

APPENDIX A

Soil Boring Logs



O'BRIEN & GERE
ENGINEERS, INC.

TEST BORING LOG

BORING NO. MW-3B

PROJECT: Old Erie Canal Supplemental FS

SHEET 1 OF 3

CLIENT: General Electric Company / Parker Hannifin Corporation

JOB NO. 39892.001.102

DRILLING CONTRACTOR: Parratt Wolff Inc.

MEAS. PT. ELEV. 393.91 NGVD 29

PURPOSE: Bedrock Well Installation

GROUND ELEV. 394.15

DRILLING METHOD: Hollow Stem Auger

SAMPLE

CORE

CASING

DATUM

Ground Surface

DRILL RIG TYPE: CME 75

TYPE

Split Spoon

NA

Steel

DATE STARTED 11/10/06

GROUND WATER DEPTH:

DIA.

1.5"

NA

4"

DATE FINISHED 11/16/06

MEASURING POINT: TOC

WEIGHT

140 lbs.

DRILLER Joe Percy

DATE OF MEASUREMENT:

FALL

30"

INSPECTOR

P. D'Annibale

Depth Ft.	Sample Number	Blows on Sample Spoon per 6"	Penetration Recovery	Unified Classification	GEOLOGIC DESCRIPTION	REMARKS
1					SEE BORING LOG FOR MW-3S O-R'bg	
2						
3						
4						
5						
6						
7						
8						
9						
10						



OBRIEN & GERE
ENGINEERS, INC.

TEST BORING LOG

BORING NO. MW-3B

PROJECT: Old Erie Canal Supplemental FS

SHEET 2 OF 3

CLIENT: General Electric Company / Parker Hannifin Corporation

JOB NO. 39892.001.102

Depth Ft.	Sample Number	Blows on Sample Spoon per 6"	Penetration Recovery	Unified Classification	GEOLOGIC DESCRIPTION	REMARKS
11						
12						
13	S1	20 35 50 —	1.5/ 1.5	CL	Rd Br \$Cy a s cmf G Reddish-brown silty CLAY and some coarse medium fine Gravel NO RECOVERY	PID 0.0 DRY COMPACT NO ODOR
14	S2	20 50 — —	1/1	CL	Rd Br \$Cy a s cmf G NO RECOVERY	PID 0.0 DRY COMPACT NO ODOR
15						
16	S3	36 50 — —	1/20	CL	Rd Br \$Cy a s cmf G	PID 0.0 DRY COMPACT NO ODOR
17						
18	S4	36 50 — —	1/1	CL	Rd Br \$Cy a s cmf G	PID 0.0 DRY comp. NO ODOR
19						
20		30 60 80 75	2/2	CL	Rd Br \$Cy a s cmf G	PID 0.0 DRY comp. NO ODOR
21						
22						



OBRIEN & GERE
ENGINEERS, INC.

TEST BORING LOG

BORING NO. MW-3B

PROJECT: Old Erie Canal Supplemental FS

SHEET 3 OF 3

CLIENT: General Electric Company / Parker Hannifin Corporation

JOB NO. 39892.001.102

Depth Ft.	Sample Number	Blows on Sample Spoon per 6"	Penetration Recovery	Unified Classification	GEOLOGIC DESCRIPTION	REMARKS
23		75	0.5	CL	Rd Br \$Cy a s cmf G	P.D 0.0
		45	0.75			DRY compact
		50				No odor
24		—			— — — — — 24.0	
		50	1/1	CL	Rd Br \$Cy a s cmf G	P.D 0.0
25		125			Reddish-brown silty CLAY and some coarse medium fine Gravel	DRY
		—				compact No odor
26		—				BEDROCK @ 25' by
						EDB 25.0' by
27						
28						
29						
30						
31						
32						
33						



O'BRIEN & GERE
ENGINEERS, INC.

TEST BORING LOG

BORING NO. *MW-4C*

PROJECT: Old Erie Canal Supplemental FS

SHEET 1 OF 1

CLIENT: General Electric Company / Parker Hannifin Corporation

JOB NO. 39892.001.102

DRILLING CONTRACTOR: Parratt Wolff Inc.

MEAS. PT. ELEV. *392.81 NAVD 29*

PURPOSE: Bedrock Well Installation

GROUND ELEV. *393.27*

DRILLING METHOD: Hollow Stem Auger

SAMPLE

CORE

CASING

DATUM Ground Surface

DRILL RIG TYPE: *CME 75*

TYPE

Split Spoon

NA

Steel

DATE STARTED *11/8/06*

GROUND WATER DEPTH:

DIA.

1.5"

NA

4"

DATE FINISHED *11/9/06 11/17/06*

MEASURING POINT: TOC

WEIGHT

140 lbs.

DRILLER *JOE PERCY*

DATE OF MEASUREMENT:

FALL

30"

INSPECTOR P. D'Annibale

Depth Ft.	Sample Number	Blows on Sample Spoon per 6"	Penetration Recovery	Unified Classification	GEOLOGIC DESCRIPTION	REMARKS
1					<i>SEE BORING LOG MW-4B 0-40' bg</i>	
2						
3						
4						
5						
6						
7						
8						
9						
10						



O'BRIEN & GERE
ENGINEERS, INC.

TEST BORING LOG

BORING NO. *MW-5B*

PROJECT: Old Erie Canal Supplemental FS

SHEET 1 OF *3*

CLIENT: General Electric Company / Parker Hannifin Corporation

JOB NO. 39892.001.102

DRILLING CONTRACTOR: Parratt Wolff Inc.

MEAS. PT. ELEV. *392.85 NGVD 29*

PURPOSE: Bedrock Well Installation

GROUND ELEV. *393.19*

DRILLING METHOD: Hollow Stem Auger

SAMPLE

CORE

CASING

DATUM Ground Surface

DRILL RIG TYPE: *CME 75*

TYPE

Split Spoon

NA

Steel

DATE STARTED *11/9/06*

GROUND WATER DEPTH:

DIA.

1.5"

NA

4"

DATE FINISHED *11/17/06*

MEASURING POINT: TOC

WEIGHT

140 lbs.

DRILLER *Joe PERCY*

DATE OF MEASUREMENT:

FALL

30"

INSPECTOR P. D'Annibale

Depth Ft.	Sample Number	Blows on Sample Spoon per 6"	Penetration Recovery	Unified Classification	GEOLOGIC DESCRIPTION	REMARKS
1					SEE BORING LOG FOR MW-55 0-12' bg	
2						
3						
4						
5						
6						
7						
8						
9						
10						



OBRIEN & GERE
ENGINEERS, INC.

TEST BORING LOG

BORING NO. NW-5B

PROJECT: Old Erie Canal Supplemental FS

SHEET 2 OF 3

CLIENT: General Electric Company / Parker Hannifin Corporation

JOB NO. 39892.001.102

Depth Ft.	Sample Number	Blows on Sample Spoon per 6"	Penetration Recovery	Unified Classification	GEOLOGIC DESCRIPTION	REMARKS
11					SEE BORING LOG MW-5S	
12					12.0	
13	51	12 24 24 30	1/2	CL	Rd Br \$Cy a s cmfG Reddish-brown silty CLAY and some coarse medium fine Gravel	PID 0.0 SATURATED COMPACT NO ODOR
14					14.0	
15	52	33 35 35 39	15/2	CL	PID 0.0 Rd Br \$Cy a s cmfG	PID 7.0 SAT. COMPACT NO ODOR
16					16.0	
17	53	50	05/0	CL	Rd Br \$Cy a s cmfG NO RECOVERY	PID 0.0 SAT. COMPACT NO ODOR
18					18.0	
19	54	25 50	05/1	CL	Rd Br \$Cy a s cmfG NO RECOVERY	PID 5.7 ppm SAT. COMPACT NO ODOR SOME BEDROCK FRAC
20					20.0	
21	55	8 18 34 40	2/2	CL	Rd Br \$Cy a l mfg	PID 0.0 SAT. COMPACT NO ODOR
22					22.0	



OBRIEN & GERE
ENGINEERS, INC.

TEST BORING LOG

BORING NO. MW-5B

PROJECT: Old Erie Canal Supplemental FS

SHEET 3 OF 3

CLIENT: General Electric Company / Parker Hannifin Corporation

JOB NO. 39892.001.102

Depth Ft.	Sample Number	Blows on Sample Spoon per 6"	Penetration Recovery	Unified Classification	GEOLOGIC DESCRIPTION	REMARKS
23	56	30	1/2	CL	Red br & Cy a l mfg	PID 0.0 SAT. COMPACT No odor
		28				
		30				
24		35				
25	57	30	1.5/2	CL	Red br & Cy a l mfg Reddish-brown silty CLAY and little medium fine gravel	PID 0.0 SAT. COMPACT No odor
		34				
		35				
26		50				
27						EDB 26' 69
28						
29						
30						
31						
32						
33						
34						



O'BRIEN & GERE
ENGINEERS, INC.

TEST BORING LOG

BORING NO. MW-6B

PROJECT: Old Erie Canal Supplemental FS	SHEET 1 OF 3
CLIENT: General Electric Company / Parker Hannifin Corporation	JOB NO. 39892.001.102
DRILLING CONTRACTOR: Parratt Wolff Inc.	MEAS. PT. ELEV. 396.99 NAVD 29
PURPOSE: Bedrock Well Installation	GROUND ELEV. 395.09
DRILLING METHOD: Hollow Stem Auger	SAMPLE CORE CASING DATUM Ground Surface
DRILL RIG TYPE: CME 75	TYPE Split Spoon NA Steel DATE STARTED 11/13/06
GROUND WATER DEPTH:	DIA. 1.5" NA 4" DATE FINISHED 11/15/06
MEASURING POINT: TOC	WEIGHT 140 lbs. DRILLER SOE PERCY
DATE OF MEASUREMENT:	FALL 30" INSPECTOR P. D'Annibale

Depth Ft.	Sample Number	Blows on Sample Spoon per 6"	Penetration Recovery	Unified Classification	GEOLOGIC DESCRIPTION	REMARKS
1	S1	3 10 10 6	2/2	SP	Br mfs a \$, o, rts Brown medium fine SAND and Silt, organic roots	PID 1.7 ppm DRY SOFT No odor
2		8				
3	S2	5 7 7	0.5/2	SP	Br mfs a \$, o	PID 0.8 ppm DRY SOFT No odor
4		0				
5		0 0 1				NO RECOVERY
6		4				
7	S3	7 13 13	1/2	SP	Br-lyBr mfs a \$, lcy, t cmf G Brown to grayish-brown medium fine SAND and Silt, little clay, trace coarse medium fine gravel	PID 0.0 ppm MOIST - SATURATED SOFT No odor
8		2				
9		1 2 2				NO RECOV.
10						



OBRIEN & GERE
ENGINEERS, INC.

