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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

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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 su	rface (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

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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).

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Mr. William Wu March 3, 2017 Page 5

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 cleanup 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 previouslyproposed excavation of the Area 1) will also provide additional work space to facilitate placing a

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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 <u>katherine.vater@nationalgrid.com</u>.

Sincerely,

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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**







FIGURE

# IRM PREMOBILIZATION INVESTIGATION LOCATIONS

NATIONAL GRID FORMER DÄNGMAN PARK MGP SITE BROOKLYN, NEW YORK

APPROXIMATE SCALE IN FEET

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 NSURANCE 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) SITE CHARACTERIZATION SOIL SB-1 A BORING LOCATION (ARCADIS, 2009) SITE CHARACTERIZATION SOIL BORING/GEOPROBE SB-2 🛕 GROUNDWATER SAMPLING LOCATION (ARCADIS, 2009) SITE CHARACTERIZATION MONITORING WELL LOCATION MW-1 (ARCADIS, 2009); ABANDONED IN JUNE 2016 REMEDIAL INVESTIGATION NAPL DELINEATION SOIL BORING/ SB-7 VERTICAL AQUIFER PROFILE TEMPORARY MONITORING WELL LOCATION (ARCADIS, 2011) REMEDIAL INVESTIGATION NAPL DELINEATION SOIL BORING SB-8 🔴 LOCATION (ARCADIS, 2011 AND 2012) REMEDIAL INVESTIGATION MONITORING WELL LOCATION MW-10 🕘 (ARCADIS, 2011, 2012, AND 2013); ABANDONED IN JUNE 2016 REMEDIAL INVESTIGATION VERTICAL AQUIFER PROFILE VP-1 🌑 TEMPORARY MONITORING WELL LOCATION (ARCADIS, 2012) SUPPLEMENTAL REMEDIAL SRI-10 INVESTIGATION SOIL BORING LOCATION (ARCADIS, 2015) PROPERTY OWNER LB-10 ( DRILLED BORING (LANGAN 2015) PROPERTY OWNER CPT-5 CPT BORING (LANGAN 2015) SUPPLEMENTAL REMEDIAL INVESTIGATION TEST HOLE (ARCADIS 2016) IRM PREMOBILIZATION INVESTIGATION SOIL BORING IRM-1 🔴 LOCATION (ARCADIS, JANUARY/FEBRUARY 2017) IRM PREMOBILIZATION TP-01 INVESTIGATION TEST PIT LOCATION (ARCADIS, JANUARY 2017) APPROXIMATE EXCAVATION AREA LIMITS, AS IDENTIFIED IN THE NYSDEC-APPROVED INTERIM REMEDIAL MEASURE DESIGN WORK PLAN (ARCADIS, NOVEMBER 2016)

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### **PROPOSED STABILIZATION AREAS**

## NATIONAL GRID FORMER DANGMAN PARK MGP SITE BROOKLYN, NEW YORK

APPROXIMATE SCALE IN FEET

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) SITE CHARACTERIZATION SOIL SB-1 A BORING LOCATION (ARCADIS, 2009) SITE CHARACTERIZATION SOIL BORING/GEOPROBE SB-2 🛕 GROUNDWATER SAMPLING LOCATION (ARCADIS, 2009) SITE CHARACTERIZATION MONITORING WELL LOCATION MW-1 (ARCADIS, 2009); ABANDONED IN JUNE 2016 REMEDIAL INVESTIGATION NAPL DELINEATION SOIL BORING/ SB-7 VERTICAL AQUIFER PROFILE TEMPORARY MONITORING WELL LOCATION (ARCADIS, 2011) REMEDIAL INVESTIGATION NAPL DELINEATION SOIL BORING SB-8 🌑 LOCATION (ARCADIS, 2011 AND 2012) REMEDIAL INVESTIGATION MONITORING WELL LOCATION MW-10 🕘 (ARCADIS, 2011, 2012, AND 2013); ABANDONED IN JUNE 2016 REMEDIAL INVESTIGATION VERTICAL AQUIFER PROFILE VP-1 🌑 TEMPORARY MONITORING WELL LOCATION (ARCADIS, 2012) SUPPLEMENTAL REMEDIAL SRI-10 INVESTIGATION SOIL BORING LOCATION (ARCADIS, 2015) PROPERTY OWNER LB-10 🕕 DRILLED BORING (LANGAN 2015) PROPERTY OWNER CPT-5 CPT BORING (LANGAN 2015) SUPPLEMENTAL REMEDIAL INVESTIGATION TEST HOLE (ARCADIS 2016) IRM PREMOBILIZATION INVESTIGATION SOIL BORING IRM-1 LOCATION (ARCADIS, JANUARY/FEBRUARY 2017) IRM PREMOBILIZATION TP-01 INVESTIGATION TEST PIT LOCATION (ARCADIS, JANUARY 2017) APPROXIMATE EXCAVATION AREA LIMITS, AS IDENTIFIED IN THE NYSDEC-APPROVED INTERIM REMEDIAL MEASURE DESIGN WORK PLAN (ARCADIS, NOVEMBER 2016) PROPOSED STABILIZATION AREAS (APPROXIMATLY 10' X 10')

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### **ATTACHMENT A**

Test Pit Logs



### Former Dangman Park MGP Site Test Pit Logs

Excavation Area 1 January 2017

ARCADIS Design & Consultancy for natural and built assets		Test Pit Log		
			Test Pit ID:	TP-01
Client:	National Grid		Date/Day:	1/3/2017 - 1/4/2017
Project:	Former Dangman Par	k MGP Site	Weather:	Overcast
Location:	Brooklyn, NY		<b>Temperature:</b>	40°F
Project #:	B0036704.0002		Wind:	Slight wind
Logged By:	K. Warren		Subcontractor:	Cascade Drilling
<b>Coordinates:</b>	NA		Equipment:	JCB 3CX Eco



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.

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

ARCADIS Design & Consultancy for natural and built assets		Test Pit Log		
			<b>Test Pit ID:</b>	TP-02
Client:	National Grid		Date/Day:	1/3/2017
Project:	Former Dangman Par	k MGP Site	Weather:	Overcast
Location:	Brooklyn, NY		<b>Temperature:</b>	40°F
Project #:	B0036704.0002		Wind:	Slight wind
Logged By:	K. Warren		Subcontractor:	Cascade Drilling
<b>Coordinates:</b>			Equipment:	JCB 3CX Eco



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.

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

ARCADIS Design & Consultancy for natural and built assets		Test Pit Log		
			<b>Test Pit ID:</b>	TP-03
Client:	National Grid		Date/Day:	1/4/2017
Project:	Former Dangman Par	k MGP Site	Weather:	Overcast
Location:	Brooklyn, NY		<b>Temperature:</b>	40°F
Project #:	B0036704.0002		Wind:	Slight wind
Logged By:	K. Warren		Subcontractor:	Cascade Drilling
<b>Coordinates:</b>			<b>Equipment:</b>	JCB 3CX Eco



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.

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

ARCADIS Design & Consultancy for natural and built assets		Test Pit Log		
			<b>Test Pit ID:</b>	TP-04
Client:	National Grid		Date/Day:	1/5/2017
Project:	Former Dangman Par	k MGP Site	Weather:	Partly Cloudy
Location:	Brooklyn, NY		<b>Temperature:</b>	32°F
Project #:	B0036704.0002		Wind:	Windy
Logged By:	K. Warren		Subcontractor:	Cascade Drilling
<b>Coordinates:</b>			Equipment:	JCB 3CX Eco



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.

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

ARCADIS Design & Consultancy for natural and built assets		Test Pit Log		
			Test Pit ID:	TP-05
Client:	National Grid		Date/Day:	1/5/2017
Project:	Former Dangman Par	k MGP Site	Weather:	Partly Cloudy
Location:	Brooklyn, NY		<b>Temperature:</b>	32°F
Project #:	B0036704.0002		Wind:	Windy
Logged By:	K. Warren		Subcontractor:	Cascade Drilling
<b>Coordinates:</b>			Equipment:	JCB 3CX Eco



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.

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

ARCADIS Design & Consultancy for natural and built assets		Test Pit Log		
			<b>Test Pit ID:</b>	TP-06
Client:	National Grid		Date/Day:	1/6/2017
Project:	Former Dangman Par	k MGP Site	Weather:	Partly Cloudy
Location:	Brooklyn, NY		<b>Temperature:</b>	37°F
Project #:	B0036704.0002		Wind:	Slightly Windy
Logged By:	K. Warren		Subcontractor:	Cascade Drilling
<b>Coordinates:</b>			Equipment:	JCB 3CX Eco



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.

