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) 402-9662 • **FAX:** (518) 402-9679
Website: www.dec.state.ny.us

Alexander B. Grannis
Commissioner

July 16, 2009

Yelena Skorobogatov
Environment, Health and Safety
Consolidated Edison Company of New York, Inc.
31-01 20th Avenue
Long Island City, NY 11105-2048

Re: ISS Modification
Con Edison White Plains Former MGP Site
Site No. V00438

Dear Ms. Skorobogatov:

In your letter dated June 30, 2009, modifications to the approved work plan are presented by ConEdison and Compass. Those modifications are hereby approved. No modification of that plan is required, but the following items are noted:

1. The Compass document indicates that "unrepresented conditions include bedrock outcroppings, extremely tightly packed gravel lenses, large amounts of boulders, a relatively thick layer of fractured bedrock above the competent bedrock, and pockets of tight clays." This statement does not accurately describe our understanding of the conditions at the site. To the best of our knowledge, no outcroppings have been encountered. The other items also appear to reference subsurface observations that the Department is not aware of. If any reports are available documenting the extent of boulders, tight clays, fractured bedrock, and gravel lenses, please provide us with a copy.

2. This document also describes "the weight of sand dropping out of the soil-cement mixture" as the force making it difficult to extract the auger and Kelly bar. Has this phenomenon been documented at this site, or is it an hypothesis? It is our understanding that the cause of both the subsidence and difficulty extracting equipment are unexplained at this time. We have a number of similar projects planned in sandy areas, so it is critical to understand what has happened at this site to the extent possible.

3. Identification of the "tight layer" was possible only after observing the performance of the mixing auger. It would be useful if such a layer could be identified prior to mobilization of mixing equipment. Are there any qualitative or quantitative descriptions of this material that would aid in that effort in other jobs?

4. The Compass document does not include the results of the jet grouting demonstration. The results of that demonstration and the subsequent coring program will dictate the delineation of "hot-spot areas," determine the effective diameter of jet grout columns, and determine the reliability of achieving this diameter. If the reliability is low (i.e uncertainty is high), this could dictate the need for more than two rows of columns for the perimeter barrier.

If you have any questions, please contact me at (518) 402-9686.

Sincerely,

William S. Ottaway, P.E.
Environmental Engineer 2
MGP Remedial Section
Division of Environmental Remediation

ec Gardiner Cross, NYSDEC
Anthony Perreta, NYSDOH
Mark VanValkenburg, NYSDOH
Yelena Skorobogatov, Con Ed

C:\Documents and Settings\kmdenyse\My Documents\Gardiner Cross\Bill Ottaway\letter.V0043802.2009-07-16.Modification_Request.wpd

conEdison
a conEdison, inc. company

Consolidated Edison Company
of New York, Inc.
31-01 20th Avenue
Long Island City NY 11105-2048
www.conEd.com

June 30, 2009

William Ottaway, P.E.
New York State Department of Environmental Conservation
625 Broadway
Remedial Bureau C, 11th Floor
Albany, NY 12233-7014

Re: **White Plains Former MGP Site, OU-2**
Request for ISS Depth Modification
Site No. V00438

Dear Mr. Ottaway:

This letter provides a brief summary of the remedial construction activities currently being conducted at the White Plains Former MGP Site, OU-2 (the Site) and the associated issues with advancing the in-situ soil stabilization (ISS) to bedrock. Consolidated Edison Company of New York, Inc. (Con Edison) would like to formally petition the New York State Department of Environmental Conservation (NYSDEC) for a modification to the ISS depth requirement (i.e. ISS to bedrock) set forth in the approved "Remedial Design Report Operable Unit 2 (OU-2) White Plains Former MGP Site (Site #V00438-3) White Plains, New York" dated November 2007 (RDR). The NYSDEC provided verbal approval of this depth modification request during the June 12, 2009 weekly onsite construction meeting. In addition, the NYSDEC has agreed to move forward with the plan as outlined in the attached work plan. The requested ISS depth modification and supporting field observations are provided herein for the NYSDEC's formal approval.

As indicated in this letter, the ISS depth modification was petitioned due to problems that the selected remedial contractor (i.e., WRScompass) is experiencing in the field with advancing the ISS operations to bedrock with the currently mobilized ISS equipment (i.e. Manitowoc 4000W crane equipped with Hain 450K S-2 drilling platform, Kelly bar and various size augers). As previously discussed during the on-site weekly construction meetings, WRScompass has indicated that the ISS equipment utilized at the Site to date can not effectively advance the ISS operations to bedrock due to subsurface soil conditions such as "tight" soil layers, tightly packed gravel lenses, and fluidizing sands.

Summary of Remedial Objectives

The RDR was developed with the following objectives:

- Prevent the ingestion/direct contact with impacted soil and groundwater;
- Prevent the inhalation of volatiles from impacted soil or groundwater, and
- To the extent feasible and consistent with safety and other concerns identified above, undertake the treatment and/or removal of MGP source materials.

The remedy components set forth in the RDR to satisfy the above remedial objectives include:

- In-situ stabilization/solidification of MGP source materials;
- Installation of a low-permeability cap or clean soil cover;
- Institutional controls, and
- Groundwater monitoring.

<u>Excavator Based ISS Results</u>

As depicted on Figure 1, the coring program implemented in the excavator based ISS area, revealed the presence of untreated soils between the bottom of the ISS cells and bedrock in fourteen ISS cells (P2, P4, P5, P8 through P14, P17, EM2, EM13, and TP4). The untreated soils within this ISS cells ranged in thickness from approximately 1.5 feet in EM13 TP5 to approximately 15 feet in P9. In addition, 6 and 12 inches of untreated soils were found within ISS cells TP5 and P3, respectively between the bottom of the ISS cells and bedrock.

As discussed during the on-site weekly construction meetings, WRScompass has indicated that the excavator used during the ISS operations (i.e., Komatsu 300) could not advance to the anticipated bedrock depths due to the presence of boulders and tightly packed gravel lenses.

<u>Auger Based ISS Results</u>

As depicted on Figure C006, various size auger diameters have been utilized by WRScompass in installing the ISS columns in the auger based ISS area. These auger diameters are listed in Table 1 and all of the augers were mounted on a 4000-series Manitowoc 4000 crane equipped with an attached Hain 450K S-2 drilling platform. The cutting teeth configuration on the various auger sizes were similar with the exception to the 8-foot auger used by WRScompass on June 1 through 3, 2009 which had a more aggressive cutting teeth design and configuration.

As detailed on Table 1, the 9-foot diameter auger was advanced on average to within 6.4 feet of anticipated bedrock (based on 6 ISS columns), the 8-foot auger advanced on average to within 5.6 feet of anticipated bedrock (based on 11 ISS columns), the 7-foot diameter auger was advanced on average to within 6.3 feet of anticipated bedrock depth (based on 34 ISS columns), the 6-foot diameter auger was advanced on average to within

6.3 feet of anticipated bedrock depths (based on 3 ISS columns), the 4-foot diameter auger was advanced on average to within 6.5 feet of anticipated bedrock depth (based on 5 ISS columns), and the alternate designed 8-foot diameter auger advanced on average to within 11.1 feet of anticipated bedrock depth (based on 10 ISS columns).