TEST BORING LOG

BORING NO. MW-6B

PROJECT: Old Erie Canal Supplemental FS

SHEET 2 OF 3

CLIENT: General Electric Company / Parker Hannifin Corporation

JOB NO. 39892.001.102

Depth Ft.	Sample Number	Blows on Sample Spoon per 6"	Penetration Recovery	Unified Classification	GEOLOGIC DESCRIPTION	REMARKS
11	54	2	0.25	CL	GyBr \$Cy, t cG	PID 0.0 ppm
		2	2		Grayish-brown silty CLAY, trace coarse	MOIST
		3			Gravel	SOFT
		3				No odor
12					12.0	
13	55	4	0.25	CL	GyBr \$Cy, t cG	PID 7.4
		3	2			SATURATED
		4				SOFT
		4				No odor
14					14.0	
15	56	0	1.5	CL	Gy \$Cy, t cG	PID 333 ppm
		-	2			SATURATED
		-				SOFT SLIGHT
		-				ODOR (SAMPLE)
16					16.0	
17	57	25	1.5	CL	GyBr \$Cy, t cG	PID 724 (SAMPLE)
		45	1.5			SAT SOFT
		50	1.5	CL	RdBr \$Cy a cmf G	SLIGHT ODOR
		-			Reddish-brown silty CLAY and coarse medium	
		-			fine Gravel	
18					18.0	
19	58	50	1	CL	RdBr \$Cy a cmf G	PID 8.2
		50	1			SAT.
		-				COMPACT
		-				No odor
20					20.0	
21	59	40	0.5	CL	RdBr \$Cy a cmf G	PID 14.2
		50	1			SATURATED
		-				COMPACT
		-				No odor
22					22.0	



OBRIEN & GERE
ENGINEERS, INC.

TEST BORING LOG

BORING NO. MW-6B

PROJECT: Old Erie Canal Supplemental FS

SHEET 3 OF 3

CLIENT: General Electric Company / Parker Hannifin Corporation

JOB NO. 39892.001.102

Depth Ft.	Sample Number	Blows on Sample Spoon per 6"	Penetration Recovery	Unified Classification	GEOLOGIC DESCRIPTION	REMARKS
23	S10	50	1.5 / 1.5	CL	Rd Br sly CL - cmfg	PID 4.0 ppm SATURATED COMPACT NO ODR
		65				
		100				
		110				
24	S11	45	1.5 / 2	CL	Rd Br sly CL - cmfg Reddish-brown silty CLAY and coarse medium fine Gravel	PID 5.1 ppm SAT. COMPACT NO ODR
		62				
		85				
		100				
26						BEDROCK @ 25.9'bg EOB 26'bg
27						
28						
29						
30						
31						
32						
33						
34						



O'BRIEN & GERE
ENGINEERS, INC.

TEST BORING LOG

BORING NO. MW-13S

PROJECT: Old Erie Canal Supplemental FS

SHEET 1 OF 2

CLIENT: General Electric Company / Parker Hannifin Corporation

JOB NO. 39892.001.102

DRILLING CONTRACTOR: Parratt Wolff Inc.

MEAS. PT. ELEV. 391.53 above 29

PURPOSE: Overburden Well Installation

GROUND ELEV. 389.67

DRILLING METHOD: Hollow Stem Auger

SAMPLE

CORE

CASING

DATUM

Ground Surface

DRILL RIG TYPE: ~~CME~~ D50

TYPE Split Spoon

NA

NA

DATE STARTED 11/2/06

GROUND WATER DEPTH: 3.05

DIA.

1.5"

NA

NA

DATE FINISHED 11/2/06

MEASURING POINT: TOC

WEIGHT

140 lbs.

DRILLER MARK EAVES

DATE OF MEASUREMENT: 11/8/06

FALL

30"

INSPECTOR

P. D'Annibale

Depth Ft.	Sample Number	Blows on Sample Spoon per 6"	Penetration Recovery	Unified Classification	GEOLOGIC DESCRIPTION	REMARKS
1	5-1	2 4 8 8	1 1/2	CL	Br & Cy o s rts Brown silty CLAY, organic some roots	PID = 0.0 ppm Moist SEMI-COMPACT
2					2.0	
3	5-2	4 6 11	1.75/2	CL	Br & Cy o s roots	PID = 0.0 ppm Moist SEMI-COMPACT
4		8		CL	Gy - Rd Br Cy Gray to Reddish-Brown CLAY	PID = 0.0 ppm Moist COMPACT
5		3 4 6 6	0/2		NO RECOVERY	
6					6.0	
7		3	0/2		NO RECOVERY	SATURATED
8					8.0	
9	5-3	19 14 18 20	1.75/2	CL	Gy - Rd Br Cy	PID = 0.0 ppm SATURATED COMPACT
10				GP	Gy cm & G s Cy Gray coarse, medium silty GRAVEL, some Clay	9.0



OBRIEN & GERE
ENGINEERS, INC.

TEST BORING LOG

BORING NO. MW-135

PROJECT: Old Erie Canal Supplemental FS

SHEET 2 OF 2

CLIENT: General Electric Company / Parker Hannifin Corporation

JOB NO. 39892.001.102

Depth Ft.	Sample Number	Blows on Sample Spoon per 6"	Penetration Recovery	Unified Classification	GEOLOGIC DESCRIPTION	REMARKS
11	5-4	19	1 1/2 / 2.0	GP	gy cm G l & Cy	PID = 0.0 ppm SATURATED LOOSE
		20				
		24				
		17				
12					12.0	
13	5-5	16	1.5 / 2.0	GP	gy cmf G l & Cy	PID = 0.0 ppm SATURATED LOOSE
		16				
		12				
		11				
14					14.0	
15	5-6	47	0.5 / 2	GP	gy cmf G l & Cy	PID = 0.0 ppm SATURATED LOOSE
		24				
		20				
		19				
16					16.0	
17	5-7	6	0.5 / 2.0	GP	gy cmf G l & Cy	PID = 0.0 ppm SATURATED LOOSE
		9				
		9				
		8				
18				CL	Reddish-brown silty CLAY	TOP OF TILL @ 17.5' b.g.
					No RECOVERY	
19	5-8					
20						BEDROCK @ 19.8' b.g. EOR 20' b.g.
21						
22						



O'BRIEN & GERE
ENGINEERS, INC.

TEST BORING LOG

BORING NO. MW-145

PROJECT: Old Erie Canal Supplemental FS

SHEET 1 OF 3

CLIENT: General Electric Company / Parker Hannifin Corporation

JOB NO. 39892.001.102

DRILLING CONTRACTOR: Parratt Wolff Inc.

MEAS. PT. ELEV. 391.39 MVD 29

PURPOSE: Overburden Well Installation

GROUND ELEV. 389.27

DRILLING METHOD: Hollow Stem Auger

SAMPLE

CORE

CASING

DATUM

Ground Surface

DRILL RIG TYPE: TRAKK

TYPE

Split Spoon

NA

NA

DATE STARTED 11/6/06

GROUND WATER DEPTH: 5.5'

DIA.

1.5"

NA

NA

DATE FINISHED 11/6/06

MEASURING POINT: TOC

WEIGHT

140 lbs.

DRILLER SOE PERCY

DATE OF MEASUREMENT: 11/8/06

FALL

30"

INSPECTOR

P. D'Annibale

Depth Ft.	Sample Number	Blows on Sample Spoon per 6"	Penetration Recovery	Unified Classification	GEOLOGIC DESCRIPTION	REMARKS
1	S1	1 4 3 3	2 1/2	SC CL	Br-Tn Cy\$, o, s rts Brown to tan clayey SILT, organic, some roots	PID 0.0 ppm MOIST COMPACT NO ODOR
2		3			2.0	
3	S2	5 3 2 2	0.5 2	SC CL	Br-Tn Cy\$, o, s rts	PID 0.0 ppm MOIST COMPACT NO ODOR
4		12			4.0	
5	S3	7 3 3	0.5 2	CL	Cy Cy Gray CLAY	PID 0.0 ppm MOIST COMPACT NO ODOR
6		4			6.0	
7	S4	7 3 7	2 1/2	CL	Cy Cy	PID 0.0 ppm MOIST COMPACT NO ODOR
8		5			7.5	
9	S5	6 8 8	0.5 2	CL	Cy Cy\$ Gray clayey SILT	PID 0.0 ppm SAT. COMPACT NO ODOR
10		5			8.0	
					10.0	



OBRIEN & GERE
ENGINEERS, INC.

TEST BORING LOG

BORING NO. MW-145

PROJECT: Old Erie Canal Supplemental FS

SHEET 2 OF 3

CLIENT: General Electric Company / Parker Hannifin Corporation

JOB NO. 39892.001.102

Depth Ft.	Sample Number	Blows on Sample Spoon per 6"	Penetration Recovery	Unified Classification	GEOLOGIC DESCRIPTION	REMARKS
11	56	3	1/2	GP	Gy cmf G a \$, s Gy\$ Gray coarse, medium, fine GRAVEL and Silt, some clayey silt	PID: 103 ppm SATURATED LOOSE ODOR COLLECT SAMPLE
		6				
		12				
		33				
12			2 1/2	GP	Gy cmf G a \$	PID 374 ppm SAT. LOOSE ODOR COLLECT SAMPLE
	57	11				
		12				
		16				
14		20	0.5/2	GP	Gy cmf G a \$	PID 28.7 ppm SATURATED LOOSE SLIGHT ODOR
	58	2				
		5				
		5				
15		9	2 1/2	GP	Gy cmf G a \$	PID 12.8 ppm SATURATED LOOSE NO ODOR
	59	20				
		17				
		20				
17		30	2 1/2	GP	Gy cmf G a \$	PID 203 ppm SAT. LOOSE ODOR SAMPLE COLLECTED
	510	21				
		15				
		12				
19		6	1.75/2	GP	Gy cmf G a \$	PID 117 ppm SAT. LOOSE ODOR SAMPLE COLLECTED
	511	10				
		13				
		20				
21		6				
22						



OBRIEN & GERE
ENGINEERS, INC.

TEST BORING LOG

BORING NO. MW-145

PROJECT: Old Erie Canal Supplemental FS

SHEET 3 OF 3

CLIENT: General Electric Company / Parker Hannifin Corporation

JOB NO. 39892.001.102

Depth Ft.	Sample Number	Blows on Sample Spoon per 6"	Penetration Recovery	Unified Classification	GEOLOGIC DESCRIPTION	REMARKS
	S12	50	0.5/2	CL	Gy - Rd Gy Cy & s mfg Gray to reddish-gray clayey SILT, some medium fine sand Glacial Till	COMPACT 0.0 P.D. NO ODR EOB 22.5' 6g
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						
34						



O'BRIEN & GERE
ENGINEERS, INC.

TEST BORING LOG

BORING NO. MW-155

PROJECT: Old Erie Canal Supplemental FS

SHEET 1 OF 2

CLIENT: General Electric Company / Parker Hannifin Corporation

JOB NO. 39892.001.102

DRILLING CONTRACTOR: Parratt Wolff Inc.

MEAS. PT. ELEV. 390.12 MWD 29

PURPOSE: Overburden Well Installation

GROUND ELEV. 388.40

DRILLING METHOD: Hollow Stem Auger

SAMPLE

CORE

CASING

DATUM

Ground Surface

DRILL RIG TYPE: TRACK

TYPE

Split Spoon

NA

NA

DATE STARTED 11/7/06

GROUND WATER DEPTH: 2.19

DIA.

1.5"

NA

NA

DATE FINISHED 11/7/06

MEASURING POINT: TOC

WEIGHT

140 lbs.

