NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Region 8
6274 East Avon-Lima Road, Avon, NY 14414-9516
P: (585) 226-5353 I F: (585) 226-8139
www.dec.ny.gov

March 29, 2016

Genesee Valley Real Estate Co., LLC
Mr. Dante Gullace, Member
First Federal Plaza
28 East Main St., Suite 500
Rochester, NY 14614

Dear Mr. Gullace:

Subject: **690 St. Paul Street, Site #C828159**
Modification to Remedial Design Work Plan: AOC #1
February 12, 2015
City of Rochester, Monroe County

The New York State Departments of Environmental Conservation and Health, collectively referred to as the Departments, have completed their review of the document entitled *Modification to Remedial Design Work Plan: AOC #1* (the Work Plan Modification) dated February 12, 2016 for the 690 Saint Paul Street site located in the City of Rochester. The Work Plan Modification modifies the approved Remedial Design Work Plan AOC #1 (the Work Plan) dated June 2015. In accordance with 6 NYCRR Part 375-1.6, the Departments have determined that the Work Plan Modification, with modifications, substantially addresses the requirements of the Brownfield Cleanup Agreement (BCA). The modifications are outlined as follows:

1. The proposed change in the treatment chemical from EHC to Ferox Plus is not approved at this time. Ferox Plus contains proprietary ingredients which may require a more detailed review prior to approval.

2. **T**he groundwater screening sample collected from the southernmost treatment well (TW-1) contained approximately 2,000 ppb of chlorinated volatile organic compounds. This result indicates that the southern extent of groundwater contamination has not been fully defined. To determine if contaminants are migrating off-site to the south in bedrock groundwater, an additional bedrock groundwater monitoring well will be installed in the Loading Area driveway/courtyard near Lowell Street between the sewer lateral and Building 14A (see Attachment 1 for the approximate location). Consistent with the modified treatment wells, the new monitoring well will be installed to a terminal elevation of approximately 477 feet MSL using the well installation procedures included in Section 6.1.1 of the Work Plan. The well will be sampled in accordance with section 6.4 of the Work Plan for at least two quarters. After two quarters, the sampling frequency and parameters will be re-evaluated.

3. Remedial activities at the site will be completed in accordance with the revised schedule that was included in the February 2016 Monthly Progress Report (and is also provided as Attachment 2 to this letter) with the following modifications:
   a. Repairs to the AOC #6D soil cap are needed to restore the 2-ft layer of clean soil over the demarcation layer with the top 6 inches of sufficient quality to support vegetation. As adequate vegetation needs to be established over the entire soil cap before the Final Engineering Report is approved, it is recommended that this task be completed as soon as the weather is favorable for growing grass.
   b. The schedule is an enforceable part of the Work Plan and BCA and is not estimated. If work cannot proceed in accordance with the approved schedule, then a revised schedule must be submitted to the Departments for approval.
   c. In accordance with 6 NYCRR Part 375-3.6, tasks 43, 45, 49 and 51 are revised as follows: *"the Departments shall use all best efforts to expeditiously approve, modify or reject the Final Engineering Report and Site Management Plan within 45 days from receipt."* Note that the Departments do not modify Final Engineering Reports.

With the understanding that the above noted modifications are agreed to, the Work Plan Modification is hereby approved. If you choose not to accept these modifications, you are required to notify this office within 20 days after receipt of this letter and prior to the start of field activities. In this event, I suggest a meeting be scheduled to discuss your concerns prior to the end of this 20-day period.

Please notify me at least 7 days in advance of the start of field activities.

We look forward to working together to bring this site back into productive use. If you have questions or concerns on this matter, please contact me at 585-226-5357.

Sincerely,

Frank Sowers

Frank Sowers, P.E.
Environmental Engineer 2

Attach:
1. Additional Well Location
2. Schedule

ec:w/Attach

Dan Noll	Suzanne Wheatcraft
Jennifer Gillen	Bridget Boyd
James Mahoney	John Frazer
Bernette Schilling	Wade Silkworth

ATTACHMENT 1:
ADDITIONAL WELL LOCATION

BUILDING 16

LOADING AREA

Sewer Lateral

Additional Bedrock Well Location

PROPOSED SEWER DISCHARGE LOCATION (SANITARY SEWER)

TW-7

Depth	Media	TCE	DCE	Vinyl Chloride
479.74'	Soil	50.9	<1.89	<1.89
474.44'	Soil	0.0175	<0.00859	<0.00859

TW-4

Depth	Media	TCE	DCE	Vinyl Chloride
481.52'-480.52'	Soil	0.432	0.335	0.029

TW-11

Depth	Media	TCE	DCE	Vinyl Chloride
479.26'	Soil	136	3.93	<1.750

TW-12

Depth	Media	TCE	DCE	Vinyl Chloride
483.38'	Soil	7.4	0.51	<0.019
483.28'-482.58'	Rock	6.5	0.68	<0.022
478.98'	Soil	43	1.2	<0.19
478.98'-478.68'	Rock	34	1.9	<0.072
475.08'-474.73'	Rock	0.059	0.95	0.047

EW-2

Depth	Media	TCE	DCE	Vinyl Chloride
479.09'-478.64'	Rock	100	2.4	<0.28
478.74'-478.59'	Soil	130	3.5	<0.35
474.19'-473.84'	Rock	<0.039	0.078	<0.017
469.19'-468.79'	Rock	<0.039	<0.038	<0.017

EW-1A

Depth	Media	TCE	DCE	Vinyl Chloride
479.37'	Soil	54	<0.19	<0.085
479.27'-478.67'	Rock	61	1.1	<0.17
478.57'	Soil	31	<0.49	<0.071
474.27'-473.92'	Rock	<0.039	<0.038	<0.017
470.07'	Soil	0.12	0.015	<0.0003

BW-20

Depth	Media	TCE	DCE	Vinyl Chloride
480.96'	Soil	1.58	0.0782	<0.00522
479.06'	Soil	7.61	0.145	0.00544

EW-3

Depth	Media	TCE	DCE	Vinyl Chloride
479.18'	Soil	12	1.2	<0.038
479.13'-478.83'	Rock	6.8	2.2	0.053
474.18'-473.88'	Rock	<0.039	<0.038	<0.017
470.08'-469.68'	Soil	0.0017	0.0016	<0.00032

LEGEND

VOC Impacts to Groundwater (From RI Report)

- 9,500-9,752 PPB
- 9,000-9,500 PPB
- 8,000-9,000 PPB (PARTIALLY INTERPRETED)
- 5,000-8,000 PPB
- 2,500-5,000 PPB (PARTIALLY INTERPRETED)
- 1,500-2,500 PPB (PARTIALLY INTERPRETED)
- 25-1,500 PPB (PARTIALLY INTERPRETED)
- 5-25 PPB (PARTIALLY INTERPRETED)
- TREATMENT WELLS
- EXTRACTION WELLS
- BEDROCK WELL
- PROPOSED EFFLUENT PIPING
- PROPOSED EXTRACTION PIPING
- AOC #1 IRM EXCAVATION AREA (APPROX.)
- BCP BOUNDARY

NOTE:

(1) SITE PLAN DEVELOPED FROM BERO ASSOCIATES ARCHITECTS SITE PLAN FOR 690 SAINT PAUL STREET, ROCHESTER CHARTER OF SCHOOL SCIENCE AND TECHNOLOGY, DATED APRIL 11, 2000.
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(5) < VALUES INDICATE THE ANALYTE WAS NOT DETECTED ABOVE LABORATORY METHOD DETECTION LIMITS.
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(7) LABELLA SAMPLE LOCATIONS MEASURED VIA A LICENSED SURVEY.
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AOC #1 REMEDIAL STRATEGY ENHANCED IN-SITU REMEDIATION

REMEDIAL DESIGN WORK PLAN: AOC #1 AMENDMENT JANUARY 2016

BROWNFIELD CLEANUP PROGRAM

690 SAINT PAUL STREET ROCHESTER, NEW YORK

VOLUNTEER: GENESEE VALLEY REAL ESTATE COMPANY

10 0 30 Feet

1 inch = 15 feet

Figure Intended to Print as ANSI D.

209280

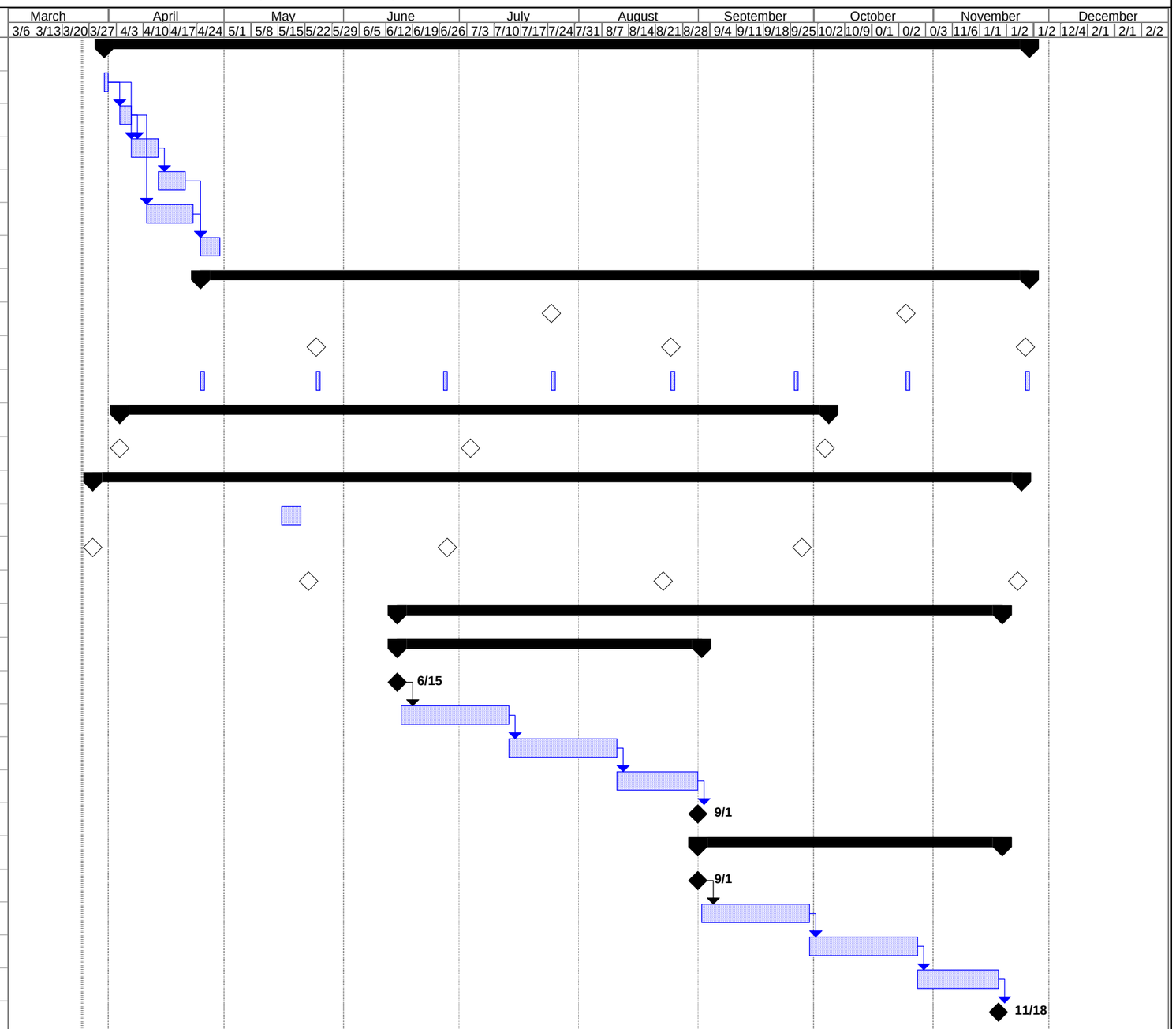
FIGURE 1

Path: I:\Genesee Valley Real Estate Co\209280\Drawings\RAWP - AOC #1\Fig 8 - AOC #1 Soil and Rock Callouts.mxd

ATTACHMENT 2:
REVISED SCHEDULE

PROPOSED PROJECT SCHEDULE
CERTIFICATE OF COMPLETION
690 ST. PAUL STREET SITE, ROCHESTER, NY

ID	Task Name
1	**AOC #1**
2	Receive NYSDEC Comments/Modifications to AOC #1 Mod. Letter
3	Baseline Groundwater Monitoring
4	Prep/Mobilze for filling of Treatment Wells
5	Implement Treatment Well Filling
6	Pump and Treat System Start up and Monitoring
7	Inject Treatment Chemical
8	**AOC 1 Routine Monitoring**
9	**Quarterly Groundwater Monitoring**
12	**Quarterly Indoor Air Monitoring**
16	**Routine P&T System Monitoring**
25	**AOC #6** (Also repair AOC 6D soil cap and establish vegetation)
26	**Quarterly NAPL Monitoring**
30	**AOC #8**
31	Repair Asphalt Parking Lot (estimated timing)
32	**Quarterly Groundwater Monitoring**
36	**Quarterly Indoor Air Monitoring**
40	**Site Wide Actions**
41	**Site Management Plan**
42	Initial Submission
43	DEC Review/Comment Period 45 days
44	Revise & Resubmit
45	Final DEC Review 45 days
46	SMP Approval
47	**Final Engineering Report**
48	Initial Submission
49	DEC Review/Comment Period 45 days
50	Revise & Resubmit
51	Final DEC Review 45 days
52	FER Approval



Project: 690 St. Paul Certificate of Completion Schedule
Date: March 2016

Task

Summary

Note Project Schedule is estaimted and may vary based on field conditions at time of work and regulatory agency response times.

LABELLA Associates, D.P.C.
Engineering
Architecture
Environmental
Planning

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February 12, 2016

Mr. Frank Sowers
NYSDEC- Region 8
6274 East Avon-Lima Rd (Rtes. 5 and 20)
Avon, NY 14414

RE: Modification to Remedial Design Work Plan: AOC #1
C828159 – 690 Saint Paul Street
Rochester, New York 14605
LaBella Project No. 209280

Dear Mr. Sowers:

LaBella Associates, D.P.C. (LaBella) is pleased to provide this letter on behalf of Genesee Valley Real Estate (GVRE) that provides additional details and proposed modifications to be made to the Remedial Design Work Plan (RDWP) for AOC #1, dated June 2015, at the above-referenced New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP) Site. The RDWP was initially approved by the NYSDEC with several modifications on June 24, 2015. Based on samples collected during the installation of the wells for AOC #1, this letter proposes some modifications to the remedy. The specific modifications are below.

1. Treatment Chemical – The RDWP initially identified the treatment chemical as EHC supplied by PeroxyChem. Based on the well installations and associated sampling data, the amount and type of treatment chemical was reassessed. Ferox-Plus from Hepure Technologies, Inc. is proposed as a replacement of EHC. Ferox-Plus has more hydrogen atoms (H_2) than EHC per pound of product, resulting in less Ferox-Plus chemical required to achieve the same results (refer to Attachment A for a chemical comparison of EHC and Ferox-Plus). Although the specific chemical is proposed to be changed, the overall approach of enhanced in-situ with bioaugmentation is still the same.

   Approximately 5,000 pounds or two (2) totes of Ferox Plus would be used as treatment. The chemical would not need to be diluted prior to injection; however, injections would be followed by adequate water injection (approximately 10-15 gallons) to push the active product into the formation. In addition, a copy of the MSDS from Hepure is located in Attachment A. Since the product is considered nonhazardous, as is EHC the prior injection chemical, safety procedures do not need to be revised per the RDWP submitted.

2. Treatment Well Depths – The RDWP initially indicated the twelve (12) treatment wells will be installed to approximately 20-feet below grade. Specifically, the treatment wells were installed between terminal depths of about 468 to 473 ft. above mean sea level (msl) in NAD 1983 datum. However, after sampling soil and rock cores from the bedrock of the wells, data shows that the highest concentrations of contaminants, specifically trichloroethylene (TCE), are located at or above 478 feet. As such, to maximize treatment, the treatment wells are proposed to be sealed off to an elevation of approximately 477-feet above msl as shown in Table 2. Attached Figure 1 shows the well and sample locations as well as any detections of TCE, 1,2-Dichloroethene, and Vinyl Chloride in the samples. Table 1 also provides a summary of the soil and bedrock sample data.

   Soil Samples

   Soil samples consisted of collecting overburden materials in wells. In addition, silty seams were observed within significant bedrock fractures below the top of bedrock and samples of these materials were analyzed from treatment wells TW-4, TW-7, TW-11, and TW-12; extraction wells EW-1A, 2, and 3; and bedrock well BW-20. The locations where silty seams with adequate volume of material for sampling (i.e. large enough fracture and recovery), were predominately located between about 478-ft. above msl. In addition, silty seams with adequate material for sampling were also noted at 470-ft. msl (EW-3), 474-ft. msl (TW-7), and 483-ft. msl (TW-12). Soils from the wells were continuously assessed for visible impairment, olfactory indications of impairment, and/or indication of detectable volatile organic compounds (VOCs) with a photo-ionization detector (PID). Soil samples were placed in a cooler on ice and sent under standard chain of custody procedures to a New York State Department of Health Environmental (NYSDOH) Laboratory Approval Program (ELAP) certified laboratory. The samples were analyzed for EPA Target Compound List (TCL) VOCs via USEPA method SW846 8260B.

   One soil sample of the overburden soil on the top of bedrock was sampled from TW-4 (481.52-480.52-ft. msl)One soil sample from the silty bedrock seams was collected from EW-2 (478.74-478.59-ft. msl) and TW-11 (479.26-ft. msl); two samples were collected from EW-3 (479.13-478.83-ft. msl and 470.08-469.69-ft. msl), TW-7 (479.74 and 474.44-ft. msl), TW-12 (483.38 and 478.98-ft. msl), and BW-20 (480.96 and 479.06-ft. msl); and three samples were collected from EW-1A (479.37-ft. msl, 478.57-ft. msl, and 470.07-ft. msl). Soil samples between the ground surface and 478-ft. above msl ranged in concentrations from 0.43 parts per million (ppm) or milligram per kilogram (mg/kg) to 136 ppm. Soil samples below 478-ft above msl ranged in concentrations from 0.0017 ppm to 0.12 ppm.

   Rock Samples

   Rock samples were collected after completing the initial coring of the wells by selecting a section of the bedrock core (approximate 3” to 6” in length) with non-mechanical fractures. In general, rock cores were selected from in proximity to significant fractures with silty seams and between. Selected samples were sent to a NYSDOH ELAP for analysis of VOC mass in the rock matrix. It is understood that rock matrix analysis is not currently an accepted method by NYSDEC and there are no comparison criteria. The selected core intervals were immediately wrapped in aluminum foil for preservation, placed in a one-quart plastic bag, and packed in ice for delivery to the laboratory. The rock core was then frozen, crushed, and placed in a sample jar containing methanol for extraction via USEPA Method 5035 and analyzed by USEPA Method 8260 following two weeks of preservation.

Rock samples were collected and analyzed from extraction wells EW-1A (two samples: 479.27-478.67-ft msl, 474.27-473.92-ft. msl), EW-2 (three samples: 479.09-478.64-ft. msl, 474.19-473.84-ft. msl, and 469.19-468.79-ft. msl), and EW-3(two samples: 479.13-478.83-ft. msl and 474.18-473.88-ft. msl) as well as treatment well TW-12 (three samples: 483.28-482.58-ft. msl, 478.98-478.68-ft. msl, and 475.08-474.73-ft. msl) during installation. Rock samples between the top of rock and 478-ft above msl ranged in concentrations from 6.5 ppm to 100 ppm. Rock samples below 478-ft above msl ranged from 0.039 ppm to 0.059 ppm.

Additional fractures were observed within the bedrock and are shown on Figures 2-4 which illustrate the cross sections of the wells at the corresponding elevations above msl as well as detections of TCE in soil and bedrock samples. Boring logs for the Treatment Wells, Extraction wells, and Monitoring Wells are included in Attachment B. In addition, well construction logs for the Treatment Wells are also included in Attachment B. Soil and rock analytical results are attached as Table 1.

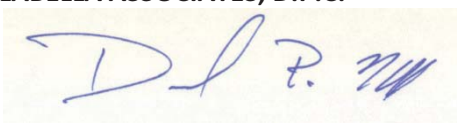
Based on the above, it is proposed that the Treatment Wells be modified in order to focus the injection/treatment to the impacted areas. Specifically, it is proposed that the Treatment Wells be sealed from 477 ft. msl and below. The sealing work would be completed by tremie grouting (i.e, from the bottom to target depth) the Treatment Wells. Table 2 provides a summary of the Treatment Well construction and proposed sealing/filling. The Treatment Wells would be filled with Portland Cement and Bentonite Grout in accordance with NYSDEC CP-43. The grout is non-shrinking and would be mixed with a ratio of 7.8 gallons of water per 97.9 pounds of Portland cement/bentonite mixture. This equates to approximately 1.04 cubic ft. of material. Table 2 also provides the amount of grout and water per well. Information on the Portland Cement and Bentonite Grout (Material Safety Data Sheet and Technical Data) are included in Attachment C.

All fieldwork will be completed in accordance with the Health and Safety Plan and Community Air Monitoring Program as described in the approved RDWP.

If you have any questions, please do not hesitate to contact me at (585) 295-6611.

Respectfully submitted,

LABELLA ASSOCIATES, D.P.C.



Dan Noll, P.E.
Project Manager

"I, Daniel P. Noll, certify that I am currently a NYS registered professional engineer and that this Amendment to the Remedial Design Work Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10)."