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



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



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





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







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



components and large

Photograph taken by:



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



	Photograph: 12
	Description:
	TP-02
	Location:
	Brooklyn, NY
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	Photograph taken by:
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	Date: 1/3/2017
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	Photograph: 13
	Description:
	TP-02
and the second sec	Location:
	Brooklyn, NY
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	Kyle Warren
	<b>Date:</b> 1/3/2017
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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























	Photograph: 23
	Description:
	TP-04
	Location:
	Brooklyn, NY
7. 6. 20. 2	Photograph taken by:
	Kyle Warren
	<b>Date:</b> 1/5/2017
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	Photograph: 24
	Description:
	TP-04
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and the second sec	Location:
	Brooklyn, NY
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A CONTRACTOR AND A CONTRACTOR	Photograph taken by:
	Kyle Warren
and the second states	Ryle Wallen
	<b>Date:</b> 1/5/2017
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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



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: 30
	Description:
	17-03
	Location:
	Brooklyn, NY
	Photograph taken by:
	Kyle Warren
	Date: 1/5/2017
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	Photograph: 37
	Description:
	TP-06
FOR 301 -	Location:
	Brooklyn NY
	Brooklyn, N
	Photograph taken by:
	Kyle Warren
	Date: 1/6/2017
	Date: 1/0/2017
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	Photograph: 39
A Contraction of the second	Description:
	TP-06
A CONTRACT OF STREET	Location:
	Brooklyn, NY
A CONTRACT OF A	Photograph taken by:
The second s	Kyle Warren
	ityle wallen
	<b>Date:</b> 1/6/2017
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	Photograph: 40
	Description:
	TP-06
	Location:
	Brooklyn, NY
	Photograph taken by: Kyle Warren
	Date: 1/6/2017
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# Former Dangman Park MGP Site Test Pit Logs

Back Alley January 2017

ARCADIS Design & Consultancy for natural and built assets		Г	<b>Cest Pit</b>	Log
			Test Pit ID:	<b>TP-07</b>
Client:	National Grid		Date/Day:	1/12/2017
Project:	Former Dangman Par	k MGP Site	Weather:	Partly Cloudy
Location:	Brooklyn, NY		<b>Temperature:</b>	60°F
Project #:	B0036704.0002		Wind:	Windy
Logged By:	K. Warren		Subcontractor:	Cascade Drilling
<b>Coordinates:</b>			<b>Equipment:</b>	JCB 3CX Eco



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.

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

		Г	<b>Cest Pit</b>	Log
	built assets	Test Pit ID: TP-08		TP-08
Client:	National Grid		Date/Day:	1/16/2017
Project:	Former Dangman Par	k MGP Site	Weather:	Scattered Clouds
Location:	Brooklyn, NY		<b>Temperature:</b>	45°F
Project #:	B0036704.0002		Wind:	Slightly Windy
Logged By:	K. Warren		Subcontractor:	Cascade Drilling
<b>Coordinates:</b>			<b>Equipment:</b>	JCB 3CX Eco



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:

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

ARCADIS Design & Consultancy for natural and built assets		Г	<b>Cest Pit</b>	Log
			<b>Test Pit ID:</b>	TP-09
Client:	National Grid		Date/Day:	1/17/2017
Project:	Former Dangman Par	k MGP Site	Weather:	Overcast
Location:	Brooklyn, NY		<b>Temperature:</b>	40°F
Project #:	B0036704.0002		Wind:	Slightly Windy
Logged By:	K. Warren		Subcontractor:	Cascade Drilling
<b>Coordinates:</b>			Equipment:	JCB 3CX Eco



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.

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

ARCADIS Design & Consultancy for natural and built assets		ſ	<b>Cest Pit</b>	Log
			<b>Test Pit ID:</b>	TP-10
Client:	National Grid		Date/Day:	1/19/2017
Project:	Former Dangman Par	k MGP Site	Weather:	Partly Cloudy
Location:	Brooklyn, NY		<b>Temperature:</b>	50°F
Project #:	B0036704.0002		Wind:	Windy
Logged By:	K. Warren		Subcontractor:	Cascade Drilling
<b>Coordinates:</b>			<b>Equipment:</b>	JCB 3CX Eco



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.

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

ARCADIS Design & Consultancy for natural and built assets			<b>Fest Pit</b>	Log
			Test Pit ID:	TP-11
Client:	National Grid		Date/Day:	1/20/2017
Project:	Former Dangman Par	k MGP Site	Weather:	Mostly Cloudy
Location:	Brooklyn, NY		<b>Temperature:</b>	45°F
Project #:	B0036704.0002		Wind:	Windy
Logged By:	K. Warren		Subcontractor:	Cascade Drilling
<b>Coordinates:</b>			Equipment:	JCB 3CX Eco



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.

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



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



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

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

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

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

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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



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



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



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





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



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



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

	Photograph: 14
	Description:
	TP-09
	Location: Brooklyn NY
Line Line	Photograph taken by:
	Kyle Warren
	Date: 1/17/2017
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National Grid Former Dangman Park MGP Site – Back Alley Brooklyn, New York




