

December 23, 2008

Douglas MacNeal, P.E.
Environmental Engineer 2
New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Action Bureau C
11th Floor, 625 Broadway
Albany, New York 12233-7014

**Re: Supplemental Remedial Investigation Work Plan
Former Kent Avenue Generating Station [Off-Site Area]
Nassau Gas Works Manufactured Gas Plant (MGP) Site
Operable Unit 2 (OU-2)
Brooklyn, New York
Site No. 2-24-019A
Index No. W2-1090-06-06**

Dear Mr. MacNeal:

National Grid is submitting for your review and approval the following work plan to conduct Supplemental Remedial Investigation (SRI) activities at the former Kent Avenue Generating Station on Kent Avenue in Brooklyn, New York. The former Kent Avenue Generating Station is located off site and north of the former Nassau Gas Works former manufactured gas plant (MGP) Site. The location of the former Nassau Gas Works MGP site and the off-site area of investigation are shown in Figure 1. Consolidated Edison Company of New York Inc. (Con Edison) owns the former Kent Avenue Generating Station.

Based upon remedial investigation activities completed to date, the lateral extent of the MGP-related dense non-aqueous liquid (DNAPL) tar impacts north of the former Nassau Gas Works MGP site have not been fully determined because the property was occupied by the Kent Avenue Generating Station. The Generating Station is in the process of being demolished, and demolition should be completed by March 2009. After demolition is complete the property should be accessible for SRI activities.

In the October 19, 2007 Letter Response to New York State Department of Environmental Conservation (NYSDEC) and New York State Department of Health (NYSDOH) Comments to the Draft RI Report, KeySpan Corporation (now National Grid) agreed to evaluate the lateral extent of the MGP-related DNAPL tar and associated groundwater impacts to the north of the MGP site, once the former Kent Avenue Generating Station was removed and/or there was a potential change in use at the property. The remedial investigation findings are presented in NYSDEC/NYSDOH-approved Final RI Report dated October 2007.

Therefore, this SRI work plan was prepared with the objective of delineating the vertical and lateral extent of MGP-related DNAPL tar impacts to the former Kent Avenue Station. The proposed SRI includes drilling soil borings, installing monitoring wells, and collecting subsurface soil and groundwater samples in order to provide a better understanding of the nature and extent of MGP-

related impacts and update the existing conceptual site model. All findings will be presented in a SRI Report following completion of SRI activities. The remainder of this letter presents the proposed SRI work plan in detail.

1.0 Supplemental RI Scope of Work

The SRI will be conducted in accordance with the NYSDEC-approved Remedial Investigation Work Plan dated September 7, 2004 (RIWP), that includes the Health and Safety Plan, Quality Assurance Project Plan (QAPP), and Field Sampling Plan. The following subsections describe the proposed soil borings, soil sample analyses, monitoring wells, and groundwater analyses.

1.1 Soil Boring Installation and Subsurface Soil Analysis

Three soil borings (B35, B36, and B37) are proposed to evaluate the vertical and lateral extent of DNAPL MGP tar-related impacts at the former Kent Avenue Generating Station. The approximate locations of the proposed borings are shown in Figure 2. The borings are proposed to evaluate the DNAPL tar impacts encountered in soil borings B3 and B4 on the northern boundary of the Nassau Gas Works MGP Site. Within these borings, DNAPL tar impacts were primarily encountered between 20 feet below ground surface (bgs) and 95 feet bgs just above the Gardiner's Clay confining unit. The approximate extent of DNAPL tar-impacted soils are shown in Figure 2. If visual DNAPL-tar impacts are encountered in the proposed borings, then additional borings will be evaluated in order to determine the extent of impacts. Copies of the boring logs completed on the northern portion of the former Nassau Gas Works site are attached to this letter. The borings will be installed utilizing resonant sonic drilling methods because of the proposed boring depth and likely subsurface foundations from the former Kent Avenue Generating Station.

Prior to installation, each proposed sample location will be cleared for utilities by a private utility mark-out company. National Grid will also attempt to obtain subsurface utility plans for the former Kent Avenue Generating Station from Con Edison. Each sample location will also be cleared utilizing manual or vacuum extraction methods to a depth of 5 feet, or 1 foot below the estimated depth of any adjacent known utility based upon available information.

Each soil boring will be continuously logged to 10 feet below observed visual impacts. Boring B35 will be extended the top of the Gardiners Clay which is located approximately 95 feet bgs. Each boring will be abandoned with a Portland cement/bentonite mixture tremmie from the bottom of the boring to the top of the boring or will be converted to a monitoring well (subsection 1.2). Each location will be resurfaced to meet existing conditions. Investigation derived wastes will be containerized in United States Department of Transportation (USDOT) 55-gallon drums or roll-offs and staged at a secured location for disposal.

Two soil samples per boring will be selected for chemical analysis. The first soil sample will be collected at the depth interval indicating the greatest degree of observed MGP-related DNAPL tar impacts within each boring. A second sample will be collected beneath observed MGP-related DNAPL tar, if present, at the completion of the boring. If no MGP-related DNAPL tar impacts are observed, then a sample will be collected to evaluate the soil conditions at the approximate elevation

of MGP-impacts observed in an adjacent boring. Table 1 summarizes each proposed boring, location, and sample rationale.

Each soil sample will be submitted to TestAmerica Laboratories in Shelton, Connecticut for analysis. TestAmerica is a NYSDOH Environmental Laboratory Approval Program (ELAP) accredited laboratory. Each soil will be analyzed for:

- Volatile organic compounds (VOCs) by Environmental Protection Agency (EPA) Method 8260B.
- Semi-volatile organic compounds (SVOCs) by Method 8270C.
- Resource Conservation Recovery Act (RCRA)- 8 metals by EPA Method 6010.
- Free cyanide [extraction by EPA Method 9013A and analysis by Micro diffusion American Society for Testing and Materials (ASTM) Method D4282-02].

Quality assurance/quality control (QA/QC) samples will be submitted as specified in the RIWP. QA/QC samples will include a blind duplicate, matrix spike/matrix spike duplicate (MS/MSD), and field rinsate blank collected at a frequency of 1 per 20 samples collected, or once a week. The QA/QC samples will be analyzed for the same suite of analytes as the samples submitted for laboratory analysis. One trip blank sample will be analyzed for VOC analysis for each shipment of samples to the laboratory.

A representative disposal sample will be collected following the completion of SRI activities and analyzed for disposal parameters required by the National Grid selected disposal facility. All IDW will be disposed of by National Grid at an approved disposal facility.

1.2 Monitoring Well Installation, Groundwater Analysis, and Groundwater Gauging

Two monitoring well clusters (MW-16S/D and MW-17S/D) will be installed to evaluate the groundwater conditions at the former Kent Avenue Generating Station north of the MGP site. Two shallow monitoring wells (MW-16S and MW-17S) will be installed to evaluate groundwater flow at the groundwater table and two deep monitoring wells (MW-16D and MW-17D) will be installed at the deep groundwater water zone to evaluate deep groundwater zone impacts and flow. The proposed wells will also be used to update and refine groundwater contour maps. Table 1 summarizes the location and rationale of the proposed monitoring wells. Figure 2 shows the proposed monitoring well locations.

Each monitoring well will consist of 2-inch inner diameter poly-vinyl chloride (PVC) 0.010" slotted screen that is 10 feet long. The well will be completed to the surface with 2-inch PVC riser. A 2-foot sump will be installed at the bottom of each well if potential recoverable DNAPL tar is encountered in the selected monitoring zone. Each monitoring wells will be constructed general accordance with the RIWP.

Each monitoring well will be developed at least 48-hours following installation to remove sediments from the well and establish a connection to the aquifer. Each will be developed to a clarity of 50 nephelometric turbidity units (NTUs) or until a maximum 10 well volumes of groundwater are

removed. Each monitoring well will be developed and sampled in accordance with methods described in the RIWP.