As discussed during the on-site weekly construction meetings, WRScompass has indicated that the ISS equipment utilized at the Site can not effectively advance the ISS operations to bedrock due to subsurface soil layers that are preventing the augers from advancing. In addition, WRScompass has indicated that the ISS equipment cannot effectively advance the ISS columns through dense soil formations or through soil formations that contain gravel. WRScompass has indicated that they have exhausted all of their viable options for performing the auger-based ISS operations and cannot advance the ISS columns to bedrock due to the Site's subsurface geologic conditions.

Proposed ISS Depth Modification

As discussed during the on-site weekly construction meetings, Con Edison is requesting that the Site wide ISS depths be modified as follows:

- The interior ISS columns will be advanced to the maximum depth feasible utilizing existing ISS equipment;
- The perimeter ISS columns will be advanced to bedrock using a combination of auger and jet grouting ISS techniques to create a perimeter curtain on the northern, western and southern sides of the auger-ISS area;
- The excavator-based ISS cells will remain as constructed and a jet grout perimeter curtain will be advanced to bedrock on the northern, eastern, and southern sides of the excavator-based ISS area; and
- The interior areas of the Site that contain MGP source material (i.e., NAPL) will be treated using a combination of auger and jet grouting ISS techniques.

Interior ISS Columns

ISS operations within the auger-based ISS area will continue with the advancement of ISS columns to the maximum depth feasible utilizing the existing crane-mounted auger equipment. Based on previous auger performance and optimum production rates, it is anticipated that an eight-foot diameter auger will be utilized by WRScompass. The ISS columns will be constructed using a 15% overlap to the extent feasible.

The auger-based ISS operations resumed at the Site on June 15, 2009 with the installation of ISS columns along the northern extent of the auger-based ISS area. A field demonstration for jet grouting technologies will take place at the Site during the weeks of June 22 and June 29, 2009. The auger-based ISS operations will be temporarily suspended to allow for the field demonstration to take place. Following the completion of the jet grouting field demonstration, the auger based ISS operations will resume while the results of the field demonstration are being obtained and evaluated.

Excavator-based ISS techniques may be employed in lieu of augers in the center portion of the Site (i.e., in the area of soil boring SB-227) where the bedrock is anticipated to be steeply sloping and is shallow enough to be reached with an excavator.

Perimeter ISS Columns and Cells

ISS operations along the perimeter of the auger-based ISS area will continue with the advancement of ISS columns to the maximum depth feasible utilizing the crane-mounted auger equipment. Should the auger-based perimeter ISS columns not advance to bedrock, jet grouting techniques will be used as a supplemental means to advance the ISS down to bedrock.

In order to address the untreated soils identified between the completed excavator-ISS cells and the bedrock, jet grouting techniques will be used to advance the ISS material down to bedrock around the perimeter of the excavator-based ISS area. Since the boring program revealed that soils have been treated down to anticipated bedrock depths within ISS cells P1, P6 and P7, the perimeter jet grout curtain will not be extended around these perimeter cells.

The jet grouting equipment will use rotary drill methods to advance through the previously installed auger-ISS columns and cells until the bedrock is reached. Upon reaching bedrock, a double fluid jetting method will be used to inject grout from bedrock to the bottom of the previously installed ISS columns and cells at predetermined injection and rotation rates. At least two rows of jet grout columns will be installed. The radius of influence for a typical jet grout column will be determined during the field demonstration test using rock coring or split spoon sampling techniques.

Interior Areas Containing MGP Source Material

The historic and rotosonic boring programs indicate potential MGP source material between soil layers containing gravel and bedrock in soil borings SB-209, RSB-1, SB-210, RSB-5, RSB-8 and SB-202. Should the auger-based ISS operations not reach the depths of the potential MGP source material in the locations of these soil borings, jet grouting will be implemented below the auger-ISS columns to effectively treat the MGP source material. The lateral extent of the jet grouting techniques within these areas will be determined based on the actual depths of the auger-ISS columns after installation.

In addition, the coring program within the excavator based ISS area revealed the presence of red/gold colored product within ISS cell P5 at a depth of 17.5 to 19 feet below grade surface as described in boring log P5-1. Jet grouting techniques will be employed in this area of the Site so that this product layer can be treated. It is anticipated that this product layer will be treated during the jet grouting techniques used to create the perimeter curtain along the east side of the excavator-based ISS area.

As discussed during the on-site weekly construction meetings, the NYSDEC has agreed that the above ISS depth modifications do not change the components of the Site's selected remedy. In addition, the ISS depth modifications will allow the remedial construction activities to occur within the current project schedule. Con Edison requests formal approval of the ISS depth modifications.

If you have any questions or require further information, please contact me at 718-204-4205, or via e-mail at skorobogatovy@coned.com.

Sincerely Yours,

Y. Skorobogatov

Yelena Skorobogatov
Technical Specialist
MGP Remediation
Environment, Health and Safety

Enc.

Cc: Mark Van Valkenburg, NYSDOH
Michael Lesser, Esq., NYSDEC
Edward Moore, NYSDEC-Region 3
Eddy Louie, Con Edison
Mike Wilcken, Esq., Con Edison

