discussions, this letter provides a summary of the recently completed Interim Remedial Measure (IRM) Premobilization Investigation activities and presents proposed revisions to the remedial approach for IRM Excavation Area 1 at the former Dangman Park Manufactured Gas Plant (MGP) Site (the Site). The proposed revisions are based on the results of IRM Premobilization Investigation activities, in combination with the previous data and the New York State Department of Environmental Conservation (NYSDEC)-required IRM objective to address coated and saturated petroleum and coal tar non-aqueous phase liquid (NAPL) observed within 15 feet of the present ground surface.

IRM PREMobilIZATION INVESTIGATION

The IRM Premobilization Investigation was conducted between January 3, 2017 and February 1, 2017, in accordance with the NYSDEC-approved work plan dated November 4, 2016. During this investigation, eleven (11) test pits (TP-01 through TP-11) were excavated and twelve (12) soil borings (IRM-1 through IRM -12) were drilled at the approximate locations shown on Figure 1. A New York State licensed Land Surveyor is documenting the actual locations, which will be shown on the future site plans including the Contract Drawings for the Excavation IRM Design.

TEST PITS

In accordance with the work plan, six (6) test pits were completed within IRM Excavation Area 1 (Northwestern Gas Holder) and five (5) were completed within IRM Excavation Area 2 (Back Alley). The approximate locations are shown on Figure 1. The test pits logs (with photographs) that were provided to NYSDEC on February 17, 2017 are provided in Attachment 1. The observations are summarized below.

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- **IRM Excavation Area 1** – the six (6) test pits (TP-01 through TP-6) excavated within this area coincide with the adjusted mapped location of the former northwestern gas holder based on 1895 and/or 1906 Sanborn Fire Insurance Maps and subsurface drilling observations at the SRI-1 soil boring location on October 8, 2015. The gas holder wall (constructed of brick) was encountered at four (4) of the test pit locations (TP-01, TP-04, TP-05 and TP-06) at approximately 3.5 feet below land surface (ft bls). The location of the gas holder is consistent with the mapped location shown on Figure 1. The cistern was not observed. The test pits were excavated to a maximum depth of 7 or 8 feet bls, except TP-06 which was excavated to 4.5 ft bls to visually observe the holder wall. All test pits were excavated below the concrete foundation of the eastern portion of the shopping center building that was recently demolished by the Property Owner. Silty-sand fill material and debris (e.g., concrete blocks, wood/organics, bricks, etc.) were observed in all test pits. NAPL was not observed in any of the test pits.
- **IRM Excavation Area 2** – the five (5) test pits (TP-07 through TP-11) excavated within this area coincide with potential shallow foundations and other obstructions observed during Supplemental Remedial Investigation (SRI) activities conducted in the back alley. The test pits were excavated to a maximum depth of 4.5 ft bls. Consistent with the SRI observations in and near Excavation Area 2, numerous subsurface obstructions are present, including brick walls and concrete slabs. The metal feature observed in some test holes during the SRI was determined to be a concrete slab. NAPL was not observed in any of the test pits.

SOIL BORINGS

Twelve (12) soil borings were drilled (IRM-1 through IRM-12; Figure 1) during the IRM premobilization investigation activities. The soil borings were drilled after completing the test pits in the area, and the test pit observations were used to identify the soil boring locations. For example, soil boring IRM-5 is located within the northern portion of test pit TP-6 where the northwestern holder wall was observed to the south. The soil borings were drilled to a total depth of 15 ft bls in IRM Excavation Areas 2 and 3; and a total depth of 21 ft bls in IRM Excavation Area 1, except IRM-3 and IRM-5 which are two of the three borings drilled within the northwestern gas holder. Soil boring IRM-4 was also drilled within the gas holder.

Soil boring IRM-3 (located at the approximate center of the northwestern gas holder) was terminated at 17 ft bls when the driller indicated that a hard object was encountered. IRM-5 was drilled to 30 ft bls because the holder foundation was not encountered at 21 ft bls in either IRM-3 or IRM-4 (Figure 1). The holder foundation was not encountered in any soil borings.

As summarized in the table below, NAPL-impacted soil was observed at or below 10 ft at each of the three borings drilled in IRM Excavation Area 2 during the IRM Premobilization Investigation. This is generally consistent with observations from previous investigation activities conducted in this area. In IRM Excavation Area 3, NAPL-coated soils (10-15 ft bls) were observed in one of the two borings drilled and this is also generally consistent with previous observations.

In IRM Excavation Area 1, limited and discrete thicknesses of NAPL-impacted soil were observed at depth in only two (2) of the seven (7) soil borings drilled during the IRM Premobilization Investigation and no NAPL was observed in the upper 14.5 ft; the limited and discrete thicknesses of NAPL-impacted soils were observed in boring IRM-5 drilled inside the holder and boring IRM-6 drilled outside the holder, near

the southwest corner of IRM Excavation Area 1. Prior to the IRM Premobilization Investigation, this area was inaccessible and the extent of NAPL impacts was a data gap.

A summary of NAPL observed in the IRM soil borings is presented in the following table.

IRM Soil Boring (Total Depth)	NAPL Observations
IRM Excavation Area 1	
IRM-5 (30')	19.5-20' NAPL blebs/coating 24-25' NAPL blebs 25-29' NAPL staining/coating
IRM-6 (21')	14.5-15' NAPL coating
IRM Excavation Area 2	
IRM-10 (15')	12.5-14.4' NAPL blebs
IRM-11 (15')	11' NAPL saturated 12.5-13' NAPL blebs
IRM-12 (15')	10' NAPL saturated
IRM Excavation Area 3	
IRM-8 (15')	10-15' NAPL coated
Note: All depths are below land surface (bls).	

PROPOSED REVISIONS FOR IRM EXCAVATION AREA 1

The limited and discrete observations of NAPL during the IRM Premobilization Investigation, which permitted sampling in areas that were previously inaccessible, warrant revisions to the remedial approach for IRM Excavation Area 1. In NYSDEC's June 8, 2016 letter to National Grid, the following IRM requirement was identified:

“In addition to the excavation and removal of the contents of the former MGP structures which contain NAPL that is proposed in the draft IRM design work plan, all coated and saturated petroleum and coal tar NAPL in soil, located within 15 feet of the present ground surface must be addressed.”

The conceptual site model (CSM) presented in the IRM Design Work Plan (Arcadis, September 2016) included the assumed intact northwestern gas holder and a foundation at 21 feet bls based on the observations at SRI-1. The IRM Premobilization Investigation has added seven additional borings to the area, and it is now understood that the northwestern holder is not an intact structure which contains NAPL. There were no observations of NAPL within 15 feet of the present ground surface inside the holder walls. Additionally, the only observation of NAPL saturated or NAPL coated soils within the 15 ft to 21 ft interval bls inside the holder walls was limited to NAPL coated soils from 19.5 ft to 20 ft bls at IRM-5. Therefore, as we have discussed, IRM Excavation Area 1 is proposed to be reduced to only the specific locations outside the holder walls where concentrated observations of NAPL are present, consistent with the existing IRM requirements.

Consistent with figures presented in the NYSDEC-approved IRM Design Work Plan, all NAPL saturated or NAPL coated soil observed within IRM Excavation Area 1 are detailed on Figures 2, 3 and 4 from the water table to 15 ft bls, from 15' to 21' bls, and below 21' bls, respectively. As shown on Figure 2, NAPL saturated or coated soil was observed outside the holder walls in IRM Excavation Area 1 within the upper

15 ft at three discrete locations: LB-51 (8-12 ft saturated NAPL), SRI-2 (13.6-14 ft NAPL coated), and IRM-6 (14.5-15 ft NAPL coating). Within the 15 ft to 21 ft bls interval, NAPL was intermittently observed at three locations: LB-51, SRI-1, and SRI-4 (Figure 3); at two of these locations NAPL was not observed in the upper 15 ft. LB-51 is the only location in IRM Excavation Area 1 where NAPL saturated or coated soil was observed in both the upper 15 ft and within the 15 ft to 21 ft bls interval; however, as detailed on Figures 2 and 3 the NAPL was intermittently present at LB-51 and was not observed in the upper 21 ft at adjacent soil boring locations (SB-3, SB-4, and MW-1). LB-51 is also the only location in IRM Excavation Area 1 where NAPL was observed above 13.6 ft.

Based on the existing NYSDEC-specified IRM requirements and the limited and discrete observations of NAPL within IRM Excavation Area 1, National Grid proposes to forego full-scale excavation of Area 1 and instead address soil boring locations LB-51, SRI-2, and IRM-6 from the 6 ft bls (approximate seasonal high water table) to 15 ft bls, as discussed below. This 9-foot thickness is the same as the targeted treatment interval for the NYSEC-approved in-situ treatment component of the IRM – Engineered Anaerobic Biological Oxidation (ABOx) through Direct Push Injection of Gypsum (September 2016 In-Situ Treatment Work Plan, Arcadis). These three soil boring locations are proposed to be addressed by one of the two approaches described below:

- Expand the NYSDEC-Approved Engineered Anaerobic Biological Oxidation through Direct Push Injection of Gypsum (In-Situ Treatment); or
- In-Situ Stabilization.

Excavation is not recommended because of the relatively extreme measures required to excavate these three discrete locations to 15 ft bls, which is approximately 7 to 9 feet below the water table. Excavation of these locations would require (at minimum) the following: installation and removal of temporary excavation support systems; erection and deconstruction of a temporary tent structure (with vapor collection and treatment) over the excavation areas; on-site water treatment and discharge to publicly owned treatment works; and additional truck traffic associated with off-site treatment/disposal of excavated materials and importing backfill materials. Additionally, because NAPL was not observed in the upper 8 feet at any of these three locations, and not observed in the upper 13 ft or 14 feet at two of the three locations, more non-impacted soil would be removed than impacted soil. The implementability difficulties and the short-term impacts associated with soil removal (including removal of non-impacted soil) outweigh the environmental benefit of excavating these three discrete locations.

Expanding the NYSDEC-approved In-Situ Treatment, as shown on Figure 5, is National Grid's recommended remedial approach to address LB-51, SRI-2 and IRM-6 because this approach treats these locations. Specifically, as detailed in Arcadis' September 2016 In-Situ Treatment Work Plan, a long-term source of sulfate (gypsum [calcium sulfate dihydrate]) would be injected/emplaced to accelerate the ongoing ABOx of MGP-related impacts. The sulfate would stimulate indigenous sulfate reducing bacteria (SRB) populations to degrade petroleum and MGP-related constituents of concern (COCs) at and downgradient of these locations. The gypsum is expected to dissolve to its solubility, and then SRB will use the sulfate to degrade dissolved phase petroleum and MGP-related COCs. As the dissolved phase concentrations decrease, more NAPL and sorbed mass will dissolve into the groundwater to re-establish equilibrium. Similarly, as the dissolved sulfate is used by the SRB, more gypsum will dissolve. Gypsum is sparingly soluble and will gradually dissolve over a long period of time (years).

In-Situ stabilization is National Grid's alternate proposed remedial approach to address one or more of LB-51, SRI-2 or IRM-6 (see Figure 6). Specifically, an approximate 10 ft by 10 ft area centered on the soil boring location (LB-51, SRI-2 or IRM-6) would be stabilized (e.g., jet grouted) from 6 ft bls (approximate seasonal high water table) to 15 ft bls. Jet grouting is being considered for stabilization below the water table instead of bucket mixing to minimize odor generation and not require a temporary tent structure (with vapor collection and treatment). Jet grouting would generate spoils, requiring off-site treatment/disposal. Odor control methods would be employed during in-situ stabilization. Long-lasting foam spray and/or other vapor/odor control methods would be used to suppress odors and volatile organic vapors originating during stabilization and from the generated waste materials, as needed.

Although MGP-related impacts at the Site appear to be essentially at steady state as documented by the extensive data obtained for this Site since 2009, this approach would stabilize, but not treat, the NAPL at the three locations. Additionally, no NAPL has been observed in any of the shallow monitoring wells (screened from 6 to 16 ft bls) during the 7-year period that investigation/gauging activities have been conducted.

In-Situ Stabilization will not provide the overall meaningful environmental benefit compared to expanding the NYSDEC-approved In-Situ Treatment to address LB-51, SRI-2 and IRM-6. Therefore, as identified above, National Grid's recommended remedial approach is to expand the NYSDEC-approved In-Situ Treatment (Figure 5).

Expanding the In-Situ Treatment to address these three locations, in addition to meeting the requirements set forth in NYSDEC's June 8, 2016 letter, will achieve the following benefits:

- Significant decrease in truck traffic relative to excavation because of the following estimated reductions in transporting materials to and/or from the Site: 14,000 vertical square feet of steel sheet piling, 5,100 in-situ cubic yards of excavation and demolition debris; and 5,100 in-situ cubic yards of off-site general fill material. This is an approximate 75% reduction in anticipated truck traffic to the site. This is a benefit to the community for overall reduction to congestion, noise, and emissions adjacent the site, and meets with NYSDEC's DER-31 policy for sustainability considerations in clean-up actions.
- Reduced duration of remedy implementation by approximately 8 weeks relative to excavation, providing a corresponding reduction in the quality of life disruptions for residents (e.g., noise and possible vibrations and odors) identified by the public during NYSDEC's October 6, 2016 public meeting and in letters received by the NYSDEC during the public comment period.
- No additional heavy construction equipment needed for implementation.
- No spoils generated that will require off-site disposal/treatment and associated truck transport from the Site.
- Minimizes the potential for odor generation.
- Provides a long-term source of treatment to degrade and petroleum and MGP-related COC at and downgradient of the three discrete locations in IRM Excavation Area 1 where limited NAPL was observed between 8 ft and 15 ft bls: LB-51, SRI-2, IRM-6.

National Grid's recommended In-Situ Treatment for LB-51, SRI-2, and IRM-6 (in lieu of the previously-proposed excavation of the Area 1) will also provide additional work space to facilitate placing a

temporary membrane covered structure over the water treatment system, as recommended in NYSDEC's January 25, 2017 email to National Grid. The water treatment system will be required for dewatering IRM Excavation Areas 2 and 3 (Figure 1).