Each of the newly installed monitoring wells and existing monitoring wells will be gauged for measureable NAPL. Monitoring wells with measureable NAPL will not be sampled. The water level will be gauged at high and low tide within the newly installed monitoring wells and existing, serviceable monitoring wells in the RI study area.

One groundwater sample will be collected from each newly installed monitoring well at least two weeks after development. Each groundwater sample will be analyzed for:

- VOCs by EPA Method 8260B.
- SVOCs by EPA Method 8270C.
- RCRA- 8 metals by EPA Method 6010.
- Total cyanide by EPA Method 9012B.

QA/QC samples will include a blind duplicate, MS/MSD, and field rinsate blank collected at a frequency of 1 per 20 samples, or once a week. The QA/QC samples will be analyzed for the same suite of analytes as the samples submitted for laboratory analysis. One trip blank sample will be analyzed for VOC analysis for each shipment of samples to the laboratory. QA/QC samples will be submitted as specified in the RIWP.

A representative water disposal sample will be collected following the completion of SRI activities and analyzed for disposal parameters required by the National Grid selected disposal facility. All IDW will be disposed of by National Grid at an approved disposal facility.

1.3 Survey

Each newly installed soil boring and monitoring well will be surveyed by a New York State licensed surveyor. The survey locations will be incorporated into the site-wide survey database and will be referenced to the New York State Plane Coordinate System (East Zone, North American Datum (NAD 83)) and North American Vertical Datum 1988 (NAVD 88).

1.4 Data Validation and Management

TestAmerica will provide New York State Category B data deliverables. All data will be incorporated into the existing site database. Laboratory data will be validated in general accordance with the New York State Analytical Services Protocols (ASP). Data will be validated and data usability summary reports will be prepared evaluating the usability of the data.

2.0 REPORT PREPARATION

The SRI data will be incorporated into the site-wide database and will be used to define the extent of MGP-related impacts to the north of the site. The SRI findings will be compiled in a SRI Report for the Nassau Gas Works MGP Site. The report will discuss the SRI findings regarding the nature and extent of the MGP-related impacts within soil and groundwater at the off-site area, summarize the

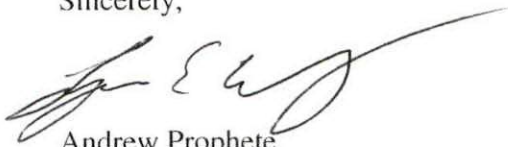
geologic findings, update the site conceptual model, and provide an evaluation of potentially complete exposure pathways in the vicinity of the site.

3.0 SCHEDULE

Field work can commence following the completion of the current demolition activities, which are being completed under the direction of Con Edison. The demolition activities are projected to be completed in March 2009. However, the implementation of the plan is dependent upon a number of factors including the approval of this work plan, securing access from the current property owner (Con Edison), and contractor availability. The field investigation program is anticipated to last approximately 3 to 4 weeks.

If you have any questions or require additional information, please feel free to contact me at (718) 963-5412 or by e-mail at andrew.prophete@us.ngrid.com.

Sincerely,



Andrew Prophete
Project Manager

Attachments

c: G. Litwin - NYSDOH
R. Rusinko, Esq. - NYSDEC
T. Bell - National Grid
C. Willard - National Grid
F. Murphy, Esq. - National Grid
D. Terry - GEI
L. Willey - GEI
L. Liebs - GEI

H:\WPROJ\Project\KIE\SPAN\Nassau Gas Works\SR\WP\Dec 2008\Nassau Supplemental RI-122308.doc

Table

Table 1
Sample Descriptions, Rationale and Analysis
Nassau Gas Works MGP Site
Brooklyn, New York

Sample I.D.	Approximate Target Depth of Soil Boring (feet bgs)	Sample Location	Sample Rationale	Sample Depth	Number of Samples		VOCs (EPA 8260B)	SVOCs (EPA 8270C)	RCRA-6 Metals (6010)	Cyanide ¹
					Soil	Groundwater				
Subsurface Soil Borings and Monitoring Wells										
B35/ MW-16S/ MW-16D	95 feet/ [depth of well installation]	North of the Nassau Gas Works site, on the southern portion of the Con Edison Generating Station Property	Evaluate the extent of DNAPL tar and soil and groundwater quality to the north of B3 where impacts were observed in soils to 95 feet.	Depth of greatest observed impact/Sample beneath observed impacts Groundwater samples to evaluate groundwater quality in the shallow and deep groundwater zones.	2	2	X	X	X	X
B36	43.5 feet [10 feet below visual impacts]	North of the Nassau Gas Works site, on the southern portion of the Con Edison Generating Station Property	Evaluate the extent of DNAPL tar and soil and groundwater quality to the north of B4 where impacts were observed in soils to 43.5 feet	Depth of greatest observed impact/Sample beneath observed impacts	2	0	X	X	X	X
B37/ MW-17S/ MW-17D	95 feet [depth of well installation]	North of the Nassau Gas Works site, on the southern portion of the Con Edison Generating Station Property	Evaluate the extent of DNAPL tar and soil and groundwater quality to the northeast of B4 where impacts were observed in soils to 43.5 feet.	Depth of greatest suspected impact/Sample beneath observed impacts Groundwater samples to evaluate groundwater quality in the shallow and deep groundwater zones.	2	2	X	X	X	X

Notes:

NAVD - North American Vertical Datum

bgs - below ground surface

Chemical analysis test methods specified are from U.S. EPA SW-846 test methods

EPA - Environmental Protection Agency

VOC - volatile organic compounds

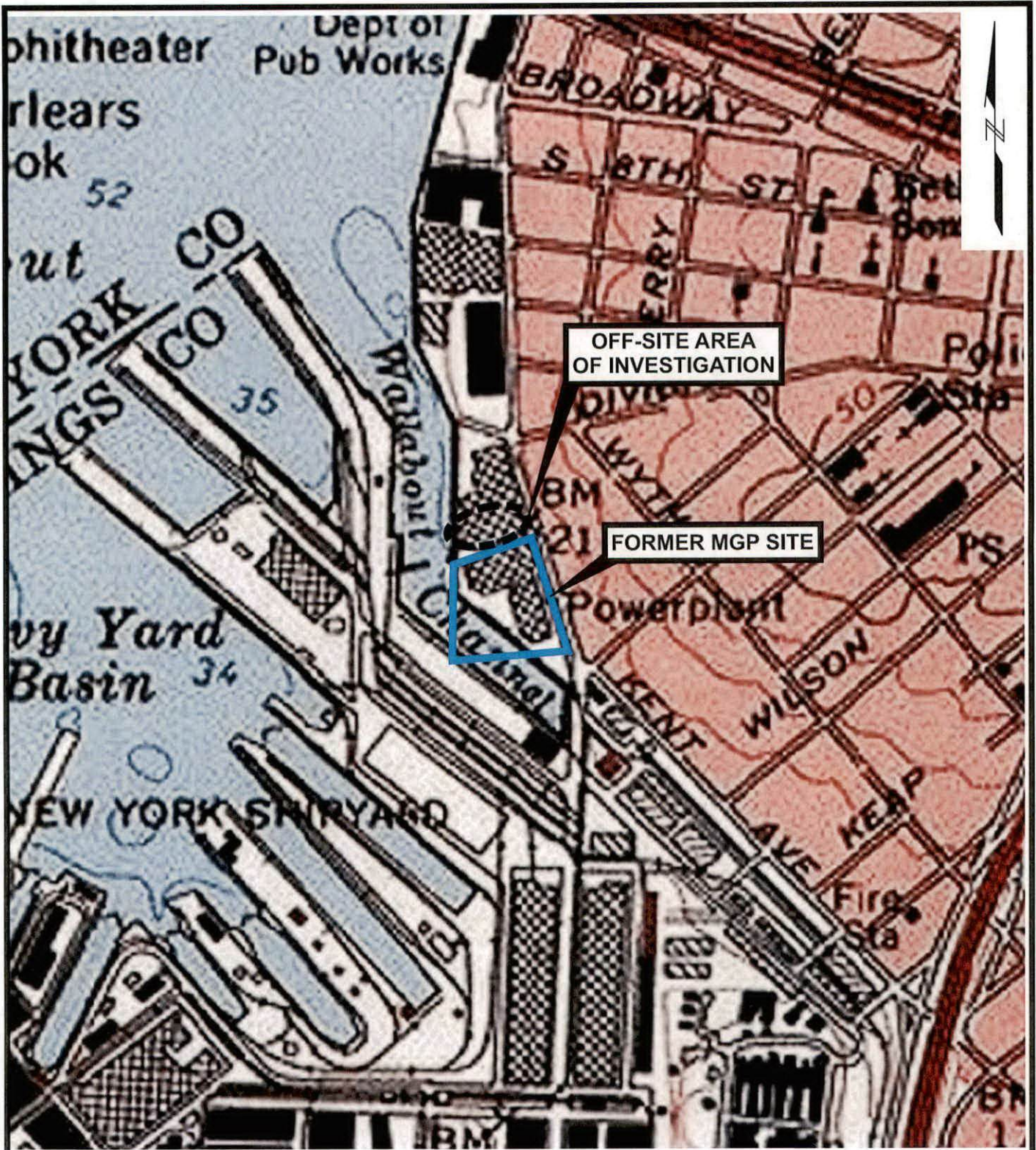
SVOC - semivolatile organic compounds

RCRA - Resource Conservation Recovery Act

¹-Soils will be analyzed by Free Cyanide [extraction by EPA Method 9013A and analysis by Microdiffusion American Society for Testing and Materials (ASTM)] and groundwater will be analyzed for Total Cyanide by EPA Method 9012B.

Prepared by: MJF

Figures



OFF-SITE AREA OF INVESTIGATION

FORMER MGP SITE



SOURCE: Map created with TOPO!® ©2001 National Geographic
(www.nationalgeographic.com/topo)

SUPPLEMENTAL REMEDIAL INVESTIGATION
NASSAU GAS WORKS FORMER MGP SITE
BROOKLYN, NEW YORK

nationalgrid

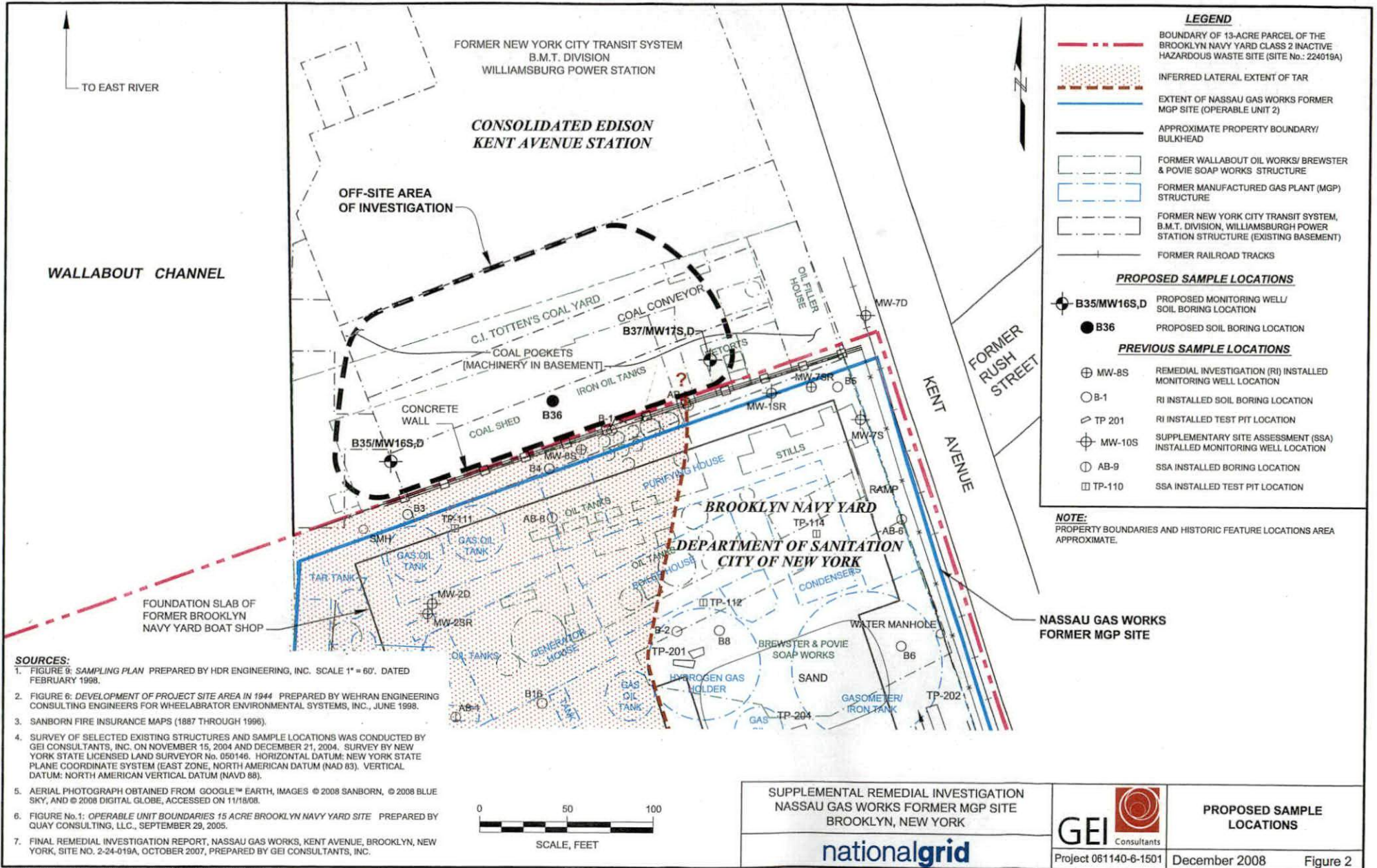


Project 061140-6-1501

SITE LOCATION MAP

December 2008

Figure 1



Attachment

Boring Logs



GEI Consultants, Inc.
455 Winding Brook Drive
Suite 201
Glastonbury, CT 06033

CLIENT: KeySpan Corporation
PROJECT NAME: Nassau Gas Works
CITY/STATE: Brooklyn, New York
GEI PROJECT NUMBER: 061140-6

BORING LOG

PAGE
1 of 4
B03

BORING ID: B03 LOCATION: NYC DOS Property
GROUND SURFACE ELEVATION (FT): 13.26 TOTAL DEPTH (FT): 105.00
NORTHING: 639321.44 EASTING: 682375.76 VERT. DATUM: NAVD 88
DRILLED BY: D. L. Maher Roy Buckenberger HOR. DATUM: NAD83 NY East Zone
LOGGED BY: A. Krause, M. Felter, and L. Willey DATE START / END: 11/15/2004 - 11/15/2004

