



SCHOOR DEPALMA
Engineers and Consultants

Site Characterization Study Work Plan Addendum
Offsite Investigation of Harbor Square Property
Former Ossining Works Manufactured Gas Plant
Ossining, New York
Site Identification Number V00568

For

Consolidated Edison Company of New York, Inc.
31-02 20th Avenue
Building 136, Second Floor
Long Island City, New York 11105

Prepared by:

SCHOOR DEPALMA
Justin Corporate Center
200 State Highway Nine
P.O. Box 900
Manalapan, New Jersey 07726-0900

July 30, 2007

**SITE CHARACTERIZATION WORK PLAN
OFFSITE INVESTIGATION OF HARBOR SQUARE PROPERTY
FORMER OSSINING WORKS MANUFACTURED GAS PLANT
OSSINING, NEW YORK**

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SECTION 1 INTRODUCTION

Schoor DePalma has prepared this Site Characterization Work Plan Addendum (SCWPA) to support the characterization of offsite areas in conjunction with the investigation of the former manufactured gas plant (MGP) property known as the Former Ossining Works MGP site. This work is being performed in accordance with a Voluntary Cleanup Agreement (VCA) entered into by the Consolidated Edison Company of New York, Inc. (Con Edison) has entered into a Voluntary Cleanup Agreement (VCA) with the New York State Department of Environmental Conservation (NYSDEC). The site identification number is V00568. The Former Ossining Works MGP site was located in the Village of Ossining, Westchester County, New York. A site location map is included as Figure 1-1.

This SCWPA has been prepared to identify the scope of work that will be implemented at an offsite property known as Harbor Square Area. The Harbor Square Area is located approximately 500 feet west of the former Ossining Gas Works site (Figure 1-2).

The investigation of the Harbor Square Area to assess the nature of “free product” previously reported and to evaluate possible connections between the former Ossining Gas Works site and the Harbor Square area.

SECTION 2 SCOPE OF WORK

The work to be performed under this SCWPA includes installation and sampling of seven (7) soil borings and six (6) groundwater monitoring wells on the Harbor Square Area as shown in Figure 1-2. The work to be implemented under this SCWPA will follow the procedures and protocols described in the Site Characterization Work Plan for the Former Ossining Works Site with the modifications described in the following appendices:

Appendix A – Scope of Work Outline

Appendix B – NYSDEC approval letter

Appendix C – SESI Correspondence regarding well abandonment clarifications

Appendix D – Clarification to utility clearance procedures

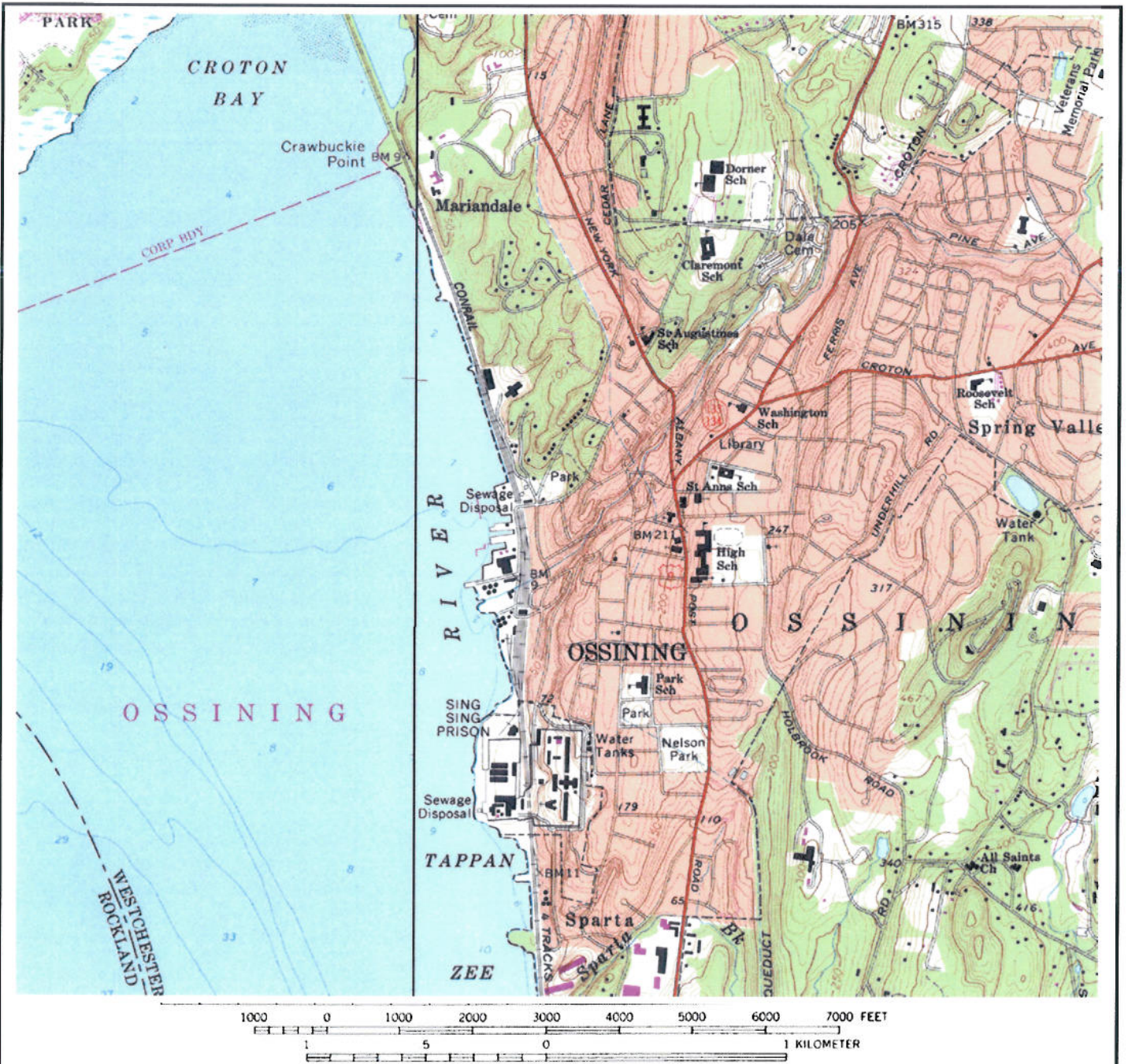
The scope of work outline (Appendix A) identifies the work to be performed and is based on discussions with the property owner, Ginsberg Development, and their environmental consultant, SESI Consulting Engineers (SESI), as well as NYSDEC, Con Edison and Schoor DePalma. This outline was previously submitted to and accepted by all parties as a condition of access to the site.

The NYSDEC approval letter (Appendix B), dated July 27, 2007, confirms approval of the scope of work described in the outline (Appendix A).

The correspondence from SESI (Appendix C) documents the property owners' direction regarding abandonment of the monitoring wells.

Appendix D clarifies the utility clearance procedures during work on the Harbor Square Area.

FIGURES



APPROXIMATE SITE LOCATION OUTLINED ON THE USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE: OSSINING, N.Y. (photorevised 1979).

