# REMEDIAL INVESTIGATION REPORT

Gastown Former MGP Site
Site No. 9-15-171
Tonawanda, Erie County, NY
Work Assignment No. D003821-21

#### Prepared for:

Superfund Standby Program NYS Department of Environmental Conservation 625 Broadway Albany, NY 12233

#### Prepared by:

Earth Tech Northeast, Inc. 40 British American Blvd. Latham, New York 12110

December 2004

Volume 2 of 3 - Appendices A through G

#### APPENDIX A

NYSDEC Site Investigation Report, January 2001 (CD in front cover pocket)

APPENDIX B

#### PREVIOUS BORING LOGS AND WELL LOGS

1998 Boring Logs,
New York State Department of Environmental
Conservation

Project Name:

Former Gastown MGP Site

Site Number:

915171

Location:

Tonawanda, New York

Logged By: Total Depth: Glenn M. May

26.0 feet

Hole Designation:

MW-1I

Date Completed:

6/4/98

**Drilling Company: Drilling Method:** 

Maximum Technologies 41/4" Hollow Stem Augers

Sampling Method: Split Spoon

D (1)		T21 - 41		Sample		
Depth (ft bgs)	Stratigraphic Description & Remarks	Elevation (ft amsl)	N U M B	C O U N	N V A	H N U
	Ground Surface	575.85	E R	Ť	L U E	
0.0	0.0'-0.3': Brown topsoil with many rootlets and high clay content. Dry. Poor recovery.		1	6 8 6	14	0.0
	0.3'-2.0': Brown silty clay with large rock fragments, small pieces of coke and coal, some cinders. Silty clay has red and brown varves. Dry. FILL MATERIAL.	575.55		18		
2.0	2.0'-4.0': Yellow brown silty clay with large rock fragments and gray mottling. Dry. Poor recovery. NATIVE.	573.85	2	15 5 9	14	0.0
4.0	4.0'-4.7': Yellow brown silty clay with gray and red mottling, few black blebs. Dry to moist. NATIVE.		3	14	20	0.0
	4.7'-6.0': Yellow brown, fine grained sand with iron red and orange mottling, some black blebs. Few rootlets. Moist. NATIVE.	571.15	) )	11 12		
6.0	6.0'-8.0': Sample same as above. Becomes saturated at 6.75' bgs. There are no black blebs within the saturated zone but iron red blebs are prevalent. This deposit grades into a gray, fine grained sand at 7.25' bgs with yellow brown mottling and red blebs. Saturated. NATIVE.		4	8 7 5 4	12	0.0
8.0	8.0'-10.0': Interbedded zones of gray, fine grained sand (seams 0.2' to 0.5' thick) and thin seams (0.1' to 0.2') of gray silty clay. Orange mottling throughout, which appears to be staining. Black blebs observed within the silty clay seams. Saturated. NATIVE.		5	4 5 5 7	10	0.6
10.0	10.0'-12.0': Sample same as above with fewer silty clay seams - only two about 0.02' thick were observed. Orange mottling throughout sample. Saturated. NATIVE.		6	6 7 7 5	14	1.2

Notes:

Measuring Point Elevations May Change: Refer to Current Elevation Table

Grain Size (

Water Found <u>∇</u>

Project Name:

Former Gastown MGP Site

e H

Hole Designation:

MW-1I

Site Number:

915171

Date Completed:

6/4/98

Location: Logged By: Tonawanda, New York

Drilling Company: Ma

Maximum Technologies 41/4" Hollow Stem Augers

Total Depth:

Glenn M. May 26.0 feet

Drilling Method: Sampling Method:

Split Spoon

Depth	Stati Li Barria a Barria	Elevation	Sample				
(ft bgs)	Stratigraphic Description & Remarks	(ft amsl)	N U M	0 C	N V	H N U	
	Ground Surface	575.85	B E R	N T	A L U E		
12.0	12.0'-14.0': Medium gray, very fine grained sand with no mottling. Only one silty clay seam (0.02' thick) observed. Saturated. NATIVE.		7	1 2 2 3	4	0.0	
14.0	14.0'-16.0': No recovery.		8	7 5 4 6	9	NA	
16.0	16.0'-18.0': Medium gray, very fine grained sand with no mottling or silty clay seams. Some sand grains near bottom of sample are dark gray. Saturated. NATIVE.		9	3 4 5 8	9	0.0	
18.0	18.0'-20.0': Interbedded zones of medium to dark gray, fine grained sand and brownish gray clay. Clay seams are 0.2' to 0.25' thick. Saturated. NATIVE.		10	5 1 2 3	3	0.0	
20.0	20.0'-21.1': Sample same as above with large, round, rock fragments approximately 0.1' in diameter. Saturated. NATIVE.  21.1'-22.0': Gravel with a few shells. Saturated. NATIVE.	Sample sent to lab	11	1 1 13 8	14	16.2	
22.0	22.0'-24.0': Reddish brown silty clay with varves, very plastic. Few pebbles observed at 22.6' bgs. Saturated. NATIVE.  Augered to 26.0' bgs without sampling.  BOH=26.0' bgs.	553.85; Sample sent to lab	12	1 1 1 1	2	45.8	

Notes:

Measuring Point Elevations May Change: Refer to Current Elevation Table

Grain Size

Water Found <u>∇</u>

Project Name: Site Number:

Former Gastown MGP Site

Hole Designation:

MW-2I

Location:

915171

Date Completed:

6/4/98

Logged By:

Tonawanda, New York Glenn M. May

**Drilling Company: Drilling Method:** 

Maximum Technologies 41/4" Hollow Stem Augers

Total Depth:

26.0 feet

Sampling Method:

Split Spoon

Donth		Elevation		Sai	mple	
Depth (ft bgs)	Stratigraphic Description & Remarks	(ft amsl)	N U M	C 0 บ	N V	H N U
	Ground Surface	575.47	B E R	N T	A L U E	
0.0	0.0'-2.0': Crushed stone and asphalt from driveway. Large rock fragment in bottom of spoon. Dry. Poor recovery. FILL MATERIAL.	575.47	1	22 10 8 7	18	2.5
2.0	2.0'-4.0': No recovery.		2	4 3 6 7	9	NA
4.0	4.0'-4.4': Yellow brown silty clay with gray and orange mottling. Rootlets. Dry to moist. NATIVE.		3	6 5 6	11	12.2
	4.4'-6.0': Yellow brown, fine grained sand with gray and orange mottling. Rootlets. Saturated. NATIVE.	571.07		6		
6.0	6.0'-8.0': Gray, fine grained sand with extensive orange mottling. Few black blebs and some iron red staining. One 0.2' thick clay seam observed at 7.6' bgs. Saturated. NATIVE.		4	4 4 3 3	7	28.8
8.0	8.0'-10.0': Sample same as above with much less staining. One 0.2' thick clay seam observed in middle of sample. Orange mottling and black blebs in this seam. Sand below clay is brown with dark gray or black grains. Saturated. NATIVE.		5	2 2 9 9	11	34.4
10.0	10.0'-12.0': Sample same as above (below clay seam). Strong petroleum odor. Saturated. NATIVE.	Sample sent to lab	6	5 7 6 6	13	27.3

Notes:

Measuring Point Elevations May Change: Refer to Current Elevation Table

Grain Size

Water Found <u>∇</u>



Project Name: Site Number:

Former Gastown MGP Site

915171

Location: Logged By: Tonawanda, New York

Glenn M. May Total Depth: 26.0 feet

Hole Designation:

Date Completed:

MW-2I 6/4/98

**Drilling Company: Drilling Method:** 

Maximum Technologies 41/4" Hollow Stem Augers

Sampling Method: Split Spoon

Depth		Elevation	Sample				
(ft bgs)	Stratigraphic Description & Remarks	(ft amsl)	N U M	C O U N	N V A	H N U	
	Ground Surface	575.47	E R	T	L U E		
12.0	12.0'-13.3': Yellow brown, fine grained sand. A clay seam 0.1' thick at 13.3' bgs. Extensive orange staining observed immediately above this clay seam. Saturated. NATIVE.		7	2 3 5 5	8	67.4	
	13.3'-14.0': Medium to dark gray sand with black grains. Few small clay seams. Saturated. NATIVE.					-	
14.0	14.0'-16.0': Sample same as above (below clay seam). Odor observed but no sheen. Saturated. NATIVE.		8	5 3 3 4	6	48.4	
16.0	16.0'-18.0': Interbedded zones of dark gray sand and dark gray clay. NAPL observed at 16.4' bgs and throughout remainder of sample. Saturated. NATIVE.	Sample sent to lab	9	4 4 7 7	11	3531	
18.0	18.0'-20.0': Sample same as above with the sand seams containing NAPL. Both sand and clay seams are 0.1' to 0.2' thick. Saturated. NATIVE.		10	1 2 1 3	3	438	
20.0	20.0'-21.0': Sample same as above with NAPL. Saturated. NATIVE.		11	wor wor	9	346	
	21.0'-22.0': Reddish brown clay containing NAPL. A 0.1' thick gravel seam at 21.75' bgs. Trace NAPL below this seam. Saturated. NATIVE.	554.47		2			
22.0	22.0'-24.0': Reddish brown to brown, silty clay with varves below 23.0' bgs, very plastic. No NAPL. Saturated. NATIVE.		12	wor wor wor	0	121	
	Augered to 26.0' bgs without sampling.						
	BOH=26.0' bgs.						

Notes:

Measuring Point Elevations May Change: Refer to Current Elevation Table

Grain Size

Water Found <u>∇</u>



Project Name: Site Number:

Former Gastown MGP Site

915171

Location:

Tonawanda, New York

Logged By: Total Depth: Glenn M. May 30.0 feet

Hole Designation:

Date Completed:

**Drilling Company: Drilling Method:** 

PW-1 6/3/98

Maximum Technologies 41/4" Hollow Stem Augers

Sampling Method: Split Spoon

Depth		Elevation	Sam		mple	-
(ft bgs)	Stratigraphic Description & Remarks	(ft amsl)	N U M	C O U N	N V	H N U
	Ground Surface	575.50	B E R	Ť	A L U E	
0.0	0.0'-2.0': Mottled clay and brown, fine grained sand with some rootlets and few small pebbles. Pieces of coal or coke near bottom of sample. Moist. FILL MATERIAL.	575.50	1	1 3 6 13	9	1.0
2.0	2.0'-4.0': No recovery.		2	5 4 4 5	8	NA
4.0	4.0'-4.75': Yellow brown silty clay with mottling. Moist. NATIVE.		3	8 6 7	13	9.7
	4.75'-6.0': Yellow brown, very fine grained sand with mottling. Moist. NATIVE.	570.75		7		
6.0	6.0'-8.0': Yellow brown, very fine grained sand with red, gray and brown mottling. Trace silt and clay. Few rootlets. Moist. NATIVE.		4	4 4 3 3	7	10.2
8.0	8.0'-8.25': Sample same as above.		5	3	7	20.7
	8.25'-10.0': Interbedded zones of dark gray sand and thin (0.1') seams of gray clay. Moist. NATIVE.		]	4 8		
10.0	10.0'-12.0': Sample same as above with fine to medium grained sand. A thin (0.02') black seam near bottom of sample. Moist to saturated. NATIVE.	Sample sent to lab	6	5 4 5 4	9	23.7
12.0	12.0'-14.0': Dark gray, fine grained sand with yellow brown mottling to 13.0' bgs. Few pebbles observed at this depth. Saturated. NATIVE.		7	3 6 4 8	10	14.4

Notes:

Measuring Point Elevations May Change: Refer to Current Elevation Table

Grain Size

Water Found <u>∇</u>



Project Name: Site Number:

Former Gastown MGP Site

915171

Location:

Tonawanda, New York

Glenn M. May Logged By: Total Depth:

30.0 feet

PW-1 Hole Designation:

Date Completed: 6/3/98

**Drilling Company:** Drilling Method:

Maximum Technologies 41/4" Hollow Stem Augers

Sampling Method: Split Spoon

	Floration	Sample				
Stratigraphic Description & Remarks	(ft amsl)	N U M	C 0 U	N V	EL N U	
Ground Surface	575.50	E R	Ť	L U E	•	
14.0'-16.0': Sample same as above without mottling.		8	7 10 9	19	7.3	
16.0'-18.0': Sample same as above. NAPL observed at 16.9' bgs and throughout remainder of sample. The NAPL is black with a petroleum odor. Saturated. NATIVE.		9	6 4 3 6	7	325	
18.0'-20.0': Interbedded zones of dark gray, fine grained sand and dark gray clay. Sand seams contain thin layers (0.04') of NAPL perched on the clay seams. Saturated. NATIVE.	Sample sent to lab	10	wor 2 1	3	680	
20.0'-22.0': Sample same as above with NAPL observed in the sand seams. Gravel of various sizes at bottom of sample. One clam shell observed in gravel. Saturated. NATIVE.		11	wor wor 8 16	8	672	
22.0'-23.0': Dark gray, course grained sand and gravel. Sheen observed throughout sample. Few shells. No NAPL. Saturated. NATIVE.  23.0'-24.0': Reddish brown silty clay with traces of gravel. No NAPL. Saturated. NATIVE.	553.50 552.50	12	4 2 2 2 2	4	152	
24.0'-26.0': Reddish brown silty clay with gray varves, very plastic. No gravel, sheen or NAPL observed. Saturated. NATIVE.		13	2 4 1 1 1	5	64.9	
	Ground Surface  14.0'-16.0': Sample same as above without mottling.  16.0'-18.0': Sample same as above. NAPL observed at 16.9' bgs and throughout remainder of sample. The NAPL is black with a petroleum odor. Saturated. NATIVE.  18.0'-20.0': Interbedded zones of dark gray, fine grained sand and dark gray clay. Sand seams contain thin layers (0.04') of NAPL perched on the clay seams. Saturated. NATIVE.  20.0'-22.0': Sample same as above with NAPL observed in the sand seams. Gravel of various sizes at bottom of sample. One clam shell observed in gravel. Saturated. NATIVE.  22.0'-23.0': Dark gray, course grained sand and gravel. Sheen observed throughout sample. Few shells. No NAPL. Saturated. NATIVE.  23.0'-24.0': Reddish brown silty clay with traces of gravel. No NAPL. Saturated. NATIVE.	Ground Surface  14.0'-16.0': Sample same as above without mottling.  16.0'-18.0': Sample same as above. NAPL observed at 16.9' bgs and throughout remainder of sample. The NAPL is black with a petroleum odor. Saturated. NATIVE.  18.0'-20.0': Interbedded zones of dark gray, fine grained sand and dark gray clay. Sand seams contain thin layers (0.04') of NAPL perched on the clay seams. Saturated. NATIVE.  20.0'-22.0': Sample same as above with NAPL observed in the sand seams. Gravel of various sizes at bottom of sample. One clam shell observed in gravel. Saturated. NATIVE.  22.0'-23.0': Dark gray, course grained sand and gravel. Sheen observed throughout sample. Few shells. No NAPL. Saturated. NATIVE.  23.0'-24.0': Reddish brown silty clay with traces of gravel. No NAPL. Saturated. NATIVE.  24.0'-26.0': Reddish brown silty clay with gray varves, very plastic. No gravel, sheen or NAPL observed. Saturated.	Ground Surface  14.0'-16.0': Sample same as above without mottling.  16.0'-18.0': Sample same as above. NAPL observed at 16.9' bgs and throughout remainder of sample. The NAPL is black with a petroleum odor. Saturated. NATIVE.  18.0'-20.0': Interbedded zones of dark gray, fine grained sand and dark gray clay. Sand seams contain thin layers (0.04') of NAPL perched on the clay seams. Saturated. NATIVE.  20.0'-22.0': Sample same as above with NAPL observed in the sand seams. Gravel of various sizes at bottom of sample. One clam shell observed in gravel. Saturated. NATIVE.  22.0'-23.0': Dark gray, course grained sand and gravel. Sheen observed throughout sample. Few shells. No NAPL. Saturated. NATIVE.  23.0'-24.0': Reddish brown silty clay with traces of gravel. No NAPL. Saturated. NATIVE.  24.0'-26.0': Reddish brown silty clay with gray varves, very plastic. No gravel, sheen or NAPL observed. Saturated.	Stratigraphic Description & Remarks  Ground Surface  575.50  14.0'-16.0': Sample same as above without mottling.  16.0'-18.0': Sample same as above. NAPL observed at 16.9' bgs and throughout remainder of sample. The NAPL is black with a petroleum odor. Saturated. NATIVE.  18.0'-20.0': Interbedded zones of dark gray, fine grained sand and dark gray clay. Sand seams contain thin layers (0.04') of NAPL perched on the clay seams. Saturated. NATIVE.  20.0'-22.0': Sample same as above with NAPL observed in the sand seams. Gravel of various sizes at bottom of sample. One clam shell observed in gravel. Saturated. NATIVE.  22.0'-23.0': Dark gray, course grained sand and gravel. Sheen observed throughout sample. Few shells. No NAPL. Saturated. NATIVE.  23.0'-24.0': Reddish brown silty clay with traces of gravel. No NAPL. Saturated. NATIVE.  24.0'-26.0': Reddish brown silty clay with gray varves, very plastic. No gravel, sheen or NAPL observed. Saturated.	Stratigraphic Description & Remarks  Ground Surface  575.50  R  T  Ground Surface  14.0'-16.0': Sample same as above without mottling.  16.0'-18.0': Sample same as above. NAPL observed at 16.9' bgs and throughout remainder of sample. The NAPL is black with a petroleum odor. Saturated. NATIVE.  18.0'-20.0': Interbedded zones of dark gray, fine grained sand and dark gray clay. Sand seams contain thin layers (0.04') of NAPL perched on the clay seams. Saturated. NATIVE.  20.0'-22.0': Sample same as above with NAPL observed in the sand seams. Gravel of various sizes at bottom of sample. One clam shell observed in gravel. Saturated. NATIVE.  22.0'-23.0': Dark gray, course grained sand and gravel. Sheen observed throughout sample. Few shells. No NAPL. Saturated. NATIVE.  23.0'-24.0': Reddish brown silty clay with traces of gravel. No NAPL. Saturated. NATIVE.  24.0'-26.0': Reddish brown silty clay with gray varves, very plastic. No gravel, sheen or NAPL observed. Saturated.	

Notes:

Measuring Point Elevations May Change: Refer to Current Elevation Table

Grain Size

Water Found <u>∇</u>



Project Name:

Former Gastown MGP Site

Site Number: Location:

915171

Tonawanda, New York

Logged By:
Total Depth:

Glenn M. May

Glenn M. Ma

Hole Designation:

PW-1 6/3/98

Date Completed:
Drilling Company:
Drilling Method:

Maximum Technologies 41/4" Hollow Stem Augers

Sampling Method: Split Spoon

Total Dep	oth: 30.0 feet Sampling M	tetnoa: Spiit Sp				
Depth	Stratigraphic Description & Remarks	Elevation	N U	Sai c o	mple N	H N U
(ft bgs)		(ft amsl)	M B	U	V A	บั
	Ground Surface	575.50	E R	Т	L U E	
26.0	26.0'-28.0': Sample same as above.		14	1 1 1 1	2	73.8
28.0	28.0'-30.0': Sample same as above.		15	1	2	80.4
,	BOH=30' bgs.			1 1 1		
						) }
					,	

Notes:

Measuring Point Elevations May Change: Refer to Current Elevation Table

Grain Size (

Water Found <u>∇</u>

NY	SDEC - Region 9 - Di	vision of Environn	nental Ren	medi	iation	1
	<del>-</del>	ohic Log (Overbur				
Project N Site Num Location: Logged B Total Dep	ber: 915171 Tonawanda, New Yorl y: Glenn M. May	Date Completed:	6/5/98 y: Maximu 4¼" Ho	ım Tec		
Depth (ft bgs)	Stratigraphic Descri	ption & Remarks	Elevation (ft amsl)	N U M	Sample C N O V	H N U
	Ground S	urface	575.32	B E R	N A L U E	
	Boring augered to depth - not l	ogged.				
	BOH=9' bgs.					
				<u> </u>		
Notes:	Measuring Point Elevation  Grain Size	is May Change: Refer to Cu  Water Found $\overline{\nabla}$			vel <u>▼</u>	

NY	SDEC - Region 9 - Division	of Environm	ental Rei	med	liat	ion	====
	Stratigraphic I						
Project Na Site Numb Location: Logged By Total Dep	rer: 915171 Tonawanda, New York Glenn M. May	Hole Designation: Date Completed: Drilling Company Drilling Method: Sampling Method	4¼" Ho	ım Te			
Depth	Stratigraphic Description &	Damarks	Elevation		Sa	mple	н
(ft bgs)	Stratigraphic Description &	Remarks	(ft amsl)	U M B	0 0 0 %	V	ท ช
	Ground Surface		574.91	E R	Ť	L U E	
	Boring augered to depth - not logged.		<del></del>		-		
}	BOH=8.5' bgs.						
		1			}		
		}					
		}			)   		
		}			<b>}</b>		
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Notes:	Measuring Point Elevations May C	Change: Refer to Curr	ent Elevation	Tabl	l le		
		ater Found $\nabla$			evel	•	



## MONITORING WELL LOG

Project Name:

Former Gastown MGP Site

Site Number:

915171

Location:

Tonawanda, New York

Screen Type:

PVC

Screen Diameter: Screen Length: 2 inch 20 feet Hole Designation:

MW-11 6/4/98

Date Completed:
Drilling Company:

Maxim Technologies

Casing Type:

Not Applicable

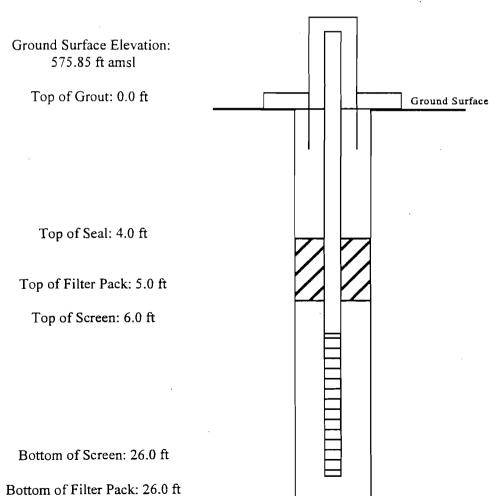
Casing Diameter:

Not Applicable

Total Depth:

26.0 feet

Top of Riser Elevation: 575.43 ft amsl





## MONITORING WELL LOG

Project Name:

Former Gastown MGP Site

Site Number:

915171

Location:

Tonawanda, New York

Screen Type:

**PVC** 

Screen Diameter: Screen Length:

2 inch

20 feet

Hole Designation:

Date Completed:

6/4/98

**Drilling Company:** Casing Type:

Maxim Technologies

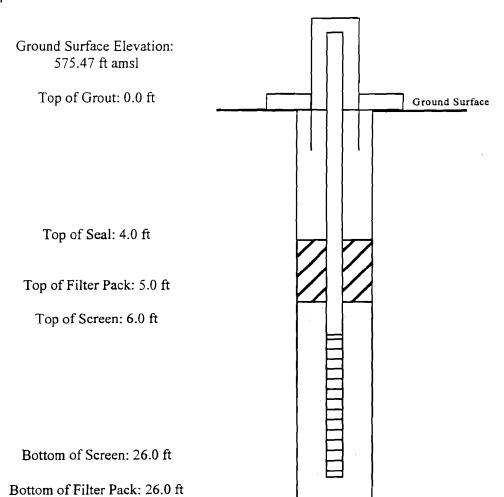
Not Applicable Not Applicable Casing Diameter:

Total Depth:

26.0 feet

MW-2I

Top of Riser Elevation: 575.08 ft amsl





## MONITORING WELL LOG

**Project Name:** 

Former Gastown MGP Site

Site Number:

915171

Location:

Tonawanda, New York

Screen Type: Screen Diameter: **PVC** 

Screen Length:

2 inch

15 feet

Hole Designation:

PW-1

6/3/98

Date Completed: **Drilling Company:** 

Maxim Technologies

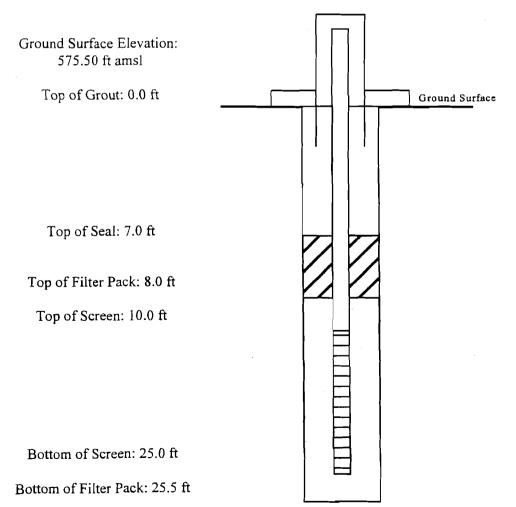
Casing Type: Casing Diameter:

Not Applicable Not Applicable

Total Depth:

30.0 feet

Top of Riser Elevation: 574.58 ft amsl





## MONITORING WELL LOG

Project Name:

Former Gastown MGP Site

Site Number:

915171

Location:

Tonawanda, New York

Screen Type:

Screen Diameter: Screen Length:

2 inch

**PVC** 

5 feet

Hole Designation:

MW-2S Date Completed:

6/5/98

Drilling Company:

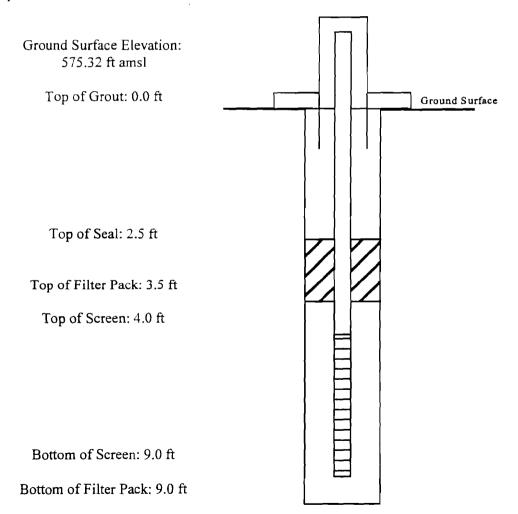
Maxim Technologies

Casing Type: Casing Diameter: Not Applicable Not Applicable

Total Depth:

9.0 feet

Top of Riser Elevation: 574.77 ft amsl





### MONITORING WELL LOG

Project Name:

Former Gastown MGP Site

Site Number:

915171

Location:

Tonawanda, New York

Screen Type:

**PVC** 

Screen Diameter: Screen Length:

2 inch

5 feet

Hole Designation:

Date Completed:

**Drilling Company:** Casing Type:

Casing Diameter:

Total Depth:

MW-3S

6/5/98

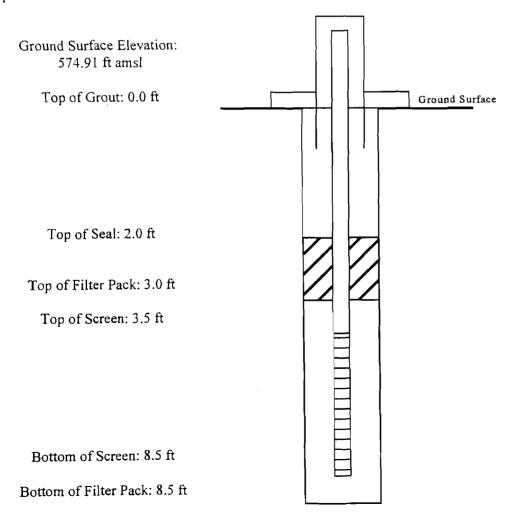
Maxim Technologies

Not Applicable

Not Applicable

8.5 feet

Top of Riser Elevation: 574.55 ft amsl



1999 Boring Logs, New York State Department of Environmental Conservation

**Project Name:** 

Former Gastown MGP Site

915171

Site Number: Location:

Logged By: Total Depth: Tonawanda, New York Glenn M. May

28.0 feet

Hole Designation:

SB-27

Date Completed: **Drilling Company:**  12/7/99 Advanced Cleanup Tech.

**Drilling Method:** 

Direct Push

Sampling Method: Macro Core

Depth		Elevation	Sample				
(ft bgs)	Stratigraphic Description & Remarks	(ft amsl)	N U M	C O U	N V	H N U	
	Ground Surface	575.27	B E R	T	A L U E		
0.0	0.0'-1.0': Crushed stone from parking lot.	575.27	1			0.0	
	1.0'-4.0': Fine grained sand with some silt, coal, brick and rock fragments. Moist. FILL MATERIAL.						
4.0	4.0'-4.4': Sample same as above.		2			0.0	
	4.4'-8.0': Gray silty clay with orange mottling. Few rootlets near top of sample. Few thin, saturated sand seams. Silty clay is cohesive and slightly plastic. Moist. NATIVE.	570.87					
8.0	8.0'-11.3': Sample same as above. A gravel seam 0.1' thick at 8.8' bgs. Saturated. NATIVE.		3		]	0.0	
	11.3'-12.0': Gray, fine grained sand, no pebbles. Saturated. NATIVE.	563.97	{   				
12.0	12.0'-16.0': Gray brown, fine to medium grained sand grading to dark gray, fine to medium grained sand. Sample contains a few orange mottled, silty clay seams 0.2' to 0.3' thick. Saturated. NATIVE.		4			0.0	
16.0	16.0'-20.0': Sample same as above with orange mottled silty clay seams 0.4' thick. Saturated. NATIVE.		5			0.0	
20.0	20.0'-24.0': Sample same as above with no silty clay seams. Saturated. NATIVE.	Sample sent to lab	6			0.0	
24.0	24.0'-28.0': No recovery. Reddish brown silty clay observed on outside of sampler. NATIVE.		7			0.0	
	BOH=28.0' bgs.						
		L					

Notes:

Measuring Point Elevations May Change: Refer to Current Elevation Table

Grain Size

Water Found <u>∇</u>



**Project Name:** Site Number:

Former Gastown MGP Site

915171

24.0 feet

Location:

Notes:

Grain Size

Tonawanda, New York

Logged By: Glenn M. May Total Depth:

Hole Designation:

Date Completed:

12/7/99

**Drilling Company: Drilling Method:** 

Advanced Cleanup Tech.

Static Level **Y** 

Direct Push Sampling Method: Macro Core

SB-28

Depth	Elev	Elevation	Sample				
(ft bgs)	Stratigraphic Description & Remarks	(ft amsl)	N U M	C 0 U	N V	H N U	
	Ground Surface	577.93	B E R	N T	A L U E		
0.0	0.0'-0.6': Brown topsoil with rootlets. Moist.		1			0.0	
	0.6'-0.9': Reworked brown silty clay with many small pebbles. Moist. FILL MATERIAL.	577.33				}	
	0.9'-1.6': Brown, fine to medium grained sand with few rock and coke fragments, and some white ash. Dry to moist. FILL MATERIAL.						
	1.6'-4.0': Reddish brown silty clay with few pieces of coal, some ash, and many rock fragments. Dry to moist. FILL MATERIAL.					[	
4.0	4.0'-4.8': Sample same as above.		2			0.0	
	4.8'-5.0': Slag, coal and coke mixed with brown silty clay.  Moist. FILL MATERIAL.						
	5.0'-7.2': Gray silty clay mottled brown at top and orange throughout remainder of zone. Dry to moist. NATIVE.	572.93					
	7.2'-8.0': Yellow brown, fine grained sand with silt and orange mottling. Moist. NATIVE.	570.73					
8.0	8.0'-12.0': Interbedded zones of gray, fine grained sand and gray silty clay with extensive orange and yellow brown mottling. Clay seams are moist, while sand seams are saturated. NATIVE.		3			0.0	
12.0	12.0'-15.0': Sample same as above.		4			0.1	
	15.0'-16.0': Medium gray, fine to medium grained sand. Saturated. NATIVE.						
		<u> </u>					

Measuring Point Elevations May Change: Refer to Current Elevation Table

Water Found <u>∇</u>

**Project Name:** 

Former Gastown MGP Site

Site Number:

915171

24.0 feet

Location:

Tonawanda, New York

Logged By: Total Depth: Glenn M. May

Hole Designation:

Date Completed:

**Drilling Company:** 

SB-28 12/7/99

Advanced Cleanup Tech.

Direct Push Drilling Method: Sampling Method: Macro Core

Darth	·	Floreties		Sar	nple	
Depth (ft bgs)	Stratigraphic Description & Remarks	Elevation (ft amsl)	N U M	C O	N V	H N U
	Ground Surface	577.93	B E R	N T	A L U E	
16.0	16.0'-20.0': Interbedded zones of medium gray, fine to medium grained sand and silty clay. Silty clay seams are only 0.05' thick. Saturated. NATIVE.		5			0.0
20.0	20.0'-23.6': Sample same as above.	Sample sent to lab	6		}	0.0
	23.6'-23.9': Gravel of various sizes. NAPL odor detected but no sheen or NAPL observed. NATIVE.	554.43; Sample sent to lab				13.8
	23.9'-24.0': Reddish brown silty clay. Saturated. NATIVE.	554.03				0.0
	BOH=24.0' bgs.					

Notes:

Measuring Point Elevations May Change: Refer to Current Elevation Table

Grain Size

Water Found  $\nabla$ 



Former Gastown MGP Site Project Name:

Site Number:

915171

Location: Logged By: Tonawanda, New York

Glenn M. May

Total Depth: 24.0 feet

SB-29 Hole Designation:

Date Completed:

Drilling Company:

12/8/99 Advanced Cleanup Tech.

Drilling Method: Direct Push

Sampling Method: Macro Core

Stratigraphic Description & Remarks	Elevation (ft amsl)	N	С	N	1
		U M	0	v	H N U
Ground Surface	575.20	B E R	N T	A L U E	ł
0.0'-0.2': Asphalt.	575.20	1	1		0.0
0.2'-2.0': Reworked, yellow brown and reddish brown silty clay with rocks, brick, black ash, and orange and black mottling. Dry. FILL MATERIAL.					
2.0'-4.0': Gray silty clay with orange and black mottling and few pebbles. Cohesive and dense. Dry. NATIVE.	573.20				
4.0'-5.0': Gray silty clay with orange, black and white mottling. Cohesive, dense and slightly plastic. Trace NAPL. Dry to moist. NATIVE.		2			18.0
5.0'-8.0': Yellow brown, very fine grained sand with silt, some clay, and orange and gray mottling. NAPL observed. Dry. NATIVE.	570.20; Sample sent to lab				
8.0'-12.0': Interbedded zones of yellow brown, fine grained sand and gray silty clay. Sand seams become gray and fine to medium grained with depth. Sheen observed throughout sample but no NAPL observed. NATIVE.	1	3			4.3
12.0'-16.0': Sample same as above. No NAPL or sheen observed in sand but a sheen was observed in a 0.3' thick silty clay seam at bottom of sample. Saturated. NATIVE.		4			0.0
16.0'-19.8': Gray, medium grained sand. Sheen and small pockets of NAPL observed throughout sample. The bottom 0.3' of sample contains NAPL. Saturated. NATIVE.	Bottom 0.3' sent to lab	5		ì	5.3
19.8'-20.0': Gravel mixed with gray sand. Saturated. NATIVE.	555.40				
	<ul> <li>0.2'-2.0': Reworked, yellow brown and reddish brown silty clay with rocks, brick, black ash, and orange and black mottling. Dry. FILL MATERIAL.</li> <li>2.0'-4.0': Gray silty clay with orange and black mottling and few pebbles. Cohesive and dense. Dry. NATIVE.</li> <li>4.0'-5.0': Gray silty clay with orange, black and white mottling. Cohesive, dense and slightly plastic. Trace NAPL. Dry to moist. NATIVE.</li> <li>5.0'-8.0': Yellow brown, very fine grained sand with silt, some clay, and orange and gray mottling. NAPL observed. Dry. NATIVE.</li> <li>8.0'-12.0': Interbedded zones of yellow brown, fine grained sand and gray silty clay. Sand seams become gray and fine to medium grained with depth. Sheen observed throughout sample but no NAPL observed. NATIVE.</li> <li>12.0'-16.0': Sample same as above. No NAPL or sheen observed in sand but a sheen was observed in a 0.3' thick silty clay seam at bottom of sample. Saturated. NATIVE.</li> <li>16.0'-19.8': Gray, medium grained sand. Sheen and small pockets of NAPL observed throughout sample. The bottom 0.3' of sample contains NAPL. Saturated. NATIVE.</li> <li>19.8'-20.0': Gravel mixed with gray sand. Saturated.</li> </ul>	0.2'-2.0': Reworked, yellow brown and reddish brown silty clay with rocks, brick, black ash, and orange and black mottling. Dry. FILL MATERIAL.  2.0'-4.0': Gray silty clay with orange and black mottling and few pebbles. Cohesive and dense. Dry. NATIVE.  4.0'-5.0': Gray silty clay with orange, black and white mottling. Cohesive, dense and slightly plastic. Trace NAPL. Dry to moist. NATIVE.  5.0'-8.0': Yellow brown, very fine grained sand with silt, some clay, and orange and gray mottling. NAPL observed. Dry. NATIVE.  8.0'-12.0': Interbedded zones of yellow brown, fine grained sand and gray silty clay. Sand seams become gray and fine to medium grained with depth. Sheen observed throughout sample but no NAPL observed. NATIVE.  12.0'-16.0': Sample same as above. No NAPL or sheen observed in sand but a sheen was observed in a 0.3' thick silty clay seam at bottom of sample. Saturated. NATIVE.  16.0'-19.8': Gray, medium grained sand. Sheen and small pockets of NAPL observed throughout sample. The bottom 0.3' of sample contains NAPL. Saturated. NATIVE.  19.8'-20.0': Gravel mixed with gray sand. Saturated.  555.40	0.2'-2.0': Reworked, yellow brown and reddish brown silty clay with rocks, brick, black ash, and orange and black mottling. Dry. FILL MATERIAL.  2.0'-4.0': Gray silty clay with orange and black mottling and few pebbles. Cohesive and dense. Dry. NATIVE.  4.0'-5.0': Gray silty clay with orange, black and white mottling. Cohesive, dense and slightly plastic. Trace NAPL. Dry to moist. NATIVE.  5.0'-8.0': Yellow brown, very fine grained sand with silt, some clay, and orange and gray mottling. NAPL observed. Dry. NATIVE.  8.0'-12.0': Interbedded zones of yellow brown, fine grained sand and gray silty clay. Sand seams become gray and fine to medium grained with depth. Sheen observed throughout sample but no NAPL observed. NATIVE.  12.0'-16.0': Sample same as above. No NAPL or sheen observed in sand but a sheen was observed in a 0.3' thick silty clay seam at bottom of sample. Saturated. NATIVE.  16.0'-19.8': Gray, medium grained sand. Sheen and small pockets of NAPL observed throughout sample. The bottom 0.3' of sample contains NAPL. Saturated. NATIVE.  19.8'-20.0': Gravel mixed with gray sand. Saturated. 555.40	0.2'-2.0': Reworked, yellow brown and reddish brown silty clay with rocks, brick, black ash, and orange and black mottling. Dry. FILL MATERIAL.  2.0'-4.0': Gray silty clay with orange and black mottling and few pebbles. Cohesive and dense. Dry. NATIVE.  4.0'-5.0': Gray silty clay with orange, black and white mottling. Cohesive, dense and slightly plastic. Trace NAPL. Dry to moist. NATIVE.  5.0'-8.0': Yellow brown, very fine grained sand with silt, some clay, and orange and gray mottling. NAPL observed. Dry. NATIVE.  8.0'-12.0': Interbedded zones of yellow brown, fine grained sand and gray silty clay. Sand seams become gray and fine to medium grained with depth. Sheen observed throughout sample but no NAPL observed. NATIVE.  12.0'-16.0': Sample same as above. No NAPL or sheen observed in sand but a sheen was observed in a 0.3' thick silty clay seam at bottom of sample. Saturated. NATIVE.  16.0'-19.8': Gray, medium grained sand. Sheen and small pockets of NAPL observed throughout sample. The bottom 0.3' of sample contains NAPL. Saturated. NATIVE.  19.8'-20.0': Gravel mixed with gray sand. Saturated. 555.40	0.2'-2.0': Reworked, yellow brown and reddish brown silty clay with rocks, brick, black ash, and orange and black mottling. Dry. FILL MATERIAL.  2.0'-4.0': Gray silty clay with orange and black mottling and few pebbles. Cohesive and dense. Dry. NATIVE.  4.0'-5.0': Gray silty clay with orange, black and white mottling. Cohesive, dense and slightly plastic. Trace NAPL. Dry to moist. NATIVE.  5.0'-8.0': Yellow brown, very fine grained sand with silt, some clay, and orange and gray mottling. NAPL observed. Dry. NATIVE.  8.0'-12.0': Interbedded zones of yellow brown, fine grained sand and gray silty clay. Sand seams become gray and fine to medium grained with depth. Sheen observed throughout sample but no NAPL observed. NATIVE.  12.0'-16.0': Sample same as above. No NAPL or sheen observed in sand but a sheen was observed in a 0.3' thick silty clay seam at bottom of sample. Saturated. NATIVE.  16.0'-19.8': Gray, medium grained sand. Sheen and small pockets of NAPL observed throughout sample. The bottom 0.3' of sample contains NAPL. Saturated. NATIVE.  19.8'-20.0': Gravel mixed with gray sand. Saturated. 555.40

Notes:

Measuring Point Elevations May Change: Refer to Current Elevation Table

Grain Size

Water Found  $\nabla$ 

Static Level <u>\(\neq\)</u>



Project Name: Site Number: Former Gastown MGP Site

915171

Location:

Tonawanda, New York

Logged By: Total Depth: Glenn M. May

Glenn M. N 24.0 feet Hole Designation:

Date Completed:

Drilling Company:

SB-29

12/8/99

Advanced Cleanup Tech.

Drilling Method: Sampling Method: Direct Push Macro Core

Depth	Stratigraphic Description & Remarks	Elevation (ft amsl)	N	Sar c o	nple N	H
(ft bgs)	(ft :		U M B	U N	V	ע ע
	Ground Surface	575.20	E R	τ	L U E	
20.0	20.0'-24.0': Sample appears to be fall-in. Large stones in shoe suggestive of gravel zone. Reddish brown silty clay observed on outside of sampler. NATIVE.		6	1	_	NM
	BOH=24.0' bgs.	,				1
·						
				ļ		

Notes:

Measuring Point Elevations May Change: Refer to Current Elevation Table

Grain Size

Water Found <u>∇</u>

Project Name: Site Number:

Former Gastown MGP Site

915171

Location: Logged By: Tonawanda, New York

Glenn M. May Total Depth: 32.0 feet

Hole Designation:

SB-30 Date Completed:

**Drilling Company:** 

12/6/99 Advanced Cleanup Tech.

Drilling Method: Sampling Method: Direct Push Macro Core

Depth		Elevation		Sample				
(ft bgs)	Stratigraphic Description & Remarks	(ft amsl)	N U M	C O U	N V	H N U		
	Ground Surface	576.13	B E R	N T	A L U E			
0.0	0.0'-0.6': Crushed stone from parking lot.	576.13	1			0.		
	0.6'-1.8': Black ash containing coal and slag. Moist. FILL MATERIAL.							
	1.8'-4.0': Light brown silty clay with black mottling, small pebbles and a few pieces of coal. Wood (railroad tie?) at end of sample. Dry to moist. FILL MATERIAL							
4.0	4.0'-4.7': Sample same as above (1.8'-4.0' bgs).		2			0.		
	4.7'-5.0': Ash containing large pieces of coal. Moist. FILL MATERIAL.							
	5.0'-6.0': Gray clay with orange and black mottling and coal pieces near top of sample. Moist. FILL MATERIAL.							
	6.0'-6.5': Wood.							
	6.5'-8.0': Gray clayey silt with orange mottling. Layered. Moist. NATIVE.	569.63						
8.0	8.0'-11.5': Sample same as above with some zones more clayey than others. Moist. NATIVE.		3			0.0		
	11.5'-12.0': Very fine grained sand with orange mottling. Dry. NATIVE.	564.63		•				
12.0	12.0'-16.0': Interbedded zones of gray, fine grained sand and gray clay. Clay seams are moist; sand seams are saturated. NATIVE.		4			0.0		
16.0	16.0'-20.0': Sample appears to be fall-in. Poor recovery.		5			0.		

Notes:

Measuring Point Elevations May Change: Refer to Current Elevation Table

Grain Size

Water Found <u>∇</u>



Project Name: Former Gastown MGP Site

Site Number: 9

915171

Tonawanda, New York

Logged By: Total Depth:

Location:

Glenn M. May 32.0 feet

Hole Designation:

SB-30

Date Completed:

12/6/99

Drilling Company: Drilling Method:

Advanced Cleanup Tech. Direct Push

Sampling Method: Macro Core

Depth		Elevation		Sar	nple	
(ft bgs)	Stratigraphic Description & Remarks	(ft amsl)	N U M B	C O U N	N V	H N U
	Ground Surface	576.13	E R	T	A L U E	
20.0	20.0'-24.0': Gray clay. Saturated. Poor recovery. NATIVE.	Sample sent to lab	6			0.0
24.0	24.0'-28.0': Brownish gray to gray clay. Bottom of sample is reddish brown to gray clay with rounded rock fragments. Saturated. Poor recovery. NATIVE.		7	i.		0.0
28.0	28.0'-32.0': Reddish brown silty clay with many small rounded pebbles and many larger, rounded to subrounded rock fragments. Very dense. Dry. NATIVE.		8			NM
	BOH=32.0' bgs.					
'						
	·					
			-			

Notes:

Measuring Point Elevations May Change: Refer to Current Elevation Table

Grain Size

Water Found <u>▽</u>

Static Level <u>\(\neq\)</u>

**Project Name:** Former Gastown MGP Site

Site Number:

915171

Tonawanda, New York

Logged By: Total Depth:

Location:

Glenn M. May 26.0 feet

Hole Designation:

Date Completed:

**Drilling Company:** 

SB-31 12/6/99

Advanced Cleanup Tech.

Direct Push Drilling Method: Sampling Method: Macro Core

Depth		Elevation		Sar	nple	
(ft bgs)	Stratigraphic Description & Remarks	(ft amsl)	N U M	COU	N V	H N U
	Ground Surface	576.21	B E R	N T	A L U E	
0.0	0.0'-0.8': Crushed stone from parking lot.	576.21	1			0.0
	0.8'-2.0': Reworked yellow brown, fine grained sand with some silt and clay, and many large, subrounded pebbles near bottom of sample. Dry. FILL MATERIAL.					
	2.0'-4.0': Yellow brown clayey silt with rusty brown and black mottling, some rootlets and a few pieces of coal (carry down?). Moist. NATIVE?	574.21				
4.0	4.0'-6.4': Yellow brown clayey silt with rusty brown, brown and black mottling near top of sample. Silty clay becomes more gray with depth and contains orange mottling. Moist. NATIVE.		2			0.0
,	6.4'-8.0': Gray, fine grained sand with silt, clay and orange mottling. Moist. NATIVE.	569.81				
8.0	8.0'-12.0': Interbedded zones of gray, fine grained sand and orange mottled, gray silty clay. The sand become coarser grained at bottom of sample. Saturated. NATIVE.		3			0.0
12.0	12.0'-15.1': Gray, medium grained sand with yellow brown mottling. Grades into brown sand with gray mottling at depth. Saturated. NATIVE.		4	    - 		0.0
	15.1'-15.8': Gray, fine grained sand with some clay seams. Saturated. NATIVE.					
	15.8'-16.0': Medium gray, medium grained sand with a coal tar odor. Saturated. NATIVE.	Sample sent to lab	! !			1.2
16.0	16.0'-20.0': Gray, medium grained sand with many pebbles and rock fragments. Bottom of sample is dark gray and contains NAPL. Saturated. NATIVE.		5			0.0

Notes:

Measuring Point Elevations May Change: Refer to Current Elevation Table

Grain Size

Water Found  $\nabla$ 



Project Name: Site Number:

Former Gastown MGP Site

915171

Location:

Tonawanda, New York

Logged By: Total Depth: Glenn M. May

26.0 feet

Hole Designation:

Date Completed:

**Drilling Company:** 

Advanced Cleanup Tech.

Drilling Method: Sampling Method:

Direct Push Macro Core

SB-31 12/6/99

ъ				Sample		
Depth (ft bgs)	Stratigraphic Description & Remarks	Elevation (ft amsl)	N U M B	C O U N	N V	H N U
	Ground Surface	576.21	E R	Ť	A L U E	
20.0	20.0'-23.4': Gray, medium grained sand. Sheen observed throughout sample but only a trace of NAPL observed. Saturated. NATIVE.		6			30.0
	23.4'-24.0': Gravel mixed with sand. Staining and NAPL observed. Saturated. NATIVE.	552.81; Sample sent to lab			·.	1330
24.0	24.0'-24.3': Sample same as above.		7			19.8
	24.3'-26.0': Reddish brown clay with some pebbles and gray mottling. Very plastic. Saturated. Becomes less saturated, more dense and contains more pebbles at bottom of sample. NATIVE.	551.91; Sample sent to lab				
	BOH=26.0' bgs.					
	·					1
	•					
			2			

Notes:

Measuring Point Elevations May Change: Refer to Current Elevation Table

Grain Size

Water Found <u>∇</u>



Project Name: Site Number:

Former Gastown MGP Site

915171

Location: Logged By: Total Depth: Tonawanda, New York

Glenn M. May 28.0 feet

Hole Designation:

Date Completed:

SB-32 12/6/99

**Drilling Company:** 

Advanced Cleanup Tech.

**Drilling Method:** Direct Push Sampling Method:

Macro Core

Depth		Elevation	Sample				
(ft bgs)	Stratigraphic Description & Remarks	(ft amsl)	N U M	C 0	N V A	H N U	
	Ground Surface	575.32	B E R	N T	L U E		
0.0	0.0'-0.4': Crushed stone from parking lot.	575.32	1			0.0	
	0.4'-1.3': Black ash with coal and rock fragments. Moist. FILL MATERIAL.						
	1.3'-1.7': Yellow brown clayey silt with rusty brown and gray mottling. Moist. NATIVE.	574.02				_	
	1.7'-4.0': Gray silty clay with black mottling and some pebbles. Moist. NATIVE.						
4.0	4.0'-7.3': Interbedded zones of fine grained sand and silty clay with orange mottling. Moist. NATIVE.	571.32	2			0.0	
	7.3'-8.0': Gray clay with rusty brown and dark gray mottling. Saturated. NATIVE.	·					
8.0	8.0'-10.0': Sample same as above.		3			0.0	
	10.0'-10.6': Dark brown clayey silt with shell fragments. Dry. NATIVE.						
	10.6'-12.0': Gray clay with some dark brown and rusty brown mottling near top of sample. Sightly plastic. Moist. NATIVE.			-			
12.0	12.0'-16.0': Gray, fine grained sand with some clay, silt and wood. Saturated. NATIVE.		4			0.0	
16.0	16.0'-20.0': Interbedded zones of gray, fine grained sand and gray clay with a few shells. Saturated. NATIVE.		5			0.0	

Notes:

Measuring Point Elevations May Change: Refer to Current Elevation Table

Grain Size

Water Found  $\nabla$ 



Project Name:

Former Gastown MGP Site

Site Number:

915171

Location:

Tonawanda, New York

Logged By:
Total Depth:

Glenn M. May 28.0 feet

Hole Designation:

Date Completed:

SB-32 12/6/99

w York

12/0/3

Drilling Company:

Advanced Cleanup Tech.

Drilling Method: Direct Push
Sampling Method: Macro Core

1 otal Depth: 28.0 feet Sampling Method: Macro Core								
Depth	Stratigraphic Description & Demarks	Elevation			nple			
(ft bgs)	Stratigraphic Description & Remarks	(ft amsl)	U M	0 U	v	H N U		
	Ground Surface	575.32	B E R	N T	A L U E			
20.0	20.0'-23.8': Yellow brown clay. Saturated. Poor recovery. NATIVE.	Sample sent to lab	6			0.0		
	23.8'-24.0': Reddish brown and gray clay. Saturated. NATIVE.	551.52				)   		
24.0	24.0'-28.0': Difficult to log due to poor recovery. Reddish brown silty clay observed on outside of sampler. NATIVE.		7			0.0		
	BOH=28.0' bgs.							
}								

Notes:

Measuring Point Elevations May Change: Refer to Current Elevation Table

Grain Size

Water Found <u>∇</u>

Project Name: Site Number:

Former Gastown MGP Site

915171

Location:

Tonawanda, New York

Logged By: Glenn M. May Total Depth: 16.0 feet

Hole Designation:

Date Completed:

SB-33 12/7/99

**Drilling Company:** 

**Drilling Method:** 

Advanced Cleanup Tech. Direct Push

Macro Core Sampling Method:

Depth		Elevation	Sample				
(ft bgs)	Stratigraphic Description & Remarks	(ft amsl)	N U M	C 0 U	N V	H N U	
	Ground Surface	574.03	B E R	N T	A L U E		
0.0	0.0'-0.4': Brown topsoil with rootlets and rock fragments.  Moist.	_	1			0.0	
	0.4'-0.8': Yellow brown, fine grained sand with rock and coke fragments. Moist. FILL MATERIAL.	573.63				_	
	0.8'-4.0': Gray brown, fine grained sand with orange mottling. Moist. NATIVE.	573.23					
4.0	4.0'-7.8': Sample same as above with silty clay seams. Becomes more gray and less mottled with depth. Moist. NATIVE.		2			0.0	
	7.8'-8.0': Black clay with shells. Moist. NATIVE.						
8.0	8.0'-12.0': Sample same as above for first 0.3'. Sample then grades into a plastic, very cohesive, greenish gray clay with orange mottling. Bottom of sample becomes more brown and contains shells. Moist. NATIVE.	Sample sent to lab	3			0.1	
12.0	12.0'-16.0': Gray, fine grained sand with gray clay seams. Saturated. NATIVE.		4			0.0	
	BOH=16.0' bgs.						
						igsquare	

Notes:

Measuring Point Elevations May Change: Refer to Current Elevation Table

Grain Size

Water Found <u>∇</u>



**Project Name:** 

Former Gastown MGP Site

Hole Designation:

SB-34

Site Number: Location:

915171

Date Completed:

12/8/99

Logged By:

Tonawanda, New York

**Drilling Company:** 

Advanced Cleanup Tech.

Glenn M. May

**Drilling Method:** 

Direct Push

Total Depth: 20.0 feet Sampling Method: Macro Core

Depth		Elevation	Sample				
(ft bgs)	Stratigraphic Description & Remarks	(ft amsl)	N U M	C O U	N V	H N U	
	Ground Surface	574.72	B E R	N T	A L U E		
0.0	0.0'-1.0': Black topsoil with brown mottling, roots, rootlets and some coal. Moist.		1			0.0	
	1.0'-4.0': Gray silty clay with extensive orange mottling and some rootlets. Dry to Moist. NATIVE.	573.72				    -  -  -	
4.0	4.0'-5.5': Sample same as above.		2			0.0	
	5.5'-8.0': Gray, fine grained sand with extensive orange mottling, some silt and clay, and a few silty clay seams. Saturated. NATIVE.						
8.0	8.0'-11.6': Interbedded zones of gray, fine to medium grained sand and gray silty clay with extensive orange mottling. Saturated. NATIVE.		3			0.0	
	11.6'-12.0': Sample same as above but more medium gray in color and unmottled.						
12.0	12.0'-16.0': Gray, fine grained sand with a 0.4' seam that contains rusty orange mottling. NAPL observed in bottom 0.2' of sample. Saturated. NATIVE.	Bottom 0.2' sent to lab	4			194	
16.0	16.0'-19.2': Sample same as above. Sheen observed throughout sample with small pockets of NAPL. Saturated. NATIVE.	Sample sent to lab	5			183	
	19.2'-20.0': Gravel of various sizes with only a trace of NAPL. Saturated. NATIVE.	555.52				30.7	
	BOH=20.0' bgs.						

Notes:

Measuring Point Elevations May Change: Refer to Current Elevation Table

Grain Size

Water Found  $\nabla$ 

Project Name:

Former Gastown MGP Site

Hole Designation:

SB-35

Site Number:

915171

Date Completed:

12/8/99

Location: Logged By: Tonawanda, New York Glenn M. May

**Drilling Company:** 

Advanced Cleanup Tech.

Total Depth: 20.0 feet

Drilling Method: Sampling Method: Direct Push Macro Core

Depth		Elevation	Sample				
(ft bgs)	Stratigraphic Description & Remarks	(ft amsl)	N U M	C 0 U	N V	H N U	
	Ground Surface	574.52	B E R	N T	A L U E		
0.0	0.0'-0.9': Topsoil with rootlets. Glass and coal near bottom of sample. Moist. FILL MATERIAL.		1			0.0	
	0.9'-3.5': Gray silty clay with extensive orange and black mottling. Moist. NATIVE.	573.62					
	3.5'-4.0': Yellow brown, very fine grained sand with clay and silt. Saturated. NATIVE.	571.02					
4.0	4.0'-8.0': Interbedded zones of yellow brown, very fine grained sand and thin (0.1') seams of gray silty clay with orange mottling. Sand seams become gray with depth and contain orange mottling. Saturated. NATIVE.		2			0.0	
8.0	8.0'-11.1': Sample same as above.		3			0.0	
	11.1'-12.0': Dark gray sand without mottling. Saturated. NATIVE.						
12.0	12.0'-16.0': Sample same as above with a sheen observed throughout. Trace of NAPL at 14.5' bgs with the bottom 0.4' of sample saturated with NAPL. Saturated. NATIVE.	Bottom 0.4' sent to lab	4			38.4	
16.0	16.0'-19.3': Sample same as above with NAPL observed throughout. Saturated. NATIVE.	Sample sent to lab	5			321	
	19.3'-20.0': Gravel of various sizes, compact, no NAPL. Saturated. NATIVE.	555.22					
	BOH=20.0' bgs.						

Notes:

Measuring Point Elevations May Change: Refer to Current Elevation Table

Grain Size

Water Found  $\nabla$ 

Project Name: Site Number:

Former Gastown MGP Site

Hole Designation:

SB-36

Location:

915171 Tonawanda, New York Date Completed:

12/8/99 Advanced Cleanup Tech.