National Grid appreciates the NYSDEC's continued prompt attention to this project. We ask for your expedited review of the National Grid's recommended approach for addressing LB-51, SRI-2, and IRM-6, so that the revisions can be incorporated into the 100% Remedial Design submittal. Namely, our recommended approach is (1) full-scale excavation of IRM Excavation Area 1 will not be required and that (2) NAPL observations at LB-51, SRI-2, and IRM-6 can be addressed with either (a) an expansion of the In-Situ Treatment IRM or (b) in-situ stabilization (e.g., jet grouting). If you have any questions or require any additional information, please contact me at (608) 826-3663 or at katherine.vater@nationalgrid.com.

Sincerely,



Katherine Vater
Project Manager

Enclosures:

Figures

- 1 IRM Premobilization Investigation Locations
- 2 IRM Excavation Area 1 – NAPL Observations from Water Table to 15' BLS
- 3 IRM Excavation Area 1 – NAPL Observations from 15' BLS to 21' BLS
- 4 IRM Excavation Area 1 – NAPL Observations Below 21' BLS
- 5 Proposed Revised In-Situ Treatment IRM Locations
- 6 Proposed Stabilization Areas

Attachments

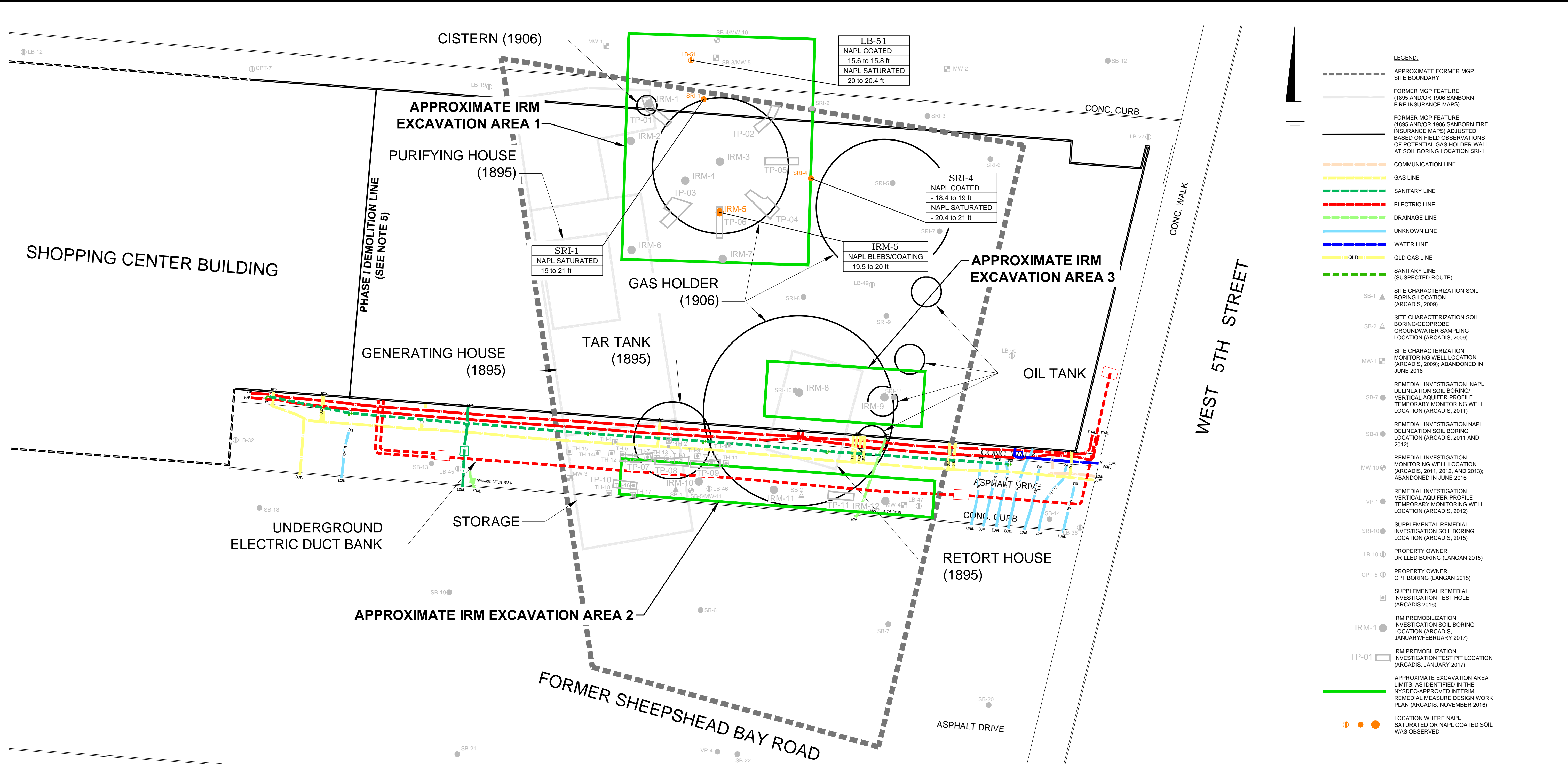
- A Test Pit Logs
- B Soil Boring Logs

cc: Dawn Hettrick, NYSDOH
Ted Leissing, National Grid
Linda Sullivan, Esq., National Grid
Bonnie Barnett, Esq., Drinker Biddle and Reath LLP
Megan Miller, P.E., Arcadis
M. Cathy Geraci, Arcadis

FIGURES



CITY:SYRACUSE,NY DIV:GROUP:ENV DBA:SANCHEZ LD:ALS PIC:(Opt) PM:(Regd) TM:(Opt) LVR:(Opt) LVS:(Opt) OFF:REF
 Z:\ENVCAD\SYRACUSE\PROJECTS\121212\IRM\Design\36704\IRM03.dwg LAYOUT: 3 SAVED: 3/3/2017 1:56 PM ACADVER: 19.1 S (LMS TECH) PAGES: 3/3 PLOTTED: 3/3/2017 1:59 PM BY: SANCHEZ, ADRIAN
 XREFS: Xref_01 XUtility XIBDR-IRMID
 IMAGES: PROJECTNAME: image_2012-11-05.jpg



- NOTES:**
- MONITORING WELL, TEST HOLE, AND SOIL BORING LOCATIONS SURVEYED RELATIVE TO THE NEW YORK STATE PLANE COORDINATE SYSTEM, LONG ISLAND ZONE, NORTH AMERICAN DATUM OF 1983 (NAD 83), EXCEPT TEST PIT DIMENSIONS/LOCATIONS AND IRM SOIL BORING LOCATIONS WHICH ARE APPROXIMATE AND WILL BE SURVEYED SOON.
 - LOCATIONS OF FORMER MGP FEATURES ARE APPROXIMATE.
 - BASE MAP BY DONALD G. DEKENIPP L.S., P.C., PROFESSIONAL LAND SURVEYOR.
 - UTILITY INFORMATION FROM CARDNO FIELD DRAFT DRAWING DATED MARCH 28, 2016; EXCEPT FOR THE APPROXIMATE LOCATION OF THE UNDERGROUND ELECTRIC DUCT BANK, WHICH IS FROM COSENTINI ASSOCIATES DRAWING DATED MARCH 1, 2016 (PROVIDED BY THE PROPERTY OWNER TO NATIONAL GRID).
 - PHASE I DEMOLITION LINE BASED ON INFORMATION PRESENTED IN AN AUGUST 22, 2016 EMAIL FROM CAMMEBY'S MANAGEMENT CO. LLC TO NATIONAL GRID.
 - THE PROPERTY OWNER DRILLED AND CPT BORING LOCATIONS ARE APPROXIMATE BASED ON A LANGAN DRAWING DATED OCTOBER 15, 2015.
 - ALL UTILITY LOCATIONS ARE APPROXIMATE.
 - IRM EXCAVATION LIMITS TO BE FINALIZED DURING THE REMEDIAL DESIGN.
 - SOIL BORING LOCATIONS WITH ASSOCIATED SOIL OBSERVATION BOXES IN IRM EXCAVATION AREA 1 ARE LOCATIONS WHERE NAPL SATURATED OR NAPL COATED SOIL WAS OBSERVED. NAPL COATED INCLUDES LIGHT, MODERATE OR HEAVY COATING.

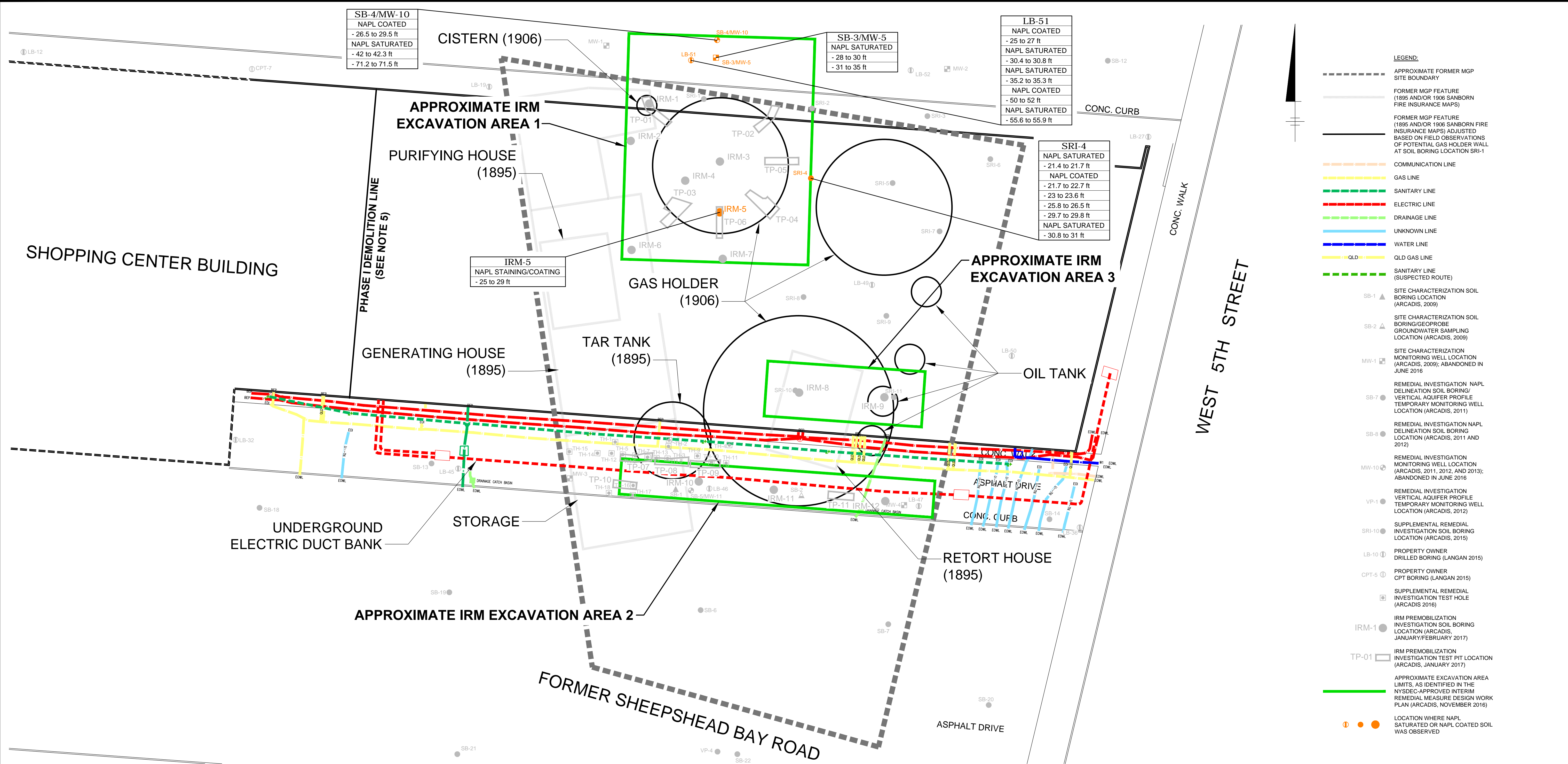
NATIONAL GRID
 FORMER DANGMAN PARK MGP SITE
 BROOKLYN, NEW YORK
IRM DESIGN

**IRM EXCAVATION AREA 1 -
 NAPL OBSERVATIONS
 FROM 15 FT BLS TO 21 FT BLS**

Design & Consultancy
 for natural and built assets

FIGURE
3

CITY:SYRACUSE,NY DIV:GROUP:ENV DBA:SANCHEZ LDALS PIC:(Opt) PM:(Retd) TM:(Opt) LVR:(Opt) OFF:REF: LAYOUT: 4 _SAVED: 3/22/2017 5:24 PM _ACADVER: 19.1.1S (LMS TECH) PAGES: 19.1.1S (LMS TECH) PLOT: PLT:FULL:CTB PLOTTED: 3/29/2017 1:51 PM BY: SANCHEZ, ADRIAN



SB-4/MW-10
NAPL COATED
- 26.5 to 29.5 ft
NAPL SATURATED
- 42 to 42.3 ft
- 71.2 to 71.5 ft

SB-3/MW-5
NAPL SATURATED
- 28 to 30 ft
- 31 to 35 ft

LB-51
NAPL COATED
- 25 to 27 ft
NAPL SATURATED
- 30.4 to 30.8 ft
- 35.2 to 35.3 ft
NAPL COATED
- 50 to 52 ft
NAPL SATURATED
- 55.6 to 55.9 ft

SRI-4
NAPL SATURATED
- 21.4 to 21.7 ft
NAPL COATED
- 21.7 to 22.7 ft
- 23 to 23.6 ft
- 25.8 to 26.5 ft
- 29.7 to 29.8 ft
NAPL SATURATED
- 30.8 to 31 ft

IRM-5
NAPL STAINING/COATING
- 25 to 29 ft

NOTES:

1. MONITORING WELL, TEST HOLE, AND SOIL BORING LOCATIONS SURVEYED RELATIVE TO THE NEW YORK STATE PLANE COORDINATE SYSTEM, LONG ISLAND ZONE, NORTH AMERICAN DATUM OF 1983 (NAD 83), EXCEPT TEST PIT DIMENSIONS/LOCATIONS AND IRM SOIL BORING LOCATIONS WHICH ARE APPROXIMATE AND WILL BE SURVEYED SOON.
2. LOCATIONS OF FORMER MGP FEATURES ARE APPROXIMATE.
3. BASE MAP BY DONALD G. DEKENIPP L.S., P.C., PROFESSIONAL LAND SURVEYOR.
4. UTILITY INFORMATION FROM CARDNO FIELD DRAFT DRAWINGS DATED MARCH 28, 2016; EXCEPT FOR THE APPROXIMATE LOCATION OF THE UNDERGROUND ELECTRIC DUCT BANK, WHICH IS FROM COSENTINI ASSOCIATES DRAWING DATED MARCH 1, 2016 (PROVIDED BY THE PROPERTY OWNER TO NATIONAL GRID).
5. PHASE I DEMOLITION LINE BASED ON INFORMATION PRESENTED IN AN AUGUST 22, 2016 EMAIL FROM CAMMEBY'S MANAGEMENT CO. LLC TO NATIONAL GRID.
6. THE PROPERTY OWNER DRILLED AND CPT BORING LOCATIONS ARE APPROXIMATE BASED ON A LANGAN DRAWING DATED OCTOBER 15, 2015.
7. ALL UTILITY LOCATIONS ARE APPROXIMATE.
8. IRM EXCAVATION LIMITS TO BE FINALIZED DURING THE REMEDIAL DESIGN.
9. SOIL BORING LOCATIONS WITH ASSOCIATED SOIL OBSERVATION BOXES IN IRM EXCAVATION AREA 1 ARE LOCATIONS WHERE NAPL SATURATED OR NAPL COATED SOIL WAS OBSERVED. NAPL COATED INCLUDES LIGHT, MODERATE OR HEAVY COATING.