Attachments

Cc: Bridget Boyd, NYSDOH
Dante Gullace, GVRE
Chris Gullace, GVRE

I:\GENESEE VALLEY REAL ESTATE CO\209280\REPORTS\RAWP AOC #1\AOC MODIFICATION LETTER\RDWP AOC1 MOD LTR 2.12.2016.DOCX

BUILDING 16

LOADING AREA

TW-7

Depth	Media	TCE	DCE	Vinyl Chloride
479.74'	Soil	50.9	<1.89	<1.89
474.44'	Soil	0.0175	<0.00859	<0.00859

TW-4

Depth	Media	TCE	DCE	Vinyl Chloride
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EW-1A

Depth	Media	TCE	DCE	Vinyl Chloride
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Depth	Media	TCE	DCE	Vinyl Chloride
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TW-7 TW-6 TW-5 TW-4 TW-3A TW-2 TW-1 TW-12 EW-6 TW-11 TW-9A TW-8 TW-10 EW-2 EW-1A BW-20 EW-3 BW-19

A A' B B' C C'

PROPOSED SEWER DISCHARGE LOCATION (SANITARY SEWER)

LEGEND

VOC Impacts to Groundwater (From RI Report)

- 9,500-9,752 PPB
- 9,000-9,500 PPB
- 8,000-9,000 PPB (PARTIALLY INTERPRETED)
- 5,000-8,000 PPB
- 2,500-5,000 PPB (PARTIALLY INTERPRETED)
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- 25-1,500 PPB (PARTIALLY INTERPRETED)
- 5-25 PPB (PARTIALLY INTERPRETED)
- TREATMENT WELLS
- EXTRACTION WELLS
- BEDROCK WELL
- PROPOSED EFFLUENT PIPING
- PROPOSED EXTRACTION PIPING
- AOC #1 IRM EXCAVATION AREA (APPROX.)
- BCP BOUNDARY

NOTE:

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Path: I:\Genesee Valley Real Estate Co\209280\Drawings\RAWP - AOC #1\Fig 8 - AOC #1 Soil and Rock Callouts.mxd

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AOC #1 REMEDIAL STRATEGY ENHANCED IN-SITU REMEDIATION

REMEDIAL DESIGN WORK PLAN: AOC #1 AMENDMENT JANUARY 2016

BROWNFIELD CLEANUP PROGRAM

690 SAINT PAUL STREET ROCHESTER, NEW YORK

VOLUNTEER: GENESEE VALLEY REAL ESTATE COMPANY

N E W S

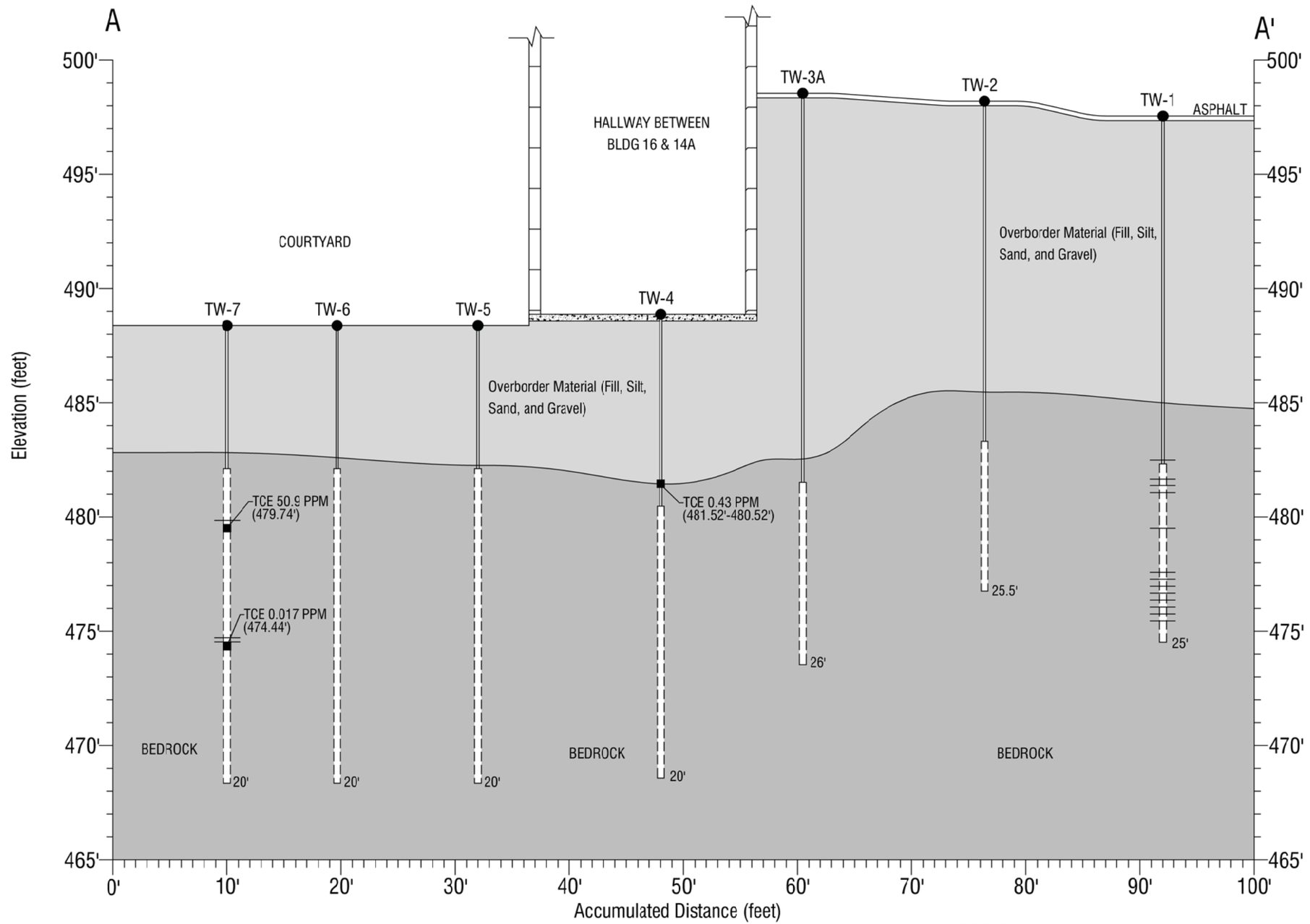
10 0 30 Feet

1 inch = 15 feet

Figure Intended to Print as ANSI D.

209280

FIGURE 1



NOTE:

1. Formations based on boring log notes.
2. Subsurface formations inferred between data points, below the terminal depth of borings and beyond the first and last point.
3. Refer to Figure 1 for overview of cross-section and surrounding features.
4. Trichlorothene (TCE) results from soil Sampling by USEPA method 8260. Refer to laboratory reports or data summery tables for complete list of testing data.
5. Rock core sampling included crushing rock sample and extraction with methanol via USEPA method 5035 and analysis via USEPA method 8260 after two weeks of preservation/extraction.

LEGEND

- Steel Casing
- Open Bedrock Hole (8" Dia.)
- Bedrock
- Concrete
- Soil Boring Location
- 30.0' Depth to Boring Bottom
- Fill Material
- Significant Bedrock Fracture
- Soil Sample Location w/ TCE Concentration & Elevation
- Bedrock Sample Location w/ TCE Concentration & Elevation
- BCP Boundary

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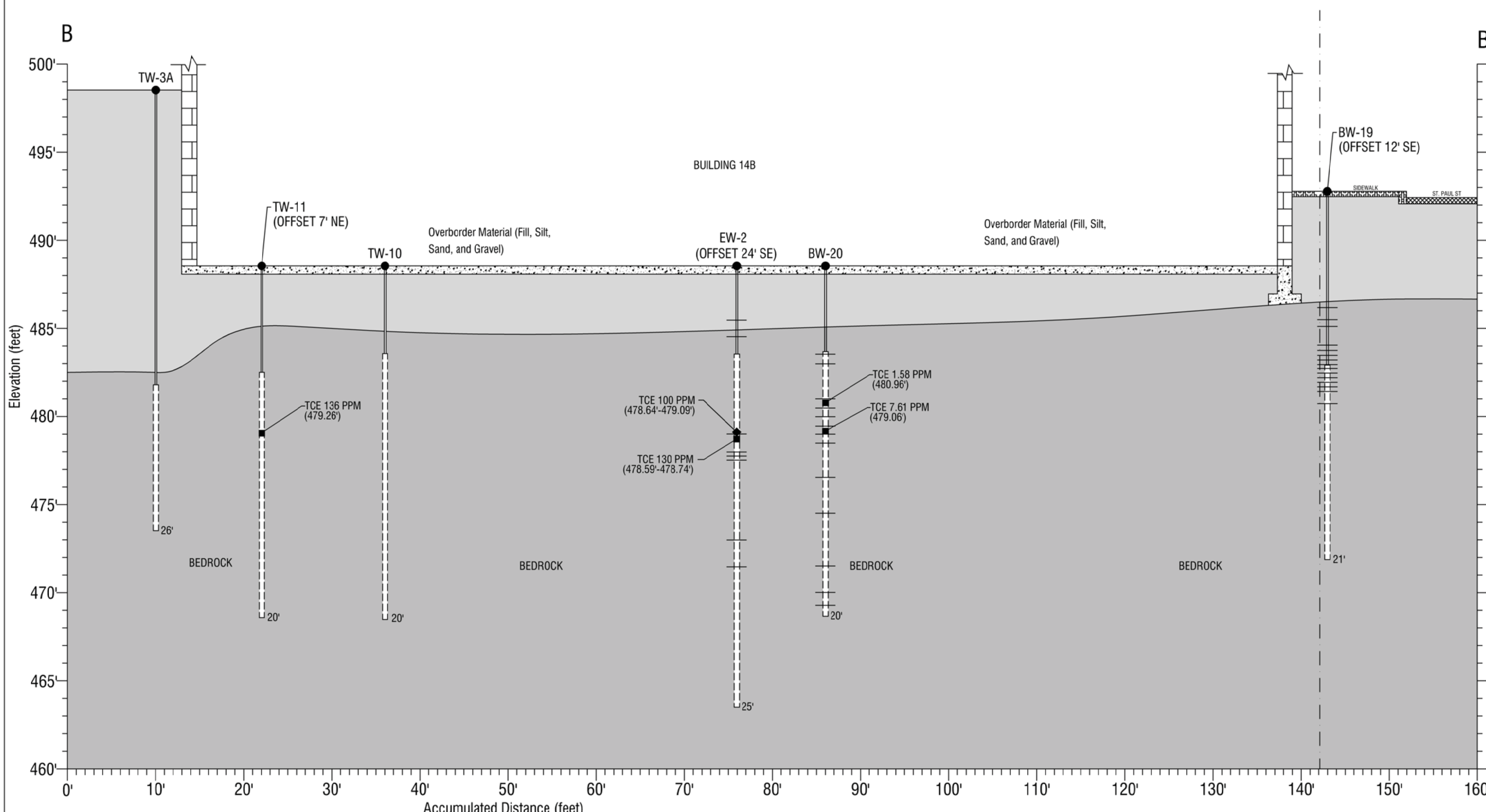
PROJECT/CLIENT
REMEDIAL DESIGN EORK PLAN AOC #1
AMENDMENT JANUARY 2016
BROWNFIELD CLEANUP PROGRAM
690 SAINT PAUL STREET
ROCHESTER, NEW YORK

DRAWING TITLE
CONCEPTUAL SITE MODEL: AOC #1
GEOLOGIC CROSS SECTION
A-A'

ISSUED FOR: FINAL
DATE: December 2015
DESIGNED BY: JMG
DRAWN BY: DRP
REVIEWED BY: DN

PROJECT/DRAWING NUMBER
209280

FIGURE 2



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3. Refer to Figure 1 for overview of cross-section and surrounding features.
4. Trichlorothene (TCE) results from soil Sampling by USEPA method 8260. Refer to laboratory reports or data summery tables for complete list of testing data.
5. Rock core sampling included crushing rock sample and extraction with methanol via USEPA method 5035 and analysis via USEPA method 8260 after two weeks of preservation/extraction.

LEGEND

Steel Casing	Soil Boring Location	Soil Sample Location w/ TCE Concentration & Elevation
Open Bedrock Hole (8" Dia.)	30.0' Depth to Boring Bottom	Bedrock Sample Location w/ TCE Concentration & Elevation
Bedrock	Fill Material	
Concrete	Significant Bedrock Fracture	BCP Boundary

300 STATE STREET
ROCHESTER, NY 14614
P: (585) 454-6110
F: (585) 454-3066
www.labellapc.com

LABELLA Associates, D.P.C.

PROJECT/CLIENT

REMEDIAL DESIGN EORK PLAN AOC #1
AMENDMENT JANUARY 2016

BROWNFIELD CLEANUP PROGRAM
690 SAINT PAUL STREET
ROCHESTER, NEW YORK

DRAWING TITLE

CONCEPTUAL SITE MODEL: AOC #1
GEOLOGIC CROSS SECTION
B-B'

ISSUED FOR: FINAL

DATE: December 2015

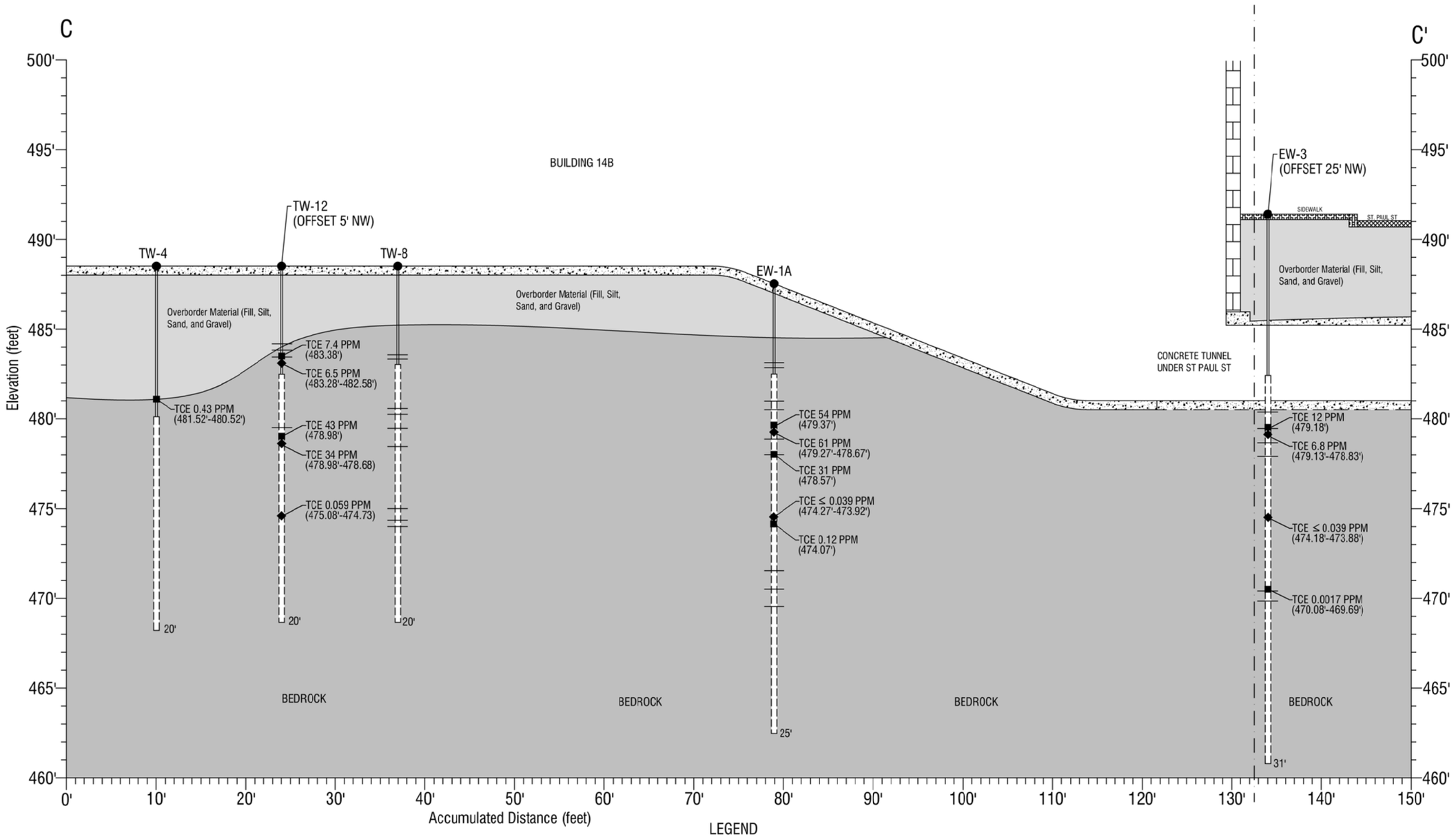
DESIGNED BY: JMG
DRAWN BY: DRP
REVIEWED BY: DN

I:\Genesee Valley Real Estate Co\209280\Drawings\All Drawings\Figure 198 - Cross-Section D-D'.dwg

PROJECT/DRAWING NUMBER

209280

FIGURE 3



NOTE:
1. Formations based on boring log notes.
2. Subsurface formations inferred between data points, below the terminal depth of borings and beyond the first and last point.
3. Refer to Figure 1 for overview of cross-section and surrounding features.
4. Trichloroethene (TCE) results from soil Sampling by USEPA method 8260. refer to laboratory reports or data summery tables for complete list of testing data.
5. Rock core sampling included crushing rock sample and extraction with methanol via USEPA method 5035 and analysis via USEPA method 8260 after two weeks of preservation/extraction.

LEGEND

- Steel Casing
- Open Bedrock Hole (8" Dia.)
- Bedrock
- Concrete
- Soil Boring Location
- 30.0' Depth to Boring Bottom
- Fill Material
- Significant Bedrock Fracture
- Soil Sample Location w/ TCE Concentration & Elevation
- Bedrock Sample Location w/ TCE Concentration & Elevation
- BCP Boundary

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PROJECT/CLIENT
REMEDIAL INVESTIGATION REPORT
BROWNFIELD CLEANUP PROGRAM
690 SAINT PAUL STREET
ROCHESTER, NEW YORK

DRAWING TITLE
CONCEPTUAL SITE MODEL: AOC #1
GEOLOGIC CROSS SECTION
C-C'

ISSUED FOR: FINAL
DATE: December 2015
DESIGNED BY: JMG
DRAWN BY: DRP
REVIEWED BY: DN
I:\Genesee Valley Real Estate Co\209280\Drawings\Powerpoint Drawings\Figure 1(B) - Cross-Section C-C'.dwg

PROJECT/DRAWING NUMBER
209280

FIGURE 4

Table 1
AOC #1 - Remedy Implementation Screening-Level Data
Detected Volatile Organic Compounds (VOCs) in Soil and Bedrock Samples
C828159 - 690 Saint Paul Street, Rochester, NY

Client Sample ID	NY Table 375 6-8A Unrestricted Use SCOs	NY Table 375 6-8b Restricted Use Restricted Residential SCOs	NY Table 375 6-8b Restricted Use Commercial SCOs	EW-1A	EW-1A	EW-1A	EW-1A	EW-1A	EW-2	EW-2	EW-2	EW-2	EW-3	EW-3	EW-3	EW-3
Sample Depth				8.7'	8.8'-9.4'	9.5'	13.8'-14.15'	18'	9.4'-9.85'	9.75'-9.9'	14.3'-14.65'	19.3'-19.7'	12.2'	12.25'-12.55'	17.2'-17.5'	21.3'-21.7'
Sample Elevation				479.37'	479.27'-478.67'	478.57'	474.27'-473.92'	470.07'	479.09'-478.64'	478.74'-478.59'	474.19'-473.84'	469.19'-468.79'	479.18'	479.13'-478.83'	474.18'-473.88'	470.08'-469.69'
Sample Media				Soil	Rock	Soil	Rock	Soil	Rock	Soil	Rock	Rock	Soil	Rock	Rock	Soil
Date Collected				8/21/2015	8/21/2015	8/21/2015	8/21/2015	8/21/2015	8/27/2015	8/27/2015	8/27/2015	8/27/2015	9/2/2015	9/2/2015	9/2/2015	9/2/2015
Analyte				Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Acetone	0.05	100	500	1.1 U	2.3 UH	0.95 U	0.23 UH	**0.062 B**	3.8 UH	4.7 U	0.23 UH	0.23 UH	0.5 U	0.23 UH	0.23 UH	0.034
cis-1,2-Dichloroethene	0.25	100	500	0.19 U	**1.1 JH**	0.49 J	0.038 UH	0.015	**2.4 JH**	**3.5 J**	**0.078 JH**	0.038 UH	**1.2**	**2.2 H**	0.038 UH	0.0016 J
Chloroform	0.37	49	350	0.18 U	0.36 UH	0.15 U	0.036 UH	0.00036 U	0.6 UH	0.75 U	0.036 UH	0.036 UH	0.080 U	0.036 UH	0.036 UH	0.00055 J
Methylene Chloride	0.05	100	500	0.43 U	0.85 UH	0.36 U	0.085 UH	0.011 B	1.4 UH	1.8 U	0.085 UH	0.085 UH	0.19 U	0.085 UH	0.085 UH	0.0075 B
Tetrachloroethene	1.3	19	150	0.14 U	0.27 UH	0.11 U	0.027 UH	0.00079 U	0.45 UH	0.56 U	0.027 UH	0.027 UH	0.060 U	0.027 UH	0.027 UH	0.00085 U
Toluene	0.7	100	500	0.072 J	0.10 UH	0.042 U	0.010 UH	0.002 J	0.17 UH	0.21 U	0.010 UH	0.010 UH	0.22 U	0.017 JH	0.014 JH	0.0044 J
Trichloroethene	0.47	21	200	**54**	**61 H**	**31**	0.039 UH	0.12	**100 H**	**130**	0.039 UH	0.039 UH	**12**	**6.8 H**	0.039 UH	0.0017 J
Vinyl Chloride	0.02	0.9	13	0.085 U	0.17 UH	0.071 U	0.017 UH	0.0003 U	0.28 UH	0.35 U	0.017 UH	0.017 UH	0.038 U	**0.053 JH**	0.017 UH	0.00032 U

Client Sample ID	NY Table 375 6-8A Unrestricted Use SCOs	NY Table 375 6-8b Restricted Use Restricted Residential SCOs	NY Table 375 6-8b Restricted Use Commercial SCOs	TW-4	TW-7	TW-7	TW-11	TW-12	TW-12	TW-12	TW-12	TW-12	BW-20	BW-20
Sample Depth				7'-8'	8.7'	14'	9.3'	5.1'	5.2'-5.9'	9.5'	9.5'-9.8'	13.4'-13.75'	7.6'	9.5'
Sample Elevation				481.52'-480.52'	479.74'	474.44'	479.26'	483.38'	483.28'-482.58'	478.98'	478.98'-478.68'	475.08'-474.73'	480.96'	479.06'
Sample Media				Soil	Gravelly Silt	Gravelly Silt	Gravelly Silt	Soil	Rock	Gravelly Silt	Rock	Rock	Gravelly Silt	Gravelly Silt
Date Collected				8/6/2015	7/22/2015	7/22/2015	8/5/2015	8/12/2015	8/12/2015	8/13/2015	8/13/2015	8/13/2015	8/18/2015	8/18/2015
Analyte				Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Acetone	0.05	100	500	**0.0881**	<9.470	**0.0781**	<8.730	<0.250	<0.290	<2.5	<0.950	<0.290	<0.291	<0.272
cis-1,2-Dichloroethene	0.25	100	500	**0.335**	<1.890	<0.00859	**3.93**	**0.51**	**0.68**	**1.2**	**1.9**	**0.95**	0.0782	0.145
Chloroform	0.37	49	350	<0.0102	<1.890	<0.00859	<1.750	<0.040	<0.046	<0.390	<0.150	<0.046	<0.0261	<0.0272
Methylene Chloride	0.05	100	500	<0.0256	<4.740	<0.0215	<4.370	<0.094	<0.110	**1.8**	<0.360	<0.110	<0.0261	<0.0272
Tetrachloroethene	1.3	19	150	<0.0102	<1.890	<0.00859	<1.750	0.042	<0.034	<0.290	<0.110	<0.034	<0.00522	0.0178
Toluene	0.7	100	500	<0.0102	<1.890	<0.00859	<1.750	0.019	0.019	0.13	0.042	0.015	<0.0261	<0.0272
Trichloroethene	0.47	21	200	0.432	**50.9**	0.0175	**136**	**7.4**	**6.5**	**43**	**34**	0.059	**1.58**	**7.61**
Vinyl Chloride	0.02	0.9	13	**0.029**	<1.890	<0.00859	<1.750	<0.019	<0.022	<0.190	<0.072	**0.047**	<0.00522	0.00544

Notes:
Soil sample VOC analysis by United States Environmental Protection Agency (USEPA) Method SW846 8260B.
Rock core VOC analysis included freezing rock cores, crushing and extraction with methanol via USEPA Method 5035 and analysis by USEPA Method 8260 following two weeks of extraction.
"<" indicates that the compound was analyzed for, but not detected at or above the method detection limit.
All values displayed in PPM; PPM = Parts Per Million = mg/kg or mg/L
Gravelly Silt samples were collected from between bedrock fractures.
Bold values indicate exceedance of the NYCRR Subpart 375-6 Remedial Program Soil Cleanup Objectives for the Protection of Public Health: Unrestricted Use.
Highlighted values indicate exceedance of the NYCRR Subpart 375-6 Remedial Program Soil Cleanup Objectives for the Protection of Public Health: Restricted Residential Use.
Underlined values indicate exceedence of NYCRR Subpart 375-6 Remedial Program Soil Cleanup Objectives for the Protection of Public Health: Commercial Use.

Table 2
AOC #1 - Remedy Implementation Screening-Level Data
Current and Proposed Depth of Wells
C828159 - 690 Saint Paul Street, Rochester, NY

Well	Ground Surface Elevation of Well (Feet MSL)	Current Terminal Depth of Well (Feet BGS)	Current Terminal Depth of Well (Feet MSL)	Proposed Terminal Depth of Well (feet)	Feet to be Filled (from the bottom)	Total Volume Grout to Fill (ft^3)	Total Volume Grout to Fill (Gallons)	Quantities in Grout Mixture			Proposed Terminal Depth of Well (Feet BGS)	Bottom of Steel Casing/Top of Open Rock Well Section (Feet MSL)	Proposed Length of Open Rock Well Section (Feet, Total)
								Portland Cement (Lbs)	Bentonite (Lbs)	Water (Gallons)			
TW-1	497.71	25	472.71	477	4.29	1.50	11.22	67.79	2.81	5.62	20.71	482.71	5.71
TW-2	498.29	25.5	472.79	477	4.21	1.47	10.99	66.41	2.76	5.51	21.29	483.29	6.29
TW-3A	498.53	26	472.53	477	4.47	1.56	11.67	70.51	2.93	5.85	21.53	481.83	4.83
TW-4	488.52	20	468.52	477	8.48	2.96	22.14	133.77	5.55	11.10	11.52	480.52	3.52
TW-5	488.52	20	468.52	477	8.48	0.74	5.54	33.44	1.39	2.77	11.52	482.52	5.52
TW-6	488.48	20	468.48	477	8.52	2.97	22.25	134.40	5.58	11.15	11.48	482.48	5.48
TW-7	488.44	20	468.44	477	8.56	2.99	22.35	135.03	5.60	11.20	11.44	482.44	5.44
TW-8	488.50	20	468.50	477	8.50	2.97	22.19	134.09	5.56	11.13	11.50	483.00	6.00
TW-9	488.54	20	468.54	477	8.46	2.95	22.09	133.46	5.54	11.07	11.54	482.54	5.54
TW-10	488.49	20	468.49	477	8.51	2.97	22.22	134.25	5.57	11.14	11.49	483.49	6.49
TW-11	488.56	20	468.56	477	8.44	2.95	22.04	133.14	5.52	11.05	11.56	482.56	5.56
TW-12	488.48	20	468.48	477	8.52	2.97	22.25	134.40	5.58	11.15	11.48	482.48	5.48

Notes:
Refer to Figures 2-4 for Geologic Cross Sections of wells.
MSL - denotes mean sea level, using datum
BGS - denotes below ground surface
Quantities in grout mixture determined from NYSDEC CP-43: Groundwater Monitoring Well Decomminssioning Policy.