CORE LOCATION	DATE INSTALLED	NOTES	ISS THICKNESS	GROUND	UNTREATED SOIL	BEDROCK
CL-1	1/30/09	ISS FROM 0-13.9' BGS (SS SAMPLING) BOTTOM OF BORING AT 13.9' BGS				
CL-2	2/2/09	ISS FROM 0-13.8' BGS (SS SAMPLING) BOTTOM OF BORING 13.8' BGS				
CL-3	2/2/09	ISS FROM 0-13.6' BGS (SS SAMPLING) BOTTOM OF BORING 13.6' BGS				
P9-1	4/22/09	UNTREATED SOIL FROM 13.5'-24' BGS BOULDER FROM 16.5'-19.5' BGS BEDROCK AT 24' BGS	10.5'	188.45	174.95-164.45	164.45
P9-2	4/22-23/09	UNTREATED SOIL FROM 12'-23' BGS BEDROCK AT 23' BGS	11'	188.45	176.45-164.45	164.45
P9-3	4/23/09	UNTREATED SOIL FROM 9'-23.8' BGS BEDROCK AT 23.8' BGS	14.8'	188.45	179.45-164.65	164.65
P10-1	4/28/09	UNTREATED SOIL FROM 14'-24' BGS BOULDER FROM 18'-19' BGS BEDROCK AT 24' BGS	10'	188.50	174.50-164.50	164.50
P8-1	4/28-29/09	UNTREATED SOIL FROM 13'-21' BGS BEDROCK AT 21' BGS	8'	188.64	175.64-167.64	167.64
P11-1	4/30/09	UNTREATED SOIL FROM 15.5'-25' BGS BEDROCK AT 25' BGS	9.5'	188.98	173.48-163.98	163.98
P12-1	5/1/09	UNTREATED SOIL FROM 18'-26' BGS BEDROCK AT 26' BGS	8'	188.79	170.79-162.79	162.79
P13-1	5/4/09	UNTREATED SOIL FROM 19'-26.5' BGS BEDROCK AT 26.5' BGS	7.5'	190.15	171.15-163.65	163.65
P14-1	5/4-5/09	UNTREATED SOIL FROM 15'-26' BGS BEDROCK AT 26' BGS	11'	188.73	173.78-162.78	162.78
P17-1	5/5/09	UNTREATED SOIL FROM 22'-30.5' BGS BEDROCK AT 30.5' BGS	8.5'	188.83	166.83-158.33	158.33
EM2-1	5/6/09	UNTREATED SOIL FROM 13'-18' BGS BEDROCK AT 18' BGS	5'	188.39	175.39-170.39	170.39
P7-1	5/7/09	NO UNTREATED SOIL REINFORCED CONCRETE 8-13.8' BGS BEDROCK AT 13.8' BGS	4'	188.70	-	174.90
P15-1	5/8/09	NO UNTREATED SOIL BEDROCK AT 16' BGS	12'	188.17	-	176.17
P6-1	5/12/09	NO UNTREATED SOIL BEDROCK AT 8' BGS	4'	188.6	-	180.6
TP5-1	5/13/09	UNTREATED SOIL FROM 13.5-14' BGS BEDROCK AT 14' BGS	11.5'	188.3	174.8-174.3	174.3
TP4-1	5/13-5/14/09	UNTREATED SOIL FROM 15-17' BGS BEDROCK AT 17' BGS	13'	188.3	173.3-171.3	171.3
EM3-1	5/19/09	NO UNTREATED SOIL BEDROCK AT 12' BGS	9'	188.6	-	176.6
P1-1	5/19/09	NO UNTREATED SOIL BEDROCK AT 15' BGS	11'	188.9	-	173.9
P3-1	5/20/09	UNTREATED SOIL FROM 13.5-14.5' BGS BEDROCK AT 14.5' BGS	10.5'	188.4	174.9-173.9	173.9
P2-1	5/21/09	UNTREATED SOIL FROM 14-17.5' BGS BEDROCK AT 17.5' BGS	10'	188.1	174.1-170.6	170.6
P4-1	5/21/09	UNTREATED SOIL FROM 10.5-18.5' BGS BEDROCK AT 18.5' BGS	6.5'	188.9	178.4-170.4	170.4
EM8-1	5/22/09	NO UNTREATED SOIL BEDROCK AT 14.5' BGS	11.5'	188.5	-	174.0
P5-1	5/26/09	UNTREATED SOIL FROM 14.5-19' BGS BEDROCK AT 19' BGS	10.5'	188.7	174.2-169.7	169.7
EM13-1	5/26/09	UNTREATED SOIL FROM 17-18.5' BGS BEDROCK AT 18.5' BGS	13'	188.7	171.7-170.2	170.2

SCALE: 1"=5'

LEGEND:

- ROTOSONIC BORING LOCATION (WITH BEDROCK ELEVATION)
- COMPLETED CORE LOCATION (APPROXIMATE LOCATION-NOT SURVEYED)
- HISTORICAL BORING LOCAITON
- 167.27 BEDROCK ELEVATION
- (22) ANTICIPATED DEPTH TO BEDROCK
- P11 EXCAVATOR BASED ISS CELL
- (15.5) APPROXIMATE DEPTH OF ISS TREATED SOIL FROM WORKING GRADE
- CELLS WITH UNTREATED SOIL
- CELLS WITH 0-12" OF UNTREATED SOIL

NO.	DESCRIPTION	DATE	DRAWN	CHK'D	APPV'D
A	ISSUED FOR REVIEW	-	JR	WJL	-

DRAWN BY: JR	DATE: 4/28/09	SEAL
CHECKED BY: WJL	DATE: -	
APPROVED BY: MAM	DATE: -	
PROJECT MGR.: MAM	DATE: -	

PARSONS
COMMERCIAL TECHNOLOGY GROUP

OFFICE: 290 ELWOOD DAVIS RD, LIVERPOOL, NY 13088, 315-451-9560
JOB: 442189
WBS: 12100

PROJECT TITLE: Consolidated Edison Remedial DesignReport
White Plains Former MGP OU-2 Site

DRAWING TITLE: CORING DELINEATION PLAN 5/27/09

SCALE: AS SHOWN

DRAWING NO.: FIGURE 1 REV.: A

FILE NAME: P:\CONED\442189 - WHITE PLAINS\CAD\AUGER DRAWINGS\C006-ISS 5-14-09.DWG
PLOT DATE: 6/9/2009 2:50 PM PLOTTED BY: RUSSO, JILL

NO.	DESCRIPTION	DATE	DRAWN	CHK'D	APPV'D
A	ISSUED FOR REVIEW	–	JR	WJL	–

DRAWN BY: JR — DATE: 4/28/09
CHECKED BY: WJL — DATE: –
APPROVED BY: MAM — DATE: –
PROJECT MGR.: MAM — DATE: –
SEAL

PARSONS
COMMERCIAL TECHNOLOGY GROUP

OFFICE: 290 ELWOOD DAVIS RD, LIVERPOOL, NY 13088, 315-451-9560
JOB: 442189
WBS: 12100

PROJECT TITLE:
Consolidated Edison Remedial DesignReport
White Plains Former MGP OU-2 Site

DRAWING TITLE:
AUGER PLAN 6/8/09

SCALE: AS SHOWN
DRAWING NO.: C006
REV.: A

TABLE 1
Con Edison
Former MGP Site
White Plains, NY
Auger Based ISS Column Elevations and Anticipated Bedrock