- LEGEND:**
- APPROXIMATE FORMER MGP SITE BOUNDARY
 - FORMER MGP FEATURE (1895 AND/OR 1906 SANBORN FIRE INSURANCE MAPS)
 - FORMER MGP FEATURE (1895 AND/OR 1906 SANBORN FIRE INSURANCE MAPS) ADJUSTED BASED ON FIELD OBSERVATIONS OF POTENTIAL GAS HOLDER WALL AT SOIL BORING LOCATION SRI-1
 - COMMUNICATION LINE
 - GAS LINE
 - SANITARY LINE
 - ELECTRIC LINE
 - DRAINAGE LINE
 - UNKNOWN LINE
 - WATER LINE
 - QLD GAS LINE
 - SANITARY LINE (SUSPECTED ROUTE)
 - SB-1 ▲ SITE CHARACTERIZATION SOIL BORING LOCATION (ARCADIS, 2009)
 - SB-2 ▲ SITE CHARACTERIZATION SOIL BORING/GEOPROBE GROUNDWATER SAMPLING LOCATION (ARCADIS, 2009)
 - MW-1 □ SITE CHARACTERIZATION MONITORING WELL LOCATION (ARCADIS, 2009); ABANDONED IN JUNE 2016
 - SB-7 ● REMEDIAL INVESTIGATION NAPL DELINEATION SOIL BORING/VERTICAL AQUIFER PROFILE TEMPORARY MONITORING WELL LOCATION (ARCADIS, 2011)
 - SB-8 ● REMEDIAL INVESTIGATION NAPL DELINEATION SOIL BORING LOCATION (ARCADIS, 2011 AND 2012)
 - MW-10 □ REMEDIAL INVESTIGATION MONITORING WELL LOCATION (ARCADIS, 2011, 2012, AND 2013); ABANDONED IN JUNE 2016
 - VP-1 ● REMEDIAL INVESTIGATION VERTICAL AQUIFER PROFILE TEMPORARY MONITORING WELL LOCATION (ARCADIS, 2012)
 - SRI-10 ● SUPPLEMENTAL REMEDIAL INVESTIGATION SOIL BORING LOCATION (ARCADIS, 2015)
 - LB-10 ○ PROPERTY OWNER DRILLED BORING (LANGAN 2015)
 - CPT-5 ○ PROPERTY OWNER CPT BORING (LANGAN 2015)
 - SUPPLEMENTAL REMEDIAL INVESTIGATION TEST HOLE (ARCADIS 2016)
 - IRM-1 ● IRM PREMOBILIZATION INVESTIGATION SOIL BORING LOCATION (ARCADIS, JANUARY/FEBRUARY 2017)
 - TP-01 □ IRM PREMOBILIZATION INVESTIGATION TEST PIT LOCATION (ARCADIS, JANUARY 2017)
 - APPROXIMATE EXCAVATION AREA LIMITS, AS IDENTIFIED IN THE NYSEDC-APPROVED INTERIM REMEDIAL MEASURE DESIGN WORK PLAN (ARCADIS, NOVEMBER 2016)
 - ● ● LOCATION WHERE NAPL SATURATED OR NAPL COATED SOIL WAS OBSERVED



NATIONAL GRID
FORMER DANGMAN PARK MGP SITE
BROOKLYN, NEW YORK
IRM DESIGN

**IRM EXCAVATION AREA 1 -
NAPL OBSERVATIONS
BELOW 21 FT BLS**

ARCADIS Design & Consultancy
for natural and built assets

FIGURE
4

ATTACHMENT A

Test Pit Logs



Former Dangman Park MGP Site

Test Pit Logs

Excavation Area 1
January 2017

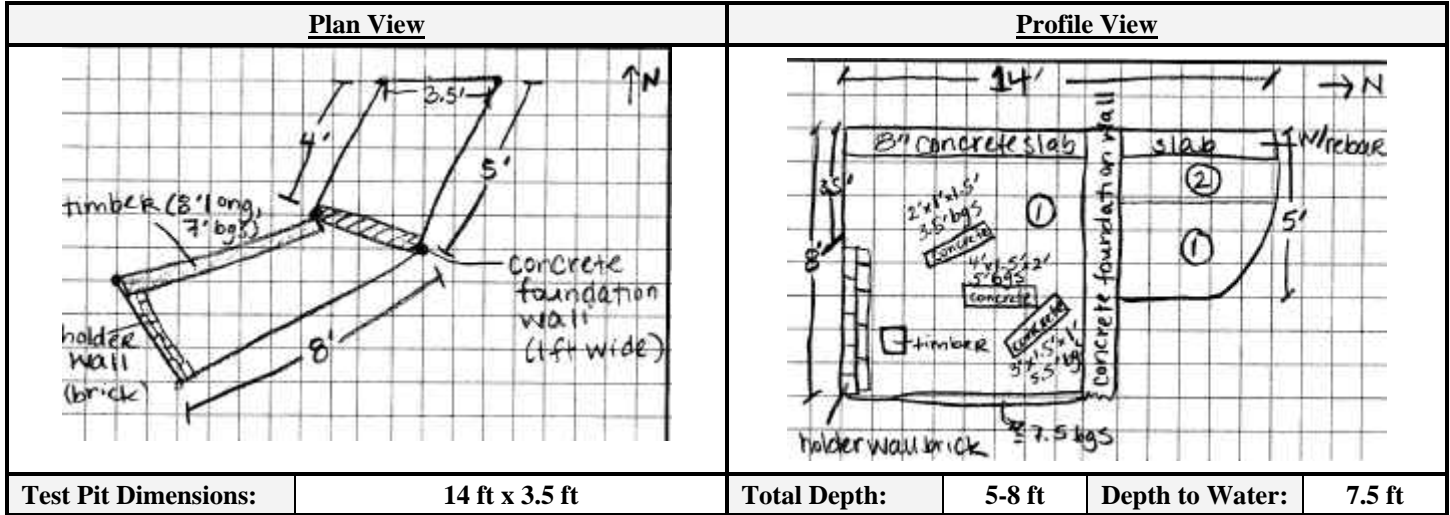


Test Pit Log

Test Pit ID: TP-01

Client:	National Grid	Date/Day:	1/3/2017 – 1/4/2017
Project:	Former Dangman Park MGP Site	Weather:	Overcast
Location:	Brooklyn, NY	Temperature:	40°F
Project #:	B0036704.0002	Wind:	Slight wind
Logged By:	K. Warren	Subcontractor:	Cascade Drilling
Coordinates:	NA	Equipment:	JCB 3CX Eco

Sketch of Test Pit Layout:



Depth Interval (feet)	PID Screening Result (ppm)	Description of Soil/Material
0-0.8	0.0	Concrete Floor Slab with Rebar (broken up with a jack hammer)
0.8-7.5	0.0	Light Brown Silty SAND with debris (brick, asphalt, cobbles), moist
7.5-8.0	Behind holder wall: 65	Same as Above, wet

Notes:

-Top of holder wall encountered at ~3.5 ft bgs. Soil exposed behind holder wall had strong odor.
-Fill Materials consist of: concrete blocks, wood/organics, timber, piles, cobbles, rebar, bricks (loose and clustered).
-Concrete foundation wall encountered underlying concrete floor slab.

Photo Summary (Photo Log Excavation Area 1):

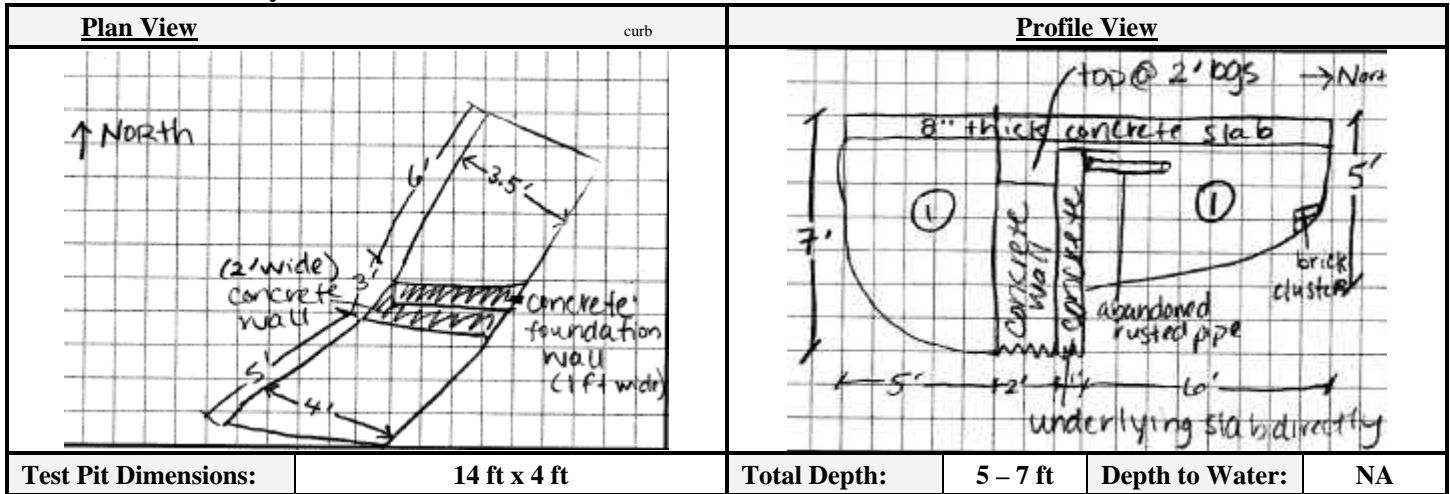
1	Large Concrete Pieces
2/3	Building Foundation Wall
4/5	Building Foundation Wall
6/7	Large Concrete Fill Pieces
8	Top of Holder Wall at 3.5 ft bgs
9/10	Holder Wall Components and Steel Fill Pieces
11	Restoration

Test Pit Log

Test Pit ID: TP-02

Client:	National Grid	Date/Day:	1/3/2017
Project:	Former Dangman Park MGP Site	Weather:	Overcast
Location:	Brooklyn, NY	Temperature:	40°F
Project #:	B0036704.0002	Wind:	Slight wind
Logged By:	K. Warren	Subcontractor:	Cascade Drilling
Coordinates:		Equipment:	JCB 3CX Eco

Sketch of Test Pit Layout:



Depth Interval (feet)	PID Screening Result (ppm)	Description of Soil/Material
0-0.8	0.0	Concrete Floor Slab with Rebar (broken up with a jack hammer)
0.8-7	0.0	Light Brown Silty SAND with debris (brick, asphalt, cobbles), moist

Notes:

-Fill Materials consist of: concrete blocks, wood/organics, timber, piles, cobbles, rebar, bricks (loose and clustered).
-Concrete foundation wall encountered underlying concrete floor slab. Additional concrete wall encountered adjacent to South at 2 ft bgs.

Photo Summary (Photo Log_Excavation Area 1):

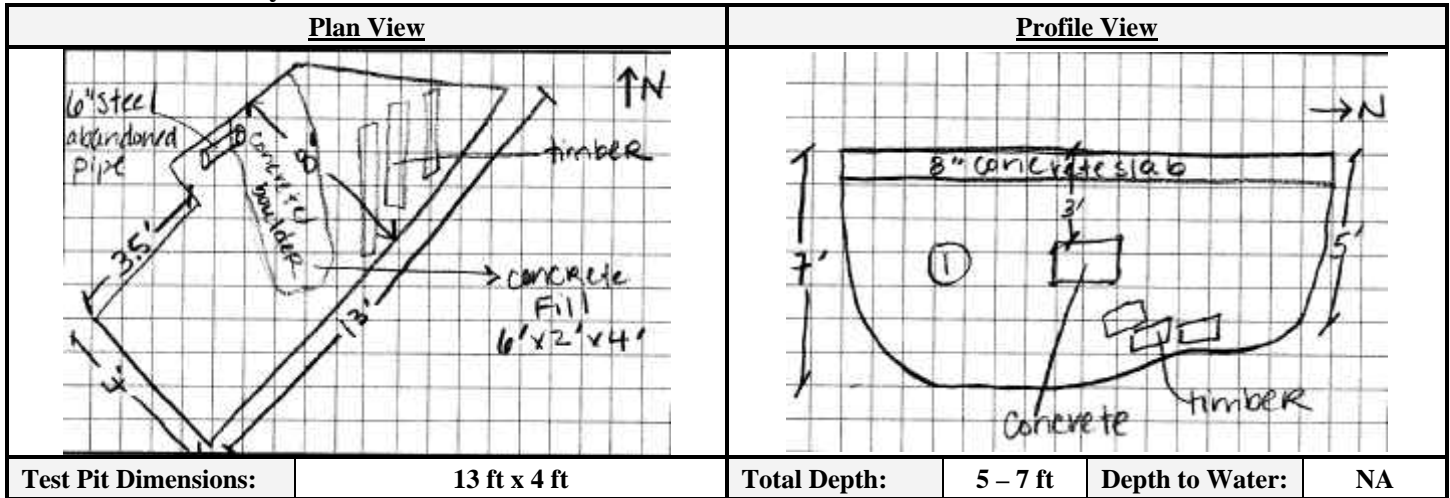
12/13	Building Foundation Wall
14	Brick Clusters
15/16	Building Foundation Wall

Test Pit Log

Test Pit ID: TP-03

Client:	National Grid	Date/Day:	1/4/2017
Project:	Former Dangman Park MGP Site	Weather:	Overcast
Location:	Brooklyn, NY	Temperature:	40°F
Project #:	B0036704.0002	Wind:	Slight wind
Logged By:	K. Warren	Subcontractor:	Cascade Drilling
Coordinates:		Equipment:	JCB 3CX Eco

Sketch of Test Pit Layout:



Depth Interval (feet)	PID Screening Result (ppm)	Description of Soil/Material
0-0.8	0.0	Concrete Floor Slab with Rebar (broken up with a jack hammer)
0.8-6.8	0.0	Brown Silty SAND with debris (brick, asphalt, cobbles), moist. Faint odor ~3.0 ft bgs.
6.8-7.0	0.0	Same as above, dark brown, trace clay.