DRILLER JOE PERCY

DATE OF MEASUREMENT: 11/8/06

FALL

30"

INSPECTOR

P. D'Annibale

Depth Ft.	Sample Number	Blows on Sample Spoon per 6"	Penetration Recovery	Unified Classification	GEOLOGIC DESCRIPTION	REMARKS
1	S1	0	1/20	CL	DK Br - Gy Cy \$, 0, s fts Dark Brown to gray clayey SILT, organic, some roots	PID 0.0 VERY MOIST SOFT NO ODOR
2	-	1	-	-	-	NO RECOVERY
3	S2	0	2/2	CL	DK Br - Gy Cy \$, 0	PID 0.0 SATURATED SOFT NO ODOR
4	-	0	-	-	-	-
5	S3	3	0.5/2	GP	DK Gy cmf G a \$ Dark gray coarse medium fine GRAVEL and silt	PID 0.0 SAT. LOOSE NO ODOR
6	-	1	-	-	-	-
7	S4	2	1/2	GP	DK Gy cmf G a \$	PID 0.0 ppm SAT. LOOSE
8	-	3	-	-	-	-
9	S5	5	1/2	GP	DK Gy - Rd Gy cmf G a s \$	PID 1.2 ppm SAT. LOOSE COMPACT NO ODOR
10	-	5	-	-	-	-
11	-	6	-	-	-	-



OBRIEN & GERE
ENGINEERS, INC.

TEST BORING LOG

BORING NO. *MW-15S*

PROJECT: Old Erie Canal Supplemental FS

SHEET 2 OF *2*

CLIENT: General Electric Company / Parker Hannifin Corporation

JOB NO. 39892.001.102

Depth Ft.	Sample Number	Blows on Sample Spoon per 6"	Penetration Recovery	Unified Classification	GEOLOGIC DESCRIPTION	REMARKS
11	<i>56</i>	22	<i>1.75/2</i>	<i>GP</i>	<i>DK Gy - Rd gy cmf G & s s</i>	<i>PID 2.0 SAT. COMPACT NO ODOOR</i>
		18				
		28				
		28				
12	<i>57</i>	16	<i>1.5/20</i>	<i>GP</i>	<i>DK Gy cmf G & s s</i>	<i>PID 0.0 SAT. COMPACT NO ODOOR</i>
13		23				
		33		<i>CL</i>	<i>Gy Rd s Cy a LG Grayish-red silty CLAY and little Gravel</i>	<i>PID 2.6 SAT. COMPACT NO ODOOR</i>
14		41				
15						<i>EOB 18' 6g 14.6'</i>
16						
17						
18						
19						
20						
21						
22						



O'BRIEN & GERE
ENGINEERS, INC.

TEST BORING LOG

BORING NO. MW-165

PROJECT: Old Erie Canal Supplemental FS

SHEET 1 OF 1

CLIENT: General Electric Company / Parker Hannifin Corporation

JOB NO. 39892.001.102

DRILLING CONTRACTOR: Parratt Wolff Inc.

MEAS. PT. ELEV. 397.30 NGVD29

PURPOSE: Overburden Well Installation

GROUND ELEV. 398.01

DRILLING METHOD: Hollow Stem Auger

SAMPLE

CORE

CASING

DATUM

Ground Surface

DRILL RIG TYPE: ~~CASE~~ D50

TYPE

Split Spoon

NA

NA

DATE STARTED 11/2/06

GROUND WATER DEPTH: 2.97

DIA.

1.5"

NA

NA

DATE FINISHED 11/2/06

MEASURING POINT: TOC

WEIGHT

140 lbs.

DRILLER MARK EAVES

DATE OF MEASUREMENT: 11/8/06

FALL

30"

INSPECTOR

P. D'Annibale

Depth Ft.	Sample Number	Blows on Sample Spoon per 6"	Penetration Recovery	Unified Classification	GEOLOGIC DESCRIPTION	REMARKS
1	S-1	3	0.5/2	CL	ASPHALT Rd Br \$Cy	0.0 PID DRY COMPACT
2		4				
		50				
3			NA	NA	CONCRETE & REBAR	
4		10				12.5 PID MOIST TO SATURATED COMPACT
5	S-2	10	1/2	CL	Rd Br \$Cy s cm G	WATER TABLE AT ~ 4' bg
		22				
		25				
6		30				0.0 PID SATURATED COMPACT
7		36	1/2	CL	Rd Br \$Cy s cm G	
		36				
		38				
8		12				0.4 PID SATURATED COMPACT
9		12	1.5/2	CL	Rd Br \$Cy s cm G	
		33				
10		40			(GLACIAL TILL)	EOB 10' bg



O'BRIEN & GERE
ENGINEERS, INC.

TEST BORING LOG

BORING NO. MW-16B

PROJECT: Old Erie Canal Supplemental FS

SHEET 1 OF 3

CLIENT: General Electric Company / Parker Hannifin Corporation

JOB NO. 39892.001.102

DRILLING CONTRACTOR: Parratt Wolff Inc.

MEAS. PT. ELEV. 397.69 NWD 29

PURPOSE: Bedrock Well Installation

GROUND ELEV. 398.18

DRILLING METHOD: Hollow Stem Auger

SAMPLE

CORE

CASING

DATUM Ground Surface

DRILL RIG TYPE: CME 75

TYPE

Split Spoon

NA

Steel

DATE STARTED 11/14/06

GROUND WATER DEPTH:

DIA.

1.5"

NA

4"

DATE FINISHED 11/15/06

MEASURING POINT: TOC

WEIGHT

140 lbs.

DRILLER JOE PERCY

DATE OF MEASUREMENT:

FALL

30"

INSPECTOR P. D'Annibale

Depth Ft.	Sample Number	Blows on Sample Spoon per 6"	Penetration Recovery	Unified Classification	GEOLOGIC DESCRIPTION	REMARKS
1					ASPHALT SEE BORING LOG MW-16S 0-9' 6g	
2						
3						
4						
5						
6						6.0
7			1/1	CL	Rd Br \$Cy a cmf G Reddish-brown silty CLAY and coarse medium fine Gravel 7.0	
8	51	27 60	1/2	CL	Rd Br \$Cy a cmf G	COMPACT DRY NO ODOR
9						9.0
10	52	21 72	1/2	CL	Rd Br \$Cy a cmf G	PID 4.5 ppm COMPACT DRY NO ODOR



O'BRIEN & GERE
ENGINEERS, INC.

TEST BORING LOG

BORING NO. MW-16B

PROJECT: Old Erie Canal Supplemental FS

SHEET 2 OF 3

CLIENT: General Electric Company / Parker Hannifin Corporation

JOB NO. 39892.001.102

Depth Ft.	Sample Number	Blows on Sample Spoon per 6"	Penetration Recovery	Unified Classification	GEOLOGIC DESCRIPTION	REMARKS
11		-				
		-				
		37	1/2	CL	Red Br \$Cy a conf G	PID 0.0
12	53	50				DRY COMPACT
		-				NO ODOR
		-				
13		50	0.5	CL	Red Br \$Cy a conf G	PID 0.9
		-	2.0			DRY COMPACT
14	54	-				NO ODOR
		-				
		-				
15		7				
		40	1/1.5	CL	Red Br \$Cy a conf G	PID 0.0
16	55	50				DRY COMPACT
		-				NO ODOR
17		47	0.75			
		90	1.5	CL	Red Br \$Cy a conf G	PID 0.0
18	56	50				DRY COMPACT
		-				NO ODOR
19		31				
		50	2/2	CL	Red Br \$Cy a conf G	PID 0.0
20	57	61				DRY - SLIGHTLY
		50				moist
		-				COMPACT
21		20	1.5			NO ODOR
		50	1.5	CL	Red Br \$Cy a conf G	PID 0.0
22	58	-				MOIST
		-				COMPACT NO ODOR



OBRIEN & GERE
ENGINEERS, INC.

TEST BORING LOG

BORING NO. MW-168

PROJECT: Old Erie Canal Supplemental FS

SHEET 3 OF 3

CLIENT: General Electric Company / Parker Hannifin Corporation

JOB NO. 39892.001.102

Depth Ft.	Sample Number	Blows on Sample Spoon per 6"	Penetration Recovery	Unified Classification	GEOLOGIC DESCRIPTION	REMARKS
23		75				
23		—				
24	59	45	1/1.5	CL	Rd Br & Cy a conf G	P.D 1.2 MOIST COMPACT NO ODOR
24		50				
24		95				
25		—				
25		60			Rd Br & Cy a conf G	P.D 0.0
26	510	60	2/2	CL		MOIST COMPACT
26		65				
27		65				NO ODOR
27		27	2/		Rd Br & Cy a conf G	P.D 0.0
28	511	40		CL		MOIST
28		42	2			COMPACT
29		45				NO ODOR
29		50	0.5	CL	Rd Br & Cy a conf G	P.D 0.0
30	512	80	/1			MOIST COMPACT
30		—				
30		—				
31		110	0.25/0.5	CL	Rd Br & Cy a conf G	NO ODOR
31		—			Reddish-brown silty CLAY and coarse	P.D 0.0
32	513	—			medium fine Gravel	MOIST COMPACT NO ODOR
32		—				
32		—				
33						BEDROCK @ 31' bg
34						COB 31' bg



O'BRIEN & GERE
ENGINEERS, INC.

TEST BORING LOG

BORING NO. TMW-1

PROJECT: Old Erie Canal Supplemental FS

SHEET 1 OF 2

CLIENT: General Electric Company / Parker Hannifin Corporation

JOB NO. 39892.001.102

DRILLING CONTRACTOR: Parratt Wolff Inc.

MEAS. PT. ELEV. 349.11 NGVD 29

PURPOSE: Overburden Well Installation

GROUND ELEV. 348.69

DRILLING METHOD: Hollow Stem Auger

SAMPLE

CORE

CASING

DATUM

Ground Surface

DRILL RIG TYPE: D50

TYPE

Split Spoon

NA

NA

DATE STARTED 11/3/06

GROUND WATER DEPTH: 3.93

DIA.

1.5"

NA

NA

DATE FINISHED 11/3/06

MEASURING POINT: TOC

WEIGHT

140 lbs.

DRILLER MARK EAVES

DATE OF MEASUREMENT: 11/3/06

FALL

30"

INSPECTOR

P. D'Annibale

Depth Ft.	Sample Number	Blows on Sample Spoon per 6"	Penetration Recovery	Unified Classification	GEOLOGIC DESCRIPTION	REMARKS
1	S1	2	1.0/2	SP	Br - Tan mfs, 0 Brown to tan medium fine SAND	DRY COMPACT
		2		SP	Bl-Gy cmf G, s \$	0.0 PID
		4			Black to gray coarse medium fine GRAVEL, some Silt	DRY
		4				COMPACT
2						2.0
3	S2	1	0.5/2	SP	Bl-Gy cmf G, s \$	0.0 PID
		2				SATURATED
		1				LOOSE
		3				4.0
4		2		SP	Bl-Gy cmf G, s \$	0.0 PID SATURATED
		4	1.0/2.0			LOOSE
5	S3	6		CL	Gy-Tn Gy	SATURATED
		6			Gray to tan CLAY	COMPACT
		6				6.0
6		6		SP	Bl-Gy cmf G, s \$	0.0 PID
		8	1.0/2.0		Black to gray coarse medium fine GRAVEL, some Silt	LOOSE
		6		CL	Gy-Tn Gy	SATURATED
		10			Gray to tan CLAY	8.0
7	S4	10		SP	Bl-Gy cmf G, s \$	0.0 PID
		14	2/2			9.0
		19		CL	Gy-Tn Gy	LOOSE
		21				SATURATED
						10.0
10						



OBRIEN & GERE
ENGINEERS, INC.