DATE	COLUMN ID	COLUMN DIAMETER	ISS COLUMN ELEVATIONS TOP	ISS COLUMN ELEVATIONS BOTTOM	DEPTHS ABOVE ANTICIPATED BEDROCK	ANTICIPATED BEDROCK ELEVATIONS*
		(FT)	(FT)	(FT)	(FT)	(FT)
3/30/09	M10	9	181.73	161.40	3.10	158.3
3/31/09	N15	9	183.18	160.24	9.84	150.4
"	N14	9	183.18	156.79	2.39	154.4
4/2/09	N5	9	182.04	139.70	4.00	135.7
"	N6	9	182.04	149.87	12.87	137.0
4/3/09	N7	9	182.04	145.10	6.20	138.9
4/7/09	M3	8	181.12	146.84	4.14	142.7
4/8/09	L3	8	181.35	147.62	4.82	142.8
"	N3	8	181.96	145.50	5.20	140.3
"	L2	8	182.23	146.28	2.28	144.0
4/9/09	K2	8	182.50	148.59	3.59	145.0
"	J2	8	181.22	150.04	4.84	145.2
"	J3	8	182.20	150.83	4.13	146.7
"	I2	8	181.95	152.73	8.03	144.7
"	I1	8	181.82	148.39	6.39	142.0
4/10/09	N2	8	183.91	141.76	2.56	139.2
"	M2	8	183.92	157.32	15.72	141.6
4/16/09	7h1	7	179.95	152.30	8.30	144.0
"	7n1	7	184.78	142.81	0.61	142.2
"	7m1	7	184.00	146.17	2.37	143.8
4/17/09	7m1 (north)	7	185.80	181.39	38.99	142.4
4/22/09	7003	7	184.86	161.76	5.46	156.3
"	7004	7	184.62	163.65	6.45	157.2
"	7009	7	183.88	165.19	3.19	162.0
"	7010	7	182.00	166.98	2.48	164.5
"	7011	7	183.28	164.00	6.00	158.0
"	7008	7	184.00	163.82	6.02	157.8
4/23/09	7021	7	183.23	173.69	10.69	163.0
"	7P10	7	181.33	162.87	9.67	153.2
"	7O11	7	181.54	163.26	7.96	155.3
"	7N12	7	181.43	167.02	9.02	158.0
"	7M11	7	181.51	164.85	7.05	157.8
"	7L10	7	181.62	163.27	8.47	154.8
"	7N11	7	181.61	162.77	8.97	153.8
"	7o10	7	181.87	160.90	7.70	153.2
"	7M10	7	182.22	162.00	8.40	153.6
4/24/09	7u17	7	189.30	154.35	1.35	153.0
"	7k9	7	182.65	162.81	8.91	153.9
"	7L9	7	182.60	160.87	8.57	152.3
4/24/09	7m9	7	183.26	160.01	7.71	152.3
"	7n10	7	182.34	161.10	8.30	152.8
"	7o9	7	182.37	158.16	4.26	153.9
4/24/09	7p9	7	182.93	156.93	0.43	156.5
"	7q8	7	182.04	155.90	5.50	150.4
"	7k8	7	182.07	159.65	6.65	153.0
4/28/09	7k7	7	184.41	158.55	6.45	152.1
"	7L8	7	184.67	158.92	6.62	152.3
4/29/09	7m8 (Remix)	7	184.53	157.97	6.47	151.5
4/28/09	7p8	7	184.85	155.01	2.81	152.2
4/30/09	7L7	7	185.36	158.02	7.42	150.6
5/12/09	6U14	6	182.48	153.55	6.55	147.0
"	6V23	6	183.76	153.90	3.70	150.2
"	6T13	6	183.63	151.98	8.78	143.2
5/29/09	4-Q-16	4	185.47	161.89	6.89	155.0
"	4-A-I-11	4	184.70	138.54	3.34	135.2
"	4-A-J-19	4	189.04	146.12	5.92	140.2
"	4-o-2	4	185.16	152.53	11.83	140.7
5/30/09	4-B-11	4	185.87	154.97	4.47	150.5
6/1/09	8Test1	8	186.24	155.47	2.97	152.5
"	8Test2	8	185.99	156.65	3.35	153.3
"	8Test3	8	185.94	151.58	10.68	140.9
6/2/09	8Test4	8	186.80	150.94	6.54	144.4
"	8A2	8	183.60	151.28	7.08	144.2
"	8A3	8	182.84	150.75	6.75	144.0
"	8b1	8	182.77	154.35	12.15	142.2
"	8e1	8	182.52	158.55	17.15	141.4
6/3/09	8d1	8	180.64	159.81	18.21	141.6
"	8c1	8	181.03	165.93	25.63	140.3

Notes:

* = estimated based on historic boring logs and rotosonic boring logs. The estimated bedrock elevation is at the ISS column center.

92 N. Main Street
Unit 20B, P.O.Box 10
Windsor, New Jersey 08561
609-371-7500 Phone
609-371-7508 Fax

Revised In-situ Soil Stabilization Approach due to Changed Subsurface Conditions

During the execution of the contractual scope of work, WRScompass encountered changed and unexpected subsurface conditions at the Con Edison Former MGP site located in White Plains, NY.

The following sections of this document summarize the actually encountered subsurface conditions at the site and WRScompass' suggested approach for the in-situ soil stabilization (ISS) going forward in light of the changed subsurface conditions.

The approach outlined within this document was largely developed as a result of the most recent attempts (on May 29, 2009) to advance a 4-foot diameter auger through the entire stratigraphic column at the captioned site to the top of bedrock and subsequent discussions among all parties involved during the May 29, 2009 progress meeting. We believe that the suggested approach reflected herein is the most feasible remedial approach for the site given the current conditions.

BACKGROUND

During the field demonstration conducted on March 30 and March 31, 2009, the auger mixing utilizing the 9-foot auger, with bedrock not reached in all field demonstration columns advanced. Within the matter of a few days it became quite clear that the subsurface conditions being encountered precluded the continued use of the 9-foot auger. Specifically, the unrepresented conditions included bedrock outcroppings, extremely tightly packed gravel lenses, large amounts of boulders, a relatively thick layer of fractured bedrock above the competent bedrock and pockets of tight clays not reflected in the information provided at the time of bid.

Moreover, even the identified sandy matrix (f sand; m sand; c sand; with trace amounts of silt or gravel) inexplicitly appear to readily fluidize in response to the in-situ stabilization efforts. This results in adverse and abrasive drilling conditions as evidenced in extreme lateral movement on the crane boom as well as line-pulls in excess of 75 to 100 tons that are routinely encountered when trying to treat the column in an upward fashion or while trying to retrieve the Kelly bar from a column. Several ISS auger column locations installed to date have required the crane operator to engage significant line pull on the load block to remove the Kelly bar and auger from the subsurface after penetration into the compact subsurface layers and fluidized sand. The weight of the sand dropping out of the soil-cement mixture is forcing the Kelly bar movement and results in significantly increased line-pull requirements. The Manitowoc 4000W 175-ton crawler crane and 100-

ton load block with 1.125" diameter wire rope cable (threaded 4 times) is capable of line pull forces over twice the tonnage compared to fixed-auger hydraulic soil mixing drill rigs. The stresses that these conditions put on the entire crane mounted drill rig system has caused some equipment damage as well as excessive wear and tear and were resulting in unsafe working conditions.

Based on these changed subsurface conditions, it became quite apparent that the use of large-diameter augers would be precluded and that a smaller diameter auger would be required. An initial attempt was made by switching to an 8-foot auger. After minor initial successes the same problems were encountered, so a 7-foot diameter auger was then installed. Even the use of the 7-foot diameter auger was producing unsafe stabilization activities, resulting in a suspension of work activities on April 30, 2009.

A 6-foot diameter auger has been attempted with a new heavier Kelly bar. There remains significant concern that even the smaller diameter augers can not avoid the same Kelly bar movement and line-pull requirements that plagued the larger diameter augers and resulted in the unsafe operating conditions.

WRScompass received a 4-foot diameter auger at the site on May 28, 2009 and commenced with an attempt to install 4-foot ISS column through the "tight layer" down to bedrock to definitively show if any sized auger can safely be used at the site. This 4-foot diameter auger is the smallest diameter auger technically feasible. On May 29, 2009, and June 1, 2009 WRScompass advanced a total of five 4-foot diameter borings (namely 4O2; 4Ai11; 4AJ19; 4Q16; 4B11). Even with the small diameter auger, these borings could not penetrate the "tight layer" precluding their advancement to the top of bedrock. The 4-foot diameter auger columns could only reach to the top of the "tight Layer" and were terminated generally between approximately 4 and 13 feet shy of the top of bedrock.

