

**Client:**

New York State Electric and Gas

**Boring ID: SB-102****Site Location:**Court Street  
Binghamton, NY**Borehole Depth:** 61.8 ft. bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows / 6 inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
805		18	35-37	7 5	11	0.5	0.1		Olive brown fine to medium GRAVEL, little medium to coarse Sand, trace coarse Gravel, wet, no odor/staining/sheen.
				24 26 14 12					
40		19	37-39		40	0.8	0.0		Olive brown fine to coarse GRAVEL, trace medium to coarse Sand, trace Silt, dense, wet, no odor/staining/sheen.
				21 12 8 10					
		20	39-41		20	0.5	0.0		
				4 4 6 7					
800		21	41-43		10	0.4	0.0		
				27 21 14 10					
45		22	43-45		35	0.5	0.0		
				10 8 8 7					
		23	45-47		16	0.5	0.0		
795				7 9 18 12					
		24	47-49.2		27	0.5	0.0		
				8 7 8 10					Olive brown fine to coarse GRAVEL, little medium to coarse Sand, wet, no odor/staining/sheen.
50		25	49.2-51.2		15	1.2	0.0		
				6 8 5 6					
790		26	51.2-53.2		13	0.4	0.0		
				4 5 5 5					
		27	53.2-55.2		10	0.3	0.0		
55				4 7					
		28	55.2-57		21	0.4	-		Olive brown fine to medium GRAVEL, some fine to medium Sand, wet, no odor/staining/sheen.

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29  
 Due to difficult drilling, boring abandoned after 3.8'  
 (first attempt), and 6.1' (second attempt). Third attempt  
 completed to 61.8' bgs.  
 Samples collected from 10'-12' and 21'-23' bgs.

**Client:**

New York State Electric and Gas

**Boring ID: SB-102****Site Location:**Court Street  
Binghamton, NY**Borehole Depth: 61.8 ft. bgs**

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows / 6 Inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
78.5		28	55.2-57	14 8	21	0.4	-		Olive brown fine to medium GRAVEL, some fine to medium Sand, wet, no odor/staining/sheen.
		29	57-59	11 17 24 26	41	0.5	-		Olive brown fine to medium GRAVEL, little Silt and Clay, trace coarse Sand, dense, stiff, wet, no odor/staining/sheen
60		30	59-61	19 27 54 50/4	81	1.2	-		As above, with increase in Clay and Silt, wet, no odor/staining/sheen.
		31	61-61.8	48 50/3	NA	-	-		Olive fine SAND matrix, little Silt, some medium to coarse Sand and Gravel, hard, no odor/staining/sheen. [TILL]
									Olive fine SAND matrix, little Silt, some medium to coarse fine angular Gravel, hard, no odor/staining/sheen. [TILL]
780									
65									
775									
70									
770									
75									





































**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29  
 Due to difficult drilling, boring abandoned after 3.8'  
 (first attempt), and 6.1' (second attempt). Third attempt  
 completed to 61.8' bgs.  
 Samples collected from 10'-12' and 21'-23' bgs.

**Date Start/Finish:** 8/27/01  
**Drilling Company:** Lyon Drilling  
**Driller's Name:** Dave Lyons  
**Drilling Method:** Hollow Stem Auger  
**Sampler Size:** 2-in. Split Spoon  
**Auger Size:** 3.25-in. ID  
**Rig Type:** Trailer-mounted CME-45

**Northing:** 767108.96  
**Easting:** 1006810.71  
**Casing Elevation:** NA  
**Surface Elevation:** 846.08 ft. AMSL  
**Borehole Depth:** 54 ft. bgs  
**Descriptions By:** K. White/M. Cobb

**Boring ID:** SB-103  
**Client:** New York State Electric and Gas  
**Location:** Court Street  
 Binghamton, NY

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows / 6 inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0									
845		1	0-2	NA 5 14 10	19	1.0	0.0	    	Concrete floor inside warehouse, 295 Court Street. Blackish-gray FILL consisting of fine to coarse Sand and Gravel, loose, moist, no odor/sheen/staining.
		2	2-4	4 11 50/4 NA	NA	0.4	0.0	    	FILL consisting of Brick fragments, Slag, fine to coarse Sand, loose, moist, no odor/sheen/staining. Brownish-gray FILL consisting of fine to coarse Sand and Gravel, trace Silt, loose, moist, no odor/sheen/staining.
5		3	4-6	5 3 2 2	5	1.5	0.0	    	Multicolored (gray, black, red) FILL consisting of fine to coarse sand-size Ash, Slag, Coal and Brick fragments, some Gravel-sized Concrete chips, little Silt, loose, moist, no odor/sheen/staining.
840		4	6-8	2 2 2 2	4	1.0	0.3	    	As above, except no Concrete or Brick fragments, loose, moist.
		5	8-10	1 2 2 2	4	NA	250	   	Grayish brown SILT, moist to wet, one embedded piece of Slag, soft, no odor/sheen/staining. Brownish gray SILT, soft, moist to wet, no odor/sheen/staining.
10		6	10-12	WOR 1 1 2	2	0.9	16.7	   	Brownish-gray and grayish-black mottled SILT, soft, blocky structure, wet, no odor/sheen/staining.
		7	12-14	1 1 1 2	2	1.0	11.1	   	As above, with trace fine Sand, massive, odor. As above, brownish-black coloration, petroleum-type (non-naphthalene) odor, loose, wet.
15		8	14-16	2 3 4 4	7	0.7	52.4	   	Brownish-gray SILT, trace fine Sand, faint bedding evident, moderately stiff, moist to wet, odor (as above), no sheen or staining.

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29

**Client:**

New York State Electric and Gas

**Boring ID: SB-103****Site Location:**Court Street  
Binghamton, NY**Borehole Depth: 54 ft. bgs**

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample Int/Type	Blows / 6 Inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
830				9					Brownish-gray and grayish-black mottled SILT, trace Clay and fine Sand, medium dense, wet, faint bedding evident, odor (as above), no sheen or staining.
		9	16-18	6	10	1.9	1.9		
				4					
				5					Brownish-gray fine rounded GRAVEL and fine to coarse SAND, some Silt, medium dense, moist to wet, no odor/sheen/staining.
				1					
		10	18-20	3	9	0.2	7.6		Brownish-gray rounded GRAVEL (many rock types), some to little medium to coarse Sand, little to trace Silt, loose, wet, faint odor (as above), no sheen or staining.
				6					
20				8					
				12					Brownish-gray rounded GRAVEL, some to little medium to coarse Sand, little Silt, dense, wet, faint odor (as above). Faint sheen noted on water at top of spoon, but not on sample.
825		11	20-22	15	26	1.4	5.1		
				11					
				11					
				3					As above, with trace Silt, no sheen, faint odor.
		12	22-24	10	24	0.0	7.4		
				14					
				15					
25				9					
		13	24-26	11	19	1.2	2.4		
				8					
				7					
820				8					No Recovery, pushed Gravel.
		14	26-28	8	16	0.5	1.8		
				8					
				9					
				9					Olive gray-brown fine to medium SAND, little rounded coarse Sand and fine Gravel, wet, no odor/sheen/staining.
		15	28-30	12	24	0.7	20.1		
				12					
30				7					As above, trace Silt, less coarse Sand and fine Gravel, no odor/sheen/staining.
				3					
815		16	30-32	5	10	1.5	3.3		
				5					
				7					
				3					Olive gray-brown fine to medium SAND, trace coarse Sand and fine subangular Gravel, wet, no odor/staining/sheens.
		17	32-34	4	7	2.0	5.2		
				3					
				5					
35				4					Olive gray-brown fine SAND, little medium to coarse Sand, little Silt, somewhat cohesive, wet, no odor/staining/sheens.
		18	34-36	7	16	1.1	2.3		
				9					
				11					

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29



Client:  
New York State Electric and Gas

Site Location:  
Court Street  
Binghamton, NY

Boring ID: **SB-103**

Borehole Depth: 54 ft. bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample Int/Type	Blows / 6 Inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
810		19	36-38	6 6 8 9	14	1.8	-		Olive gray-brown fine to medium SAND, little coarse Sand and Silt, somewhat cohesive, slight yellow cast, no odor/staining/sheens.
		20	38-40	8 8 7 8	15	1.1	9.6		As above, trace Silt, no cohesive, no odor/staining/sheens.
40		21	40-42	6 7 8 9	15	1.3	20.7		Olive-gray fine to medium SAND, trace coarse Sand, trace Silt in horizontal laminations, wet, no odor/staining/sheens.
805		22	42-44	10 7 8 9	15	0.5	21.1		Olive-gray fine to coarse SAND, little fine subrounded Gravel, wet, no odor/staining/sheens.
45		23	44-45	10 9 14 9	23	0.7	14.4		
800		24	46-48	17 9 10 14	19	0.7	54		Olive-gray medium to coarse SAND, little fine Sand and fine subangular Gravel, no odor/staining/sheens.
		25	48-50	9 18 15 16	33	0.0	0.0		Light olive-gray SILT and CLAY with little fine Sand matrix, some medium to coarse Sand and fine angular Gravel, medium cohesive, no odor/staining/sheens. [TILL]
50		26	50-52	10 12 30 22	42	0.7	0.0		
795		27	52-54	28 31 34 60	65	1.5	1.5		Light olive-gray SILT and CLAY matrix, some medium to coarse Sand, little fine subrounded to subangular Gravel, hard, cohesive, no odor/staining/sheens. [TILL]
55									



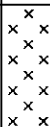

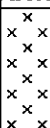
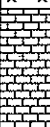



**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

Remarks: Horiz. datum: NAD83-State Plane NY Central  
Vert. datum: NGVD 29

**Date Start/Finish:** 08/29/01 - 08/31/01  
**Drilling Company:** Lyon Drilling  
**Driller's Name:** Dave Lyons  
**Drilling Method:** Hollow Stem Auger  
**Sampler Size:** 2-in. & 3-in. Split Spoon  
**Auger Size:** 3.25" ID  
**Rig Type:** Trailer-mounted CME-45

**Northing:** 767055.12  
**Easting:** 1006880.36  
**Casing Elevation:** NA  
**Surface Elevation:** 846.02 ft. AMSL  
**Borehole Depth:** 64 ft. bgs  
**Descriptions By:** Michael K. Cobb

**Boring ID:** SB-104  
**Client:** New York State Electric and Gas  
**Location:** Court Street  
 Binghamton, NY

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample Int/Type	Blows / 6 Inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0									
845		1	0-2	NA NA 18 26	18	0.8	0.0	 	Concrete floor inside warehouse, 295 Court Street. Medium brown FILL consisting of fine Sand, little coarse Sand and fine Gravel, Concrete, Brick, dry, no odor/staining/sheen.
		2	2-4	22 18 8 12	26	1.2	0.0		Medium brown FILL consisting of fine Sand and Brick, Concrete rubble, 3" Brick fragment lodged in shoe, dry, no odor/staining/sheen.
5		3	4-6	6 12 26 28	38	1.3	0.0		Medium brown fine to coarse SAND and fine GRAVEL, Concrete, Brick, dry, no odor/staining/sheen.
840		4	6-8	NA 7 12 10	19	0.1	0.0		Trace recovery: Concrete rubble, no odor/staining/sheen, dry.
		5	8-10 3-in SS	1 1 1 2	NA	0.4	0.0		BRICK fragments (powder to 3" wide), little fine to coarse Sand, dry, no odor/staining/sheen.
10		6	10-12 3-in SS	2 2 1 3	NA	1.3	0.0		Medium brown medium SAND, some coarse rounded Sand, little fine Gravel, no fines, wet, trace Brick fragments, no odor/staining/sheen.
		7	12-14 3-in SS	10 18 16 18	NA	1.2	0.0		As above, little medium to coarse Gravel, cobble-sized Fill Concrete, Brick, wet, no odor/staining/sheen.
15		8	14-16	10 38 50/0 NA	38	0.8	0.0		Auger through Concrete Slab.

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29  
 Samples collected from 10'-12', 16'-18', and 20'-22' bgs.

**Client:**

New York State Electric and Gas

**Boring ID: SB-104****Site Location:**Court Street  
Binghamton, NY**Borehole Depth: 64 ft. bgs**

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows / 6 Inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
830				15					Light olive SILT, blocky, little horizontal bedding, trace oxidation mottling, wet, no odor/staining/sheen.
9		16-18	3-in SS	12	NA	1.3	0.0		
				14					
				14					
				1					As above, grading to little fine Sand, no odor/staining/sheen.
10		18-20		2	7	1.6	0.0		
				5					
20				4			42.5		Dark olive fine to coarse SAND, some Silt, soupy, loose, wet, little petroleum-type odor (non-naphthalene), no sheen.
				2					As above, some dark gray fine to medium rounded Gravel, soupy, wet, odor as above, possible slight rainbow sheen.
825		20-22	3-in SS	2	NA	1.2	73.4		
				2					
				3					
				3					
				5					As above, faint odor as above, olive color, no sheens.
				1	3	0.5	27.2		
		22-24		2					
				1					
25				5					Olive fine to coarse SAND and fine rounded GRAVEL, little Silt, soupy, no sheen or staining, faint odor as above. (Gravel lodged in base of spoon)
				6	13	0.3	0.0		
		24-26		7					
820				6					
				7					As above, Gravel is rounded to subangular, no discernable odor, no staining/sheen.
				10	29	1.1	0.2		
		26-28		19					
				20					
				5					Olive fine to coarse SAND, some fine Gravel, trace Silt and subangular to angular Gravel, more compact, no odor/staining/sheen.
				7	15	0.8	0.0		
30		28-30		8					
				8					
815				8					
		30-32		11	21	0.9	0.0		
				10					
				10					
				3					Olive-gray medium to coarse SAND and fine to medium subrounded to angular GRAVEL, little fine Sand, wet, compact, medium dense, no odor/staining/sheen.
				6	16	1.3	0.0		
		32-34		10					
				12					
35				8					
				15	37	0.8	0.0		
		34-36		22					
				19					

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29  
 Samples collected from 10'-12', 16'-18', and 20'-22' bgs.

**Client:**

New York State Electric and Gas

**Boring ID: SB-104****Site Location:**Court Street  
Binghamton, NY**Borehole Depth: 64 ft. bgs**

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows / 6 Inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
30		19	36-38	12 14 16 10	30	1.2	0.4		Olive-gray medium to coarse SAND and fine to medium subrounded to angular GRAVEL, little fine Sand, wet, compact, medium dense, no odor/staining/sheen.
		20	38-40	4 8 6 14	14	0.6	0.0		As above, Gravel is mostly rounded, some fines appear to have washed out, no odor/staining/sheen.
40		21	40-42 3-in SS	17 12 17 19	NA	0.5	0.0		Olive-gray fine to coarse SAND and fine to coarse GRAVEL, mostly rounded, trace Silt, wet, no odor/staining/sheen.
		22	42-44	5 7 9 12	16	0.5	-		As above, except only fine to medium Gravel fits in spoon, no odor/staining/sheen.
45		23	44-46	9 10 10 12	20	1.0	-		
800		24	46-48	14 9 12 9	21	0.7	0.0		Olive-gray fine to coarse SAND and fine to medium rounded to angular GRAVEL, wet, moderately dense, no odor/staining/sheen.
		25	48-50	8 8 12 9	20	0.5	0.0		
50		26	50-52	8 9 11 9	20	1.0	0.0		Light olive fine to medium SAND, some coarse Sand and fine to medium rounded to subrounded Gravel, trace Silt, wet, no odor/staining/sheen.
795		27	52-54	1 4 6 7	10	0.7	0.0		
55		28	54-56	4 8 10 10	18	0.5	0.0		Olive-gray fine to coarse SAND and fine to medium angular to subrounded GRAVEL, little Silt, wet, no odor/staining/sheen.

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists



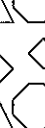
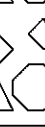
**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29  
 Samples collected from 10'-12', 16'-18', and 20'-22' bgs.

**Client:**

New York State Electric and Gas

Boring ID: **SB-104****Site Location:**Court Street  
Binghamton, NY

Borehole Depth: 64 ft. bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows / 6 inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
58		29	56-58	4 5 6 6	11	0.3	0.0		Olive-gray fine to coarse SAND and fine to medium angular to subrounded GRAVEL, little Silt, wet, no odor/staining/sheen.
60		30	58-60	112/5 NA NA NA	NA	0.2	0.0		Olive-gray SILT, CLAY, coarse SAND and fine to medium GRAVEL, broken, cohesive, no odor/staining/sheen.
785		31	60-62	28 18 14 14	32	0.2	0.0		Olive-gray SILT and CLAY matrix, greater fraction medium to coarse Sand and Gravel, broken/angular Rock, otherwise cohesive, wet, no odor/staining/sheen. [TILL]
		32	62-64	14 4 11 16	15	1.0	0.0		
65									
780									
70									
775									
75									



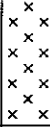

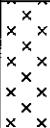
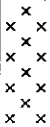



**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
Vert. datum: NGVD 29  
Samples collected from 10'-12', 16'-18', and 20'-22' bgs.

**Date Start/Finish:** 08/08/01 - 08/10/01  
**Drilling Company:** Lyon Drilling  
**Driller's Name:** Dave Lyons  
**Drilling Method:** Hollow Stem Auger  
**Sampler Size:** 2-in. & 3-in. Split Spoon  
**Auger Size:** 3.25-in. ID  
**Rig Type:** Trailer-mounted CME-45

**Northing:** 766930  
**Easting:** 1006978.77  
**Casing Elevation:** NA  
**Surface Elevation:** 841.44 ft. AMSL  
**Borehole Depth:** 64.0 ft. bgs  
**Descriptions By:** Jerry Shi

**Boring ID:** SB-105  
**Client:** New York State Electric and Gas  
**Location:** Court Street  
 Binghamton, NY

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample Int/Type	Blows / 6 Inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0									
840		1	0-2	NA	NA	NA	NA		Blacktop (Court Street road surface).
									CONCRETE.
		2	2-4	6 4 4 3	8	0.2	0.0		Gray-brown FILL consisting of fine to coarse Gravel, little fine to coarse Sand, trace Asphalt and Silt, dry, no odor/staining/sheen.
5		3	4-6	1 2 2 3	4	1.5	0.0		Brown FILL consisting of Silt, trace fine Gravel, Sand, and Coal, dry to damp, no odor/staining/sheen.
835		4	6-8	5 5 5 5	10	1.7	0.0		As above, damp, no odor/staining/sheen.
		5	8-10	5 1 1	6	1.0	0.0		
10		6	10-12	1 1 1 1	2	1.5	0.0		Brown fine SAND, trace medium Gravel, damp, no odor/staining/sheen.
830		7	12-14	WOR 1 2 3	3	1.0	0.0		Brown fine SAND, trace fine to medium Gravel, no odor/staining/sheen. Silt layer and color changes to gray, wet from 12.5' - 12.6' bgs. Increased Gravel from 12.8' - 13.0' bgs.
15		8	14-16 3-in SS	3 3 5 6	NA	1.0	0.0		Olive brown fine to coarse GRAVEL, some medium to coarse Sand, little fine Sand, wet, no odor/staining/sheen.

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29  
 Samples taken at 14'-16' and 52'-54' bgs.

**Client:**

New York State Electric and Gas

**Boring ID: SB-105****Site Location:**Court Street  
Binghamton, NY**Borehole Depth:** 64.0 ft. bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample Int/Type	Blows / 6 inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
825		9	16-18 3-in SS	5 5 2 2	NA	1.2	0.0		Gray-brown fine SAND and fine to coarse GRAVEL, wet, no odor/staining/sheen.
									Yellow-brown fine Sand and fine to coarse GRAVEL, trace Silt, wet, no odor/staining/sheen.
									Dark gray fine SAND, some Gravel, wet, no odor/staining/sheen.
		10	18-20 3-in SS	2 3 2 8	NA	1.5	0.0		Dark brown fine to medium SAND, little fine to medium Gravel, trace Silt and Wood, wet, no odor/staining/sheen.
									Brown fine to medium SAND, little fine to medium Gravel, trace Silt, wet, no odor/staining/sheen.
20		11	20-22 3-in SS	2 14 17 16	NA	1.2	0.0		Dark brown fine to medium SAND, little fine to coarse Gravel, wet, no odor/staining/sheen.
									Brown fine to coarse GRAVEL, some medium to coarse Sand, little fine Sand, wet, no odor/staining/sheen.
		12	22-24 3-in SS	3 8 12 16	NA	0.5	0.0		Olive-brown fine to medium GRAVEL, some medium to coarse Sand, little fine Sand, wet, no odor/staining/sheen.
25		13	24-26 3-in SS	12 19 21 20	NA	0.6	0.0		Olive-brown fine to coarse GRAVEL, some medium to coarse Sand, little fine Sand, wet, no odor/staining/sheen.
815		14	26-28 3-in SS	12 14 12 12	NA	1.5	0.0		
		15	28-30 3-in SS	14 15 8 7	NA	1.0	0.0		
30									
		16	30-32 3-in SS	6 7 10 11	NA	0.4	0.0		
810									
		17	32-34 3-in SS	2 5 7 9	NA	0.0	0.0		No recovery.
35		18	34-36 3-in SS	12 10 11 12	NA	0.5	0.0		Olive-brown fine to coarse GRAVEL, some medium to coarse Sand, little fine Sand, wet, no odor/staining/sheen.

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29  
 Samples taken at 14'-16' and 52'-54' bgs.

**Client:**

New York State Electric and Gas

**Boring ID: SB-105****Site Location:**Court Street  
Binghamton, NY**Borehole Depth: 64.0 ft. bgs**

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows / 6 Inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
805		19	36-38 3-in SS	10 12 16 14	NA	0.2	0.0		Olive-brown fine to coarse GRAVEL, some medium to coarse Sand, little fine Sand, wet, no odor/staining/sheen.
		20	38-40 3-in SS	15 14 11 10	NA	0.0	0.0		No recovery.
40		21	40-42 3-in SS	21 14 12 10	NA	0.4	0.0		Olive brown fine to coarse GRAVEL, little fine to coarse Sand, wet, no odor/staining/sheen.
800		22	42-44 3-in SS	12 10 9 7	NA	0.1	0.0		
45		23	44-46 3-in SS	31 15 12 14	NA	0.2	0.0		
795		24	46-48 3-in SS	26 10 10 14	NA	0.2	0.0		
		25	48-50 3-in SS	17 14 14 10	NA	0.1	0.0		Olive brown fine to coarse GRAVEL and medium to coarse SAND, little fine Sand, wet, no odor/staining/sheen.
50		26	50-52	3 4 4 4	8	1.8	0.0		Brown fine to medium SAND, trace Silt and fine to medium Gravel, wet, no odor/staining/sheen.
790		27	52-54 3-in SS	WOR 2 5 6	NA	0.5	0.0		Olive brown fine to coarse GRAVEL, some fine to coarse Sand, trace Silt, wet, no odor/staining/sheen.
55		28	54-56 3-in SS	8 15 14 11	NA	0.2	0.0		

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29  
 Samples taken at 14'-16' and 52'-54' bgs.



## Client:





New York State Electric and Gas

Boring ID: **SB-105**

## Site Location:

Court Street  
Binghamton, NY

Borehole Depth: 64.0 ft. bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows / 6 Inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
78.5		29	56-58	5 4 4 7	8	0.3	0.0		Olive brown fine to coarse GRAVEL, some fine to coarse Sand, trace Silt, wet, no odor/staining/sheen.
60		30	58-60	10 11 16 14	27	0.3	0.0		
78.0		31	60-62 3-in SS	10 15 40 42	NA	1.0	0.0		Olive brown CLAY and SILT matrix embedded with fine to coarse GRAVEL, tight, hard, no odor/staining/sheen. [TILL]
		32	62-64	26 27 50/3 NA	NA	1.0	0.0		As above, with increased Clay and Silt content, harder, more tight, wet, no odor/staining/sheen. [TILL]
65									
77.5									
70									
77.0									
75									

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
Vert. datum: NGVD 29  
Samples taken at 14'-16' and 52'-54' bgs.

<b>Date Start/Finish:</b> 08/08/01 - 08/09/01 <b>Drilling Company:</b> Lyon Drilling <b>Driller's Name:</b> Harry Lyons <b>Drilling Method:</b> Hollow Stem Auger <b>Sampler Size:</b> 2-in. and 3-in. Split Spoon <b>Auger Size:</b> 4.25-in. ID <b>Rig Type:</b> CME 55-Truck Mount Rig	<b>Northing:</b> 766882.5 <b>Easting:</b> 1006834.09  <b>Casing Elevation:</b> NA <b>Surface Elevation:</b> 841.99 ft. AMSL <b>Borehole Depth:</b> 56 ft. bgs  <b>Descriptions By:</b> Michael K. Cobb	<b>Boring ID:</b> SB-106  <b>Client:</b> New York State Electrical and Gas  <b>Location:</b> Court Street Binghamton, NY
---	---	---

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows / 6 Inches	N - Value	Recovery (feet)	P/D Headspace (ppm)	Geologic Column	Stratigraphic Description
0									
		NA	0-1.1	NA	NA	NA	NA		Blacktop (Court street road surface). Solid steam auger to 1.1' bgs, no sample.
840		1	1.1-3	5 3 2 2	5	1.0	0.0		Dark brown fine SAND, little coarse Sand and fine Gravel, Coal fragments, dry to moist, no odor/staining/sheen.
		2	3-5	3 3 3 3	6	0.4	0.0		Red-brown fine SAND, little Silt, little medium to coarse Sand, moist, no odor/staining/sheen.
5									Red-brown fine SAND, some medium to coarse Sand and fine Gravel, moist, no odor/staining/sheen.
		3	5-7	5 5 4 2	9	1.5	0.0		As above, with Coal and Cinder fragments.
835									Reddish-tan SILT, trace coarse Sand, Coal fragments, moist, little oxidation staining, no odor/sheen.
		4	7-9.5	4 1 WOR WOR WOR	1	1.0	0.3		Dark olive fine SAND, some Silt, trace coarse Sand and fine Gravel, very loose, wet, faint, indistinct petroleum odor, no staining or sheen. [Overdrive spoon 0.5', rod falls from 8.0'-9.5' bgs]
10		5	9.5-11 3-in SS	3 6 3	NA	0.0	250		Olive SILT, trace brick fragments, black staining, trace amber NAPL, soft, wet, MGP-like odor.
									Tan SILT, trace Clay and fine Sand, stiff, moist to wet, little oxidation staining at 10.2' bgs.
830		6	11-13	3 3 4 5	7	0.9	16.7		Olive SILT and CLAY, trace Brick fragments (as coarse Sand), trace amber NAPL/sheens, blocky, wet, soft to medium stiff, slight MGP-type odor, trace horizontal laminations.
		7	13-15 3-in SS	3 2 2 3	NA	0.0	0.0		Olive SILT, little Clay, black staining, trace amber NAPL on fracture planes, blocky, wet, MGP-type odor.
15		8	15-17 3-in SS	2 3	NA	0.7	11.1		Fine to coarse SAND and fine to coarse GRAVEL, wet, sheens throughout, slight MGP-type odor.



**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29

## Client:
















New York State Electrical and Gas

Boring ID: SB-106

## Site Location:

Court Street  
Binghamton, NY

Borehole Depth: 56 ft. bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows / 6 Inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
825	8	15-17	3-in SS	4	NA	0.7	11.1		Soupy fine to coarse SAND and fine to coarse GRAVEL, wet, sheens throughout, slight MGP-type odor.
		17-19	3-in SS	30	NA	1.9	52.4		Dark gray to olive fine to medium GRAVEL, some fine to coarse Sand, trace Silt, wet, medium dense to dense, odor, trace sheens.
		19-21	3-in SS	WOR	NA	0.2	7.6		Dark gray to olive SILT, some fine Gravel, wet, soft, no odor/staining/sheen.
820	10	21-23	3-in SS	WOR	NA	1.4	5.1		Loose, rounded GRAVEL, trace sheens, wet (fines may have washed out), faint indistinct odor.
		23-25	3-in SS	WOR	NA	1.3	7.4		Olive-gray fine to coarse SAND and fine rounded GRAVEL, trace Silt, loose to medium dense, wet, no odor, sheens in water.
		25-27	3-in SS	WOR	NA	1.2	2.4		Olive-gray fine to coarse GRAVEL, some coarse Sand, little fine to medium Sand, wet, loose, soupy, trace sheens in spoon and odor as above.
815	12	27-29	3-in SS	14	0.5	1.8			As above, grading to olive-gray fine to medium SAND, some rounded to angular fine to coarse Gravel, wet, no sheen, faint MGP-type odor.
		29-31	3-in SS	17	NA	0.7	20.1		Olive-gray soupy fine to coarse SAND and fine to medium GRAVEL, wet, no sheens, slight MGP-type odor. [Poor recovery, much of material was washed from spoon]
		31-33	3-in SS	8	NA	1.5	3.3		Dark brown to black fine to medium SAND, little coarse Sand and fine to coarse rounded Gravel, slight odor, no staining or sheen.
810	15	33-35	3-in SS	7	NA	2.0	5.2		Dark gray to olive fine to coarse GRAVEL and fine to coarse SAND, trace Silt, medium dense to dense, no sheen or staining, slight odor, wet.
		35-37	3-in SS	WOR	NA	1.1	2.3		Olive-gray medium to coarse SAND and fine to medium GRAVEL, trace Silt, wet, trace odor as above, no staining or sheens.
									Olive-gray fine to medium SAND (lenses of predominantly fine Sand), trace fine to medium Gravel, wet, no odor/staining/sheens.
35	17								Olive well sorted fine to medium SAND, wet, very loose to loose, faint odor, no staining or sheen.
									
									

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

Remarks: Horiz. datum: NAD83-State Plane NY Central  
Vert. datum: NGVD 29

Client:  
New York State Electrical and Gas

Boring ID: **SB-106**

Site Location:  
Court Street  
Binghamton, NY

Borehole Depth: 56 ft. bgs

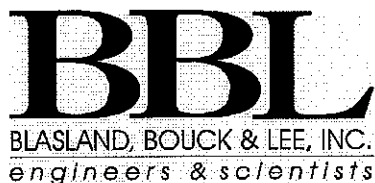
Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows / 6 Inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
805		18	35-37 3-in SS	6 9	NA	1.1	2.3		Olive well sorted fine to medium SAND, wet, very loose to loose, faint odor, no staining or sheen.
				1 2 3 5	5	1.1	1.8		Olive fine to medium well sorted SAND, very loose to loose, wet, faint odor, no staining or sheen.
40		19	37-39						As above, with trace Silt, faint odor, no staining or sheen.
		20	39-41	1 2 4 3	6	1.1	1.1		
800		21	41-43	WOR 1 3 7	4	1.3	20.7		
		22	43-45	WOR WOR 6 7	6	0.5	21.1		Olive-gray well sorted fine SAND, trace Silt, loose, wet, faint odor as above, no odor or sheen.
45				3 3 4 3	7	0.7	14.4		Fine to medium rounded GRAVEL lense, little fine to coarse Sand, no odor/staining/sheen.
795		23	45-47						Olive-gray fine to medium SAND, little coarse Sand and fine Gravel, wet, loose, faint odor as above, no staining or sheen.
		24	47-49	5 9 10 12	19	0.7	54		Olive-gray fine to coarse SAND and fine to medium GRAVEL, trace Silt, wet, faint odor as above, no staining ro sheen.
50		25	49-50	50/3	NA	0.0	0.0		No Recovery. Spoon refusal at 49.3' bgs.
		26	50-52	7 10 18 20	28	0.7	0.0		Olive-gray fine to coarse SAND and fine Gravel, some Clay, medium plasticity, blocky texture, hard and dense, moist, slight odor, no staining or sheen.
790				6 44 41 48	85	2.0	2.0		Brown medium well sorted SAND, little odor, no staining or sheen.
		27	52-54						Olive-gray SILT, some fine to coarse Sand and fine Gravel, trace odor, no staining or sheen. [TILL]
55		28	54-56	15 40 50/2	NA	0.8	2.7		As above, Gravel is composed of more Shale fragments than above. [TILL]

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

Remarks: Horiz. datum: NAD83-State Plane NY Central  
Vert. datum: NGVD 29

<b>Date Start/Finish:</b> 8/10/01 <b>Drilling Company:</b> Lyon Drilling Company <b>Driller's Name:</b> Harry Lyon <b>Drilling Method:</b> Hollow Stem Auger <b>Sampler Size:</b> 2-in. & 3-in. Split Spoon <b>Auger Size:</b> 4.25-in. ID <b>Rig Type:</b> Track CME 55	<b>Northing:</b> 766865.77 <b>Easting:</b> 1006774.63  <b>Casing Elevation:</b> NA <b>Surface Elevation:</b> 842.34 ft. AMSL <b>Borehole Depth:</b> 53 ft. bgs  <b>Descriptions By:</b> A. Roy-Perreault A. Roy-Perreault	<b>Boring ID:</b> <b>SB-107</b>  <b>Client:</b> New York State Electric and Gas  <b>Location:</b> Court Street Binghamton, NY
--	---	--

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows / 6 Inches	N - Value	Recovery (feet)	P/D Headspace (ppm)	Geologic Column	Stratigraphic Description
845									
0		NA	NA	NA	NA	NA	NA		Blacktop (Court Street road surface).
840		1	1-3	4 26 18 18	44	0.5	1.5	x x x x x x x x x x x x x x x	Light gray FILL consisting of Sand, some fine sand- to fine gravel-sized Concrete fragments , medium to dense, no odor/staining/sheen. Gray FILL consisting of fine to medium angular Gravel and fine to coarse Sand, dry, medium dense, no odor/staining/sheen.
5		2	3-5	7 7 5 3	13	2.0	1.3		Olive SILT and CLAY, little fine to coarse Sand, moist, no odor/staining/sheen.
		3	5-7	3 3 3 2	6	1.3	1.1		As above, trace fine bone, little white pulp.
835		4	7-9	WOR - 5 6	5	1.2	0.6		As above, wet. As above, dark gray stained, slight MGP-type odor, soft, wet
10		5	9-11	11 10 8 7	18	0.4	27		Medium brown fine to medium GRAVEL, little fine to coarse Sand, loose, faint odor as above, no odor/staining/sheen.
830		6	11-13 3-in SS	3 4 5 6	NA	2.0	56.2		Olive to gray SILT, soft, blocky, horizontal bedding, little light amber NAPL on bedding planes (11.5'-11.9'), @ 12.8', little mpg odor.
		7	13-15 3-in SS	WOR 3 5 6	NA	2.0	2.3		As above, trace rounded fine Gravel, very soft (13.0' - 13.8') to soft (13.8' - 15.0'), trace amber NAPL on bedding, vertical fractures, and roots, wet, MGP-type odors.
15		8	15-17 3-in SS	5 7	NA	2.0	27		Fine to coarse GRAVEL and fine to coarse SAND, little Silt, trace amber NAPL, sheen, MGP-type odor, wet, soupy, loose.



**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29  
 Sample collected from 6'-8' bgs.

## Client:

New York State Electric and Gas

Boring ID: **SB-107**

## Site Location:

Court Street  
Binghamton, NY

Borehole Depth: 53 ft. bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows / 6 Inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
8		8	15-17 3-in SS	7 8	NA	2.0	27		Fine to coarse GRAVEL and fine to coarse SAND, little Silt, trace amber NAPL, sheen, MGP-type odor, wet, soupy, loose.
825		9	17-19 3-in SS	12 9 5 5	NA	1.8	1.8		Dark gray to brown fine to coarse SAND and fine to medium rounded to subrounded GRAVEL, trace Silt, sheen on water, wet, loose to medium dense, MGP-type odor.
20		10	19-21 3-in SS	7 7 3 5	NA	1.7	1.5		
820		11	21-23 3-in SS	9 10 10 10	NA	2.0	1.6		As above, no staining or sheens, slight MGP-type odors.
25		12	23-25 3-in SS	6 16 16 20	NA	1.6	0.0		
815		13	25-27 3-in SS	15 12 11 15	NA	2.0	1.7		
30		14	27-29 3-in SS	22 8 8 -	NA	0.7	-		
810		15	29-31 3-in SS	7 10 7 7	NA	0.2	0.7		Recovered material is same as above, majority of material appears to have fallen/washed out of the spoon, becoming more loose, more soupy, no odor/staining/sheen.
35		16	31-33 3-in SS	7 13 8 -	NA	0.5	1.1		Dark gray to brown fine to coarse SAND and fine to medium GRAVEL, medium dense, slight odor, no sheen or staining. Dark gray to brown fine to coarse SAND, some fine to medium Gravel, medium dense, slight odor, no sheen or staining.
		17	33-35 3-in SS	6 6 4 7	NA	1.1	6.7		Dark gray well sorted fine to medium SAND, trace fine Gravel, increase in fine to medium Gravel to SAND and rounded GRAVEL from 33.5'-33.6' bgs, loose, wet, faint odor, no staining or sheen.
		18	35-37	4 3	6	1.2	2.4		Dark gray to brown fine to medium SAND, some coarse Sand and fine Gravel, loose, wet, faint odor, no staining or sheen.

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

Remarks: Horiz. datum: NAD83-State Plane NY Central  
Vert. datum: NGVD 29  
Sample collected from 6'-8' bgs.

## Client:

New York State Electric and Gas

Boring ID: **SB-107**

## Site Location:

Court Street  
Binghamton, NY



































Borehole Depth: 53 ft. bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows / 6 Inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
80.5		18	35-37	3 3	6	1.2	2.4		Dark gray-brown fine to medium GRAVEL, some fine to coarse Sand, trace Silt, loose, wet, faint odor, no staining or sheen.
				5					Fine to medium well sorted SAND as above from 35'-35.5' bgs.
		19	37-39	5 1 1	6	0.8	0.5		Dark gray to brown GRAVEL as above from 35.5'-37' bgs.
40		20	39-41	4 4 4 4	8	1.0	0.5		
80.0		21	41-43 3-in SS	4 2 WOR 3	NA	NA	0.5		No recovery.
45		22	43-45 3-in SS	15 3 5 8	NA	1.0	-		Fine to coarse GRAVEL, little fine Sand, very soupy, very loose to loose, no odor/staining/sheen.
		23	45-47 3-in SS	4 3 3 5	NA	2.0	2.0		
79.5		24	47-49 3-in SS	5 6 7 6	NA	1.8	0.7		As above, except trace fine Sand and Silt, no odor/staining/sheen.
50		25	49-51 3-in SS	33 21 15 16	NA	1.3	0.0		Medium gray fine SAND and fine to medium GRAVEL, dense, wet, no odor/staining/sheen.
79.0			51-53	33 22 44 50	66	1.1	0.0		Light olive SILT, little fine Sand matrix, medium to coarse Sand and fine Gravel clasts, angular to subrounded, mostly shale, hard, no odor/staining/sheen. [TILL]
55									

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

Remarks: Horiz. datum: NAD83-State Plane NY Central  
Vert. datum: NGVD 29  
Sample collected from 6'-8' bgs.

<b>Date Start/Finish:</b> 8/13/01 <b>Drilling Company:</b> Lyon Drilling Company <b>Driller's Name:</b> Harry Lyon <b>Drilling Method:</b> Hollow Stem auger <b>Sampler Size:</b> 2-in. & 3-in. Split Spoon <b>Auger Size:</b> 4.25-in. ID <b>Rig Type:</b> Track CME 55	<b>Northing:</b> 766835.7 <b>Easting:</b> 1006686.51  <b>Casing Elevation:</b> NA <b>Surface Elevation:</b> 842.72 ft. AMSL <b>Borehole Depth:</b> 51 ft. bgs  <b>Descriptions By:</b> A. Roy-Perreault	<b>Boring ID:</b> <b>SB-108</b>  <b>Client:</b> New York State Electric and Gas  <b>Location:</b> Court Street Binghamton, NY
--	--	--

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample Int/Type	Blows / 6 Inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
845									
0									
		1	0-2	NA	NA	1.0	0.0		Blacktop (Court Street road surface).
									Hard SAND and GRAVEL observed on the wall of the hole. No sample taken.
									CONCRETE, auger to 2' bgs.
840				1					Dark brown FILL consisting of fine to coarse Sand, little fine to medium Gravel, trace Coal and Brick fragments, dry, very loose to loose, no odor/staining/sheen.
		2	2-4	2	5	0.9	0.0		Dark brown FILL consisting of Clay and Silt, moist, soft to medium plasticity, no odor/staining/sheen.
				4					
				7					
5				3					Dark brown FILL consisting of fine Sand, some medium to coarse Sand and fine to medium Gravel, little Silt, trace Clay and Coal fragments, very loose to loose, no odor/staining/sheen.
		3	4-6	3	6	0.9	0.0		
				2					
				2					
				1					FILL as above, except some Clay, moist to wet, no odor/staining/sheen.
		4	6-8 3-in SS	2	NA	0.9	0.0		
				4					
835				3					
				9					Dark brown fine SAND and SILT, little Clay, trace medium Gravel, wet to moist, no odor/staining/sheen.
				4					
		5	8-10	3	2	1.0	0.0		Olive CLAY, little Silt, wet and very soft, black staining, slight odor, no sheen.
				1					
10				1					Dark gray plastic CLAY, some Silt, wet, very soft and blocky texture, black staining, no odor, no sheen in water.
		6	10-12	1	5	1.5	0.0		
				1					
				1					
830				1					Dark gray to olive gray SILT, little Clay, low plasticity, wet, blocky texture, trace oxidation and black staining, no odor or sheen.
		7	12-14	2	4	1.5	0.0		
				3					
				4					
				2					As above but with more oxidation staining and slight odor.
				2					
15				2					
		8	14-16	2	4	1.8	0.1		Dark gray fine to coarse SAND and GRAVEL, little Silt, soupy texture, wet, very loose, no odor/staining/sheen.
				2					
				2					
				3					

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29  
 Samples collected from 6'-8' (with duplicate), 18'-20', and  
 35'-37' bgs.  
 Water level measured to be 14' bgs during drilling.



## Client:








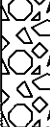

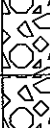

New York State Electric and Gas

Boring ID: SB-108

## Site Location:

Court Street  
Binghamton, NY

Borehole Depth: 51 ft. bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows / 6 Inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
20	825	9	16-18	3	31	2.0	0.0		Dark gray fine to coarse SAND and fine to medium GRAVEL, little Silt, soupy texture, wet, very loose, slight odor, no staining or sheen.
				2					
				2					
				2					
25	820	10	18-20 3-in SS	6	NA	2.0	0.3		As above but with coarse Gravel, sheen observed in drilling water.
				13					
				18					
				24					
30	815	11	20-22 3-in SS	28	NA	1.8	0.0		As above but dense, higher content in fines, little odor, no staining or sheen.
				30					
				30					
				28					
35	810	12	22-24 3-in SS	30	NA	0.9	0.1		Dark brown fine to coarse GRAVEL, some fine to coarse Sand, trace Silt, medium dense to dense, little odor, stronger odor from 26' - 28' bgs.
				30					
				20					
				11					
35	810	13	24-26 3-in SS	13	NA	0.9	0.0		
				17					
				17					
				14					
35	810	14	26-28 3-in SS	15	NA	0.5	0.4		
				12					
				8					
				9					
35	810	15	28-30 3-in SS	6	NA	1.0	0.0		As above with larger Gravel pieces, amber staining from Silt increasing at 30' bgs. Negative shake test.
				13					
				13					
				19					
35	810	16	30-32 3-in SS	14	NA	0.8	0.4		
				14					
				11					
				10					
35	810	17	32-33.5 3-in SS	12	NA	0.8	0.6		Dark brown fine to medium GRAVEL, some fine to coarse Sand, Trace Silt, medium dense to dense, little odor.
				9					
				8					
35	810	18	33.5-35 3-in SS	13	NA	0.5	0.5		Dark brown fine to coarse GRAVEL, some fine to coarse Sand, Trace Silt, medium dense to dense, medium odor.
				13					
				10					
35	810	19	35-37 3-in SS	13	NA	0.8	1.0		As above, strong odor, no staining or sheen.
				20					

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
Vert. datum: NGVD 29  
Samples collected from 6'-8' (with duplicate), 18'-20', and  
35'-37' bgs.  
Water level measured to be 14' bgs during drilling.

**Client:**

New York State Electric and Gas

Boring ID: **SB-108****Site Location:**Court Street  
Binghamton, NY

Borehole Depth: 51 ft. bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows / 6 Inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
		19	35-37 3-in SS	28 28	NA	0.8	1.0		As above, strong odor, no staining or sheen.
805		20	37-39 3-in SS	24 19 20 20	NA		0.2		Dark brown fine to coarse GRAVEL and fine to coarse SAND, trace Silt, medium dense to dense, orangish staining, strong odor, no sheen.
40		21	39-41 3-in SS	16 24 13 13	NA	0.7	0.7		Dark brown fine to coarse SAND, some fine to medium Gravel, little Clay and Silt, wet, dense, slight odor, no sheen or staining.
		22	41-43	1 2 5 6	7	1.0	0.2		Dark brown fine to medium SAND, trace coarse Sand, slight odor, no staining or sheen.
800		23	43-45	3 6 7 10	13	0.9	0.1		Dark olive-gray fine to medium SAND, well sorted, faint odor, loose to medium dense, no sheen or staining.
45		24	45-47	2 6 6 6	12	1.5	0.0		As above, with trace coarse Sand, wet, no odor or sheen.
		25	47-49	3 4 7 7	11	0.3	0.0		SILT layer with fine Sand, black non-oily staining throughout (<0.1') wet, medium stiff, no sheen or odor.
795									Olive CLAY and SILT, fine to coarse Sand and fine Gravel, medium stiff to stiff, moist, no odor/staining/sheen.
50		26	49-51	3 9 12 20	21	0.4	0.0		Olive-gray SILT and CLAY, some angular to rounded fine to medium Gravel, hard, no odor/staining/sheen. [TILL]
790									
55									

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

**Remarks:** Horiz. datum: NAD83-State Plane NY Central

Vert. datum: NGVD 29

Samples collected from 6'-8' (with duplicate), 18'-20', and 35'-37' bgs.

Water level measured to be 14' bgs during drilling.

<b>Date Start/Finish:</b> 08/15/01 <b>Drilling Company:</b> Lyon Drilling <b>Driller's Name:</b> Harry Lyon <b>Drilling Method:</b> Hollow Stem Auger <b>Sampler Size:</b> 2-in. and 3-in Split Spoon <b>Auger Size:</b> 4.25-in. ID <b>Rig Type:</b> CME 55-Truck Mount Rig	<b>Northing:</b> 766782.95 <b>Easting:</b> 1006524.7  <b>Casing Elevation:</b> NA <b>Surface Elevation:</b> 843.67 ft. AMSL <b>Borehole Depth:</b> 55 ft. bgs  <b>Descriptions By:</b> Michael K. Cobb	<b>Boring ID:</b> <b>SB-109</b>  <b>Client:</b> New York State Electric and Gas  <b>Location:</b> Court Street Binghamton, NY
--	---	--

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows / 6 Inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
845									
0		1	0-1	NA	NA	0.0	0.0		Blacktop (Court Street road surface).
		2	1-3	24 16 6 6	22	1.5	1.1		Dark brown to black SILT and fine SAND, and gray crushed fine to medium Gravel, Coal chunks, dry, no odor/staining/sheen. Dark SILT and fine SAND, little coarse Sand and fine Gravel (fill), dry, crumbly, no odor/staining/sheen.
840		3	3-5	2 3 9 6	12	0.6	1.6		Olive SILT, little fine Sand, trace coarse Sand, fine Gravel, oxidized/mottled, moist, medium stiff, no odor/staining/sheen.
5		4	5-7	2 3 3 4	6	1.1	1.2		Dark brown fine SAND, some to little Silt, fine Sand, and fine Gravel, no odor/staining/sheen. Light olive brown SILT, little Clay, medium plastic, moist, blocky, horizontal bedding, no odor/staining/sheen.
		5	7-9	3 4 6 6	10	1.0	0.0		As above, with increasing oxidation/mottling, trace black organic matter, moist, no odor/staining/sheen.
835		6	9-11	1 2 2 3	4	2.0	0.6		As above, except moist, grading to wet, no odor/staining/sheen.
10		7	11-13	3 3 5 6	8	2.0	0.0		Light olive brown SILT, low to medium plastic, horizontal bedding, little oxidation/mottling, moist to wet, no odor/staining/sheen.
		8	13-15	3 4 5 6	9	2.0	0.0		As above, trace black organic material, moist, no odor/staining/sheen.
830		9	15-17	3 3	8	1.5	0.0		As above, trace rounded fine Gravel embedded in matrix.
15									

BBL

BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29  
 Samples collected from 10'-11', 13'-15', & 17'-19' bgs.

## Client:

New York State Electric and Gas

Boring ID: SB-109

## Site Location:

Court Street  
Binghamton, NY

Borehole Depth: 55 ft. bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows / 6 Inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description			
20	825	9	15-17	5	8	1.5	0.0		As above, trace rounded fine Gravel embedded in matrix.			
				5					As above, grading to medium gray.			
		10	17-19	2	15	1.0	NA		Medium gray fine SAND, some Silt, wet, soft, no odor/staining/sheen.			
				6					Dark gray-olive fine SAND, little coarse Sand and fine Gravel, trace Silt, wet, faint MGP-type odor, no staining or sheen.			
				9								
		11	19-21 3-in SS	12				NA	0.0	NA		Olive to multicolored fine to coarse GRAVEL, some fine to coarse Sand, trace Silt, wet, soupy, loose, faint MGP-odor, no staining or sheen.
				3								
				8								
		12	21-23 3-in SS	7	NA	1.5	0.0		Olive-gray fine to coarse GRAVEL, rounded to subangular, some fine to coarse Sand, little Silt, no odor/staining/sheen.			
				9					Black well sorted medium SAND, trace coarse Sand and Gravel, medium dense, faint MGP odor, no staining or sheen.			
14												
25	820	13	23-25 3-in SS	6	NA	1.8	0.0		Dark gray medium SAND, little coarse Sand and fine rounded Gravel, loose, wet, parting fine Sand at 24' bgs, faint odor as above, no staining or sheen.			
				5								
				3								
		14	25-27	4	7	2.0	0.0					
				3								
				1								
		15	27-29	5	11	1.5	0.0		Dark gray fine SAND, little Silt, seam with some Silt at 27.4' bgs, trace fine rounded Gravel, no odor/staining/sheen.			
				5					Olive fine SAND, well sorted, no odor/staining/sheen.			
				6								
		30	815	16	29-31	2	8	1.1	0.0		Medium gray very fine SAND, well sorted, occasional Silt laminae with oxidation staining, loose, no odor or sheen.	
3	Olive fine SAND, trace Silt, loose, no odor/staining/sheen.											
5												
17	31-33			6	2	1.8	0.0		Medium gray fine SAND, loose, wet, no odor/staining/sheen.			
				WOR								
				1					Olive-gray to brown fine SAND, trace coarse Sand, fine Gravel, rounded, no odor/staining/sheen.			
18	33-35			1	8	1.8	0.1		Olive gray brown fine SAND, little medium Sand, loose, wet, no odor/staining/sheen.			
				3								
				5								
35	810			19	35-37	2	13	2.0	0.0			
		6										

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists













Remarks: Horiz. datum: NAD83-State Plane NY Central  
Vert. datum: NGVD 29  
Samples collected from 10'-11', 13'-15', & 17'-19' bgs.

Client:  
New York State Electric and Gas

Boring ID: **SB-109**

Site Location:  
Court Street  
Binghamton, NY

Borehole Depth: 55 ft. bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows / 6 Inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
40	805	19	35-37	7 7	13	2.0	0.0		Olive gray brown fine SAND, little medium Sand, loose, wet, no odor/staining/sheen.
		20	37-39 3-in SS	5 5 8	13	1.0	0.0		Olive gray fine SAND, little medium Sand, trace Silt, loose to medium dense, wet, no odor/staining/sheen.
		21	39-40	4 5	5	1.0	0.0		
		22	40-42	3 6 7 9	13	1.0	0.0		Dark gray fine to medium SAND, little coarse Sand and fine rounded Gravel, trace Silt, medium dense, faint odor, no staining or sheen.
45	800	23	42-44	8 5 8 50/0.4	17	1.3	0.0		Olive-gray medium to coarse SAND, little fine Sand, Silt, and fine Gravel, wet, medium dense, no odor/staining/sheen.
		NA	44-44.5	NA	NA	NA	NA		Olive-gray SILT and fine SAND matrix, coarse Sand and fine Gravel clasts, grading stiff to hard, no odor/staining/sheen. [TILL]
		24	44.5-46.5	11 13 8 10	21	1.0	0.0		
50	795	25	46.5-48.5	16 20 8 22	28	1.2	0.0		Olive gray fine SAND and SILT matrix, some coarse Sand and angular to subangular fine to medium Gravel, little soupy, no odor/staining/sheen.
		26	48.5-50.5	17 5 7 29	12	1.0	0.0		Olive gray SILT, little Clay and fine Sand matrix, sticky, some angular fine Gravel and coarse Sand clasts, wet, little soupy, non cohesive, no odor/staining/sheen.
		NA	50.5-51	NA	NA	NA	NA		
		27	51-53	12 8 14 15	22	1.2	0.0		As above, but cohesive, no odor/staining/sheen.
55	790	28	53-55	11 21 27 28	48	0.9	0.9		Olive gray SILT and CLAY matrix, fine to medium subangular and subrounded Gravel and coarse Sand clasts, broken Gravel-Cobble, wet, hard, no odor/staining/sheen. [TILL]

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

Remarks: Horiz. datum: NAD83-State Plane NY Central  
Vert. datum: NGVD 29  
Samples collected from 10'-11', 13'-15', & 17'-19' bgs.