Logged By:

Glenn M. May

**Drilling Company: Drilling Method:** 

Direct Push

Total Depth:

20.0 feet

Sampling Method:

Macro Core

Depth		Elevation	Sample					
(ft bgs)	Stratigraphic Description & Remarks	(ft amsl)	N U M	0 C	N V	H N U		
	Ground Surface	574.28	B E R	T	A L U E			
0.0	0.0'-0.3': Topsoil with rootlets. Moist.		1			0.0		
	0.3'-2.0': Dark brown subsoil with orange mottling, few pebbles and some rootlets. Moist. NATIVE.		<u> </u>   					
	2.0'-4.0': Gray silty clay with extensive orange mottling. Dry to moist. NATIVE.	572.28						
4.0	4.0'-4.4': Sample same as above.		2		1	0.0		
	4.4'-8.0': Interbedded zones of gray, fine grained sand and gray silty clay with extensive orange mottling throughout. Sand saturated; silty clay moist. NATIVE.	569.88						
8.0	8.0'-11.2': Gray, fine grained sand with extensive orange mottling. Saturated. NATIVE.		3			0.0		
	11.2'-12.0': Dark gray, fine grained sand without mottling. Saturated. NATIVE.	,						
12.0	12.0'-16.0': Sample same as above.		4			0.0		
16.0	16.0'-18.3': Brown, medium to coarse grained sand. Saturated. NATIVE.	Sample sent to lab	5			0.0		
·	18.3'-18.8': Gravel of various sizes, angular. Saturated. NATIVE.	555.98						
	18.8'-20.0': Reddish brown silty clay. Very plastic and cohesive. Saturated. NATIVE.	555.48						
	BOH=20.0' bgs.							
		<u> </u>						

Notes:

Measuring Point Elevations May Change: Refer to Current Elevation Table

Grain Size

Water Found ∇

**Project Name:** Site Number:

Former Gastown MGP Site

915171

Location:

Tonawanda, New York

Glenn M. May

Hole Designation:

Date Completed:

**Drilling Company:** Drilling Method:

12/9/99 Advanced Cleanup Tech.

Direct Push

SB-37

Logged By: Total Depth: 20.0 feet Sampling Method: Macro Core

Depth	Stratigraphic Description & Remarks  Ground Surface	Elevation (ft amsl) 574.69	Sample			
(ft bgs)			N U M B E R	C O U N T	N V A L U E	H N U
0.0	0.0'-0.7': Crushed stone from parking lot.	574.69	1			0.0
	0.7'-2.0': Reworked black silty clay with coke and many rocks fragments of various sizes. Dry. FILL MATERIAL.					
	2.0'-4.0': Gray silty clay with orange and dark brown mottling, few rock fragments and some rootlets. Moist. NATIVE.	572.69				
4.0	4.0'-7.6': Sample same as above with mostly orange mottling, although some white and black mottling are observed. Moist. NATIVE.		2			0.0
	7.6'-8.0': Gray, fine grained sand with extensive orange mottling. Saturated. NATIVE.	567.09				
8.0	8.0'-12.0': Interbedded zones of gray, fine grained sand and thin (0.1') seams of gray silty clay with extensive orange mottling that decreases with depth. Saturated. NATIVE.		3			0.0
12.0	12.0'-14.8': Sample same as above with fewer silty clay seams. Saturated. NATIVE.		4			0.0
	14.8'-15.8': Interbedded zones of dark gray, fine grained sand and dark gray silty clay. The silty clay seams are approximately 0.4' thick. Saturated. NATIVE.					
	15.8'-16.0': Gray gravel of various sizes. Saturated. NATIVE.	558.89				
16.0	16.0'-20.0': No recovery. Reddish brown silty clay observed on shoe of sampler. NATIVE.		5			NM
	BOH=20.0' bgs.					

Notes:

Measuring Point Elevations May Change: Refer to Current Elevation Table

Grain Size

Water Found <u>∇</u>



Project Name:

Former Gastown MGP Site

Hole Designation:

SB-38

Site Number:

915171

Date Completed:

12/9/99

Location:

Tonawanda, New York

**Drilling Company:** 

Advanced Cleanup Tech.

Logged By:

**Drilling Method:** 

Direct Push

Glenn M. May Sampling Method: Total Depth: 24.0 feet

Macro Core

Depth (ft bgs)	Stratigraphic Description & Remarks	Elevation (ft amsl)	Sample			
			N U M	C 0 บ	N V	H N U
	Ground Surface		B E R	T	A L U E	
0.0	0.0'-0.6': Crushed stone from parking lot.	576.81	1			0.0
	0.6'-1.0': Brown sand with many rock fragments of various sizes. Dry. FILL MATERIAL.					1
	1.0'-1.4': Black ash with slag and coke fragments. Dry. FILL MATERIAL.					
	1.4'-1.8': Light brown, fine grained sand. Dry. FILL MATERIAL.					
	1.8'-4.0': Yellow brown silty clay with few sand seams, many rock fragments, and a few pieces of slag. Moist. FILL MATERIAL.					
4.0	4.0'-4.6': Brown, fine grained sand with slag, ash, coal and rock fragments. Dry. FILL MATERIAL.		2			0.0
	4.6'-5.2': Interbedded zones of brown to yellow brown, fine grained sand and silty clay with orange mottling. Saturated. NATIVE.					
	5.2'-8.0': Gray silty clay with extensive black and brown mottling. Cohesive and compact. Moist. NATIVE.	571.61		ľ		
8.0	8.0'-9.2': Sample same as above. Mottling decreases with depth. Saturated. NATIVE.		3			0.0
	9.2'-12.0': Interbedded zones of gray, fine grained sand and silty clay. Sand seams contain a high clay content and are moist, not saturated. NATIVE.	567. <b>6</b> 1				
12.0	12.0'-14.9': Dark gray silty clay with gravel seams. Saturated. NATIVE.		4			0.0

Notes:

Measuring Point Elevations May Change: Refer to Current Elevation Table

Grain Size

Water Found  $\nabla$ 

## NYSDEC - Region 9 - Division of Environmental Remediation Stratigraphic Log (Overburden)

**Project Name:** Site Number:

Former Gastown MGP Site

915171

24.0 feet

Location:

Total Depth:

Grain Size

Tonawanda, New York

Logged By: Glenn M. May Hole Designation:

Date Completed:

SB-38

12/9/99

**Drilling Company:** 

Advanced Cleanup Tech.

Static Level <u>\(\neglige\)</u>

Drilling Method: Sampling Method: Direct Push Macro Core

Depth		Elevation	Sample					
(ft bgs)	Stratigraphic Description & Remarks	(ft amsl)	N U M	0 U	N V	H N U		
	Ground Surface	576.81	B E R	N T	A L U E			
12.0	14.9'-15.8': Medium gray silty clay with orange mottling. Cohesive and very plastic. Moist. NATIVE.		4			0.0		
	15.8'-16.0': Gray sand. Saturated. NATIVE.							
16.0	16.0'-20.0': Interbedded zones of gray, fine grained sand and thin (0.1') seams of silty clay. Bottom of sample is more reddish brown in color. Saturated. NATIVE.		5			0.0		
20.0	20.0'-22.7': Sample same as above (reddish brown, fine grained sand). Saturated. NATIVE.	Sample sent to lab	6			0.2		
ا	22.7'-23.7': Gravel of various sizes. Moist but not saturated. NATIVE.	554.11				4.1		
	23.7'-24.0': Reddish brown silty clay. Saturated. NATIVE.	553.11						
	BOH=24.0' bgs.							
	·							

Water Found <u>∇</u>

# NYSDEC - Region 9 - Division of Environmental Remediation Stratigraphic Log (Overburden)

**Project Name:** 

Former Gastown MGP Site

Site Number: Location:

915171

Tonawanda, New York

Logged By: Total Depth: Glenn M. May

24.0 feet

Hole Designation:

SB-39

**Date Completed:** 

12/9/99

**Drilling Company:** 

Advanced Cleanup Tech.

**Drilling Method:** 

Direct Push

Sampling Method: Macro Core

Depth		Elevation	Sample				
(ft bgs)	Stratigraphic Description & Remarks	(ft amsl)	N U M	C 0 U	N V	H N U	
	Ground Surface	577.09	B E R	T	A L U E		
0.0	0.0'-0.8': Crushed stone from parking lot.	577.09	1			NM	
	0.8'-1.0': Brown silty clay with many rock fragments. FILL MATERIAL.			   			
	1.0'-1.1': Black ash with small brick fragments. Moist. FILL MATERIAL.						
	1.1'-4.0': Tan ash with brown and green mottling. Moist to Saturated (bottom of sample). FILL MATERIAL.	Sample sent to lab				0.0	
4.0	4.0'-4.2': Tan ash same as above.		2			0.0	
	4.2'-8.0': Gray silty clay with black mottling throughout except for a zone from 5.4' to 6.4' bgs, which is mottled orange. Petroleum contamination observed at 6.4' bgs. A sand seam observed from 7.1' to 7.4' bgs with a strong petroleum odor. A sand seam was also observed at bottom of sample. Moist. NATIVE.	572.89; Sample sent to lab (6.4'-9.0')				11.5	
8.0	8.0'-11.6': Interbedded zones of gray, fine to medium grained sand and thin (0.1') seams of gray silty clay. Extensive black mottling and a strong petroleum odor to 9.0' bgs. Sheen observed throughout sample. Saturated. NATIVE.	569.09	3			40.0 2.9*	
12.0	11.6'-12.0': Gray sand with brown mottling. Saturated. NATIVE.		4		'	3.6	
12.0	12.0'-15.0': Sample same as above.		7			5.0	
	15.0'-16.0': Gray, medium grained sand. Saturated. NATIVE.						
	* soils below petroleum contamination zone.						
	M ' D' D' A CI D C A C	. E1	T 11			Ţ	

Notes:

Measuring Point Elevations May Change: Refer to Current Elevation Table

Grain Size (

Water Found  $\nabla$ 

Static Level ▼

# NYSDEC - Region 9 - Division of Environmental Remediation Stratigraphic Log (Overburden)

Project Name:

Former Gastown MGP Site

Hole Designation:

Drilling Company:

SB-39

Site Number:

915171

Date Completed:

12/9/99

Location:

Tonawanda, New York

Advanced Cleanup Tech.

Logged By: Total Depth:

Notes:

Grain Size

Glenn M. May 24.0 feet

Drilling Method: Direct Push
Sampling Method: Macro Core

			Sample				
Depth (ft bgs)	Stratigraphic Description & Remarks	Elevation (ft amsl)	N U M	C 0 U	N V	H N U	
	Ground Surface	577.09	B E R	N T	A L U E		
16.0	16.0'-20.0': Sample same as above.	,	5		1	3.8	
20.0	20.0'-23.1': Sample same as above.		6			NM	
1	23.1'-24.0': Gravel of various sizes. Saturated. NATIVE.	553.99				1 4141	
	24.0': Reddish brown, silty clay observed on shoe of sampler. NATIVE.	553.09					
	BOH=24.0' bgs.						
		ļ.					
					I		
1							
,							

Measuring Point Elevations May Change: Refer to Current Elevation Table

Water Found  $\nabla$ 

Static Level ▼



# MONITORING WELL LOG

Project Name: Site Number:

Former Gastown MGP Site

915171

Location:

Tonawanda, New York

Screen Type: Screen Diameter: **PVC** 1 inch

Screen Length:

15 feet

Hole Designation:

Date Completed: 12/7/99 Advanced Cleanup Tech.

**Drilling Company:** 

Casing Type:

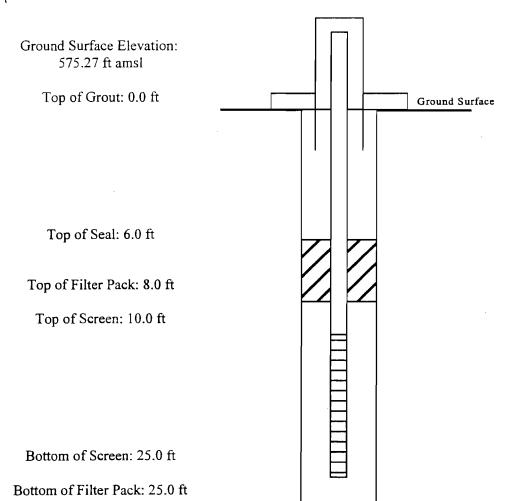
Casing Diameter: Total Depth:

Not Applicable Not Applicable

25.0 feet

MW-27

Top of Riser Elevation: 575.17 ft amsl





# MONITORING WELL LOG

Project Name:

Former Gastown MGP Site

Site Number:

915171

Location:

Tonawanda, New York

Screen Type: Screen Diameter: PVC 1 inch

Screen Length:

15 feet

Hole Designation:

MW-34 Date Completed: 12/8/99

**Drilling Company:** 

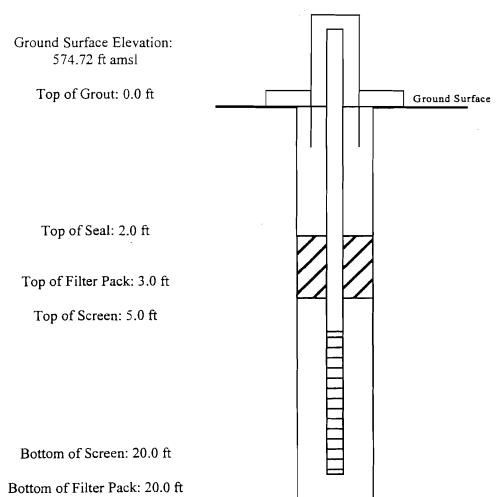
Advanced Cleanup Tech.

Casing Type: Casing Diameter: Not Applicable Not Applicable

Total Depth:

20.0 feet

Top of Riser Elevation: 574.56 ft amsl





# MONITORING WELL LOG

Project Name:

Former Gastown MGP Site

Site Number:

915171

Location:

Tonawanda, New York

Screen Type: Screen Diameter: **PVC** 1 inch

Screen Length:

15 feet

Hole Designation:

MW-35

**Date Completed:** 

12/8/99

**Drilling Company:** 

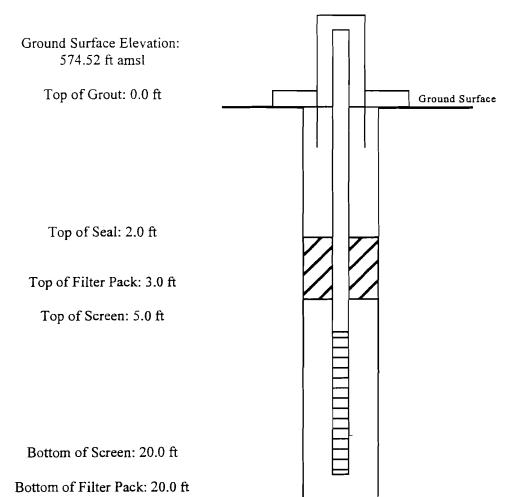
Advanced Cleanup Tech.

Casing Type: Casing Diameter: Not Applicable Not Applicable

Total Depth:

20.0 feet

Top of Riser Elevation: 574.31 ft amsl





# MONITORING WELL LOG

Project Name:

Former Gastown MGP Site

Site Number:

915171

Location:

Tonawanda, New York

Screen Type: Screen Diameter: PVC 1 inch

Screen Length:

15 feet

Casing Diameter:

Hole Designation: MW-36

Date Completed:

12/8/99

**Drilling Company:** 

Advanced Cleanup Tech.

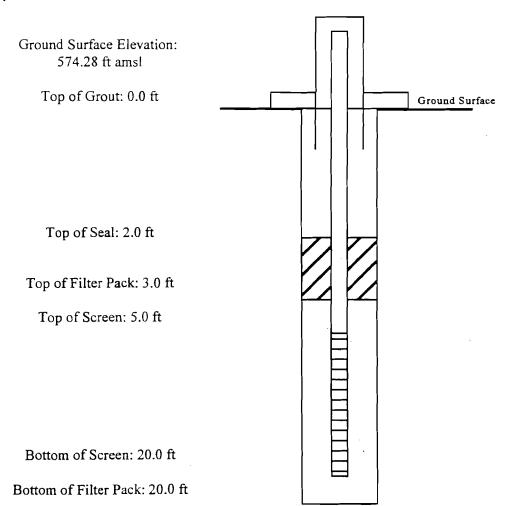
Casing Type:

Not Applicable Not Applicable

Total Depth:

20.0 feet

Top of Riser Elevation: 574.13 ft amsl





# **MONITORING WELL LOG**

Project Name: Site Number: Former Gastown MGP Site

915171

Location:

713171 T

Location.

Tonawanda, New York

Screen Type: Screen Diameter: PVC 1 inch

Screen Length:

7 feet

Hole Designation:

MW-39

Date Completed:

12/9/99

**Drilling Company:** 

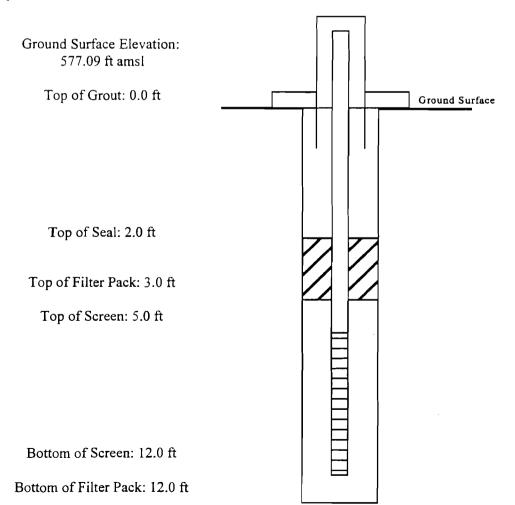
Advanced Cleanup Tech.

Casing Type: Casing Diameter: Not Applicable Not Applicable

Total Depth:

12.0 feet

Top of Riser Elevation: 576.85 ft amsl



## **APPENDIX C**

TEST PIT LOGS AND PHOTOGRAPHS

Outside holder:

0-2.5' Fill material (gravel, crushed stone, brick, sand clay) Slight odor, no PID

reading.

2.5-6.5' Silty clay

6.5-8.5' Silty sand, water seepage at 8.5'

Inside holder:

0-3'1" Fill material (gravel, crushed stone, brick, sand clay) Slight odor, no PID

reading.

Holder foundation at 1.5'

Holder Floor at 3' 1"

TP-2

0-3' Fill (sand, gravel, brick, asphalt, and coal). PID 30.3ppm

3' Thin tar seam, some water perched above.

3.5-5' Silty clay. Coal tar at 4'

Soil w/ fuel oil smell at 1', scattered tarry substance.

Edge of holder wall at 1.5'

#### TP-3

0-14" cover (sand and gravel)

14-24" Fill consists of large stone, gravel, brick and asphalt.

24"-36" Stone

36"-48" Sand

48"-60" Clay

Total depth 5', length 15'

Foundation wall at 18"

3" thick layer of coal tar found inside holder foundation

Floor under entire pit to foundation wall at 3.5 feet.

Slight sheen noticed on water coming off pile





TP-3

0-31 Fill 3'-5.5' Clay

Fill - sand and gravel, stone, asphalt pieces, cement, garbage, C&D Water at 4 feet Floor of holder at 5.5' Small layer of tar on floor of holder. Depth 5.5', length 23'

#### TP-5

0-1' Fill

1'-7' Clinker/slag fill

Curved brick wall encountered at 1' Metal riveted tank opn inside of brick wall at 2' Fill material inside holder mostly slag and clinker Water at 7'

Pieces of purifier waste found inside holder (green, sulfur smell)



0 - 2' Sand and gravel fill

2' - 7' Clinker, slag, and waste material

Exposed brick wall at 4'
Water at 7'
Fill is mostly slag and clinker with other wastes
Retaining wall seems to extend below water table



0 - 1' Sand and gravel fill

1' - 3' Sandy fill

3' - 6.5'Clay with weathered coal tar (P5150004.JPG)

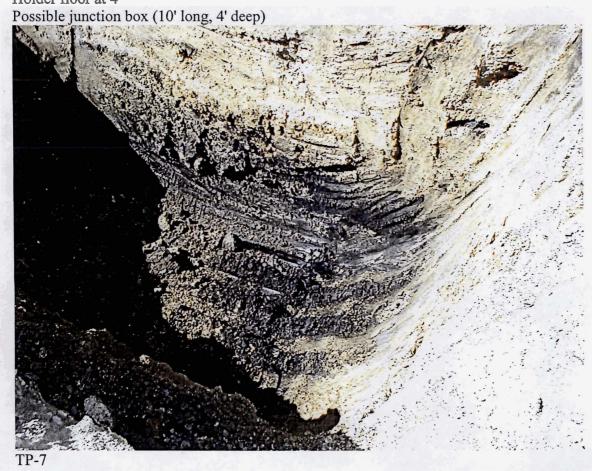
Pieces of coke (?), purifier waste (green, but no prominent odor), Small amount of hardened coal tar found at 4' (P5150005.JPG) Water at 6.5'
Found bell end of concrete pipe coal on floor of holder.
Weathered coal tar appears to run along pipe.

#### TP-7a

0- 2' Fill

2' - Clinker, slag, waste material

Top of foundation at 1' Small 2" pipe capped w/ check valve at 2' Holder floor at 4'



TP-8	
0-3.5'	cinder, sand, brown to black fill
3.5 - 10'	Blue-green clay
10 - 10.5'	Brown silty clay
10.5-11'	Blue-grey silty clay. Mottled.

Strong naphthalene odor from first scrape of bucket No significant PID readings 2" pipe found inside wood cylinder wrapped with wire (insulator?)

TP-9	
0-3.5'	Dark brown to black fill. Heavy staining, strong odor, but no product.
3.5-71	Silty clay

Clay pipe found, no outlet 1.5' Plugged pipe found 10.5' from wall of building. Top of pipe 3.5' below Small area of possible fuel impacted oil. 45.5 ppm max on PID. Large amount of refractory material. Yellow brick with round holes. Some thick tar remaining (50 ppm max on PID). Possible site of an old coke oven.



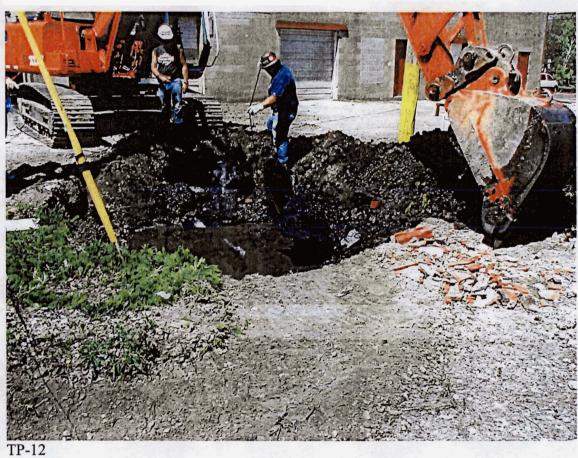
TP-10 Shallow test pit to locate outer edge of large holder

Shallow pit encountering large amounts of construction debris (Building foundation, lead pipes (3 10"pipes running to south). Smell of coal tar, but no product observed.

Lead pipe blanked off, coal tar smell, PID-11.4 ppm inside pipe.



TP-12 Investigation of 13' diameter tank.



TP-13	
0-1.5'	Light brown to gray fill
1.5 - 3.5'	Lime. Light gray to white
3.5 - 4'	Dark brown to black stained soil
4 - 5'	Gray mottled silty clay

Seam of semi-solid coal tar running on top of clay layer. Strong petroleum smell (fuel oil?)



TP-14
Deposit of naphthalene crystals at south end of pit. 6-39 ppm
Collected sample.

Investigate metal tank.

Tank appears to be 13' diameter, 10' deep

Top of tank is 1' below grade.



TP-14



**TP-14** 

## APPENDIX D

BORING LOGS AND WELL CONSTRUCTION DIAGRAMS

	arth Tech, Inc. bany, NY (518) 458-1313  Test Boring Log						Boring No.DP-1	
PROJECT: Gastown Former MGP Site RI								Sheet 1 of 2
CLIENT	T: NYSDE							Job No. 44491.02
DRILLII	NG CON	TRACTO	OR: SJB [	Orilling Serv	rices			Meas. Pt. Elev.: NA
PURPO	SE: Sub	surface	Soil Sam	pling				Ground Elev.: NA
DRILLII	NG METI	HOD: Di	rect Push		SAMPLE	CORE	CASING	Datum: Ground Level
DRILL I	RIG TYP	E: Simco	2400	TYPE	Macro Core			Date Started: 6/12/01
GROUI	NDW <sub>A</sub> TE	R DEPT	H: NA	DIAM.	2" I.D.			Date Finished: 6/12/01
MEAS.	PT.:			WEIGHT				Driller: Ken Fuller
DATE O	F MEAS.:			FALL				Inspector: Walt Howard
Depth (Feet)	Sample Number	Blow Count	Unified Classif- ication	PID Reading (ppm)	GEOLOG	GIC DESCRI	PTION	REMARKS
0 -	S-1		0.8		Dk Gr bk Cy\$		soil	Rec = 3.3' Dry
-			0.8		2.8': Br rd \$, t	f S; mttld		Damp @ 2.8'
-			0.9		Rd br mf(+) S seams w/ Fe		sm vert	Rec = 4.0' Wet
5 -	S-2		0.9		C 01 Community			
			0.9		6.0': Same; w/	iyis of Gr br	Суф, ГГ S	Faint odor @ 6.0'
-	S-3		1.5		Gr Cy\$, I f S 8.2': Gr br mf(- upward; sft we		_	Rec = 3.3' Wet
10			0.8					

l	Tech, I				Test Boring Log	Boring No.DP-1
	, NY (518 					
PROJECT: Gastown Former MGP Site RI						Sheet 2 of 2
CLIEN	T: NYSD	EC				Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	PID Reading (ppm)	Geologic Description	Remarks
10 -	S-3		0.8		10.8': Gr br Cy\$, s f(+) S 11.2': Gr br Cy\$, t f S	
- - -			0.8		Br mf(+) S, s \$; sft wet  12.4': Gr f S, s \$; faint odor, minor sheen (petrol)	Rec =- 2.0' Wet/Moist
- - 15 -	S-4		0.8		13.9': Gr Cy\$, I f S; sft; faint odor	
-   	S-5		129		Gr mf(+) S, t \$; sft, wet, odor  17.6': Bk mf S, t \$; NAPL saturated.  17.9': Br Cy\$	Rec = 3.0' Wet Lab sample 16'-17'
20 —			84		Gr c(+) mf S, I mf G; sm odor, no sheen  20.0'  Bottom of Boring	
					Bottom of Boring	

## MONITORING WELL COMPLETION LOG WELL NO. \_DPW-1\_

Earth Tech, Inc. 40 British American Boulevard Latham, NY 12110 (518) 951-2200

Project -	Gastown Former MGP Site RI	
Client -	NYSDEC	
Location	Tonawanda, NY	-
	No. 44491.02	_
	lled 9/14/01	_
Date Dev	veloped10/3/01	

#### WELL CONSTRUCTION DETAIL

# \_\_\_\_ 0.0' CONCRETE-2.0' BENTONITE SEAL -RISER · SAND 5.0' CHOKE 9.0' PRE PACKED WELL SCREEN **FORMATION** COLLAPSE 14.0'

#### **INSPECTION NOTES**

Inspectorwait Howard	
Drilling ContractorSJB [	Orilling Services
Type of Well Direct Push Micr Static Water Level 6.18' Measuring Point (M.P.) Top Total Depth of Well 14.0' Total Depth of BoringNA	Dateof PVC
Drilling Method  Type <u>Direct Push Casing</u> Casing None	
	Diameter <u>NA</u> Fall <u>NA</u>
	Diameter 3/4" ID Joint Type Flush Joint
	Diameter 3/4" I.D./1.4" O.D. Length 5 feet Gravel/Alluvium
Grade Pre Pack Grade 0	Natural X  Interval Natural Collapse 5'-14'
Seal(s) Type Bentonite Granules Type Type	Interval————
Locking Casing	⊠ No

NOT TO SCALE

Earth Tech, Inc. Albany, NY (518) 458-1313  Test Boring Log					og	Boring No.DP-2		
PROJECT: Gastown Former MGP Site RI						Sheet 1 of 2		
CLIENT: NYSDEC								Job No. 44491.02
DRILLING	CONT	RACTO	R: SJB [	Orilling Serv	ices			Meas. Pt. Elev.: NA
PURPOSE	E: Subs	surface	Soil Samp	pling				Ground Elev.: NA
DRILLING	METH	lOD: Dir	ect Push		SAMPLE	CORE	CASING	Datum: Ground Level
DRILL RIC	G TYPE	E: Simco	2400	TYPE	Macro Core			Date Started: 6/12/01
GROUND	WATE	R DEPT	H: NA	DIAM.	2" I.D.			Date Finished: 6/12/01
MEAS. PT	T.:			WEIGHT				Driller: Ken Fuller
DATE OF N	MEAS.:			FALL				Inspector: Walt Howard
	ample umber	Blow Count	Unified Classif- ication	PID Reading (ppm)	GEOLO(	GIC DESCRI	PTION	REMARKS
5 —	S-1			0.0 0.0 57 0.0	Concrete and 0.2': Dk or to  Br conf S, I \$  2.0': Gr br Cy  Rd br Cy\$, I i No odor  5.0': Gr Cy\$, 5.4': Bk coal NAPL blebs 6.2': Gr Cy\$; blebs and str	psoil ; fill, loose, di ;\$, t f S; frm;  f S; sft mtld  t f S; sft tar; sft; sm pe heavy sheen	ry mtld etr. sheen;	Rec = 2.6' Dry Damp at base  Rec = 3.1' Damp
10	S-3			45.0 9.0 7.0	Gr Cy\$, t f S: w/ NAPL blet 9.0': Same w	os & sheen, s		Rec = 2.4' Moist

F41	Table 1			<del></del>		
1	<b>Tech, I</b> , NY (518		13		Test Boring Log	Boring No.DP-2
	CT: Gas	Sheet 2 of 2				
	T: NYSD					Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif-	PID Reading	Geologic Description	Remarks
10			ication	(ppm)	10.0': Br s t f S; highly org; rts;	
-		-			shells	
-	S-3					
_						
-					Gr C&\$; sft 12.4': Br Gr Cy \$; rts; fnt odor,	Rec = 1.8' Moist
				129	no sheen; frm	
_				129	13.3': occ blebs; frm	
_	S-4					
_				54		
15 —						
					Gr mf(+) S a, \$; loose; wet some NAPL saturation; some	Rec = 2.4'   Wet
-				145	pooling at base 16.5': Gr \$ a, f S; moist; frm some blebs	Lab sample 16-18'
-	S-5				some blebs	
	3-3			25		
20 —					20.0'	
-					Bottom of Boring	
	}					
	-					
25						

Earth Tech, Inc. Albany, NY (518) 458-1313  Test Boring Log								Boring No.DP-3
PROJE	CT: Gast	Sheet 1 of 2						
CLIENT	: NYSDE	Job No. 44491.02						
DRILLIN	NG CON	Meas. Pt. Elev.: NA						
PURPO	SE: Sub	surface	Soil Sam	pling		_		Ground Elev.: NA
DRILLIN	NG MET	HOD: Di	rect Push	1	SAMPLE	CORE	CASING	Datum: Ground Level
DRILL F	RIG TYP	E: Simco	2400	TYPE	Macro Core			Date Started: 6/12/01
GROUN	IDWATE	R DEPT	TH: NA	DIAM.	2" I.D.			Date Finished: 6/12/01
MEAS.	PT.:			WEIGHT				Driller: Ken Fuller
DATE OF	F MEAS.:			FALL				Inspector: Walt Howard
(Feet)	Sample Number	Blow Count	Unified Classif- ication	PID Reading (ppm)	GEOLO(	GIC DESCRI	PTION	REMARKS
0 _					Gr bk cmf S a w/ lyrs of lt br			Rec = 2.9' Dry, damp @ base
_				0.0				
	S-1			0.0				
				1.7	2.8': Bk gr mf	(+) S, I \$; sta	ined, odor	
+				8	Gr br Cy\$, t f frm, odor	S; rts org; ml	ild	Rec = 3.4' Damp
5 —	S-2 -			12	5.5': Bk gr f S strong odor; s	-		
_				40	7.0': Blk stain: 7.1': Gr bk Cy		ı	
-				5	Blk Gr Cy\$, st	ft; mtld; odor		Rec = 5.3' Wet
10	S-3			30	9.4': Gr mf S, odor, no shee		et	

Earth	Tech, I	nc.			Tarak Daniera I are	
1	, NY (518		13		Test Boring Log	Boring No.DP-3
PROJE	ECT: Gas	Sheet 2 of 2				
CLIEN	T: NYSD	EC				Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	PID Reading (ppm)	Geologic Description	Remarks
- 10     	S-3			0.4	Gr mf(+) S, I \$, sft; odor sheen; w/ lyrs Gr Cy\$ sm Fe stain  Gr br f S, I \$; sft, wet No sheen  12.8': Gr \$ a, f S; frm no sheen; wet	Rec = 1.5' Wet
15 —	S-4 S-5			140	Gr br mf S, I \$; loose; blebs some NAPL saturation	Rec = 2.0'  Lab sample 17-18'
-				190	17.6': NAPL pooling  17.8'  Gr mf S, I \$, I f G; loose  20.0'	
20 — — — — — — — — — — — — — — — — — — —					Bottom of Boring	

Earth Tech, Inc. Albany, NY (518) 458-1313		Test Boring Log			Boring No.DP-4
PROJECT: Gastown Former MGF	Sheet 1 of 2				
CLIENT: NYSDEC	Job No. 44491.02				
DRILLING CONTRACTOR: SJB I	Meas. Pt. Elev.: NA				
PURPOSE: Subsurface Soil Sam	pling				Ground Elev.: NA
DRILLING METHOD: Direct Push		SAMPLE	CORE	CASING	Datum: Ground Level
DRILL RIG TYPE: Simco 2400	TYPE	Macro Core			Date Started: 6/12/01
GROUNDWATER DEPTH: NA	DIAM.	2" I.D.			Date Finished: 6/12/01
MEAS. PT.:	WEIGHT				Driller: Ken Fuller
DATE OF MEAS.:	FALL				Inspector: Walt Howard
Depth Sample Blow Classif- (Feet) Number Count ication	PID Reading (ppm)	GEOLO(	GIC DESCRI	PTION	REMARKS
0		Br Cy\$ a, cmf frm base fill	S, I mf G;		Rec = 2.7' Dry
	3.5	1.0': Gr br Cy no odor; mtld		amp;	
S-1	4.0				
	4.8				
	5.0	Gr br Cy\$, tf S	S; frm mtled,	no odor	Rec = 3.1' Moist/wet
5 —	2.4				Wet @ 5.0'
- S-2	2.4	6.0': Blk f S; g	ranular waste	9	
	,,,,	Gr bk Cy\$, l f	_	sm odor	Rec = 2.9' Wet
- S-3		8.8': Starting s 9.2': NAPL sa		2' thk)	
10		Gr f S, a \$ to	10'		

Earth	Tech, l	nc.				
	, NY (518		13		Test Boring Log	Boring No.DP-4
PROJE	ECT: Gas		Sheet 2 of 2			
CLIEN	T: NYSD	EC			Job No. 44491.02	
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	PID Reading (ppm)	Geologic Description	Remarks
10 —	S-3			2.7	Gr \$; t f S; frm 10.5': Same, w/ NAPL blebs/stringers	
-   -				7.6	Gr mf(+) S, I \$; sft, loose, much staining, sheen w/ blebs: stringers of NAPL	Rec = 2.6' Wet Lab sample 12-13'
	S-4			4.0	14.1': Gr f S, s \$; frm; no stains	Pool of coal tar pulled to surface w/ macro core. Rods coated w/ coal tar.
15 — — —						
<u> </u>	S-5			0.4	Dk Gr f S, s \$; fnt odor no sheen or blebs	Rec = 1.5' Wet
_	3-5			0.4		
_ _					20.0'	٠.
20 —			-	,	Bottom of Boring	
_ 	_					
	-					
 25						

Earth Tech, Inc. Albany, NY (518) 458-1313	Boring No.DP-5				
PROJECT: Gastown Former MGF	Sheet 1 of 2				
CLIENT: NYSDEC	Job No. 44491.02				
DRILLING CONTRACTOR: SJB [	Meas. Pt. Elev.: NA				
PURPOSE: Subsurface Soil Sam	oling				Ground Elev.: NA
DRILLING METHOD: Direct Push		SAMPLE	CORE	CASING	Datum: Ground Level
DRILL RIG TYPE: Simco 2400	TYPE	Macro Core			Date Started: 6/12/01
GROUNDWATER DEPTH: NA	DIAM.	2" I.D.			Date Finished: 6/12/01
MEAS. PT.:	WEIGHT				Driller: Ken Fuller
DATE OF MEAS.:	FALL				Inspector: Walt Howard
Depth (Feet) Sample Blow Classification	PID Reading (ppm)	GEOLO	GIC DESCRI	PTION	REMARKS
0	0.4	Br cmf S, I \$,	s mf G; base	e fill	Rec = 1.2'
	0.4	0.7': Bk cmf S cinders	S, t \$, I f G; st	ain	Dry
S-1 .	0.4	1.3': Lyr white 1.7': Lyr Bk c			
	0.4	2.2': Br gr Cy	\$, t f S; frm d	amp	
	0.0	Bk Dk gr Cy\$ mtld; fnt odor		d	Rec = 2.0'
5 —	0.3	5.5': Gr br Cy	\$, t f S; frm, f	nt odor	
S-2	3.2				
S-3		Dk Gr bk Cy\$ stringers of co 8.8': Gr Cy\$; 8.9': Br G fgm	oal tar w/ she frm w/	Rec = 1.5' Moist	

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1	<b>Tech, I</b> , NY (518		13		Test Boring Log	Boring No.DP-5
PROJE	CT: Gas	Sheet 2 of 2				
CLIEN	T: NYSD	Job No. 44491.02				
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	PID Reading (ppm)	Geologic Description	Remarks
(Feet) 10			Classif-		Geologic Description  Gr mf(+) S, I \$; loose; heavy sheen, some pooling NAPL  14.5': Lyr Cy\$, f S; frm  15.0': Gr mf(+) S, I \$; loose; sheen w/ blebs  No Recovery	Rec = 3.3' Wet Lab sample 12-14'
20					Bottom of Boring	
25						

l	<b>Tech, I</b> , NY (518		313		Test Bo	oring L	og	Boring No. DP-6
PROJE	CT: Gas	Sheet 1 of 2						
CLIEN	T: NYSDE	Job No. 44491.02						
DRILLI	NG CON	Meas. Pt. Elev.: NA						
PURPO	SE: Sub	surface	Soil Sam	pling				Ground Elev.: NA
DRILLI	NG MET	HOD: Di	rect Push		SAMPLE	CORE	CASING	Datum: Ground Level
DRILL	RIG TYP	E: Simco	2400	TYPE	Macro Core			Date Started: 6/12/01
GROUI	NDWATE	R DEPT	TH: NA	DIAM.	2" I.D.			Date Finished: 6/12/01
MEAS.	PT.:			WEIGHT				Driller: Ken Fuller
DATE C	F MEAS.:			FALL		_		Inspector: Walt Howard
Depth (Feet)	Sample Number	Blow Count	Unified Classif- ication	PID Reading (ppm)	GEOLO(	GIC DESCRI	PTION	REMARKS
0 -			0.0	(FF)	Gr br bk cmf some cinders		ase fill,	Rec = 3.7' Dry
_	S-1		0.0					
 			0.0		2.3': Br Cy\$, I coal fgmts Sft dmp @ 3.		drs	
- - 5 -			0.0		3.5': Gr br Cy mtld, no odor Same: mtld, F coarse down	\$, I f S; frm		Rec = 3.0' Damp
	S-2		0.0		5.4': Lyr Gr br 6.0': Br mf(+) no sheen			Wet @ 6.3'
_			0.0					
	S-3		0.0		Gr mf(+) S, I \$ no sheen 8.9': Lyr br Cy		Rec = 3.0' Wet Lab sample 8-10'	

				<del></del>		
1	<b>Tech, I</b> , NY (518		13		Test Boring Log	Boring No. DP-6
PROJE	ECT: Gas	Sheet 2 of 2				
CLIEN	T: NYSD	Job No. 44491.02				
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	PID Reading (ppm)	Geologic Description	Remarks
10						
_	S-3					
_						
_			0.0		Gr br mf(+) S, I(-) \$; sft	Rec = 1.9'
_					faint odor, no sheen	Wet
			0.0		13.3'	
_					Gr mf(+) G, a cmf S, t \$; hard, no odor	
-	S-4		0.0			
-						
15 —			1			
-						
					Gr cmf S, t f G	Rec = 2.7' Wet
					16.6': Gr mf G, s cmf S; Hd, sbrdd	Wet
	S-5					
_					18.2'	
_					Rd \$yC; occ gr varves; plastic; sft	
_						
-						
20 —					20.0' Bottom of Boring	
_					J	
	Ī					
_						
_	_					
25						

Earth To			13		Test Boring Log	Boring No.DP-7
PROJECT	T: Gasto	Sheet 2 of 2				
CLIENT:	NYSDE	С			Job No. 44491.02	
(Feet) N	ample umber	Blow Counts	Unified Classif- ication	PID Reading (ppm)	Geologic Description	Remarks
15 —	S-3 - S-4 - S-5	Counts	ication	(ppm) 0.0 0.0 0.0	Br mf(+) S, I \$, sft, wet  14.7': Gr mf(+) S, a Cy\$: frm no odor  Br mf S, I \$; loose; no odor  16.7': Gr mf S, t \$; no odor	Rec = 3.0' Wet  Rec = 2.4' Wet
20 -	-  -  -  -				Gr mf(+) G, a cmf S, t \$  20.0  Bottom of Boring	
25						

Earth Tech, Inc.		Test Bo	orina I	Davis a No. DD 0						
Albany, NY (518) 458-1313	<u> </u>	Boring No. DP-8								
PROJECT: Gastown Former MGF	Sheet 1 of 2									
CLIENT: NYSDEC	Job No. 44491.02									
DRILLING CONTRACTOR: SJB I	DRILLING CONTRACTOR: SJB Drilling Services									
PURPOSE: Subsurface Soil Sam	pling			<b>-</b>	Ground Elev.: NA					
DRILLING METHOD: Direct Push		SAMPLE	CORE	CASING	Datum: Ground Level					
DRILL RIG TYPE: Simco 2400	TYPE	Macro Core			Date Started: 6/13/01					
GROUNDWATER DEPTH: NA	DIAM.	2" I.D.			Date Finished: 6/13/01					
MEAS. PT.:	WEIGHT				Driller: Ken Fuller					
DATE OF MEAS.:	FALL				Inspector: Walt Howard					
Depth Sample Blow Classif- (Feet) Number Count ication	PID Reading (ppm)	GEOLO	GIC DESCRI	PTION	REMARKS					
S-1	0.3 0.3 0.0	Dk br cmf S s 1.2': Gr br Cy mtld w/ Fe sta Dk gr br Cy\$,	\$, I f S; frm d	ense,	Rec = 3.1' Damp  Rec = 3.4' Damp/Moist					
5 — — — — — — — — — — — — — — — — — — —	0.0	5.0': Lt br \$, I(	-) f S; frm; mt	itld	Wet @ 6.8'					
S-3	0.0	Rd br Cy\$, s f sheen	S; sft; no odd	or; no	Rec = 3.2' Wet					
10	0.0	9.5': Rd br Cy no sheen	\$, t f S; frm; n	o odor;						

	<b>Tech, I</b> NY (518		13		<b>Test Boring Log</b>	Boring No. DP-8
PROJE	CT: Gas	town For	mer MGP	Site RI		Sheet 2 of 2
CLIEN'	T: NYSD	EC				Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	PID Reading (ppm)	Geologic Description	Remarks
10  	S-3	-			10.8': Rd br mf(+) S, a \$; frm wet, no odor or sheen	
	S-4			0.0	Gr mf(+) S, I(-) \$; fnt odor	Rec = 0.3' Damp Tube loaded w/ flowing sand
15 —				0.0	Gr mf(+) S, I \$; sft, loose, fnt petrol odor, no sheen	Rec = 2.2' Wet
- -	S-5			0.0		Lab sample 16-18'
20 —					20.0	,
					Bottom of Boring	

Earth Tech, Inc. Albany, NY (518) 458-1313		Test Boring Log			Boring No. DP-9				
PROJECT: Gastown Former MGI	Site RI				Sheet 1 of 2				
CLIENT: NYSDEC	Job No. 44491.02								
DRILLING CONTRACTOR: SJB I	Meas. Pt. Elev.: NA								
PURPOSE: Subsurface Soil Sam	PURPOSE: Subsurface Soil Sampling								
DRILLING METHOD: Direct Push	ı	SAMPLE	CORE	CASING	Datum: Ground Level				
DRILL RIG TYPE: Simco 2400	TYPE	Macro Core			Date Started: 6/13/01				
GROUNDWATER DEPTH: NA	DIAM.	2" I.D.			Date Finished: 6/13/01				
MEAS. PT.:	WEIGHT				Driller: Ken Fuller				
DATE OF MEAS.:	FALL				Inspector: Walt Howard				
Depth Sample Blow Classif- (Feet) Number Count ication	PID Reading (ppm)	GEOLO(	GIC DESCRII	PTION	REMARKS				
0	0.0	Dk br bk cmf bks; cndrs	S;   \$,   mf G;	; base fill;	Rec = 3.6' Dry/Moist				
S-1	0.0	·							
	0.0	2.4': Lyr bk mf S, I \$; stain, no odor or sheen							
	0.0	2.6': Dk gr C <sub>y</sub>	/\$, If S; frm, s	m odor					
	0.0	Gr rd br Cy\$, fnt odor	t f S; frm, we	t, mtld,	Rec = 2.6' Damp				
5 —	0.0	5.6': Gr rd br	\$ If S frm v	vet mtld					
- S-2	0.0	fnt odor	φ, τι Ο, ππη, τ	rot, maa,					
	0.0	Same			Rec = 2.7' Wet				
- S-3	0.0								
10									

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Albany	, NY (518	) 458-13	13		Test Boring Log	Boring No.DP-9
PROJE	CT: Gas	town For	mer MGP	Site RI		Sheet 2 of 2
CLIEN	T: NYSD	EC				Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	PID Reading (ppm)	Geologic Description	Remarks
10 —				0.0	10.1': Bk mf(+) S, I \$; stained odor	
_	S-3				10.6': Gr br Cy\$, I f S, sft; lyr Br mf S at 11.4'	
_				0.0	Gr mf(+) S, I \$; loose; wet	Rec = 2.7' Wet
					12.6': Gr Cy\$, t f S, sft	
				0.0	13.1': Gr mf S, I \$; loose	
	S-4			0.0		
15 —				0.0		
_				0.0	Dk Gr mf S, I \$; loose; odor, NAPL sheen & blebs at 16.8'	Rec = 2.3' Wet
-				0.0	17.0': Gr Cy\$, I f S; frm	Lab sample 17-18'
      -	S-5			0.0	17.5': Gr mf(+) S, I(-)\$; loose; odor lyr NAPL saturated @ 17.8' to bottom	
				45		
20 —				4.5	Gr mf(+) S, I \$; sft; odor v/slt sheen	
				47	21.0': 0.3' lyr NAPL sat	
	S-6				21.5': Gr Cy\$, I f S; sft 21.8'	
-   -	,			5	Rd \$yC; sft; 0.01-0.02' thk gr Cy\$ seams (varved) 22.4': Gr Cy\$; I f S, sft	Rec = 2.6' Wet
	ŀ				24.0'	
					Bottom of Boring	
25	ļ					
					<del></del>	

Earth Tech, Inc. Albany, NY (518) 458-	1313		Test Boring Log			Boring No. DP-10
PROJECT: Gastown F	ormer MGF	Site RI			_	Sheet 1 of 2
CLIENT: NYSDEC	Job No. 44491.02					
DRILLING CONTRAC	Meas. Pt. Elev.: NA					
PURPOSE: Subsurfac	e Soil Sam	pling				Ground Elev.: NA
DRILLING METHOD:	Direct Push	l	SAMPLE	CORE	CASING	Datum: Ground Level
DRILL RIG TYPE: Sin	ico 2400	TYPE	Macro Core			Date Started: 6/13/01
GROUNDWATER DE	PTH: NA	DIAM.	2" I.D.			Date Finished: 6/13/01
MEAS. PT.:		WEIGHT				Driller: Ken Fuller
DATE OF MEAS .:		FALL				Inspector: Walt Howard
Depth Sample Blov (Feet) Number Cour	Claccif	PID Reading (ppm)	GEOLO(	GIC DESCRI	PTION	REMARKS
5 - S-2 - S-3 - 10		0.0 0.0 0.0 48	Blk cmf S, I \$ base fill; sm of section of the sect	cbls  y\$, t f S; frm  t f S; frm: mtl  \$, I mf(+) S; s  Cy\$, t f S, fn	d; no  oft no odor  it coal tar	Rec = 3.2' Dry  Rec = 3.5' Damp/Moist  Wet @ 6.2'  Rec = 2.2' Wet

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1	, NY (518		13		Test Boring Log	Boring No. DP-10
PROJE	ECT: Gas	town Fo	rmer MGF	Site RI		Sheet 2 of 2
CLIEN	T: NYSD	Job No. 44491.02				
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	PID Reading (ppm)	Geologic Description	Remarks
10 _						
_	S-3					
-						
_			40		Gr mf(+) S, I \$; blebs and sheen lyr NAPL saturated at 12.6' (0.1' thk)	Rec = 1.8' Wet Lab sample 12-14'
			111		13.1': Gr Cy\$, I f S; 0.05' lyr of mf S w/ NAPL satur at 13.7'	
_	S-4		46			
15 —						
_						
-					No Recovery	Rec = 0
_						
	S-5					
	}					
-	ſ					
20 —					No Recovery	Rec = 0
_						
-						
	S-6					
. –						
_					24.0'	
	}-				Bottom of Boring	
25						

Earth	Tech, I	nc.			Tost R	oring I	00	
Albany,	NY (518	) 458-13	313		Test Bo	Jilly L	.og	Boring No. DP-11
PROJE	CT: Gast	own For	rmer MGF	Site RI				Sheet 1 of 2
CLIENT	T: NYSDE	Job No. 44491.02						
DRILLII	NG CON	Meas. Pt. Elev.: NA						
PURPO	SE: Sub	surface	Soil Sam	pling				Ground Elev.: NA
DRILLII	NG METI	HOD: Di	rect Push		SAMPLE	CORE	CASING	Datum: Ground Level
DRILL	RIG TYP	E: Simco	2400	TYPE	Macro Core			Date Started: 6/13/01
GROUI	NDWATE	R DEPT	TH: NA	DIAM.	2" I.D.			Date Finished: 6/13/01
MEAS.	PT.:			WEIGHT				Driller: Ken Fuller
DATE O	F MEAS.:			FALL				Inspector: Walt Howard
Depth (Feet)	Sample Number	Blow Count	Unified Classif- ication	PID Reading (ppm)	GEOLOG	GIC DESCR	PTION	REMARKS
5	S-1			0 20 30	Dk gr bk cmf hard; cbls  Dk gr bk mf(+ @ 4.6'  Rd brick fgmt 5.3': Bk cmf S blk stain, stron	) G, t \$, a mf 4.8-5.2' , I \$, s mf(+)	S; bk stain	Rec = 2.5' Dry  Rec = 2.1' Moist
- - - - 10	S-3			5.0 4.5	Gr br \$, s mf(+ Blk stain at 9.0 10.0-10.2'; no	0-9.2', 9.4-9.		Rec = 2.7' Wet

	<b>Tech, I</b> NY (518	<b>nc.</b> 3) 458-13	13		Test Boring Log	Boring No.DP-11
PROJE	CT: Gas	town For	mer MGP	Site RI		Sheet 2 of 2
CLIENT	: NYSD	EC				Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	PID Reading (ppm)	Geologic Description	Remarks
10 —	S-3				10.3': Br gr mf(+) S t \$; sm blebs and sheen. Thin seam of NAPL saturation at 10.4'.	
	_			2.5	Br gr mf(+) S, I \$; frm; sheen	Rec = 1.5' Wet
_	S-4			2.5		
15 —						
				40	Gr br bk mf(+) S, I \$; sft; blebs, pools of NAPL.	Rec = 2.1' Wet
_					17.0': Heavy sheen	Lab sample 17-18'
_	S-5			220	17.5'-17.8': Lyr of mf(+) S, t \$ w/ strong rd color, NAPL saturated	
_						
20 —	S-6			10	Gr bk cmf(+) S, t \$, I f G; sm brick fgmts at 20.5': odor, slight sheen.	Rec = 0.8' Wet
					22.0'	
_					Bottom of Boring Probe Refusal	
_						
25						

Earth Tech, Inc. Albany, NY (518) 458-1313		Test Boring Log			Boring No. DP-12
PROJECT: Gastown Former MGF	P Site RI			1	Sheet 1 of 2
CLIENT: NYSDEC	Job No. 44491.02				
DRILLING CONTRACTOR: SJB (	Meas. Pt. Elev.: NA				
PURPOSE: Subsurface Soil Sam	pling				Ground Elev.: NA
DRILLING METHOD: Direct Push		SAMPLE	CORE	CASING	Datum: Ground Level
DRILL RIG TYPE: Simco 2400	TYPE	Macro Core			Date Started: 6/13/01
GROUNDWATER DEPTH: NA	DIAM.	2" I.D.			Date Finished: 6/13/01
MEAS. PT.:	WEIGHT				Driller: Ken Fuller
DATE OF MEAS.:	FALL				Inspector: Walt Howard
Depth Sample Blow Classif- (Feet) Number Count Ication	PID Reading (ppm)	GEOLO(	GIC DESCRI	PTION	REMARKS
0		Lt Br cmf S,	\$, I mf G, ba	se fill, hd	Rec = 2.7' Dry
S-1	1.9	1.9': Br gr Cy	\$, tfS; frm n		
5 —	0.2	Dk gr bk Cy\$ staining	, t f S; frm mt	ld, Bk	Rec = 3.0' Damp
- S-2	0.8	6.2': Lyr w/ w staining	hite seams a	nd bk	
- S-3	0.4	Gr br Cy\$, I f sheen	S; frm; no od	lor, no	Rec = 2.0' Moist
10	0.2				Wet @ 9.5'

Earth 7	 Гесh, I	nc.			Tank Danimer Lan	
Albany, I			13		Test Boring Log	Boring No. DP-12
PROJEC	CT: Gas	town For	mer MGP	Site RI		Sheet 2 of 2
CLIENT:	NYSDI	EC				Job No. 44491.02
(Feet)	Sample Number	Blow Counts	Unified Classif- ication	PID Reading (ppm)	Geologic Description	Remarks
10						
	S-3			0.0		
				0.3		
					No Recovery	Rec = 0
				0.0		
	S-4			0.0		
				0.0		
15 —				0.0		
					Gr br mf(+) S, s \$, frm; mtld, no	Rec = 2.7'
					odor, no sheen	Wet
				0.0		Lab sample 17-18'
	S-5					Lab sample 17-10
				0.0		
					18.4': Gr Cy\$ s f S; frm; no sheen	
-				0.0		
20					Gr C(+) mf S, t f G	Rec = 2,8' Wet
				0.0	21.0'	ì
					Rd gr mf G, I C(+) mf S; loose; well rdd G; fnt odor	
	S-6			10,6	22.1'	
					Rd gr \$yC; sft; w/ gr varves 0.01-0.03' thk	
					0.01-0.03 tilk	
					Bottom of Boring	
					Bottom of Boning	
25						

Earth Tech, Inc.  Albany, NV (518) 458 1313  Test Boring Log								Daving No. 33 42
Albany,								Boring No. DP-13
PROJEC	CT: Gast	own For	mer MGF	Site RI				Sheet 1 of 2
CLIENT	: NYSDE	Job No. 44491.02						
DRILLIN	IG CON	Meas. Pt. Elev.: NA						
PURPO	SE: Sub:	surface	Soil Sam	oling				Ground Elev.: NA
DRILLIN	IG METH	HOD: Dir	rect Push		SAMPLE	CORE	CASING	Datum: Ground Level
DRILL R	RIG TYPE	E: Simco	2400	TYPE	Macro Core			Date Started: 6/13/01
GROUN	DWATE	R DEPT	H: NA	DIAM.	2" I.D.			Date Finished: 6/13/01
MEAS. F	PT.:			WEIGHT				Driller: Ken Fuller
DATE OF	MEAS.:			FALL				Inspector: Walt Howard
	Sample Number	Blow Count	Unified Classif- ication	PID Reading (ppm)	GEOLO	GIC DESCRI	PTION	REMARKS
0 -					Dk br \$, I mf \$	S; rts, topsoil		Rec = 3.2' Dry/Wet
	Ę			0.0	1.0': Lt br \$, s no odor, no s		ı	
	S-1	_		0.0				
-	[			0.0				Wet @ 2.6'
+					Rd gr br Cy\$,	s(-) mf S; sft	; no odor	Rec = 3.0' Wet
5 — —	-			0.0				
_	S-2			0.0				
_	-			0.0				
-					Gr br Cy\$, I f S; mtld, frm; no odor or sheen			Rec = 2.2' Moist
-	S-3			0.0				
10				0.0	9.7': Dk br \$; l fgmts	f S; frm, org	; rts; shell	