FEROX-PLUS COMPARE TO EHC

Comparison of FMC's EHC and Hepure Technologies, Inc. Ferox-Plus™ Carbon Content and Fermentation to Hydrogen

FMC's EHC contains 60% fibrous carbon and 40% zero valent iron. The fibrous carbon is derived from alfalfa fines and is assumed to consist of 50% cellulose consisting of polymers of glucose, 25% hemicellulose containing the basic units of mannose, glucose, galactose, and xylose, and 25% lignin comprised of the basic units of paracoumaryl alcohol, coniferyl alcohol, and sinapyl alcohol. Assuming that the carbon compounds are mineralized to carbon dioxide and hydrogen gas according to the equations below, Table I presents the estimated carbon content of EHC and its hydrogen yield.

Cellulose

glucose $C_6H_{10}O_5 + H_2O \rightarrow 6CO_2 + 6H_2$

Hemicelluose

mannose, glucose, galactose, and xylose $C_{23}H_{42}O_{26} + 20H_2O \rightarrow 23CO_2 + 41H_2$

Lignin

paracoumaryl alcohol, coniferyl alcohol, and sinapyl alcohol

$C_{36}H_{36}O_9 + 63H_2O \rightarrow 36CO_2 + 81H_2$

$Fe^0 + 2H_2O \rightarrow Fe^{2+} + 2OH^- + H_2$

Table I: Carbon and Hydrogen Yields for EHC

Compound	% in EHC	% Organic Carbon in Compound	% Organic Carbon in EHC	Hydrogen Yield g H_2/g Compound	Hydrogen Yield g H_2/g EHC
Cellulose	30.0	44.4	13.3	0.075	0.023
Hemicellulose	15.0	37.6	5.6	0.113	0.017
Lignin	15.0	70.6	10.6	0.267	0.040
ZVI	40.0	0	0	0.036	0.014
Total EHC	100.0		29.5		0.094

FMC's EHC contains approximately 29.5 percent carbon with a theoretical yield of 0.094 g of hydrogen per g of EHC.

FEROX-PLUS® contains 36.0% soybean oil, 2.4% sodium lactate, and 4.9% proprietary emulsifier and nutrient package. Soybean oil is composed of 7.2% linolenate, 54.5% linoleate, 23.0% oleate,

4.1% sterate, 10.6% palmitate, 0.3% arachidate, and 0.3% behanate. These carbon compounds are mineralized to carbon dioxide and hydrogen gas according to the equations in Table II.

Table II: Compounds Mineralized to Carbon Dioxide and Hydrogen Gas

Ingredient	Estimated Carbon Content and Hydrogen Yield
Linolenate	$C_{18}H_{29}O_2 + 34H_2O \rightarrow 18CO_2 + 48H_2 + H^+$
Linoleate	$C_{18}H_{31}O_2 + 34H_2O \rightarrow 18CO_2 + 49H_2 + H^+$
Oleate	$C_{18}H_{33}O_2 + 34H_2O \rightarrow 18CO_2 + 50H_2 + H^+$
Stearate	$C_{18}H_{35}O_2 + 34H_2O \rightarrow 18CO_2 + 51H_2 + H^+$
Palmitate	$C_{16}H_{31}O_2 + 30H_2O \rightarrow 16CO_2 + 45H_2 + H^+$
Arachidate	$C_{20}H_{39}O_2 + 38H_2O \rightarrow 20CO_2 + 57H_2 + H^+$
Behanate	$C_{22}H_{43}O_2 + 42H_2O \rightarrow 22CO_2 + 63H_2 + H^+$
Proprietary Emulsifier Nutrient Mixture	Company Confidential
Sodium Lactate	$C_3H_5O_3Na + 3H_2O \rightarrow 3CO_2 + 5H_2 + Na + H^+$
ZVI	$Fe^0 + 2H_2O \rightarrow Fe^{2+} + 2OH^- + H_2$

Table III presents the estimated carbon content of FEROX-PLUS® and hydrogen yield.

Table III. Carbon and Hydrogen Yields for Ferox-Plus™

Compound	% in Ferox-PLUS™	% Organic Carbon in Compound	% Organic Carbon in Ferox-PLUS™	Hydrogen Yield g H_2/g Compound	Hydrogen Yield g H_2/g Ferox-Plus™
Linolenate	2.6	77.9	2.02	0.349	0.0090
Linoleate	19.6	77.9	15.28	0.356	0.0699
Oleate	8.3	76.8	6.36	0.358	0.0297
Stearate	1.5	76.3	1.13	0.363	0.0054
Palmitate	3.8	75.2	2.87	0.355	0.0136
Arachidate	0.1	77.1	0.08	0.369	0.0004
Behanate	0.1	77.8	0.08	0.374	0.0004
Emulsifier/Nutrient	4.9		2.91	0.267	0.0131
Sodium Lactate	2.4	32.1	0.46	0.090	0.0022
Zero Valent Iron	40	0	0	0.036	0.0144
Total Ferox-Plus™	**83.3**		**31.19**		**0.1581**

Terra Systems Inc. FEROX-PLUS® contains approximately 31.2 percent carbon with a theoretical yield of 0.158 g of hydrogen per g of FEROX-PLUS®.

Based upon the assumptions described above, the FEROX-PLUS® contains more carbon per g and has a higher hydrogen yield than the FMC EHC product.

Hepure Technologies Inc

Committed to Comprehensive Environmental Solutions

Ferox Plus

MATERIAL SAFETY DATA SHEET

According to OSHA and ANSI

Reviewed on 5/1/2013

1. Identification of Substance

Trade Name: Ferox Plus

Supplier: Hepure Technologies, Inc.
63 Main Street, Suite 203B
Flemington, NJ 08822

Emergency Information: 908-510-3835 Dr. Robert Kelley

2. Composition/Data on Components

Ingredient	CAS #	Weight%	Hazardous
Food grade edible soy bean oil	8001-22-7	30-40%	No
Iron	7439-89-6	10-40%	No
Emulsifiers, thickeners, and proprietary nutrient package containing nitrogen, phosphorus and vitamin B_{12}	Mixture	3 - 6%	No
Sodium Lactate	867-56-1	2 - 4%	Yes
Water	7732-18-5	10 - 55%	No

3. Hazards Identification

Hazard Description:
Information pertaining to particular dangers for man and environment

R 36/37 Irritating to eyes and respiratory system.

4. First Aid Measures

After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Seek medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly. Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing

Seek immediate medical advice.

Information for doctor

The following symptoms may occur: Nausea, Cramp, Gastric or intestinal disorders

5. Fire Fighting Measures

Suitable extinguishing agents: Extinguishing powder, dry chemical, sand, or graphite to smother fire. Use water only in mist/fog application to avoid spreading power/acclimated dust in surrounding area.

For safety reasons unsuitable extinguishing agents: Water, Carbon dioxide, Halogenated extinguisher

Protective equipment: Wear self-contained respirator. Wear fully protective impervious suit.

6. Accidental Release Measures

Person-related safety precautions:

Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation. Keep away from ignition sources.

Measures for cleaning/collecting:
Ensure adequate ventilation.
Keep away from ignition sources.

Additional information:
See section 7 for information on safe handling.
See section 8 for information on personal protection equipment.
See section 13 for disposal information.

7. Handing and Storage

Handling
Information for safe handling:
Keep container tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation at the workplace.

Information about protection against explosions and fires:
Keep ignition sources away.

Storage
Requirements to be met by storerooms and receptacles:
No special requirements.

Information about storage in one common facility:
Do not store together with oxidizing and acidic materials.
Store away from halogens.
Further information about storage containers:
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.

8. Exposure Controls and Personal Protection

Additional information about design of technical systems:
Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per mile.

Components with limit values that require monitoring at the workplace: None required.

Additional Information: No data

Personal protective equipment

General protective and hygienic measures
The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages, and feed.
Remove all soiled and contaminated clothing immediately.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.

Breathing Equipment: Use suitable respirator when high concentrations are present.

Protection of hands: Impervious gloves

Eye protection: Safety glasses, full face protection.

Body protection: Protective work clothing.

9. Physical and Chemical Properties

Form: Viscous Liquid
Color: Grey
Odor: Odorless

Change in condition
Melting point / Melting range: - 20º C
Boiling point / Boiling range: >300º C
Sublimation temperature / start: Not determined
Flash point: >250º C
Ignition temperature: Not determined
Decomposition temperature: Not determined

Explosion limits:
Lower: Not determined
Upper: Not determined

Vapor pressure at 20º C: 1 mm Hg
Density at 20º C (68º F): 1.44 g/cc

Solubility in / Miscibility with water: Insoluble

10. Stability and Reactivity

Thermal decomposition / conditions to be avoided:
Decomposition will not occur if used and stored according to specifications.
Materials to be avoided:
Acids, Water / moisture, Oxidizing agents, Halogens

Reacts with strong oxidizing agents
Dangerous products of decomposition: Metal oxide fume

11. Toxicological Information

Acute toxicity:

LD / LC50 values that are relevant for classification:		
Oral	LD50	20000 mg/kg (gpg) 30000 mg/kg (rat)
	LDLo	20 mg/kg (rbt)

Primary irritant effect:

On the skin: Irritant to skin and mucous membranes.
On the eye: Irritating effect.
Sensitization: No sensitizing effects known.

Other information (about experimental toxicity):

Tumorigenic effects have been observed with laboratory animals.

Subacute to chronic toxicity:

Iron compounds may cause vomiting, diarrhea, pink urine, black stool, and liver damage. May cause damage to the kidneys. Irritating to the respiratory tract, they may cause pulmonary fibrosis if dusts are inhaled.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.
The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for components in this product.
No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA, or ACGIH.

12. Ecological Information

General notes:

Do not allow material to be released to the environment without proper governmental permits.

13. Disposal Considerations

Product:
Recommendation:

Consult state, local or national regulations for proper disposal.

Uncleaned Packagings:

Recommendation:

Disposal must be made according to official regulations.

14. Transport Information

Shipping Information:

Not regulated as a hazardous material by DOT, IMO, or IATO.

Proper shipping-name (technical name): Emulsified Zero Valent Iron

15. Regulations

Product related hazard information:

Hazard symbols:

IX Irritant

Risk phrases:

36 / 37 Irritating to eyes and respiratory system.

Safety phrases:

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical Substance Inventory.

Information about limitation of use:

For use only by technically qualified individuals.

16. Other Information

Employees should use this information only as a supplement to other information gathered by them, and should make independent judgment of suitability of this information to ensure proper use and protect the healthy and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

LABELLA Associates, P.C.

300 STATE STREET, ROCHESTER, NY
(585) 454-6110

BORING LOG
Remedial Measures NYSDEC BCP Site #C828159
690 St. Paul Street
Rochester, New York
Well Installations

BORING: **TW-1**
SHEET 1 OF 2
JOB: **209280**
CHKD BY:

CONTRACTOR: NYEG
DRILLER: Brian G.
LABELLA REPRESENTATIVE: KR Miller

BORING LOCATION: SOUTHERNMOST IN ALLEY/LOADING DOCK AREA
TYPE OF WELL: TREATMENT WELL
GROUND SURFACE ELEVATION: DATUM:
START DATE: 7/8/2015 END DATE: 7/15/2015

TYPE OF DRILL RIG: MOBILE B-59 TRUCK MTD.
AUGER SIZE AND TYPE: 8.25-INCH HOLLOW STEM
OVERBURDEN SAMPLING METHOD: 2-INCH SPLIT SPOON

DRIVE SAMPLER TYPE: SPLIT SPOON
INSIDE DIAMETER:
ROCK CORE BARREL: NX

DEPTH (FEET)	SAMPLE RECOVERY	RQD Value (%)	SAMPLE NO. AND DEPTH (FEET)	STRATA CHANGE (FEET)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	DEPTH (FEET)	NOTE
0	<0.5	N/A	S-1 0 - 0.5		Poor recovery due to split spoon refusal @ 0.5´ (cobble) Dark Gray to Black Granular Fill Material	0.0		
2					Hand auger refusal at 1´; two (2) 4-inch cast iron pipes found at this depth			
	<0.5	N/A	S-2 2 - 4		Poor recovery. Fill Material, Coarse Gravel and Small Cobbles, rounded, brown/gray	0.0		
4	0	N/A	S-3 4 - 4.5		Split spoon refusal @ 4.5´. No recovery.			
6					Auger to 7´; hard augering, boulder or weathered bedrock.			
	0	N/A	S-4 7 - 7.1		Split spoon refusal @ 7.1´. No recovery.			
8					Auger to 9´; driller reports feels like weathered bedrock. Dark Brownish-gray auger cuttings (hot) screened with PID	10		Sample auger cuttings
10	0.6	N/A	S-5 9.5 - 11.5		Gray weathered/broken rock. Dolostone, brown and dark Gray. Gray cf Sand @ 11.5´.	0.3		
12					Auger to 12.5´.			
	0	N/A	S-6 12.5 - 14.5		No recovery, broken rock. Screen Aiuger cuttings from 12.5´ to 13´ with PID. Augers on weathered bedrock @ 13´.	2.5		
14					Apparent competent bedrock @ 15´. Set steel casing @ 15´.			
16								

WATER LEVEL DATA				DEPTH (FT)			NOTES:
DATE	TIME		ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	Set 8-inch diameter steel casing to 15´ below grade on 7/13/2015. After coring rock, hole in rock created to 25´ with a 7 7/8-inch roller bit. Driller reports losing ±100 gallons of water during coring and reaming of rock hole.
				15	25	yes	

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER

and = 35 to 50 %
some = 20 to 35%
little = 10 to 20%
trace = 1 to 10%
c - coarse
m = medium
f = fine
ND = Non Detect
BGS = Below the Ground Surface
NA = Not Applicable

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BORING LOG
Remedial Measures NYSDEC BCP Site #C828159
690 St. Paul Street
Rochester, New York
Well Installations

BORING: **TW-1**
SHEET 2 OF 2
JOB: **209280**
CHKD BY:

CONTRACTOR: NYEG
DRILLER: Brian G.
LABELLA REPRESENTATIVE: S Rife

BORING LOCATION: SOUTHERNMOST IN ALLEY/LOADING DOCK AREA
TYPE OF WELL: TREATMENT WELL
GROUND SURFACE ELEVATION: DATUM:
START DATE: 7/8/2015 END DATE: 7/15/2015

TYPE OF DRILL RIG: MOBILE B-59 TRUCK MTD.
AUGER SIZE AND TYPE: 8.25-INCH HOLLOW STEM
ROCK DRILLING METHOD: NX CORE

DRIVE SAMPLER TYPE: N/A
INSIDE DIAMETER:
ROCK CORE BARREL: NX

DEPTH (FEET)	SAMPLE RECOVERY	RQD Value (%)	SAMPLE NO. AND DEPTH (FEET)	STRATA CHANGE (FEET)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	DEPTH (FEET)	NOTE
16	66%	1500%	Run 1 15´ - 20´		Medium to dark gray, fine-grained, non-fossiliferous Dolostone that is highly to moderately fractured. Fractures are mostly horizontal, but some low-angle and vertical fractures are present. Secondary crystallization is in some horizontal and low angle fractures (rare). Larger Poor recovery, so difficult to determine depths. Horizontal Fractures in rock core: 15.5´; 15.7´; 16.3´; 16.5´; 16.6´; 16.9´; 16.95´; 17.2´; 17.6´; 18.3´; 18.5´. Highly Fractured Zones: 15´ to 15.5´; 15.7´ to 16.3´; ±18´.			
18								
20								
22	100%	1800%	Run 2 20´ - 25´		Rock core appears similar to above. Horizontal Fractures in rock core: 22.0´; 22.15´; 22.25´; 22.3´; 22.4´; 22.6´; 22.7´; 22.8´; 23.0´; 23.35´.			
24					Highly Fractured Zone: 20´ to 22´.			
26					End of Boring @ 25´			
28								
30								
32								

WATER LEVEL DATA				DEPTH (FT)			NOTES:
DATE	TIME		ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	Set 8-inch diameter steel casing to 15´ below grade on 7/13/2015. After coring rock, hole in rock created to 25´ with a 7 7/8-inch roller bit. Driller reports losing ±100 gallons of water during coring and reaming of rock hole.
				15	25	yes	

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER

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BORING LOG
Remedial Measures NYSDEC BCP Site #C828159
690 St. Paul Street
Rochester, New York
Well Installations

BORING: **TW-2**
SHEET 1 OF 2
JOB: **209280**
CHKD BY:

CONTRACTOR: NYEG
DRILLER: Brian G.
LABELLA REPRESENTATIVE: S Rife

BORING LOCATION: ALLEY/LOADING DOCK AREA; ±14´ NORTH OF TW-1
TYPE OF WELL: TREATMENT WELL
GROUND SURFACE ELEVATION: DATUM:
START DATE: 7/13/2015 END DATE: 7/17/2015

TYPE OF DRILL RIG: MOBILE B-59 TRUCK MTD.
AUGER SIZE AND TYPE: 8.25-INCH HOLLOW STEM
OVERBURDEN SAMPLING METHOD: 2-INCH SPLIT SPOON

DRIVE SAMPLER TYPE: SPLIT SPOON
INSIDE DIAMETER:
OTHER:

DEPTH (FEET)	SAMPLE RECOVERY	RQD Value (%)	SAMPLE NO. AND DEPTH (FEET)	STRATA CHANGE (FEET)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	DEPTH (FEET)	NOTE
0	0	N/A	S-1 0 - 2		No recovery. Trace asphalt chunks in tip of sampler. Hand auger refusal at 1´; two (2) 4-inch cast iron pipes found at this depth			
2	0	N/A	S-2 2 - 4		No recovery.			
4	0.17		S-3 4 - 6	4	Brown mf Sand and mc Gravel, moist, no odor	0.0		Cable caught in winch
6	1.6		S-4 6 - 8		As above, very coarse sub-angular Gravel.	5.2		Sample 7´- 8´
8	0.66		S-5 8 - 9.5		As above.	1.1		
10					Top of weathered bedrock @ 9.5´. Fractured bedrock, wet Sand and VC A Gravel.			
12						0.7		Sample 12´- 12.8´
14					Apparent competent bedrock @ 12.8´. Set steel casing @ 12.8´. Hole in rock created with a 7 7/8-inch roller bit.			
16								

WATER LEVEL DATA				DEPTH (FT)			NOTES:
DATE	TIME		ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	Set 8-inch diameter steel casing to12.8´ below grade on 7/14/2015. No coring of rock; hole in rock to 25.5´ created with a 7 7/8-inch roller bit. Driller reports losing ±80 gallons of water during reaming of rock hole.
				12.8	25.5	yes	

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
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BORING LOG
Remedial Measures NYSDEC BCP Site #C828159
690 St. Paul Street
Rochester, New York
Well Installations

BORING: **TW-2**
SHEET 2 OF 2
JOB: **209280**
CHKD BY:

CONTRACTOR: NYEG
DRILLER: Brian G.
LABELLA REPRESENTATIVE: S Rife

BORING LOCATION: ALLEY/LOADING DOCK AREA; ±14´ NORTH OF TW-1
TYPE OF WELL: TREATMENT WELL
GROUND SURFACE ELEVATION: DATUM:
START DATE: 7/13/2015 END DATE: 7/17/2015

TYPE OF DRILL RIG: MOBILE B-59 TRUCK MTD.
AUGER SIZE AND TYPE: 8.25-INCH HOLLOW STEM
OVERBURDEN SAMPLING METHOD: 2-INCH SPLIT SPOON

DRIVE SAMPLER TYPE: SPLIT SPOON
INSIDE DIAMETER:
OTHER:

DEPTH (FEET)	SAMPLE RECOVERY	RQD Value (%)	SAMPLE NO. AND DEPTH (FEET)	STRATA CHANGE (FEET)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	DEPTH (FEET)	NOTE
16								
18								
20					Hole in rock created with a 7 7/8-inch roller bit.			
22								
24					End of Boring @ 25.5´			
26								
28								
30								
32								

WATER LEVEL DATA				DEPTH (FT)			NOTES:
DATE	TIME		ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	Set 8-inch diameter steel casing to12.8´ below grade on 7/14/2015. No coring of rock; hole in rock to 25.5´ created with a 7 7/8-inch roller bit. Driller reports losing ±80 gallons of water during reaming of rock hole.
				12.8	25.5	yes	

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
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BORING LOG
Remedial Measures NYSDEC BCP Site #C828159
690 St. Paul Street
Rochester, New York
Well Installations

BORING: **TW-3**
SHEET 1 OF 1
JOB: **209280**
CHKD BY:

CONTRACTOR: NYEG
DRILLER: Brian G.
LABELLA REPRESENTATIVE: S Rife / KR Miller

BORING LOCATION: NORTHERNMOST IN ALLEY/LOADING DOCK AREA
TYPE OF WELL: TREATMENT WELL
GROUND SURFACE ELEVATION: DATUM:
START DATE: 7/17/2015 END DATE: 7/21/2015

TYPE OF DRILL RIG: MOBILE B-59 TRUCK MTD.
AUGER SIZE AND TYPE: 8.25-INCH HOLLOW STEM
OVERBURDEN SAMPLING METHOD: N/A

DRIVE SAMPLER TYPE:
INSIDE DIAMETER:
OTHER:

DEPTH (FEET)	SAMPLE RECOVERY	RQD Value (%)	SAMPLE NO. AND DEPTH (FEET)	STRATA CHANGE (FEET)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	DEPTH (FEET)	NOTE
0								
2								
4								
6								
8								
10					Auger and Roller Bit Refusal encountered at 11.6´; possible concrete footer. Will move this well location ±2.5´ to the south (TW-3A).			
12					Refusal at 11.6´.			
14								
16								

WATER LEVEL DATA				DEPTH (FT) BOTTOM OF CASING	DEPTH (FT) BOTTOM OF BORING	GROUNDWATER ENCOUNTERED
DATE	TIME		ELAPSED TIME			
				N/A	11.6	

NOTES:

GENERAL NOTES

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BORING LOG
Remedial Measures NYSDEC BCP Site #C828159
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Well Installations

BORING: **TW-3A**
SHEET 1 OF 2
JOB: **209280**
CHKD BY:

CONTRACTOR: NYEG
DRILLER: Brian G.
LABELLA REPRESENTATIVE: KR Miller

BORING LOCATION: ALLEY/LOADING DOCK AREA
TYPE OF WELL: TREATMENT WELL
GROUND SURFACE ELEVATION: DATUM:
START DATE: 7/21/2015 END DATE: 7/24/2015

TYPE OF DRILL RIG: MOBILE B-59 TRUCK MTD.
AUGER SIZE AND TYPE: 8.25-INCH HOLLOW STEM
OVERBURDEN SAMPLING METHOD: N/A

DRIVE SAMPLER TYPE: SPLIT SPOON
INSIDE DIAMETER:
OTHER:

DEPTH (FEET)	SAMPLE RECOVERY	RQD Value (%)	SAMPLE NO. AND DEPTH (FEET)	STRATA CHANGE (FEET)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	DEPTH (FEET)	NOTE
0					Augered to apparent competent rock at 16´, and set 8-inch diameter steel casing to 16´ below grade on 7/21/2015. Casing cement did not hold, so re-set casing at 16.7´ on 7/22/2015.			
2								
4								
6								
8								
10								
12								
14								
16								