DEPTH FT.	SAMPLE INFORMATION				STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
	TYPE and NO.	PEN FT.	REC FT.	PID (ppm)					
0									0-5 ft: Vacuum cleared for potential subsurface utilities.
6	S1	1	1.3	max 434 (6 ft-7 ft)	[Pattern]				6-7 ft: Black to dark brown, FINE to MEDIUM SAND, cinders, organics, some cobbles and medium gravel, loose, dry. No odors or visual impacts. [FILL]
8	S2	8	6.3	max 53.6 (9.5 ft-10 ft)	[Pattern]		PLO		7-9.2 ft: Gray, COBBLES with coarse gravel. No visual impacts. [FILL]
10								NGW-B3(9.5-10)	9.2-15 ft: Apparent groundwater table. Brown, FINE SAND and SILT, some clay, cohesive, wet. Organic material from 9.2ft-9.5 ft. Trace petroleum-like odor. Black staining in veins. [MARSH]
16	S3	10	10.6	max 941 (23 ft-24 ft)	[Pattern]		NLO		15-20 ft: Brown-gray, FINE SAND and SILT, little clay, cohesive, semi-plastic, wet. Trace to moderate naphthalene-like odor. No visual impacts. [MARSH]
20							TLO		20-22.5 ft: Black-stained, CLAY, little fine sand and silt, cohesive, plastic, soft, wet. Moderate naphthalene-like and tar-like odors. Black staining and trace tar coated sand lenses at 21 ft and 22.5 ft. [MARSH]
24							NLO		22.5-25 ft: Black-stained, CLAY interbedded with fine sand layers, wet. Moderate tar-like odor. Black staining and tarcoated. [MARSH]

NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION
 REC = RECOVERY LENGTH OF SAMPLE IN. = INCHES
 PID = PHOTOIONIZATION DETECTOR READING (JAR HEADSPACE) FT. = FEET
 NM = NOT MEASURED

NLO = NAPHTHALENE-LIKE ODOR
 PLO = PETROLEUM LIKE ODOR
 TLO = TAR-LIKE ODOR
 CLO = CHEMICAL-LIKE ODOR
 SLO = SULFUR-LIKE ODOR
 CrLO = CREOSOTE-LIKE ODOR
 OLO = ORGANIC-LIKE ODOR

[Blue Box] Tar Saturated [Green Box] Blebs, globs, lenses, grain-coating, sheen [Light Blue Box] Staining and sheen



GEI Consultants, Inc.
455 Winding Brook Drive
Suite 201
Glastonbury, CT 06033

CLIENT: **KeySpan Corporation**
PROJECT NAME: **Nassau Gas Works**
CITY/STATE: **Brooklyn, New York**
GEI PROJECT NUMBER: **061140-6**

BORING LOG

PAGE
2 of 4
B03

DEPTH FT.	SAMPLE INFORMATION				STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
	TYPE and NO.	PEN FT.	REC FT.	PID (ppm)					
26	S4	10	5.8	max 792 (34 ft-35 ft)					25-30 ft: Brown, SILT, little clay and fine sand, soft, very wet. Strong naphthalene-like odor. No visual impacts. [MARSH]
28							TLO		
30									30-35 ft: Black-stained, FINE SAND, little silt, cohesive, non-plastic, loose, wet. Strong tar-like odor. Blackstaining and heavily tar coated to tar saturated. [ALLUVIAL]
32							TLO		
34								NGW-B3(34-35)	
36	S5	10	11	max 1540 (44 ft-45 ft)					35-37.5 ft: Black-stained to brown, SILT, trace clay, trace to little fine sand, cohesive, non-plastic, moderately stiff, wet. Strong tar-like odor. Black staining and veins of tar throughout interval. [GLACIAL TILL]
38							NLO		37.5-43.1 ft: Brown, SILT, little clay, cohesive, plastic, wet. Trace naphthalene-like odor. No visual impacts. [GLACIAL TILL]
40									
42							TLO		
44								NGW-B3(44-44.5)	43.1-45 ft: Brown, SILT with fine sand layers, cohesive, non-plastic, loose, wet. Strong tar-like odor. Tar saturated. [GLACIAL TILL]
46	S6	10	4.9	max 201 (46 ft-47 ft)					45-48 ft: Brown, MEDIUM SAND, trace coarse gravel, non-cohesive, non-plastic, wet. Moderate naphthalene-like odor. Novisual impacts. [GLACIAL OUTWASH]
48							NLO		
50									48-53 ft: Brown, CLAY, little silt, plastic, very dense, moist. Moderate naphthalene-like odor. No visual impacts. [GLACIAL LACUSTRINE]
52							TLO		
									53-55 ft: Brown, FINE to MEDIUM SAND, little silt and

NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION
 REC = RECOVERY LENGTH OF SAMPLE IN. = INCHES
 PID = PHOTOIONIZATION DETECTOR READING (JAR HEADSPACE) FT. = FEET
 NM = NOT MEASURED

Tar Saturated Blebs, globs, lenses, grain-coating, sheen Staining and sheen

NLO = NAPHTHALENE-LIKE ODOR
 PLO = PETROLEUM LIKE ODOR
 TLO = TAR-LIKE ODOR
 CLO = CHEMICAL-LIKE ODOR
 SLO = SULFUR-LIKE ODOR
 CrLO = CREOSOTE-LIKE ODOR
 OLO = ORGANIC-LIKE ODOR



GEI Consultants, Inc.
455 Winding Brook Drive
Suite 201
Glastonbury, CT 06033

CLIENT: KeySpan Corporation
PROJECT NAME: Nassau Gas Works
CITY/STATE: Brooklyn, New York
GEI PROJECT NUMBER: 061140-6

BORING LOG

PAGE
3 of 4

B03

DEPTH FT.	SAMPLE INFORMATION				STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
	TYPE and NO.	PEN FT.	REC FT.	PID (ppm)					
54									black sand, trace gravel, plastic, wet. Moderate tar-like odor. Trace sheen and trace tar blebs from 53 ft-53.5 ft. [GLACIAL OUTWASH]
56	S7	10	8.7	max 78.9 (57 ft-58 ft)					55-59 ft: Brown, FINE to MEDIUM SAND, trace silt, well sorted, wet. Trace naphthalene-like odor. No visual impacts. [GLACIAL OUTWASH]
58									59-60 ft: Brown, MEDIUM to COARSE SAND, trace to little coarse gravel, non-cohesive, wet. Moderate naphthalene-like odor. No visual impacts. [GLACIAL OUTWASH]
60									60-65 ft: Brown, MEDIUM SAND, little to some silt, cohesive, non-plastic, moderately stiff to loose, moist to wet. Trace naphthalene-like odor. No visual impacts. [GLACIAL TILL]
62									
64									
66	S8	10	7.7	max 246 (74 ft-75 ft)					65-75 ft: Brown to gray, FINE to MEDIUM SAND, trace silt, well sorted, non-cohesive, non-plastic, loose, wet. Moderate naphthalene-like odor. Trace spotty sheen from 65 ft-68 ft. [GLACIAL OUTWASH]
68									
70									
72									
74									
76	S9	10	10.1	max 696 (79.5 ft-80.5 ft)					75-80 ft: Brown to gray, FINE SAND, little silt, well sorted, non-cohesive, non-plastic, wet. Moderate tar-like odor. Lightly tar coated soil grains. [GLACIAL OUTWASH]
78									
80									
82									80-82 ft: Brown, FINE SAND, trace silt, well sorted, non-cohesive, loose, moist. Moderate tar-like odor. [GLACIAL OUTWASH]

NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION
 REC = RECOVERY LENGTH OF SAMPLE IN. = INCHES
 PID = PHOTOIONIZATION DETECTOR READING (JAR HEADSPACE) FT. = FEET
 NM = NOT MEASURED

Tar Saturated Blebs, globs, lenses, grain-coating, sheen Staining and sheen

NLO = NAPHTHALENE-LIKE ODOR
 PLO = PETROLEUM LIKE ODOR
 TLO = TAR-LIKE ODOR
 CLO = CHEMICAL-LIKE ODOR
 SLO = SULFUR-LIKE ODOR
 CrLO = CREOSOTE-LIKE ODOR
 OLO = ORGANIC-LIKE ODOR