On June 1, 2009, WRScompass attempted to advance 8-foot diameter columns with a newly designed auger with an aggressive cutting/mixing profile. This auger was applied in the immediate vicinity of the 4-foot diameter auger columns. Even this auger could not successfully penetrate the "tight layer". Between June 1, 2009 and June 3, 2009, WRScompass advanced ten 8-foot diameter columns (namely Test 8-1 through Test 8-4; 8A2; 8A3; 8d1; and 8c1). With the exception of ISS columns 8c1 and 8d1 these 8-foot diameter auger columns could only reach to the top of the "tight layer" and were terminated approximately 4 and 12 feet above top of bedrock. Columns 8c1 and 8d1 were terminated between approximately 21 and 27 feet above bedrock but at installation depths of over 15 and 20 feet bgs, respectively.

The results of the additional auger-ISS attempts have been summarized in Table 1 below:

Table 1

Column ID	Auger Diameter [feet]	Top Elevation	Bottom Elevation	Depth of Column [ft bgs]	Anticipated Depth to Bedrock [ft bgs]	Suggested Reason for Termination
4O2	4	185.16	152.53	32.63	45	tight/hard layer
4AI11	4	184.70	138.54	46.16	51	tight/hard layer
4AJ19	4	189.04	146.12	42.92	45	tight/hard layer
4Q16	4	185.47	161.89	23.58	32	tight/hard layer
4B11	4	185.87	154.97	30.90	35.5	tight/hard layer
Test 8-1	8	186.24	155.47	30.77	35.5	tight/hard layer
Test 8-2	8	185.99	156.65	29.34	35.5	tight/hard layer
Test 8-3	8	185.93	151.58	34.35	45	tight/hard layer
Test 8-4	8	186.80	150.94	35.86	44	tight/hard layer
8A2	8	183.60	151.28	32.32	42.5	tight/hard layer
8A3	8	182.84	150.75	32.09	42.5	tight/hard layer
8E1	8	182.52	158.55	23.97	40.52	Suspected Obs
8B1	8	182.77	154.35	28.42	40.77	Suspected Obs
8d1	8	180.64	159.81	20.83	42.5	Suspected Obs
8c1	8	181.03	165.93	15.10	42.5	Suspected Obs

Based on these recent observations as summarized in Table 1 above, WRScompass has developed the approach outlined herein as described in the following section “Revised Suggested ISS Approach”.

Post-solidification coring, coupled with observations made during the ISS as well as the reaching of premature refusal, indicates that many of the ISS auger locations may contain a layer of 5 to 10 feet of untreated material between the bedrock and the maximum depth achieved with the auger equipment. Drilling/ISS operations completed to date with the various auger diameters have been unable to sufficiently penetrate unanticipated layers of what responds like competent bedrock material to the crane operator. Though not shown in the boring logs, this unanticipated layer may be compact gravel or very fractured rock. The auger rig is unable to distinguish between the actual competent rock and this fractured layer.

The soil mixing process through the rock-like gravel layers at depth, combined with the line-pull requirements for the Kelly bar, are proving very difficult and unsafe to sustain successful and continued auger mixing production of overlapped column locations. The injection of the cement-based grout into the column during the continued attempts to penetrate this rock-like layer is readily aggravating an already tenuous situation. Due to its design consistency the grout readily creates a quickly hardening soil-cement that, in a short duration, precludes an effective overlapping of ISS columns.

The post-solidification coring program has revealed boulders in the subsurface profile. These boulders have been encountered in areas where a significant quantity of boulders was not anticipated for this project. Boulders at depth will require the drilling to cease and create multiple locations where the untreated material must be addressed.

For the reasons aforementioned, it is possible that the soil profile for this site may be un-drillable.

SUGGESTED REVISED ISS APPROACH

Based on work performed to date and the subsequent confirmatory coring program, the large diameter auger ISS is continuously encountering refusal at a very "tight"/hard geologic layer above the competent bedrock.

This layer has been encountered in the majority of the ISS columns attempted to date. This encountered layer varies in depth above the existing competent bedrock and must be penetrated to allow the ISS large diameter soil mixing auger to reach the competent bedrock. The operator describes this as refusal due to the fact that the bar and drill tool is continuously lifted and dropped while turning and a grinding sensation is encountered. Over the past month, considerable time and effort has been spent in multiple areas of the site using conventional ISS approaches in an attempt to progress the auger-ISS program with meaningful production rates allowing for a timely completion of the remedy. However, even with all the extended efforts to date which have resulted in substantial equipment damage and several retooling events, a successful penetration and stabilization of the soils beneath this layer have proven unsuccessful.

Therefore, based on the results of the past few days, the indicated consent by all parties, and our corporate and respective professional individual experiences, WRScompass proposes to construct a low permeability "perimeter curtain" by treating from the surface, through the "tight"/hard layer, to the top of bedrock along the perimeter of site. Based on our experiences to date, construction of this will likely entail the combination of auger-ISS using an 8-foot diameter auger and jet grouting, with the exception of the sections of the perimeter covered by excavator-ISS where a contact of the ISS and the bedrock has been established and verified (namely cells P1, P6, and P7). The "perimeter curtain" will be installed via the installation of a minimum two overlapping jet grouting columns along the northern, eastern, and southern perimeter in the areas of the cells exhibiting untreated material between the bottom of the ISS material and the bedrock. In an effort to minimize the volume of jet grouting required, WRScompass proposes to install the jet grouting columns from the bottom of the stabilized perimeter columns to the top of bedrock as this will likely reduce the jet grouting volume by up to 60% or even greater.

WRScompass will use the 8-foot auger as supported by a memorandum evaluating the performance of the augers used to date. Said evaluation has been provided under separate cover (Transmittal No. 143).

As part of the regular ISS progression pattern, WRScompass will advance ISS columns to the maximum depth and lateral extents safely and technically feasible. The safe and technically feasible definition of refusal will be an auger advancement of one foot or less within one minute or when unsafe conditions resulting from the stabilization activities are observed, which is consistent with the definitions of both bedrock refusal and obstructions in the specifications. Upon resumption of ISS operations at the site, WRScompass will advance interior columns (likely within rows "d" through "n") to the largest extent possible until the jet grouting equipment can be mobilized for a field demonstration test. Once the jet grouting equipment is on-site, WRScompass will temporarily suspend auger-ISS operations in order to focus on the jet grouting activities since spatial constraints and batch plant limitations will not allow for concurrent auger-ISS and jet grouting operations.

Following the successful completion of the jet grouting field demonstration, WRScompass will commence with the auger-ISS operations in the southwestern corner of the site, commonly referred to as the "alcove area". In order to be protective of the surrounding structures, WRScompass will advance the auger-ISS columns in an off-set pattern which extends over three parallel, east-west oriented rows (Rows "o", "p", and "q"). With this approach primary columns will be initially installed in front of the "quasi retaining wall" which will leave alternating, undisturbed columns in place. These alternating, undisturbed columns will be stabilized the following day after the primary columns have been allowed to partially cure overnight.

Once the materials in the "alcove area" have been stabilized using the aforementioned approach, WRScompass will apply the same approach for the first two rows north of the "quasi retaining wall" (i.e. Rows "p" and "q") for its entire length.