WATER LEVEL DATA				DEPTH (FT)			NOTES:
DATE	TIME		ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	No coring of rock; hole in rock created to 26´ with a 7 7/8-inch roller bit. Driller reports losing 50 to 80 gallons of water during reaming of rock hole. Driller reports most drilling water lost in deeper rock (>15´).
				16.7	26		

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
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BORING LOG
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Rochester, New York
Well Installations

BORING: **TW-3A**
SHEET 2 OF 2
JOB: **209280**
CHKD BY:

CONTRACTOR: NYEG
DRILLER: Brian G.
LABELLA REPRESENTATIVE: KR Miller

BORING LOCATION: ALLEY/LOADING DOCK AREA
TYPE OF WELL: TREATMENT WELL
GROUND SURFACE ELEVATION: DATUM:
START DATE: 7/21/2015 END DATE: 7/24/2015

TYPE OF DRILL RIG: MOBILE B-59 TRUCK MTD.
AUGER SIZE AND TYPE: 8.25-INCH HOLLOW STEM
OVERBURDEN SAMPLING METHOD: N/A

DRIVE SAMPLER TYPE: SPLIT SPOON
INSIDE DIAMETER:
OTHER:

DEPTH (FEET)	SAMPLE RECOVERY	RQD Value (%)	SAMPLE NO. AND DEPTH (FEET)	STRATA CHANGE (FEET)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	DEPTH (FEET)	NOTE
16					Hole in rock created with a 7 7/8-inch roller bit.			
18								
20								
22								
24								
26					End of Boring @ 26´			
28								
30								
32								

WATER LEVEL DATA				DEPTH (FT)			NOTES:
DATE	TIME		ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	No coring of rock; hole in rock created to 26´ with a 7 7/8-inch roller bit. Driller reports losing 50 to 80 gallons of water during reaming of rock hole. Driller reports most drilling water lost in deeper rock (>15´).
				16.7	26	yes	

GENERAL NOTES

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BORING LOG
Remedial Measures NYSDEC BCP Site #C828159
690 St. Paul Street
Rochester, New York
Well Installations

BORING: **TW-4**
SHEET 1 OF 2
JOB: **209280**
CHKD BY:

CONTRACTOR: NYEG
DRILLER: H. Lyons
LABELLA REPRESENTATIVE: DJK & KR Miller

BORING LOCATION: INTERIOR, TO NORTH OF ALLEY/LOADING DOCK AREA
TYPE OF WELL: TREATMENT WELL
GROUND SURFACE ELEVATION: DATUM:
START DATE: 8/6/2015 END DATE: 8/11/2015

TYPE OF DRILL RIG: CME 45B SKID-MTD.
AUGER SIZE AND TYPE: 8.25-INCH HOLLOW STEM
OVERBURDEN SAMPLING METHOD: 2-INCH SPLIT SPOON

DRIVE SAMPLER TYPE: SPLIT SPOON
INSIDE DIAMETER:
ROCK CORE BARREL: NX

DEPTH (FEET)	SAMPLE RECOVERY	RQD Value (%)	SAMPLE NO. AND DEPTH (FEET)	STRATA CHANGE (FEET)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	DEPTH (FEET)	NOTE
0					Remove 6"-7" thick concrete floor slab with core drill.			
					Clean crushed stone, wet (fill). Some white, weak material from 1.5´ to 1.7´. This material is rusted, easily breakable, and slimy when rubbed together, like putty or glue (fill).	0.1		
2	Hand Auger to 4´			1.7				
					Some large rocks/boulders, gravel mix of subangular/subrounded rocks, fine to coarse, some sand. Wet at 4´.	0.1		
4								
	0	N/A	S-1 4 - 6		No recovery, wet.			
6	0.1		S-2 6 - 7		Poor recovery	0.1		
			S-3 7 - 8		Silty brown soils, wet, oily odor.	1.8		Soil sample collected 7´ - 8´
8					Apparent competent bedrock @ 8´. Set steel casing @ 8´.			
10								
12					Hole in rock created with a 7 7/8-inch roller bit.			
14								
16								

WATER LEVEL DATA				DEPTH (FT) BOTTOM OF CASING	DEPTH (FT) BOTTOM OF BORING	DEPTH (FT) GROUNDWATER ENCOUNTERED
DATE	TIME		ELAPSED TIME			
				8	20	4

NOTES:
Set 8-inch diameter steel casing 8´. No coring of rock; hole in rock created to 20´ with a 7 7/8-inch roller bit. Driller reports losing ±25 gallons of water during reaming of rock hole; most water apparently lost between 9´ and 11´ BFF. Driller observes fast recharge of groundwater and northwest groundwater flow in fracture at 15´.

GENERAL NOTES

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BORING LOG
Remedial Measures NYSDEC BCP Site #C828159
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Rochester, New York
Well Installations

BORING: **TW-4**
SHEET 2 OF 2
JOB: **209280**
CHKD BY:

CONTRACTOR: NYEG
DRILLER: H. Lyons
LABELLA REPRESENTATIVE: DJK & KR Miller
BORING LOCATION: INTERIOR, TO NORTH OF ALLEY/LOADING DOCK AREA
TYPE OF WELL: TREATMENT WELL
GROUND SURFACE ELEVATION: DATUM:
START DATE: 8/6/2015 END DATE: 8/11/2015

TYPE OF DRILL RIG: CME 45B SKID-MTD.
AUGER SIZE AND TYPE: 8.25-INCH HOLLOW STEM
OVERBURDEN SAMPLING METHOD: 2-INCH SPLIT SPOON
DRIVE SAMPLER TYPE: SPLIT SPOON
INSIDE DIAMETER:
ROCK CORE BARREL: NX

DEPTH (FEET)	SAMPLE RECOVERY	RQD Value (%)	SAMPLE NO. AND DEPTH (FEET)	STRATA CHANGE (FEET)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	DEPTH (FEET)	NOTE
16					Hole in rock created with a 7 7/8-inch roller bit.			
18								
20					End of Boring @ 20´.			
22								
24								
26								
28								
30								
32								

WATER LEVEL DATA				DEPTH (FT)			NOTES:
DATE	TIME		ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	Set 8-inch diameter steel casing 8´. No coring of rock; hole in rock created to 20´ with a 7 7/8-inch roller bit. Driller reports losing ±25 gallons of water during reaming of rock hole; most water apparently lost between 9´ and 11´ BFF. Driller observes fast recharge of groundwater and northwest groundwater flow in fracture at 15´.
				8	20	4	

GENERAL NOTES

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BORING LOG
Remedial Measures NYSDEC BCP Site #C828159
690 St. Paul Street
Rochester, New York
Well Installations

BORING: **TW-5**
SHEET 1 OF 2
JOB: **209280**
CHKD BY:

CONTRACTOR: NYEG
DRILLER: Joel
LABELLA REPRESENTATIVE: KR Miller

BORING LOCATION: EXTERIOR SIDEWALK ENTRANCE AREA, SOUTHERNMOST OF 3 TREATMENT WELLS HERE.
TYPE OF WELL: TREATMENT WELL
GROUND SURFACE ELEVATION: DATUM:
START DATE: 7/21/2015 END DATE: 7/24/2015

TYPE OF DRILL RIG: CME TRUCK-MTD.
AUGER SIZE AND TYPE: 8.25-INCH HOLLOW STEM
OVERBURDEN SAMPLING METHOD: 2-INCH SPLIT SPOON

DRIVE SAMPLER TYPE: SPLIT SPOON
INSIDE DIAMETER:
OTHER:

DEPTH (FEET)	SAMPLE RECOVERY	RQD Value (%)	SAMPLE NO. AND DEPTH (FEET)	STRATA CHANGE (FEET)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	DEPTH (FEET)	NOTE
0			S-1		Remove concrete sidewalk with core drill.			
	<0.5	N/A	1 - 2		Poor recovery. Grayish-brown f/c Sand and c Gravel (concrete sub-base).	0.1		
2								
	1.5	N/A	S-2 2 - 4		Grayish-brown f/c Sand and f Gravel, moist	0.1 0.2		
4								
	1	N/A	S-3 4 - 5.5		Brownish-gray f/c Gravel with c Sand and broken, weathered Dolostone	0.1 0.0		
					Split spoon refusal @ 5.5´			
6					Auger refusal @ 6´			
					Apparent competent bedrock @ 6´. Set steel casing @ 6´.			
8								
10					Hole in rock created with a 7 7/8-inch roller bit.			
12								
14								
16								

WATER LEVEL DATA				DEPTH (FT)			NOTES:
DATE	TIME		ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	Set 8-inch diameter steel casing 6´ below grade. No coring of rock; hole in rock created to 20´ with a 7 7/8-inch roller bit. Driller reports losing ±20-30 gallons of water during reaming of rock hole.
				6	20	No	

GENERAL NOTES

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BORING LOG
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Well Installations

BORING: **TW-5**
SHEET 2 OF 2
JOB: **209280**
CHKD BY:

CONTRACTOR: NYEG
DRILLER: Joel
LABELLA REPRESENTATIVE: KR Miller

BORING LOCATION: EXTERIOR SIDEWALK ENTRANCE AREA, SOUTHERNMOST OF 3 TREATMENT WELLS HERE.
TYPE OF WELL: TREATMENT WELL
GROUND SURFACE ELEVATION: DATUM:
START DATE: 7/21/2015 END DATE: 7/24/2015

TYPE OF DRILL RIG: CME TRUCK-MTD.
AUGER SIZE AND TYPE: 8.25-INCH HOLLOW STEM
OVERBURDEN SAMPLING METHOD: 2-INCH SPLIT SPOON

DRIVE SAMPLER TYPE: SPLIT SPOON
INSIDE DIAMETER:
OTHER:

DEPTH (FEET)	SAMPLE RECOVERY	RQD Value (%)	SAMPLE NO. AND DEPTH (FEET)	STRATA CHANGE (FEET)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	DEPTH (FEET)	NOTE
16					Hole in rock created with a 7 7/8-inch roller bit.			
18								
20					End of Boring @ 20´.			
22								
24								
26								
28								
30								
32								

WATER LEVEL DATA				DEPTH (FT)			NOTES:
DATE	TIME		ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	Set 8-inch diameter steel casing 6´ below grade. No coring of rock; hole in rock created to 20´ with a 7 7/8-inch roller bit. Driller reports losing ±20-30 gallons of water during reaming of rock hole.
				6	20	4	

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER

and = 35 to 50 %
some = 20 to 35%
little = 10 to 20%
trace = 1 to 10%
c - coarse
m = medium
f = fine
ND = Non Detect
BGS = Below the Ground Surface
NA = Not Applicable

LABELLA Associates, P.C.

300 STATE STREET, ROCHESTER, NY
(585) 454-6110

BORING LOG
Remedial Measures NYSDEC BCP Site #C828159
690 St. Paul Street
Rochester, New York
Well Installations

BORING: **TW-6**
SHEET 1 OF 1
JOB: **209280**
CHKD BY:

CONTRACTOR: NYEG
DRILLER: Joel
LABELLA REPRESENTATIVE: KR Miller

BORING LOCATION: EXTERIOR SIDEWALK ENTRANCE AREA, MIDDLE OF 3 TREATMENT WELLS HERE.
TYPE OF WELL: TREATMENT WELL
GROUND SURFACE ELEVATION: DATUM:
START DATE: 7/21/2015 END DATE: 7/23/2015

TYPE OF DRILL RIG: CME TRUCK-MTD.
AUGER SIZE AND TYPE: 8.25-INCH HOLLOW STEM
OVERBURDEN SAMPLING METHOD: 2-INCH SPLIT SPOON

DRIVE SAMPLER TYPE: SPLIT SPOON
INSIDE DIAMETER:
OTHER:

DEPTH (FEET)	SAMPLE RECOVERY	RQD Value (%)	SAMPLE NO. AND DEPTH (FEET)	STRATA CHANGE (FEET)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	DEPTH (FEET)	NOTE
0			S-1		Remove concrete sidewalk with core drill.			
	1	N/A	0.5 - 2		Brown Clay and Silt with f/c Gravel and c Sand (fill).	0.2		
2	1	N/A	S-2 2 - 3		Split spoon refusal @ 3´ (concrete?). Dark grayish-brown f/c Sand and c/ f Gravel (fill).	0.1		
4	0.5	N/A	S-3 3 - 5		Concrete rubble atop moist, broken, weathered Dolostone and f Gravel with Silt.	0.1		
			S-4, 5 - 5.5		Wet Silty f Gravel with c Sand, trace c Gravel, broken rock.	0.1		
					Split spoon refusal @ 5.5´.			
6					Auger refusal @ 6´			
					Apparent competent bedrock @ 6´. Set steel casing @ 6´.			
8								
10								
					Hole in rock created with a 7 7/8-inch roller bit.			
12								
14								
16								

WATER LEVEL DATA				DEPTH (FT)			NOTES:
DATE	TIME		ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	Set 8-inch diameter steel casing 6´ below grade. No coring of rock; hole in rock created with a 7 7/8-inch roller bit. Driller reports losing ±20-30 gallons of water during reaming of rock hole.
				6	20	No	

GENERAL NOTES

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BORING LOG
Remedial Measures NYSDEC BCP Site #C828159
690 St. Paul Street
Rochester, New York
Well Installations

BORING: **TW-6**
SHEET 2 OF 2
JOB: **209280**
CHKD BY:

CONTRACTOR: NYEG
DRILLER: Joel
LABELLA REPRESENTATIVE: KR Miller

BORING LOCATION: EXTERIOR SIDEWALK ENTRANCE AREA, MIDDLE OF 3 TREATMENT WELLS HERE.
TYPE OF WELL: TREATMENT WELL
GROUND SURFACE ELEVATION: DATUM:
START DATE: 7/21/2015 END DATE: 7/23/2015

TYPE OF DRILL RIG: CME TRUCK-MTD.
AUGER SIZE AND TYPE: 8.25-INCH HOLLOW STEM
OVERBURDEN SAMPLING METHOD: 2-INCH SPLIT SPOON

DRIVE SAMPLER TYPE: SPLIT SPOON
INSIDE DIAMETER:
OTHER:

DEPTH (FEET)	SAMPLE RECOVERY	RQD Value (%)	SAMPLE NO. AND DEPTH (FEET)	STRATA CHANGE (FEET)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	DEPTH (FEET)	NOTE
16					Hole in rock created with a 7 7/8-inch roller bit.			
18								
20					End of Boring @ 20´.			
22								
24								
26								
28								
30								
32								

WATER LEVEL DATA				DEPTH (FT)			NOTES:
DATE	TIME		ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	Set 8-inch diameter steel casing 6´ below grade. No coring of rock; hole in rock created with a 7 7/8-inch roller bit. Driller reports losing ±20-30 gallons of water during reaming of rock hole.
				6	20	No	

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
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BGS = Below the Ground Surface
NA = Not Applicable

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BORING LOG
Remedial Measures NYSDEC BCP Site #C828159
690 St. Paul Street
Rochester, New York
Well Installations

BORING: **TW-7**
SHEET 1 OF 2
JOB: **209280**
CHKD BY:

CONTRACTOR: NYEG
DRILLER: Joel
LABELLA REPRESENTATIVE: DJK

BORING LOCATION: EXTERIOR SIDEWALK ENTRANCE AREA, NORTHERN OF 3 TREATMENT WELLS HERE.
TYPE OF WELL: TREATMENT WELL
GROUND SURFACE ELEVATION: DATUM:
START DATE: 7/21/2015 END DATE: 7/23/2015

TYPE OF DRILL RIG: CME TRUCK-MTD.
AUGER SIZE AND TYPE: 8.25-INCH HOLLOW STEM
OVERBURDEN SAMPLING METHOD: 2-INCH SPLIT SPOON

DRIVE SAMPLER TYPE: SPLIT SPOON
INSIDE DIAMETER:
ROCK CORE BARREL: NX

DEPTH (FEET)	SAMPLE RECOVERY	RQD Value (%)	SAMPLE NO. AND DEPTH (FEET)	STRATA CHANGE (FEET)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	DEPTH (FEET)	NOTE
0			S-1		Remove concrete sidewalk with core drill.			
	<0.5´	N/A	0.5 - 2		Poor recovery. f/c Gravel	0.2		
2								
	1.5´	N/A	S-2 2 - 3		Brown and gray f/c Gravel, c Sand, trace Silt/Clay (fill)	0.2		
4								
	1.2´	N/A	S-3 3 - 5.5		Similar to above, but less c Gravel and more Silt/Clay	0.2		
					Split spoon refusal @ 5.5´.			
6					Auger refusal @ 6´. Apparent competent bedrock @ 6´. Set steel casing @ 6´.			
	100%	9	Run 1		Medium to dark gray, fine-grained, non-fossiliferous Dolostone that is highly to moderately fractured. Fractures are mostly horizontal, but some low-angle and vertical fractures are present. Secondary crystallization is in some horizontal and low angle fractures (rare). Larger horizontal and low angle fractures contain silt and highly weathered rock, which presents as fine gravel.			
8			6´ - 10´		Rubble 6´-6.33´. Vertical fractures in rock core from 6.5´ to 6.6´ and 6.6´	29	8.5´	Soil sample collected @ 8.5´
					Horizontal Fractures in rock core: 6.33´; 6.5´; 6.75´; 6.83´; 6.92´; 7.08´;7.25´; 7.42´; 7.75´; 7.83´; 8.25´; 8.42´; 8.75´; 8.83´; 9.1´; 9.33´; 9.5´; 9.6´; 9.9´.			
10								
	100%	20	Run 2		Rock core appears similar to above.			
12			10´ - 15´		Horizontal Fractures in rock core: 10.25´; 10,33´; 10.42´; 10.55´; 10.7´; 11´; 11.5´; 11.66´; 11.9´; 12.1´; rubble @ 12.2´; 12.33´; 12.5´; 12.66´; 12.75´; 12.8´; 13.2´; 13.75´; 14´; 14.25´; 14.4´; 15´.			
					Staining observed from 12.2´ to 12.6´.			
14								Soil sample collected @ 14´
16								

WATER LEVEL DATA				DEPTH (FT)			NOTES:
DATE	TIME		ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	Set 8-inch diameter steel casing 6´ below grade. After coring rock, hole in rock created with a 7 7/8-inch roller bit. Driller reports losing ±20-30 gallons of water during coring and reaming of rock hole.
				8	20	yes	

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
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BORING LOG
Remedial Measures NYSDEC BCP Site #C828159
690 St. Paul Street
Rochester, New York
Well Installations

BORING: **TW-7**
SHEET 2 OF 2
JOB: **209280**
CHKD BY:

CONTRACTOR: NYEG
DRILLER: Joel
LABELLA REPRESENTATIVE: DJK

BORING LOCATION: EXTERIOR SIDEWALK ENTRANCE AREA, NORTHERN OF 3 TREATMENT WELLS HERE.
TYPE OF WELL: TREATMENT WELL
GROUND SURFACE ELEVATION: DATUM:
START DATE: 7/21/2015 END DATE: 7/23/2015

TYPE OF DRILL RIG: CME TRUCK-MTD.
AUGER SIZE AND TYPE: 8.25-INCH HOLLOW STEM
OVERBURDEN SAMPLING METHOD: 2-INCH SPLIT SPOON

DRIVE SAMPLER TYPE: SPLIT SPOON
INSIDE DIAMETER:
OTHER:

DEPTH (FEET)	SAMPLE RECOVERY	RQD Value (%)	SAMPLE NO. AND DEPTH (FEET)	STRATA CHANGE (FEET)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	DEPTH (FEET)	NOTE
16	100%	50	Run 3 15´ - 20´		Rock core appears similar to above. Horizontal Fractures in rock core: 15´; 15.3´; 15.35´; 15.4´; 15.5´; 15.66´; 15.8´; 16´; 16.6´; 16.75´; 16.9´; 17.25´; 17.5´; 17.75´; 18.4´; 19´; 19.2´; 19.6´; 19.75´; 20´.			
18								
20					End of Boring @ 20´			
22								
24								
26								
28								
30								
32								

WATER LEVEL DATA				DEPTH (FT)			NOTES:
DATE	TIME		ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	Set 8-inch diameter steel casing 6´ below grade. After coring rock, hole in rock created with a 7 7/8-inch roller bit. Driller reports losing ±20-30 gallons of water during coring and reaming of rock hole.
				8	20	yes	

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
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BORING LOG
Remedial Measures NYSDEC BCP Site #C828159
690 St. Paul Street
Rochester, New York
Well Installations

BORING: **TW-8**
SHEET 1 OF 2
JOB: **209280**
CHKD BY:

CONTRACTOR: NYEG
DRILLER: H. Lyons
LABELLA REPRESENTATIVE: KR Miller

BORING LOCATION: INTERIOR
TYPE OF WELL: TREATMENT WELL
GROUND SURFACE ELEVATION: DATUM:
START DATE: 7/21/2015 END DATE: 7/24/2015

TYPE OF DRILL RIG: CME 45B SKID-MTD.
AUGER SIZE AND TYPE: 8.25-INCH HOLLOW STEM
OVERBURDEN SAMPLING METHOD: 2-INCH SPLIT SPOON

DRIVE SAMPLER TYPE: SPLIT SPOON
INSIDE DIAMETER:
ROCK CORE BARREL: NX

DEPTH (FEET)	SAMPLE RECOVERY	RQD Value (%)	SAMPLE NO. AND DEPTH (FEET)	STRATA CHANGE (FEET)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	DEPTH (FEET)	NOTE
0					Remove ±6" thick concrete floor slab with core drill.			
					Hand auger refusal at 3.5´.			
2	Hand Auger to 3.5´							
4	87.5%	0	Run 1 3.5´ - 5.5´		Horizontal Fractures in rock core: 3.66´;4.1´; 4.15´; 4.4´; 4.45´; 4.5´;4.6´; 4.75´-4.9´; 5´-5.1´; 5.3´. Vertical Fracture in rock core from 3.66´ to 4´. Low-angle Fracture in rock core from 4.15´ to 4.3´.			Driller reports losing some coring water at 5´.
6	93%	8	Run 2 5.5´ - 10.5´		Apparent competent bedrock @ 5.5´. Set steel casing @ 5.5´. Medium to dark gray, fine-grained, non-fossiliferous Dolostone that is highly to moderately fractured. Fractures are mostly horizontal, but some low-angle and vertical fractures are present. Secondary crystallization is in some horizontal and low angle fractures (rare). Larger horizontal and low angle fractures contain silt and highly weathered rock, which presents as fine gravel. Secondary crystallization in some pits and vugs, which are rare.	8.7	7.2	
8					Rubble 5.5´ to 5.85´. Horizontal Fractures in rock core: 5.85´; 6.15´; 6.3´; 6.35´; 6.45´; 6.6´; 7.0´; 7.1´; 7.2´; 7.35´; 7.55´; 7.6´; 7.7´; 7.8´. Rubble 7.9´ to 8.3´.	26	9.1	
10					Horizontal Fractures in rock core: 8.5´; 8.8´; 9.0´; 9.1´; 9.2´; 9.35´; 9.55´; 9.75´; 9.9´; 10.2´.	75	9.9	
12	100%	26	Run 3 10.5´ - 15.5´		Rock appears similar to above. Two (2) Vertical Fractures in rock core from 10.5´ to 10.8´. Horizontal Fractures in rock core: 10.8´; 10.95´; 11´; 11.1´; 11.2´; 11.4´; 11.55´; 11.65´; 11.9´; 12.1´; 12.3´; 12.5´; 12.65´; 12.7´; 12.95´ to 13.1´; 13.2´; 13.4´; 13.6´; 13.8´; 14.0´; 14.3´; 14.4´; 14.55´; 14.8´; 15.2´; 15.5´.	4.6	12.5	Driller reports probable highly fractured zone from 13´ to 13.5´; roller bit drops in this interval.
14								
16								

WATER LEVEL DATA				DEPTH (FT)			NOTES:
DATE	TIME		ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	Set 8-inch diameter steel casing 5.5´ below grade. After coring rock, hole in rock created with a 7 7/8-inch roller bit. Driller reports losing ±40 gallons of water during coring and reaming of rock hole.
				5.5	20	4	

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
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and = 35 to 50 %
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BGS = Below the Ground Surface
NA = Not Applicable

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BORING LOG
Remedial Measures NYSDEC BCP Site #C828159
690 St. Paul Street
Rochester, New York
Well Installations