<b>Date Start/Finish:</b> 09/17/01 <b>Drilling Company:</b> Lyon Drilling <b>Driller's Name:</b> Harry Lyon <b>Drilling Method:</b> Hollow Stem Auger <b>Sampler Size:</b> 2-in. & 3-in. Split Spoon <b>Auger Size:</b> 4.25-in. ID <b>Rig Type:</b> CME 55-Truck Mount Rig	<b>Northing:</b> 767098.16 <b>Easting:</b> 1006195.8  <b>Casing Elevation:</b> NA <b>Surface Elevation:</b> 841.89 ft. AMSL <b>Borehole Depth:</b> 10 ft. bgs  <b>Descriptions By:</b> Michael K. Cobb	<b>Boring ID:</b> <b>SB-110</b>  <b>Client:</b> New York State Electric and Gas  <b>Location:</b> Court Street Binghamton, NY
---	---	--

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample Int/Type	Blows / 6 Inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0									
		1	0.5-1.6	NA	NA	0.0	0.0		Blacktop (Brandywine Ave. road surface).
									CONCRETE.
840		2	1.6-3.0	5 7 11	12	0.9	0.0		Reddish brown FILL consisting of fine Sand and Silt, some coarse Sand and fine rounded to angular Gravel, trace Coal, dry to moist, no odor/staining/sheen.
		3	3-5	10 5 4 3	9	0.3	0.0		
5		4	5-7 3-in SS	9 11 7 7	NA	0.5	0.0		As above, moist. At 6.0' bgs, driller reports material is softer.
835		5	7-9 3-in SS	3 4 8 7	NA	1.5	0.0		Reddish-brown SILT, little medium coarse Sand and fine rounded Gravel, no odor/staining/sheen.
									Olive gray SILT, little black organic materials (possible staining), little coarse Sand, fine to medium rounded Gravel, moist, no odor/staining/sheen.
		6	9-10 3-in SS	4 8	NA	1.0	0.0		As above, with increased rust mottling and decreased organic material. (No water in the borehole, opened to 10.0')
10									
830									
15									



**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29  
 Sample collected from 7'-9' bgs.



<b>Date Start/Finish:</b> 09/17/01 <b>Drilling Company:</b> Lyon Drilling <b>Driller's Name:</b> Harry Lyon <b>Drilling Method:</b> Hollow Stem Auger <b>Sampler Size:</b> 2-in. & 3-in. Split Spoon <b>Auger Size:</b> 4.25-in. ID <b>Rig Type:</b> CME 55-Truck Mount Rig	<b>Northing:</b> 766963.13 <b>Easting:</b> 1006223.28  <b>Casing Elevation:</b> NA <b>Surface Elevation:</b> 846.08 ft. AMSL <b>Borehole Depth:</b> 10 ft. bgs  <b>Descriptions By:</b> Michael K. Cobb	<b>Boring ID:</b> <b>SB-112</b>  <b>Client:</b> New York State Electric and Gas  <b>Location:</b> Court Street Binghamton, NY
---	--	--

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows / 6 Inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0									
845		1	0-2	2 5 7 6	12	1.1	0.0		Medium brown SILT and fine SAND, organics (roots), moist, no odor/staining/sheen.
									Light brown fine SAND, some medium to coarse Sand, loose, dry, no odor/staining/sheen.
		2	2-4	5 9 19 29	28	2.0	0.0		Medium brown fine SAND, some coarse Sand and fine Gravel, trace Coal, moist.
5		3	4-6 3-in SS	4 10 12 18	NA	1.5	0.0		Black, white, red brown mixed FILL consisting of Coal, Cinders, Ash, medium to coarse Sand, fine to medium Gravel, moist, no odor/staining/sheen.
840									Medium brown fine to coarse SAND and fine to coarse subrounded GRAVEL, moist, no odor/staining/sheen.
		4	6-8 3-in SS	7 6 4 6	NA	1.2	0.0		As above, little Silt, little oxidation mottling, moist, no odor/staining/sheen.
		5	8-10 3-in SS	5 7 8 12	NA	1.2	0.0		As above, with fragments of red Sandstone, black shale flakes, moist, no odor/staining/sheen.
10									
835									
15									



**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29  
 Sample collected from 4'-6' bgs.



**Boring ID:** SB-201

**Client:** New York State Electric and Gas

**Location:** Court Street  
Binghamton, NY

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
*engineers & scientists*

Page: 1 of 3

**Client:**  
New York State Electric and Gas

**Site Location:**  
Court Street  
Binghamton, NY

**Boring ID: SB-201**

**Borehole Depth: 54 ft. bgs**

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows / 6 Inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
20 825		5	16-18	2	8	1.4	58.4		Olive-gray SILT, little Clay, trace black oily staining along bedding planes, blocky, horizontal bedding, moist to wet, rust mottling, MGP odor. Sheens and little black oily staining (trace black NAPL) along bedding planes from 14'-16' bgs.
				4					
				4					
				5					
25 820		6	18-20	WOR	NA	0.8	28.3		Dark olive fine to coarse SAND and fine GRAVEL, little Silt, trace sheen (silvery), trace black oily NAPL, loose.
				WOR					
				3					
				4					
30 815		7	20-22	4	12	1.4	15.1		Dark olive fine to coarse SAND, some fine Gravel, heavy amber/rainbow sheens, trace spots of oily NAPL (no blebs), wet, MGP odor.
				6					
				6					
				8					
35 810		8	22-24	6	16	0.8	0.5		As above with trace silvery sheens, no NAPL, MGP odor.
				7					
				9					
				7					
30 815		9	24-26	7	6	0.7	0.0		Dark olive-gray fine to coarse SAND, little coarse Sand and fine to medium Gravel, trace sheens, no NAPL, no odor.
				2					
				4					
				8					
30 815		10	26-28	6	8	0.5	68.5		Dark olive fine to coarse SAND and fine GRAVEL, partially saturated with black tar (medium viscosity) in last 0.03'.
				4					
				4					
				4					
30 815		11	28-30	2	7	0.3	0.0		Olive grey fine SAND, trace rounded fine Gravel, well sorted, trace sheens, no tar/NAPL, wet.
				3					
				4					
				5					
30 815		12	30-32 3-in SS	6	NA	1.2	0.0		As above, medium Sand lens from 32.5' to 32.7' bgs.
				7					
				10					
				10					
30 815		16	32-34 3-in SS	6	NA	1.3	0.0		As above, rust colored banding at 35.5'-35.6' bgs, and a 1 cm wide lens of red SILT and CLAY, no sands at 36.7' bgs, no odor/staining/sheen throughout interval.
				6					
				7					
				7					
35 810		14	34-36 3-in SS	6	NA	1.3	0.0		As above, rust colored banding at 35.5'-35.6' bgs, and a 1 cm wide lens of red SILT and CLAY, no sands at 36.7' bgs, no odor/staining/sheen throughout interval.
				9					
				9					
				10					

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
Vert. datum: NGVD 29  
Sample collected from 14'-16' bgs.

**Client:**

New York State Electric and Gas

Boring ID: **SB-201****Site Location:**Court Street  
Binghamton, NY

Borehole Depth: 54 ft. bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows / 6 Inches	N Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
40 805	15	36-38 3-in SS		7	NA	1.2	0.0		Light olive fine SAND, well sorted, little reddish banding at 36-36.5' bgs, no sheens, no NAPL, no odor, wet.
				10					
				7					
				12					
40 805	16	38-40 3-in SS		7	NA	1.5	0.0		As above but no red banding, little Silt in <1/2" bands at 38-38.2' bgs, no odor/staining/sheen.
				10					
				12					
				12					
40 805	17	40-42		5	14	1.2	0.0		Olive gray-brown fine SAND, trace Silt throughout, plus trace partings Silt, wet, no odor/staining/sheen.
				8					
				6					
				5					
40 805	18	42-44		5	10	1.2	0.0		As above, little reddish fine to medium Sand at 42-42.5' bgs.
				5					
				5					
				6					
45 800	19	44-46		8	14	1.2	0.0		Olive gray-brown fine to medium SAND, seam of very fine Sand from 44.2-44.3' bgs, well sorted, no odor/staining/sheen. Olive-gray fine to medium SAND, little coarse Sand and fine rounded Gravel, loose, wet, no odor/staining/sheen.
				8					
				6					
				8					
45 800	20	46-48		2	5	1.5	0.0		Olive gray fine to medium SAND, trace Silt, wet, loose, 1/2" seam red SILT with little Clay at 47.5' bgs, possible trace sheens (may be from water column), trace coarse Sand and fine rounded Gravel with trace sheen from 48'-48.3' bgs.
				2					
				3					
				5					
50 795	21	48-50		5	15	1.6	0.0		Brown fine SAND, little Silt, wet, no odor/staining/sheen.
				6					
				7					
				8					
50 795	22	50-52		7	26	1.1	0.0		Brown fine to medium SAND well sorted, no odor/staining/sheen.
				9					
				17					
				15					
50 795	23	52-54		50/ 0.7 NA	NA	0.1	0.0		Olive-gray SILT AND CLAY matrix, coarse Sand and fine Gravel clasts, dense, moderately cohesive, no odor/staining/sheen. [TILL]
				NA					
				NA					
				NA					
55 790									

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29  
 Sample collected from 14'-16' bgs.

<b>Date Start/Finish:</b> 09/11/01 <b>Drilling Company:</b> Lyon Drilling Company <b>Driller's Name:</b> Harry Lyon <b>Drilling Method:</b> Hollow Stem Auger <b>Sampler Size:</b> 2-in. Split Spoon <b>Auger Size:</b> 4.25-in. ID <b>Rig Type:</b> Track CME 55	<b>Northing:</b> 767047.42 <b>Easting:</b> 1006463.39  <b>Casing Elevation:</b> NA <b>Surface Elevation:</b> 844.43 ft. AMSL <b>Borehole Depth:</b> 14 ft. bgs  <b>Descriptions By:</b> Michael Cobb	<b>Boring ID:</b> SB-202  <b>Client:</b> New York State Electric and Gas  <b>Location:</b> Court Street Binghamton, NY
---	---	---


Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows / 6 Inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
845									
0									Gravel Topfill. Blind auger to 6.0' bgs, Concrete slab encountered at 4.1' bgs.
5	840	NA	0-6	NA	NA	NA	NA		
		1	6-8	WOH 1 1 1	2	1.5	42.6		Medium to coarse SAND as cinders, few fine Gravel, little Silt, loose, slight MGP odor, staining, no sheen, wet.
		2	8-10	1 WOH 6 3	6	1.8	91.2 14.7		As above, rainbow sheens, trace blebs of black oily NAPL.
10	835								Gray SILT and CLAY, grading to olive-gray, blocky soft, black stained, rust mottling from 9-9.4' bgs, wet.
		3	10-12	2 5 6 6	11	1.7	39.9		Light brown red mottled SILT, blocky, horizontal bedding (sheens in wash may impact PID), no internal staining, sheen, or odor.
		4	12-14	2 6 7 7	13	1.6	32.4		
15	830								



**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29

<b>Date Start/Finish:</b> 09/14/01 <b>Drilling Company:</b> Lyon Drilling Company <b>Driller's Name:</b> Harry Lyon <b>Drilling Method:</b> Hollow Stem Auger <b>Sampler Size:</b> 3-in. Split Spoon <b>Auger Size:</b> 4.25-in. ID <b>Rig Type:</b> Truck CME 55	<b>Northing:</b> 766809.75 <b>Easting:</b> 1006406.15  <b>Casing Elevation:</b> NA <b>Surface Elevation:</b> 844.82 ft. AMSL <b>Borehole Depth:</b> 1 ft. bgs  <b>Descriptions By:</b> Michael Cobb	<b>Boring ID:</b> SB-204  <b>Client:</b> New York State Electric and Gas  <b>Location:</b> Court Street Binghamton, NY
---	--	---

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows / 6 Inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	845								
		NA	0-14	NA	NA	NA	NA		Auger through Test Pit from 0 - 14' bgs.
5	840								
10	835								
		1	14-14.3	50/0.3	NA	0.2	NA	0.2/0.3	Fine to coarse GRAVEL, soupy, heavy black tar (dripping off spoon), Wood fragments, strong MGP-type odor.
15	830	NA	14.3-15	NA	NA	NA	NA		Auger refusal at 15' bgs.

 <b>BLASLAND, BOUCK &amp; LEE, INC.</b> <i>engineers &amp; scientists</i>	<b>Remarks:</b> Horiz. datum: NAD83-State Plane NY Central Vert. datum: NGVD 29
--	--

# **Monitoring Wells and Piezometers**



Well No. MW931S

Project NYSEG

Location: Court St., Binghamton, NY

BLASLAND & BUCK ENGINEERS, P.C.  
ENGINEERS & SCIENTISTS

Date Start/Finish: 5/28/93 - 5/28/93

Drilling Company: Parratt Wolf Inc.

Driller's Name: Doug Richmond

Rig Type: CME Mobil - 57

Spoon Size: 2-inch I.D.

Hammer Weight: 140

Height of Fall: 30-inches

Drilling Method: HSA

Bit Size: Auger Size: 4 1/2-inch ID

Northing:

Easting:

Well Casing Elev.: ft.

Corehole Depth: 20.7 ft.

Borehole Depth: 20.7 ft.

Ground Surface Elev.: ft.

General Location:

Abandoned

Depth (Ft)	Sample/Run Number	Sample/Int/Type	Blows/6 in.	N	Recovery (Ft)	Recovery (%)	RQD (%)	PID Field (ppm)	PID Headspace (ppm)	Drilling Water Level	Geologic Col	Stratigraphic Description	Misc. Test	Well Column	Well Materials
0												Brown fine to coarse SAND and fine to coarse GRAVEL, dry, loose.  grades with little brick fragments.			2-inch diameter stainless steel (SS) well riser 10.3' - 2.4' above ground level
1															Cement surface pad 1.5' - 0.0'
2															Cement/bentonite grout 5.4' - 1.5'
3															
4															
5															
6															
7															Bentonite seal 7.8' - 5.4'
8															
9															Grade # 00 Silica Sand pack 8.3' - 7.8'
10															
11												Brown gray SILT and fine to medium GRAVEL, some fine to coarse sand, moist, loose.			
12															
13															
14															
15															0.010-inch slot stainless steel (SS) well screen 20.3' - 10.3'
16												Wet at 15.5. grades with little oil globules.			Grade # 0 Silica Sand pack 20.7' - 8.3'
17															
18															
19												Brown fine to coarse SAND and fine to medium GRAVEL, some silt, trace clay, some coal tar residues in matrix, wet, very loose.			
20															
Geologist Initials: TRO										Remarks:			Water Levels		
Project No.: 130.08													Date	Time	Elevation



BLASLAND & BOUCK ENGINEERS, P.C.  
ENGINEERS & SCIENTISTS

Well No. MW931S

Project NYSEG

Location: Court St., Binghamton, NY

Date Start/Finish: 5/28/93 - 5/28/93  
Drilling Company: Parrott Wolf Inc.  
Driller's Name: Doug Richmond  
Rig Type: CME Mobil - 57  
Spoon Size: 2-inch I.D.  
Hammer Weight: 140  
Height of Fall: 30-inches  
Drilling Method: HSA  
Bit Size: Auger Size: 4 1/2-inch ID

Northing:  
Easting:  
Well Casing Elev.: ft  
Corehole Depth: 20.7 ft  
Borehole Depth: 20.7 ft  
Ground Surface Elev.: ft

General Location:  
Abandoned

Depth (Ft.)	Sample/Run Number	Sample/Int/Type	Blows/6 in.	N	Recovery (Ft.)	Recovery (%)	RQD (%)	PID Field (ppm)	PID Headspace (ppm)	Drilling Water Level	Geologic Col.	Stratigraphic Description	Misc. Test	Well Column	Well Materials
20															
21															
22															
23															
24															
25															
26															
27															
28															
29															
30															
31															
32															
33															
34															
35															
36															
37															
38															
39															
40															
Geologist Initials: TRO										Remarks:			Water Levels		
Project No.: 130.08													Date	Time	Elevation

Bottom of boring at 20.7 ft.

**NOTES:**

Augered 0.0' - 20.7' feet without sampling.

Characterization of MW931S was determined by MW931D

Well MW931S was abandoned and grouted to the surface.

NR - No recovery

NA - Not available

Water level obtained 7/7/93

Bottom of well set at 20.7'





BLASLAND & BOUCK ENGINEERS, P.C.  
ENGINEERS & SCIENTISTS

Well No. MW931D

Project NYSEG

Location: Court St., Binghamton, NY

Date Start/Finish: 5/27/83 - 5/27/83

Drilling Company: Parratt Wolf Inc.

Driller's Name: Doug Richmond

Rig Type: CME Mobil - 57

Spoon Size: 2-inch I.D.

Hammer Weight: 140

Height of Fall: 30-inches

Drilling Method: HSA

Bit Size: Auger Size: 4 1/2-inch ID

Northing:

Easting:

Well Casing Elev.: 848.75 ft.

Corehole Depth: 512 ft.

Borehole Depth: 512 ft.

Ground Surface Elev.: 845.9 ft.

General Location:

Depth (FT.)	Sample/Run Number	Sample/Inch/Type	Blows/6 in.	N	Recovery (FT.)	Recovery (%)	RQD (%)	PID Field (ppm)	PID Headspace (ppm)	Drilling Water Level	Geologic Col.	Stratigraphic Description	Misc. Test	Well Column	Well Materials
0															6-inch diameter outer protective PVC casing with locking cap installed to 2.85' above ground level.
1												Brown fine to coarse SAND and fine to coarse GRAVEL, dry, loose.			
2												grades with little brick fragments.			Cement surface pad 1.5' - 0.0'
3															
4	1		17		0.9			0.0	0.0						
5			8												
6			21	29											
7			13		0.9			0.0	0.0						
8	2		7												
9			4	8											
10			4		0.6			0.0	0.0			grades to brown fine to coarse SAND, trace clay, damp to moist, loose.			
11	3		12									grades with little fine to medium gravel.			
12			7	19				NA	0.0			Brown gray SILT and fine to medium GRAVEL, some fine to coarse sand, moist, loose.			
13			3		0.6										
14	4		8					NA							
15			7	15											
16			8		0.2			NA	0.6						
17	5		7												
18			4	12				NA	7.6						2-inch diameter stainless steel (SS) well riser 40.85' - 2.24' above ground level
19			4		0.5										
20	6		3	7											
21			3					NA	47.1			Wet at 15.5. grades with little oil globules.			
22			4	8											
23	7		5					NA	69.8						
24			4		11										
25			4					NA							
26	8		3	11											
27			4												
28			4	7								Brown fine to coarse SAND and fine to medium GRAVEL, some silt, trace clay, little oil globules in matrix, wet, very loose.			
29			3					NA	NA						
30			4		NR										
31	9		2												
32			3												
33			4	5											

Geologist Initials: TRO

Remarks:

Water Levels

Date Time Elevation

Project No.: 130.08



BLASLAND & BOUCK ENGINEERS, P.C.  
ENGINEERS & SCIENTISTS

Well No. MW931D

Project: NYSEG

Location: Court St, Binghamton, NY

Date Start/Finish: 5/27/93 - 5/27/93

Drilling Company: Parratt Wolf Inc.

Driller's Name: Doug Richmond

Rig Type: CME Mobil - 57

Spoon Size: 2-inch I.D.

Hammer Weight: 140

Height of Fall: 30-inches

Drilling Method: HSA

Bit Size: Auger Size: 4 1/2-inch ID

Northing:

Easting:

Well Casing Elev.: 848.75 ft.

Corehole Depth: 512 ft.

Borehole Depth: 512 ft.

Ground Surface Elev.: 845.9 ft.

General Location:

Depth (Ft.)	Sample/Run Number	Sample/Int./Type	Blows/6 in.	N	Recovery (Ft.)	Recovery (%)	RQD (%)	PID Field (ppm)	PID Headspace (ppm)	Drilling Water Level	Geologic Col.	Stratigraphic Description	Misc. Test	Well Column	Well Materials
-22			4		0.4			NA	83.5			grades to some oil globules.			
-23	10		4	8				NA	55.5			grades to fine to coarse SAND, little fine gravel, some black staining, wet, very loose, oil sheen.			
-24			4		0.4			NA	29.7			No oil sheen or oil globules after 27.0'			
-25	11		1	8				NA	24.4			grades to fine to medium SAND, some silt, trace black staining.			
-26			3		12			NA	9.9						
-27	12		7	17				NA	12.3						
-28			8		0.9			NA	11.3						
-29	13		3	6				NA	NA						
-30			3		14			NA	6.7						
-31	14		4	19				NA	5.9						
-32			5		18			NA	8.0						
-33	15		8	26				NA							
-34			11		0.6			NA							
-35	16		15	26				NA							
-36			12		NR			NA							
-37	17		9	19				10							
-38			10		10			14							
-39	18		12	24				0.8							
-40			7		10										
-41	19		11	30											
-42			13		10										
-43	20		8		0.6										
-44			10												
-45			9												
-46			10												
-47			17	27											

Cement/bentonite grout 35.6' - 15'

Bentonite seal 38.5' - 35.6'

Grade # 00 Silica Sand pack 39.0' - 38.5'

0.010-inch slot stainless steel (SS) well screen 50.85' - 40.85'

Geologist Initials: TRO

Remarks:

Water Levels

Date	Time	Elevation

Project No.: 130.08



BLASLAND & BOUCK ENGINEERS, P.C.  
ENGINEERS & SCIENTISTS

Well No. MW931D

Project: NYSEG

Location: Court St., Binghamton, NY

Date Start/Finish: 5/27/93 - 5/27/93

Drilling Company: Parratt Wolf Inc.

Driller's Name: Doug Richmond

Rig Type: CME Mobil - 57

Spoon Size: 2-inch ID.

Hammer Weight: 140

Height of Fall: 30-inches

Drilling Method: HSA

Bit Size: Auger Size: 4 1/2-inch ID

Northing:

Easting:

Well Casing Elev.: 848.75 ft.

Corehole Depth: 51.2 ft.

Borehole Depth: 51.2 ft.

Ground Surface Elev.: 845.9 ft.

General Location:

Depth (ft.)	Sample/Run Number	Sample/Int./Type	Blows/6 in.	N	Recovery (ft.)	Recovery (%)	RGD (%)	PID Field (ppm)	PID Headspace (ppm)	Drilling Water Level	Geologic Col.	Stratigraphic Description	Misc. Test	Well Column	Well Materials
44															
45	21		11 12 16 17 8 17	28	10			0.0	4.3			grades to fine to coarse SAND, wet, loose.			
46					11			0.6	5.3			Fine SAND and SILT lenses at 46.5 - 46.7 and 47.0 - 47.3 ft.			
47	22		50/3												
48			50/3		0.1			1.3	NA			Brown SILT and fine GRAVEL, little fine to coarse sand, wet, dense.			
49	23														
50			31 57 50/4		0.3			2.0	10.4			grades to brown/green, very dense.			
51	24														
52												Bottom of boring at 51.2 ft.			
53															
54															
55															
56															
57															
58															
59															
60															
61															
62															
63															
64															
65															

**NOTES:**

Augered 0.0 - 4.0' feet without sampling.

Ground water level 6/16/93.

WOH - Weight of hammer

NR - No recovery

NA - Not available

Water level obtained 7/7/93

Grade # 0 Silica Sand pack 51.2' - 39.0'

Bottom of well set at 51.2'

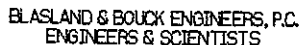
Geologist Initials: TRO

Remarks:

Water Levels

Date	Time	Elevation

Project No.: 130.08



Location: Court St., Binghamton, NY

Date Start/Finish: 6/4/83 - 6/4/83  
Drilling Company: Parratt Wolf Inc.  
Driller's Name: Doug Richmond  
Rig Type: CME Mobil - 57  
Spoon Size: 2-inch I.D.  
Hammer Weight: 140  
Height of Fall: 30-inches  
Drilling Method: HSA  
Bit Size: Auger Size: 4 1/2-inch ID

Northing:  
 Easting:  
 Well Casing Elev.: 847.0 ft.  
 Corehole Depth: 14.8 ft.  
 Borehole Depth: 14.8 ft.  
 Ground Surface Elev.: 844.0 ft.

**General Location:**

Depth (Ft.)	Sample/Run Number	Sample/Int/Type	Blows/6 in.	N	Recovery (Ft.)	Recovery (%)	RQD (%)	PID Field (ppm)	PID Headspace (ppm)	Drilling Water Level	Geologic Col.	Stratigraphic Description	Misc. Test	Well Column	Well Materials
0															6-inch diameter outer protective PVC casing with locking cap installed to 3.0' above ground level.
1												Brown fine to coarse SAND and fine to coarse GRAVEL, dry, loose.			Cement surface pad 1.5' - 0.0'
2												grades to dry to damp.			Cement/bentonite grout 2.0' - 1.5'
3												grades to moist.			2-inch diameter stainless steel (SS) well riser 4.2' - 2.45' above ground level
4												grades to wet.			Bentonite seal 3.0' - 2.0'
5															Grade # 00 Silica Sand pack 3.5' - 3.0'
6															
7															
8															
9												Brown SILT, some clay, trace wood slivers, some black staining and coal tar odor, wet, soft, semiplastic.			
10												grades to brown-gray SILT, little clay, little fine sand, some thick black coal tar residue and oil globules in matrix, moist, soft.			0.010-inch slot stainless steel (SS) well screen 14.2' - 4.2'
11												grades to no coal tar in matrix.			
12															
13															
14															Grade # 0 Silica Sand pack 14.8' - 3.5'
15															
16												Bottom of boring at 14.8 ft.			Bottom of well set at 14.8'
17												NOTES: Augered 0.0' - 14.8' feet without sampling. Characterization of MW932S was determined by MW932D			
18												NR - No recovery			
19												NA - Not available			
20												Water level obtained 7/7/93			
21															
22															

Geologist Initials: TRO

Project No.: 130.08

Remarks:

Water Levels

Date	Time	Elevation



BLASLAND & BOUCK ENGINEERS, P.C.  
ENGINEERS & SCIENTISTS

Well No. MW932D

Project: NYSEG

Location: Court St., Binghamton, NY

Date  
Drilling  
Driller  
Rig T  
Spoon  
Hammer  
Height  
Drilling  
Bit Si

Date Start/Finish: 6/2/83 - 6/2/83  
Drilling Company: Parratt Wolf Inc.  
Driller's Name: Doug Richmond  
Rig Type: CME Mobil - 57  
Spoon Size: 2-inch I.D.  
Hammer Weight: 140  
Height of Fall: 30-inches  
Drilling Method: HSA  
Bit Size: Auger Size: 4 1/2-inch ID

Northing  
Easting  
Well Casing Elev.: 846.9 ft.  
Corehole Depth: 56.2 ft.  
Borehole Depth: 56.2 ft.  
Ground Surface Elev.: 844.1 ft.

General Location:

Depth (Ft.)	Sample/Run Number	Sample/Int./Type	Blows/6 in.	N	Recovery (Ft.)	Recovery (%)	RQD (%)	PID Field (ppm)	PID Headspace (ppm)	Drilling Water Level	Geologic Col.	Stratigraphic Description	Misc. Test	Well Column	Well Materials	
22	0											Brown fine to coarse SAND and fine to coarse GRAVEL, dry, loose.			6-inch diameter outer protective PVC casing with locking cap installed to 2.80' above ground level.	
23	1		21	9	0.3			0.0	0.0			grades to dry to damp.			Cement surface pad 1.5' - 0.0'	
24	2		7	7	0.4			0.0	0.0			grades to moist.				
25	3		2	2								grades to wet.				
26	4		2	2	NR			0.0	NA							
27	5		2	2												
28	6		2	2												
29	7		2	2												
30	8		2	2												
31	9	WOH	2	2	18			0.1	13.4			Brown SILT, some clay, trace wood slivers, some black staining and coal tar odor, wet, soft, semiplastic.				
32	10		4	4				6.8	15.4			grades to brown-gray SILT, little clay, little fine sand, some thick black coal tar residue and oil globules in matrix, moist, soft.				
33	11		5	4	17							grades to no coal tar residue in matrix.			2-inch diameter stainless steel (SS) well riser 43.6' - 2.18' above ground level	
34	12		5	11	16			0.0	12.7	▽		grades to some coal tar residue and oil globules in matrix.				
35	13		10	10	20			4.5	76.4			grades to brown, little coal tar residue and black staining.				
36	14		10	11	16							grades to gray SILT, some clay, trace sand, little wood slivers, trace oil sheen in matrix, wet, medium stiff, semiplastic.				
37	15		10	11	16			6.3	65.5			grades to dark gray SILT and CLAY, little wood slivers, trace oil sheen in matrix, wet, soft, plastic.				
38	16		8	8	13											
39	17		8	8	16											
40	18		5	4	16			15.5	114							
41	19		5	6												
42	20		5	5	10			13.2	121							
43	21		2	2												
44	22		2	2												
Geologist Initials: TRO									Remarks:					Water Levels		
Project No.: 130.08														Date	Time	Elevation



BLASLAND & BOUCK ENGINEERS, P.C.  
ENGINEERS & SCIENTISTS

Well No. MW932D

Project: NYSEG

Location: Court St., Binghamton, NY

Date Start/Finish: 6/2/93 - 6/2/93  
Drilling Company: Parratt Wolf Inc.  
Driller's Name: Doug Richmond  
Rig Type: CME Mobil - 57  
Spoon Size: 2-inch I.D.  
Hammer Weight: 140  
Height of Fall: 30-inches  
Drilling Method: HSA  
Bit Size: Auger Size: 4 1/2-inch ID

Northing:  
Easting:  
Well Casing Elev: 846.9 ft.  
Corehole Depth: 56.2 ft.  
Borehole Depth: 56.2 ft.  
Ground Surface Elev: 844.1 ft.

General Location:

Depth (Ft.)	Sample/Run Number	Sample/Int./Type	Blows/6 in.	N	Recovery (Ft.)	Recovery (%)	RQD (%)	PID Field (ppm)	PID Headspace (ppm)	Drilling Water Level	Geologic Col.	Stratigraphic Description	Misc. Test	Well Column	Well Materials
-44			13		10			12	13.4						
-45	22		17	34								Gray-brown fine SAND, some fine to medium gravel, little silt, moist, medium dense.			
-46			17		0.9			15	113						
-47	23		20	48								grades to brown fine to coarse SAND and fine to medium GRAVEL, little silt, wet, medium dense.			
-48			26		13			12	13.0						
-49	24		26												
-50			19	45											
-51			12		0.9			22	8.3			grades to fine SAND, SILT, and fine to medium GRAVEL, wet, medium dense.			
-52	25		16	34											
-53			17		0.7			22	7.1			grades to fine SAND and SILT, little coarse sand and fine gravel, wet to moist, medium dense.			
-54	26		28	55											
-55			27		0.4			16	NA			grades to some fine to medium gravel, dense to very dense.			
-56	27		70/3												
-57			9												
-58	28		00/3	NR				NA	NA			Bottom of boring at 56.2 ft.			
-59															
-60															
-61															
-62															
-63															
-64															
-65															
-66															
Geologist Initials: TRO								Remarks:				Water Levels			
Project No.: 130.08												Date	Time	Elevation	



BLASLAND & BOUCK ENGINEERS, P.C.  
ENGINEERS & SCIENTISTS

Well No. MW8335

Project NYSEG

Location: Court St, Binghamton, NY

Date Start/Finish: 6/9/93 - 6/9/93

Drilling Company: Parratt Wolf Inc.

Driller's Name: Doug Richmond

Rig Type: CME Mobil - 57

Spoon Size: 2-inch I.D.

Hammer Weight: 140

Height of Fall: 30-inches

Drilling Method: HSA

Bit Size: Auger Size: 4 1/2-inch ID

Northing:

Easting:

Well Casing Elev.: 847.28 ft.

Corehole Depth: 220 ft.

Borehole Depth: 220 ft.

Ground Surface Elev.: 844.2 ft.

General Location:

Depth (Ft.)	Sample/Run Number	Sample/Int/Type	Blows/6 in.	N	Recovery (Ft.)	Recovery (%)	RQD (%)	PID Field (ppm)	PID Headspace (ppm)	Drilling Water Level	Geologic Col.	Stratigraphic Description	Misc. Test	Well Column	Well Materials
-20	10		1	3				0.0	43.8			grades with trace fine gravel.			
-21			2												
-22			3												
-23												Bottom of boring at 22.0 ft.			Bottom of well set at 22.0'
-24												<b>NOTES:</b> Augered 0.0' - 2.0' feet without sampling. Ground water level 6/16/93. WOH - Weight of hammer NR - No recovery NA - Not available Water level obtained 7/7/93			
-25															
-26															
-27															
-28															
-29															
-30															
-31															
-32															
-33															
-34															
-35															
-36															
-37															
-38															
-39															
-40															

Geologist Initials: TRO

Remarks:

Water Levels

Date Time Elevation

Project No.: 130.08



BLASLAND & BOUCK ENGINEERS, P.C.  
ENGINEERS & SCIENTISTS

Well No. MW933D

Project: NYSEG

Location: Court St., Binghamton, NY

Date Start/Finish: 6/1/93 - 6/1/93

Drilling Company: Parratt Wolf Inc.

Driller's Name: Doug Richmond

Rig Type: CME Mobil - 57

Spoon Size: 2-inch I.D.

Hammer Weight: 140

Height of Fall: 30-inches

Drilling Method: HSA

Bit Size: Auger Size: 4 1/2-inch I.D.

Northing:

Easting:

Well Casing Elev.: 847.53 ft.

Corehole Depth: 48 ft.

Borehole Depth: 48 ft.

Ground Surface Elev.: 844.6 ft.

General Location:

Depth (ft.)	Sample/Run Number	Sample/Int./Type	Blows/ft. in.	N	Recovery (ft.)	Recovery (%)	RSD (%)	PTD Field (ppm)	PTD Headspace (ppm)	Drilling Water Level	Geologic Col.	Stratigraphic Description	Misc. Test	Well Column	Well Materials
0															
1												Brown fine to coarse SAND and fine to coarse GRAVEL, dry, loose.			6-inch diameter outer protective PVC casing with locking cap installed to 2.93' above ground level.
2			2		0.7			0.0	0.0			grades with some clay.			
3	1		3	7											
4			4												
5			6					10	0.0			Ash lense 3.5' - 3.8'			
6	2		8	20	0.7							grades to fine to coarse SAND and fine GRAVEL, little silt, dry, loose.			
7			9					0.6	0.0			grades to gray brown, dry to damp.			Cement surface pad 1.5' - 0.0'
8			11		0.3										
9	3		13	14				0.7	0.3			grades to dark brown fine to coarse SAND, some fine to medium gravel, little silt, moist, medium dense.			
10			14		0.3										
11	4		6	7				10	0.0			Brown SILT, little clay, some oxidation staining, moist to wet, medium stiff.			
12			7		18										
13	5		4	8				0.6	0.0			grades to some clay, wet.			
14			6		2.0										
15			8					0.8	0.0						
16	6		5	11											
17			4		16										
18	7		3	9				12	0.0			grades to gray SILT, little clay, some oxidation staining, wet, medium stiff.			
19			5		1.0										
20	8		6	13				17	13.2			Gray fine to coarse SAND and fine to medium GRAVEL, little silt, wet to saturated, loose.			
21			7		0.1										
22	9		2	6											
23			3												
24	10		6					4.3	24.3			grades to black fine to coarse SAND, trace silt, saturated, loose.			
25			WOH		0.4										
26			2												
27			2												
28			3	4											

Geologist Initials: TRO

Remarks:

Water Levels

Date	Time	Elevation

Project No: 130.08





BLASLAND & BOUCK ENGINEERS, P.C.  
ENGINEERS & SCIENTISTS

Well No. MW933D

Project: NYSEG

Location: Court St., Binghamton, NY

Date Start/Finish: 6/1/93 - 6/1/93

Drilling Company: Parratt Wolf Inc.

Driller's Name: Doug Richmond

Rig Type: CME Mobil - 57

Spoon Size: 2-inch I.D.

Hammer Weight: 140

Height of Fall: 30-inches

Drilling Method: HSA

Bit Size: Auger Size: 4 1/2-inch ID

Northing:

Easting:

Well Casing Elev.: 847.53 ft.

Corehole Depth: 48 ft.

Borehole Depth: 48 ft.

Ground Surface Elev.: 844.6 ft.

General Location:

Depth (ft.)	Sample/Run Number	Sample/Int./Type	Blows/6 in.	N	Recovery (ft.)	Recovery (%)	RQD (%)	PID Field (ppm)	PID Headspace (ppm)	Drilling Water Level	Geologic Col.	Stratigraphic Description	Misc. Test	Well Column	Well Materials
-22			3		13			3.4	27.5			grades with trace fine gravel.			
-23	11		4	9											
-24			5												
-25	12		6	9	11			3.8	52.9			Slight hydrocarbon odor.			
-26			6												
-27	13		4	12				8.3	37.5						
-28			4									grades to brown fine SAND and SILT. wet, loose.			
-29	14		7	10											
-30			3	0.6				16	41.4			Lenses of fine to coarse SAND 28.0' - 30.0'.			
-31	15		3	6				0.8	43.7			Layers of oxidation staining 30.0' - 32.0'.			
-32			6	0.8											
-33	16		5	10				7.4	30.7						
-34			5	10											
-35	17		4	10											
-36			5	NR				NA	NA						
-37	18		6												
-38			11	17											
-39	19		14	0.8				11.9	17.2			grades to black-gray fine to coarse SAND, little silt, some oil sheen in matrix.			
-40			7												
-41	20		9	8				5.5	46.2						
-42			9	10											
-43	21		9	18				NA	15.9			oil sheen in matrix			
-44			10	14											
-45			5	15				NA	NA						
-46			6												
-47			7												
-48			7	13											

Cement/bentonite grout 31.0' - 1.5'

2-inch diameter stainless steel (SS) well riser 37.0' - 2.3' above ground level

Bentonite seal 34.1' - 31.0'

Grade # 00 Silica Sand pack 35.5' - 34.1'

0.010-inch slot stainless steel (SS) well screen 46.6' - 37.0'

Geologist Initials: TRO

Remarks:

Project No.: 130.08

Water Levels

Date	Time	Elevation



BLASLAND & BOUCK ENGINEERS, P.C.  
ENGINEERS & SCIENTISTS

Well No. MW033D

Project: NYSEG

Location: Court St., Binghamton, NY

Date Start/Finish: 6/1/93 - 6/1/93

Drilling Company: Parratt Wolf Inc.

Driller's Name: Doug Richmond

Rig Type: CME Mobil - 57

Spoon Size: 2-inch I.D.

Hammer Weight: 140

Height of Fall: 30-inches

Drilling Method: HSA

Bit Size: Auger Size: 4 1/2-inch ID

Northing:

Easting:

Well Casing Elev.: 847.53 ft.

Corehole Depth: 48 ft.

Borehole Depth: 48 ft.

Ground Surface Elev.: 844.6 ft.

General Location:

Depth (ft.)	Sample/Run Number	Sample/Int./Type	Blows/6 in.	N	Recovery (ft.)	Recovery (%)	RQD (%)	PID Field (ppm)	PID Headspace (ppm)	Drilling Water Level	Geologic Col.	Stratigraphic Description	Misc. Test	Well Column	Well Materials
44			10		0.6			6.1	56.2						
45	22		20	35											
46			27		0.8			0.0	9.5						
47	23		19												
48			21	65											
49			43												
50			47												
51															
52															
53															
54															
55															
56															
57															
58															
59															
60															
61															
62															
63															
64															
65															

Brown SILT, some fine to coarse sand and fine to medium gravel, wet to moist, loose.  
No oil sheen or coal tar residue after 43.5'.  
grades to some fine gravel, little fine to coarse sand, moist, dense.

Bottom of boring at 48.0 ft.

**NOTES:**  
Augered 0.0 - 2.0' feet without sampling.  
Ground water level 6/16/93.  
WOH - Weight of hammer  
NR - No recovery  
NA - Not available  
Water level obtained 7/7/93

Grade # 0 Silica Sand pack 48.0' - 35.5'  
Bottom of well set at 46.6'

Geologist Initials: TRO

Remarks:

Project No.: 130.08

Water Levels

Date	Time	Elevation



BLASLAND & BOUCK ENGINEERS, P.C.  
ENGINEERS & SCIENTISTS

Well No. MW935D

Project: NYSEG

Location: Court St., Binghamton, NY

Date Start/Finish: 6/3/93 - 6/3/93  
Drilling Company: Parratt Wolf Inc.  
Driller's Name: Doug Richmond  
Rig Type: CME Mobil - 57  
Spoon Size: 2-inch I.D.  
Hammer Weight: 140  
Height of Fall: 30-inches  
Drilling Method: HSA  
Bit Size: Auger Size: 4 1/2-inch ID

Northing:  
Easting:  
Well Casing Elev.: 848.3 ft.  
Corehole Depth: 62 ft.  
Borehole Depth: 62 ft.  
Ground Surface Elev.: 844.9 ft.

General Location:

Depth (ft.)	Sample/Run Number	Sample/Int./Type	Blows/6 in.	N	Recovery (ft.)	Recovery (%)	RQD (%)	PID F1d1 (ppm)	PID Headspace (ppm)	Drilling Water Level	Geologic Col.	Stratigraphic Description	Misc. Test	Well Column	Well Materials
0												Brown fine to coarse SAND and fine GRAVEL, some silt, trace clay, moist, loose.			
1															
2			1		0.6			0.3	0.0						
3	1		2	3											
4			1		11			0.2	13			Gray ASH, some coal, moist, very loose.			
5	2		1	3								Brown fine to coarse SAND, some silt, trace clay, moist, loose.			
6			1		0.2			5.6	5.7			Gray ASH, some coal intense 5.5' - 6.0' grades to fine to coarse SAND, some medium size coal, trace silt, wet, very loose.			
7	3		1	2											
8			1		13			11.5	374			Gray-brown ASH, some fine to coarse sand, some <b>coal tar residue</b> in matrix, wet, very loose.			
9	4		1	1											
10			4		11			45.2	496			Gray-brown SILT, some clay, some <b>coal tar residue</b> and fibrous material in matrix, wet, very soft.			
11	5		5	9											
12			10		0.9			2.4	262			grades to green-gray SILT, trace clay, some <b>coal tar residue</b> in matrix, damp to moist, medium stiff.			
13	6		12	32											
14			20												
15	7		24	19				7.0	263			grades to brown-gray SILT, some oxidation staining, damp, very stiff.			
16			7	22											
17	8		12		11			73.5	337			grades with trace <b>amber coal tar residue</b> in matrix.			
18			7												
19	9		19	33				71.3	283						
20			14		19										
21	10		9	12								Brown fine to coarse SAND and fine to medium GRAVEL, some silt, some <b>oil globules</b> , wet, loose.			
22			5												
23			7												
24			8		16			11.6	47.2			grades to dark gray fine SAND, some silt, trace oil sheen, wet, loose. slight coal tar odor.			
25			4												
26			4												
27			4	8											

6-inch diameter outer protective PVC casing with locking cap installed to 3.4' above ground level.

Cement surface pad 1.5' - 0.0'

2-inch diameter stainless steel (SS) well riser 46.47' - 2.76' above ground level

Geologist Initials: TRO

Remarks:

Project No.: 130.08

Water Levels

Date	Time	Elevation



BLASLAND & BOUCK ENGINEERS, P.C.  
ENGINEERS & SCIENTISTS

Well No. MW935D

Project: NYSEG

Location: Court St., Binghamton, NY

Date Start/Finish: 6/3/93 - 6/3/93  
Drilling Company: Parratt Wolf Inc.  
Driller's Name: Doug Richmond  
Rig Type: CME Mobil - 57  
Spoon Size: 2-inch I.D.  
Hammer Weight: 140  
Height of Fall: 30-inches  
Drilling Method: HSA  
Bit Size: Auger Size: 4 1/2-inch ID

Northing:  
Easting:  
Well Casing Elev.: 848.3 ft.  
Corehole Depth: 62 ft.  
Borehole Depth: 62 ft.  
Ground Surface Elev.: 844.9 ft.

General Location:

Depth (ft.)	Sample/Run Number	Sample/Int./Type	Blows/6 in.	N	Recovery (ft.)	Recovery (%)	RQD (%)	PID Field (ppm)	PID Headspace (ppm)	Drilling Water Level	Geologic Col.	Stratigraphic Description	Misc. Test	Well Column	Well Materials
22			3		16			4.9	16.9						
23			4	8											
24			4		16			9.2	6.2			grades to brown fine SAND, some silt, no evidence of coal tar residue or oil globules, wet, loose.			
25	12		5									grades to fine to coarse SAND.			Cement/bentonite grout 40.0' - 15'
26			6	13				6.9	4.4						
27	13		7		18										
28			4	9				4.8	6.3						
29	14		4		17							grades to fine SAND, some silt.			
30			6	10				2.5	10.2						
31	15		9		15							Brown SILT, some clay lense 30.5' - 31.0'.			
32			5	14				13.2	7.1			grades to tan brown fine SAND and SILT.			
33	16		12		20							grades to brown fine to coarse SAND, little silt, oil sheen at 32.2 feet in isolated area.			
34			9	21				7.7	12.8			grades to some silt, trace coal pieces, trace oil sheen.			
35	17		5		20							grades to fine SAND and SILT.			
36			6	11				15.5	17.8			No oil sheen or coal tar residue after 36.0'			
37	18		6		11										
38			9	16				1.8	6.5						
39	19		7		11										
40			7	16											
41	20		13		12			4.8	NA			Oxidation staining.			Bentonite seal 43.4' - 40.0'
42			5	15											
43	21		10		13			1.8	4.3						Grade # 00 Silica Sand pack 44.0' - 43.4'
44			8	18											

Geologist Initials: TRO

Remarks:

Project No.: 130.08

Water Levels

Date	Time	Elevation



BLASLAND & BOUCK ENGINEERS, P.C.  
ENGINEERS & SCIENTISTS

Well No. MW935D

Project: NYSEG

Location: Court St., Binghamton, NY

Date Start/Finish: 6/3/93 - 6/3/93

Drilling Company: Parratt Wolf Inc.

Driller's Name: Doug Richmond

Rig Type: CME Mobil - 57

Spoon Size: 2-inch I.D.

Hammer Weight: 140

Height of Fall: 30-inches

Drilling Method: HSA

Bit Size: Auger Size: 4 1/2-inch ID

Northing:

Easting:

Well Casing Elev.: 848.3 ft.

Corehole Depth: 62 ft.

Borehole Depth: 62 ft.

Ground Surface Elev.: 844.9 ft.

General Location:

Depth (ft.)	Sample/Run Number	Sample/Int./Type	Blows/6 in.	N	Recovery (ft.)	Recovery (%)	RQD (%)	PID Field (ppm)	PID Headspace (ppm)	Drilling Water Level	Geologic Col.	Stratigraphic Description	Misc. Test	Well Column	Well Materials
44			1		12			25	40.2			grades to fine to coarse SAND, little silt.			
45	22		9	15								grades to fine SAND and SILT.			
46			13		11			3.1	46.3						
47	23		8	17											
48			8		10			4.4	3.5						
49	24		8	21											
50			13		10			20.6	191						
51	25		13	28								black stained silt lense at 51.0' - 51.1'.			
52			15		18			NA	5.7			grades to fine to coarse SAND, some silt.			
53	26		9	25								Silt lenses at 53.0' and 53.5'			
54			10		02			0.0	3.8						
55	27		15									Green-brown SILT, some fine to medium gravel, little fine to coarse sand, damp to moist, medium dense.			
56															
57															
58															
59															
60			16		0.4			0.0	NA			grades to medium dense to dense.			
61	28		16	34											
62			28												
63			34												
64															
65															
66															

Bottom of boring at 62.0 ft.

**NOTES:**

Augered 0.0 - 2.0' feet without sampling.

Ground water level 6/16/93.

WOH - Weight of hammer

NR - No recovery

NA - Not available

Geologist Initials: TRO

Remarks:

Augered 54.2' - 60.0' without sampling. Water level obtained 7/7/93

**Water Levels**

Date	Time	Elevation

Project No.: 130.08



BLASLAND & BOUCK ENGINEERS, P.C.  
ENGINEERS & SCIENTISTS

Well No. MW938S

Project NYSEG

Location: Court St., Binghamton, NY

Date Start/Finish: 8/7/83 - 8/7/83

Drilling Company: Parratt Wolf Inc.

Driller's Name: Doug Richmond

Rig Type: CME Mobil - 57

Spoon Size: 2-inch I.D.

Hammer Weight: 140

Height of Fall: 30-inches

Drilling Method: HSA

Bit Size: Auger Size: 4 1/2-inch ID

Northing:

Easting:

Well Casing Elev.: 847.85 ft.

Corehole Depth: 24.0 ft.

Borehole Depth: 24.0 ft.

Ground Surface Elev.: 844.4 ft.

General Location:

Depth (ft.)	Sample/Run Number	Sample/Int/Type	Blows/6 in.	N	Recovery (ft.)	Recovery (%)	RQD (%)	PID Field (ppm)	PID Headspace (ppm)	Drilling Water Level	Geologic Col.	Stratigraphic Description	Misc. Test	Well Column	Well Materials
0															
1												Brown fine to coarse SAND and fine to medium GRAVEL, trace silt and clay, moist, loose.			6-inch diameter outer protective PVC casing with locking cap installed to 3.45' above ground level.
2			3		15			0.1	0.0						Cement surface pad 1.5' - 0.0'
3	1		9												
4			7												
5	2		5		0.1			0.0	0.0			Black COAL, fine to coarse SAND and ASH, trace slag, dry, loose.			2-inch diameter stainless steel (SS) well riser 12.95' - 2.79' above ground level
6			2												
7	3		2		0.2			0.0	0.0						Cement/bentonite grout 7.5' - 1.5'
8			2												
9	4		2									Brown SILT, some clay, moist, soft.			Bentonite seal 10.5' - 7.5'
10			1									grades to little clay, trace fine gravel, stiff.			
11	5		3		NA			31.7	55.7						
12			3												
13	6		4					6.9	10.0			grades to gray SILT, some clay, little wood pieces, some black staining, moist, stiff.			Grade # 00 Silica Sand pack 11.0' - 10.5'
14			6		13							grades to little clay, some oxidation staining.			
15	7		5		2.0			0.6	3.5						
16			8												
17	8		9		17			0.0	19			ASH lense at 16.5 ft.			0.010-inch slot stainless steel (SS) well screen 22.95' - 12.95'
18			12									grades to dark gray SILT, some clay, moist to wet, medium stiff.			
19	9		4		0.1			0.9	2.2			Brown fine to coarse SAND, wet, very loose.			
20			3												
21	10		3												
22			2		18			0.9	5.4			grades to dark gray fine to coarse SAND and fine to medium GRAVEL.			Grade # 0 Silica Sand pack 24.0' - 11.0'
23			3									grades to fine to coarse SAND, trace medium gravel.			

Geologist Initials: TRO

Remarks:

Water Levels

Date	Time	Elevation

Project No: 130.08



ELASLAND & BOUCK ENGINEERS, P.C.  
ENGINEERS & SCIENTISTS

Well No. MW936S

Project NYSEG

Location: Court St, Binghamton, NY

Date Start/Finish: 6/7/93 - 6/7/93

Drilling Company: Parratt Wolf Inc.

Driller's Name: Doug Richmond

Rig Type: CME Mobil - 57

Spoon Size: 2-inch I.D.

Hammer Weight: 140

Height of Fall: 30-inches

Drilling Method: HSA

Bit Size: Auger Size: 4 1/2-inch ID

Northing:

Easting:

Well Casing Elev.: 847.85 ft.

Corehole Depth: 24.0 ft.

Borehole Depth: 24.0 ft.

Ground Surface Elev.: 844.4 ft.

General Location:

Depth (ft.)	Sample/Run Number	Sample/Int/Type	Blows/6 in.	N	Recovery (ft.)	Recovery (%)	RQD (%)	PTD Field (ppm)	PTD Headspace (ppm)	Drilling Water Level	Geologic Col.	Stratigraphic Description	Misc. Test	Well Column	Well Materials
22															
23	11		2	6	11			12	3.1						
24															
25															
26															
27															
28															
29															
30															
31															
32															
33															
34															
35															
36															
37															
38															
39															
40															
41															
42															
43															
44															

Bottom of boring at 24.0 ft.

**NOTES:** Augered 0.0' - 2.0' feet without sampling.  
Ground water level 6/16/93.  
WOH - Weight of hammer  
NR - No recovery  
NA - Not available  
Water level obtained 7/7/93

Bottom of well set at 23.0'

Geologist Initials: TRO

Remarks:

Water Levels

Date	Time	Elevation
------	------	-----------

Project No.: 130.08



BLASLAND & BOUCK ENGINEERS, P.C.  
ENGINEERS & SCIENTISTS

Well No. MW938D

Project: NYSEG

Location: Court St., Binghamton, NY

Date Start/Finish: 6/8/83 - 6/8/83  
Drilling Company: Parratt Wolf Inc.  
Driller's Name: Doug Richmond  
Rig Type: CME Mobil - 57  
Spoon Size: 2-inch I.D.  
Hammer Weight: 140  
Height of Fall: 30-inches  
Drilling Method: HSA  
Bit Size: Auger Size: 4 1/2-inch ID

Northings:  
Easting:  
Well Casing Elev.: 847.51 ft.  
Corehole Depth: 60.8 ft.  
Borehole Depth: 60.8 ft.  
Ground Surface Elev.: 844.1 ft.

General Location:

Depth (Ft.)	Sample/Run Number	Sample/Int/Type	Blows/6 in.	N	Recovery (Ft.)	Recovery (%)	RQD (%)	PID Field (ppm)	PID Headspace (ppm)	Drilling Water Level	Geologic Col.	Stratigraphic Description	Misc. Test	Well Column	Well Materials
0															
1															
2															
3															
4															
5															
6	1		8		0.3			0.0	0.0			Brown fine to coarse SAND, some fine to medium gravel, trace silt and clay, damp, loose.			6-inch diameter outer protective PVC casing with locking cap installed to 3.41' above ground level.
7			6												
8			3												
9			2												
10															
11	2		3		NR			0.0	NA						
12			2												
13			1												
14			1												
15															
16															
17															
18															
19															
20															
21															
22															
23															
24															
25															
26	3		3		0.6			0.0	0.0			grades to moist.			2-inch diameter stainless steel (SS) well riser 49.8' - 2.77' above ground level
27			6												
28			7												
29			8									Brown-gray SILT, little clay, moist, medium stiff.			
30															
31															
32															
33															
34															
35															
36															
37															
38															
39															
40															
41															
42															
43															
44															
45															
46															
47															
48															
49															
50															
51															
52															
53															
54															
55															
56															
57															
58															
59															
60															
61															
62															
63															
64															
65															
66															
67															
68															
69															
70															
71															
72															
73															
74															
75															
76															
77															
78															
79															
80															
81															
82															
83															
84															
85															
86															
87															
88															
89															
90															
91															
92															
93															
94															
95															
96															
97															
98															
99															
100															
Geologist Initials: TRO										Remarks:		Water Levels			
Project No.: 130.08												Date	Time	Elevation	





BLASLAND & BOUCK ENGINEERS, P.C.  
ENGINEERS & SCIENTISTS

Well No. MW938D

Project: NYSEG

Location: Court St., Binghamton, NY

Date Start/Finish: 6/8/93 - 6/8/93

Drilling Company: Parratt Wolf Inc.

Driller's Name: Doug Richmond

Rig Type: CME Mobil - 57

Spoon Size: 2-inch I.D.