GEI Consultants, Inc.
455 Winding Brook Drive
Suite 201
Glastonbury, CT 06033

CLIENT: KeySpan Corporation
PROJECT NAME: Nassau Gas Works
CITY/STATE: Brooklyn, New York
GEI PROJECT NUMBER: 061140-6

BORING LOG

PAGE
4 of 4 **B03**

DEPTH FT.	SAMPLE INFORMATION				STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
	TYPE and NO.	PEN FT.	REC FT.	PID (ppm)					
84									82-84 ft: Brown, FINE to MEDIUM SAND, trace silt, well sorted, non-cohesive, loose, wet. Moderate naphthalene-like odor. No visual impacts. [GLACIAL OUTWASH]
86	S10	10	9.4	max 485 (94 ft-95 ft)					84-85 ft: Black-stained, MEDIUM to COARSE SAND, trace silt, non-cohesive, loose, wet. Strong tar-like odor. Blackstaining and tar saturated soil grains. [GLACIAL OUTWASH]
88									85-87 ft: Brown to black-stained, FINE to MEDIUM SAND, well sorted, non-cohesive, loose, wet. Strong tar-like odor. Tarstaining on soil grains. [GLACIAL OUTWASH]
90									87-90.5 ft: Gray to dark brown, FINE SAND, trace silt, well sorted, loose, wet. Moderate naphthalene-like odor. No visual impacts. [GLACIAL OUTWASH]
92									90.5-93.5 ft: Gray, FINE SAND, well sorted, non-cohesive, non-plastic, loose, wet. Moderate naphthalene-like odor. No visual impacts. [GLACIAL OUTWASH]
94									93.5-95 ft: Same as above. Strong tar-like odor. Moderately tar coated soil grains. [GLACIAL OUTWASH]
96	S11	10	11.3	max 38.3 (104 ft-104.5 ft)					95-105 ft: Gray, CLAY, trace silt, fine sand stringer at 96 ft, trace shell fragments from 103 ft-104.5 ft, cohesive, plastic, very stiff, dry. No odors or visual impacts. [GARDINERS CLAY]
100									
102									
104								NGW-B3(104-104.5)	Bottom of boring at 105 ft.

NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION
REC = RECOVERY LENGTH OF SAMPLE IN. = INCHES
PID = PHOTOIONIZATION DETECTOR READING (JAR HEADSPACE) FT. = FEET
NM = NOT MEASURED

Tar Saturated Blebs, globs, lenses, grain-coating, sheen Staining and sheen

NLO = NAPHTHALENE-LIKE ODOR
PLO = PETROLEUM LIKE ODOR
TLO = TAR-LIKE ODOR
CLO = CHEMICAL-LIKE ODOR
SLO = SULFUR-LIKE ODOR
CrLO = CREOSOTE-LIKE ODOR
OLO = ORGANIC-LIKE ODOR



GEI Consultants, Inc.
455 Winding Brook Drive
Suite 201
Glastonbury, CT 06033

CLIENT: KeySpan Corporation
PROJECT NAME: Nassau Gas Works
CITY/STATE: Brooklyn, New York
GEI PROJECT NUMBER: 061140-6

BORING LOG
PAGE 1 of 4
B04

BORING ID: B04 **LOCATION:** NYC DOS Property
GROUND SURFACE ELEVATION (FT): 14.46 **TOTAL DEPTH (FT):** 105.00
NORTHING: 639402.79 **EASTING:** 682402.7 **VERT. DATUM:** NAVD 88
DRILLED BY: D. L. Maher Roy Buckenberger **HOR. DATUM:** NAD83 NY East Zone
LOGGED BY: A. Krause, M. Felter, and L. Willey **DATE START / END:** 11/15/2004 - 11/16/2004

DEPTH FT.	SAMPLE INFORMATION				STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
	TYPE and NO.	PEN FT.	REC FT.	PID (ppm)					
0									0-5 ft: Vacuum cleared for potential subsurface utilities.
2									
4									
6	S1	2	2	max 277 (6 ft-6.5 ft)	[Pattern]		PLO	NGW-B4(6-6.5)	5-6 ft: Brown, MEDIUM to COARSE SAND, some silt and gravel, poorly sorted, non-cohesive, loose, moist to wet. Trace Petroleum-like odor. No visual impacts. [FILL]
8	S2	6	1	max 18.4 (14 ft-15 ft)			↑ Odor ↓		6-6.5 ft: Black-stained, MEDIUM to COARSE SAND, some silt and gravel, trace metal fragments. Strong petroleum-like odor. Black staining and heavily petroleum coated soil grains. [FILL]
10									6.5-7 ft: CONCRETE.
12									7-13 ft: Apparent groundwater table. CONCRETE and ROCK FRAGMENTS, metal fragments and possible piece of black paper with moderate unidentifiable odor. [FILL]
14									13-20 ft: NO RECOVERY: 13-20 ft is a void.
16									
18									
20	S3	5	11.8	max 3142 (22.5 ft-23 ft)	[Pattern]		NLO/TLO	NGW-B4(22.5-23)	20-20.5 ft: Black-stained, SILT, some clay and gravel, trace wood and fine sand, cohesive, loose, wet. Moderate naphthalene-like odor. Black staining and sheen. [FILL]
22							NLO/TLO		20.5-23 ft: Gray to brown, CLAY, some silt, sand and shell. Moderate tar-like odor. Veins of tar coated to tar saturated. Sand and shell fragments. [MARSH]
24							NLO/T		23-25 ft: Brown, SILT and FINE SAND, some clay, well sorted, moderately cohesive, loose. Strong naphthalene-like odor. Trace tar veins. [MARSH]

NOTES:
PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION
REC = RECOVERY LENGTH OF SAMPLE IN. = INCHES
PID = PHOTOIONIZATION DETECTOR READING (JAR HEADSPACE) FT. = FEET
NM = NOT MEASURED

Tar Saturated
 Blebs, globs, lenses, grain-coating, sheen
 Staining and sheen

NLO = NAPHTHALENE-LIKE ODOR
 PLO = PETROLEUM LIKE ODOR
 TLO = TAR-LIKE ODOR
 CLO = CHEMICAL-LIKE ODOR
 SLO = SULFUR-LIKE ODOR
 CrLO = CREOSOTE-LIKE ODOR
 OLO = ORGANIC-LIKE ODOR



GEI Consultants, Inc.
455 Winding Brook Drive
Suite 201
Glastonbury, CT 06033

CLIENT: KeySpan Corporation
PROJECT NAME: Nassau Gas Works
CITY/STATE: Brooklyn, New York
GEI PROJECT NUMBER: 061140-6