BORING: **TW-8**
SHEET 2 OF 2
JOB: **209280**
CHKD BY:

CONTRACTOR: NYEG
DRILLER: H. Lyons
LABELLA REPRESENTATIVE: KR Miller

BORING LOCATION: INTERIOR
TYPE OF WELL: TREATMENT WELL
GROUND SURFACE ELEVATION: DATUM:
START DATE: 7/21/2015 END DATE: 7/24/2015

TYPE OF DRILL RIG: CME 45B SKID-MTD.
AUGER SIZE AND TYPE: 8.25-INCH HOLLOW STEM
OVERBURDEN SAMPLING METHOD: 2-INCH SPLIT SPOON

DRIVE SAMPLER TYPE: SPLIT SPOON
INSIDE DIAMETER:
ROCK CORE BARREL: NX

DEPTH (FEET)	SAMPLE RECOVERY	RQD Value (%)	SAMPLE NO. AND DEPTH (FEET)	STRATA CHANGE (FEET)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	DEPTH (FEET)	NOTE
16	100%	59	Run 4 15.5´ - 20´		Rock core appears similar to above. Horizontal Fractures in rock core: 15.55´; 15.8´; 16´; 16.1´; 16.2´; 16.45´; 16.75´; 16.95´; 17.2´; 17.7´; 17.85´; 18´; 18.4´; 19.0´; 19.4´; 20´.			
18								
20					End of Boring @ 20´			
22								
24								
26								
28								
30								
32								

WATER LEVEL DATA				DEPTH (FT)			NOTES:
DATE	TIME		ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	Set 8-inch diameter steel casing 5.5´ below grade. After coring rock, hole in rock created with 7 7/8-inch roller bit. Driller reports losing ±40 gallons of water during coring and reaming of rock hole.
				5.5	20	yes	

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
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BORING LOG
Remedial Measures NYSDEC BCP Site #C828159
690 St. Paul Street
Rochester, New York
Well Installations

BORING: **TW-9**
SHEET 1 OF 1
JOB: **209280**
CHKD BY:

CONTRACTOR: NYEG
DRILLER: H. Lyons
LABELLA REPRESENTATIVE: KR Miller

BORING LOCATION: INTERIOR, SOUTHERNMOST OF INTERIOR TREATMENT WELLS
TYPE OF WELL: TREATMENT WELL
GROUND SURFACE ELEVATION: DATUM:
START DATE: 7/24/2015 END DATE: 7/27/2015

TYPE OF DRILL RIG: CME 45B SKID-MTD.
AUGER SIZE AND TYPE: 8.25-INCH HOLLOW STEM
OVERBURDEN SAMPLING METHOD: 2-INCH SPLIT SPOON

DRIVE SAMPLER TYPE: SPLIT SPOON
INSIDE DIAMETER:
ROCK CORE BARREL: NX

DEPTH (FEET)	SAMPLE				VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	DEPTH (FEET)	NOTE
	SAMPLE RECOVERY	RQD Value (%)	SAMPLE NO. AND DEPTH (FEET)	STRATA CHANGE (FEET)				
0					Remove ±8" thick concrete floor slab with core drill. Hand auger refusal at 1´; two (2) 4-inch cast iron pipes found at this depth, running parallel to each other in an east/west orientation. Further investigation suggests that these pipes are likely associated with a larger bank of pipes that appear to extend to the east and outside the footprint of the building. Will adjust this boring location approx. 1 foot to the south (see boring TW-9A).			
2								
4								
6								
8								
10								
12								
14								
16								

WATER LEVEL DATA				DEPTH (FT)			NOTES:
DATE	TIME		ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	
				N/A	1	no	

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
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BORING LOG
Remedial Measures NYSDEC BCP Site #C828159
690 St. Paul Street
Rochester, New York
Well Installations

BORING: **TW-9A**
SHEET 1 OF 2
JOB: **209280**
CHKD BY:

CONTRACTOR: NYEG
DRILLER: H. Lyons
LABELLA REPRESENTATIVE: S. Rife & KR Miller

BORING LOCATION: INTERIOR, SOUTHERNMOST OF INTERIOR TREATMENT WELLS
TYPE OF WELL: TREATMENT WELL
GROUND SURFACE ELEVATION: DATUM:
START DATE: 7/27/2015 END DATE: 7/31/2015

TYPE OF DRILL RIG: CME 45B SKID-MTD.
AUGER SIZE AND TYPE: 8.25-INCH HOLLOW STEM
OVERBURDEN SAMPLING METHOD: 2-INCH SPLIT SPOON

DRIVE SAMPLER TYPE: SPLIT SPOON
INSIDE DIAMETER:
ROCK CORE BARREL: NX

DEPTH (FEET)	SAMPLE RECOVERY	RQD Value (%)	SAMPLE NO. AND DEPTH (FEET)	STRATA CHANGE (FEET)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	DEPTH (FEET)	NOTE
0					Remove 4"-5" thick concrete floor slab with core drill.			
					Hand clear from 0.5´ to 3´. Large cobbles and Silty c Sand and c Gravel.			
2								
		0	Run 1					
4			3.5´ - 6.0´		Fractured Dolostone, occasional vugs, vertical fractures, mud seams (2 noted), no odors.			
6					Apparent competent bedrock @ 6.0´. Set steel casing @ 6.0´.			
		0	Run 2					
8			6´ - 11´		Highly Fractured Dolostone, frequent angled and vertical fractures. Mud seams noted @ 9´, 9.7´, and 10´. Petroleum odors reported by Driller at 7´ to 8´.			
10								
12	100%		Run 3					
			11´ - 16´					
14								
16								

WATER LEVEL DATA				DEPTH (FT) BOTTOM OF CASING	DEPTH (FT) BOTTOM OF BORING	GROUNDWATER ENCOUNTERED
DATE	TIME		ELAPSED TIME			
				6	20	yes

NOTES:
Set 8-inch diameter steel casing 6´ below grade. After coring rock, hole in rock created with a 7 7/8-inch roller bit.

GENERAL NOTES

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BORING LOG
Remedial Measures NYSDEC BCP Site #C828159
690 St. Paul Street
Rochester, New York
Well Installations

BORING: **TW-9A**
SHEET 2 OF 2
JOB: **209280**
CHKD BY:

CONTRACTOR: NYEG
DRILLER: H. Lyons
LABELLA REPRESENTATIVE: S. Rife & KR Miller

BORING LOCATION: INTERIOR
TYPE OF WELL: TREATMENT WELL
GROUND SURFACE ELEVATION: DATUM:
START DATE: 7/27/2015 END DATE: 7/31/2015

TYPE OF DRILL RIG: CME 45B SKID-MTD.
AUGER SIZE AND TYPE: 8.25-INCH HOLLOW STEM
OVERBURDEN SAMPLING METHOD: 2-INCH SPLIT SPOON

DRIVE SAMPLER TYPE: SPLIT SPOON
INSIDE DIAMETER:
ROCK CORE BARREL: NX

DEPTH (FEET)	SAMPLE RECOVERY	RQD Value (%)	SAMPLE NO. AND DEPTH (FEET)	STRATA CHANGE (FEET)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	DEPTH (FEET)	NOTE
16	92.5%	25	Run 4 15.5´ - 20´		Rock core appears similar to above.			
18								
20					End of Boring @ 20´			
22								
24								
26								
28								
30								
32								

WATER LEVEL DATA				DEPTH (FT)			NOTES:
DATE	TIME		ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	Set 8-inch diameter steel casing 6´ below grade. After coring rock, hole in rock created with a 7 7/8-inch roller bit.
				6	20	yes	

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER

and = 35 to 50 %
some = 20 to 35%
little = 10 to 20%
trace = 1 to 10%
c - coarse
m = medium
f = fine
ND = Non Detect
BGS = Below the Ground Surface
NA = Not Applicable

LABELLA Associates, P.C.
300 STATE STREET, ROCHESTER, NY
(585) 454-6110

BORING LOG
Remedial Measures NYSDEC BCP Site #C828159
690 St. Paul Street
Rochester, New York
Well Installations

BORING: **TW-10**
SHEET 1 OF 2
JOB: **209280**
CHKD BY:

CONTRACTOR: NYEG
DRILLER: H. Lyons
LABELLA REPRESENTATIVE: KR Miller

BORING LOCATION: INTERIOR, TO NORTHWEST OF TW-9
TYPE OF WELL: TREATMENT WELL
GROUND SURFACE ELEVATION: DATUM:
START DATE: 7/24/2015 END DATE: 8/25/2015

TYPE OF DRILL RIG: CME 45B SKID-MTD.
AUGER SIZE AND TYPE: 8.25-INCH HOLLOW STEM
OVERBURDEN SAMPLING METHOD: 2-INCH SPLIT SPOON

DRIVE SAMPLER TYPE: SPLIT SPOON
INSIDE DIAMETER:
ROCK CORE BARREL: NX

DEPTH (FEET)	SAMPLE RECOVERY	RQD Value (%)	SAMPLE NO. AND DEPTH (FEET)	STRATA CHANGE (FEET)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	DEPTH (FEET)	NOTE
0					Remove ±11" thick concrete floor slab with core drill.			
					Hand clear to 1.5´. Cobbles and c Gravel.			
					Hand auger			
2	1.7´	N/A	S-1 1.5´ - 3.5´		Brown Clayey Silt with f Gravel atop brownish-gray f Gravel, wet	0.1		
					Split spoon refusal @ 3.5´			
4	100%	0	Run 1 3.5´ - 5´		Medium gray Dolostone, highly to moderately fractured. Horizontal Fractures in rock core: 3.7´; 3.9´; 4.2´; 4.35´; 4.45´; 4.5´;4.55´; 4.65´; 4.9´. After coring, able to auger to 4´. Use 7 7/8-inch roller bit to reach 5´ and apparent competent rock.	0.0		
					Apparent competent bedrock @ 5´. Set steel casing @ 5´.			
6								
8								
10					Hole in rock created with a 7 7/8-inch roller bit.			
12								
14								
16								

WATER LEVEL DATA

DATE	TIME		ELAPSED TIME

DEPTH (FT) BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED
5	20	yes

NOTES: Set 8-inch diameter steel casing 5´ below grade. After coring rock to 5.5´, hole in rock created to 20´ with a 7 7/8-inch roller bit. Broken drill string leaves roller bit at 17´ from 7/29 to 8/25, when it is successfully removed. Driller reports losing ±125 gallons of water during coring and reaming of rock hole. Driller notes petroleum (fuel oil?) odor at ±19´.

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER

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BORING LOG
Remedial Measures NYSDEC BCP Site #C828159
690 St. Paul Street
Rochester, New York
Well Installations

BORING: **TW-10**
SHEET 2 OF 2
JOB: **209280**
CHKD BY:

CONTRACTOR: NYEG
DRILLER: H. Lyons
LABELLA REPRESENTATIVE: KR Miller

BORING LOCATION: INTERIOR, TO NORTHWEST OF TW-9
TYPE OF WELL: TREATMENT WELL
GROUND SURFACE ELEVATION: DATUM:
START DATE: 7/24/2015 END DATE: 8/25/2015

TYPE OF DRILL RIG: CME 45B SKID-MTD.
AUGER SIZE AND TYPE: 8.25-INCH HOLLOW STEM
OVERBURDEN SAMPLING METHOD: 2-INCH SPLIT SPOON

DRIVE SAMPLER TYPE: SPLIT SPOON
INSIDE DIAMETER:
ROCK CORE BARREL: NX

DEPTH (FEET)	SAMPLE RECOVERY	RQD Value (%)	SAMPLE NO. AND DEPTH (FEET)	STRATA CHANGE (FEET)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	DEPTH (FEET)	NOTE
16					Hole in rock created with a 7 7/8-inch roller bit.			
18								
20					End of Boring @ 20´.			
22								
24								
26								
28								
30								
32								

WATER LEVEL DATA				DEPTH (FT)			NOTES:
DATE	TIME		ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	Set 8-inch diameter steel casing 5´ below grade. After coring rock to 5.5´, hole in rock created to 20´ with a 7 7/8-inch roller bit. Broken drill string leaves roller bit at 17´ from 7/29 to 8/25, when it is successfully removed. Driller reports losing ±125 gallons of water during coring and reaming of rock hole. Driller notes petroleum (fuel oil?) odor at ±19´.
				5	20	yes	

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
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BGS = Below the Ground Surface
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BORING LOG
Remedial Measures NYSDEC BCP Site #C828159
690 St. Paul Street
Rochester, New York
Well Installations

BORING: **TW-11**
SHEET 1 OF 2
JOB: **209280**
CHKD BY:

CONTRACTOR: NYEG
DRILLER: H. Lyons
LABELLA REPRESENTATIVE: S. Rife

BORING LOCATION: INTERIOR
TYPE OF WELL: TREATMENT WELL
GROUND SURFACE ELEVATION: DATUM:
START DATE: 8/4/2015 END DATE: 8/6/2015

TYPE OF DRILL RIG: CME 45B SKID-MTD.
AUGER SIZE AND TYPE: 8.25-INCH HOLLOW STEM
OVERBURDEN SAMPLING METHOD: 2-INCH SPLIT SPOON

DRIVE SAMPLER TYPE: SPLIT SPOON
INSIDE DIAMETER:
ROCK CORE BARREL: NX

DEPTH (FEET)	SAMPLE RECOVERY	RQD Value (%)	SAMPLE NO. AND DEPTH (FEET)	STRATA CHANGE (FEET)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	DEPTH (FEET)	NOTE
0				0.5	Remove concrete floor slab with core drill.			
					Brown vf Sand, little Silt, little m sub-rounded Gravel, dry, no odor	0.3		
2				2				
					Brown vf Sand, silty weathered material, moist, no odor	0.1		
				3.5				Weathered bedrock at 3.5´
4			Run 1 3.5´ - 6.0´		Thick mud seam, highly weathered and broken Dolostone, no petro. odor, wet, common Vertical Fractures noted. Horizontal Fractures common.			
				5.0		1.2		Mud seam very eroded.
6				5.7	Apparent competent bedrock @ 6.0´. Set steel casing @ 6.0´.			
			Run 2 6´ - 10´			5.0		
8					Weathered Dolostone, average 1" to 3" between fractures, abundant mud seams, petro odors noted @ 8.7´ and 9.3´. Samples of silty weathered bedrock taken, PID-screened core inside barrel and read 133 ppm at 9.3´.			Soil samples collected @ 8.4´ - 8.7´ and 9.3´.
						17	8.3	
						38	8.7	
						133	9.3	
10								
						54.7	10.5	
12			Run 3 10´ - 15´		Weathered Dolostone, average 3" to 4" between fractures, petro odors noted @ 10.5´, dissipate downward in the column.	10.1	12.1	
						1.2	13.1	
14								
16								

WATER LEVEL DATA				BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED
DATE	TIME		ELAPSED TIME	DEPTH (FT)		
				6	20	yes

NOTES:
Set 8-inch diameter steel casing 6´ below grade. After coring rock, hole in rock created with a 7 7/8-inch roller bit.

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
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BGS = Below the Ground Surface
NA = Not Applicable

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BORING LOG
Remedial Measures NYSDEC BCP Site #C828159
690 St. Paul Street
Rochester, New York
Well Installations

BORING: **TW-11**
SHEET 2 OF 2
JOB: **209280**
CHKD BY:

CONTRACTOR: NYEG
DRILLER: H. Lyons
LABELLA REPRESENTATIVE: S. Rife

BORING LOCATION: INTERIOR
TYPE OF WELL: TREATMENT WELL
GROUND SURFACE ELEVATION: DATUM:
START DATE: 8/4/2015 END DATE: 8/6/2015

TYPE OF DRILL RIG: CME 45B SKID-MTD.
AUGER SIZE AND TYPE: 8.25-INCH HOLLOW STEM
OVERBURDEN SAMPLING METHOD: 2-INCH SPLIT SPOON

DRIVE SAMPLER TYPE: SPLIT SPOON
INSIDE DIAMETER:
ROCK CORE BARREL: NX

DEPTH (FEET)	SAMPLE RECOVERY	RQD Value (%)	SAMPLE NO. AND DEPTH (FEET)	STRATA CHANGE (FEET)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	DEPTH (FEET)	NOTE
16			Run 4 15.5´ - 20´		Fairly intact Dolostone, fractures typically 5" to 6" apart, no	0.6		
18								
20					End of Boring @ 20´			
22								
24								
26								
28								
30								
32								

WATER LEVEL DATA				DEPTH (FT)		
DATE	TIME		ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED
				6	20	yes

NOTES:
Set 8-inch diameter steel casing 6´ below grade. After coring rock, hole in rock created to 20´ with a 7 7/8-inch roller bit. Driller reports losing ±60 gallons of water during coring and reaming of rock hole.

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
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NA = Not Applicable

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BORING LOG
Remedial Measures NYSDEC BCP Site #C828159
690 St. Paul Street
Rochester, New York
Well Installations

BORING: **TW-12**
SHEET 1 OF 2
JOB: **209280**
CHKD BY:

CONTRACTOR: NYEG
DRILLER: H. Lyons
LABELLA REPRESENTATIVE: KR Miller

BORING LOCATION: INTERIOR, NORTHERNMOST OF INTERIOR TREATMENT WELLS
TYPE OF WELL: TREATMENT WELL
GROUND SURFACE ELEVATION: DATUM:
START DATE: 8/11/2015 END DATE: 8/14/2015

TYPE OF DRILL RIG: CME 45B SKID-MTD.
AUGER SIZE AND TYPE: 8.25-INCH HOLLOW STEM
OVERBURDEN SAMPLING METHOD: 2-INCH SPLIT SPOON

DRIVE SAMPLER TYPE: SPLIT SPOON
INSIDE DIAMETER:
ROCK CORE BARREL: NX

DEPTH (FEET)	SAMPLE RECOVERY	RQD Value (%)	SAMPLE NO. AND DEPTH (FEET)	STRATA CHANGE (FEET)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	DEPTH (FEET)	NOTE
0					Remove ±7" thick concrete floor slab with core drill.			
						0.1		
					Hand auger refusal at 1.5´. Brown c Gravel and Cobbles atop brown c/f Gravel and c Sandy Silt (fill).			
	0.25	N/A	S-1 1.5´ - 1.7´		Split spoon refusal (large cobble) @ 1.7´.	0.3		
2					Auger with cutting head and hand auger to 2.25´.			
			S-1		Reddish-brown c Gravel atop broken Cobble and reddish-brown Clayey Silt with f Sand and trace c Gravel (native). More c Gravel near 4.3´	0.2		
4		N/A	2.25´ - 4.3´					Driller and helper note a petroleum (fuel oil?) odor at 4.3´.
	1.2´		Run 1		Auger refusal @ 4.3´.	0.2		
			4.3´ - 6´		Rubble 4.3´ to 4.7´. First intact core 4.8´ to 4.95´. Horizontal Fracture with Silt and f Gravel @ 5.1´. Rock more competent 5.2´to 5.6´.	1.4	5.1	Collected soil sample from 5.1´ and a rock core sample from 5.2´ to 5.9´.
6					Horizontal Fratures in rock core: 5.2´; 5.4´; 5.5´; 5.7´; 5.9.	0.2		
					Apparent competent bedrock @ 6´. Set steel casing @ 6´.			
	97%	9	Run 2		Medium to dark gray, fine-grained, non-fossiliferous Dolostone that is highly to moderately fractured. Fractures are mostly horizontal, but some low-angle vertical fractures are present.	1.3		
8			6´ - 11´			1.9		Collected soil sample from 9.5´ and a rock core sample from 9.5´ to 9.8´.
					Horizontal Fractures in rock core: 6.1´; 6.3´; 6.6´; 6.7´; 6.9´; 7´; 7.1´; 7.3´; 7.5´; 7.6´; 7.75´; 7.8´; 8´; 8.4´; 8.5´; 8.6´; 8.7´; 8.8´; 8.9´; 9.1´; 9.3´; 9.45´; 9.5´; 10´; 10.1´; 10.25´; 10.33´; 10.5´; 10.75´.	39	9.5	
10								
						17	10.4	
	100%	23	Run 3		Vertical Fractures in rock core from 13.4´ to 13.6´.			
12			11´ - 16´		Horizontal Fractures in rock core: 11.2´; 11.25´; 11.66´; 11.7´; 11.9´; 12.2´; 12.4´; 12.6´; 12.66´; 12.95´; 13.1´; 13.25´; 13.45´; 13.6´; 14.2´; 14.6´14.8´; 15´; 15.2´; 15.3´; 15.4´; 15.6´; 15.7´.			
14					Rock core appears similar to above.			Collected a rock core sample from 13.4´ to 13.75´.
16					Hole in rock created with a 7 7/8-inch roller bit.			

WATER LEVEL DATA				DEPTH (FT) BOTTOM OF CASING	DEPTH (FT) BOTTOM OF BORING	GROUNDWATER ENCOUNTERED
DATE	TIME		ELAPSED TIME			
				6	20	yes

NOTES:
Set 8-inch diameter steel casing 6´ below grade. After coring rock to 16´, hole in rock created with a 7 7/8-inch roller bit. Driller reports losing ±40 gallons of water during coring and reaming of rock hole.