	<b>Tech, I</b> , NY (518		13		Test Boring Log	Boring No. DP-13
			mer MGP	 Site RI		Sheet 2 of 2
	T: NYSD			Job No. 44491.02		
Depth (Feet)	Sample Number	Blow Counts	Unified Classif-	PID Reading	Geologic Description	Remarks
10			ication	(ppm)		
_						
	S-3					
_						
					No Recovery	Rec = 0
_						
_	-					
_	S-4					
15 —						
	1				lu B	D == = 0
-				;	No Recovery	Rec = 0
	}					
	S-5					
					Gr Cy\$, I f S; frm; rts; org	
_				0.0	Gr σyφ, ττο, ππ, τω, σισ	Rec = 1.5'
				0.0		
	S-6				19.3': Gr mf(+) S, I(+) \$; frm	
20 —				0.0	Dk Gr mf(+) S, t \$; frm; no sheen; no odor	Rec = 1.0'
				0.0		
				0.0	20.8': Gr rdd Gravel fgmts 20.9': Rd \$yC	
_	S-7					
_						
_						
					24.0'	
					Bottom of Boring	
25						

Earth Tech, Inc.			<del>.</del>		
Albany, NY (518) 458-1313		Test Bo	oring L	og	Boring No. DP-14
PROJECT: Gastown Former MG	P Site RI				Sheet 1 of 2
CLIENT: NYSDEC	Job No. 44491.02				
DRILLING CONTRACTOR: SJB	Meas. Pt. Elev.: NA				
PURPOSE: Subsurface Soil Sal	mpling				Ground Elev.: NA
DRILLING METHOD: Direct Pus	h	SAMPLE	CORE	CASING	Datum: Ground Level
DRILL RIG TYPE: Simco 2400	TYPE	Macro Core	_	-	Date Started: 6/13/01
GROUNDWATER DEPTH: NA	DIAM.	2" I.D.	_		Date Finished: 6/13/01
MEAS. PT.:	WEIGHT	_		.*	Driller: Ken Fuller
DATE OF MEAS.:	FALL	-	_		Inspector: Walt Howard
Depth Sample Blow Classif- (Feet) Number Count Classif- ication	PID Reading (ppm)	GEOLO	GIC DESCRI	PTION	REMARKS
0		Gr Gravel ba	se fill		Rec = 2.4'
	0.0	1.0': Br cmf	S, I mf(+) G;	fill	
	0.0				Damp @ 2.0'
		Gr br \$, I f S seams; wet;			Rec = 3.2' Wet/Damp
5 —	0.0				
	0.0	5.6': Gr Cy\$, minor bk sta		s; no odor;	
	0.0	6.7': Dr Gr \$, rts	. I f S; frm; sh	nells; org;	
		Gr C&\$, t f S; frm; rts; org; shells;			Rec = 2.0' Damp
10					

1	Tech, I		313		Test Boring Log	Boring No. DP-14
PROJE	ECT: Ga	stown Fo	ormer MG	iP Site RI		Sheet 2 of 2
CLIEN	T: NYSE	DEC				Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	PID Reading (ppm)	Geologic Description	Remarks
10	S-3				Tube filled w/ slough from upper part of hole	Rec = 0
	S-5			0.0	Gr Cy\$, t f S; sft; no odor; no sheen  17.6': Gr mf(+) S, s \$; frm w/ 0.02-0.04' seams of Gr \$yC	Rec = 2.9' Wet Lab sample 16-18'
20 —	S-6			0.0 12 24 38	Gr mf G, s cmf S, t \$; frm; no odor; no sheen  Gr cmf S, I \$, t f G; loose; wet  21.0': Gr cmf G, I cmf S; loose sit odor; Gr rdd-sbrdd  21.9'  Rd \$yC; frm; w/ seams of Gr lyrs (varved)	Rec = 2.6' Wet
 25						

l	Earth Tech, Inc. Albany, NY (518) 458-1313  Test Boring Log							Boring No. DP-15
			mer MGF	P Site RI				Sheet 1 of 3
	T: NYSDE	Job No. 44491.02						
	NG CON		Meas. Pt. Elev.: NA					
<b>-</b>			Soil Sam					Ground Elev.: NA
<u> </u>			rect Push		SAMPLE	CORE	CASING	Datum: Ground Level
	RIG TYP			TYPE	Macro Core			Date Started: 6/14/01
	NDWATE			DIAM.	2" I.D.			Date Finished: 6/14/01
	PT.:			WEIGHT				Driller: Ken Fuller
DATE	F MEAS.:			FALL				Inspector: Walt Howard
Depth (Feet)	Sample Number	Blow Count	Unified Classif- ication	PID Reading (ppm)	GEOLO	GIC DESCRI	PTION	REMARKS
0	S-1			(ppini)	Topsoil 0-0.5 Bk dk gr cmf brick fgmt Same 4.2': Rd br \$y white seam (I	S, I \$, s mf G C, I f S, t f G;	Rec = 3.1' Dry	
- - -	S-3				Rd br Cy\$, I c (reworked, fill 9.7': Bk Gr Cy	)	Rec = 2.4' Damp	

Earth	Tech, I	nc.			Test Boring Log	Paring No DD 45
Albany	, NY (518	) 458-13	13		Test Boring Log	Boring No. DP-15
PROJE	CT: Gas	town For	mer MGP	Site RI		Sheet 2 of 3
CLIEN	T: NYSD	Job No. 44491.02				
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	PID Reading (ppm)	Geologic Description	Remarks
10	S-3				Br gr CyS, I f S; frm mtld	Rec = 2.9'
	S-4			0.0	12.4': Gr mf(+) S, s \$ frm; wet	Wet 12.0'
15				0.0	Br f S, s Cy\$; sft; wet; no odor	Rec = 12.0'
-	S-5			0.0	16.9': Gr br f S a(+), Cy\$, mod frm	Wet
20 —				0.0	Gr mf(+) S, I \$; no odor, no sheen	Rec = 1.1 Wet
	S-6 S-7			0.0	Same	Rec = 1.0' Wet

	<b>Tech, I</b> , NY (518		13		Test Boring Log	Boring No. DP-15
	ECT: Gas			Site RI		Sheet 3 of 3
CLIEN	T: NYSD	EC				Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	PID Reading (ppm)	Geologic Description	Remarks
25			ioadon	(ррпі)		Lab sample 25-26'
_	S-7					
_						, <i>:</i>
				0.0	Gr br mf S, a \$, I f G; loose, sft; very faint coal tar odor	Rec = 2.3'
_				0.0	28.9': Gr br \$yC; sft plastic 29.2': Gr f S, I \$; v faint odor	·
_	S-8				29.8'	
30 —				0.0		
_		_			·	
_		_			32.0'	
_					Bottom of Boring	
_						
_						
35 —						
_						
_						
_						
40 40						

Earth	Tech, I	nc.				<del>-</del>	<del></del>	
(	, NY (518		313		Test Bo	oring L	.og	Boring No. DP-16
PROJE	CT: Gas	town Fo	rmer MGF	P Site RI				Sheet 1 of 3
CLIEN	T: NYSD	Job No. 44491.02						
DRILLI	NG CON	TRACTO	OR: SJB [	Orilling Serv	vices			Meas. Pt. Elev.: NA
PURPO	DSE: Sub	surface	Soil Sam	pling				Ground Elev.: NA
DRILLI	NG METI	HOD: Di	rect Push		SAMPLE	CORE	CASING	Datum: Ground Level
DRILL	RIG TYP	E: Simco	2400	TYPE	Macro Core			Date Started: 6/14/01
GROUI	NDWATE	R DEPT	TH: NA	DIAM.	2" I.D.			Date Finished: 6/14/01
MEAS.	PT.:	_		WEIGHT			:	Driller: Ken Fuller
DATE C	F MEAS.:			FALL				Inspector: Walt Howard
Depth (Feet)	Sample Number	Blow Count	Unified Classif- ication	PID Reading (ppm)	GEOLOG	SIC DESCRI	PTION	REMARKS
5 —	S-1			0.0	Topsoil 0.5': Dk br cm 1.5': Dk Br mfi Wh It br Gn; lin 5.7': Dk br cmf	(+) S, I \$, occ	c f G waste fill	Rec = 2.3' Dry  Rec = 2.3' Dry
10	S-3			0.0	Br cmf S, I \$, t 9.0': Bk cmf S, 9.3': Br mf(+) S 9.9': Dk gr br C	I mf G; cndrs	Rec = 2.2' Dry/Wet @ 9.5'	

1	Tech,		4.0		Test Boring Log	Boring No. DP-16
	, NY (518 ECT: Gas	-		Sito DI		Sheet 2 of 3
	T: NYSD		THEI WIGH	Site Ki		Job No. 44491.02
Depth (Feet)	epth Sample Blow Unified PID Classif- Reading				Geologic Description	Remarks
10 —			ication	(ppm)	Stain; no odor	
-   -	S-3					
_					Same	Rec = 2.8' Damp
_				0.0	12.8': Br gr Cy\$, I f S, mtld	
	S-4			0.0	13.5': Gr br f S a \$; mtld; no odor	
15 —						
_					Gr br Cy\$, I f S; occ f S, seams (.003' thk) mtld	Rec = 2.0' Wet
	S-5			0.0	17.4': Lt br f S, a \$	
_				0.0		
_						
20 —					Lt br mf(+) S, I \$, t f G; sft; no	Rec = 3.2'
_				0.0	odor; no sheen	Wet
_	S-6					
				0.0	22.5': Br f S, a \$; firm; damp;	
					no odor	
	0.7			0.0	Dk Gr mf(+) S, I \$; massive	Rec = 2.7' Wet
25	S-7			0.0		

	<b>Tech, l</b> , NY (518		13		Test Boring Log	Boring No.DP-16		
			mer MGF	Site RI		Sheet 3 of 3		
	T: NYSDI					Job No. 44491.02 Remarks		
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	PID Reading (ppm)	Geologic Description			
25			iodion	(ррпі)				
_	S-7							
						,		
					Gr mf(+) S, I \$, t mf G; sft; faint odor	Rec = 1.5' Wet		
_						Lab sample 28-29'		
_								
30 —	S-8							
30 —	3-0							
				}				
					32.0'			
					Bottom of Boring			
_								
_								
_								
35 —								
_								
_								
_								
-								
_								
_								

	Tech, I				Test Bo	orina L	oq	Boring No.DP-17
	NY (518							_
			mer MGF	Site RI				Sheet 1 of 2
	T: NYSDE							Job No. 44491.02
				Orilling Serv	rices			Meas. Pt. Elev.: NA
	PURPOSE: Subsurface Soil Sampling							Ground Elev.: NA
DRILLII	NG METH	HOD: Dir	rect Push		SAMPLE	CORE	CASING	Datum: Ground Level
DRILL I	RIG TYPI	E: Simco	2400	TYPE	Macro Core			Date Started: 6/14/01
GROU	NDWATE	R DEPT	H: NA	DIAM.	2" I.D.			Date Finished: 6/14/01
MEAS.	PT.:			WEIGHT				Driller: Ken Fuller
DATE O	F MEAS.:			FALL				Inspector: Walt Howard
Depth (Feet)	Sample Number	Blow Count	Unified Classif- ication	PID Reading (ppm)	GEOLO(	GIC DESCRII	PTION	REMARKS
5 —	S-1		ication	0.0 5.0 2.0 0.0 0.0	Dk br cmf S, I \$, s mf(+) G; base fill; Bk stain w/ tar; odor @ 1.0'; rd Fe stain @ 1.5'  2.3': Gr br Cy\$, I f S; mtld; fnt odor 2.5': Dk Gr br cmf S, t \$, I f G; loose  Rd br gr Cy\$, I f S; frm 4.2': Dk Gr bk Cy\$, I f S; frm 4.6': Gr Br Cy\$, I f S; frm, no odor, mtld 5.3': Gr br f S, s(+) Cy\$; frm; mtld			Rec = 2.9' Dry/Damp  Rec = 3.1' Damp
	S-3			0.0	Gr br f S, a \$; 9.1': 0.05' thk 9.4': Gr br mf SI odor, sm n	seam w/ bk s	stain/odor	Rec = 3.1' Wet @ 8.5'

Forth	Tech, i	nc				
1	, NY (518		13		Test Boring Log	Boring No. DP-17
PROJE	ECT: Gas	town For	mer MGF	Site RI		Sheet 2 of 2
CLIEN	T: NYSD	EC				Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	PID Reading (ppm)	Geologic Description	Remarks
10 —	S-3			0.2	Dk Gr bk \$, a f S; stained odor, no sheen, no NAPL	
-					Gr br mf(+) S, t \$; loose wet, faint odor, no sheen	Rec = 2.4' Wet
-	S-4				13.7': Dk Gr bk f S, a \$; frm, sm	
15 —					stain, fnt odor, no sheen, occ Cy\$ seams	
-   -					Gr br f S, I \$; fnt odor, sm faint sheen	Rec = 1.0' Wet
  -	S-5					
-						
20 —					Gr f S, I \$; sft; sheen, occ blebs; sm NAPL saturation 20.9'	Rec = 1.0' Wet Lab sample 20-21'
_	S-6				Rd br \$yC; w/ m G a Blk stain on sampler tip	
_	3-0					
_					24.0'	
					Bottom of Boring	

Earth Tech, Inc.		Test Bo	oring L	O.C.	Baring No DD 49
Albany, NY (518) 458-1313					Boring No.DP-18
PROJECT: Gastown Former MGF	Site RI				Sheet 1 of 1
CLIENT: NYSDEC	Job No. 44491.02				
DRILLING CONTRACTOR: SJB [	Meas. Pt. Elev.: NA				
PURPOSE: Subsurface Soil Samp	oling				Ground Elev.: NA
DRILLING METHOD: Direct Push		SAMPLE	CORE	CASING	Datum: Ground Level
DRILL RIG TYPE: Simco 2400	TYPE	Macro Core			Date Started: 6/15/01
GROUNDWATER DEPTH: NA	DIAM.	2" I.D.			Date Finished: 6/15/01
MEAS. PT.:	WEIGHT				Driller: Ken Fuller
DATE OF MEAS.:	FALL				Inspector: Walt Howard
Depth Sample Blow Classif- ication	PID Reading (ppm)	GEOLO(	GIC DESCRI	PTION	REMARKS
S-1  S-2  S-3		Refusal at 2. abandon loc	0' on 2 attem ation	pts:	

Earth Tech, Inc. Albany, NY (518) 458-1313		Test Bo	oring L	.og	Boring No. DP-19
PROJECT: Gastown Former MGF	Site RI				Sheet 1 of 2
CLIENT: NYSDEC	Job No. 44491.02				
DRILLING CONTRACTOR: SJB E	Orilling Serv	ices			Meas. Pt. Elev.: NA
PURPOSE: Subsurface Soil Samp	oling				Ground Elev.: NA
DRILLING METHOD: Direct Push		SAMPLE	CORE	CASING	Datum: Ground Level
DRILL RIG TYPE: Simco 2400	TYPE	Macro Core			Date Started: 6/15/01
GROUNDWATER DEPTH: NA	DIAM.	2" I.D.			Date Finished: 6/15/01
MEAS. PT.:	WEIGHT				Driller: Ken Fuller
DATE OF MEAS.:	FALL				Inspector: Walt Howard
Depth Sample Blow Classif- (Feet) Number Count Classif- ication	PID Reading (ppm)	GEOLOG	GIC DESCR	IPTION	REMARKS
5 — S-2 — S-2	0.0	Dk br cmf S, I  1.2': Br gr \$ a brick, glass  Gr br Cy\$, I f: mtld  5.8': Gr bk Cy no odor	f S; frm, dar	mp; occ no odor;	Rec = 2.8' Dry/Damp
S-3		Bk dk gr Cy\$, some NAPL b 8.8': Lt Gr f S, fgmt; sm odor 9.4': Dk gr Cy	lebs a Cy\$; sft n , no sheen	ntld, brick	Rec = 2.9' Moist

Earth	Tech, I	nc.				
	, NY (518		13		Test Boring Log	Boring No.DP-19
PROJE	ECT: Gas	town For	mer MGF	Site RI		Sheet 2 of 2
CLIEN	T: NYSD	EC				Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	PID Reading (ppm)	Geologic Description	Remarks
10 —	S-3				10.0': Gr \$&C frm; rts; org; faint odor	
— — — — —	S-4				Same  12.4': Gr Cy\$ I, f S; frm; occ shells; rts; sm odor; lyr mf S, t \$ at 13.3'  13.8': Gr mf(+) S, I \$; odor	Rec = 2.1' Wet
	S-5			0.0 0.0 28.0	Gr mf(+) S, I \$; massive, sm odor; slt sheen & blebs 16-18' 0.03' lyr w/ NAPL saturation at 17.9'  Coarse Gravel fgmt w/ NAPL coating in sampler tip	Rec = 2.1' Wet Lab sample 17-18'
20 —					Bottom of Boring Probe Refusal	

Earth Tech, Inc. Albany, NY (518) 458-1313		Test Bo	oring L	.og	Boring No. DP-20
PROJECT: Gastown Former MG	P Site RI				Sheet 1 of 2
CLIENT: NYSDEC	Job No. 44491.02				
DRILLING CONTRACTOR: SJB	Drilling Serv	rices			Meas. Pt. Elev.: NA
PURPOSE: Subsurface Soil San	npling		-		Ground Elev.: NA
DRILLING METHOD: Direct Pus	<u> </u>	SAMPLE	CORE	CASING	Datum: Ground Level
DRILL RIG TYPE: Simco 2400	TYPE	Macro Core			Date Started: 6/15/01
GROUNDWATER DEPTH: NA	DIAM.	2" I.D.			Date Finished: 6/15/01
MEAS. PT.:	WEIGHT				Driller: Ken Fuller
DATE OF MEAS.:	FALL				Inspector: Walt Howard
Depth Sample Blow Classif- (Feet) Number Count Classif- ication	PID Reading (ppm)	GEOLO	GIC DESCR	IPTION	REMARKS
5 — S-2	0.0 30 8	Topsoil 0.5': Bk dk gr slag, cndrs, t  2.2': Wet w/ s coal tar; stick  Rd br Cy\$, I f sm bk stainin  5.0': Bk rd br saturated f S at 5.0', 5.1', 5	strong odor; y S; frm; mtld g Cy\$, s f S; N seams (0.02 5.3', 5.8', 6.3	Rec = 2.7' Dry  Rec = 3.0' Damp/Moist	
S-3	12	Gr br bk Cy\$ NAPL blebs at thk seams of 8.5', 9.0', 9.4	, I f S; sft frm and pooling; NAPL sat f	Rec = 3.1' Damp	
10	15				

	<b>Tech, I</b> , NY (518		13		Test Boring Log	Boring No.DP-20
		-	mer MGF	Site RI		Sheet 2 of 2
CLIEN	T: NYSD	EC				Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	PID Reading (ppm)	Geologic Description	Remarks
10						Lab sample 10-11'
_	S-3			25	10.8': Bk mf(+) S, I \$; NAPL saturated	
_					Mixture Gr br Cy\$, I f S and mf S. All probable slough from up hole. Some blebs and much heavy sheen.	Rec = 0
	S-4					
15 — —					Gr mf(+) S, s \$; sft; occ lyrs Gr	Rec = 2.7'
_	S-5			4.6	Cy\$, 0.05-0.10' thk; fnt odor, no sheen	Wet
_				0.6	18.0': Gr mf(+) S, I \$; no sheen	
_				0.4		
20 —					Gr mf S, I \$; faint sheen sm rd \$yC on sampler tip	Rec = 0.4' Wet
	S-6					
	J-0					
_					24.0'	
_					Bottom of Boring	

	<b>Tech, I</b> NY (518		313		Test Bo	oring L	.og	Boring No. DP-21
PROJE	CT: Gas	town For	mer MGF	Site RI				Sheet 1 of 2
CLIEN	: NYSDE	Job No. 44491.02						
DRILLII	NG CON	TRACTO	DR: SJB [	Orilling Serv	rices		-	Meas. Pt. Elev.: NA
PURPO	SE: Sub	surface	Soil Sam	pling				Ground Elev.: NA
DRILLII	NG METI	HOD: Di	rect Push		SAMPLE	CORE	CASING	Datum: Ground Level
DRILL	RIG TYP	E: Simco	2400	TYPE	Macro Core	,		Date Started: 6/15/01
GROUI	NDWATE	R DEPT	H: NA	DIAM.	2" I.D.			Date Finished: 6/15/01
MEAS.	PT.:			WEIGHT			:	Driller: Ken Fuller
DATE O	F MEAS.:			FALL				Inspector: Walt Howard
Depth (Feet)	Sample Number	Blow Count	Unified Classif- ication	PID Reading (ppm)	GEOLOG	GIC DESCR	IPTION	REMARKS
0	S-1			0.0	Crushed Stone 0.5': Lt br tn f S, I \$  Same: Perched wet seam 4.5-5.0'			Rec = 2.5' Dry  Rec = 2.9' Dry/Wet
5 —	S-2			0.0	5.0': Rd br Cy odor, no shee		mtld; no	Wet seam @ 5.0'
-	S-3				Lt Gr br Cy\$, I odor; some se tar odor 9.0-9.7' and 1	ams w/ blk		Rec = 2.8' Moist
10				0.0				

Earth	Tech,	lnc.			Toot Poring Log	D N. DD 24
Albany	, NY (518	3) 458-13	13		Test Boring Log	Boring No. DP-21
PROJE	ECT: Gas	Sheet 2 of 2				
CLIEN	T: NYSD	Job No. 44491.02				
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	PID Reading (ppm)	Geologic Description	Remarks
10						
_	S-3					
				0.0	Rd br gr Cy\$ a, f S; bk stain seam. 12.5' and 13.1'; fnt odor, no sheen	Rec = 3.3' Wet
_				0.0	13.3': Lt Br mf S, t \$, no sheen fnt odor	
_	S-4			0.0	14.1': Gr mf(+) S, I \$; loose; wet, no sheen, no odor	
15 —				0.0	14.7': Gr Cy\$ 14.8': Gr mf(+) S, no sheen	
_				14.7		
_					Bk stained mf(+) S, I\$	Rec = 1.8' Wet
_	S-5			15	16.8': Gr Cy\$, I f S; frm, sm vert seams w/ NAPL saturation 16.9': Dk Gr mf(+) S, t \$; heavy	Lab sample 16-17'
_				38	sheen NAPL saturated, sm pooling	
_						
20 —					Dk br gr Cy\$, s mf(+) S; sm NAPL sheen, some blebs	Rec = 1.1' Wet
	S-6				21.0': 0.05' lyr bk f S material	
					22.0'	
_	-				Bottom of Boring Probe Refusal	
. —						
 25						

Earth Tech, Inc.					
Albany, NY (518) 458-1313		Test B	oring L	og	Boring No. DP-22
PROJECT: Gastown Former N	IGP Site RI				Sheet 1 of 2
CLIENT: NYSDEC	Job No. 44491.02				
DRILLING CONTRACTOR: S.	B Drilling Se	ervices			Meas. Pt. Elev.: NA
PURPOSE: Subsurface Soil S	ampling				Ground Elev.: NA
DRILLING METHOD: Direct Po	ısh	SAMPLE	CORE	CASING	Datum: Ground Level
DRILL RIG TYPE: Simco 240	TYPE	Macro Core			Date Started: 6/15/01
GROUNDWATER DEPTH: NA	DIAM.	2" I.D.			Date Finished: 6/15/01
MEAS. PT.:	WEIGHT			.:	Driller: Ken Fuller
DATE OF MEAS.:	FALL				Inspector: Walt Howard
Depth Sample Blow Classif ication		GEOLO	GIC DESCRI	PTION	REMARKS
		Base fill crus fgmts to 1.2'	hed stone ar	Rec = 2.7' Damp	
	0.0	1.2': Lt br mfe & lyrs of wh l			
	0.0	110 0001			
	0.0				
5 —	15	Gn dk gr bk C Heavy NAPL at 5.1' 5.3': Dk Gr br rts; fnt odor 5.7': Gr mf(+)	saturation 4  Cy\$, If S; fr	Rec = 3.2' Damp	
	0.0	some bk stair 6.3': Gr br Cy odor	n at 6.7'		·
	250	Gr br Cy\$, I f S; frm some seams (0.01' thk) w/ NAPL saturation; occ blebs			Rec = 2.5' Damp Lab sample 8-9'
10	16	9.6': Dk br Cy 9.9': Gr br C&		APL blebs	

Earth Tech, Albany, NY (5		313		Test Boring Log	Boring No. DP-22
PROJECT: Ga			iP Site RI		Sheet 2 of 2
CLIENT: NYS	DEC				Job No. 44491.02
Depth Sample (Feet) Number		Unified Classif- ication	PID Reading (ppm)	Geologic Description	Remarks
10 — — S-3			66		
——————————————————————————————————————			40 12	Gr gn Cy\$, t f S; 0.05' thk lyr of mf(+) S, t \$ w/ NAPL sat. at 12.3' and 12.8'  12.9': Gr mf(+) S, t \$; no sheen 13.2': Gr Cy\$, t f S, frm  13.6': Gr mf(+) S, s Cy\$; frm; no sheen; sm odor	Rec = 2.2' Damp
15 —			6		
			NM NM	Dk Gr mf(+) S, t \$; heavy NAPL saturation  17.3': Gr Cy\$, I f S; freq. seams	Rec = 2.9' Wet Lab sample 16-17'
S-5			NM	Gr mf(+) S, I \$; no visible sign of NAPL	
20				Gr cmf S, t \$, a mf(+) G; sand	Rec = 0,4'
				grains coated w/ sheen, NAPL	Damp
S-6					
				24.0'	
25				Bottom of Boring	

	<b>Tech,</b> i NY (518 ,		313		Test Bo	oring L	Boring No. DP-23	
PROJE	CT: Gas	town Fo	rmer MGF	P Site RI				Sheet 1 of 2
CLIEN	T: NYSDI	Job No. 44491.02						
DRILLI	NG CON	TRACTO	OR: SJB [	Drilling Serv	rices			Meas. Pt. Elev.: NA
PURPO	DSE: Sub	surface	Soil Sam	pling				Ground Elev.: NA
DRILLI	NG MET	HOD: Di	rect Push		SAMPLE	CORE	CASING	Datum: Ground Level
DRILL	RIG TYP	E: Simc	o 2400	TYPE	Macro Core			Date Started: 6/15/01
GROUI	NDWATE	R DEPT	ΓH: NA	DIAM.	2" I.D.			Date Finished: 6/15/01
MEAS.	PT.:			WEIGHT				Driller: Ken Fuller
DATE O	F MEAS.:			FALL				Inspector: Walt Howard
Depth (Feet)	Sample Number	Blow Count	Unified Classif- ication	PID Reading (ppm)	GEOLOG	GIC DESCRI	PTION	REMARKS
0					Dk gr br cmf S base fill			Rec = 3.3' Dry
_	S-1			0.0	1.3': Br gr bk slag	Cy\$, FS, FFG		
_				0.0				
_				0.0	2.8': Gr br Cy	\$, I f S; frm; r	no odor	
				0.0	Gr br f S, a \$;	frm; no odor		Rec = 3.0' Damp
5 —				0.0	4.8': Gr br f S, 5.3': Br Cy\$, s	f S; lyrs of f	S, no	
-	S-2			0.0	odor, no shee 6.2': Dk Gr bk		c stain.	
-					faint odor	,	·	
				0.0	Dk br bk Cy\$,	l f S; rts; org	, shells	Rec = 2.7' Wet
	S-3			,	8.6': Org lyr gr light gr at 9.4'	ading downw	ard to	
10				0.0	9.4': Lt gr f S,	a \$; frm; no c	odor	

Earth	Tech, I	nc.				
	, NY (518		13		Test Boring Log	Boring No. DP-23
PROJE	CT: Gas	town For	mer MGP	Site RI		Sheet 2 of 2
CLIEN.	T: NYSD	EC				Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	PID Reading (ppm)	Geologic Description	Remarks
10	S-3				10.5': Gr mf(+) S, I \$; no odor, no sheen	
				0.0	Same 12.7': Lt gr Cy\$; a f S	Rec = 2.8' Wet
_				0.0	13.3': Gr mf(+) S, I \$, loose; no odor, no sheen	
_	S-4			0.0	14.0': Same; w/ 0.05-0.10' seams Gr Cy\$	
15 — —					·	
-    -				0.0	Gr Cy\$, s f S; sft; no odor, no sheen; seams of Gr mf(+) S, t \$	Rec = 1.7' Wet
-	S-5			0.0	@ 16.5', 17.2' and 17.3'	
-				0.0	Gr mf G; I cmf S; hd; very faint odor	
_						
20 —					Gr cmf S, t \$, I f G; fnt odor	Rec = 2.0'
<del>-</del>					20.7': Gr mf G, s cmf S; G sbrdd; fnt odor 21.1': Gr cmf S, I mf(+) G	Lab sample 20-21'
_ _	S-6				Rd \$yC; occ seams It gr Cy\$ (varved)	
_						
_						
					Bottom of Boring	
25						

<b>Earth Tech, Inc.</b> Albany, NY (518) 458-1313		Test Boring Log			Boring No. DP-24
PROJECT: Gastown Former MGF	Site RI				Sheet 1 of 2
CLIENT: NYSDEC	Job No. 44491.02				
DRILLING CONTRACTOR: SJB [	Orilling Serv	ices			Meas. Pt. Elev.: NA
PURPOSE: Subsurface Soil Sam	pling				Ground Elev.: NA
DRILLING METHOD: Direct Push		SAMPLE	CORE	CASING	Datum: Ground Level
DRILL RIG TYPE: Simco 2400	TYPE	Macro Core			Date Started: 6/18/01
GROUNDWATER DEPTH: NA	DIAM.	2" I.D.			Date Finished: 6/18/01
MEAS. PT.:	WEIGHT				Driller: Ken Fuller
DATE OF MEAS ::	FALL				Inspector: Walt Howard
Depth Sample Blow Classif- ication	PID Reading (ppm)	GEOLOG	GIC DESCR	IPTION	REMARKS
5 —	0.0 0.0 0.0 0.0	Dk Gr \$ a mf  1.2': Gr br Cy odor; rts; org  Same  5.2': Gr br mf(	\$, I f S, frm;	mtld; no	Rec = 3.3' Dry/Damp  Rec = 3.0' Damp/Wet
S-2	0.0	6.0': Gr mf(+) S, I \$; wet; no odor 6.3': Gr br Cy\$, s f S; mtld damp; no odor  Same; seams of Gr br Cy\$, I f S			Rec = 2.6'
S-3	0.0	oame, seams	oi di bi Cy	φ, 11 3	Wet at 9.5'

Earth	Tech, I	nc.			Took Dowings Long	
Albany	, NY (518	) 458-13	13		Test Boring Log	Boring No. DP-24
PROJE	CT: Gas	town For	mer MGF	Site RI		Sheet 2 of 2
CLIEN	T: NYSD	EC				Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	PID Reading (ppm)	Geologic Description	Remarks
10 — —	S-3			0.0	10.0': Gr It Gr mf(+) S, I \$; wet, no odor	
					Gr mf(+) S, I \$; sft; fnt odor	Rec = 1.6' Wet
— —	S-4			1.0 548	13.5': Same; bottom 0.1' of sample is saturated w/ NAPL	Lab sample 13-17'
15 —				NM	Gr mf(+) S, s \$; frm; odor 16.2' Gr cmf G, s cmf S; hd; no odor	Rec = 2.0' * Wet Bleb on bottom of tip
- - -	S-5			NM		upon extraction  *Lost bottom foot out of tube when extracting from sampler
20 —	`			NM NM	Same: Heavy sheen & odor w/ coal tar blebs, some NAPL/tar saturation at 21.0'  Rd \$yC' sft	Rec = 1.2' Wet
- - -	S-6					
					Bottom of Boring	

	<b>Tech,</b> l , NY (518		313		Test Be	oring L	.og	Boring No. DP-25	
PROJE	CT: Gas	town Fo	rmer MGF	Site RI			-	Sheet 1 of 2	
CLIEN	T: NYSDI	Job No. 44491.02							
DRILLI	NG CON	TRACTO	OR: SJB [	Orilling Serv	rices			Meas. Pt. Elev.: NA	
PURPO	DSE: Sub	surface	Soil Sam	oling	· · · · · · · · · · · · · · · · · · ·			Ground Elev.: NA	
DRILLI	NG MET	HOD: Di	rect Push		SAMPLE	CORE	CASING	Datum: Ground Level	
DRILL	RIG TYP	E: Simco	2400	TYPE	Macro Core			Date Started: 6/18/01	
GROUI	NDWATE	R DEPT	ΓH: NA	DIAM.	2" I.D.			Date Finished: 6/18/01	
MEAS.	PT.:			WEIGHT				Driller: Ken Fuller	
DATE C	F MEAS.:			FALL				Inspector: Walt Howard	
Depth (Feet)	Sample Number	Blow Count	Unified Classif- ication	PID Reading (ppm)	GEOLO	GIC DESCRI	PTION	REMARKS	
0	S-1			0.0	Dk Gr br \$, s cmf(+) S, t f G; rts, org, topsoil  1.5': Tn It br \$, I mf S; frm			Rec = 3.0' Dry	
-				0.0	Rd br Cy\$, I f	S; sft; mtld;	rts	Rec = 3.4' Moist/Wet	
5 <del>-</del>				0.0	5.0': Gr rd br seams; wet	mf(+) S, s Cy	<b>/</b> \$; w/		
_	S-2	-		0.0	5.9': Gr br Cy	\$, s f S; frm;	damp		
_				0.0	6.5'; Gr br mf	(+) S; s Cy\$;	wet		
-				0.0	Br mf(+) S, I \$	i; wet; sft; no	Rec = 2.7' Wet		
_	S-3				9.0': Br gr Cy\$ gr mf S, I \$; ne		v/ seams		
10				0.0					

Earth	Tech, l	nc.			Toot Poring Log	5 · N 55 05
Albany	, NY (518	) 458-13	13		Test Boring Log	Boring No. DP-25
PROJE	ECT: Gas	town For	mer MGF	Site RI		Sheet 2 of 2
CLIEN	T: NYSD	EC			<u></u>	Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	PID Reading (ppm)	Geologic Description	Remarks
10 — —	- S-3				10.4': Gr Cy\$ a mf S; alt seams Cy\$ and mf(+) S; no odor, no sheen	
_				0.0	Br mf(+) S, I \$; sft; small shells; no odor	Rec = 2.7' Wet
-				0.0		
_	S-4			0.0	13.7': Gr cmf S, I Cy\$	
_	_				14.7'	
15 —					Gr m G; fgmt in tube tip	
-			,			
_				0.0	Gr cmf(+) S, t \$, I mf G; loose, wet; no odor	Rec = 2.5' Wet
     –	S-5			0.0	17.1': Gr mf(+) G, s cmf S; no odor; G sbrdd	
_				0.0		
-				0.0		
-   -						
20 —				0.0	Gr cmf(+) G; s(-) cmf S; loose; no odor; no sheen	Rec = 1,9' Wet
_				0.0		Lab sample 20-21'
				0.0	21.9'	
	S-6				Rd \$yC (in tube tip)	
_						
					24.0'	
					Bottom of Boring	
25						

Earth Tech,	Inc.			Took D			
Albany, NY (518	8) 458-13	313		Test Bo	oring L	og	Boring No. DP-26
PROJECT: Gas	Sheet 1 of 2						
CLIENT: NYSD	EC						Job No. 44491.02
DRILLING CON	ITRACTO	OR: SJB	Drilling Ser	vices			Meas. Pt. Elev.: NA
PURPOSE: Sub	surface	Soil Sam	pling				Ground Elev.: NA
DRILLING MET	HOD: Di	rect Push	1	SAMPLE	CORE	CASING	Datum: Ground Level
DRILL RIG TYP	E: Simco	2400	TYPE	Macro Core			Date Started: 6/18/01
GROUNDWATE	ER DEPT	TH: NA	DIAM.	2" I.D.			Date Finished: 6/18/01
MEAS. PT.:			WEIGHT				Driller: Ken Fuller
DATE OF MEAS.	:		FALL			_	Inspector: Walt Howard
Depth Sample (Feet) Number	Blow Count	Unified Classif- ication	PID Reading (ppm)	GEOLOG	GIC DESCRI	PTION	REMARKS
- - S-1 -							Dry
5 —			0.0	Gr br Cy\$, I f S 4.7': Yw br gr ( no odor		ld; frm;	Rec = 3.2' Damp
- S-2				6.2': Gr mf(+) \$ seams gr Cy\$,		wet; w/	.·
- S-3				Gr br Cy\$, s f \$			Rec = 2.3' Wet
10				9.5': Gr f S, <b>a</b> \$ 	; frm; no odd	or	

l	<b>Tech, i</b> , NY (518		13		Test Boring Log	Boring No. DP-26
PROJE	CT: Gas	town For	mer MGP	Site RI		Sheet 2 of 2
CLIEN	T: NYSD	EC		_		Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	PID Reading (ppm)	Geologic Description	Remarks
10 — — —	S-3					
					Gr mf(+) S, I \$; loose; w/ seams/lyrs (0.02-0.05' thk) Gr Cy\$, I f S; no odor, no sheen 13.4': Gr Cy\$, I f S; frm	Rec = 1.6' Wet
15 — —	S-4				No Recovery	Rec = 0
-   -   -	S-5					
20 —				0.0	No Recovery No odor or PID reading in tube	Rec = 0 .
-	S-6				upon extraction.	No sample collected
					24.0' Bottom of Boring	
 25					Bottom of Boning	

l	<b>Tech</b> , <b>I</b>		313		Test Bo	oring L	.og	Boring No. DP-27
	CT: Gas	Sheet 1 of 2						
	T: NYSDE	Job No. 44491.02						
			OR: SJB (	Drilling Serv	rices			Meas. Pt. Elev.: NA
			Soil Sam					Ground Elev.: NA
ļ — — —			rect Push		SAMPLE	CORE	CASING	Datum: Ground Level
	RIG TYP			TYPE	Macro Core			Date Started: 6/18/01
	NDWATE			DIAM.	2" I.D.			Date Finished: 6/18/01
	PT.:			WEIGHT			<u></u>	Driller: Ken Fuller
	F MEAS.:			FALL				Inspector: Walt Howard
Depth (Feet)	Sample Number	Blow Count	Unified Classif- ication	PID Reading (ppm)	GEOLOG	GIC DESCR	IPTION	REMARKS
0	S-1		ication	0.0	Dk Gr cmf S,  1.3': Bk same  2.2': Bk mf S e metallic blue of fibrous materi  2.6': Dark Bl of fibrous materi  Rd br Cy\$, I f	; w/ cndrs, s granular was green color; al gr cmf S, t f C al; odor; no	Rec = 3.1' Dry	
5 -	S-2			0.0	4.7': Gr br f S,	I(+) Cy\$; frr	n; fnt odor	Damp  Wet @ 6.3'
-	S-3			0.0	Dk Br gr Cy\$, f S; sm odor 9.1': Br Cy\$ a		ams of	Rec = 1.8' Wet
10								

Earth	Tech, I	nc.			Toot Doring Log	- · N - D - 0
Albany	, NY (518	) 458-13	13		Test Boring Log	Boring No.DP-27
PROJE	ECT: Gas	stown For	mer MGF	Site RI		Sheet 2 of 2
CLIEN	T: NYSD	EC				Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	PID Reading (ppm)	Geologic Description	Remarks
10						
_	S-3					
				0.0	Gr mf(+) S, I \$; loose; wet; no odor; no sheen	Rec = 0.9' Wet Lab sample 12-13'
-				0.0		Lab sample 12 18
	S-4					
15 —						
-   -	S-5				No Recovery No sheen, odor or evidence of NAPL on sampler or tube.	Rec = 0
-   -						
20 —					No Recovery No evidence of NAPL or odor on sampler or tube.	Rec = 0
 	S-6					
_						
					24.0'	
					Bottom of Boring	
25				_		

Earth	Tech,	nc.			T. (D	• •		
Albany,	, NY (518	3) 458-13	313		Test Bo	oring L	.og	Boring No. DP-28
PROJE	CT: Gas	Sheet 1 of 2						
CLIENT	T: NYSDI	Job No. 44491.02						
DRILLI	NG CON	TRACT	DR: SJB I	Orilling Serv	vices			Meas. Pt. Elev.: NA
PURPO	DSE: Sub	surface	Soil Sam	pling				Ground Elev.: NA
DRILLI	NG MET	HOD: Di	rect Push		SAMPLE	CORE	CASING	Datum: Ground Level
DRILL	RIG TYP	E: Simco	2400	TYPE	Macro Core			Date Started: 6/19/01
GROUN	NDWATE	R DEPT	H: NA	DIAM.	2" I.D.			Date Finished: 6/19/01
MEAS.	PT.:			WEIGHT				Driller: Ken Fuller
DATE O	F MEAS.:			FALL				Inspector: Walt Howard
	Sample Number	Blow Count	Unified Classif- ication	PID Reading (ppm)	GEOLOG	GIC DESCRI	PTION	REMARKS
5 —	S-1			0.0 0.0 0.0 0.0 0.0	Dk Br \$ a cmf(+) S, I f G; rts; org; topsoil; w/ brick fgmt; occ endrs  1.9': Gr br Cy\$, I f S; frm; no odor, mtld  Gr br \$ a f S; frm; no odor; mtld			Rec = 2.9' Dry  Rec = 3.0' Moist
-	S-3			[	Gr Cy\$, s f S; 1 10.0-10.5'; she no odor			Rec = 2.8' Moist

Earth	Tech, I	nc.				
	, NY (518		13		Test Boring Log	Boring No. DP-28
PROJE	CT: Gas		Sheet 2 of 2			
CLIEN.	T: NYSD	EC				Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	PID Reading (ppm)	Geologic Description	Remarks
10 — — — — — — — — — — — — — — — — — — —	S-3			0.0	Dk Gr Cy\$, I(-) f S; sft; org; rts; shells; no odor	Rec = 2.8' Moist
15 — — — — —	S-5			0.0 10.0 9.5	Same w/ wood fgmts; w/ odor 16.6': Abundant shell; peat lyr; some odor, no sheen	Rec = 2.7' Damp/Wet Lab sample 16-18'
20 —				6.5 1.3	Gr mf G; s cmf S; t \$; loose; faint odor; G sbrdd  Gr cmf(+) S, t \$; shell fgmts; odor; no sheen	Rec = 1.2' Wet
-	S-6			0.0	20.4': Gr mf(+) G, s cmf S; loose; no odor, no sheen  22.5'  Rd \$yC (in tube tip)	Soft pushing @ 22.5'
_ 					24.0'	
 25	_				Bottom of Boring	

Earth	Toch	nc	_					
	<b>Tech, I</b> NY (518		313		Test Bo	oring L	og	Boring No. DP-29
	CT: Gas	Sheet 1 of 2						
	: NYSDE	Job No. 44491.02						
			DR: SJB [	Drilling Serv	vices			Meas. Pt. Elev.: NA
			Soil Sam					Ground Elev.: NA
			rect Push		SAMPLE	CORE	CASING	Datum: Ground Level
DRILL	RIG TYP	E: Simco	2400	TYPE	Macro Core			Date Started: 6/19/01
GROUI	NDWATE	R DEPT	H: NA	DIAM.	2" I.D.			Date Finished: 6/19/01
MEAS.	PT.:			WEIGHT	<del></del>			Driller: Ken Fuller
DATE C	F MEAS.:			FALL				Inspector: Walt Howard
Depth (Feet)	Sample Number	Blow Count	Unified Classif- ication	PID Reading (ppm)	GEOLOG	GIC DESCRI	PTION	REMARKS
0			10011011	1,4,4,	Dk br \$ a mf(-	+) S; topsoil		Rec = 2.0'
_					0.6': Gr br \$1		1	Damp
				0.0				
_	S-1			0.0				
-								
_								
_				0.0	Gr br Cy\$, I f	S; frm; mtld		Rec = 3.4' Damp
5 —				0.0	5.1': Br mf(+)		Alt Cy\$ &	
_					f S seams (0.0	JI-U.U4 [NK)		
	S-2			0.0				Wet @ 5.9'
_				0.0	7.0': Gr br Cy	S, I f S; sft; m	tld	
-	}							
-				0.0	Gr br mf(+); s	Cy\$; sft; mtle	Rec = 1.6'	
	]				9 6h O= C	I C	0.40141.1	Wet
_					8.6': Gr mf S, I lyr Cy\$ I f S at		U. IU <sup>-</sup> thk	-
	S-3			0.0				
10								

1	<b>Tech, I</b> , NY (518		13		Test Boring Log	Boring No.DP-29
PROJE	CT: Gas	town For	mer MGP	Site RI		Sheet 2 of 2
CLIEN.	T: NYSD	EC				Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	PID Reading (ppm)	Geologic Description	Remarks
10						
	S-3					
				0.0	Gr mf(+) S, a \$; sft; no odor, no sheen	Rec = 1.3' Wet
-				0.0		,
				0.0		
-	S-4					
15						
15 —						
_				30	Gr mf S, I \$; sft; odor; occ NAPL blebs; NAPL sat seam (0.01') @ 16.9'	Rec = 1.4' Wet Lab sample 16-17'
-	S-5				Gr mf G, a cmf S, t \$; loose; occ blebs, odor 17.5'	
					Rd \$yC on tube tip	
_						,
_					20.01	
20 —				<del>-</del>	Bottom of Boring	
<del>-</del>						·
_						
_						
_						
_						
_						
25						

<b>nc.</b> 3) 458-13	13		Test Boring Log			Boring No.DP-30		
PROJECT: Gastown Former MGP Site RI								
CLIENT: NYSDEC								
TRACTO	R: SJB [	Drilling Serv	rices			Meas. Pt. Elev.: NA		
surface S	Soil Sam	pling				Ground Elev.: NA		
HOD: Dire	ect Push		SAMPLE	CORE	CASING	Datum: Ground Level		
E: Simco	2400	TYPE	Macro Core			Date Started: 6/19/01		
R DEPTI	H: NA	DIAM.	2" I.D.			Date Finished: 6/19/01		
		WEIGHT			:	Driller: Ken Fuller		
		FALL				Inspector: Walt Howard		
Count	Unified Classif- ication	PID Reading (ppm)	GEOLOG	GIC DESCRI	PTION	REMARKS		
		0.0	1.1': Lt br gr Codor  Same  4.8': Gr br mf(odor; mtld	Cy\$, I f S; frn	frm; no	Rec = 2.4 Dry  Rec = 3.2' Damp  Wet @ 5.4'		
		0.0	mtld 7.1': Gr Cy\$, I	f S; sft 8.4-9.0'		Rec = 2.5' Damp		
3	town Fore TRACTC Surface S HOD: Dir E: Simco	town Former MGF  TRACTOR: SJB I  Surface Soil Sam  HOD: Direct Push  E: Simco 2400  ER DEPTH: NA	town Former MGP Site RI  TRACTOR: SJB Drilling Server Surface Soil Sampling  HOD: Direct Push  E: Simco 2400 TYPE  TRACTOR: NA DIAM.  WEIGHT  FALL  Blow Count Classif- ication (ppm)  0.0  0.0  0.0  0.0  0.0  0.0  0.0  0	town Former MGP Site RI  EC TRACTOR: SJB Drilling Services Surface Soil Sampling HOD: Direct Push E: Simco 2400 TYPE Macro Core R DEPTH: NA DIAM. 2" I.D. WEIGHT FALL Blow Count Classif- ication 0.0 Dk br bk \$ a co odor  0.0  1.1": Lt br gr Co odor; mtld 5.5": Gr br mf( mtld 0.0  7.1": Gr Cy\$, I 0.0 Same: Br mtld	1	Test Boring Log		

l .	Tech, l		00		Test Boring Log	Boring No. DP-30
PROJE	ECT: Gas		Sheet 2 of 2			
CLIEN	T: NYSD	EC				Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	PID Reading (ppm)	Geologic Description	Remarks
10				0.0	10.1': Gr \$, a f S; frm; no odor	
<del>-</del>	S-3					
_ 	-			0.0	Gr f S, a \$; sft; no odor; no sheen	Rec = 1.8' Wet
_				0.0	13.3': Gr Cy\$, s f S; sft; no odor;	
_	S-4			0.0	no sheen	
15 <b>—</b>					15.0'	
-						
_	_			10	Gr cmf(+) S, t \$; t f G; loose; sm odor	Rec = 1.4' Wet
_	0.5			13	16.6': Lyr Gr mf G, s cmf S; odor; NAPL sat seam (0.01') at 16.9'.	Lab sample 16.0-17.4'
	S-5				17.4'	
					Rd Cy\$ (in tube tip)	
_					20.0'	
20 —					Bottom of Boring	·
_						
_						
_						
<b>-</b> 25						

Earth Te	ech, l	nc.			T4 D			<del></del>
Albany, N	Y (518)	) 458-13	313		Test Bo	oring L	.og	Boring No.DP-31
PROJECT	Sheet 1 of 2							
CLIENT: N	NYSDE	C						Job No. 44491.02
DRILLING	CONT	TRACTO	OR: SJB [	Orilling Serv	vices			Meas. Pt. Elev.: NA
PURPOSE	E: Subs	surface	Soil Sam	pling				Ground Elev.: NA
DRILLING	METH	HOD: Di	rect Push		SAMPLE	CORE	CASING	Datum: Ground Level
DRILL RIG	3 TYPE	E: Simco	2400	TYPE	Macro Core			Date Started: 6/19/01
GROUND\	WATE	R DEPT	TH: NA	DIAM.	2" I.D.			Date Finished: 6/19/01
MEAS. PT	ī.:			WEIGHT				Driller: Ken Fuller
DATE OF M	MEAS.:			FALL				Inspector: Walt Howard
	imple imber	Blow Count	Unified Classif- ication	PID Reading (ppm)	GEOLOG	GIC DESCRI	PTION	REMARKS
0 -				0.0	Dk Br \$, I f S,	frm; org; rts	topsoil	Rec = 3.4' Dry
_				0.0	1.0': Gr br Cy seams gr mf(		mtld; occ	
	S-1			0.0				
_				0.0				
-				0.0	Gr br f S, s \$; Gr br Cy\$, I f		r; occ seam	Rec = 3.1' Damp Wet @ 4.6'
5 -	6-2			0.0				
- 3	)-2 [			0.0				
	-			0.0				
					Gr br Cy\$, I f 8 (0.01-0.05') gr			Rec = 1.7' Wet
- s	5-3			0.0				

Earth	Tech, l	nc.			Tost Paring Log	Daving No DD 24
Albany	, NY (518	) 458-13	13		Test Boring Log	Boring No. DP-31
PROJE	CT: Gas	town For	mer MGF	Site RI		Sheet 2 of 2
CLIEN	T: NYSD	EC				Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	PID Reading (ppm)	Geologic Description	Remarks
10						
	S-3					
_						
_				0.0	Gr mf(+) S, s Cy\$; sft; lyrs of Cy\$; no odor, no sheen	Rec = 1.5' Wet
				0.0		
-				0.0		
	S-4					
15 —						
_						
-				11.8	Same; slight odor	Rec = 1.0' Wet
_				4.0	Gr mf G. I cmf S; hd; sm odor; no sheen; G sbrdd 17.0'	Lab sample 16-17'
_	S-5				Rd \$yC (in tube tip)	
-		_				
-				J		
						,
20 —					20.0'	
					Bottom of Boring	·
_						
_						
_						
-						
_						
_						
25						

Earth Tech, Inc. Latham, NY (518) 951-2200	Test Boring Log			Boring No. DP-32	
PROJECT: Gastown Former MC	SP Site RI				Sheet 1 of 2
CLIENT: NYSDEC					Job No. 44491.02
DRILLING CONTRACTOR: SJB	Drilling Se	ervices			Meas. Pt. Elev.: NA
PURPOSE: Subsurface Soil Sa	mpling/Mc	nitoring Well	Installation		Ground Elev.: NA
DRILLING METHOD: Direct Pus	sh	SAMPLE	CORE	CASING	Datum: Ground Level
DRILL RIG TYPE: Simco 2400	TYPE	MacroCore			Date Started: 9/10/01
GROUNDWATER DEPTH: NA	DIAM.	2" I.D.			Date Finished: 9/10/01
MEAS. PT.:	WEIGHT				Driller: Ken Fuller
DATE OF MEAS.:	FALL				Inspector: Walt Howard
Depth Sample Blow Classif- (Feet) Number Count ication	Graphic Log	GEOLO(	GIC DESCR	PTION	REMARKS
S-1		Dk br cmf S,			Rec = 3.4' Dry
0.4		Rd gr \$, I f S	; frm		Rec = 3.1' Damp
S-2 0.3		6.2': Gr br C	y\$, I f S; frm	; no odor	
S-3		Br mf(+) S, I sheen; sm Fe		or; no	Rec = 2.9' Wet
10		9.7': <b>G</b> r Cy\$	tfS;sft		

	<b>Tech, I</b> n, NY (5		 2200		Test Boring Log	Boring No. DP-32
	PROJECT: Gastown Former MGP Site RI			P Site RI		Sheet 2 of 2
CLIEN	T: NYSE	DEC				Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	Graphic Log	Geologic Description	Remarks
10 - -	S-3				10.2': Gr mf(+) S,   Cy\$; loose; no odor; no sheen 10.6': Gr Cy\$,   f S; frm	
_		,	0.0		Gr mf(+) S, I \$; loose; clean, no odor or sheen	Rec = 1.6' Wet
			<b>0</b> .0			
	S-4		0.0			
15 <del></del>						
_			0.0		Gr Cy\$,   f S; occ seams mf(+) S,   \$	Rec = 2.0' Wet
_	S-5		0.0		16.9': Gr mf G, I cmf S, I \$; hd; no odor; no sheen	
_			0.0			
					19.0': Rd \$yC; sft	
20 —					20.0': Bottom of Boring	
_					Install micro well DP-32 w/ 3/4" I.D. pre-pack well screen. See well construction log.	·
_						

Earth Tech, Inc. 40 British American Boulevard Latham, NY 12110 (518) 951-2200

Project.	Gastown Former MGP Site RI				
Client	NYSDEC				
	Tonawanda, NY				
Project No. 44491.02					
Date Dri	lled 9/10/01				
	veloped10/2/01				

### WELL CONSTRUCTION DETAIL

# - 0.0' CONCRETE-2.0' BENTONITE SEAL -RISER . SAND 10.0' CHOKE 14.8' PRE PACKED WELL SCREEN FORMATION COLLAPSE 20.0'

NOT TO SCALE

### **INSPECTION NOTES**

Inspector Walt Howard	
Drilling ContractorSJB D	rilling Services
•	•
Type of Well Direct Push Micro	10/2/01
Static Water Level 6.58	
Measuring Point (M.P.) Top	
Total Depth of Well19.8'	
Total Depth of Boning	
Drilling Method	
Type Direct Push	Diameter <u>2 1/2" O.D.</u>
Casing None	
Sampling Method	
Type <u>MacroCore</u>	Diameter <u>2 1/2" O.D.</u>
Weight NA	FallNA
Interval <u>0 - 20'</u>	
Riser Pipe Left in Place	
Material Sch 40 PVC	Diameter 3/4" ID
Length	
Screen	,
	Diameter <u>3/4" I.D./1.4" O.D.</u>
	Length 5 feet
	Gravel/Alluvium
Filter Pack	
Sand Pre Pack Gravel	Natural X
Grade Pre Pack Grade 0	
Amount NA	Interval Natural Collapse 10-20'
Seal(s)	
Type Bentonite Granules	Interval0 - 10'
Type	
Type	Interval
Locking Casing	X No
Notes:	_ 140

Earth Tech, Inc.					
Latham, NY (518) 951-2200		Test B	oring L	.og	Boring No. DP-33
PROJECT: Gastown Former M		Sheet 1 of 2			
CLIENT: NYSDEC	Job No. 44491.02				
DRILLING CONTRACTOR: SJE	B Drilling Se	ervices			Meas. Pt. Elev.: NA
PURPOSE: Subsurface Soil Sa	ampling/Mo	nitoring Well	Installation		Ground Elev.: NA
DRILLING METHOD: Direct Pu	sh	SAMPLE	CORE	CASING	Datum: Ground Level
DRILL RIG TYPE: Simco 2400	TYPE	MacroCore			Date Started: 9/10/01
GROUNDWATER DEPTH: NA	DIAM.	2" I.D.	<u>-</u>	<b></b>	Date Finished: 9/10/01
MEAS. PT.:	WEIGHT				Driller: Ken Fuller
DATE OF MEAS.:	FALL				Inspector: Walt Howard
Depth Sample Blow Classif- (Feet) Number Count ication	Graphic Log	GEOLO	GIC DESCR	PTION	REMARKS
S-1  S-1  O.1  S-2  O.1  S-3  O.0		GEOLOGIC DESCRIPTION  Bk Dk Gr cmf S, s \$, I f G; rts; org; some cndrs; brks  Gr Br Cy\$, t f S; frm; mttld  5.2': Lt Br rd f S, a \$; frm  6.0': Rd br Cy\$, I f S; frm  Gr br rd Cy\$, s f S; sand seams,			Rec = 1.0' Dry  Rec = 2.6' Dry/Damp  Rec = 1.9' Moist/Wet
10		fSaCy\$; no			
10 0.1					

1	Earth Tech, Inc. Latham, NY (518) 951-2200				Test Boring Log	Boring No. DP-33
PROJE	ECT: Ga	stown Fo	ormer MG	P Site RI		Sheet 2 of 2
CLIEN	T: NYS	DEC				Job No. 44491.02
Depth (Feet)	Sample Number		Unified Classif- ication	Graphic Log	Geologic Description	Remarks
10						
_	S-3					
_					:	
_	_		0.0		Br gr c(-)mf S, I \$; massive clean sand, no odor	Rec = 2.3'
_			0.0			
	S-4		0.0		14.0': Gr mf(+) S; w/ seams Gr Cy\$; frm; no odor	
15 —						
-			0.0		Gr mf(+) S, I \$; occ Cy\$ seams; no odor	Rec = 1.3' Wet
			0.0			
	S-5					
20 —					Gr cmf S, t \$;   f G; G sbrdd; no odor; no sheen	Rec = 0.3' Wet
	-				21.0': Rd \$yC in sampler tip	
	S-6					
_						
 25					24.0': Bottom of Boring Seal boring w/ bentonite Install DPW-33 in separtate boring	

Earth Tech, Inc. 40 British American Boulevard Latham, NY 12110 (518) 951-2200

Project	Gastown Former MGP Site RI				
Client NYSDEC  Location Tonawanda, NY-Open Bible Church Parkir					
	lled 9/12/01				
	veloped10/1/01				