BORING LOG

PAGE
2 of 4
B04

DEPTH FT.	SAMPLE INFORMATION				STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
	TYPE and NO.	PEN FT.	REC FT.	PID (ppm)					
26	S4	10	10	max 975 (26 ft-27 ft)	[Pattern: Dotted]	[Color: Yellow]	↑		25-35 ft: Brown, FINE to MEDIUM SAND, some silt, coarse sand and f. to c. gravel, poorly sorted, non-cohesive, loose, wet. Mod. naphthalene-like odor. Sheen and trace tar coated veins. [GLACIAL OUTWASH]
28									
30					[Pattern: Dotted]	[Color: Yellow]	OTN		
32									
34					[Pattern: Dotted]	[Color: Yellow]	↓		
36	S5	10	9.5	max 667 (43 ft-43.5 ft)					
38					[Pattern: Dotted]	[Color: Yellow]			36-41 ft: Brown, FINE to MEDIUM SAND, trace silt, well sorted, non-cohesive, loose, wet. Trace sheen and lightly tarcoated. [GLACIAL OUTWASH]
40									
42					[Pattern: Horizontal Lines]	[Color: Blue]	TLO		41-43 ft: Brown, SILT, trace sand, cohesive, dense, moist. Moderate tar-like odor. Trace sheen. [GLACIAL TILL]
44					[Pattern: Dotted]	[Color: Blue]	NLO	NGW-B4(43-43.5)	43-45 ft: Brown, MEDIUM to COARSE SAND, trace silt, poorly sorted, non-cohesive, loose, wet. Moderate to strong naphthalene-like odor. Trace sheen and lightly tar coated veins towards bottom. Tar saturated from 43 ft-43.5 ft. [GLACIAL OUTWASH]
46	S6	10	8.3	max 70.2 (47.5 ft-48 ft)	[Pattern: Dotted]	[Color: Blue]	NLO		45-46.5 ft: Brown, FINE SAND, well sorted, non-cohesive, loose, wet. Moderate naphthalene-like odor. Sheen. [GLACIAL OUTWASH]
48					[Pattern: Diagonal Lines]	[Color: Yellow]	OTN		46.5-47.5 ft: Brown, SILT and CLAY layers, very dense, wet. Moderate naphthalene-like odors. No visual impacts. [GLACIAL LACUSTRINE]
50					[Pattern: Dotted]	[Color: Yellow]			47.5-55 ft: Brown, FINE to MEDIUM SAND, trace silt, well sorted, non-cohesive, loose. No odors or visual impacts. [GLACIAL OUTWASH]
52					[Pattern: Dotted]	[Color: Yellow]			

NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION
 REC = RECOVERY LENGTH OF SAMPLE IN. = INCHES
 PID = PHOTOIONIZATION DETECTOR READING (JAR HEADSPACE) FT. = FEET
 NM = NOT MEASURED

[Color: Blue] Tar Saturated [Color: Yellow] Blebs, globs, lenses, grain-coating, sheen [Color: Blue] Staining and sheen

NLO = NAPHTHALENE-LIKE ODOR
 PLO = PETROLEUM LIKE ODOR
 TLO = TAR-LIKE ODOR
 CLO = CHEMICAL-LIKE ODOR
 SLO = SULFUR-LIKE ODOR
 CrLO = CREOSOTE-LIKE ODOR
 OLO = ORGANIC-LIKE ODOR



GEI Consultants, Inc.
455 Winding Brook Drive
Suite 201
Glastonbury, CT 06033

CLIENT: KeySpan Corporation
PROJECT NAME: Nassau Gas Works
CITY/STATE: Brooklyn, New York
GEI PROJECT NUMBER: 061140-6

BORING LOG

PAGE
3 of 4 B04

DEPTH FT.	SAMPLE INFORMATION				STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
	TYPE and NO.	PEN FT.	REC FT.	PID (ppm)					
54					[Dotted pattern]			55-65 ft: Brown, FINE to MEDIUM SAND, little coarse sand, trace silt, poorly sorted, non-cohesive, non-plastic, wet. Noodors or visual impacts. [GLACIAL OUTWASH]	
56	S7	10	9.5	max 15.6 (55.5 ft-56 ft)					
58									
60					[Dotted pattern]			65-75 ft: Brown, FINE to MEDIUM SAND, trace silt, well sorted, non-cohesive, loose, wet. No odors or visual impacts. [GLACIAL OUTWASH]	
62									
64									
66	S8	10	8.4	max 35.5 (70 ft-71 ft)					
68					[Dotted pattern]			75-76.5 ft: Gray, FINE SAND, trace silt, well sorted, wet. No odors or visual impacts. [GLACIAL OUTWASH]	
70									
72									
74									
76	S9	10	8.9	max 26 (76.5 ft-77 ft)	[Dotted pattern]			76.5-82 ft: Gray to brown, FINE to MEDIUM SAND, trace silt, well sorted, wet. No odors or visual impacts. [GLACIALOUTWASH]	
78									
80									
82									

NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION
REC = RECOVERY LENGTH OF SAMPLE IN. = INCHES
PID = PHOTOIONIZATION DETECTOR READING (JAR HEADSPACE) FT. = FEET
NM = NOT MEASURED

Tar Saturated Blebs, globs, lenses, grain-coating, sheen Staining and sheen

NLO = NAPHTHALENE-LIKE ODOR
PLO = PETROLEUM LIKE ODOR
TLO = TAR-LIKE ODOR
CLO = CHEMICAL-LIKE ODOR
SLO = SULFUR-LIKE ODOR
CrLO = CREOSOTE-LIKE ODOR
OLO = ORGANIC-LIKE ODOR



GEI Consultants, Inc.
455 Winding Brook Drive
Suite 201
Glastonbury, CT 06033

CLIENT: KeySpan Corporation
PROJECT NAME: Nassau Gas Works
CITY/STATE: Brooklyn, New York
GEI PROJECT NUMBER: 061140-6

BORING LOG

PAGE
4 of 4
B04

DEPTH FT.	SAMPLE INFORMATION				STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION
	TYPE and NO.	PEN FT.	REC FT.	PID (ppm)					
84									82-85 ft: Light brown, MEDIUM SAND, trace silt, well sorted, non-cohesive, loose, wet. No odors or visual impacts. [GLACIAL OUTWASH]
86	S10	10	10	max 1.1 (94 ft-94.5 ft)					85-90 ft: Brown, MEDIUM to COARSE SAND, some fine gravel, trace silt, poorly sorted, non-cohesive, loose, wet. No odors or visual impacts. [GLACIAL OUTWASH]
88									
90									90-95 ft: Dark brown, MEDIUM SAND, some silt, well sorted, non-cohesive, loose, wet. Very trace naphthalene-like odor. No visual impacts. [GLACIAL OUTWASH]
92									
94									
96	S11	10	10	max 2.1 (100.5 ft-101 ft)					95-99 ft: Brown, FINE to MEDIUM SAND, some silt, well sorted, non-cohesive, loose, wet. No odors or visual impacts. [GLACIAL OUTWASH]
98									
100								NGW-B4(100-101)	99-101 ft: Gray to brown, MEDIUM to COARSE SAND, trace silt, poorly sorted, non-cohesive, loose. No odors or visual impacts. [GLACIAL OUTWASH]
102									101-105 ft: Gray, CLAY, trace shells, cohesive, dense, moist. No odors or visual impacts. [GARDINERS CLAY]
104									Bottom of boring at 105 ft.

NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL
REC = RECOVERY LENGTH OF SAMPLE
PID = PHOTOIONIZATION DETECTOR READING (JAR HEADSPACE)
NM = NOT MEASURED

ppm = PARTS PER MILLION
IN. = INCHES
FT. = FEET

NLO = NAPHTHALENE-LIKE ODOR
PLO = PETROLEUM LIKE ODOR
TLO = TAR-LIKE ODOR
CLO = CHEMICAL-LIKE ODOR
SLO = SULFUR-LIKE ODOR
CrLO = CREOSOTE-LIKE ODOR
OLO = ORGANIC-LIKE ODOR

Tar Saturated
 Blebs, globs, lenses, grain-coating, sheen
 Staining and sheen



GEI Consultants, Inc.
455 Winding Brook Drive
Suite 201
Glastonbury, CT 06033

CLIENT: KeySpan Corporation
PROJECT NAME: Nassau Gas Works
CITY/STATE: Brooklyn, New York
GEI PROJECT NUMBER: 061140-6

BORING LOG
PAGE 1 of 3
B05/MW7SR

BORING ID: B05/MW7SR LOCATION: NYC DOS Property
GROUND SURFACE ELEVATION (FT): 17.95 TOTAL DEPTH (FT): 65.00
NORTHING: 639568.58 EASTING: 682450.75 VERT. DATUM: NAVD 88
DRILLED BY: D. L. Maher Roy Buckenberger HOR. DATUM: NAD83 NY East Zone
LOGGED BY: L. Willey DATE START / END: 11/17/2004 - 11/17/2004