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





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





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



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





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





Boring/Well:	IRM	1-1		Project/No.:	Former Dangman P	ark MGP Site	/ B0036704	1.0002	Pag	e <u>1</u>	of	1
Site Location:	Brooklyn, NY					Drilling Started:	1	/25/2017	Drilling Completed:		1/25/2017	
Drilling Contra	actor:	Cascade D	rilling, L.P.			Driller:	Frank G	ardella	Helper:	Marsha	all Daniels	
Drilling Metho	d:	Sonic				Drilling Flu	id Used:	None				
Length and D of Coring Dev	iameter ice:	5' x 4"				Sampling	Interval:	Co	ntinuous	feet		
Land Surface	Elev.:	-		feet	Surveved	Estimated		Datum:	NGVD 29	_		
						Type of Sa	ample/		<u></u>			
Total Depth D	rilled:	2	21	Feet	Hole Diameter: 6"	Coring De	vice:	Core Barrel				
Prepared By:	Patricia Prezo	orski				Hammer Weight:	NA	pounds	Hammer Drop:	N	A inc	ches
Sample/Core	Depth					_						
(feet below lai	nd surface)	Core	PID	Blows								
		Recovery	Reading	per								
From	То	(feet)	(ppm)	6 inches	Operate o Flaticity		Sample/0	Core Description	n			
-		NIA	NIA		Concrete 0.5° thick.							
0	5				See Test Pit TP-T log	aand aana fi	llenotoriol (	ad brief, sen		1		
5	10	3.4	1.4, 0		Brown line to medium			eu brick, coric	stele, wood) 6-6	, wei,		
10	45	4	131		petroleum-like odor at	9.5, no visual	Impacts	adax 40 441.				
10	15	4	64, 10		Brown line to medium	sand, wet, per	troleum-like	odor 10-11 v	ath slight sheen			
45	20	4.0	04, 19		Duoun fine te medium		-	au al immo ata				
15	20	4.2	8.1, 2.4		Brown line to medium	sand, wet, no	odor, no vi	sual impacts				
20	21	1	2.1, 1.0		Brown find to modium	aand wat alia		m like odor o	light aboon at 20	2 5'		
20	21	1	04, 40		End of boring at 21'	sanu, wet, siig	gni petroleu		light sheen at 20	).5		
		-			End of boring at 21.							
	1	1										
	1	1										
	1	1										
	1	1										
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Site control in our interview of the second sec	Boring/Well:	IRM-2			Project/No.:	Former Dangman P	ark MGP Site /	B0036704	1.0002	Page	e <u>1</u> of <u>1</u>
Drilling Contraction Gascade Drilling, LP. Drilling, Field Qascie, Yong Height Mathamide Marshall Daniels   Drilling Windt Samit Samit Samity	Site Location:	Brooklyn, NY					Drilling Started:	1	/26/2017	Drilling Completed:	1/26/2017
Dniling Hathic:     Sonic     Dniling Fuld Use:     Nove       Longin and Jameter     6 X 4"     Sampling Intervit:     Continuous     ref       Continuous     5 X 4"     Sampling Intervit:     Navyo 2     Navyo 2       Total Depth Direct:     2 X     Feet     Barnare     Type of Sample's     Navyo 2       Total Depth Direct:     2 X     Feet     Head Diameter     Continuous     ref       Sampler	Drilling Contra	actor:	Cascade Dr	illing, L.P.			Driller:	Frank G	ardella	Helper:	Marshall Daniels
Langh and Damese     y     y     Samping Interval:     Continuous     feet       and Surface Dervice	Drilling Metho	d:	Sonic				Drilling Flui	d Used:	None		
Land Surface     Eve:	Length and D of Coring Dev	iameter rice:	5' x 4"				Sampling Ir	nterval:	Cor	tinuous	feet
Image: Control Depice     Core Barrel       Propared By: Patricia Preserve     21     Feet     Hole Diameter: 6*     Coring Device: Core Barrel       Sample/Core Description     Propared By: Patricia Preserve     NA _ nounds     Drop:	Land Surface	Elev.:			feet	Surveyed	Estimated		Datum:	NGVD 29	_
Total Depth Drilled:   21   Feet   Hole Diameter:   6'   Coring Device:   Core Barrel     Prepared By:   Patricle Prezord:   NA   pounds   Drop:   NA   inchest     Sample/Core Description   Core   Peg   Bows   Sample/Core Description   NA   inchest     from   To   Core   Peg   Bows   Sample/Core Description   NA   inchest     0   5   NA   0.4   Concrete 0.5'thick. Hand cleared to 5'.   Sample/Core Description     0   5.0   NA   0.4   Bown fine to coases sand, some smalt olarge pebbles, some fill material (red brick, wood debris, sod op 11-12', finer sand at 14.5', wett     1   1.0   2.9   7.2.5   Bown fine to medium sand, sown silty day lense 6.5-7.5' with dor, petroleum-like odor 9-10', wett     1   1.0   2.9   7.2.5   Bown fine to medium sand, sown, and tabris at 11.5', petroleum-like odor 11-12', finer sand at 14.5', wett     1   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0   1.0					-		Type of Sar	mple/			
Paymente is patrice preserves     Nome     Hammen is more     Hammen is more     Hammen is more     Main pounds     Drops     No     No     Index       Sample/Core     Recovery     Redow     Servery     Redow     Servery     <	Total Depth D	rilled:	2	1	Feet	Hole Diameter: 6"	Coring Dev	ice:	Core Barrel		
Sample/Core bescription     Core of point     Blows of per section       From     To     (fee)     (ppm)     6 inclex     Sample/Core Description       1     To     (fee)     (ppm)     6 inclex     Sample/Core Description       0     5     NA     0.4     Concrete 0.5' thick. Hand cleared 0.5'.       0     5     NA     0.4     Sag material, coal), wet       1     1     2.2     1     Sag material, coal), wet       1     1     2.3     7.25     Sag material, coal), wet       1     1     2.2     1     None fine to medium sand, brown silty clay lense 6.5-7.5' with odor, petroleum-like odor 9-0', wet       1     1     2.2     1     None fine to medium sand, brown silty clay lense 6.5-7.5' with odor, petroleum-like odor 9-0', wet       1     1     7.5     Inon visual impacts     None fine to medium sand, metal debris at 11.5', petroleum-like odor 11-12', finer sand at 14.5', wet,       1     1     52     1     Brown fine to medium sand, wet, no odor, no visual impacts       1     1     52     1     Brown fine to medium sand, wet, slight petroleum-like odor, sli	Prepared By:	Patricia Prezo	orski				Hammer Weight:	NA	pounds	Hammer Drop:	NA inches
(fiete)Core (pm)PD 6Biose Sample/Core DescriptionFomTo(refer)66Sample/Core Description111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111 <td>Sample/Core</td> <td>Depth</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Sample/Core	Depth									
FromTo(refev)(pm)6 incheSample/Core Description0110Concrete 05' thick. Hand cleared to 5'.0121Brown fine to coarse sand, some small to large pebbles, some fill material (red brick, wood debris,012.97, 2.5IBrown fine to coarse sand, some small to large pebbles, some fill material (red brick, wood debris,51002.97, 2.5IBrown fine to medium sand, brown silly clay lense 6.5-7.5' with odor, petroleum-like odor 9-10', wet10154.32.3, 24Brown fine to medium sand, metal debris at 11.5', petroleum-like odor 11-12', finer sand at 14.5', wet10154.32.3, 24Brown fine to medium sand, metal debris at 11.5', petroleum-like odor 11-12', finer sand at 14.5', wet10154.32.3, 24Brown fine to medium sand, wet, no odor, no visual impacts10154.32.3, 24Imom fine to medium sand, wet, no odor, no visual impacts110152.6Imom fine to medium sand, wet, no odor, no visual impacts1201211452Imod form fine to medium sand, wet, slight petroleum-like odor, slight sheen1201211452Imod form fine to medium sand, wet, slight petroleum-like odor, slight sheen12112112124Imod form fine to medium sand, wet, slight petroleum-like odor, slight sheen1201211452Imod form fine to medium sand, wet, slight petroleum-like odor, slight sheen121121124Imod form fine to	(feet below lar	nd surface)	Core	PID	Blows						
Indication     Open of the base of the bas	From	То	Recovery	Reading	per 6 inchos			Sample/(	ore Descriptio	n	
0     5     NA     0.4     Brown fine to coarse sand, some small to large pebbles, some fill material (red brick, wood debris, slag material, coal), wet       5     10     2.9     7.25     Brown fine to medium sand, brown silty clay lense 6.5-7.5' with odor, petroleum-like odor 9-10', wet       10     2.9     7.252     Brown fine to medium sand, brown silty clay lense 6.5-7.5' with odor, petroleum-like odor 9-10', wet       10     15     4.3     23,24     Brown fine to medium sand, brown silty clay lense 6.5-7.5' with odor, petroleum-like odor 9-10', wet       10     15     4.3     23,24     Brown fine to medium sand, brown silty clay lense 6.5-7.5' with odor, petroleum-like odor 9-10', wet       10     15     4.3     23,24     Brown fine to medium sand, brown silty clay lense 6.5-7.5' with odor, petroleum-like odor 11-12', finer sand at 14.5', wet, mo visual impacts       10     15.3     20.3     4.3     23,24     Brown fine to medium sand, wet, and other no visual impacts       11     52.5     16     Brown fine to medium sand, wet, slight petroleum-like odor, slight sheen     Ear (10000)       12     1     52     Brown fine to medium sand, wet, slight petroleum-like odor, slight sheen     Ear (10000)       13     1     52 <t< td=""><td>FIOIII</td><td>10</td><td>(ieel)</td><td>(ppm)</td><td>6 Inches</td><td>Concrete 0.5' thick. Ha</td><td>and cleared to 5</td><td>Sample/</td><td></td><td>11</td><td></td></t<>	FIOIII	10	(ieel)	(ppm)	6 Inches	Concrete 0.5' thick. Ha	and cleared to 5	Sample/		11	
Image: Constraint of the stage material, coal), wet     stage material, coal), wet       5     10     2.9     7, 2.5     Brown fine to medium sand, brown silty clay lense $6.5 \cdot 7.5'$ with odor, petroleum-like odor 9-10', wet       1     7     22, 16     7       1     7     72.52     10       10     15     4.3     23, 24     Brown fine to medium sand, metal debris at 11.5', petroleum-like odor 11-12', finer sand at 14.5', wet,       10     15     4.3     23, 24     Brown fine to medium sand, metal debris at 11.5', petroleum-like odor 11-12', finer sand at 14.5', wet,       10     15     4.3     23, 24     Brown fine to medium sand, wet, no odor, no visual impacts       110     12     28, 6, 15     10     Interview file       111     52     Brown fine to medium sand, wet, no odor, no visual impacts     Interview file       111     52     Brown fine to medium sand, wet, slight petroleum-like odor, slight sheen     Interview file       111     52     Brown fine to medium sand, wet, slight petroleum-like odor, slight sheen     Interview file       111     52     Brown fine to medium sand, wet, slight petroleum-like odor, slight sheen     Interview file	0	5	NA	0.4		Brown fine to coarse s	and, some sma	all to large	pebbles, some	fill material (re	d brick, wood debris,
5     10     2.9     7.2.5     Brown fine to medium sand, brown silty clay lense $6.57.5$ with odor, petroleum-like odor 9-10', wet       10     11     22, 16     Provide the time of the time of ti				•••		slag material, coal), w	et		F,		,
Image: Constraint of the state of	5	10	2.9	7. 2.5		Brown fine to medium	sand. brown sil	ltv clav len	se 6.5-7.5' with	odor. petroleu	m-like odor 9-10', wet
Image: space of the space of	-	-		22, 16						,	
10154.323,24Brown fine to medium sand, metal debris at 11.5', petroleum-like odor 11.12', finer sand at 14.5', wet, no visual impacts111128.6, 15Interview of the transmitter of tr				72-52							
Image: section of the section of th	10	15	4.3	23, 24		Brown fine to medium	sand, metal de	bris at 11.	5', petroleum-li	ke odor 11-12',	finer sand at 14.5', wet,
Image: space of the system o				71, 50		no visual impacts					
15204.252, 65Brown fine to medium sand, wet, no odor, no visual impacts1118.4, 6.6112.112.112021152Brown fine to medium sand, wet, slight petroleum-like odor, slight sheen2021152Brown fine to medium sand, wet, slight petroleum-like odor, slight sheen2021152Brown fine to medium sand, wet, slight petroleum-like odor, slight sheen2021152Brown fine to medium sand, wet, slight petroleum-like odor, slight sheen2021152Brown fine to medium sand, wet, slight petroleum-like odor, slight sheen2021152Brown fine to medium sand, wet, slight petroleum-like odor, slight sheen2021152Brown fine to medium sand, wet, slight petroleum-like odor, slight sheen2021152Brown fine to medium sand, wet, slight petroleum-like odor, slight sheen20211152Brown fine to medium sand, wet, slight petroleum-like odor, slight sheen21111112111112211112311112411112511112611112711112811129111<				28.6, 15							
Image: section of the section of th	15	20	4.2	52, 65		Brown fine to medium	sand, wet, no c	odor, no vi	sual impacts		
Image: system of the system				18.4, 6.6							
20   21   1   52   Brown fine to medium sand, wet, slight petroleum-like odor, slight sheen     1   1   1   1   End of boring at 21'.     1   1   1   1   1     1   1   1   1   1     1   1   1   1   1     1   1   1   1   1     1   1   1   1   1     1   1   1   1   1     1   1   1   1   1     1   1   1   1   1   1     1   1   1   1   1   1     1   1   1   1   1   1     1   1   1   1   1   1     1   1   1   1   1   1     1   1   1   1   1   1     1   1   1   1   1   1     1   1   1   1   1   1     1				2.1							
Image: series of boring at 21'.Image: series of bori	20	21	1	52		Brown fine to medium	sand, wet, sligh	nt petroleu	m-like odor, sli	ght sheen	
InterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationInterpretationIn						End of boring at 21'.					
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Boring/Well:	IRI	M-3	-	Project/No.:	Former Dangman P	ark MGP Site /	/ B0036704	.0002	Pag	e <u>1</u>	of	1
Site Location:	Brooklyn, NY					Drilling Started:	1	/27/2017	Drilling Completed:		1/27/20 <sup>-</sup>	17
Drilling Contra	actor:	Cascade D	rilling, L.P.			Driller:	Frank G	ardella	Helper:	Marsha	all Danie	∍ls
Drilling Metho	d:	Sonic				Drilling Flui	id Used:	None				
Length and D of Coring Dev	iameter rice:	5' x 4"				Sampling I	nterval:	Co	ntinuous	feet		
Land Surface	Elev.:			feet	Surveyed	Estimated		Datum:	NGVD 29	_		
				•		Type of Sa	ample/					
Total Depth D	vrilled:	1	17	Feet	Hole Diameter: 6"	Coring Dev	vice:	Core Barre				
Prepared By:	Patricia Prez	orski				Hammer Weight:	NA	pounds	Hammer Drop:	N	IA i	inches
Sample/Core	Depth											
(feet below la	nd surface)	Core	PID	Blows								
<b>F</b>	т.	Recovery	Reading	per			Comple/(	ana Dagarinti				
From	10	(reet)	(ppm)	6 Inches	Concrete 0.5' thick Ha	and cleared to	Sample/C	ore Description	on			
0	5	NA	0.6		Brown fine to coarse s	and some sm	all to large	nehhles som	e fill material (re	d brick (	concrete	
	<u> </u>	TV/	0.0		wood) moist		an to large					.,
5	10	5	0.2		(5-7.5') Brown fine to a	coarse sand si	mall to larg	e nehhles hri	ck debris wet r	no odor		
	10		32		(7 5-10') Brown-gray s	ilty sand little	small to me	dium pebbles	trace large per	obles		
					wood and red brick de	bris, little grav-	blue chips.	wet, naphtha	lene-like odor			
10	15	3.9	1.4. 2.2		Brown fine to medium	sand, some fill	I material (r	netal, red brid	k) 10-11.5'. wet	. no visu	al impac	ts.
			3.6. 0.9		slight odor			,	.,,			
			36		3							
15	17	2.8	4.1, 12		Brown silty fine to mee	lium sand, trac	e cobbles,	black wood d	ebris 16-16.5', v	vet,		
			31, 62		concrete fragments 16	5.5-17'; Driller in	ndicated ha	ard object enc	ountered at 17'			
			300-500		Note: PID reading at b	ottom of soil co	ore may be	associated w	ith wood debris			
					End of boring at 17'.							
	ļ											
1	1	1		1	1							