#### WELL CONSTRUCTION DETAIL

## - 0.0' CONCRETE-2.0' BENTONITE SEAL -RISER -SAND 12.0' CHOKE 15.2' PRE PACKED WELL SCREEN FORMATION COLLAPSE 20.2' - 21.0'

Drilled at 5' off-set location to boring DP-33

## INSPECTION NOTES

Drilling ContractorSJB D	orilling Services
Type of Well	Date
Drilling Method  Type	
WeightNA	Diameter <u>2 1/2" O.D.</u> Fall <u>NA</u>
Riser Pipe Left in Place  Material Sch 40 PVC  Length 15.2'	Diameter 3/4" ID Joint Type Flush Joint
Slot Size 0.010 inch	Diameter 3/4" I.D./1.4" O.D. Length 5 feet Gravel/Alluvium
Grade Pre Pack Grade 0	NaturalX Interval Natural Collapse 12-21
Seal(s) Type Bentonite Granules Type Type Type	Interval——————
Locking Casing X Yes Notes:	□ No

Earth Tech, Inc. Latham, NY (518) 951-2200		Test B	oring L	.og	Boring No. DP-34
PROJECT: Gastown Former MC	GP Site RI				Sheet 1 of 2
CLIENT: NYSDEC					Job No. 44491.02
DRILLING CONTRACTOR: SJB	Drilling Se	ervices			Meas. Pt. Elev.: NA
PURPOSE: Subsurface Soil Sa	impling/Mo	nitoring Well	Installation		Ground Elev.: NA
DRILLING METHOD: Direct Pus	h	SAMPLE	CORE	CASING	Datum: Ground Level
DRILL RIG TYPE: Simco 2400	TYPE	MacroCore			Date Started: 9/11/01
GROUNDWATER DEPTH: NA	DIAM.	2" I.D.		:	Date Finished: 9/11/01
MEAS. PT.:	WEIGHT				Driller: Ken Fuller
DATE OF MEAS.:	FALL				Inspector. Walt Howard
Depth Sample Blow Classif- (Feet) Number Count ication	Graphic Log	GEOLO(	GIC DESCRI	PTION	REMARKS
2.0		Dk Gr cmf G,			Rec = 2.1' Dry/Damp
2.0 S-1 2.0 2.0 5 - 2.1 S-2 2.0		O.5': BK DK G	S, a \$; frm; r	nttld	Rec = 2.9' Damp
2.0 - S-3 - 2.2 10 2.0		Same 8.5': Dk Gr Bk wh shells; no		g; sm rts;	Rec = 1.8' Moist

Earth	Tech, I	nc –				
	n, NY (51		2200		Test Boring Log	Boring No. DP-34
	_		ormer MG	P Site RI		Sheet 2 of 2
CLIEN	T: NYSE	DEC				Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	Graphic Log	Geologic Description	Remarks
10						
-	S-3					
			2.0			   Rec = 3.2'
_					Dk Gr Cy\$, I f S; frm; v org, rts; seam wh platey, decomposed	Wet S.2
_			2.0		shells @ 12 6'	
_	S-4				13.8': Same: w/ seams f S, I \$	. •
-	3-4		2.0			
15 —					15.0': Gr cmf(+) S, I \$, t f G;	
					faint odor, no sheen or blebs	
-			4.0		Gr mf(+) S, I \$; fining upward; sm odor, no sheen, no blebs	Rec = 1.3' Wet
-						
			5.4		17.1': Gr mf G, I cmf S; G sbrdd, no sheen, no blebs	
	S-5				17.2': Rd gr \$yC (Red Clay)	
_						
_						
-						
20 —	_				20.0': Bottom of Boring	-
_					Install microwell DPW-34	
_						
-						
_						
_						
_						
_						
25						

Earth Tech, Inc. 40 British American Boulevard Latham, NY 12110 (518) 951-2200

Project.	Gastown Former MGP Site RI					
Client	NYSDEC					
	Tonawanda, NY					
Project No. 44491.02						
Date Drilled 9/11/01						
	veloped 10/2/01					

### WELL CONSTRUCTION DETAIL

## **-** 0.0' CONCRETE-- 2.0' BENTONITE SEAL -RISER . SAND **-** 10.0' CHOKE 12.0' PRE PACKED WELL SCREEN FORMATION COLLAPSE 17.0' 20.01

NOT TO SCALE

### **INSPECTION NOTES**

Inspector Walt Howard	
Drilling Contractor SJB C	Orilling Services
Type of Well	Date10/2/01 of PVC
Drilling Method  Type	
Sampling Method Type <u>MacroCore</u> Weight <u>NA</u> Interval <u>0 - 20'</u>	Diameter <u>2 1/2" O.D.</u> Fall <u>NA</u>
	Diameter 3/4" ID Joint Type Flush Joint
Slot Size 0.010 inch	Diameter 3/4" I.D./1.4" O.D. Length 5 feet Gravel/Alluvium
Grade Pre Pack Grade 0	Natural X  Interval Natural Collapse 10-20'
	Interval2 - 10' Interval Interval
Locking Casing	□ No

Earth Tech, Inc.	Earth Tech, Inc. Test Boring Log							
Latham, NY (518) 951-2200	Boring No. DP-35							
PROJECT: Gastown Former M	Sheet 1 of 2							
CLIENT: NYSDEC	Job No. 44491.02							
DRILLING CONTRACTOR: SJ	3 Drilling Se	ervices			Meas. Pt. Elev.: NA			
PURPOSE: Subsurface Soil S	ampling/Mo	nitoring Well	Installation		Ground Elev.: NA			
DRILLING METHOD: Direct Pu	sh	SAMPLE	CORE	CASING	Datum: Ground Level			
DRILL RIG TYPE: Simco 2400	TYPE	MacroCore			Date Started: 9/11/01			
GROUNDWATER DEPTH: NA	DIAM.	2" I.D.		*	Date Finished: 9/11/01			
MEAS. PT.:	WEIGHT				Driller: Ken Fuller			
DATE OF MEAS.:	FALL				Inspector: Walt Howard			
Depth Sample Blow Classif- (Feet) Number Count ication	Graphic Log	GEOLO	GIC DESCR	IPTION	REMARKS			
S-1		Dk Br S a cm cndrs  0.6': Rd br g  Gr br rd mf(+ alt seams f S  5.3': Gr br C	r Cy\$, I f S;	frm, mttld	Rec = 1.8' Dry  Rec = 2.3' Damp			
2.2 - S-3 2.4 10 2.2		Br gr mf(+) S a f S; frm, no			Rec = 1.4' Wet			

Farth	Tech, I	nc		<del>-</del> T		
Latham, NY (518) 951-2200					Test Boring Log	Boring No. DP-35
PROJE	ECT: Ga	stown Fo	ormer MG	P Site RI		Sheet 2 of 2
CLIEN	T: NYSE	DEC				Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	Graphic Log	Geologic Description	Remarks
10  -	S-3				·	
——————————————————————————————————————	S-4		0.5		Gr mf(+) S, a \$; occ seams (0.05-0.4) Gr \$ a C; no odor, no sheen, no blebs	Rec = 1.9' Wet
  15	3-4		1.3	·		
_ _			2.0		Gr mf S, I \$; loose; no odor, no sheen	Rec = 1.8' Wet
- -	S-5		2.0		17.2': Gr mf G, s cmf S, t \$; hd; sm odor; tiny bleb near tip; G sbrdd	
20 — —			No PID		Gr mf S, I \$; frm; strong odor; pockets of sheen  20.8': Gr cmf S, t \$; (fine upward)	
- - -	S-6				20.9': Gr m f (+) G, I cmf S; G sbro 0.1' thk coal tar sat seam at 21.2' 21.6': Rd Cy\$; S ft	1d
					Bottom of Boring @ 24.0' Seal boring w/ Bentonite	

Earth Tech, Inc.	Boring No. DP-36				
Latham, NY (518) 951-2200  PROJECT: Gastown Former MC	Sheet 1 of 2				
	Job No. 44491.02				
CLIENT: NYSDEC	Drilling Co				Meas. Pt. Elev.: NA
DRILLING CONTRACTOR: SJB					Ground Elev.: NA
PURPOSE: Subsurface Soil Sa		1		CASING	Datum: Ground Level
DRILLING METHOD: Direct Pus		SAMPLE	CORE	CASING 	
DRILL RIG TYPE: Simco 2400	TYPE DIAM.	MacroCore			Date Started: 9/11/01
GROUNDWATER DEPTH: NA		2" I.D.			Date Finished: 9/11/01  Driller: Ken Fuller
MEAS. PT.:	WEIGHT				-
DATE OF MEAS.:	FALL				Inspector: Walt Howard
Depth Sample Blow Classif- (Feet) Number Count ication	Graphic Log <sup>'</sup>	GEOLO	GIC DESCRI	PTION	REMARKS
S-1		Lt Br \$,   mf is 1.0': Lt br the Gr rd br mf(+ of Cy\$  , f S;	\$ a, f S; loo	m; seams	Rec = 3.3' Dry  Rec = 2.4' Moist
S-3		Gr Cy\$, t f S mttld, no odd		at 8.6';	Rec = 2.9' Damp

<del></del>	· · ·					
	<b>Tech, I</b> n, NY (51		2200		Test Boring Log	Boring No. DP-36
PROJE	ECT: Ga	Sheet 2 of 2				
CLIEN	T: NYSE	EC .				Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	Graphic Log	Geologic Description	Remarks
10 — — — — — — — — — — — — — — — — — — —	S-3 S-4				10.5': Dk Br Bk Cy\$; rts; v org; occ shells; no odor  Dk Gr Cy\$, t f S; v. org; occ rts & snells  13.0': Grading to Gr mf(+) S, a \$; w/ freq seams. Gr Cy\$; frm; no odor, no sheen	Rec = 2.8' Moist
	S-5				Gr Cy\$ s mf(+) S; alt seams Cy\$ and f S; frm; no odor  17.0': Gr cmf G s, cmf S; hd; Gr sbang - sbrdd; some coal tar odor; no sheen; no blebs	Rec = 2.0' Wet
20 —					Gr mf(+) S, I(-) \$; well srtd; sm odor 20.6': Gr cmf S, t f G; loose; some odor, no sheen or blebs 21.2': Gr cmf G; s cmf S; hd; some odor, no sheen or sign of NAPL 22.4': Rd \$yC; in tip, trace NAPL bleb	Rec = 2.5' Very hard probing 20 - 22.4', then soft probing to 24.0'
  25					Bottom of Boring @ 24.0' Install Microwell DPW-36	

Earth Tech, Inc. 40 British American Boulevard Latham, NY 12110 (518) 951-2200

Project.	Gastown Former MGP Site RI
Client	NYSDEC
Location	Tonawanda, NY - E. Niagara St. & East Ave
	No. <u>44491.02</u>
	lled <u>9/11/01</u>
Date De	veloped <u>10/1/01</u>

### WELL CONSTRUCTION DETAIL

# CONCRETE-\_ 2.0' BENTONITE SEAL RISER -SAND - 11.3' CHOKE **-** 16.2' PRE PACKED WELL SCREEN **FORMATION** COLLAPSE 21.2 - 24.0'

NOT TO SCALE

| ...

INSPE	CTION	LNO	TFS.
11 11 27 27 1	(,     ( )   )		

Inspector Walt Howard  Drilling Contractor SJB D	 rilling Services
Type of Well	Date
Drilling Method  Type	
Sampling Method Type MacroCore Weight NA Interval 0 - 24'	Diameter 2 1/2" O.D. Fall NA
Riser Pipe Left in Place  Material Sch 40 PVC  Length 16.2'	Diameter 3/4" ID Joint Type Flush Joint
	Diameter <u>3/4" I.D./1.4" O.D.</u> Length <u>5 feet</u> Gravel/Alluvium
Filter Pack Sand <u>Pre Pack</u> Gravel Grade <u>Pre Pack Grade 0</u> Amount <u>NA</u>	
Seal(s) Type Bentonite Granules Type Type Type	Interval—————
Locking Casing X Yes Notes:	□ No

				<del></del>				
i	Earth Tech, Inc. Latham, NY (518) 951-2200  Test Boring Log							Boring No. DP-37
		<del></del>						
	ECT: Ga	Sheet 1 of 2						
	T: NYS							Job No. 44491.02
				B Drilling Se				Meas. Pt. Elev.: NA
					onitoring Well			Ground Elev.: NA
DRILLI	NG ME	THOD: [	Direct Pu	sh	SAMPLE	CORE	CASING	Datum: Ground Level
DRILL	RIG TY	PE: Sim	nco 2400	TYPE	MacroCore			Date Started: 9/11/01
GROU	NDWAT	ER DEP	TH: NA	DIAM.	2" I.D.		:	Date Finished: 9/11/01
MEAS.	PT.:	-		WEIGHT				Driller: Ken Fuller
DATE	OF MEAS	.:		FALL				Inspector. Walt Howard
Depth (Feet)	Sample Number	Blow Count	Unified Classif- ication	Graphic Log	GEOLO(	GIC DESCR	IPTION	REMARKS
					Lt Gr topsoil			Rec = 2.9'
-					0.5': Brk fgn			Dry
-	0.1				1.3': Bk slag	brks		
_	S-1				0.41.1.0.=	<b>.</b>		
					2.4': Lt Gr B	r \$ a f S; frn	n; mttld	
-								
_					Gr Br \$ a, m	f(+) S; frm; ı	mttld;	Rec = 2.6'
_					Fe stain; no			Moist
5 —								
				}				
	S-2							
-					6.5': Gr\$1, t	S; frm; no c	odor	
_								
_			,					
				I	Br Dk Gr \$ I(+) f S; frm; fts; v org;			Rec = 2.6'
7					t shells Grading down	to Dk Gr Cv	/\$ t, f S:	Moist
-	S-3				v org; some sl		,,	
-								
10		Ì	}					

		· · · · · · · · · · · · · · · · · · ·				
Earth T Latham,			2200		Test Boring Log	Boring No. DP-37
PROJECT: Gastown Former MGP Site RI						Sheet 2 of 2
CLIENT	: NYSD	EC				Job No. 44491.02
	Sample Number	Blow Counts	Unified Classif- ication	Graphic Log	Geologic Description	Remarks
10			-			
	S-3					
<del>-</del>					Dk Gr Cy\$ I, f S; frm; rts; occ shells; v org	Rec = 1.8'
-	S-4				13.6': Gr G fgmt w/ sm cmfs in tip; sl coal tar odor	·
15 —						
-		-			Gr mf(+) S, t \$; frm; sm odor, no sheen; fining upward 16.5': Gr cmf(+) G, I cmf S; G well rdd; strong odor	Rec = 1.6' Wet
-	S-5				17.3': Same; w/ NAPL blebs 0.10' NAPL saturation seam 17.4 - 17.5' 17.5': Rd \$yC; w/ tiny NAPL	
					blebs	
20					Bottom of Boring @ 20.0'	
_					Seal boring w/ bentonite	
7						
	-					
 25						

.

r=-:				<del></del>
Earth Tech, Inc.	Tes	t Boring L	.oa	Boring No. DP-38
Latham, NY (518) 951-2200		<del></del>		
PROJECT: Gastown Former MGP	Site RI			Sheet 1 of 2
CLIENT: NYSDEC				Job No. 44491.02
DRILLING CONTRACTOR: SJB D				Meas. Pt. Elev.: NA
PURPOSE: Subsurface Soil Sam	oling/Monitoring		<u></u>	Ground Elev.: NA
DRILLING METHOD: Direct Push	SAM	IPLE CORE	CASING	Datum: Ground Level
	TYPE Macro	Core —		Date Started: 9/11/01
GROUNDWATER DEPTH: NA	DIAM. 2" I	.D		Date Finished: 9/11/01
MEAS. PT.: V	/EIGHT -	-		Driller: Ken Fuller
DATE OF MEAS.:	FALL -			Inspector: Walt Howard
Depth Sample Blow Classif-ication	Graphic GI Log	EOLOGIC DESCRI	PTION	REMARKS
S-1 S-2 S-2	1.1': L 1.7': B 2.9': G Same	ayer m f S, t \$ (0.1) d gr br Cy\$, a mf(+) Cy\$; mf S; frm; no e stain	rks  frm; mttid  thk)  S; alt	Rec = 3.5' Dry  Rec = 2.8' Damp
S-3	Same			Rec = 2.4' Wet

	Tech, I				Test Boring Log	Boring No. DP-38
	m, NY (5					
PROJ	ECT: Ga	Sheet 2 of 2				
CLIEN	IT: NYSE	DEC				Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	Graphic Log	Geologic Description	Remarks
10 —	S-3		ļ		10.0': GrfS, s \$; seams of Gr Cy\$; frm; no odor; no sheen	
- - - -	S-4				Gr mf(+) S, I Cy\$; frm; no sheen; no odor 12.4': Gr cmf S, I mf G; G sbrdd	Rec = 0.5' Wet
15 — ———————————————————————————————————	S-5				Gr mf G a, cmf S, I Cy\$  16.4': Gr cmf(+) Ga, cmf S; loose; sm faint odor; no sheen; no sign of NAPL; G sbrdd	Rec = 1.3' Wet
20 —	S-6				Gr cmf G, I cmf S; G sbrdd; no odor; no sheen  21.9': Rd \$yC; sft; no odor	Rec = 2.0' Wet
					Bottom of Boring @ 24.0' Seal w/ Bentonite	

					<del></del>
Earth Tech, Inc.		Test B	oring L	Boring No. DP-39	
Latham, NY (518) 951-2200 PROJECT: Gastown Former MC					
	Sheet 1 of 2				
CLIENT: NYSDEC	Daillin o C				Job No. 44491.02
DRILLING CONTRACTOR: SJB					Meas. Pt. Elev.: NA
PURPOSE: Subsurface Soil Sa				0.401410	Ground Elev.: NA
DRILLING METHOD: Direct Pus		SAMPLE	CORE	CASING	Datum: Ground Level
DRILL RIG TYPE: Simco 2400	TYPE	MacroCore		<del></del>	Date Started: 9/12/01
GROUNDWATER DEPTH: NA	DIAM.	2" I.D.			Date Finished:  Driller: Ken Fuller
MEAS. PT.:	WEIGHT				
DATE OF MEAS.:	FALL				Inspector: Walt Howard
Depth Sample Blow Classif-ication	Graphic Log	GEOLO	GIC DESCRI	PTION	REMARKS
S-1 S-2 S-2		Gravel and content of the second content of		e and	Rec = 2.1' Dry  Rec = 1.3' Dry
S-3	1	Gr br rd Cy\$, fgmts; occ she seds; no odor			Rec = 2.4' Damp

Earth	Tech, I	nc.	_		Toot Poring Log	
Latham, NY (518) 951-2200					Test Boring Log	Boring No. DP-39
PROJECT: Gastown Former MGP Site RI						Sheet 2 of 2
CLIENT: NYSDEC						Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	Graphic Log	Geologic Description	Remarks
10 _						
	S-3					
_						
					Gr rd Cy\$, I f G; reworked native	Rec = 2.8'
					seds	Moist
					12.4': Gr cmf S, I mf G; thin Gravel layer: no odor	
	İ				12.5': Rd \$yC; alt seams of Gr Cy\$; vvd; no odor; no sheen; no	
	S-4				Cy\$; vvd; no odor; no sheen; no visible coal tar	
_						
15 <del></del>						
_					Bottom of Boring @ 16.0'	_
_					Seal w/ Bentonite	
_						
_	S-5					
_	3-5					
_						
_						
_						
20 <del></del>						
_						
_						
_						
_						
_						
 25						

Earth Tech, Inc.	Test Boring Log				Boring No. DP-40
Latham, NY (518) 951-2200	<del>                                       </del>				
PROJECT: Gastown Former Mo	Sheet 1 of 2				
CLIENT: NYSDEC	Job No. 44491.02				
DRILLING CONTRACTOR: SJE	B Drilling Se	ervices			Meas. Pt. Elev.: NA
PURPOSE: Subsurface Soil Sa	ampling/Mo	nitoring Well	Installation	r — <del>-</del> —	Ground Elev.: NA
DRILLING METHOD: Direct Pus	sh	SAMPLE	CORE	CASING	Datum: Ground Level
DRILL RIG TYPE: Simco 2400	TYPE	MacroCore			Date Started:
GROUNDWATER DEPTH: NA	DIAM.	2" I.D.			Date Finished:
MEAS. PT.:	WEIGHT				Driller: Ken Fuller
DATE OF MEAS.:	FALL				Inspector: Walt Howard
Depth Sample Blow Classif- (Feet) Number Count ication	Number Count Classif- Graphic GEOLOGIC DESCRIPTION				REMARKS
S-1		Lt Gr cmf S, I org; topsoil; of fill  1.8': Lt Gr br mttling  Same; hard; f rts; Fe stain; I  6.3': Gr br mf no odor  Br gr mf(+) S,	freq mttld brolk org at 5.4	; glass ; sm & gr; sm '	Rec = 3.1' Dry  Rec = 3.1' Damp
S-3		9.0': Gr mf(+) seams Gr \$ a		Rec = 2.2' Wet	

Earth Tech, Inc. Latham, NY (518) 951-2200					Test Boring Log	Boring No. DP-40
<del>                                     </del>				D 0:t 5'		Sheet 2 of 2
PROJECT: Gastown Former MGP Site RI						Job No. 44491.02
CLIENT: NYSDEC						JUD 140. 4449 1.02
Depth (Feet)	Sample Number	Blow Counts	Classif	Graphic Log	Geologic Description	Remarks
10						
	S-3					
					Gr mf(+) S, a Cy\$; alt seams of	Rec = 1.3'
_					Sand \$; sft; no sheen; no odor	Wet
_						
-						
-	S-4					
_						
15 —						
-						
_					Gr mf(+) S, I \$; frm	Rec = 6.9'
_					16.6':Gr cmf G,   cmf S,   \$; hd; faint coal tar odor; no sheen; no blebs	Wet
-	S-5				16.9': Rd \$yC; no odor	
					7, 21, 112, 22, 21	·.
						Note: Soft probing start
						Note: Soft probing start at 19.0'
20 —						
_					Bottom of Boring @ 20.0' Install Well DPW-40	
_						
_						
_						
_						
_						
_						
 25						
	_			_		

Earth Tech, Inc. 40 British American Boulevard Latham, NY 12110 (518) 951-2200

Project	Gastown Former MGP Site RI
Client	NYSDEC
Location	Tonawanda, NY - Carney Street
	No. 44491.02
	lled 9/12/01
	veloped 10/2/01

#### WELL CONSTRUCTION DETAIL

## \_\_\_ 0.0' CONCRETE-1.5' BENTONITE SEAL -RISER -SAND 8.0' CHOKE 10.01 13.7' PRE PACKED WELL SCREEN . **FORMATION** COLLAPSE 18.71 - 20.0'

### INSPECTION NOTES

Inspector Walt Howard	
Drilling Contractor SJB [	Drilling Services
Type of WellDirect Push Micr Static Water Level7.61' Measuring Point (M.P.)Top Total Depth of Well18.7' Total Depth of Boring20.0'	Date
Drilling Method  Type	Diameter2 1/2" O.D
Sampling Method Type <u>MacroCore</u> Weight <u>NA</u> Interval <u>0 - 20'</u>	Diameter <u>2 1/2" O.D.</u> Fall <u>NA</u>
	Diameter 3/4" ID Joint Type Flush Joint
Slot Size 0.010 inch	Diameter 3/4" I.D./1.4" O.D. Length 5 feet Gravel/Alluvium
Grade Pre Pack Grade 0	Natural X  Interval Natural Collapse 10-20
Type	Interval 1.5' - 8.0' Interval Interval
Locking Casing 🗵 Yes Notes:	□ No

NOT TO SCALE

Farth	Tech I	nc						
Earth Tech, Inc. Latham, NY (518) 951-2200					Test B	Boring No. DP-41		
PROJECT: Gastown Former MGP Site RI								Sheet 1 of 2
CLIENT: NYSDEC								Job No. 44491.02
DRILLI	NG CON	ITRACT	OR: SJB	Drilling Se	ervices			Meas. Pt. Elev.: NA
PURPO	DSE: Si	Ground Elev.: NA						
DRILLI	NG MET	HOD: [	Direct Pus	h SAMPLE CORE CASING			Datum: Ground Level	
DRILL	RIG TYF	PE: Sim	nco 2400	TYPE	MacroCore			Date Started: 9/12/01
GROUI	NDWATE	ER DEP	TH: NA	DIAM.	2" I.D.		<del></del> . ·	Date Finished: 9/12/01
MEAS.	PT.:			WEIGHT				Driller: Ken Fuller
DATE C	F MEAS.	:		FALL				Inspector: Walt Howard
Depth (Feet)					PTION	REMARKS		
5 1 1	S-1				Gr br cmf S, w/ brks; sm r Same: Stone slag	eworked nati	ve fill	Rec = 1.3' Dry  Rec = 1.2' Dry
    10	S-3				Dk Gr \$ a, f \$ odor; 2' long poss tree roo	seam of woo		Rec = 2.7' Moist

l	Earth Tech, Inc. Latham, NY (518) 951-2200				Test Boring Log	Boring No. DP-41
			ormer MG	P Site RI		Sheet 2 of 2
<u> </u>	IT: NYSE					Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif-	Graphic	Geologic Description	Remarks
15 —	S-3 S-4	Counts	ication	Log	Bk Dk gr \$, I f S; frm; v org rts; sm shells; occ thin seamd of peat  14.0': Faint coal tar odor  14.5': Dk Gr cmf S, I \$, s mf G; t NAPL belb; sm coal tar odor  Dk Gr cmf(+) G a, cmf S, t \$; loose; G sbrdd; stong odor  16.5': Freq blebs  17.0': Rd Cy\$; w Gr C and \$ varves; no NAPL	Rec = 2.7' Moist  Rec = 2.1' Wet
25					Bottom of Boring @ 20.0' Seal w/ Bentonite	

Earth Tech, Inc.		Test Boring Log			Boring No. DP-42
Latham, NY (518) 951-2200 PROJECT: Gastown Former MC	SP Site PI				Sheet 1 of 2
	JE SILEKI				Job No. 44491.02
CLIENT: NYSDEC	Drilling Ca	arvinos.			Meas. Pt. Elev.: NA
DRILLING CONTRACTOR: SJE			Inotelletie-		Ground Elev.: NA
PURPOSE: Subsurface Soil Sa			CORE	CASING	Datum: Ground Level
DRILLING METHOD: Direct Pus	1	SAMPLE		CASING	Date Started: 9/12/01
DRILL RIG TYPE: Simco 2400	TYPE DIAM.	MacroCore			
GROUNDWATER DEPTH: NA	WEIGHT	2" I.D.			Date Finished: 9/12/01  Driller: Ken Fuller
MEAS. PT.:					
DATE OF MEAS.:	FALL				Inspector: Walt Howard
Depth Sample Blow Classif- (Feet) Number Count içation	Graphic Log	GEOLO	GIC DESCRI	PTION	REMARKS
_		Dk gr \$ a, cm topsoil	nf(+) S, t f G;	rts; org;	Rec = 3.3' Dry
		1.0': Sm brk	and crush st	one	
_					
S-1		1.9': Lt gr br	\$ a, f S; frm		
		Lt gr br f S, a	a \$; frm; mttlo	d	Rec = 2.8'
					Dry/Damp
5 —					
S-2					
		7.2': GrbrC	v\$ If St frm	no odor	
	I .	slt org; rts	<b>, φ, 11 Ο, 11111</b>	, 110 0001,	
		D) #			
	I .	Dk gr \$ a f S; shells and pe		v org; occ	Rec = 2.0'
		pt			
_ S-3					
10					

	<b>Tech, I</b> m, NY (51		2200		Test Boring Log	Boring No. DP-42
PROJ	ECT: Ga	stown Fo	ormer MG	P Site RI		Sheet 2 of 2
CLIEN	T: NYSE	EC				Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	Graphic Log	Geologic Description	Remarks
10 — — — — — — — — — — — — — — — — — — —	S-3				Dk Gr Cy\$, I f S; frm; v org; freq shells; occ decomposed clam shell 13.7': Dk Gr cmf S, t \$, I f G; loose; no odor; no visible sign of NAPL	Rec = 1.9' Damp/Moist
15 —	S-5				Lt Gr cmf(+) S, I \$; abdt shell fgmts 16.7': Dk Gr cmf(+) G, I cmf S; loose; no odor; no sign of NAPL 17.9': Rd \$yC; sft; no odor	Rec = 2.2' Wet
20 — — — — — — — — — — — — — — — — — — —					Bottom of Boring @ 20.0' Seal w/ Bentonite	

Earth Tech, Inc. Latham, NY (518) 951-2200		Test Boring Log			Boring No. DP-43
PROJECT: Gastown Former M	GP Site RI				Sheet 1 of 2
CLIENT: NYSDEC					Job No. 44491.02
DRILLING CONTRACTOR: SJE	B Drilling Se	ervices			Meas. Pt. Elev.: NA
PURPOSE: Subsurface Soil S	ampling/Mo	nitoring Well	Installation		Ground Elev.: NA
DRILLING METHOD: Direct Pu	sh	SAMPLE	CORE	CASING	Datum: Ground Level
DRILL RIG TYPE: Simco 2400	TYPE	MacroCore			Date Started:9/12/01
GROUNDWATER DEPTH: NA	DIAM.	2" I.D.			Date Finished: 9/12/01
MEAS. PT.:	WEIGHT				Driller: Ken Fuller
DATE OF MEAS.:	FALL				Inspector: Walt Howard
Depth Sample Blow Classif- (Feet) Number Count ication	Graphic Log	GEOLO	GIC DESCRI	PTION	REMARKS
S-1		Lt Gr \$, s mf sm cndrs and  1.8': Lt Gr B Br Gr mf(+) S no odor	brks r Cy\$, I f S; h	nd; mttld	Rec = 3.3' Dry  Rec = 3.2' Damp
5 - S-2		5.2': Gr br C 6.4': Gr br m			
S-3		Br mf(+) S, I :			Rec = 3.0' Wet
10	1	9.3': GrfS, I odor; frm	⊅; occ Cy∜ s	seams; no	

						,
1	Earth Tech, Inc. Latham, NY (518) 951-2200				Test Boring Log	Boring No. DP-43
PROJI	ECT: Ga	stown Fo	ormer MG	P Site RI		Sheet 2 of 2
CLIEN	IT: NYSE	DEC				Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	Graphic Log	Geologic Description	Remarks
10	S-3 S-4				Gr mf(+) S, I Cy\$; occ Cy\$ seams; no odor; no sheen	Rec = 0.7' Wet
15 —	S-5				Lt Gr mf(+) S, I \$; occ seams Gr C and \$; sft; no odor; no sheen  17.1': Gr mf G I, cmf S, t \$; frm; no odor; no sheen  17.2': Rd \$yC; sft	Rec = 1.8' Wet
20					Bottom of Boring @ 20.0' Install Microwell DPW-43	

Earth Tech, Inc. 40 British American Boulevard Latham, NY 12110 (518) 951-2200

Project	Gastown Former MGP Site RI
Client	NYSDEC
Location	Tonawanda, NY
	No. 44491.02
	lled 9/12/01
	veloped

#### WELL CONSTRUCTION DETAIL

## - 0.0' CONCRETE - 1.0' BENTONITE SEAL -RISER -SAND 10.0' CHOKE 12.0' 14.4' PRE PACKED WELL SCREEN **FORMATION** COLLAPSE 19.4' 20.0'

NOT TO SCALE

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Inspector Walt Howard	
Drilling ContractorSJB D	rilling Services
Type of WellDirect Push Micro Static Water Level6.52'  Measuring Point (M.P.)Top  Total Depth of Well19.4'  Total Depth of Boring20.0'	Date
Drilling Method  TypeDirect Push Casing None	Diameter <u>2 1/2" O.D.</u>
Weight <del>NA</del>	Diameter <u>2 1/2" O.D.</u> Fall <u>NA</u>
	Diameter 3/4" ID Joint Type Flush Joint
Slot Size 0.010 inch	Diameter <u>3/4" I.D./1.4" O.D.</u> Length <u>5 feet</u> Gravel/Alluvium
Filter Pack Sand <u>Pre Pack</u> Gravel Grade <u>Pre Pack Grade 0</u> Amount <u>NA</u>	
Seal(s) Type Bentonite Granules Type Type Type	Interval————
Locking Casing X Yes	□No

Earth Tech, Inc. Latham, NY (518) 951-2200	Test B	oring Lo	Boring No. DP-44	
PROJECT: Gastown Former MGP S	<del></del> Site RI			Sheet 1 of 2
CLIENT: NYSDEC				Job No. 44491.02
DRILLING CONTRACTOR: SJB Dri	lling Services			Meas. Pt. Elev.: NA
PURPOSE: Subsurface Soil Sample	ing/Monitoring Well	Installation		Ground Elev.: NA
DRILLING METHOD: Direct Push	SAMPLE	CORE	CASING	Datum: Ground Level
DRILL RIG TYPE: Simco 2400 T	YPE MacroCore			Date Started: 9/12/01
GROUNDWATER DEPTH: NA D	IAM. 2" I.D.			Date Finished: 9/12/01
MEAS. PT.: WE	EIGHT			Driller: Ken Fuller
DATE OF MEAS.:	ALL			Inspector: Walt Howard
I Lassii- I	raphic GEOLO Log	GIC DESCRIP	TION	REMARKS
S-1 S-2 S-2	2.5': Lt Gr br mttld Same; Moist	f(+) S, & \$; occ	e rts;	Rec = 4.0' Dry  Rec = 3.0' Dry/Moist
S-3	Gr br mf S, I S Cy\$ seams	S; sft - frm; mttl		Rec = 1.3' Wet

Earth Tech, Inc. Latham, NY (518) 951-2200	oring L	.og	Boring No. DP-44		
PROJECT: Gastown Former MC	BP Site RI				Sheet 1 of 2
CLIENT: NYSDEC					Job No. 44491.02
DRILLING CONTRACTOR: SJB	Drilling Se	ervices			Meas. Pt. Elev.: NA
PURPOSE: Subsurface Soil Sa			Installation	_	Ground Elev.: NA
DRILLING METHOD: Direct Pus		SAMPLE	CORE	CASING	Datum: Ground Level
DRILL RIG TYPE: Simco 2400	TYPE	MacroCore			Date Started: 9/12/01
GROUNDWATER DEPTH: NA	DIAM.	2" I.D.			Date Finished: 9/12/01
MEAS. PT.:	WEIGHT				Driller: Ken Fuller
DATE OF MEAS.:	FALL				Inspector: Walt Howard
Depth Sample Blow Classif- (Feet) Number Count ication	Graphic Log	GEOLO	GIC DESCR	IPTION	REMARKS
S-1 S-2 S-3 S-3		2.5': Lt Gr br mttld  Same; Moist  6.5': Gr br m seams; mttld;  Gr br mf S, I s	\$   f S; hd; t at 6.0' f(+) S, & \$; o frm	ree rts;	Rec = 3.0' Dry/Moist  Rec = 1.3' Wet
10		9.8': Gr mf S	; s \$; no odo	r	

						<del></del>
i	<b>Tech, I</b> m, NY (51		2200		Test Boring Log	Boring No. DP-44
				P Site RI		Sheet 2 of 2
CLIEN	IT: NYSE	DEC				Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	Graphic Log	Geologic Description	Remarks
					Gr Cy\$ a, mf(+) S; alt seam; sft; no odor; no sheen  Gr mf(+) S a Cy\$; alt seams; sft; no odor  17.0': Gr cmf G s, cmf(+) S; hd; slt coal tar odor; no sheen or visible sign of NAPL  18.0': Rd \$yC; sft; no sheen; no visible sign of NAPL  Bottom of Boring @ 20.0' Install Microwell DPW-44	Rec = 0.5' Wet  Rec = 2.0' Wet
-						
25						

Earth Tech, Inc. 40 British American Boulevard Latham, NY 12110 (518) 951-2200

Project .	Gastown Former MGP Site RI
Client	NYSDEC
	Tonawanda, NY
	No. 44491.02
	lled 9/12/01
	veloped 10/2/01

### WELL CONSTRUCTION DETAIL

## - --- 0.0' CONCRETE-1.5 BENTONITE SEAL -RISER -SAND 8.0' CHOKE 12.0' - 14.3' PRE PACKED WELL SCREEN FORMATION COLLAPSE 19.3' - 20.0'

NOT TO SCALE

La caractera Wolt Howard	
Inspector Walt Howard  Drilling Contractor SJB C	Orilling Services
Type of Well Direct Push Micr	·
Static Water Level	
Measuring Point (M.P.)	
Total Depth of Well19.3'  Total Depth of Boring20.0'	
Total Depth of Borning	
Drilling Method	
Type <u>Direct Push</u> Casing None	
·	
Sampling Method  TypeMacroCore	Diameter2_1/2" O.D.
Weight NA	Fall <u>NA</u>
Interval <u>0 - 20'</u>	
Riser Pipe Left in Place	
Material Sch 40 PVC	Diameter <u>3/4" ID</u> Joint Type <u>Flush Joint</u>
Screen	- John Typo
	Diameter <u>3/4" I.D./1.4" O.D.</u>
	Length 5 feet
Stratigraphic Unit Screened	Gravei/Alluvium
Filter Pack	
Grade Pre Pack Grade 0	Natural X
	Interval Natural Collapse 12-20'
Seal(s)	
Type <u>Bentonite Granules</u>	
Type	
Locking Casing 区 Yes Notes:	∐ No

Earth Tech, Inc.		Test Bo	oring L	oq	Boring No. DP-45
Latham, NY (518) 951-2200					
PROJECT: Gastown Former MC	SP Site RI				Sheet 1 of 2
CLIENT: NYSDEC					Job No. 44491.02
DRILLING CONTRACTOR: SJB					Meas. Pt. Elev.: NA
PURPOSE: Subsurface Soil Sa	mpling/Mo	nitoring Well			Ground Elev.: NA
DRILLING METHOD: Direct Pus	h	SAMPLE	CORE	CASING	Datum: Ground Level
DRILL RIG TYPE: Simco 2400	TYPE	MacroCore			Date Started:9/13/01
GROUNDWATER DEPTH: NA	DIAM.	2" I.D.			Date Finished: 9/13/01
MEAS. PT.:	WEIGHT				Driller: Ken Fuller
DATE OF MEAS .:	FALL				Inspector: Walt Howard
Depth Sample Blow Classif- (Feet) Number Count ication	Graphic Log	GEOLO	GIC DESCR	IPTION	REMARKS
5 -		Blind probe v	v/ no sample	er to 16 feet	

						<u> </u>
1	<b>Tech, I</b> n, NY (51		2200		Test Boring Log	Boring No. DP-45
PROJE	ECT: Ga	stown Fo	ormer MG	P Site RI		Sheet 2 of 2
CLIEN	T: NYSE	EC				Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	Graphic Log	Geologic Description	Remarks
10						
_						
15 —						
					Gr cy\$ I, f S; w/ freq seams (0.02 -	Rec = 2.1'
					0.05' thk) Gr f S, I \$; sf; no odor	Wet
_					17.6': Gr cmf(+) G l, cmf S; loose;	
					G sbrdd; no odor; no visible NAPL	
_	S-1					,
					19.0': Top of Rd \$yC (based on	
-					probe resistance)	
20 —					Bottom of Boring @ 20.0'	
					Seal w/ Bentonite	
_						
_						
_			,			
_						
_						
25						

Earth Tech, Inc.		Test Bo	oring L	.og	Boring No. DP-46
Latham, NY (518) 951-2200					<del></del>
PROJECT: Gastown Former MC	GP Site RI	<del></del>			Sheet 1 of 2
CLIENT: NYSDEC					Job No. 44491.02
DRILLING CONTRACTOR: SJE	B Drilling Se	ervices			Meas. Pt. Elev.: NA
PURPOSE: Subsurface Soil Sa	ampling/Mo	onitoring Well	Installation		Ground Elev.: NA
DRILLING METHOD: Direct Pus	sh	SAMPLE	CORE	CASING	Datum: Ground Level
DRILL RIG TYPE: Simco 2400	TYPE	MacroCore			Date Started: 9/13/01
GROUNDWATER DEPTH: NA	DIAM.	2" I.D.		- :	Date Finished: 9/13/01
MEAS. PT.:	WEIGHT				Driller: Ken Fuller
DATE OF MEAS .:	FALL				Inspector: Walt Howard
Depth Sample Blow Classif- (Feet) Number Count ication	Graphic Log	GEOLOG	GIC DESCR	IPTION	REMARKS
5 —					

Farth	Tech, I	nc		<del>-</del>		
	n, NY (51		2200		Test Boring Log	Boring No. DP-46
PROJE	ECT: Ga	stown Fo	ormer MG	P Site RI		Sheet 2 of 2
CLIEN	T: NYSE	EC				Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	Graphic Log	Geologic Description	Remarks
10 _						
-					.*	
_		_			Gr mf S, s \$; freq seams Gr Cy\$;	Rec = 4.0'
_					sft	vet
_	S-1					
15 <b>—</b>						
_						
_					Gr f S, I \$; loose; no odor; no sheen	Rec = 2.6' Wet
					17 Ol. Ca Culti fra a coope Ca	
_					17.0': Gr Cy\$; freq seams Gr mf(+) S,   \$; sft; no odor	
_	S-2					
_					18.4': Dk Gr mf(+) S, s \$; no odor; no sheen	
		_				
20 —						
_					Bottom of Boring @ 20.0' Seal w/ Bentonite	
		_				
_						
-						
_						
_		-				
25						

					<del></del>
Earth Tech, Inc.		Test B	orina L	oq	Boring No. DP-47
Latham, NY (518) 951-2200		-			
PROJECT: Gastown Former	IGP Site RI				Sheet 1 of 2
CLIENT: NYSDEC					Job No. 44491.02
DRILLING CONTRACTOR: S.	IB Drilling Se	ervices			Meas. Pt. Elev.: NA
PURPOSE: Subsurface Soil	Sampling/Mo	onitoring Well			Ground Elev.: NA
DRILLING METHOD: Direct P	ush	SAMPLE	CORE	CASING	Datum: Ground Level
DRILL RIG TYPE: Simco 240	TYPE	MacroCore	<del>-</del>		Date Started: 9/13/01
GROUNDWATER DEPTH: NA	+	2" I.D.			Date Finished: 9/13/01
MEAS. PT.:	WEIGHT				Driller: Ken Fuller
DATE OF MEAS.:	FALL				Inspector: Walt Howard
Depth Sample Blow Classif ication	I Grannic I	GEOLO	GIC DESCRI	PTION	REMARKS
S-1 S-2		Dk Gr \$ a cm fill  2.0': Br gr \$ l	, f S; hd; mtt	ld	Rec = 2.8' Dry  Rec = 3.4' Damp/Moist
S-3		Same; wet al	8.5'; no odo	r	Rec = 2.7' Moist/Wet

1	<b>Tech, I</b> n, NY (51		2200		Test Boring Log	Boring No. DP-47
PROJE	ECT: Ga	stown Fo	ormer MG	P Site RI		Sheet 2 of 2
CLIEN	T: NYSE	DEC				Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	Graphic Log	Geologic Description	Remarks
10					10.4': Gr f S a \$; frm	
	S-3	_				
_						
					Gr Cy\$ s f S; sft alt seams Cy\$	Rec = 1.3'
					and f S; no odor	Wet
_	S-4				,	
4.5						
15 —						
-					Gr cmf G I, cmf(+) S, I \$; tight;	Rec = 1.3' Wet
_					G sbrdd; v slight coal tar odor; no sheen; no visible sign of NAPL	VVet
l –						
_	S-5					
					19.0': Top of Rd \$yC (based on probe resistance)	
-						
20 —					Bottom of Boring @ 20.0'	
_					Seal w/ Bentonite	
_						
_						
25						

	·							
	<b>Tech, I</b> i i, NY (51		2200		Test Boring Log			Boring No. DP-48
PROJE	CT: Ga	stown F	ormer MC	GP Site RI				Sheet 1 of 2
CLIENT	T: NYSD	EC						Job No. 44491.02
DRILLI	NG CON	TRACT	OR: SJB	Drilling Se	ervices			Meas. Pt. Elev.: NA
PURPO	SE: Su	bsurfac	e Soil Sa	ampling/Mo	nitoring Well	Installation		Ground Elev.: NA
DRILLII	NG MET	HOD: [	Direct Pus	sh	SAMPLE	CORE	CASING	Datum: Ground Level
DRILL	RIG TYP	PE: Sim	nco 2400	TYPE	MacroCore			Date Started: 9/14/01
GROUN	NDWATE	R DEP	TH: NA	DIAM.	2" I.D.			Date Finished: 9/14/01
MEAS.	PT.:			WEIGHT				Driller: Ken Fuller
DATE O	F MEAS.			FALL				Inspector: Walt Howard
	Sample Number	Blow Count	Unified Classif- ication	Graphic Log	GEOLO	GIC DESCR	IPTION	REMARKS
5 -	S-1		Icanon		Lt Gr \$ a cmf occ brk fgmts  2.5': Lt Gr br  Gr br \$ I, f S;  4.9': Dk Gr C;  5.5': Br gr \$ I vert root sea	\$ a, f S; hd; frm y\$; v org f S; frm; mt	mttld	Rec = 3.4' Dry  Rec = 3.2' Dry/Damp
10	S-3				Gr br f s a(+) no sheen; sm 9.3': Gr mf(+)	Cy\$ seams		Rec = 2.2' Damp/Wet

Earth Tecl	n, Inc.			Tost Paring Lag	
Latham, NY	(518) 951-	2200		Test Boring Log	Boring No. DP-48
PROJECT:	Gastown Fo	ormer MG	SP Site RI		Sheet 2 of 2
CLIENT: N	SDEC				Job No. 44491.02
Depth Sam (Feet) Numl		Unified Classif- ication	Graphic Log	Geologic Description	Remarks
10 S-3				.*	
				Gr mf S, a cy\$; alt seams Sand and Cy\$: sft; no odor	Rec = 1.9' Wet PID HS 13-14' = 1.6 ppm
15 —					
				Gr cmf G, s cmf S, t \$; hd; G sbrdd; some coal tar odor; no visible NAPL	Rec = 0.8' Moist PID HS = 1.4 ppm Ver hard probing entire sleeve
20				Gramf G. Lamf Schd. C. ahrdd	
- - -				Gr cmf G, I cmf S; hd; G sbrdd; sm coal tar odor; no sheen or visible sign of NAPL 21.6': Rd \$yC; sft; no odor	Rec = 1.6' Moist/Wet PID HS 21-22' = 1.5 ppm
— S-6					
25				Bottom of Boring @ 24.0' Seal w/ Bentonite	

	<del></del> -						
Earth Ted		2200		Test Bo	Boring No. DP-49		
	Y (518) 951		OD 0:4- D				
	: Gastown F	ormer M	GP Site R	<u> </u>			Sheet 1 of 2
CLIENT: N				· · · · · · · · · · · · · · · · · · ·			Job No. 44491.02
	CONTRAC						Meas. Pt. Elev.: NA
				lonitoring Well		T	Ground Elev.: NA
	METHOD:		Τ	SAMPLE	CORE	CASING	Datum: Ground Level
	TYPE: Sir			MacroCore	·		Date Started: 12/10/01
	VATER DEP	TH: NA	DIAM.	2" I.D.			Date Finished: 12/10/01
MEAS. PT.		<del></del>	WEIGHT				Driller: Ken Fuller
DATE OF M	EAS.:	<del></del>	FALL				Inspector: Walt Howard
Depth San (Feet) Num	nple Blow nber Count	Unified Classif- ication	Graphic Log	GEOLOG	GIC DESCR	IPTION	REMARKS
5 -	-1			Drilled 5' N of Dk Gr \$, I f S; 1.7': Br gr mf( no odor Rd gr \$ a, f S; mttld	rts; org +) S, a \$; fr		Rec = 2.7' Wet  Rec = 1.8' Moist
- - - - - - 10	-3			Dk Gr bk \$ I, f org	S; frm; rts; s	shell fgmts;	Rec = 1.3' Damp

	<b>Tech, I</b>		2200		Test Boring Log	Boring No. DP-49
PROJE	ECT: Ga	stown Fo	ormer MG	P Site RI		Sheet 2 of 2
CLIEN	T: NYSE	EC				Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	Graphic Log	Geologic Description	Remarks
10 	S-3	_				
	S-4				Dk Gr Bk \$ I, f S; loose; rts; shells; org	Wet .
15 —					13.8': Gr cmf(+) S, t \$; t f G; shells no odor	
-	<b>S-</b> 5				Gr cmf S, I \$, I f G; abdt shells; fnt coal tar odor  16.3': Gr cmf G, I cmf S; Gr sbrdd; fnt odor	Rec = 1.1' Wet Hard probing to 20.0'
20 —	S-6				20.0': Top Rd \$yC (based on probe resistance)	Begin softer probing at 20.0'
-					Bottom of Boring @ 21.0' Install Microwell DPW-49	

Earth Tech, Inc. 40 British American Boulevard Latham, NY 12110 (518) 951-2200

Project.	Gastown Former MGP Site RI
Client	NYSDEC
	Tonawanda, NY
	No. 44491.02
•	lled <u>12/10/01</u>
	veloped <u>12/12/01</u>

#### WELL CONSTRUCTION DETAIL

# - 0.0' CONCRETE-BENTONITE SEAL -RISER -SAND 8' CHOKE -10' 15' PRE PACKED WELL SCREEN **FORMATION** COLLAPSE - 20' - 21'

Inspector <u>Walt Howard</u>	
Drilling Contractor SJB D	Orilling Services
Type of Well	Date
Drilling Method  Type <u>Direct Push</u> Casing None	Diameter <u>2 1/2" O.D.</u>
WeightNA	Diameter 2 1/2" O.D. Fall NA
	Diameter 3/4" ID Joint Type Flush Joint
Slot Size 0.010 inch	Diameter 3/4" I.D./1.4" O.D. Length 5 feet Gravel/Alluvium
Grade Pre Pack Grade 0	Natural X  Interval Natural Collapse 10-21'
Seal(s) Type Bentonite Granules Type Type Type	Interval
Locking Casing X Yes	□ No

Earth Tech, Inc. Latham, NY (518) 951-2200		Test Bo	oring L	og	Boring No. DP-50
PROJECT: Gastown Former M	GP Site RI				Sheet 1 of 2
CLIENT: NYSDEC					Job No. 44491.02
DRILLING CONTRACTOR: SJ	B Drilling Se	ervices			Meas. Pt. Elev.: NA
PURPOSE: Subsurface Soil S			 Installation		Ground Elev.: NA
DRILLING METHOD: Direct Pu		SAMPLE	CORE	CASING	Datum: Ground Level
DRILL RIG TYPE: Simco 2400	TYPE	MacroCore			Date Started: 12/11/01
GROUNDWATER DEPTH: NA	DIAM.	2" I.D.			Date Finished: 12/11/01
MEAS. PT.:	WEIGHT				Driller: Ken Fuller
DATE OF MEAS.:	FALL				Inspector: Walt Howard
Depth Sample Blow Classif- (Feet) Number Count ication	Graphic Log	GEOLO	GIC DESCR	PTION	REMARKS
S-1 S-2 S-3		Dk Gr br \$ 1, 1.0': Brk fgmt  3.0': Gr br \$ s  Gr br \$ a, f S  6.0': Gr br Cy no odor  Dk Gr blk Cy shells; no odo	and brk cnd  s, f S  frm; mttld;  \$ I, f S; frm;	rts rts; mttld;	Rec = 3.0' Damp  Rec = 1.9' Damp

l .	<b>Tech, I</b> n, NY (51		2200		Test Boring Log	Boring No. DP-50
			ormer MG	P Site RI		Sheet 2 of 2
	T: NYSE					Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif-	Graphic Log	Geologic Description	Remarks
10			ication	Log		
_						
-	S-3					
_						
_					No Recovery	Rec = 0' Wet Tube
_						wet Tube
_						
	S-4					
_						
1.5						
15 —						
					Di C. C. f. f. S. frm: rto: cm shalls	Rec = 2.8'
					Dk Gr \$ I, f S; frm; rts; sm shells	Moist
_						
_						
<u> </u>	S-5				17.6': Gr cmf G, I cmf S, t \$; hd; G sbrdd-sbang; Rd Clay coated	5
_					Gr at 18.0'; faint coal tar odor	
_						
_						
20 —					Gr cmf G, s cmf S; Gr rdd; faint	
-	}				coal tar odor	
-	S-6					
-						Begin soft probe at 21.7'
_					Bottom of Boring @ 22.0'	
_						
_						
25						

Earth Tech, Inc. 40 British American Boulevard Latham, NY 12110 (518) 951-2200

Gastown Former MGP Site RI
NYSDEC
Tonawanda, NY
No. 44491.02
lled 12/11/01
veloped <u>12/12/01</u>

#### WELL CONSTRUCTION DETAIL

## \_ 0.0' CONCRETE-\_ 1.5' BENTONITE SEAL -RISER -SAND - 5.0' CHOKE - 8.0' <del>-</del> 16.7' PRE PACKED WELL SCREEN FORMATION COLLAPSE 20.5 22.0'

## **INSPECTION NOTES**

Inspector Walt Howard	
Drilling Contractor SJB D	rilling Services
Type of WellDirect Push Micro	owell
Static Water Level	
Measuring Point (M.P.)	
Total Depth of Well20.5'	
Total Depth of Boring22.0'	
Drilling Method	
Type Direct Push	Diameter 2 1/2" O.D.
Casing None	
Sampling Method	
Type MacroCore	Diameter <u>2 1/2" O.D.</u>
WeightNA	FallNA
Interval <u>0.0 - 22.0'</u>	
Riser Pipe Left in Place  Material Sch 40 PVC	Diameter <u>3/4" ID</u>
Length16.7'	Joint Type Flush Joint
Screen	<u>.</u>
	Diameter <u>3/4" I.D./1.4" O.D.</u>
	Length <u>5 feet</u>
Stratigraphic Unit Screened	Gravel/Alluvium
Filter Pack	•
Sand Pre Pack Gravel	Natural <u>X</u>
Grade Pre Pack Grade 0	
Amount NA	Interval <u>Natural Collapse 8-22'</u>
Seal(s)	
Type Bentonite Granules	
Туре	Interval————
Туре	Interval—————
Locking Casing X Yes Notes:	□ No

						· · · · · · · · · · · · · · · · · · ·
Earth Tech, Inc. Latham, NY (518) 951-2200			Test Boring Log			Boring No. DP-51
PROJECT: Gastown Forme	MGP Sit	e Ri				Sheet 1 of 2
CLIENT: NYSDEC						Job No. 44491.02
DRILLING CONTRACTOR:	S IR Drilli	na S	ervices			Meas. Pt. Elev.: NA
PURPOSE: Subsurface Soil				Installation		Ground Elev.: NA
DRILLING METHOD: Direct		<u>y/Ivic</u>	SAMPLE	CORE	CASING	Datum: Ground Level
DRILL RIG TYPE: Simco 24	<del></del>		MacroCore			Date Started, 12/11/01
GROUNDWATER DEPTH: N		<u>РЕ</u> ЛМ.	2" I.D.			Date Started. 12/11/01  Date Finished. 12/11/01
MEAS. PT.:	WEI		<del> </del>		· ·	Driller: Ken Fuller
DATE OF MEAS.:	<del></del>	\LL				Inspector: Walt Howard
Linife		_				
Depth Sample Blow Class (Feet) Number Count catio	if- Grap	ohic og	GEOLOG	GIC DESCR	IPTION	REMARKS
S-1  S-2  S-2			Dk Gr br \$, I f			Rec = 1.5' Dry  Rec = 3.1' Damp Wet @ 5.5'
S-3			No Recovery			Rec = 0 Wet
10						

Earth	Took I	nc				
Earth Tech, Inc.  Latham, NY (518) 951-2200					Test Boring Log	Boring No. DP-51
PROJECT: Gastown Former MGP Site RI						Sheet 2 of 2
CLIEN	T: NYSE	EC				Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	Graphic Log	Geologic Description	Remarks
10 —						
	S-3					
-					Die Cr. C. I. f. S. from the com challes	Rec = 2.9'
					Dk Gr \$ I, f S; frm; rts; sm shells; org: no odor	Wet/Moist
-		· ·				
-	S-4	_				
15 —						
-						
					Dk Gr \$ a, f S; frm; rts 16.2': Gr mf(+) G; I cmf S; shells;	Rec = 0.4' Wet
_					faint coal tar odor; no NAPL	Hard drilling 16 - 18' Soft probe 18 - 20'
	S-5					
					18.0': Rd \$yC (based on probe resistance)	
_						
	ł					
20 —					Bottom of Boring @ 20.0' Install Microwell DPW-51	
-					Mistan Wildiowell ST W-31	
-						
_						
_						
25						

Earth Tech, Inc. 40 British American Boulevard Latham, NY 12110 (518) 951-2200

Project .	Gastown Former MGP Site RI
Client	NYSDEC
	Tonawanda, NY
	No. 44491.02
•	lled <u>12/11/01</u>
	veloped 12/13/01

#### WELL CONSTRUCTION DETAIL

# - 0.0' CONCRETE: - 1.5' BENTONITE SEAL -RISER -SAND CHOKE 8' 14' PRE PACKED WELL SCREEN **FORMATION** COLLAPSE 19' 20'

## INSPECTION NOTES

Inspector Walt Howard	
Drilling ContractorSJB [	Orilling Services
Type of Well <u>Direct Push Micr</u> Static Water Level <u>7.37'</u>	
Measuring Point (M.P.)	
Total Depth of Well19'	
Total Depth of Boring20'_	
Drilling Method  Type <u>Direct Push</u> Casing <u>None</u>	
Sampling Method	
Type <u>MacroCore</u>	Diameter 2 1/2" O.D.
Weight <u>NA</u> Interval <u>0 - 20'</u>	Fall <u>NA</u>
mervar <u> </u>	
Riser Pipe Left in Place  Material Sch 40 PVC  Length 14'	Diameter 3/4" ID Joint Type Flush Joint
	Diameter <u>3/4" I.D./1.4" O.D.</u> Length <u>5 feet</u>
Stratigraphic Unit Screened	
Filter Pack	NaturalX
Grade Pre Pack Grade 0	
Amount <u>NA</u>	Interval Natural Collapse 8-20'
	Interval 1 - 7'
	Interval
1 ype	III(e) val
Locking Casing X Yes Notes:	□ No

<b>Earth Tech, Inc.</b> Latham, NY (518) 951-2200		Test Bo	oring L	.og	Boring No. DP-52
PROJECT: Gastown Former MC	Sheet 1 of 2				
CLIENT: NYSDEC					Job No. 44491.02
DRILLING CONTRACTOR: SJE	Drilling Se	ervices			Meas. Pt. Elev NA
PURPOSE: Subsurface Soil Sa	.mpling/ <b>M</b> o	nitoring Well	Installation		Ground Elev.: NA
DRILLING METHOD: Direct Pus	h	SAMPLE	CORE	CASING	Datum: Ground Level
DRILL RIG TYPE: Simco 2400	TYPE	MacroCore			Date Started: 12/11/01
GROUNDWATER DEPTH: NA	DIAM.	2" I.D.			Date Finished: 12/11/01
MEAS. PT.:	WEIGHT				Driller: Ken Fuller
DATE OF MEAS.:	FALL	_			Inspector: Walt Howard
Depth Sample Blow Classif- (Feet) Number Count ication	Graphic Log	GEOLO	GIC DESCR	PTION	REMARKS
S-1  S-2  S-3		Ok Gr br cmf topsoil  Gr \$ a, f S; fru  Gr mf(+) S, a	m; rts		Rec = 1.5' Moist  Rec = 2.1' Wet  Rec = 1.8' Wet

	· .			<del></del>		T .
Earth Tech, Inc. Latham, NY (518) 951-2200					Test Boring Log	Boring No. DP-52
PROJECT: Gastown Former MGP Site RI						Sheet 2 of 2
CLIEN	T: NYSE	DEC				Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	Graphic Log	Geologic Description	Remarks
10					·	
	S-3					
					Same	Rec = 0.3'
					Camo	Wet
		_				
_	S-4					
_						
15 —						
_	}					
_					Gr f S, a \$; occ rts and shells; frm; no odor	Rec = 2.2'
					17.3': Gr cmf G s, cmf S; G	Hard probing 17 - 20'
_	S-5				sbrdd-rdd; hd; v faint coal tar odor; no NAPL	
_						
_	}					
20 —					Gr mf G a, cmf(+) S; v faint coal	Rec =0.7' Wet
_					tar odor; no NAPL; Rd \$yC in tip	, vvet
_						
					22.0': Rd \$yC (inferred)	Begin soft probe at 22'
				-	Bottom of Boring @ 23.0' Install Microwell DPW-52	
					motali Milotoweli DE W-32	
_						
25						

Earth Tech, Inc. 40 British American Boulevard Latham, NY 12110 (518) 951-2200

Project	Gastown Former MGP Site RI
Client	NYSDEC
Location	Tonawanda, NY
	No. 44491.02
	illed <u>12/11/01</u>
	veloped

### WELL CONSTRUCTION DETAIL

# 0.0 CONCRETE-1.5' BENTONITE SEAL -RISER -SAND 10.0' CHOKE 17.4' PRE PACKED WELL SCREEN **FORMATION** COLLAPSE 22.4'

INSPECTION NOTES

Inspector Walt Howard	
Drilling ContractorSJB D	rilling Services
Type of Well Direct Push Micro Static Water Level 7.25' Measuring Point (M.P.) Top of Total Depth of Well 22.4' Total Depth of Boring 22.4'	Date
Drilling Method  Type <u>Direct Push</u> Casing None	Diameter <u>2 1/2" O.D.</u>
Sampling Method Type <u>MacroCore</u> Weight <u>NA</u> Interval <u>0 - 23'</u>	Diameter 2 1/2" O.D. Fall NA
Riser Pipe Left in Place  Material Sch 40 PVC  Length 17.4'	Diameter <u>3/4" ID</u> Joint Type <u>Flush Joint</u>
	Diameter 3/4" I.D./1.4" O.D.  Length 5 feet  Gravel/Alluvium
Filter Pack Sand <u>Pre Pack</u> Gravel Grade <u>Pre Pack Grade 0</u> Amount <u>NA</u>	
Seal(s) Type Bentonite Granules Type Type Type	Interval—————
Locking Casing X Yes	□ No

DPW-52 installed in blind probe boring next to DP-52.