TEST BORING LOG

BORING NO. *TMW-1*

PROJECT: Old Erie Canal Supplemental FS

SHEET 2 OF 2

CLIENT: General Electric Company / Parker Hannifin Corporation

JOB NO. 39892.001.102

Depth Ft.	Sample Number	Blows on Sample Spoon per 6"	Penetration Recovery	Unified Classification	GEOLOGIC DESCRIPTION	REMARKS
11	56	27		GP	Bl-Gy cmf G 10.5	0.0 PID
		39	2/12	CL	Gy-Tn Cy 11.0	SWET.
		50		GP	Bl-Gy cmf G 11.5	LOOSE
				CL	Gy-Tn Cy 12.0	
12	57	38	1/2			0.0 PID
50		CL		Gy-Tn Cy 13.0	SATURATED LOOSE	
		CL		Rd Gy SCy	0.0 PID	
				Reddish-gray silty CLAY	DRY - COMPACT	
14						EOB 14'6g
15						
16						
17						
18						
19						
20						
21						
22						



O'BRIEN & GERE
ENGINEERS, INC.

TEST BORING LOG

BORING NO. TMW-2

PROJECT: Old Erie Canal Supplemental FS

SHEET 1 OF 1

CLIENT: General Electric Company / Parker Hannifin Corporation

JOB NO. 39892.001.102

DRILLING CONTRACTOR: Parratt Wolff Inc.

MEAS. PT. ELEV. 399.91 NAVD 29

PURPOSE: Overburden Well Installation

GROUND ELEV. 398.82

DRILLING METHOD: Hollow Stem Auger

SAMPLE

CORE

CASING

DATUM

Ground Surface

DRILL RIG TYPE: D50

TYPE

Split Spoon

NA

NA

DATE STARTED 11/3/06

GROUND WATER DEPTH: 4.48

DIA.

1.5"

NA

NA

DATE FINISHED 11/3/06

MEASURING POINT: TOC

WEIGHT

140 lbs.

DRILLER MARK EAVES

DATE OF MEASUREMENT: 11/8/06

FALL

30"

INSPECTOR

P. D'Annibale

Depth Ft.	Sample Number	Blows on Sample Spoon per 6"	Penetration Recovery	Unified Classification	GEOLOGIC DESCRIPTION	REMARKS
1	51	2 5 10 6	1.07 2.0	SP	Br-Tn mfs, 0 Brown to tan medium fine SAND, organic	0.0 fID DRY compact
2		11			No Recovery	GRAVEL IN SPLIT SPOON
3	/		/			
4						4.0
5	52	6 10 11 12	1.75 2.0	GP CL	Gr cmf G Gray coarse medium fine GRAVEL Rd Br & Cy Reddish-brown silty CLAY	0.0 fID moist compact
6						6.0 EDB: 6' lg
7						
8						
9						
10						

[illegible]

O'BRIEN & GERE ENGINEERS, INC. 435 New Karner Road Albany, New York 12205				CORE LOG				Hole No.: MW-4C		Job No.: 39892.001.102	
Project: Old Erie Canal Supplemental FS				Drilling Contractor: Parratt Wolff Inc.				Sheet 1 of 1		Date Started: 11/17/06	
Client: General Electric Company / Parker Hannifin				Driller: Joe Percy				Date Finished: 11/17/06			
Purpose: Bedrock Well Installation				Geologist: P. D'Annibale				Total Depth: 50'		Ground Elev.: 393.27 NGVD 1929	
Location: Clyde, New York				Length of Casing: 40'				S.W.L.:			
Hole Location: S of facility along walkway				Casing Size: 6" 4"				Core Size: 3 3/4"		Inclination/Bearing:	
Formation Member	Unit	Run No.		Pen. Rate (min. per foot)	Depth Scale	Lithologic Description (Include in order: ROCK TYPE, color, grain size, texture, bedding, fracture & minerals.)	Core Recovery		RQD		
		Time Start	Time Stop				Length	Percent			
Upper Silurian						Boring advanced through overburden utilizing 4 1/4" HSA. Top of bedrock at 26.0' bgs. Set 4" steel casing to 40.0' bgs. See soil boring log MW-4C for soil description.					
		1022			40.0'	Greenish-gray shale, fine grained, horizontal bedding, frequent horizontal fractures, some gypsum partings and stringers	2.4	48	17%		
		1033		2.2	45.0'	Gray shale, fine-grained, horizontal bedding. Frequent horizontal fractures					
		1050		8		Greenish gray shale, fine grained, horizontal bedding, numerous fractures with bedding	4.9	98	21%		
		1130			50.0'	End of coring at 50.0' bgs					

O'BRIEN & GERE ENGINEERS, INC. 435 New Karner Road Albany, New York 12205				CORE LOG				Hole No.: MW-SB		Job No.: 39892.001.102	
								Sheet 1 of 1		Date Started: 11/16/06	
Project: Old Erie Canal Supplemental FS				Drilling Contractor: Parratt Wolff Inc.						Date Finished: 11/17/06	
Client: General Electric Company / Parker Hannifin				Driller: Joe Percy						Total Depth: 39.2'	
Purpose: Bedrock Well Installation				Geologist: P. D'Annibale						Ground Elev.: 393.19' NGVD 1929	
Location: Clyde, New York				Length of Casing: 39.0'				S.W.L.:			
Hole Location: S of facility along walk path				Casing Size: 6" 4"		Core Size: 3 3/4"		Inclination/Bearing:			
Formation Member	Run No.	Time Start/Stop	Pen. Rate (min. per foot)	Depth Scale	Lithologic Description (include in order: ROCK TYPE, color, grain size, texture, bedding, fracture & minerals.)			Core Recovery		RQD	
					Boring advanced through overburden utilizing 4 1/2" HSA TOP of bedrock at 25.9' bgs. Set 4" steel casing to 29.0' bgs. See soil boring log MW-SB for soil description.						
	1348	1	6.4	29.0' 30.0'	Greenish gray shale, fine grained, horizontal bedding, highly fractured with bedding, few to some gypsum partings			2		40 0%	
	1440	1420			Greenish gray shale, fine grained, horizontal bedding, highly fractured with bedding						
	2		4.0	35.0'				2		40 0%	
				39.0'	End of coring at 39.2' bgs						

O'BRIEN & GERE ENGINEERS, INC. 435 New Karner Road Albany, New York 12205				CORE LOG		Hole No.: MW-6B	Job No.: 39892.001.102
Project: Old Erie Canal Supplemental FS				Drilling Contractor: Parratt Wolff Inc.		Sheet 1 of 1	Date Started: 11/15/06
Client: General Electric Company / Parker Hannifin				Driller: Joe Percy		Date Finished: 11/15/06	
Purpose: Bedrock Well Installation				Geologist: P. D'Annibale		Total Depth: 39.4'	
Location: Clyde, New York				Length of Casing: 39.4'		Ground Elev.: 395.09 NGVD (1929)	
Hole Location: Near Hydrogen tank, SW of facility				Casing Size: 6" 4"	Core Size: 3 3/4"	Inclination/Bearing:	
Formation Member	Run No.	Pen. Rate (min. per foot)	Depth Scale	Lithologic Description (include in order: ROCK TYPE, color, grain size, texture, bedding, fracture & minerals.)	Core Recovery Length	Percent	RQD
Upper Silurian	1321		29.0'	Boring advanced through overburden utilizing 4 1/4" HSA. Top of bedrock at 25.9' bgs. Set 4" steel casing to 29.0' bgs. See soil boring log MW-6B for soil description.			
	1	11.4	30.0'	Greenish gray to gray shale, fine grained, horizontal bedding, frequent horizontal fractures, gypsum stringers	5	100	82.1%
	1434		35.0'	Greenish gray to gray shale, fine grained, horizontal bedding, occasional horizontal fractures			
	2	4.8			5	100	29.6%
	1458		39.0'	End of coring at 39.4' bgs.			

CORE LOG

O'BRIEN & GERE ENGINEERS, INC.
435 New Karner Road
Albany, New York 12205

Hole No.: MW-16B Job No.: 39892.001.102

Sheet 1 of 1 Date Started: 11/15/06

Project: Old Erie Canal Supplemental FS

Drilling Contractor: Parratt Wolff Inc.

Client: General Electric Company / Park

Driller: Joe Percy

Purpose: Bedrock Well Installation

Geologist: P. D'Annibale

Location: Clyde, New York

Length of Casing: 44.1'

Hole Location: ~ 50' SSW of facility

Casing Size: 6" Core Size: 3 3/4"

Inclination/Bearing:

Formation Member	Run No. Time Start/Stop	Pen. Rate (min. per foot)	Depth Scale	Lithologic Description (include in order: ROCK TYPE, color, grain size, texture, bedding, fracture & minerals.)	Core Recovery	
					Length	Percent
						RQD
				Boring advanced through overburden utilizing 4 1/4" HSA. Top of bedrock at 31.0' bgs. Set 4" steel casing to 34.0' bgs. See soil boring log MW-168 for soil description.		
	0847		34.5'	Greenish gray shale, fine grained, horizontal bedding, numerous fractures with bedding. Vertical fractures from 36.5 to 37.0 and from 37.5 to 37.8.	4.75	52.9%
	1048	9.4	35.5'			
	1034			Greenish gray shale, fine grained, horizontal bedding, numerous fractures with bedding	4.5	95
	1124	7.4	40.5'	Dark gray shale, fine grained, horizontal bedding, numerous horizontal fractures		100
				End of coring at 44.0' bgs.		42.5%

APPENDIX B

Monitoring Well Completion Logs

WELL COMPLETION LOG

Well ID:

MW-3B

Project: Old Erie Canal Supplemental FS
Location: Clyde, New York
Project No.: 39892.001.102

Client: Parker-Hannifin
Date Drilled: 11/16/2006
Date Developed: 11/17 - 21/06

Inspection Notes:

Inspector: P. D'Annibale
Drilling Contractor: Parratt-Wolff, Inc.
Type of Well: Monitoring Well

Static Water Level (ft bmp): 8.19 **Date:** 11/28/06
Measuring Point: TOC
Total Depth of Well (ft bmp): 38.54

Drilling Method - Overburden:

Type: HSA **Diameter:** 4 1/4" ID
Casing: 4" Steel

Sampling Method - Overburden:

Type: Split Spoon **Diameter:** 2" OD
Weight: 140 # **Fall:** 30"
Interval: 12.0' - 26.0'

Drilling Method - Bedrock:

Type: HX diamond bit **Diameter:** 3 3/4" OD
Casing: NA

Sampling Method - Bedrock:

Type: HX Core **Diameter:** 3 3/4" OD
Interval: 29.0' - 39.0'

Riser Pipe Left in Place:

Material: Sch. 40 PVC **Diameter:** 2" ID
Length: 28.5' **Joint Type:** Flush Thread

Screen:

Material: Sch. 40 PVC **Diameter:** 2" ID
Slot Size: 0.010 **Joint Type:** Flush Thread