Hammer Weight: 140

Height of Fall: 30-inches

Drilling Method: HSA

Bit Size: Auger Size: 4 1/2-inch ID

Northing:

Easting:

Well Casing Elev.: 847.51 ft.

Corehole Depth: 60.8 ft.

Borehole Depth: 60.8 ft.

Ground Surface Elev.: 844.1 ft.

General Location:

Depth (ft.)	Sample/Run Number	Sample Int./Type	Blows/6 in.	N	Recovery (ft.)	Recovery (%)	RQD (%)	PID Field (ppm)	PID Headspace (ppm)	Drilling Water Level	Geologic Col.	Stratigraphic Description	Misc. Test	Well Column	Well Materials
22			1		11			0.0	NA			grades to fine to coarse SAND, some silt.			
23	5		2												
24			3					0.0	0.0						
25	6		4		18										
26			4					16.3	0.2						
27	7		6												
28			5		11										
29	8		4		19			NA	47.3			grades with some <b>coal tar residue</b> in matrix.			
30			6									No coal tar residue or oil sheen after 29.5'.			
31	9		8		0.8			0.0	11			grades to brown fine SAND and SILT.			
32			9		21										
33	10		12					0.0	0.2						
34			6		12										
35	11		7					10	0.2						
36			5		11										
37	12		6									grades to gray brown fine to coarse SAND, trace silt.			
38			7		11			11	0.7			grades with trace fine to medium gravel.			
39	13		9												
40			11		13			0.1	0.2						
41	14		13		22										
42			10					15	0.8						
43	15		13		13										
44			10												
45			13		23										
46			16					0.0	0.0						
47			7		16										
48			14												
49			13												

Cement/bentonite grout 43.8' - 15'

Bentonite seal 46.8' - 43.8'

Geologist Initials: TRO

Remarks:

Water Levels

Date	Time	Elevation

Project No.: 130.08



BLASLAND & BOUCK ENGINEERS, P.C.  
ENGINEERS & SCIENTISTS

Well No. MW936D

Project NYSEG

Location: Court St., Binghamton, NY

Date Start/Finish: 6/8/93 - 6/8/93  
Drilling Company: Parratt Wolf Inc.  
Driller's Name: Doug Richmond  
Rig Type: CME Mobil - 57  
Spoon Size: 2-inch I.D.  
Hammer Weight: 140  
Height of Fall: 30-inches  
Drilling Method: HSA  
Bit Size: Auger Size: 4 1/2-inch ID

Northings:  
Easting:  
Well Casing Elev: 847.51 ft.  
Corehole Depth: 60.8 ft.  
Borehole Depth: 60.8 ft.  
Ground Surface Elev: 844.1 ft.

General Location:

Depth (Ft.)	Sample/Run Number	Sample/Int/Type	Blows/6 in.	N	Recovery (Ft.)	Recovery (%)	RQD (%)	PID Field (ppm)	PID Headspace (ppm)	Drilling Water Level	Geologic Col.	Stratigraphic Description	Misc. Test	Well Column	Well Materials
44			7		13			0.0	0.0						
45	16		9	24											
46			5		18			0.0	0.0			grades to medium dense.			
47	17		9	20											
48			5		19			0.4	0.0			grades to little silt.			Grade # 00 Silica Sand pack 48.0' - 46.8'
49	18		13	24											
50			5		18			0.0	0.4						
51	19		18	35								Fine SAND and SILT lense at 51.2 feet.			Grade # 0 Silica Sand pack 60.8' - 48.0'
52			19		17			0.5	0.0						
53	20		22	45								grades to gray/brown fine to coarse SAND, some silt, moist, medium dense.			
54			17		0.4			0.6	0.0						
55	21		11	22											
56			20		0.3			0.0	12						0.010-inch slot stainless steel (SS) well screen 59.8' - 49.8'
57	22		31	58											
58			23		11			0.0	0.0						
59	23		24	47								Brown-green SILT and fine to medium GRAVEL, medium dense.			
60			23									grades to brown fine to coarse SAND and fine GRAVEL, some silt, wet, medium dense.			
61	24		20		0.4			0.3	0.1			grades to brown-green SILT and fine to medium GRAVEL, some sand, moist, dense to very dense.			Bottom of well set at 59.85'
62			100/3												
63															
64															
65															

Geologist Initials: TRO

Remarks:

Water level obtained 7/7/93

Water Levels

Date	Time	Elevation

Project No.: 130.08



BLASLAND & BOUCK ENGINEERS, P.C.  
ENGINEERS & SCIENTISTS

Well No. P2-1

Project NYSEG

Location: Court St, Binghamton, NY

Date Start/Finish: 6/9/93 - 6/9/93  
Drilling Company: Parratt Wolf Inc.  
Driller's Name: Doug Richmond  
Rig Type: CME Mobil - 57  
Spoon Size: 2-inch I.D.  
Hammer Weight: 140  
Height of Fall: 30-inches  
Drilling Method: HSA  
Bit Size: Auger Size: 4 1/2-inch ID

Northing:  
Easting:  
Well Casing Elev.: 848.4 ft  
Corehole Depth: 12 ft  
Borehole Depth: 12 ft  
Ground Surface Elev.: 844.8 ft

General Location:

Depth (Ft.)	Sample/Run Number	Sample Int./Type	Blows/6 in.	N	Recovery (Ft.)	Recovery (%)	RQD (%)	PID Field (ppm)	PID Headspace (ppm)	Drilling Water Level	Geologic Col.	Stratigraphic Description	Misc. Test	Well Column	Well Materials
0															
1												Brown fine to coarse SAND and fine to medium GRAVEL, trace silt and clay, some brick fragments.			2-inch diameter schedule 40 PVC well riser 3.6' - 2.24' above ground level
2			5		12			0.0	0.0						
3	1		4												
4			3		11			19.9	49.2			Gray COAL and ASH, some fine to coarse sand, dry, loose.			Cement/bentonite grout 1.0' - 0.0'
5	2											Brown fine to medium GRAVEL, trace fine to coarse sand, some black staining, wet, loose, sheen on water.			Bentonite seal 2.0' - 1.0'
6					0.8			7.7	103						
7	3											Gray SILT, trace clay, some black staining, wet, soft.			
8					0.6			11.5	247			Brown fine to coarse SAND and fine to medium GRAVEL, trace silt and clay, lense 7.0' - 7.5'.			0.010-inch slot schedule 40 PVC well screen 8.5' - 3.5'
9	4											Black stained wood pieces 7.5' - 8.0' and 9.0' - 10.0'.			Grade # 0 Silica Sand pack 12.0' - 2.0'
10					14			2.3	275			grades to gray SILT and CLAY, some black staining, some coal tar residue, soft, semiplastic.			
11	5														
12												Bottom of boring at 12.0 ft.			Bottom of Piezometer well set at 8.5'
13															
14															
15															
16															
17															
18															
19															
20															
21															
22															

Geologist Initials: TRO + VAD

Remarks:

Project No.: 130.08

Water Levels

Date	Time	Elevation

<b>Date Start/Finish:</b> 9/25/97 / 9/25/97 <b>Drilling Company:</b> MAXIM Technologies, Inc. <b>Driller's Name:</b> Rodney Bush <b>Drilling Method:</b> HSA  <b>Auger Size:</b> 4.25 ID in. <b>Rig Type:</b> 82 Acker <b>Spoon Size:</b> 3 in.	<b>Northing:</b> 766680.61143 <b>Easting:</b> 1008336.48768 <b>Well Casing:</b> 849.36 feet  <b>Borehole Depth:</b> 28.5 ft. <b>Ground Surface:</b> 849.63 feet  <b>Geologist:</b> Matthew W Erbe	<b>Well No:</b> MW97-7S  <b>Client:</b> New York State Electric & Gas  <b>Location:</b> Court Street Binghamton, New York
--	--	--

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Blows/6 In.	N	Recovery (ft.)	PID (ppm) Headspace	Geotechnical Test	Geologic Column	Stratigraphic Description	Well Construction
gs elevation 849.63 ft.										GROUND SURFACE	Flushmount manhole installed.
5	845									Brown SILT, fine SAND and GRAVEL, grass rootlets, loose, dry (TOPSOIL).  Light brown fine SAND, SILT, and fine to medium, subrounded GRAVEL.  <i>Stratigraphic descriptions not accompanied by other sampling data (e.g. blow counts) are inferred from auger cuttings. See log of adjacent test boring TB-12 for complete stratigraphic description and sampling details.</i>	Cement surface pad 0.0' to 0.5' bgs. #10 Silica sand drain 0.5' to 1.5' bgs.  2" diameter, Schedule 40 PVC well riser 0.27' to 18.0' bgs.  Portland cement/5% bentonite grout 1.5' to 12.0' bgs.
0	840									Light brown SILT and fine to coarse, subrounded GRAVEL (many types), trace cobbles, loose, dry.  Brown fine to medium GRAVEL, some Silt, trace fine Sand, loose, dry.	Bentonite chips 12.0' to 14.0' bgs.
5	835										

<b>BBL</b> BLASLAND, BOUCK & LEE, INC. engineers & scientists	<b>Remarks:</b>  Augered to 18' below grade and collected sample (18-20') for TCL VOCs, TCL SVOCs, TAL Inorganics, and Cyanide. Augered to 28' below grade and collected sample (28-30') for TOC. bgs - below ground surface	<b>Saturated Zones</b>		
		Date / Time	Elevation	Depth
		2/11/98	832.01	17.62

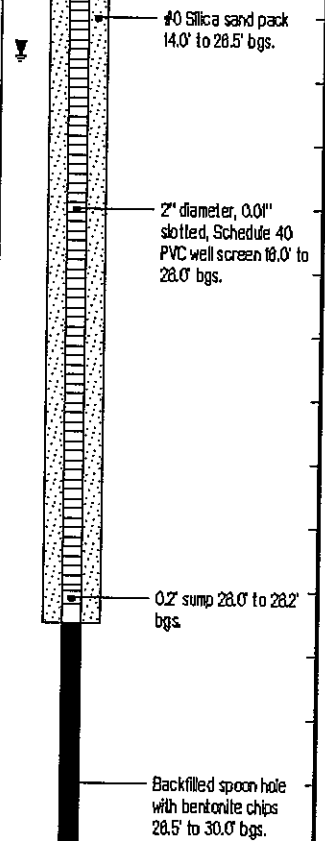
**Client:**  
New York State Electric & Gas

**Location:**  
Court Street  
Binghamton, New York

**Well No:** MW97-7S

**Total Depth = 26.5 ft.**

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Blows/6 In.	N	Recovery (ft.)	PIQ (ppm) Headspace	Geotechnical Test	Geologic Column	Stratigraphic Description	Well Construction
1										Brown fine to medium, rounded GRAVEL, little fine Sand and Silt, moist.	
20	830	S-1	/	NA	NA	0.7	NA			As above.	
25	825									Wet at 21.0' bgs.	
30	820	S-2	/	NA	NA	0.3	NA			Three small red sandstone and granite Gravels.	
		S-3	/	NA	NA	1.0	NA			Gray brown fine to coarse GRAVEL, some Silt, little fine to medium Sand, saturated.	
35	815									Bottom of boring 26.5' bgs. Bottom of spoons 30.0' bgs.	



**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

Remarks:

**Saturated Zones**

Date / Time	Elevation	Depth
2/11/98	832.01	17.62

Date Start/Finish: 9/29/97 / 9/30/97  
 Drilling Company: MAXIM Technologies, Inc.  
 Driller's Name: John Warner  
 Drilling Method: HSA

Auger Size: 4.25 ID in.  
 Rig Type: 82 Acker  
 Spoon Size: 3 in.

Northing: 766776.05437  
 Easting: 1006414.00581  
 Well Casing: 845.69 feet

Borehole Depth: 24.5 ft.  
 Ground Surface: 845.97 feet

Geologist: Matthew W. Erbe

Well No: TB-13/MW97-8S

Client:  
 New York State Electric & Gas

Location:  
 Court Street  
 Binghamton, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Blows/6 In.	N	Recovery (ft.)	PID (ppm) Headspace	Geotechnical Test	Geologic Column	Stratigraphic Description	Well Construction
GS elevation 845.97 ft										GROUND SURFACE	4" diameter flushmount curb box installed
	845	S-1		NA	NA	NA	NA			Augered through 0.5' of asphalt then 1.3' of concrete (ROADWAY).	Asphalt surface seal 0.0' to 1.0' bgs.
		S-2		15	27	1.0	33.1			Light brown SILT, little to some fine Gravel (subrounded), one sandstone fragment, trace Sand, brick, dry. (FILL)	#0 Silica sand 0.5' to 1.0' bgs inside of curb box
		S-3		7	9	1.3	29.1			Light brown SILT, little to some fine Gravel, trace medium Gravel and Sand, dry. (FILL)	Portland cement/5% bentonite grout 1.0' to 8.0' bgs.
5		S-4		10	20	0.2	28.0			Trace reddish orange brick and coal fragments. As above, poor recovery.	2" diameter, Schedule 40 PVC well riser 0.28' to 12.0' bgs.
	840	S-5		4	15	1.0	37.7			As above, moist.	Bentonite chips 8.0' to 10.0' bgs.
		S-8		5	7	1.2	19.4			Gray SILT, medium plasticity, Fe mottling, trace black specks and slag in spoon tip, moist. (FILL)	
		S-7		2	4	1.6	1033			Gray SILT, few black specks (wood-like), Fe mottling, moist to wet.	
		S-8		100/2	NA	0.2	66.2			No black specks, trace wet reddish black staining (stringers). Poor recovery. Brown SILT, trace to little coarse Sand, fibrous wood pieces, moist. (FILL)	#0 Silica sand pack 10.0' to 22.5' bgs.
5											

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

Remarks:

First attempt refusal at 1' bgs on metal. Second attempt refusal at 14.3' bgs due to concrete/rebar. Moved west approximately 8' for third attempt. Began 2" split spoons at 14' bgs. (Cont. p.2)

Saturated Zones

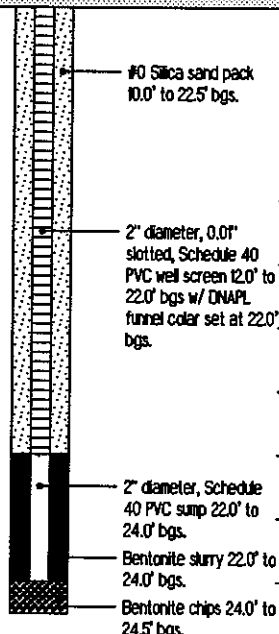
Date / Time	Elevation	Depth
2/11/98	831.72	14.25 ▼

**Client:**  
New York State Electric & Gas

**Location:**  
Court Street  
Binghamton, New York

**Well No:** TB-13/MW97-8S

**Total Depth = 24.5 ft.**

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Blows/6 In.	N	Recovery (ft.)	PID (ppm) Headspace	Geotechnical Test	Geologic Column	Stratigraphic Description	Well Construction
830		S-8		NA	NA	0.2	66.2			At 14.3', drilled through obstruction (concrete?) to 14.8' bgs.	 <p>#10 Silica sand pack 10.0' to 22.5' bgs.</p> <p>2" diameter, 0.01" slotted, Schedule 40 PVC well screen 12.0' to 22.0' bgs w/ DNAPL funnel collar set at 22.0' bgs.</p> <p>2" diameter, Schedule 40 PVC sump 22.0' to 24.0' bgs.</p> <p>Bentonite slurry 22.0' to 24.0' bgs.</p> <p>Bentonite chips 24.0' to 24.5' bgs.</p>
		S-9		8 9 9 10	18	1.5	2400			Gray SILT, mottled Fe staining, black oily substance along interior of fracture planes, dry, odors.	
		S-10		17 16 15 14	31	1.5	910			As above, no black staining.	
20										As above.	
825		S-11		2 4 4 4	8	0.7	1834			Gray SILT and fine to medium, rounded GRAVEL, trace Sand, saturated. Product visible, black with red sheen, naphthalene-like odor.	
		S-12		2 1 1 2	2	0.5	340			Black stained fine to medium SAND, little to some Silt, heavy sheen, and odor.	
25										Bottom of spoons at 24' bgs. Bottom of boring at 24.5' bgs.	
820											
30											
815											
35											

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

**Remarks:**

Sampled interval: (18-20') for TCL VOCs/SVOCs, TAL Inorganics, and cyanide, MS/MSD. bgs - below ground surface NA - not available. DNAPL - dense non-aqueous phase liquid.

**Saturated Zones**

Date / Time	Elevation	Depth
2/11/98	831.72	14.25' ↓



<b>Date Start/Finish:</b> 9/23/97 / 9/23/97 <b>Drilling Company:</b> MAXIM Drilling <b>Driller's Name:</b> John Warner <b>Drilling Method:</b> HSA  <b>Auger Size:</b> 4.25 ID in. <b>Rig Type:</b> 82 Acker <b>Spoon Size:</b> NA in.	<b>Northing:</b> 766901.69748 <b>Easting:</b> 1006245.69188 <b>Well Casing:</b> 846.99 feet  <b>Borehole Depth:</b> 23 ft. <b>Ground Surface:</b> 847.21 feet  <b>Geologist:</b> Michael R. Arlauckas	<b>Well No:</b> MW97-9S  <b>Client:</b> New York State Electric & Gas  <b>Location:</b> Brandywine Avenue Binghamton, New York
---	--	---

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Blows/6 In.	N	Recovery (ft.)	PID (ppm) Headspace	Geotechnical Test	Geologic Column	Stratigraphic Description	Well Construction
gs elevation 847.21 ft.											Flushmount manhole installed.
										GROUND SURFACE	
845										No sampling performed. See log of adjacent well MW97-9D for stratigraphic description.	Cement surface pad 0.0' to 0.5' bgs. #0 Silica sand drain 0.5' to 1.0' bgs.  2" diameter, Schedule 40 PVC well riser 0.2' to 13.0' bgs.  Portland cement/5% bentonite grout 1.0' to 8.8' bgs.  Bentonite chips 8.8' to 11.2' bgs.  #0 Silica sand pack 11.2' to 23.2' bgs.
5											
840											
0											
835											
5											

**Remarks:**  
 Moved approximately 4' north of MW97-9D and augered directly to 23.0' below grade. bgs - below ground surface. NA - not available.

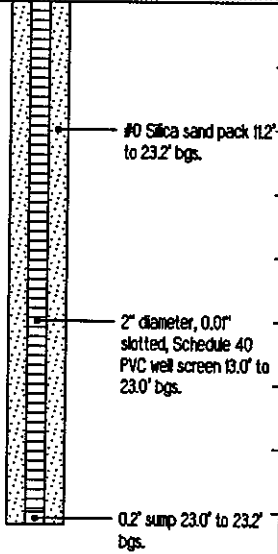
Saturated Zones		
Date / Time	Elevation	Depth
2/11/98	832.49	14.72 ▼



**Client:**  
New York State Electric & Gas

**Location:**  
Brandywine Avenue  
Binghamton, New York

**Well No:** MW97-9S  
**Total Depth =** 23 ft.

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Blows/6 In.	N	Recovery (ft.)	PID (ppm) Headspace	Geotechnical Test	Geologic Column	Stratigraphic Description	Well Construction
830										No sampling performed. See log of adjacent well MW97-9D for stratigraphic description.	 <p>#10 Silica sand pack 12' to 23.2' bgs.</p> <p>2" diameter, 0.01" slotted, Schedule 40 PVC well screen 13.0' to 23.0' bgs.</p> <p>0.2' sump 23.0' to 23.2' bgs.</p>
825											
820										Bottom of boring 23.0' bgs.	
815											
810											
805											
800											
795											
790											
785											
780											
775											
770											
765											
760											
755											
750											
745											
740											
735											
730											
725											
720											
715											
710											
705											
700											
695											
690											
685											
680											
675											
670											
665											
660											
655											
650											
645											
640											
635											
630											
625											
620											
615											
610											
605											
600											
595											
590											
585											
580											
575											
570											
565											
560											
555											
550											
545											
540											
535											
530											
525											
520											
515											
510											
505											
500											
495											
490											
485											
480											
475											
470											
465											
460											
455											
450											
445											
440											
435											
430											
425											
420											
415											
410											
405											
400											
395											
390											
385											
380											
375											
370											
365											
360											
355											
350											
345											
340											
335											
330											
325											
320											
315											
310											
305											
300											
295											
290											
285											
280											
275											
270											
265											
260											
255											
250											
245											
240											
235											
230											
225											
220											
215											
210											
205											
200											
195											
190											
185											
180											
175											
170											
165											
160											
155											
150											
145											
140											
135											
130											
125											
120											
115											
110											
105											
100											
95											
90											
85											
80											
75											
70											
65											
60											
55											
50											
45											
40											
35											

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

Remarks:

**Saturated Zones**

Date / Time	Elevation	Depth
2/11/98	832.49	14.72

Date Start/Finish: 9/22/97 / 9/23/97  
 Drilling Company: MAXIM Technologies, Inc.  
 Driller's Name: John Warner  
 Drilling Method: HSA

Auger Size: 4.25 ID in.  
 Rig Type: 82 Acker  
 Spoon Size: 2 in.

Northing: 766894.67686  
 Easting: 1008248.18164  
 Well Casing: 847.13 feet

Borehole Depth: 44 ft.  
 Ground Surface: 847.36 feet

Geologist: Keith A White

Well No: MW97-9D

Client:  
 New York State Electric & Gas

Location:  
 Brandywine Avenue  
 Binghamton, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Blows/6 In.	N	Recovery (ft.)	PID (ppm) Headspace	Geotechnical Test	Geologic Column	Stratigraphic Description	Well Construction
gs elevation 847.36 ft											Flushmount curb box installed.
										<b>GROUND SURFACE</b>	
		S-1		2 14 22 24	36	1.0	0.0			Moderate brown SILT and fine to medium SAND, little coarse Sand and fine subangular Gravel, moist (TOPSOIL).	Cement surface pad 0.0' to 0.5' bgs.
	845	S-2		30 40 25 18	65	0.8	0.0			Dark yellowish brown fine to coarse SAND and fine to medium subrounded Gravel, some Silt, occasional coal fragments, dry to moist (FILL).	#0 Silica sand drain 0.5' to 10' bgs.
5		S-3		8 8 8 7	16	0.3	0.0			As above, no clear evidence of fill (i.e. coal fragments, etc.) Poor recovery, Cobble fragment in spoon end. Recovered material is "slough" from above.	2" diameter, Schedule 40 PVC well riser 0.3' to 34.0' bgs.
	840	S-4		11 14 18 20	32	0.9	0.0			Dark yellowish brown fine to coarse SAND and fine to medium, rounded to subrounded GRAVEL, little to some Silt, dry to moist.	
		S-5		11 16 13 11	29	1.0	0.0			Dark yellowish brown fine to coarse SAND and fine to medium, subrounded GRAVEL, little to some Silt, few bright gravels, most are gray siltstone, dry to moist.	
10		S-6		8 11 9 5	20	0.8	0.0			As above, one red sandstone gravel.	Portland cement/5% bentonite grout 1.0' to 29.8' bgs.
	835	S-7		5 4 3 2	7	0.7	0.0			As above, subangular to subrounded Gravels, occasional red sandstone gravel, moist to wet.	
6		S-8		2 2	5	0.4	0.0			As above, wet.	

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

Remarks:

bgs - below ground surface

Saturated Zones

Date / Time	Elevation	Depth
2/11/98	832.50	14.86 ↓

Client:  
New York State Electric & Gas

Location:  
Brandywine Avenue  
Binghamton, New York

Well No: MW97-9D  
Total Depth = 44 ft.

DEPTH	ELEVATION	Sample Run Number	Sample/Int./Type	Blows/6 In.	N	Recovery (ft.)	PID (ppm) Headspace	Geotechnical Test	Geologic Column	Stratigraphic Description	Well Construction
		S-8		3 2	5	0.4	0.0				
	830	S-9		3 2 2 1	4	0.5	149			As above, occasional small droplets of residual brown oily product. Naphthalene type odor.	2" diameter, Schedule 40 PVC well riser 0.3' to 34.0' bgs.
		S-10		3 3 2 3	5	1.0	182			Grayish brown fine to medium SAND, little Silt, saturated, faint petroleum-like odor.	
20		S-11		2 2 2 3	4	2.0	356			As above, one fine Gravel.	
	825	S-12		2 1 1 3	2	1.0	136			Color change to dark yellowish brown. Grayish brown fine to medium SAND, little coarse Sand, some to little Silt, no bedding evident, loose, saturated.	
25		S-13		1 1 5 13	6	1.1	153			Color change to dark yellow brown, some Silt, trace Clay. Dark yellow brown fine to medium SAND and SILT, occasional fine Sand parting (<1/8" thick).	Portland cement/5% bentonite grout 1.0' to 28.8' bgs.
	820	S-14		6 8 10 14	18	0.5	26.4			Grayish brown fine to medium SAND, trace fine rounded Gravel and coarse Sand, loose, saturated. Gravel stuck in spoon end.	
		S-15		10 9 8 8	17	1.0	39.2			Coarse SAND and GRAVEL (subround to well rounded), many bright Gravels (~30-45%), trace Silt and fine Sand.	
30		S-16		8 11 13 14	24	0.2	21.8			Subround to well rounded GRAVEL (as above), little fine to coarse Sand, trace grayish brown Silt.	Bentonite chips 28.8' to 32.0' bgs.
	815	S-17		4 5 6 8	11	0.7	45.0			Poor recovery, Gravel wedged in spoon end. Grayish brown coarse SAND and GRAVEL, subround to rounded, little to trace Silt.	#10 Silica sand pack 32.0' to 44.0' bgs.
35		S-18		5 6	12	1.0	0.4			Grayish brown fine SAND, some to little Silt.	

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

**Remarks:**

Water in augers up to 16.5' below ground surface.

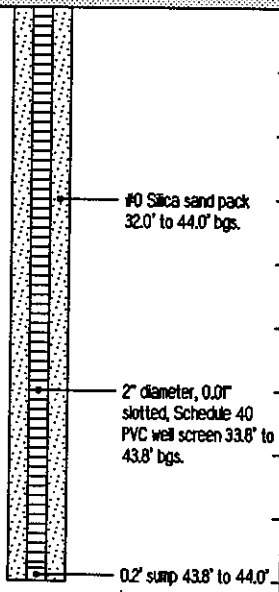
**Saturated Zones**

Date / Time	Elevation	Depth
2/11/98	832.50	14.86 ↓

**Client:**  
New York State Electric & Gas

**Location:**  
Brandywine Avenue  
Binghamton, New York

**Well No:** MW97-9D  
**Total Depth = 44 ft.**

DEPTH	ELEVATION	Sample Run Number	Sample/Int./Type	Blows/6 In.	N	Recovery (ft.)	PID (ppm) Headspace	Geotechnical Test	Geologic Column	Stratigraphic Description	Well Construction
		S-18		6 9	12	1.0	0.4			At 34'bgs, grayish brown fine SAND, little Silt, no bedding visible.	
	810	S-19		7 9 8 11	17	2.0	15.4			As above, one olive gray Silt seam (1/8" thick) at 36.2'.	
		S-20		1 1 1 3	2	1.2	37.6			As above, no layering evident. Some Sand heaved into augers.	
40		S-21		5 7 40 25	47	0.5	50.0			Grayish brown fine SAND, trace Silt. Fine to coarse SAND and GRAVEL, some to little Silt.	
	805	S-22		11 17 28 18	45	0.0	NA			No recovery.	
		S-23		25 25 27 28	52	0.4	NA			Dark yellow brown to grayish brown fine to coarse SAND, SILT, and subrounded to rounded GRAVEL (many different rock types), dense, moist to wet (TILL).	
	800	S-24		24 37 76 50	113	0.9	NA			As above, very dense.	
										Bottom of boring 44.0' bgs. Bottom of spoons 48.0' bgs.	
50											
	795										
55											

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

Remarks:

Saturated Zones

Date / Time	Elevation	Depth
2/11/98	832.50	14.86

<b>Date Start/Finish:</b> 9/19/97 / 9/19/97 <b>Drilling Company:</b> MAXIM Technologies, Inc. <b>Driller's Name:</b> Rodney Bush <b>Drilling Method:</b> HSA  <b>Auger Size:</b> 4.25 ID in. <b>Rig Type:</b> 82 Acker <b>Spoon Size:</b> 3 in.	<b>Northing:</b> 766983.73368 <b>Easting:</b> 1006661.51156 <b>Well Casing:</b> 843.43 feet  <b>Borehole Depth:</b> 12.5 ft. <b>Ground Surface:</b> 844.04 feet  <b>Geologist:</b> Matthew W. Erbe	<b>Well No:</b> SB-08/MW97-10S  <b>Client:</b> New York State Electric & Gas  <b>Location:</b> Court Street Yard Binghamton, New York
--	---	--

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Blows/6 In.	N	Recovery (ft.)	PID (ppm) Headspace	Geotechnical Test	Geologic Column	Stratigraphic Description	Well Construction
gs elevation 844.04 ft										<b>GROUND SURFACE</b>	Flushmount manhole cover
		S-1		5 20 10 8	30	2.0	0.0			Brown SILT, trace fine to medium Gravel, rootlets (grass), loose, dry. (TOPSOIL)	Cement surface pad.
		S-2		8 7 7 7	14	2.0	9.1			Brown SILT and fine GRAVEL, trace rootlets, loose, dry. (TOPSOIL)	#0 Silica sand drain 10' to 15' bgs.
840										Light brown SILT, little coal fragments, trace Gravel (rounded), moist. (FILL)	Portland cement/5% bentonite grout 15' to 25' bgs.
5		S-3		7 6 5 5	11	0.2	7.5			As above, Fe staining.	Hydrated bentonite chips 25' to 35' bgs.
										Greenish gray SILT, some coal fragments, trace to little blueish white waste (10mm), stiff, moist.	2" diameter, Schedule 40 PVC well riser 0.6' to 4.0' bgs.
		S-4		6 5 7 5	12	0.7	7.3			0.1" thick coal seam, some silt.	2" diameter, 0.0" slotted, sch 40 PVC well screen 4.0' to 12.0' bgs.
										Poor recovery, brown SILT and fine GRAVEL, loose, moist to wet.	
835		S-5		1 3 3 4	6	2.0	140			Olive gray SILT, trace fine, rounded Gravel, coal, brick, soft, saturated (FILL).	
10										Brown SILT and fine GRAVEL, trace coal, saturated.	#0 Silica sand pack 3.5' to 12.0' bgs.
		S-6		2 3 3 3	6	2.0	106			Olive gray SILT and very fine SAND, black mottling, soft, saturated.	
										As above.	Hydrated bentonite chips 12.0' to 25' bgs.
										Bottom of spoons at 12.0' bgs. Bottom of boring 12.5' bgs.	
830											
6											

**BBL**  
 BEASLAND, BOUCK & LEE, INC.  
 engineers & scientists

#### Remarks:

PCB composite sample taken from 10-12' bgs. Sample intervals (0-2' & 2-4') analyzed for PAHs, total benzene, TCLP benzene. Sample interval (0-2') analyzed as MS/MSD. Sample interval (2-4') analyzed as duplicate.

#### Saturated Zones

Date / Time	Elevation	Depth
2/11/98	835.23	8.81 ↓



<b>Date Start/Finish:</b> 9/22/97 / 9/23/97 <b>Drilling Company:</b> MAXIM Technologies, Inc. <b>Driller's Name:</b> Rodney Bush <b>Drilling Method:</b> HSA  <b>Auger Size:</b> 4.25 ID in. <b>Rig Type:</b> 82 Acker <b>Spoon Size:</b> 2 in.	<b>Northing:</b> 766984.04794 <b>Easting:</b> 1006658.01039 <b>Well Casing:</b> 843.68 feet  <b>Borehole Depth:</b> 54 ft. <b>Ground Surface:</b> 844.06 feet  <b>Geologist:</b> Matthew W Erbe	<b>Well No:</b> MW97-10D  <b>Client:</b> New York State Electric & Gas  <b>Location:</b> Court Street Yard Binghamton, New York
--	--	--

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Blows/6 In.	N	Recovery (ft.)	PID (ppm) Headspace	Geotechnical Test	Geologic Column	Stratigraphic Description	Well Construction
gs elevation 844.06 ft										GROUND SURFACE	Flushmount curb box installed
		S-1		20 54 19 11	73	1.7	0.0			Brown SILT, highly organic, grass rootlets, loose, dry (TOPSOIL). At 0.2', brown SILT and fine to medium GRAVEL, one cobble. At 0.5', GRAVEL, concrete, trace brick, rootlets. (FILL)	Cement surface pad 0.0' to 0.5' bgs. #10 Silica sand drain 0.5' to 1.5' bgs.
		S-2		14 10 11 8	21	1.5	128			Brown SILT, little fine Gravel, trace coal fragments, slag, Fe staining, few white plastic pieces. Olive gray SILT, little fine Gravel, trace coal, slag, Fe staining, odor (FILL). Wet.	2" diameter, Schedule 40 PVC well riser 0.4' to 40.0' bgs.
840		S-3		1 2 1 2	3	2.0	487			Olive gray SILT, Fe staining, trace coarse Sand, brick fragments, coal, wet, sheens, odor (FILL). Some coal, medium stiff, black staining, odors. As above, saturated (FILL).	
5		S-4		2 3 2 3	5	1.2	247				
		S-5		4 4 5 6	9	2.0	303			Olive gray SILT, black staining, odors, saturated.	
835		S-6		2 2 2 2	4	1.5	184			As above.	Portland cement/5% bentonite grout 1.5' to 35.0' bgs.
10		S-7		2 3 5 6	8	1.5	407			As above.	
		S-8		1 3	8	1.5	1339			Stiff, one fine Gravel. As above, little fine Gravel.	
830											
5											

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

**Remarks:**

bgs - below ground surface

**Saturated Zones**

Date / Time	Elevation	Depth
2/11/98	832.48	11.58 ↓

**Client:**  
New York State Electric & Gas

**Location:**  
Court Street Yard  
Binghamton, New York

**Well No:** MW97-10D  
**Total Depth =** 54 ft.

DEPTH	ELEVATION	Sample Run Number	Sample/Int./Type	Blows/6 In.	N	Recovery (ft.)	PID (ppm) Headspace	Geotechnical Test	Geologic Column	Stratigraphic Description	Well Construction
		S-8		5 6	8	1.5	1339				
		S-9		2 3 4 3	7	0.2	454			Black fine SAND and GRAVEL, some Silt, loose, heavy coatings of reddish orange sheen, odor. Poor recovery. Gray SILT and fine, rounded GRAVEL, Fe staining, odor.	
825		S-10		1/ (12") 1/ (12")	1	0.5	494			Black-stained fine to medium SAND, very loose, saturated, sheen, odor.	
20		S-11		1 3 2 3	5	0.0	NA			As above.	2" diameter, Schedule 40 PVC well riser 0.4' to 40.0' bgs.
		S-12		2 3 4 5	7	0.8	498			As above.	
820		S-13		3 4 7 8	11	1.0	397			As above.	
25		S-14		4 6 8 8	14	2.0	314			As above.	Portland cement/5% bentonite grout 15' to 35.0' bgs.
		S-15		2 5 5 7	10	2.0	202			Black stained fine to medium SAND and olive gray SILT, soft, heavy sheens, odors. One red, rounded Cobble. Black fine to medium SAND, medium dense, mottled sheens, odor. Dark brownish black fine to medium SAND, medium dense, no sheens.	
85		S-16		2 4 6 7	10	2.0	108			Dark brownish gray fine to medium, subround SAND, trace Silt, mottled sheen, odors.	
30		S-17		3 4 7 8	11	2.0	97.1			Dark olive brown fine to medium SAND, little Silt, less sheen. As above.	
810		S-18		2 5	12	1.0	12.3			0.0' Silty Sand seam. As above.	
35											

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

Remarks:

**Saturated Zones**

Date / Time	Elevation	Depth
2/11/98	832.48	11.58

Client:  
New York State Electric & Gas

Location:  
Court Street Yard  
Binghamton, New York

Well No: MW97-10D  
Total Depth = 54 ft.

DEPTH	ELEVATION	Sample Run Number	Sample Int./Type	Blows/6 In.	N	Recovery (ft.)	P10 (ppm) Headspace	Geotechnical Test	Geologic Column	Stratigraphic Description	Well Construction
		S-18		7 7	12	1.0	12.3			Brown gray very fine to fine SAND, little Silt, no sheen. Poor recovery. As above.	
		S-19		2 4 5 6	9	0.5	15.8			Brown very fine to medium SAND, trace Silt. As above.	
805		S-20		3 4 7 8	11	1.0	5.3			Brown fine to medium, subangular SAND, trace Silt, loose.	
40		S-21		2 4 7 8	11	1.0	9.0			As above, trace sheens.	
		S-22		3 5 7 10	12	1.5	55.8			As above.	
800		S-23		2 5 6 9	11	1.8	70.1			Two 0.1' Silty Sand seams at 45.1' and 45.5' bgs.	
45		S-24		4 4 6 7	10	2.0	27.5			Brown fine to medium SAND, little fine, rounded to subrounded GRAVEL, trace Silt, loose.	
		S-25		4 15 17 19	32	1.6	248			Brown SILT and fine, angular GRAVEL, trace fine to medium Sand. Brown fine to medium SAND, trace Silt, sheens.	
795		S-26		11 15 30 40	45	0.5	41.5			Light brown SILT and fine to medium, angular to subrounded GRAVEL, trace to little, fine to medium, angular Sand. (TILL) Brown SILT and red brown to gray, medium to coarse, rounded GRAVEL. (TILL)	
60		S-27		30 24 23 90	47	0.6	31.4			Light brown medium to coarse GRAVEL, very fine SAND and SILT, several well rounded, red sandstone Gravel and subangular dark gray Gravel, Fe staining, very dense (TILL).	
790										Bottom of spoons 54.0' bgs. Bottom of boring 52.0' bgs.	
55											

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

Remarks:

Saturated Zones

Date / Time	Elevation	Depth
2/11/98	832.48	11.58



Date Start/Finish: 9/26/97 / 9/26/97  
 Drilling Company: MAXIM Technologies, Inc.  
 Driller's Name: John Warner  
 Drilling Method: HSA

Auger Size: 4.25 ID in.  
 Rig Type: 82 Acker  
 Spoon Size: 2 in.

Northing: 766805.93078  
 Easting: 1006507.19296  
 Well Casing: 844.15 feet  
 Borehole Depth: 18.5 ft.  
 Ground Surface: 844.58 feet

Geologist: Michael R Arlauckas

Well No: MW97-11S  
 Client:  
 New York State Electric & Gas  
 Location:  
 Court Street  
 Binghamton, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Blows/6 In.	N	Recovery (ft.)	PID (ppm) Headspace	Geotechnical Test	Geologic Column	Stratigraphic Description	Well Construction
gs elevation 844.58 ft										GROUND SURFACE	4" diameter flushmount curb box installed
		S-1		NA	NA	NA	NA			Augered through asphalt and crushed stone (ROADWAY).	Asphalt surface seal.
		S-2		18 18 15 7	33	1.4	0.0			Light brown very fine SAND, some angular to subround fine Gravel, little Silt, trace coal fragments, dry. (FILL)	#0 Silica sand 10' to 3.8' bgs.
5	840	S-3		7 7 9 10	16	1.1	5.1			Brown very fine SAND, little angular fine to medium Gravel, trace Silt, rock fragments, moist. (FILL)	Bentonite chips 3.8' to 5.8' bgs.
		S-4		14 10 12 12	22	0.8	11.1			Tan to brown very fine to fine SAND, some Silt, little fine Gravel (angular), rock fragments, moist. (FILL)	2" diameter, Schedule 40 PVC well riser 0.4' to 7.6' bgs.
		S-5		18 4 3 2	7	1.5	30.9			As above.	
10	835	S-6		NA	NA	2.0	NA			Light brown SILT and very fine SAND, brown mottling, moist. Pushed Shelby tube 10' to 12'.	#0 Silica sand pack 5.8' to 18.0' bgs.
		S-7		1 2 3 4	5	1.7	259			Gray SILT and very fine SAND, light brown mottling, moist.	2" diameter, 0.0" slotted, Schedule 40 PVC well screen 7.6' to 17.6' bgs.
5	830	S-8		3 4	9	1.6	12.8			As above.	

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

Remarks:

NA=Not available. bgs - below ground surface

Saturated Zones

Date / Time	Elevation	Depth
2/11/98	832.76	11.82

**Total Depth = 18.5 ft.**

[illegible]

Date / Time	Elevation	Depth
2/11/98	832.76	11.82 ▼

Date Start/Finish: 9/25/97 / 9/25/97  
 Drilling Company: MAXIM Technologies, Inc.  
 Driller's Name: John Warner  
 Drilling Method: HSA

Auger Size: 4.25 ID in.  
 Rig Type: 82 Acker  
 Spoon Size: 2 in.

Northing: 766836.48624  
 Easting: 1008626.15635  
 Well Casing: 843.56 feet

Borehole Depth: 18 ft.  
 Ground Surface: 844.00 feet

Geologist: Michael R Arlauckas

Well No: MW97-12S

Client:  
 New York State Electric & Gas

Location:  
 Court Street  
 Binghamton, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int./Type	Blows/6 In.	N	Recovery (ft.)	PID (ppm) Headspace	Geotechnical Test	Geologic Column	Stratigraphic Description	Well Construction
gs elevation 844.00 ft										GROUND SURFACE	4" diameter flushmount manhole installed
		S-1		NA	NA	NA	NA			Augered through asphalt and crushed stone.	Asphalt surface seal.
		S-2		8 20 18 13	38	0.6	NA			Light brown very fine SAND, some subrounded to angular Gravel, little Silt, trace coal, dry. (FILL)	#0 Silica sand drain 0.5' to 3.3' bgs.
840		S-3		5 17 9 13	26	1.1	NA			As above. Brown very fine SAND, trace Gravel and Silt. (FILL)	Bentonite chips 3.3' to 5.3' bgs.
5		S-4		10 10 7 6	17	0.0	NA			Brown very fine SAND, little angular Gravel. (FILL) Black fine to medium SAND, coal (FILL). No recovery.	2" diameter, Schedule 40 PVC well riser 0.4' to 7.3' bgs.
		S-5		2 1 1 1	2	0.7	NA			Grayish brown SILT and CLAY, moist. Brown very fine SAND, brown staining, moist.	
835		S-6		3 5 6 6	11	1.0	NA			Gray SILT and very fine SAND, light brown mottling, moist.	#0 Silica sand pack 5.3' to 17.5' bgs.
10		S-7		3 3 4 5	7	1.9	NA			Gray SILT, light brown mottling, moist.	2" diameter, 0.01" slotted, Schedule 40 PVC well screen 7.3' to 17.3' bgs.
830		S-8		3 4	8	1.8	NA			Grayish brown very fine SAND, mottled, wet.	
5											

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

Remarks:

NA=Not available. bgs - below ground surface

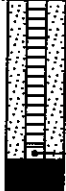
Saturated Zones

Date / Time	Elevation	Depth
2/11/98	831.70	12.30 ▼

**Client:**  
New York State Electric & Gas

**Well No:** MW97-12S  
**Total Depth =** 18 ft.

**Location:**  
Court Street  
Binghamton, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Blows/6 In.	N	Recovery (ft.)	PID (ppm) Headspace	Geotechnical Test	Geologic Column	Stratigraphic Description	Well Construction
		S-8		4 7	8	1.8	NA			At 14.9' bgs, gray SILT and very fine SAND, mottled, moist.	 <p>0.2' sump 17.3' to 17.5' bgs. Hydrated bentonite chips 17.5' to 18.0' bgs.</p>
		S-9		5 6 3 4	9	1.8	NA			As above.	
										Gray SAND and GRAVEL, wet. Bottom of boring 18.0' bgs.	
825											
20											
820											
25											
815											
30											
810											
35											

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

**Remarks:**

**Saturated Zones**

Date / Time	Elevation	Depth
2/11/98	831.70	12.30 ▼

<b>Date Start/Finish:</b> 9/18/97 / 9/18/97 <b>Drilling Company:</b> MAXIM Technologies, Inc. <b>Driller's Name:</b> Rodney Bush <b>Drilling Method:</b> HSA  <b>Auger Size:</b> 4.25 ID in. <b>Rig Type:</b> 82 Acker <b>Spoon Size:</b> 3 in.	<b>Northing:</b> 767079.84950 <b>Easting:</b> 1008456.79965 <b>Well Casing:</b> 844.66 feet  <b>Borehole Depth:</b> 12.5 ft. <b>Ground Surface:</b> 844.84 feet  <b>Geologist:</b> Matthew W Erbe	<b>Well No:</b> MW97-13S  <b>Client:</b> New York State Electric & Gas  <b>Location:</b> Court Street Yard Binghamton, New York
--	--	--

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Blows/6 In.	N	Recovery (ft.)	PID (ppm) Headspace	Geotechnical Test	Geologic Column	Stratigraphic Description	Well Construction
gs elevation 844.84 ft										<b>GROUND SURFACE</b>	Flushmount curb box installed.
		S-1	13 13 19 20	32	2.0	9.9				Light gray to dark gray fine to medium GRAVEL, loose, dry. (FILL) Brown fine to medium SAND, trace fine Gravel, loose, dry. (FILL) Coal fragments. Brown fine to medium, rounded GRAVEL, trace coal, red quartzite, loose, dry. (FILL) As above. Black fine to medium SAND, some 1" brick fragments, coal (2mm), loose. (FILL) 0.1" brown decomposed wood, black staining, moist. (FILL) Dark brown fine GRAVEL, moist, petroleum odor. (FILL) Black fine, angular GRAVEL and fine to coarse SAND, trace fibers, moist, strong odors. (FILL) Brown fine GRAVEL, some medium to coarse Sand and Silt, trace chinders, slag, coal and wood pieces, strong odors, sheens. Black NAPL throughout. (FILL) Poor recovery. As above. 0.1" angular, medium Gravel-sized brick and cement, fragments, loose, dry.	Cement surface pad 0.0' to 0.8' bgs. #10 Silica sand drain 0.8' to 1.4' bgs. Portland cement/5% bentonite grout 1.4' to 2.5' bgs. Bentonite chips 2.5' to 3.5' bgs. 2" diameter, Schedule 40 PVC well riser 0.2' to 5.0' bgs. #10 Silica sand pack 3.5' to 10.0' bgs. 2" diameter, 0.0" slotted, Schedule 40 PVC well screen 5.0' to 10.0' bgs w/ DNAPL funnel collar set at 10.0' bgs. DNAPL collection sump 10.0' to 12.0' bgs. Bentonite slurry 10.0' to 12.0' bgs. Bentonite chips 12.0 to 12.5 bgs.
5	840	S-2	8 10 19 21	29	1.5	11.1					
		S-3	6 5 4 3	9	0.3	564					
		S-4	4 2 4 3	6	1.2	1011					
		S-5	75/3 8 8 3	18	0.4	545					
10	835	S-6	5 8 11 12	19	2.0	437					
		S-7	10 16 15 18	31	1.0	382					
5	830									Bottom of spoons 14.0' bgs. Bottom of boring 12.5' bgs.	

<b>BBL</b> BEASLAND, BOUCK & LEE, INC. engineers & scientists	<b>Remarks:</b> 2" spoons from 10' to 14' below grade. bgs - below ground surface. NAPL - Non Aqueous Phase Liquid.	<b>Saturated Zones</b>		
		Date / Time	Elevation	Depth
		2/11/98	840.47	4.37 ↓

<b>Date Start/Finish:</b> 12/10/97 / 12/11/97 <b>Drilling Company:</b> MAXIM Technologies, Inc. <b>Driller's Name:</b> Rodney Bush <b>Drilling Method:</b> HSA  <b>Auger Size:</b> 4.25 ID in. <b>Rig Type:</b> 82 Acker	<b>Northing:</b> 767165.84629 <b>Easting:</b> 1006897.14703 <b>Well Casing:</b> 845.55 feet  <b>Borehole Depth:</b> 20 ft. <b>Ground Surface:</b> 845.86 feet  <b>Geologist:</b> Matthew W. Erbe	<b>Well No:</b> MW97-14S  <b>Client:</b> New York State Electric & Gas  <b>Location:</b> Conrail Right of Way Binghamton, New York
--	---	---

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Blows/6 In.	N	Recovery (ft.)	PID (ppm) Headspace	Geotechnical Test	Geologic Column	Stratigraphic Description	Well Construction
gs elevation 845.86 ft										GROUND SURFACE	9" diameter flushmount curb box installed.
5	845									No sampling conducted. See log of adjacent well MW97-14D for sampling and stratigraphic details.	Cement surface seal 0.0' to 0.5' bgs.
											#0 Silica sand 0.4' to 1.0' bgs inside of curb box.
											Type I Portland Cement/5% Bentonite Grout 1.0' to 6.0' bgs.
											2" diameter, Schedule 40 PVC well riser 0.3' to 9.8' bgs.
											Bentonite chips 6.0' to 8.0' bgs.
10	835										#0 Silica sand pack 8.0' to 20.0' bgs.
5											2" diameter, 0.0" slotted, Schedule 40 PVC well screen 9.8' to 19.8' bgs.

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

**Remarks:**

bgs - below ground surface. NA=Not available. Installed approximately 4' east of MW97-14D.

**Saturated Zones**

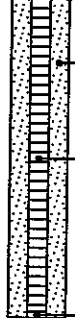
Date / Time	Elevation	Depth
2/11/98	832.95	12.91 ↓



**Client:**  
New York State Electric & Gas

**Location:**  
Conrail Right of Way  
Binghamton, New York

**Well No:** MW97-14S  
**Total Depth =** 20 ft.

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Blows/6 In.	N	Recovery (ft.)	PID (ppm) Headspace	Geotechnical Test	Geologic Column	Stratigraphic Description	Well Construction
830										No sampling conducted. See log of adjacent well MW97-14D for sampling and stratigraphic details.	 <p>#10 Silica sand pack 8.0' to 20.0' bgs.</p> <p>2" diameter, 0.01" slotted, Schedule 40 PVC well screen 8.8' to 18.8' bgs.</p> <p>2" diameter, Schedule 40 PVC sump 18.8' to 20.0' bgs.</p>
20	825										
25	820									Bottom of boring at 20' bgs.	
30											
35	815										

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

Remarks:

**Saturated Zones**

Date / Time	Elevation	Depth
2/11/98	832.95	12.91 ↓

<b>Date Start/Finish:</b> 12/10/97 / 12/11/97 <b>Drilling Company:</b> MAXIM Technologies, Inc. <b>Driller's Name:</b> Rodney Bush <b>Drilling Method:</b> HSA  <b>Auger Size:</b> 4.25 ID in. <b>Rig Type:</b> 82 Acker <b>Spoon Size:</b> 2 in.	<b>Northing:</b> 767165.72745 <b>Easting:</b> 1006893.23697 <b>Well Casing:</b> 845.57 feet  <b>Borehole Depth:</b> 40 ft. <b>Ground Surface:</b> 845.91 feet  <b>Geologist:</b> Matthew W. Erbe	<b>Well No:</b> MW97-14D  <b>Client:</b> New York State Electric & Gas  <b>Location:</b> Conrail Right of Way Binghamton, New York
--	---	---

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Blows/6 In.	N	Recovery (ft.)	PID (ppm) Headspace	Geotechnical Test	Geologic Column	Stratigraphic Description	Well Construction
gs elevation 845.91 ft										GROUND SURFACE	6" diameter flushout curb box installed.
	845	S-1	NA	5	13	0.6	0.0			Asphalt. (FILL)	
				8						Dark brown SILT, some fine to coarse Sand and fine Gravel, trace brick, stiff, dry. (FILL)	
		S-2	9	30/2	NA	0.4	0.0			Tan fine SAND and SILT, some fine, subangular Gravel.	Cement surface seal 0.0' to 0.5' bgs.
				NA						At 2.8', concrete.	#40 Silica sand 0.4' to 1.0' bgs inside of curb box.
				NA						No Recovery.	
5		S-3	2	3	5	0.0	NA				Type I Portland Cement/5% Bentonite Grout 1.0' to 30.0' bgs.
	840			2							
		S-4	27	6	12	0.1	NA			Poor recovery. Brown SILT, fine to coarse, round to subround Sand, slag, brick, concrete, medium dense, dry to moist (FILL).	
				6							
				5							
		S-5	2	1	2	0.1	0.2			Orange, very fine to fine SAND, some SILT, rootlets, occasional coarse, round Sand, very loose, moist.	2" diameter, Schedule 40 PVC well riser 0.3' to 34.8' bgs.
				1							
10				1							
	835	S-6	1	1	2	1.5	0.8			Orange, very fine SAND, some SILT, rootlets, several faint, red-brown laminations throughout, very loose, moist to wet.	
				1							
				2							
		S-7	2	2	6	2.0	1.6			As above.	
				4							
				2							
		S-8	1	10	5	1.1	1.7			Grades to orange-brown, very fine to fine SAND, little SILT, loose, wet.	

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

#### Remarks:

bgs - below ground surface. NA=Not available. First attempt had auger refusal at 6' bgs. Moved 3' south and refusal again, augers pull up stiff steel cables and rebar. Third attempt moved 10' east.

#### Saturated Zones

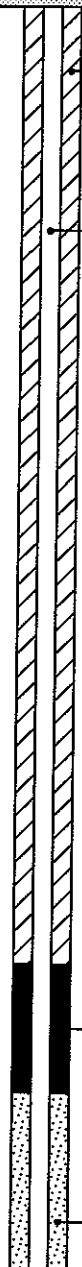
Date / Time	Elevation	Depth
2/11/98	832.95	12.96



**Client:**  
New York State Electric & Gas

**Location:**  
Conrail Right of Way  
Binghamton, New York

**Well No:** MW97-14D  
**Total Depth =** 40 ft.

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Blows/6 In.	N	Recovery (ft.)	PID (ppm) Headspace	Geotechnical Test	Geologic Column	Stratigraphic Description	Well Construction
830		S-8		4 5	5	1.1	1.7			Brown, fine SAND, some very fine Sand, little Silt, orange mottling and laminations.	 <p>Type I Portland Cement/5% Bentonite Grout 1.0' to 30.0' bgs.</p> <p>2" diameter, Schedule 40 PVC well riser 0.3' to 34.8' bgs.</p> <p>Bentonite chips 30.0' to 32.0' bgs.</p> <p>#0 Silica sand pack 32.0' to 40.0' bgs.</p>
		S-9		4 5 8 10	11	1.5	1.9				
		S-10		5 7 7 7	14	0.8	1.1			Orange-brown, fine to coarse SAND, little Silt and fine, angular Gravel, medium dense, wet.	
825		S-11		6 8 12 12	20	0.7	1.0			Orange-brown, well rounded, fine to medium GRAVEL (quartzite, red sandstone, dark gray siltstone), little Silt, trace fine to coarse Sand, medium dense, wet.	
		S-12		10 11 15 17	26	0.5	1.1			As above, more fine Gravel, little fine to coarse Sand.	
25		S-13		13 10 10 7	20	0.5	0.9			Gray-brown, fine to coarse Sand, some fine Gravel, little Silt.	
820		S-14		25 17 14 19	31	0.2	0.8			Orange-brown, fine to coarse SAND and fine, round to subangular GRAVEL, little Silt.	
		S-15		13 15 14 9	29	0.5	1.4			As above, gray-brown, some fine to coarse Sand.	
30		S-16		15 14 7 10	21	1.0	0.9			As above.	
815		S-17		11 10 10 10	20	0.1	0.9			Dark gray, fine to medium, subangular GRAVEL, some fine to coarse Sand, little orange-brown Silt, loose.	
35		S-18		10 9	22	0.9	0.4			Brown, fine to medium SAND, some fine subangular Gravel, trace Silt, medium dense.	