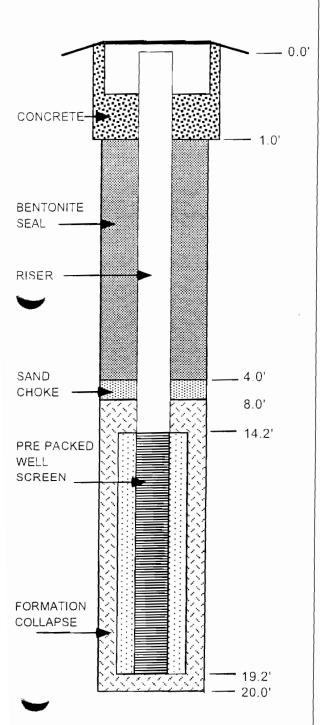
Earth Tech, Inc.		T (D			
Latham, NY (518) 951-2200		Test Boring Log			Boring No. DP-53
PROJECT: Gastown Former M				Sheet 1 of 2	
CLIENT: NYSDEC					Job No. 44491.02
DRILLING CONTRACTOR: SJE	B Drilling Se	rvices			Meas. Pt. Elev.: NA
PURPOSE: Subsurface Soil Sa	ampling/Mo	nitoring Well	Installation		Ground Elev.: NA
DRILLING METHOD: Direct Pu	sh	SAMPLE	CORE	CASING	Datum: Ground Level
DRILL RIG TYPE: Simco 2400	TYPE	MacroCore			Date Started: 12/12/01
GROUNDWATER DEPTH: NA	DIAM.	2" I.D.	_		Date Finished: 12/12/01
MEAS. PT.:	WEIGHT				Driller: Ken Fuller
DATE OF MEAS.:	FALL				Inspector: Walt Howard
Depth Sample Blow Classif- (Feet) Number Count ication	Graphic Log	GEOLO	GIC DESCRI	PTION	REMARKS
S-1 S-2 S-2		Damp  1.7': Lt Gr br \$ f, f S; frm; mttld; rts			Rec = 3.3' Damp  Rec = 3.4' Moist
S-3		6.9': Gr \$ a f s; frm; no odor  Same  8.9': Dk Gr bk \$ I; f S; rts; occ shells;		Wet @ 6.9'  Rec = 2.9'  Wet/Moist	
10		v org			

Earth	Tech, I	nc.		<del>-</del>	To at Daving Lan		
Latham, NY (518) 951-2200			2200		Test Boring Log	Boring No. DP-53	
PROJECT: Gastown Former MGP Site RI			ormer MG	P Site RI		Sheet 2 of 2	
CLIEN	T: NYSD	EC				Job No. 44491.02	
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	Graphic Log	Geologic Description	Remarks	
10 	S-3	· ·		·			
-					Same 12.6': Gr f S, s \$; v loose; liquified	Rec = 3.1' Wet	
- -	S-4				13.7': Gr Cy\$, I f S; alt seams Cy\$ a f S; occ rts; org		
15 <del>-</del>					15.1': Gr cmf S, I mf G; hd; v faint coal tar odor  Gr cmf(+) G, a cmf S; G sbrdd-	Begin hard probing @ 15.5' Rec = 1.9'	
 	S-5				sbang; v faint coal tar odor	Wet <sub>.</sub>	
					19.2': Rd \$yC (inferred)	Begin soft probe @ 19.2'	
					Bottom of Boring @ 20.0' Install Microwell DPW-53		
_	-						
_	-						
25							

Earth Tech, Inc. 40 British American Boulevard Latham, NY 12110 (518) 951-2200

Project	Gastown Former MGP Site RI					
Client NYSDEC						
	Tonawanda, NY					
Project No44491.02						
	lled 12/12/01					
Date De	veloped <u>12/12/01</u>					

### WELL CONSTRUCTION DETAIL



Inspector Walt Howard	
Drilling ContractorSJB D	rilling Services
Type of Well Direct Push Micro	owell
Static Water Level 4.86'	
Measuring Point (M.P.) Top	
Total Depth of Well 19.2'	
Total Depth of Boring 20.0'	
Drilling Method	0.4/0// 0.5
Type <u>Direct Push</u> Casing <u>None</u>	Diameter <u>2 1/2" O.D.</u>
_	
Sampling Method  Type MacroCore	Diameter <u>2 1/2" O.D.</u>
Weight NA	Fall NA
Interval <u>0 - 20'</u>	
Disor Dina Laft in Dlaga	
Riser Pipe Left in Place  Material Sch 40 PVC	Diameter 3/4" ID
	Joint Type Flush Joint
Screen	
	Diameter <u>3/4" I.D./1.4" O.D.</u>
Slot Size 0.010 inch	Length 5 feet
Stratigraphic Unit Screened.	Gravel/Alluvium
Filter Pack	
Sand Pre Pack Gravel	Natural X
Grade Pre Pack Grade 0	
Amount NA	Interval Natural Collapse 8-20
Seal(s)	
Type Bentonite Granules	
Type	
•	
Locking Casing X Yes	□ No

Earth Tech, Inc.	<del></del>				
Latham, NY (518) 951-2200		Test Boring Log			Boring No. DP-54
PROJECT: Gastown Former MC	SP Site RI			Sheet 1 of 3	
CLIENT: NYSDEC					Job No. 44491.02
DRILLING CONTRACTOR: SJB	Drilling Se	ervices		· ·	Meas. Pt. Elev.: NA
PURPOSE: Subsurface Soil Sa	mpling/Mo	nitoring Well	Installation		Ground Elev.: NA
DRILLING METHOD: Direct Pus	h	SAMPLE	CORE	CASING	Datum: Ground Level
DRILL RIG TYPE: Simco 2400	TYPE	MacroCore			Date Started: 12/12/01
GROUNDWATER DEPTH: NA	DIAM.	2" I.D.			Date Finished: 12/12/01
MEAS. PT.:	WEIGHT				Driller: Ken Fuller
DATE OF MEAS.:	FALL		·		Inspector: Walt Howard
Depth Sample Blow Count Classification	Graphic Log	GEOLOGIC DESCRIPTION			REMARKS
S-1  S-2		GEOLOGIC DESCRIPTION  Dk Gr br \$ a, f s; rts; org; topsoil  1.0': Rd brk lyr w/ subase Gravel  Bk gr br f G a, cmf(+) S, s \$; frm; reworked fill; no odor		Gravel	Rec = 2.0' Dry  Rec = 1.9' Moist
S-3		Same 8.9': Lt br woo poss peat 9.4': Rd \$yC s			Rec = 2.3' Wet

	<b>Tech, I</b> m, NY (51		2200		<b>Test Boring Log</b>	Boring No. DP-54	
PROJECT: Gastown Former MGP Site RI				P Site RI		Sheet 2 of 3	
CLIEN	IT: NYSE	DEC				Job No. 44491.02	
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	Graphic Log	Geologic Description	Remarks	
10			104,1011		10.0': Gr f S, a \$, I f G; no odor		
	S-3						
					Gr \$ a, f S; frm; occ shells; no odor	Rec = 1.1' Wet Note: Rd \$yC slough in tube Soft push	
_ _ _ 15 —	S-4						
15 —			,				
- -					Gr \$ s, f S; occ shells; no odor	Rec = 0.3' Wet Soft push through ho tube	
- -	S-5						
- 20 <del>-</del>						Rec = 0.2'	
_					Gr \$ s, f S; occ shells	Wet	
_	S-6						
_						Hard probing start at 23'	
_ _ 25	S-7				Gr mf(+) S, I \$; no odor 24.3': Rd br gr \$ a, f S, I f G; hd; G sbrdd (Till)	Very hard probing 24 - 28'	

Earth Tech, Inc. 40 British American Boulevard Latham, NY 12110 (518) 951-2200

Project .	Gastown Former MGP Site RI						
Client	NYSDEC						
Location	Tonawanda, NY						
Project No. <u>44491.02</u>							
Date Drilled 12/12/01							
	veloped 12/13/01						

#### WELL CONSTRUCTION DETAIL

# - 0.0' CONCRETE - 1.0' BENTONITE SEAL -RISER -SAND 10' CHOKE 12' 20' PRE PACKED WELL SCREEN **FORMATION** COLLAPSE 28'

### **INSPECTION NOTES**

Drilling ContractorSJB D	rilling Services
Type of WellDirect Push Micro Static Water Level7.42'  Measuring Point (M.P.)Top Total Depth of Well25'  Total Depth of Boring28'	Date
Drilling Method  Type <u>Direct Push</u> Casing <u>None</u>	Diameter <u>2 1/2" O.D.</u>
Sampling Method Type <u>MacroCore</u> Weight <u>NA</u> Interval 0 - 28'	Diameter <u>2 1/2" O.D.</u> Fall <u>NA</u>
Riser Pipe Left in Place  Material Sch 40 PVC  Length 20'	Diameter <u>3/4" ID</u> Joint Type <u>Flush Joint</u>
	Diameter <u>3/4" I.D./1.4" O.D.</u> Length <u>5 feet</u> Gravel/Alluvium
Filter Pack Sand <u>Pre Pack</u> Gravel Grade <u>Pre Pack Grade 0</u> Amount <u>NA</u>	
Seal(s) Type Bentonite Granules Type Type	Interval
Locking Casing	□No

Earth Tech, Inc.			<del></del>		
Latham, NY (518) 951-2200	1	Test Boring Log			Boring No. DP-55
PROJECT: Gastown Former MC	GP Site RI				Sheet 1 of 2
CLIENT: NYSDEC					Job No. 44491.02
DRILLING CONTRACTOR: SJB	Drilling Se	ervices			Meas. Pt. Elev.: NA
PURPOSE: Subsurface Soil Sa	impling/Mo	nitoring Well	Installation		Ground Elev.: NA
DRILLING METHOD: Direct Pus	h	SAMPLE	CORE	CASING	Datum: Ground Level
DRILL RIG TYPE: Simco 2400	TYPE	MacroCore			Date Started:12/12/01
GROUNDWATER DEPTH: NA	DIAM.	2" I.D.			Date Finished: 12/12/01
MEAS. PT.:	WEIGHT				Driller: Ken Fuller
DATE OF MEAS	FALL				Inspector Walt Howard
Depth Sample Blow Classif- (Feet) Number Count ication	Graphic Log	GEOLO(	GIC DESCR	IPTION	REMARKS
S-1  S-1  S-2  S-3		Dk Gr br \$, s cndrs; fill  2.1': Gr br \$ I  6.3': Gr br f S odor	, f S; frm; mi frm; rts; v m	ittld; rts	Rec = 3.0' Damp  Rec = 3.3' Damp  Rec = 2.3' Wet
10		9.8': Gr Cy\$ s odor	, f S; seams	Cy\$; no	

	<b>Tech</b> , <b>I</b>		2200		Test Boring Log	Boring No. DP-55
PROJECT: Gastown Former MGP Site RI						Sheet 2 of 2
CLIEN	IT: NYSE	EC				Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	Graphic Log	Geologic Description	Remarks
10	S-3					
-	S-4				Dk Gr mf(+) S, I \$; w/ alt seams (0.01 - 0.15' thk) of Gr \$ I, f S; wet; sft; no odor; no sign of NAPL	Rec = 1.9' Wet
15 — —						
<u>-</u>	S-5				Gr f S, I \$; w/ alt seams (0.01 - 0.04' thk) Gr \$; s absent @ 16.6'; no odor  17.3': Gr mf(+) G a, cmf S; loose; G rdd-sbrdd; v faint coal tar odor; no sheen; no NAPL	Rec = 2.0' Wet
_					17.8': Rd \$yC; sft  19.5': Rd \$yC (inferred)	Begin soft probing @ 19.5'
20 —					Bottom of Boring @ 20.0' Install DPW-55	19.5'
- -						
  25						

Earth Tech, Inc. 40 British American Boulevard Latham, NY 12110 (518) 951-2200

Project	Gastown Former MGP Site RI					
Client	NYSDEC					
	Tonawanda, NY					
Project i	No. 44491.02					
Date Dri	lled					
Date De	veloped					

#### WELL CONSTRUCTION DETAIL

# <del>--</del> 0.0' CONCRETE-- 1.0' BENTONITE SEAL -RISER -SAND **-** 8.0' CHOKE -14.4' PRE PACKED WELL SCREEN **FORMATION** COLLAPSE 19.4' 20.0

Inspector <u>Walt Howard</u>	
Drilling Contractor SJB D	Orilling Services
Type of Well Direct Push Micro Static Water Level 5.88'  Measuring Point (M.P.) Top  Total Depth of Well 19.4'  Total Depth of Boring 20.0'	Date12/13/01 of PVC
Drilling Method  Type Direct Push  Casing None	
Sampling Method Type <u>MacroCore</u> Weight <u>NA</u> Interval <u>0 - 20.0'</u>	Diameter <u>2 1/2" O.D.</u> Fall <u>NA</u>
Riser Pipe Left in Place  Material Sch 40 PVC  Length 14.4'	Diameter <u>3/4" ID</u> Joint Type <u>Flush Joint</u>
	Diameter 3/4" I.D./1.4" O.D. Length 5 feet Gravel/Alluvium
Grade Pre Pack Grade 0	Natural XInterval Natural Collapse 8-20
Seal(s) Type Bentonite Granules Type Type	Interval————
Locking Casing 区 Yes Notes:	□ No

Earth Te					Test Bo	—— orina L	.oa	Boring No. DP-56
Latham, NY (518) 951-2200								
PROJECT: Gastown Former MGP Site RI							Sheet 1 of 2	
CLIENT:								Job No. 44491.02
DRILLING	G CON	TRACT	OR: SJB	Drilling Se	ervices			Meas. Pt. Elev.: NA
					nitoring Well			Ground Elev.: NA
DRILLING	G MET	HOD: D	Direct Pus	h	SAMPLE	CORE	CASING	Datum: Ground Level
DRILL RI	G TYP	E: Sim	2400	TYPE	MacroCore			Date Started: 12/12/01
GROUND	WATE	R DEP	TH: NA	DIAM.	2" I.D.		'	Date Finished: 12/12/01
MEAS. P	T.:			WEIGHT				Driller: Ken Fuller
DATE OF	MEAS.:			FALL				Inspector: Walt Howard
	ample umber	Blow Count	Unified Classif- ication	Graphic Log	GEOLOG	GIC DESCR	IPTION	REMARKS
5 -	S-1				Asphalt 0.2': Br gr cm' sbrdd 1.1': Gr br \$ i, G stone	f S; frm; rts	; org; sm f	Rec = 2.3' Dry  Rec = 3.0' Damp
10	S-3				Same 9.2': Br rd f S, \$; much Fe st		ims f S and	Rec = 3.2' Damp

						<del> </del>
i	Earth Tech, Inc.  Latham, NY (518) 951-2200				Test Boring Log	Boring No. DP-56
PROJE	ECT: Ga	stown Fo	ormer MG	P Site RI		Sheet 2 of 2
CLIEN	T: NYSE	EC				Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	Graphic Log	Geologic Description	Remarks
10	S-3 S-4				Gr f S, I \$; sft; no odor; sm seams Gr \$  Gr f S, I \$; loose; wet; no odor; no sheen  16.8': Gr \$ I, f S; alt seams \$ and f S; frm; no odr  17.4': Gr cmf(+) G I, cmf S; hd; v faint coal tar odor; no sheen; no NAPL  17.7': Rd \$yC	Rec = 0.5' Wet Very soft push 12 - 16'  Rec = 1.4' Wet Hard probing  Begin soft push @ 18 - 20'
20 —					Bottom of Boring @ 20.0' Instail DPW-56	

Earth Tech, Inc. 40 British American Boulevard Latham, NY 12110 (518) 951-2200

Project	Gastown Former MGP Site RI					
Cliant	NYSDEC					
Client	Tanayanda NV					
Location Tonawanda, NY						
Project No. <u>44491.02</u>						
Date Drilled						
	veloped12/13/01					

#### WELL CONSTRUCTION DETAIL

# CONCRETE-BENTONITE SEAL RISER -SAND 8.0' CHOKE 14.3' PRE PACKED WELL SCREEN **FORMATION** COLLAPSE 20.01

INSPECTION NOTES

Inspector Walt Howard	
Drilling ContractorSJB Di	rilling Services
Type of Well	Date
Drilling Method  Type	Diameter2 1/2" O.D.
Sampling Method  Type <u>MacroCore</u> Weight <u>NA</u> Interval <u>0 - 20'</u>	Diameter <u>2 1/2" O.D.</u> Fall <u>NA</u>
Riser Pipe Left in Place  Material Sch 40 PVC  Length 14.3'	Diameter3/4" ID Joint TypeFlush Joint
	Diameter <u>3/4" I.D./1.4" O.D.</u> Length <u>5 feet</u> Gravel/Alluvium
Filter Pack Sand Pre Pack Gravel — Grade Pre Pack Grade 0 — Amount NA	
Seal(s) Type Bentonite Granules Type Type Type	Interval
Locking Casing  Yes	□ No ·

NOT TO SCALE

Earth Tech, Inc.		Tost R	oring I	00	
Latham, NY (518) 951-2200		Test Boring Log			Boring No. DP-57
PROJECT: Gastown Former MC	Sheet 1 of 2				
CLIENT: NYSDEC					Job No. 44491.02
DRILLING CONTRACTOR: SJB	Drilling Se	ervices			Meas. Pt. Elev.; NA
PURPOSE: Subsurface Soil Sa	impling/Mo	nitoring Well	Installation		Ground Elev.: NA
DRILLING METHOD: Direct Pus	h_	SAMPLE	CORE	CASING	Datum: Ground Level
DRILL RIG TYPE: Simco 2400	TYPE	MacroCore			Date Started: 12/13/01
GROUNDWATER DEPTH: NA	DIAM.	2" I.D.			Date Finished: 12/13/01
MEAS. PT.:	WEIGHT				Driller: Ken Fuller
DATE OF MEAS.:	FALL				Inspector: Walt Howard
Depth Sample Blow Classif- (Feet) Number Count ication	Graphic Log	GEOLOG	GIC DESCR	IPTION	REMARKS
S-1 S-2 S-2		Dk Gr \$ a, mf  1.1': Lt Br mf  Br gr f S, s \$; odor	S.   \$; frm		Rec = 3.2' Damp  Rec = 2.1' Moist
S-3		Br Gr \$ I, f S; f 9.0': Gr Bk \$, t		ells	Rec = 2.5' Damp
10	9	9.6': Gr \$ & C;	frm; occ rts		

Earth Tech, Inc. Latham, NY (518) 951-2200  PROJECT: Gastown Former MGP Site RI  CLIENT: NYSDEC					Test Boring Log	Boring No. DP-57
						Sheet 2 of 2
						Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	Graphic Log	Geologic Description	Remarks
10 -	S-3					
					Lt Gr Cy\$. t f S; frm; rts	Rec = 3.1' Wet
	S-4				13.0': Dk Gr seam f S.   \$ 13.1': Gr \$ t f S; w/ freq seams (0.01 - 0.05' thk) Gr f S.   \$; no odor	
15 — —					Gr f S, I \$; massive; no odor	Rec = 3.0'
_	S-5				17.0': Gr cmf(+) G, I cmf S; hd; Gr sbrdd; v faint petrol odor, poss fuel oil	Wet
20 —					Gr cmf S, a cmf(+) G; hd; G sbrdd; v faint petrol (poss fuel oil) odor; tr Rd \$yC in tip	Rec = 1.1' Wet
<u> </u>	S-6				22.4': Top Rd \$yC (based on probe resistance)	Soft push start @ 22.4
					Bottom of Boring @ 23.0'	

Earth Tech, Inc. 40 British American Boulevard Latham, NY 12110 (518) 951-2200

Project.	Gastown Former MGP Site RI						
Client	NYSDEC						
	Tonawanda, NY						
Project No. 44491.02							
Date Drilled							
	veloped						

#### WELL CONSTRUCTION DETAIL

# \_\_\_\_ 0.0' CONCRETE-\_ 1.5' BENTONITE SEAL -RICER -SAND **-** 8.0' CHOKE 16.0' PRE PACKED WELL SCREEN **FORMATION** COLLAPSE 21.0' 23.0'

NOT TO SCALE

Inspector Walt Howard	
Drilling Contractor SJB D	Orilling Services
Type of Well Direct Push Micro Static Water Level 8.01' Measuring Point (M.P.) Top Total Depth of Well 21.0' Total Depth of Boring 23.0'	Date
Drilling Method  Type <u>Direct Push</u> Casing <u>None</u>	
Sampling Method Type <u>MacroCore</u> Weight <u>NA</u> Interval <u>0 - 23'</u>	Diameter <u>2 1/2" O.D.</u> Fall <u>NA</u>
Riser Pipe Left in Place  Material Sch 40 PVC  Length 16.0'	Diameter 3/4" ID Joint Type Flush Joint
	Diameter 3/4" I.D./1.4" O.D. Length 5 feet Gravel/Alluvium
Filter Pack Sand <u>Pre Pack</u> Gravel Grade <u>Pre Pack Grade 0</u> Amount <u>NA</u>	
Seal(s) Type Bentonite Granules Type Type Type	Interval1 - 8' Interval Interval
Locking Casing   Yes  Notes:	□ No

Earth Tech, Inc. Latham, NY (518) 951-2200		Test B	.og	Boring No. DP-58	
PROJECT: Gastown Former MC	GP Site RI				Sheet 1 of 3
CLIENT: NYSDEC					Job No. 44491.02
DRILLING CONTRACTOR: SJE	Drilling Se	ervices			Meas. Pt. Elev.: NA
PURPOSE: Subsurface Soil Sa	mpling/Mo	nitoring Well	Installation		Ground Elev.: NA
DRILLING METHOD: Direct Pus	sh	SAMPLE	CORE	CASING	Datum: Ground Level
DRILL RIG TYPE: Simco 2400	TYPE	MacroCore			Date Started: 12/13/01
GROUNDWATER DEPTH: NA	DIAM.	2" I.D.	<u></u>	<u> </u>	Date Finished: 12/13/01
MEAS. PT.:	WEIGHT				Driller: Ken Fuller
DATE OF MEAS.:	FALL				Inspector: Walt Howard
Depth Sample Blow Classif- (Feet) Number Count ication	Graphic Log	GEOLO	GIC DESCR	IPTION	REMARKS
S-1 S-2 S-2		G a, cmf S, lel  , f S; frm; rts  orked topsoil t f S; frm; occ r  S; frm; occ r	g ets; v mttld;	Rec = 3.5' Damp  Rec = 3.4' Damp/Moist  Rec = 3.0' Damp/Wet	

	Tech, I		2000		Test Boring Log	Boring No. DP-58
	n, NY (5					
		_	ormer MG	P Site RI	·	Sheet 2 of 3
CLIEN	T: NYSE	DEC			T	Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	Graphic Log	Geologic Description	Remarks
10					10.3': Gr f S, s \$; md frm; sm coal tar odor; no sheen; no NAPL	
	S-3				tar odor, no sneen, no MAFE	
					Gr f S, I \$; sft; v faint coal tar	Rec = 0.3' Wet
					odor	**Gt
	S-4					
15 —						
_						<b>5</b>
					Gr f S, I \$ sft; w/ alt seams (0.02 - 0.05' thk) of Gr Cy\$; no odor; no	Rec = 2.2' Wet
_					sheen	
_						
-	S-5					
_						•.
_						
_						
_						·
20 —					Gr Cy\$; w/ seams Gr f S,   \$	Rec = 2.4'
-					20.3': 0.3' lyr Gr f S, I \$; no sheen 20.6': Gr Cy\$, I f S; alt seams;	Wet
_					frm; becoming more Cy\$	
	S-6					
_					22.4': Gr f S, I \$; loose; v faint coal tar odor; no sheen	
					,	
_						
_					Door regovery Cravel riese in	Rec = 0.1'
	C 7				Poor recovery, Gravel piece in tip; no odor; no sheen	Wet
25	S-7					Soft push @ 25' bgs

Earth Tech, Inc. 40 British American Boulevard Latham, NY 12110 (518) 951-2200

Project.	Gastown Former MGP Site RI
Client	NYSDEC
	Tonawanda, NY
	No. 44491.02
	lled 12/13/01
	veloped 12/13/01

#### WELL CONSTRUCTION DETAIL

# - 0.0' CONCRETE-BENTONITE SEAL -RISER -SAND 12' CHOKE 20' PRE PACKED WELL SCREEN FORMATION COLLAPSE 25' 26'

#### **INSPECTION NOTES**

Inspector Walt Howard	
Drilling Contractor SJB D	rilling Services
Type of Well Direct Push Micro Static Water Level 6.20' Measuring Point (M.P.) Top Total Depth of Well 25.0' Total Depth of Boring 26.0'	of PVC
Drilling Method  Type <u>Direct Push</u> Casing <u>None</u>	Diameter <u>2 1/2" O.D.</u>
Sampling Method Type <u>MacroCore</u> Weight <u>NA</u> Interval <u>0 - 26'</u>	Diameter <u>2 1/2" O.D.</u> Fall <u>NA</u>
Riser Pipe Left in Place  Material Sch 40 PVC  Length 20.0'	Diameter 3/4" ID Joint Type Flush Joint
Slot Size 0.010 inch	Diameter <u>3/4" I.D./1.4" O.D.</u> Length <u>5 feet</u> Gravel/Alluvium
Filter Pack Sand <u>Pre Pack</u> Gravel Grade <u>Pre Pack Grade 0</u> Amount <u>NA</u>	
Seal(s) Type Bentonite Granules Type Type	Interval—————
Locking Casing	⊠ No

NOT TO SCALE



20 -

	E A R T I				BORING LOG		Boring No.:	( DP-59
	T: Gastow		MGP		TOR: C&W (Dennis)		PAGE 1 OF	2
	T No.: 444				TION: Tonawanda, New Yor		DATE: June 23, 2	
	E ELEVAT			BORING LO	OCATION: Niagara Construc		ET GEOLOGIST:	Tamara Raby
	ATER LEV					DRILLING AND SAM		
DATE	TIME	DEPTH			CASING	SAMPLER	CORE	TUBE
				TYPE		DPT		
				I.D.		2 inch	-	-
				WT./Fall			•	
	Sample			HNu				
Depth	Number	Blows	Rec.	Readings	SAMPLE DESCR	RIPTION, REMARKS	, AND STRATUM CHA	ANGES
(ft)	& Time	per/6"	(feet)	(ppm)				
1 — 2 — 3 —			1.8	0.7	0.0 - 1.0' FILL consisti GRAVEL, and pieces 1.0 - 1.8' Orangish bro moist to wet.	of Asphalt.	•	
4 — 5 — 6 —			3.0	0.0	Same as above, no bia	ack staining		
7 —					No recovery, gravel fra	agments in shoe.		
9 —			0.0	NA				
12 — 13 — 14 —			4.0	0.0	0.0 - 2.2' Same as 0.0 2.2 - 4.0' Gray clayey S	_	_	·
16 — 17 — 18 — 19 —			3.2	3.6	Gray fine Sandy SILT, saturated, odor.	varying amounts	of Clay (from trad	ce to some)



### BORING LOG Boring No.: ( DP-59 )

					DOMING LOG		orning ito	( 5, -55	
PROJEC	T: Gastow	n Former I	MGP		TOR: C&W (Dennis)			2	
	T No.: 444				TION: Tonawanda, New Yor		DATE: June 23, 2004		
	E ELEVAT			BORING LO	OCATION: Niagara Construc		ET GEOLOGIST:	Tamara Raby	
	ATER LEV					DRILLING AND SAMPL		_	
DATE	TIME	DEPTH			CASING	SAMPLER	CORE	TUBE	
				TYPE		DPT		-	
				I.D.	-	2 inch			
				WT./Fail		<u></u>			
	Sample			HNu					
Depth	Number	Blows	Rec.	Readings	SAMPLE DESCR	RIPTION, REMARKS, A	ND STRATUM CHA	ANGES	
(ft)	& Time	per/6"	(feet)	(ppm)			.*		
21 —			2.0	0.0	0.0 - 1.0' Same as about 1.0 - 2.0' Gray fine to disaturated.	coarse SAND and f		RAVEL,	
23 <del>-</del> 24 <del>-</del>					Red CLAY in shoe, tra		above ciay.		
27					Borehole depth - 24' b				
25 —					Abandon boring with b	entonite chips.			
20									
26 —					Collect sample from 19 analysis (sample ID D		ed for VOC and	SVOC	
27 —							+ 22 El bas		
28 —					Per driller, GRAVEL a	t 21.5 bgs, GLAY a	it 22.5 bgs.		
29 <del>-</del>									
30 —									
31 —									
32 —									
33 —									
34 —									
35 — 36 —									
36 — 37 —									
38 —									
39 —									
40 —									
				L					



20 -

DRO IEC	T: Gastow	n Forma-	MCD	CONTRAC	BORING LOG TOR: SJB (Andy)		Boring No.:	( DP-60
	T: Gastow T No.: 444		MGP		TOR: SJB (Andy) ATION: Tonawanda, New Y	o els	DATE: June 1, 2	
	E ELEVAT				OCATION: Courtyard	OTK	ET GEOLOGIST	
_	ATER LEV			BOKING L	OCATION. Countyard	DRILLING AND SAME		. Talliala Naby
DATE	TIME	DEPTH		CASING SAMPLER			CORE	TUBE
				TYPE		DPT		100L
				I.D.		2 inch		
				WT./Fall				
	Sample			HNu				
Depth (ft)	Number & Time	Blows per/6"	Rec. (feet)	Readings (ppm)	SAMPLE DESC	RIPTION, REMARKS,	AND STRATUM CH	ANGES
1 — 2 — 3 —			3.1	6.5	0 - 0.2' Grass and top 0.2 - 3.1' Brown and alternating SILTS, SA creosote type odor, w	dark gray to bla NDS, and GRAVE		
4 — 5 — 6 — 7 —			4.0	3.0	Brownish gray fine Sa coarser bottom 1.5', b trace brown NAPL ble	lack staining throu	ughout, saturated	
8 — 9 — 10 — 11 —			4.0	1.1	0-3.5' Brownish gray 0 3.5-4.0' Gray and Brown Black mottling and trainterval.	wn fine SAND, trac	ce Silt, saturated	
12 — 13 — 14 — 15 — 16			3.5	5.6	0.0 - 2.0' Same as abo 2.0 - 2.5' Grayish brow 2.5 - 3.5' Grayish brow Trace sheen and NAP	vn fine SAND, satu vn Silty fine SAND,	, saturated.	⁄al.
16 — 17 — 18 —			0.0	NA	No recovery.			



Boring No.: ( DP-60 )

PROJECT: Gastown Former MGP				CONTRACT	TOR: SJB (Andy)	PAGE 2 OF 2				
PROJEC	T No.: 444	91		SITE LOCA	TION: Tonawanda, New Yo	rk	DATE: June 1, 20	004		
SURFAC	E ELEVAT	ION: NA		BORING LO	OCATION: Courtyard		ET GEOLOGIST:	Tamara Raby		
W	ATER LEV	ELS				DRILLING AND SAMPL	ING			
DATE	TIME	DEPTH			CASING	SAMPLER	CORE	TUBE		
-				TYPE		DPT				
				I.D.		2 inch				
				WT./Fall	WT./Fall					
Depth	Sample Number	Blows	Rec.	HNu Readings	SAMPLE DESCR	IPTION, REMARKS, AN	ND STRATUM CHA	ANGES		
21 —	& Time	per/6"	(feet)	(ppm)	0.0-2.2' Gray Silty find blebs.					
22 —			3.8	10.6	2.2-3.6' Red to gray fine to medium SAND and GRAVEL, saturated. 3.6-3.8' Red CLAY, wet. Trace NAPL blebs observed to 0.0' - 3.0'.					
23 —					Trace TV II E BISBS SESSITION TO U.S. S.S.					
24 —					Borehole depth - 24' bgs.					
25 —					Abandon boring with b	entonite chips.				
26 —					Collect sample from 2 submitted for VOC and		,	I		
27 —					DUP1, and DP602223).					
28 —		_			Per driller, gravel at 21	.1' bgs, clay at 23.8	bgs.			
29 —										
30 —										
31 —										
32 —			-							
33 —										
34 —										
35 —										
36 —										
37 —										
38 —										
39 —										
40 —										



PROJEC	T: Gastow	n Former	MGP	CONTRAC	TOR: SJB (Andy)		PAGE 1 OF	2		
	T No.: 444				TION: Tonawanda, New Yo	ork	DATE: June 1, 2	004		
	E ELEVAT				OCATION: DL Moore		ET GEOLOGIST:			
	ATER LEV					DRILLING AND SAM				
DATE	TIME	DEPTH			CASING	SAMPLER	CORE	TUBE		
				TYPE		DPT				
_		~		I.D.		2 inch				
				WT./Fall						
Depth (ft)	Sample Number & Time	Blows per/6"	Rec. (feet)	HNu Readings (ppm)	SAMPLE DESCR	RIPTION, REMARKS,	AND STRATUM CH.	ANGES		
1 — 2 — 3 — 4 —			2.0	29	0.0 - 0.5' - Concrete  0.5 - 2.5' Brown FILL material, brick, slag, fine to coarse SAN black staining at bottom 0.4' with odor.  0.0 - 0.4' Sluff					
5 — 6 — 7 —			4.0	51	0.4 - 1.5' Gray with iron and black mottling Silty CLAY, moist. 1.5 - 4.0' Gray fine Sandy SILT, some Clay, black staining. 2.5 observed to be moist w/ odor, grayish brown w/ rust mottles.					
8 — 9 — 0 — 1 — 2 —			4.0	40.6	0.0 - 1.1' Sluff 1.1 - 1.9' Same as abo 1.9 - 2.1' Black fine SA 2.1 - 2.9' Gray with rus 2.9 - 4.0' Gray with rus Entire interval has an	AND, trace Silt, most and black mottlest mottling fine Sa	ing Clayey SILT, andy SILT, satura			
					0.0 - 1.0' Sluff					
3 —					1 0 - 3 0' Grav with rus	t mottling Sandy	SILT, trace black	staining		
4 — 5 — 6			4.0	55	<ul><li>1.0 - 3.0' Gray with rust mottling Sandy SILT, trace black staining</li><li>3.0 - 3.5 Gray and tan fine SAND grading to gray Clayey SILT at saturated, odor.</li><li>Entire interval has slight sheen.</li></ul>					
8 —			4.0	14.1	1.8 - 4.0' Gray with bla	Gray Silty fine SAND, saturated, very soft. Gray with black staining Silty CLAY, some very fine S dium Sand, saturated, oror. erval has slight sheen.				
~										



PROJE SURFA	CT: Gastow CT No.: 444		MGP	[CONTRAC]	TOR: SJB (Andy)		PAGE 2 OF	2
SURFA	اد No.: 444							
١	0==:=:				TION: Tonawanda, New Yo	rk	DATE: June 1, 20	
				BORING LO	DCATION: DL Moore	DO!! / INIO AND OAA!	ET GEOLOGIST:	Tamara Raby
	VATER LEV			1		DRILLING AND SAM		T. 105
DATE	TIME	DEPTH		TVDE	CASING	SAMPLER	CORE	TUBE
				TYPE I.D.		DPT		
				WT./Fall		2 inch		
	Sample			HNu	,			
Depth	Number	Blows	Rec.	Readings	SAMPLE DESCE	RIPTION, REMARKS,	AND STRATUM CHA	ANGES
(ft)	& Time	per/6"	(feet)	(ppm)	0/ WIN EE DEGG!	th Front, Files, Files,	AND OTHER ON OTH	11020
( - 7		,	(1227)	(1)	0.0 - 2.0' Sluff		<del></del> :	
0.4	1				2.0 - 2.6' Gray Silty	very fine SAND	), saturated, NA	PL saturatio
21 -	1				observed.	•		
22 -			4.0	240	2.6 - 3.1' Gray Clayey	SILT, trace fine S	Sand, saturated, o	odor.
22 -			4.0	240	3.4 - 4.0 Gray fine to			
23 -					odor.			
20								
24 -					Gravel at 21.5' bgs an		, per driller.	
	4				Borehole depth - 24' b	•		
25 -	1			}	Abandon boring with b	entonite chips.		
	4							
26 -	-				Collect sample from 1	5 - 16' (plus MS/N	ASD) and submitt	ted for VOC
	-				and SVOC analysis (s	ample IDs DP611	1516 and DP6115	516MS/MSD).
27 -	-							
	-							
28 -		-						
	-							
29 –	1							
	1	1						
30 —	1							
21	1							
31 –	]							
32 -								
٠.	1 1							
33 -								
		}						
34 —								
-								
35 —	-							
-								
36 <b>–</b>								
-	i I							
37 —	†							
38 —								
-								
39 <b>—</b>	1							



Boring No.: ( DP-62 )

/ r=====				1			la caracteristics	, = , += ,
	T: Gastow		MGP		TOR: C&W Environmental (		PAGE 1 OF	2
	T No.: 444				ATION: Tonawanda, New Yo	rk	DATE: June 23,	
	E ELEVAT			BORING LO	OCATION: Acme Grinding		ET GEOLOGIST:	Tamara Raby
$\overline{}$	ATER LEV					DRILLING AND SAMPL		
DATE	TIME	DEPTH			CASING	SAMPLER	CORE	TUBE
				TYPE		DPT		
				I.D.		2 inch		
				WT./Fall				<u></u>
	Sample			HNu				
Depth	Number	Blows	Rec.	Readings	SAMPLE DESCR	RIPTION, REMARKS, A	ND STRATUM CH	ANGES
(ft)	& Time	per/6"	(feet)	(ppm)				
					0.3' Concrete			
1 . 1		ĺ			0.3 - 1.2' Black cinders	s, slag and other FI	LL material.	
1 -					1.2 - 1.6' White ash ma			ndv SILT.
1 1					moist.	2.0.10.1, 1.10.0.1. 1.1p	5101111111000	idy Cizi,
2 —			1.6	0				
-								
3 —								
4 -					Brown with rust mottlin	g fine Sandy SILT,	moist to wet.	
						-		
5 —								
] -								
6 —			3.2	0				
7 -								
'								
1 1								
8 -					0.0 - 0.2' - Same as ab	ove		
-							av Silby CLAV	race shall
9 —	J				0.2 - 3.6' Blackish gray	grading to dark gra	ay Silly CLAT, I	iace sileii
-					fragments, moist.			
10 —			<b>3</b> .6	0				
			0.0	,				
1,, 1								
11								
12	_				Crowinh brown Cilb. fi-	a CAND caturated		
-	ļ				Grayish brown Silty find	e Sand, saturated		
13 —								
14 —			2.5	0				
'4 —			2.5	U				•
15 —								
-								
16 -					0	11	0:14	
					Gray same as above, a	iliternating w/ Claye	y Silt.	ļ
17 —								
''								
7								
18 —			3.8	0				
-	ĺ							
19 —								
20 —								
20 -								



Boring No.: ( DP-62 )

PROJECT: Gastown Former MGP			MGP		FOR: C&W Environmental (	PAGE 2 OF 2				
	T No.: 444				TION: Tonawanda, New Yo	ork	DATE: June 23,			
SURFAC	E ELEVAT	ION: NA		BORING LC	CATION: Acme Grinding_		ET GEOLOGIST:	Tamara Raby		
W	ATER LEV	ELS				DRILLING AND SAMPL	ING			
DATE	TIME	DEPTH			CASING	SAMPLER	CORE	TUBE		
	-			TYPE		DPT				
				I.D.		2 inch				
				WT./Fall	<u>-</u>		<u></u>			
	Sample			HNu						
Depth	Number	Blows	Rec.	Readings	SAMPLE DESCR	RIPTION, REMARKS, AN	ND STRATUM CH	ANGES		
(ft)	& Time	per/6"	(feet)	(ppm)			<u> </u>			
21 — 22 — 22 —			3.6	0.0 in Silt, 9.4 in gravel						
23 —								1		
24 -					0.0 - 1.5' Sluff					
25 —			3	230	1.5 - 3.0' Same as abo Gravel above Clay.		ut. NAPL satu	ration in		
26 —					Red CLAY in shoe, so		<u>_</u>			
27 —					Borehole depth - 26' by Abandon boring with b	-				
28 —					Collect samples from	12-13' and 20-21' b	as and submitt	fo <b>r</b> VOC and		
20					SVOC analysis (sample					
29 —							,			
30 —					Gravel at 21.5' and Cla	ay at 25' bgs, per dr	iller.			
31 —										
32 —										
33 —										
34 —								. '		
35 —										
36 -										
37 —										
38 —										
39 —										
40										



Boring No.: ( DP-63 )

EDO 150	T 0 1		1105				PAGE 1 OF	( DF-03 )			
	T: Gastow		MGP		CONTRACTOR: C&W Environmental (Dennis)			2			
	T No.: 444						DATE: June 23,				
	E ELEVAT ATER LEV			BORING LO			ET GEOLOGIST:	Tamara Raby			
DATE	TIME	DEPTH			DRILLING AND SAMPLING  CASING SAMPLER CORE TUBE						
		DEFIN		TVDE							
<del></del>				TYPE		DPT					
				I.D.	-	2 inch					
	Sample		Г	WT./Fall		<del>-</del>					
Depth	Number	Blows	Rec.	Readings	SAMBLE DESCRI	PTION, REMARKS, A	ND STRATUM CH	ANCES			
(ft)	& Time	per/6"	(feet)	I -	SAMPLE DESCRI	PHON, REMARKS, A	IND STRATOM CH	ANGES			
(11)	Q TIME	регло	(1661)	(ppm)	0.5' Concrete						
-			[		I .	A C					
1 1 —			1		0.5 - 1.6 Tan/Brown S	LAG material.					
-				1	J						
2			1.2	1.1							
				[ '.'	}			ĺ			
3 —											
] 3 =											
1.7											
4 -		_			Brown FILL material	(fine to coarse	SAND and fi	ne to coarse			
1 1					GRAVEL). In shoe -	,		,			
5 —					sand and fine Gravel, v	, ,	ile Only OLAT,	"acc coarse			
1 -			2 4.8		Isand and line Graver, v	vet, trace NAFL.		ĺ			
6 -											
]			_								
<sub>7</sub> _	1	İ			]						
l ' 7		ł									
_ 7					1			İ			
8 -					Dark gray organic Silty	CLAY trace shell	fragments trac	ε ΝΔΡΙ			
<b>∣</b>	1	ľ			blebs, NAPL observed		_	JO TAXILE			
9 —					DIEDS, NAFE ODSERVED	iii preierentiai pat	iiways.	]			
l -	ĺ										
10 —	- 1	ľ	1.8	24.8				ł			
]											
11 —								l			
l '' ¬		ĺ						1			
٦ ,,											
12 —					Gray fine Sandy SILT,	race to little Clav	NAPL observe	d in			
] -{					preferential pathways, i						
13 —					professional paniways, i	THE SOLUTION III	.5 0/ 1/1D 30am	u. 1.0.			
-											
14 —	[	ĺ	3.0	40.6							
								ļ			
15	l										
16 -											
10					Gray same as above, a	Iternating w/ Silty	CLAY, saturate	d, trace			
, ,		ſ			NAPL blebs throughout						
17 —											
-											
18 —			3.6	20.8							
4											
19 —											
			ł								
20 —											
20 —											



Boring No.: ( DP-63 )

PROJEC	T: Gastow	n Former	MGP	CONTRACTOR: C&W Environmental (Dennis)			PAGE 2 OF 2			
	T No.: 444				TION: Tonawanda, New Yo		DATE: June 23, 2004			
	E ELEVAT	TON: NA BORING L				CATION: Niagara Construction (East Boring) ET GEOLOGIST: Tamara Raby				
W	ATER LEV	ELS			. (	DRILLING AND SAMPL	ING			
DATE	TIME	DEPTH			CASING SAMPLER CORE TUBE					
				TYPE		DPT				
				I.D.		2 inch				
				WT./Fall						
Depth (ft)	Sample Number & Time	Blows per/6"	Rec. (feet)	HNu Readings (ppm)	SAMPLE DESCR	IPTION, REMARKS, A	ND STRATUM CHA	ANGES		
21 —			1.6	15.6	Brownish gray fine to ograding to gray bottom					
23 —					Borehole depth - 23' b					
_					Abandon boring with b					
24 —					Gravel at 21.5' and Cla		riller.			
25 —						., a. <b></b> 250, po. a				
26 —				No analytical samples collected from this location.						
27 —										
28										
29 —										
30 —										
31 —										
32 —										
33 —										
34 —										
<b>3</b> 5 —										
36 —										
37 —										
38 —										
39 —										
40 —										
,										

Earth Tech, I	Inc.					
Albany, NY (51	18) 458-1313		Test Boring Log			Boring No. MW-40
PROJECT: Ga:	stown Former MG				Sheet 1 of 2	
CLIENT: NYSD	PEC					Job No. 44491.02
DRILLING CON	NTRACTOR: SJB	Drilling Se	rvices			Meas. Pt. Elev.: NA
PURPOSE: Mo	onitoring Well Ins	tallation				Ground Elev.: NA
DRILLING MET	THOD: Hollow Ste	em Auger	SAMPLE	CORE	CASING	Datum: Ground Level
DRILL RIG TYP	PE: CME-750	TYPE	SS		HSA	Date Started: 6/14/01
GROUNDWATE	ER DEPTH: NA	DIAM.	2" O.D.		8 1/4" I.D.	Date Finished: 6/14/01
MEAS. PT.:	. <u>-</u>	WEIGHT	140#			Driller: Ken Fuller
DATE OF MEAS	.:	FALL	30"			Inspector: Walt Howard
Depth Sample (Feet) Number	Blow Count Unified Classif- ication	PID Reading (ppm)	GEOLO	GIC DESCRI	PTION	REMARKS
5 -			No samples geologic des adjacent soi	cription, see	log for	

Earth Tech, Inc.			
Albany, NY (518) 458-	1313	Test Boring Log	Boring No. MW-40
PROJECT: Gastown F			Sheet 2 of 2
CLIENT: NYSDEC			Job No. 44491.02
Depth Sample Blow (Feet) Number Counts	Unified PID Classif- Reading ication (ppm)	Geologic Description	Remarks
10			
20 S-1 3 3 5 7 9 9 9 3 3		Gr Cy\$, t f S 18.1': Gr mf(+) S, t \$; no sheen 18.3': Gr Cy\$, I f S, sft 18.9': Gr mf(+) S, t \$; NAPL saturated  Gr Cy\$, t f S; w/ NAPL sat seam (0.05') at 20.1' 20.5': Gr cmf S, t \$, s(+) mf(+) G, no sheen 21.5': Rd \$yC; plastinc (in spoon tip)  Bottom of Boring Auger to 22.0'	Rec = 1.1' Wet  1.0' of slough in spoon w/ NAPL blebs  Rec = 1.2' Wet

Earth Tech, Inc. 40 British American Blvd. Latham NY 12110 (518) 951-2200

Project -	Gastown Former MGP Site RI	
Client -	NYSDEC	
	Tonawanda, NY	
	No. 44491.02	
-	illed6/14/01	
	veloped <u>7/11/01</u>	

#### WELL CONSTRUCTION DETAIL

# 0.0 CONCRETE -3.0' BENTONITE PELLETS -6.0' 8.0' SCREEN-FILTER PACK 18.0' 18.4' BENTONITE CHPS 22.0' NOT TO SCALE

Inspector Walt Howard	
Drilling Contractor SJB Drilling	g Services
Type of WellGroundwater Mo	onitoring
Static Water Level 6.74	
Measuring Point (M.P.)Top	of PVC
Total Depth of Well 18.0	
Total Depth of Boring 22.0'	
Drilling Method  Type <u>HSA</u> Casing <u>None</u>	
Sampling Method	
Type Split Spoon	Diameter 2" O.D.
vveignt <u>140#</u>	Fall <u>30"</u>
Interval 18.0' - 22.0'	
Riser Pipe Left in Place	
	Diameter 2" I.D.
Length	Joint Type Flush Thread
Screen	
	Diameter 2" I.D.
	Length 10.0' Alluvium
Filter Pack	Natural
Grade US Silica Grade 0	Natural
	Interval 6.0' - 18.4'
Seal(s)	
Type Pellets 100 lbs	Interval 3.0' - 6.0'
Type Pellets 50 lbs	Interval 18.4' - 22.0'
Type	Interval
Locking Casing X Yes	□ No
Notes: Flush Mount Casing	•

Earth Tech, Inc. Albany, NY (518) 458-1313		Test B	oring L	og	Boring No. MW-41
PROJECT: Gastown Former MG	SP Site RI			Sheet 1 of 1	
CLIENT: NYSDEC					Job No. 44491.02
DRILLING CONTRACTOR: SJB	Drilling Ser	vices			Meas. Pt. Elev.: NA
PURPOSE: Monitoring Well Ins	tallation				Ground Elev.: NA
DRILLING METHOD: Hollow Ste	em Auger	SAMPLE	CORE	CASING	Datum: Ground Level
DRILL RIG TYPE: CME-750	TYPE	None		HSA	Date Started: 6/19/01
GROUNDWATER DEPTH: NA	DIAM.		_	8 1/4" I.D.	Date Finished: 6/20/01
MEAS. PT.:	WEIGHT				Driller: Ken Fuller
DATE OF MEAS.:	FALL				Inspector: S. Chioniere
Depth Sample Blow Classification	PID Reading (ppm)	GEOLO	GIC DESCRI	PTION	REMARKS
5		No samples For geologic adjacent soil	description,	see log for	

Earth Tech, Inc. 40 British American Blvd. Latham NY 12110 (518) 951-2200

Project.	Gastown Former MGP Site RI
Client	NYSDEC
	Tonawanda, NY
	No. 44491.02
Date Dr	illed 6/19/01-6/20/01
	veloped 7/10/01

#### WELL CONSTRUCTION DETAIL

# 0.0 CONCRETE -2.0' BENTONITE SÉAL 4.5 6.0' SCREEN-**FILTER** PACK 21.0' 22.0' NOT TO SCALE

Inspector Stephen Choiniere					
Drilling Contractor SJB Drilling	Services				
Type of WellGroundwater Monitoring					
Static Water Level _6.11'					
Measuring Point (M.P.)	of PVC				
Total Depth of Well 21.0					
Total Depth of Boring 22.0					
Drilling Method					
Type HSA	Diameter 8 1/4" I.D.				
Casing None					
Sampling Method					
	Diameter2" O.D				
Weight140#	Fall				
Interval 19.5' - 21.5'					
	Diameter <u>2" I.D.</u> Joint Type <u>Flush Thread</u>				
Screen					
Material Sch/ 40 Prepack	Diameter 2" I.D.				
Slot Size 0.020"	Length <u>15.0'</u>				
Slot Size 0.020" Stratigraphic Unit Screened	Alluvium and Gravel				
Filter Pack					
Sand X Gravel					
Grade US Silica Grade 0					
Amount 1000#	Interval <u>4.5' - 21.0'</u>				
Seal(s)					
Type Pellets 125+#	Interval 2.0' - 4.5'				
Туре	Interval				
Туре	Interval				
Locking Casing 🛛 Yes	□No				
Notes: Flush-mount completion					

Earth Tech, Inc.	Toot P	orina l			
Albany, NY (518) 458-1313	Test Boring Log			Boring No. MW-42	
PROJECT: Gastown Former MG	P Site RI				Sheet 1 of 2
CLIENT: NYSDEC					Job No. 44491.02
DRILLING CONTRACTOR: SJB	Drilling Se	rvices			Meas. Pt. Elev.: NA
PURPOSE: Monitoring Well Ins	tallation				Ground Elev.: NA
DRILLING METHOD: Hollow Ste	em Auger	SAMPLE	CORE	CASING	Datum: Ground Level
DRILL RIG TYPE: CME-750	TYPE	SS		HSA	Date Started: 6/20/01
GROUNDWATER DEPTH: NA	DIAM.	2" O.D.		8 <u>1/4"</u> I.D.	Date Finished: 6/20/01
MEAS. PT.:	WEIGHT	140#		,*	Driller: Ken Fuller
DATE OF MEAS.:	FALL	30"			Inspector: S. Choiniere
Depth Sample Blow Classif- (Feet) Number Count Cassif- ication	PID Reading (ppm)	GEOLO:	GIC DESCR	UPTION	REMARKS
5		No samples geologic des adjacent soi	scription, se	-	

1	Tech, I	<b>nc</b> . 8) 458-1	313		Test Boring Log	Boring No. MW-42
<u> </u>				GP Site RI		Sheet 2 of 2
CLIENT						Job No. 44491.02
Depth	Sample Number	Blow Counts	Unified Classif-	PID Reading	Geologic Description	Remarks
10	14dillbei		ication	(ppm)		
-						
-		_				
					,	
+		1		0.0	Gr Cy\$, t f S; no odor	Rec = 0.3'
		1				Wet
15 —	S-1	1				
		1				
+		1		0.0	Gr Cy\$, tf S	Rec = 1.3' Moist
		1			16.8': Gr \$, s f S 16.9': Gr Cy\$, t f S; no odor	
	S-2	1			10.9 . Gr Cyt, tr 3, no odor	
		1		0.0	Gr Cy\$	Rec = 0.3'
+		1		0.0	Gi Cyu	Wet
		WOR			Gr cmf S, a mf(+) G; no odor	
-	S-3	1				
		1				D 0'0'
20		1		0.0	Gr cmf S, a mf(+) G; no odor 20.15': Rd br \$yC	Rec = 2.0' Wet
		WOR				
	S-4	1				
		WOR			22.0'	
					Bottom of Boring Augered only to 20.0'	
					Augered only to 20.0	
25						

Earth Tech, Inc. 40 British American Blvd. Latham NY 12110 (518) 951-2200

Project.	Gastown Former MGP Site RI
Client .	NYSDEC
	Tonawanda, NY
	No. <u>44491.02</u>
-	illed6/20/01
	eveloped 7/11/01