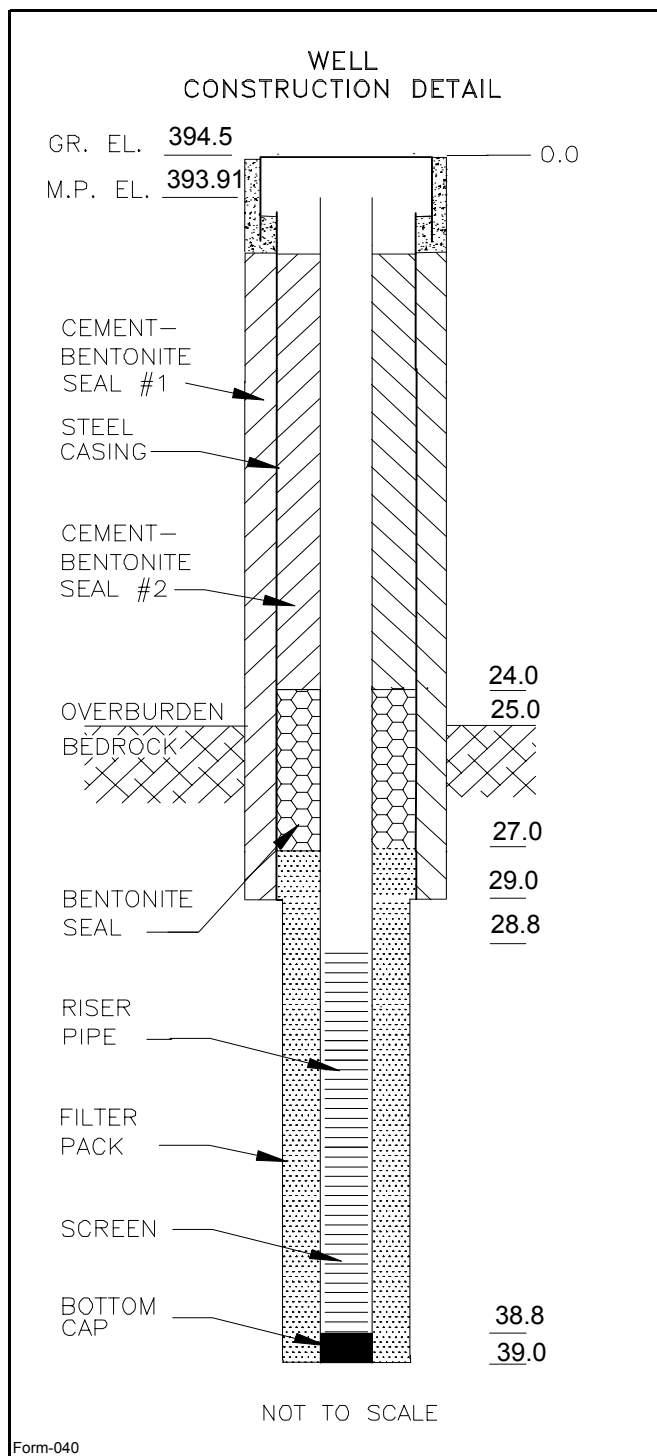
Filter Pack:

Type: Sand **Grade:** # 0 Morie
Interval: 27.0' - 39.0'

Seal(s):

Type: Cement-Bentonite Seal #1 **Interval:** 0.0' - 29.0'
Type: Bentonite Seal **Interval:** 24.0'-27.0'
Type: **Interval:**

Locking Casing: ☒ Yes ☐ No



O'BRIEN & GERE
ENGINEERS, INC.

WELL COMPLETION LOG

Well ID: **MW-4C**

Project: Old Erie Canal Supplemental FS
Location: Clyde, New York
Project No.: 39892.001.102

Client: Parker-Hannifin
Date Drilled: 11/17/2006
Date Developed: 11/20/2006

Inspection Notes:

Inspector: P. D'Annibale
Drilling Contractor: Parratt-Wolff, Inc.
Type of Well: Monitoring Well

Static Water Level (ft bmp): -1.06 **Date:** 11/28/06
Measuring Point: TOC
Total Depth of Well (ft bmp): 48.23

Drilling Method - Overburden:

Type: HSA **Diameter:** 4 1/4" ID
Casing: 4" Steel

Sampling Method - Overburden:

Type: NA **Diameter:** NA
Weight: NA **Fall:** NA
Interval: NA

Drilling Method - Bedrock:

Type: HX diamond bit **Diameter:** 3 3/4" OD
Casing: NA

Sampling Method - Bedrock:

Type: HX Core **Diameter:** 3 3/4" OD
Interval: 40.0' - 50.0'

Riser Pipe Left in Place:

Material: Sch. 40 PVC **Diameter:** 2" ID
Length: 38.2' **Joint Type:** Flush Thread

Screen:

Material: Sch. 40 PVC **Diameter:** 2" ID
Slot Size: 0.010 **Joint Type:** Flush Thread

Filter Pack:

Type: Sand **Grade:** # 0 Morie
Interval: 38.0 - 50.0'

Seal(s):

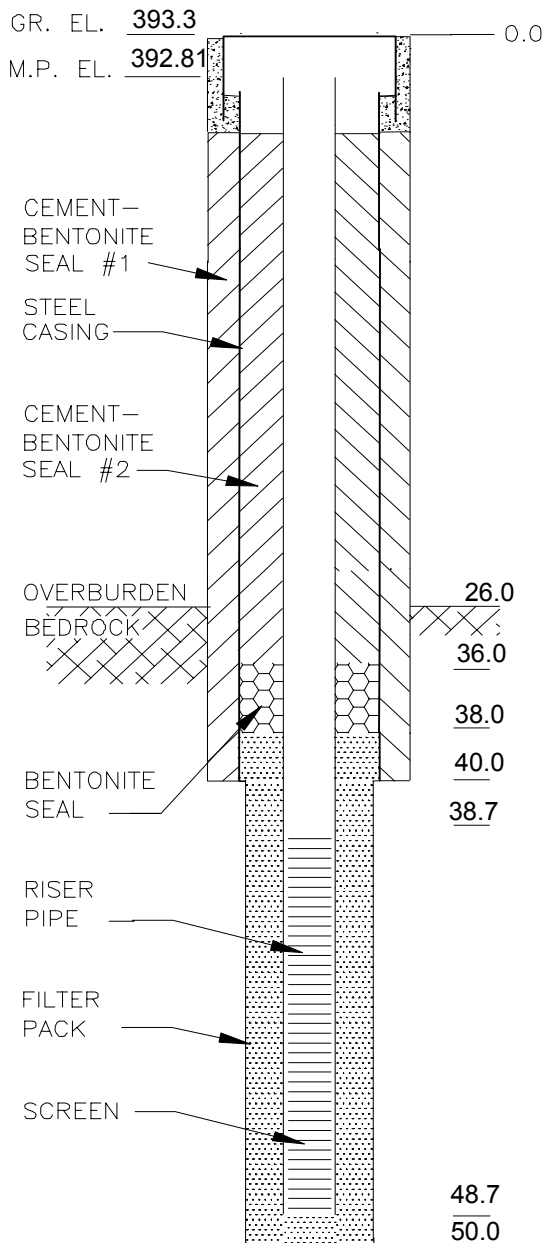
Type: Cement-Bentonite Seal #1 **Interval:** 0.0' - 40.0'
Type: Bentonite Seal **Interval:** 36.0'-38.0'
Type: **Interval:**

Locking Casing: ☒ Yes ☐ No



O'BRIEN & GERE
ENGINEERS, INC.

WELL CONSTRUCTION DETAIL



NOT TO SCALE

Form-042

WELL COMPLETION LOG

Well ID: **MW-5B**

Project: Old Erie Canal Supplemental FS
Location: Clyde, New York
Project No.: 39892.001.102

Client: Parker-Hannifin
Date Drilled: 11/16/2006
Date Developed: 11/20 - 21/06

Inspection Notes:

Inspector: P. D'Annibale
Drilling Contractor: Parratt-Wolff, Inc.
Type of Well: Monitoring Well

Static Water Level (ft bmp): NA **Date:** _____
Measuring Point: TOC
Total Depth of Well (ft bmp): 38.91

Drilling Method - Overburden:

Type: HSA **Diameter:** 4 1/4" ID
Casing: 4" Steel

Sampling Method - Overburden:

Type: Split Spoon **Diameter:** 2" OD
Weight: 140 # **Fall:** 30"
Interval: 12.0' - 26.0'

Drilling Method - Bedrock:

Type: HX diamond bit **Diameter:** 3 3/4" OD
Casing: NA

Sampling Method - Bedrock:

Type: HX Core **Diameter:** 3 3/4" OD
Interval: 29.0' - 39.2'

Riser Pipe Left in Place:

Material: Sch. 40 PVC **Diameter:** 2" ID
Length: 28.9' **Joint Type:** Flush Thread

Screen:

Material: Sch. 40 PVC **Diameter:** 2" ID
Slot Size: 0.010 **Joint Type:** Flush Thread

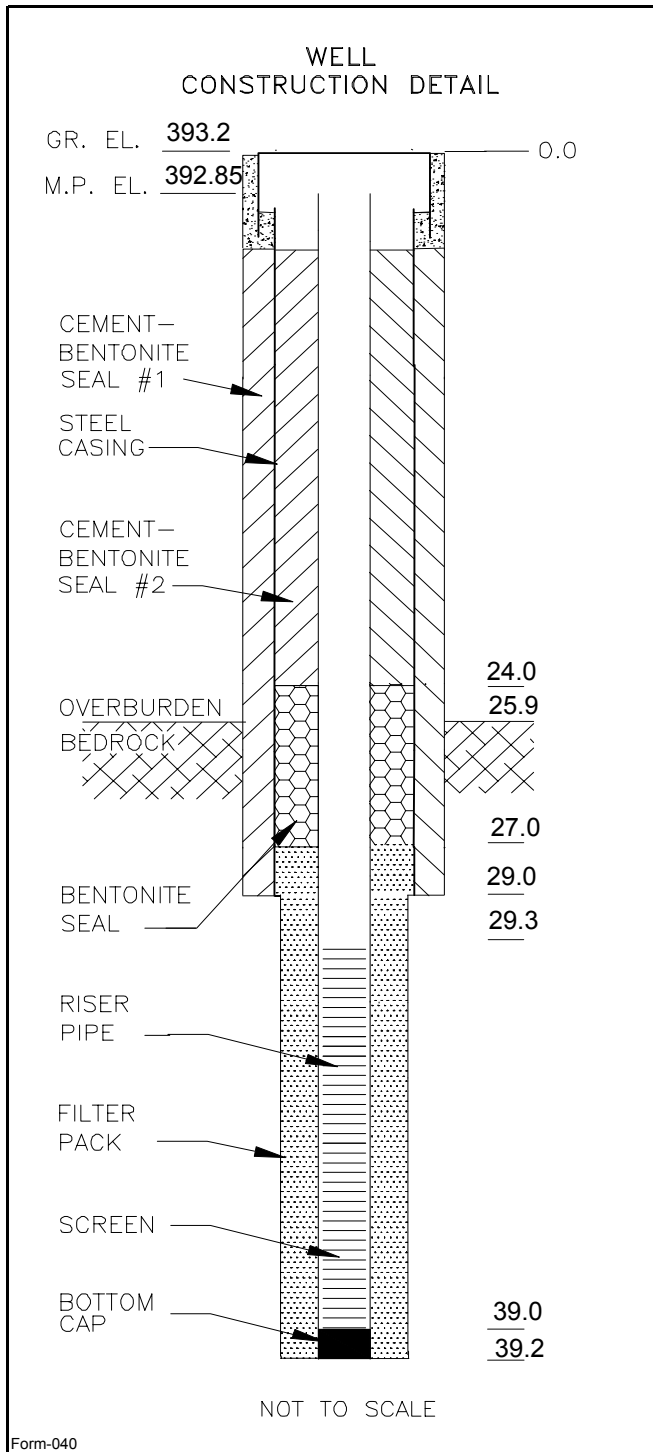
Filter Pack:

Type: Sand **Grade:** # 0 Morie
Interval: 27.0' - 39.2'

Seal(s):

Type: Cement-Bentonite Seal #1 **Interval:** 0.0' - 29.0'
Type: Bentonite Seal **Interval:** 24.0' - 27.0'
Type: _____ **Interval:** _____

Locking Casing: ☒ Yes ☐ No



O'BRIEN & GERE
ENGINEERS, INC.