Notes:

-Fill Materials consist of: concrete blocks, wood/organics, timber, piles, cobbles, rebar, bricks (loose and clustered).
-Faint odor 3.0 ft to 7 ft bgs.

Photo Summary (Photo Log_Excavation Area 1):

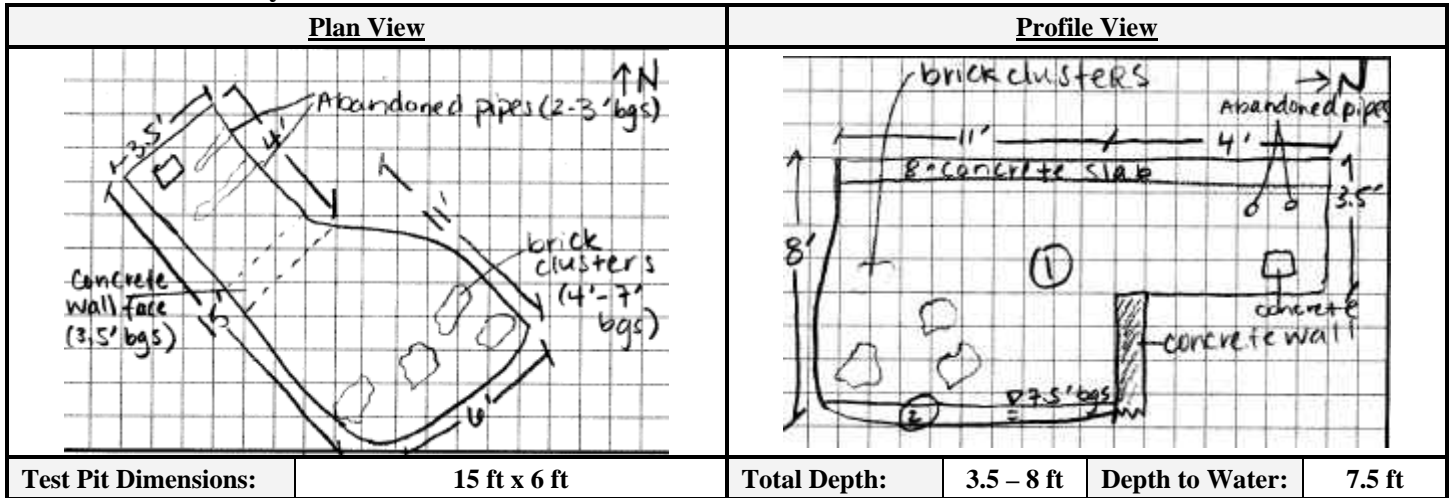
17/18	Fill Materials
19/20	Concrete and Brick Clusters
21/22	Concrete Fill Pieces

Test Pit Log

Test Pit ID: TP-04

Client:	National Grid	Date/Day:	1/5/2017
Project:	Former Dangman Park MGP Site	Weather:	Partly Cloudy
Location:	Brooklyn, NY	Temperature:	32°F
Project #:	B0036704.0002	Wind:	Windy
Logged By:	K. Warren	Subcontractor:	Cascade Drilling
Coordinates:		Equipment:	JCB 3CX Eco

Sketch of Test Pit Layout:



Depth Interval (feet)	PID Screening Result (ppm)	Description of Soil/Material
0-0.8	0.0	Concrete Floor Slab with Rebar (broken up with a jack hammer)
0.8-7.5	0.0	Brown Silty SAND with debris (brick, asphalt, cobbles), moist.
7.5-8.0	0.0	Same as above, dark brown, trace clay.

Notes:

-Fill Materials consist of: concrete blocks, wood/organics, timber, piles, cobbles, rebar, bricks (loose and clustered).
-Wall face encountered at 3.5 ft bgs, wall face present on side walls.
-Brick clusters throughout TP from 3 ft to 7 ft bgs.

Photo Summary (Photo Log_Excavation Area 1):

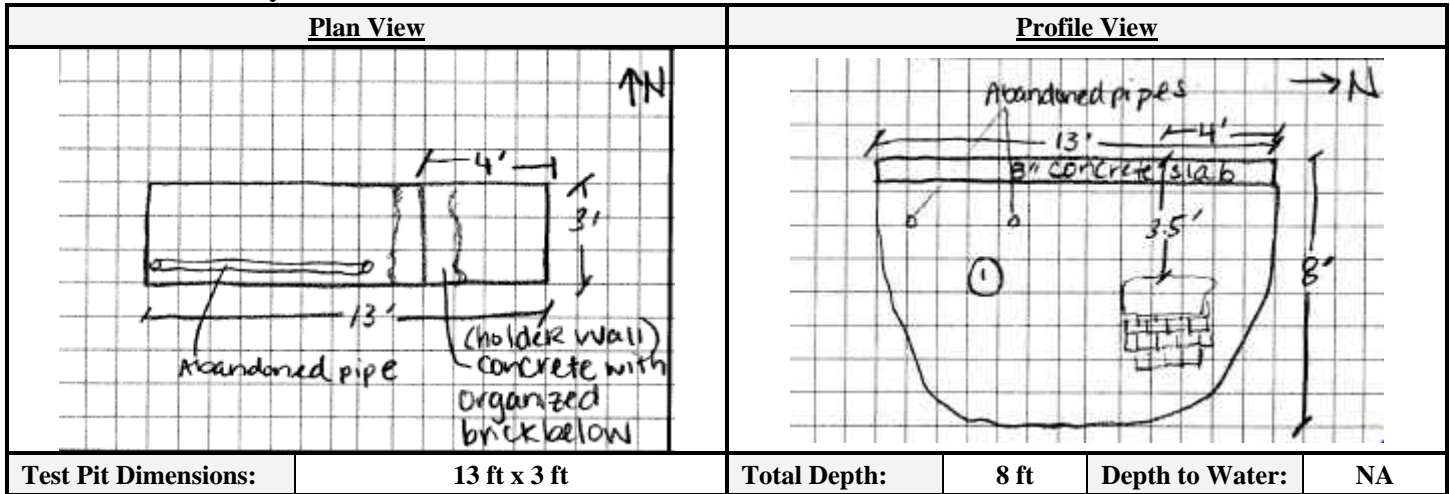
23/24	Digging TP-04
25/26	Concrete Wall Encountered
27	Concrete Wall Encountered
28	Brick Pieces on TP Sidewall

Test Pit Log

Test Pit ID: TP-05

Client:	National Grid	Date/Day:	1/5/2017
Project:	Former Dangman Park MGP Site	Weather:	Partly Cloudy
Location:	Brooklyn, NY	Temperature:	32°F
Project #:	B0036704.0002	Wind:	Windy
Logged By:	K. Warren	Subcontractor:	Cascade Drilling
Coordinates:		Equipment:	JCB 3CX Eco

Sketch of Test Pit Layout:



Depth Interval (feet)	PID Screening Result (ppm)	Description of Soil/Material
0-0.8	0.0	Concrete Floor Slab with Rebar (saw cut with core cutter)
0.8-8.0	0.0	Brown Silty SAND with debris (brick, asphalt, cobbles), moist.

Notes:

-Fill Materials consist of: concrete blocks, wood/organics, timber, piles, cobbles, rebar, bricks (loose and clustered).
-Holder Wall encountered at 3.5 ft bgs. Concrete block Encountered on top and organized mortared brick underlying Concrete block.

Photo Summary (Photo Log_Excavation Area 1):

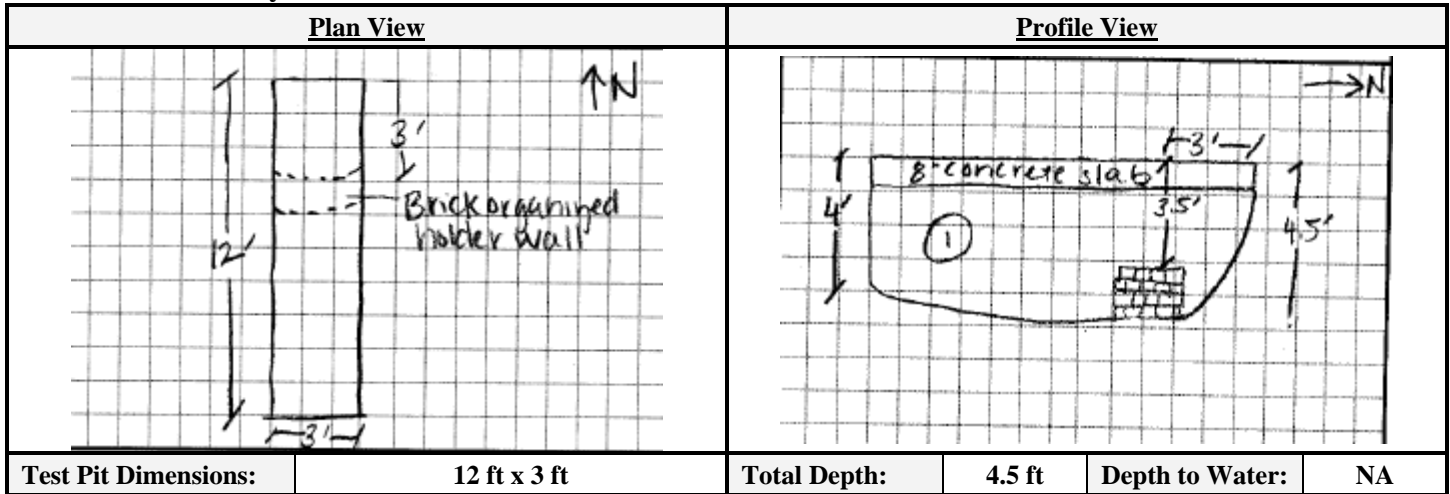
29	Core Cutting Concrete Slab
30	Remove Concrete Slab
31	Concrete piece overlying brick holder wall
32	Large Concrete Piece Vacancy in TP
33	Concrete piece with holder wall bricks
34	Continuation of Holder Wall on side walls
35	TP to depth

Test Pit Log

Test Pit ID: TP-06

Client:	National Grid	Date/Day:	1/6/2017
Project:	Former Dangman Park MGP Site	Weather:	Partly Cloudy
Location:	Brooklyn, NY	Temperature:	37°F
Project #:	B0036704.0002	Wind:	Slightly Windy
Logged By:	K. Warren	Subcontractor:	Cascade Drilling
Coordinates:		Equipment:	JCB 3CX Eco

Sketch of Test Pit Layout:



Depth Interval (feet)	PID Screening Result (ppm)	Description of Soil/Material
0-0.8	0.0	Concrete Floor Slab with Rebar (saw cut with core cutter)
0.8-4.5	0.0	Dark brown Silty SAND with debris (brick, asphalt, cobbles), moist. Faint odor present from 2 ft – 4 ft bgs.

Notes:

-Fill Materials consist of: concrete blocks, wood/organics, timber, piles, cobbles, rebar, bricks (loose and clustered).
-Holder Wall encountered at 3.5 ft bgs. Side walls contain organized brick.