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

Remarks:

**Saturated Zones**

Date / Time	Elevation	Depth
2/11/98	832.95	12.96

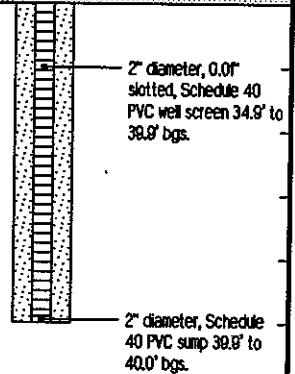
**Client:**  
New York State Electric & Gas

**Location:**  
Conrail Right of Way  
Binghamton, New York

**Well No:** MW97-14D

**Total Depth =** 40 ft.

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Blows/6 In.	N	Recovery (ft.)	PID (ppm) Headspace	Geotechnical Test	Geologic Column	Stratigraphic Description	Well Construction
810		S-18		13 10	22	0.9	0.4				
		S-19		5 5 9 9	14	0.8	0.3			Dark gray well sorted fine to coarse subangular SAND, trace Silt and medium rounded Gravel (siltstone), coarsening downward.	
		S-20		4 11 16 16	27	0.7	0.2			Brownish gray fine to medium SAND, trace coarse subangular Sand and Silt.	
40										Pushed GRAVEL from 39' to 40' bgs. (TILL?)	
805		S-21		12 38 24 65/.4	62	0.8	0.3			Olive-gray coarse SAND and fine to medium, round to subround GRAVEL (siltstone, shale), some fine to medium Sand, little Clay and Silt, well cemented, very dense (TILL).	
										Bottom of spoons at 42' bgs. Bottom of boring at 40' bgs.	
45											
800											
60											
795											
55											



**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

**Remarks:**

**Saturated Zones**

Date / Time	Elevation	Depth
2/11/98	832.95	12.96 ▼

<b>Date Start/Finish:</b> 12/9/97 / 12/9/97 <b>Drilling Company:</b> MAXIM Technologies, Inc. <b>Driller's Name:</b> Rodney Bush <b>Drilling Method:</b> HSA  <b>Auger Size:</b> 4.25 ID in. <b>Rig Type:</b> 82 Acker <b>Spoon Size:</b> 3 in.	<b>Northing:</b> 767248.13253 <b>Easting:</b> 1006209.68240 <b>Well Casing:</b> 857.10 feet  <b>Borehole Depth:</b> 27.1 ft. <b>Ground Surface:</b> 857.43 feet  <b>Geologist:</b> Matthew W. Erbe	<b>Well No:</b> TW97-IS  <b>Client:</b> New York State Electric & Gas  <b>Location:</b> Conrail Right of Way Binghamton, New York
--	---	--

DEPTH	ELEVATION	Sample Run Number	Sample/Int./Type	Blows/6 In.	N	Recovery (ft.)	PID (ppm) Headspace	Geotechnical Test	Geologic Column	Stratigraphic Description	Well Construction
gs elevation 857.43 ft.											8" diameter flushmount curb box installed
										GROUND SURFACE	
855										No sampling conducted 0 to 24' bgs. See boring log of adjacent test well TW97-ID for sampling and stratigraphic details.	Cement surface seal 0.0' to 0.5' below grade #10 Silica sand 0.4' to 1.0' below grade inside of curb box
5											Backfilled with soil cuttings 1.0' to 13.0' below grade
850					8						2" diameter, Schedule 40 PVC well riser 0.3' to 17.0' below grade
10											
845											Bentonite chips 13.0' to 15.0' below grade

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
*engineers & scientists*

Remarks:

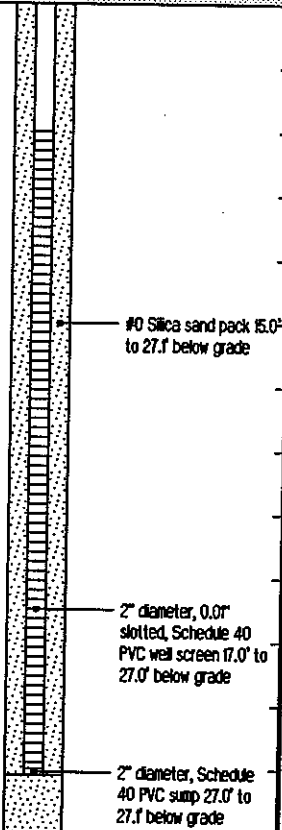
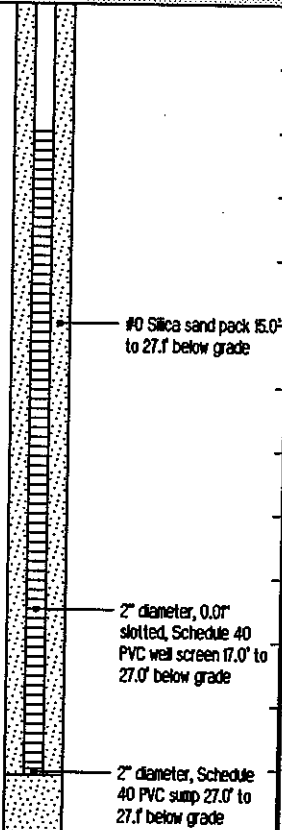
NA=Not available. bgs - below ground surface Lithologic description from 0-24' bgs & 26-28' bgs obtained from TW97-ID boring. Auger refusal at 20' below ground surface (bgs), moved ~4' north of TW97-ID.

Saturated Zones		
Date / Time	Elevation	Depth
2/11/98	835.57	21.86

**Client:**  
New York State Electric & Gas

**Location:**  
Conrail Right of Way  
Binghamton, New York

**Well No:** TW97-IS  
**Total Depth =** 27.1 ft.

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Blows/6 In.	N	Recovery (ft.)	PID (ppm) Headspace	Geotechnical Test	Geologic Column	Stratigraphic Description	Well Construction
840										No sampling conducted 0 to 24' bgs. See boring log of adjacent test well TW97-ID for sampling and stratigraphic details.	
20					6						
835											
25		S-1		2 2 4 7		2.0	NA			Gray SILT, some Clay, trace Sand, Fe stained mottling, rootlets.	
		S-2				2.0	NA			Shelby Tube sample taken.	
830										Bottom of boring at 28' bgs.	
30											
825											
35											

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

**Remarks:**

Collected 2-inch spoon from 24-26' bgs.  
Collected shelly tube from 26-28' bgs.

**Saturated Zones**

Date / Time	Elevation	Depth
2/11/98	835.67	21.86

<b>Date Start/Finish:</b> 12/5/97 / 12/9/97 <b>Drilling Company:</b> MAXIM Technologies, Inc. <b>Driller's Name:</b> Rodney Bush <b>Drilling Method:</b> HSA  <b>Auger Size:</b> 4.25 ID in. <b>Rig Type:</b> 82 Acker <b>Spoon Size:</b> 3 in.	<b>Northing:</b> 767242.73080 <b>Easting:</b> 1006210.19995 <b>Well Casing:</b> 857.07 feet  <b>Borehole Depth:</b> 64 ft. <b>Ground Surface:</b> 857.36 feet  <b>Geologist:</b> Matthew W. Erbe	<b>Well No:</b> TW97-ID  <b>Client:</b> New York State Electric & Gas  <b>Location:</b> Conrail Right of Way Binghamton, New York
--	---	--

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Blows/6 In.	N	Recovery (ft.)	PID (ppm) Headspace	Geotechnical Test	Geologic Column	Stratigraphic Description	Well Construction
gs elevation 857.36 ft										GROUND SURFACE	9" diameter flushmount curb box installed
		S-1		3 7 8 6	15	1.3	0.0			Black fine to coarse Sand size cinders, coal, slag, Fe staining, medium dense, dry (FILL).	Cement surface seal 0.0' to 0.5' bgs.
	855	S-2		4 4 5 5	9	1.5	0.0			As above, color change to yellow, orange and black, loose.	#0 Silica sand 0.4' to 1.0' bgs inside of curb box.
										As above.	
5		S-3		5 5 5 6	10	1.0	0.0			As above.	Backfilled with soil cuttings 1.0' to 52.0' bgs.
	850	S-4		4 3 5 3	8	1.0	0.0			As above.	2" diameter, Schedule 40 PVC well riser 0.3' to 56.4' bgs.
		S-5		4 2 3 2	5	1.0	0.0			As above.	
10		S-6		3 2 2 2	4	1.1	0.0			As above.	
	845	S-7		2 2 2 3	4	1.3	0.0			As above.	
		S-8		9 10	20	1.0	17.0				

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

**Remarks:**

NA=Not available. bgs - below ground surface

**Saturated Zones**

Date / Time	Elevation	Depth
2/11/98	832.80	24.56

**Client:**  
New York State Electric & Gas

**Location:**  
Conrail Right of Way  
Binghamton, New York

**Well No:** TW97-1D  
**Total Depth =** 64 ft.

DEPTH	ELEVATION	Sample Run Number	Sample/Int./Type	Blows/6 In.	N	Recovery (ft.)	PID (ppm) Headspace	Geotechnical Test	Geologic Column	Stratigraphic Description	Well Construction
		S-8		10 8	20	1.0	17.0			Black SILT, some fine Sand, moist, gasoline-like odors.	
	840	S-9		11 13 10 11	23	1.0	0.0			Gray fine to medium SAND, concrete, fine coal fragments.	Backfilled with soil cuttings 10' to 52.0' bgs.
		S-10		11 7 7 8	14	0.9	0.0			Orange, fine to medium, subrounded GRAVEL, some Silt, little Clay, fine to coarse Sand, coal, medium dense (FILL).	
20										As above, angular to subrounded GRAVEL.	
		S-11		9 8 5 5	13	1.2	0.0			As above, shale fragments from 19.2-19.4', 1/4" thick, black stained rope at 20'. (FILL)	
	835	S-12		3 5 6 7	11	1.7	0.0			Gray SILTY CLAY, medium plasticity, black stained, trace coal fragments, stiff, moist. (FILL)	
										As above, medium to high plasticity, medium to coarse, rounded Sand, fine Gravel, moist. (FILL)	
25		S-13		NA	NA	0.0	NA			No Recovery. Pushed piece of shale.	
	830	S-14		11 11 13 11	24	1.5	0.0			Gray SILT, some very fine Sand, trace Clay, rootlets, Fe mottling, very stiff.	
										As above.	
		S-15		9 15 13 19	28	1.7	0.0				
30		S-16		NA	NA	0.9	0.0			Gray Silt, some medium to coarse Sand, fine, subrounded Gravel, moist.	
	825	S-17		7 6 6 4	12	0.4	0.0			Tan and gray fine to coarse subangular SAND and fine subrounded GRAVEL, little Silt, medium dense, wet.	
35		S-18		2 3	8	0.0	NA			No Recovery.	

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

**Remarks:**

2-inch spoons collected from 26-64' bgs.  
Attempted shelly tube from 24-26' bgs.

**Saturated Zones**

Date / Time	Elevation	Depth
2/11/98	832.80	24.56 ↓



**Client:**  
New York State Electric & Gas

**Location:**  
Conrail Right of Way  
Binghamton, New York

**Well No:** TW97-ID  
**Total Depth =** 64 ft.

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Blows/6 In.	N	Recovery (ft.)	PID (ppm) Headspace	Geotechnical Test	Geologic Column	Stratigraphic Description	Well Construction
		S-18		5 3	8	0.0	NA				
	820	S-19		2 4 5 8	9	1.0	0.0			Gray, fine to medium SAND, little Silt, trace coarse Sand, loose.	Backfilled with soil cuttings 1.0' to 52.0' bgs.
		S-20		7 10 15 9	25	0.6	0.0			Fine, rounded GRAVEL, some fine to medium Sand, little Silt. At 37.6', Fine to medium SAND, some Silt, trace Clay.	2" diameter, Schedule 40 PVC well riser 0.3' to 56.4' bgs.
40		S-21		1 1 1 1	2	1.0	0.0			Gray, fine to coarse, subangular to subround SAND, trace Silt, medium dense. Well rounded medium Gravel in spoon tip.	
	85	S-22		5 3 3 4	6	1.0	0.0			Brownish-gray fine to medium SAND, trace coarse Sand and Silt, very loose.	
										As above, well graded, subangular grains, loose.	
	45	S-23		2 3 4 7	7	1.0	6.7			As above, no visual evidence of product.	
										As above, medium dense.	
	80	S-24		3 5 6 6	11	1.0	2.8			As above.	
		S-25		4 4 6 7	10	1.0	2.1			As above.	
	50	S-26		5 6 7 8	13	0.9	1.1			As above At 50.5', 0.05'-thick medium Sand seam, some fine Sand, trace Silt.	
	805	S-27		4 7 10 10	17	1.0	1.1			As above.	
		S-28		5 6	14	1.0	1.5			Brown fine subangular Sand, trace Silt, medium dense.	Bentonite chips 52.0' to 54.0' bgs.

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

**Remarks:**

WOH = Weight of hammer. 3-inch spoon collected from 36-38' bgs.

**Saturated Zones**

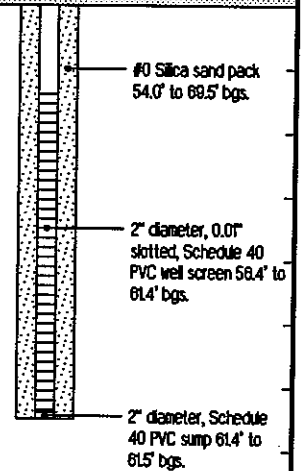
Date / Time	Elevation	Depth
2/11/98	832.80	24.56 ↓

**Client:**  
New York State Electric & Gas

**Location:**  
Conrail Right of Way  
Binghamton, New York

**Well No:** TW97-ID  
**Total Depth =** 64 ft.

DEPTH	ELEVATION	Sample Run Number	Sample/Int./Type	Blows/6 In.	N	Recovery (ft.)	PID (ppm) Headspace	Geotechnical Test	Geologic Column	Stratigraphic Description	Well Construction
		S-28		8 10	14	1.0	1.5				
	800	S-29		4 18 26 22	44	1.2	1.7			Brown fine round to subround GRAVEL, some fine to coarse Sand, trace Silt, dense.	
		S-30		6 12 15 22	27	2.0	1.3			Brown fine to medium subround to subangular Sand, trace Silt, medium dense.	
	80	S-31		1 8 22 29	30	1.2	1.8			Color change to Brownish gray.	
	795	S-32		26 29 20 32	49	0.0	NA			Fine to medium rounded GRAVEL, little fine to coarse Sand, trace Silt, red-brown mottling, dense (TILL). Fine rounded GRAVEL, some fine to coarse Sand, little Silt in spoon tip (TILL).	
	85									Bottom of spoons at 64' bgs. Bottom of boring at 62' bgs.	
	790										
	70										
	785										
	75										



**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

**Remarks:**

**Saturated Zones**

Date / Time	Elevation	Depth
2/11/98	832.80	24.56



Date Start/Finish: 12/2/97 / 12/3/97  
 Drilling Company: MAXIM Technologies, Inc.  
 Driller's Name: Rodney Bush  
 Drilling Method: HSA

Auger Size: 4.25 ID in.  
 Rig Type: 82 Acker  
 Spoon Size: 3 in.

Northing: 767242.41559  
 Easting: 1006479.26406  
 Well Casing: 856.09 feet

Borehole Depth: 24 ft.  
 Ground Surface: 856.43 feet

Geologist: Matthew W. Erbe

Well No: TW97-2S

Client:  
 New York State Electric & Gas

Location:  
 Conrail Right of Way  
 Binghamton, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Blows/6 In.	N	Recovery (ft.)	PID (ppm) Headspace	Geotechnical Test	Geologic Column	Stratigraphic Description	Well Construction
gs elevation 856.43 ft										GROUND SURFACE	8" diameter flushmount curb box installed.
855										No sampling conducted. See boring log of adjacent test well TW97-2D for sampling and stratigraphic details.	Cement surface seal 0.0' to 1.0' bgs.
5											#0 Silica sand 0.5' to 1.0' bgs inside of curb box.
850											Backfilled with soil cuttings 1.0' to 10.4' bgs.
10											2" diameter, Schedule 40 PVC well riser 0.3' to 14.4' bgs.
845											Bentonite chips 10.4' to 12.4' bgs.
5											#0 Silica sand pack 12.4' to 24.5' bgs.

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

Remarks:

NA=Not available. bgs - below ground surface

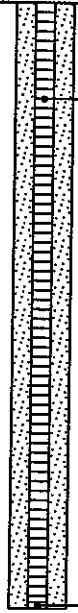
Saturated Zones

Date / Time	Elevation	Depth
2/11/98	837.08	19.35

**Client:**  
New York State Electric & Gas

**Location:**  
Conrail Right of Way  
Binghamton, New York

**Well No:** TW97-2S  
**Total Depth =** 24 ft.

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Blows/6 In.	N	Recovery (ft.)	PID (ppm) Headspace	Geotechnical Test	Geologic Column	Stratigraphic Description	Well Construction
840										No sampling conducted. See boring log of adjacent test well TW97-2D for sampling and stratigraphic details.	 <p>2" diameter, 0.01" slotted, Schedule 40 PVC well screen 14.4' to 24.4' bgs.</p> <p>2" diameter, Schedule 40 PVC pump 24.4' to 24.5' bgs.</p>
835											
830										Bottom of boring at 24.5' bgs.	
825											

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

**Remarks:**

**Saturated Zones**

Date / Time	Elevation	Depth
2/11/98	837.08	19.35' ↓

<b>Date Start/Finish:</b> 12/3/97 / 12/5/97 <b>Drilling Company:</b> MAXIM Technologies, Inc. <b>Driller's Name:</b> Rodney Bush <b>Drilling Method:</b> HSA  <b>Auger Size:</b> 4.25 ID in. <b>Rig Type:</b> 82 Acker <b>Spoon Size:</b> 3 in.	<b>Northing:</b> 767243.11930 <b>Easting:</b> 1006470.78451 <b>Well Casing:</b> 856.00 feet  <b>Borehole Depth:</b> 69 ft. <b>Ground Surface:</b> 856.36 feet  <b>Geologist:</b> Matthew W. Erbe	<b>Well No:</b> TW97-2D  <b>Client:</b> New York State Electric & Gas  <b>Location:</b> Conrail Right of Way Binghamton, New York
--	---	--

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Blows/6 In.	N	Recovery (ft.)	PTD (ppm) Headspace	Geotechnical Test	Geologic Column	Stratigraphic Description	Well Construction
gs elevation 856.36 ft										GROUND SURFACE	9" diameter flushmount curb box installed.
855		S-1	8 8 14 17	22	0.7	16.3				Black fine to coarse SAND, little fine to medium subrounded Gravel and cinders, trace Silt, coal, slag, and brick, medium dense, dry (FILL).	Cement surface seal 0.0" to 1.0" bgs.
		S-2	14 13 11 10	24	0.1	0.0				As above, poor recovery.	#40 Silica sand 0.5" to 1.0" bgs inside of curb box.
5		S-3	5 3 3 3	6	1.5	0.0				As above, some brown Silt and fine to coarse Sand.	Backfilled with soil cuttings 1.0" to 58.0" bgs.
850		S-4	5 4 9 16	13	1.5	0.0				At 5.7', highly oxidized slag and fine to coarse Sand, coal fragments, loose, dry. (FILL) As above, medium dense, moist to dry.	2" diameter, Schedule 40 PVC well riser 0.4' to 64.0" bgs.
10		S-5	8 10 9 12	19	1.0	0.0				Light brown fine to coarse subrounded SAND and fine rounded GRAVEL, trace SILT, slag, red mottling, dry to moist. (FILL)	
845		S-6	9 8 7 6	15	0.7	0.0				Brown fine to coarse subangular to subround SAND and GRAVEL (siltstone), trace Silt, moist. (FILL)	
		S-7	8 9 8 10	17	0.2	0.0				As above, poor recovery. Coarse, rounded Gravel in spoon tip.	
5		S-8	6 9	22	0.7	0.0				Brown fine to coarse rounded GRAVEL and subangular SAND, trace coal fragments, moist (FILL).	

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

**Remarks:**

bgs - below ground surface NA=Not available. Lithologic description from 0-24' below ground surface (bgs) was taken from TW97-2S boring.

**Saturated Zones**

Date / Time	Elevation	Depth
2/11/98	832.95	23.41

**Client:**  
New York State Electric & Gas

**Location:**  
Conrail Right of Way  
Binghamton, New York

**Well No:** TW97-2D  
**Total Depth =** 69 ft.

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Blows/6 In.	N	Recovery (ft.)	PID (ppm) Headspace	Geotechnical Test	Geologic Column	Stratigraphic Description	Well Construction
840		S-8		13 15	22	0.7	0.0				
		S-9		35 50/0. NA NA	NA	0.3	0.0			Brown fine to coarse subrounded GRAVEL, trace fine to coarse Sand, Silt, moist. (FILL) At 16.6', spoon refusal.	Backfilled with soil cuttings 1.0' to 58.0' bgs.
		S-10		13 17 17 24	34	0.6	0.0			Brown medium to coarse subangular to angular GRAVEL (siltstone and shale), some fine to coarse Sand, little to trace Silt, dense, moist to wet. (FILL)	2" diameter, Schedule 40 PVC well riser 0.4' to 64.0' bgs.
835		S-11		11 12 12 17	24	1.0	226			Dark gray medium to coarse GRAVEL (siltstone and shale), little fine to coarse Sand, medium dense, wet, sheen, odor. (FILL)	
		S-12		17 11 10 8	21	0.8	53.6				
830		S-13		10 13 13 15	26	1.0	14.8			Gray very fine SAND, some Silt, trace fine rounded Gravel, some black staining, no sheen, odor. Gray SILT, some Clay, little fine to coarse Sand, Fe mottling throughout, very stiff.	
		S-14		13 22 26 33	48	1.0	4.4			Gray SILT, little Clay, Fe staining throughout, occasional dark reddish-black colored speckles, hard.	
		S-15		7 8 6 7	14	0.0	NA			No Recovery 28-32' bgs.	
825		S-16		10 7 8 7	15	0.0	NA				
		S-17		8 8 8 11	16	1.4	1.7			Rounded Cobble in top of spoon. Gray fine SAND, trace Silt and fine shell fragments, medium dense.	
35		S-18		1 2	6	1.5	1.1			Gray fine SAND, trace Silt, greenish-yellow vegetation, shell fragments, loose.	

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

**Remarks:**

2-inch spoons collected from 24-70' bgs.  
3-inch spoon collected from 32-34' bgs.

**Saturated Zones**

Date / Time	Elevation	Depth
2/11/98	832.95	23.41' ↓

**Client:**  
New York State Electric & Gas

**Location:**  
Conrail Right of Way  
Binghamton, New York

**Well No:** TW97-2D  
**Total Depth =** 69 ft.

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Blows/6 In.	N	Recovery (ft.)	PID (ppm) Headspace	Geotechnical Test	Geologic Column	Stratigraphic Description	Well Construction
820		S-18		4 5	6	1.5	1.1			As above, no vegetation evident.	
		S-19		6 5 4 4	9	1.3	2.9			As above, little Silt.	
		S-20		2 4 6 8	10	2.0	3.7			As above, color change to brown-gray.	
40		S-21	WOH	1 4 5	5	1.3	6.5			Gray to brown fine to medium SAND, grades to fine Sand, little to trace Silt, shell fragments, medium dense.	
85		S-22		5 5 8 7	13	1.2	2.9			Grayish brown fine to medium SAND, little Silt, Fe staining, shell fragments.	
45		S-23		4 5 7 8	12	1.3	1.4			Brown fine SAND, little medium Sand and Silt, Fe stained.	
80		S-24		6 6 6 9	12	1.1	1.4			Brownish-gray fine to medium SAND.	
		S-25		8 6 6 6	12	1.3	0.6			At 49.0', heavy Fe staining for 0.4'.	
60		S-26		6 7 8 7	15	1.7	0.1			Gray fine to medium SAND, trace Silt and coarse Sand and shell fragments.	
805		S-27		5 6 9 10	15	2.0	0.7			Brown fine to medium SAND, trace Silt and coarse rounded Sand.	
55		S-28		2 5	20	2.0	0.0			Brown fine SAND, trace Silt and medium Sand.	

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

**Remarks:**

WOH = Weight of hammer.

**Saturated Zones**

Date / Time	Elevation	Depth
2/11/98	832.95	23.41

**Client:**  
New York State Electric & Gas

**Location:**  
Conrail Right of Way  
Binghamton, New York

**Well No:** TW97-2D  
**Total Depth =** 69 ft.

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Blows/6 In.	N	Recovery (ft.)	PID (ppm) Headspace	Geotechnical Test	Geologic Column	Stratigraphic Description	Well Construction
800		S-28		15 20	20	2.0	0.0				
		S-29		3 5 7 11	12	2.0	0.0				
		S-30		2 5 7 9	12	1.0	0.1			Brown fine SAND, little Silt, trace fine rounded Gravel (red sandstone, quartzite). Brown fine to medium subangular to round SAND, little Silt, trace fine rounded Gravel (sandstone). As above, trace Silt, no Gravel, loose.	
795		S-31		1 2 4 5	6	1.5	0.0				
		S-32		1 3 5 7	8	2.0	0.0			Brown fine SAND, some medium Sand, trace Silt.	
790		S-33		1 2 4 6	6	2.0	0.0			At 63.9', Silty Sand seam 0.1' thick. As above.	
		S-34		1 3 5 12	8	2.0	0.0			As above.	
		S-35		1 5 15 13	20	1.0	0.0			Brown fine rounded to subrounded GRAVEL, some fine to coarse Sand and Silt, little to trace Clay, medium dense (TILL).	
785										Bottom of spoons at 70' bgs. Bottom of boring at 69' bgs.	
75											

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

**Remarks:**

**Saturated Zones**

Date / Time	Elevation	Depth
2/11/98	832.95	23.41



Date Start/Finish: 12/1/97 / 12/2/97  
 Drilling Company: MAXIM Technologies, Inc.  
 Driller's Name: Rodney Bush  
 Drilling Method: HSA

Auger Size: 4.25 ID in.  
 Rig Type: 82 Acker  
 Spoon Size: 3 in.

Northing: 767238.71380  
 Easting: 1006688.58601  
 Well Casing: 855.52 feet

Borehole Depth: 28 ft.  
 Ground Surface: 855.80 feet

Geologist: Matthew W. Erbe

Well No: TW97-3

Client:  
 New York State Electric & Gas

Location:  
 Conrail Right of Way  
 Binghamton, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Blows/6 In.	N	Recovery (ft.)	PID (ppm)	Headspace	Geotechnical Test	Geologic Column	Stratigraphic Description	Well Construction
GS elevation 855.80 ft											GROUND SURFACE	9" diameter flushmount curb box installed
855		S-1	8	8	21	1.7	0.2				Black cinders and coal fragments, some slag and fine to coarse Sand, medium dense (FILL).	Cement surface seal 0.0' to 1.0' below grade
			13	8								#0 Silica sand 0.5' to 1.0' below grade inside of curb box
		S-2	8	8	15	1.5	0.0				Brown fine SAND and orange Gravel-sized slag (highly oxidized), black staining, some Silt, little coarse Sand, medium dense, moist. (FILL)	
			7	9								
850		S-3	8	5	11	1.2	0.0				Black fine to coarse Sand-sized coal fragments, cinders and slag, medium dense, dry. (FILL)	Backfilled with soil cuttings 1.0' to 10.0' below grade
			6	5								
		S-4	8	9	12	1.0	0.0				Light brown fine to coarse SAND, some fine, round to subangular Gravel, little Silt, medium dense, moist (FILL).	2" diameter, Schedule 40 PVC well riser 0.3' to 14.0' below grade
			3	5								
		S-5	8	8	17	0.7	0.0				Brown fine to coarse SAND and medium to coarse subangular GRAVEL, trace Silt, medium dense, moist (FILL).	
			9	9								
845		S-6	9	15	31	0.8	0.0				As above, dense.	Bentonite chips 10.0' to 12.0' below grade
			16	28								
		S-7	32	25	46	0.0	NA				No Recovery.	#0 Silica sand pack 12.0' to 24.0' below grade
			21	21								
		S-8	30	20	36	1.0	0.0					
			20									

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

Remarks:

NA=Not available. bgs - below ground surface

Saturated Zones

Date / Time	Elevation	Depth
2/11/98	837.08	18.72

Well No: TW97-3  
Total Depth = 26 ft.

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
*engineers & scientists*

Date / Time	Elevation	Depth
2/11/98	837.08	18.72 ▼



Date Start/Finish: 5/19/98 / 5/19/98  
 Drilling Company: MAXIM Technologies, Inc.  
 Driller's Name: Rodney Bush  
 Drilling Method: Hollow-Stemmed Auger

Northing: 766964.26256  
 Easting: 1008809.38656  
 Well Casing: 842.35 feet

Well No: MW98-15S  
 Client:  
 New York State Electric & Gas

Auger Size: ID 4.25 in.  
 Rig Type: CME 55  
 Spoon Size: 2 and 3 in.

Borehole Depth: 17 ft.  
 Ground Surface: 842.58 feet

Geologist: Michael Cobb

Location:  
 295 Court Street Property,  
 Binghamton, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Blows/6 In.	N	Recovery (ft.)	PID (ppm) Headspace	Geotechnical Test	Geologic Column	Stratigraphic Description	Well Construction
gs elevation 842.58 ft.										GROUND SURFACE	
										Asphalt and concrete slab (pavement).	9" diameter steel flushmount curb box.
840		S-1 2" SS	7 10 7 5	17	<0.1	0.8				Medium brown medium to coarse SAND, some fine Gravel, medium gravel in spoon tip, dry. (FILL)	Cement surface seal.
5		S-2 2" SS	3 2 2 1	4	0.1	0.8				Medium brown fine to medium SAND, some coarse Sand, little to trace fine Gravel, dry to moist. (FILL)	Sand drain 1' to 2' bgs.
		S-3 2" SS	5 8 8 10	14	0.3	1.2				Medium brown fine to coarse SAND, trace Silt, trace rootlets, dry to moist. (FILL)	2" diameter, Schedule 40 PVC well riser 0.2' to 5' bgs.
835		S-4 3" SS	30 53 7 9	60	0.9	1.0				Medium brown fine to coarse SAND and fine to medium GRAVEL, some large concrete fragments, dry to moist. (FILL)	Bentonite chips 3' to 4' bgs.
10		S-5 3" SS	2 2 3 3	5	1.9	320				Dark gray to black SILT, slight black staining, moist to wet, petroleum-like odor.	
		S-6 3" SS	4 4 5 8	9	1.9	700				Dark olive gray SILT, some fine Sand in seams, little black staining, soft, wet, petroleum-like odor.	
830		S-7 2" SS	3 4 4 3	8	1.8	8.1				As above, dark olive gray SILT, little fine Sand, wet, petroleum-like odors.	Granul silica sand pack 4' to 15' bgs.
5											2" diameter, 0.01" slotted, Schedule 40 PVC well screen 5' to 15' bgs.

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

#### Remarks:

Samples collected from 9-11 bgs submitted for analysis of VOCs, SVOCs, and TPH. bgs = below ground surface. NA = Not available. SS = Split-Spoon.

#### Saturated Zones

Date / Time	Elevation	Depth
6/5/98	832.27	10.31

Well No: MW98-155

**Total Depth = 17 ft.**

[illegible]

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
*engineers & scientists*

**Remarks:**

Saturated Zones		
Date / Time	Elevation	Depth
6/5/98	832.27	10.31

Date Start/Finish: 5/21/98 / 5/21/98  
 Drilling Company: MAXIM Technologies, Inc.  
 Driller's Name: Rodney Bush  
 Drilling Method: Hollow-Stemmed Auger

Auger Size: ID 4.25 in.  
 Rig Type: CME 55

Northing: 767090.44712  
 Easting: 1007112.84029  
 Well Casing: 841.56 feet

Borehole Depth: 17 ft.  
 Ground Surface: 841.90 feet

Geologist: Michael Cobb

Well No: MW98-16S

Client:  
 New York State Electric & Gas

Location:  
 295 Court Street Property,  
 Binghamton, New York

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Blows/6 In.	N	Recovery (ft.)	PID (ppm) Headspace	Geotechnical Test	Geologic Column	Stratigraphic Description	Well Construction
GS elevation 841.90 ft.										GROUND SURFACE	9" diameter steel flushmount curb box.
840										No sampling conducted. See the boring log of adjacent well MW98-16D for a stratigraphic description and sampling details.	Cement surface seal.
5											Sand drain 0.7' to 3' bgs.
835											2" diameter, Schedule 40 PVC well riser 0.3' to 7' bgs.
											Bentonite chips 3' to 5' bgs.
10											
830											Granul silica sand pack 5' to 17' bgs.
5											2" diameter, 0.01" slotted, Schedule 40 PVC well screen 7' to 17' bgs.

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

**Remarks:**

A confirmatory split-spoon taken from 10-12' bgs matched the corresponding sample from MW98-16D. Drillers report concrete layer from 11.9-12.7' bgs. bgs - below ground surface.

**Saturated Zones**

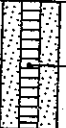
Date / Time	Elevation	Depth
6/5/98	833.52	8.38

Client:  
New York State Electric & Gas

Well No: MW98-165

Location:  
295 Court Street Property,  
Binghamton, New York

Total Depth = 17 ft.

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Blows/6 In.	N	Recovery (ft.)	PID (ppm) Headspace	Geotechnical Test	Geologic Column	Stratigraphic Description	Well Construction
825											 <p>2" diameter, 0.01" slotted, Schedule 40 PVC well screen 7' to 17' bgs.</p>
20										Bottom of boring at 17' bgs.	
820											
25											
815											
30											
810											
35											

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

Remarks:

Saturated Zones

Date / Time	Elevation	Depth
6/5/98	833.52	8.38

Date Start/Finish: 5/20/98 / 5/21/98  
 Drilling Company: MAXIM Technologies, Inc.  
 Driller's Name: Rodney Bush  
 Drilling Method: Hollow-Stemmed Auger

Northing: 767088.50563  
 Easting: 1007110.21662  
 Well Casing: 841.70 feet  
 Borehole Depth: 46 ft.  
 Ground Surface: 841.91 feet

Well No: MW98-18D  
 Client:  
 New York State Electric & Gas  
 Location:  
 295 Court Street Property,  
 Binghamton, New York

Auger Size: ID 4.25 in.  
 Rig Type: CME 55  
 Spoon Size: 2 and 3 in.

Geologist: Michael Cobb

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Blows/6 In.	N	Recovery (ft.)	PID (ppm) headspace	Geotechnical Test	Geologic Column	Stratigraphic Description	Well Construction
gs elevation 841.91 ft.											
										GROUND SURFACE	8" diameter steel flushmount curb box.
840		S-1 3" SS		10 20 18	30	1.2	2.1			Asphalt.	Cement surface seal.
		S-2 3" SS		13 13 9 9	22	1.0	1.0			Medium brown fine to coarse SAND, and fine GRAVEL, some medium Gravel, dry to moist. (FILL)	Sand drain 0.7' to 3.5' bgs.
5		S-3 3" SS		7 6 5 4	11	1.1	1.0			Medium brown fine to coarse SAND, and fine to medium GRAVEL, angular to subangular, moist. (FILL)	Type I Portland Cement/Bentonite Grout 3.5' to 32.5' bgs.
835		S-4 3" SS		3 4 4 5	8	1.3	0.8			Becoming very moist at 5.8' bgs. Trace coal-like fragments. Gravel is subrounded to subangular. (FILL)	2" diameter, Schedule 40 PVC well riser 0.2' to 38.5' bgs.
		S-5 3" SS		2 2 5 6	7	2.0	1.0			Brown SILT and fine SAND, little fine to coarse Gravel, trace black staining, grading to black SILT and fine SAND, little fine to medium Gravel, very moist. (FILL)	
10		S-6 3" SS		2 2 2 30	4	1.1	0.3			Olive gray SILT and fine SAND, little medium to coarse Sand and fine Gravel, rounded to subrounded, wet. (perched water) (FILL)	
830		S-7 3" SS		NA 8 8 5	16	1.5	0.5			Dense fill. Timber and cobble fragments lodged in spoon tip (10-12'). Drillers auger to 12.5' bgs.	
		S-8 2" SS		1 2	4	0.2	0.9			SILT and fine SAND, some concrete and wood fragments, moist.	
5										Red-brown SILT and fine SAND, some fine to medium Gravel, moist.	
										Medium GRAVEL-sized concrete fragments, moist.	
<b>BBL</b> BLASLAND, BOUCK & LEE, INC. engineers & scientists										Remarks: PID results below water table not shown due to moisture interference with instrument. bgs = below ground surface. NA = Not available. SS = Split-Spoon.	Saturated Zones Date / Time    Elevation    Depth 6/5/98        832.59        9.32'

**Client:**  
New York State Electric & Gas

**Location:**  
295 Court Street Property,  
Binghamton, New York

**Well No:** MW98-18D

**Total Depth =** 46 ft.

DEPTH	ELEVATION	Sample Run Number	Sample/Int/Type	Blows/6 In.	N	Recovery (ft.)	PID (ppm) Headspace	Geotechnical Test	Geologic Column	Stratigraphic Description	Well Construction
		S-8 2" SS		2 3	4	0.2	0.9			At 14' bgs. Medium brown medium SAND, little to some fine Sand, trace coarse Sand, wet. (Upon breaking through concrete at 14' bgs, water rises in borehole to 9.5' bgs.)	Type I Portland Cement/Bentonite Grout 3.5' to 32.5' bgs.
	825	S-9 2" SS		3 4 5 5	9	0.2				Medium brown medium to coarse SAND and fine GRAVEL, rounded to subrounded, wet.	
		S-10 2" SS		9 8 9 10	17	0.2					
20		S-11 2" SS		8 9 12 10	21	0.3				As above, some fine Sand, wet.	2" diameter, Schedule 40 PVC well riser 0.3' to 38.5' bgs.
	820	S-12 2" SS		5 7 8 7	15	0.5					
		S-13 2" SS		7 10 7 8	17	0.5				As above. Possible seams of well sorted medium SAND throughout unit. Poor recovery prevents accurate stratigraphic placement.	
25		S-14 2" SS		7 9 7 8	16	0.2				As above, with fine to medium GRAVEL and medium to coarse SAND, little fine SAND, wet.	
	815	S-15 2" SS		6 5 5 6	10	0.3					
		S-16 2" SS		13 5 4 5	9	0.5					
30		S-17 2" SS		9 7 6 5	13	0.3					
	810	S-18 2" SS		6 7	12	0.2					
35											Bentonite chips 32.5' to 35.0' bgs.

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

**Remarks:**

**Saturated Zones**

Date / Time	Elevation	Depth
6/5/98	832.59	9.32

**Location:**  
295 Court Street Property,  
Binghamton, New York

Well No: MW98-16D

**Total Depth = 46 ft.**

DEPTH	ELEVATION	Sample Run Number	Sample/Int./Type	Blows/6 In.	N	Recovery (ft.)	PID (ppm) Headspace	Geotechnical Test	Geologic Column	Stratigraphic Description	Well Construction
		S-18 2" SS		5 6	12	0.2					
	805	S-19 2" SS		7 9 18 12	27	2.0				Medium brown fine to medium SAND, no gravel, no silt, wet.	
										As above, with little fine gravel.	
		S-20 2" SS		8 7 6 4	13	1.8				Brown fine to medium SAND, trace coarse Sand, wet.	
40											
		S-21 2" SS		15 10 8 8	18	2.0				As above, a few seams with some fine subrounded gravel, wet.	
	800										
		S-22 2" SS		14 10 9 9	19	2.0					
		S-23 2" SS		4 6 8 10	14	0.4				Light brown SILT, some coarse Sand and fine Gravel, little fine to medium Sand, wet. (TILL). As above, light brown SILT, some fine to coarse Sand and fine Gravel, soft, wet.	
45											
	795									Bottom of spoons at 46' bgs. Bottom of boring at 44' bgs.	
50											
	790										
55											

Granul silica sand pack  
35.0' to 44.0' bgs.

2" diameter, 0.01" slotted, Schedule 40 PVC well screen 38.5' to 43.5' bgs.

# BBL

BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

Remarks:

Saturated Zones		
Date / Time	Elevation	Depth
6/5/98	832.59	9.32

<b>Date Start/Finish:</b> 07-24-01 / 08-02-01 <b>Drilling Company:</b> Lyon Drilling <b>Driller's Name:</b> Harry Lyon <b>Drilling Method:</b> Hollow Stem Auger/ Spun Casing/HX Rock Coring <b>Sampler Size:</b> 2-in. & 3-in. Split Spoon <b>Auger Size:</b> 4.25-in. ID <b>Rig Type:</b> CME 55-Truck Mount Rig	<b>Northing:</b> 766879.91 <b>Easting:</b> 1006546.13 <b>Casing Elevation:</b> 847.05 ft. AMSL <b>Surface Elevation:</b> 844.19 ft. AMSL <b>Well Depth:</b> 108.1 ft. bgs <b>Descriptions By:</b> Michael K. Cobb	<b>Well ID:</b> MW01-03R <b>Client:</b> New York State Electric and Gas <b>Location:</b> Court Street Binghamton, NY
---	--	---

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/In/Type	Blows per 6 inches/ Minutes per foot	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well Construction
845										
0		1	0-2	3 4 4 5	8	1.2	0.0		Medium brown SILT and fine SAND, little coarse Sand and fine Gravel, Organics, loose, dry, no odor/sheen/staining.	2" PVC Riser (~2.5 ags - 98' bgs)
		2	2-4	3 3 3 2	6	0.4	0.1		Medium brown fine SAND, some Silt, little coarse Sand and fine Gravel, dry, loose, no odor/sheen/staining.	Cement/Bentonite Grout (0 - 93' bgs)
840		3	4-6	2 1 2 3	3	0.6	0.2		Medium dark brown SILT, some medium to coarse Sand, some fine to medium Gravel, Coal fragments, medium Till lodged in shoe, moist, no odor/sheen/staining.	
-5		4	6-8	8 4 1 2	5	1	0.1		Medium brown fine SAND, some medium to coarse Sand and Gravel, moist, no odor/sheen/staining. Gray brown CLAY, little Silt, trace fine to medium rounded Gravel, soft, medium plasticity, moist, little oxidation staining, no odor or sheen.	
		5	8-10	1 3 3 6	6	0.8	0.1		Tan SILT, trace Clay, soft, blocky, moist, little oxidation, trace black staining, no odor or sheen.	Cement/Bentonite Grout (0 - 45' bs)
-10		6	10-12	1 3 3 4	6	1.7	0.1		Tan SILT and CLAY, moderately plastic, blocky texture, moist to wet, soft, oxidation staining, no black staining, no odor, or sheen.	6-inch OD Steel Casing (0 - 45' bgs)
		7	12-14	3 4 5 7	9	1.6	0.3			
830		8	14-16	3 5 7 7	12	0.4	0.3		Tan CLAY, little Silt, medium to high plasticity, wet, no odor, trace oxidation staining, no odor or sheen.	10-inch Auger Hole (0 - 45' bgs)
-15										

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29

**Water Level Data**

Date	Depth	Elev.
7/23/01	13.3'	

Depth measured from top of casing.



## Client:

New York State Electric and Gas

Well ID: MW01-03R

## Site Location:

Court Street  
Binghamton, NY

Well Depth: 108.1 ft. bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches/ Minutes per foot	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well Construction
		9	16-18 3-in SS	7 7 7 6	NA	1.6	0.2		Tan to gray SILT and CLAY, medium to highly plastic, blocky texture, wet, oxidation staining, no odor or sheen.	
82.5		10	18-20	1 1 5 9	6	1.1	0.0		No Recovery. Medium angular gravel-sized Quartz lodged in shoe.	2" PVC Riser (~2.5 ags - 98' bgs)
20		11	20-22	5 7 10 7	17	1.2	0.2		Medium SAND, little fine Sand, loose, wet, no odor/sheen/staining.	Cement/Bentonite Grout (0 - 93' bgs)
		12	22-24	3 4 3 7	7	1.8	0.2		Tan CLAY and SILT, blocky, stiff, no odor/sheen/staining.	
									Medium gray SAND, some coarse Sand and fine Gravel, trace fine Sand and Silt, wet, loose, no odor/sheen/staining.	
									Medium gray medium SAND, some coarse Sand, little fine Gravel, trace fine Sand and Silt, wet, loose, no odor/sheen/staining.	
82.0		13	24-26	2 3 5 7	8	1.2	0.2		Dark gray to black fine SAND, trace coarse Sand, wet, loose, faint MGP-type odor, no sheen or staining.	Cement/Bentonite Grout (0 - 45' bs)
25		14	26-28	3 5 7 4	12	1.1	0.3		Dark gray-black medium SAND, little fine to coarse Sand, trace fine rounded Gravel, wet, faint MGP-type odor, no sheen or staining.	6-inch OD Steel Casing (0 - 45' bgs)
		15	28-30	WOR 1 3 3	4	2	0.0		As above, with trace medium Gravel, 1" tan Silt and Clay seam, soft at 29.5' bgs.	
81.5		16	30-32	2 3 4 4	7	2	0.1		Dark gray medium SAND, little coarse Sand and fine Gravel, trace medium rounded Gravel, no odor/sheen/staining.	10-inch Auger Hole (0 - 45' bgs)
30		17	32-34	WOR 2 2 3	4	2	0.2		Medium gray very fine SAND and SILT, wet, soft, faint MGP odor throughout, no sheen or staining.	
									Medium gray fine to medium SAND, loose, wet, faint odor, no sheen or staining.	
81.0		18	34-36	1 1 4 8	5	2	0.1		Medium gray very fine SAND, little Silt, dilatant, faint odor, no sheen or staining.	
35									Medium gray fine SAND, trace Silt, Silt/Clay parting, wet, faint odor, little MGP odor from 34'-34.5', staining at 35.1' bgs, no sheen.	

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

Remarks: Horiz. datum: NAD83-State Plane NY Central  
Vert. datum: NGVD 29

## Water Level Data

Date	Depth	Elev.
7/23/01	13.3'	

Depth measured from top of casing.

## Client:

New York State Electric and Gas

Well ID: MW01-03R

## Site Location:

Court Street

Well Depth: 108.1 ft. bgs

Binghamton, NY

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches/ Minutes per foot	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well Construction
19		36-38	4 6 6 7	12	2	0.1			Medium gray fine SAND, little trace Silt, little parting of Silt at 38.5', Amber discoloration in bands from 37.5'-38' bgs, MGP-type odor concentrated in bands, no sheen or staining.	2" PVC Riser (~2.5 ags - 98' bgs)
805		20	38-40	WOH/ 1.5 4 NA	NA	1.5	0.0		Dark gray-black (olive) fine to medium SAND, very loose, wet, 1" thick wide tan soft Silty Clay lens at 38.5' bgs, no odor/sheen/staining	Cement/Bentonite Grout (0 - 45' bs)
40		21	40-42	4 8 16 18	24	2	18.5		Dark gray black fine SAND, Intervals of black NAPL (medium viscosity), Trace NAPL throughout fine intervals, mostly saturated with NAPL from 41'-42' bgs.	6-inch OD Steel Casing (0 - 45' bgs)
		22	42-44	30 50/4" NA NA	NA	0.2	0.2		Tan SILT and fine to medium angular GRAVEL, little fine to coarse Sand, dense, No NAPL, no odor/sheen/staining. [TILL]	10-inch Auger Hole (0 - 45' bgs)
800		23	44-46	38 41 35 39	76	1.2	0.1		Olive tan SILT and fine to coarse GRAVEL, Black shale fragments, very hard, no odor/staining. [TILL]	4.5-inch Borehole (45' - 103' bgs)
45		24	46-48	50/0.3'	NA	0.0	0.0		No Recovery. Rounded Gravel and broken Rock found in the spoon, loose and no fines. Infer Cobble or Boulder obstruction. Rollerbit through boulder to 47.8' bgs.	
		25	48-50	38 60 50/0.2' NA	60	1.1	0.0		Light brown matrix composed of SILT, little Clay, some gray Rock fragments (mostly Shale with trace fossil), fine subangular to angular Gravel and coarse Sand, no odor/sheen/staining, hard. [TILL]	
795		26	50-52	45 50/0.2' NA NA	NA	0.7	0.0		As above, with trace medium Sand. [TILL]	Cement/Bentonite Grout (0 - 93' bgs)
50		27	52-54	50/0.3'	NA	0.0	0.0		No Recovery. Rollerbit advances to 54.5' bgs. Cobbles and boulder from 52'-53' bgs, less hard from 53'-54'.	
790		NA	54-54.5	NA	NA	NA	NA			
55		28	54.5-55.2	70 50/0.2'	NA	0.6	0.1		Light gray brown SILT matrix and coarse SAND and fine angular GRAVEL (mostly black shale), little Clay, very hard, wet, no odor/sheen/staining. [TILL]	
		NA	55.2-56	NA	NA	NA	NA		No Sampling, drill to 56' bgs.	

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

Remarks: Horiz. datum: NAD83-State Plane NY Central  
Vert. datum: NGVD 29

## Water Level Data

Date	Depth	Elev.
7/23/01	13.3'	

Depth measured from top of casing.

## Client:

New York State Electric and Gas

Well ID: MW01-03R

## Site Location:

Court Street  
Binghamton, NY

Well Depth: 108.1 ft. bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample Int/Type	Blows per 6 Inches/ Minutes per foot	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well Construction
		29	56-56.7	46 50/0.2	NA	0.5	0.0		Light gray-brown (khaki) SILT matrix with gray-black coarse SAND and fine subangular to angular GRAVEL, little Clay, massive (no consistent concentration of clasts), very hard, wet, no odor/sheen/staining. [TILL]	
		NA	56.7-58	NA	NA	NA	NA		No Sampling, drill to 58' bgs.	2" PVC Riser (~2.5 ags - 98' bgs)
		30	58-58.3	50/0.3	NA	0.3	0.1		As above from 56'-56.7' bgs, with little medium Sand.	
785									No Sampling, drill to 61.2' bgs.	
60		NA	58.3- 61.2	NA	NA	NA	NA			Cement/Bentonite Grout (0 - 93' bgs)
		31	61.2- 62.8	HW Core	NA	1.1	0.0		HQ CORE RUN (61.2-62.8' bgs): Light brown SILT and little CLAY matrix with medium to coarse SAND and fine to coarse subrounded to angular GRAVEL, multiple rock types (includes shale, siltstone, pink granite), wet, hard, No odor/sheen/stains. [TILL]	
		NA	62.8- 63.5	NA	NA	NA	NA		No Sampling, drill to 63.5' bgs.	
780		32	63.5- 63.8	50/0.2	NA	0.1	0.0		As above from 61.2'-62.8' bgs. [TILL]	
									No Sampling, drill to 66.2' bgs.	
65		NA	63.7- 66.2	NA	NA	NA	NA			4.5-inch Borehole (45' - 103' bgs)
		33	66.2- 66.9	45 50/0.2	NA	0.7	0.0		As above from 61.2'-62.8' bgs. [TILL]	
		NA	66.9-68	NA	NA	NA	NA		No Sampling, drill to 68' bgs.	
		34	68-68.7	50 50/0.2	NA	0.7	0.0		As above from 61.2'-62.8' bgs, with trace oxidation staining, no odor or sheen. [TILL]	
775		NA	68.7-70	NA	NA	NA	NA		No Sampling, drill to 70' bgs.	
70		35	70-70.7	55 50/0.2	NA	0.5	0.8		Light brown SILT and little CLAY matrix with medium to coarse SAND and fine to coarse subrounded to angular GRAVEL, multiple rock types (includes shale, siltstone, pink granite), little oxidation staining, little dark brown discoloration at 70.7' bgs, wet, hard, no odor/sheen/stains. [TILL]	
		NA	70.7- 72.6	NA	NA	NA	NA		No Sampling, drill to 72' bgs.	
		36	72-72.6	55 50/0.1	NA	0.5	0.6		As above from 70'-70.2' bgs. [TILL]	
									No Sampling, drill to 75' bgs, no sheens in return water.	
770		NA	72.6-75	NA	NA	NA	NA			
75		37	75-75.4	75/0.4	NA	0.4	0.0		Light brown SILT, little brown Silt and Clay matrix, some medium to coarse Sand and Gravel (primary shale fragments), horizontal bedded (possible weathered Brown), no odor/sheen/staining. [TILL]	
		NA	75.4- 80.5	NA	NA	NA	NA			

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

Remarks: Horiz. datum: NAD83-State Plane NY Central  
Vert. datum: NGVD 29

## Water Level Data

Date	Depth	Elev.
7/23/01	13.3'	

Depth measured from top of casing.

## Client:

New York State Electric and Gas

Well ID: MW01-03R

## Site Location:

Court Street

Binghamton, NY

Well Depth: 108.1 ft. bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches/ Minutes per foot	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well Construction
765		NA	75.4-80.5	NA	NA	NA	NA		No Sampling, drill to 80.5' bgs, no sheens in return water.	2" PVC Riser (~2.5 ags - 98' bgs)
80		38	80.5-81.2	48 50/0.2'	NA	0.5	0.0		Light brown SILT and medium to coarse SAND, some fine angular Gravel, little Clay matrix, gray oxidation staining, hard, wet, no odor or sheen. [TILL]	Cement/Bentonite Grout (0 - 93' bgs)
									No Sampling, drill to 85.5' bgs.	4.5-inch Borehole (45' - 103' bgs)
760		NA	81.2-85.5	NA	NA	NA	NA			
85		39	85.5-86.2	25 50/0.2'	NA	0.4	0.0		As above from 80.5'-81.2' bgs. [TILL]	
		NA	86.2-90.2	NA	NA	NA	NA		No Sampling, drill to 90.2' bgs. Driller reports hard drilling, probable Cobbles throughout zone.	
755										
90		40	90.2-90.7	75	NA	0.5	0.0		As above from 80.5'-81.2' bgs, with more weathered shale. [TILL] Refusal at 90.7' bgs.	
		NA	90.7-94.2	NA	NA	NA	NA		No Sampling. Driller reports rock surface at 92' bgs. Rollerbit advance to 94.2' bgs to confirm.	
750				Min/ft	RQD					
95		1	94.2-97.5	3:00 3:30	34	2.5	NA		Dark gray SHALE with horizontal bedding, slightly weathered, medium hard, no staining/sheens/odor. BREAKS: Oxidation on fracture face at 94.5'; Clay in fracture at 95' and 95.4' bgs; broken zone from 92.2'-95.4'.	Bentonite (93' - 96' bgs)

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

Remarks: Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29

## Water Level Data

Date	Depth	Elev.
7/23/01	13.3'	

Depth measured from top of casing.