Once the "alcove area" extending to the central portion in front of the "quasi retaining wall" have been stabilized WRScompass will start stabilizing materials in a "north-to-south" direction in the centralized portion of the site which has not been stabilized at that time extending to the southeast corner. Rows "8a" through "8d" paralleling Water Street will be stabilized last as the crane retreats from the treatment area. If necessary, WRScompass will utilize excavator-ISS in the former gas holder area, should auger-ISS encounter significant obstructions above the hard/tight geologic layer.

A schematic depicting this approach has been attached to this document.

Following the completion of the auger-ISS, WRScompass will remobilize the jet grouting equipment to establish the "low permeability perimeter curtain" and to treat designated "hot spot areas".

Lateral or vertical areas which can not be completed to either the desired depth or desired proximity of obstructions (such as foundation elements near the "quasi retaining wall') using the auger-ISS will be marked and surveyed for subsequent jet grouting during the post-auger-ISS mobilization of the jet grouting subcontractor. Based on the diameter of the auger and the effective radius of influence of the jet grouting, the "perimeter curtain" may range in thickness from 6 to 8 feet. This will be achieved via the installation of two rows of overlapping jet grouting columns based on the results of the jet grouting field demonstration which will determine the effective radius of influence of the jet grouting.

At identified "hot spot areas" (such as the former gas holder area) within the auger-ISS area, WRScompass will mark and survey these locations for subsequent jet grouting from the terminal depth of the column(s) to the top of bedrock.

WRScompass will provide this work plan to Golder Associates (Golder) for review to address any potential structural concerns. However, the contents of this plan do not represent a new approach and are consistent with the key parameters evaluated by Golder culminating in the "Temporary Excavation Support Plan" submitted to and approved by ConEdison and Parsons in January 2009. Golder has addressed grout subsidence and operations near the "quasi retaining wall" in previously evaluations submitted under separate cover. Appropriate correspondence from Golder's review will be provided under separate cover.

Throughout this approach WRScompass will continue to monitor the "quasi retaining wall" and other adjacent structures using the tiltometers, deflection targets, crack gauges, and vibration monitors in accordance with the already utilized protocol.

SCHEDULE

Barring any unforeseen additional subsurface issues or additional delays beyond WRScompass' control, we believe that the approach presented herein represent the best and most expeditious alternative. With an anticipated remaining ISS quantity of 13,000 yds^3 and an anticipated remaining jet grouting quantity of 2,000 yds^3 and using an 8-foot diameter auger, WRScompass expects a project completion by mid to late November 2009.

CONCLUSIONS

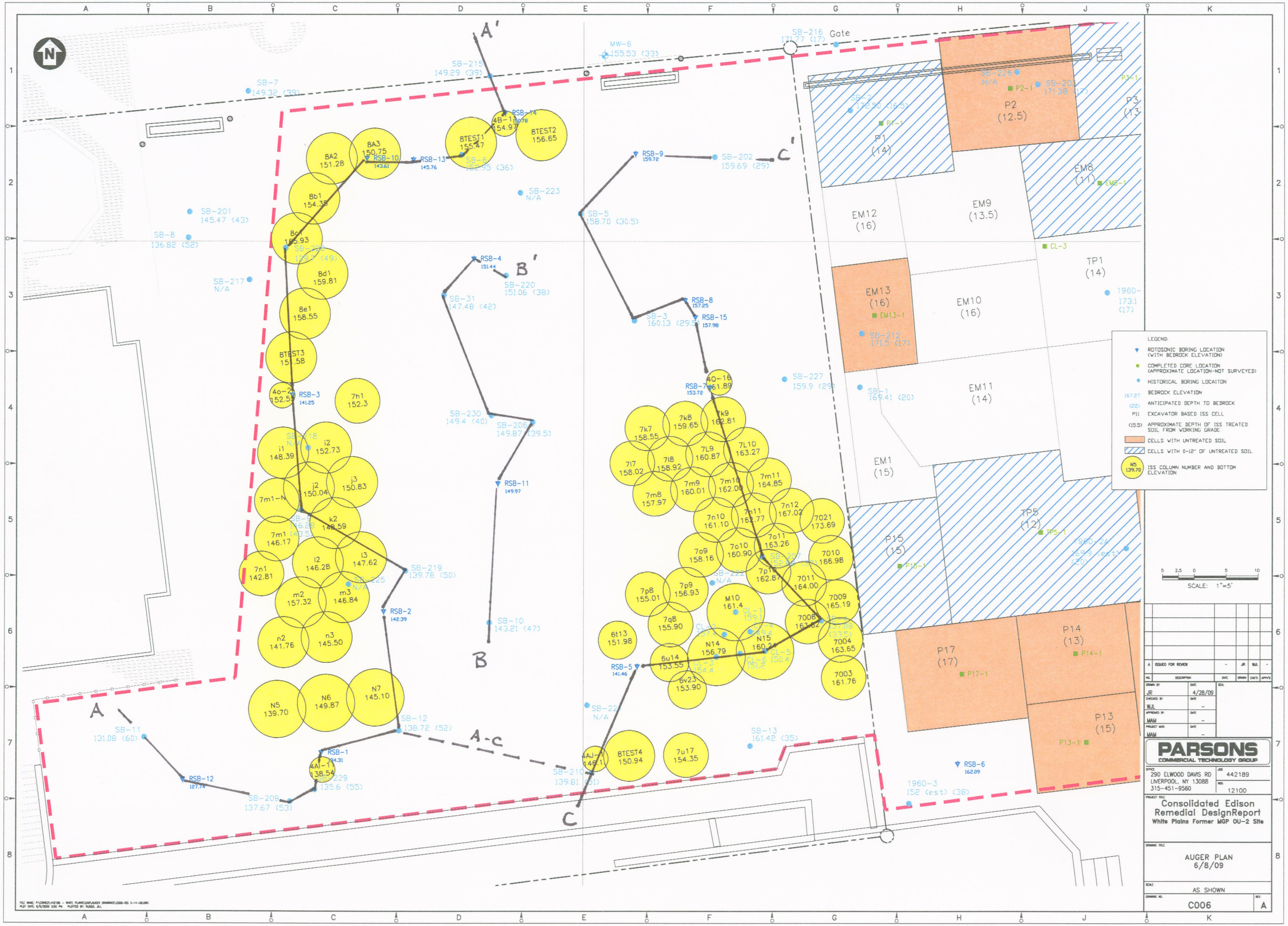
WRScompass is committed to working collaboratively with the ConEd team to successfully complete this project. We strongly believe that the approach described herein represents the most viable alternative to achieve this goal in light of the changed and unforeseen subsurface conditions. However, in order to successfully implement and conclude this approach in a timely fashion, a collaborative team effort by all parties going forward is imperative.

Should you have any questions of comments please contact me at (321) 917-3863 or via email at rschaar@wrscompass.com.