Photo Summary (Photo Log_Excavation Area 1):

36	Core Cutting Concrete Slab
37	Remove Concrete Slab
38	Removed in-tact portion on holder wall
39/40	Fill components of TP

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Excavation Area 1
Brooklyn, New York



Photograph: 1

Description:
TP-01

Location:
Brooklyn, NY

Photograph taken by:
Kyle Warren

Date: 1/4/2017



Photograph: 2

Description:
TP-01
Building Foundation
Wall

Location:
Brooklyn, NY

Photograph taken by:
Kyle Warren

Date: 1/4/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Excavation Area 1
Brooklyn, New York



Photograph: 3

Description:
TP-01

Location:
Brooklyn, NY

Photograph taken by:
Kyle Warren

Date: 1/4/2017



Photograph: 4

Description:
TP-01

Location:
Brooklyn, NY

Photograph taken by:
Kyle Warren

Date: 1/4/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Excavation Area 1
Brooklyn, New York



Photograph: 5

Description:

TP-01
Concrete foundation
wall

Location:

Brooklyn, NY

Photograph taken by:

Kyle Warren

Date: 1/4/2017



Photograph: 6

Description:

TP-01

Location:

Brooklyn, NY

Photograph taken by:

Kyle Warren

Date: 1/4/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Excavation Area 1
Brooklyn, New York



Photograph: 7

Description:
TP-01

Location:
Brooklyn, NY

Photograph taken by:
Kyle Warren

Date: 1/4/2017



Photograph: 8

Description:
TP-01
Top of holder wall at
3.5 ft bgs

Location:
Brooklyn, NY

Photograph taken by:
Kyle Warren

Date: 1/4/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Excavation Area 1
Brooklyn, New York



Photograph: 9

Description:
TP-01

Location:
Brooklyn, NY

Photograph taken by:
Kyle Warren

Date: 1/4/2017



Photograph: 10

Description:
TP-01
Holder wall
components and large
steel fill

Location:
Brooklyn, NY

Photograph taken by:
Kyle Warren

Date: 1/4/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Excavation Area 1
Brooklyn, New York



Photograph: 11

Description:

TP-01

Restoration

Location:

Brooklyn, NY

Photograph taken by:

Kyle Warren

Date: 1/4/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Excavation Area 1
Brooklyn, New York



Photograph: 12

Description:
TP-02

Location:
Brooklyn, NY

Photograph taken by:
Kyle Warren

Date: 1/3/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Excavation Area 1
Brooklyn, New York



Photograph: 13

Description:
TP-02

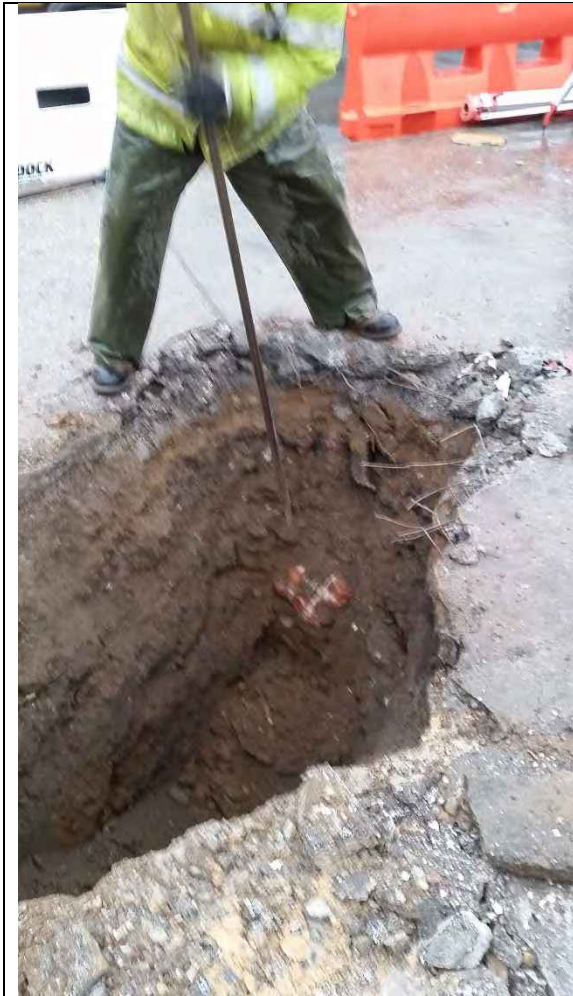
Location:
Brooklyn, NY

Photograph taken by:
Kyle Warren

Date: 1/3/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Excavation Area 1
Brooklyn, New York



Photograph: 14

Description:

TP-02
Brick clusters

Location:

Brooklyn, NY

Photograph taken by:

Kyle Warren

Date: 1/4/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Excavation Area 1
Brooklyn, New York



Photograph: 15

Description:

TP-02
Concrete foundation
wall

Location:

Brooklyn, NY

Photograph taken by:

Kyle Warren

Date: 1/3/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Excavation Area 1
Brooklyn, New York



Photograph: 16

Description:

TP-02
Concrete Foundation
Wall

Location:

Brooklyn, NY

Photograph taken by:

Kyle Warren

Date: 1/3/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Excavation Area 1
Brooklyn, New York



Photograph: 17

Description:
TP-03

Location:
Brooklyn, NY

Photograph taken by:
Kyle Warren

Date: 1/4/2017



Photograph: 18

Description:
TP-03
Fill Materials:
abandoned steel pipes

Location:
Brooklyn, NY

Photograph taken by:
Kyle Warren

Date: 1/4/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Excavation Area 1
Brooklyn, New York



Photograph: 19

Description:
TP-03

Location:
Brooklyn, NY

Photograph taken by:
Kyle Warren

Date: 1/4/2017



Photograph: 20

Description:
TP-03

Location:
Brooklyn, NY

Photograph taken by:
Kyle Warren

Date: 1/4/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Excavation Area 1
Brooklyn, New York



Photograph: 21

Description:
TP-03

Location:
Brooklyn, NY

Photograph taken by:
Kyle Warren

Date: 1/4/2017



Photograph: 22

Description:
TP-03

Location:
Brooklyn, NY

Photograph taken by:
Kyle Warren

Date: 1/4/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Excavation Area 1
Brooklyn, New York



Photograph: 23

Description:

TP-04

Location:

Brooklyn, NY

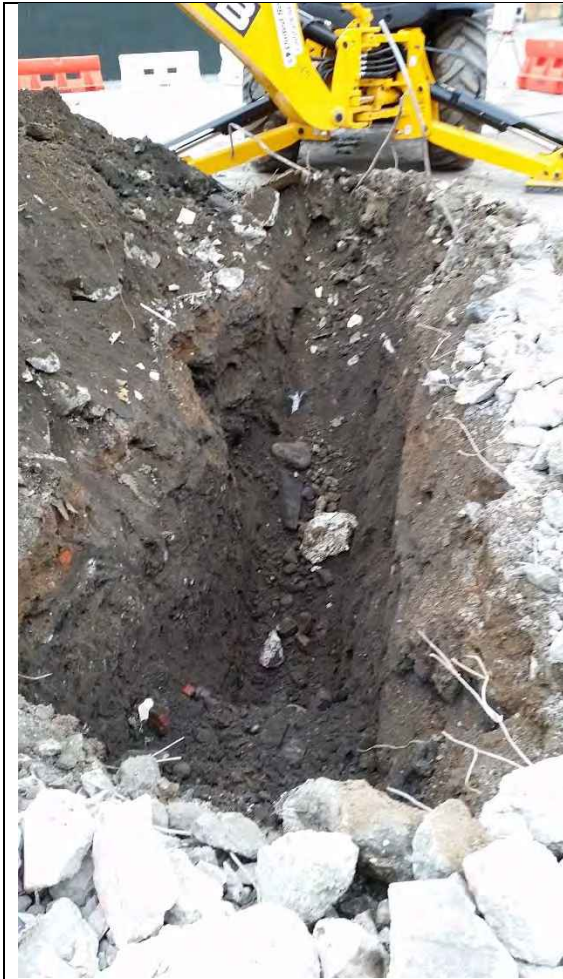
Photograph taken by:

Kyle Warren

Date: 1/5/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Excavation Area 1
Brooklyn, New York



Photograph: 24

Description:
TP-04

Location:
Brooklyn, NY

Photograph taken by:
Kyle Warren

Date: 1/5/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Excavation Area 1
Brooklyn, New York



Photograph: 25

Description:
TP-04

Location:
Brooklyn, NY

Photograph taken by:
Kyle Warren

Date: 1/5/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Excavation Area 1
Brooklyn, New York



Photograph: 26

Description:

TP-04
Concrete Wall 2.5 ft
bgs

Location:

Brooklyn, NY

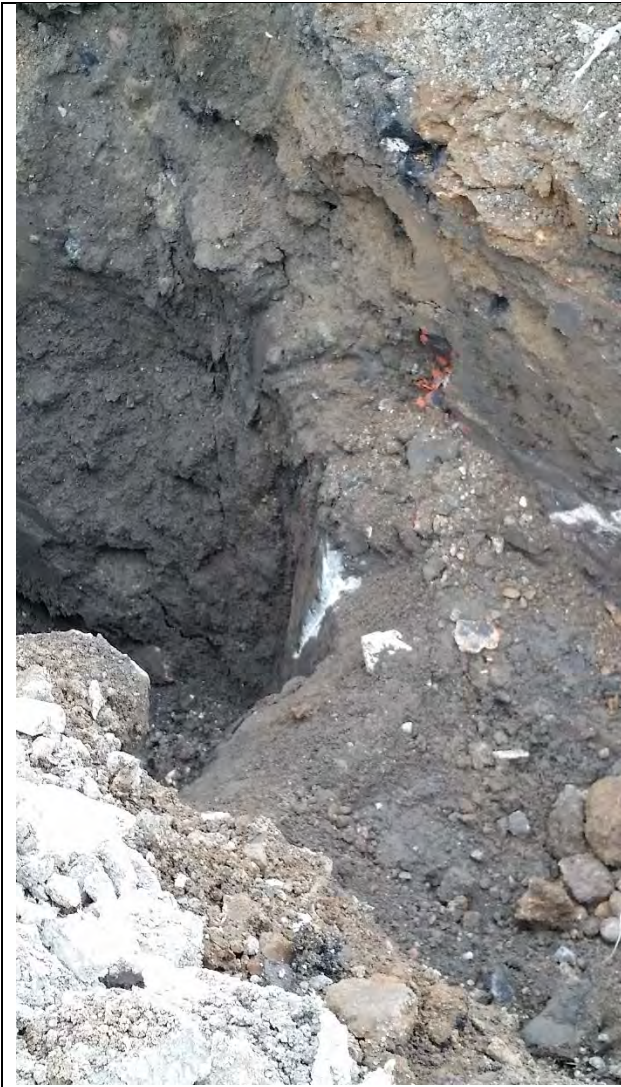
Photograph taken by:

Kyle Warren

Date: 1/5/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Excavation Area 1
Brooklyn, New York



Photograph: 27

Description:
TP-04

Location:
Brooklyn, NY

Photograph taken by:
Kyle Warren

Date: 1/5/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Excavation Area 1
Brooklyn, New York



Photograph: 28

Description:
TP-04

Location:
Brooklyn, NY

Photograph taken by:
Kyle Warren

Date: 1/5/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Excavation Area 1
Brooklyn, New York



Photograph: 29

Description:

TP-05
Core cutting concrete
slab

Location:

Brooklyn, NY

Photograph taken by:

Kyle Warren

Date: 1/5/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Excavation Area 1
Brooklyn, New York



Photograph: 30

Description:
TP-05

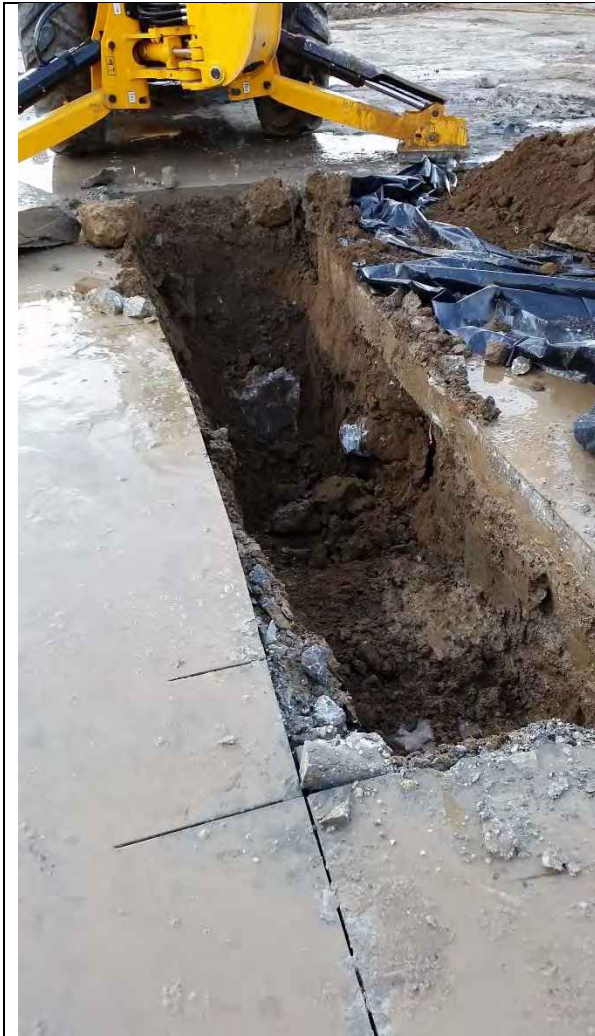
Location:
Brooklyn, NY

Photograph taken by:
Kyle Warren

Date: 1/5/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Excavation Area 1
Brooklyn, New York



Photograph: 31

Description:

TP-05
Concrete boulder
overlying brick holder
wall

Location:

Brooklyn, NY

Photograph taken by:

Kyle Warren

Date: 1/5/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Excavation Area 1
Brooklyn, New York



Photograph: 32

Description:
TP-05

Location:
Brooklyn, NY

Photograph taken by:
Kyle Warren

Date: 1/5/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Excavation Area 1
Brooklyn, New York



Photograph: 33

Description:

TP-05
Concrete block with top
of holder wall bricks

Location:

Brooklyn, NY

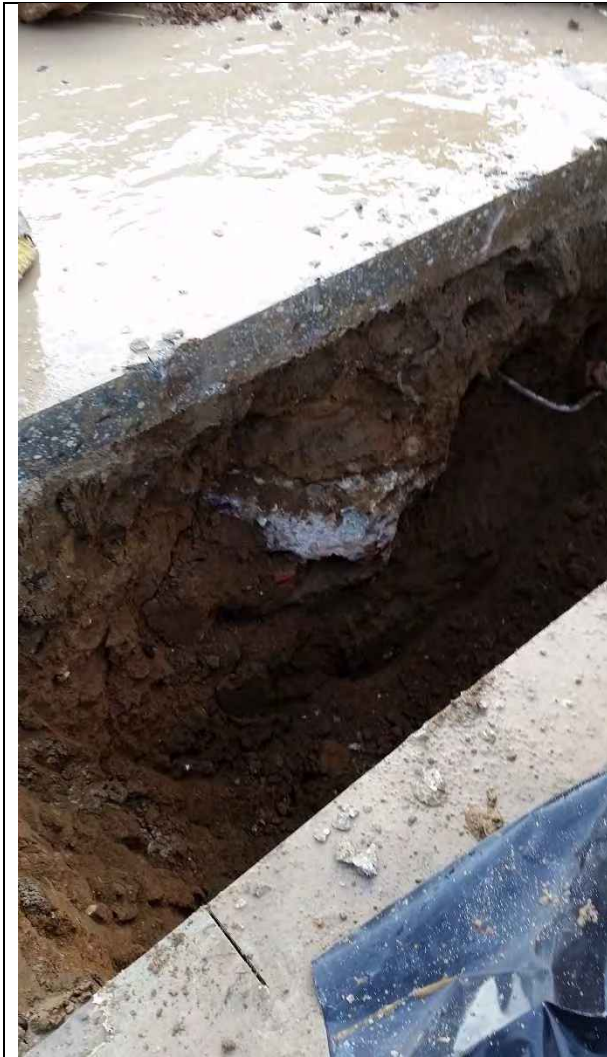
Photograph taken by:

Kyle Warren

Date: 1/5/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Excavation Area 1
Brooklyn, New York



Photograph: 34

Description:
TP-05
Continuation of holder
wall

Location:
Brooklyn, NY

Photograph taken by:
Kyle Warren

Date: 1/5/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Excavation Area 1
Brooklyn, New York



Photograph: 35

Description:
TP-05

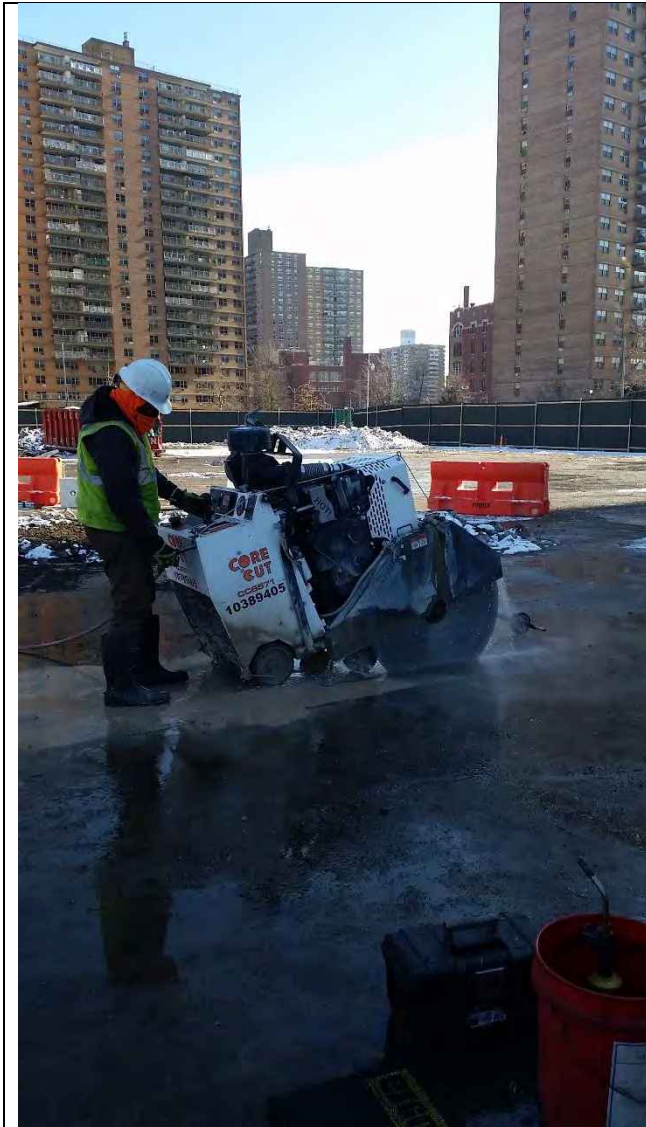
Location:
Brooklyn, NY

Photograph taken by:
Kyle Warren

Date: 1/5/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Excavation Area 1
Brooklyn, New York



Photograph: 36

Description:
TP-06
Core Cutting Concrete
Slab

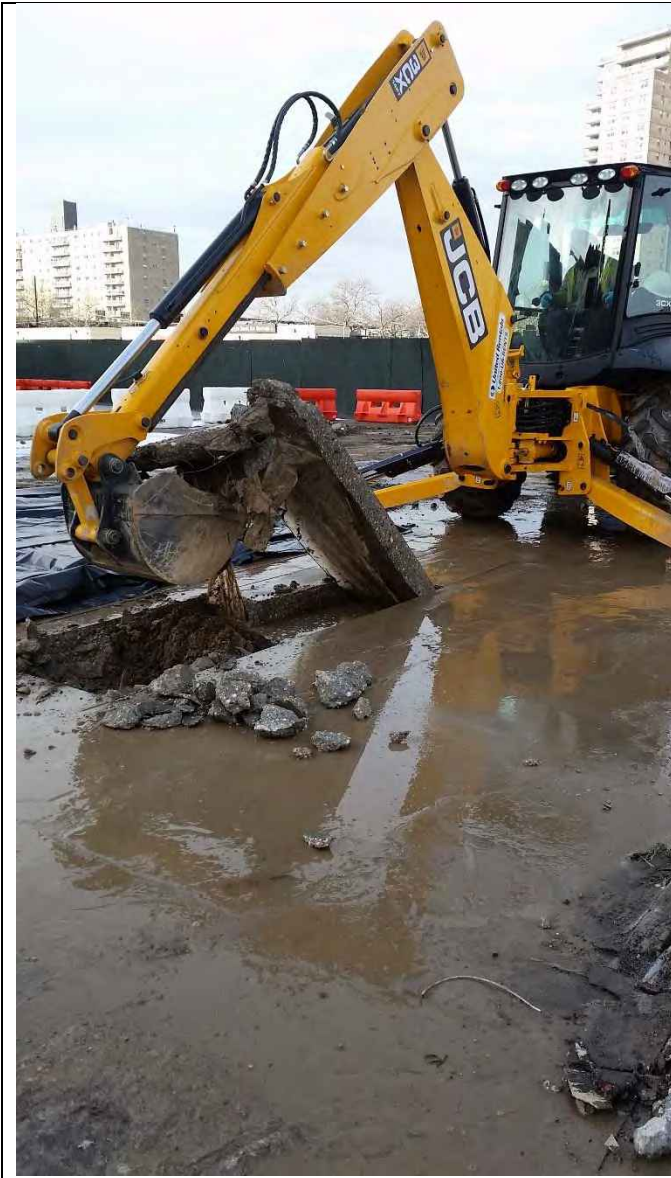
Location:
Brooklyn, NY

Photograph taken by:
Kyle Warren

Date: 1/6/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Excavation Area 1
Brooklyn, New York



Photograph: 37

Description:
TP-06

Location:
Brooklyn, NY

Photograph taken by:
Kyle Warren

Date: 1/6/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Excavation Area 1
Brooklyn, New York



Photograph: 38

Description:

TP-06
Competent holder wall
piece removed from TP

Location:

Brooklyn, NY

Photograph taken by:

Kyle Warren

Date: 1/6/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Excavation Area 1
Brooklyn, New York



Photograph: 39

Description:
TP-06

Location:
Brooklyn, NY

Photograph taken by:
Kyle Warren

Date: 1/6/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Excavation Area 1
Brooklyn, New York



Photograph: 40

Description:
TP-06

Location:
Brooklyn, NY

Photograph taken by:
Kyle Warren

Date: 1/6/2017

Former Dangman Park MGP Site Test Pit Logs

Back Alley
January 2017

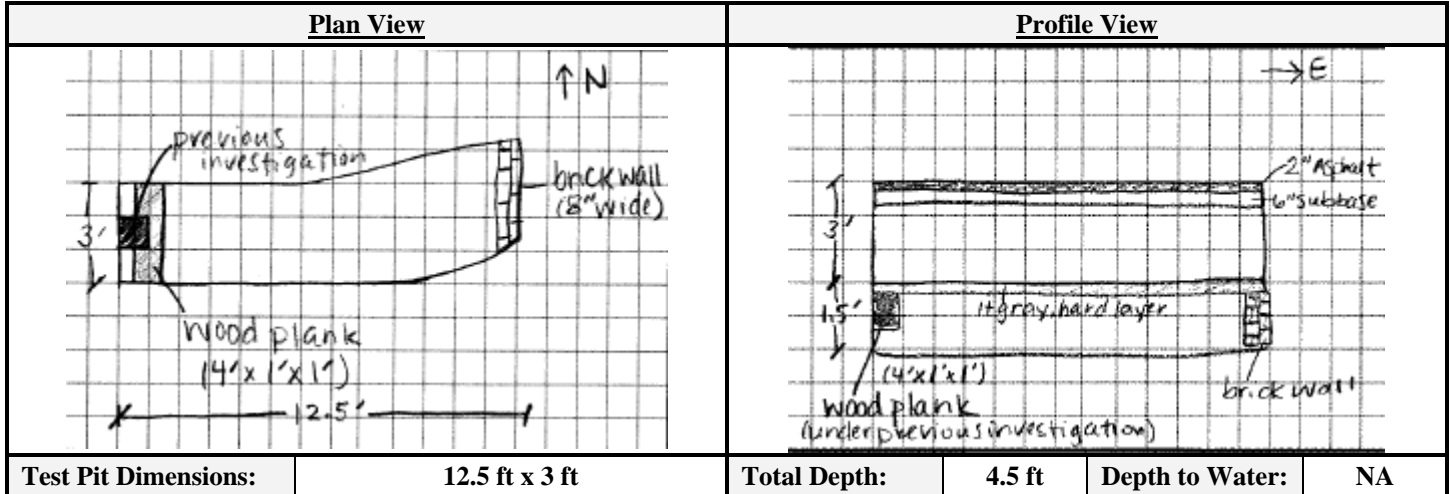


Test Pit Log

Test Pit ID: TP-07

Client:	National Grid	Date/Day:	1/12/2017
Project:	Former Dangman Park MGP Site	Weather:	Partly Cloudy
Location:	Brooklyn, NY	Temperature:	60°F
Project #:	B0036704.0002	Wind:	Windy
Logged By:	K. Warren	Subcontractor:	Cascade Drilling
Coordinates:		Equipment:	JCB 3CX Eco

Sketch of Test Pit Layout:



Depth Interval (feet)	PID Screening Result (ppm)	Description of Soil/Material
0-0.2	0.0	Asphalt
0.2-0.8	0.0	Subbase Materials from Asphalt
0.8-3.0	0.0	Brown SAND, some gravel, some silt, with debris (wood, glass, steel), moist
3.0-3.2	0.0	Light Gray SAND, compacted, moist
3.2-4.5	0.0	Brown SAND, some gravel, some silt, with debris (wood, glass, steel), moist

Notes:

-Holder wall encountered on eastern end of TP at 3 ft bgs.
Approximate location of Former Tar Tank eastern wall.
-Timber pile oriented N to S encountered on western end of TP at 3 ft bgs, directly underlying previous investigation.
-Fill Materials consist of: concrete blocks, wood/organics, timber, piles, cobbles, glass, brick pieces.

Photo Summary (Photo Log Back Alley):

1	Core Cutting Back Alley TPs
2/3	Wooden Pile underlying previous investigation
4/5	Holder wall encountered on eastern end

Test Pit Log

Test Pit ID: TP-08

Client:	National Grid	Date/Day:	1/16/2017
Project:	Former Dangman Park MGP Site	Weather:	Scattered Clouds
Location:	Brooklyn, NY	Temperature:	45°F
Project #:	B0036704.0002	Wind:	Slightly Windy
Logged By:	K. Warren	Subcontractor:	Cascade Drilling
Coordinates:		Equipment:	JCB 3CX Eco

Sketch of Test Pit Layout:

Plan View	Profile View				
Test Pit Dimensions:	12 ft x 4 ft	Total Depth:	3.5 ft	Depth to Water:	NA

Depth Interval (feet)	PID Screening Result (ppm)	Description of Soil/Material
0-0.2	0.0	Asphalt
0.2-0.8	0.0	Subbase Materials from Asphalt
0.8-3.0	5.2	Brown SAND, some gravel, some silt, with debris (wood, glass, steel), moist, faint odor.
3.0-3.5	4.3	Brick Wall running East to West, 8 inches wide.

Notes:

-Brick wall oriented East to West encountered in center of TP.
Top of brick wall encountered at 3 ft bgs. Perpendicular to brick wall encountered on east side of TP-07.
-Dark stained area on southside of wall with strong odor.
-Fill Materials consist of: concrete blocks, wood/organics, timber, piles, cobbles, glass, brick pieces.

Photo Summary (Photo Log Back Alley):

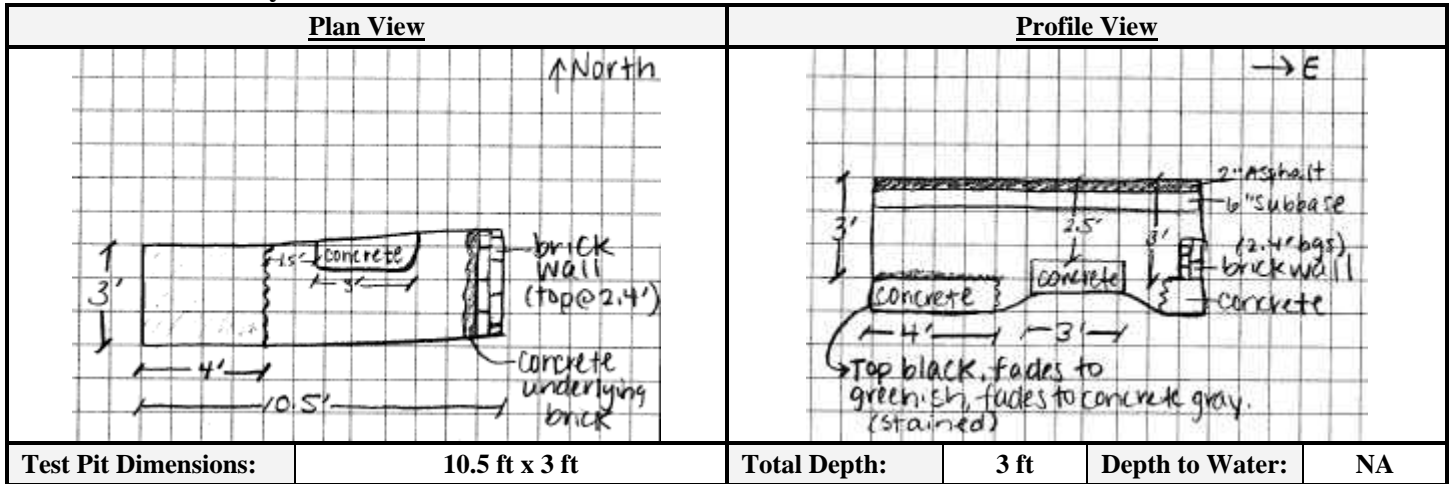
6	Brick wall running west to east
7	Brick wall perpendicular to brick wall encountered in TP-07
8	Eastern end of Brick Wall
9	Brick Wall looking East

Test Pit Log

Test Pit ID: TP-09

Client:	National Grid	Date/Day:	1/17/2017
Project:	Former Dangman Park MGP Site	Weather:	Overcast
Location:	Brooklyn, NY	Temperature:	40°F
Project #:	B0036704.0002	Wind:	Slightly Windy
Logged By:	K. Warren	Subcontractor:	Cascade Drilling
Coordinates:		Equipment:	JCB 3CX Eco

Sketch of Test Pit Layout:



Depth Interval (feet)	PID Screening Result (ppm)	Description of Soil/Material
0-0.2	0.0	Asphalt
0.2-0.8	0.0	Subbase Materials from Asphalt
0.8-3.5	5.2	Brown SAND, some gravel, some silt, with debris (wood, glass, steel), moist.
3.5-4.0	Strong odor, high readings	Black Concrete slab, heavily stained, strong odor.