Site   During   During   During   During   During   During   During   Complete:   1/26/2017   Complete:   1/26/2017     Drilling Controctor:   Sanci   Started'   National and lameler   Orilling Nuthed:   Sonic   Marshall Daineles     Orilling Method:   Sonic   Six 4"   Drilling fluid Used:   None   Feet     Land Surface Elev:	Boring/Well:	IRM-4		<u>.</u>	Project/No.:	Former Dangman P	ark MGP Site	/ B0036704	.0002	Pag	e <u>1</u>	of	1
Drilling Contractor:     Cascade Drilling, L.P.     Driller:     Fark Gardella     Helper:     Marshall Daniels       Drilling Mukhod:     Sonic     Drilling Fluid Used:     None     Image: Sonic	Site Location:	Brooklyn, NY					Drilling Started:	1	/26/2017	Drilling Completed:		1/26/201	17
Dnilling Method:   Sonic   Dnilling Fluid Used:   None     Length and Diameter of Coring Device: $5' \times 4'$ Sampling Interval:   Continuous   feet     Lang Surface Elev:	Drilling Contra	ictor:	Cascade D	rilling, L.P.			Driller:	Frank G	ardella	Helper:	Marsh	all Danie	∍ls
Sampling Intervat:   Continuous   feet     Sampling Intervat:   Continuous   feet     Sampling Intervat:   Maintervat:   Notice Intervat:   Notice Intervat: <td>Drilling Metho</td> <td>d:</td> <td>Sonic</td> <td></td> <td></td> <td></td> <td>Drilling Flu</td> <td>id Used:</td> <td>None</td> <td></td> <td></td> <td></td> <td></td>	Drilling Metho	d:	Sonic				Drilling Flu	id Used:	None				
Land Surface Elev::	Length and Di of Coring Dev	iameter ice:	5' x 4"				Sampling I	nterval:	Co	ntinuous	feet		
Total Depth Drilled:   21   Feet   Hole Diameter: $6^{+}$ Type of Sample/ Coring Device:   Core Barrel     Prepared By:   Patricia Prezorski   Hammer   Hammer   Hammer   Hammer     Sample/Core Depth   Recovery   Reading   per   NA   pounds   Drop:   NA   inches     Sample/Core Depth   (feet)   (ppm)   6 inches   Sample/Core Description <td>Land Surface</td> <td>Elev.:</td> <td></td> <td></td> <td>feet</td> <td>Surveyed</td> <td>Estimated</td> <td></td> <td>Datum:</td> <td>NGVD 29</td> <td>_</td> <td></td> <td></td>	Land Surface	Elev.:			feet	Surveyed	Estimated		Datum:	NGVD 29	_		
Total Depth Drilled:   21   Feet   Hole Diameter: $6^{\circ}$ Coring Device:   Core Barrel     Prepared By:   Petricia Prezorski   Hammer   Hammer   Hammer   NA   inches     Sample/Core Depth   Core   PID   Blows   Sample/Core Description   NA   inches     From   To   (feet)   (ppm)   6 inches   Sample/Core Description      6   O   5   NA   0.6   Dark brown fine to coarse and, some small to large pebbles, some fill material (red brick, concrete, wood), moist     5   10   3.5   5.1, 9.1   Dark brown fine to medium sand, some sill, petroleum-like odor 10.11.5',     10   15   4.3   264, 30   Brown fine to medium sand, some sill, petroleum-like odor 10.11.5',     10   15   4.3   264, 30   Brown fine to medium sand, some sill, petroleum-like odor at 15', no visual impacts     11   15   2.0   4.4   50, 2.2   Brown fine to medium sand, singht petroleum-like odor at 15', no visual impacts     12   2   2.1   1   18.5, 78   Brown fine to medium sand, slight petroleum-like odor 20.5-21' with slight sheen     20   21					-		Type of Sa	ample/					
Hammer   Hammer   Hammer     Vergard By:   NA   pounds   Drop:   NA   inches     Sample/Core Dept/ (feet below land surface)   Core   PID   Blows   per     From   To   (feet)   (ppm)   6   inches     Sample/Core Description   inches   Sample/Core Description   Inches     0   5   NA   0.6   Dark brown fine to coarse sand, some small to large pebbles, some fill material (red brick, concrete.     0   5   5.1, 9.1   Dark brown film to coarse sand, some small to large pebbles, some fill material (red brick, concrete.     10   15   5.1, 9.1   Dark brown film to coarse sand, some small to large pebbles, some fill material (red brick, concrete.     10   15   5.1, 9.1   Dark brown film to coarse sand, some silt, petroleum-like odor 1.5.1.5.1     10   15   4.3   26.4.30   Brown fine to medium sand, some silt, petroleum-like odor 1.1.1.5.7     11   15.8   2.0   1.4   1.4   1.4     12   2.1   1.4   1.4   1.4     13   2.0   2.1.7.4   Inche order 1.5.20', petroleum-like odor 20.5-21' with slight sheen	Total Depth D	rilled:	2	21	Feet	Hole Diameter: 6"	Coring Dev	vice:	Core Barrel				
Sample/Core Deptive       (feet below land surface)     Core Recovery (ppm)     PID 6 inches     Sample/Core Description       Image: Core Deptive     To     (feet)     (ppm)     6 inches     Sample/Core Description       Image: Core Deptive     To     (feet)     (ppm)     6 inches     Sample/Core Description       Image: Core Deptive     To     (feet)     (ppm)     6 inches     Sample/Core Description       Image: Core Deptive     To     (feet)     (ppm)     6 inches     Sample/Core Description       Image: Core Deptive     To     Core To Core Deptive     Sample/Core Description       Image: Core Deptive     To     Dark brown file to coarse sand, some small to large pebbles, some fill material (red brick, concrete, core sand, some small to large pebbles, some fill material (red brick, concrete, core sand, some small to large pebbles, some fill material (red brick, concrete, core sand, some small to large pebbles, some fill material (red brick, concrete, core sand, some small to large pebbles, some fill material (red brick, concrete, core sand, some small to large pebbles, some fill material (red brick, concrete, core sand, some small to large pebbles, some fill material (red brick, concrete, core sand, some small to large pebbles, some fill material (red brick, concrete, core sand, some small to large pebbles, to core sand, some small to large pebbles, to core sand, some small to large pebbles, to core sand, some	Prepared By:	Patricia Prezo	orski				Hammer Weight:	NA	pounds	Hammer Drop:	<u> </u>	IA i	inches
Ifeed below land surface)     Core Recovery     PID Reading per 6 inches     Sample/Core Sample/Core Description       From     To     (leet)     6 inches     Sample/Core Description       0     5     NA     0.6     Dark brown fine to coarse sand, some small to large pebbles, some fill material (red brick, concrete, wood), moist       5     100     3.5     5.1, 9.1     Dark brown fill material, brown clay layer at 7', wet, black stained silty fine to medium sand 8.5-10'       6     27.1, 49.5     with petroleum-like odor       10     15     4.3     26.4, 30     Brown fine to medium sand, some silt, petroleum-like odor 10-11.5',       10     15     4.3     26.4, 30     Brown fine to medium sand, some silt, petroleum-like odor 10-11.5',       10     15     4.3     26.4, 30     Brown fine to medium sand, some silt, petroleum-like odor 10-11.5',       11     15.2     14.8     Brown fine to medium sand, some sint, petroleum-like odor at 15', no visual impacts       12     2.0     4.4     50, 2.2     Brown fine to medium sand, slight petroleum-like odor 20.5-21' with slight sheen       14     14.8     End of boring at 21'.     End of boring at 21'.       14 <td< td=""><td>Sample/Core</td><td>Depth</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	Sample/Core	Depth											
Recovery     Reading per (ppm)     From     To     (feet)     (ppm)     6 inches     Sample/Core Description       0     5     NA     0.6     Concrete 0.5' thick. Hand cleared to 5'.       0     5     NA     0.6     Dark brown fine to coarse sand, some small to large pebbles, some fill material (red brick, concrete, wood), moist       5     10     3.5     5.1, 9.1     Dark brown fill material, brown clay layer at 7', wet, black stained silty fine to medium sand 8.5-10'       10     3.5     5.1, 9.1     Dark brown fill material, brown clay layer at 7', wet, black stained silty fine to medium sand 8.5-10'       10     1.5     5.1, 9.1     Dark brown fill material, brown clay layer at 7', wet, black stained silty fine to medium sand 8.5-10'       10     1.5     2.0     6.8.7     medium sand, some silt, petroleum-like odor 10-11.5',       10     1.5     2.0     4.4     50, 2.2     Brown fine to medium sand, fine sand 18.5-20', petroleum-like odor at 15', no visual impacts       15     2.0     4.4     50, 2.2     Brown fine to medium sand, fine sand 18.5-20', petroleum-like odor 20.5-21' with slight sheen       20     2.1     1     18.57     Brown fine to medium sand, slight petroleum-like odo	(feet below lar	nd surface)	Core	PID	Blows								
Initial     Initial     Concrete 0.5' thick. Hand cleared to 5'.       0     5     NA     0.6     Dark brown fine to coarse sand, some small to large pebbles, some fill material (red brick, concrete, wood), moist       5     10     3.5     5.1, 9.1     Dark brown fill material, brown clay layer at 7', wet, black stained silly fine to medium sand 8.5-10'       6     27.1, 49.5     with petroleum-like odor       7     68.7     10       10     15     4.3     264, 30       10     15     4.3     264, 30       10     15     4.3     264, 30       10     15     4.3     264, 30       10     15     4.3     264, 30       10     15     4.3     264, 30       10     15     5.5, 9.1     10       15     20     4.4     50, 2.2     Brown fine to medium sand, fine sand 18.5-20', petroleum-like odor at 15', no visual impacts       16     2     2, 17.4     14.8     14.8       20     21     1     18.5, 78     Brown fine to medium sand, slight petroleum-like odor 20.5-21' with slight sheen <	From	То	Recovery	Reading	per 6 inchos			Sample/(	ore Description	n			
0     5     NA     0.6     Dark brown fine to coarse sand, some small to large pebbles, some fill material (red brick, concrete, wood), moist       5     10     3.5     5.1, 9.1     Dark brown fill material, brown clay layer at 7', wet, black stained silty fine to medium sand 8.5-10'       10     3.5     5.1, 9.1     Dark brown fill material, brown clay layer at 7', wet, black stained silty fine to medium sand 8.5-10'       10     15     4.3     26.4, 30     Brown fine to medium sand, some silt, petroleum-like odor 10-11.5',       10     15     4.3     26.4, 30     Brown fine to medium sand, some silt, petroleum-like odor 12-15'       11     5.5, 9.1     Ender the medium sand, fine sand 18.5-20', petroleum-like odor at 15', no visual impacts       15     20     4.4     50, 2.2     Brown fine to medium sand, fine sand 18.5-20', petroleum-like odor at 15', no visual impacts       16     2     14.8     End of boring at 21'.       17     18.5, 78     Brown fine to medium sand, slight petroleum-like odor 20.5-21' with slight sheen       16     1     End of boring at 21'.       17     1     18.5, 78     Brown fine to medium sand, slight petroleum-like odor 20.5-21' with slight sheen       16     1     <	TIOIII	10	(1661)	(ppin)	0 Inches	Concrete 0.5' thick. Ha	and cleared to	5'.					
Image: Second	0	5	NA	0.6		Dark brown fine to coa	arse sand, som	e small to l	arge pebbles,	some fill materi	ial (red b	rick, cor	ncrete,
5     10     3.5     5.1, 9.1     Dark brown fill material, brown clay layer at 7', wet, black stained silty fine to medium sand 8.5-10'       6     27.1, 49.5     with petroleum-like odor       10     15     4.3     26.4, 30     Brown fine to medium sand, some silt, petroleum-like odor 10-11.5',       10     15     4.3     26.4, 30     Brown fine to medium sand, some silt, petroleum-like odor 10-11.5',       10     15     4.3     26.4, 30     Brown fine to medium sand, some silt, petroleum-like odor 10-11.5',       10     15     4.3     26.4, 30     Brown fine to medium sand, some silt, petroleum-like odor 11.5-12', no odor 12-15'       11     5.5, 9.1     Endor fine to medium sand, fine sand 18.5-20', petroleum-like odor at 15', no visual impacts       12     20     4.4     50, 2.2     Brown fine to medium sand, slight petroleum-like odor 20.5-21' with slight sheen       13     20     21     1     18.5, 78     Brown fine to medium sand, slight petroleum-like odor 20.5-21' with slight sheen       14     End of boring at 21'.     End of boring at 21'.     End of boring at 21'.       14     14     14     14     14       14     14	-					wood), moist							
Image: Constraint of the second sec	5	10	3.5	5.1, 9.1		Dark brown fill materia	II, brown clay la	aver at 7', v	vet, black stair	ed silty fine to r	nedium :	sand 8.5	5-10'
Image: Marking Constraints     Image: Constraints <th< td=""><td></td><td></td><td></td><td>27.1, 49.5</td><td></td><td>with petroleum-like od</td><td>or</td><td></td><td>,</td><td>,</td><td></td><td></td><td></td></th<>				27.1, 49.5		with petroleum-like od	or		,	,			
10   15   4.3   26.4, 30   Brown fine to medium sand, some silt, petroleum-like odor 10-11.5',     1   51, 82   slight petroleum-like odor 11.5-12', no odor 12-15'     15   20   4.4   50, 2.2   Brown fine to medium sand, fine sand 18.5-20', petroleum-like odor at 15', no visual impacts     15   20   4.4   50, 2.2   Brown fine to medium sand, fine sand 18.5-20', petroleum-like odor at 15', no visual impacts     16   2, 17.4   14.8   14.8     20   21   1   18.5, 78   Brown fine to medium sand, slight petroleum-like odor 20.5-21' with slight sheen     20   21   1   18.5, 78   Brown fine to medium sand, slight petroleum-like odor 20.5-21' with slight sheen     20   21   1   18.5, 78   Brown fine to medium sand, slight petroleum-like odor 20.5-21' with slight sheen     20   21   1   18.5, 78   Brown fine to medium sand, slight petroleum-like odor 20.5-21' with slight sheen     21   1   18.5, 78   End of boring at 21'.     22   2   2   1   1     23   24   24   24   24     24   24   24   24   24				68.7									
Image: Mark Stress of S	10	15	4.3	26.4, 30		Brown fine to medium	sand, some si	lt, petroleu	m-like odor 10	-11.5',			
Image: Mark State     5.5, 9.1     Image: Mark State				51, 82		slight petroleum-like o	dor 11.5-12', n	o odor 12-1	5'				
15   20   4.4   50, 2.2   Brown fine to medium sand, fine sand 18.5-20', petroleum-like odor at 15', no visual impacts     1   2, 17.4   1     1   14.8   14.8     20   21   1   18.5, 78     Brown fine to medium sand, slight petroleum-like odor 20.5-21' with slight sheen   End of boring at 21'.     1   1   1   1     1   1   1   1     1   1   1   1     1   1   1   1     1   1   1   1     1   1   1   1     1   1   1   1     1   1   1   1     1   1   1   1     1   1   1   1     1   1   1   1   1     1   1   1   1   1     1   1   1   1   1   1     1   1   1   1   1   1   1     1   1   1   1   1 <td></td> <td></td> <td></td> <td>5.5, 9.1</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>				5.5, 9.1									
Image: Marking State     2, 17.4     Image: Marking State       20     21     1     14.8     Brown fine to medium sand, slight petroleum-like odor 20.5-21' with slight sheen       20     21     1     18.5, 78     Brown fine to medium sand, slight petroleum-like odor 20.5-21' with slight sheen       20     21     1     18.5, 78     Brown fine to medium sand, slight petroleum-like odor 20.5-21' with slight sheen       20     21     1     18.5, 78     End of boring at 21'.       20     21     1     1.5     Find of boring at 21'.       20     21     1     21     21       21     21     21     21     21       21     21     21     21     21       21     21     21     21     21       21     21     21     21     21       21     21     21     21     21       21     21     21     21     21       21     21     21     21     21       21     21     21     21	15	20	4.4	50, 2.2		Brown fine to medium	sand, fine san	d 18.5-20',	petroleum-like	e odor at 15', no	visual ir	npacts	
Image: Marking Series (Marking Series (				2, 17.4									
20   21   1   18.5, 78   Brown fine to medium sand, slight petroleum-like odor 20.5-21' with slight sheen     Image: Strain Str				14.8									
Image: Marking Series (Marking Series (	20	21	1	18.5, 78		Brown fine to medium	sand, slight pe	etroleum-lik	e odor 20.5-2'	1' with slight she	en		
Image: Marking Series						End of boring at 21'.							
Image: Market State													
Image:													
Image: Constraint of the second sec													
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Boring/Well:	IF	RM-5		Project/No.:	Former Dangman F	Park MGP Site	/ B0036704	.0002	Pag	e <u>1</u>	of <u>1</u>
Site Location:	Brooklyn, N	Y				Drilling Started:	1,	26/2017	Drilling Completed:	1/2	7/2017
Drilling Contra	ctor:	Cascade D	rilling, L.P.			Driller:	Frank Ga	ardella	Helper:	Marshall I	Daniels
Drilling Method	d:	Sonic				Drilling Flu	id Used:	None			
Length and Dia	ameter	5' x 4"				Sampling I	Interval <sup>.</sup>	Co	ntinuous	feet	
Land Surface	Elev ·	0 1 1		feet	Surveyed	Estimated	intorvai.	Datum:		_1001	
							omplo/	Datum.	NOVD 25		
Total Depth D	rilled:	3	80	Feet	Hole Diameter: 6"	Coring Dev	vice:	Core Barrel			
Prepared By:	Patricia Pre	zorski				Hammer Weight:	NA	pounds	Hammer Drop:	NA	inches
Sample/Core [	Depth										
(feet below lan	d surface)	Core	PID	Blows							
_	-	Recovery	Reading	per			0 1- /0	Description			
From	10	(feet)	(ppm)	6 inches	Concrete 0.5' thick		Sample/C	ore Description	on		
0	5	ΝΔ	ΝΔ		See Test Pit TP-6 log						
5	10	1.8	0.4-0.5		Brown fine to medium	. sand little fill r	material (re	h brick wood	cobbles concr	oto) wot	
5	10	4.0	0.4 0.0		no visual impacts no	odor	material (rec			cic), wci,	
10	15	5	4.6		Brown silty fine to me	dium sand wet	t slight netr	oleum-like odr	or		
10	10	5	38 154		red brick and wood fra	adments at $14'$	t, siigin peti		<i></i> ,		
15	20	42	72 4 4		Brown fine to medium	sand wet net	troleum-like	odor 15-16'			
	20	1.2	12.3.82		NAPI, blebs and coati	ng 19 5-20' wit	h naphthale	ne-like odor			
			134								
20	21	1	35		Brown fine to medium	sand. wet. no	visual impa	cts. slight peti	roleum-like odo	r	
21	25	4			Fine to medium sand.	wet, stained, o	odor	,- <b>3</b> -			
					(24-25') NAPL blebs,	sheen, naphtha	alene-like o	lor			
25	30	5			(25-29') Fine to mediu	um sand, wet, N	NAPL stainii	ng/coating, sh	een, naphthalei	ne-like odor	
					(29-30') Silty sand, no	visual impacts	s, no odor	0 0			
					End of boring at 30'.						