## Client:

New York State Electric and Gas

Well ID: MW01-03R

## Site Location:

Court Street

Binghamton, NY

Well Depth: 108.1 ft. bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches/ Minutes per foot	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well Construction
		1	94.2-97.5	4:30	34	2.5	NA		Dark gray SHALE with horizontal bedding, slightly weathered, medium hard, no staining/sheens/odor. BREAKS: Little Clay in fracture at 96.2'; Trace weathering (ill-fitting fracture) at 96.7'; vertical hairline fracture from 95.4'-96.6'; and Vertical break from 96.6'-96.7'.	<p>2" PVC Riser (~2.5 ags - 98' bgs)</p> <p>Grade 0 Sand Pack (96' - 108' bgs)</p> <p>2" Diameter PVC Screen (98' - 108' bgs)</p> <p>3-7/8-inch Rollerbit Borehole (103' - 108' bgs)</p>
745		2	97.5-102.4	5:30	20.4	4.9	NA		Dark gray to almost black SHALE, slightly weathered, horizontal bedding and closed bedding, medium hard, no sheens, no odor, no staining. BREAKS: Horizontal breaks at 98.3' (trace Clay), 98.9' (Clay, weathered), 99.3' & 99.4' (trace Clay), 101.6' (little Clay, slight weathering), 102.1' & 102.2' (slight weathering); Broken zone from 98.5'-98.7' (gray Clay, weathered), 100.6'-100.7' & 101.9'-102'. Subvertical fracture from 98.7'-98.9'.	
-100				5:00						
				10:00						
				10:00						
		3	102.4-108.1	9:00	86	5.2	NA		No Recovery, clay seam or void.	
				10:00						
740				6:00						
-105				6:00						
				6:00						
				6:00						
				6:00						
				6:00						
735										
-110										
730										
-115										

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29

## Water Level Data

Date	Depth	Elev.
7/23/01	13.3'	

Depth measured from top of casing.

Date Start/Finish: 07/25/01-8/23/01  
 Drilling Company: Lyon Drilling  
 Driller's Name: Harry Lyon  
 Drilling Method: Hollow Stem Auger/  
 Spun Casing/HX Rock Coring  
 Sampler Size: 2-in. Split Spoon  
 Auger Size: 4.25-in. ID  
 Rig Type: CME 55-Truck Mount Rig

Northing: 766675.03  
 Easting: 1006347.09  
 Casing Elevation: 848.57 ft. AMSL  
 Surface Elevation: 848.99 ft. AMSL  
 Well Depth: 108.5 ft. bgs  
 Descriptions By: Michael K. Cobb  
 A.Roy-Perreault

Well ID: **MW01-07R**  
 Client: New York State Electric and Gas  
 Location: Court Street  
 Binghamton, NY

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches/ Minutes per foot	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well Construction
850										
0		1	0-2	8 26 27 17	33	1.2	0.0	x x x x x x x x x x x x	Light brown FILL consisting of fine Sand, little Silt, little fine to coarse Sand and fine Gravel, Organics, dry, no odor, no odor/staining/sheen.	2" PVC Riser (~2.5 ags - 99' bgs)
		2	2-4	12 25 35 18	60	1.1	0.0	x x x x x x x x x x x x	Light brown FILL consisting of fine to coarse Sand and fine to medium Gravel, little Silt, trace Brick fragments, dry to moist, no odor/staining/sheen.	Cement/Bentonite Grout (0 - 90.5' bgs)
845		3	4-6	8 20 15 11	35	1.1	0.0	x x x x x x x x x x x x	Light brown fine to coarse SAND and fine to medium GRAVEL, trace Silt, moist, no odor/staining/sheen.	
5		4	6-8	8 9 12 11	21	1.1	0.0		Light brown fine to coarse SAND, little Gravel, trace to little Silt, dry, no odor/staining/sheen.	Cement/Bentonite Grout (0 - 45' bgs)
840		5	8-10	18 7 9 11	16	1.0	0.0		No Recovery.	6-inch OD Steel Casing (0 - 50' bgs)
10		6	10-12	15 29 50/3" NA	29	0.0	0.0		Coarse FILL, augered to 12-1/2". Fine SAND, little medium Sand, trace coarse Sand and Gravel, moist, no odor/staining/sheen.	10-inch Auger Hole (0 - 45' bgs)
835		7	12-14	NA 6 5 6	11	0.2	0.0		Brown medium SAND, little coarse rounded Sand and Gravel, moist to wet, no odor/staining/sheen.	
15		8	14-16	4 4 4 2	8	1.0	0.0			

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

Remarks: Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29  
 Samples collected from 20'-22' bgs and 22'-24' bgs.

#### Water Level Data

Date	Depth	Elev.
8/23/01	17.8'	

Depth measured from top of casing.

## Client:

New York State Electric and Gas

Well ID: MW01-07R

## Site Location:

Court Street  
Binghamton, NY

Well Depth: 108.5 ft. bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches/ Minutes per foot	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well Construction
		9	16-18	2 2 2 2	4	0.3	0.0		Brown fine to coarse SAND, some Gravel, trace Silt, wet, no odor/staining/sheen.	
830		10	18-20	WOR 2 3 3	5	0.5	16.2		Brown fine to coarse SAND, some fine Gravel, little Silt, wet, no staining/sheen, faint petroleum-type odor.	2" PVC Riser (~2.5 ags - 99' bgs)
20		11	20-22	4 3 5 5	8	2.0	36.1		Dark brown fine to medium SAND, trace fine to medium Gravel, wet, loose, soupy, no staining or sheen, slight petroleum-type odor.	Cement/Bentonite Grout (0 - 90.5' bgs)
		12	22-24	3 4 3 1	7	2.0	9.8		As above, little Silt, oxidation staining, less odor.	
825		13	24-26	1 1 1 2	2	0.0	NA		No Recovery. Infer same as above, soupy material apparently ran out of spoon through basket.	Cement/Bentonite Grout (0 - 45' bgs)
25		14	26-28	2 8 6 7	16	1.0	0.7		Brown fine to medium GRAVEL, little fine to medium Sand and Silt, trace odor, wet, loose and soupy, no sheen or staining.	6-inch OD Steel Casing (0 - 50' bgs)
		15	28-30	7 8 7 8	15	1.0	0.0		Brown fine to coarse SAND and medium GRAVEL, partings of Silt, trace Silt in the matrix, wet, medium dense, no sheen/staining/odor.	
820		16	30-32	8 16 6 3	22	0.7	0.0		Brown fine to coarse SAND and fine to medium GRAVEL, trace Silt, trace odor, medium dense, soupy, wet, no staining or sheen.	10-inch Auger Hole (0 - 45' bgs)
30		17	32-34	3 4 3 4	7	1.0	0.0		Brown fine to coarse rounded GRAVEL (fines and Sand have probably been flushed out of spoon), loose, no odor/sheen/staining.	
815		18	34-36	8 6 9 11	15	0.7	0.0		Dark brown fine to coarse SAND and fine to coarse GRAVEL, trace Silt, wet, medium dense, no odor/sheen/staining.	
35										

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
Vert. datum: NGVD 29  
Samples collected from 20'-22' bgs and 22'-24' bgs.

## Water Level Data

Date	Depth	Elev.
8/23/01	17.8'	

Depth measured from top of casing.

## Client:

New York State Electric and Gas

Well ID: MW01-07R

## Site Location:

Court Street  
Binghamton, NY

Well Depth: 108.5 ft. bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches/ Minutes per foot	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well Construction
		19	36-38	10 14 24 18	38	0.5	0.5		Dark brown fine to coarse SAND and fine to coarse GRAVEL, little Silt, wet, medium dense, no odor/sheen/staining.	<p>2" PVC Riser (~2.5 ags - 99' bgs)</p> <p>Cement/Bentonite Grout (0 - 45' bgs)</p> <p>6-inch OD Steel Casing (0 - 50' bgs)</p> <p>10-inch Auger Hole (0 - 45' bgs)</p>
810-40		20	38-40	14 15 19 16	34	1.0	0.0		Brown fine to coarse GRAVEL, trace Silt, some fine to coarse Sand, wet, medium dense to dense, no sheen/staining/odor.	
		21	40-42	10 12 10 18	22	1.0	0.0		Brown fine to medium GRAVEL, some fine to coarse Sand, trace Silt, medium dense, wet, no odor/staining/sheen.	
		22	42-44	10 11 11 11	22	1.0	0.0			
805-45		23	44-46	5 4 4 10	8	1.1	0.0		Dark brown fine to medium SAND, well sorted, loose to medium dense, no odor/staining/sheen.	
		24	46-48	15 15 21 28	36	1.2	0.0		As above, little fine to medium SAND. Light brown SILT, some coarse Sand, fine Gravel and Clay, dense, wet, no odor/staining/sheen. No Recovery.	
800-50		25	48-50	15 30 45 48	75	0.6	0.1		Light brown to tan CLAY and SILT, some medium to coarse Sand and fine Gravel, very stiff to hard, no odor/staining/sheen. [TILL]	
		26	50-52	6 14 15 32	29	0.8	3.1		Olive-gray SILT and CLAY matrix, and coarse Sand and fine to medium angular Gravel, hard, cohesive, no odor/staining/sheen.	
		27	52-54	21 33 36 50/0.2	69	0.7	2.2		As above, with little dark brown weathered Rock fragments.	
795-55		28	54-56	21 50/0.1 NA NA	NA	0.1	NA		Broken Cobble in shoe.	<p>Cement/Bentonite Grout (0 - 90.5' bgs)</p> <p>4.5-inch borehole (50' - 94' bgs)</p>

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
Vert. datum: NGVD 29  
Samples collected from 20'-22' bgs and 22'-24' bgs.

## Water Level Data

Date	Depth	Elev.
8/23/01	17.8'	
Depth measured from top of casing.		



**Client:**

New York State Electric and Gas

**Well ID: MW01-07R****Site Location:**Court Street  
Binghamton, NY**Well Depth: 108.5 ft. bgs**

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample Int/Type	Blows per 6 Inches/ Minutes per foot	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well Construction
		29	56-58	6 12 4 11	16	0.8	NA		Light olive-gray fine to medium angular to subangular GRAVEL and medium to coarse SAND, little Silt and fine Sand, non-cohesive, no odor/staining/sheen.	<p>2" PVC Riser (~2.5 ags - 99' bgs)</p> <p>Cement/Bentonite Grout (0 - 90.5' bgs)</p> <p>4.5-inch borehole (50' - 94' bgs)</p>
790		30	58-59.5	18 26 32	58	1.1	0.0		Olive-gray SILT/CLAY matrix, medium to coarse Sand and fine angular Gravel, clasts, hard, no odor/staining/sheen. [TILL]	
-60		NA	59.5-63	NA	NA	NA	NA		Rollerbit advance to 63' bgs.	
785		31	63-64.4	30 44 50/0.4	44	0.2	0.0		Light olive TILL as described from 58'-59.5' bgs.	
-65		NA	64.4-68.5	NA	NA	NA	NA		Rollerbit advanced to 68.5' bgs (Cobble encountered from 68'-68.6' bgs).	
780		32	68.5-69.7	22 40 50/0.2	40	0.5	0.0		Light olive SILT, little Clay, little fine to medium angular Gravel and medium to coarse Sand, no odor/staining/sheen. [TILL]	
-70		NA	69.7-73.2	NA	NA	NA	NA		Rollerbit advanced to 73.2' bgs.	
775		33	73.2-74.4	37 58 50/0.2	58	1.0	0.0		Light brown fine SAND and SILT, blocky, wet, no odor/staining/sheen.	
-75		NA	74.4-78	NA	NA	NA	NA		Rollerbit advanced to 78' bgs.	

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29  
 Samples collected from 20'-22' bgs and 22'-24' bgs.

**Water Level Data**

Date	Depth	Elev.
8/23/01	17.8'	
Depth measured from top of casing.		

## Client:

New York State Electric and Gas

Well ID: MW01-07R

## Site Location:

Court Street  
Binghamton, NY

Well Depth: 108.5 ft. bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample Int/Type	Blows per 6 inches/ Minutes per foot	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well Construction
		NA	74.4-78	NA	NA	NA	NA		Rollerbit advanced to 78' bgs.	
770		34	78-80	50 50/0.3 NA NA	NA	0.9	0.0		Olive-gray SILT, little Clay matrix and angular to subangular medium to coarse Sand and fine Gravel, trace medium Gravel, cohesive, hard, no odor/staining/sheen.	2" PVC Riser (~2.5 ags - 99' bgs)
80		NA	80-83.5	NA	NA	NA	NA		Rollerbit advanced to 83.5' bgs.	Cement/Bentonite Grout (0 - 90.5' bgs)
		35	100/0.3	NA	0.3	0.0			Olive and olive-gray SILT and CLAY matrix, some medium to coarse Sand and fine angular to subangular Gravel, hard, no odor/staining/sheen. [TILL]	4.5-inch borehole (50' - 94' bgs)
765		NA	83.8-88	NA	NA	NA	NA		Rollerbit advanced to 88' bgs.	
85		36	88-88.3	100/0.3	NA	0.3	0.0		As above from 83.5'-83.8' bgs, broken Shale fragments (cobbles and boulders), no odor/staining/sheens.	
		NA	88.3-94	NA	NA	NA	NA		Driller reports rock surface at 91.5' bgs. Rollerbit advanced to 94' bgs to confirm.	
760		NA	88.3-94	NA	NA	NA	NA			
90		1	94-99	6:30 11:00	84	5.0	NA		Dark gray to black SHALE, horizontal bedding, slightly weathered, hard, no staining/sheen/odor. BREAKS: Horizontal breaks at 94.7' (trace Clay), 95.7' (trace Clay, slightly weathered), 95.9' (trace Clay).	Bentonite (90.5' - 93.5' bgs)
755										3 7/8-inch Corehole (94' - 109' bgs)
95										Grade 0 Sand Pack (93.5' - 109' bgs)

# BBL

BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
Vert. datum: NGVD 29  
Samples collected from 20'-22' bgs and 22'-24' bgs.

## Water Level Data

Date	Depth	Elev.
8/23/01	17.8'	
Depth measured from top of casing.		

**Client:**

New York State Electric and Gas

**Well ID: MW01-07R****Site Location:**Court Street  
Binghamton, NY**Well Depth: 108.5 ft. bgs**

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample Int/Type	Blows per 6 Inches/ Minutes per foot	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well Construction
750		1	94-99	9:30 7:30 8:30	84	5.0	NA		Dark gray to black SHALE, horizontal bedding, slightly weathered, hard, no staining/sheen/odor. BREAKS: Horizontal breaks at 96.9' (broken on outside), 97.5 (trace Clay), 97.6' (trace Clay), 98.3' (trace Clay), 98.4' (trace Clay), 99' (trace Clay); sub-vertical fracture from 98.8'-98.85'.	2" PVC Riser (~2.5 ags - 99' bgs)
100		2	99-104	6:00 7:15 8:00 7:00 6:00	87	5.0	NA		Dark gray to black SHALE as above. BREAKS: Horizontal breaks at 99.6' (trace Clay), 100.2', 100.4', and 100.8' (no Clay or weathering), 102.5 (trace Clay, smooth), 103.3' and 103.4 (trace Clay).	Grade 0 Sand Pack (93.5' - 109' bgs)  2" Diameter PVC Screen (99' - 109' bgs)
745		3	104- 109	8:00 9:00 6:30 6:00 7:00	88	4.5	NA		Dark gray to black SHALE as above. BREAKS: Broken zones from 103.7'-103.8' and at 106.3' (Clay and rock fragments), Horizontal breaks at 104.6' (very flat and smooth surface, trace Clay), 105.2' (trace Clay, very smooth, weathering on outside), 105.8' (No Clay), 106.6' (Trace Clay), 107.2' (trace Clay, very smooth, weathering on outside), 107.7 (Rough surface, trace Clay).  Boring first drilled and sampled to till with 4-1/4 HSA, then overdrilled with 6-1/4 HSA to set outer steel casing. Till drilled with 4.5-inch OD spun casing to 94' bgs, 2.5' into rock surface. HQ drilled an additional 15' into rock. Well set in corehole at 108' bgs.	3 7/8-inch Corehole (94' - 109' bgs)
105										
740										
110										
735										
115										

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
Vert. datum: NGVD 29  
Samples collected from 20'-22' bgs and 22'-24' bgs.

**Water Level Data**

Date	Depth	Elev.
8/23/01	17.8'	
Depth measured from top of casing.		

Date Start/Finish: 9/18/01  
 Drilling Company: Lyon Drilling  
 Driller's Name: Harry Lyon  
 Drilling Method: Hollow Stem Auger  
 Sampler Size: 2-in. & 3-in. Split Spoon  
 Auger Size: 4.25-in. ID  
 Rig Type: CME 55-Truck Mount Rig

Northing: 767043.09  
 Easting: 1006086.29  
 Casing Elevation: 861.45 ft. AMSL  
 Surface Elevation: 861.16 ft. AMSL  
 Well Depth: 61.3 ft. bgs  
 Descriptions By: Michael K. Cobb

Well ID: **MW01-17D**  
 Client: New York State Electric and Gas  
 Location: Court Street  
 Binghamton, NY

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 inches/ Minutes per foot	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well Construction
0										
		NA	0-0.5	NA	NA	0.0	NA		ASPHALT.	Flushmount 8" diameter Curb-box
860		1	0.5-2	5 3 3	8	1.2	1.2	x x x	Dark brown to black medium to coarse SAND FILL as Cinders, little Gravel, dry, loose, no odor/staining/sheen. Red-brown fine SAND, some Silt, little medium to coarse Sand and Gravel, trace Fill, moist, no odor/staining/sheen.	Cement Pad
		2	2-4	2 7 10 7	17	0.9	1.0		Light brown fine to coarse SAND and fine to medium GRAVEL (broken coarse Gravel probable Cobbles), no Fill traces apparent, dry, crumbly, no odor/staining/sheen.	2" diameter sch 40 PVC Riser (0 - 54.5' bgs)
5		3	4-6	12 11 10 6	21	0.6	1.4			
855		4	6-8	16 7 8 7	15	1.6	2.0		Light brown fine to coarse SAND and fine to medium rounded GRAVEL, no Fill traces, dry, crumbly, no odor/staining/sheen.	Cement Bentonite Grout (0 - 48.5' bgs)
		5	8-10	8 10 8 14	18	0.8	1.6			
10		6	10-12	19 14 10 10	24	1.0	2.8			
		7	12-14	18 4 4 4	8	1.0	2.2		Medium brown fine to coarse SAND, some fine Gravel, little medium Gravel, dry, generally loose, moist in shoe, no odor/staining/sheen.	
15		8	14-16	3 4 3 1	7	0.5	1.3		As above, moist throughout, trace Silt in partings, no odor/staining/sheen.	

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

Remarks: Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29

#### Water Level Data

Date	Depth	Elev.
9/18/01	30'	
Depth measured from top of casing.		

## Client:

New York State Electric and Gas

Well ID: MW01-17D

## Site Location:

Court Street  
Binghamton, NY

Well Depth: 61.3 ft. bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches/ Minutes per foot	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well Construction
845		9	16-18	2 2 2 3	4	0.9	1.6		Medium brown fine to coarse SAND, some fine Gravel, little medium Gravel, trace Silt in partings, moist to wet, generally loose, no odor/staining/sheen.	
		10	18-20	3 7 10 10	17	1.0	1.4		As above, with pink granite Gravel, moist to wet, no odor/staining/sheen. Hole checked, no standing water.	2" diameter sch 40 PVC Riser (0 - 54.5' bgs)
20		11	20-22	16 7 8 5	15	1.2	1.1		Light to medium brown fine to medium GRAVEL and fine to coarse SAND, moist, no odor/staining/sheen.	
		12	22-24	8 6 8 16	14	0.1	NA		Rock in shoe, poor recovery.	Cement Bentonite Grout (0 - 48.5' bgs)
25		13	24-26	12 34 5 4	39	1.3	2.4		Medium brown fine to coarse SAND and fine to medium GRAVEL, many rock types/colors, moist, no odor/staining/sheen.	
835		14	26-28	3 14 3 3	17	0.7	2.2		As above, trace brown Silt, no odor/staining/sheen.	
		15	28-30 3-in SS	WOR NA NA NA	NA	0.3	1.8		Multicolored fine to coarse GRAVEL, some fine to coarse Sand, little brown Silt smearing all, wet, no odor/staining/sheen.	
30		16	30-32 3-in SS	6 6 2 4	NA	1.3	1.5		Brown fine to medium SAND, trace coarse Sand and fine Gravel, loose, soupy, wet, no odor/staining/sheen.	
		17	32-34	1 2 2 3	4	1.8	3.0		Dark brown fine to medium SAND, little coarse Sand and fine Gravel, trace Silt, wet, soupy, no odor/staining/sheen.	
35		18	34-36	6 4 3 3	7	1.1	2.3			

# BBL

BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

Remarks: Horiz. datum: NAD83-State Plane NY Central  
Vert. datum: NGVD 29

## Water Level Data

Date	Depth	Elev.
9/18/01	30'	

Depth measured from top of casing.

## Client:

New York State Electric and Gas

Well ID: MW01-17D

## Site Location:

Court Street

Binghamton, NY

Well Depth: 61.3 ft. bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample Int/Type	Blows per 6 Inches/ Minutes per foot	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well Construction
825				3					Dark brown fine to medium SAND, little coarse Sand and fine Gravel, trace Silt, poor recovery, wet, soupy, no odor/staining/sheen.	
		19	36-38	3						
				7	10	0.2	1.6			
				9						
		20	38-40	2					Dark olive-gray fine SAND, trace Silt, well sorted, loose, wet, no bedding apparent, no odor/staining/sheen.	2" diameter sch 40 PVC Riser (0 - 54.5' bgs)
				2	6	1.2	2.5			
				4						
40				6						
		21	40-42	4					Olive-gray fine to medium SAND, some coarse Sand and fine rounded Gravel, loose, wet, no odor/staining/sheen.	
				2	4	1.1	2.1			
				2						
				2						
		22	42-44	1						Cement Bentonite Grout (0 - 48.5' bgs)
				2	3	1.0	2.2			
				3						
		23	44-46	4						
45				4						
				5	9	1.0	2.9			
				5						
		24	46-48	NA					Medium brown fine to medium SAND, some coarse Sand and fine Gravel (generally rounded), trace Silt in pockets, wet, no odor/staining/sheen.	
				4	11	1.2	2.9			
				7						
				10						
		25	48-50	5					Olive well-sorted fine SAND, trace Silt, wet, no bedding, no odor/staining/sheen.	
				7	14	0.9	2.3			
				7						
				9						
50				2					As above, trace coarse Sand and fine Gravel.	Medium Bentonite Chips (48.5' - 52.4' bgs)
				5						
		26	50-52	7	12	1.8	2.8			
				10						
				7					Olive well sorted fine SAND, trace Silt, medium dense, wet, no odor/staining/sheen.	
				7						
		27	52-54	9	16	0.9	3.5			Grade 0 Silica Sand (52.4' - 59.5' bgs)
				9						
				5					Olive-gray fine SAND, some medium Sand, trace fine to medium Gravel, medium dense, wet, no odor/staining/sheen.	
				9						
55		28	54-56	10	19	0.9	2.5			2" ID 0.010 slot PVC Screen (54.5' - 59.5' bgs)
				10						

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

Remarks: Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29

## Water Level Data

Date	Depth	Elev.
9/18/01	30'	

Depth measured from top of casing.

New York State Electric and Gas

**Well ID: MW01-17D**

**Site Location:**

**Court Street**

**Binghamton, NY**

**Well Depth: 61.3 ft. bgs**

[illegible]

**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
Vert. datum: NGVD 29

### Water Level Data

Date	Depth	Elev.
------	-------	-------

9/18/01 30'

Depth measured from top of casing.

<b>Date Start/Finish:</b> 9/19/01 <b>Drilling Company:</b> Lyon Drilling <b>Driller's Name:</b> Harry Lyon <b>Drilling Method:</b> Hollow Stem Auger  <b>Sampler Size:</b> 2-in. Split Spoon <b>Auger Size:</b> 4.25-in. ID <b>Rig Type:</b> CME 55-Truck Mount Rig	<b>Northing:</b> 767034.1 <b>Easting:</b> 1006087.89  <b>Casing Elevation:</b> 861.32 ft. AMSL <b>Surface Elevation:</b> 861.65 ft. AMSL <b>Well Depth:</b> 37 ft. bgs  <b>Descriptions By:</b> Michael K. Cobb	<b>Well ID:</b> MW01-17S  <b>Client:</b> New York State Electric and Gas  <b>Location:</b> Court Street Binghamton, NY
--	--	---

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches/ Minutes per foot	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well Construction
0										
860		NA	NA	NA	NA	NA	NA		No Sampling. Blind Drill with auger plug. For soil descriptions, see the boring log of adjacent well MW01-17D.	
5										
855										
10										
850										
15										

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

**Remarks:** Hole is 9' South of 17D.  
 Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29

#### Water Level Data

Date	Depth	Elev.
9/19/01	30'	

Depth measured from top of casing.



## Client:

New York State Electric and Gas

Well ID: MW01-17S

## Site Location:

Court Street  
Binghamton, NY

Well Depth: 37 ft. bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches/ Minutes per foot	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well Construction
845	NA	NA	NA	NA	NA	NA	NA		No Sampling. Blind Drill with auger plug. For soil descriptions, see the boring log of adjacent well MW01-17D.	
20										2" diameter sch 40 PVC Riser (0 - 27' bgs)
840										Medium Bentonite Chips (15.5' - 23.5' bgs)
25										Formation Collapse Gravel (23.5' - 25.5' bgs)
835										Grade 0 Silica Sand (25.5' - 37' bgs)
30										2" ID 0.010 slot PVC Screen (27' - 37' bgs)
830										
35										

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

**Remarks:** Hole is 9' South of 17D.  
Horiz. datum: NAD83-State Plane NY Central  
Vert. datum: NGVD 29

## Water Level Data


Date	Depth	Elev.
9/19/01	30'	

Depth measured from top of casing.

**Client:**

New York State Electric and Gas

**Well ID: MW01-17S****Site Location:**Court Street  
Binghamton, NY**Well Depth: 37 ft. bgs**

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample Int/Type	Blows per 6 Inches/ Minutes per foot	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well Construction
825	NA	NA	NA	NA	NA	NA	NA		No Sampling. Blind Drill with auger plug. For soil descriptions, see the boring log of adjacent well MW01-17D.	 <p>Grade 0 Silica Sand (25.5' - 37' bgs)</p> <p>2" ID 0.010 slot PVC Screen (27' - 37' bgs)</p>
40										
820										
45										
815										
50										
810										
55										

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

**Remarks:** Hole is 9' South of 17D.  
 Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29

**Water Level Data**

Date	Depth	Elev.
9/19/01	30'	

Depth measured from top of casing.

<b>Date Start/Finish:</b> 8/16/01 <b>Drilling Company:</b> Lyon Drilling <b>Driller's Name:</b> Harry Lyon <b>Drilling Method:</b> Hollow Stem Auger	<b>Northing:</b> 766866.42 <b>Easting:</b> 1006781.15 <b>Casing Elevation:</b> 841.93 ft. AMSL <b>Surface Elevation:</b> 842.29 ft. AMSL <b>Well Depth:</b> 21 ft. bgs <b>Descriptions By:</b> Michael K. Cobb	<b>Well ID:</b> PZ01-02 <b>Client:</b> New York State Electric and Gas <b>Location:</b> Court Street Binghamton, NY
<b>Sampler Size:</b> 2-in. Split Spoon <b>Auger Size:</b> 4.25-in. ID <b>Rig Type:</b> CME 55-Truck Mount Rig		

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 inches/ Minutes per foot	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well Construction
0										
840		NA	NA	NA	NA	NA	NA		No Sampling. Blind Drill with 4-1/4" HSA from 0 - 21' bgs. For soil descriptions, see the boring log of adjacent soil boring SB-107.	Flushmount 8" diameter Steel Curb-box Cement pad 2" diameter sch 40 PVC Riser (0 - 9' bgs) Cement Bentonite Grout (0.5 - 4.1' bgs) Medium Bentonite Chips (4.1' - 6.2' bgs) Grade 0 Silica Sand (6.2' - 19' bgs) 2" ID 0.010 slot PVC Screen (9' - 19' bgs)
5										
835										
10										
830										
15										



**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29

#### Water Level Data

Date	Depth	Elev.
9/21/01	8.65'	

Depth measured from top of casing.

## Client:

New York State Electric and Gas

Well ID: PZ01-02

## Site Location:

Court Street

Well Depth: 21 ft. bgs

Binghamton, NY

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches/ Minutes per foot	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well Construction
825	NA	NA	NA	NA	NA	NA	NA		No Sampling. Blind Drill with 4-1/4" HSA from 0 - 21' bgs. For soil descriptions, see the boring log of adjacent soil boring SB-107.	
20										
820										
25										
815										
30										
810										
35										

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
Vert. datum: NGVD 29

**Water Level Data**

Date	Depth	Elev.
9/21/01	8.65'	

Depth measured from top of casing.

<b>Date Start/Finish:</b> 9/11/01 <b>Drilling Company:</b> Lyon Drilling <b>Driller's Name:</b> Harry Lyon <b>Drilling Method:</b> Hollow Stem Auger  <b>Sampler Size:</b> 2-in. & 3-in. Split Spoon <b>Auger Size:</b> 4.25-in. ID <b>Rig Type:</b> CME 55-Truck Mount Rig	<b>Northing:</b> 766894.74 <b>Easting:</b> 1006354.66  <b>Casing Elevation:</b> 845.17 ft. AMSL <b>Surface Elevation:</b> 845.49 ft. AMSL <b>Well Depth:</b> 16 ft. bgs  <b>Descriptions By:</b> Michael K. Cobb	<b>Well ID:</b> PZ01-03  <b>Client:</b> New York State Electric and Gas  <b>Location:</b> Court Street Binghamton, NY
--	---	--

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches/ Minutes per foot	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well Construction
0										Flushmount Curb-box
845									Auger through Black Top.	Cement pad
								x x	Auger through loose Gravel FILL.	2" diameter sch 40 PVC Riser (0 - 6' bgs)
								x x	Auger through brown fine to coarse Sand and Gravel FILL.	Cement Bentonite Grout (0.5 - 2' bgs)
		NA	0-4.5	NA	NA	NA	-	x x		Medium Bentonite Chips (2' - 4' bgs)
								x x	Auger through slab. Infer Gas Holder 4 foundation.	
-5								x x		
840		1	4.5-6	6	9	0.3	-		Light olive fine to coarse SAND and fine to medium Gravel, little Silt, wet, no odor/staining/sheen.	
				3						
				3						
		2	6-8	4	4	0.5	-		Light olive SILT and fine to coarse SAND, fine Gravel, cinder-like Fill, moist, no odor/staining/sheen.	
				2						
				2						
		3	8-10	2	4	0.0	-		Trace Recovery: Light olive SILT, SAND, and GRAVEL, soupy, no odor/staining/sheen.	
				2						
-10				2						
835				1					Olive SILT and fine to coarse SAND, fine Gravel, various Fill materials (Coal, Porcelain), no odor/staining/sheen.	Grade 1 Silica Sand (4' - 16' bgs)
		4	10-12 3-in SS	2	NA	2.0	-	x x	White and black ASH and CINDERS, moist to wet, no odor/staining/sheen.	
				3					Olive-brown SILT, blocky, horizontal bedding, MGP odor, trace black NAPL blebs.	
				4					Olive SILT, black oily NAPL in fractures, partings throughout.	2" ID 0.020 slot PVC Screen (6' - 16' bgs)
		5	12-14	WOR	3	1.8	-		As above, little fine to medium Sand, more NAPL and MGP odor.	
				2					As above, large Gravel at 14.3' bgs, moist to wet, soft.	
				1						
-15				1						
830		6	14-16	8	10	0.2	-		Light gray SILT, yellow-brown mottled, medium dense, blocky, black staining and black oily NAPL.	
				12						



**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29  
 PID was not giving reliable headspace readings, apparent moisture interference.

#### Water Level Data

Date	Depth	Elev.
9/17/01	12.28'	

Depth measured from top of casing.

<b>Date Start/Finish:</b> 9/12/01 <b>Drilling Company:</b> Lyon Drilling <b>Driller's Name:</b> Harry Lyon <b>Drilling Method:</b> Hollow Stem Auger	<b>Northing:</b> 767003.98 <b>Easting:</b> 1006317.74 <b>Casing Elevation:</b> 848.32 ft. AMSL <b>Surface Elevation:</b> 845.33 ft. AMSL <b>Well Depth:</b> 16 ft. bgs <b>Descriptions By:</b> Michael K. Cobb	<b>Well ID:</b> PZ01-04/SB-203 <b>Client:</b> New York State Electric and Gas <b>Location:</b> Court Street Binghamton, NY
<b>Sampler Size:</b> 2-in. and 3-in. Split Spoon <b>Auger Size:</b> 4.25-in. ID <b>Rig Type:</b> CME 55-Truck Mount Rig		

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches/ Minutes per foot	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well Construction
0	845	1	0-2	2 5 8 6	13	1.3	8.1		Medium brown fine to coarse SAND, some fine to medium Gravel, Brick and crushed Rock fragments, moist, no odor/staining/sheen.	2" diameter sch 40 PVC Riser (0 - 4.6' bgs) Cement Bentonite Grout (0 - 1.5' bgs)
		2	2-4	8 24 16 14	40	1.0	2.2		As above, trace Coal fragments.	Medium Bentonite Chips (1.5' - 3.5' bgs)
		3	4-6	7 18 14 11	32	1.2	84.7		As above, faint MGP-like odor.	
-5	840	4	6-8	11 11 8 6	19	0.5	313		Dark gray to black fine to medium SAND, some coarse Sand and fine Gravel, black stained, faint MGP-like odor, moist.	
		5	8-10	1 1 1 1	2	1.2	234		Dark olive-gray SILT, little fine to medium Sand and fine to medium Gravel, black and amber NAPL, oily, MGP odor, soft, probable Fill.	
-10	835	6	10-12 3-in SS	1 1 2	NA	2.0	259		As above, NAPL in pores/partings, high organic content, no bedding, apparently reworked.	Grade 0 Silica Sand (3.5' - 14.6' bgs)
		7	12-14 3-in SS	2 1 2 2	NA	2.0	193.5		As above, heavily NAPL impacted, high organic content (roots and wood).	2" ID 0.010 slot PVC Screen (6' - 14.6' bgs)
				2					As above, reworked SILT, Organics, NAPL impacted.	
-15	830	8	14-16 3-in SS	NA NA NA	NA	0.5	84.9		Refusal at 14.6' bgs. Infer concrete slab at 14.6' underlying sewer.	



**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
Vert. datum: NGVD 29

#### Water Level Data

Date	Depth	Elev.
9/17/01	14.28'	

Depth measured from top of casing.

<b>Date Start/Finish:</b> 9/13/01 <b>Drilling Company:</b> Lyon Drilling <b>Driller's Name:</b> Harry Lyon <b>Drilling Method:</b> Hollow Stem Auger  <b>Sampler Size:</b> 2-in. & 3-in. Split Spoon <b>Auger Size:</b> 4.25-in. ID <b>Rig Type:</b> CME 55-Truck Mount Rig	<b>Northing:</b> 767133.02 <b>Easting:</b> 1006247.31  <b>Casing Elevation:</b> 847.79 ft. AMSL <b>Surface Elevation:</b> 844.93 ft. AMSL <b>Well Depth:</b> 15.5 ft. bgs  <b>Descriptions By:</b> Michael K. Cobb	<b>Well ID:</b> PZ01-05  <b>Client:</b> New York State Electric and Gas  <b>Location:</b> Court Street Binghamton, NY
--	---	--

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches/ Minutes per foot	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well Construction
0	845								Auger, no sampling from 0 - 6' bgs. As per driller, softer at 5' bgs.	2" diameter sch 40 PVC Riser (0 - 4.6' bgs) Cement Bentonite Grout (0 - 1.5' bgs) Medium Bentonite Chips (1.5' - 3.5' bgs)
5	840	NA	NA	NA	NA	NA	NA			
1		6-8		5	9	1.2	33.4		Olive-gray SILT, little coarse Sand and fine Gravel, no odor/staining/sheen.	
				6					Dark brown to black SILT, little medium to coarse Sand and fine Gravel, no odor/staining/sheen.	
				3						
				7						
2		8-10		3	8	0.2	NA		Poor Recovery. Little medium to coarse SAND, granite coarse Gravel lodged in shoe, no odor/staining/sheen.	
				5						
				3						
10	835			2						
3		10-12		1	2	1.1	40.5		Black stained SILT, little Clay, little Organic Matter, soft, little black to amber oily NAPL, wet.	Grade 1 Silica Sand (3.5' - 14.6' bgs)
				1						
				1						
				1					SILT and coarse SAND, fine Gravel (possible Sluff), very soft, soupy, black oily NAPL.	
4		12-14		1	3	1.8	120.5		Olive-gray blocky SILT, interbedded with black-brown organic-rich SILT, very soft, wet, black stained, trace NAPL, much less impacted than above.	2" ID 0.020 slot PVC Screen (6' - 14.6' bgs)
				2						
				1						
15	830	5	14-15.5 3-in SS	3	NA	1.3	5.3		Gray blocky SILT, little yellow-brown mottling, no NAPL, trace staining, faint MGP-type odor, stiff to medium stiff.	Backfill Bentonite (14.5' - 15.5' bgs)
				8						
				14						



**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
Vert. datum: NGVD 29

#### Water Level Data

Date	Depth	Elev.
9/17/01	13.36'	

Depth measured from top of casing.

<b>Date Start/Finish:</b> 9/14/01 <b>Drilling Company:</b> Lyon Drilling <b>Driller's Name:</b> Harry Lyon <b>Drilling Method:</b> Hollow Stem Auger  <b>Sampler Size:</b> 2-in. & 3-in. Split Spoon <b>Auger Size:</b> 4.25-in. ID <b>Rig Type:</b> CME 55-Truck Mount Rig	<b>Northing:</b> 766804.95 <b>Easting:</b> 1006397.19  <b>Casing Elevation:</b> 844.54 ft. AMSL <b>Surface Elevation:</b> 845.11 ft. AMSL <b>Well Depth:</b> 19 ft. bgs  <b>Descriptions By:</b> Michael K. Cobb	<b>Well ID:</b> PZ01-06  <b>Client:</b> New York State Electric and Gas  <b>Location:</b> Court Street Binghamton, NY
--	---	--

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 inches/ Minutes per foot	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well Construction
0	845	NA	0-14	NA	NA	NA	NA		Auger through Test Pit 208.	Flushmount Curb-box Cement pad 2" diameter sch 40 PVC Riser (0 - 8' bgs) Cement Bentonite Grout (0.5 - 3.5' bgs) Medium Bentonite Chips (3.5' - 5.5' bgs) Grade 1 Silica Sand (5.5' - 18' bgs) 2" ID 0.020 slot PVC Screen (8' - 18' bgs)
1		14-14.6 3-in SS		24 50/0.1	NA	0.6	79.5		WOOD (timber), NAPL saturated, sheens and MGP-type odor.	
15	830	NA	14.6-16.4	NA	NA	NA	NA		Auger through WOOD.	



**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29

**Water Level Data**

Date	Depth	Elev.
9/17/01	12.83'	

Depth measured from top of casing.

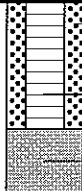


Client:  
New York State Electric and Gas

Site Location:  
Court Street  
Binghamton, NY

Well ID: PZ01-06

Well Depth: 19 ft. bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows per 6 Inches/ Minutes per foot	N - Value / RQD (%)	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description	Well Construction
	NA	14.6-16.4	NA	NA	NA	NA	NA		Auger through WOOD.	 <p>Grade 1 Silica Sand (5.5' - 18' bgs)</p> <p>2" ID 0.020 slot PVC Screen (8' - 18' bgs)</p> <p>Medium Bentonite Chips (18' - 19' bgs)</p>
2	16.4-18	3-in SS	12	10	NA	0.0	NA		No Recovery after 2 attempts. Thin amber NAPL on spoons, MGP odor.	
3	18-19	3-in SS	3	5	NA	0.3	54		Medium to coarse GRAVEL, little fine to coarse Sand, soupy, rounded, little NAPL.	
20 825										
25 820										
30 815										
35 810										



Remarks: Horiz. datum: NAD83-State Plane NY Central  
Vert. datum: NGVD 29

#### Water Level Data

Date	Depth	Elev.
9/17/01	12.83'	
Depth measured from top of casing.		

## **Susquehanna River Borings**

<b>Date Start/Finish:</b> 08/16/01 - 08/20/01 <b>Drilling Company:</b> Atlantic Testing Laboratories <b>Driller's Name:</b> Mark Childs <b>Drilling Method:</b> Drive and Wash <b>Sampler Size:</b> 2-in. and 3-in. Split Spoon <b>Auger Size:</b> 4-inch diameter <b>Rig Type:</b> Barge-Mounted CME-55	<b>Northing:</b> 766555.56 <b>Easting:</b> 1003696.01  <b>River Bottom Elevation:</b> 825.17 ft. AMSL <b>Borehole Depth:</b> 36.0 ft. bgs <b>Water Depth:</b> 5.6 ft.  <b>Descriptions By:</b> W. Lilley A. Roy-Perreault	<b>Boring ID:</b> SR-101  <b>Client:</b> New York State Electric and Gas  <b>Location:</b> Court Street Binghamton, NY
--	---	---

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows / 6 Inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	825	1	0-2 3-in SS	14 15 16 21	NA	0.7	1685		Dark gray to olive fine to coarse SAND and fine to coarse angular to rounded GRAVEL, little Silt, medium MGP-odor, little sheen.
		2	2-4 3-in SS	35 25 15 13	NA	0.6	713		Light olive rounded fine to coarse GRAVEL, some fine to coarse Sand, little Silt, medium dense to dense, no odor/staining/sheen.
5	820	3	4-6 3-in SS	13 12 13 16	NA	0.7	3.9		Dark brown fine to medium rounded GRAVEL, some fine to coarse Sand, little Silt, medium dense to dense. No odor, staining, nor sheen.
		4	6-8 3-in SS	5 6 13 17	NA	0.2	26.1		Multicolored subrounded to rounded GRAVEL, some medium to coarse Sand, medium dense to dense, no odor/staining/sheen.
10	815	5	8-10 3-in SS	21 25 35 40	NA	0.5	0.0		Light brown fine to medium subrounded to rounded GRAVEL and fine to coarse SAND, little Silt, dense to very dense, no odor/staining/sheen.
		6	10-12	35 51 26 24	77	0.8	0.0		
		7	12-14	20 20 14 17	34	0.8	0.0		
15	810	8	14-16	31 20 17 21	37	0.8	0.0		Dark brown fine to medium SAND, little fine to medium Gravel and coarse Sand, dense to very dense, well sorted, no odor/staining/sheen.

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29

**Client:**

New York State Electric and Gas

**Boring ID: SR-101****Site Location:**Court Street  
Binghamton, NY**Borehole Depth: 36.0 ft. bgs**

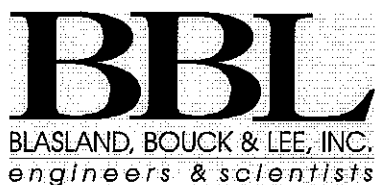
Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows / 6 Inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
20	805	9	16-18	9	33	0.8	0.0		Dark brown well sorted fine to medium SAND, little fine to coarse Gravel and coarse Sand, medium dense to dense, no odor/staining/sheen.
				14					
				19					
				21					
20	805	10	18-20	23	53	0.5	0.0		Brown fine to coarse GRAVEL and medium to coarse SAND, sorted, wet, no odor/staining/sheen.
				29					
				24					
				30					
25	800	11	20-22 3-in SS	18	NA	0.9	0.0		Gray brown fine GRAVEL, some medium to coarse Sand, trace Silt, no odor/staining/sheen.
				34					
				38					
				42					
25	800	12	22-24 3-in SS	12	NA	1.0	0.0		Gray brown coarse SAND and fine to medium GRAVEL, no odor/staining/sheen.
				36					
				38					
				39					
30	795	13	24-26 3-in SS	17	NA	1.2	0.0		Gray SILT, SAND and GRAVEL, trace Clay, no odor/staining/sheen. [TILL]
				27					
				27					
				25					
30	795	14	26-28 3-in SS	18	NA	1.3	0.0		Gray SILT, SAND and GRAVEL, trace Clay, no odor/staining/sheen. [TILL]
				32					
				28					
				29					
30	795	15	28-30 3-in SS	18	NA	1.1	0.0		Gray SILT, SAND and GRAVEL, trace Clay, no odor/staining/sheen. [TILL]
				27					
				39					
				30					
35	790	16	30-32 3-in SS	25	NA	1.1	0.0		Gray SILT, SAND and GRAVEL, trace Clay, no odor/staining/sheen. [TILL]
				23					
				60					
				32					
35	790	17	32-34 3-in SS	10	NA	1.0	0.0		Gray SILT, SAND and GRAVEL, trace Clay, no odor/staining/sheen. [TILL]
				27					
				52					
				60					
35	790	18	34-36	12	NA	0.2	0.0		Gray SILT, SAND and GRAVEL, trace Clay, no odor/staining/sheen. [TILL]
				100/ 0.2					

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29

<b>Date Start/Finish:</b> 08/21/01 - 08/24/01 <b>Drilling Company:</b> Atlantic Testing Laboratories <b>Driller's Name:</b> Mark Childs <b>Drilling Method:</b> Drive and Wash <b>Sampler Size:</b> 3-in. Split Spoon <b>Auger Size:</b> 4-inch diameter <b>Rig Type:</b> Barge-Mounted CME-55	<b>Northing:</b> 766654.32 <b>Easting:</b> 1006447.25 <b>River Bottom Elevation:</b> 826.87 ft. AMSL <b>Borehole Depth:</b> 36.0 ft. bgs <b>Water Depth:</b> 3.9 ft. <b>Descriptions By:</b> William Lilley	<b>Boring ID:</b> SR-102 <b>Client:</b> New York State Electric and Gas <b>Location:</b> Court Street Binghamton, NY
--	--	---

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows / 6 inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0									
825		1	0-2 3-in SS	7 15 16 7	NA	0.6	0.0		Black to dark gray coarse SAND and GRAVEL, odors, staining, and sheen.
		2	2-4 3-in SS	13 12 7 7	NA	0.5	0.0		Dark gray coarse SAND, trace Shells, well sorted, no odor/staining/sheen.
5		3	4-6 3-in SS	5 7 5 5	NA	0.3	3.9		Gray coarse SAND, trace Silt and Shells, well sorted, no odor/staining/sheen.
820		4	6-8 3-in SS	5 10 6 8	NA	0.4	26.1		Gray GRAVEL and coarse SAND, no odor/staining/sheen.
		5	8-10 3-in SS	8 9 5 6	NA	0.5	0.0		Gray GRAVEL and coarse SAND, trace Silt, slight sheen, no odor/staining.
10		6	10-12 3-in SS	10 11 10 6	NA	0.2	0.0		
815		7	12-14 3-in SS	21 17 11 7	NA	0.4	0.0		
15		8	14-16 3-in SS	11 9 9 11	NA	0.9	0.0		Gray coarse SAND, some fine to medium Gravel, trace Silt, no odor/staining/sheen.



**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29

## Client:

New York State Electric and Gas

Boring ID: SR-102

## Site Location:

Court Street  
Binghamton, NY

Borehole Depth: 36.0 ft. bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows / 6 inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
810		9	16-18 3-in SS	7 9 9 8	NA	0.4	0.0		Gray coarse SAND, some fine to medium Gravel, well sorted, no odor/staining/sheen.
		10	18-20 3-in SS	14 21 12 18	NA	0.6	0.0		Gray fine to medium SAND, little fine Gravel, trace Silt, no odor/staining/sheen.
20		11	20-22 3-in SS	17 27 20 21	NA	1.7	0.0		Gray coarse SAND and fine GRAVEL, unsorted, wet, no odor/staining/sheen.
805		12	22-24 3-in SS	12 12 9 7	NA	0.6	0.0		Gray fine GRAVEL, some medum to coarse Sand, trace Silt, no odor/staining/sheen.
25		13	24-26 3-in SS	42 19 19 17	NA	1.8	0.0		
800		14	26-28 3-in SS	18 23 19 14	NA	0.3	0.0		
		15	28-30 3-in SS	43 23 16 14	NA	0.5	0.0		
30		16	30-32 3-in SS	11 13 17 18	NA	0.8	0.0		
795		17	32-34 3-in SS	11 19 21 18	NA	0.8	0.0		Olive gray SILT, SAND and GRAVEL, no odor/staining/sheen. [TILL]
35		18	34-36 3-in SS	60 44 50 51	NA	1.2	0.0		

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

Remarks: Horiz. datum: NAD83-State Plane NY Central  
Vert. datum: NGVD 29

<b>Date Start/Finish:</b> 08/13/01 - 08/15/01 <b>Drilling Company:</b> Atlantic Testing Laboratories <b>Driller's Name:</b> Mark Childs <b>Drilling Method:</b> Drive and Wash <b>Sampler Size:</b> 2-in. and 3-in. Split Spoon <b>Auger Size:</b> 4-inch diameter <b>Rig Type:</b> Barge-Mounted CME-55	<b>Northing:</b> 766848.69 <b>Easting:</b> 1006839.89  <b>River Bottom Elevation:</b> 825.27 ft. AMSL <b>Borehole Depth:</b> 38.0 ft. bgs <b>Water Depth:</b> 5.5 ft.  <b>Descriptions By:</b> Michael K. Cobb	<b>Boring ID:</b> SR-103  <b>Client:</b> New York State Electric and Gas  <b>Location:</b> Court Street Binghamton, NY
--	---	---

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample Int/Type	Blows / 6 Inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0	825	1	0-2	2 1 1 1	2	0.2	1.2		Gray-brown fine to medium SAND, loose, no odor/staining/sheen.
		2	2-4 3-in SS	3 3 3 3	NA	1.0	1.3		Dark olive-gray fine to medium SAND, little rounded fine to medium Gravel, loose, wet, no odor/staining/sheen.
5	820	3	4-6	15 13 10 12	23	0.9	0.0		Dark olive gray fine to medium rounded to subangular GRAVEL, some fine to coarse Sand, medium dense, no odor/staining/sheen.
		4	6-8 3-in SS	10 10 9 12	NA	1.2	0.0		Multicolored rounded fine to medium GRAVEL, some dark olive-gray medium to coarse Sand, many rock types (mostly sandstone), no odor/staining/sheen.
10	815	5	8-10 3-in SS	10 9 12 13	NA	1.1	1.1		
		6	10-12	13 15 30 33	45	1.0	1.5		
		7	12-14	13 15 15 14	30	1.2	2.5		
15	810	8	14-16	5 5 6 10	11	1.0	3.5		Multicolored fine angular GRAVEL, some olive-gray fine to coarse Sand, no odor/staining/sheen.