Notes:

-Discontinuous concrete slab encountered at 3 ft bgs on eastern and western end of TP. Edges appeared to be broken.
-Concrete slab heavily stained with strong odor. When pieces broken off, black faded to green and faded to concrete gray.
-Fill Materials consist of: concrete blocks, wood/organics, timber, piles, cobbles, glass, brick pieces.

Photo Summary (Photo Log Back Alley):

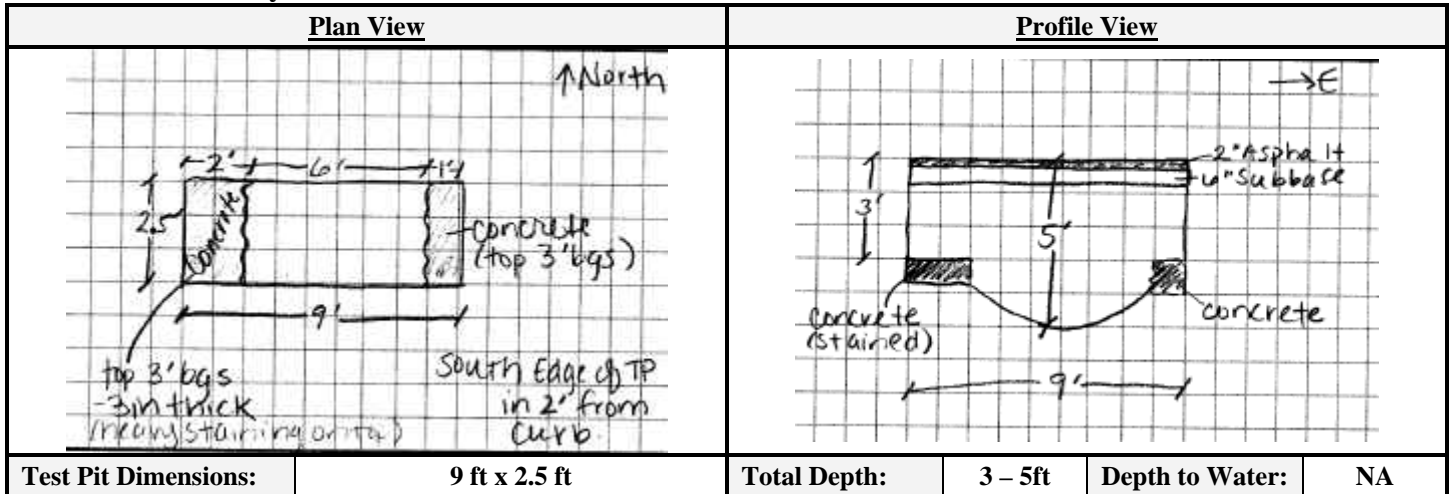
10	Holder wall on eastern end
11/12	Brick wall on eastern end, concrete piece in middle, concrete stained piece on western end.
13	Broken piece of stained concrete
14	Looking east to holder wall

Test Pit Log

Test Pit ID: TP-10

Client:	National Grid	Date/Day:	1/19/2017
Project:	Former Dangman Park MGP Site	Weather:	Partly Cloudy
Location:	Brooklyn, NY	Temperature:	50°F
Project #:	B0036704.0002	Wind:	Windy
Logged By:	K. Warren	Subcontractor:	Cascade Drilling
Coordinates:		Equipment:	JCB 3CX Eco

Sketch of Test Pit Layout:



Depth Interval (feet)	PID Screening Result (ppm)	Description of Soil/Material
0-0.2	0.0	Asphalt
0.2-0.8	0.0	Subbase Materials from Asphalt
0.8-3.5	9.4	Brown SAND, some gravel, some silt, with debris (wood, glass, steel), moist.
3.5-4.0	Strong odor, high readings	Black Concrete slab, heavily stained, strong odor.

Notes:

-Discontinuous concrete slab encountered at 3 ft bgs on eastern and western end of TP. Edges appeared to be broken.
-Concrete slab heavily stained with strong odor. When pieces broken off, black faded to green and faded to concrete gray.
-Fill Materials consist of: concrete blocks, wood/organics, timber, piles, cobbles, glass, brick pieces.

Photo Summary (Photo Log Back Alley):

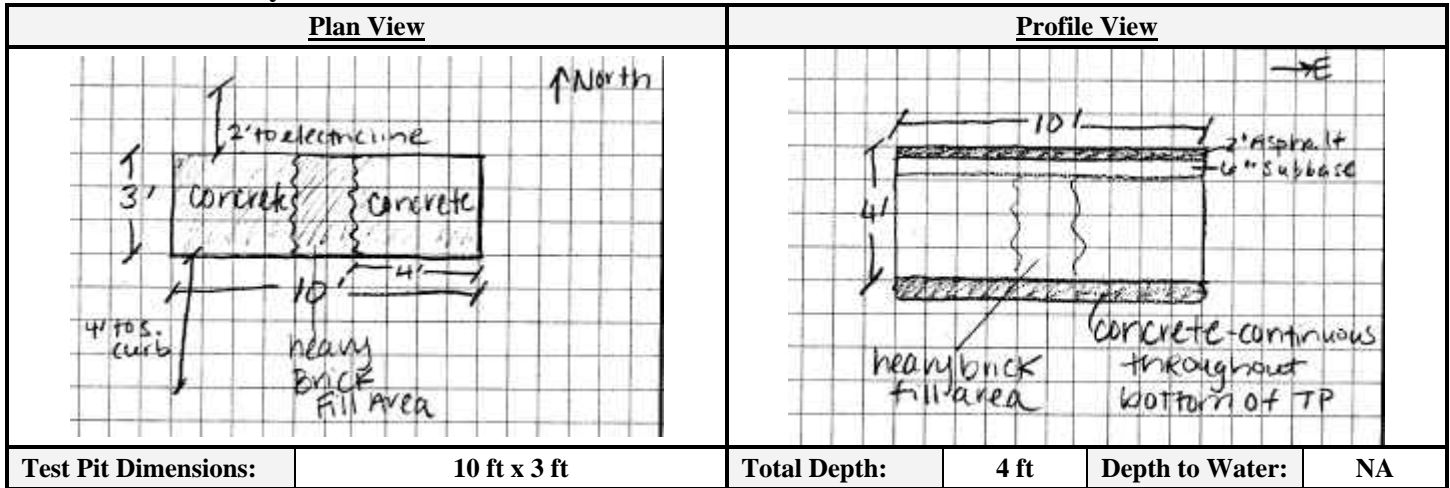
15	Fill Materials, heavy brick fill area
16	Concrete stained foundation piece on western end
17	Concrete stained foundation pieces looking east
18	Concrete stained foundation piece on eastern end

Test Pit Log

Test Pit ID: TP-11

Client:	National Grid	Date/Day:	1/20/2017
Project:	Former Dangman Park MGP Site	Weather:	Mostly Cloudy
Location:	Brooklyn, NY	Temperature:	45°F
Project #:	B0036704.0002	Wind:	Windy
Logged By:	K. Warren	Subcontractor:	Cascade Drilling
Coordinates:		Equipment:	JCB 3CX Eco

Sketch of Test Pit Layout:



Depth Interval (feet)	PID Screening Result (ppm)	Description of Soil/Material
0-0.2	0.0	Asphalt
0.2-0.8	0.0	Subbase Materials from Asphalt
0.8-4.0	8.0-19.5	Brown SAND, some gravel, some silt, with debris (wood, glass, steel), moist.
4.0	Strong odor, high readings	Black Concrete slab, heavily stained, strong odor.

Notes:

-Discontinuous concrete slab encountered at 4 ft bgs on bottom of TP.
-Concrete slab heavily stained with strong odor. When pieces broken off, black faded to green and faded to concrete gray.
-Fill Materials consist of: concrete blocks, wood/organics, timber, piles, cobbles, glass, brick pieces.

Photo Summary (Photo Log_Back Alley):

19/20	Concrete stained foundation along entire bottom
21/22	Fill Materials

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Back Alley
Brooklyn, New York



Photograph: 1

Description:

TP-07
Core Cutting Back Alley
TPs

Location:

Brooklyn, NY

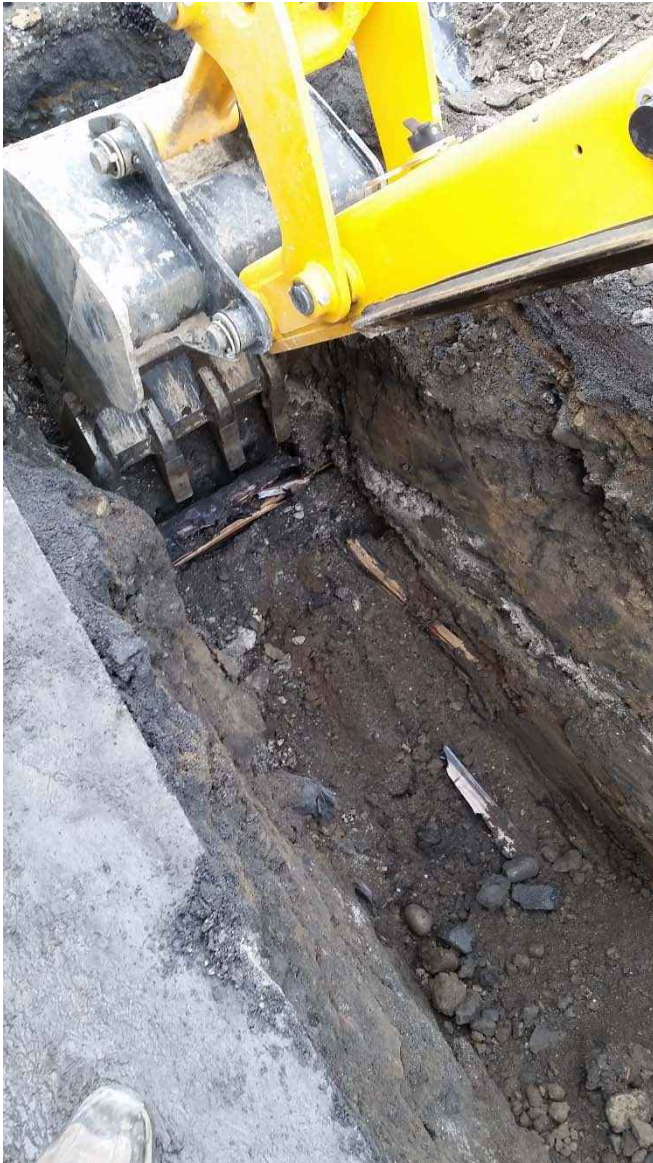
Photograph taken by:

Kyle Warren

Date: 1/11/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Back Alley
Brooklyn, New York



Photograph: 2

Description:

TP-07

Wooden Pile

Location:

Brooklyn, NY

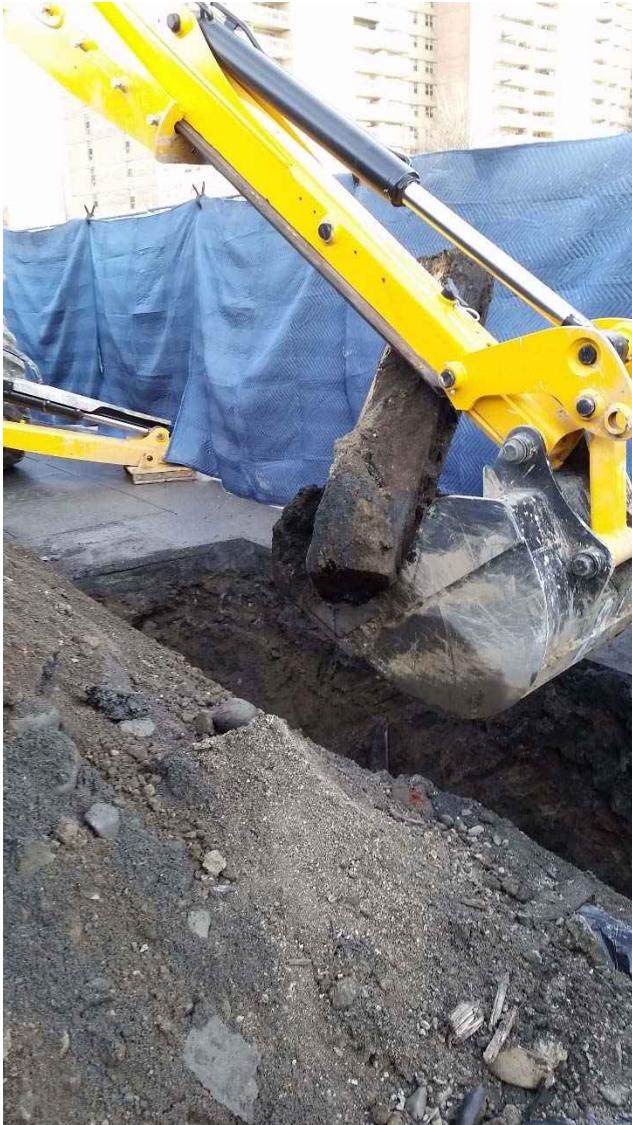
Photograph taken by:

Kyle Warren

Date: 1/12/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Back Alley
Brooklyn, New York



Photograph: 3

Description:

TP-07

Wooden Pile

Location:

Brooklyn, NY

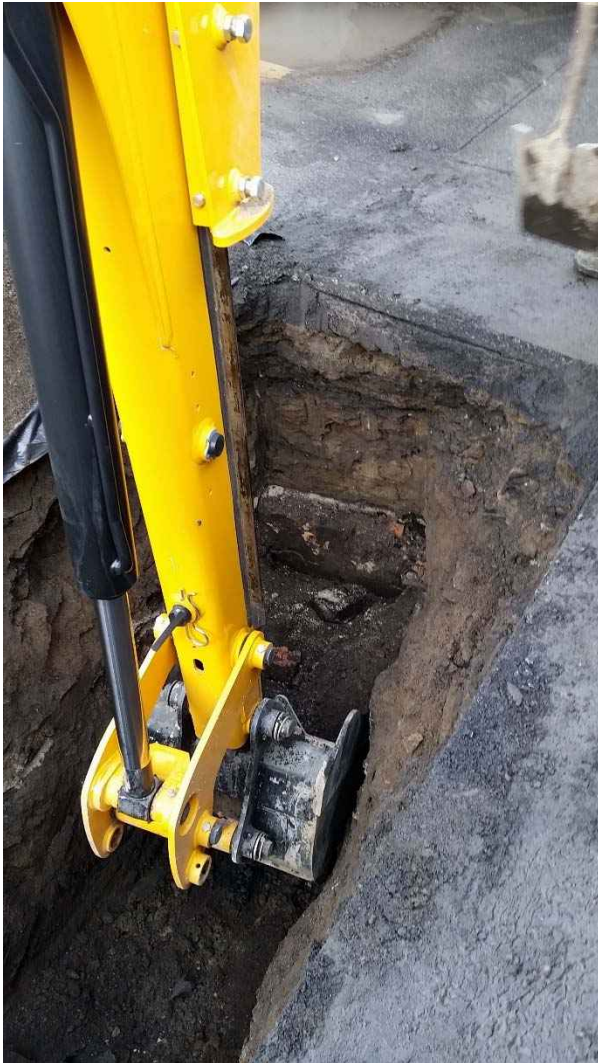
Photograph taken by:

Kyle Warren

Date: 1/12/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Back Alley
Brooklyn, New York



Photograph: 4

Description:

TP-07
Brick Holder Wall on
Eastern End

Location:

Brooklyn, NY

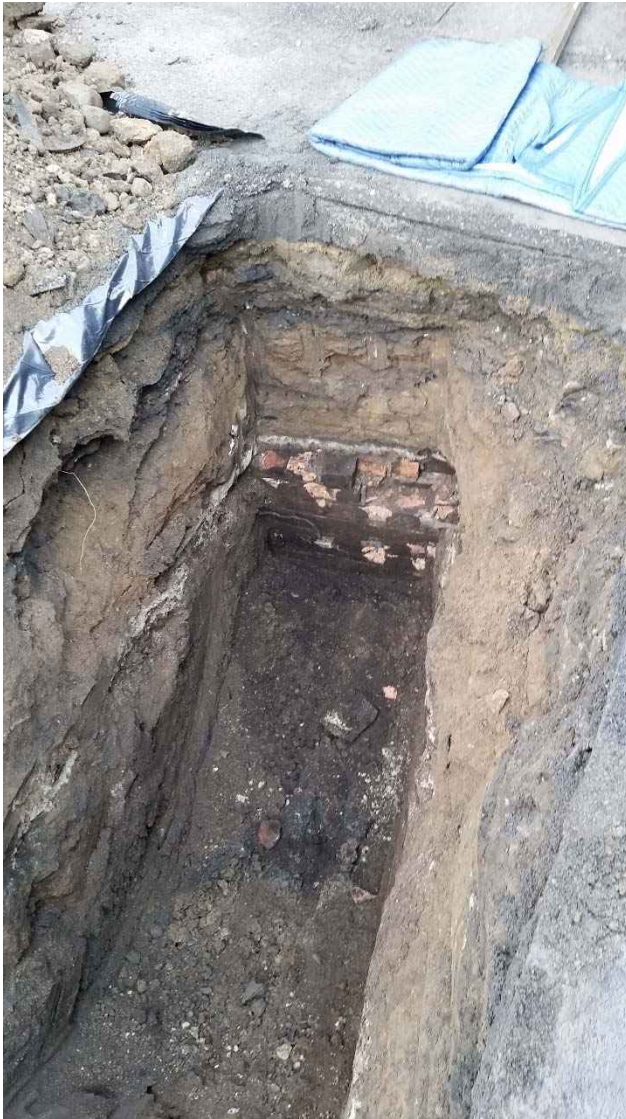
Photograph taken by:

Kyle Warren

Date: 1/12/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Back Alley
Brooklyn, New York



Photograph: 5

Description:

TP-07

Brick Holder Wall on
Eastern End

Location:

Brooklyn, NY

Photograph taken by:

Kyle Warren

Date: 1/12/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Back Alley
Brooklyn, New York



Photograph: 6

Description:

TP-08
Brick Wall running West
to East

Location:

Brooklyn, NY

Photograph taken by:

Kyle Warren

Date: 1/16/2017



Photograph: 7

Description:

TP-08
Brick wall running
perpendicular to brick
wall encountered at
eastern end of TP-07

Location:

Brooklyn, NY

Photograph taken by:

Kyle Warren

Date: 1/4/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Back Alley
Brooklyn, New York



Photograph: 8

Description:

TP-08
Brick Wall, eastern end

Location:

Brooklyn, NY

Photograph taken by:

Kyle Warren

Date: 1/16/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Back Alley
Brooklyn, New York



Photograph: 9

Description:

TP-08

Brick wall looking East

Location:

Brooklyn, NY

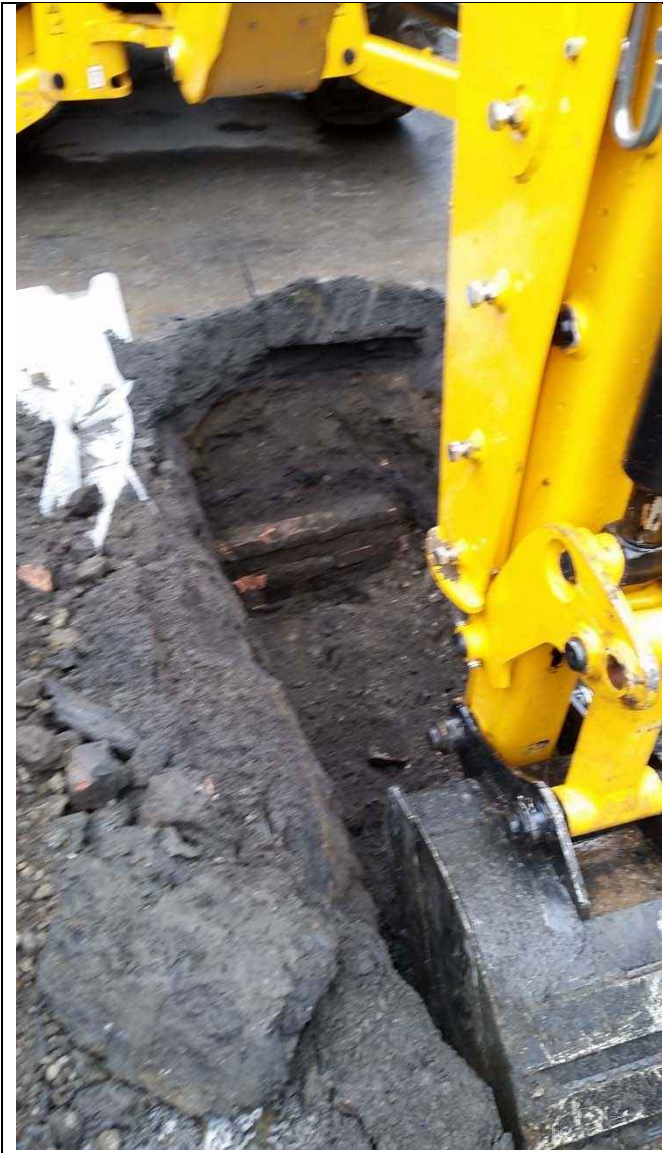
Photograph taken by:

Kyle Warren

Date: 1/16/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Back Alley
Brooklyn, New York



Photograph: 10

Description:

TP-09
Holder wall on Eastern
end

Location:

Brooklyn, NY

Photograph taken by:

Kyle Warren

Date: 1/17/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Back Alley
Brooklyn, New York



Photograph: 11

Description:

TP-09
Brick Wall on Eastern
End (right), concrete
piece in middle,
concrete stained piece
on western end (left)

Location:

Brooklyn, NY

Photograph taken by:

Kyle Warren

Date: 1/17/2017



Photograph: 12

Description:

TP-09
Concrete stained piece
on western end

Location:

Brooklyn, NY

Photograph taken by:

Kyle Warren

Date: 1/17/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Back Alley
Brooklyn, New York



Photograph: 13

Description:

TP-09
Broken piece of stained
concrete profile (black
fades to green fades to
gray)

Location:

Brooklyn, NY

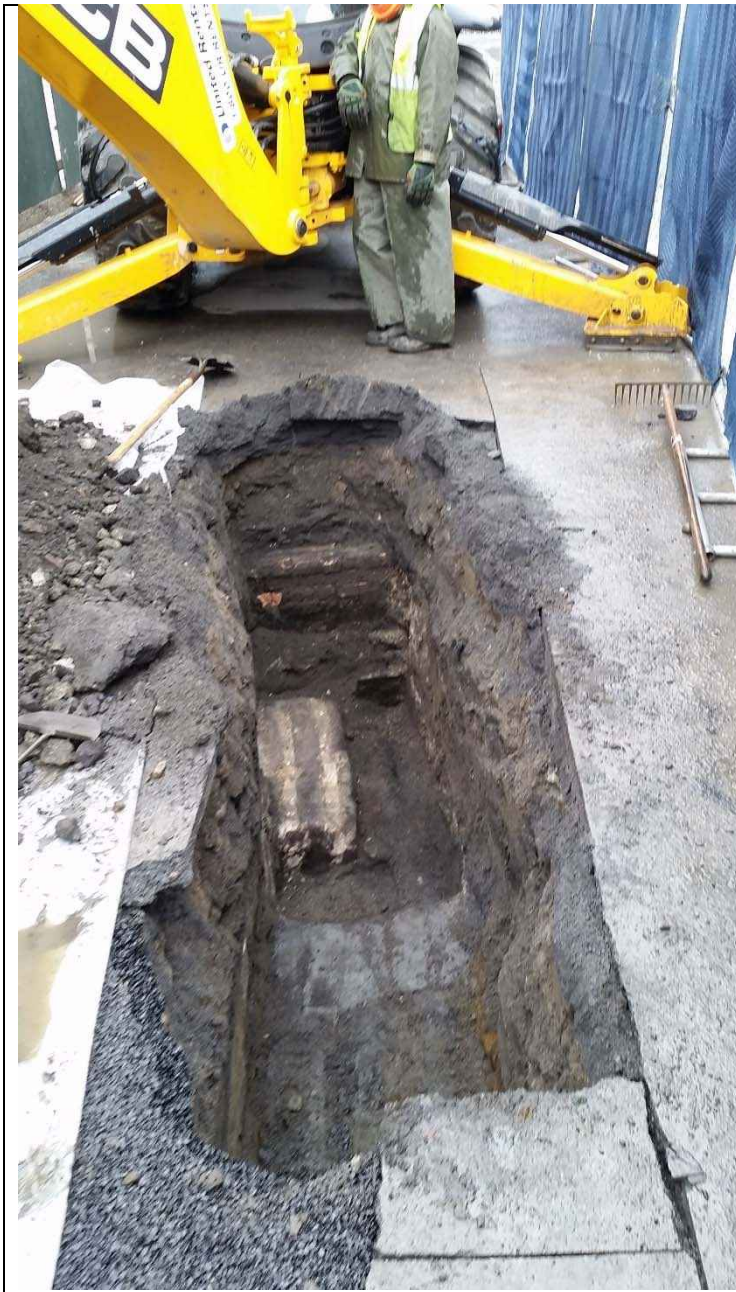
Photograph taken by:

Kyle Warren

Date: 1/17/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Back Alley
Brooklyn, New York



Photograph: 14

Description:
TP-09

Location:
Brooklyn, NY

Photograph taken by:
Kyle Warren

Date: 1/17/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Back Alley
Brooklyn, New York



Photograph: 15

Description:

TP-10
Fill Materials – heavy
brick fill area

Location:

Brooklyn, NY

Photograph taken by:

Kyle Warren

Date: 1/19/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Back Alley
Brooklyn, New York



Photograph: 16

Description:

TP-10
Concrete Stained
Foundation

Location:

Brooklyn, NY



Photograph taken by:

Kyle Warren

Date: 1/19/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Back Alley
Brooklyn, New York

	<p>Photograph: 17</p> <p>Description: TP-10 Concrete stained foundation piece on eastern and western end of TP</p> <p>Location: Brooklyn, NY</p> <p>Photograph taken by: Kyle Warren</p> <p>Date: 1/19/2017</p>
	<p>Photograph: 18</p> <p>Description: TP-10 Concrete Stained foundation piece on eastern end of TP</p> <p>Location: Brooklyn, NY</p> <p>Photograph taken by: Kyle Warren</p> <p>Date: 1/19/2017</p>

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Back Alley
Brooklyn, New York



Photograph: 19

Description:

TP-11
Concrete stained
foundation along entire
length of TP

Location:

Brooklyn, NY

Photograph taken by:

Kyle Warren

Date: 1/20/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Back Alley
Brooklyn, New York



Photograph: 20

Description:

TP-11
Concrete stained
foundation piece along
entire length of TP

Location:

Brooklyn, NY

Photograph taken by:

Kyle Warren

Date: 1/19/2017

PHOTOGRAPH LOG

National Grid
Former Dangman Park MGP Site – Back Alley
Brooklyn, New York



Photograph: 21

Description:
TP-11
Fill Materials

Location:
Brooklyn, NY

Photograph taken by:
Kyle Warren

Date: 1/19/2017



Photograph: 22

Description:
TP-11
Fill Materials

Location:
Brooklyn, NY

Photograph taken by:
Kyle Warren

Date: 1/19/2017

ATTACHMENT B

Soil Boring Logs