#### WELL CONSTRUCTION DETAIL

# CONCRETE -3.9' BENTONITE SEAL 6.8 9.0' SCREEN-**FILTER PACK** 19.0' 20.0' NOT TO SCALE

Inspector Stephen Choiniere	
Drilling Contractor SJB Drilling	Services
Type of WellGroundwater Mor	
Static Water Level _5.01 Measuring Point (M.P.) Top of	
Total Depth of Well19.0'	
Total Depth of Boring 20.0	· · ·
Drilling Method  TypeHSA  CasingNone	
Sampling Method	01.0.5
TypeSS Weight140#	Diameter <u>2" O.D.</u> Sell 30"
Interval 14.0' - 22.0'	
Riser Pipe Left in Place	
Material Sch. 40 PVC Length 9.0'	Diameter 2" I.D.  Joint Type Flush Thread
Screen	50int Type <u>Triadir timeda</u>
Material Sch. 40 Prepack	
Slot Size0.020" Stratigraphic Unit Screened_	Length <u>10.0'</u> Alluvium
Filter Pack	
Sand X Gravel	Natural
Grade US Silica Grade 0	
Amount	Interval <u>6.8' - 19.0'</u>
Seal(s) Type 75# pellets & 50# granular	Interval 3.9' - 6.8'
Type	Interval
Туре	Interval
	□ No
Notes: Flush-mount completion	

<b>Earth Tech, Inc.</b> Albany, NY (518) 458-1313		Test Bo	Boring No. MW-43		
PROJECT: Gastown Forme	Sheet 1 of 1				
CLIENT: NYSDEC	Job No. 44491.02				
DRILLING CONTRACTOR:	SJB Drilling Se	ervices			Meas. Pt. Elev.; NA
PURPOSE: Monitoring We	Installation				Ground Elev.: NA
DRILLING METHOD: Hollo	Stem Auger	SAMPLE	CORE	CASING	Datum: Ground Level
DRILL RIG TYPE: CME-750	TYPE	None		HSA	Date Started: 6/20/01
GROUNDWATER DEPTH:	IA DIAM.			8 1/4" I.D.	Date Finished: 6/21/01
MEAS. PT.:	WEIGHT			•	Driller: Ken Fuller
DATE OF MEAS .:	FAL				Inspector: S. Choiniere
Depth Sample Blow Class (Feet) Number Count ical	sif- Reading	GEOLOGIC DESCRIPTION			REMARKS
5 -		No samples hole. For ge see log for a DP-11.	eologic desc	cription,	

Earth Tech, Inc. 40 British American Blvd. Latham NY 12110 (518) 951-2200

Project.	Project _Gastown Former MGP Site RI					
Client .	NYSDEC					
	Tonawanda, NY					
	No. 44491.02					
Date Dr	illed 6/20/01-6/21/01					
	veloped7/11/01					

#### WELL CONSTRUCTION DETAIL

# CONCRETE +\*\* 4.5' BENTONITE PELLETS 8.1 11.5 SCREEN-**FILTER PACK** 21.5 SUMP \_ 22.0' NOT TO SCALE

Inspector <u>Stephen Choiniere</u> Drilling Contractor SJB Drillin	
Type of WellGroundwater Mo Static Water Level _7.66	onitoring Date 7/11/01 of PVC
Drilling Method Type HSA Casing None	Diameter <u>8 1/4" I.D.</u>
Sampling Method Type None Weight Interval	_ Diameter _ Fall
Riser Pipe Left in Place  Material Sch. 40 PVC  Length 12.0'	Diameter2" I.D. Joint TypeFlush Thread
Screen  Material Sch. 40 Prepack  Slot Size 0.020"  Stratigraphic Unit Screened	Length 10.0'
Filter Pack Sand X Gravel Grade US Silica Grade 0 Amount 500#	
Seal(s) Type Pellets 150# Type Type	
Locking Casing X Yes  Notes: Flush-mount completion	□ No

Earth Tech, Inc. Albany, NY (518) 458-1313	Boring No. MW-44				
PROJECT: Gastown Former MG	Sheet 1 of 2				
CLIENT: NYSDEC					Job No. 44491.02
DRILLING CONTRACTOR: SJB	Drilling Ser	rvices			Meas, Pt. Elev.: NA
PURPOSE: Monitoring Well Ins	tallation				Ground Elev.: NA
DRILLING METHOD: Hollow Ste		SAMPLE	CORE	CASING	Datum: Ground Level
DRILL RIG TYPE: CME-750	TYPE	SS		HSA	Date Started: 6/21/01
GROUNDWATER DEPTH: NA	DIAM.	2" O.D.	-	8 1/4" I.D.	Date Finished: 6/21/01
MEAS. PT.:	WEIGHT	140#			Driller: Ken Fuller
DATE OF MEAS.:	FALL	30"			Inspector: S. Choiniere
Depth Sample Blow Classif- (Feet) Number Count ication	PID Reading (ppm)	GEOLOGIC DESCRIPTION			REMARKS
5 -		No samples geologic des adjacent soil	cription, se	e log for	

Earth	Tech, I	nc.			<del></del>	
Albany, NY (518) 458-1313			313		Test Boring Log	Boring No. MW-44
PROJ	PROJECT: Gastown Former MGP Site RI				Sheet 2 of 2	
CLIEN	IT: NYSE	DEC				Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	PID Reading (ppm)	Geologic Description	Remarks
10 —						
-						
-						
_						
-						
_		_				·
_						
15 —						
-						
_	S-1	WOR WOR		251	Gr mf(+) S, t \$; sft; odor; 1/2" thk NAPL sat seam @ 16.3'; seams w/out NAPL @ 16.5', 17.1' and 17.8'	Rec = 1.5' Moist
_		1		30.7	17.0	
-		5		12.4	Gr cmf S; sm odor	Rec = 1.5' Wet
_		27		12.4	18.6': Gr m(+) f G; G fgmts; sm odor	
-	S-2	24		2.7	20.00	·
20 —		19			Bottom of Boring	
					Augered to 19.5	
-						
_						
_						
_						
25						

Earth Tech, Inc.
40 British American Blvd.
Latham NY 12110
(518) 951-2200

Project -	Gastown Former MGP Site RI
Client	NYSDEC
	Tonawanda, NY
	No. 44491.02
	lled 6/21/01
	veloped _7/11/01

#### WELL CONSTRUCTION DETAIL

# CONCRETE -4.0' BENTONITE PELLETS 7.0' 9.0' SCREEN-**FILTER PACK** 19.0' SUMP 19.5' NOT TO SCALE

Inspector Stephen Choinlere	
Drilling Contractor SJB Drilling	g Services
Type of WellGroundwater Mc Static Water Level6.62 Measuring Point (M.P.)Top Total Depth of Well19.5' Total Depth of Boring19.5'	Date
Drilling Method Type HSA Casing None	
Sampling Method	Diameter <u>2" O.D.</u> Fall <u>0 "</u>
Riser Pipe Left in Place  Material Sch. 40 PVC  Length 9.5'	Diameter 2" I.D. Joint Type Flush Thread
Screen  Material Sch. 40 Prepack  Slot Size 0.020"  Stratigraphic Unit Screened	Diameter 2" I.D.  Length 10.0' Alluvium and Gravel
Filter Pack Sand X Gravel Grade US Silica Grade 0 Amount 650#	
Seal(s) Type Pellets 150# Type Type	Interval
Locking Casing	□No
. 10 10 01 1 Indiana completion	

	· · · · · · · · · · · · · · · · · · ·		Test Bo	Boring No. MW-45			
	PROJECT: Gastown Former MGP Site RI						
DRILLING CON	CLIENT: NYSDEC						
	TRACTOR: S	B Drilling Se	ervices			Meas. Pt. Elev.: NA	
PURPOSE: Mor	nitoring Well Ir	stallation				Ground Elev.: NA	
DRILLING MET	HOD: Hollow S	tem Auger	SAMPLE	CORE	CASING	Datum: Ground Level	
DRILL RIG TYP	E: CME-75	TYPE	SS		HSA	Date Started: 3/25/02	
GROUNDWATE	R DEPTH:	DIAM.	2"0.D.		4 1/4" I.D.	Date Finished: 3/25/02	
MEAS. PT.:		WEIGHT	140#		.*	Driller: Tony Jakubezak	
DATE OF MEAS.:		FALL	30"			Inspector: Walt Howard	
Depth Sample (Feet) Number	Blow Count Unified Classif ication	I Isrannic I	GEOLO(	GIC DESCR	IPTION	REMARKS	
5 - S-1 - S-2 - 10	2 3 5 7 4 5 5		Wood fragr Dr Gr Bk \$ glass; cndrs	a, cmf S; sft;	wd chips;	Rec=0.8' Damp  Rec=0.6' Moist	

1	<b>Tech, I</b>		200		Test Boring Log	Boring No. MW-45
	_		ormer MG	P Site RI		Sheet 2 of 2
	T: NYSE					Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	Graphic Log	Geologic Description	Remarks
10		1			Dk Gr br \$ I, mf (+) S; sft; sl mttld	Rec= 1.7'
	0.0	WH				Damp
	S-3	1			11.1': Gr Cy\$ I, fS, frm, sm shells	Rec=1.0' Moist
		1			· ·	
		WH			Gr \$ a, fS; sft-frm; occ shells;	
_	S 4	WH			rts; org; No Odor	
_	S-4	WH				
_		WH			Gr Cy\$ I, fS; occ peat seams; sft;	Rec=1.9
_		WH			sm coal tar odor	Damp
15 —	S-5	WH				
_		WH	] !			
_		WH			Same	Rec=2.0'
_		2			16.6': Gr cmf S, t \$, I mf G; freq	Damp-very
	S-6	5			shells; strong odor; no sheen; no vis sign of NAPL	PID Screen= >20 ppm
-		16 24				
-					Gr mf G S, cmf S; loose Gr sbrdd-	Rec= 0.8' Wet
_		19			sbang; sm odor 19.0': Rd \$yC; sm Gr Cy\$ seams;	vvet
-	S-7	16 			soft	
-		4				
20 -		4			20.0': Bottom of Boring	
					Auger to 19'	
_						
_						
_						
_						
25						

Earth Tech, Inc.
40 British American Boulevard
Latham, NY 12110
(518) 951-2200

Project -	Gastown Former MGP Site RI
Client -	NYSDEC
	Tonawanda, NY
	o. <u>44491</u>
	ed <u>3/25/02-3/26/02</u>
	eloped <u>4/2/02</u>

#### WELL CONSTRUCTION DETAIL

### - 0.0' CEMENT GROUT 4.0 BENTONITE SEAL RISER -7.0' 9.0' SCREEN-SAND **PACK** 19.0' 20.0' NOT TO SCALE

Inspector Walt Howard	
Drilling Contractor SJB Drilling	
Type of Well Monitoring Well Static Water Level 5.83' Measuring Point (M.P.) Top of Total Depth of Well 19.0' Total Depth of Boring 20.0'	Date
Drilling Method  Type Hollow Stem Auger  Casing None	Diameter <u>4 1/4" I.D.</u>
Sampling Method Type Split Spoon Weight 140# Interval 5.0 - 20.0'	Diameter <u>2" O.D.</u> Fall <u>30"</u>
Riser Pipe Left in Place  Material Sch 40 PVC  Length 9.0'	Diameter <u>2'LD</u> Joint Type <u>Flush Thread</u>
Slot Size 0.020 inch	Diameter 2' I.D.  Length 10.0' Alluvium/Gravel
Filter Pack Sand X Gravel Grade Filpro "0" Amount 300 LBS	Natural Interval _ 7.0 - 20.0'
Seal(s)  Type Bentonite Chips  Type Cement/Bent Grout  Type	
Locking Casing X Yes Notes:	□ No

<del></del>					
Earth Tech, Inc.		Test Boring Log			Boring No. MW-46
Albany, NY (518) 951-2200					
PROJECT: Gastown Former MC	SP Site RI			<del> </del>	Sheet 1 of 2
CLIENT: NYSDEC					Job No. 44491.02
DRILLING CONTRACTOR: SJB		ervices			Meas. Pt. Elev.: NA
PURPOSE: Monitoring Well Inst		<del>,</del> ,		т — —	Ground Elev.: NA
DRILLING METHOD: Hollow Ste	em Auger	SAMPLE	CORE	CASING	Datum. Ground Level
DRILL RIG TYPE: CME-75	TYPE	SS		HSA	Date Started: 3/26/02
GROUNDWATER DEPTH:	DIAM.	2"0.D.		4 1/4" I.D.	
MEAS. PT.:	WEIGHT	140#			Driller: Tony Jakubezak
DATE OF MEAS.:	FALL	30"			Inspector: Walt Howard
Depth Sample Blow Classif- (Feet) Number Count ication	Graphic Log	GEOLO	GIC DESCR	IPTION	REMARKS
5		Gr br mf (+ sm rts; no c	) S, s\$; frm; dor	mttld;	Rec=1.8' Wet

Earth	Tech, I	nc.				
	y, NY (51		200		Test Boring Log	Boring No. MW-46
PROJ	ECT: Ga	stown Fo	rmer MG	P Site RI		Sheet 2 of 2
CLIEN	IT: NYSE	EC				Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	Graphic Log	Geologic Description	Remarks
10 -	S-2	5 4 2		-	Dk Gr f S, a \$; frm; sm shells; rts; org	Rec=1.0' Wet
-   -   -	S-3	2 2 WH			Dk Gr Cy\$ a, f S; frm; sm ahells; org; no odor	Rec= 1.0' Moist PID HS= 0 ppm
15 —	S-4	1 2 1			Same; w/seams of peat at 15.1'- 15.4'; sm coal tar odor; no sheen	Rec=1.4' Moist PID HS= 4.2 ppm
	S-5	1 5 13 22			Gr Cy\$, I f S; frm; org; leaf and peat seams; sm odor 16.3': Gr m fG s, cmf S, t \$; loose; G sbrdd; coal tar odor	Rec=0.8' Wet PID HS= 10 ppm
  	S-6	35 5 7 2			Gr cmf S, t \$, I mf G; loose; sm odor; No NAPL 18.7': Rd \$yC; occ Gr in top	Rec=1.3' Wet PID HS=5 ppm
20 — ———————————————————————————————————					20.0': Bottom of Boring Auger to 20'	

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Project -	Gastown Former MGP Site RI
	NYSDEC
Location	Tonawanda, NY
Project N	No. <u>44491</u>
Date Dri	lled <u>3/26/02</u>
Date De	veloped <u>4/1/02</u>

#### WELL CONSTRUCTION DETAIL

### - 0.0' CEMENT GROUT 4.0' BENTONITE SEAL PISER -7.0' 8.6' SCREEN. SAND PACK 18.6' 20.0

Inspector Walt Howard	
Drilling Contractor SJB Drilling Services	
Type of Well Well	
Static Water Level 4.40' Date 4/1/02	_
Measuring Point (M.P.) Top of PVC	
Total Depth of Well 18.6'	
Total Depth of Boring 20.0'	
Drilling Method	
Type Hollow Stem Auger Diameter 4 1/4" I.D.	
Casing None	
Sampling Method	
Type Split Spoon Diameter 2" O.D.	
Weight140# Fall Fall	
Interval 5.0'-20.0'	
Riser Pipe Left in Place	
Material Sch 40 PVC Diameter 2'LD	
Length 8.6' Joint Type Flush Thread	_
Screen	
Material Sch 40 PVC Diameter 2' I.D.	_
Slot Size 0.020 inch Length 10.0'	
Stratigraphic Unit Screened Alluvium/Gravel	_
Filter Pack	
Sand X Gravel Natural	
Grade Filpro "0"	
Amount <u>250 #</u> Interval <u>7.0'-20.0'</u>	_
Seal(s)	
Type Bentonite Pellets Interval 4.0'-7.0'	_
Type Cement/Bent Grout Interval 0.0'-4.0'	_
Type Interval	-
Locking Casing X Yes No	

BORING LOG Boring No.: ( MW-46B )

PROJECT:         Gastown Former MGP         CONTRACTOR:         SJB (Tony)         PAGE 1 OF           PROJECT No.:         44491         SITE LOCATION:         Tonawanda, New York         DATE:         June           SURFACE ELEVATION:         NA         BORING LOCATION:         ET GEOLOG           WATER LEVELS         DRILLING AND SAMPLING           DATE         TIME         DEPTH         CASING         SAMPLER         CORE              Split Spoon              I.D.          2 inch              WT./Fall          140 lbs	
SURFACE ELEVATION: NA         BORING LOCATION:         ET GEOLOG           WATER LEVELS         DRILLING AND SAMPLING           DATE         TIME         DEPTH         CASING         SAMPLER         CORE              Split Spoon              I.D.          2 inch	
WATER LEVELS         DRILLING AND SAMPLING           DATE         TIME         DEPTH         CASING         SAMPLER         CORE              TYPE          Split Spoon              I.D.          2 inch	
DATE         TIME         DEPTH         CASING         SAMPLER         CORE              TYPE          Split Spoon               1.D.          2 inch	
TYPE Split Spoon I.D 2 inch	TUBE
I.D 2 inch	
Sample HNu	
Depth Number Blows Rec. Readings SAMPLE DESCRIPTION, REMARKS, AND STRATUM	CHANGES
(ft) & Time   per/6"   (feet)   (ppm)	
1 — 2 — 3 — 4 — 5 — Auger to 10' bgs. 6 — 7 — 8 — 9 —	
Dark gray fine Sandy SILT, some Clay, trace shells a saturated, spongy texture.	nd wood fibers,
12 No recovery.	
7   5     7	
13 — 2   5   0   NA	
14 WOH Same as above. Fine SAND seam (3/4" thick) at 1.7	' Increasing
- WOH shalls with depth	. increasing
15 — 3 WOH 1.9 8.5 shells with depth.	
]   WOH   ]	
16 3	
_   16	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	e GRAVEL,
17 4 0.8 6.8 saturated, slight odor.	
<b>1</b>   _	
18 2 0.0 - 0.4' Same as above.	
7 0.4 0.8 Pod and gray Silty CLAV soft pliable place	ric saturated
19 — 5 S WOH 0.8 6.0 0.4 - 0.8' Red and gray Silty CLAY, soft, pliable, plast slight odor.	ic, saturated,
I I VVI I I I I I I I I I I I I I I I I	
20 WOH Sight oddi.	

EARTH T T K C H

**BORING LOG** 

Boring No.:

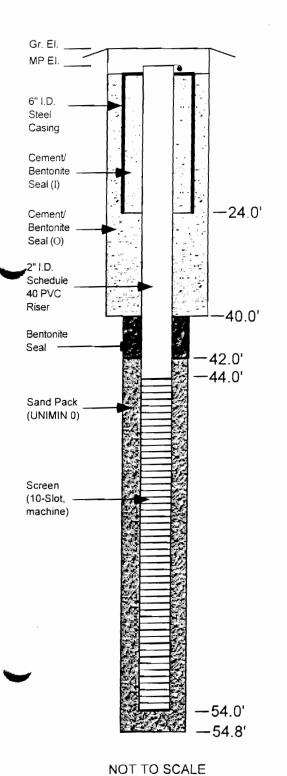
( MW-46B )

PROJEC	T: Gastow	n Former	MGP	CONTRAC	CONTRACTOR: SJB (Tony) PAGE 2 OF 3			3	
	T No.: 444			SITE LOCATION: Tonawanda, New York DATE: June 9-15, 20					
SURFAC	E ELEVAT	ION: NA		BORING LO	OCATION:		ET GEOLOGIST:	Tamara Raby	
W	ATER LEV					DRILLING AND SAMPL			
DATE	TIME	DEPTH			CASING	SAMPLER	CORE	TUBE	
				TYPE	-	Split Spoon			
				I.D.		2 inch	<del></del>		
				WT./Fall		140 lbs			
	Sample	1	ł	HNu					
Depth	Number	Blows	Rec.	Readings	SAMPLE DESCR	RIPTION, REMARKS, A	ND STRATUM CHA	ANGES	
(ft)	& Time	per/6"	(feet)	(ppm)					
		2			Red Clayey SILT, trac	e fine to coarse Sa	and, less wet an	d more stiff	
21 —	6	3	0.3	5.6	than above.				
21		3	0.5	3.0					
22 —		4							
22 -		5			Same as above with t	ace fine gravel.			
00	-	7	1.0	2.0		-			
23 —	7	7	1.0	<b>3</b> .9					
-		11							
24 —		1			0.0 - 1.1' Same as abo	ove.			
] -		16			1.1 - 1.8' Red very fine		vel and medium	to coarse	
25 —	8	22	1.8	5.4	Sand, saturated.	,	. c. a.i.a iiioaiaiii		
-		24	[		Joana, Saturatea.				
26 —					0.0 4.0! 01.4				
-		26			0.0 - 1.0' Sluff				
27 —	9	31	2.0	2.1	1.0 - 1.4' Same as abo		<b>.</b>	0-45	
_	,	50/0.1					SILT, trace Clay, fine to coarse Sand, fine		
28 -		-			Gravel, tight, moist (T	LL).			
- 1		16			Same as above.				
29 —	10	31	2.0	0.0					
23	10	33	2.0	0.0					
1 20 7		48							
30 —		31			Same as above.				
1, 1	4.4	50/0.3	0.5	4.0					
31 —	11	-	0.5	1.3					
		_							
32 -	<u></u>	14			0.0 - 0.5' Same as abo	ove.			
-		17			0.5 - 1.0' Weathered b			}	
33 —	12	20	1.0	1.6	Join 1.0 Producted to	55.50K p10000.			
-		23							
34 —		3			0.0 - 0.3' Sluff.				
-		6			0.3 - 0.5' Same as abo	we (TILL)			
35 —	13	22	8.0	4.1	0.5 - 0.8 Very weather				
-					0.5 - 0.6 very weather	eu Deurouk.			
36 -		33			1A/a - 4b - a a d b - a d - a d				
-		36			Weathered bedrock.				
37 —	14	40	1.0	2.5					
_		50/0.3							
38 -									
55 -		1			Same as above.				
39 —	15	3	8.0	1.5					
39 -	10	19	0.0	1.5					
1 40 7		50/0							
40			_						

				1000000000	BORING LOG	oring No.:	( MW-46B	
	T: Gastow		MGP		TOR: SJB (Tony)		3	
	ROJECT No.: 44491 JRFACE ELEVATION: NA				TION: Tonawanda, New Yo	ork	DATE: June 9-15 ET GEOLOGIST:	
	ATER LEVI		_	BORING LO	DCATION:	DRILLING AND SAME		ramara Raby
DATE	TIME	DEPTH	_	_	CASING	SAMPLER	CORE	TUBE
				TYPE	CASING	Split Spoon		
			_	I.D.		2 inch		
				WT./Fall		140 lbs		
_	Sample			HNu				•
Depth	Number	Blows	Rec.	Readings	SAMPLE DESC	RIPTION, REMARKS,	AND STRATUM CHA	MGES
(ft)	& Time	per/6"	(feet)	(ppm)	SAMI LE DESC	ANT HON, REMARKS,	AND STRATOM CIT	11020
(11)	Q TITLE	peno	(1661)	(ppiii)	RUN 1 - 39.5 - 45.5'	hae	<del></del>	
-	1					ugs		
41 —					Run length 6.0'			
_					Recovery 6.0'			
42 —					RQD 73%			
_	D							
43 —	RUN 1							
_								
44 —								
77								
15								
45 —								
					RUN 2 - 45.5 - 54.8'	bas		
46 —		1			Run length 9.3'	-5		
_					Recovery 7.4'			
47 —					RQD 34%			
-					1100 0470			
48 —					Very broken bottom 2	2 4'		
-					Very broken bottom 2			
49 —								
-	ļ	1						
50 —	RUN 2							
_		ì						
51 —								
_								
52 —								
<u> </u>	1	· · · · · · · · · · · · · · · · · · ·						
53 —								
<b>~</b> ]								
54 —								
J-4								·
<sub></sub> 1					End of boring at 54.8	bgs.		
55 —					Set 2-inch diameter,		10-slot screen fr	om 44.0 -
†					54.0' bgs.			
56 —					1			
-								
57 —								
-				1				
58 —								
59 —								
~~ <u>]</u>								
60 🗕								
· · ·				T			<del>-</del>	

Earth Tech, Inc. 40 British American Blvd. Latham, NY 12110 (518)951-2200

#### WELL CONSTRUCTION DETAIL



<b>WELL</b>	NO.	MW	- 46B

Project Gastown
Client NYSDEC
Location Tonawanda, NY
Project No. <u>44491</u>
Date Drilled 6/9/04 - 6/15/04
Date Developed6/22/04

Inspector <u>Tamara Raby</u> Drilling Contractor <u>SJB</u>	<u>.</u>
Measuring Point (M.P.) _Top_c Total Depth of Well _54.0' bg	Date _7/12/04 of Inner Casing
Casing Permanent 6" steel	Diameter <u>8.25" dia_to 24' bg</u> to 24' (grouted)
	Vash (24' to 39.5' bg) 3' bg)
Weight140 lb	Diameter2" Fall30" en HQ core from 40' to 54.8' bg
Riser Pipe Left in Place	*.
Material PVC Length	Diameter <u>2"</u> Joint Type <u>flush thread</u>
Slot Size 10	Diameter2" Length10'bedrock
Filter Pack Sand X Gravel Grade #0 Amount	NaturalInterval
Seal(s) Type <u>bentonite</u> Type <u>grout</u> Type	Interval <u>0 - 40' bg</u>
Locking Casing X Yes  Notes:	□ No

Earth	Tech,	Inc.				<del></del>	·	
	y, NY (5		2200		Test B	oring L	og	Boring No. MW-47
PROJE	ECT: G	Sheet 1 of 2						
CLIEN	T: NYS	DEC_						Job No. 44491.02
DRILL	ING CO	NTRACT	OR: SJE	B Drilling Se	ervices			Meas. Pt. Elev.: NA
PURP	OSE: M	onitoring	Well Ins	tallation				Ground Elev.: NA
DRILL	ING ME	THOD: H	Hollow Ste	em Auger	SAMPLE	CORE	CASING	Datum: Ground Level
DRILL	RIG TY	PE: <u>C</u> M	E-75	TYPE	SS ·		HSA	Date Started: 3/26/02
GROU	NDWAT	ER DEP	TH:	DIAM.	2"0.D.	_	4 1/4" I.D.	Date Finished: 3/26/02
MEAS	. PT.:			WEIGHT	140#		.:	Driller: Tony Jakubezak
DATE	OF MEAS	.:		FALL	30"			Inspector: Walt Howard
Depth (Feet)	Sample Number	Blow Count	Unified Classif- ication	Graphic Log	GEOLO	GIC DESCRI	PTION	REMARKS
		WH			Dk Gr Bk \$ a	a, cmf S; t Gr	famts:	Rec= 0.8'
		1			brks; rts	a, o o, t o.	191113,	Damp
_	S-1	2	<del>  </del>					·
_		2						
		2			Wh Lt gr mf	S, I \$, I f G; s coal tar odo		Rec=1.1' Moist
	S-2	2			iiiie, v/ laiiit	Coartar odo	·	PID HS= 7 ppm
	3-2	3						
		2						
		2			Bk fs; loose; I \$ (lime)	no odor; stair	ı lyr wh fs,	Rec=1.5' Damp
5 <b>–</b>	S-3	2			4.5': Gr br \$,	t f S; frm; rts	; mttld	PID HS= 1.5 ppm
3 –	<b>Q</b> -3	4						
		5						
					Br f S, s \$; frr 6.4': Gr br \$ I,	-		Rec=1.6' Damp
		10			fuel oil odor		آ	Collect poss lab
-	S-4	9			6.8': Bk gr f S petrol (fuel oi			sample No PID
-		10			petror (luer or	140 FID		
. –		10			GrbrfSa\$;;	mod frm: fred	ı bk	Rec=1.3'
		3			stain; mod pe		•	Wet
_	S-5	3						No PID
	5-5	4						
_10		3						

			<del></del>		
Earth Tech,				Test Boring Log	Boring No. MW-47
Albany, NY (51					Sheet 2 of 2
PROJECT: Ga		ormer MG	P Site RI		
CLIENT: NYSI	DEC	11			Job No. 44491.02
Depth Sample (Feet) Number	,	Unified Classif- ication	Graphic Log	Geologic Description	Remarks
10	3			Br gr \$ a, f S; frm; mttld fuel oil odor; wet w/ tr blebs and sheen	Rec= 1.4'
_ S-6	4			at 11.4'.	Damp PID HS=7 ppm
-	4				
-	5			Gr br mf (+)S, I \$; loose; v/	Rec= 0.8'
S-7	4			faint odor; sm sheen in slough on top of sampler	Wet PID HS=1.5 ppm
- 3-1	4				
	3			Gr dkgr f S a \$; sft; w/ occ seams/	Rec= 1.1'
	1			lyrs (0.01'-0.05') gr Cy\$; no	Wet
15 — S-8	1			odor; no sheen	PID HS= 0.4 ppm
	1				
-	2			Gr f S a , Cy\$; sft; no odor; no sheen	Rec= 0.7' Wet
	1			Sheen	PID HS= 0.6 ppm
S-9	1			,	
	1				
	WH			Gr \$ a, f S; sft; freq Cy\$ seams; occ fs seams; no odor	Rec= 0.8' Wet
S-10	WH				PID HS=0.6 ppm
	WH				
20	1_ WH			Gr Cy\$, I f S; sft; alt seams;	Rec=1.3'
	WH			no odor; sft 20.9': Gr cmf S, t \$, s mf G; G	Wet PID HS=0.8 ppm
S-11	3			sbrdd; no odor; no sheen 21.1': Rddsh gr \$yC	
	5				Rec=0.8'
	WH			Rd \$yC; sft; no odor	Wet
S-12	- S-12 1				
	WH				
-	WH			24 Oly Pottom of Poring	
25				24.0': Bottom of Boring Auger to 22.5'	

Earth Tech, Inc. 40 British American Boulevard Latham, NY 12110 (518) 951-2200

Project -	Gastown Former MGP Site RI
Client -	NYSDEC
	Tonawanda, NY
	No. <u>44491</u>
	lled <u>3/27/02</u>
	veloped 4/2/02

#### WELL CONSTRUCTION DETAIL

### - 0.0' CEMENT **GROUT** 6.5' BENTONITE SEAL RISER -9.5' 12.0' SCREEN-SAND **PACK** 22.0' 22.5'

Inspector <u>Walt Howard</u> Drilling Contractor <u>SJB Drilling</u>	
Type of Well Monitoring Well Static Water Level 5.70' Measuring Point (M.P.) Top of Total Depth of Well 22.0' Total Depth of Boring 22.5'	Date
Drilling Method  Type Hollow Stem Auger  CasingNone	Diameter <u>4 1/4" I.D.</u>
Sampling Method Type Split Spoon Weight 140# Interval 0.0-24.0	Diameter <u>2" O.D.</u> Fall <u>30"</u>
Riser Pipe Left in Place  Material Sch 40 PVC  Length 12.0'	Diameter2'I.D Joint TypeFlush Thread
Screen  Material Sch 40 PVC  Slot Size 0.020 inch  Stratigraphic Unit Screened	Diameter <u>2' I.D.</u> Length <u>10.0'</u> Alluvium/Gravel
	Natural Interval
Seal(s) Type	Interval6.5'9.5' Interval0.0'-6.5' Interval
Locking Casing X Yes	□ No

Earth Tech, In	C.		Tost R	orina I	00	
Albany, NY (518)	) 951-2200		Test Boring Log			Boring No. MW-48
PROJECT: Gast	town Former MC	GP Site RI				Sheet 1 of 2
CLIENT: NYSDE	EC					Job No. 44491.02
DRILLING CONT	RACTOR: SJB	Drilling Se	ervices			Meas. Pt. Elev.: NA
PURPOSE: Mon	itoring Well Inst	tallation				Ground Elev.: NA
DRILLING METH	HOD: Hollow Ste	em Auger	SAMPLE	CORE	CASING	Datum: Ground Level
DRILL RIG TYPE	E: CME-75	TYPE	SS	-	HSA	Date Started: 3/27/02
GROUNDWATER	R DEPTH:	DIAM.	2 <u>"</u> 0.D.		4 1/4" I.D.	Date Finished: 3/27/02
MEAS. PT.:		WEIGHT	140#		•	Driller: Tony Jakubezak
DATE OF MEAS.:		FALL	30"			Inspector: Walt Howard
Depth Sample (Feet) Number	Blow Count Unified Classif-	Graphic Log	GEOLO	REMARKS		
5 - S-1 - S-2 - 10	2 1 3 4 5 4 7		stained; fnt	\$ !, fS; frm; c		Rec=1.1' Damp PID HS= 4.8 ppm  Rec= 1.4' Damp PID HS= 1.4 ppm

Earth Tech, Inc. Albany, NY (518) 951-2200				Test Boring Log		Boring No. MW-48	
PROJ	ECT: Ga	stown Fo	ormer MG	P Site RI		Sheet 2 of 2	
CLIEN	T: NYS	DEC				Job No. 44491.02	
Depth (Feet)	Sample Number		Unified Classif- ication	Graphic Log	Geologic Description	Remarks	
10	S-3	1 2 3			Bk gr Cy\$ I, fS; fr,; stained wet seam @ 10.9' 11.1': Gr br bk Cy\$ I, fS; frm; mttld	Rec=1.3' Damp PID HS=0.2 ppm	
	S-4	5 6 5			Same 12.2': Bk dk gr mf (+)S, s\$; sft; sm coal tar odor; no sheen 12.9': Gr br mf (+) S, I\$; frm	Rec= 1.0' Wet PID HS= 0.6 ppm	
15 —	S-5	2			Lt Gr \$s, fS; sft; freq alt seams (0.01-0.03' thk) of Cy\$ and fS; v/ fnt odor; no sheen	Rec= 1.1' Wet PID HS=0.2 ppm	
_		-1 WH			Gr Cy\$ t, fS; sft; no odor	Rec= 1.4' Wet	
_	S-6	2 1			16.9': Gr fS, s\$; sft; alt seams \$ and fS; no odor; no sheen	PID HS=0.2 ppm	
	S-7	WH WH			Gr Cy\$; sft; w/ freq alt seams/lyrs (0.02-0.1' thk) of fS, \\$; no odor; v/sft; no sheen	Rec=1.5' Wet PID HS=0.2 ppm	
20	S-8	WH WH			Same: w/ alt seams; no odor  21.2': 0.04' thk seam mf(+)s 21.5': Gr cmf S, t\$, smfG; hd; G sbrdd; v/ fnt coal tar odor; no sheen	Rec=1.7' Wet PID HS=0.4 ppm	
- - -	S-9	14 12 3 3			Gr cmfS, s,f (+)G; G ang-sbrdd; v/ fnt coal tar odor; no sign of NAPL 23.0': Rd \$yC; sft; w/ sm G fgmts; No Odor	Rec= 1.2' Wet PID HS=16.2 ppm	
					24.0': Bottom of Boring Auger to 23.5'		

Notes:

Earth Tech, Inc. 40 British American Boulevard Latham, NY 12110 (518) 951-2200

Project -	Gastown Former MGP Site RI
Client	NYSDEC
	Tonawanda, NY
	lo. <u>44491</u>
•	led <u>3/23/02</u>
Date Dev	veloped <u>3/29/02</u>

**INSPECTION NOTES** 

#### WELL CONSTRUCTION DETAIL

# - 0.0' CEMENT GROUT 6.0' BENTONITE SEAL RISER -10.0' **-** 13.0' SCREEN SAND **PACK** 23.0' - 23.5'

NOT TO SCALE

Inspector Walt Howard	
Drilling Contractor SJB Drillin	g Services
Type of Well Monitoring Well	
Static Water Level	
Measuring Point (M.P.)	
Total Depth of Well23.0'	
Total Depth of Bonnig 23.3	
Drilling Method	
Type Hollow Stem Auger	
Casing None	
Sampling Method	Diameter 3" O D
Type <u>Split Spoon</u> Weight <u>140</u> #	Fall 30"
Interval 5.0'-24.0'	
Riser Pipe Left in Place	
Material Sch 40 PVC	
Length	Joint Type Flush Thread
Screen	¥.
Material Sch 40 PVC	Diameter 2' I.D.
Slot Size 0.020 inch Stratigraphic Unit Screened	Alluvium/Gravel
Filter Pack Sand X Gravel	Natural
Grade Filpro "0"	
Amount 200 LBS	Interval <u>10.0'-23.5'</u>
Seal(s)	
Type Bentonite Chips	Interval 6.0'-10.0'
Type <u>Cement/Bent Grout</u> Type	Interval 0.0'-6.0'
	ilitoryal — — —
Locking Casing X Yes	□ No

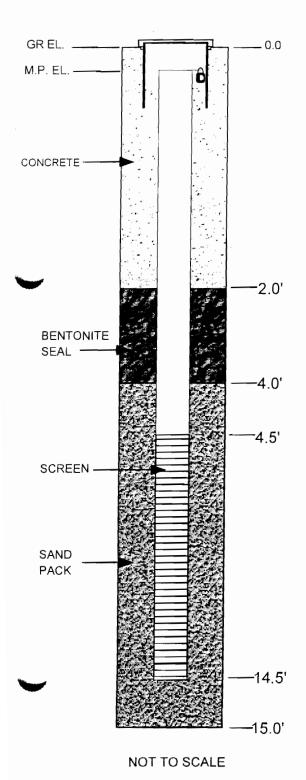
#### **BORING LOG**

Boring No.: ( MW-49 )

	BORING LOG Boring N					( 10100-49				
	T: Gastow		MGP	CONTRACTOR: SJB (Tony)			PAGE 1 OF 2			
PROJEC	T No.: 444	91		SITE LOCATION: Tonawanda, New York			DATE: June 2, 2004			
	E ELEVAT			BORING LO	LOCATION: ET GEOLOGIST: Tamara					
	ATER LEV	ELS				.ING				
DATE	TIME	DEPTH			CASING	SAMPLER	CORE	TUBE		
-				TYPE		Split Spoon	_	+-		
				I.D.		2 inch		-		
				WT./Fall		140 lbs				
	Sample			HNu						
Depth	Number	Blows	Rec.	Readings	SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES					
(ft)	& Time	per/6"	(feet)	(ppm)						
		2			0.0 - 1.2' Gray to black	0.0 - 1.2' Gray to black fine to coarse SAND and fine GRAVEL, trace				
. 7		3	4.0	0.0	Silt, dry.					
1 —	1	5	1.6	2.3	1.2 - 1.6' Tan Clayey S	SILT trace medium	to coarse Sand	d and fine		
4		7			Gravel, dry.	TET, date mediam	to coarse carn	a drid iiiic		
2 —				<del></del>						
		3			0.0 - 0.3' Same as abo					
3 —	2	2	1.4	2.3	0.3 - 1.0 Tan fine SAN					
J	_	2	',	2.0	1.0 - 1.4 Brown Clayey	SILT, trace mediu	m Sand and or	ganics		
,		2			(rootlets), iron mottling	, moist.				
4 —		4			0.0 - 0.4' Sluff					
_		7			0.4 - 0.8' Same as abo	ve				
5 —	3	10	1.9	3.9	0.8 - 2.0' Tan fine SAN		at			
4					0.6 - 2.0 Tall line SAIN	st.				
6		10								
_		6			Same as above, saturated.					
7 -	4	8	2.0	2.7						
' ¬	4	8	2.0	2.7						
_ 7		10								
8 —		3			Same as above, trace clay at 1.6'.					
-		4			diffic as above, trace day at 1.5.					
9 —	5		1.8	4.1						
4		4								
10 -		5								
]		1			0.0 - 0.4' Same as abo					
11 —	6	1	1.8	5.4	0.4 - 1.8 Gray fine SAN	ND, trace medium S	Sand, Silt, and	Clay,		
'' ¬	0	1	1.0	J.4	saturated.					
7		1								
12 —		7			0.0 - 1.6' Same as abo	ve.				
-		14			1.6 - 2.0' Gray angular		VFI trace fine	to coarse		
13 —	7	20	2.0	3.2	Sand and Silt, saturate		WEE, adoc mic	. 10 000130		
-					Joanu anu oiit, saturate	u.				
14 -		22			0.0.001.01.55					
		48			0.0 - 0.3' Sluff.					
15 -	8	47	1.0	3.2	0.3 - 0.5' Same as abo					
13 -	١	12	1.0	5.2	0.5 - 1.0 Red Silty CLA	Y, stiff, plastic, satu	ırated.			
7	]	5			_					
16 —		3		-	Sluff					
$\dashv$		I								
17 —	9	4	8.0	10.8						
_		3								
18 —		33								
10					End of boring at 18' bg	S.				
. 1										
19 —					Set 2-inch diameter, So	chedule 40 PVC 10	)-slot screen fro	om 4.5 to		
$\dashv$					14.5' bgs.					
20 -				_	17.0 bgs.					
	_									

Earth Tech, Inc. 40 British American Blvd. Latham, NY 12110 (518)951-2200

#### WELL CONSTRUCTION DETAIL



<b>N</b> ELL	NO.	MW-49

Project Costown
Project <u>Gastown</u>
Client NYSDEC
Location Tonawanda, NY
Project No. <u>44491</u>
Date Drilled 6/2/04
Date Developed _6/22/04

Inspector <u>Tamara Raby</u>	
Drilling Contractor <u>SJB</u>	
Type of Well Monitoring Static Water Level 5.94' Measuring Point (M.P.) Top of Total Depth of Well 14.5' bg Total Depth of Boring 15.0' bg	Date <u>7/12/04</u> of Inner Casing
Drilling Method  Type <u>HSA</u> Casing <u>N/A</u>	Diameter <u>4.25</u> "
Sampling Method  Typesplit spoon  Weight140 lb  Interval _2' from 0 - 18' bg	Fall30"
Riser Pipe Left in Place  MaterialPVC  Length	
Screen Material PVC Slot Size 10 Stratigraphic Unit Screened	Length <u>10'</u>
Filter Pack Sand X Gravel Grade #0 Amount	
Seal(s) Type Bentonite Type Concrete Type	Interval <u>2' - 4' bg</u> Interval <u>0 - 2' bg</u> Interval
Locking Casing	□ No

DEPTH

Blows

per/6"

2 3

5

7

3 2

2

2

4 7

10

10

6

8

8 10

3

4

4 5

1

1

1 1

7 14

20

22

48

47

12 5

2

3

3 5

2

1

1 2 Rec.

(feet)

1.6

1.4

1.9

2.0

1.8

1.8

2.0

1.0

8.0

2.0

PROJECT: Gastown Former MGP

PROJECT No.: 44491

DATE

Depth

(ft)

1

2

3

4

5

6

7

8

9

10

11

12

13 -

14

15 -

16

17

18

19

20

SURFACE ELEVATION: NA

WATER LEVELS

TIME

Sample

Number

& Time

1

2

3

5

6

7

8

9

10

SITE LOCATION: Tonawanda, New York

BORING LOCATION: West of DL Moore

Same as above, soft.

CONTRACTOR: SJB (Tony)

TYPE

I.D. WT./Fall

HNu

Readings

(ppm)

2.3

2.3

3.9

2.7

4.1

5.4

3.2

3.2

0

0

BORING LO	G B	oring No.:	( MW-49B )
TOR: SJB (Tony)		PAGE 1 OF	4
ATION: Tonawanda, Nev	v York	DATE: June 2-	4, 2004
OCATION: West of DL N	Moore.	ET GEOLOGIS	T: Tamara Raby
	DRILLING AND SAM	/IPLING	
CASING	SAMPLER	CORE	TUBE
-	Split Spoon		
	2 inch		'
	140_lbs		
	SCRIPTION, REMARKS		
Silt, dry. 1.2 - 1.6' Tan Clay Gravel, dry.	ey SILT, trace medi	um to coarse Sa	and and fine
0.0 - 0.3' Same as 0.3 - 1.0 Tan fine S	SAND, iron mottling, ayey SILT, trace me		organics
0.0 - 0.4' Sluff 0.4 - 0.8' Same as 0.8 - 2.0' Tan fine S	SAND, iron mottling	, wet.	
Same as above, tra	ace clay at 1.6'.		
0.0 - 0.4 Same as 0.4 - 1.8 Gray fine saturated.	above. SAND, trace mediu	m Sand, Silt, an	d Clay,
0.0 - 1.6' Same as 1.6 - 2.0' Gray ang Sand and Silt, satu	ular fine to coarse G	GRAVEL, trace f	ine to coarse
0.0 - 0.3' Sluff. 0.3 - 0.5' Same as 0.5 - 1.0 Red Silty	above. Clay, stiff, plastic, sa	aturated.	
Grayish and Red C	LAY, plastic, mediu	m stiff, wet.	

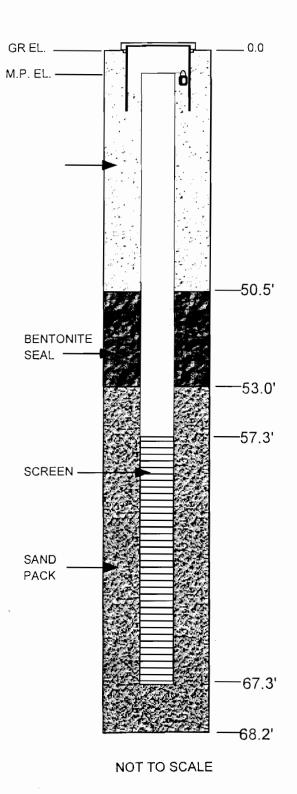
					BORING LOG		oring No.:	( MW-49B
	T: Gastow		MGP		TOR: SJB (Tony)		PAGE 2 OF	4
PROJECT No.: 44491 SURFACE ELEVATION: NA					CATION: Tonawanda, New York DATE: June			
				BORING LO	OCATION: West of DL Mo		ET GEOLOGIST:	Tamara Raby
	ATER LEV					DRILLING AND SAME		
DATE	TIME	DEPTH		TVOE	CASING	SAMPLER	CORE	TUBE
				TYPE		Split Spoon	<del></del>	<del></del>
				I.D.	<u> </u>	2 inch		
	ļ <u> </u>		<del></del>	WT./Fall	<del></del>	140 lbs		
Depth	Sample Number	Blows	Rec.	HNu Readings	SAMPLE DESC	RIPTION, REMARKS,	AND STRATUM CH.	ANGES
(ft)	& Time	per/6"	(feet)	(ppm)				
21 —	11	1 1 1	2.0	0	Same as above, soft		,	
22 — - 23 —	12	WOH WOH WOH	2.0	0	Same as above, very	soft.		
24 — 25 —	13	WOH WOH WOH	2.0	0	Same as above, very	soft.		
26 — 27 — 28 —	14	WOH WOH WOH	2.0	0	Same as above, very	soft.		
29 — 	15	WOR WOR WOR WOH	2.0	0	Same as above, very	soft.		
30 —	16	2 4 6 9	1.4	0.4	0.0 - 0.8' Same as ab 0.8 - 1.4' Red Clayey to medium Gravel, m	SILT, trace to little	fine to coarse Sa	and and fine
32 —	17	12 22 22 24	2.0	0	Red SILT, trace Clay dry, very stiff.	fine to coarse San	d, and fine to co	arse Gravel
35 —	18	50/4"	0	NA	No recovery, stone in	shoe of splitspoon	, spoon is wet.	
37 —	19	36 46 48 44	0	NA	No recovery, stone in	shoe of splitspoon	, spoon is wet.	
38 —	20	28 33 36 39	0	NA	No recovery, stone in	shoe of splitspoon,	spoon is wet.	

E	ART	*	T E G		<b>BORING LOG</b>	Вс	oring No.:	( MW-49B )	
PROJEC	T: Gastov	n Former	MGP	CONTRAC	TOR: SJB (Tony)		PAGE 3 OF	4	
	T No.: 44				TION: Tonawanda, New Y	DATE: June 2-4	. 2004		
SURFAC	E ELEVAT	TION: NA		BORING LO				ET GEOLOGIST: Tamara Raby	
	ATER LEV	_				DRILLING AND SAME			
DATE	TIME	DEPTH			CASING	SAMPLER	CORE	TUBE	
				TYPE		Split Spoon	-		
				1.D.		2 inch			
				WT./Fail					
						140 lbs			
	Sample	1		HNu	1				
Depth	Number	Blows	Rec.	Readings	SAMPLE DESC	RIPTION, REMARKS, A	AND STRATUM C	HANGES	
(ft)	& Time	per/6"	(feet)	(ppm)					
		7			Same as 32 - 34' bgs	moist to wet, med	ium SAND sea	m at 1.7'	
1		13		ì	(approximately 0.5" th				
41 —	21	19	1.8	2.3	(approximatory old tr	nok).			
-		1							
42 —		22							
		17			Same as above, soft,	areas with increas	ed amounts of	medium Sand,	
42	20	19		0.0	moist to wet.				
43 —	22	21	2.0	2.3					
$\dashv$		27							
44									
_		12			Grayish red fine Sand				
45 —	23	17	1.7	3.9	coarse Gravel, trace	Silt, wet, medium s	and stringers ob	served	
<sup>+3</sup> ¬	23	19	1.7	3.9	throughout.				
╛		38							
46 -		27			Cama an about area	tar Cilt contant was	v atiff maint to		
-				1	Same as above, grea	ter Siit content, ver	y stiff, moist to	wet.	
47	24	38	1.0	2.7					
	~ .	50/5"	1.0						
7		_		ĺ					
48 -		22			Sluff, weathered bedr	ock in shoe of split	enoon		
Ⅎ		42			Clair, wedatiered bear	ook in shoc or spile	3p0011.		
49 —	25	i 1	0.3	4.1					
4		50/3"							
50 -		-							
30 -		15			Gray fine to medium S	SAND, some coars	e Sand and fine	to coarse	
		24			Gravel, little Silt (pote				
51 —	26	50/3"	1.0	5.4	oravor, maio om (poto	many wouthered b	ouroun.		
_		30/3							
52 -	27	50/0"	0.0	3.2	Weathered bedrock in	shoo of colitonoor			
+		30/0	0.0	3.2			1.	_ <del></del>	
53 —				·	RUN 1 - 52.7 - 56.2' b	igs			
					Run length 3.5'				
54				l .	Recovery 3.1'				
J4 —					RQD 58%				
+	RUN 1								
55 —									
-									
56 —									
<sub>57</sub> T					RUN 2 - 56.2 - 61.7' b	gs			
57 —	ļ				Run length 5.5'	_			
-		1			Recovery 5.5'				
58 —	DULL								
	RUN 2				RQD 13%				
59 -									
29 —									
-									
60 -		_							

					BORING LOG		oring No.:	( MW-49B
	CT: Gastow		MGP	CONTRACTOR: SJB (Tony)			PAGE 4 OF	4
PROJECT No.: 44491 SURFACE ELEVATION: NA				SITE LOCATION: Tonawanda, New York BORING LOCATION:			DATE: June 2-4, 2004 ET GEOLOGIST: Tamara Raby	
	ATER LEV			BORING LO	DCATION:	DRILLING AND SAM		Tamara Raby
DATE	TIME	DEPTH			CASING	SAMPLER	CORE	TUBE
				TYPE		Split Spoon		
				I.D.		2 inch	-	
				WT./Fall		140 lbs		
	Sample			HNu				<u></u>
Depth	Number	Blows	Rec.	Readings	SAMPLE DESC	RIPTION, REMARKS,	AND STRATUM CH	IANGES
(ft)	& Time	per/6"	(feet)	(ppm)				
_	RUN 2							
61 —	Cont'd							
_								
62					RUN 3 - 61.7 - 68.2' I	ogs		
_	-				Run length 6.5'			
63 —	1			l	Recovery 6.2' RQD 48%			
-					RQD 40%			
64 —		j						
-								
65 —	RUN 3			ĺ.				
-	i i	1		ĺ				
66 —	1 1	1						
67 —	[ ]			[				
0/		1						
68 —								
_								
69 —	1	1			End of boring at 68.2'	_		
-		- 1			Set 2-inch diameter, \$	Schedule 40 PVC,	10-slot screen fr	om 57.3 -
70 —		}			67.3' bgs.			
4	[	1						
71 —		1						
-								
72 —	j			l				
+								
73 —								
74	1	- 1						
/ <del>4</del> ]		1						
75 —								
76 —								
4								
77 —			ſ					
4		}						
78 —		ľ	ľ					
4								
79 —	}	}		1				
-								
80 —				[				

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#### WELL CONSTRUCTION DETAIL



WELL NO. MW-49B
Project _Gastown
Client NYSDEC
Location Tonawanda, NY
Project No. <u>44491</u>
Date Drilled 6/3/04 - 6/7/04
Date Developed 6/22/04

Inspector <u>Tamara Raby</u>								
Drilling Contractor _SJB								
Type of Well Monitoring Static Water Level 8.88' Measuring Point (M.P.) Top of Total Depth of Well 67.3' bg Total Depth of Boring 68.2' bg	Date _7/12/04 Inner Casing							
Drilling Method  Type HSA / HQ Core								
Sampling Method  Type <u>split spoon</u> Weight <u>140 lb</u> Interval <u>2' from 16' to 54' bg</u>	Fall							
Riser Pipe Left in Place  Material <u>PVC</u> Length								
Screen  Material PVC  Slot Size 10  Stratigraphic Unit Screened	Length _10'							
Filter Pack Sand X Gravel Grade #0 Amount								
Seal(s) Type Bentonite Type Grout Type	<u> </u>							
Locking Casing X Yes  Notes:								

PROJECT: Gastown Former MGP CO				CONTRAC	CTOR: SJB (Tony)		PAGE 1 OF	3
	T No.: 44				ATION: Tonawanda, New Yo	ork	DATE: June 8-11	
	E ELEVAT				OCATION: West of DL Moor		ET GEOLOGIST:	
	ATER LEV			1		DRILLING AND SAMP		· diridia / taby
DATE	TIME	DEPTH			CASING	SAMPLER	CORE	TUBE
				TYPE	-	Split Spoon	-	
				I.D.		2 inch		
				WT./Fall	-	140 lbs		
	Sample	<del>                                     </del>	Τ	HNu		1.0.00		
Depth	Number	Blows	Rec.	Readings	SAMPLE DESCR	RIPTION, REMARKS,	AND STRATUM CHA	NGES
(ft)	& Time	per/6"	(feet)	(ppm)	O/ 22 3230.	11011, 11211/11110, /	7 11 10 11 0 11 0 11 0 11 0 11 0 11 0 1	
1 - 2 - 3 - 4 - 5 - 6 7 - 8 9 - 9					·	Auger to 10' k	ogs.	
10 -	1	1 WOH WOH	0.5	6.5	Olive gray orgnaic fine saturated.	e Sandy SILT, trace	e medium Sand a	and Clay,
13 —	2	WOH WOH WOH	1.0	4.5	Olive gray organic SIL gragments, saturated	T, some Clay, trac	ce fine Sand, she	lls, and woo
15 —	3	1 WOH 1 WOH	0.8	0.9	Same as above.			
16 — 17 — 18 —	4	3 14 16 18	0.3	5.9	Dark gray fine to coars saturated.	se SAND and fine	to coarse GRAVI	EL, loose,
9 –	5	6 9 11 7	0.8	1.4	Same as above.			