**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29

**Client:**











New York State Electric and Gas

**Boring ID: SR-103****Site Location:**

Court Street

Binghamton, NY

**Borehole Depth:** 38.0 ft. bgs

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows / 6 Inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
20	805	9	16-18	7 10 9 9	19	1.1	2.8		Multicolored fine angular GRAVEL, some olive-gray fine to coarse Sand, no odor/staining/sheen.
		10	18-20	6 8 10 10	18	0.7	0.0		Olive fine to coarse SAND and rounded to subrounded fine to medium GRAVEL, medium dense to dense, no odor/staining/sheen.
		11	20-22 3-in SS	17 19 15 16	NA	0.9	0.3		Olive well sorted fine to medium SAND, medium dense, no odor/staining/sheen.
		12	22-24 3-in SS	5 5 5 7	NA	1.5	5.4		Olive well sorted fine to medium SAND, no odor/staining/sheen.
25	800	13	24-26	5 5 6 7	11	2.0	0.0		Olive fine to medium SAND, some coarse Sand and fine to coarse Gravel, trace Silt, no odor/staining/sheen.
		14	26-28 3-in SS	6 6 8 6	NA	0.4	0.0		Multicolored fine to medium GRAVEL, some fine to coarse Sand, little Silt, loose, medium dense, no odor/staining/sheen.
		15	28-30 3-in SS	20 15 12 12	NA	1.0	0.3		Multicolored fine to coarse GRAVEL, sorted, medium dense, no odor/staining/sheen.
30	795	16	30-32 3-in SS	14 10 10 12	NA	0.5	0.0		Multicolored fine to coarse subangular to rounded GRAVEL, some coarse Sand, medium dense, no odor/staining/sheen.
		17	32-34 3-in SS	15 36 25 20	NA	0.8	0.0		Multicolored fine to coarse subangular to rounded GRAVEL. Olive-gray GRAVEL and CLAY in tip of shoe, no odor/staining/sheen.
35	790	18	34-36 3-in SS	8 16 19 29	NA	0.1	1.3		Olive gray CLAY and SILT, some fine to coarse Sand and fine to medium Gravel, hard, no odor/staining/sheen. [TILL]

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29



## Client:

New York State Electric and Gas


Boring ID: SR-103

## Site Location:

Court Street  
Binghamton, NY

Borehole Depth: 38.0 ft. bgs




Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows / 6 inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
		19	36-38 3-in SS	20 40 41 52	81	0.2	0.0		Olive gray CLAY and SILT, some fine to coarse Sand and fine to medium Gravel, hard, no odor/staining/sheen. [TILL]
40	785								
45	780								
50	775								
55	770								



**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
Vert. datum: NGVD 29

<b>Date Start/Finish:</b> 08/23/01 - 08/23/01 <b>Drilling Company:</b> Atlantic Testing Laboratories <b>Driller's Name:</b> Mark Childs <b>Drilling Method:</b> Drive and Wash <b>Sampler Size:</b> 2-in. Split Spoon <b>Auger Size:</b> 4-inch diameter <b>Rig Type:</b> Barge-Mounted CME-55	<b>Northing:</b> 766718.06 <b>Easting:</b> 1006537.24  <b>River Bottom Elevation:</b> 827.77 ft. AMSL <b>Borehole Depth:</b> 6.0 ft. bgs <b>Water Depth:</b> 3.0 ft.  <b>Descriptions By:</b> William Lilley	<b>Boring ID:</b> SR-104  <b>Client:</b> New York State Electrical and Gas  <b>Location:</b> Court Street Binghamton, NY
--	---	---

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows / 6 Inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
830									
0		1	0-2	15 12 12 11	24	0.7	0.0		Gray GRAVEL, little Sand, trace Silt, slight sheen, no odor/staining.
825		2	2-4	11 13 12 11	25	0.5	0.0		As above, no odor/staining/sheen.
5		3	4-6	16 10 5 6	15	0.7	0.0		Gray coarse SAND, little fine Gravel, no odor/staining/sheen.
820									
10									
815									
15									



**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29  
 Sample collected from 0-2' bgs.




<b>Date Start/Finish:</b> 08/24/01 - 08/24/01 <b>Drilling Company:</b> Atlantic Testing Laboratories <b>Driller's Name:</b> Mark Childs <b>Drilling Method:</b> Drive and Wash <b>Sampler Size:</b> 2-in. Split Spoon <b>Auger Size:</b> 4-inch diameter <b>Rig Type:</b> Barge-Mounted CME-55	<b>Northing:</b> 766748.61 <b>Easting:</b> 1006617.7  <b>River Bottom Elevation:</b> 828.67 ft. AMSL <b>Borehole Depth:</b> 8.0 ft. bgs <b>Water Depth:</b> 2.1 ft.  <b>Descriptions By:</b> William Lilley	<b>Boring ID:</b> SR-105  <b>Client:</b> New York State Electric and Gas  <b>Location:</b> Court Street Binghamton, NY
--	--	---

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows / 6 Inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
830									
0		1	0-2	5 14 21 19	35	0.5	15.0		Gray fine to coarse GRAVEL, little coarse Sand, trace Silt, slight sheen, no odor/staining/sheen.
825		2	2-4	18 17 15 7	32	0.7	4.0		Gray GRAVEL and SAND, trace Silt, slight sheen, no odor or staining.
5		3	4-6	7 7 6 2	13	0.1	0.0		Gray coarse SAND and fine GRAVEL, trace Silt, no odor/staining/sheen.
		4	6-8	15 10 8 9	19	0.3	0.0		
820									
10									
815									
15									



**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29  
 Sample collected from 0-2' bgs.




<b>Date Start/Finish:</b> 08/27/01 - 08/27/01 <b>Drilling Company:</b> Atlantic Testing Laboratories <b>Driller's Name:</b> Mark Childs <b>Drilling Method:</b> Drive and Wash <b>Sampler Size:</b> 2-in. Split Spoon <b>Auger Size:</b> 4-inch diameter <b>Rig Type:</b> Barge-Mounted CME-55	<b>Northing:</b> 766762.9 <b>Easting:</b> 1006707.93 <b>River Bottom Elevation:</b> 824.67 ft. AMSL <b>Borehole Depth:</b> 6.0 ft. bgs <b>Water Depth:</b> 6.1 ft. <b>Descriptions By:</b> William Lilley	<b>Boring ID:</b> SR-106 <b>Client:</b> New York State Electric and Gas <b>Location:</b> Court Street Binghamton, NY
--	--	---

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows / 6 Inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
825									
0		1	0-2	7 15 11 5	26	0.7	0.0		Gray GRAVEL, some coarse Sand, slight sheen, no odor or staining.
		2	2-4	4 8 5 6	13	0.4	0.0		Gray brown GRAVEL and SAND, trace Silt, no odor/staining/sheen.
5	820	3	4-6	5 1 1 1	2	0.3	0.0		Gray SAND, some fine to medium Gravel, trace Silt, no odor/staining/sheen.
10	815								
15	810								

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29  
 Sample collected from 0-2' bgs.




<b>Date Start/Finish:</b> 08/27/01 - 08/27/01 <b>Drilling Company:</b> Atlantic Testing Laboratories <b>Driller's Name:</b> Mark Childs <b>Drilling Method:</b> Drive and Wash <b>Sampler Size:</b> 2-in. Split Spoon <b>Auger Size:</b> 4-inch diameter <b>Rig Type:</b> Barge-Mounted CME-55	<b>Northing:</b> 766788.13 <b>Easting:</b> 1006790.99  <b>River Bottom Elevation:</b> 822.3 ft. AMSL <b>Borehole Depth:</b> 6.0 ft. bgs <b>Water Depth:</b> 8.5 ft.  <b>Descriptions By:</b> William Lilley	<b>Boring ID:</b> SR-107  <b>Client:</b> New York State Electric and Gas  <b>Location:</b> Court Street Binghamton, NY
--	--	---

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows / 6 Inches	N - Value	Recovery (feet)	P/D Headspace (ppm)	Geologic Column	Stratigraphic Description
825									
0		1	0-2	7 13 15 18	28	1.0	0.0		Gray brown GRAVEL, some Sand, trace Silt, no odor/staining/sheen.
820		2	2-4	7 33 18 15	46	1.0	0.0		Gray brown coarse SAND and fine to medium GRAVEL, trace Silt, no odor/staining/sheen.
5		3	4-6	14 34 15 14	49	1.0	0.0		
815									
10									
810									
15									



**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29  
 Sample collected from 0-2' bgs.

<b>Date Start/Finish:</b> 08/28/01 - 08/28/01 <b>Drilling Company:</b> Atlantic Testing Laboratories <b>Driller's Name:</b> Mark Childs <b>Drilling Method:</b> Drive and Wash <b>Sampler Size:</b> 2-in. Split Spoon <b>Auger Size:</b> 4-inch diameter <b>Rig Type:</b> Barge-Mounted CME-55	<b>Northing:</b> 766651.94 <b>Easting:</b> 1006547.79  <b>River Bottom Elevation:</b> 828.7 ft. AMSL <b>Borehole Depth:</b> 6.0 ft. bgs <b>Water Depth:</b> 2.1 ft.  <b>Descriptions By:</b> William Lilley	<b>Boring ID:</b> SR-108  <b>Client:</b> New York State Electrical and Gas  <b>Location:</b> Court Street Binghamton, NY
--	--	---

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows / 6 Inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
825									
0				7					
1		0-2		8	22	0.5	0.0		Gray brown GRAVEL, some medium to coarse Sand, trace Silt and Brick, slight sheen, no odor or staining.
820				14					
2		2-4		27	26	0.3	0.0		Gray coarse SAND and fine GRAVEL, trace Silt, no odor/staining/sheen.
				16					
5				10					
3		4-6		6	29	0.5	0.0		Gray medium to coarse SAND, some coarse Gravel, trace Silt, no odor/staining/sheen.
				12					
				17					
				13					
				18					
815									
10									
810									
15									

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29  
 Sample collected from 0-2' bgs with duplicate and MS/MSD.



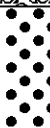
<b>Date Start/Finish:</b> 08/28/01 - 08/28/01 <b>Drilling Company:</b> Atlantic Testing Laboratories <b>Driller's Name:</b> Mark Childs <b>Drilling Method:</b> Drive and Wash <b>Sampler Size:</b> 2-in. Split Spoon <b>Auger Size:</b> 4-inch diameter <b>Rig Type:</b> Barge-Mounted CME-55	<b>Northing:</b> 766401.41 <b>Easting:</b> 1006233.58  <b>River Bottom Elevation:</b> 826.37 ft. AMSL <b>Borehole Depth:</b> 12.0 ft. bgs <b>Water Depth:</b> 4.4 ft.  <b>Descriptions By:</b> William Lilley	<b>Boring ID:</b> SR-109  <b>Client:</b> New York State Electric and Gas  <b>Location:</b> Court Street Binghamton, NY
--	--	---

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows / 6 Inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0									
825		1	0-2	5 5 8 11	13	0.1	2.8		CONCRETE and GRAVEL, little Sand, slight sheen, no odor/staining/sheen.
		2	2-4	10 11 16 50	27	1.0	12.0		Gray to brown GRAVEL, some sand, trace Silt, slight sheen, no odor or staining.
5		3	4-6	28 24 9 7	33	1.1	21.0		Brown GRAVEL and SAND, trace Silt, no odor/staining/sheen.
820		4	6-8	13 14 22 18	36	0.9	35.0		Gray brown GRAVEL and SAND, trace Silt, no odor/staining/sheen.
		5	8-10	20 18 14 14	32	0.4	0.0		
10		6	10-12	31 23 19 15	44	1.1	0.0		Brown GRAVEL and SAND, trace Silt, no odor/staining/sheen.
815									
15									



**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29  
 Samples collected from 0-2' & 4'-6' bgs.

<b>Date Start/Finish:</b> 8/29/01 <b>Drilling Company:</b> Atlantic Testing Laboratories <b>Driller's Name:</b> Mark Childs <b>Drilling Method:</b> Drive and Wash <b>Sampler Size:</b> 2-in. Split Spoon <b>Auger Size:</b> 4-inch diameter <b>Rig Type:</b> Barge-Mounted CME-55	<b>Northing:</b> 766381.63 <b>Easting:</b> 1006251.2  <b>River Bottom Elevation:</b> 822.27 ft. AMSL <b>Borehole Depth:</b> 6.0 ft. bgs <b>Water Depth:</b> 8.5 ft.  <b>Descriptions By:</b> William Lilley	<b>Boring ID:</b> SR-110  <b>Client:</b> New York State Electric and Gas  <b>Location:</b> Court Street Binghamton, NY
--	--	---

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows / 6 Inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
825									
0		1	0-2	9 5 4 4	13	0.3	0.0		Gray GRAVEL, little Sand, trace Cinders, Asphalt, and Bricks, no odor/staining/sheen.
820		2	2-4	47 61 44 41	105	0.3	0.0		Gray GRAVEL, some Sand, little brown Silt, no odor/staining/sheen.
5		3	4-6	7 32 33 27	65	0.9	0.0		Gray GRAVEL, some Sand, trace brown SILT, no odor/staining/sheen.
815									
10									
810									
15									

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29  
 Sample collected from 0-2' bgs.



Date Start/Finish: 08/29/01 - 08/29/01  
 Drilling Company: Atlantic Testing Laboratories  
 Driller's Name: Mark Childs  
 Drilling Method: Drive and Wash  
 Sampler Size: 2-in. Split Spoon  
 Auger Size: 4-inch diameter  
 Rig Type: Barge-Mounted CME-55

Northing: 766416.09  
 Easting: 1006249.44




River Bottom Elevation: 825.77 ft. AMSL  
 Borehole Depth: 6.0 ft. bgs  
 Water Depth: 5.0 ft.

Descriptions By: William Lilley

Boring ID: **SR-111**

Client: New York State Electric and Gas




Location: Court Street  
 Binghamton, NY

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows / 6 Inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
0									
825		1	0-2	9 9 15 22	24	0.7	0.0		Gray Gravel, some Sand, trace Silt, slight sheen, no odor/staining/sheen.
		2	2-4	17 31 31 20	62	0.5	0.0		Gray brown coarse SAND, little fine Gravel, trace Silt, no odor/staining/sheen.
5		3	4-6	14 19 22 14	41	0.9	0.0		Gray brown GRAVEL and coarse SAND, trace Silt, no odor/staining/sheen.
820									
10									
815									
15									
810									

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

Remarks: Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29  
 Sample collected from 0-2' bgs.

<b>Date Start/Finish:</b> 08/30/01 <b>Drilling Company:</b> Atlantic Testing Laboratories <b>Driller's Name:</b> Mark Childs <b>Drilling Method:</b> Drive and Wash <b>Sampler Size:</b> 2-in. Split Spoon <b>Auger Size:</b> 4-inch diameter <b>Rig Type:</b> Barge-Mounted CME-55	<b>Northing:</b> 766410.22 <b>Easting:</b> 1006223.77  <b>River Bottom Elevation:</b> 827.77 ft. AMSL <b>Borehole Depth:</b> 6.0 ft. bgs <b>Water Depth:</b> 3.0 ft.  <b>Descriptions By:</b> William Lilley	<b>Boring ID:</b> SR-112  <b>Client:</b> New York State Electric and Gas  <b>Location:</b> Court Street Binghamton, NY
---	---	---

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows / 6 Inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
830									
0									
		1	0-2	10 13 10 25	23	0.3	0.0		Gray brown coarse GRAVEL, little Sand, trace Silt, no odor/staining/sheen.
825		2	2-4	19 16 21 21	37	0.5	0.0		Brown GRAVEL and SAND, trace Silt, no odor/staining/sheen.
5		3	4-6	22 21 18 28	39	0.2	0.0		Gray fine GRAVEL and coarse SAND, trace Silt, no odor/staining/sheen.
820									
10									
815									
15									

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29  
 Sample collected from 0-2' bgs.

**Date Start/Finish:** 08/30/01  
**Drilling Company:** Atlantic Testing Laboratories  
**Driller's Name:** Mark Childs  
**Drilling Method:** Drive and Wash  
**Sampler Size:** 2-in. Split Spoon  
**Auger Size:** 4-inch diameter  
**Rig Type:** Barge-Mounted CME-55

**Northing:** 766385.69  
**Easting:** 1006215.85  
**River Bottom Elevation:** 827.17 ft. AMSL  
**Borehole Depth:** 6.0 ft. bgs  
**Water Depth:** 3.6 ft.  
**Descriptions By:** William Lilley

**Boring ID:** SR-113

**Client:** New York State Electric and Gas

**Location:** Court Street  
Binghamton, NY

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample Int/Type	Blows / 6 Inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
830									
0				15					
		1	0-2	16	35	0.1	0.0		Gray GRAVEL, little coarse Sand, trace Silt, no odor/staining/sheen.
				19					
825				22					
		2	2-4	18	48	1.0	0.0		Brown GRAVEL, some fine to medium Sand, trace Silt, no odor/staining/sheen.
				24					
				24					
				16					
5		3	4-6	15	27	0.7	0.0		
				13					
				14					
				13					
820									
10									
815									
15									




**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29  
 Sample collected from 0-2' bgs.

**Date Start/Finish:** 08/31/01  
**Drilling Company:** Atlantic Testing Laboratories  
**Driller's Name:** Mark Childs  
**Drilling Method:** Drive and Wash  
**Sampler Size:** 2-in. Split Spoon  
**Auger Size:** 4-inch diameter  
**Rig Type:** Barge-Mounted CME-55

**Northing:** 766446.82  
**Easting:** 1006281.67  
**River Bottom Elevation:** 827.17 ft. AMSL  
**Borehole Depth:** 6.0 ft. bgs  
**Water Depth:** 3.6 ft.  
**Descriptions By:** Michael K. Cobb

**Boring ID:** SR-114  
**Client:** New York State Electric and Gas  
**Location:** Court Street  
 Binghamton, NY

Depth (ft. bgs)	Elevation (ft. AMSL)	Sample Run Number	Sample/Int/Type	Blows / 6 Inches	N - Value	Recovery (feet)	PID Headspace (ppm)	Geologic Column	Stratigraphic Description
830									
0		1	0-2	2 9 7 9	16	0.1	0.0		Olive gray fine angular GRAVEL and coarse SAND, little fine to medium Sand, no odor/staining/sheen.
825		2	2-4	19 21 24 45	45	0.3	0.4		Olive fine GRAVEL and medium to coarse SAND, wet, no odor/staining/sheen.
5		3	4-6	32 30 16 14	46	0.6	0.6		Olive gray fine GRAVEL and medium to coarse SAND, little medium to coarse Gravel and fine Sand, trace Silt, wet, no odor/staining/sheen.
820									
10									
815									
15									

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

**Remarks:** Horiz. datum: NAD83-State Plane NY Central  
 Vert. datum: NGVD 29  
 Sample collected from 0-2' bgs.

## Test Pits

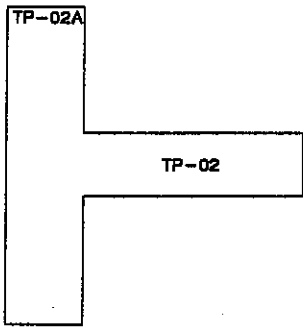
# TEST PIT LOG

BINGHAMTON TP-01

DEPTH (FT)	STRATA CHANGE	South	DESCRIPTION	Northeast	COMMENTS
0					
1			Brown fine to coarse SAND and GRAVEL (fill), damp		
2			Brown fine to coarse SAND and GRAVEL (fill), some slabs of concrete and wood branches, damp		PID ~ 0.0 ppm from 0 to 7.0 ft.
3					
4			Black stained soil, moist		
5			Brown SAND and SILT, some gravel, moist		Slight coal tar odor
6					Notes: - PID readings obtained from excavation piles and above open test pits. - Band in trench was to determine presence of foundation. No foundation was found.
7			Slight oil sheen on water surface Bottom of test pit at 7.0 ft.		
8			Distance from south end of pit		
<p>GROUND SURFACE ELEVATION: 844.9 PROJECT: NYSEG Binghamton Court Street</p> <p>DATE EXCAVATED: 5/11/93 PROJECT NO.: 130.08</p> <p>CLASSIFIED BY: TRO &amp; VAD</p> <p>EQUIPMENT USED: John Deere Backhoe</p>					
<p>SUMMARY</p> <p>DEPTH OF TEST PIT 7.0 ft</p> <p>DEPTH TO GROUND WATER 7.0 ft</p> <p>TEST PIT NO. TP-01</p>					

# TEST PIT LOG

BINGHAMTON TP-02

DEPTH (FT.)	STRATA CHANGE	West	DESCRIPTION	East	COMMENTS
0			Brown SAND and GRAVEL, some to little brick and concrete slabs (Fill), damp		PID - 0.0 ppm from 0.0 to 3.5 ft.
1					
2					
3					
4			Bottom of test pit at 3.5 ft.		
<p><u>Test pits 2 &amp; 2A orientation</u></p> 					
<p>Notes:</p> <ul style="list-style-type: none"> <li>- Total length of pit is 10 ft.</li> <li>- Test Pit TP-02A was added to the end of TP-02 to search for foundation or other structures.</li> <li>- PID readings obtained from excavation piles and open test pit.</li> </ul>					
<p>GROUND SURFACE ELEVATION: <u>844.9</u></p> <p>DATE EXCAVATED: <u>5/11/83</u></p> <p>CLASSIFIED BY: <u>TRO &amp; VAD</u></p> <p>EQUIPMENT USED: <u>John Deere Backhoe</u></p>					<p>PROJECT: <u>NYSEG Binghamton Court Street</u></p> <p>PROJECT NO.: <u>130.08</u></p>
<p>SUMMARY</p> <p>Depth of Test Pit: <u>3.5 ft.</u></p> <p>Depth to Ground Water: <u>Not Encountered</u></p> <p>Test Pit No. <u>TP-02</u></p>					

# TEST PIT LOG

BINGHAMTON TP-02A

DEPTH (FT.)	STRATA CHANGE	North	DESCRIPTION	South	COMMENTS
- 0			Brown fine to coarse SAND and GRAVEL, some to little Brick and concrete slabs (Fill), damp		PID - 0.0 ppm from 0.0 to 4.5 ft.
- 1					
- 2					
- 3					
- 4			Black stained COAL, SLAG, and fine to medium GRAVEL, moist		
- 5					PID - 4.1 ppm from 4.5 to 8.5 ft.
- 6	(6.5 ft) V		Oil sheen on water surface _____ Grades to saturated with coal tar residue, oil sheen in soil		
- 7			Bottom of test pit at 6.5 ft.		Notes: - Test Pit TP-02A is 11 ft. in length. - TP-02A was added to the end of TP-02 to search for foundation or other structures. - PID readings obtained from excavation piles and open test pit. - See diagram on TP-02 Test Pit Log. - Sample #BSVXTPXX02 was obtained from 6.0 ft. and submitted to the laboratory for chemical characterization.

GROUND SURFACE ELEVATION: 844.5

DATE EXCAVATED: 5/11/93

CLASSIFIED BY: TRO & VAD

EQUIPMENT USED: John Deere Backhoe

PROJECT: NYSEG Binghamton Court Street

PROJECT NO.: 130.08

SUMMARY	
Depth of Test Pit	<u>6.5 ft.</u>
Depth to Ground Water:	<u>6.5 ft.</u>
Test Pit No. <u>TP-02A</u>	



# TEST PIT LOG

BINGHAMTON TP-03

DEPTH (FT.)	STRATA CHANGE	North	DESCRIPTION	South	COMMENTS
- 0			Brown/Grey fine to coarse SAND and GRAVEL (Fill), damp		PID -- 0.0 ppm from 0.0 to 5.5 ft.
- 1					
- 2					
- 3			Grades to black stained with SLAG, some coal and brick fragments, some orange oxidation staining, moist from 2.5 to 5.5 ft.  * retrieved a metal sign "Columbia Gas System, Gas Works"		
- 4					
- 5					
- 6			Black SAND and SILT, little gravel, trace slag sheen in soil, saturated with coal tar residue some dry, brittle pieces of coal tar residue, moist, Oil sheen on water surface		- 21.1 ppm from 6.0 to 6.5 ft.
- 7	(B.S)		Bottom of test pit at 6.5 ft.		Notes:  - Test Pit TP-03 is 14 ft. in length  - PID readings obtained from excavation piles and open test pit.

GROUND SURFACE ELEVATION: 844.7

DATE EXCAVATED: 5/11/93

CLASSIFIED BY: TRO & VAD

EQUIPMENT USED: John Deere Backhoe

PROJECT: NYSEG Binghamton Court Street

PROJECT NO.: 130.08

SUMMARY	
Depth of Test Pit:	<u>6.5 ft.</u>
Depth to Ground Water:	<u>6.5 ft.</u>
Test Pit No. <u>TP-03</u>	

# TEST PIT LOG

BINGHAMTON TP-04

DEPTH (FT.)	STRATA CHANGE	North	DESCRIPTION	South	COMMENTS
- 0			Brown fine to coarse SAND and GRAVEL (Fill), damp		PID -- 0.0 ppm from 0.0 to 4.5 ft.
- 1					
- 2			Grades to black stained with COAL and SLAG from 1.5 to 6.5 ft.		
- 3					
- 4			Coal tar residue from 4.5 ft to 6.5 ft.		- 4.1 ppm from 4.5 to 6.25 ft.
- 5					
- 6	(6.5 ft) V		Some red oxidation staining from 6.0 to 6.5 ft., saturated with amber coal tar residue. Oil sheen on water surface. Bottom of pit 6.5 ft.		- 13.5 ppm from 6.25 to 6.5 ft.
- 7					Notes: - Test Pit TP-04 is 12 ft. in length - PID readings obtained from excavation piles and open test pit.

GROUND SURFACE ELEVATION: 844.7 PROJECT: NYSEG Binghamton Court Street

DATE EXCAVATED: 5/11/93 PROJECT NO.: 130.08

CLASSIFIED BY: TRO & VAD

EQUIPMENT USED: John Deere Backhoe

**SUMMARY**

Depth of Test Pit: 6.5 ft.

Depth to Ground Water: 6.5 ft.

Test Pit No. TP-04

# TEST PIT LOG

BINGHAMTON TP-05

DEPTH (FT.)	STRATA CHANGE	Northeast	DESCRIPTION	Southwest	COMMENTS
- 0			Brown fine to coarse SAND and GRAVEL (Fill), damp		PID - 0.0 ppm from 0.0 to 2 ft.
- 1					
- 2			Grades to black stained with BRICK, and WOOD BOARDS Strong coal tar odor from 2.0 to 6.0 ft.		- 177.0 ppm at 2.0 to 2.5 ft. - 0.0 ppm at 2.5 to 6.0 ft.
- 3					
- 4					
- 5					
- 6	(6.0 ft)		Brick and wood boards covered w/coal tar residue at 6.0 feet Bottom of test pit at 6.0 feet		
- 7					Notes: - Test Pit TP-05 is 12 ft. in length - PID readings obtained from excavation piles and open test pit. - Sample #BSV\XTP\X05 was obtained from 6.0 ft and submitted to the laboratory for chemical characterization.

GROUND SURFACE ELEVATION: 844.6

DATE EXCAVATED: 5/11/93

CLASSIFIED BY: TRO & VAD

EQUIPMENT USED: John Deere Backhoe

PROJECT: NYSEG Binghamton Court Street

PROJECT NO.: 130.08

SUMMARY	
Depth of Test Pit	<u>6.0 ft.</u>
Depth to Ground Water:	<u>6.0 ft.</u>
Test Pit No. <u>TP-05</u>	

# TEST PIT LOG

BINGHAMTON TP-06 & 06A

DEPTH (FT.)	STRATA CHANGE	Southwest	Northeast	DESCRIPTION	COMMENTS
0				Brown fine to coarse SAND and GRAVEL (F <sub>10</sub> ), damp	PID - 0.0 ppm from 0 to 2.0 ft.
1					
2				Grade to black stained, with some brick fragments, concrete, wood boards	- 14.5 ppm for 2.0 to 4.5 ft. - 242.0 ppm from excavation pile from 2.0 to 4.5 ft.
3				Thick 'gooey' coal tar from 2.0 to 3.0 ft.	
4					0.0 ppm from 4.5 to 7.0 ft.
5				Black fine to coarse GRAVEL, some sand and silt, damp	
6					
7	(7.0 ft)			Bottom of TP-06 at 7.0 ft.	
				Bottom of TP-06A at 4.0 ft.	
					Notes: - TP-06A was added northwest side of TP-06 to evaluate extent and limits of coal tar residue. - PID readings obtained from excavation piles and upon test pits. - Dräger Tube obtained from excavation piles at 4 ft were nondetect for Hydrogen Cyanide and Hydrogen Sulfide.
GROUND SURFACE ELEVATION: 845.4 DATE EXCAVATED: 5/12/83 CLASSIFIED BY: TRO & VAD EQUIPMENT USED: John Deere Backhoe					SUMMARY DEPTH OF TEST PIT 7.0 ft DEPTH TO GROUND WATER 7.0 ft
TEST PIT NO.					TP-06 & TP-06A

# TEST PIT LOG

BINGHAMTON TP-07

DEPTH (FT.)	STRATA CHANGE	South	DESCRIPTION	North	COMMENTS
- 0			Brown fine to coarse SAND and fine to coarse GRAVEL (Fill), damp		PID - 0.0 ppm from 0.0 to 3.5 ft.
- 1			Several 4 ft by 3 ft concrete slabs with rebar		
- 2					
- 3			Grades with BRICKS, and WOOD BOARDS (Bricks in layers)		
- 4			Black stained from 3.0 to 5.0 ft.		648 ppm from 3.5 to 5.2 ft
- 5	(5.0 ft)		Metallic luster and sheen on water surface and in soil Strong coal tar odor Bottom of Test Pit at 5.2 ft.		
					<p>Notes:</p> <ul style="list-style-type: none"> <li>- Test Pit TP-07 is 12 ft. in length</li> <li>- PID readings obtained from excavation piles and open test pit.</li> <li>- Sample #BSVXTPXX07 was obtained from 5.0 ft and submitted to the laboratory for chemical characterization.</li> </ul>
<p>GROUND SURFACE ELEVATION: <u>845.0</u> PROJECT: <u>NYSEG Binghamton Court Street</u></p> <p>DATE EXCAVATED: <u>5/12/93</u> PROJECT NO.: <u>130.08</u></p> <p>CLASSIFIED BY: <u>TRO &amp; VAD</u></p> <p>EQUIPMENT USED: <u>John Deere Backhoe</u></p>					<p><b>SUMMARY</b></p> <p>Depth of Test Pit: <u>5.2 ft.</u></p> <p>Depth to Ground Water: <u>5.0 ft.</u></p> <p>Test Pit No. <u>TP-07</u></p>

# TEST PIT LOG

BINGHAMTON TP-08

DEPTH (FT)	STRATA CHANGE	North	South	COMMENTS
0		Brown coarse to fine SAND and GRAVEL (fill), damp		
1				
2		Some concrete pieces with rebar, 1.5" dia. orange plastic pipe		
3				
4		Concrete at 3.5 ft. possible foundation of oil tank 5	Brown fine to coarse SAND and SILT, damp	
5		Bottom of concrete at 4.5 ft.	some brick	
6			Black stained fine to coarse SAND and fine to coarse GRAVEL, some brick, moist	
7			Black thick "gooey" coal tar residue, Naphtha odor	
8	(8.0 ft) V		Oil sheen on water surface at 8.0 ft. Bottom of test pit at 8.0 ft.	
<p>Notes:</p> <ul style="list-style-type: none"> <li>- Test Pit TP-08 is 21 ft. in length.</li> <li>- PID readings obtained from excavation piles and upon test pits.</li> </ul>				
<p>PID -- 0.0 ppm from 0 to 8.0 ft.</p>				
<p>SUMMARY</p>				
<p>DEPTH OF TEST PIT 8.0 ft</p>				
<p>DEPTH TO GROUND WATER 8.0 ft</p>				
<p>TEST PIT NO. TP-08</p>				

GROUND SURFACE ELEVATION: 845.7  
 DATE EXCAVATED: 5/13/93  
 CLASSIFIED BY: TRO & VAD  
 EQUIPMENT USED: John Deere Backhoe

PROJECT: NYSEG Binghamton Court Street  
 PROJECT NO.: 130.08

# TEST PIT LOG

BINGHAMTON TP-09

DEPTH (FT.)	STRATA CHANGE	Northwest	DESCRIPTION	Southeast	COMMENTS
- 0			Brown fine to coarse SAND and GRAVEL (Fill), damp		PID -- 0.0 ppm from 0.0 to 5.5 ft.
- 1			- some 1" diameter orange plastic pipe		
- 2					
- 3					
- 4			Grades to black stained with some wood boards, little brick		
- 5			Oil Sheen on water surface and in soil Thick "goosey" coal tar residue with metallic luster		
- 6	(5.5 ft)		Bottom of Test Pit at 5.5 ft.		
					<p>Notes:</p> <ul style="list-style-type: none"> <li>- Test Pit TP-9 is 12 ft. in length</li> <li>- PID readings obtained from excavation piles and open test pit.</li> <li>- PID reading for ambient air 17.5 ppm directly over excavation pile 0.0 ppm at 5.0 ft from excavation pile.</li> </ul>
<p>GROUND SURFACE ELEVATION: <u>845.6</u> PROJECT: <u>NYSEG Binghamton Court Street</u></p> <p>DATE EXCAVATED: <u>5/12/83</u> PROJECT NO.: <u>130.08</u></p> <p>CLASSIFIED BY: <u>TRO &amp; VAD</u></p> <p>EQUIPMENT USED: <u>John Deere Backhoe</u></p>					<p><b>SUMMARY</b></p> <p>Depth of Test Pit: <u>5.5 ft.</u></p> <p>Depth to Ground Water: <u>5.5 ft.</u></p> <p>Test Pit No. <u>TP-9</u></p>

# TEST PIT LOG

BINGHAMTON TP-10

DEPTH (FT.)	STRATA CHANGE	South	DESCRIPTION	North	COMMENTS
- 0			Brown fine to coarse SAND and GRAVEL (Fill), damp		PID - 0.0 ppm from 0.0 to 5 ft.
- 1					
- 2			Grades to black stained, with some BRICK, some wood boards from 2.0 to 5.0 ft.		
- 3					
- 4			Coal tar odor and moist at 4.5 ft.		
- 5	(5.0 ft)		Oil sheen on water surface Bottom of test pit at 5.0 ft.		
- 6					
					<p>Notes:</p> <ul style="list-style-type: none"> <li>- Test Pit TP-10 is 10 ft. in length</li> <li>- PID readings obtained from excavation piles and open test pit. Ambient air PID reading 3.5 ppm at pile</li> </ul>
<p>GROUND SURFACE ELEVATION: <u>844.7</u> PROJECT: <u>NYSEG Binghamton Court Street</u></p> <p>DATE EXCAVATED: <u>5/12/93</u> PROJECT NO.: <u>130.08</u></p> <p>CLASSIFIED BY: <u>TRO &amp; VAD</u></p> <p>EQUIPMENT USED: <u>John Deere Backhoe</u></p>					<p><b>SUMMARY</b></p> <p>Depth of Test Pit: <u>5.0 ft.</u></p> <p>Depth to Ground Water: <u>5.0 ft.</u></p> <p>Test Pit No. <u>TP-10</u></p>



# TEST PIT LOG

BINGHAMTON TP-11

DEPTH (FT.)	STRATA CHANGE	South	DESCRIPTION	North	COMMENTS
- 0			Brown fine to coarse SAND and GRAVEL, little concrete with rerod, little wood, damp		PID - 0.0 ppm from 0.0 to 4.0 ft.
- 1					
- 2			- some black staining in soil		
- 3			- red brick in layers to 4 ft.		
- 4	(4.0 ft)		slight coal tar odor slight oil sheen on water surface Bottom of test pit at 4.0 ft.		
					<p>Notes:</p> <ul style="list-style-type: none"> <li>- Test Pit TP-11 is 10 ft. in length</li> <li>- PID readings obtained from excavation piles and open test pit.</li> </ul>
<p>GROUND SURFACE ELEVATION: <u>844.4</u> PROJECT: <u>NYSEG Binghamton Court Street</u></p> <p>DATE EXCAVATED: <u>5/12/93</u> PROJECT NO.: <u>130.08</u></p> <p>CLASSIFIED BY: <u>TRO &amp; VAD</u></p> <p>EQUIPMENT USED: <u>John Deere Backhoe</u></p>					<p><b>SUMMARY</b></p> <p>Depth of Test Pit: <u>4.0 ft.</u></p> <p>Depth to Ground Water: <u>4.0 ft.</u></p> <p>Test Pit No. <u>TP-11</u></p>

# TEST PIT LOG

BINGHAMTON TP-12

DEPTH (FT.)	STRATA CHANGE	South	DESCRIPTION	North	COMMENTS
0					PID - 0.0 ppm from 0 to 7.0 ft.
1					General location: Ammonia Well
2					
3			Grades to dark brown with BRICK, some black staining, coal tar odor from 2.5 to 7.0 ft.		
4			Red brick & mortar foundation		
5					
6					
7					
8					
<p>GROUND SURFACE ELEVATION: 844.7</p> <p>DATE EXCAVATED: 5/13/93</p> <p>CLASSIFIED BY: TRO &amp; VAD</p> <p>EQUIPMENT USED: John Deere Backhoe</p> <p>PROJECT: NYSEG Binghamton Court Street</p> <p>PROJECT NO. 130.08</p>					<p>Notes:</p> <ul style="list-style-type: none"> <li>- Test Pit TP-12 is 12 ft. in length.</li> <li>- PID readings obtained from excavation piles and upon test pits.</li> </ul>
<p>Slight coal tar odor at 7.0 ft</p> <p>Slight oil sheen on water surface</p> <p>Bottom of test pit at 7.0 ft.</p>					
<p>Summary</p> <p>DEPTH OF TEST PIT 7.0 ft</p> <p>DEPTH TO GROUND WAT 7.0 ft</p>					
<p>TEST PIT NO. TP-12</p>					

# TEST PIT LOG

BINGHAMTON TP-13

DEPTH (FT.)	STRATA CHANGE	West	DESCRIPTION	East	COMMENTS
0			Brown fine to coarse SAND and GRAVEL (Fill), damp		PID - 0.0 ppm from 0 to 2.5 ft.
1			- little orange plastic pipe		General location: Gas holder No. 4
2					
3			Concrete foundation Gas holder No. 4		
4					
					<p>Notes:</p> <ul style="list-style-type: none"> <li>- Test Pit TP-13 is 28 ft. in length.</li> <li>- Located edge of foundation.</li> <li>- Test pit could not be excavated to depth due to close proximity of cars.</li> </ul>
<p>GROUND SURFACE ELEVATION: 844.9 PROJECT: NYSEG Binghamton Court Street</p> <p>DATE EXCAVATED: 5/13/83 PROJECT NO.: 130.08</p> <p>CLASSIFIED BY: TRO &amp; VAD</p> <p>EQUIPMENT USED: John Deere Backhoe</p>					<p>SUMMARY</p> <p>DEPTH OF TEST PIT 2.5 ft</p> <p>DEPTH TO GROUND WATER NA</p>
					TEST PIT NO. TP-13

# TEST PIT LOG

BINGHAMTON TP-14

DEPTH (FT.)	STRATA CHANGE	Southwest	South	DESCRIPTION	North	COMMENTS
0				Brown fine to coarse SAND and GRAVEL (FIII), damp		PID -- 0.0 ppm from 0 to 6.0 ft. General location: Gas holder No. 4
1						
2						
3				Coat tar odor, some pipe and metal pieces at 79 ft. length. Concrete foundation black staining on top of foundation		
4						
5						
6	(5.5 ft)					
		<p>Black stained fine to coarse SAND and GRAVEL, pieces of metal and pipe 4.5 to 5.0 ft.</p> <p>Some to little coal tar residue in matrix.</p> <p>Bottom of test pit at 6.0 ft.</p>				<p>Notes:</p> <ul style="list-style-type: none"> <li>- PID reading obtained from excavation piles and above open test pit.</li> <li>- Aerial view on Figure 4.</li> <li>- Sample #BSVXTPX14 obtained from north end at 6.0 ft. and submitted to the laboratory for chemical characterization.</li> </ul>
<p>Length (ft) 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100</p>						
<p>GROUND SURFACE ELEVATION: 845.0 PROJECT: NYSEG Binghamton Court Street</p> <p>DATE EXCAVATED: 5/13/83 PROJECT NO.: 130.08</p> <p>CLASSIFIED BY: TRO &amp; VAD</p> <p>EQUIPMENT USED: John Deere Backhoe</p>						
<p>SUMMARY</p> <p>DEPTH OF TEST PIT 6.0 ft</p> <p>DEPTH TO GROUND WATER 5.5 ft</p>						
<p>TEST PIT NO. TP-14</p>						

# TEST PIT LOG

BINGHAMTON TP-15

DEPTH (FT.)	STRATA CHANGE	Northwest	DESCRIPTION	Southeast	COMMENTS
0					PID - 0.0 ppm from 0 to 8.0 ft.
1			Black stained from 1.5 to 2.5 feet		
2					
3			Ash, some coal, gravel, little wood, damp 4" diameter pipe at 3.0 filled with coal tar residue (PID > 2500)		
4					
5			Black, thick, coal tar residue, moist		- Slight Coal tar odor
6	(6.0 ft)		Black fine to coarse SAND and GRAVEL, wet saturated with coal tar residue and oil globules, viscous Oil sheen on water surface Bottom of test trench at 6.0 ft.		Notes: - Test Pit TP-15 is 13 ft. in length. - PID reading obtained from excavation piles and above open test pit. - Sample #BSVXTPXX15 was obtained from 8 ft. and submitted to the laboratory for chemical characterization.
General location: Gas holder No. 2					
<p>GROUND SURFACE ELEVATION: 844.7</p> <p>DATE EXCAVATED: 5/13/93</p> <p>CLASSIFIED BY: TRO &amp; VAD</p> <p>EQUIPMENT USED: John Deere Backhoe</p>					
<p>PROJECT: NYSEG Binghamton Court Street</p> <p>PROJECT NO.: 130.08</p>					
SUMMARY					
DEPTH OF TEST PIT					6.0 ft
DEPTH TO GROUND WATER					6.0 ft
TEST PIT NO.					TP-15

# TEST PIT LOG

BINGHAMTON TP-16

DEPTH (FT.)	STRATA CHANGE	South	DESCRIPTION	North	COMMENTS
- 0			Brown fine to coarse SAND and GRAVEL (Fill), damp		PID -- 0.0 ppm from 0.0 to 5.5 ft.
- 1					
- 2			Grades with BRICKS, little wood boards, some to little ash, some black staining from 1.5 to 5.5 feet		
- 3					
- 4					
- 5	(5.5 ft)		Oil sheen on top of water surface Bottom of test pit at 5.5 ft.		Notes: - Test Pit TP-16 is 12 ft. in length  - PID readings obtained from excavation piles and open test pit.
- 6					
General location: Gas holder No. 2					

GROUND SURFACE ELEVATION: <u>844.7</u> DATE EXCAVATED: <u>5/13/93</u> CLASSIFIED BY: <u>TRO &amp; VAD</u> EQUIPMENT USED: <u>John Deere Backhoe</u>	PROJECT: <u>NYSEG Binghamton Court Street</u> PROJECT NO.: <u>130.08</u>	<b>SUMMARY</b> Depth of Test Pit: <u>5.5 ft.</u> Depth to Ground Water: <u>5.5 ft.</u> Test Pit No. <u>TP-16</u>
--	---	---

# TEST PIT LOG

BINGHAMTON TP-17

DEPTH (FT.)	STRATA CHANGE	North	DESCRIPTION	South	COMMENTS
- 0		Grass	Brown fine to coarse SAND and GRAVEL (Fill), damp		PID - 0.0 ppm from 0.0 to 8.0 ft.
- 1					
- 2			Black stained from 1.5 to 7.0 feet - removed concrete slab (8" x 2.5' long)		
- 3			Black fine to coarse SAND, fine to coarse GRAVEL, and ASH, little plastic cable		
- 4					
- 5					
- 6					
- 7			Black to brown SILT and CLAY, moist.		Notes: - Test Pit TP-17 is 12 ft. in length. - PID readings obtained from excavation piles and open test pit.
- 8	(8.0 ft.)		Oil sheen on water surface. Bottom of test pit at 8.0		
- 9					

GROUND SURFACE ELEVATION: 843.8  
 DATE EXCAVATED: 5/13/93  
 CLASSIFIED BY: TRO & VAD  
 EQUIPMENT USED: John Deere Backhoe

PROJECT: NYSEG, Binghamton Court Street  
 PROJECT NO.: 130.08

## SUMMARY

Depth of Test Pit: 8.0 ft.  
 Depth to Ground Water: 8.0 ft.

Test Pit No. TP-17

# TEST PIT LOG

BINGHAMTON TP-18

DEPTH (FT.)	STRATA CHANGE	South	DESCRIPTION	North	COMMENTS
- 0			Brown fine to coarse SAND and GRAVEL (Fill), damp		PID - 0.0 ppm from 0.0 to 8.0 ft.
- 1					
- 2			grades to black stained with SLAG and ASH from 1.5 to 8.0 feet.		
- 3					
- 4					
- 5					- Slight coal tar odor
- 6			Gray CLAY, some black staining, moist		Notes:
- 7			Coal tar residue in clay		- Test Pit TP-18 is 10.0 ft. in length.
- 8	(7.5 ft)		Oil sheen on water surface.		- PID readings obtained from excavation piles and open test pit.
- 8			Bottom of test pit at 8.0 ft.		
- 9					

GROUND SURFACE ELEVATION: 844.6  
 DATE EXCAVATED: 5/13/93  
 CLASSIFIED BY: TRO & VAD  
 EQUIPMENT USED: John Deere Backhoe

PROJECT: NYSEG, Binghamton Court Street  
 PROJECT NO.: 130.08

## SUMMARY

Depth of Test Pit: 8.0 ft.  
 Depth to Ground Water: 8.0 ft.

Test Pit No. TP-18



# TEST PIT LOG

BINGHAMTON TP-19

DEPTH (FT.)	STRATA CHANGE	North	DESCRIPTION	South	COMMENTS
- 0			Brown fine to coarse SAND and GRAVEL, little brick, metal pipes (Fill), damp		PID - 0.0 ppm from 0.0 to 8.5 ft.
- 1					
- 2			Black stained from 2.0 to 7.0 feet, some concrete blocks		
- 3					
- 4					
- 5			some black stained wood timbers		
- 6					
- 7					Notes: - Test Pit TP-19 is 11 ft. in length. - PID readings obtained from excavation piles and open test pit.
- 8	(8.0 ft.)		Gray CLAY, some black staining, moist, slight coal tar odor		
- 9			Bottom of test pit at 8.5 ft.		

GROUND SURFACE ELEVATION: <u>843.8</u>	PROJECT: <u>NYSEG, Binghamton Court Street</u>	SUMMARY
DATE EXCAVATED: <u>5/13/93</u>	PROJECT NO.: <u>130.08</u>	
CLASSIFIED BY: <u>TRO &amp; VAD</u>		
EQUIPMENT USED: <u>John Deere Backhoe</u>		
		Depth of Test Pit: <u>8.5 ft.</u>
		Depth to Ground Water: <u>8.0 ft.</u>
		Test Pit No. <u>TP-19</u>

# TEST PIT LOG

BINGHAMTON TP-20

DEPTH (FT.)	STRATA CHANGE	North	DESCRIPTION	South	COMMENTS	
- 0			Brown fine to coarse SAND and GRAVEL (Fill), damp		PID - 0.0 ppm from 0.0 to 8.5 ft.	
- 1			Black stained from 1.5 to 7.0 feet			
- 2			Dark Brown to Black fine to coarse SAND, fine to coarse GRAVEL, and ASH, little plastic cable			
- 3						
- 4						
- 5						
- 6						
- 7			Reddish brown SILT little clay, damp, slightly plastic		<b>Notes:</b> - Test Pit TP-20 is 12 ft. in length. - PID readings obtained from excavation piles and open test pit.	
- 8						
- 8.5	(8.5 ft.)		Bottom of test pit at 8.5			
GROUND SURFACE ELEVATION: <u>843.8</u> DATE EXCAVATED: <u>5/13/83</u> CLASSIFIED BY: <u>TRO &amp; VAD</u> EQUIPMENT USED: <u>John Deere Backhoe</u>					<b>SUMMARY</b> Depth of Test Pit: <u>8.5 ft.</u> Depth to Ground Water: <u>8.5 ft.</u> Test Pit No. <u>TP-20</u>	

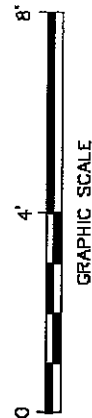
# TEST PIT LOG

BINGHAMTON TP-21

DEPTH (FT.)	STRATA CHANGE	North	DESCRIPTION	South	COMMENTS
- 0			Brown fine to coarse SAND and GRAVEL (Fill)		PID - 0.0 ppm from 0.0 to 8.0 ft.
- 1					
- 2					
- 3			Brown SILT and CLAY, moist		
- 4					
- 5					
- 6					
- 7					Notes: - Test Pit TP-21 is 10.0 ft. in length. - PID readings obtained from excavation piles and open test pit. - Sample #BSVXTPXX21 and duplicate sample #BSVXTPXX41 obtained from 8 ft and submitted to the laboratory for chemical characterization.
- 8	(8.0 ft)		Brown to Black SILT and CLAY, some gravel, moist Bottom of test pit at 8.0 ft.		
- 9					

GROUND SURFACE ELEVATION: 844.5	PROJECT: NYSEG, Binghamton Court Street	SUMMARY
DATE EXCAVATED: 5/13/93	PROJECT NO.: 130.08	
CLASSIFIED BY: TRO & VAD		Depth of Test Pit: 8.0 ft.
EQUIPMENT USED: John Deere Backhoe		Depth to Ground Water: 8.0 ft.
		Test Pit No. TP-21



**TEST PIT 201**

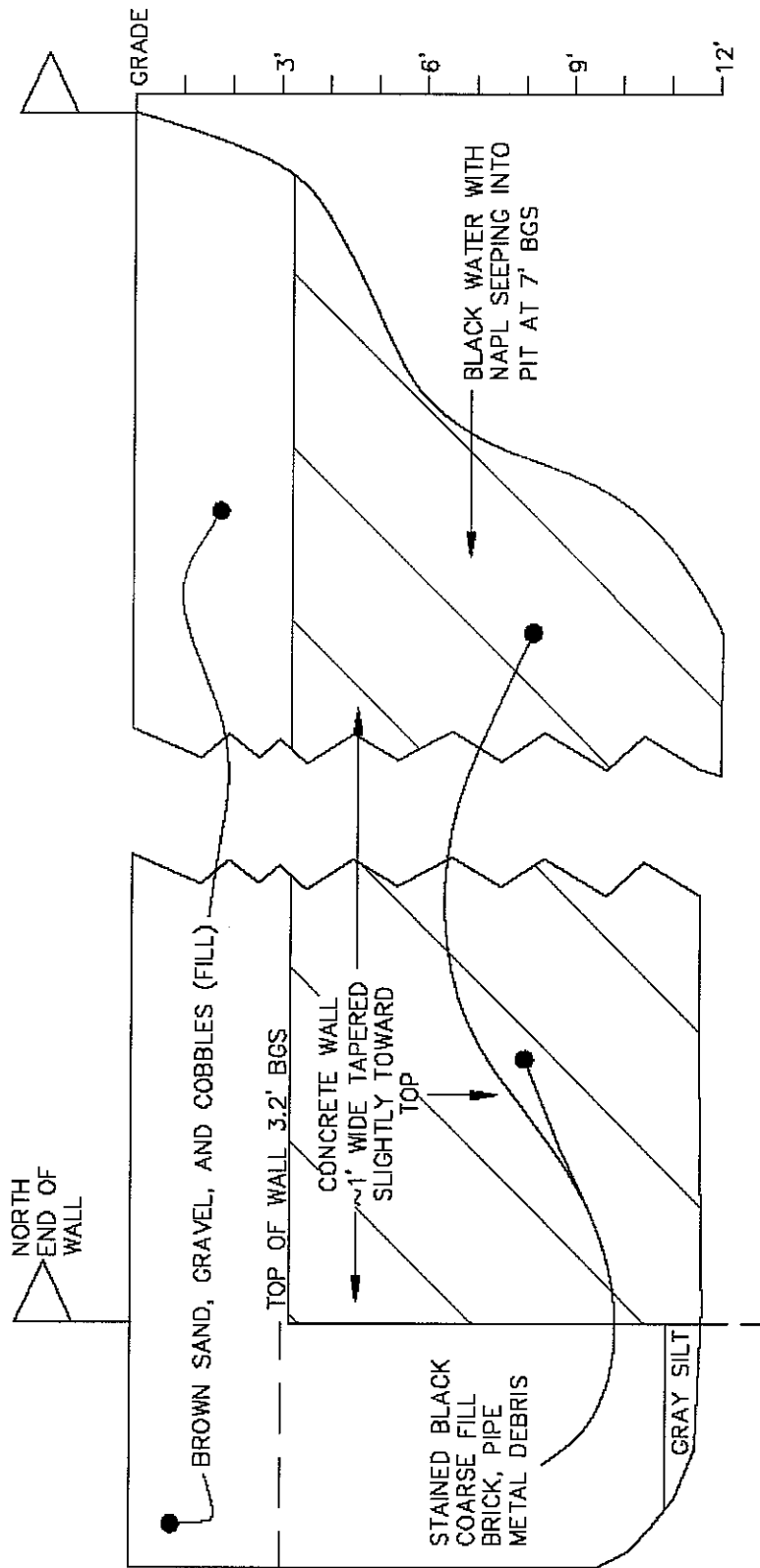
**BBI**  
BRASLAND, BUCKY & IEE, INC.  
ENGINEERS & ARCHITECTS

FIGURE

X: 1303BX00.DWG  
P: PAGESET/PLT-AL  
11/8/02 SYR-54-PGL  
1303BX003/1303BX01.DWG

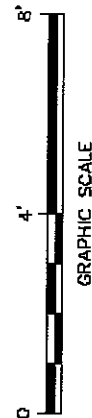
N

S



NOTES:

OBJECTIVE: EXTEND KNOWN TRACE OF BURIED WALL NORTH FROM PIN FLAG MARKING THE NORTHERN END OF PRIOR NYSEG IRM TRENCH. END OF WALL FOUND; NO BOTTOM (>11.5' BGS); NO CORNER FOUND

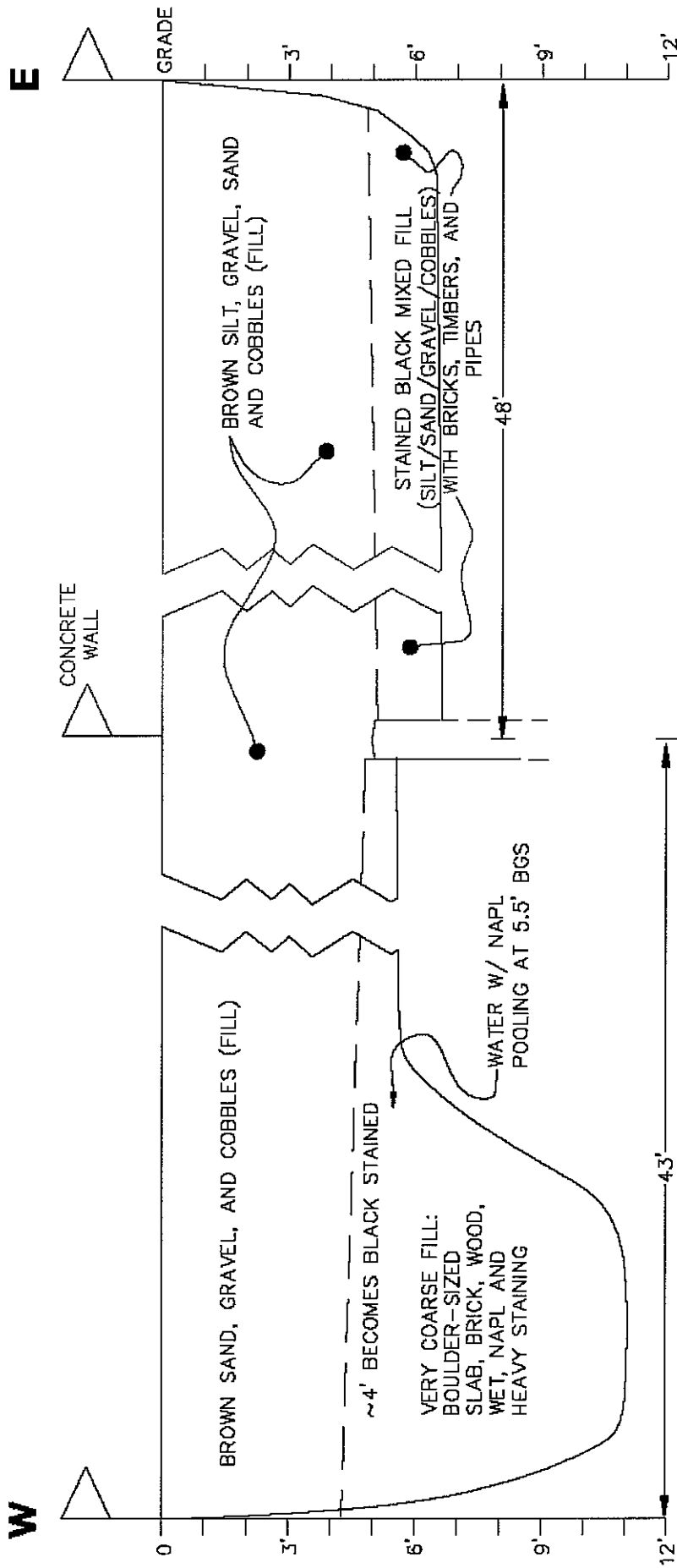


NEW YORK STATE ELECTRIC & GAS  
BINGHAMTON, NEW YORK  
PHASE II SRI

TEST PIT 202

**BBL**  
BLASLAND, BUCK & LEE, INC.  
engineers & scientists

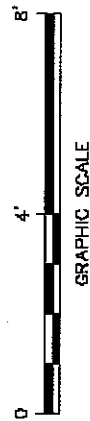
FIGURE

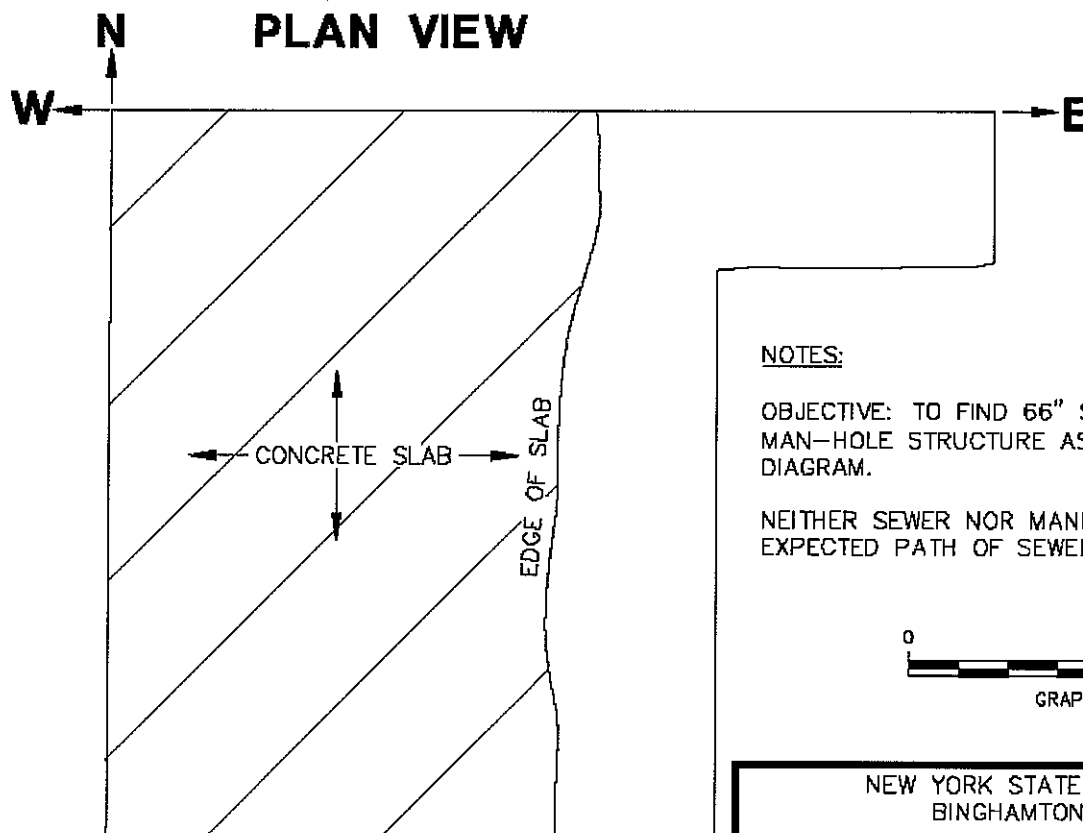
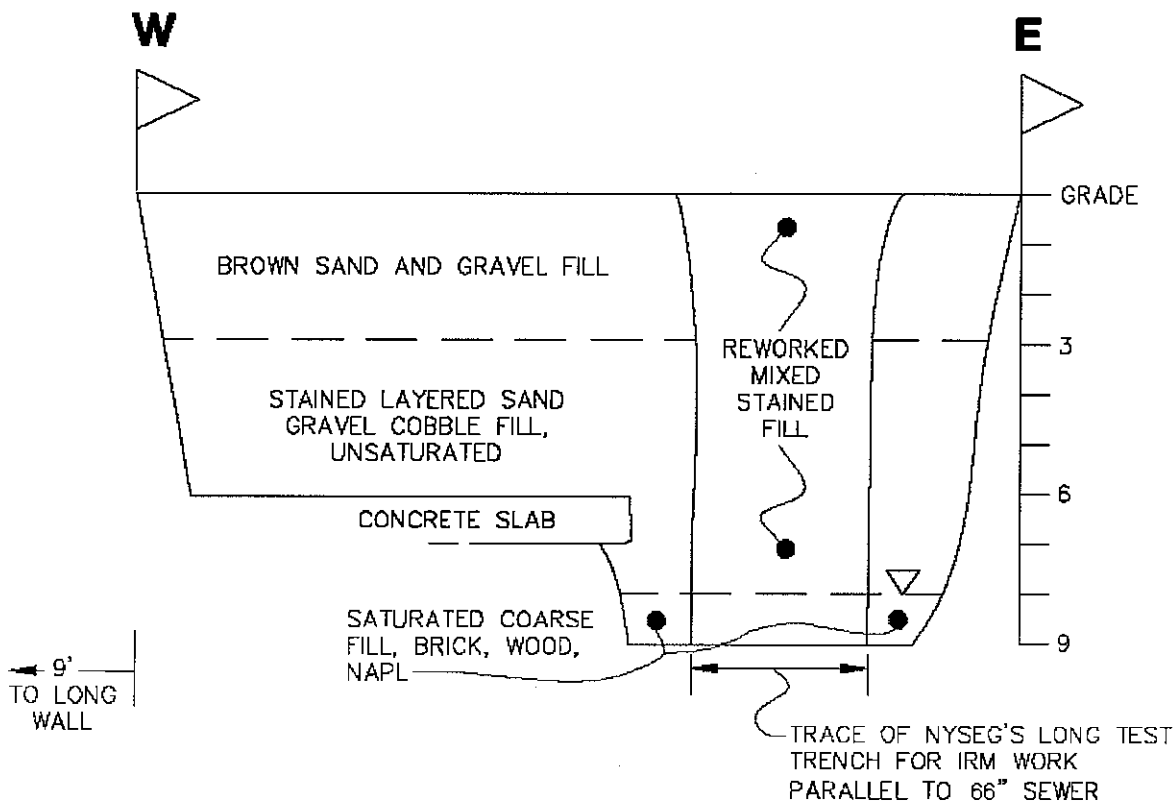


#### NOTES:

EXCAVATED IN TWO EPISODES (FROM WALL EAST ON 9/11, FROM WALL WEST ON 9/13).