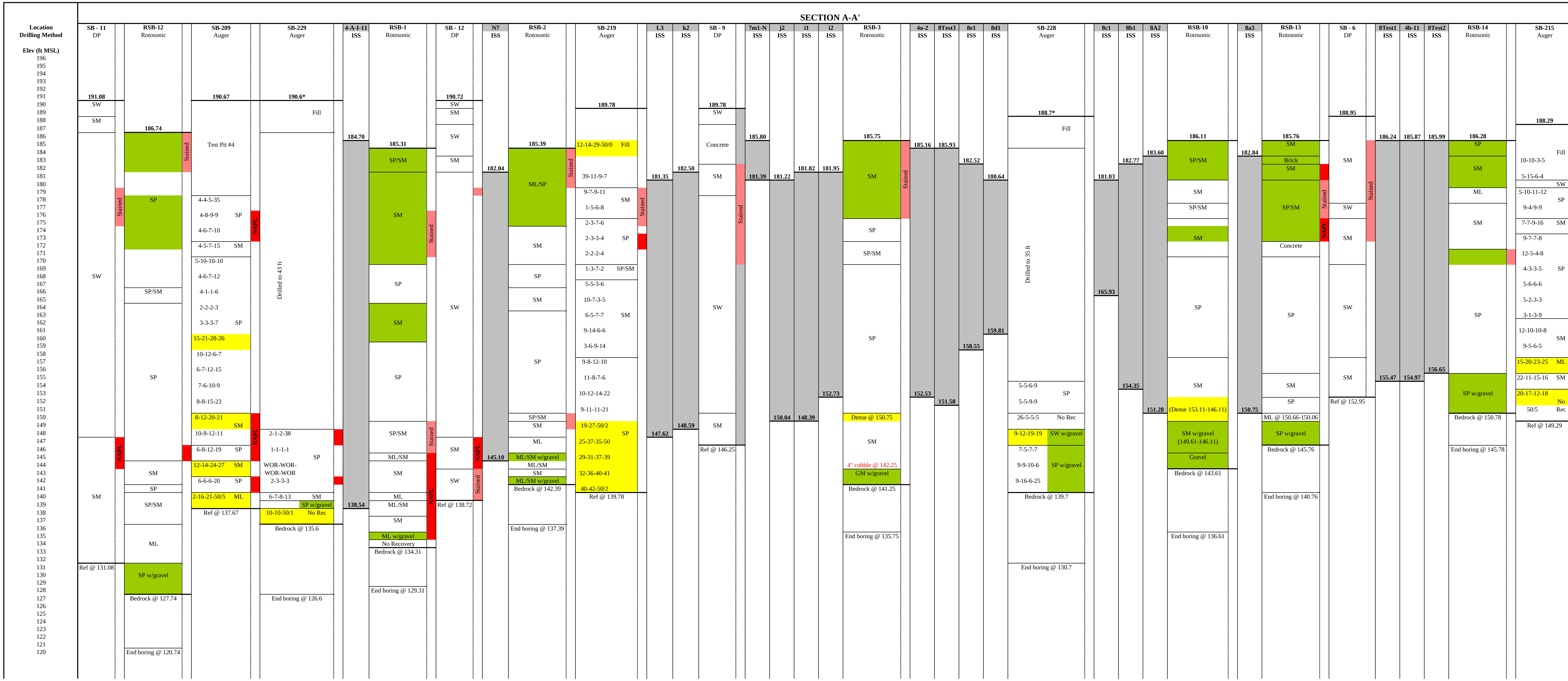
Sincerely,
WRScompass

Ralph G. Schaar, P.G.
Technical Director

www.wrscompass.com
WRS Infrastructure & Environment, Inc. d/b/a WRScompass
Compass Environmental, Inc.


LEGEND:
ROTOSONIC BORING LOCATION (WITH BEDROCK ELEVATION)
COMPLETED CORE LOCATION (APPROXIMATE LOCATION-NOT SURVEYED)
HISTORICAL BORING LOCAITON
167.27 BEDROCK ELEVATION
(22) ANTICIPATED DEPTH TO BEDROCK
P11 EXCAVATOR BASED ISS CELL
(15.5) APPROXIMATE DEPTH OF ISS TREATED SOIL FROM WORKING GRADE
CELLS WITH UNTREATED SOIL
CELLS WITH 0-12" OF UNTREATED SOIL
N5 139.70 ISS COLUMN NUMBER AND BOTTOM ELEVATION
SCALE: 1"=5'
A ISSUED FOR REVIEW - JR WJL -
NO. DESCRIPTION DATE DRAWN CHK'D APPV'D
DRAWN BY JR DATE 4/28/09
CHECKED BY WJL DATE -
APPROVED BY MAM DATE -
PROJECT MGR. MAM DATE -
SEAL
PARSONS
COMMERCIAL TECHNOLOGY GROUP
OFFICE 290 ELWOOD DAVIS RD LIVERPOOL, NY 13088 315-451-9560
JOB 442189
WBS 12100
PROJECT TITLE
Consolidated Edison
Remedial DesignReport
White Plains Former MGP OU-2 Site
DRAWING TITLE
AUGER PLAN
6/8/09
SCALE AS SHOWN
DRAWING NO. C006
REV. A