#### **BORING LOG**

Boring No.: ( MW-50B ) PAGE 2 OF

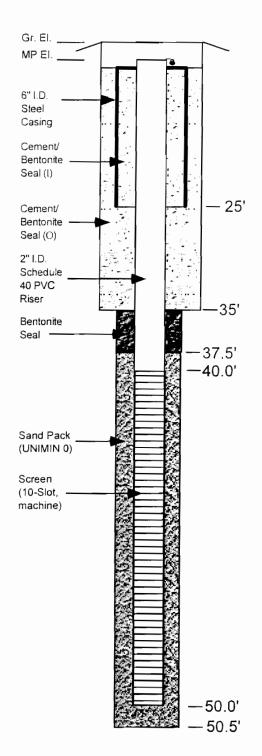
					BOKING LOG	Bornig No ( MVV-30B )			
	T: Gastow		MGP		TOR: SJB (Tony)		PAGE 2 OF	3	
	T No.: 444				TION: Tonawanda, New Yor	k	DATE: June 8-11		
	E ELEVAT	ATION: NA						Tamara Raby	
W	ATER LEV	/ELS		DRILLING AND SAMPLING					
DATE	TIME	DEPTH			CASING	SAMPLER	CORE	TUBE	
				TYPE		Split Spoon			
				I.D.		2 inch			
				WT./Fall		140 lbs			
	Sample			HNu					
Depth	Number	Blows	Rec.	Readings	SAMPLE DESCR	RIPTION, REMARKS, A	ND STRATUM CH	ANGES	
(ft)	& Time	per/6"	(feet)	(ppm)					
(,		WOH	(1.551)	(	No recovery. Tip of sp	olit spoon has gray	el nieces w/ rec	Idish brown	
-	1	WOH			CLAY.	nit spoon has grav	or proces with rec	IdiSii biowii	
21 —	6	1	0.0	NA	CLAT.				
\ _		WOH							
22 —		WOH							
		WOH			No recovery.				
22	7	WOH	0.0	210					
23 —	7	WOH	0.0	NA					
-		WOH							
24 —		WOH			0.0 - 0.6 Reddish brow	on Ciltu CLAV tran	o Croval varus	oft	
-		1				in Silly CLAT, trac	e Graver, very s	soit,	
25 -	8	WOH	1.4	4.5	saturated.				
- "		WOH			0.6 - 1.4' Reddish brov	vn fine to coarse S	andy Clayey Sl	LT, trace Fine	
		18			Gravel, soft, saturated				
26 —		7			Same as above, gradi	na to firm, less mo	isture with dept	h (TILL?)	
-		14			January States	,			
27 —	9	12	2.0	4.0					
-									
28 —		11						_	
		14			Pinkish gray fine Sand	y SILT, trace medi	um to coarse S	and, moist,	
29 —	10	50/0.4'	0.8	0.3	very stiff.				
29 -	10	-	0.0	0.3					
		_							
30 —		31			Pinkish gray SILT, trac	re medium to coars	se Sand moist	very stiff	
_		46			l likish gray oier, trac	c mediam to coart	oc dana, moist,	very sum.	
31	11		1.5	0					
· 4		48							
32 —	ŕ	23							
]		21			0.0 - 1.0' Sluff from ab-	ove.			
22	12	27	2.0	2.6	1.0 - 1.4' Same as abo	ve.			
33 —	12	30	2.0	2.0	1.4 - 2.0' Fine Sandy S	ILT, saturated bot	tom 0.3 feet.		
٦, ٦		33			,				
34 —		48			0.0 - 0.3' Sluff from abo	ove.			
-		50/0.3'			0.3 - 0.8' Same as abo				
35 —	13	30/0.3	1.5	1.6					
		-			0.8 - 1.5' Weathered b	earock			
36 —		-							
]					RUN 1 - 36.0 - 45.5' bg	js –			
1 1					Run length 9.5'				
37 —					Recovery 8.85'				
-					RQD 40%				
38 —	RUN 1				NQD 40%				
_									
39 —					Very broken from 2.4 -	2.9'			
55 =									
1,0 7									
40									

BORING LOG Boring No.: ( MW-50B )

					BURING LUG	501	ing No.:	( MM-20B
PROJEC	T: Gastow	n Former	MGP	CONTRAC	TOR: SJB (Tony)		PAGE 3 OF	3
	T No.: 444					·k	DATE: June 8-11	
	E ELEVAT			BORING LO		.,	ET GEOLOGIST:	
	ATER LEV			DOMING EC		DELLING AND CAMPI		ramara Nauy
						DRILLING AND SAMPL		TUDE
DATE	TIME	DEPTH			CASING	SAMPLER	CORE	TUBE
				TYPE	-	Split Spoon		
				I.D.		2 inch		
				WT./Fall		140 lbs		
	Sample			HNu				
Depth	Number	Blows	Rec.	Readings	SAMPLE DESCE	RIPTION, REMARKS, A	ND STRATUM CH	ANGES
	& Time		l		SAMI LE BESSI	til Hort, Italiantito, A	TID OTTOKTOM OT	11000
(ft)	& Time	per/6"	(feet)	(ppm)				
41 -								
42 —	RUN 1					See previous pa	ane	
43 —	CONT					Gee previous pr	age.	٠
44 —								
45 —					RUN 2 - 45.5 - 51.0' b	ae		
46 —					Run length 5.5'	ys		
47					Recovery 4.2' RQD 24%			
48 —	RUN 2				Very broken 0.8 - 1.6'			
49 —								
50 —								
51 —								
] " 7					End of boring at 51.0'	bgs.		-
52 —					Set 2-inch diameter, S 50.0' bgs.	chedule 40 PVC, 1	0-slot screen fr	rom 40.0 -
53 —					3=			
54 —								
55 —								
56 —								
57 —								
58 —								
-								
59 —								
60 —								

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#### WELL CONSTRUCTION DETAIL



NOT TO SCALE

### WELL NO. \_\_MW-50B

Project	Gastown
Client	NYSDEC
Location	Tonawanda, NY
	No. <u>44491</u>
	illed _6/8/04 - 6/11/04
	eveloped 6/22/04

_	· · · · · · · · · · · · · · · · · · ·
Measuring Point (M.P.) Total Depth of Well _50.0'	Date _7/12/04  Top of Inner Casing bg 5' bg
Casing Permanent 6" s Type Temp NW Drive a	Diameter 8.25" dia. to 25' bosteel to 25' (grouted)  nd Wash (25' to 36' bg)  1' bg)
Weight <u>140 lb</u>	ore Diameter <u>2"</u> Fall <u>30"</u> , then HQ core from 36' to 51' bg
Riser Pipe Left in Place  Material PVC Length Screen	Diameter <u>2"</u> Joint Type <u>flush thread</u>
Slot Size <u>10</u>	Diameter2" Length10' ned _bedrock
Filter Pack Sand X Grave Grade #0 Amount	
Seal(s) Type <u>bentonite</u> Type <u>grout</u> Type	Interval <u>35' - 37 5' bg</u> Interval <u>0 - 35' bg</u>
Locking Casing X Yes	s □ No

ROJEC	T: Gastov	vn Forme	r MGP	CONTRAC	TOR: SJB (Tony)	PAGE 1 OF	2			
ROJEC	T No.: 44	491			ATION: Tonawanda, New Yo	rk	DATE: June 16, 2			
_	E ELEVA				OCATION: East of Niagara (		ET GEOLOGIST:			
W	ATER LE	/ELS				DRILLING AND SAM	IPLING			
DATE	TIME	DEPTH			CASING	SAMPLER	CORE	TUBE		
				TYPE	PE Split Spoon					
				I.D.	.D 2 inch					
				WT./Fall		140 lbs				
	Sample			HNu						
Depth	Number	Blows	Rec.	Readings	SAMPLE DESCR	IPTION, REMARKS,	AND STRATUM CHA	ANGES		
(ft)	& Time	per/6"	(feet)	(ppm)						
		21			0.0 - 0.3' Black SLAG	(fine to coarse Sa	AND), dry.			
, -		24		4.0	0.3 - 0.5' Weathered c	oncrete, dry.				
1	1	10	1.4	1.2	0.5 - 1.2' Brick fragmer					
-		1			1.2 - 1.4' Brown with ru		trace fine sand in	moiet		
2 —		5		<del>                                     </del>	1.2 1.7 DIOWII WILLII	ist mottles GILT,	race file saria, f	noist.		
-		4			Proup for Sandy Oll 3	Truct mottles	ack staining	hottom 0.4		
3 —	2	1	1.5	1.8	Brown fine Sandy SILT	, rust mottles, bl	ack staining, wet	มอแอก ป.1		
		2								
4 —		4								
· _]		5			0.0 to 0.6' FILL material.					
_ 7	2	2	4.0	24.7	0.6 to 0.8' Same as 2.0 - 4.0' bgs. 0.8 - 1.2' Black fine to medium SAND, saturated with NAPL.					
5 —	3	5	1.2	34.7						
Ⅎ		2		1		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	ataratoa mining			
6 -		1			Dark grov Clavov SILT	rust and black r	mottling troop NA	DI Cina t		
4					Dark gray Clayey SILT		-	APL. FINE (		
7 -	4	1	1.8	35.6	medium SAND seam a	t 0.8' saturated v	VITH NAPL.			
_		2								
в 🗐		2								
ا `		7		ĺ	Olive gray Clayey SILT	, little fine Sand f	from 0.4 - 1.0' and	d 1.5 - 1.8'		
9 —	5	1	1.8	28.7	(has NAPL blebs), rust	mottles, saturate	ed.			
° 7	5	1	1.0	20.7	,					
_		2								
⁰	_	2			Dark gray CLAY, trace	Silt_rust_mottles	moist pliable tr	ace black		
$\dashv$		3			staining.	,	,, p.13010, ti			
1{	6	3	8.0	17.1	Stanning.					
4										
$2 \rightarrow$	_	5				<del></del>	<del></del>			
_		6			Olive gray Silty CLAY,	•	•	etterential		
3	7	8	2.0	140	pathways, black stainin	g 0.5 - 1.2' , mois	st.			
_	·	7	0	, ,,						
1 <del>]</del>		8								
7		1			0.0 - 0.6' Olive gray Silt	y fine SAND, trac	ce NAPL, rust mo	ottles.		
_ 7		2	4.0	000	0.6 - 1.4' Trace to little	-				
5 -	8	WOH	1.6	229		•				
		2			1.4 - 1.8' Olive gray Silt	v fine SAND no	NAPL trace blac	k staining		
3 <del>-+</del>		1.			0.0 - 1.0' Dark gray Silt					
+		l l				y iiiie OAND, SOII	, saturateu, trace			
7 —	9	1	2.0		heavy sheen.	. OU.T : :	1 -1 -1 -1 -1			
4		4			1.0 - 1.8' Dark gray Cla		_			
$\downarrow$		7			1.8 - 2.0' Fine SAND, sa					
, T		4			0.0 - 0.1' Gray Clayey S	SILT, soft, trace b	lack staining, sat	urated.		
T	40	won		l l	0.1 - 0.2' Black wood fra		-			
9 —	10	3	0.2	13.9						
-			1							
- 1		5	- 1							

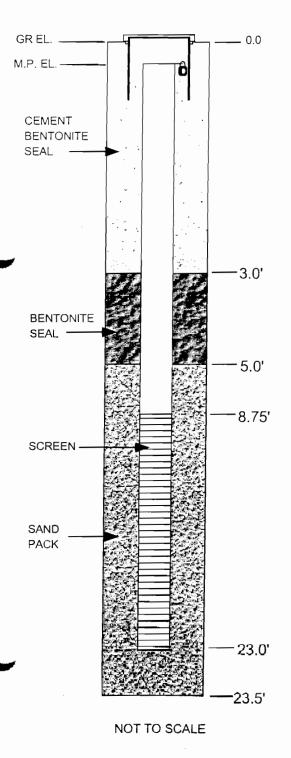
EARTH 😂 TECH BORING LOG

Boring No.: (TW-1)

				BORING LOG Boring No.:						
PROJEC	T: Gastow	n Former	MGP	CONTRAC	PAGE 1 OF	2				
PROJEC	T No.: 444	191			TION: Tonawanda, New Yo	ork	DATE: June 16, 2	.004		
	E ELEVAT				OCATION: East of Niagara		ET GEOLOGIST:			
	ATER LEV					DRILLING AND SAMP				
DATE	TIME	DEPTH			CASING	SAMPLER	CORE	TUBE		
				TYPE		Split Spoon				
				I.D.		2 inch				
				WT./Fall		140 lbs				
	Sample			HNu				_		
Donth		Blows	Dog.	1	CAMPLE DESCE	UDTION DEMARKS A	ND CTRATUM CH	MCES		
Depth	Number	Blows	Rec.	Readings	SAMPLE DESCR	IPTION, REMARKS, A	ND STRATUNICA	ANGES		
(ft)	& Time	per/6"	(feet)	(ppm)			<u> </u>			
21 —	11	2 WOH 11 20	2.0	0.0	Gray fine to coarse SAND and fine to medium GRAVEL, saturated trace NAPL top 0.2'.					
22 -		19			Gray fine to coarse SA	ND and fine to co:	arse Gravel slic	ht sheen		
-		1			saturated. Tip of spoo					
23 —	12	1	2.0	1.2	saturated.	ATTIGS TEGUISIT DIOV	VII OLAT, VELY S	,ort,		
					saturateu.					
24 -		1								
_					End of boring at 24' bo	gs, auger to 23.5' b	gs.			
25 —					1					
26					Set 6-inch diameter, 30-slot, Schedule 80 PVC screen from 8					
20 —					bgs (sump bottom 7.5)	").				
27 —										
28 —										
-										
29 —										
30 —										
31 —										
31 —										
32 —	_									
33 —										
-										
34 —								.*		
35 —										
36										
37										
38 –										
39 —										
40										

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#### WELL CONSTRUCTION DETAIL



WELL NO. TW-1
Project Gastown
Client NYSDEC
Location Tonawanda, NY
Project No. <u>44491</u>
Date Drilled 6/16/04
Date Developed 6/22/04

Drilling Contractor SJB	
Type of Well <u>Extraction/Record</u> Static Water Level <u>7.25'</u> Measuring Point (M.P.) <u>Top or a control of Well 23.0' bg</u> Total Depth of Boring <u>23.5' bg</u>	Date _7/12/04 f Inner Casing
Drilling Method Type HSA Casing N/A	
Sampling Method Typesplit spoon Weight140 lb Interval2' from 0-24' bg	Fall30"
Riser Pipe Left in Place  Material <u>PVC (Sch 80)</u> Length	
Screen Material PVC (Sch 80) Slot Size 30 Stratigraphic Unit Screened	Length 13.63' w/ 0.63' sump
Filter Pack Sand X Gravel Grade #2 Amount	Natural Interval <u>5' - 23.5' bg</u>
Seal(s) Type Bentonite Type Grout Type	· ·
Locking Casing	□ No

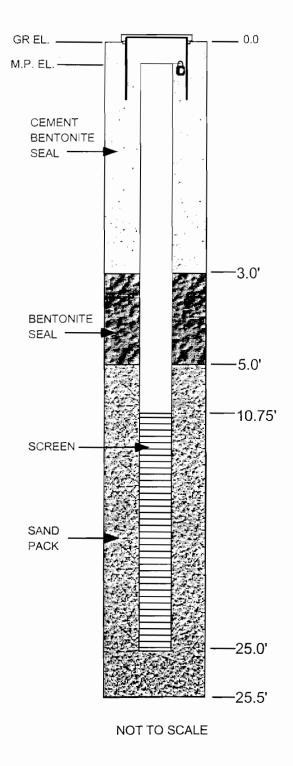
BORING LOG Boring No.: (TW-2)

PROJECT OF 3 data	DDC 153	T. O	- Fa	MCC	CONTRACTOR: CIP (T)			2			
SURFACE ELEVATION: NA				MGP			-1-				
WATER LEVELS											
DATE   TIME   DEPTH					BURING LO				ramara Raby		
Type									TUDE		
Depth   Sample   Depth   Number   Sample   Depth   Number   Sample   Depth   Number   Sample   Depth   Number   Sample   Depth   D			_		TVDC						
Depth   Number   Blows   Rec.   Readings   Readings   Readings   Readings   Readings   Readings   Readings   Readings   Readings   Readi								_			
Depth   Number   Blows   Rec   perior   (feet)											
Depth   Number   Blows   Rec.   perification   Rec.   perification   Perification   Rec.   perification   Per							140 lbs				
Month   String   Perf6" (feet) (ppm)	D- "		Diame	D		CALIDIE DECOR	IDTION DELADICO	AND CTOATURE OF	ANCEC		
1						SAMPLE DESCR	IF HUN, KEMAKKS, A	AND STRATUM CH	ANGES		
1	· (ft)	& IIme		(1eet)	(ppm)	EU Landeria de Caracteria	- to OANI	) alam -!!- \	d=.		
2	-		1			rill material (black fir	ie io coarse SANI	ر, siag, cinders)	, ury.		
2	1 —	1		0.5	2.3						
Same as above, saturated.											
Same as above, saturated.    Same as above, saturated.   Same as above, saturated.	2										
17			1			Same as above, satur	ated.				
Brownish gray Clayey SILT, trace wood fragments, rust and black mottles, sheen, black staining.  Brownish gray Clayey SILT, trace wood fragments, rust and black mottles, sheen, black staining.  Black/dark gray organic Clayey Silt, moist, sheen.  Black/dark gray organic Clayey Silt, moist, sheen.  Clive gray same as above, tan cinders, sheen, saturated (may be sluff from above).  Dark gray alternating Clayey SILT and fine Sandy Silt, saturated.  Clive gray same as above, tan cinders, sheen, saturated (may be sluff from above).  Dark gray alternating Clayey SILT and fine Sandy Silt, saturated.  Gray fine Sandy SILT, some to trace clay, rust and black mottling that decreases with depth, saturated.  Clove gray same as above, saturated (may be sluff from above).  Dark gray fine Sandy SILT, some to trace clay, black mottling, saturated.  Dark gray fine Sandy SILT, some to trace Clay, black mottling, saturated.  Same as above with trace medium Gravel at 1.6°.  Same as above, no black mottling.	, ]	2	1	0.3	2.2						
Brownish gray Clayey SILT, trace wood fragments, rust and black mottles, sheen, black staining.  Black/dark gray organic Clayey Silt, moist, sheen.  Black/dark gray organic Clayey Silt, moist, sheen.  Black/dark gray organic Clayey Silt, moist, sheen.  Olive gray same as above, tan cinders, sheen, saturated (may be sluff from above).  Dark gray alternating Clayey SILT and fine Sandy Silt, saturated.  Dark gray alternating Clayey SILT and fine Sandy Silt, saturated.  Gray fine Sandy SILT, some to trace clay, rust and black mottling that decreases with depth, saturated.  Dark gray fine Sandy SILT, some to trace Clay, black mottling, saturated.  Dark gray fine Sandy SILT, some to trace Clay, black mottling, saturated.  Same as above with trace medium Gravel at 1.6'.  Same as above, no black mottling.  Same as above, no black mottling.	3 -	2	17	0.2	2.3						
Brownish gray Clayey SILT, trace wood fragments, rust and black mottles, sheen, black staining.  Black/dark gray organic Clayey Silt, moist, sheen.  Dolive gray same as above, tan cinders, sheen, saturated (may be sluff from above).  Dork gray alternating Clayey SILT and fine Sandy Silt, saturated.  Dork gray alternating Clayey SILT and fine Sandy Silt, saturated.  Gray fine Sandy SILT, some to trace clay, rust and black mottling that decreases with depth, saturated.  Dork gray fine Sandy SILT, some to trace Clay, black mottling, saturated.  Dork gray fine Sandy SILT, some to trace Clay, black mottling, saturated.  Dork gray fine Sandy SILT, some to trace Clay, black mottling, saturated.  Same as above with trace medium Gravel at 1.6'.  Same as above, no black mottling.											
The standard of the standard o	4 —					Brownish gray Clavey	SILT trace wood	fragments rust	and black		
Black/dark gray organic Clayey Silt, moist, sheen.  1	-							aginonia, rust	a. ra black		
Black/dark gray organic Clayey Silt, moist, sheen.  7 — 4	5 —	3	ì	1.8	3.9	mottics, sheen, black s	kaning.				
Black/dark gray organic Clayey Silt, moist, sheen.    Table			ı								
Black/dark gray organic Clayey Silt, moist, sheen.    1	6										
8 WOH 9 Status and Sta			1			Black/dark gray organi	c Clayey Silt, mois	st, sheen.			
8	, ]	4	1	2.0	27						
Olive gray same as above, tan cinders, sheen, saturated (may be sluff from above).  Olive gray same as above, tan cinders, sheen, saturated (may be sluff from above).  Dark gray alternating Clayey SILT and fine Sandy Silt, saturated.  Dark gray alternating Clayey SILT and fine Sandy Silt, saturated.  Gray fine Sandy SILT, some to trace clay, rust and black mottling that decreases with depth, saturated.  WOH  WOH  WOH  WOH  15 - 8	'	4	1	2.0	2.7						
Olive gray same as above, tan cinders, sheen, saturated (may be sluff from above).  Olive gray same as above, tan cinders, sheen, saturated (may be sluff from above).  Dark gray alternating Clayey SILT and fine Sandy Silt, saturated.  Dark gray alternating Clayey SILT and fine Sandy Silt, saturated.  Gray fine Sandy SILT, some to trace clay, rust and black mottling that decreases with depth, saturated.  WOH  WOH  WOH  WOH  15 - 8			1								
9 — 5   WOH   2   2.0   4.1   from above).  10 — 1	8 -		-			Olive gray same as ah	ove, tan cinders	sheen, saturated	(may be sluff		
Dark gray alternating Clayey SILT and fine Sandy Silt, saturated.  Dark gray alternating Clayey SILT and fine Sandy Silt, saturated.  Dark gray alternating Clayey SILT and fine Sandy Silt, saturated.  Gray fine Sandy SILT, some to trace clay, rust and black mottling that decreases with depth, saturated.  WOH  WOH  Dark gray alternating Clayey SILT and fine Sandy Silt, saturated.  Dark gray fine Sandy SILT, some to trace Clay, black mottling, saturated.  Dark gray fine Sandy SILT, some to trace Clay, black mottling, saturated.  Same as above with trace medium Gravel at 1.6'.  Same as above, no black mottling.  Same as above, no black mottling.	-						2.3, 12 311,0010,				
Dark gray alternating Clayey SILT and fine Sandy Silt, saturated.  Dark gray alternating Clayey SILT and fine Sandy Silt, saturated.  Dark gray alternating Clayey SILT and fine Sandy Silt, saturated.  Gray fine Sandy SILT, some to trace clay, rust and black mottling that decreases with depth, saturated.  Dark gray fine Sandy SILT, some to trace Clay, black mottling, saturated.  Dark gray fine Sandy SILT, some to trace Clay, black mottling, saturated.  Same as above with trace medium Gravel at 1.6'.  Same as above, no black mottling.  Same as above, no black mottling.	9 -	5		2.0	4.1	noni abovoj.					
Dark gray alternating Clayey SILT and fine Sandy Silt, saturated.  Dark gray alternating Clayey SILT and fine Sandy Silt, saturated.  Dark gray alternating Clayey SILT and fine Sandy Silt, saturated.  Gray fine Sandy SILT, some to trace clay, rust and black mottling that decreases with depth, saturated.  Dark gray fine Sandy SILT, some to trace Clay, black mottling, saturated.  Dark gray fine Sandy SILT, some to trace Clay, black mottling, saturated.  Same as above with trace medium Gravel at 1.6'.  Same as above, no black mottling.  Same as above, no black mottling.	-										
Dark gray alternating Clayey SILT and fine Sandy Silt, saturated.  Dark gray alternating Clayey SILT and fine Sandy Silt, saturated.  Gray fine Sandy SILT, some to trace clay, rust and black mottling that decreases with depth, saturated.  WOH  WOH  Same as above with trace medium Gravel at 1.6'.  Same as above, no black mottling.  Same as above, no black mottling.	10 -										
11 — 6 2 2.0 5.4  12 3 Gray fine Sandy SILT, some to trace clay, rust and black mottling that decreases with depth, saturated.  13 — 7 3 2 2.0 3.2 Gray fine Sandy SILT, some to trace clay, rust and black mottling that decreases with depth, saturated.  14 WOH  15 — 8 WOH  1 1 2.0 3.2 Dark gray fine Sandy SILT, some to trace Clay, black mottling, saturated.  16 WOH  17 — 9 WOH  1 1.5 10.8 Same as above with trace medium Gravel at 1.6'.  18 WOH  19 — 10 WOH  WOH  WOH  WOH  WOH  WOH  Same as above, no black mottling.						Dark grav alternating (	Clavey SILT and fi	ne Sandv Silt. s	aturated.		
12 3 3 3 4 3 4 3 4 3 4 4 4 4 4 4 4 4 4 4	1 11 🗐	6		2.0	5.4		, . ,				
Gray fine Sandy SILT, some to trace clay, rust and black mottling that decreases with depth, saturated.    13 - 7	''			2.0	0.4						
Gray fine Sandy SILT, some to trace clay, rust and black mottling that decreases with depth, saturated.  13 — 7	12										
decreases with depth, saturated.  14  WOH 15 — 8 WOH 1	12 -		3			Gray fine Sandy SILT,	some to trace cla	y, rust and black	mottling that		
13 7 2 2.0 3.2  14 WOH 15 8 WOH 1 1 2.0 3.2  16 WOH 17 9 WOH 1 1.5 10.8  18 WOH 1	40	_	3	0.0	2.0						
14	13	/		2.0	3.2						
Dark gray fine Sandy SILT, some to trace Clay, black mottling, saturated.  16  WOH 17 9 WOH 1 1.5 10.8  Same as above with trace medium Gravel at 1.6'.  WOH 19 10 WOH WOH WOH WOH WOH WOH WOH WOH WOH WOH											
15 — 8 WOH 2.0 3.2 saturated.  16 WOH WOH 1.5 10.8 Same as above with trace medium Gravel at 1.6'.  17 — 9 WOH 1 1.5 10.8 Same as above, no black mottling.  19 — 10 WOH WOH WOH WOH WOH WOH WOH WOH	14 —					Dark gray fine Sandy 9	SILT, some to trac	e Clay, black me	ottling.		
16	-						, come to trac	Jay, Didok III	g,		
10 WOH 17 — 9 WOH 1 1.5 10.8  Same as above with trace medium Gravel at 1.6'.  Same as above, no black mottling.  Same as above, no black mottling.	15 —	8		2.0	3.2	Saturateu.					
Same as above with trace medium Gravel at 1.6'.  17 — 9											
17 — 9 WOH 1 1.5 10.8  18 WOH 2 WOH 19 — 10 WOH WOH WOH WOH WOH WOH WOH WOH WOH WOH	16										
18						Same as above with trace medium Gravel at 1.6'.					
18 WOH 19 10 WOH WOH WOH WOH WOH WOH WOH WOH	17	α	WOH	1.5	10.9						
18 2 Same as above, no black mottling.  19 10 WOH WOH WOH WOH WOH	''	9	1	1.5	10.0						
WOH  WOH  WOH  WOH  WOH  WOH  WOH  WOH											
19 — 10 WOH WOH WOH WOH	18 —					Same as above, no bla	ck mottling				
19 — 10 WOH 2.0 19.3	-	ļ	1								
- WOH	19 —	10		2.0	19.3						
20 WOH	_		I								
	20		WOH								

PROJEC	T: Gastow	n Former	MGP	CONTRAC	TOR: SJB (Tony)	PAGE 1 OF	2		
ROJEC	T No.: 444	491		SITE LOCATION: Tonawanda, New York DATE:				004	
	E ELEVAT			BORING L	OCATION: West of DL M	oore.	ET GEOLOGIST:		
W	ATER LEV	ÆLS				DRILLING AND SAM		<u>.</u>	
DATE	TIME	DEPTH			CASING	SAMPLER	CORE	TUBE	
				TYPE	PE - Split Spoon				
				I.D.		2 inch			
				WT./Fall	Nu SAMPLE DESCRIPTION, REMARKS, AND STRATUM CHANGES (ppm)				
	Sample	1	ļ	HNu					
Depth	Number	Blows	Rec.	Readings					
(ft)	& Time	per/6"	(feet)	(ppm)					
		WOH			0.0 - 1.1' Same as a	bove.			
24	4.4	17	20	20.4	1.1 - 2.0 Gray fine to	coarse SAND and	fine to coarse GF	RAVEL.	
21	11	21	2.0	29.1	saturated.			•	
7		18							
22 —		40			Same as above.				
		40							
23 —	12	31	1.5	61.4					
4		25							
24									
4		1			0.2 -1.5 Red CLAY, saturated, NAPL blebs throughout, NAPL hea bottom 0.2'				
25 —	13	1	1.5	172					
. ]		1	,,,,						
26 —		1							
		WOH			Red CLAY, Little coarse Sand and fine Gravel. Does not appear that NAPL is in the CLAY (pulled down from above).				
,, ]	4.4	WOH	2.0	200					
27 —	14	WOH	2.0	200			·		
. 7		WOH							
28 -+		$\neg$			End of boring at 26' I	ogs, auger to 25.5'	bas		
4	ĺ	}				ogo, aago, to <b>20</b> .0	290.		
29 —		1							
4	1	}							
30 <del>-</del>	1	- 1	i		Cat 6 inch diameter	20 alat Cabadula (	00 DVC agrees fro	- 10'0" to	
4	1		ł		Set 6-inch diameter,		BU PVC screen irc	m 109 to	
31 —					25' bgs (sump botton	n 7.5°).			
4		J	ļ						
12 -									
	1	J							
33	ł	- 1	1	1					
	ł	1	1						
34 —	l	ĺ	ĺ	1					
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4			ł						
8 —									
4	1								
9 —	ł								
٠									

Earth Tech, Inc. 40 British American Blvd. Latham, NY 12110 (518)951-2200

#### WELL CONSTRUCTION DETAIL



WELL NO. TW-2
Project Gastown
Client NYSDEC
Location Tonawanda, NY
Project No. <u>44491</u>
Date Drilled6/17/04
Date Developed 6/22/04

Drilling Contractor SJB	·
Type of Well Extraction/Recover Static Water Level 6.44' Measuring Point (M.P.) Top of Total Depth of Well 25' bg Total Depth of Boring 25.5' bg	Date _7/12/04
Drilling Method Type_HSA Casing N/A	Diameter <u>8.25"</u>
Sampling Method  Typesplit spoon  Weight140 lb  Interval _2' from 0 to 28' bg	Fall30"
Riser Pipe Left in Place  Material PVC (Sch 80)  Length	
Screen Material PVC (Sch 80) Slot Size Stratigraphic Unit Screened	Length 13.63' w/ 0.63' sump
Filter Pack Sand X Gravel Grade #2 Amount	Natural Interval <u>5'-25.5' bg</u>
Seal(s) TypeBentonite TypeGrout Type	Interval 3' - 5' bg Interval 0 - 3' bg Interval
Locking Casing X Yes Notes:	□ No

Earth	Tech,	Inc.						
1	, NY (51		2200	-	Test B	oring L	.og	Boring No. VW-1
PROJE	ECT: Ga	astown F	ormer Mo	GP Site RI				Sheet 1 of 2
CLIEN	T: NYSI	DEC					Job No. 44491.02	
DRILL	ING COI	NTRACT	OR: SJE	B Drilling Se	ervices			Meas. Pt. Elev.: NA
PURP	OSE: Vi	ibratory	Well Insta	allation				Ground Elev.: NA
DRILL	ING ME	THOD:			SAMPLE	CORE	CASING	Datum: Ground Level
DRILL	RIG TY	PE:		TYPE				Date Started: 9/13/01
GROU	NDWAT	ER DEP	TH:	DIAM.				Date Finished: 9/13/01
MEAS	. PT.:			WEIGHT				Driller: Tony J.
DATE	OF MEAS	.:		FALL				Inspector: Walt Howard
Depth (Feet)	Sample Number	Blow Count	Unified Classif- ication	Graphic Log	GEOLO	GIC DESCR	IPTION	REMARKS
		17			Lt Gr br \$ a.	cmf S, I f G	; base fill	Rec = 1.5'
_	S-1	15		}				Dry PID = 0.0
-	3-1	12			1.0': Bk cndr	s, brks; sl <b>a</b> g		0.0
] _		10						
_		4			Bk cndrs, brk	-		Rec = 1.0' Dry
-					2.4': Rd Cy\$	1, mf(+) S; f	rm; no odor	PID = 0.0
-	S-2	4						
_		3						
_		4			Gr br \$, I f S; frm; mttld; no odor			Rec = PID = 0.4 ppm
		2						
5 —		2						
5 -	S-3	3						
		2						
		2			Gr br \$ s, f S gr f S I \$; sm		occ seams	Rec = 1.7' Damp/Moist
_					gι ι Ο ι φ, δ[[]	i C Staill		PID = 0.4 ppm
-	S-4	1						
_		2						
		2		}	Same			Rec = 1.4'
		1						Moist
	S-5	2			8.9': Br mf(+)	S. s \$: frm:	no odor	PID = 0.8 ppm
		4			( ' )	., - +,,		
10	ļ	5						
10								

Earth	Tech, I	nc.			Test Boring Log	Boring No. VW-1
Albany	/, NY (51	8) 951-2	200		———————	
PROJE	ECT: Ga	stown Fo	ormer MG	SP Site RI		Sheet 2 of 2
CLIEN	T: NYSE	DEC				Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	Graphic Log	Geologic Description	Remarks
10 —	S-6	2 2 2			Br Gr f S, a \$; frm; occ seams gr Cy\$	Rec = 0.8' Wet PID = 0.8 ppm
— —	S-7	WH WH 2			Dk Gr mf(+) S, I \$; w/ freq seams (0.02 - 0.05' thk) of Gr Cy\$; sm coal tar odor at tip	Rec = 1.2' Wet PID = 0.2 ppm
15 -	S-8	1 1 WH			Gr f S a \$; sft; freq seam Gr Cy\$	Rec = 1.2' Wet PID = 0.0
— —	S-9	1 1 1			Dk Gr rddsh mf(+) S, I \$; loose; strong odor; full coal tar NAPL saturation  17.6': Dk Gr bk \$ and C; stained w/ heavy coal tar sheen	Rec = 1.8' Wet PID = 70 ppm
	S-10	1 WH WH			Same 18.3': Freq seams Bk and Gr Cy\$ (0.05' thk) w/ seams of mf(+) S, I \$  19.2': Gr f S seam (0.05' thk) saturated w/ coal tar NAPL	Rec = 1.4' Wet
20 —	S-11	2 2 2 4			Same; w/ NAPL saturation 20.2': Gr Cy\$ a f S; sft; freq seams f S, a \$ 20.7': Dk Gr cmf S, s mf(+) G; loose G sbrdd, trace NAPL bleb in tip; sl odor	Rec = 1.1' Wet PID = 1350 ppm lower PID in Gravel
_	S-12	17 3 1 WH WH			Same; freq NAPL blebs  22.5': Rd \$yC; w/ sm Gr \$ and C vvs; no visible coal tar; some coal tar odor	Rec = 1.0' Wet
					Bottom of Boring @ 24.0' Auger to 22.0'	

**Drilling Method** 

Earth Tech, Inc. 40 British American Boulevard Latham, NY 12110 (518) 951-2200

Project -	Gastown Former MGP Site RI					
Client -						
	Sportsman Club Parking Lot					
Project N	lo. <u>44491</u>					
	led					
Date Dev	veloped 10/4/01					

#### WELL CONSTRUCTION DETAIL

### - 0.0' CONCRETE-4.0' BENTONITE PELLETS : RISER -10.0' 15.5' SCREEN SAND PACK 20.5' SUMP -21.5' 22.0'

Inspector Walt Howard  Drilling Contractor SJB Drilling Services
Type of Well Experimental Vibratory Well  Static Water Level 7.82' Date 10/4/01  Measuring Point (M.P.) Top of PVC  Total Depth of Well 21.5'  Total Depth of Boring 22.0'

**INSPECTION NOTES** 

Type Hollow Stem Auger	Diameter	4 1/4" I.D.
Casing None		
ampling Method		

Sampling	Method	
	Split Spoon	Diameter 2" O.D.
	140#	Fall <u>30"</u>
	0.0 - 24.0'	

Riser Pipe Left in P	lace PVC Diame	eter 17/8" I.D.
		ype Flush Thread

Screen			2
Material Sch 80 PVC	Diameter.	1 7/8 " I.D.	
Slot Size 0.010 inch	Length	5.0'	
Stratigraphic Unit Screened	_		

Filter Pack	
Sand X Grave	el Natural
Grade Filpro #1 Silica	Sand
Amount 300 lbs	Interval10.0 - 22.0'
Seal(s)	4.0.40.0

Type ———		Interval4.0 - 10.0' Interval _ Interval		
Locking Casing	🛛 Yes	□ No		

NOT TO SCALE

1	h Tech, Inc.  Test Boring Log				Boring No. VW-2			
PROJECT: Gastown Former MGP Site RI				Sheet 1 of 2				
CLIEN	T: NYSI	DEC			_			Job No. 44491.02
DRILLI	ING CO	NTRACT	OR: SJE	B Drilling Se	ervices			Meas. Pt. Elev.: NA
PURPO	OSE: Vi	bratory \	Well Insta	allation				Ground Elev.: NA
DRILLI	NG ME	THOD:			SAMPLE	CORE	CASING	Datum: Ground Level
DRILL	RIG TYI	PE:		TYPE				Date Started: 9/13/01
GROU	NDWATI	ER DEP	TH:	DIAM.				Date Finished: 9/14/01
MEAS.	. PT.:			WEIGHT			:	Driller: Tony J.
DATE	OF MEAS	.:		FALL				Inspector: Walt Howard
Depth (Feet)	Sample Number	Blow Count	Unified Classif- ication	Graphic Log	GEOLO(	GIC DESCR	IPTION	REMARKS
		19			No sample d			
_	S-1	12			140 Samples	concerca o	10	
		11						
		11						
-		9		]				
_		4						
-	S-2			1				
_		5						
_		6						
_		4						
5 —		3						
3 –	S-3	4						
		7						
_		,	Ì					
_								
_				1				
_								
10								

Earth Tech, Albany, NY (5		200		Test Boring Log	Boring No. VW-2
PROJECT: Ga	astown Fo	ormer MG	P Site RI		Sheet 2 of 2
CLIENT: NYS	DEC				Job No. 44491.02
Depth Sample (Feet) Number		Unified Classif- ication	Graphic Log	Geologic Description	Remarks
10	2 4 7 11 WH WH			Dk Gr Cy\$, I f S; sft; odor  17.4': Begin heavy sheen; blebs; Dk Gr f S, I \$; 0.07' thk seam @ 17.7', 17.9' and 18.1'; fully saturated w/ coal tar NAPL; mtrbdd w/ Gr Cy\$; pocket of NAPL at 18.2'  Gr Cy\$ I f S; NAPL sat seams of mf(+) S, I \$ at 19.2', 19.5' and 19.9' (~0.05' thk); blebs only in Cy\$  20.1': Gr cmf G a cmf S, I(-) \$; occ blebs; heavy stain at 20.3'  Rd Cy\$; sft; some faint coal tar odor	Rec = 1.3' Wet  Rec = 1.4' Wet  Rec = 1.2' Moist PID Headspace = 71.3 ppm
				Bottom of Boring @ 22.0' Auger to 21.5'	
25					

## MONITORING WELL COMPLETION LOG WELL NO. \_\_VW-2

Earth Tech, Inc. 40 British American Boulevard Latham, NY 12110 (518) 951-2200 Project Gastown Former MGP Site RI

Client NYSDEC

Location Sportsman Club Parking Lot

Project No. 44491

Date Drilled 9/13/01 - 9/14/01

Date Developed 10/4/01

#### WELL CONSTRUCTION DETAIL

# - 0.0' CONCRETE-4.0' BENTONITE PELLETS RISER -10.0 15.5' SCREEN-SAND PACK 20.5' SUMP 21.5'

### **INSPECTION NOTES**

Inspector Walt Howard									
Drilling Contractor SJB Drilling	g Services								
Type of Well Experimental Vibra	atory Well								
	Static Water Level Date Date								
Measuring Point (M.P.) <u>Top of</u> Total Depth of Well <u>21.5'</u>	of PVC								
Total Depth of Well21.5									
Total Depth of Boring 21.5'									
Drilling Method  TypeHollow Stem Auger CasingNone	Diameter <u>4 1/4" I.D.</u>								
Sampling Method Type Split Spoon Weight 140# Interval 0.0 - 6.0', 15.0 - 23.0	Diameter <u>2" O.D. / 3" O.D.</u> Fall <u>30"</u>								
Riser Pipe Left in Place  Material Sch 80 PVC  Length 15.5'									
Screen  Material Sch 80 PVC  Slot Size 0.010 inch  Stratigraphic Unit Screened	Diameter <u>1.7/8" I.D.</u> Length <u>5.0'</u> Alluvium/Gravel								
Filter Pack									
Sand X Gravel	Natural								
Grade Filpro #1 Silica Sand									
Amount 300 lbs	Interval <u>10.0 - 21.5'</u>								
Seal(s) TypeBentonite Pellets	Interval 4.0 - 10.0'								
Type									
Type									
Locking Casing	□ No								

NOT TO SCALE

Earth Tech, I Albany, NY (51			Test B	oring L	Boring No. VW-3	
PROJECT: Ga	stown Former M	GP Site RI				Sheet 1 of 2
CLIENT: NYS	DEC					Job No. 44491.02
DRILLING CON	TRACTOR: SJ	3 Drilling S	ervices			Meas. Pt. Elev.: NA
PURPOSE: Vi	bratory Well Inst	allation				Ground Elev.: NA
DRILLING MET	HOD:		SAMPLE	CORE	CASING	Datum: Ground Level
DRILL RIG TYP	PE:	TYPE				Date Started: 9/13/01
GROUNDWATE	R DEPTH:	DIAM.				Date Finished: 9/13/01
MEAS. PT.:		WEIGHT				Driller: Tony J.
DATE OF MEAS.		FALL				Inspector: Walt Howard
Depth Sample (Feet) Number	Blow Count Unified Classif- ication	Graphic Log	GEOLO	GIC DESCR	IPTION	REMARKS
5 S-3	15 18 10 12 7 9 8 9 4 5 7 6		Lt Gr cmf G, fill/crush stor 0.8': Dk Br cmf S, t \$ fgmts at 2.8' 2.9': Dk Gr Codor  Lt br gr \$ s, f no odor	nf(+) S, I(-) \$  , s mf G; bas  y\$,I f S; rewo	se fill; coal orked; no	Rec = 1.3' Dry  Rec = 1.2' Dry

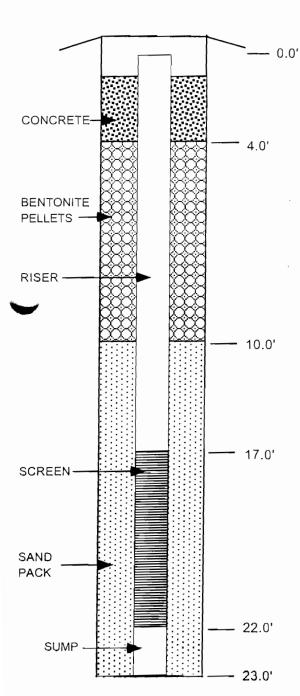
Earth Tech, Inc.	Test Boring Log	Boring No. VW-3
Albany, NY (518) 951-2200  PROJECT: Gastown Former MGP Site RI		Sheet 2 of 2
CLIENT: NYSDEC		Job No. 44491.02
Depth Sample Blow Classif- (Feet) Number Counts ication Log	Geologic Description	Remarks
10	Gr f S, s \$; sm coal tar odor; no sheen; no blebs 15.3': Dk Gr Bk Cy\$ seam; org 15.35': Dk Gr mf(+) S, s \$; some coal tar odor; no visible sign of coal tar NAPL  Dk Gr mf S; freq dk gr Cy\$ seams; freq NAPL blebs to 17.6' 17.6': Dk Gr mf(+) S, I \$; NAPL saturated  Approx 2" sbrdd G fgmt at top of ecovery w/ NAPL sat Gr Cy\$ I f S; w/ occ f S seams; cc NAPL blebs 19.8': Gr f S a \$; occ Cy\$ seams; no blebs 20.3': Gr cmf G, s cmf S; G sbrdd; occ blebs Gr cmf G, I cmf S; hI; sm cbl gmts; G sbrdd; NAPL large bleb at 21.5'  Bottom of Boring @ 23.0' Auger to 23.0'	Rec = 11' Wet  Rec = 0.9' Wet  Rec = 1.3' Wet  Rec = 1.4' Wet

## MONITORING WELL COMPLETION LOG WELL NO. VW-3

Earth Tech, Inc. 40 British American Boulevard Latham, NY 12110 (518) 951-2200

Project -	Gastown Former MGP Site RI				
	NYSDEC				
	Sportsman Club Parking Lot				
	No. <u>44491</u>				
	lled				
	veloped 10/4/01				

#### WELL CONSTRUCTION DETAIL



### **INSPECTION NOTES**

Inspector <u>Walt Howard</u> Drilling Contractor <u>SJB Drilling</u>	g Services
Type of Well Experimental Vibratic Water Level 8.0'  Measuring Point (M.P.) Top of Total Depth of Well 23.0'  Total Depth of Boring 23.0'	Date
Drilling Method  Type Hollow Stem Auger  Casing None	
Sampling Method Type Split Spoon Weight 140# Interval 0 - 6', 15 - 23'	Diameter <u>2" O.D.</u> Fall <u>30"</u>
Riser Pipe Left in Place  Material Sch 80 PVC  Length 17'	Diameter 1 1/7" I.D.  Joint Type Flush Thread
Screen  Material Sch 80 PVC  Slot Size 0.010 inch  Stratigraphic Unit Screened	Length5.0'
Filter Pack Sand X Gravel Grade Filpro #1 Silica Sand Amount 300 lbs	
Seal(s) Type Type Type	Interval————
Locking Casing X Yes	□ No

NOT TO SCALE

Earth Tech, Ir	1C.		Test Be	oring I		
Albany, NY (518	Boring No. PPW-1					
PROJECT: Gas	Sheet 1 of 3					
CLIENT: NYSD	Job No. 44491.02					
DRILLING CON	TRACTOR: SJB	Drilling Se	rvices			Meas. Pt. Elev.: NA
PURPOSE: Pre	ssure Pulse Tes	t Well Insta	Ilation		· 	Ground Elev.: NA
DRILLING MET	HOD: Hollow Ste	em Auger	SAMPLE	CORE	CASING	Datum: Ground Level
DRILL RIG TYP	E: <u>CM</u> E-75	TYPE	ss_		HSA_	Date Started: 3/28/02
GROUNDWATE	R DEPTH: 7.0'	DIAM.	2"00		8 1/4"_I.D.	Date Finished: 3/28/02
MEAS. PT.: G	round Level	WEIGHT	140#		.*	Driller: Tony Jakubczak
DATE OF MEAS.:	4/3/02	FALL	30"			Inspector: Walt Howard
Depth Sample (Feet) Number	Blow Count Unified Classif- ication	Graphic Log	GEOLO	GIC DESCR	IPTION	REMARKS
5 - S-1 - S-2	2 3 5 7 4 4 4		Gr br bk \$15 sm bk stain;	f S; frm; mttle fnt coal tar o	d; reworked; odor	Rec=1.4' Damp PID HS= 3.5 ppm  Rec=0.2' Damp PID HS=7.8 ppm

Farth	Tech, I	nc				T
1	y, NY (51		200		Test Boring Log	Boring No. PPW-1
<u> </u>	<u> </u>			P Site RI		Sheet 2 of 3
CLIEN	T: NYSE	DEC				Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	Graphic Log	Geologic Description	Remarks
10 —	S-3	1 2 2			Gr br bk \$ I f S; frm; stained 10.3': Gr br fs I \$; wet; no sheen; w/seams Gr Cy\$ 11.1': Gr br \$, t f S; frm; mttld	Rec=1.5' Moist/Wet PID HS=1.2 ppm
	S-4	3 4 4 5			Same; w/ bk stained fs seam at 12.2'-12.3' 12.8': Dk Gr mf(+)S, I-\$; loose; fnt coal tar odor; no sheen; no NAPL; Cy\$ seam (0.04' thk) at 13.2'	Rec=1.5' Wet PID HS=1.2 ppm
15 — —	S-5	WH 1 2 1			Gr fS I\$: loose; w/ freq seams (0.02-0.04') Cy\$; No sheen; No NAPL	Rec=0.9' Wet PID HS=12 ppm
- - - -	S-6	WH WH 2			Gr Cy\$; w/ fS seams 16.4': Bk dk gr fs, I \$; loose; No odor	Rec=0.6' Wet PID HS= 420 ppm
— — —	S-7	WR WR WH			Bk mf(+)S, I\$; sft; hvy coal tar sheen; freq blebs @ 18.1'-18.8'	Rec=0.8' Wet PID HS=240 ppm
20 -	S-8	WH WH 1 2			Gr fS; 0.05' seams; w/ alt seams Gr Cy\$; sand seams NAPL sat. 20.7': Bk mf(+)S, I\$, NAPL sat to sample bottom	Rec= 1.2' Wet PID HS=750 ppm
         	S-9	2 12 24 14			Gr Cy\$, (+)fS, smfG; No NAPL 22.2': Gr cmf S, t f G; loose No NAPL; No sheen 22.5': Gr cmf G I, cmfS; loose; No NAPL; No Sheen	Rec=0.8' Wet PID HS=350 ppm
25	S-10	1 1			Rd \$yC; frm; w/ freq GrCy\$ varves; frm; No odors	Rec= 1.8' Moist PID HS= 70 ppm

	<b>Tech, I</b>		200		Test Boring Log	Boring No. PPW-1
PROJ	ECT: Ga	stown Fo	rmer MG	P Site RI		Sheet 3 of 3
CLIENT: NYSDEC					·	Job No. 44491.02
Depth (Feet)	Sample Number	Blow Counts	Unified Classif- ication	Graphic Log	Geologic Description	Remarks
25 —	S-10	WH				
	0 , 0	WH				
	-	_			Bottom of Boring Auger to 25.5'	
_	_					
-	-					
30 —	-					
-						
-						
_	_					
=						•.
35 —						
-						
_	-					
40	-					

## MONITORING WELL COMPLETION LOG WELL NO. PPW-1

Earth Tech, Inc. 40 British American Boulevard Latham, NY 12110 (518) 951-2200 Project Gastown Former MGP Site RI

Client NYSDEC

Location Tonawanda, NY

Project No. 44491

Date Drilled 3/28/02

Date Developed 4/3/02

**INSPECTION NOTES** 

## WELL CONSTRUCTION DETAIL **THREADED** STEEL CAP 0.0' CONCRETE-- 2.0' NOMINAL 11" BOREHOLE CEMENT GROUT — 16.0' ENTONITE PELLETS . **-** 18.0' \_ 19.4' STAINLESS STEEL SCREEN SAND PACK 24.0' SUMP - 24.6' - 25.5'

NOT TO SCALE

Inspector Walt Howard	
Drilling Contractor SJB Drillin	g Services
Type of Well Pressure Pulse Te	st Well
Static Water Level	
Measuring Point (M.P.) Top of	
Total Depth of Well 24.6'  Total Depth of Boring 25.5'	
Total Boptil of Borning	
Drilling Method	
Type Hollow Stem Auger Casing None	
Sampling Method	
Type Split Spoon	Diameter 2" O.D.
Weight140#	Fall 30"
Interval <u>5.0' - 26.0'</u>	
Riser Pipe Left in Place	
Material Black Steel	
Length 19.6'	Joint Type Welded
Screen	
Material Stainless Steel	
Slot Size 0.050 inch Stratigraphic Unit Screened	Alluvium/Gravel
Filter Pack Sand X Gravel	Natural
Grade #4 Silica	ivaturar
Amount 200 lbs	Interval 18.0 - 25.5'
Seal(s)	
Type Bentonite Chips	
Type Cement Grout	Interval 16.0'-0.0'
Type	Interval —
	⊠ No
Notes:	

APPENDIX E

MONITORING WELL DEVELOPMENT LOGS

		Monito	ring Well	Develop	ment Form	i i		-
Project Name and Nun	nber:			mer MGP S		44491		
Monitoring Well Number	er:	DPW-1		Date:	10/2/200	1		
Samplers:		Paul Whee	ler.	_				
Campiers.		T dai VVIICE	101					
Sample Number:				QA/C	C Collected?			
Purging / Sampling Me	thod:	Peristaltic						
1. L = Constructed Total Well Depth (ground):  2. Measured Total Well Depth (TOC):  3. Sand/Silt Accumulation:  4. D = Casing Diameter (I.D.):  5. W = Static Depth to Water (TOC):  6. C = Column of Water in Casing (L-W):  Well Volume = C(3.14159)(0.5D <sup>2</sup> )(7.48)  13.28 feet  6.75 inches  6.18 feet  7.1 feet  7.1 gal								
			Mutaplier	or Casing D	lameter			
		Well ID	3/4-inch	1-inch	2-inch	3-inch	4-inch	]
		Vol. (gal/ft)	0.023	0.041	0.163	0.37	0.65	
Field Parameter Measu	rements Units	and Observa	ations Durin	g Well Purg	ing			
Time	24 hr	835	845	850	855	900	905	910
Water Level	Feet							
Gallons Purged	Gal	0.25	2	3	3.5	4	4.5	5
Flow Rate	mL/min							
Turbidity (+/- 10%)	NTU	999	497	147	174	94	12	25
Diss. Oxygen (+/- 10%)	mg/l							
Eh/ORP (+/- 10%)	MeV							
Conductivity (+/- 3%)	ms/cm	1.41	1.37	1.34	1.32	1.31	1.3	1.29
pH (+/- 0.1)	pH unit	7.24	7.15	7.09	7.08	7.09	7.05	7.05
Temp	С	14	13.9	13.8	13.8	13.8	13.8	13.8
Color		Dark Gray	Light Gray	Gray-clear	Gray-clear	Gray-clear	Clear	Clear
		Very Faint	Faint Coal	Faint Coal	Faint Coal	Faint Coal	Faint Coal	Faint Coal
Odor		Coal Tar	Tar	Tar	Tar	Tar	Tar	Tar
Comments:								

#### Monitoring Well Development Form Project Name and Number: NYSDEC Gastown Former MGP Site RI #44491 Monitoring Well Number: **DPW-32** Date: 10/2/2001 Samplers: Paul Wheeler Sample Number: QA/QC Collected? Purging / Sampling Method: Peristaltic L = Constructed Total Well Depth (ground): 19.8 feet Measured Total Well Depth (TOC): 19.39 feet Sand/Silt Accumulation: 0.41 feet 4. D = Casing Diameter (I.D.): 0.75 inches W = Static Depth to Water (TOC): 6.58 feet C = Column of Water in Casing (L-W): 12.81 feet Well Volume = $C(3.14159)(0.5D^2)(7.48)$ 0.29 gal Multiplier for Casing Diameter Well ID 3/4-inch 1-inch 2-inch 3-inch 4-inch Vol. (gal/ft) 0.023 0.041 0.163 0.37 0.65 Field Parameter Measurements and Observations During Well Purging Parameter Units Time 24 hr 1005 1015 1022 1030 1035 1042 1048 Water Level Feet Gallons Purged Gal 0.1 0.75 1.25 1.5 2.5 3 Flow Rate mL/min Turbidity (+/- 10%) NTU 999 218 70 999 645 126 25 Diss. Oxygen (+/- 10%) mg/l Eh/ORP (+/- 10%) MeV Conductivity (+/- 3%) ms/cm 0.995 1.27 1.27 1.27 1.27 1.27 1.27 pH (+/- 0.1) pH unit 7.07 7.11 7.07 7.08 7.06 7.03 7.02 C 14.4 Temp 15.4 14.5 15.5 14.6 15 15.5

Dark Gray

Very Faint

Coal Tar

Light Gray

Tar

Faint Coal Faint Coal

Light Gray

Tar

Light Gray Gray-Clear

Tar

Faint Coal Faint Coal Very Faint

Tar

Comments:

Color

Odor

Page 1 of 2

Clear

Coal Tar

Semi-clear

Very Faint

Coal Tar

Monitoring Well Development Form								
Project Name and Num	ber:	NYSDEC G	astown Form	ner MGP Sit	te RI #4	14491		
Monitoring Well Numbe	DPW-32		Date: 10/2/2001					
Samplers:		Paul Wheel	er	•				
		1 441 111001						
Sample Number:				QA/Q	C Collected?			
Purging / Sampling Met	hod:	Peristaltic						
1. L = Constructed Total 2. Measured Total Well 3. Sand/Silt Accumulatid 4. D = Casing Diameter 5. W = Static Depth to V 6. C = Column of Water Well Volume = C(3,141)	Depth (TOo on: (I.D.): Water (TOO in Casing)	C): ;): (L-W):	Multiplier fo	0.75 6.58 12.81 0.29	feet feet inches feet feet gal			
		Well ID	3/4-inch	1-inch	2-inch	3-inch	4-inch	ĺ
		Vol. (gal/ft)	0.023	0.041	0.163	0.37	0.65	
Field Parameter Measu	rements and	d Observation	ns During We	ell Purging				
Time	24 hr	1050	1055					
Water Level	Feet	1000	1000					
Gallons Purged	Gal	3.25	3.5					
Flow Rate	mL/min	0.20	0.0					
Turbidity (+/- 10%)	NTU	36	21					
Diss. Oxygen (+/- 10%)	mg/l							
Eh/ORP (+/- 10%)	MeV							
Conductivity (+/- 3%)	ms/cm	1.27	1.27		-,			
pH (+/- 0.1)	pH unit	6.99	6.98					
Temp	С	14.9	14.7					
Color		Clear	Clear					
		Very Faint	Very Faint					
Odor		Coal Tar	Coal Tar					
Comments:								

Page 2 of 2

#### Monitoring Well Development Form Project Name and Number: NYSDEC Gastown Former MGP Site RI #44491 Monitoring Well Number: **DPW-33** Date: 10/1/2001 Samplers: Paul Wheeler Sample Number: QA/QC Collected? Purging / Sampling Method: Peristaltic 20.2 feet L = Constructed Total Well Depth (ground): Measured Total Well Depth (TOC): 19.35 feet 3. Sand/Silt Accumulation: 0.85 feet D = Casing Diameter (I.D.): 0.75 inches 5. W = Static Depth to Water (TOC): 7.95 feet C = Column of Water in Casing (L-W): 11.4 feet Well Volume = $C(3.14159)(0.5D^2)(7.48)$ 0.26 gal Multiplier for Casing Diameter Well ID 3/4-inch 1-inch 2-inch 4-inch 3-inch Vol. (gal/ft) 0.023 0.041 0.163 0.37 0.65 Field Parameter Measurements and Observations During Well Purging **Parameter** Units 24 hr 1628 Time 1600 1605 1610 1615 1622 1625 Water Level Feet Gallons Purged Gal 0.5 1 1.5 2 3 3.5 4 Flow Rate mL/min 574\* Turbidity (+/- 10%) NTU 999 999 999 999 683 166 Diss. Oxygen (+/- 10%) mg/l Eh/ORP (+/- 10%) MeV Conductivity (+/- 3%) 1.33 1.59 1.59 ms/cm 1.54 1.58 1.61 1.61 pH unit 6.74 pH (+/- 0.1) 6.74 6.74 6.75 6.76 6.76 6.7 Temp C 17.9 17.2 16.8 16.4 16 16 15.9 Dark Brown/Black Dark Gray Dark Gray Gary/Clear Color Dark Gray Dark Gray Dark Gray Slight Coal Slight Coal Slight Slight Slight Slight

Comments:

Odor

None

Coal Tar

Coal Tar

Tar

Page 1 of 2

Coal Tar

Tar

Coal Tar

<sup>\*-</sup> Pulled tubing up further in water column

		Monito	ring Well	Develop	ment Form			
Project Name and Num	nber:	NYSDEC	Gastown Fo	ormer MGP	Site RI #	44491		
Monitoring Well Numbe	er:	DPW-33		Date:	10/1/2001	1		
Samplers:		Paul Whee	eler					
Sample Number:			-/	_ QA	/QC Collected?			š
Purging / Sampling Met	thod:	Peristaltic						
1. L = Constructed Total 2. Measured Total Well 3. Sand/Silt Accumulation 4. D = Casing Diameter 5. W = Static Depth to Note Construction 6. C = Column of Water Well Volume = C(3.141)	Depth (TO) on: r (I.D.): Water (TOC r in Casing (	C): :): (L-W):		20.2 19.35 0.85 0.75 7.95 11.4 0.26	feet feet feet inches feet feet gal			,
			Multiplier f	or Casing Di	iameter			
		Well ID Vol. (gal/ft)	3/4-inch 0.023	1-inch 0.041	2-inch 0.163	3-inch 0.37	4-inch 0.65	
Field Parameter Measu		d Observation	ons During \	Well Purging	j			
Parameter	Units	1	T		1	Т		
Time	24 hr	1632	1635	1640				
Water Level	Feet							
Gallons Purged	Gal	4.5	5	5.5				
Flow Rate	mL/min				я			
Turbidity (+/- 10%)	NTU	77	51	34				
Diss. Oxygen (+/- 10%)	mg/l							
Eh/ORP (+/- 10%)	MeV							
Conductivity (+/- 3%)	ms/cm	1.62	1.63	1.63				
pH (+/- 0.1)	pH unit	6.75	6.76	6.8				
Temp	С	16	15.9	15.8				
Color		Clear	Clear	Clear				
Odor		Slight Coal Tar	Slight Coal Tar	Slight Coal Tar				
Comments:	,					,		

Page 2 of 2

### Monitoring Well Development Form

Project Name and Number:

NYSDEC Gastown Former MGP Site RI

#44491

Monitoring Well Number:

**DPW-34** 

Date: 10/2/2001

Samplers:

Paul Wheeler

Sample Number:

QA/QC Collected?