FIGURE 1-1. SITE LOCATION MAP

SCHOOR DEPALMA
Engineers and Consultants

200 STATE HIGHWAY NINE
P.O. BOX 900
MANALAPAN, NJ 07726-0900

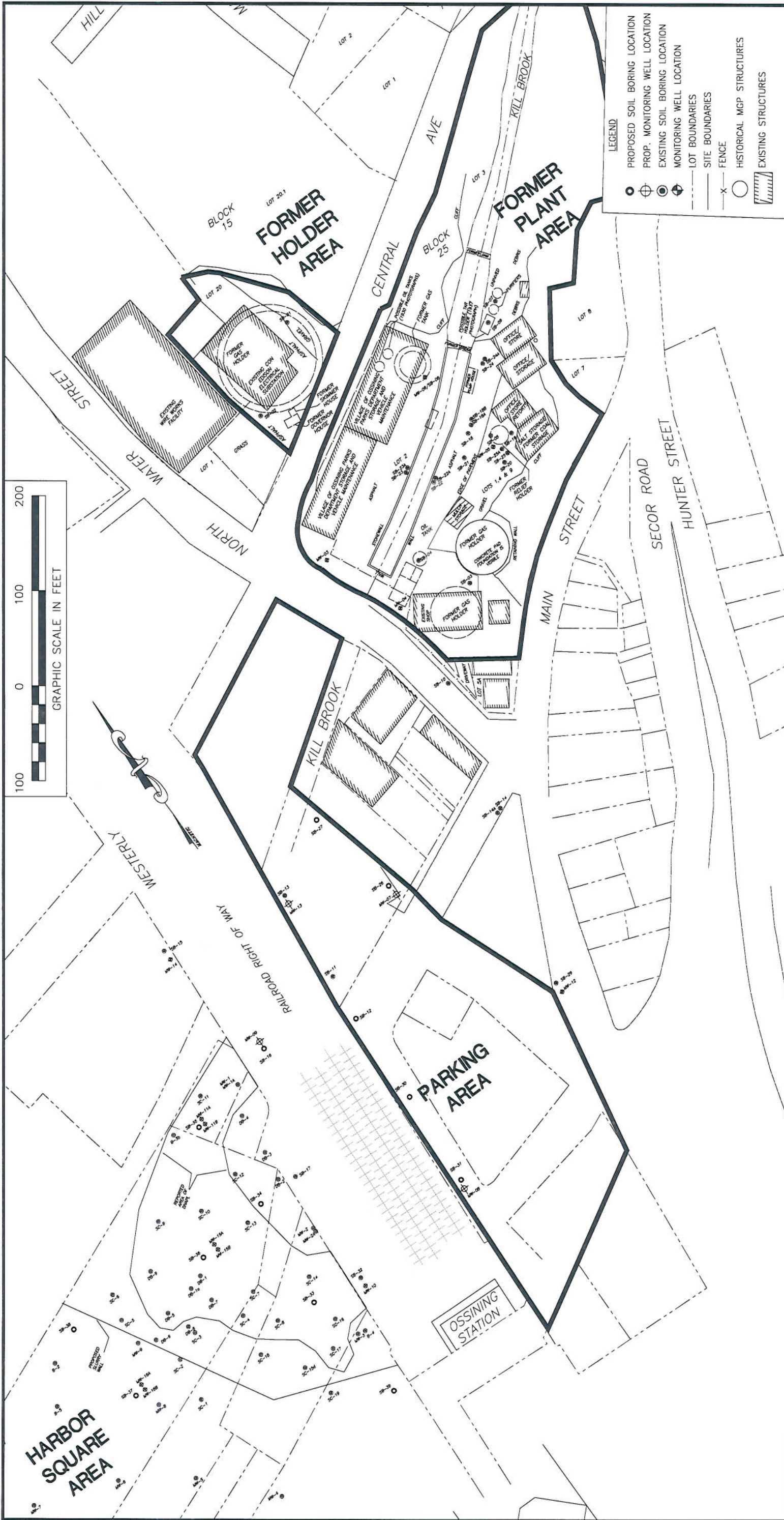


NORTH

FORMER OSSINING WORKS
MANUFACTURED GAS PLANT
SITE
OSSINING, NY



SCALE 1" = 2000'	DATE 01/10/06	DRAWN BY JMS	PROJECT NO. 060341901
---------------------	------------------	-----------------	--------------------------