Sine model with the second of the second	Boring/Well: IRM-6				Project/No.:	Former Dangman F	Park MGP Site	/ B003670	4.0002	Pag	e <u>1</u>	of <u>1</u>
Drilling Contractor: Gencess Drilling, LP. Driller, Frank Gardella Heiper: Marshall Daniels   Drilling Natur Legenda Sonic <	Site Location:	Brooklyn, NY					Drilling Started:		1/25/2017	Drilling Completed:	1/2	25/2017
Dniling Heather:     Sanic     Dniling Fuel User:     None       Langt and Dameter:     6'X.4'     Samplen [Interval:     Continuous     ret       Continuo Elev:     -     ret     Samplen [Interval:     Outrinuous     ret       Total Depth Dilec:     2'X     Feet     Hole Diameter:     6'Y     Continuous     ret       Total Depth Dilec:     2'X     Feet     Hole Diameter:     6'Y     Continuous     ret       SampleCore Depth     Recover     Recover     Pend     for     Manner     Manner       Gree tobe/ Marcel     Gree Over     Recover     Pend     for     SampleCore Description       Gree tobe/ Marcel     Gree Over     Recover     Pend     for     SampleCore Description       Gree tobe/ Marcel     Gree Over     Recover     Pend     for     SampleCore Description       Gree tobe/ Marcel     Gree Over     Recover     Pend     for     SampleCore Description       Gree tobe/ Marcel     Gree Over     Recover     Pend     for     Sampore free tocores sand, little sample door vistla inpact. door <td>Drilling Contra</td> <td>ctor:</td> <td>Cascade Dr</td> <td>rilling, L.P.</td> <td></td> <td></td> <td>Driller:</td> <td>Frank C</td> <td>Gardella</td> <td>Helper:</td> <td>Marshall</td> <td>Daniels</td>	Drilling Contra	ctor:	Cascade Dr	rilling, L.P.			Driller:	Frank C	Gardella	Helper:	Marshall	Daniels
Langh and Diameter     y     y     Sampling Interval:     Continuous     rest       and Surface Diverse	Drilling Metho	d:	Sonic				Drilling Flu	uid Used:	None			
Land Surface Elev:	Length and Di of Coring Dev	ameter ice:	5' x 4"				Sampling	Interval:	Con	tinuous	feet	
Total Depth     L     21     Feat     Hole Diameter:     6'     Coring Device:     Coree Barrel       Prepared by:     Patricial Persons     L     Mainter:	Land Surface	Elev.:			feet	Surveyed	Estimated		Datum:	NGVD 29		
Preparate Br     Pathics	Total Depth D	rilled:	2	:1	Feet	Hole Diameter:6"	Type of Sa Coring De	ample/ vice:	Core Barrel			
Sample/Core Description     Norm     Pice Reading or per dealing or per deali	Prepared By:	Patricia Prezo	orski				Hammer Weight:	NA	pounds	Hammer Drop:	NA	inches
(fact)Core (fee)PID (gen)Biose (gen)Sample/Core DescriptionFromTo(fee)(gen)6 incheSample/Core Description111101011111100151050.8,1.411151050.8,1.411110150.8,1.411111150.8,1.41111111.31111111.31.31111111.31.3111121.41.3111132.01.51.3.711141.41.3.7111152.01.5.71.3.711151.01.5.71.5.711151.01.5.71.5.711151.01.5.71.5.711161.01.5.71.5.711171.01.5.71.5.711171.01.5.71.5.711171.01.5.71.5.711181.1.71.5.71.5.711191.1.71.5.71.5.71110	Sample/Core	Depth										
FromForforReading 6 indexperFromVo(ppr)6 indexSample/Core Description05NA0.5Concrete 0.5' thick. Hand cleared to 5'.05NA0.5Dark torvom fine to coarse sand, little small olarge pebbles,10150.00.8.1.4Concrete 0.5' thick. Mand cleared to 5'.101550.8.1.4Concrete nood, metal, glass), moist, odor101550.8.1.4Concrete nood, word find for, no visual impacts11520.3.1.32Concrete nood, wet, naphthalene-ike odor 14.15', NAPL coaling 14.5-15'11520.24.91Concrete nood, wet, naphthalene-ike odor 14.15', NAPL coaling 14.5-15'11620.24.91Concrete nood, wet, naphthalene-ike odor 14.15', NAPL coaling 14.5-15'11721824.91Concrete nood, wet, no visual impacts, no odor11821024.91Concrete nood, wet, no visual impacts, no odor1202111.06.8.7Gond boring at 21'.1210121012101210121112101210121012111210121012101211121012101210121112101210121012111210121012101211121012101210121112101210121012111210121012101211121012101210121112101210<	(feet below lar	nd surface)	Core	PID	Blows							
From     To     (feed)     (ppm)     6 inches     SampleCore Description       0     5     NA     0.5     Concrete 0.5' thick. Hand cleared to 5'.       0     5     NA     0.5     Dark brown fine to coarse sand, little small to large pebbles.       5     10     5     0.8, 1.4     Brown fine to medium sand, wet, odor 9.10', no visual impacts       10     5     0.8, 1.4     Brown fine to medium sand, wet, naphthalene-like odor 14-15', NAPL coating 14.5-15'       115     2.0     4.5     19, 37     Brown fine to medium sand, wet, naphthalene-like odor with slight sheen at 19' and 20'       120     4.5     19, 37     Image from fine to medium sand, wet, no visual impacts, no odor       200     21     1     6.8, 7     Brown fine to medium sand, wet, no visual impacts, no odor       20     21     1     6.8, 7     Brown fine to medium sand, wet, no visual impacts, no odor       20     21     1     6.8, 7     Brown fine to medium sand, wet, no visual impacts, no odor       21     1     6.8, 7     End of boring at 21'.     End of boring at 21'.       21     1     6.7     7 <t< td=""><td></td><td></td><td>Recovery</td><td>Reading</td><td>per</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>			Recovery	Reading	per							
Concrete 0.5 fink. Hand cleared to 5:05NA0.5Dark brown fine to coarse sand, little small to large pebbles, little fill material (red brick, concrete, wood, metal, glass), moist, dor51050.8, 1.4Brown fine to medium sand, wet, odor 9-10, no visual impacts1015547, 13Brown fine to medium sand, wet, odor 9-10, no visual impacts116547, 13Brown fine to medium sand, wet, odor 9-10, no visual impacts15204.519, 37Brown fine to medium sand, wet, aphthalene-lke odor with slight sheen at 19' and 20'15204.519, 37Impact sand, wet, petroleum-like odor with slight sheen at 19' and 20'16773Impact sand, wet, no visual impacts, no odor202116.8, 7Brown fine to medium sand, wet, no visual impacts, no odor202116.8, 7Brown fine to medium sand, wet, no visual impacts, no odor202116.8, 7Brown fine to medium sand, wet, no visual impacts, no odor2116.8, 7Brown fine to medium sand, wet, no visual impacts, no odor222116.8, 7Brown fine to medium sand, wet, no visual impacts, no odor2311111241111241112511126111271112811129111	From	То	(feet)	(ppm)	6 inches			Sample/	Core Descriptio	n		
0     5     NA     0.5     Dark brown fine to coarse sand, tittle small to large pebbles,       1     1     5     0.8, 1.4     Ittle fill material (red brick, concrete, wood, metal, glass), moist, odor       5     10     5     0.8, 1.4     Brown fine to medium sand, wet, odor 9-10, no visual impacts       10     15     5     47, 13     Brown fine to medium sand, wet, naphthalene-like odor 14-15', NAPL coating 14.5-15'       11     2.0     4.5     19, 37     Brown fine to medium sand, wet, naphthalene-like odor with slight sheen at 19' and 20'       2.1     1     6.8, 7     Brown fine to medium sand, wet, naphthalene-like odor with slight sheen at 19' and 20'       2.0     2.1     1     6.8, 7     Brown fine to medium sand, wet, no visual impacts, no odor       2.0     2.1     1     6.8, 7     Brown fine to medium sand, wet, no visual impacts, no odor       2.0     2.1     1     6.8, 7     Brown fine to medium sand, wet, no visual impacts, no odor       2.0     2.1     1     6.8, 7     Brown fine to medium sand, wet, no visual impacts, no odor       2.0     2.1     1     6.8, 7     Immaterial (red bring at 21'.		_				Concrete 0.5' thick. H	and cleared to	5'.				
InterfailInterfail (red link, concrete, woord, metal, glass), moist, dor51050.8, 1.4Brown fine to medium sand, wet, odor 9-10', no visual impacts1154.7, 13Brown fine to medium sand, wet, naphthalene-like odor 14-15', NAPL coating 14.5-15'1118, 132Image: Sand Sand Sand Sand Sand Sand Sand Sand	0	5	NA	0.5		Dark brown fine to coa	arse sand, little	e small to la	arge pebbles,			
5 10 5 0.8, 1.4 Brown fine to medium sand, wet, odor 9-10', no visual impacts   10 15 5 47, 13 Brown fine to medium sand, wet, naphthalene-like odor 14-15', NAPL coating 14.5-15'   11 20 4.5 19, 37 Brown fine to medium sand, wet, naphthalene-like odor 14-15', NAPL coating 14.5-15'   115 20 4.5 19, 37 Brown fine to medium sand, wet, naphthalene-like odor with slight sheen at 19' and 20'   115 20 4.5 19, 37 Brown fine to medium sand, wet, no visual impacts, no odor   20 21 1 6.8, 7 Brown fine to medium sand, wet, no visual impacts, no odor   20 21 1 6.8, 7 Brown fine to medium sand, wet, no visual impacts, no odor   20 21 1 6.8, 7 Brown fine to medium sand, wet, no visual impacts, no odor   20 21 1 6.8, 7 Brown fine to medium sand, wet, no visual impacts, no odor   21 1 6.8, 7 Brown fine to medium sand, wet, no visual impacts, no odor   21 1 6.8, 7 Brown fine to medium sand, wet, no visual impacts, no odor   21 1 6.8, 7 Brown fine to medium sand, wet, no visual impacts, no odor   21 1 6.8, 7 Impact sand, wet, no visual impacts, no odor   21 <td< td=""><td></td><td></td><td></td><td></td><td></td><td>little fill material (red b</td><td>rick, concrete,</td><td>wood, me</td><td>tal, glass), mois</td><td>t, odor</td><td></td><td></td></td<>						little fill material (red b	rick, concrete,	wood, me	tal, glass), mois	t, odor		
1015547, 13Brown fine to medium sand, wet, naphthalene-like odor 14-15', NAPL coating 14.5-15'1116, 132Image: Second Secon	5	10	5	0.8, 1.4		Brown fine to medium	sand, wet, od	or 9-10', n	o visual impacts			
168, 13215204.519, 37Brown fine to medium sand, wet, petroleum-like odor with slight sheen at 19' and 20'1124, 91116.8, 7Brown fine to medium sand, wet, no visual impacts, no odor202116.8, 7Brown fine to medium sand, wet, no visual impacts, no odor116.8, 7Brown fine to medium sand, wet, no visual impacts, no odor1116.8, 7Brown fine to medium sand, wet, no visual impacts, no odor1116.8, 7Brown fine to medium sand, wet, no visual impacts, no odor1116.8, 7Brown fine to medium sand, wet, no visual impacts, no odor1116.8, 7Impact sand sand sand sand sand sand sand sand	10	15	5	47, 13		Brown fine to medium	sand, wet, na	phthalene-	like odor 14-15	, NAPL coating	14.5-15'	
15 20 4.5 19, 37 Brown fine to medium sand, wet, petroleum-like odor with slight sheen at 19' and 20'   1 1 24, 91 1   1 1 73 1   20 21 1 6.8, 7 Brown fine to medium sand, wet, no visual impacts, no odor   20 21 1 6.8, 7 Brown fine to medium sand, wet, no visual impacts, no odor   20 21 1 6.8, 7 Brown fine to medium sand, wet, no visual impacts, no odor   21 21 1 6.8, 7 Brown fine to medium sand, wet, no visual impacts, no odor   21 21 1 6.8, 7 Brown fine to medium sand, wet, no visual impacts, no odor   21 21 1 6.8, 7 Brown fine to medium sand, wet, no visual impacts, no odor   21 21 1 1 6.8, 7 Brown fine to medium sand, wet, no visual impacts, no odor   21 21 1 1 1 1 Brown fine to medium sand, wet, no visual impacts, no odor   21 21 1 1 1 1 1 1   21 21 1 1 1 1 1   21 21 1 1 1 1 1   21 21 1				8, 132								
Image: Probability of the state of the s	15	20	4.5	19, 37		Brown fine to medium	sand, wet, per	troleum-lik	e odor with sligh	nt sheen at 19'	and 20'	
107373202116.8,7Brown fine to medium sand, wet, no visual impacts, no odor11116.8,7End of boring at 21'.11111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111111211111113111111141111111511111115111111151111 <t< td=""><td></td><td></td><td></td><td>24, 91</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>				24, 91								
202116.8.7Brown fine to medium sand, wet, no visual impacts, no odorImage: Constraint of the straint				73								
Image: series of the series	20	21	1	6.8, 7		Brown fine to medium	sand, wet, no	visual imp	acts, no odor			
Image: series of the series						End of boring at 21'.						
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Boring/Well:	IRM	1-7		Project/No.:	Former Dangman P	ark MGP Site /	B0036704	1.0002	Pag	e <u>1</u>	of 1
Site Location:	Brooklyn, NY					Drilling Started:	1	/25/2017	Drilling Completed:	1	/25/2017
Drilling Contra	ctor:	Cascade D	rilling, L.P.			Driller:	Frank G	ardella	Helper:	Marsha	ll Daniels
Drilling Metho	d:	Sonic				Drilling Fluid	d Used:	None			
Length and Di of Coring Devi	ameter ce:	5' x 4"				Sampling In	iterval:	Cor	ntinuous	feet	
Land Surface	Elev.:			feet	Surveyed	Estimated		Datum:	NGVD 29		
Total Depth D	rilled:	2	:1	Feet	Hole Diameter: 6"	Type of Sar Coring Devi	nple/ ice:	Core Barrel			
Prepared By:	Patricia Prezo	orski				Hammer Weight:	NA	pounds	Hammer Drop:	N/	inches
Sample/Core I (feet below lar From	Depth nd surface) To	Core Recovery (feet)	PID Reading (ppm)	Blows per 6 inches			Sample/0	Core Descriptio	on		
					Concrete 0.5' thick. Ha	and cleared to 5	ľ.				
0	5	NA			Brown fine to coarse s	and, some fill m	naterial (re	d brick, glass,	metal, concrete	e, wood),	
					black stained wood at	3.5' with moder	ate odor,	silty dark gray	sand 4-5', mois	it	
5	10	5	1.8, 7.4		Brown fine to medium	sand, little smal	ll to mediu	ım pebbles, we	et, wood debris	at 8-9',	
			6.3, 34.5		red brick fragments 6-	9', odor 9-10' at	finer san	d, no visual im	pacts		
10	15	5	1.1, 38.5		Brown fine to medium	sand, wet, petro	oleum-like	odor at 12' ar	nd 15'		
			4.5								
15	20	5	45.3, 7		Brown fine to medium	sand, wet, petro	oleum-like	odor at 15'			
			6, 5								
20	21	1	8.3, 1.6		Brown fine to medium	sand, wet, no v	isual impa	acts, no odor			
					End of boring at 21'.						
-											
-											
		ł									
		1									