SUMMARY OF SOIL BORING AND MONITORING WELL INSTALLATION
WHITE PLAINS FORMER MGP SITE

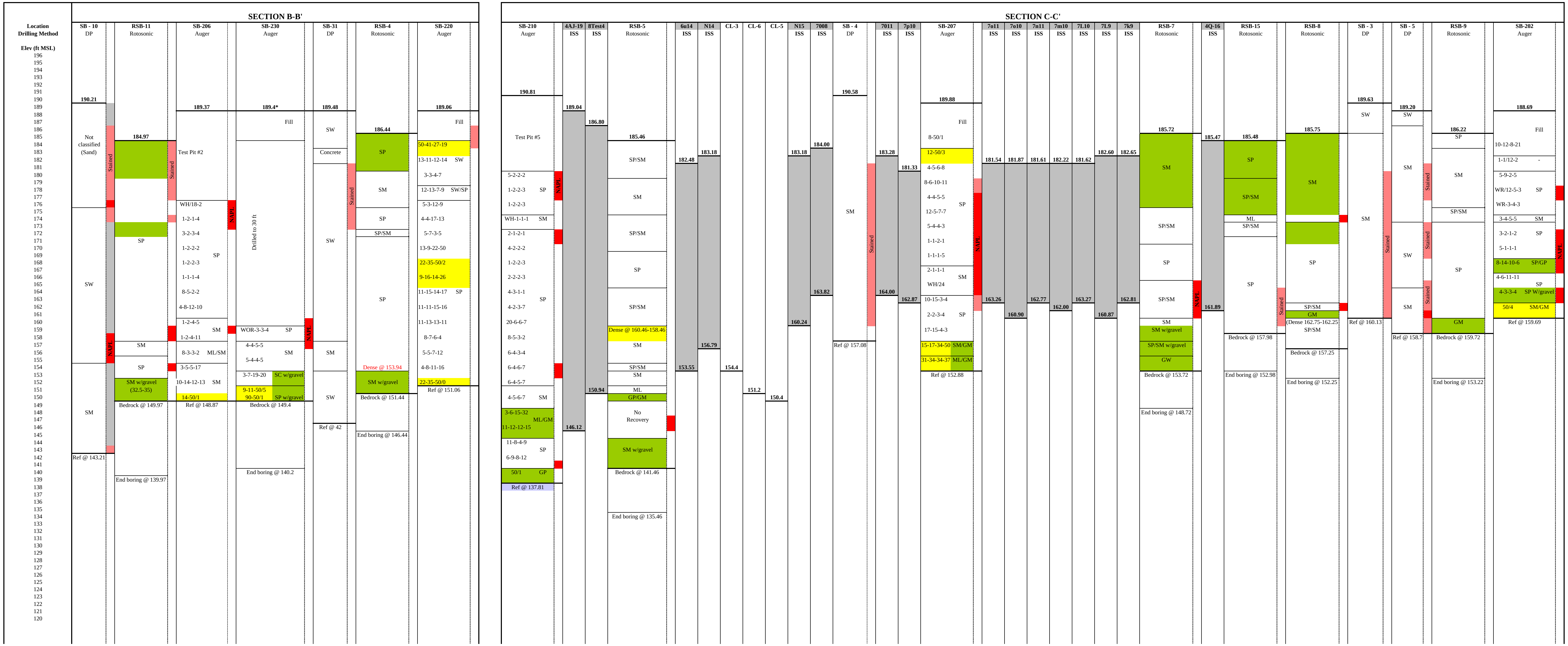


Unified Soil Classification System Definitions:

GM = Silty gravel, gravel-sand-silt mixture
GP = Poorly graded gravels or gravel-sand mixtures, little or no fines
ML = Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
SC = Clayey sands, sand-clay mixtures
SM = Silty sands, sand-silt mixtures
SP = Poorly graded sands or gravels, little or no fines
SW = Well-graded sands, gravelly sands, litle or no fines

WH = Weight of hammer
WOR = Weight of rod
Dense (N≥30) or Very Dense (N≥50) Soil or noted as dense by the driller
Soil with gravel
Stained soil
Soil with NAPL

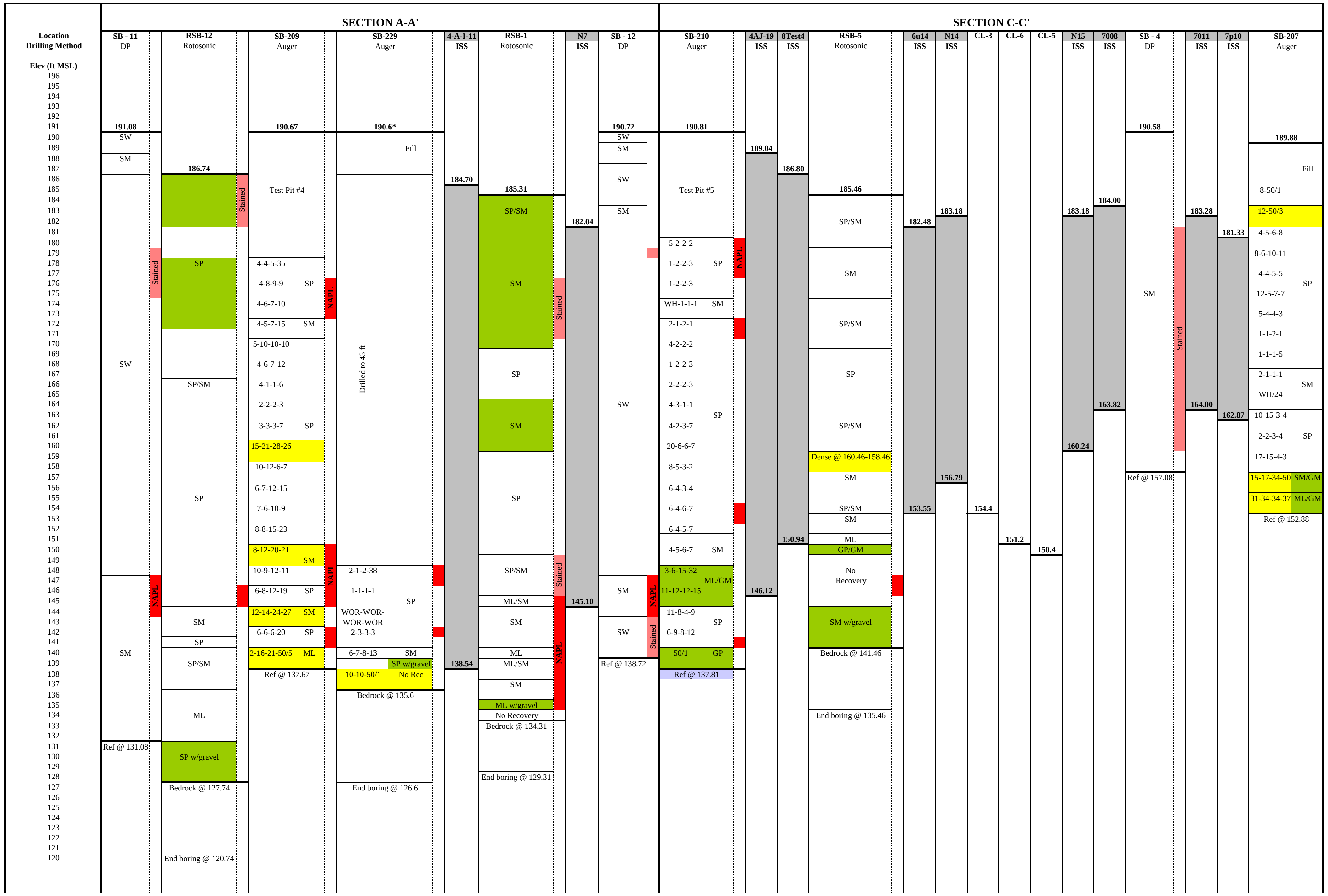
SUMMARY OF SOIL BORING AND MONITORING WELL INSTALLATION
WHITE PLAINS FORMER MGP SITE



Unified Soil Classification System Definitions:
GM = Silty gravel, gravel-sand-silt mixture
GP = Poorly graded gravels or gravel-sand mixtures, little or no fines
ML = Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
SC = Clayey sands, sand-clay mixtures
SM = Silty sands, sand-silt mixtures
SP = Poorly graded sands or gravels, little or no fines
SW = Well-graded sands, gravelly sands, litle or no fines

WH = Weight of hammer
WOR = Weight of rod
Dense (N≥30) or Very Dense (N≥50) Soil or noted as dense by the driller
Soil with gravel
Stained soil
Soil with NAPL

SUMMARY OF SOIL BORING AND MONITORING WELL INSTALLATION
WHITE PLAINS FORMER MGP SITE



Unified Soil Classification System Definitions:
GM = Silty gravel, gravel-sand-silt mixture
GP = Poorly graded gravels or gravel-sand mixtures, little or no fines
ML = Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
SC = Clayey sands, sand-clay mixtures
SM = Silty sands, sand-silt mixtures
SP = Poorly graded sands or gravels, little or no fines
SW = Well-graded sands, gravelly sands, little or no fines

WH = Weight of hammer
WOR = Weight of rod
Dense (N≥30) or Very Dense (N≥50) Soil or noted as dense by the driller
Soil with gravel
Stained soil
Soil with NAPL