WELL COMPLETION LOG

Well ID: **MW-6B**

Project: Old Erie Canal Supplemental FS
Location: Clyde, New York
Project No.: 39892.001.102

Client: Parker-Hannifin
Date Drilled: 11/15/2006
Date Developed: 11/16/2006

Inspection Notes:

Inspector: P. D'Annibale
Drilling Contractor: Parratt- Wolff, Inc.
Type of Well: Monitoring Well

Static Water Level (ft bmp): 9.00 **Date:** 11/28/06
Measuring Point: TOC
Total Depth of Well (ft bmp): 41.26

Drilling Method - Overburden:

Type: HSA **Diameter:** 4 1/4" ID
Casing: 4" Steel

Sampling Method - Overburden:

Type: Split Spoon **Diameter:** 2" OD
Weight: 140 # **Fall:** 30"
Interval: 0.0' - 26.0'

Drilling Method - Bedrock:

Type: HX diamond bit **Diameter:** 3 3/4" OD
Casing: NA

Sampling Method - Bedrock:

Type: HX Core **Diameter:** 3 3/4" OD
Interval: 29.0' - 39.4'

Riser Pipe Left in Place:

Material: Sch 40 PVC **Diameter:** 2" ID
Length: 31.3' **Joint Type:** Flush Thread

Screen:

Material: Sch 40 PVC **Diameter:** 2" ID
Slot Size: 0.010 **Joint Type:** Flush Thread

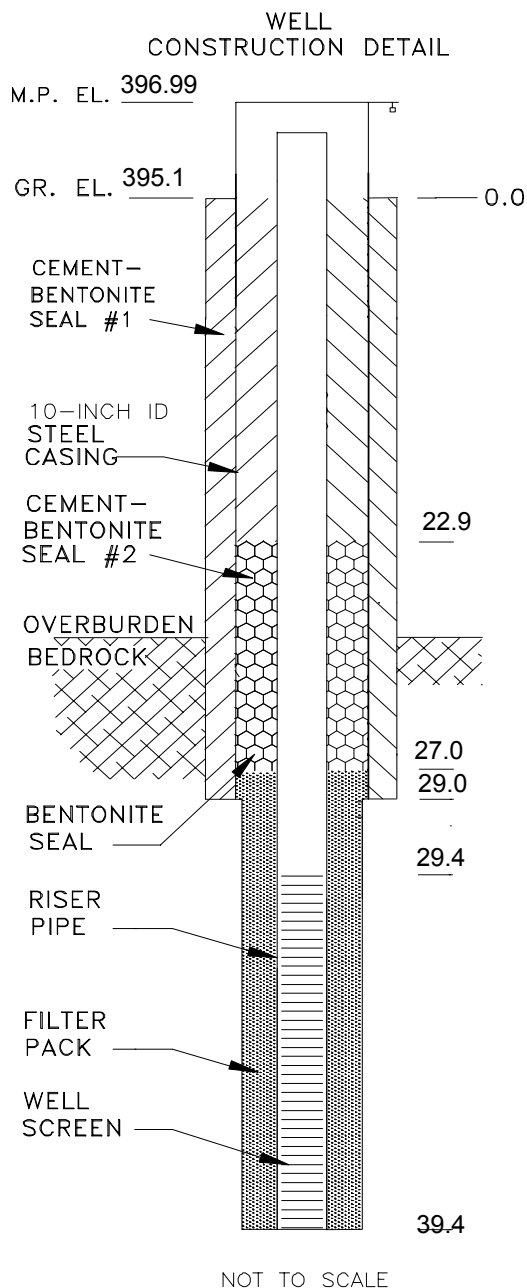
Filter Pack:

Type: Sand **Grade:** # 0 Morie
Interval: 27.0' - 39.3'

Seal(s):

Type: Cement-Bentonite Seal #1 **Interval:** 0.0'-29.0'
Type: Bentonite Seal **Interval:** 22.9'-27.0'
Type: **Interval:**

Locking Casing: ☒ Yes ☐ No



Form-033



OBRIEN & GERE
ENGINEERS, INC.

WELL COMPLETION LOG

Well ID: **MW-13S**

Project: Old Erie Canal Supplemental GW
Location: Clyde, New York
Project No.: 39892.001.102

Client: Parker-Hannifin
Date Drilled: 11/2/2006
Date Developed: 11/14/2006

Inspection Notes:

Inspector: P. D'Annibale
Drilling Contractor: Parratt-Wolff, Inc
Type of Well: Monitoring Well

Static Water Level (ft bmp): 3.05 **Date:** 11/8/06
Measuring Point: Top of PVC
Total Depth of Well (ft bmp): 18.71

Drilling Method - Overburden:

Type: HSA **Diameter:** 4 1/4" ID
Casing: NA

Sampling Method - Overburden:

Type: Split-Spoon **Diameter:** 2" OD
Weight: 140 # **Fall:** 30"
Interval: 0.0'-20.0'

Riser Pipe Left in Place:

Material: Sch 40 PVC **Diameter:** 2" ID
Length: 13.7' **Joint Type:** Flush Thread

Screen:

Material: Sch 40 PVC **Diameter:** 2" ID
Slot Size: 0.010 **Joint Type:** Flush Thread

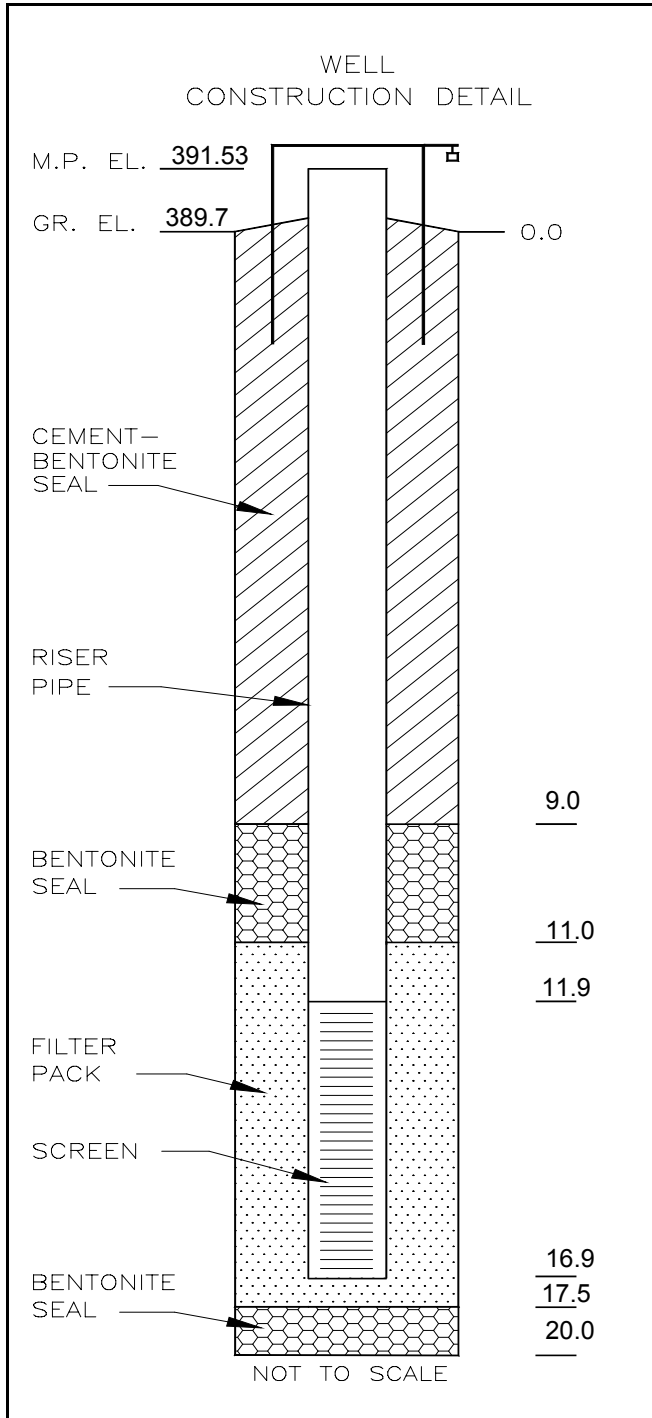
Filter Pack:

Type: Sand **Grade:** # 0 Morie
Interval: 11.0'-17.5'

Seal(s):

Type: Cement-Bentonite **Interval:** 0.0'-2.5'
Type: Bentonite Pellets **Interval:** 9.0'-11.0'
Type: Bentonite Pellets **Interval:** 17.5'-20.0'

Locking Casing: ☒ Yes ☐ No

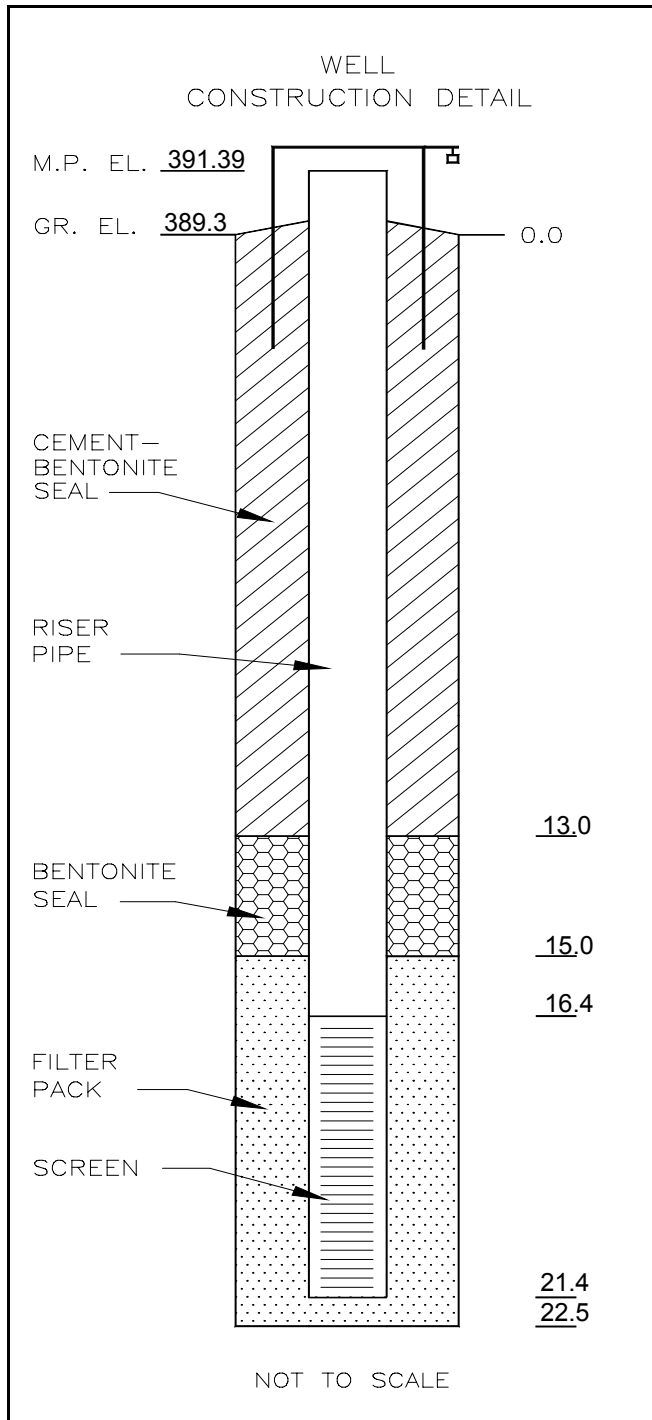


WELL COMPLETION LOG

Well ID: **MW-14S**

Project: Old Erie Canal Supplemental GW
Location: Clyde, New York
Project No.: 39892.001.102