Boring/Well:	IRM	1-8	-	Project/No.:	Former Dangman P	ark MGP Site	/ B0036704	.0002	Pag	e <u>1</u>	of	1
Site Location:	Brooklyn, NY					Drilling Started:	1	/27/2017	Drilling Completed:		1/27/201	7
Drilling Contra	ictor:	Cascade D	rilling, L.P.			Driller:	Frank G	ardella	Helper:	Marsha	all Danie	ls
Drilling Metho	d:	Sonic				Drilling Flu	uid Used:	None				
Length and Di of Coring Dev	ameter ice:	5' x 4"				Sampling	Interval:	Cor	itinuous	feet		
Land Surface	Elev.:			feet	Surveyed	Estimated		Datum:	NGVD 29			
						Type of Sa	ample/					
Total Depth D	rilled:	1	5	Feet	Hole Diameter: 6"	Coring De	vice:	Core Barrel				
Prepared By:	Patricia Prezo	orski				Hammer Weight:	NA	pounds	Hammer Drop:	N	A i	nches
Sample/Core	Depth					_ 0			·			
(feet below lar	nd surface)	Core	PID	Blows								
-	-	Recovery	Reading	per			O a marta //	Dens Deservicetie	_			
From	10	(feet)	(ppm)	6 inches	Concrete 0.5' thick Ha	and cleared to	Sample/C	ore Descriptio	n			
0	5	ΝΔ	0.6		Dark brown to black si	Ity fine to med	um sand s	ome fill materi	al (red brick or	ncrete)	some	
0	5		0.0		small to large peoples	moist moder	ate odor			nciete),	Some	
5	10	4	57 80		Dark brown to brown s	tilty fine to me	dium sand	some fill mater	ial (wood cond	rete) m	niet	
	10		30,61		black slag material 6-6	7' wet at 7.5	odor			<i>ioto)</i> , inc	Jiot,	
10	15	5	26.8.80.9		Brown fine to medium	sand wet od	or NAPL or	ated				
	10		163 332			bana, not, oa	01, 101 2 00					
			120, 15,2									
			-, -		End of boring at 15'.							
					<u> </u>							