OBJECTIVE: TO FIND POSSIBLE 2ND WALL EXPECTED PARALLEL TO BURIED WALL, AS SEEN IN TEST PITS 201 AND 202.  
NO 2ND WALL FOUND.

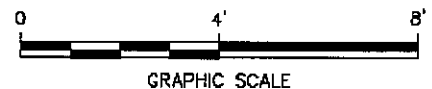




**NOTES:**

OBJECTIVE: TO FIND 66" SEWER AND POSSIBLE MAN-HOLE STRUCTURE AS PER SEWER "AS-BUILT" DIAGRAM.

NEITHER SEWER NOR MANHOLE FOUND; SLAB OVER EXPECTED PATH OF SEWER.

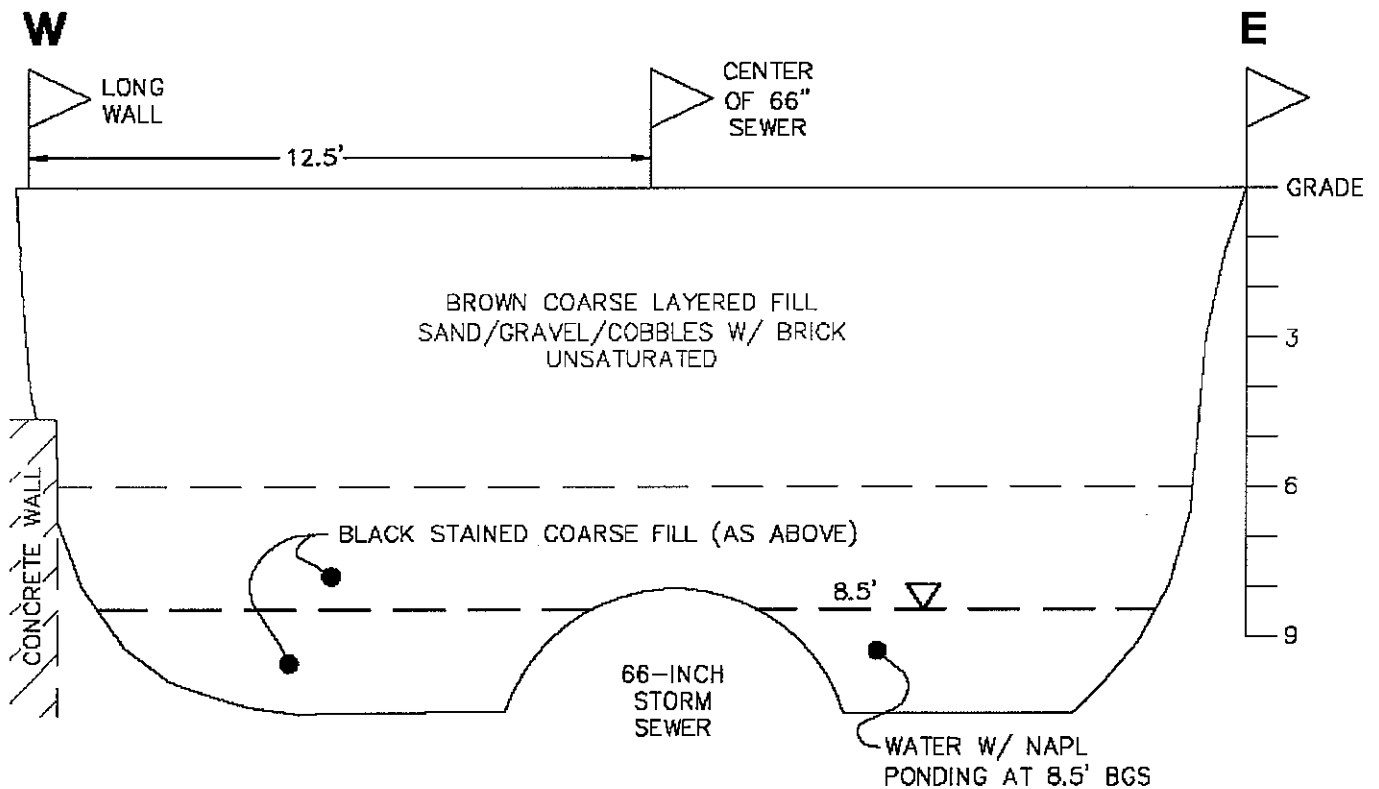


NEW YORK STATE ELECTRIC & GAS  
BINGHAMTON, NEW YORK  
PHASE II SRI

**TEST PIT 204**

**BBL**  
BLASLAND, BUCK & LEE, INC.  
engineers & scientists

FIGURE

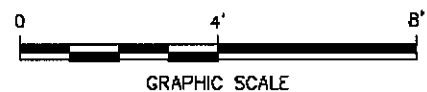


**NOTES:**

OBJECTIVE: TO FIND 66" STORM SEWER, INVESTIGATE BEDDING.

PIT NOT EXCAVATED TO DEPTH OF SEWER DUE TO WATER FILLING PIT

PIEZOMETER PZ01-04 INSTALLED ADJACENT TO PIT (NORTH)



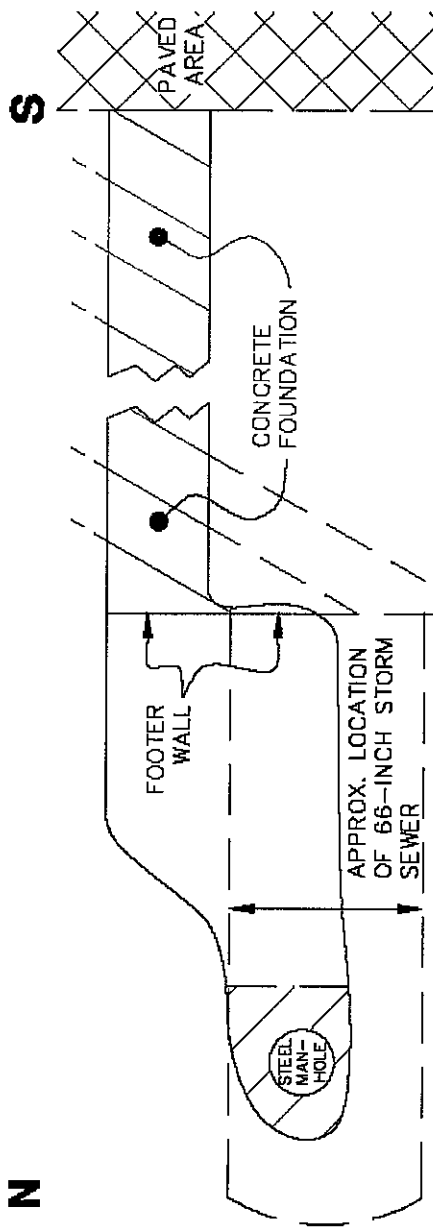
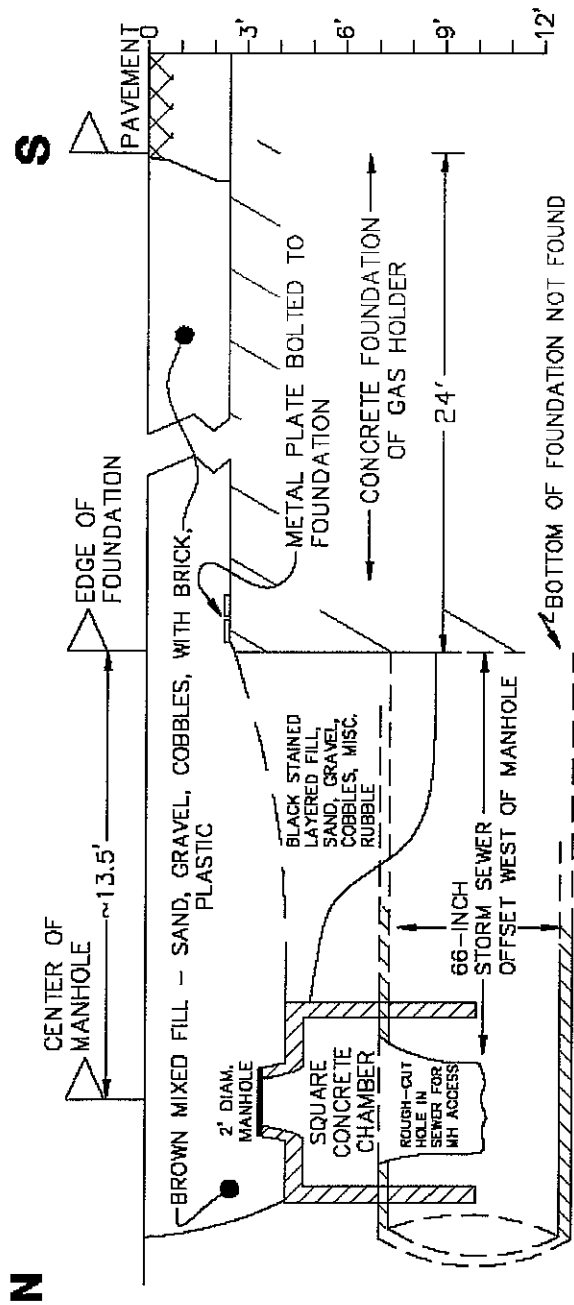
NEW YORK STATE ELECTRIC & GAS  
BINGHAMTON, NEW YORK  
PHASE II SRI

**TEST PIT 205**

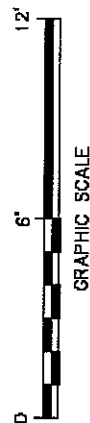
**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

FIGURE





**PLAN VIEW**



NEW YORK STATE ELECTRIC & GAS  
BINGHAMTON, NEW YORK

PHASE II SRI

**TEST PIT 206**

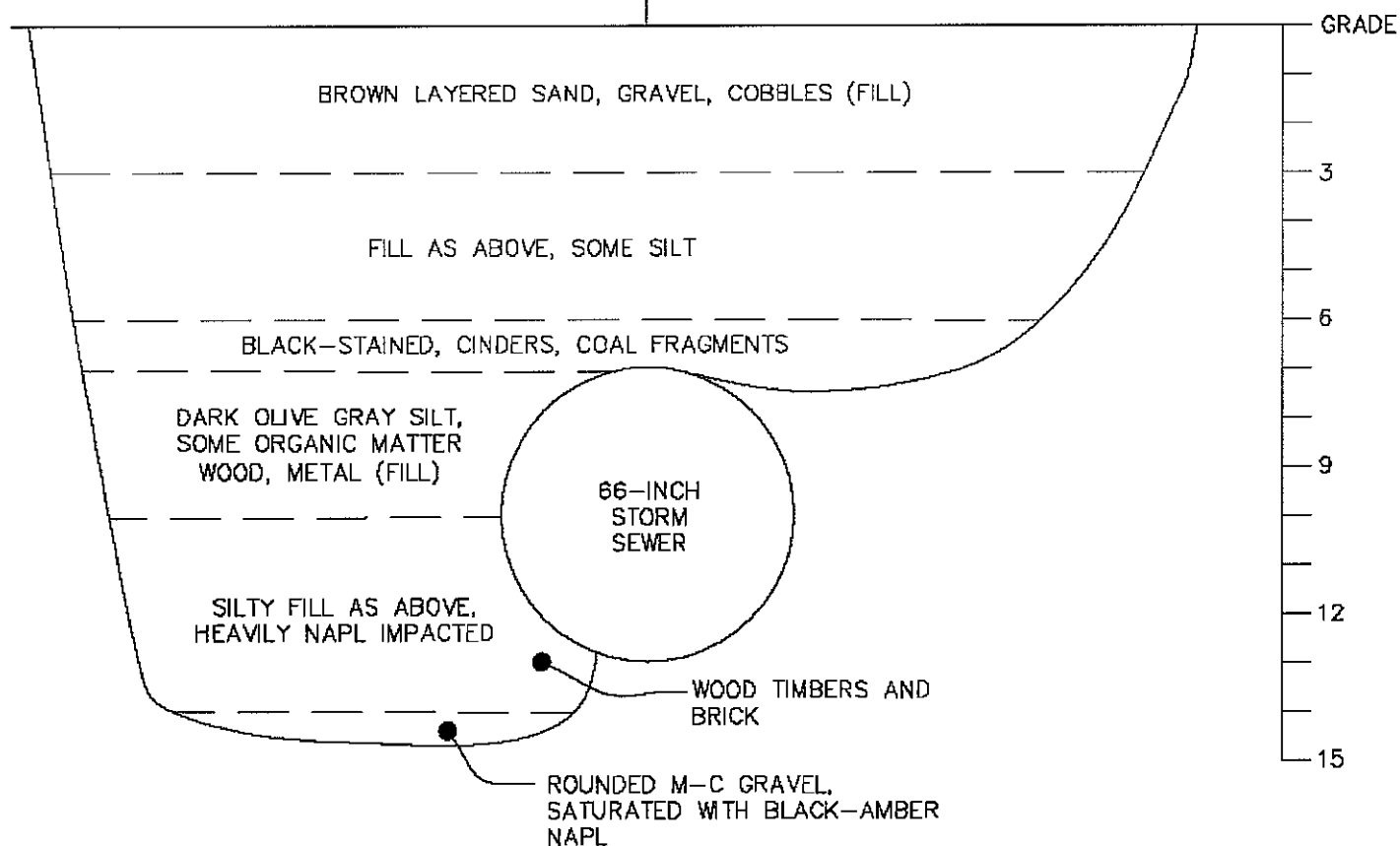
**BBL**  
BLASAND, BUCK & LEE, INC.  
engineers & consultants

FIGURE

W

E

CENTER  
OF 66"  
SEWER



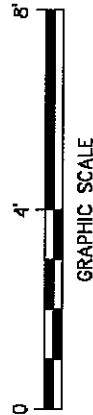
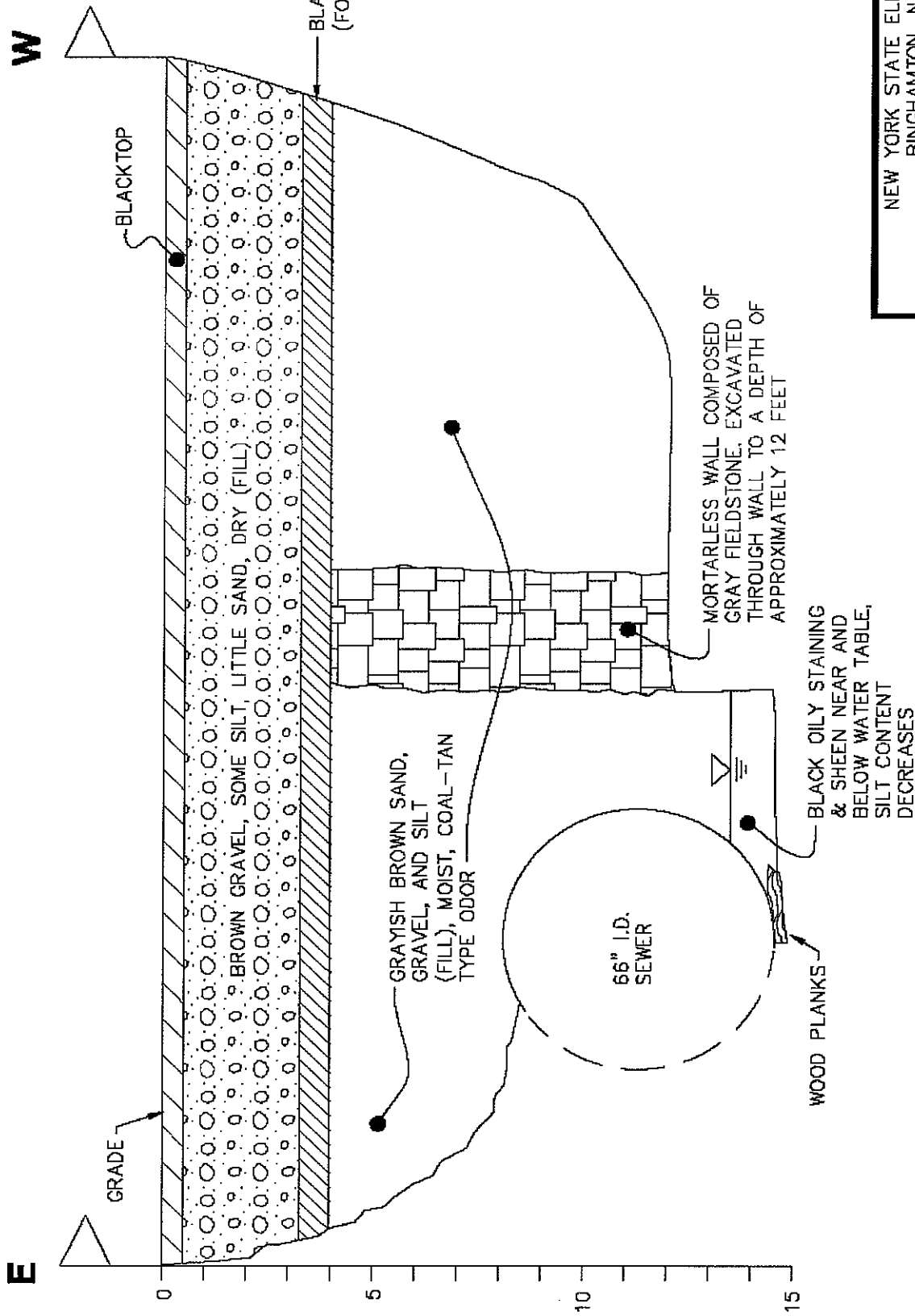
GRAPHIC SCALE

NEW YORK STATE ELECTRIC & GAS  
BINGHAMTON, NEW YORK  
PHASE II SRI

TEST PIT 207

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

FIGURE

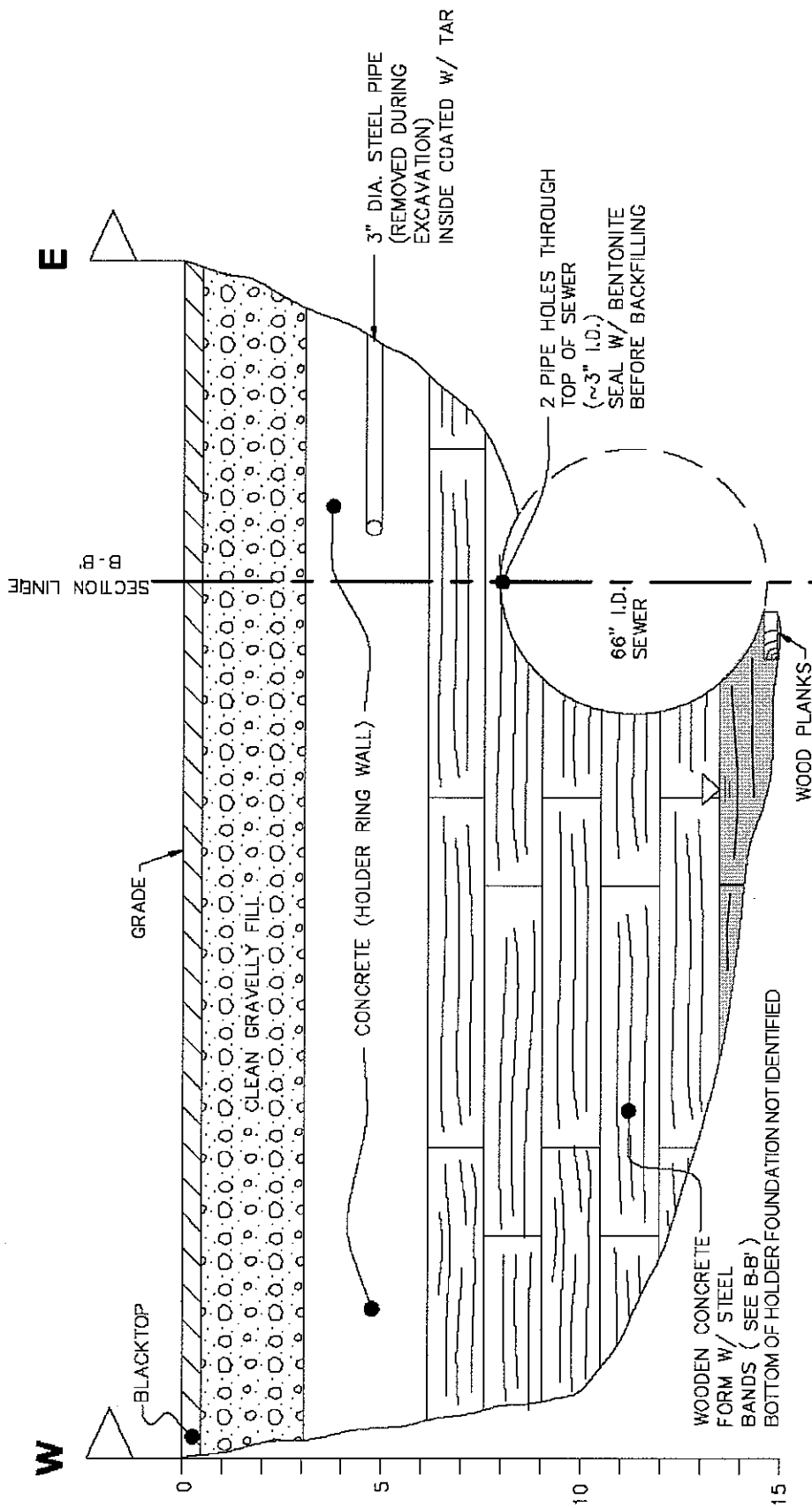


NEW YORK STATE ELECTRIC & GAS  
BINGHAMTON, NEW YORK  
PHASE II/SRI

## TEST PIT 208 (SOUTH WALL)

FIGURE

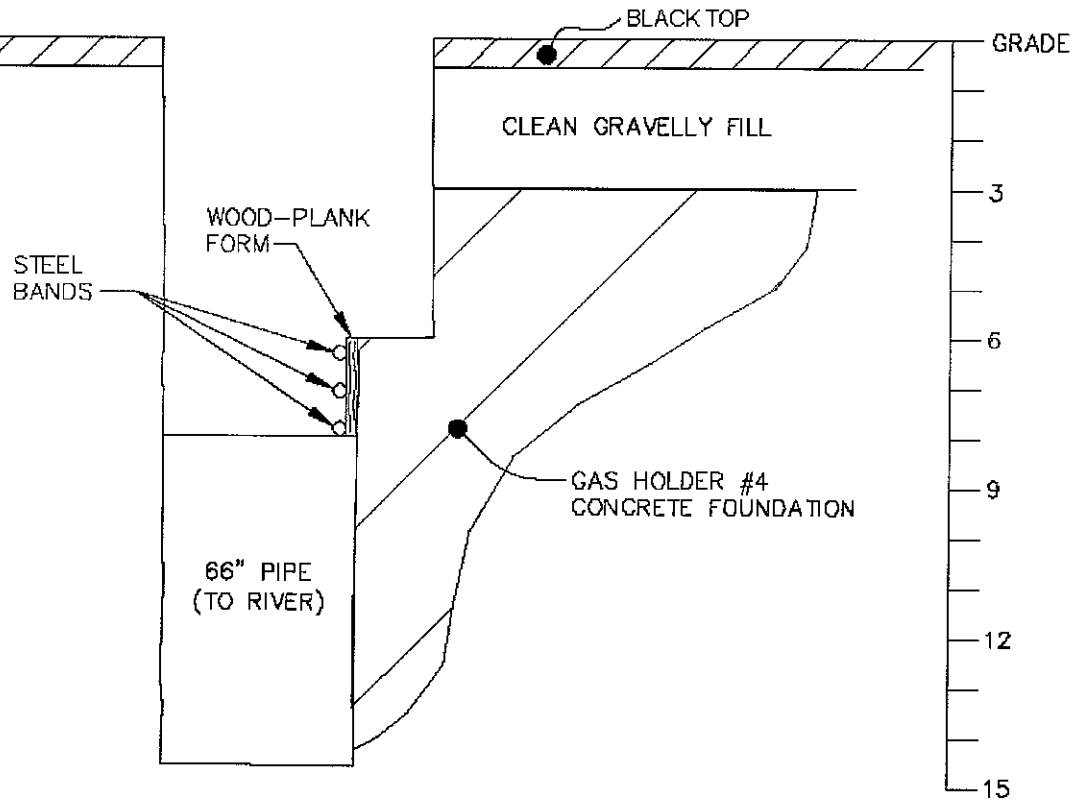
**BBL**  
BLASLAND, BUCKLE & LEE, INC.  
engineers & architects



**DESCRIPTION OF MATERIAL EXCAVATED:**

S

N



GRAPHIC SCALE

NEW YORK STATE ELECTRIC & GAS  
BINGHAMTON, NEW YORK  
PHASE II SRI

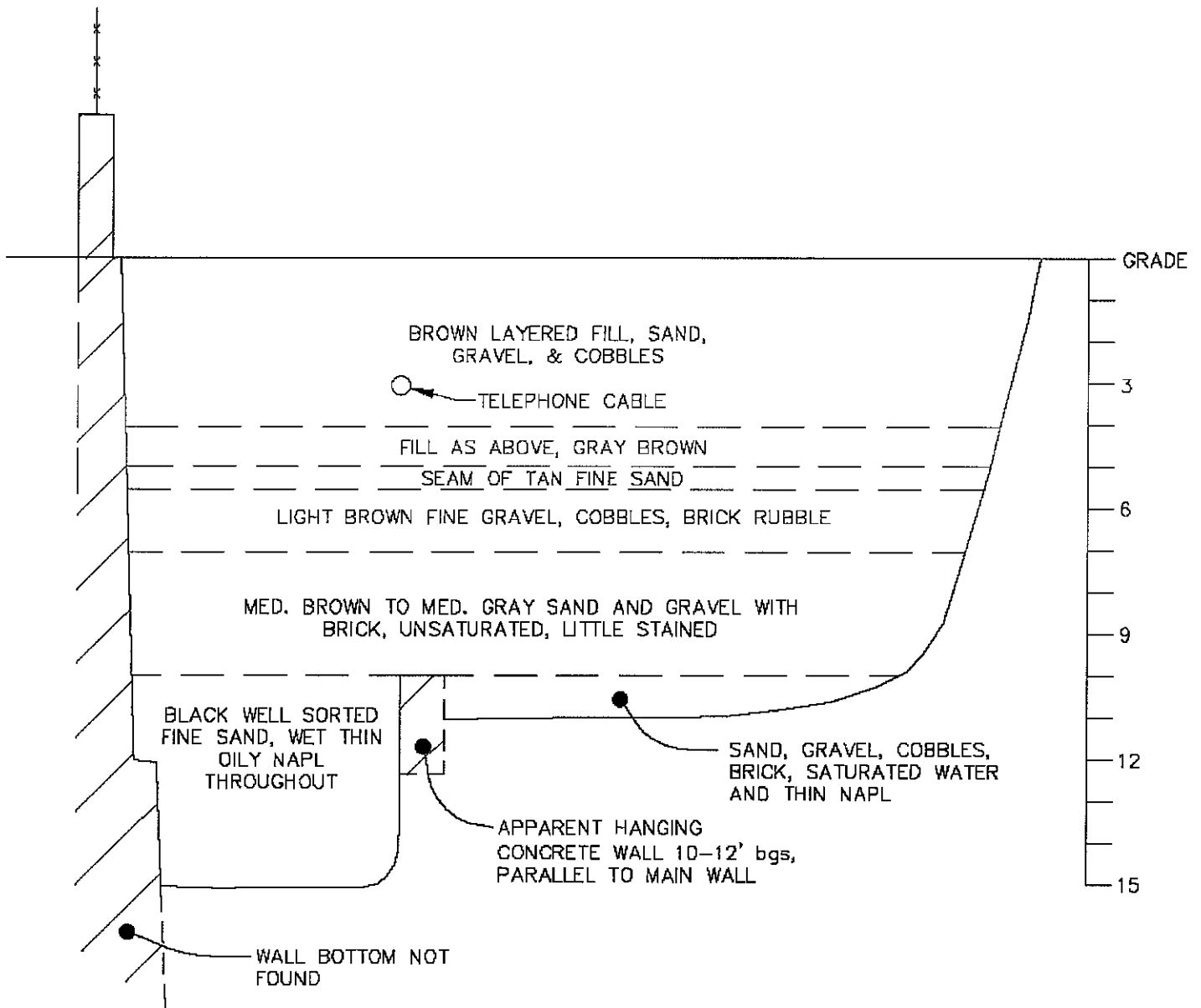
TEST PIT 208 (EAST WALL)

**BBL**  
BLASLAND, BUCK & LEE, INC.  
engineers & scientists

FIGURE

W

E



## NOTE

1. EXCAVATED WEST TO EAST FROM BRANDYWINE AVE. FENCELINE.

NEW YORK STATE ELECTRIC & GAS  
BINGHAMTON, NEW YORK  
PHASE II SRI

TEST PIT 209

**BBL**  
BLASLAND, BUCK & LEE, INC.  
engineers & scientists

FIGURE

W

E

FENCE

GRADE

BROWN LAYERED FILL, SAND,  
GRAVEL, & COBBLES

LIGHT BROWN, SOME SILT

BROWN LAYERED FILL, SAND,  
GRAVEL, & COBBLES

BRICK RUBBLE

LAYERED FILL, SAND, GRAVEL, COBBLES, WITH BRICK,  
CONCRETE BLOCKS, LITTLE STAINING UNSATURATED

BLACK STAINED SILT AND  
ROUNDED FIRM GRAVEL (PEA  
GRAVEL) MEDIUM STIFF,  
LITTLE BLACK-AMBER NAPL

BLACK WELL SORTED  
FINE SAND, LITTLE THIN  
AMBER NAPL, WET

CONCRETE WALL

WALL BOTTOM NOT  
FOUND

3

6

9

12

15



GRAPHIC SCALE

NEW YORK STATE ELECTRIC & GAS  
BINGHAMTON, NEW YORK  
PHASE II SRI

TEST PIT 210

**BBL**  
BLASLAND, SOUCK & LEE, INC.  
engineers & scientists

FIGURE

## **Historical Borings and Wells**



DATE STARTED <u>2-14-91</u> FINISHED <u>2-15-91</u> SHEET <u>1</u> OF <u>2</u>	<b>EMPIRE</b> SOILS INVESTIGATIONS INC.	<b>SUBSURFACE LOG</b> HOLE NO. <u>B-1</u> SURF. ELEV. _____ G. W. DEPTH <u>See Notes</u>
---	--	---

PROJECT Tank InvestigationLOCATION Columbia Gas(ESI# GD-91-016)Binghamton, New York

DEPTH	SAMPLES	SAMPLE NO.	BLOWS ON SAMPLER				BLOW ON CASING C	SOIL OR ROCK CLASSIFICATION	Curb Box NOTES with Lock
			0	6	12	18			
0								ASPHALT 0.8'	
								Miscellaneous FILL material 2.0'	
	1	8	8	8	16			FILL: fine-medium Gravel, Some Silt, trace sand (Damp)	X
	2	9	10	11	21			grades to little silt, trace sand	
5								Brown fine-medium SAND & GRAVEL, trace silt (Damp-Firm)	
	3	14	11	17	28			(very-Compact)	
	4	20	30	39	69			(Compact)	
10									
	5	12	19	20	39				
	6	15	18	15	33			Bentonite Grout	X
	7	10	11	6	17			(Firm)	
5									
	8	11	10	7	17				
	9	30	39	39	78			4" PVC Riser	
20								(very-Compact)	X
	10	11	13	7	20			(Firm)	
	11	4	3	4	7			(Loose)	
25									
	12	5	5	4	9				
	13	4	4	10	14			Bentonite Pellets	X
	14	18	19	19	38			(Firm)	
	15	29	25	17	42			(Compact)	
30									
	16	12	5	14	19			3 Q Sand	
	17	9	16	15	31			(Wet-Firm)	
35									
	18	18	15	19	34			(Compact)	
	19	18	15	25	40			4" PVC Well Screen, 0.010" Slot	
40									

N = No. blows to drive 2 " spoon 12 " with 140 lb. pin wt. falling 30 " per blow. CLASSIFICATION Visual by C = No blows to drive \_\_\_\_\_ " casing \_\_\_\_\_ " with \_\_\_\_\_ lb. weight falling \_\_\_\_\_ " per blow. Driller (M.W.)METHOD OF INVESTIGATION 3 1/2" I.D. Hollow Stem Augers, 8 1/2" I.D. Hollow Stem Augers

[illegible]

DISTRICT NO. 9  
COUNTY Broome  
B.S.M. PROJ. NO. 9-289

STATE OF NEW YORK  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF SOIL MECHANICS  
**SUBSURFACE INFORMATION**

HOLE NO. 1  
LINE & STA. Tom L. 6/01  
OFFSET RT. 3'

NAME Tompkins St. Bridge NC.  
QUAD. LOCATION DATE, START 8/15/60 GND. ELEV. 849.8  
PED. CLASS. DATE, FINISH 8/17/60 G.W. ELEV. 829.2  
CASING O.D. 3 1/2" I.D. 2 1/2" WEIGHT OF HAMMER 300 # HAMMER FALL  
SAMPLER O.D. 2 1/2" I.D. 1 1/2" INSIDE LENGTH OF SAMPLER 18" CASING SAMPLER 18"

DEPTH BELOW GND. SURF.	BLOWS ON CASING	SAMPLE NO.	BLOWS ON SAMPLER					CROSS SECTION	MOISTURE	COLOR	MECH. ANALYSIS				FIELD IDENTIFICATION OF SOIL & REMARKS
			0 6	6 12	12 18	18 24	% PASSING SIEVE NO.								
							4				10	40	200		
0	6														
	13														
	9														
	5														
5	6														
	3	J1	1	1					17.1	M. Br.	82.5	68.2	48.0	26.4	Sand, gravel, & ashes. (0' - 9.0')
	3				2										
	7														
	12														
10	19														
	10	J2	3	3					16.4	M. Br.	77.2	68.3	67.4	32.2	Sand, fine sand, and gravel. (9.0' - 14.5')
	21				5								51.4	33.2	
	15														
	20														
15	14														
	10														
	9	J3	2	1					46.7	W. Br.	75.2	60.0	70.4	60.2	Silt, sand, & some organic. (14.5' - 19.5')
	8				1						73.2	92.0	96.4	60.2	
20	7														
	10														
	10														
	20	J4	1 1/2	1 1/2						W. Br.					Silt, sand, & some gravel. (19.5' - 25.0')
	12				4										
	7														
25	9														
	73														
	85														
	48	J5	18	18					2.3	M. Br.	54.5	41.5	24.0	11.7	Sand, gravel, & some stone. (25.0' - 31.0')
	66				20										
30	54														
	55														
	35														
	35	J6	1	3						W. Br.					Sand, & some gravel. (31.0' - 54.0')
	44				4										
35	48														
	54														
	70														
	71														
40	40	J7	7	7						M. Br.					
	51				10										
	67														
	89														
	70														
	48	J8	4	3						W. Br.					
45	55				3										
	42														
	40														
	44														
	43														
50	65	J9	5	9						W. Br.	60.9	47.4	28.9	12.6	

DRILLING INSPECTOR T. F. Weidman ASST. SOILS ENGINEER W. M. Green

SAMPLES SHOULD BE TAKEN AT APPROXIMATELY 5 FT. INTERVALS AND WHEREVER THERE IS AN INDICATION OF POSSIBLE CHANGE OF STRATA CLEAN TO END OF CASING AND TAKE ALL SAMPLES "DRY" WITH SAMPLER BELOW END OF CASING. DO NOT DRIVE THE SAMPLER FARTHER THAN ITS INSIDE LENGTH WITHOUT CLEANING. LOCATION OF LAYER BOUNDARIES MUST BE SHOWN IN "CROSS SECTION" COLUMN. SAMPLES SHOULD BE VISUALLY IDENTIFIED ACCORDING TO B.S.M. INSTRUCTIONS. MOISTURE CONTENT SHOULD BE INDICATED IN "MOISTURE" COLUMN AS W=WET, M=MOIST, OR D=DRY. ANY LOSS OF WASH WATER OR UPWARD FLOW OF WATER AND MATERIAL INTO CASING SHOULD BE EMPHASIZED UNDER "REMARKS".

DISTRICT NO. 9  
COUNTY Broome  
B.S.M. PROJ. NO. 9-289

STATE OF NEW YORK  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF SOIL MECHANICS  
**SUBSURFACE INFORMATION**

HOLE NO. 1  
LINE & STA. Tom L. 6401  
OFFSET Rt. 3'

NAME Tompkins St. Bridge

NO.

QUAD. LOCATION

DATE, START 8/15/60

GND. ELEV. 849.8

PED. CLASS.

DATE, FINISH 8/17/60

G.W. ELEV. 829.2

CASING O.D. 3 1/2" I.D. 2 1/2" WEIGHT OF HAMMER 300 #

HAMMER FALL

SAMPLER O.D. 2" I.D. 1 1/2"

INSIDE LENGTH OF SAMPLER 18" CASING SAMPLER 18"

DEPTH BELOW GND. SURF.	BLOWS ON CASING	SAMPLE NO.	BLOWS ON SAMPLER					CROSS SECTION	MOISTURE	COLOR	MECH. ANALYSIS				FIELD IDENTIFICATION OF SOIL & REMARKS
											% PASSING SIEVE NO.				
			0	5	10	15	18				24	4	10	40	
50	90														
	98														
	86														
	70														
55	61														
	98	J10	6	5				21.7	M. Gr.	25.7	31.4	78.2	75.7		Silt, trace clay, & some gravel. (54.0' - 58.0')
	83				5					25.9	31.4	78.2	75.7		
	73														
	65														
60	71														
	87	J11	4	3				3.4	M. Gr.	24.7	19.1	14.2	7.1		Silt, trace clay. (58.0' - 66.0')
	87				3					24.7	19.1	14.2	7.1		
	88														
	77														
65	86														
	89														
	99	J12	21	10				5.4	M. Gr.	35.7	31.6	23.5	19.4		Sand, gravel, & silt. (66.0' - 69.0')
	81				9					35.7	31.6	23.5	19.4		
	123														
70	200														
	231														
	92	J13	18	23				7.0	W. Br.	53.3	44.3	33.7	26.3		Sand & gravel. (69.0' - 77.0')
	96				11					53.3	44.3	33.7	26.3		
	97														
75	85														
	66														
	94	J14	26	78				7.5	M. Gr.	67.1	55.3	35.5	28.6		Sand, gravel, & clay. (77.0' - 78.5')
					29					67.1	55.3	35.5	28.6		
80															
															Bottom of hole 78.5'.
85															
90															
95															
100															

GRILLING INSPECTOR T. F. Weidman ASS'T. SOILS ENGINEER W. M. Green

SAMPLES SHOULD BE TAKEN AT APPROXIMATELY 5 FT INTERVALS AND WHEREVER THERE IS AN INDICATION OF POSSIBLE CHANGE OF STRATA CLEAN TO END OF CASING AND TAKE ALL SAMPLES "DRY" WITH SAMPLER BELOW END OF CASING. DO NOT DRIVE THE SAMPLER FARTHER THAN ITS INSIDE LENGTH WITHOUT CLEANING. LOCATION OF LAYER BOUNDARIES MUST BE SHOWN IN "CROSS SECTION" COLUMN. SAMPLES SHOULD BE VISUALLY IDENTIFIED ACCORDING TO B.S.M. INSTRUCTIONS. MOISTURE CONTENT SHOULD BE INDICATED IN "MOISTURE" COLUMN AS W=WET, M=MOIST, OR D=DRY. ANY LOSS OF WASH WATER OR UPWARD FLOW OF WATER AND MATERIAL INTO CASING SHOULD BE EMPHASIZED UNDER "REMARKS".

FORM SM 12A R1A

SHEET 2 OF 2 SHEETS FOR HOLE NO. 1

DISTRICT NO. 9  
COUNTY Broome  
B.S.M. PROJ. NO. 9-289

STATE OF NEW YORK  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF SOIL MECHANICS  
**SUBSURFACE INFORMATION**

HOLE NO. 2  
LINE & STA. Tom L 4+92  
OFFSET Rt. 85'

NAME Tompkins Street Br Idge NO.  
QUAD. LOCATION DATE, START 8/29/60 GND. ELEV. 325.4  
PED. CLASS. DATE, FINISH 9/2/60 G.W. ELEV. 330.6

CASING O.D. 3 1/2" I.D. 2 1/2" WEIGHT OF HAMMER 300 # HAMMER FALL  
SAMPLER O.D. 2" I.D. 1 1/2" INSIDE LENGTH OF SAMPLER 18" CASING 18" SAMPLER 18"

DEPTH BELOW GND. SURF.	BLOWS ON CASING	SAMPLE NO.	BLOWS ON SAMPLER	CROSS SECTION	MOISTURE	COLOR	MECH. ANALYSIS				FIELD IDENTIFICATION OF SOIL & REMARKS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
							% PASSING SIEVE NO.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
							4	10	40	200																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
0	48																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						

DRILLING INSPECTOR T. F. Weidman ASST SOILS ENGINEER W.M. Green

SAMPLES SHOULD BE TAKEN AT APPROXIMATELY 5 FT INTERVALS AND WHEREVER THERE IS AN INDICATION OF POSSIBLE CHANGE OF STRATA CLEAN TO END OF CASING AND TAKE ALL SAMPLES "DRY" WITH SAMPLER BELOW END OF CASING. DO NOT DRIVE THE SAMPLER FARTHER THAN ITS INSIDE LENGTH WITHOUT CLEANING. LOCATION OF LAYER BOUNDARIES MUST BE SHOWN IN "CROSS SECTION" COLUMN. SAMPLES SHOULD BE VISUALLY IDENTIFIED ACCORDING TO B.S.M INSTRUCTIONS. MOISTURE CONTENT SHOULD BE INDICATED IN "MOISTURE" COLUMN AS W=WET, M=MOIST, OR D=DRY ANY LOSS OF WASH WATER OR UPWARD FLOW OF WATER AND MATERIAL INTO CASING SHOULD BE EMPHASIZED UNDER "REMARKS".

HOLE NO 2  
LINE & STA. Tom L 4+92  
OFFSET Rt, 85'

SAMPLER O.D.		I.D.		MECH. ANALYSIS		FIELD IDENTIFICATION OF SOIL & REMARKS	
		3 BLOWS ON SAMPLER		% PASSING SIEVE NO.			
		0 6 12 18 24		4 10 40 200			
DEPTH BELOW GND. SURF.	BLOWS ON CASING	SAMPLE NO.	CROSS SECTION	MOISTURE	COLOR		
0	85				Gr &		
	86				Rd		
	87						
	77	J-11	1 3 5	M			Silt and some thin layers Red Clay.
55	75						
	80						( 59.0 - 62.0 )
	73						Silt, Sand, & Gravel.
	67						
	62	J-12	12 13 11	M Br		100 100 100 477	
60	94			220		100 100 100 479	
	79						( 62.0 - 67.6 )
	94						Clay, Sand, & Stone
	172						
	300						
	140	J-13	17 15 14	M Gr		57.7 37.6 21.2 15.9	
65	124			6.9			
	170						
	524	for 6'					
70							Drilled with Ax Diamond from 67.6' to 72.6'. Rock recovery, 4.2'. 34 PSC, Sandstone.
							Drilled with Ax Diamond from 72.6' to 77.6'. Rock recovery 4.8' Sandstone.
75							Bottom of Hole - 77.6'.
80							

SHOULD BE EMPHASIZED UNDER REMARKS  
SHEET 2 OF 2 SHEETS FOR HOLE NO. 1

DISTRICT NO. 9  
COUNTY Broome  
B S.M. PROJ. NO. 9-289

STATE OF NEW YORK  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF SOIL MECHANICS  
**SUBSURFACE INFORMATION**

HOLE NO. 3  
LINE & STA. Tom 2+91  
OFFSET Rt. 58'

NAME Tompkins Street Bridge NO. 815.8  
QUAD. LOCATION DATE, START 8/23/60 GND. ELEV. 830.8  
PED. CLASS. DATE, FINISH 8/25/60 G.W. ELEV. 836.8  
CASING O.D. 1 1/2" I.D. 1 1/2" WEIGHT OF HAMMER 300# HAMMER FALL  
SAMPLER O.D. 2" I.D. 1 1/2" INSIDE LENGTH OF SAMPLER 24" CASING 18" SAMPLER 18"

DEPTH BELOW GND. SURF.	BLOWS ON CASING	SAMPLE NO.	BLOWS ON SAMPLER					CROSS SECTION	MOISTURE	COLOR	MECH. ANALYSIS				IDENTIFICATION OF SOIL & REMARKS
											% PASSING SIEVE NO.				
			0 6	6 12	12 18	18 24	24				4	10	40	200	
0	33														
	38														
	39														
	30														
5.0'	30														
6.5'	5	J 1	13	10	9			W Br.							0.0 - 9.0 Sand, Gravel, & some Stone.
	30							C. 2	41.0	28.6	16.3	6.9			
	47														
9.0'	46														
	33														
11.0'	42														
12.5'	32	J 2	9	8				M Br.	91.4	88.2	57.0	16.7			9.0 - 13.5 Sand & some Gravel
13.5'	39							J. 2							
	70														
	88														
	115														
	153														
	64	J 3	10	16				M Br. & Gr.	34.2	26.8	22.5	11.7			13.5 - 21.0 Sand, Gravel, & some Clay
	69			16											
20	92														
	66														
	109														
	183	J 4	24	24				W Br.	42.4	32.2	29.0	13.5			21.0 - 27.0 Sand, Gravel, & Stone
	97			19				2							
25	115														
	87														
	104														
	128							Br.							
	100	J 5	21	65	40			M & Gr.	64.4	47.4	33.7	21.0			27.0 - 32.0 Sand, Gravel, Stone, & some Clay
30	168														
	115														
	190														
	112							Gr.							
	69	J 6	10	9	7			W & Br.							32.0 - 46.5
35	76														
	104														
	117														
	101														
	149							Gr.							
40	85	J 7	20	16	18			M & Br.	53.9	43.6	34.4	22.4			37-42 Sand, Gravel, some Stone & Clay
	75														
	81														
	75														
	78														
45	104	J 8	23	23	22			M Br.							
	130														
	267														
	464														
	85														
50		J 9	60	58	63			M Br.	87.2	71.2	58.2	20.5			46.5 - 50.5 (Bottom of Hole) Washed out & Broke Stone at 48.2' with Chopping Bit. Clay, Sand, & St.

DRILLING INSPECTOR T. F. Waldman ASS'T. SOILS ENGINEER W. M. Green

SAMPLES SHOULD BE TAKEN AT APPROXIMATELY 5 FT INTERVALS AND WHEREVER THERE IS AN INDICATION OF POSSIBLE CHANGE OF STRATA. CLEAN TO END OF CASING AND TAKE ALL SAMPLES "DRY" WITH SAMPLER BELOW END OF CASING. DO NOT DRIVE THE SAMPLER FARTHER THAN ITS INSIDE LENGTH WITHOUT CLEANING. LOCATION OF LAYER BOUNDARIES MUST BE SHOWN IN "CROSS SECTION" COLUMN. SAMPLES SHOULD BE VISUALLY IDENTIFIED ACCORDING TO B.S.M. INSTRUCTIONS. MOISTURE CONTENT SHOULD BE INDICATED IN "MOISTURE" COLUMN AS W=WET, M=MOIST, OR D=DRY. ANY LOSS OF WASH WATER OR UPWARD FLOW OF WATER AND MATERIAL INTO CASING SHOULD BE EMPHASIZED UNDER "REMARKS".