PROJECT NO
060341901
SCALE (APPROXIMATE)
1" = 100'
DATE
7/27/07
CHECKED BY
JMS
SHEET NO.
1 of 1

FIGURE 1-2 SITE MAP
FORMER OSSINING GAS WORKS
BLOCK 25 LOTS 1, 2, 3, 4 & 9 AND BLOCK 15 LOT 20
VILLAGE OF OSSINING WESTCHESTER COUNTY NEW YORK

SCHOOR DEPALMA
Engineers and Consultants
Cert. Of Authorization 24GA27926200
200 STATE HIGHWAY NINE
P.O. BOX 900 MANALAPAN, NJ 07726
TEL (732)577-9000 FAX (732)577-9888

NOTE:
LOT BOUNDARIES AND STREET ALIGNMENTS ADAPTED FROM TAX MAP OF THE VILLAGE OF OSSINING. EXISTING STRUCTURES APPROXIMATED FROM 2005 AERIAL PHOTOGRAPH. HISTORICAL STRUCTURES ADAPTED FROM "HISTORICAL INVESTIGATION REPORT - FORMER OSSINING WORKS MGP SITE (SITE #000588) FIGURE 5-1, PREPARED BY THE RETEC GROUP, INC., FEBRUARY 19, 2003" AND HISTORICAL SANBORN FIRE INSURANCE COMPANY MAPS.

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APPENDIX A

SCOPE OF WORK OUTLINE

Proposed Investigation

Former Ossining Works-Offsite Activities

Harbor Square Area

- 1 Gauge and Sample Harbor Square Monitoring wells MW-1A/MW-1B, MW-2A/MW-2B, MW-3, MW-8 and MW-9
 - a. Analyze groundwater samples for VOCs, SVOCs, metals and cyanide
 - b. If non-aqueous phase liquid (NAPL) is present, obtain a sample, if possible for analysis of:
 - i. Specific gravity
 - ii. Forensic fingerprint
- 2 Install and sample seven (7) soil borings
 - a. The soil borings will be installed in the following locations:
 - i. SB-33 in the southern limb of the DNAPL area
 - ii. SB-34 along the eastern edge of the DNAPL area
 - iii. SB-35 in the northern limb of the DNAPL area
 - iv. SB-36 in the central portion of the DNAPL area in the vicinity of the apparent low point in the Silt/Clay
 - v. SB-37 west of the DNAPL area and the low area in the Silt/Clay
 - vi. SB-38 west of the DNAPL area near Kill Brook (Sing Sing Kill)
 - vii. SB-39 south of the DNAPL area
 - b. Each location will be advanced to the top of the silt/clay layer using hollow-stem auger drilling techniques. A temporary surface casing will be installed in the upper portion of the silt/clay layer and the boring will extend through the layer to the top of bedrock or a maximum depth of 100 feet below grade, whichever is reached first.
 - c. The borings will be sampled continuously to completion depth. Samples will be screened in the field for DNAPL, organic vapors and other evidence of contamination.
 - d. Samples will be collected for laboratory analysis at one or more of the following intervals.
 - i. Biased sample from above the silt/clay layer
 - ii. Biased sample within the silt/clay layer
 - iii. Biased sample below the silt/clay layer
 - iv. Sample with no field evidence of contamination
 - v. Sample from bottom of boring
 - e. Soil samples will be analyzed by a fixed base laboratory for one or more of the following: VOCs, SVOCs, metals and cyanide. Sample(s) of DNAPL, if encountered, will be subjected to forensic fingerprint analysis.
- 3 Install and sample groundwater monitoring wells at three locations.
 - a. Anticipated monitoring well locations are as follows:
 - i. MW-11 in the DNAPL area west of MW-1/MW-1A
 - ii. MW-15 in the central portion of the DNAPL area
 - iii. MW-16 west of the DNAPL area
 - b. At each location install two monitoring wells.