Boring/Well:	IRM	1-9		Project/No.:	Former Dangman Pa	ark MGP Site /	B0036704	.0002	Pag	e <u>1</u> of <u>1</u>
Site Location:	Brooklyn, NY					Drilling Started:	1	/27/2017	Drilling Completed:	1/27/2017
Drilling Contra	actor:	Cascade Dr	illing, L.P.			Driller:	Frank Ga	ardella	Helper:	Marshall Daniels
Drilling Metho	d:	Sonic				Drilling Flui	d Used:	None		
Length and D of Coring Dev	iameter vice:	5' x 4"				Sampling I	nterval:	Cor	ntinuous	feet
Land Surface	Elev.:			feet	Surveyed	Estimated		Datum:	NGVD 29	
						Type of Sa	mple/			
Total Depth D	Drilled:	1	5	Feet	Hole Diameter: 6"	Coring Dev	vice:	Core Barrel		
Prepared By:	Patricia Prezo	orski				Weight:	NA	pounds	Drop:	NA inches
Sample/Core	Depth									
(feet below la	nd surface)	Core	PID	Blows						
From	То	Recovery	Reading	per 6 inchos			Sample/C	ore Descriptio	ND .	
FIOIII	10	(ieel)	(ppin)	0 IIICHES	Concrete 0.5' thick. Ha	ind cleared to t	5'.		Л	
0	5	NA	0.2		Brown fine to coarse s	and, some sma	all to large	pebbles, some	e fill material (re	d brick, concrete),
					moist	,	0	, ,	,	, ,,
5	10	3.2	0.2		Brown fine to medium	sand, moist, m	etal debris	at 5.5', red br	ick debris at 7.	5', wet at 7.5',
			1.4		no visual impacts, no c	odor				
10	15	3.9	4.9, 50		Brown fine to medium	sand, petroleu	m-like odoi	, wet		
			70, 160							
			105, 16							
					End of boring at 15'.					
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				<u> </u>						
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Boring/Well:	IRM	-10		Project/No.:	Former Dangman Pa	ark MGP Site	/ B0036704	1.0002	Pag	e <u>1</u>	of	1
Site Location:	Brooklyn, NY					Drilling Started:	:	2/1/2017	Drilling Completed:		2/1/2017	7
Drilling Contra	ctor:	Cascade D	rilling, L.P.			Driller:	Frank G	ardella	Helper:	Marsh	all Danie	ls
Drilling Metho	d:	Sonic				Drilling Flu	id Used:	None				
Length and Di of Coring Dev	ameter ice:	5' x 4"				Sampling	Interval:	Cor	ntinuous	feet		
Land Surface	Elev.:			feet	Surveyed	Estimated		Datum:	NGVD 29			
						Type of Sa	ample/					
Total Depth D	rilled:	1	5	Feet	Hole Diameter: 6"	Coring De	vice:	Core Barrel				
Prepared By:	Patricia Prezo	orski				Hammer Weight:	NA	pounds	Hammer Drop:	N	IA i	nches
Sample/Core	Depth											
(feet below lar	nd surface)	Core	PID	Blows								
From	То	Recovery (feet)	Reading (ppm)	per 6 inches			Sample/0	Core Descriptio	'n			
		()	(FF)		Asphalt. Hand cleared	to 5'.						
0	5	NA	0.4		Dark Brown to black si	Ity fine to med	lium sand, l	ittle small to la	rge pebbles, so	me fill		
					material (red brick, cor	ncrete), moist						
5	10	2.7	94, 98		(5-7') Dark brown fine	to medium sa	nd, moist, c	odor, no visual	impacts			
			105, 98		(7-7.7') Dark brown fin	e to medium s	and, wet a	t 7.5' with petro	bleum-like odor			
			31									
10	15	4.4	47, 64		(10-12) Same as abov	е						
			57, 70		(12.5-14.4') Brown fine	to medium s	and, NAPL	blebs, naphtha	lene-like odor,	wet		
			47									
					End of boring at 15'.							
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L	1	1	1									