DEPTH FT.	SAMPLE INFORMATION				STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
	TYPE and NO.	PEN FT.	REC FT.	PID (ppm)						
0									NGW-MW-7SR was installed adjacent to NGW-B5.	
2									MW-7SR Construction Details: Flush mount road box 0-1', Riser 0-13', Screen 13-23', Sump 23-25', Grout 1-8', Seal 8-11', Sand Pack 11-25'.	
4									0-5 ft: Vacuum cleared for potential subsurface utilities. [FILL]	
6	S1	10	9.1	max 3486 (14 ft-14.5 ft)					5-8 ft: Red brown to light brown, SILT, little fine sand, trace clay, and rootlets, semi-cohesive, soft, loose, moist. No odors or visual impacts. [FILL]	
8									8-10 ft: Gray, FINE SAND, little silt, non-cohesive, loose, moist. Moderate petroleum-like odor (fuel oil-like). Novisual impacts. [FILL]	
10									10-13.4 ft: Black-stained, SILT and FINE SAND, trace wood fragments, non-cohesive, loose, moist. Strong petroleum-like odor (fuel oil-like, possibly kerosene). Black staining. [FILL]	
12										
14										
16	S2	10	10.6	max 2279 (18 ft-19 ft)					13.4-15 ft: Brown, FINE to MEDIUM SAND, little silt, trace fine to coarse gravel, moist. Strong petroleum-like odor (fuel oil-like, possibly kerosene). No visual impacts. [ALLUVIAL]	
18										
20									15-19 ft: Apparent groundwater table. Black-stained, FINE SAND, little silt and coarse sand, non-cohesive, wet. Strong petroleum (kerosene)-like odor. Black staining. [ALLUVIAL]	
22										
24									19-25 ft: Brown to red brown, SILT and FINE SAND, trace coarse gravel, moist. Strong petroleum (kerosene)-like odor. Novisual impacts. [GLACIAL TILL]	

NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION
REC = RECOVERY LENGTH OF SAMPLE IN. = INCHES
PID = PHOTOIONIZATION DETECTOR READING (JAR HEADSPACE) FT. = FEET
NM = NOT MEASURED

Tar Saturated Blebs, globs, lenses, grain-coating, sheen Staining and sheen

NLO= NAPHTHALENE LIKE ODOR
PLO= PETROLEUM LIKE ODOR
TLO= TAR LIKE ODOR
CLO= CHEMICAL LIKE ODOR
SLO= SULFUR LIKE ODOR
CrLO= CREOSOTE LIKE ODOR
OLO= ORGANIC LIKE ODOR



GEI Consultants, Inc.
455 Winding Brook Drive
Suite 201
Glastonbury, CT 06033

CLIENT: KeySpan Corporation
PROJECT NAME: Nassau Gas Works
CITY/STATE: Brooklyn, New York
GEI PROJECT NUMBER: 061140-6

BORING LOG

PAGE 2 of 3
B05/MW7SR

DEPTH FT.	SAMPLE INFORMATION				STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
	TYPE and NO.	PEN IN.	REC IN.	PID (ppm)						
26	S3	10	7.7	max 109 (26 ft-26.5 ft)					25-35 ft: Red brown to brown, SILT, some fine sand, trace to little coarse gravel and clay, cohesive, semi-plastic, very dense, wet. Moderate petroleum (kerosene)-like odor. No visual impacts. [GLACIAL TILL]	
28										
30										
32										
34										
36	S4	10	11.6	max 65.3 (44 ft-44.5 ft)					35-38.5 ft: Same as above, stiff, dry. No odors or visual impacts. [GLACIAL TILL]	
38									38.5-40.5 ft: Brown, FINE SAND, well sorted, non-cohesive, loose, wet. Trace petroleum (kerosene)-like odor. No visual impacts. [GLACIAL OUTWASH]	
40							PLO			
42							PLO		40.5-42 ft: Brown, SILT and FINE SAND, trace coarse gravel, dense stiff, dry. Trace petroleum (kerosene)-like odor. No visual impacts. [GLACIAL TILL]	
44									42-45 ft: Brown, MEDIUM SAND, trace silt, moist to wet, No odors or visual impacts. [GLACIAL OUTWASH]	
46	S5	10	9	max 30.6 (46.5 ft-47 ft)					45-55 ft: Brown, FINE to MEDIUM SAND, trace silt and coarse sand, well sorted, non-cohesive, non-plastic, loose, wet. No odors or visual impacts. [GLACIAL OUTWASH]	
48										
50										
52										
54										

NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION
REC = RECOVERY LENGTH OF SAMPLE IN. = INCHES
PID = PHOTOIONIZATION DETECTOR READING (JAR HEADSPACE) FT. = FEET
NM = NOT MEASURED

NLO= NAPHTHALENE LIKE ODOR
PLO= PETROLEUM LIKE ODOR
TLO= TAR LIKE ODOR
CLO= CHEMICAL LIKE ODOR
SLO= SULFUR LIKE ODOR
CrLO= CREOSOTE LIKE ODOR
OLO= ORGANIC LIKE ODOR

- Tar Saturated
- Blebs, globs, lenses, grain-coating, sheen
- Staining and sheen



GEI Consultants, Inc.
455 Winding Brook Drive
Suite 201
Glastonbury, CT 06033

CLIENT: KeySpan Corporation
PROJECT NAME: Nassau Gas Works
CITY/STATE: Brooklyn, New York
GEI PROJECT NUMBER: 061140-6

BORING LOG

PAGE
3 of 3

B05/MW7SR

DEPTH FT.	SAMPLE INFORMATION				STRATA	VISUAL IMPACTS	ODOR	ANALYZED SAMPLE ID	SOIL / BEDROCK DESCRIPTION	WELL CONSTRUCTION DETAILS
	TYPE and NO.	PEN IN.	REC IN.	PID (ppm)						
56	S6	10	9.9	max 62.7 (62 ft-62.5 ft)					55-65 ft: Brown, FINE to MEDIUM SAND, trace silt, well sorted, non-cohesive, non-plastic, loose, wet. No odors or visual impacts. [GLACIAL OUTWASH]	
58										
60										
62										
64								NGW-B5(64-64.5)		Bottom of boring at 65 ft.

NOTES:

PEN = PENETRATION LENGTH OF SAMPLER OR CORE BARREL ppm = PARTS PER MILLION
REC = RECOVERY LENGTH OF SAMPLE IN. = INCHES
PID = PHOTOIONIZATION DETECTOR READING (JAR HEADSPACE) FT. = FEET
NM = NOT MEASURED

NLO= NAPHTHALENE LIKE ODOR
PLO= PETROLEUM LIKE ODOR
TLO= TAR LIKE ODOR
CLO= CHEMICAL LIKE ODOR
SLO= SULFUR LIKE ODOR
CrLO= CREOSOTE LIKE ODOR
OLO= ORGANIC LIKE ODOR



Tar
Saturated



Blebs, globs, lenses,
grain-coating, sheen



Staining
and sheen

PROJECT: BROOKLYN NAVY YARD SITE - SSA

PROJECT NO: 07912-002-018

LOCATION: KENT AVENUE, BROOKLYN, N.Y.