- i. One single-cased well will be installed with a screen that extends from above the water table to approximately 6 inches below the top of the silt/clay layer
- ii. One well double-cased well will be installed below the top of the silt/clay layer. The well screen will be selected based on observations from the nearby soil boring.
- iii. Groundwater samples will be obtained and analyzed from the newly installed in the same manner as described for the existing Harbor Square monitoring wells.

4 Well and Boring Abandonment

- a. Borings will be abandoned by grouting. Grout will consist of a Portland cement/bentonite slurry emplaced with a tremie pipe.
- b. Monitoring wells will be abandoned by sealing and grouting in place as follows:
 - i. The lower portion of the well will be filled with clean sand to approximately one foot above the top of the screen.
 - ii. The remainder of the well casing will be filled with a cement-bentonite slurry.
 - iii. The upper portion of the well casing will be cut off approximately one foot below grade.
- c. Well casings will not be pulled, overdrilled or perforated to avoid potential cross-contamination between the sand zones above and below the onsite silty clay layer.

APPENDIX B

NYSDEC APPROVAL LETTER

New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau C, 11th Floor
625 Broadway, Albany, New York 12233-7014
Phone: (518) 402-9564 • **FAX:** (518) 402-9679
Website: www.dec.state.ny.us



Alexander B. Grannis
Commissioner

July 27, 2007

Mr. Richard Rienzo, P.E.
Project Manager
Consolidated Edison Company
31-01 20th Avenue
Long Island City, NY 11105-2048

**Re: Proposed Soil Borings/Monitoring Wells on Harbor Square
Voluntary Cleanup Agreement Index No. D2-0003-02-08
Site No.: V00568
Ossining, Westchester County, New York**

Dear Mr. Rienzo,

The New York State Department of Environmental Conservation (Department) has reviewed the proposal (ref. 7/25/07 email) by Consolidated Edison to install seven (7) soil borings and six (6) monitoring wells on the Harbor Square Brownfield Cleanup Site (Site No. C360091). This scope of work has been put forth in response to the presence of DNAPL at the Harbor Square Site and to fully delineate the nature and extent of contamination from the Former Ossining Manufactured Gas Plant. This scope of work is hereby approved.

It is the Department's understanding the Consolidated Edison will adhere with all relevant appendices in the approved Site Characterization Work Plan for quality assurance, field sampling, health & safety, and community air monitoring; and well decommissioning and abandonment will be consistent with Department guidance.

Please forward a copy this plan to the document repositories, the New York State Department of Health, Harbor Square LLC, and this office.

If you have any questions concerning this matter, please contact me at (518) 402-9564.

Sincerely,

Matthew Hubicki
Project Manager
Remedial Bureau C
Environmental Remediation

APPENDIX C

SESI CORRESPONDENCE

From: Michael St. Pierre [msp@sesi.org]
Sent: Friday, July 27, 2007 10:45
To: Schindler, Jason; Matthew Hubicki; Keith Diorio
Cc: Larry Menkes; Richard Rienzo; Michael Ryan; Linda Shaw
Subject: RE: Update Scope of Work for Harbor Square

Jason-

Please cut the casing off a minimum of 2 feet below grade. If you could also fill the top couple of feet with a bentonite slurry, that would be good.

I will overnight you a plan showing the building and pile locations for you to layout your wells.

Thanks

.....
Michael St. Pierre, P.E.
Principal
SESI CONSULTING ENGINEERS
12-A Maple Avenue
Pine Brook, NJ 07058

Phone: (973) 808-9050
Fax: (973) 808-9099
email: msp@sesi.org
www.sesi.org

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-----Original Message-----

From: Schindler, Jason [mailto:jschindi@schoordepalma.com]
Sent: Thursday, July 26, 2007 8:03 AM
To: Michael St. Pierre; Matthew Hubicki; Keith Diorio
Cc: Larry Menkes; Richard Rienzo; Michael Ryan; Linda Shaw
Subject: RE: Update Scope of Work for Harbor Square

Michael,

Following are Schoor DePalma's responses to your comments.