DISTRICT NO. 9  
COUNTY Broome  
B.S.M PROJ. NO. 9-289

STATE OF NEW YORK  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF SOIL MECHANICS  
**SUBSURFACE INFORMATION**

HOLE NO. 4  
LINE & STA. CL 10+76  
OFFSET Lt. 30'

NAME Tompkins St. Bridge NO. 845.4  
QUAD. LOCATION DATE, START 8/7/60 GND. ELEV. 845.4  
PED. CLASS. DATE, FINISH 8/12/60 G.W. ELEV. 832.6  
CASING O.D. 3 1/2" I.D. 2 1/2" WEIGHT OF HAMMER 300# HAMMER FALL 832.6  
SAMPLER O.D. 2 1/4" I.D. 1 1/4" INSIDE LENGTH OF SAMPLER 25" CASING SAMPLER 18"

DEPTH BELOW GND. SURF.	BLOWS ON CASING	SAMPLE NO.	BLOWS ON SAMPLER	CROSS- SECTION	MOISTURE	COLOR	MECH. ANALYSIS				FIELD IDENTIFICATION OF SOIL & REMARKS	
							% PASSING SIEVE NO.					
							4	10	40	200		
0	7											
	7											
	8											
	17											
5	14				7.7							
	5	J1	1 1		W. Br.	23.7	19.4	10.5	6.0			Fill. Ashes, gravel, & sand. (0' - 8.0')
	5											
	27											
	14											
10	11	J2	4 3		8.7							
	22				W. Br.	40.0	22.6	13.8	8.3			Fill. Sand, gravel, & brick. (8.0' - 15.0')
	18					40.0	27.6	13.8	8.3			
	16											
15	14											
	54											
	20	J3	16 8		W. Br.							Sand & gravel. (15.0' - 33.0)
	41											
	43											
20	44											
	63											
	30	J4	9 7		9.1							
	44				W. Br.	73.7	73.7	72.7	72.7			
	56					98.7	98.7	98.7	98.7			
25	52											
	74											
	47	J5	7 10		W. Br.							
	82											
30	87											
	84											
	92											
	105	J6	13 8									
35	88				W. Br.	56.9	49.8	32.9	16.0			Sand, fine sand, & gravel. (33.0' - 36.0')
	68											
	87											
	115											
	138	J7	10 10		W. Br.	42.9	31.8	26.6	16.5			Sand & gravel. (36.0' - 42.5')
40	95											
	153											
	115											
	139											
	315											
45	307	J8	56 99		M. Br.							Clay & stone, sand. (42.5 - 56.0)
	175											
	222											
	215											
	964											
50	213											

DRILLING INSPECTOR T. F. Weidman ASS'T. SOILS ENGINEER W. M. Green

SAMPLES SHOULD BE TAKEN AT APPROXIMATELY 5 FT INTERVALS AND WHEREVER THERE IS AN INDICATION OF POSSIBLE CHANGE OF STRATA CLEAN TO END OF CASING AND TAKE ALL SAMPLES "DRY" WITH SAMPLER BELOW END OF CASING. DO NOT DRIVE THE SAMPLER FARTHER THAN ITS INSIDE LENGTH WITHOUT CLEANING. LOCATION OF LAYER BOUNDARIES MUST BE SHOWN IN "CROSS SECTION" COLUMN SAMPLES SHOULD BE VISUALLY IDENTIFIED ACCORDING TO B.S.M INSTRUCTIONS. MOISTURE CONTENT SHOULD BE INDICATED IN "MOISTURE" COLUMN AS W=WET, M=MOIST, OR D=DRY. ANY LOSS OF WASH WATER OR UPWARD FLOW OF WATER AND MATERIAL INTO CASING SHOULD BE EMPHASIZED UNDER "REMARKS".



DISTRICT NO. 9  
COUNTY Broome  
B.S.M. PROJ. NO. 9-289

STATE OF NEW YORK  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF SOIL MECHANICS  
**SUBSURFACE INFORMATION**

HOLE NO. 4  
LINE & STA. CL 10+76  
OFFSET Lt. 30'

NAME Tompkins St. Bridge

NO. 845.4

QUAD. LOCATION \_\_\_\_\_ DATE, START 8/9/60

GND. ELEV. 832.6

PED. CLASS. \_\_\_\_\_ DATE, FINISH 8/12/60

G.W. ELEV. 832.6

CASING O.D. 3 1/2" I.D. 2 1/2" WEIGHT OF HAMMER 300 #

18" HAMMER FALL

SAMPLER O.D. 1 3/4" I.D. 1 1/4" INSIDE LENGTH OF SAMPLER 25" CASING 25" SAMPLER 18"

DEPTH BELOW GND. SURF.	BLOWS ON CASING	SAMPLE NO.	BLOWS ON SAMPLER	CROSS SECTION	MOISTURE	COLOR	MECH. ANALYSIS			
							% PASSING SIEVE NO.			
							4	10	40	200
0			18 10 11							
55			J 10 413 226		50		48.6	43.6	35.6	25.0
60										
65										

FIELD IDENTIFICATION OF SOIL  
& REMARKS

Struck solid at 50.1'. Drilled  
with AX sawtooth from 50.1' to 55.0'.  
Stone recovery .5'.

Bottom of hole 56.5'.

DRILLING INSPECTOR T. F. Weidman ASS'T. SOILS ENGINEER W. M. Green

SAMPLES SHOULD BE TAKEN AT APPROXIMATELY 5 FT. INTERVALS AND WHEREVER THERE IS AN INDICATION OF POSSIBLE CHANGE OF STRATA. CLEAN TO END OF CASING AND TAKE ALL SAMPLES "DRY" WITH SAMPLER BELOW END OF CASING. DO NOT DRIVE THE SAMPLER FARTHER THAN ITS INSIDE LENGTH WITHOUT CLEANING. LOCATION OF LAYER BOUNDARIES MUST BE SHOWN IN "CROSS SECTION" COLUMN. SAMPLES SHOULD BE VISUALLY IDENTIFIED ACCORDING TO B.S.M. INSTRUCTIONS. MOISTURE CONTENT SHOULD BE INDICATED IN "MOISTURE" COLUMN. A. W = WET, M = MOIST, OR D = DRY. ANY LOSS OF WASH WATER OR UPWARD FLOW OF WATER AND MATERIAL INTO CASING SHOULD BE EMPHASIZED UNDER "REMARKS".

## ***Appendix B***

---

# **Groundwater Modeling Information**

## **Appendix B-1**

### **Court Street Site TWODAN™ Model**

# **Appendix B-1 – Court Street Site TWODAN™ Model**

## **Introduction**

In April, 1997, Blasland, Bouck & Lee, Inc. (BBL) constructed a conceptual-level analytic element groundwater flow model of the region surrounding the Court Street Site to examine regional groundwater flow conditions and to identify areas where additional field data were required. In March 1998, this steady-state two-dimensional model was subsequently refined using site-specific and regional data obtained during the Phase I Supplemental Remedial Investigation (SRI). The model was calibrated with respect to the February 11, 1998 potentiometric data shown in Table 2 and on Figure 8 of this report. The model was used for estimating the groundwater discharge rate to the Susquehanna River near the site. A sensitivity analysis of the input parameters was used to examine the effects that varying the hydraulic conductivity and recharge parameters had upon the calibration statistics.

The following subsections provide a summary of the model software, approach, construction, and results.

## **Groundwater Flow Model**

### **Conceptual Model**

BBL used data collected during the Task II RI (BBL, 1996), and during this SRI to develop a conceptual model of groundwater flow near the site (refer to Section 4.2.1 of this report). The conceptual groundwater flow model is as follows:

- The majority of groundwater flow from the Susquehanna River valley to the Susquehanna River occurs through the sand and gravel unit and is generally horizontal;
- Shallow groundwater in the fill and silt units represents a small fraction of groundwater flow near the site (i.e., less than 0.1 percent), and is contributed to the sand and gravel unit as vertical-flux-specified infiltration from above the sand and gravel unit; and
- The base of the sand and gravel unit represents a no-flow boundary (i.e., water contributed to the sand and gravel unit from the underlying till [or bedrock] is insignificant).

### **Model Software**

BBL selected the TWODAN™ Analytic Element Method (AEM) software (Fitts, 1995) as the appropriate program to model groundwater flow in the sand and gravel aquifer. The AEM model type is endorsed by the United States Environmental Protection Agency (USEPA), and is a mathematical construct of groundwater flow

---

based on the superposition of geometrically-specified analytic functions (Strack, 1989; Haitjema, 1995). Each of these analytic functions represents groundwater-flow features such as groundwater flux sources, flux sinks, aquifer heterogeneities, and hydraulic barriers. TWODAN™, as used in this context, is a single layer, two-dimensional, steady-state groundwater flow model.

Once the analytic element parameters are determined, the continuous distribution of potentiometric heads throughout the model domain is saved through a series of analyte solutions (Strack, 1989; Haitjema, 1995). A continuous potentiometric head distribution surface is computed for the aquifer without interpolation, and velocities are solved using analytical solutions at specific points along a flow path.

The method has been widely applied to the solution of steady-state, two-dimensional groundwater flow problems (Fitts, 1994), and is described in detail by Strack (1989). Demonstrated uses of AEM include:

- The study of regional groundwater flow (Haitjema, 1992);
- Modeling capture zones of groundwater recovery systems (Grubb, 1993, and Bakker and Strack, 1996);
- Well discharge optimization (Fitts, 1994); and
- Simulation of hydraulic barriers (Fitts, 1997).

The model assumes the following:

- Darcy conditions of groundwater flow apply (laminar flow);
- Flow represents steady-state conditions;
- The fluid is spatially uniform, and has constant physical properties;
- The porous medium, unless modified by aquifer heterogeneity elements, has isotropic horizontal hydraulic conductivity, homogeneous base elevation, and constant porosity; the base of the porous medium is impermeable;
- The flow is two-dimensional, using the Dupuit-Forchheimer condition, where resistance to flow in the vertical direction is assumed to be negligible;
- Line discharge elements completely penetrate the aquifer; and
- Horizontal flow barrier elements completely penetrate the aquifer, and have uniform conductance.

---

## Initial Model Parameters

Numerical parameters were assigned to the model domain attributes and boundary conditions based on information obtained from the Task II RI Report (BBL, 1996), literature on the hydrogeology of the region (Coates, 1973; and Randall, 1986), USGS Topographic map data, and both regional and site data obtained as part of the Phase I SRI. The initial model was developed using the following procedures and parameters:

- Elevation data from all available sources were converted with respect to the 1929 National Geodetic Vertical Datum (NGVD) definition of mean sea level (MSL);
- The hydraulic conductivity of the sand and gravel unit was 330 feet per day (ft/d);
- The thickness of the sand and gravel unit was modeled as the site-wide average of 38 feet;
- The base elevation for the sand and gravel unit was modeled as the site-wide average of 793 feet above MSL (FAMSL);
- The regional recharge rate was specified as 10 inches per year, applied as a set of variable-sized circular infiltration elements, small near the site and larger further away;
- The recharge rate in developed areas, as depicted on U.S.G.S. topographic maps, was specified as 5 inches per year; and
- The stages of the Susquehanna River and the Chenango River were modeled as series of head-specified line elements. Head values for the elements were estimated using points of known river elevation, including data from staff gauge SG-1 (831.63 FAMSL), the crest of the Rockbottom Dam (830.6 FAMSL), and information contained in U.S.G.S. topographic maps of the area.

The hydraulic conductivity of 330 ft/d was obtained by iterative “calibration” of the original regional TWODANTM conceptual model using Ranney Well drawdown and discharge (i.e., pumping-rate) data provided in the Task II RI Report (BBL, 1996). The Ranney well was simulated in the model using head-specified line elements for the intake laterals. The reported drawdown and discharge measurements described in the Task II RI were then used to calibrate the hydraulic conductivity and infiltration rates. Specifying a six-foot steady-state drawdown at the Ranney Well, the model hydraulic conductivities and infiltration rates were adjusted by the same factor until the model computed a combined discharge of 1400 gpm from the Ranney Well head-specified line elements.

It is our judgment that this pumping-based aquifer conductivity value better describes the field-scale hydraulic conductivity of the Sand and Gravel Unit than the geometric mean of the available slug test data (See Appendix

---

C of this report). This conductivity is slightly higher than the overall hydraulic conductivity used in the USGS model of Southwestern Broome County (Randall, 1985) of 130 ft/d.

### **Model Calibration**

The February 11, 1998 potentiometric surface for the sand and gravel unit on site, as depicted in the Sand and Gravel Unit Potentiometric Elevation Contour Map (Figure 8 of this report), was selected as the calibration target, since it was developed using the most complete set of hydraulic head measurements obtained during the SRI. The groundwater potentiometric elevations and hydraulic gradients for this date were compared and are consistent with historical data for the site. The majority of these hydraulic-head data (calibration targets) are on or near the site. To provide control on the south side of the river, a hydraulic-head measurement was obtained from a monitoring well that screens the sand and gravel unit across the river (DGC-6D).

To achieve calibration conditions, polygonal aquifer-heterogeneity elements were added to the model to adjust potentiometric elevations to be reasonable in the areas off site, and close as possible to conditions observed on site. These included two sets of aquifer-heterogeneity elements. The first simulated the decreasing thickness (or diminishing transmissivity) of the sand and gravel unit, down to 10 feet along the valley walls. The second simulated the increasing thickness of sand and gravel unit (or increasing transmissivity) beneath the valley floor northeast of the site, as noted by Randall (1986), to a spatially-estimated average of 70 feet.

These parameters were adjusted until a solution which had a statistically close match to the target calibration heads was obtained. The difference between the modeled and target calibration heads for a specific target location is called the residual. The average of the residual is defined as the mean residual (MR), whereas the absolute mean residual (AMR) is the mean of the absolute values of each of the residuals.

### **Model Results**

The simulated sand and gravel unit potentiometric elevation contours are shown on Figure D-1. The rate of groundwater discharge from the north side of Susquehanna River along the length of the site (450 ft) was estimated by the model to be approximately 0.46 cubic feet per second (205 gpm).

The calibration statistics for this simulation are shown in Table D-1. The MR and the AMR for this simulation are reasonably close to zero (both are within 1 foot).

### **Sensitivity Analysis**

To examine the effect of the model input parameters on the model results, BBL conducted a sensitivity analysis. Two sets of parameters were examined in the sensitivity analysis: recharge to the aquifer, and the aquifer hydraulic conductivity. The calibrated parameters were adjusted by one order-of-magnitude upward and downward. The results of the sensitivity analysis (Table D-1) show that the model is more sensitive to changes

---

in hydraulic conductivity than to changes in recharge. Increasing or decreasing the hydraulic conductivity an order of magnitude results in a concomitant increase or decrease in discharge to the river by approximately the same factor. Increasing or decreasing the recharge by an order of magnitude resulted in an increase or decrease in discharge to the river by a factor of approximately 1.4.

## Conclusions

The model output a reasonably good representation of the regional and site conditions of groundwater flow in the sand and gravel unit. The model output (Figure D-1) generally agrees with regional historical water level data provided in available boring and well logs and is similar to the hand-contoured data set presented in Figure \_ of this report.

The model can be used to target potential upgradient sources of the aliphatic-hydrocarbon contamination detected in the lower portion of the sand and gravel unit at the site (see Section 4.2.1.4 of this report).

## References

- Bakker, M., and O.D.L. Strack. 1996. Capture Zone Delineation in Two-Dimensional Groundwater Flow Models. *Water Resources Research* 32: 1309-1315.
- Blasland, Bouck & Lee, Inc. (BBL). 1996. Task II Remedial Investigation Report. Former Manufactured Gas Plant Site. Courts Street. Binghamton, New York. New York State Electric & Gas Corporation. June 1996.
- Coates, D.R. 1973. Glacial Geology of the Binghamton-Western Catskill Region. Publications in Geomorphology, State University of New York, Binghamton, New York.
- Fitts, C.R. 1994. Well Discharge Optimization Using Analytic Elements. *Ground Water* 32: 547-550.
- Fitts, C.R. 1995. Two-Dimensional Analytic Element (TWODANJ) Software Manual.
- Fitts, C.R. 1997. Analytic Modeling of Impermeable and Resistant Barriers. *Ground Water* 35: 312-317.
- Grubb, S. 1993. Analytical Model for Estimation of Steady-State Capture Zones of Pumping Wells in Confined and Unconfined Aquifers. *Ground Water* 31: 27-32.
- Haitjema, H.M. 1992. Modeling Regional Groundwater Flow in Fulton County, Indiana: Using the Analytic Element Method. *Ground Water* 30:660-666.
- Haitjema, H.M. 1995. Analytical Element Modeling of Groundwater Flow. Academic Press: New York.



---

Randall, Allan D., 1986. Aquifer Model of the Susquehanna River Valley in Southwestern Broome County, New York, U.S. Geological Survey Water-Resources Investigation Report 85-4099, 34 pp.

Strack, O.D.L. 1989. Groundwater Mechanics. Prentice-Hall, New Jersey.

TABLE B-1

NEW YORK STATE ELECTRIC AND GAS CORPORATION  
COURT STREET SITE  
BINGHAMTON, NEW YORK

SUPPLEMENTAL REMEDIAL INVESTIGATION  
CALIBRATION AND SENSITIVITY ANALYSIS RESULTS  
TWO-DAN GROUNDWATER FLOW MODEL

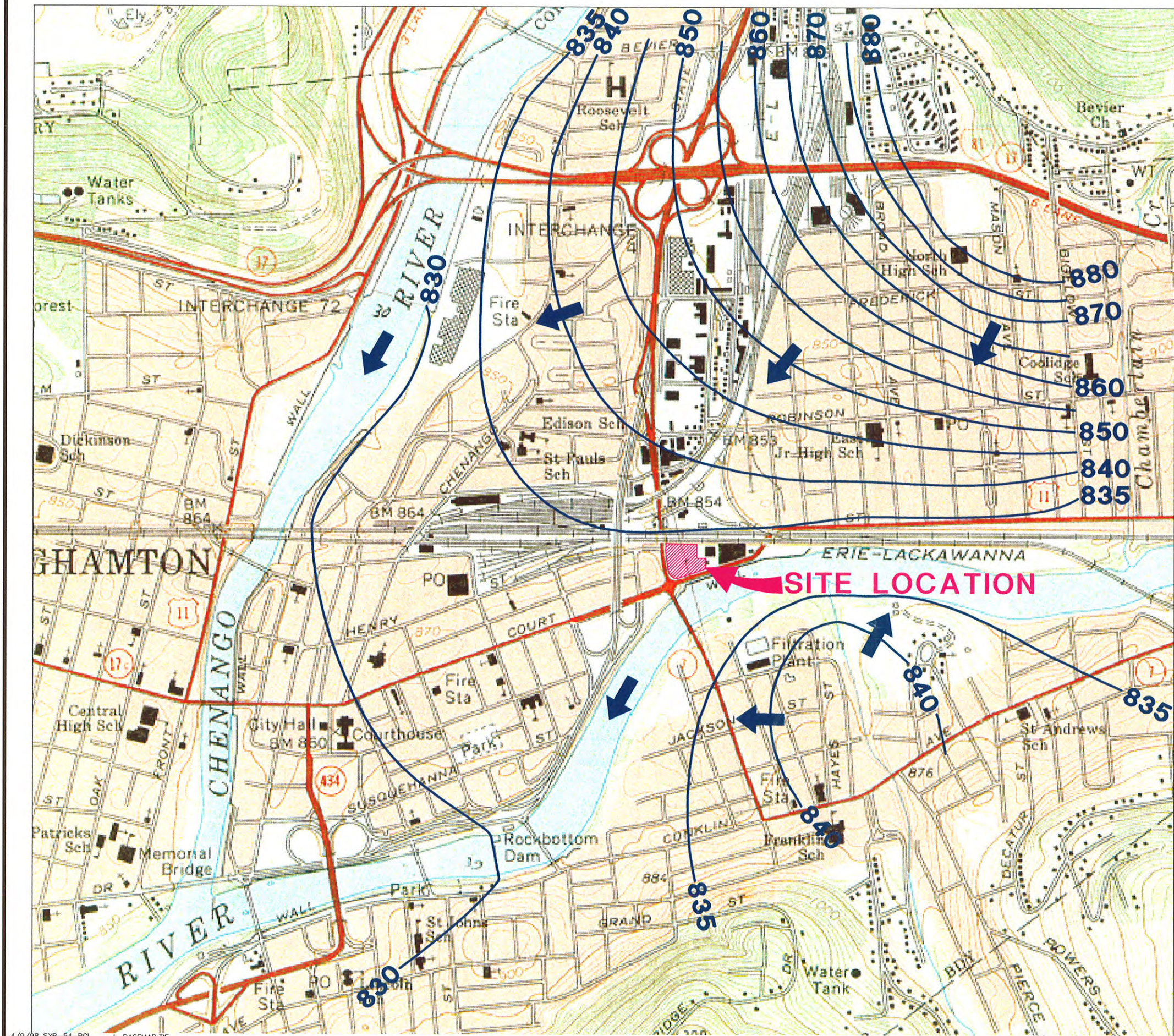
Simulation	Mean Residual (ft)	Absolute Mean Residual (ft)	Groundwater Discharge* from Site (gpm)
Calibrated Simulation	-0.5	0.67	205
Increased Recharge 10x	-1.2	1.24	283
Decreased Recharge 10x	-0.5	0.64	194
Increased Hydraulic Conductivity 10x	-0.48	0.64	2230
Decreased Hydraulic Conductivity 10x	-1.17	1.24	31

**Note:**

\* Groundwater discharge to the Susquehanna River from the north side of the river, along the southern site boundary.

## **Figure B-1**



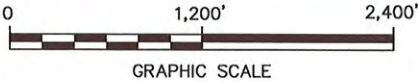


**LEGEND:**

- 835 — MODEL-COMPUTED WATER TABLE ELEVATION CONTOURS (FT. AMSL)
- ← RIVER AND GROUNDWATER FLOW DIRECTION

**NOTES:**

1. BASE MAP SOURCE: USGS 7.5 MIN. TOPO. QUAD., BINGHAMTON EAST, NY., BINGHAMTON WEST, NY., CASTLE CREEK, NY., CHENANGO FORKS, NY. (1968, PHOTOREVISED 1976).
2. ALL PROPERTY BOUNDARY LINES ARE APPROXIMATE.
4. CALIBRATION BASED ON FEBRUARY 11, 1998 ELEVATION POTENTIOMETRIC ELEVATION CONTOUR MAP FOR THE SAND AND GRAVEL UNIT.
5. SEE TEXT FOR MODEL INPUT PARAMETERS AND ASSUMPTIONS.



NYSEG COURT STREET SITE  
 BINGHAMTON, NEW YORK  
**SUPPLEMENTAL REMEDIAL INVESTIGATION**  
**POTENTIOMETRIC SURFACE ELEVATION**  
**CONTOURS FOR SAND & GRAVEL**  
**UNIT FROM STEADY-STATE MODEL**

**BBL**  
 BLASLAND, BOUCK & LEE, INC.  
 engineers & scientists

FIGURE  
**B-1**



## **Appendix B-2**

### **Court Street Site FLONET™ Model**

## **Appendix B-2 – Court Street Site FLONET™ Model**

### **Introduction**

BBL constructed a conceptual-level, cross-sectional model to simulate regional groundwater flow in the Susquehanna River valley near the Court Street Site. The purposes of this model were to examine the possible hydraulic influence of the flood wall adjacent to the site on groundwater flow, and to examine the distribution and rate of groundwater discharging into the Susquehanna River from the site.

The following subsections provide a summary of the conceptual model, model software, approach, construction, and results.

### **Groundwater Flow Model**

#### **Conceptual Model**

BBL used data collected during the Task II RI (BBL, 1996), and during this SRI to develop a conceptual model of groundwater flow near the site (refer to Section 4.2.1 of the SRI report). The conceptual groundwater flow model is described as follows:

- Three hydrostratigraphic units represent groundwater flow at the site: alluvium, sand and gravel, and bedrock/till. This interpretation differs slightly from that presented in Section 4.2.1.2 of the SRI report. Specifically, the fill unit and silt unit described in the SRI report were combined into a single unit intended to represent the fine-grained alluvium that is reported to mantle most of the valley floor in the region (Randall, 1986). This change was considered justified because both the fill and silt units identified at the site are limited in areal extent and are not regional features.
- The bedrock/till unit was subdivided into till and bedrock so that individual hydrogeological parameters could be attributed to each.
- The majority of groundwater flow from the Susquehanna River valley to the Susquehanna River occurs horizontally at the site through the sand and gravel unit.
- A limited rate of groundwater discharge occurs upward into the sand and gravel unit from the till unit.
- A flood wall of low hydraulic conductivity exists along the north bank of the river and extends from the land surface to an elevation of approximately 817 feet above mean sea level (FAMSL). The flood wall partially penetrates the sand and gravel unit.

---

The cross-sectional model represents groundwater flow within a 6,000-foot long section that traverses the valley floor, and approximates groundwater flow paths from near the north and south valley walls to the River (Figure D-2). The cross-sectional model cuts through the location of the Court Street Site and is aligned parallel to the regional groundwater flow directions based on the results of the AEM model described in Appendix D-1. Near the site, the cross-sectional model location is coincident with the cross section presented in Figure 4 of the SRI Report.

### **Model Software**

The cross-sectional flow model was developed using the FLONETJ Finite Element Method (FEM) software (Waterloo Hydrologic Software Version 3.1, 1997). The dual-formulation FEM model is based upon the work of Frind and Matanga (1985), and deforms the initial water table and the upper portion of the finite-element mesh by adjusting the results for head and flux simultaneously at the nodes throughout the model domain.

The model assumes the following conditions:

- Flow is in steady-state;
- The water is spatially uniform and has constant physical properties;
- Flow is two-dimensional (no flow into and out of the line of section);
- Recharge is applied to the top row in the mesh; and
- The flood wall is nearly impermeable.

### **Initial Model Parameters**

Numerical parameters were assigned to the model domain attributes and boundary conditions based on information obtained from the Task II RI Report (BBL, 1996), literature on the hydrogeology of the region (Coates, 1973 and Randall, 1986), USGS Topographic map data, and both regional and site data collected during this SRI. The initial model was developed using the following rules/parameters:

- Elevation data from all sources were converted with respect to the 1929 National Geodetic Vertical Datum (NGVD) definition of mean sea level (MSL);
- The top of the initial model mesh was specified as ground surface along the cross section;
- The vertical and horizontal hydraulic conductivities were specified using polygonal property zones for each of the hydrostratigraphic units as shown in Figure D-3, using the values shown in Table D-2;

- 
- The hydraulic conductivity of the flood wall was specified as  $3.5 \times 10^{-8}$  centimeters per second (cm/sec), based on the range of values for hot and cold-rolled sheet pile presented in Starr (ca. 1992);
  - The regional recharge rate was specified as 10 inches per year, across the top of the model mesh;
  - The Susquehanna River was modeled as a constant head boundary condition, at an elevation of 831.63 feet MSL, which was measured by BBL staff at staff gage SG-1 on February 11, 1998;
  - Constant head boundaries were specified at the north (840 FAMS L) and south (838 FAMS L) vertical edges of the model mesh, representing the regional flux of groundwater in to the model domain (Figure D-3).

### **Model Calibration**

The February 11, 1998 potentiometric elevation data for the sand and gravel unit on site, as depicted in Figure 8 of this SRI Report, were selected as the calibration targets, since they represent the most complete round of water level measurements conducted on site. The potentiometric elevations and hydraulic gradients for this date were compared with and found to be consistent to historical data for the site.

To achieve calibrated head conditions, the vertical hydraulic conductivity of the hydrogeologic units was adjusted by varying the vertical anisotropy to obtain a solution with a reasonable match to the target calibration heads. Final calibrated horizontal and vertical hydraulic conductivity values are presented in Table D-2.

### **Model Results**

The model-produced potentiometric head elevation contours are shown on Figure D-4. This figure shows that:

- A flood wall of low permeability causes the majority of groundwater behind it to be diverted beneath it, before discharging to the river just in front of it. In the absence of the flood wall, groundwater would be expected discharge to the river in the same general area.
- Groundwater near the base of the sand and gravel unit beneath the site discharges near the center of the river.

The model calculated the discharge of water from beneath the site to be approximately 0.2 cfs (80 gpm), assuming a shoreline length (width of the site) of 425 feet. This is considered reasonably close to the value of 0.5 cfs (205 gpm) calculated by the areal model described in Appendix D-1.



---

## References

- Coates, D.R. 1973. Glacial Geology of the Binghamton-Western Catskill Region. Publications in Geomorphology, State University of New York, Binghamton, New York.
- Frind, E.O. and G.B. Matanga, 1985. The Dual Formulation of Flow for Contaminant Transport Modeling 1, Review of Theory and Accuracy Aspects, Water Resources Research, 21(2), 159-169.
- Randall, Allan D., 1986. Aquifer Model of the Susquehanna River Valley in Southwestern Broome County, New York, U.S. Geological Survey Water-Resources Investigation Report 85-4099, 34 pp.
- Starr, Robert C., ca. 1992. Field Hydraulic Test of a Rectangular Enclosure Comprised of Bethlehem Steel PZ22 Sheet Piling, Waterloo Centre for Groundwater Research, University of Waterloo, Waterloo, Ontario, Canada.
- Waterloo Hydrogeologic Inc., 1997. FLONET/TRANS (Version 3.1) User Manual, Waterloo Centre for Groundwater Research, Waterloo, Ontario, Canada.

TABLE B-2

NEW YORK STATE ELECTRIC AND GAS CORPORATION  
COURT STREET SITE  
BINGHAMTON, NEW YORK

SUPPLEMENTAL REMEDIAL INVESTIGATION  
CALIBRATED FLONET MODEL HYDRAULIC CONDUCTIVITY VALUES

Hydrogeologic Unit	Hydraulic Conductivity (Feet/Day)	
	Horizontal*	Vertical
FILL/SILT	0.15	0.006
SAND/GRAVEL	327.91	65.58
TILL	0.03	0.03
BEDROCK	0.01	0.001

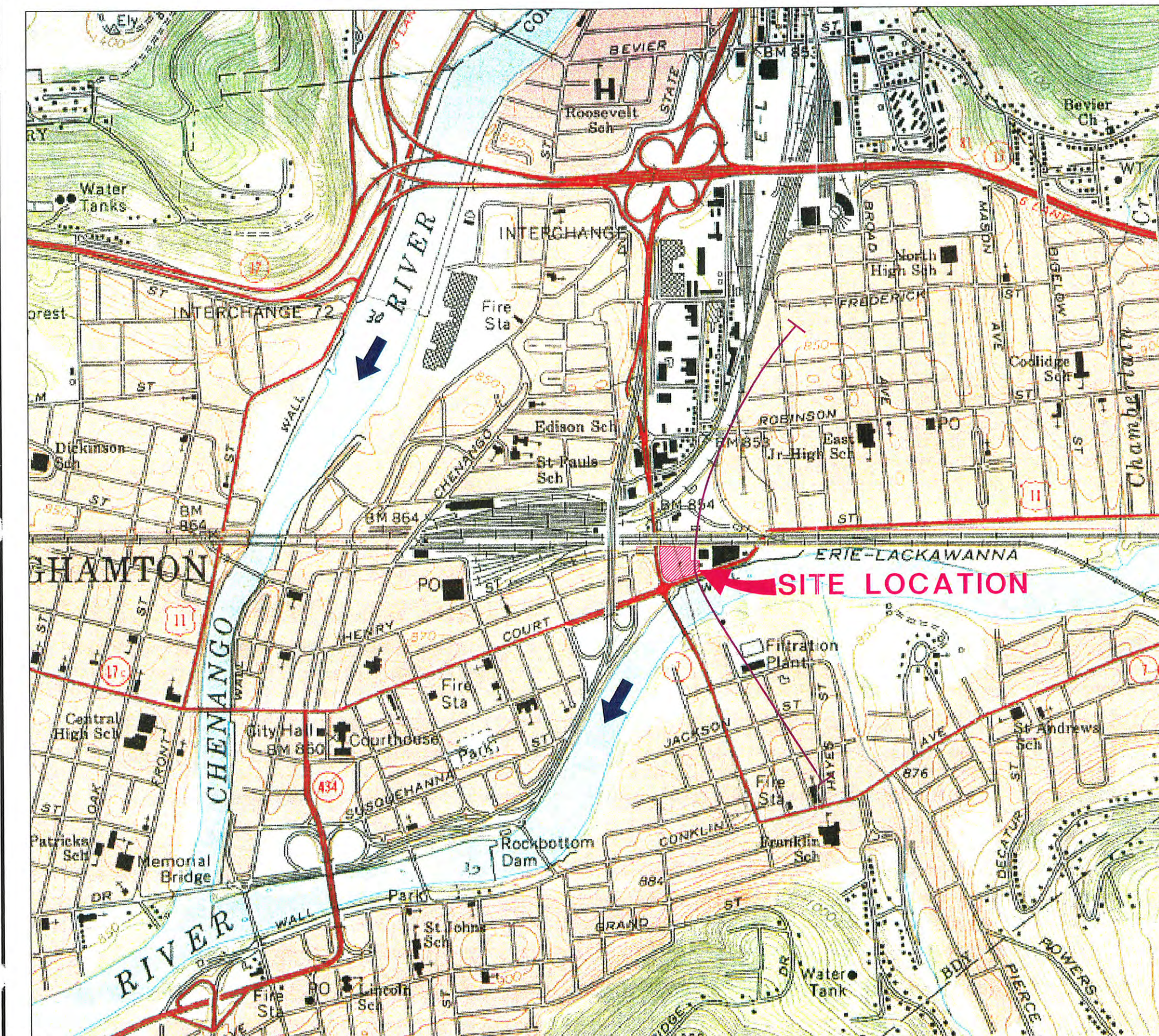
**Notes:**

Horizontal hydraulic conductivities selected based on:

- (FILL/SILT) The range of hydraulic conductivities for silt provided in Brassington (1998).
- (SAND/GRAVEL) Pumping data for the Ranney Well (see Appendix D-1).
- (TILL) The range of hydraulic conductivities for till provided in Freeze and Cherry (1979).
- (BEDROCK) The range of hydraulic conductivities for shale and sandstone provided Freeze and Cherry (1979).

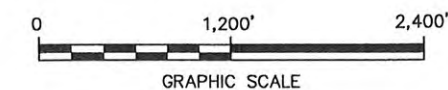
## **Figure B-2**





RIVER FLOW DIRECTION

NOTES:



### LINE OF SECTION FOR FLONET MODEL

FIGURE  
B-2

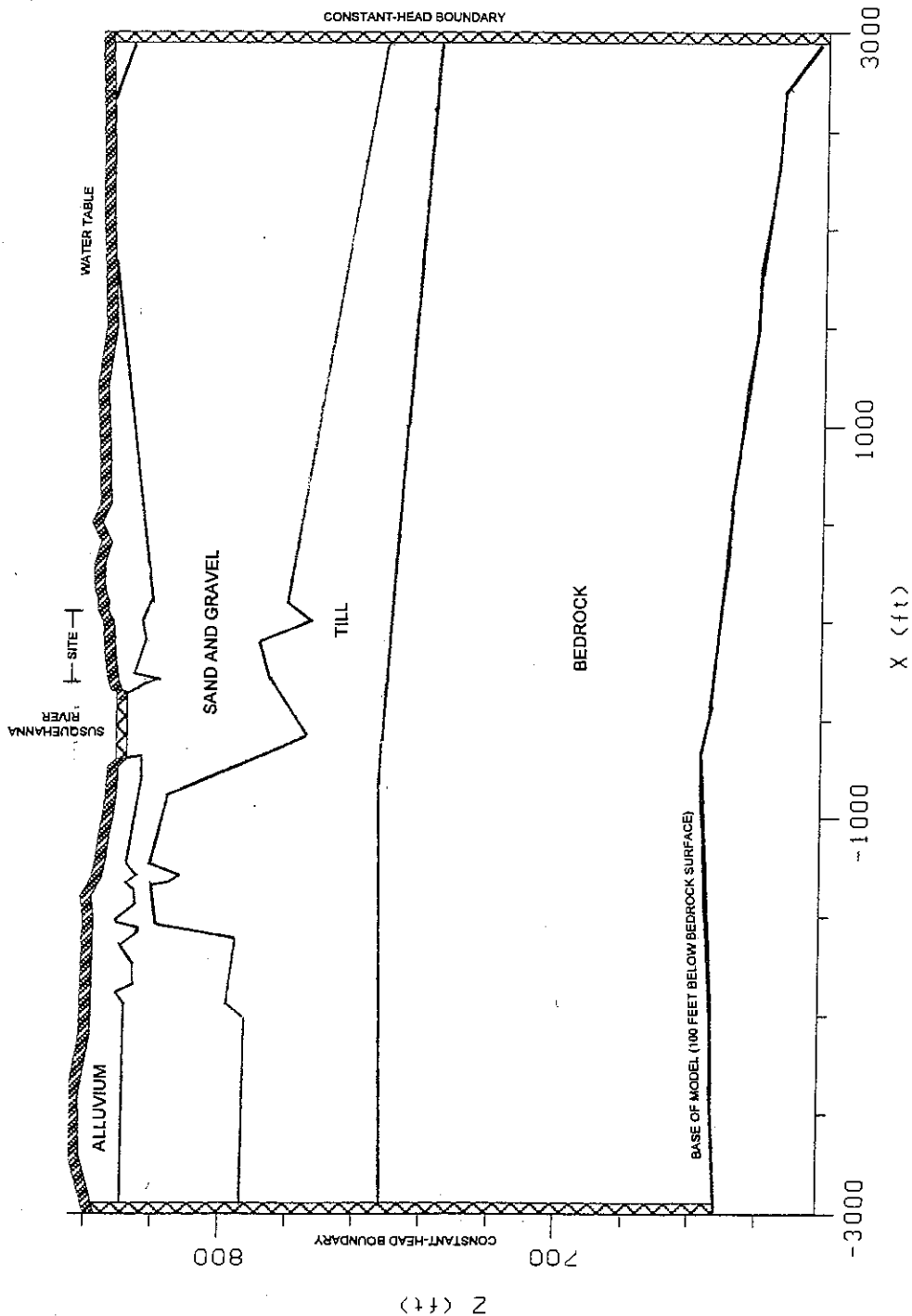


## **Figure B-3**

# Model Boundaries and Hydrostratigraphic Units

SOUTH

NORTH



Project : BH33  
Date : 10 Apr 98

Model Dimensions  
No Rows : 21  
No Columns : 46

Units  
L : ft  
T : days  
S : ft<sup>2</sup> /day  
V : ft/day  
C : mg/L

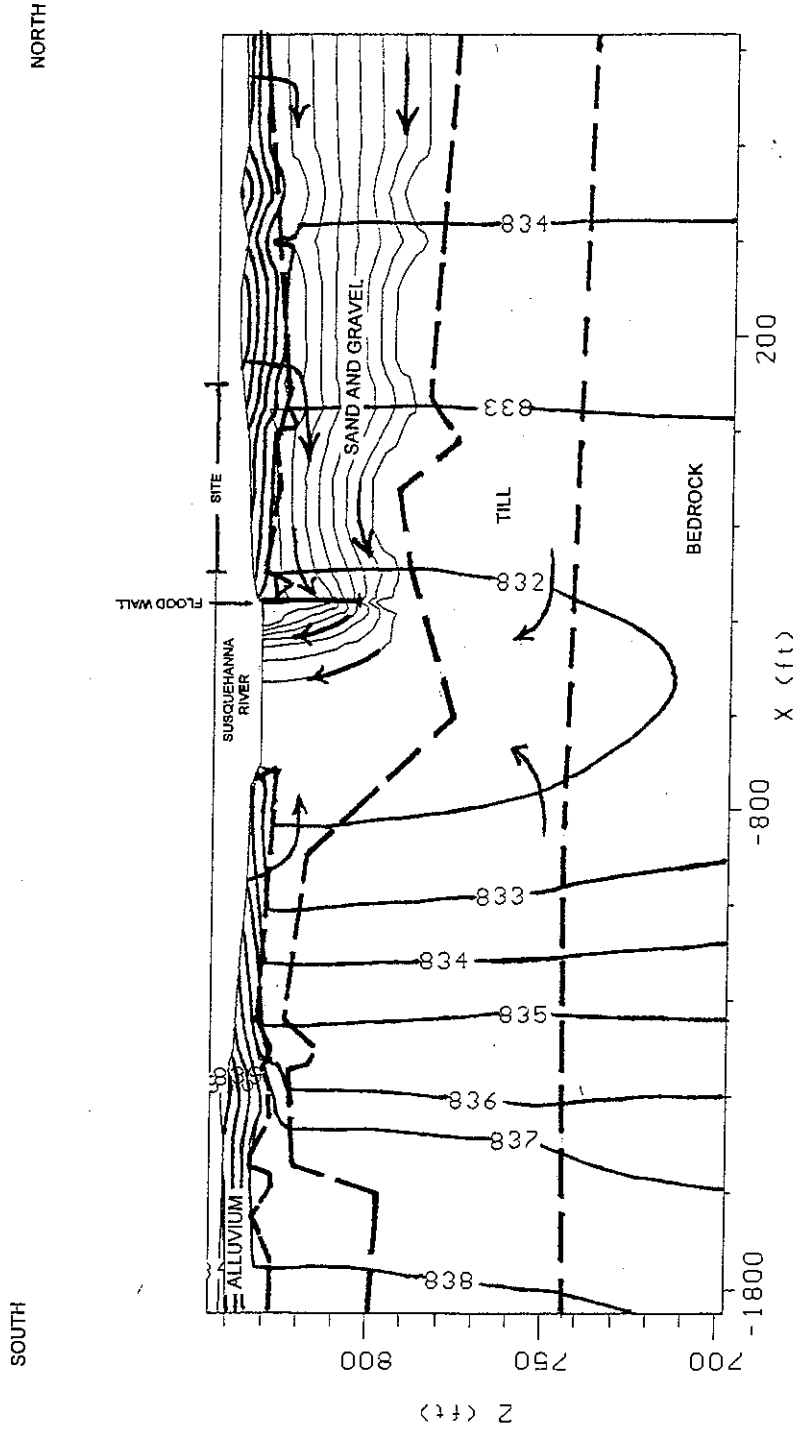
Notes:

**BBL**  
BLASAND, BOUCK & LEE, INC.  
engineers & scientists

FIGURE B-3

## **Figure B-4**

# MODEL-SIMULATED EQUIPOTENTIALS AND STREAMLINES



Project : BH33  
Date : 15 Apr 98

Model Dimensions  
No Rows : 21  
No Columns : 46

Units  
L : ft  
T : days  
S : ft<sup>2</sup>/day  
V : ft/day  
C : mg/L

Notes:

FLONET CROSS-SECTIONAL MODEL  
NYSEG COURT STREET SITE  
BINGHAMTON, NEW YORK

- GEOLOGIC CONTACT
- EQUIPOTENTIAL LINE (FAMS)
- GROUNDWATER STREAMLINE
- GROUNDWATER FLOW DIRECTION

**BBL**  
BLASLAND, BOUCK & LEE, INC.  
engineers & scientists

FIGURE B-4



## ***Appendix C***

---

# **Storm Sewer Inspection Report**

## Storm Sewer Inspection

Client: New York State Electric & Gas, Binghamton, New York

Project Number: 130.36.002

Pipe Inspected: From Manhole #1, Upstream to Manhole #2

Pipe Material: Concrete, 5' sections

Pipe Diameter: 66"

Footage	Description
0	Manhole #1
6	(2) 1 ½" pipes @ 12:00 protruding into pipe 1.5' with tar seeping out; 2-3" of gravel begins
9	tar weep @ 9:00
17	tar weep @ 5:00
25	tar weep @ 7:00
20	hole in pipe @ 4:00 at joint
35	gravel ends, clean pipe
66	oily weep @ 7:00
78	oily weep @ 4:00
90	oily weep @ 4:00
106	oily weep @ 6:00
138	vault; no open manway to surface; approximately 5' by 5' by 7' high; pipe bends to the left
155	for the next 10 feet all joints have weeps, no notable oil but mineral deposits are present
165	oily joint @ 6:00 and manhole with manway to surface; access covered by asphalt
169	oily weep @ 6:00
175	flush 2" pipe @ 12:00; tar seeping in
180	oily joints @ 5:00 and 9:00
184	approximately ½ quart of DNAPL laying at the bottom of the pipe
205	oily weep @ 2:00 and 4:00
271	oily weeps for the next 100'
227	2-3' of rock and gravel at bottom of pipe begins
314	oily weeps end
326	oily weep @ 6:00
359	oily weep @ 7:00
386	end gravel; water is ponded behind gravel
405	Manhole #2

## Storm Sewer Inspection Report

Client: New York State Electric & Gas, Binghamton, New York

Project Number: 130.36.002

Pipe Inspected: From Manhole #2, Upstream

Pipe Material: Concrete, 5' sections

Pipe Diameter: 66"

Footage	Description
0	Manhole #2
12	lateral on left completely filled with sediment
14	brown stained area on right; doesn't appear to be oil or tar
44	brown staining on right-hand wall, doesn't appear to be oil or tar
50	brown staining on right-hand wall, start of 4' high box culvert; too much water to get any further up the pipe

## ***Appendix D***

---

# **NAPL Screening Methods**

# ***Appendix D – NAPL Screening Methods***

---

## **Aqueous VOC Concentrations**

Mathematical methods were used to estimate the dense non-aqueous phase liquid (DNAPL) zone in overburden using aqueous volatile organic compound (VOC) and semivolatile organic compound (SVOC) data from the site. These methods rely on a comparison between detected concentrations and effective solubility limits based on principles presented in United States Environmental Protection Agency (USEPA) guidance on DNAPL site evaluation (Publication 9355.4-07FS, 1992) and other sources (WCGR, 1991; Cohen and Mercer, 1993; Pankow and Cherry, 1996; Kueper, pers. com. with M.J. Gefell, 1997). DNAPL presence is strongly suggested and can reasonably be expected to exist in immediate proximity to any monitoring well exhibiting VOC concentrations greater than one percent of the compound effective solubility within and downstream of known or suspected DNAPL release locations (WCGR, 1991; USEPA, 1992; Cohen and Mercer, 1993; Pankow and Cherry, 1996). Locations where sampled groundwater concentrations exceed 1 percent (or calculated pore-water concentrations in soil samples exceed 10 percent) of a component's effective solubility were included in the DNAPL zone shown on Figure 9. Note that this method was also used for comparison with calculated aqueous concentrations in soil (and sediment) samples to estimate DNAPL presence or absence. Locations where calculated pore-water concentrations in soil samples exceed 10 percent of a component's effective solubility were also included in the DNAPL zone. This appendix summarizes the results of effective solubility screening and describes the mathematical method in detail.

The criterion for groundwater samples described above, 1 percent of effective solubility, likely provides a conservative measure (underestimate) of the probable DNAPL distribution. Concentrations below one percent of the effective solubility can exist near DNAPL. Dissolved concentrations of DNAPL constituents in groundwater samples are typically below the constituent effective solubility limits due to several factors, including:

- 1) Heterogeneous distribution of residual and pooled DNAPL;
- 2) Hydrodynamic dispersion within the geologic medium;
- 3) Borehole dilution; and
- 4) Rate-limited mass transfer at low DNAPL saturations.

### Mathematical Method

The groundwater and soil-quality databases were queried to identify each location where VOCs or SVOCs were detected during the most recent sampling event at the location. The analytical data included aqueous concentrations detected at wells and piezometers and total soil concentrations, which were used to calculate equilibrium aqueous concentrations. Where primary and duplicate samples were collected, the higher of the two values was used for each constituent. To assess DNAPL presence, the measured concentration of each

---

compound detected in ground water (or calculated as present within soil based on equilibrium partitioning assumptions) ( $C_{m_i}$ ) was compared to the effective solubility limits of the chemical ( $C_i$ ). Any groundwater sampling location for which the ratio of  $C_{m_i}/C_i$  was greater than 0.01 was included within the DNAPL zone. Similarly, any soil sampling location for which the ratio of  $C_{m_i}/C_i$  was greater than 0.10 was included within the DNAPL zone.

The mathematical approach is complicated at the site by the presence of a highly complex mixture of DNAPLs in the subsurface. Several simplifying assumptions were used to allow a mathematical assessment of the solubility ratio discussed above, including:

- The suite of VOCs and SVOCs detected (or calculated) in the aqueous phase at each location comprises the exact suite of compounds in the source DNAPL. This assumption allows effective solubilities to be evaluated based on the correct number of compounds in a hypothetical DNAPL mixture, rather than applying a common solubility reduction factor for all locations, which would require that the DNAPL have the same properties everywhere. This approach, therefore, provides a useful means to account for the fact that DNAPL composition may vary spatially at the site.
- The degree of sorption is the same for each compound. This assumption is justified by the likely, near saturation of available sorption sites due to the length of time that DNAPL has been in the subsurface.
- The dispersion is the same for each compound. This assumption is justified by the fact that dispersion is a physical property of the geologic medium, and does not vary between different solutes.
- The degradation rates are the same for each compound. This assumption is considered reasonable given that samples obtained in the DNAPL zone would be located near enough to DNAPL that travel times available for degradation processes would be limited. While this is considered the weakest of the assumptions in the method, this weakness is counter-balanced by the fact that this approach accounts for every solute detected (or calculated) in the aqueous phase. Also, this is only one of several methods used to delineate the DNAPL zone.

These assumptions lead to the result that each measured VOC or SVOC concentration in groundwater (or calculated as present within soil based on equilibrium partitioning assumptions) ( $C_{m_i}$ ) is proportional to the chemical's effective solubility limit ( $C_i$ ). This result is presumed to be valid at the interface between the water and the DNAPL, where all compounds in the DNAPL are at the effective solubility limits in the aqueous phase, in accordance with Raoult's Law. In terms of a proportionality constant ( $\alpha$ ), we assume that  $C_{m_i} / C_i = \alpha$ , where  $\alpha = 1$  at the DNAPL-water interface, and diminishes with increasing distance from the DNAPL source zone because of dispersion, degradation, and borehole dilution (which are assumed equal for each DNAPL constituent). Note that  $\alpha$  also equals the detected percent of the effective solubility for compound *i*. Using

---

these assumptions, the derivation below describes the development of a relatively simple expression to compare measured concentrations to effective solubilities for any mixture of constituents.

According to Raoult's Law, we know that:

$$C_i = M_i S_i, \text{ or } M_i = C_i / S_i,$$

where:  $M_i$  = chemical mole fraction in the DNAPL phase; and  
 $S_i$  = chemical pure-phase solubility.

Since the sum of the DNAPL-constituent mole fractions must add up to unity, it follows that:

$$(C_1 / S_1) + (C_2 / S_2) + (C_3 / S_3) \dots + (C_n / S_n) = 1,$$

where:  $n$  is the number of components comprising the DNAPL.

Based on the discussion above, we can replace  $C_i$  with  $Cm_i / \alpha$ , which leads to:

$$\alpha = [(Cm_1 / S_1) + (Cm_2 / S_2) + (Cm_3 / S_3) \dots + (Cm_n / S_n)].$$

Given the relationship that  $Cm_i / C_i = \alpha$ , we obtain the following equation relating any mixture of measured chemicals to their estimated effective solubility limits:

$$\frac{Cm_i}{C_i} = \sum_{i=1}^n \frac{Cm_i}{S_i}$$

BBL used the groundwater analytical database to solve the equation above using the groundwater VOC and SVOC data from wells and piezometers in the overburden hydrogeologic unit, and the pure-phase (textbook) solubilities for each detected compound. Wells and piezometers that meet or exceed the 0.01 criterion (1 percent of effective solubility) are shown on Figure \_\_. Similarly, saturated and unsaturated soil samples with calculated aqueous VOC concentrations that meet or exceed a 0.10 criterion (10 percent of effective solubility) were included within the DNAPL zone.

### Soil and Sediment VOC Concentrations

The mathematical aqueous solubility assessment described above was applied to soil and sediment samples by calculating equilibrium pore-water concentrations based on the methods of Feenstra *et al.* (November 1991). Unlike groundwater samples from wells, soil samples are not subject borehole dilution effects. To help delineate the probable DNAPL zone, therefore, the soil VOC and SVOC data were evaluated with respect to 10

---

percent of the effective solubility limit, indicating that DNAPL was present in the soil sample analyzed by the laboratory.

For comparison with effective solubility criteria, equilibrium pore-water concentrations within the soil and sediment samples were estimated using the following expression (based on Feenstra *et al.*, November 1991):

$$C_{m_i} = C_t \rho_b / [(K_{oc})(f_{oc})(\rho_b) + (n_w) + (H_C)(n_A)],$$

where:  $C_{m_i}$  = calculated chemical concentration in pore water (mg/L or ug/cm<sup>3</sup>);

$C_t$  = measured total soil concentration (ug/g or mg/kg, dry weight);

$K_{oc}$  = organic carbon based partition coefficient (cm<sup>3</sup>/g);

$f_{oc}$  = fraction of organic carbon in soil (dimensionless);

$\rho_b$  = dry bulk density of soil sample (g/cm<sup>3</sup>);

$n_w$  = water-filled porosity (volume fraction);

$H_C$  = Henry's Law constant (dimensionless); and

$n_A$  = air-filled porosity (volume fraction, equal to zero in the saturated zone).

This equation was used to assess the DNAPL distribution based on saturated and unsaturated (vadose) soil and sediment sampling results from the site and site-specific soil-water partitioning parameters characterized during the completion of the SRI. In the saturated and unsaturated zones, the calculated pore-water concentrations were compared to 10 percent of the effective solubility limits using the mathematical method described above to help delineate the DNAPL zone. The results of the soil and sediment screening are shown on Figure \_\_\_\_.

## References

- Cohen R. M. and Mercer J. W. *DNAPL Site Evaluation*. C. K. Smoley, Boca Raton, Florida. 1993.
- Feenstra, S., Mackay, D.M., and Cherry, J.A. *A Method for Assessing Residual NAPL Based on Organic Chemical Concentrations in Soil Samples*. Ground-Water Monitoring Review, Vol. 11, No. 2, pp. 128-136. November 1991.
- Kueper, B.H. Personal Communication with M.J. Gefell. July 1997.
- Pankow, J.F. and Cherry, J.A. *Dense Chlorinated Solvents and other DNAPLs in Groundwater*. Waterloo Press, Portland, Oregon. 1995.
- United States Environmental Protection Agency (USEPA). *Estimating Potential for Occurrence of DNAPL at Superfund Sites*. Office of Emergency and Remedial Response. Publication 9355.4-07FS. January 1992.



---

Waterloo Centre for Groundwater Research (WCGR). *Professional Short Course Notes: Dense, Immiscible Phase Liquid Contaminants (DNAPLS) in Porous and Fractured Media, University of Waterloo, Waterloo, Ontario. Kitchener, Ontario, Canada. October 7-10, 1991.*

## ***Electronic Attachments***

---

**(provided on separate CD)**