Client: Parker-Hannifin
Date Drilled: 11/6/2006
Date Developed: 11/15/2006



Inspection Notes:

Inspector: P. D'Annibale
Drilling Contractor: Parratt-Wolff, Inc.
Type of Well: Monitoring Well

Static Water Level (ft bmp): 5.51 **Date:** 11/8/06
Measuring Point: Top of PVC
Total Depth of Well (ft bmp): 23.55

Drilling Method - Overburden:

Type: HSA **Diameter:** 4 1/4" ID
Casing: NA

Sampling Method - Overburden:

Type: Split-Spoon **Diameter:** 2" OD
Weight: 140 # **Fall:** 30"
Interval: 0.0'-22.5'

Riser Pipe Left in Place:

Material: Sch 40 PVC **Diameter:** 2" ID
Length: 18.5' **Joint Type:** Flush Thread

Screen:

Material: Sch 40 PVC **Diameter:** 2" ID
Slot Size: 0.010 **Joint Type:** Flush Thread

Filter Pack:

Type: Sand **Grade:** #0 Morie
Interval: 15.0'-22.5'

Seal(s):

Type: Cement-Bentonite **Interval:** 0.0'-13.0'
Type: Bentonite Pellets **Interval:** 13.0'-15.0'
Type: **Interval:**

Locking Casing: ☒ Yes ☐ No

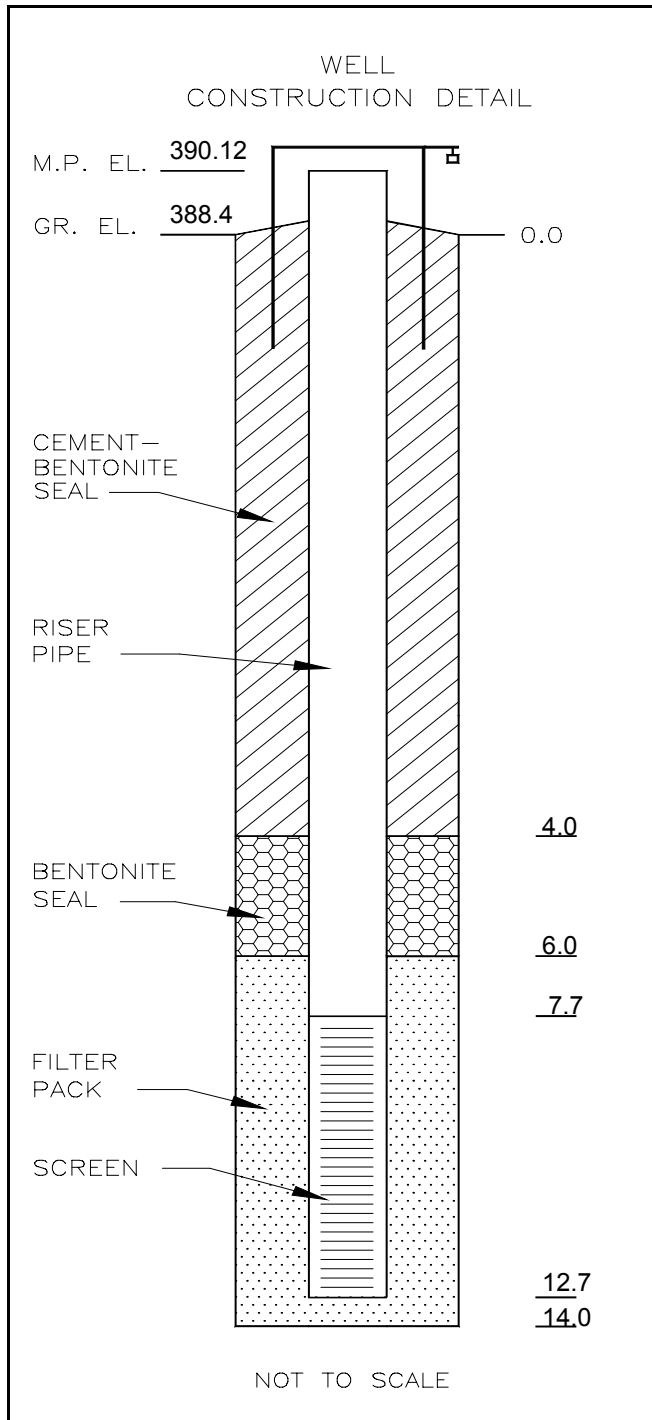


WELL COMPLETION LOG

Well ID: **MW-15S**

Project: Old Erie Canal Supplemental GW
Location: Clyde, New York
Project No.: 39892.001.102

Client: Parker-Hannifin
Date Drilled: 11/7/2006
Date Developed: 11/15/2006



Inspection Notes:

Inspector: P. D'Annibale
Drilling Contractor: Parratt-Wolff, Inc.
Type of Well: Monitoring Well

Static Water Level (ft bmp): 2.19 **Date:** 11/8/06
Measuring Point: Top of PVC
Total Depth of Well (ft bmp): 14.42

Drilling Method - Overburden:

Type: HSA **Diameter:** 4 1/4" ID
Casing: NA

Sampling Method - Overburden:

Type: Split-Spoon **Diameter:** 2" OD
Weight: 140 # **Fall:** 30"
Interval: 0.0'-14.0'

Riser Pipe Left in Place:

Material: Sch 40 PVC **Diameter:** 2" ID
Length: 9.4' **Joint Type:** Flush Thread

Screen:

Material: Sch 40 PVC **Diameter:** 2" ID
Slot Size: 0.010 **Joint Type:** Flush Thread

Filter Pack:

Type: Sand **Grade:** #0 Morie
Interval: 6.0'-14.0'

Seal(s):

Type: Cement-Bentonite **Interval:** 0.0' - 4.0'
Type: Bentonite Pellets **Interval:** 4.0' - 6.0'
Type: **Interval:**

Locking Casing: ☒ Yes ☐ No



WELL COMPLETION LOG

Well ID: **MW-16S**

Project: Old Erie Canal Supplemental GW
Location: Clyde, New York
Project No.: 39892.001.102

Client: Parker-Hannifin
Date Drilled: 11/2/2006
Date Developed: 11/14/2006

Inspection Notes:

Inspector: P. D'Annibale
Drilling Contractor: Parratt-Wolff, Inc.
Type of Well: Monitoring Well

Static Water Level (ft bmp): 2.97 **Date:** 11/8/06
Measuring Point: Top of PVC
Total Depth of Well (ft bmp): 8.92

Drilling Method - Overburden:

Type: HSA **Diameter:** 4 1/4" ID
Casing: NA

Sampling Method - Overburden:

Type: Split-Spoon **Diameter:** 2" OD
Weight: 140 # **Fall:** 30"
Interval: 0.0'-10.0'

Riser Pipe Left in Place:

Material: Sch 40 PVC **Diameter:** 2" ID
Length: 3.9' **Joint Type:** Flush Thread

Screen:

Material: Sch 40 PVC **Diameter:** 2" ID
Slot Size: 0.010 **Joint Type:** Flush Thread

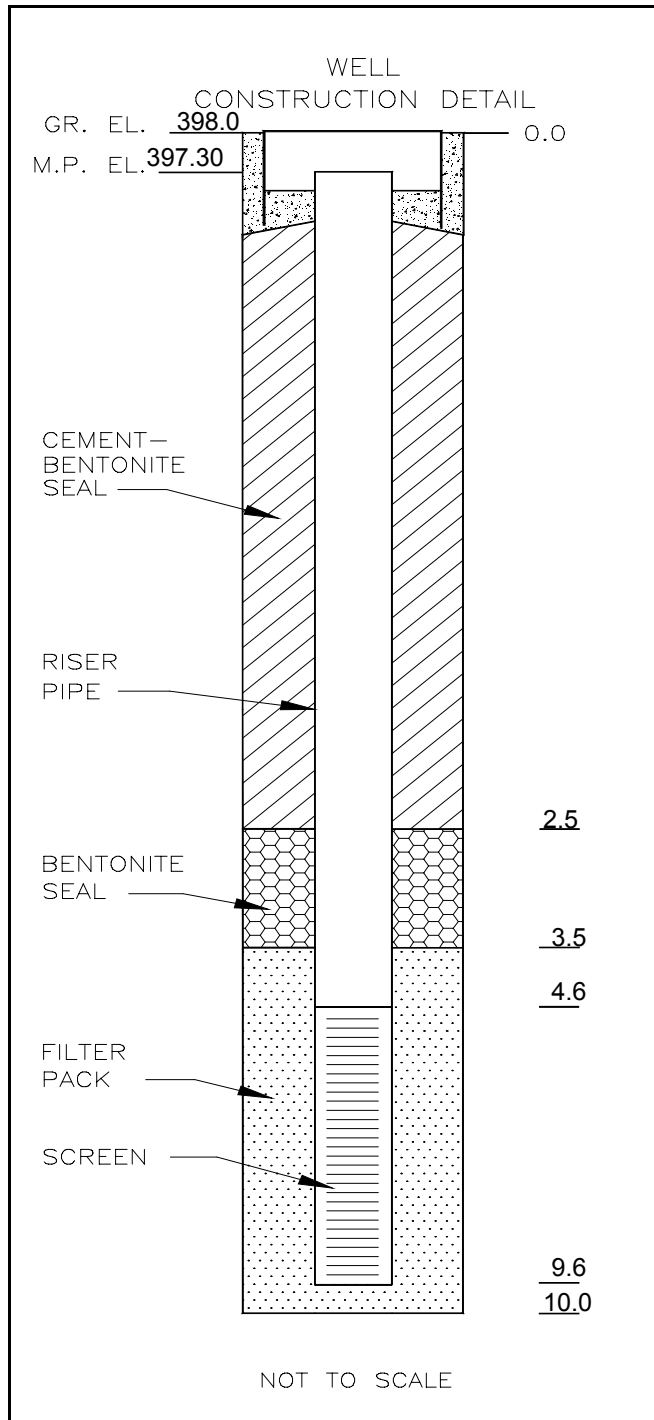
Filter Pack:

Type: Sand **Grade:** # 0 Morie
Interval: 3.5'-10.0'

Seal(s):

Type: Cement-Bentonite **Interval:** 0.0' - 2.5'
Type: Bentonite Pellets **Interval:** 2.5' - 3.5'
Type: **Interval:**

Locking Casing: ☒ Yes ☐ No



WELL COMPLETION LOG

Well ID:

MW-16B

Project: Old Erie Canal Supplemental FS
Location: Clyde, New York
Project No.: 39892.001.102

Client: Parker-Hannifin
Date Drilled: 11/15/2006
Date Developed: 11/16, 21/06

Inspection Notes:

Inspector: P. D'Annibale
Drilling Contractor: Parratt-Wolff, Inc.
Type of Well: Monitoring Well

Static Water Level (ft bmp): 3.88 **Date:** 11/28/06
Measuring Point: TOC
Total Depth of Well (ft bmp): 43.13

Drilling Method - Overburden:

Type: HSA **Diameter:** 4 1/4" ID
Casing: 4" Steel

Sampling Method - Overburden:

Type: Split Spoon **Diameter:** 2" OD
Weight: 140 # **Fall:** 30"
Interval: 9.0' - 31.0'

Drilling Method - Bedrock:

Type: HX diamond bit **Diameter:** 3 3/4" OD
Casing: NA

Sampling Method - Bedrock:

Type: HX Core **Diameter:** 3 3/4" OD
Interval: 34.0' - 44.0'

Riser Pipe Left in Place:

Material: Sch. 40 PVC **Diameter:** 2" ID
Length: 33.1' **Joint Type:** Flush Thread

Screen:

Material: Sch. 40 PVC **Diameter:** 2" ID
Slot Size: 0.010 **Joint Type:** Flush Thread

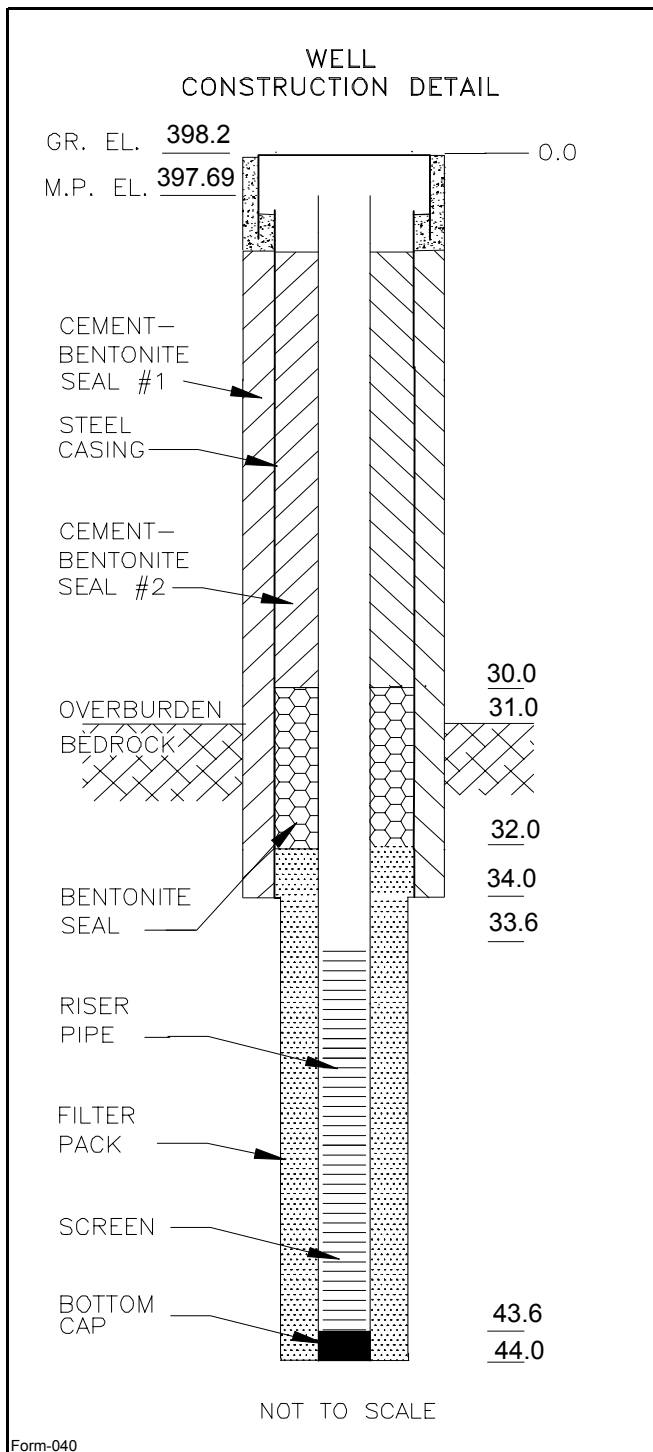
Filter Pack:

Type: Sand **Grade:** # 0 Morie
Interval: 32.0' - 44.0'

Seal(s):

Type: Cement-Bentonite Seal #1 **Interval:** 0.0' - 34.0'
Type: Bentonite Seal **Interval:** 30.0'-32.0'
Type: **Interval:**

Locking Casing: ☒ Yes ☐ No



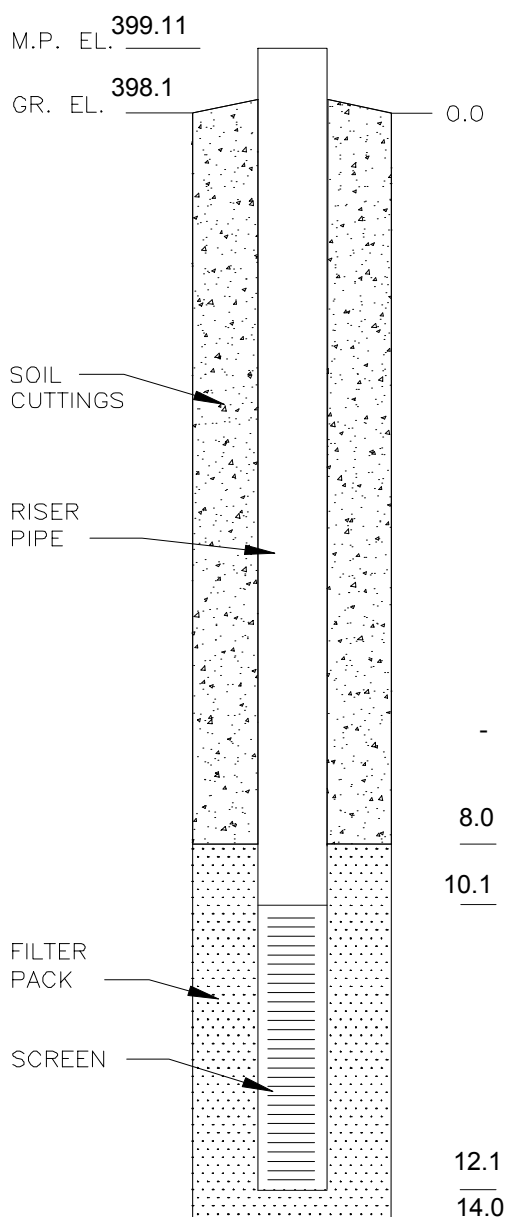
WELL COMPLETION LOG

Well ID: TMW-1

Project: Old Erie Canal Supplemental GW
Location: Clyde, New York
Project No.: 39892.001.102

Client: Parker-Hannifin
Date Drilled: 11/3/2006
Date Developed: 11/14, 20/2006

WELL CONSTRUCTION DETAIL



Inspection Notes:

Inspector: P. D'Annibale
Drilling Contractor: Parratt-Wolff, Inc
Type of Well: Temporary Monitoring Well

Static Water Level (ft bmp): 3.93 Date: 11/8/06
Measuring Point: Top of PVC
Total Depth of Well (ft bmp): 13.09

Drilling Method - Overburden:

Type: HSA Diameter: 4 1/4" ID
Casing: NA

Sampling Method - Overburden:

Type: Split-Spoon Diameter: 2" OD
Weight: 140 # Fall: 30"
Interval: 0.0'-14.0'

Riser Pipe Left in Place:

Material: Sch 40 PVC Diameter: 2" ID
Length: 11.1' Joint Type: Flush Thread

Screen:

Material: Sch 40 PVC Diameter: 2" ID
Slot Size: 0.010 Joint Type: Flush Thread

Filter Pack:

Type: Sand Grade: #0 Morie
Interval: 8.0'-14.0'

Seal(s):

Type: Cement-Bentonite Interval: NA
Type: Bentonite Pellets Interval: NA
Type: Interval:

Locking Casing: ☐ Yes ☒ No



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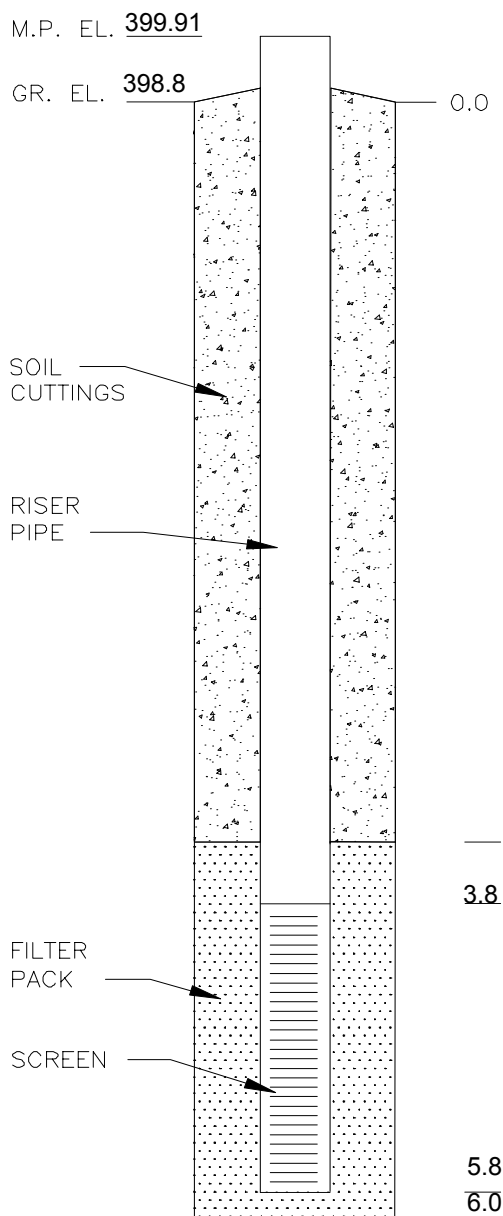
WELL COMPLETION LOG

Well ID: TMW-2

Project: Old Erie Canal Supplemental GW
Location: Clyde, New York
Project No.: 39892.001.102

Client: Parker-Hannifin
Date Drilled: 11/3/2006
Date Developed: 11/14/2006

WELL CONSTRUCTION DETAIL



Inspection Notes:

Inspector: P. D'Annibale
Drilling Contractor: Parratt-Wolff, Inc
Type of Well: Temporary Monitoring Well

Static Water Level (ft bmp): 4.48 **Date:** 11/8/06
Measuring Point: Top of PVC
Total Depth of Well (ft bmp): 6.86

Drilling Method - Overburden:

Type: HSA **Diameter:** 4 1/4" ID
Casing: NA

Sampling Method - Overburden:

Type: Split-Spoon **Diameter:** 2" OD
Weight: 140 # **Fall:** 30"
Interval: 0.0'-6.0'

Riser Pipe Left in Place:

Material: Sch 40 PVC **Diameter:** 1" ID
Length: 4.9' **Joint Type:** Flush Thread

Screen:

Material: Sch 40 PVC **Diameter:** 1" ID
Slot Size: 0.010 **Joint Type:** Flush Thread

Filter Pack:

Type: Backfill **Grade:**
Interval: 0.0'-6.0'

Seal(s):

Type: **Interval:**
Type: **Interval:**
Type: **Interval:**

Locking Casing: ☐ Yes ☒ No



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