1. If you provide us with a copy of your pile map we will locate the wells such that they do not interfere with the pile locations. I do not currently expect a surveyor to be necessary for this task. We plan to survey the locations and elevations of the wells and borings after they are completed.

2. If necessary, we can modify the proposed approach for depth of casing cut offs. Do you have a cut and fill plan that would establish necessary depths for cut-offs? Alternatively, if you feel that filling the well risers and surface casings with cement will pose construction problems we could fill the upper several feet of the risers and casings with a bentonite slurry, subject to DEC approval. The bentonite would be

placed above the cement slurry and would serve as a temporary seal which could be removed if necessary.

3. Drill spoils and fluids will be drummed for offsite disposal by Con Edison. The investigation-derived waste will be classified by sampling prior to disposal.

Please contact me if you have any questions or require further clarifications.

Thanks,

Jason Schindler
Vice President
SCHOOR DEPALMA
200 State Highway Nine
Manalapan, NJ 07726-0900
Phone: (732) 577-9000
FAX: (732) 577-8168
Website: www.schoordepalma.com

-----Original Message-----

From: Michael St. Pierre [mailto:mstp@sesi.org]
Sent: Wednesday, July 25, 2007 15:32
To: Schindler, Jason; Matthew Hubicki; Keith Diorio
Cc: Larry Menkes; Richard Rienzo; Michael Ryan; Linda Shaw
Subject: RE: Update Scope of Work for Harbor Square

Jason-

I would recommend that the proposed wells be laid out by a surveyor prior to their installation so that we can ensure that they do not interfere with any of the proposed piles.

You intend to cutoff the well casings approx. 1 foot below grade - is there any concern if the proposed construction extends below that elevation and the wells are hit or cutoff further down?

What will be done with the spoils from the drilling? What about the excess drilling mud?

Thanks

Michael St. Pierre, P.E.
Principal
SESI CONSULTING ENGINEERS
12-A Maple Avenue
Pine Brook, NJ 07058

Phone: (973) 808-9050
Fax: (973) 808-9099
email: mstp@sesi.org
www.sesi.org

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-----Original Message-----

From: Schindler, Jason [mailto:jschindl@schoordepalma.com]
Sent: Wednesday, July 25, 2007 2:51 PM
To: Matthew Hubicki
Cc: Larry Menkes; Richard Rienzo; Michael Ryan; Linda Shaw; Michael St. Pierre
Subject: RE: Update Scope of Work for Harbor Square

Attached please find the revised outline for Harbor Square. Section 4 identifies boring and well abandonment.

Thank You,
Jason Schindler

-----Original Message-----

From: Matthew Hubicki [mailto:mshubick@gw.dec.state.ny.us]
Sent: Wednesday, July 25, 2007 13:47
To: Schindler, Jason
Cc: Larry Menkes; Richard Rienzo; Michael Ryan; Linda Shaw; msp@sesi.org
Subject: Update Scope of Work for Harbor Square

Jason,

As discussed this morning ... please update the scope of work to include details for backfilling the soil borings that go through and below the confining clay silt layer to prevent a possible conduit for DNAPL. And abandonment of the deep wells, too. (Refer to guidance Draft 2002 MW Decommissioning).

If you can send electronically to Mike Ryan and I we will try to review asap. Well Mike will ... because I will be out of the office tomorrow & Friday.

Please give me call if you have any questions.

Thanks
Matt

518-402-9564
518-402-9605 (direct)

APPENDIX D

UTILITY CLEARANCE CLARIFICATION

Utility clearance will be performed as described in Section 3.2.1 of the Site Characterization Work Plan with the following clarification:

Locations will be a minimum of 10 feet from marked underground utilities and utilities identified through the geophysics, if any. The drillers will probe ahead of the drill tools for the first 5 feet in lieu of a separate vacuum excavation.