Boring/Well:	IRM	-11		Project/No.:	Former Dangman Pa	ark MGP Site	/ B0036704	.0002	Pag	e <u>1</u>	of 1
Site Location:	Brooklyn, NY					Drilling Started:		2/1/2017	Drilling Completed:	:	2/1/2017
Drilling Contra	actor:	Cascade D	rilling, L.P.			Driller:	Frank G	ardella	Helper:	Marsha	ll Daniels
Drilling Metho	d:	Sonic				Drilling Flu	id Used:	None			
Length and D of Coring Dev	iameter ice:	5' x 4"				Sampling	Interval:	Cor	ntinuous	feet	
Land Surface	Elev.:			feet	Surveyed	Estimated		Datum:	NGVD 29		
						Type of Sa	ample/				
Total Depth D	rilled:	1	5	Feet	Hole Diameter: 6"	Coring De	vice:	Core Barrel			
Prepared By:	Patricia Prezo	orski				Hammer Weight:	NA	pounds	Hammer Drop:	N	A inches
Sample/Core	Depth					-					
(feet below lar	nd surface)	Core	PID	Blows							
From	Та	Recovery	Reading	per			Sample/(	oro Docorintic			
From	10	(feet)	(ppm)	6 Inches	Asphalt, Hand cleared	to 5'	Sample/C	ore Descriptio	'n		
0	5	NA	04		Brown to grav brown fi	ne to medium	sand som	e fill material (i	ed brick concr	ete) moi	st.
5	10	34	54 58		(5-7') Brown fine to me	dium sand m	oist no vis	ual impacts		010), 1101	
	10	0.1	29.1.75		(7-8 4') Brown fine to r	nedium sand	wet at 7.5'	with petroleum	-like odor		
			145		(* • • • ) = • • • • • • •						
10	15	3.5	103, 102		(10-12.5') Brown fine to	o medium san	d, wet, petr	oleum-like odd	or, NAPL satura	ited at 11	
			51, 54		(12.5-13') Brown fine to	o medium san	d, NAPL bl	ebs, naphthale	ne-like odor, sł	neen	
			10		(13-14') Same as abov	/e					
					(14-15') Fine sand						
					End of boring at 15'.						
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Boring/Well:	IRM	-12		Project/No.:	Former Dangman P	ark MGP Site /	B0036704	1.0002	Pag	e <u>1</u>	of 1
Site Location:	Brooklyn, NY					Drilling Started:	;	2/1/2017	Drilling Completed:	2	/1/2017
Drilling Contra	actor:	Cascade D	rilling, L.P.			Driller:	Frank G	ardella	Helper:	Marshal	l Daniels
Drilling Metho	d:	Sonic				Drilling Flui	d Used:	None			
Length and D of Coring Dev	iameter rice:	5' x 4"				Sampling Ir	nterval:	Cor	itinuous	feet	
Land Surface	Elev.:			feet	Surveyed			Datum:	NGVD 29	_	
	2.07.1						mple/	Datam			
Total Depth D	rilled:	1	5	Feet	Hole Diameter: 6"	Coring Dev	vice:	Core Barrel			
Prepared By:	Patricia Prezo	orski				Hammer Weight:	NA	pounds	Hammer Drop:	NA	inches
Sample/Core	Depth										
(feet below la	nd surface)	Core	PID	Blows							
_	_	Recovery	Reading	per							
From	То	(feet)	(ppm)	6 inches	A	1- <b>F</b> I	Sample/0	Core Descriptio	n		
					Asphait. Hand cleared	10 5 .		<b>6</b> 11 ( ) ) (			
0	5	NA	0.2		Brown to gray brown fi	ine to medium :	sand, som	e fill material (r	ed brick, concr	ete), trace	
					cobble, moist						
5	10	3.5	0.4, 25		(5-7') Dark brown fine	to medium san	d, little silt	, some fill mate	rial (red brick,	concrete),	moist,
			65, 65		no visual impacts						
					(7-8.5') Brown fine to r	medium sand, li	ittle small	bebbles, petrol	eum-like odor,	wet at 7.5	
10	15	4	46.2, 31		Same as above, NAPL	saturated at 1	0', petrole	um-like odor			
			6.2, 3.8								
			5.3								
					End of boring at 15'.						
	1		1								
	1										