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
2) WATER LEVEL READINGS HAVE BEEN MADE AT TIMES AND UNDER CONDITIONS STATED, FLUCTUATIONS OF GROUNDWATER

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300 STATE STREET, ROCHESTER, NY
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BORING LOG
Remedial Measures NYSDEC BCP Site #C828159
690 St. Paul Street
Rochester, New York
Well Installations

BORING: **TW-12**
SHEET 2 OF 2
JOB: **209280**
CHKD BY:

CONTRACTOR: NYEG
DRILLER: H. Lyons
LABELLA REPRESENTATIVE: KR Miller

BORING LOCATION: INTERIOR, NORTHERNMOST OF INTERIOR TREATMENT WELLS
TYPE OF WELL: TREATMENT WELL
GROUND SURFACE ELEVATION: DATUM:
START DATE: 8/11/2015 END DATE: 8/14/2015

TYPE OF DRILL RIG: CME 45B SKID-MTD.
AUGER SIZE AND TYPE: 8.25-INCH HOLLOW STEM
OVERBURDEN SAMPLING METHOD: 2-INCH SPLIT SPOON

DRIVE SAMPLER TYPE: SPLIT SPOON
INSIDE DIAMETER:
ROCK CORE BARREL: NX

DEPTH (FEET)	SAMPLE RECOVERY	RQD Value (%)	SAMPLE NO. AND DEPTH (FEET)	STRATA CHANGE (FEET)	VISUAL CLASSIFICATION	PID FIELD SCREEN (PPM)	DEPTH (FEET)	NOTE
16					Hole in rock created with a 7 7/8-inch roller bit.			
18								
20					End of Boring @ 20´			
22								
24								
26								
28								
30								
32								

WATER LEVEL DATA				DEPTH (FT)			NOTES:
DATE	TIME		ELAPSED TIME	BOTTOM OF CASING	BOTTOM OF BORING	GROUNDWATER ENCOUNTERED	Set 8-inch diameter steel casing 6´ below grade. After coring rock, hole in rock created to 20´ with a 7 7/8-inch roller bit. Driller reports losing ±40 gallons of water during coring and reaming of rock hole.
				6	20	yes	

GENERAL NOTES

1) STRATIFICATION LINES REPRESENT APPROXIMATE BOUNDARY BETWEEN SOIL TYPES, TRANSITIONS MAY BE GRADUAL.
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ENVIRONMENTAL ENGINEERING CONSULTANTS

WELL CONSTRUCTION LOG
Remedial Measures NYSDEC BCP Site #C828159
690 St. Paul Street
Rochester, New York

WELL ID **TW-1**
SHEET 1 OF 1
JOB # 209280
CHKD. BY:

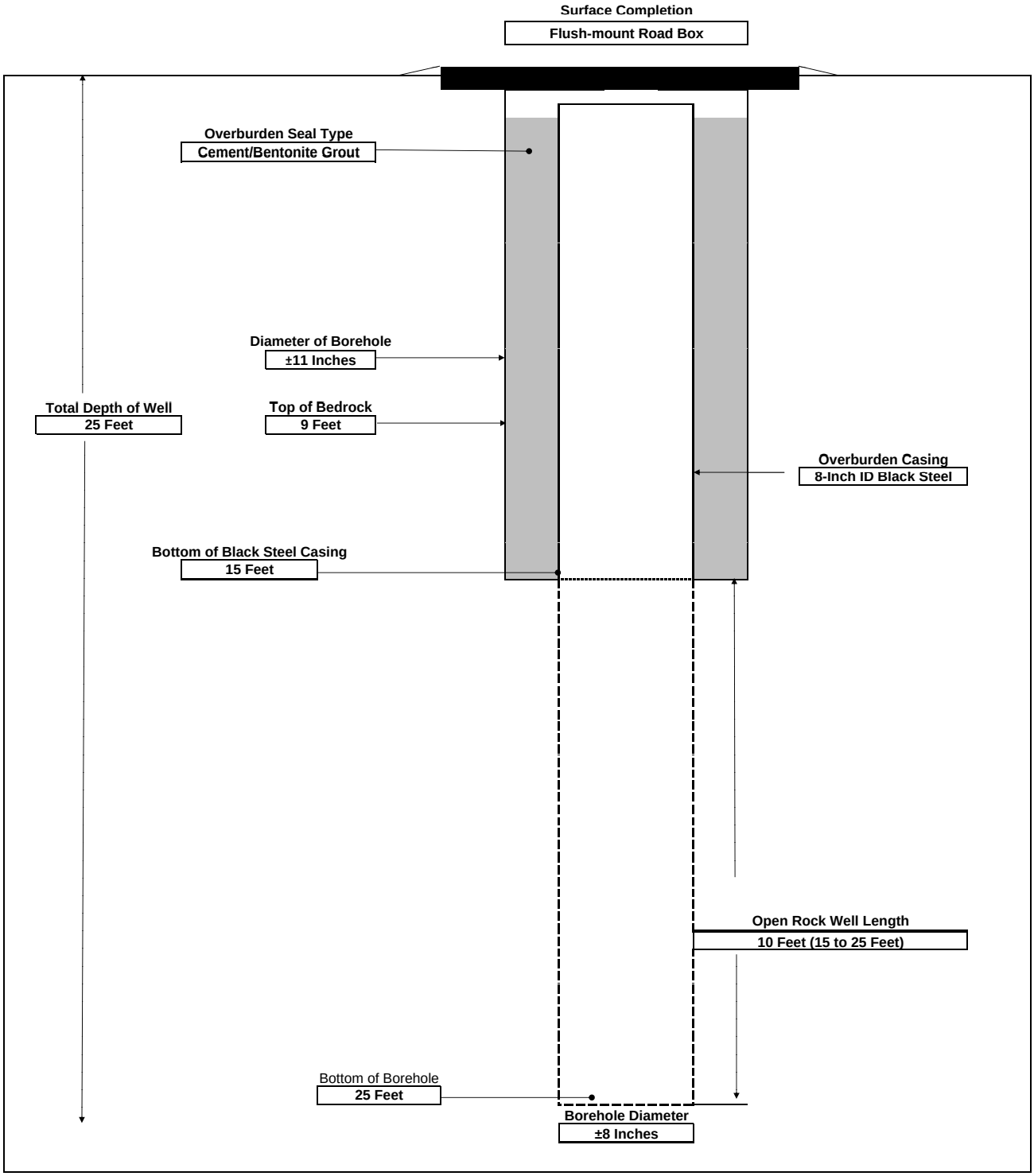
CONTRACTOR: NYEG
DRILLER Brian G.
LABELLA REPRESENTATIVE: KR Miller

WELL LOCATION: SOUTHERNMOST IN ALLEY/LOADING DOCK AREA
GROUND SURFACE ELEVATION DATUM
START DATE 7/8/2015 END DATE 7/15/2015

TYPE OF DRILL RIG: MOBILE B-59 TRUCK MTD.
AUGER SIZE AND TYPE 8.25-INCH HOLLOW STEM AUGERS
OVERBURDEN SAMPLING METHOD: 2-INCH SPLIT SPOON
ROCK DRILLING METHOD NOMINAL 8-INCH ROLLER BIT

WATER LEVEL DATA

DATE	TIME	WATER	REMARKS



NOTE: NOT TO SCALE

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ENVIRONMENTAL ENGINEERING CONSULTANTS

WELL CONSTRUCTION LOG
Remedial Measures NYSDEC BCP Site #C828159
690 St. Paul Street
Rochester, New York

WELL ID **TW-2**
SHEET 1 OF 1
JOB # 209280
CHKD. BY:

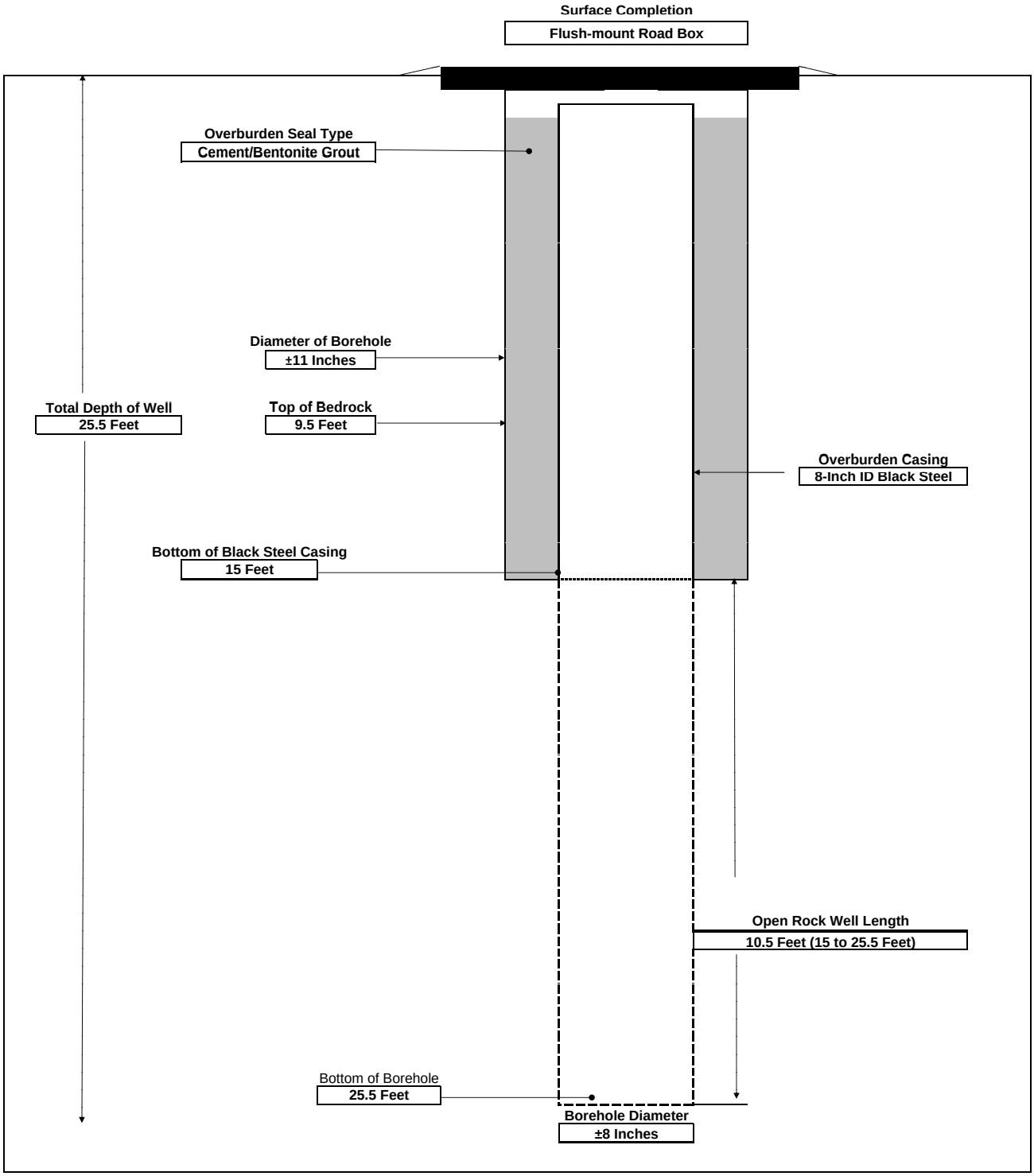
CONTRACTOR: NYEG
DRILLER Brian G.
LABELLA REPRESENTATIVE: KR Miller

WELL LOCATION: ALLEY/LOADING DOCK AREA; ±14´ NORTH OF TW-1
GROUND SURFACE ELEVATION DATUM
START DATE 7/13/2015 END DATE 7/17/2015

TYPE OF DRILL RIG: MOBILE B-59 TRUCK MTD.
AUGER SIZE AND TYPE 8.25-INCH HOLLOW STEM AUGERS
OVERBURDEN SAMPLING METHOD: 2-INCH SPLIT SPOON
ROCK DRILLING METHOD NOMINAL 8-INCH ROLLER BIT

WATER LEVEL DATA

DATE	TIME	WATER	REMARKS



NOTE: NOT TO SCALE

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WELL CONSTRUCTION LOG
Remedial Measures NYSDEC BCP Site #C828159
690 St. Paul Street
Rochester, New York

WELL ID **TW-3A**
SHEET 1 OF 1
JOB # 209280
CHKD. BY:

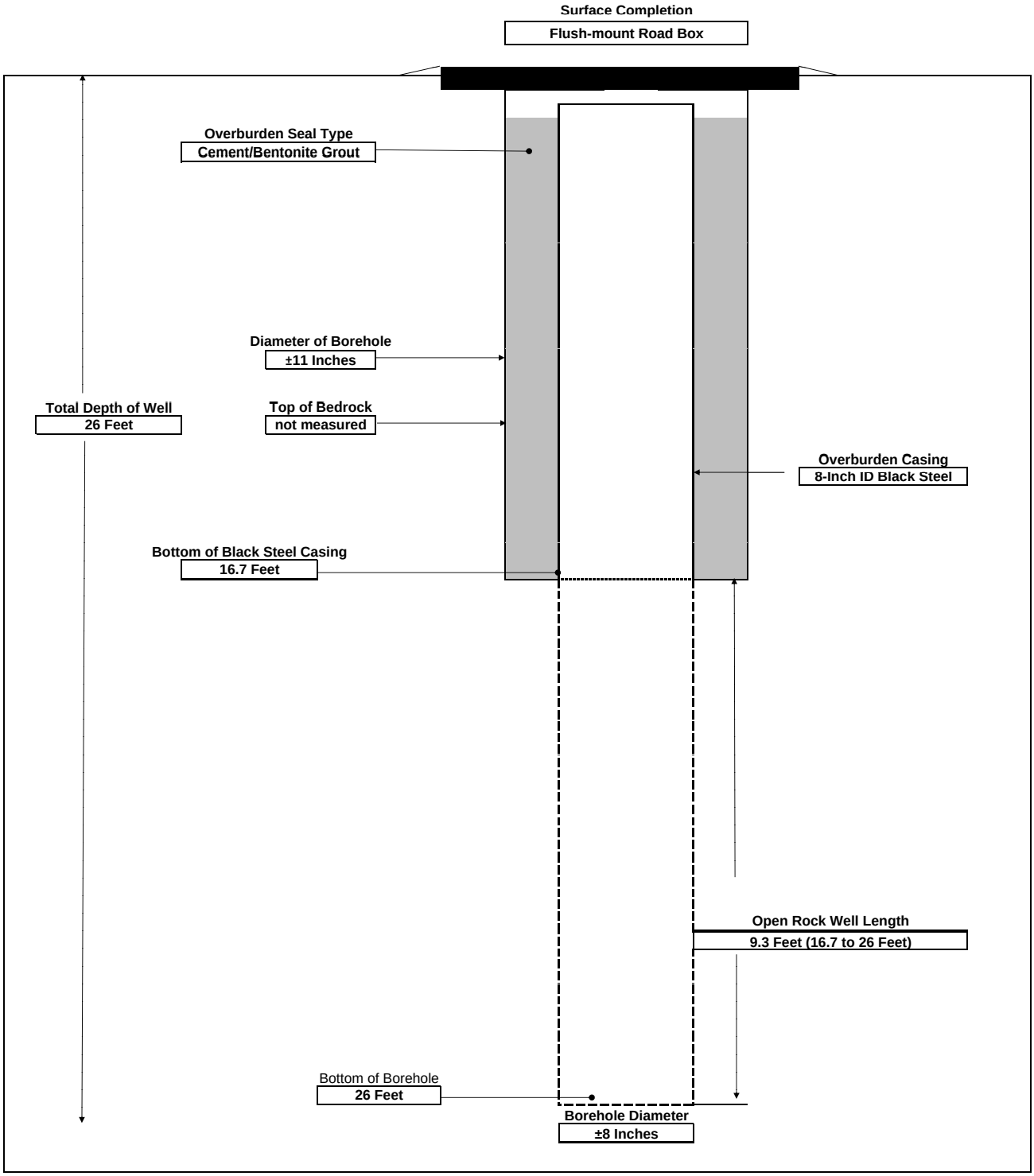
CONTRACTOR: NYEG
DRILLER Brian G.
LABELLA REPRESENTATIVE: KR Miller

WELL LOCATION: NORTHERNMOST IN ALLEY/LOADING DOCK AREA
GROUND SURFACE ELEVATION DATUM
START DATE 7/21/2015 END DATE 7/24/2015

TYPE OF DRILL RIG: MOBILE B-59 TRUCK MTD.
AUGER SIZE AND TYPE 8.25-INCH HOLLOW STEM AUGERS
OVERBURDEN SAMPLING METHOD: 2-INCH SPLIT SPOON
ROCK DRILLING METHOD NOMINAL 8-INCH ROLLER BIT

WATER LEVEL DATA

DATE	TIME	WATER	REMARKS



NOTE: NOT TO SCALE

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ENVIRONMENTAL ENGINEERING CONSULTANTS

WELL CONSTRUCTION LOG
Remedial Measures NYSDEC BCP Site #C828159
690 St. Paul Street
Rochester, New York

WELL ID **TW-4**
SHEET 1 OF 1
JOB # 209280
CHKD. BY:

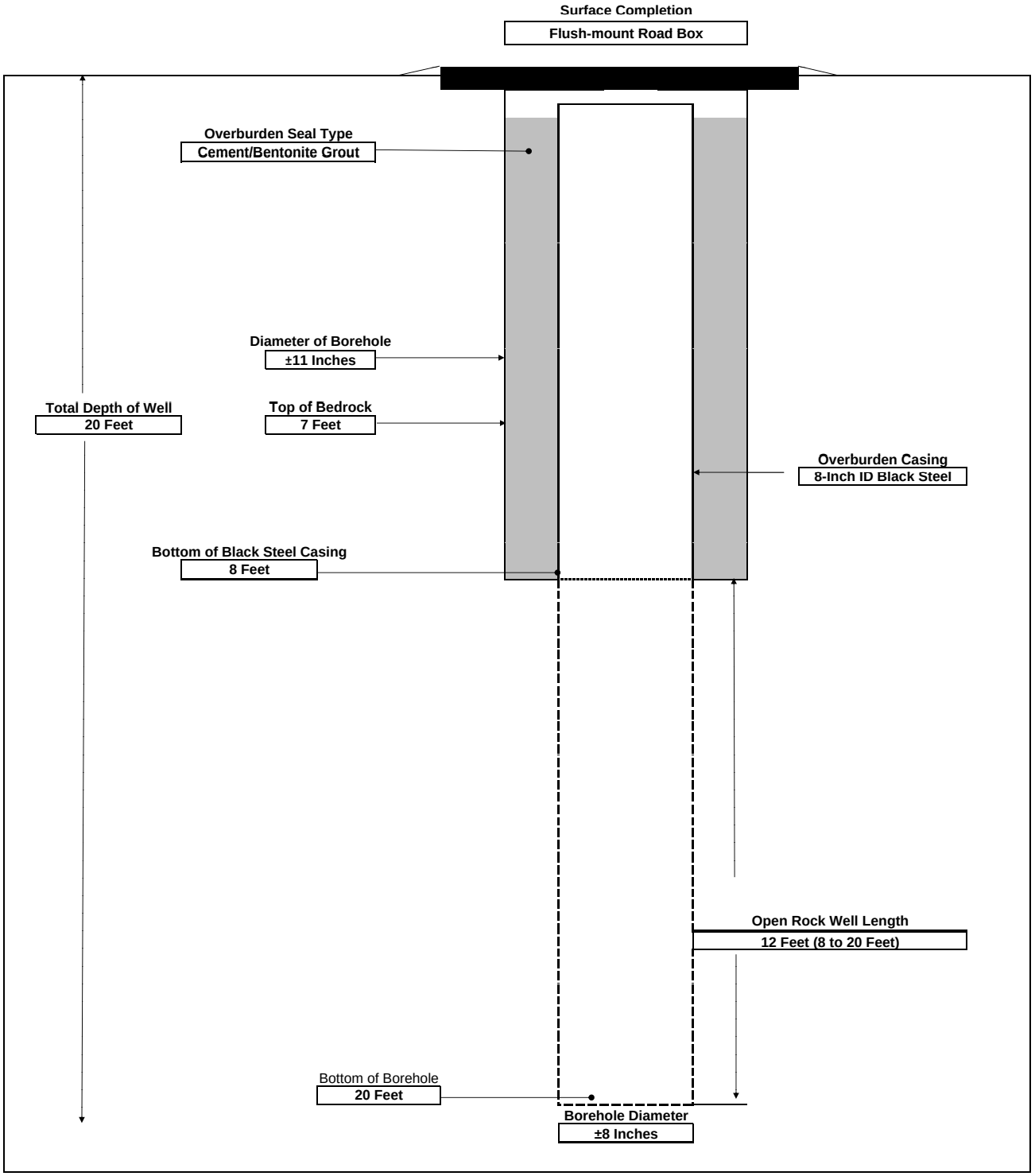
CONTRACTOR: NYEG
DRILLER H. Lyons
LABELLA REPRESENTATIVE: DJK & KR Miller

WELL LOCATION: INTERIOR, NORTH OF ALLEY/LOADING DOCK AREA
GROUND SURFACE ELEVATION DATUM
START DATE 8/6/2015 END DATE 8/11/2015

TYPE OF DRILL RIG: CME 45B SKID-MTD.
AUGER SIZE AND TYPE 8.25-INCH HOLLOW STEM AUGERS
OVERBURDEN SAMPLING METHOD: 2-INCH SPLIT SPOON
ROCK DRILLING METHOD NOMINAL 8-INCH ROLLER BIT

WATER LEVEL DATA

DATE	TIME	WATER	REMARKS



NOTE: NOT TO SCALE

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ENVIRONMENTAL ENGINEERING CONSULTANTS

WELL CONSTRUCTION LOG
Remedial Measures NYSDEC BCP Site #C828159
690 St. Paul Street
Rochester, New York

WELL ID **TW-5**
SHEET 1 OF 1
JOB # 209280
CHKD. BY:

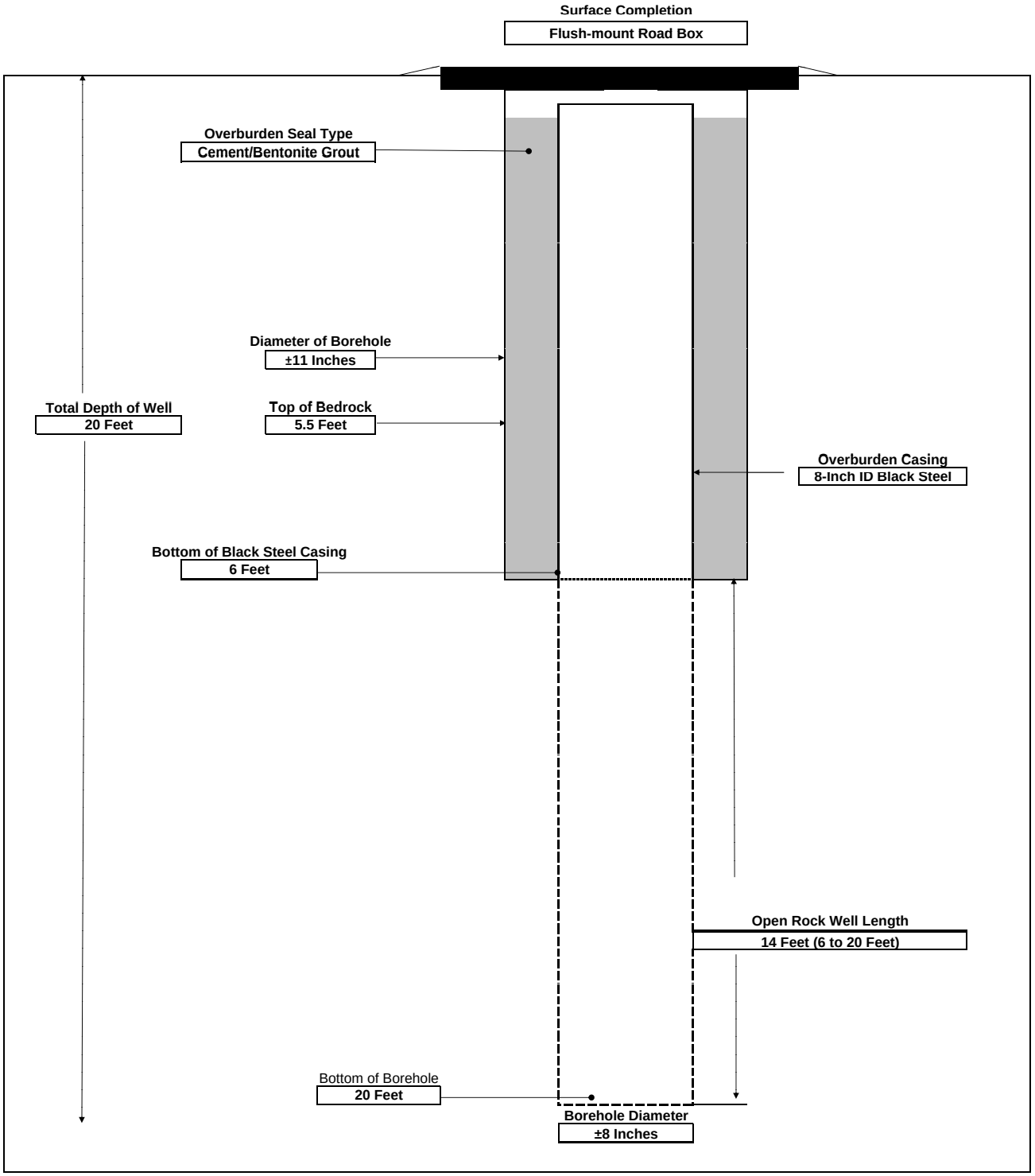
CONTRACTOR: NYEG
DRILLER Joel
LABELLA REPRESENTATIVE: KR Miller

WELL LOCATION: EXTERIOR SIDEWALK ENTRANCE AREA, SOUTHERNMOST OF 3 TREATMENT WELLS HERE
GROUND SURFACE ELEVATION DATUM
START DATE 7/21/2015 END DATE 7/24/2015

TYPE OF DRILL RIG: CME TRUCK-MTD.
AUGER SIZE AND TYPE 8.25-INCH HOLLOW STEM AUGERS
OVERBURDEN SAMPLING METHOD: 2-INCH SPLIT SPOON
ROCK DRILLING METHOD NOMINAL 8-INCH ROLLER BIT

WATER LEVEL DATA

DATE	TIME	WATER	REMARKS



NOTE: NOT TO SCALE

LABELLA Associates, P.C.
300 STATE STREET, ROCHESTER, NEW YORK
ENVIRONMENTAL ENGINEERING CONSULTANTS

WELL CONSTRUCTION LOG
Remedial Measures NYSDEC BCP Site #C828159
690 St. Paul Street
Rochester, New York

WELL ID **TW-6**
SHEET 1 OF 1
JOB # 209280
CHKD. BY:

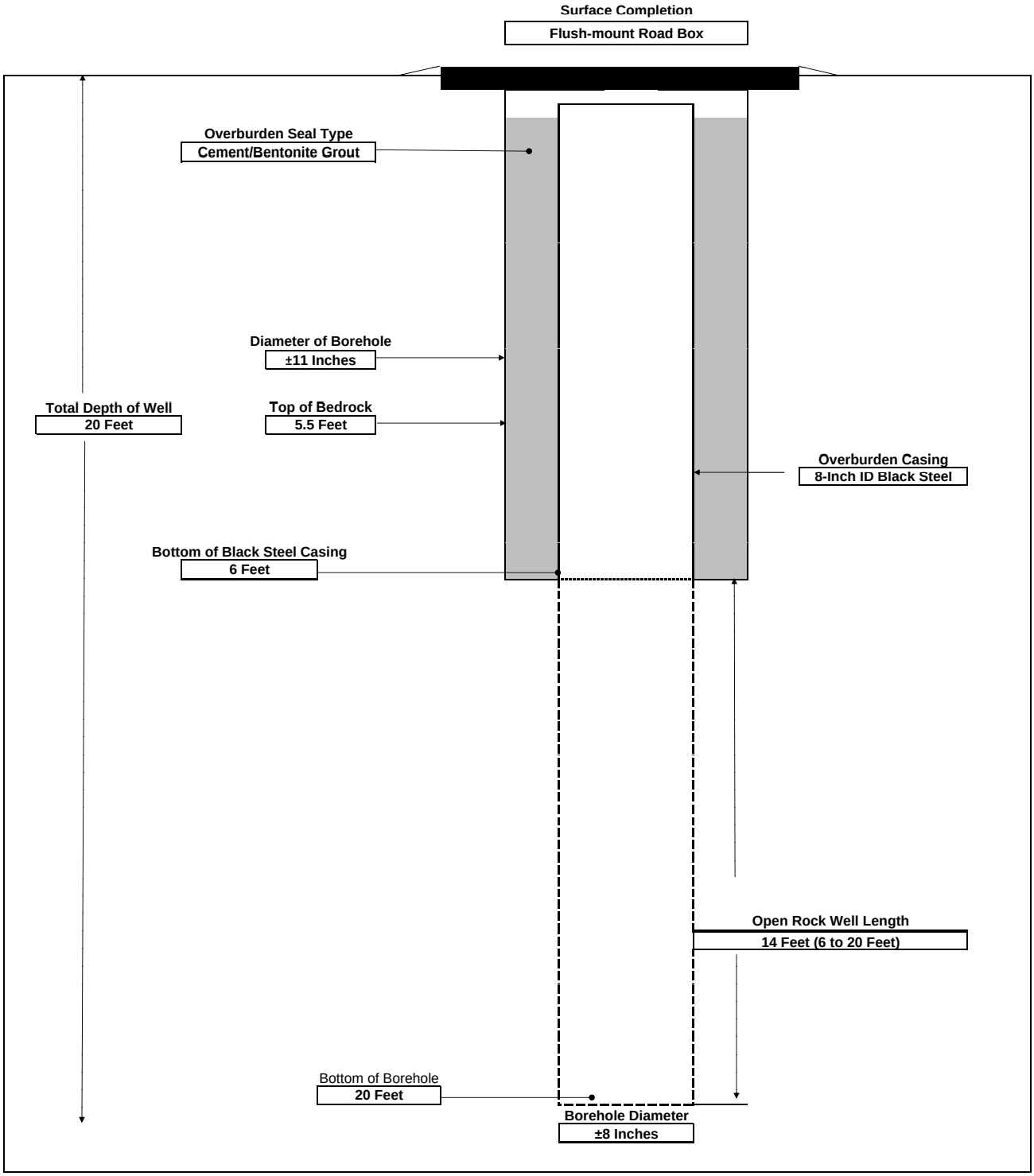
CONTRACTOR: NYEG
DRILLER Joel
LABELLA REPRESENTATIVE: KR Miller

WELL LOCATION: EXTERIOR SIDEWALK ENTRANCE AREA, MIDDLE OF 3 TREATMENT WELLS HERE
GROUND SURFACE ELEVATION DATUM
START DATE 7/21/2015 END DATE 7/23/2015

TYPE OF DRILL RIG: CME TRUCK-MTD.
AUGER SIZE AND TYPE 8.25-INCH HOLLOW STEM AUGERS
OVERBURDEN SAMPLING METHOD: 2-INCH SPLIT SPOON
ROCK DRILLING METHOD NOMINAL 8-INCH ROLLER BIT

WATER LEVEL DATA

DATE	TIME	WATER	REMARKS



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WELL CONSTRUCTION LOG
Remedial Measures NYSDEC BCP Site #C828159
690 St. Paul Street
Rochester, New York

WELL ID **TW-7**
SHEET 1 OF 1
JOB # 209280
CHKD. BY:

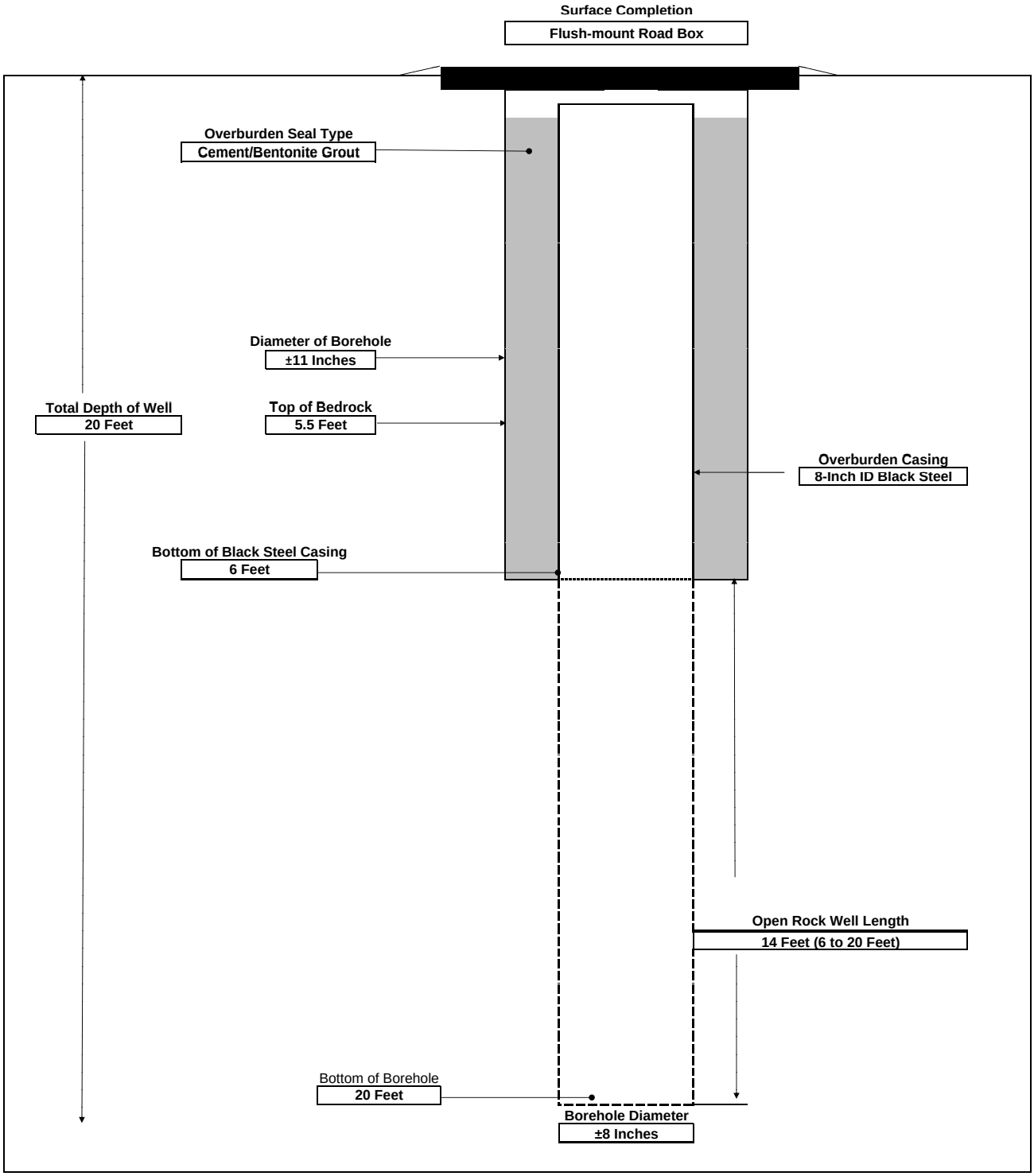
CONTRACTOR: NYEG
DRILLER Joel
LABELLA REPRESENTATIVE: DJK & KR Miller

WELL LOCATION: EXTERIOR SIDEWALK ENTRANCE AREA, NORTHERNMOST OF 3 TREATMENT WELLS HERE
GROUND SURFACE ELEVATION DATUM
START DATE 7/21/2015 END DATE 7/23/2015

TYPE OF DRILL RIG: CME TRUCK-MTD.
AUGER SIZE AND TYPE 8.25-INCH HOLLOW STEM AUGERS
OVERBURDEN SAMPLING METHOD: 2-INCH SPLIT SPOON
ROCK DRILLING METHOD NOMINAL 8-INCH ROLLER BIT

WATER LEVEL DATA

DATE	TIME	WATER	REMARKS



NOTE: NOT TO SCALE

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ENVIRONMENTAL ENGINEERING CONSULTANTS

WELL CONSTRUCTION LOG
Remedial Measures NYSDEC BCP Site #C828159
690 St. Paul Street
Rochester, New York

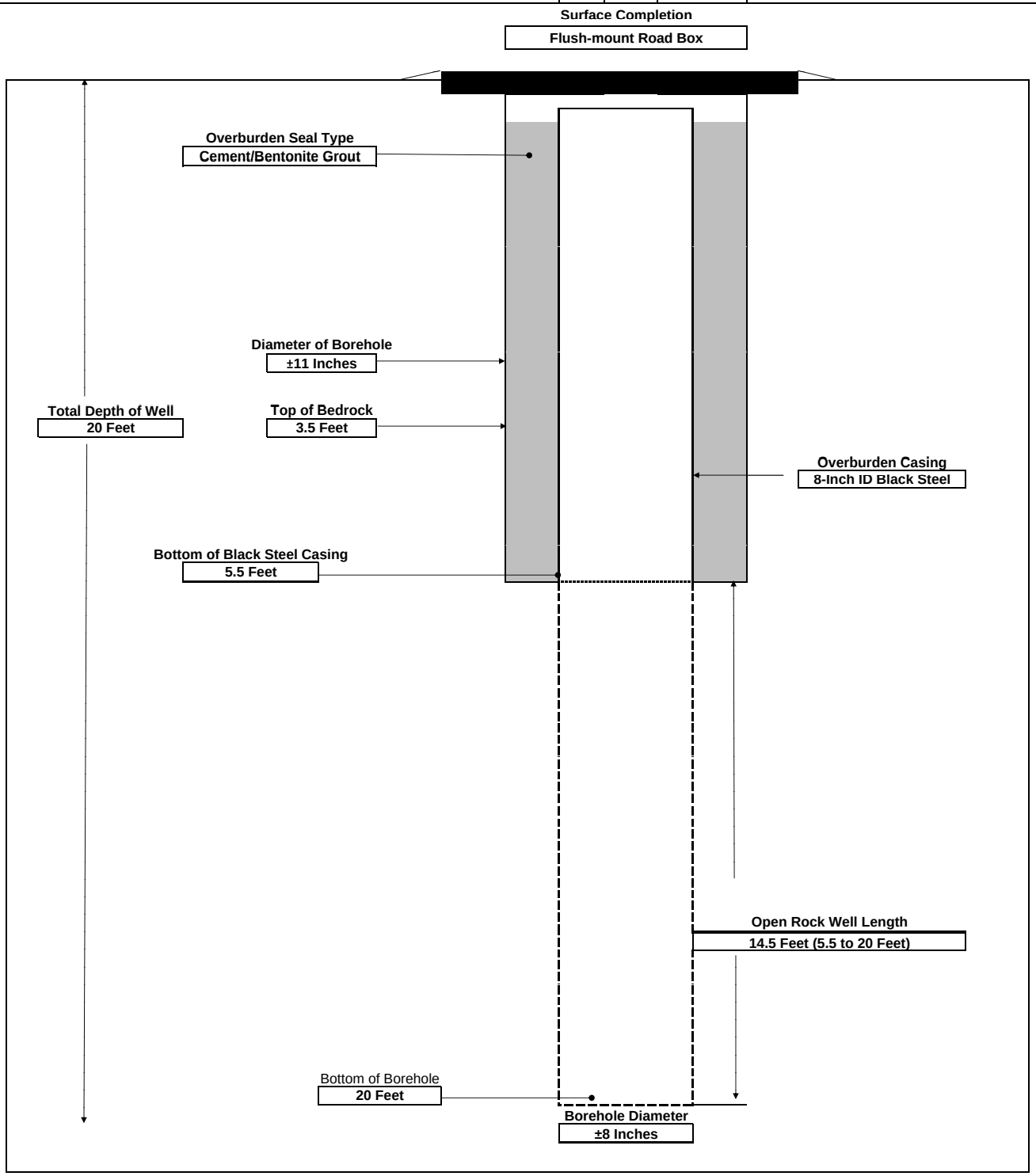
WELL ID **TW-8**
SHEET 1 OF 1
JOB # 209280
CHKD. BY:

CONTRACTOR: NYEG
DRILLER H. Lyons
LABELLA REPRESENTATIVE: KR Miller

WELL LOCATION: INTERIOR
GROUND SURFACE ELEVATION DATUM
START DATE 7/21/2015 END DATE 7/24/2015

TYPE OF DRILL RIG: CME 45B SKID-MTD.
AUGER SIZE AND TYPE 8.25-INCH HOLLOW STEM AUGERS
OVERBURDEN SAMPLING METHOD: 2-INCH SPLIT SPOON
ROCK DRILLING METHOD NOMINAL 8-INCH ROLLER BIT

WATER LEVEL DATA			
DATE	TIME	WATER	REMARKS



NOTE: NOT TO SCALE

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WELL CONSTRUCTION LOG
Remedial Measures NYSDEC BCP Site #C828159
690 St. Paul Street
Rochester, New York

WELL ID **TW-9A**
SHEET 1 OF 1
JOB # 209280
CHKD. BY:

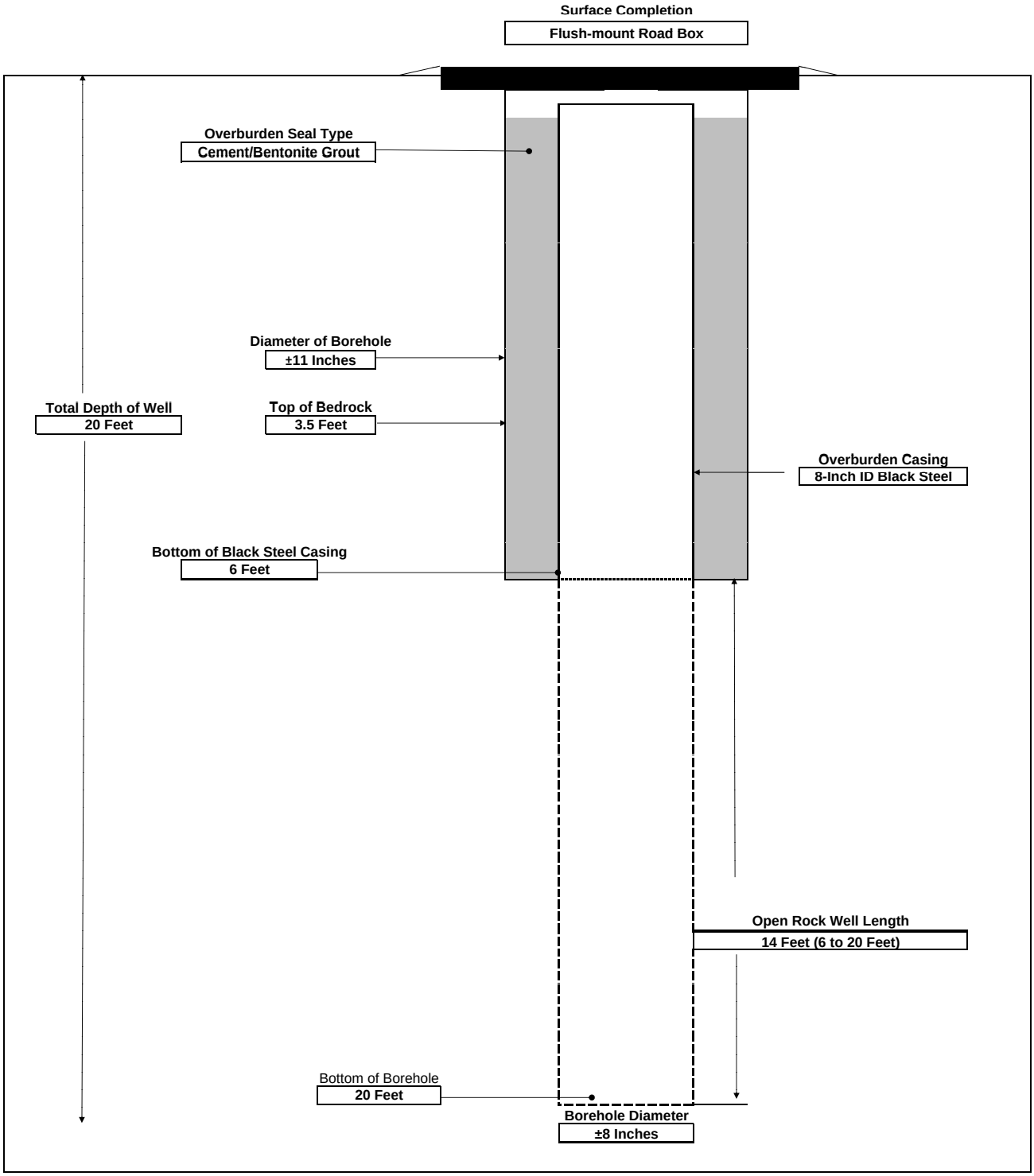
CONTRACTOR: NYEG
DRILLER H. Lyons
LABELLA REPRESENTATIVE: S. Rife & KR Miller

WELL LOCATION: INTERIOR, SOUTHERNMOST OF INTERIOR TREATMENT WELLS
GROUND SURFACE ELEVATION DATUM
START DATE 7/27/2015 END DATE 7/31/2015

TYPE OF DRILL RIG: CME 45B SKID-MTD.
AUGER SIZE AND TYPE 8.25-INCH HOLLOW STEM AUGERS
OVERBURDEN SAMPLING METHOD: 2-INCH SPLIT SPOON
ROCK DRILLING METHOD NOMINAL 8-INCH ROLLER BIT

WATER LEVEL DATA

DATE	TIME	WATER	REMARKS



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ENVIRONMENTAL ENGINEERING CONSULTANTS

WELL CONSTRUCTION LOG
Remedial Measures NYSDEC BCP Site #C828159
690 St. Paul Street
Rochester, New York

WELL ID **TW-10**
SHEET 1 OF 1
JOB # 209280
CHKD. BY:

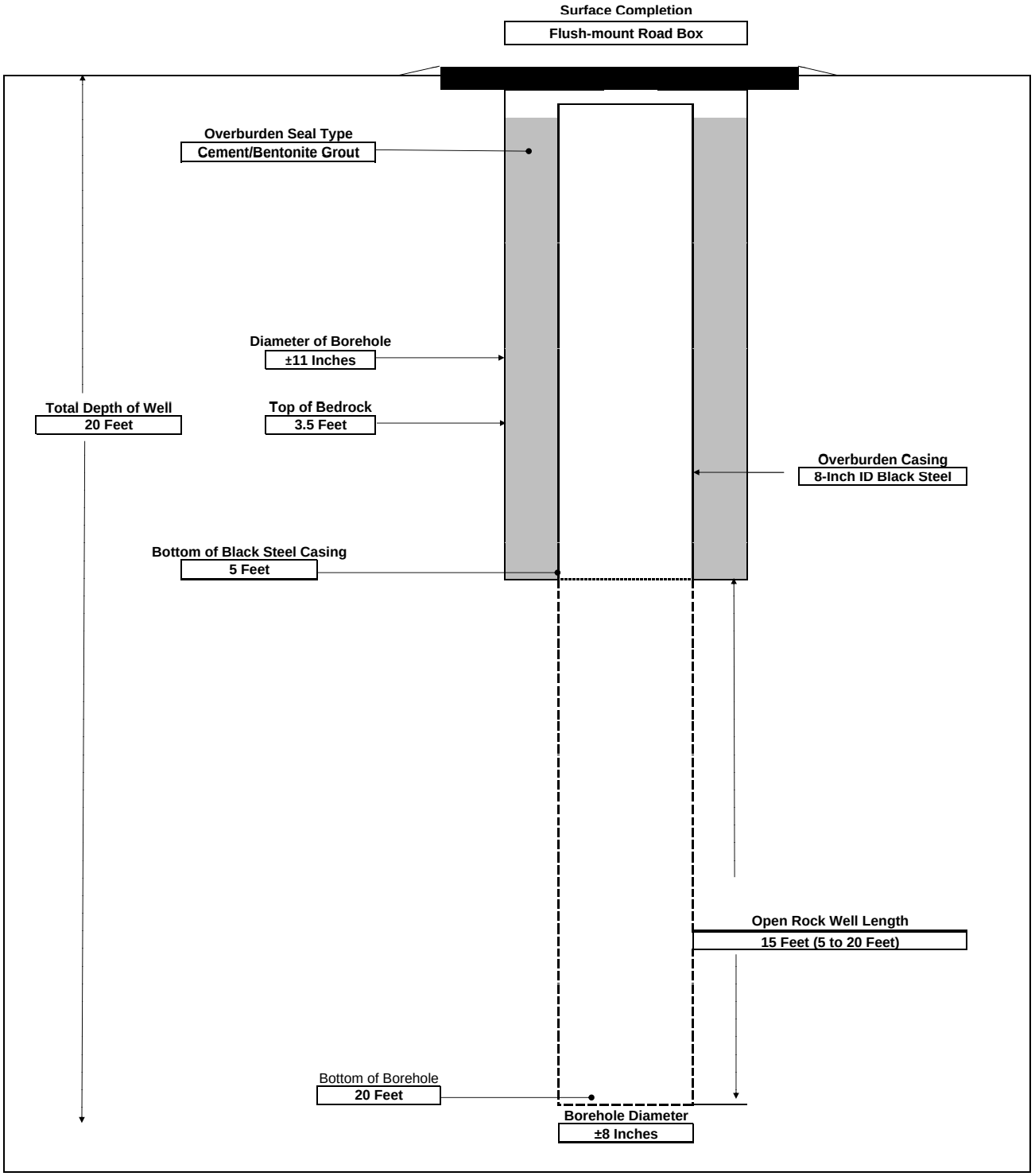
CONTRACTOR: NYEG
DRILLER H. Lyons
LABELLA REPRESENTATIVE: KR Miller

WELL LOCATION: INTERIOR, TO NORTHWEST OF TW-9A
GROUND SURFACE ELEVATION DATUM
START DATE 7/24/2015 END DATE 8/25/2015

TYPE OF DRILL RIG: CME 45B SKID-MTD.
AUGER SIZE AND TYPE 8.25-INCH HOLLOW STEM AUGERS
OVERBURDEN SAMPLING METHOD: 2-INCH SPLIT SPOON
ROCK DRILLING METHOD NOMINAL 8-INCH ROLLER BIT

WATER LEVEL DATA

DATE	TIME	WATER	REMARKS



NOTE: NOT TO SCALE

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WELL CONSTRUCTION LOG
Remedial Measures NYSDEC BCP Site #C828159
690 St. Paul Street
Rochester, New York

WELL ID **TW-11**
SHEET 1 OF 1
JOB # 209280
CHKD. BY:

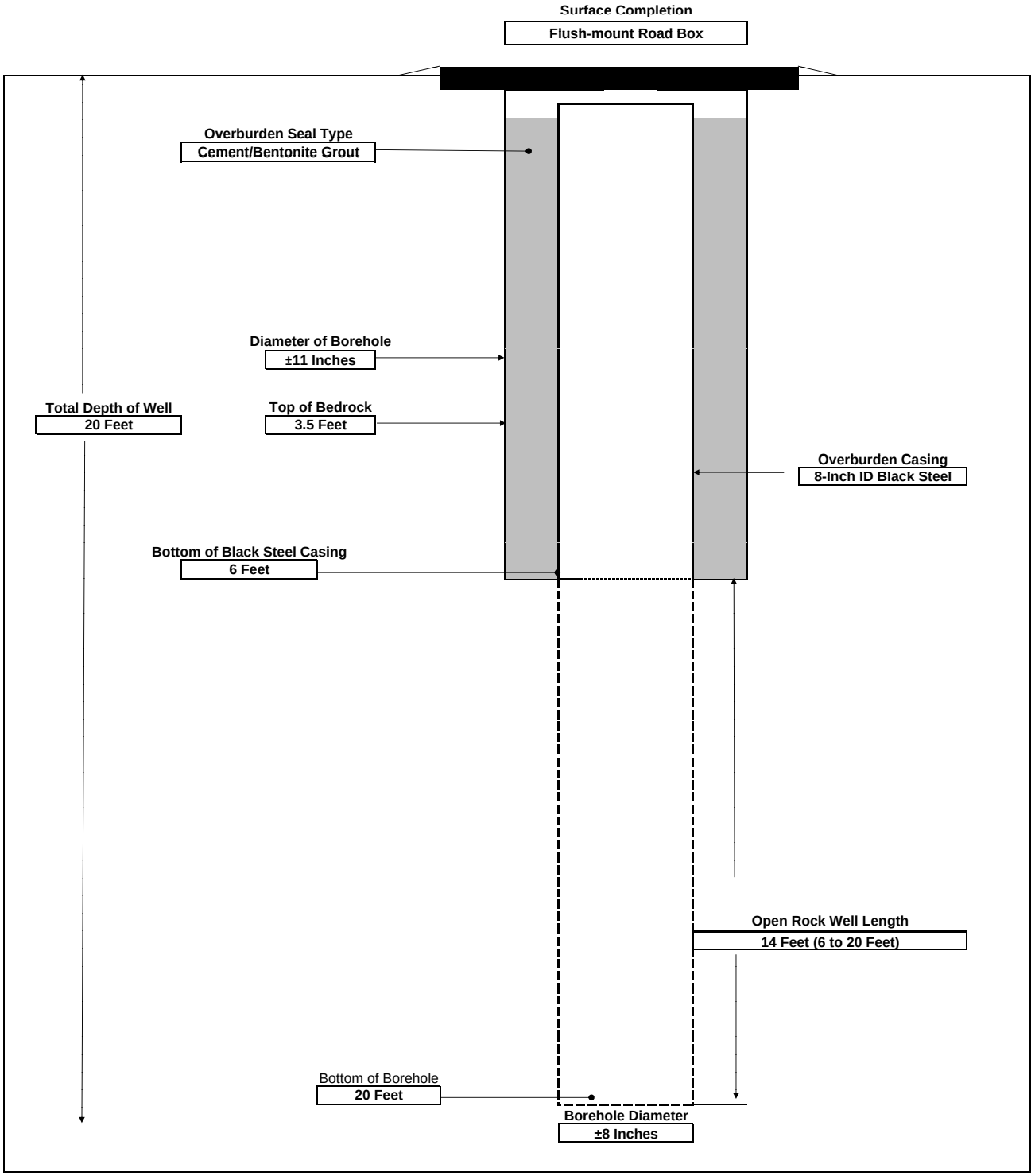
CONTRACTOR: NYEG
DRILLER H. Lyons
LABELLA REPRESENTATIVE: S. Rife & KR Miller

WELL LOCATION: INTERIOR
GROUND SURFACE ELEVATION DATUM
START DATE 7/24/2015 END DATE 8/25/2015

TYPE OF DRILL RIG: CME 45B SKID-MTD.
AUGER SIZE AND TYPE 8.25-INCH HOLLOW STEM AUGERS
OVERBURDEN SAMPLING METHOD: 2-INCH SPLIT SPOON
ROCK DRILLING METHOD NOMINAL 8-INCH ROLLER BIT

WATER LEVEL DATA

DATE	TIME	WATER	REMARKS



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ENVIRONMENTAL ENGINEERING CONSULTANTS

WELL CONSTRUCTION LOG
Remedial Measures NYSDEC BCP Site #C828159
690 St. Paul Street
Rochester, New York

WELL ID **TW-12**
SHEET 1 OF 1
JOB # 209280
CHKD. BY:

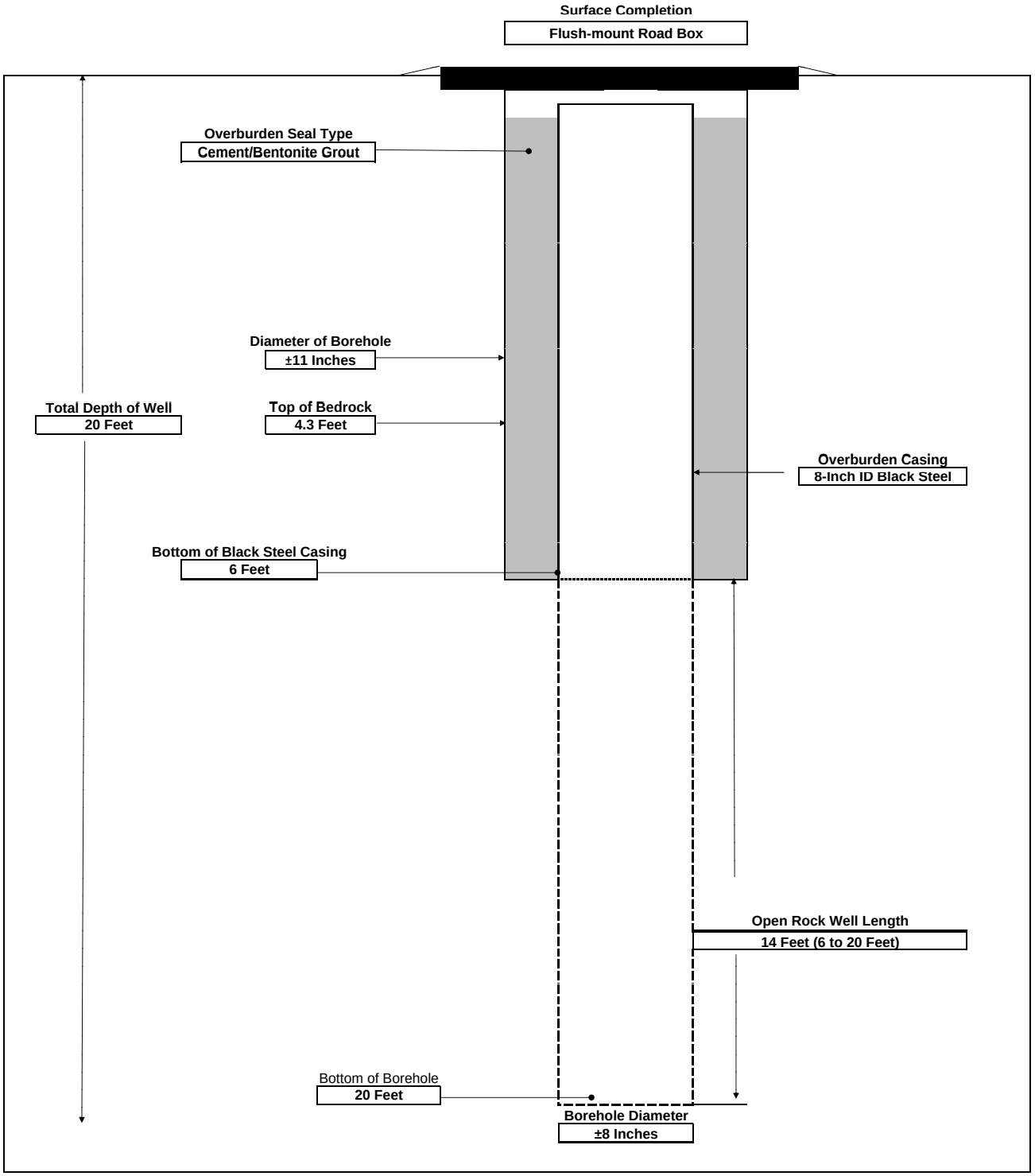
CONTRACTOR: NYEG
DRILLER H. Lyons
LABELLA REPRESENTATIVE: KR Miller

WELL LOCATION: INTERIOR, NORTHERNMOST OF INTERIOR TREATMENT WELLS
GROUND SURFACE ELEVATION DATUM
START DATE 8/11/2015 END DATE 8/14/2015

TYPE OF DRILL RIG: CME 45B SKID-MTD.
AUGER SIZE AND TYPE 8.25-INCH HOLLOW STEM AUGERS
OVERBURDEN SAMPLING METHOD: 2-INCH SPLIT SPOON
ROCK DRILLING METHOD NOMINAL 8-INCH ROLLER BIT

WATER LEVEL DATA

DATE	TIME	WATER	REMARKS



NOTE: NOT TO SCALE

QUIKRETE®
CEMENT & CONCRETE PRODUCTS™

Portland Cement Based Concrete Products

MATERIAL SAFETY DATA SHEET
(Complies with OSHA 29 CFR 1910.1200)

SECTION I: PRODUCT IDENTIFICATION

The QUIKRETE® Companies
One Securities Centre
3490 Piedmont Road, Suite 1300
Atlanta, GA 30329

Emergency Telephone Number
(770) 216-9580

Information Telephone Number
(770) 216-9580

MSDS J1
Revision: Aug-13

QUIKRETE® Product Name	Code #
CONCRETE MIX	1101
FENCE POST MIX	1005
FIBER-REINFORCED CONCRETE MIX	1006
CRACK RESISTANT CONCRETE MIX	1006-80
QUIKRETE 5000 CONCRETE MIX	1007
QUIKRETE 6000 CONCRETE MIX	1007
LIGHTWEIGHT CONCRETE MIX	1008
HANDICRETE CONCRETE MIX	1141-59, -60, -80
MAXIMUM YIELD CONCRETE MIX	1100-80
B-CRETE	1101-81
PRO-FINISH QUIKRETE 5000	1007-85
BASIC CONCRETE MIX	1015
RIP RAP	1129
ALL-STAR CONCRETE MIX	1121
ALL-STAR CRACK RESISTANT CONCRETE MIX	1470-03
ALL-STAR 5000 CONCRETE MIX	1470-01
RED-E-CRETE CONCRETE MIX	1101-91, -87; 1141-62, -63, -92, -93
RIP RAP SCRIM	1134-80
FIBER REINFORCED DECK MIX	1251-80, -81
PRO-FINISH CRACK RESISTANT CONCRETE MIX	1006-68
COUNTERTOP MIX	1106-80
RITEMIX CONCRETE	1171-60
GREEN CONCRETE MIX	1101-63, -73
FLOWCRETE 5000 (MIX 801)	8080026/NR80026

Product Use: Portland cement-based, aggregated products for general construction

SECTION II - HAZARD IDENTIFICATION

Route(s) of Entry: Inhalation, Skin, Ingestion

Acute Exposure: Product becomes alkaline when exposed to moisture. Exposure can dry the skin, cause alkali burns and affect the mucous membranes. Dust can irritate the eyes and upper respiratory system. Toxic effects noted in animals include, for acute exposures, alveolar damage with pulmonary edema.

Chronic Exposure: Dust can cause inflammation of the lining tissue of the interior of the nose and inflammation of the cornea. Hypersensitive individuals may develop an allergic dermatitis.

Carcinogenicity: Since Portland cement and blended cements are manufactured from raw materials mined from the earth (limestone, marl, sand, shale, etc.) and process heat is provided by burning fossil fuels, trace, but detectable, amounts of naturally occurring, and possibly harmful, elements may be found during chemical analysis. Under ASTM standards, Portland cement may contain 0.75 % insoluble residue. A fraction of these residues may be free crystalline silica. Respirable crystalline silica (quartz) can cause silicosis, a fibrosis (scarring) of the lungs and possibly cancer. There is evidence that exposure to respirable silica or the disease silicosis is associated with an increased incidence of Scleroderma, tuberculosis and kidney disorders.

Carcinogenicity Listings:		
	NTP:	Known carcinogen
	OSHA:	Not listed as a carcinogen
	IARC Monographs:	Group 1 Carcinogen
	California Proposition 65:	Known carcinogen

NTP: The National Toxicology Program, in its "Ninth Report on Carcinogens" (released May 15, 2000) concluded that "Respirable crystalline silica (RCS), primarily quartz dusts occurring in industrial and occupational settings, is *known to be a human carcinogen*, based on sufficient evidence of carcinogenicity from studies in humans indicating a causal relationship between exposure to RCS and increased lung cancer rates in workers exposed to crystalline silica dust (reviewed in IAC, 1997; Brown *et al*., 1997; Hind *et al*., 1997)

IARC: The International Agency for Research on Cancer ("IARC") concluded that there was "*sufficient evidence* in humans for the carcinogenicity of crystalline silica in the forms of quartz or cristobalite from occupational sources", and that there is "*sufficient evidence* in experimental animals for the carcinogenicity of quartz or cristobalite." The overall IARC evaluation was that "crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is *carcinogenic to humans (*Group 1)." The IARC evaluation noted that "carcinogenicity was not detected in all industrial circumstances or studies. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." For further information on the IARC evaluation, see IARC Monographs on the Evaluation of carcinogenic Risks to Humans, Volume 68, "Silica, Some Silicates." (1997)

Signs and Symptoms of Exposure: Symptoms of excessive exposure to the dust include shortness of breath and reduced pulmonary function. Excessive exposure to skin and eyes especially when mixed with water can cause caustic burns as severe as third degree.

Medical Conditions Generally Aggravated by Exposure: Individuals with sensitive skin and with pulmonary and/or respiratory disease, including, but not limited to, asthma and bronchitis, or subject to eye irritation, should be precluded from exposure. Exposure to crystalline silica or the disease silicosis is associated with increased incidence of scleroderma, Tuberculosis and possibly increased incidence of kidney lesions.

Chronic Exposure: Dust can cause inflammation of the lining tissue of the interior of the nose and inflammation of the cornea. Hypersensitive individuals may develop an allergic dermatitis. (May contain trace (<0.05 %) amounts of chromium salts or compounds including hexavalent chromium, or other metals found to be hazardous or toxic in some chemical forms. These metals are mostly present as trace substitutions within the principal minerals)

Medical Conditions Generally Aggravated by Exposure: Individuals with sensitive skin and with pulmonary and/or respiratory disease, including, but not limited to, asthma and bronchitis, or subject to eye irritation, should be precluded from exposure.

SECTION III - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Hazardous Components	CAS No.	%	PEL (OSHA) mg/M^3	TLV (ACGIH) mg/M^3
Portland Cement	65997-15-1	10-30	5	5
Lime	01305-62-0	0-5	5	5
Silica Sand, crystalline	14808-60-7	70-90	$\frac{10}{\%SiO_2+2}$	0.025 (respirable)
May contain one or more of the following ingredients:				
Amorphous Silica (From fly Ash)	07631-86-9	$\frac{80}{\%SiO_2+2}$	10	
Alumina (From Fly Ash)	01344-28-1	5	5	
Limestone Dust	01317-65-3	5	5	
Calcium Sulfate	10101-41-4 or 13397-24-5	5	5	

Other Limits: National Institute for Occupational Safety and Health (NIOSH). Recommended standard maximum permissible concentration=0.05 mg/M^3 (respirable free silica) as determined by a full-shift sample up to 10-hour working day, 40-hour work week. See NIOSH Criteria for a Recommended Standard Occupational Exposure to Crystalline Silica.

SECTION IV – First Aid Measures

Eyes: Immediately flush eye thoroughly with water. Continue flushing eye for at least 15 minutes, including under lids, to remove all particles. Call physician immediately.
Skin: Wash skin with cool water and pH-neutral soap or a mild detergent. Seek medical treatment if irritation or inflammation develops or persists. Seek immediate medical treatment in the event of burns.
Inhalation: Remove person to fresh air. If breathing is difficult, administer oxygen. If not breathing, give artificial respiration. Seek medical help if coughing and other symptoms do not subside. Inhalations of large amounts of Portland cement require immediate medical attention.
Ingestion: Do not induce vomiting. If conscious, have the victim drink plenty of water and call a physician immediately.

SECTION V - FIRE AND EXPLOSION HAZARD DATA

Flammability: Noncombustible and not explosive.
Auto-ignition Temperature: Not Applicable
Flash Points: Not Applicable

SECTION VI – ACCIDENTAL RELEASE MEASURES

If spilled, use dustless methods (vacuum) and place into covered container for disposal (if not contaminated or wet). Use adequate ventilation to keep exposure to airborne contaminants below the exposure limit.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND STORAGE

Do not allow water to contact the product until time of use. DO NOT BREATHE DUST. In dusty environments, the use of an OSHA, MSHA or NIOSH approved respirator and tight fitting goggles is recommended.

SECTION VIII – EXPOSURE CONTROL MEASURES

Engineering Controls: Local exhaust can be used, if necessary, to control airborne dust levels.

Personal Protection: The use of barrier creams or impervious gloves, boots and clothing to protect the skin from contact is recommended. Following work, workers should shower with soap and water. Precautions must be observed because burns occur with little warning -- little heat is sensed.

WARN EMPLOYEES AND/OR CUSTOMERS OF THE HAZARDS AND REQUIRED OSHA PRECAUTIONS ASSOCIATED WITH THE USE OF THIS PRODUCT.

Exposure Limits: Consult local authorities for acceptable exposure limits

SECTION IX - PHYSICAL/CHEMICAL CHARACTERISTICS

Appearance: Gray to gray-brown colored powder; Some products contain coarse aggregates.

Specific Gravity:	2.6 to 3.15	**Melting Point:**	>2700°F
Boiling Point:	>2700°F	**Vapor Pressure:**	Not Available
Vapor Density:	Not Available	**Evaporation Rate:**	Not Available
Solubility in Water:	Slight	**Odor:**	Not Available
pH:	13 (10%)	**Volatile Organic Content (VOC):**	0 g/L

SECTION X - REACTIVITY DATA

Stability: Stable.
Incompatibility (Materials to Avoid): Contact of silica with powerful oxidizing agents such as fluorine, chlorine trifluoride, manganese trioxide, or oxygen difluoride may cause fires
Hazardous Decomposition or By-products: Silica will dissolve in Hydrofluoric Acid and produce a corrosive gas – silicon tetrafluoride.
Hazardous Polymerization: Will Not Occur.
Condition to Avoid: Keep dry until used to preserve product utility.

SECTION XI – TOXICOLOGICAL INFORMATION

Routes of Entry: Inhalation, Ingestion
Toxicity to Animals:
LD50: Not Available
LC50: Not Available
Chronic Effects on Humans: Conditions aggravated by exposure include eye disease, skin disorders and Chronic Respiratory conditions.
Special Remarks on Toxicity: Not Available

SECTION XII – ECOLOGICAL INFORMATION

Ecotoxicity: Not Available
BOD5 and COD: Not Available
Products of Biodegradation: Not available
Toxicity of the Products of Biodegradation: Not available
Special Remarks on the Products of Biodegradation: Not available

SECTION XIII – DISPOSAL CONSIDERATIONS

Waste Disposal Method: The packaging and material may be land filled; however, material should be covered to minimize generation of airborne dust. This product is not classified as a hazardous waste under the authority of the RCRA (40CFR 261) or CERCLA (40CFR 117&302).

SECTION XIV – TRANSPORT INFORMATION

Not hazardous under U.S. DOT and TDG regulations.

SECTION XV – OTHER REGULATORY INFORMATION

US OSHA 29CFR 1910.1200: Considered hazardous under this regulation and should be included in the employers' hazard communication program
SARA (Title III) Sections 311 & 312: Qualifies as a hazardous substance with delayed health effects
SARA (Title III) Section 313: Not subject to reporting requirements
TSCA (May 1997): Some substances are on the TSCA inventory list
Federal Hazardous Substances Act: Is a hazardous substance subject to statues promulgated under the subject act
California Regulation: WARNING: This product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.
Canadian Environmental Protection Act: Not listed
Canadian WHMIS Classification: Considered to be a hazardous material under the Hazardous Products Act as defined by the Controlled Products Regulations (Class D2A, E- Corrosive Material) and subject to the requirements of Health Canada's Workplace Hazardous Material Information (WHMIS). This product has been classified according to the hazard criteria of the Controlled Products Regulation (CPR). This document complies with the WHMIS requirements of the Hazardous Products Act (HPA) and the CPR.

SECTION XVI – OTHER INFORMATION

HMIS-III:

Health –
0 = No significant health risk
1 = Irritation or minor reversible injury possible
2 = Temporary or minor injury possible
3 = Major injury possible unless prompt action is taken
4 = Life threatening, major or permanent damage possible

Flammability-
0 = Material will not burn
1 = Material must be preheated before ignition will occur
2 = Material must be exposed to high temperatures before ignition

	3 = Material capable of ignition under normal temperatures
	4 = Flammable gases or very volatile liquids; may ignite spontaneously
Physical Hazard-	0 = Material is normally stable, even under fire conditions
	1 = Material normally stable but may become unstable at high temps
	2 = Materials that are unstable and may undergo react at room temp
	3 = Materials that may form explosive mixtures with water
	4 = Materials that are readily capable of explosive water reaction

Abbreviations:

ACGIH	American Conference of Government Industrial Hygienists
CAS	Chemical Abstract Service
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CPR	Controlled Products Regulations (Canada)
DOT	Department of Transportation
IARC	International Agency for Research
MSHA	Mine Safety and Health Administration
NIOSH	National Institute for Occupational Safety and Health
NTP	National Toxicity Program
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act
TLV	Threshold Limit Value
TWA	Time-weighted Average
WHMIS	Workplace Hazardous Material Information System

Last Updated: August 23, 2013

NOTE: The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, express or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to silica contained in our products. END OF MSDS.

PORTLAND CEMENT

PRODUCT NO. 1124-31, -47, -94

DIVISION **3**

Cement
03 05 00

PRODUCT DESCRIPTION

QUIKRETE® Portland Cement is a high quality Portland cement meeting ASTM C 150 Type I.

PRODUCT USE

QUIKRETE® Portland Cement is used for making high strength repair mortars, concrete and for any other applications requiring Type I Portland cement. In many locations the product also meets ASTM C 150 Type II. Consult your supplying plant to confirm compliance with ASTM C 150 Type II.

SIZES

• QUIKRETE® Portland Cement
- 31 lb (14 kg) bags
- 47 lb (21.3 kg) bags
- 94 lb (42.6 kg) bags
- 40 kg (88 lb) bags
- 42 kg (93 lb) bags

YIELD

• Yield depends on application. For concrete mixes: Five to six 94 lb (42.6 kg) bags of QUIKRETE® Portland Cement is typically used with appropriate proportions of sand and gravel to produce 1 cu. yd. (0.8 m3) of concrete.

TECHNICAL DATA

QUIKRETE® Portland Cement complies with ASTM C 150 Type I and in many locations also complies with ASTM C 150 Type II. The product is used in a variety of construction materials. Typical mix designs for some applications are listed below:

Concrete Mix
1 Part QUIKRETE® Portland Cement
2 Parts QUIKRETE® All-Purpose Sand (ASTM C-33)
3 Parts QUIKRETE® All-Purpose Gravel (ASTM C-33)

Mortar Mix (Type S, per ASTM C-270)
1 Part QUIKRETE® Portland Cement
1/2 Part QUIKRETE® Hydrated Lime -Type S
3-1/2 to 4-1/2 Parts QUIKRETE® Masonry Sand (ASTM C-144)

Scratch and Brown Coat Stucco Mix (per ASTM C-926)
1 Part QUIKRETE® Portland Cement
1/2 Part QUIKRETE® Hydrated Lime (Type S)
4-1/2 to 6 Parts QUIKRETE® Washed Plaster Sand (ASTM C-897)

INSTALLATION

Installation methods are specific for each type of product.

PRECAUTIONS

The following points apply to all products made from Portland cement:
• Protect from freezing for at least 24-48 hr.
• Use the minimum amount of water necessary to achieve the desired consistency. Adding too much water will weaken the product.
• Keep the product damp for several days to obtain proper curing.

WARRANTY

The QUIKRETE® Companies warrant this product to be of merchantable quality when used or applied in accordance with the instructions herein. The product is not warranted as suitable for any purpose or use other than the general purpose for which it is intended. Liability under this warranty is limited to the replacement of its product (as purchased) found to be defective, or at the shipping companies' option, to refund the purchase price. In the event of a claim under this warranty, notice must be given to The QUIKRETE® Companies in writing. This limited warranty is issued and accepted in lieu of all other express warranties and expressly excludes liability for consequential damages.

The QUIKRETE® Companies
One Securities Centre
3490 Piedmont Rd., NE, Suite 1300, Atlanta, GA 30305
(404) 634-9100 • Fax: (404) 842-1425

** Refer to www.quikrete.com for the most current technical data, MSDS, and guide specifications*