BORING NUMBER: MW-1SR

PAGE: 1 OF 1

SOIL BORING LOG

DATE: 5/1/97

NUMBER	DEPTH	SPT	T	WL	SI	DESCRIPTION (USCS)	COMMENTS
SS-1						ASPHALT/GRAVEL SUB-BASE	
SS-2							
SS-3	4'					BROWN FINE-CSE SAND, SOME FINE GRAVEL	MW-1SR-SS1S (2'-4')
SS-4							FILL MATERIAL
SS-5	8'					AS ABOVE, WITH WOOD AND BRICK	
SS-6							
SS-7	12'					GRAY TO BLACK TO OLIVE GREEN SILT AND V. FINE/FINE SAND. PETROLEUM/SOLVENT ODOR	NATURAL MATERIAL MW-1SR-SS1D (10'-12')
SS-8	16'						
SS-9						OIL SATURATED 14'-19'	SILT AND SAND
SS-10	20'						
	24'					BROWN MED SILTY SAND, SOME SMALL PEBBLES/ GRANULES	
	28'					BOTTOM OF BORING AT 22 FEET	TILL
	32'						
	36'						
	40'						

NOTE - THIS BORING LOG SERVES AS THE LOG FOR MW-7S DUE TO SIMILARITY OF MATERIALS ENCOUNTERED IN EACH

BOREHOLE COMPLETION: 20 FEET BELOW LAND SURFACE

WATER DEPTH: 9.84 FEET BELOW TOC

DATE: 5/27/97

DRILLING METHOD: 4 1/4 INCH I.D. HOLLOW STEM AUGERS

LOGGED BY: HDR ENGINEERING, INC.

- KEY:**
- SI - SCREEN
 - SS - SPLITSPOON
 - SPT - SOIL PENETRATION TEST-N NUMBER
 - ST - SHELBY TUBE
 - T - TYPE
 - WL - WATER LEVEL



PROJECT: BROOKLYN NAVY YARD SITE - SSA

PROJECT NO: 07912-002-018

LOCATION: KENT AVENUE, BROOKLYN, N.Y.

BORING NUMBER: MW-8S

PAGE: 1 OF 1

SOIL BORING LOG

DATE: 5/1/97

NUMBER	DEPTH	SPT	T	WL	SI	DESCRIPTION (USCS)	COMMENTS
SS-1						ASPHALT - GRAVEL SUB BASE	
SS-2	4'					GRAY TO BROWN F-M SAND, WITH GRAVEL, BRICK, COAL	MW-8S-SS1S(2-4') FILL MATERIAL
SS-3							PETROL. ODOR
SS-4	8'						
SS-5						GRAY TO BLACK V.F. SANDY SILT TO SILT	SOLVENT/PETROL ODOR MW8S-SS10(8-12')
SS-6	12'						
SS-7							NATURAL MATERIAL
SS-8	16'						
SS-9						SHELL FRAGMENTS	SILT
SS-10	20'						
	24'						
	28'						
	32'						
	36'						
	40'						
						BOTTOM OF BORING AT 20 FEET	

BOREHOLE COMPLETION: 20 FEET BELOW LAND SURFACE

WATER DEPTH: 7.55 FEET BELOW TOC

DATE: 5/27/97

DRILLING METHOD: 4 1/4 INCH I.D. HOLLOW STEM AUGERS

LOGGED BY: HDR ENGINEERING, INC.

KEY:
 SI - SCREEN
 SS - SPLITSPOON
 SPT - SOIL PENETRATION TEST-N NUMBER
 ST - SHELBY TUBE
 T - TYPE
 WL - WATER LEVEL



P:\07912-002-018\7912-BOR

PROJECT: BROOKLYN NAVY YARD SITE - SSA

PROJECT NO: 07912-002-018

LOCATION: KENT AVENUE, BROOKLYN, N.Y.

BORING NUMBER: AB-7

PAGE: 1 OF 1

AUGER BORING LOG

DATE: 4/17/97

NUMBER	DEPTH	SPT	T	WL	SI	DESCRIPTION (USCS)	COMMENTS
SS-1						ASPHALT/GRAVEL SUB-BASE	
SS-2	4'					REDDISH-BROWN F. SAND, SOME GRAVEL	OVA = 0ppm FILL
SS-3							
SS-4	8'			▼		RED-BROWN SILT, TO GRAY/BLACK SL. SANDY SILT. OIL STAINED 5-12'	OVA OUT
SS-5				≡			
SS-6	12'					OIL SATURATED 8'-12'	STRONG ODOR AB7-SS1(9'-10')
						FLOATING PRODUCT?	STRONG ODOR
						BOTTOM OF BORING AT 12 FEET	
	16'						
	20'						
	24'						
	28'						
	32'						
	36'						
	40'						

BOREHOLE COMPLETION: 12 FEET BELOW LAND SURFACE

WATER DEPTH: 7.1 FEET BELOW LAND SURFACE

DATE: 4/17/97

DRILLING METHOD: 4-INCH O.D. SOLID STEM AUGER

LOGGED BY: HDR ENGINEERING, INC.

KEY:

- SI - SCREEN
- SS - SPLITSPOON
- SPT - SOIL PENETRATION TEST-N NUMBER
- ST - SHELBY TUBE
- T - TYPE
- WL - WATER LEVEL



P:\07912\147\7912-BOR

PROJECT: BROOKLYN NAVY SITE - SSA

PROJECT NO: 07912-002-018

LOCATION: KENT AVENUE, BROOKLYN, N.Y.

BORING NUMBER: B-1

PAGE: 2 OF 2

SOIL BORING LOG

DATE: 5/22-23/97

NUMBER	DEPTH	SPT	T	WL	SI	DESCRIPTION (USCS)	COMMENTS
SS-6						BOULDER DRILLED TO 45'	NATIVE MATERIAL
	44'						
SS-7							
	48'						
SS-8							
	52'						
SS-9						GRAY TO BROWN FINE-COARSE SAND WITH GRAVEL	
						GRAY TO BROWN LAMINATED MEDIUM TO COARSE SAND	
						BOTTOM OF BORING AT 57'	
	60'						
	64'						
	68'						
	72'						
	76'						
	80'						

BOREHOLE COMPLETION: 57 FEET BELOW LAND SURFACE

WATER DEPTH: NOT AVAILABLE

DATE: 5/27/97

DRILLING METHOD: 4 1/4 - INCH I.D. HOLLOW-STEM AUGERS

LOGGED BY: HDR ENGINEERING, INC.

KEY:

- SI - SCREEN
- SS - SPLITSPOON
- SPT - SOIL PENETRATION TEST-N NUMBER
- ST - SHELBY TUBE
- T - TYPE
- WL - WATER LEVEL



147\7912-BOR

P:\7912

PROJECT: BROOKLYN NAVY YARD SITE - SSA

PROJECT NO: 07912-002-018

LOCATION: KENT AVENUE, BROOKLYN, N.Y.

BORING NUMBER: B-2

PAGE: 1 OF 2

SOIL BORING LOG

DATE: 5/23&27/97

NUMBER	DEPTH	SPT	T	WL	SI	DESCRIPTION (USCS)	COMMENTS	
	4'					DK. GRAY TO BLACK SILT TO V. FINE SAND, SHELLS, T. GRAVEL	DRILLED OUT TO 15'	
	8'							
	12'							
SS-1	16'							MILD PETROL. ODOR B2-SS1(15-17')
SS-2								
	20'					GRAY TO BROWN M-C SAND WITH ABUNDANT GRAVEL BOULDER 25'-27'	STRONG PETROLEUM ODOR	
	24'							
SS-3								
	28'							
SS-4								
	32'							
	36'							
SS-5						HEAVY GRAVELS ABUNDANT GRAVEL	PETROL ODOR	
	40'							

BOREHOLE COMPLETION: 57 FEET BELOW LAND SURFACE

WATER DEPTH: NOT AVAILABLE

DATE: 5/27/97

DRILLING METHOD: 4 1/4 INCH I.D. HOLLOW STEM AUGERS

LOGGED BY: HDR ENGINEERING, INC.

KEY:
 SI - SCREEN
 SS - SPLITSPOON
 SPT - SOIL PENETRATION TEST-N NUMBER
 ST - SHELBY TUBE
 T - TYPE
 WL - WATER LEVEL



P:\07912018.147\7912-BOR