Purging / Sampling Method:

Peristaltic

1. L = Constructed Total Well Depth (ground):

17 feet

2. Measured Total Well Depth (TOC):

16.1 feet

3. Sand/Silt Accumulation:

feet

4. D = Casing Diameter (I.D.):

0.9 0.75 inches

5. W = Static Depth to Water (TOC):

8.28 feet

6. C = Column of Water in Casing (L-W):

feet 7.82

Well Volume =  $C(3.14159)(0.5D^2)(7.48)$ 

0.18

#### Multiplier for Casing Diameter

Well ID	3/4-inch	1-inch	2-inch	3-inch	4-inch
Vol. (gal/ft)	0.023	0.041	0.163	0.37	0.65

Field Parameter Measurements and Observations During Well Purging

Parameter	Units						
Time	24 hr	730	750	1125	1145	1153	
Water Level	Feet						
Gallons Purged	Gal	0.1	0.75	0.85	1	1.25	
Flow Rate	mL/min						
Turbidity (+/- 10%)	NTU	999	999	999	66	2	
Diss. Oxygen (+/- 10%)	mg/l						
Eh/ORP (+/- 10%)	MeV						
Conductivity (+/- 3%)	ms/cm	3.08	3.5	3.47	3.52	3.48	
pH (+/- 0.1)	pH unit	6.23	7.07	7.21	7.22	7.23	
Temp	С	16.1	14.4	17.3	18.8	18.6	
Color		Dark Gray	Dark Gray	Dark Gray	Clear	Clear	
			Very Faint	Very Faint	Very Faint	Very Faint	
Odor		None	Coal Tar	Coal Tar	Coal Tar	Coal Tar	

Comments:

Well ran dry, let set for a few hours-returned at 1100

Purged dry again, turned pump to very low flow rate and achieved a semi continous

flow rate

		Monit	oring We	II Develop	ment Forr	n	F	
Project Name and Num	nber:	NYSDEC G	Bastown For	mer MGP S	ite RI #	<del>1</del> 44491		
Monitoring Well Number	er:	DPW-36		_ Date:	10/1/2001			
Samplers:		Paul Whee	ler			1.11		
Sample Number:				QA/Q	C Collected?			
Purging / Sampling Me	thod:	Peristaltic F	Pump					
1. L = Constructed Total 2. Measured Total Well 3. Sand/Silt Accumulati 4. D = Casing Diameter 5. W = Static Depth to 16. C = Column of Wate Well Volume = C(3.141)	l Depth (1 ion: r (I.D.): Water (To r in Casir	OC): OC):	):	21.2 20.36 0.84 0.75 8.27 12.09 0.28				
			Multiplier f	or Casing D	iameter			
		Well ID Vol. (gal/ft)	3/4-inch 0.023	1-inch 0.041	2-inch 0.163	3-inch 0.37	4-inch 0.65	
Field Parameter Measu	rements	and Observa	ations Durin	g Well Purgi	ing			
Parameter	Units							
Time	24 hr	1415	1425	1435	1440	1445	1450	1455
Water Level	Feet							
Gallons Purged	Gal	1	2	3	4	5	6	7
Flow Rate	mL/min							
Turbidity (+/- 10%)	NTU	999	141	146	144	999	931	101
Diss. Oxygen (+/- 10%)	mg/l							
Eh/ORP (+/- 10%)	MeV							
Conductivity (+/- 3%)	ms/cm	0.93	0.705	0.777	0.8	0.828	0.835	0.84
pH (+/- 0.1)	pH unit	6.61	6.93	6.94	6.98	6.96	6.92	6.97
Temp	С	16.3	15.5	15	14.6	14.3	14.3	14.7
Color		Brown	Light Gray		Light Gray	Light Gray	Light Gray	Lighter Gray
		Coal Tar	Coal Tar	Coal Tar	Coal Tar	Coal Tar	Coal Tar	Coal Tar
Odor		Like	Like	Like	Like	Like	Like	Like
Comments:								

		Monitorin	g Well De	evelopme	ent Form	- V- W		
Project Name and Num	ber:	NYSDEC Gas	stown Form	er MGP Sit	te RI #	44491		
Monitoring Well Numbe	r:	DPW-36		Date:	10/1/2001			
Samplers:		Paul Wheeler						
Sample Number:				QA/Q	C Collected?			
Purging / Sampling Met	hod:	Peristaltic Pur	mp					
1. L = Constructed Tota 2. Measured Total Well 3. Sand/Silt Accumulation 4. D = Casing Diameter 5. W = Static Depth to Well 6. C = Column of Water Well Volume = C(3.141)	Depth (TOon: (I.D.): Vater (TOO in Casing (	C): (): (L-W): 7.48)	Multiplier fo	20.36 0.84 0.75 8.27 12.09 0.28	feet inches feet feet gal	*		
		Well ID Vol. (gal/ft)	3/4-inch 0.023	1-inch 0.041	2-inch 0.163	3-inch 0.37	4-inch 0.65	
Field Parameter Measu	rements an	d Observations	During We	II Purging				
Parameter	Units							
Time	24 hr	1500	1505	1510	1515			
Water Level	Feet			2				
Gallons Purged	Gal	8	9	9.5	10			
Flow Rate	mL/min							
Turbidity (+/- 10%)	NTU	103	86	52	51			
Diss. Oxygen (+/- 10%)	mg/l							
Eh/ORP (+/- 10%)	MeV							
Conductivity (+/- 3%)	ms/cm	0.85	0.855	0.855	0.856			
pH (+/- 0.1)	pH unit	6.93	6.89	6.9	6.92			
Temp	С	14.7	14.6	14.6	14.6			
Color		Lighter Gray			,		(C)	
Odor		Coal Tar Like						
Comments:								

Page 2 of 2

### Monitoring Well Development Form

Project Name and Number:

NYSDEC Gastown Former MGP Site RI

#44491

Monitoring Well Number:

**DPW-40** 

Date: 10/2/2001

Samplers:

Paul Wheeler

Sample Number:

QA/QC Collected?

Purging / Sampling Method:

Peristaltic

L = Constructed Total Well Depth (ground):

18.7 feet 18.36 feet

Measured Total Well Depth (TOC):

3. Sand/Silt Accumulation:

0.34 feet

4. D = Casing Diameter (I.D.):

0.75 inches

5. W = Static Depth to Water (TOC):

7.61 feet

6. C = Column of Water in Casing (L-W):

10.75 feet

Well Volume =  $C(3.14159)(0.5D^2)(7.48)$ 

0.25 gal

#### Multiplier for Casing Diameter

Well ID	3/4-inch	1-inch	2-inch	3-inch	4-inch
Vol. (gal/ft)	0.023	0.041	0.163	0.37	0.65

Field Parameter Measurements and Observations During Well Purging

Parameter	Units							
Time	24 hr	1350	1410	1415	1420	1425	1430	1445
Water Level	Feet							
Gallons Purged	Gal	0.1	1.5	1.75	2	2.25	2.5	3
Flow Rate	mL/min	9						
Turbidity (+/- 10%)	NTU	999	999	346	207	176	162	177
Diss. Oxygen (+/- 10%)	mg/l							
Eh/ORP (+/- 10%)	MeV							
Conductivity (+/- 3%)	ms/cm	0.693	0.702	0.711	0.714	0.714	0.711	0.712
pH (+/- 0.1)	pH unit	7.42	7.37	7.32	7.3	7.3	7.26	7.3
Temp	С	16.3	15.9	15.7	15.6	15.5	15.7	15.6
Color		Black/Gray	Gray	Light Gray	Gray/Clear	Gray/Clear	Gray/Clear	Gray/Clear
Odor		Coal Tar	Coal Tar	Coal Tar	Coal Tar	Coal Tar	Coal Tar	Coal Tar

Comments:

1352-Well went dry, allowed it to recharge and lowered the flow rate on the pump

1435- Turbidity 177

		Monitor	ring Well	Developr	nent Form		***	
Project Name and Num	nber:	NYSDEC G	astown For	rmer MGP Si	ite RI #	44491		
Monitoring Well Numbe	er:	DPW-43		Date:	10/2/2001			
Samplers:		Paul Wheel	er					
Out.,,p. 0.		1 55	01		7.00			
Sample Number:				QA/QC	C Collected?			
Purging / Sampling Me	thod:	Peristaltic						
1. L = Constructed Total 2. Measured Total Wel 3. Sand/Silt Accumulati 4. D = Casing Diameter 5. W = Static Depth to 16. C = Column of Wate Well Volume = C(3.141)	ll Depth (7 ion: ir (I.D.): Water (Te ir in Casir	TOC): OC): ng (L-W):	):		feet feet inches feet feet gal			
			Multiplier f	or Casing Di	ameter			
		Well ID Vol. (gal/ft)	3/4-inch 0.023	1-inch 0.041	2-inch 0.163	3-inch 0.37	4-inch 0.65	
Field Parameter Measu  Parameter	urements Units	and Observa	itions Durin	g Well Purgi	ing			
Time	24 hr	1515	1525	1530	1535	1540	1545	1550
Water Level	Feet							
Gallons Purged	Gal	0.25	1.5	2.75	3.25	4	4.5	4.75
Flow Rate	mL/min					***		
Turbidity (+/- 10%)	NTU	999	999	164	86	130	78	79
Diss. Oxygen (+/- 10%)	mg/l							
Eh/ORP (+/- 10%)	MeV							
Conductivity (+/- 3%)	ms/cm	1.34	1.43	1.43	1.44	1.43	1.44	1.44
pH (+/- 0.1)	pH unit	7.29	7.34	7.13	7.15	7.22	7.16	7.22
Temp	С	17.7	16.5	16.4	16.3	16.1	16.1	16.2
Color		Black/Gray				Clear	Clear	Clear
Odor		Slight Coal Tar		Slight Coal Tar		Slight Coal Tar	Slight Coal Tar	Slight Coal Tar
Comments:								

		Monitor	ing Well I	Developm	ent Form		1.0	
Project Name and Num	ber:	NYSDEC	Gastown Fo	rmer MGP S	Site RI	#44491		
Monitoring Well Numbe	r:	DPW-43		Date:	10/2/2001			
Samplers:		Paul Whee	eler					
Sample Number:				QA/QC	Collected?			
Purging / Sampling Met	hod:	Peristaltic						
1. L = Constructed Tota 2. Measured Total Well 3. Sand/Silt Accumulation 4. D = Casing Diameter 5. W = Static Depth to Well 6. C = Column of Water Well Volume = C(3.1418)	Depth (TOo on: (I.D.): Vater (TOC in Casing (	C): ): L-W):		0.6 0.75 6.52 12.48	feet feet feet inches feet feet gal			
			Multiplier fo	or Casing Di	ameter			
		Well ID Vol. (gal/ft)	3/4-inch 0.023	1-inch 0.041	2-inch 0.163	3-inch 0.37	4-inch 0.65	
Field Parameter Measur	rements and	d Observation	ons During V	Vell Purging				
Parameter	Units							
Time	24 hr	1600						
Water Level	Feet							
Gallons Purged	Gal	5.25						
Flow Rate	mL/min							
Turbidity (+/- 10%)	NTU	82						
Diss. Oxygen (+/- 10%)	mg/l							
Eh/ORP (+/- 10%)	MeV				-			
Conductivity (+/- 3%)	ms/cm	1.43						
pH (+/- 0.1)	pH unit	7.17						
Temp	С	16						
Color								
Odor								
Comments:							Page 2 of	2

NySDEC Gastown Former MGP Site RI			Monitor	ing Well I	Develop	ment Form		
Samplers:   Paul Wheeler	Project Name and Num	nber:	NYSDEC G	astown Forn	ner MGP §	Site RI	#44491	-
Sample Number:   QA/QC Collected?	Monitoring Well Numbe	er:	DPW-44		Date:	10/2/2001		
Purging / Sampling Method: Peristaltic  1. L = Constructed Total Well Depth (ground): 19.3 feet 2. Measured Total Well Depth (TOC): 18.82 feet 3. Sand/Silt Accumulation: 0.48 feet 4. D = Casing Diameter (I.D.): 0.75 inches 5. W = Static Depth to Water (TOC): 6.94 feet 6. C = Column of Water in Casing (L-W): 11.88 feet  Well Volume = C(3.14159)(0.5D²)(7.48) 0.27 gal  Multiplier for Casing Diameter  Well ID 3/4-inch 1-inch 2-inch 3-inch 4-inch Vol. (gal/ft) 0.023 0.041 0.163 0.37 0.65  Field Parameter Measurements and Observations During Well Purging  Parameter Units  Time 24 hr 1625 1640 1645 1650 1657 1702  Water Level Feet Gallons Purged Gal 0.1 1.5 2.25 2.75 3.5 4  Flow Rate mL/min Turbidity (+/- 10%) NTU 999 379 171 46 56 37  Diss. Oxygen (+/- 10%) mg/l  Eh/ORP (+/- 10%) MeV  Conductivity (+/- 3%) ms/cm 1.41 1.39 1.43 1.42 1.43 1.42 pH (+/- 0.1) pH unit 7.42 7.33 7.28 7.33 7.2 7.2	Samplers:		Paul Wheel	er				
1. L = Constructed Total Well Depth (ground): 2. Measured Total Well Depth (TOC): 3. Sand/Silt Accumulation: 4. D = Casing Diameter (I.D.): 5. W = Static Depth to Water (TOC): 6. C = Column of Water in Casing (L-W):  Well Volume = C(3.14159)(0.5D²)(7.48)  Well ID 3/4-inch 1-inch 2-inch 3-inch 4-inch Vol. (gal/ft) 0.023 0.041 0.163 0.37 0.65  Field Parameter Measurements and Observations During Well Purging  Parameter Units  Time 24 hr 1625 1640 1645 1650 1657 1702  Water Level Feet Gallons Purged Gal 0.1 1.5 2.25 2.75 3.5 4  Flow Rate mL/min Turbidity (+/- 10%) NTU 999 379 171 46 56 37  Diss. Oxygen (+/- 10%) mg/l  Eh/ORP (+/- 10%) MeV  Conductivity (+/- 3%) ms/cm 1.41 1.39 1.43 1.42 1.43 1.42 pH (+/- 0.1) pH unit 7.42 7.33 7.28 7.33 7.2 7.2	Sample Number:				QA/Q	C Collected?		
2. Measured Total Well Depth (TOC):  3. Sand/Silt Accumulation: 4. D = Casing Diameter (I.D.): 5. W = Static Depth to Water (TOC): 6. C = Column of Water in Casing (L-W):  Well Volume = C(3.14159)(0.5D²)(7.48)  Multiplier for Casing Diameter  Well ID 3/4-inch 1-inch 2-inch 3-inch 4-inch Vol. (gal/ft) 0.023 0.041 0.163 0.37 0.65  Field Parameter Measurements and Observations During Well Purging  Parameter  Units  Time 24 hr 1625 1640 1645 1650 1657 1702  Water Level Feet Gallons Purged Gal 0.1 1.5 2.25 2.75 3.5 4  Flow Rate mL/min Turbidity (+/- 10%) NTU 999 379 171 46 56 37  Diss. Oxygen (+/- 10%) mg/l  Eh/ORP (+/- 10%) MeV  Conductivity (+/- 3%) ms/cm 1.41 1.39 1.43 1.42 1.43 1.42 pH (+/- 0.1) pH unit 7.42 7.33 7.28 7.33 7.2 7.2	Purging / Sampling Me	thod:	Peristaltic					
Well ID Vol. (gal/ft)         3/4-inch Vol. (gal/ft)         1-inch Vol. (gal/ft)         2-inch Vol. (gal/ft)         3-inch Vol. (gal/ft)         4-inch Vol. (gal/ft)           Field Parameter Measurements and Observations During Well Purging           Parameter Units           Time         24 hr         1625         1640         1645         1650         1657         1702           Water Level         Feet         Value         Value	<ol> <li>Measured Total Well</li> <li>Sand/Silt Accumulati</li> <li>D = Casing Diameter</li> <li>W = Static Depth to 16</li> <li>C = Column of Wate</li> </ol>	ll Depth (7 ion: r (I.D.): Water (Te er in Casir	TOC):  OC): ng (L-W):	): - - - - - -	18.82 0.48 0.75 6.94 11.88	feet feet feet inches feet feet feet		
Vol. (gal/ft)         0.023         0.041         0.163         0.37         0.65           Field Parameter Measurements and Observations During Well Purging           Parameter         Units           Time         24 hr         1625         1640         1645         1650         1657         1702           Water Level         Feet				Multiplier for	r Casing C	Diameter		
Parameter         Units           Time         24 hr         1625         1640         1645         1650         1657         1702           Water Level         Feet								
Water Level         Feet         2.25         3.5         4           Gallons Purged         Gal         0.1         1.5         2.25         2.75         3.5         4           Flow Rate         mL/min         1         1         46         56         37           Turbidity (+/- 10%)         NTU         999         379         171         46         56         37           Diss. Oxygen (+/- 10%)         mg/l         1			and Observa	ations During	ı Well Purç	ging		
Gallons Purged         Gal         0.1         1.5         2.25         2.75         3.5         4           Flow Rate         mL/min         Turbidity (+/- 10%)         NTU         999         379         171         46         56         37           Diss. Oxygen (+/- 10%)         mg/l         Eh/ORP (+/- 10%)         MeV           Conductivity (+/- 3%)         ms/cm         1.41         1.39         1.43         1.42         1.43         1.42           pH (+/- 0.1)         pH unit         7.42         7.33         7.28         7.33         7.2         7.2	Time	24 hr	1625	1640	1645	1650	1657	1702
Flow Rate mL/min Turbidity (+/- 10%) NTU 999 379 171 46 56 37  Diss. Oxygen (+/- 10%) mg/l Eh/ORP (+/- 10%) MeV  Conductivity (+/- 3%) ms/cm 1.41 1.39 1.43 1.42 1.43 1.42 pH (+/- 0.1) pH unit 7.42 7.33 7.28 7.33 7.2	Water Level	Feet						
Turbidity (+/- 10%) NTU 999 379 171 46 56 37  Diss. Oxygen (+/- 10%) mg/l  Eh/ORP (+/- 10%) MeV  Conductivity (+/- 3%) ms/cm 1.41 1.39 1.43 1.42 1.43 1.42  pH (+/- 0.1) pH unit 7.42 7.33 7.28 7.33 7.2 7.2	Gallons Purged	Gal	0.1	1.5	2.25	2.75	3.5	4
Turbidity (+/- 10%) NTU 999 379 171 46 56 37  Diss. Oxygen (+/- 10%) mg/l  Eh/ORP (+/- 10%) MeV  Conductivity (+/- 3%) ms/cm 1.41 1.39 1.43 1.42 1.43 1.42  pH (+/- 0.1) pH unit 7.42 7.33 7.28 7.33 7.2 7.2	Flow Rate	mL/min						
Diss. Oxygen (+/- 10%) mg/l Eh/ORP (+/- 10%) MeV Conductivity (+/- 3%) ms/cm 1.41 1.39 1.43 1.42 1.43 1.42 pH (+/- 0.1) pH unit 7.42 7.33 7.28 7.33 7.2 7.2		-		379	171	46	56	37
Eh/ORP (+/- 10%) MeV  Conductivity (+/- 3%) ms/cm 1.41 1.39 1.43 1.42 1.43 1.42 pH (+/- 0.1) pH unit 7.42 7.33 7.28 7.33 7.2 7.2								
Conductivity (+/- 3%) ms/cm 1.41 1.39 1.43 1.42 1.43 1.42 pH (+/- 0.1) pH unit 7.42 7.33 7.28 7.33 7.2 7.2								
pH (+/- 0.1)		1	1.41	1.39	1.43	1.42	1.43	1.42
				-				
Temp		-						
Color Black/Gray Light Gray Clear Clear Clear								
Faint Coal	Coloi			Ligiti O.S.	Oloc.	0.00	0.02	
Odor Tar None None None None	Odor			None	None	None	None	

## Monitoring Well Development Form

Project Name and Number:

NYSDEC Gastown Former MGP Site RI

#44491

Monitoring Well Number:

**DPW-49** 

Date: 12/12/2001

Samplers:

Amy Tillman

Sample Number:

QA/QC Collected?

Purging / Sampling Method:

1. L = Constructed Total Well Depth (ground):

20 feet

2. Measured Total Well Depth (TOC):

0 feet

3. Sand/Silt Accumulation:

0 feet

4. D = Casing Diameter (I.D.):

0.75 inches

5. W = Static Depth to Water (TOC):

8.11 feet

6. C = Column of Water in Casing (L-W):

11.89 feet

Well Volume =  $C(3.14159)(0.5D^2)(7.48)$ 

0.27 gal

#### Multiplier for Casing Diameter

Well ID	3/4-inch	1-inch	2-inch	3-inch	4-inch
Vol. (gal/ft)	0.023	0.041	0.163	0.37	0.65

Field Parameter Measurements and Observations During Well Purging

Parameter	Units		le .					
Time	24 hr	1100	1105	1108	1115	1119	1122	1125
Water Level	Feet							
Gallons Purged	Gal	1	1.5	2	2.75	3	3.5	4
Flow Rate	mL/min							
Turbidity (+/- 10%)	NTU	999	216	92.4	147	43.2	27.5	22.5
Diss. Oxygen (+/- 10%)	%	19.1	4	3.6	3.7	3.2	2.8	2.9
Eh/ORP (+/- 10%)	MeV	-362.2	-328.2	-333.7	-319	-287.1	-300	-300
Conductivity (+/- 3%)	ms/cm	4915	4970	4985	4793	4792	4793	4794
pH (+/- 0.1)	pH unit	6.91	6.87	6.88	6.86	6.86	6.85	6.86
Temp	С	12.42	12.63	12.64	12.63	12.62	12.6	12.61
				Slightly	Slightly			
Color		Light Brown	Cloudy	Cloudy	Cloudy	Clear	Clear	Clear
Odor		None	Slight	Slight	None	Slight	Slight	Slight

Comments:

Tubing is just above the bottom

#### Monitoring Well Development Form Project Name and Number: NYSDEC Gastown Former MGP Site RI #44491 Monitoring Well Number: **DPW-50** Date: 12/12/2001 Samplers: Amy Tillman QA/QC Collected? Sample Number: Purging / Sampling Method: L = Constructed Total Well Depth (ground): 20.5 feet Measured Total Well Depth (TOC): 0 feet Sand/Silt Accumulation: 0 feet 4. D = Casing Diameter (I.D.): 0.75 inches 5. W = Static Depth to Water (TOC): 6.2 feet 6. C = Column of Water in Casing (L-W): 14.3 feet Well Volume = $C(3.14159)(0.5D^2)(7.48)$ 0.33 gal Multiplier for Casing Diameter Well ID 3/4-inch 2-inch 3-inch 4-inch 1-inch 0.37 Vol. (gal/ft) 0.023 0.041 0.163 0.65 Field Parameter Measurements and Observations During Well Purging Parameter Units 1255 24 hr 1245 1250 Time 1225 1230 1235 1240 Water Level Feet Gallons Purged 2 2.25 2.5 Gal 1 1.5 Flow Rate mL/min Turbidity (+/- 10%) NTU 999 999 999 999 999 883 717 Diss. Oxygen (+/- 10%) % 4.7 3 6.9 2.9 2.4 2.3 2.2 Eh/ORP (+/- 10%) MeV -542.9 -531.5 -480 -502.4 -499.1-491.4 -486.3 Conductivity (+/- 3%) 4179 4211 4180 4140 4147 4045 4057 umhos 6.77 pH (+/- 0.1) pH unit 6.85 6.8 6.78 6.79 6.78 6.82 Temp C 12.54 12.86 12.48 12.47 12.46 12.46 12.46 Color Dark Brown Dark Brown Brown Brown Brown Cloudy Odor None None Nonw Slight Slight None None Comments: Tubing is just above the bottom Let pump for 15 minutes before taking first reading

ıl		Monitori	ng Well [	Developn	nent Form		
Project Name and Num	nber:	NYSDEC (	Gastown Fo	rmer MGP	Site RI	#44491	
Monitoring Well Numbe	er:	DPW-50		Date:	12/12/200	1	
Samplers:		Amy Tillma	in				
ample Number:				QA/G	C Collected?		
Purging / Sampling Met	thod:						
1. L = Constructed Total 2. Measured Total Well 3. Sand/Silt Accumulati 4. D = Casing Diameter 5. W = Static Depth to \ 6. C = Column of Water Well Volume = C(3.141	l Depth (TO on: r (I.D.): Water (TOC r in Casing (	C): :): (L-W):		-	feet feet feet inches feet feet gal		
			Multiplier fo	or Casing D	iameter		
		Well ID Vol. (gal/ft)	3/4-inch 0.023	1-inch 0.041	2-inch 0.163	3-inch 0.37	4-inch 0.65
		Vol. (gal/ft)	0.023	0.041	0.163		
Parameter	Units	Vol. (gal/ft)	0.023	0.041	0.163		
Field Parameter Measu  Parameter  Time	Units 24 hr	Vol. (gal/ft)	0.023	0.041	0.163		
Parameter Time Water Level	Units 24 hr Feet	Vol. (gal/ft) d Observation 1300	0.023	0.041	0.163		
Parameter Fime Water Level Gallons Purged	Units 24 hr Feet Gal	Vol. (gal/ft)	0.023	0.041	0.163		
Parameter Fime Water Level Gallons Purged Flow Rate	Units 24 hr Feet Gal mL/min	Vol. (gal/ft) d Observation 1300 4.5	0.023	0.041	0.163		
Parameter Time Vater Level Ballons Purged Flow Rate Turbidity (+/- 10%)	Units 24 hr Feet Gal mL/min NTU	Vol. (gal/ft) d Observation 1300 4.5 773	0.023	0.041	0.163		
Parameter Fime Water Level Sallons Purged Flow Rate Furbidity (+/- 10%) Diss. Oxygen (+/- 10%)	Units 24 hr Feet Gal mL/min NTU %	Vol. (gal/ft) d Observation 1300 4.5 773 2	0.023	0.041	0.163		
Parameter Fime Vater Level Gallons Purged Flow Rate Furbidity (+/- 10%) Diss. Oxygen (+/- 10%)	Units 24 hr Feet Gal mL/min NTU % MeV	1300 4.5 773 2 -474.9	0.023	0.041	0.163		
Parameter Fime  Vater Level  Gallons Purged Flow Rate Furbidity (+/- 10%) Diss. Oxygen (+/- 10%) Eh/ORP (+/- 10%)	Units  24 hr Feet Gal mL/min NTU % MeV umhos	Vol. (gal/ft) d Observation 1300 4.5 773 2 -474.9 3989	0.023	0.041	0.163		
Parameter Fime  Vater Level  Sallons Purged Flow Rate Furbidity (+/- 10%)  Diss. Oxygen (+/- 10%)  Eh/ORP (+/- 10%)  Conductivity (+/- 3%)  OH (+/- 0.1)	Units 24 hr Feet Gal mL/min NTU % MeV	Vol. (gal/ft) d Observation 1300 4.5 773 2 -474.9 3989 6.77	0.023	0.041	0.163		
Parameter Fime	Units  24 hr  Feet Gal mL/min NTU % MeV umhos pH unit	Vol. (gal/ft) d Observation 1300 4.5 773 2 -474.9 3989	0.023	0.041	0.163		

Page 2 of 2

## Monitoring Well Development Form Project Name and Number: NYSDEC Gastown Former MGP Site RI #44491 Monitoring Well Number: DPW-51 Date: 12/13/2001 Samplers: Amy Tillman QA/QC Collected? Sample Number: Purging / Sampling Method:

1. L = Constructed Total Well Depth (ground):

19 feet

2. Measured Total Well Depth (TOC):

0 feet

3. Sand/Silt Accumulation:

feet

4. D = Casing Diameter (I.D.): 5. W = Static Depth to Water (TOC): 0.75 inches

6. C = Column of Water in Casing (L-W):

7.37 feet 11.63 feet

Well Volume =  $C(3.14159)(0.5D^2)(7.48)$ 

0.27 gal

#### Multiplier for Casing Diameter

Well ID	3/4-inch	1-inch	2-inch	3-inch	4-inch
Vol. (gal/ft)	0.023	0.041	0.163	0.37	0.65

Field Parameter Measurements and Observations During Well Purging

Parameter	Units						
Time	24 hr	800	807	814	821		
Water Level	Feet						
Gallons Purged	Gal	0.5	0.6	0.7	0.75		
Flow Rate	mL/min						
Turbidity (+/- 10%)	NTU	132	69.6	46.7	39.1		
Diss. Oxygen (+/- 10%)	%	87.8	90.4	90.5	90.7		
Eh/ORP (+/- 10%)	MeV	-61.1	-67.2	-69	-75.1		
Conductivity (+/- 3%)	umhos	5724	5706	5662	5630		
pH (+/- 0.1)	pH unit	7.14	7.18	7.17	7.2		
Temp	С	11.87	12.1	12.16	12.17		
Color		Cloudy	Cloudy	Cloudy	Cloudy		
Odor		None	None	None	None		

Comments:

Bailer got stuck on 12/12

Removed 12/13, used 12/12 water level Tubing placed just above the bottom

Let pump fpr 25 minutes before first reading

Low producing well

Many air bubbles in the flow through cell

## Monitoring Well Development Form

Project Name and Number:

NYSDEC Gastown Former MGP Site RI

#44491

Monitoring Well Number:

**DPW-52** 

Date: 12/12/2001

Samplers:

Amy Tillman

Sample Number:

QA/QC Collected?

Purging / Sampling Method:

1. L = Constructed Total Well Depth (ground):

0 feet 22.4 feet

Measured Total Well Depth (TOC):

3. Sand/Silt Accumulation:

feet 0

4. D = Casing Diameter (I.D.):

0.75 inches

5. W = Static Depth to Water (TOC):

7.25 feet

6. C = Column of Water in Casing (L-W):

15.15 feet

Well Volume =  $C(3.14159)(0.5D^2)(7.48)$ 

0.35 gal

#### Multiplier for Casing Diameter

Well ID	3/4-inch	1-inch	2-inch	3-inch	4-inch
Vol. (gal/ft)	0.023	0.041	0.163	0.37	0.65

Field Parameter Measurements and Observations During Well Purging

Parameter	Units							
Time	24 hr	1530	1537	1544	1551	1558	1605	
Water Level	Feet							
Gallons Purged	Gal	1	2	2.5	3	3.75	4.5	
Flow Rate	mL/min							
Turbidity (+/- 10%)	NTU	724	136	77.4	73.8	54.8	50.6	
Diss. Oxygen (+/- 10%)	%	30.8	6.7	3.8	3.3	3	2.8	
Eh/ORP (+/- 10%)	MeV	-289	<-345	-373	-388.4	-374	-353.6	
Conductivity (+/- 3%)	umhos	6380	6714	6689	6634	6623	6598	
pH (+/- 0.1)	pH unit	6.68	6.63	6.63	6.62	6.62	6.63	
Temp	С	13.09	12.95	12.91	12.88	12.87	12.88	
Color		Murky Gray	Cloudy	Cloudy	Cloudy	Cloudy	Cloudy	
Odor		None	None	None	None	None	None	

Comments:

Tubing is just above the bottom

Let pump for 15 minutes before taking first reading

#### Monitoring Well Development Form NYSDEC Gastown Former MGP Site RI Project Name and Number: #44491 Monitoring Well Number: **DPW-53** Date: 12/12/2001 Samplers: Amy Tillman Sample Number: QA/QC Collected? Purging / Sampling Method: 1. L = Constructed Total Well Depth (ground): 19.5 feet 2. Measured Total Well Depth (TOC): 0 feet 3. Sand/Silt Accumulation: 0 feet 4. D = Casing Diameter (I.D.): 0.75 inches 5. W = Static Depth to Water (TOC): 4.86 feet 6. C = Column of Water in Casing (L-W): 14.64 feet Well Volume = $C(3.14159)(0.5D^2)(7.48)$ 0.34 gal Multiplier for Casing Diameter Well ID 3/4-inch 2-inch 3-inch 4-inch 1-inch Vol. (gal/ft) 0.023 0.37 0.65 0.041 0.163 Field Parameter Measurements and Observations During Well Purging

Parameter	Units							
Time	24 hr	1655	1702	1709	1716	1723	1730	1737
Water Level	Feet							
Gallons Purged	Gal	0.5	1	1.5	2	2.5	3	3.25
Flow Rate	mL/min							
Turbidity (+/- 10%)	NTU	999	80.4	62	52.4	58.6	47.2	43.9
Diss. Oxygen (+/- 10%)	%	38.8	28.6	20	16.1	16.3	17.7	17.7
Eh/ORP (+/- 10%)	MeV	-260	-293.9	-322.9	-333	-313.5	-301.7	-283.6
Conductivity (+/- 3%)	umhos	5164	4926	4697	4501	4370	4280	4159
pH (+/- 0.1)	pH unit	6.95	6.88	6.84	6.83	6.83	6.83	6.83
Temp	С	13.01	13.02	13.05	13.07	13.04	13.08	13.06
Color		Brown	Clear	Clear	Clear	Clear	Clear	Clear
Odor		None	None	None	Slight	None	None	None

Comments:

Tubing is just above the bottom

Let pump for 15 minutes before taking first reading

Flow dropped at 1730

		Monitor	ing Well	Developr	nent Form			
Project Name and Num	her:		-	ormer MGP		<del>‡</del> 44491		
Project Name and Num	iber.	MISDEC	Jastowii Po	iner MGF	Sile Ni F	74451		
Monitoring Well Numbe	er:	DPW-53	DPW-53 Date: 12/12/2001					
Samplers:		Amy Tillma	ın					
Sample Number:				QA/	QC Collected?			
Purging / Sampling Met	hod:			<del></del>				
1. L = Constructed Total 2. Measured Total Well 3. Sand/Silt Accumulatid 4. D = Casing Diameter 5. W = Static Depth to V 6. C = Column of Water Well Volume = C(3.141)	Depth (TOon: (I.D.): Water (TOO in Casing (	C): :): (L-W):			feet feet feet inches feet feet gal		*	
v			Multiplier fo	or Casing D	iameter			
		Well ID	3/4-inch	1-inch	2-inch	3-inch	4-inch	1
		Vol. (gal/ft)		0.041	0.163	0.37	0.65	
Field Parameter Measu	rements and	d Observatio	ons During	Well Purgin	g			
Time	24 hr	1744						
Water Level	Feet							
Gallons Purged	Gal	3.5						
Flow Rate	mL/min							
Turbidity (+/- 10%)	NTU	38.8						
Diss. Oxygen (+/- 10%)	%	18.9						
Eh/ORP (+/- 10%)	MeV	-260.3	-,					
Conductivity (+/- 3%)	umhos	4101						
pH (+/- 0.1)	pH unit	6.81	1.					
Temp	С	13.07						
Color		Clear						
Odor		None						
Comments:		ust above th or 15 minute		king first re	ading			

Page 2 of 2

#### Monitoring Well Development Form Project Name and Number: NYSDEC Gastown Former MGP Site RI #44491 Monitoring Well Number: **DPW-54** Date: 12/13/2001 Samplers: Amy Tillman Sample Number: QA/QC Collected? Purging / Sampling Method: 1. L = Constructed Total Well Depth (ground): 25 feet 2. Measured Total Well Depth (TOC): 0 feet 3. Sand/Silt Accumulation: feet 4. D = Casing Diameter (I.D.): 0.75 inches 5. W = Static Depth to Water (TOC): 7.42 feet 6. C = Column of Water in Casing (L-W): 17.58 feet Well Volume = $C(3.14159)(0.5D^2)(7.48)$ 0.40 gal Multiplier for Casing Diameter

Well ID	3/4-inch	1-inch .	2-inch	3-inch	4-inch
Vol. (gal/ft)	0.023	0.041	0.163	0.37	0.65

Field Parameter Measurements and Observations During Well Purging

Parameter	Units							
Time	24 hr	900	910	920	930	940	950	1000
Water Level	Feet							
Gallons Purged	Gal	0.5	0.6	0.75	1	1.5	2.25	2.5
Flow Rate	mL/min							
Turbidity (+/- 10%)	NTU	81.8	48.5	31.1	16.4	20.9	10.83	8.89
Diss. Oxygen (+/- 10%)	%	80.8	82.8	82.1	86.7	87.2	87.8	88.4
Eh/ORP (+/- 10%)	MeV	-63.7	-69.5	-72.4	-80.3	-83.5	-86.6	-90.5
Conductivity (+/- 3%)	umhos	2038	2040	2047	2043	2045	2047	2045
pH (+/- 0.1)	pH unit	7.02	7.12	7.12	7.16	7.17	7.18	7.2
Temp	С	12.04	12.1	12.15	12.13	12.19	12.24	12.24
Color		Cloudy	Cloudy	Cloudy	Cloudy	Clear	Clear	Clear
Odor		None	None	None	None	None	None	

Comments:

Tubing is just above the bottom

Let pump for 15 minutes before taking first reading Slow flow rate, many air bubbles in flow through cell

#### Monitoring Well Development Form Project Name and Number: NYSDEC Gastown Former MGP Site RI #44491 Monitoring Well Number: **DPW-55** Date: 12/13/2001 Samplers: Amy Tillman Sample Number: QA/QC Collected? Purging / Sampling Method: 1. L = Constructed Total Well Depth (ground): 19.4 feet 2. Measured Total Well Depth (TOC): 0 feet 3. Sand/Silt Accumulation: 0 feet 4. D = Casing Diameter (I.D.): 0.75 inches 5. W = Static Depth to Water (TOC): 5.88 feet

#### Multiplier for Casing Diameter

13.52

0.31

Well ID	3/4-inch	1-inch	2-inch	3-inch	4-inch
Vol. (gal/ft)	0.023	0.041	0.163	0.37	0.65

feet

gal

Field Parameter Measurements and Observations During Well Purging

6. C = Column of Water in Casing (L-W):

Well Volume =  $C(3.14159)(0.5D^2)(7.48)$ 

Parameter	Units						
Time	24 hr	1315	1320	1325	1330	1335	
Water Level	Feet						
Gallons Purged	Gal	1.25	2	3	3.5	4	
Flow Rate	mL/min						
Turbidity (+/- 10%)	NTU	159	119	45.7	58	59.5	
Diss. Oxygen (+/- 10%)	%	11.4	4.4	3.1	3.2	3.5	
Eh/ORP (+/- 10%)	MeV	-299	-460.2	-460.5	-445.4	-436.2	
Conductivity (+/- 3%)	umhos	1678	1719	1721	1718	1716	
pH (+/- 0.1)	pH unit	6.85	6.83	6.82	6.82	6.82	
Temp	С	13.97	14	13.99	13.98	13.97	
Color		Cloudy	Cloudy	Cloudy	Cloudy	Cloudy	 
Odor		None	None	None	None	None	

Comments:

Tubing is just above the bottom

Let pump for 15 minutes before taking first reading

### Monitoring Well Development Form

Project Name and Number:

NYSDEC Gastown Former MGP Site RI

#44491

Monitoring Well Number:

**DPW-56** 

Date: 12/13/2001

Samplers:

Amy Tillman

Sample Number:

QA/QC Collected?

Purging / Sampling Method:

1. L = Constructed Total Well Depth (ground):

\_\_\_\_19.3 feet

2. Measured Total Well Depth (TOC):

0 feet

3. Sand/Silt Accumulation:

0 feet

4. D = Casing Diameter (I.D.):

0.75 inches

5. W = Static Depth to Water (TOC):

8.33 feet

6. C = Column of Water in Casing (L-W):

10.97 feet

Well Volume =  $C(3.14159)(0.5D^2)(7.48)$ 

0.25 gal

#### Multiplier for Casing Diameter

Well ID	3/4-inch	1-inch	2-inch	3-inch	4-inch
Vol. (gal/ft)	0.023	0.041	0.163	0.37	0.65

Field Parameter Measurements and Observations During Well Purging

Parameter	Units							
Time	24 hr	1050	1105	1115	1125	1135	1150	
Water Level	Feet							
Gallons Purged	Gal	0.5	0.75	0.85	1	1.25	1.5	
Flow Rate	mL/min							
Turbidity (+/- 10%)	NTU	635	445	455	999	983	508	
Diss. Oxygen (+/- 10%)	%	91.9	92.3	92.2	90	88.6	86.7	
Eh/ORP (+/- 10%)	MeV	-87.6	-90.7	-95	-96	-94.4	-96.9	
Conductivity (+/- 3%)	umhos	1451	1455	1449	1433	1424	1417	
pH (+/- 0.1)	pH unit	7.62	7.61	7.57	7.45	7.43	7.38	
Temp	С	13.08	13.19	13.34	13.43	13.44	13.45	
Color		Gray	Gray	Gray	Gray	Gray	Gray	
Odor		None	None	None	None	None	None	

Comments:

Tubing is just above the bottom

Let pump for 15 minutes before taking first reading

Low flow rate

#### Monitoring Well Development Form #44491 Project Name and Number: NYSDEC Gastown Former MGP Site RI Monitoring Well Number: **DPW-57** Date: 12/13/2001 Samplers: Amy Tillman QA/QC Collected? Sample Number: Purging / Sampling Method: 21 feet 1. L = Constructed Total Well Depth (ground): 2. Measured Total Well Depth (TOC): 0 feet 3. Sand/Silt Accumulation: feet 4. D = Casing Diameter (I.D.): 0.75 inches 5. W = Static Depth to Water (TOC): 8.01 feet

#### Multiplier for Casing Diameter

12.99

0.30

Well ID	3/4-inch	1-inch	2-inch	3-inch	4-inch
Vol. (gal/ft)	0.023	0.041	0.163	0.37	0.65

feet

gai

Field Parameter Measurements and Observations During Well Purging

6. C = Column of Water in Casing (L-W):

Well Volume =  $C(3.14159)(0.5D^2)(7.48)$ 

Parameter	Units							
Time	24 hr	1520	1525	1530	1535	1540	1545	1550
Water Level	Feet							
Gallons Purged	Gal	1	2	2.25	2.5	3.25	4	5
Flow Rate	mL/min							F
Turbidity (+/- 10%)	NTU	999	999	999	999	1074	824	999
Diss. Oxygen (+/- 10%)	%	10	3.5	2.7	2.2	2.3	2	1.8
Eh/ORP (+/- 10%)	MeV	-438.3	-447.1	-487.1	-491.6	-443.7	-415.6	-465.2
Conductivity (+/- 3%)	umhos	1322	1345	1346	1341	1336	1333	1317
pH (+/- 0.1)	pH unit	6.91	6.93	6.93	6.93	6.92	6.91	6.91
Temp	С	13.74	13.83	13.83	13.83	13.84	13.83	13.83
Color		Brown	Brown	Brown	Brown	Brown	Brown	Brown
Odor		None						

Comments:

Tubing is just above the bottom

Let pump for 15 minutes before taking first reading

#### Monitoring Well Development Form Project Name and Number: NYSDEC Gastown Former MGP Site RI #44491 Monitoring Well Number: **DPW-58** Date: 12/13/2001 Samplers: Amy Tillman and Walt Howard Sample Number: QA/QC Collected? Purging / Sampling Method: 1. L = Constructed Total Well Depth (ground): 25 feet 2. Measured Total Well Depth (TOC): 0 feet 3. Sand/Silt Accumulation: 0 feet 4. D = Casing Diameter (I.D.): 0.75 inches 5. W = Static Depth to Water (TOC): feet 6.2 6. C = Column of Water in Casing (L-W): feet 18.8 Well Volume = $C(3.14159)(0.5D^2)(7.48)$ 0.43 gal Multiplier for Casing Diameter Well ID 3/4-inch 1-inch 2-inch 3-inch 4-inch 0.023 0.65 Vol. (gal/ft) 0.041 0.163 0.37 Field Parameter Measurements and Observations During Well Purging Units Parameter Time 24 hr 1415 1420 1425 1430 1435 1440 Water Level Feet Gal 1.5 3.75 4.5 5 Gallons Purged 2.25 Flow Rate mL/min Turbidity (+/- 10%) NTU 12 15 9.26 7.91 6.65 5.06 Diss. Oxygen (+/- 10%) % 17.3 4.6 3.3 2.9 2.7 2.4 Eh/ORP (+/- 10%) MeV -187.9 -238 -260.2-254-256.6 -220Conductivity (+/- 3%) umhos 1688 1744 1742 1741 1739 1738 6.71 6.71 6.71 6.71 pH (+/- 0.1) pH unit 6.74 6.72 C 12.49 12.49 12.49 12.48 Temp 12.6 12.5 Clear Clear Clear Clear Color Clear Clear Slight Slight Slight Slight Slight Slight Odor Tubing is just above the bottom Comments: Let pump for 15 minutes before taking first reading

#### Monitoring Well Development Form Project Name and Number: NYSDEC Gastown Former MGP Site RI #44491 Monitoring Well Number: MW-40 Date: 7/11/2001 Samplers: Patrick Armstrong QA/QC Collected? Sample Number: Purging / Sampling Method: 17.3 feet 1. L = Constructed Total Well Depth (ground): 2. Measured Total Well Depth (TOC): 0 feet feet 3. Sand/Silt Accumulation: 4. D = Casing Diameter (I.D.): inches 5. W = Static Depth to Water (TOC): 6.74 feet 6. C = Column of Water in Casing (L-W): 10.56 feet Well Volume = $C(3.14159)(0.5D^2)(7.48)$ 1.72 gal

#### Multiplier for Casing Diameter

Well ID	3/4-inch	1-inch	2-inch	3-inch	4-inch
Vol. (gal/ft)	0.023	0.041	0.163	0.37	0.65

Field Parameter Measurements and Observations During Well Purging

Parameter	Units							
Time	24 hr	856	907	914	920	932	940	
Water Level	Feet							
Gallons Purged	Gal	2	5	7.5	10	15	18	
Flow Rate	mL/min			8				
Turbidity (+/- 10%)	NTU	20	850	999	999	999	999	
Diss. Oxygen (+/- 10%)	mg/l	0	0	0	0	0	0	
Eh/ORP (+/- 10%)	MeV	1						
Conductivity (+/- 3%)	ms/cm	1.35	1.33	1.4	1.39	1.37	1.32	
pH (+/- 0.1)	pH unit	6.48	7	6.88	6.8	6.75	6.86	
Temp	С							
Color								
Odor								

Comments:

Water has bright sheen and strong odor of coal tar/NAPL, very silty and gray water

### Monitoring Well Development Form Project Name and Number: NYSDEC Gastown Former MGP Site RI #44491 Monitoring Well Number: Date: 7/10/2001 MW-41 Samplers: Patrick Armstrong Sample Number: QA/QC Collected? Purging / Sampling Method: 1. L = Constructed Total Well Depth (ground): 20.2 feet 2. Measured Total Well Depth (TOC): 0 feet 3. Sand/Silt Accumulation: 0 feet 4. D = Casing Diameter (I.D.): 2 inches 5. W = Static Depth to Water (TOC): 6.11 feet 6. C = Column of Water in Casing (L-W): 14.09 feet Well Volume = $C(3.14159)(0.5D^2)(7.48)$ 2.30 gal Multiplier for Casing Diameter Well ID 3/4-inch 1-inch 2-inch 3-inch 4-inch Vol. (gal/ft) 0.023 0.041 0.163 0.37 0.65 Field Parameter Measurements and Observations During Well Purging

Parameter	Units							
Time	24 hr	1438	1444	1452	1459	1530	1536	1543
Water Level	Feet							
Gallons Purged	Gal	2.5	5	7.5	10	12.5	15	17.5
Flow Rate	mL/min							
Turbidity (+/- 10%)	NTU	999	999	999	999	999	999	999
Diss. Oxygen (+/- 10%)	mg/l	0.01	0.01	0.01	0	0.01	0.02	0.02
Eh/ORP (+/- 10%)	MeV							
Conductivity (+/- 3%)	ms/cm	2.05	1.43	1.48	1.53	2.12	1.55	1.53
pH (+/- 0.1)	pH unit	6.06	6.44	6.03	6.63	6.99	7.4	7.5
Temp	С	15.4	14.4	14.1	12.6	15.1	14.2	14.9
Color				ir.				
Odor								

Comments:

Water is gray and silty with faint NAPL odor No NAPL present and no sheens noted

		Monitorii	ng Well D	evelopm	ent Form		
Project Name and Num	ber:	NYSDEC (	Gastown Fo	rmer MGP	Site RI	#44491	
Monitoring Well Numbe	r:	MW-41		Date:	7/10/2001		
Samplers:		Patrick Arn	nstrong	.00		i.	
Sample Number:		1 8 166		QA/QC	Collected?		
Purging / Sampling Met	hod:						
1. L = Constructed Total 2. Measured Total Well 3. Sand/Silt Accumulation 4. D = Casing Diameter 5. W = Static Depth to Well 6. C = Column of Water Well Volume = C(3.141)	Depth (TOon: (I.D.): Vater (TOO in Casing	C): ): (L-W):		20.2 0 0 2 6.11 14.09 2.30	feet feet feet inches feet feet gal	,	
			Multiplier fo	or Casing D	iameter		
		Well ID Vol. (gal/ft)	3/4-inch 0.023	1-inch 0.041	2-inch 0.163	3-inch 0.37	4-inch 0.65
Field Parameter Measur	rements an	d Observatio	ons During \	Well Purging	g		
Time	24 hr	1549	1617				
Water Level	Feet	1010	1017				
Gallons Purged	Gal	20	25	-			
Flow Rate	mL/min		20				
Turbidity (+/- 10%)	NTU	999	999				
Diss. Oxygen (+/- 10%)	%	0.03	0.04				
Eh/ORP (+/- 10%)	MeV		9.0				
Conductivity (+/- 3%)	umhos	1.53	1.53				
pH (+/- 0.1)	pH unit	7.68	7.15				
Temp	С	12.9	13.7				
Color							
Odor							
Comments:							Page 2 of 2

### Monitoring Well Development Form Project Name and Number: NYSDEC Gastown Former MGP Site RI #44491 Monitoring Well Number: MW-42 Date: 7/11/2001 Samplers: Patrick Armstrong Sample Number: QA/QC Collected? Purging / Sampling Method: 1. L = Constructed Total Well Depth (ground): 19.3 feet Measured Total Well Depth (TOC): 0 feet 3. Sand/Silt Accumulation: feet 0 4. D = Casing Diameter (I.D.): 2 inches W = Static Depth to Water (TOC): feet 6.49 C = Column of Water in Casing (L-W): 12.81 feet Well Volume = $C(3.14159)(0.5D^2)(7.48)$ 2.09 gal Multiplier for Casing Diameter Well ID 3/4-inch 1-inch 2-inch 3-inch 4-inch Vol. (gal/ft) 0.023 0.041 0.163 0.37 0.65 Field Parameter Measurements and Observations During Well Purging Parameter Units 24 hr 1049 1055 Time 1104 1115 1120 1126 Water Level Feet Gallons Purged 2 Gal 6 10 14 17 20 Flow Rate mL/min Turbidity (+/- 10%) NTU 999 899 786 999 332 982 Diss. Oxygen (+/- 10%) mg/l 0.08 0.2 0.23 0.16 0.19 0.19 Eh/ORP (+/- 10%) MeV 0.786 0.803 0.892 Conductivity (+/- 3%) ms/cm 1.57 1.48 1.58 pH (+/- 0.1) pH unit 7.21 7.06 7.37 6.51 6.68 6.89 C 13.4 12.1 12.7 12.7 Temp 12.9 12.6 Color Odor

Gray, moderate silt, no sheens or odors

Page 1 of 1

Comments:

		Monito	ring Well	Developm	ent Form			
Project Name and Nur	nber:	NYSDEC G	astown Forn	ner MGP Site	RI #4	4491		
Monitoring Well Numb	er:	MW-43		Date:	7/11/2001			
Samplers:		Patrick Arm	strong					-
Sample Number:				QA/Q0	C Collected?			
Purging / Sampling Me	thod:							
1. L = Constructed Total 2. Measured Total Wel 3. Sand/Silt Accumulat 4. D = Casing Diamete 5. W = Static Depth to 6. C = Column of Wate Well Volume = C(3.14	I Depth ( <sup>-</sup> ion: r (I.D.): Water (Ter in Casir	ГОС): ОС): ng (L-W):			feet feet feet inches feet gel gel	,		
		Well ID	3/4-inch	1-inch	2-inch	3-inch	4-inch	
Field Parameter Measu	rements Units	Vol. (gal/ft) and Observa	0.023	0.041 Well Purgino	0.163	0.37	0.65	1
Time	24 hr	1416	1428	1437	1452	1500		
Water Level	Feet							
Gallons Purged	Gal	2.5	5	10	15	20		
Flow Rate	mL/min					9		
Turbidity (+/- 10%)	NTU	999	999	999	999	999		
Diss. Oxygen (+/- 10%)	mg/l	0.16	0.41	0.27	0.32	0.38		
Eh/ORP (+/- 10%)	MeV							
Conductivity (+/- 3%)	ms/cm	1.93	0.943	0.969	2.63	1.96		
pH (+/- 0.1)	pH unit	8.23	8.45	8.57	8.52	8.21		
Temp	С	14	,15.1	14.2	13.7	13.3		
Color								
Odor		2 - 1						

Water is black, silty, and has surface sheen and odor of DNAPL

Page 1 of 1

Comments:

		Monito	ring Well	Developm	ent Form		
Project Name and Nur	nber:	NYSDEC G	astown Forn	ner MGP Site	RI #4	4491	
Monitoring Well Numb	er:	MW-44		Date:	7/11/2001		
Samplers:		Patrick Arms	strong				
Sample Number:				QA/Q0	C Collected?		
Purging / Sampling Me	ethod:						
1. L = Constructed Tot 2. Measured Total Wel 3. Sand/Silt Accumulat 4. D = Casing Diamete 5. W = Static Depth to 6. C = Column of Wate Well Volume = C(3.14	ll Depth (T tion: or (I.D.): Water (TO er in Casin	OC): OC): g (L-W):	:		feet feet feet inches feet feet gal		
			Multiplier fo	r Casing Diar	neter		
		Well ID Vol. (gal/ft)	3/4-inch 0.023	1-inch 0.041	2-inch 0.163	3-inch 0.37	4-inch 0.65
	urements :	Vol. (gal/ft)	0.023	0.041	0.163		
Parameter	urements :	Vol. (gal/ft) and Observa	0.023 tions During	0.041 Well Purging	0.163	0.37	
Field Parameter Measu  Parameter  Time  Water Level	Units 24 hr	Vol. (gal/ft)	0.023	0.041	0.163		
Parameter Time Water Level	Units 24 hr Feet	Vol. (gal/ft) and Observa	0.023 tions During 1250	0.041 Well Purging	0.163	1317	
Parameter Time Water Level Gallons Purged	Units 24 hr Feet Gal	Vol. (gal/ft) and Observa	0.023 tions During	0.041 Well Purging	0.163	0.37	
Parameter Time Water Level Gallons Purged Flow Rate	Units 24 hr Feet Gal mL/min	Vol. (gal/ft) and Observa 1240 2	0.023 tions During 1250 5	0.041 Well Purging 1257	1308	1317	
Parameter Time Water Level Gallons Purged Flow Rate Turbidity (+/- 10%)	Units 24 hr Feet Gal mL/min NTU	Vol. (gal/ft) and Observa 1240 2 999	0.023 tions During 1250 5 999	0.041 Well Purging 1257 10 999	0.163 1308 15 999	0.37 1317 20 999	
Parameter Time Water Level Gallons Purged Flow Rate Turbidity (+/- 10%) Diss. Oxygen (+/- 10%)	Units  24 hr Feet Gal mL/min NTU mg/l	Vol. (gal/ft) and Observa 1240 2	0.023 tions During 1250 5	0.041 Well Purging 1257	1308	1317	
Parameter Time Water Level Gallons Purged Flow Rate Turbidity (+/- 10%) Diss. Oxygen (+/- 10%) Eh/ORP (+/- 10%)	Units 24 hr Feet Gal mL/min NTU mg/l MeV	Vol. (gal/ft) and Observa  1240 2  999 0.19	0.023 tions During 1250 5 999 0.2	0.041 Well Purging 1257 10 999 0.17	0.163 1308 15 999 0.19	0.37 1317 20 999 0.18	
Parameter Time Water Level Gallons Purged Flow Rate Turbidity (+/- 10%) Diss. Oxygen (+/- 10%) Eh/ORP (+/- 10%) Conductivity (+/- 3%)	Units 24 hr Feet Gal mL/min NTU mg/l MeV ms/cm	Vol. (gal/ft) and Observa  1240 2 999 0.19 0.97	0.023 tions During 1250 5 999 0.2	0.041 Well Purging 1257 10 999 0.17 0.99	0.163 1308 15 999 0.19	0.37 1317 20 999 0.18	
Parameter Time Water Level Gallons Purged Flow Rate Turbidity (+/- 10%) Diss. Oxygen (+/- 10%) Eh/ORP (+/- 10%) Conductivity (+/- 3%) pH (+/- 0.1)	Units  24 hr Feet Gal mL/min NTU mg/l MeV ms/cm pH unit	Vol. (gal/ft) and Observa  1240 2 999 0.19 0.97 7.54	0.023 tions During 1250 5 999 0.2 1 7.36	0.041 Well Purging 1257 10 999 0.17 0.99 7.31	0.163 1308 15 999 0.19 0.99 7.03	0.37 1317 20 999 0.18 1.01 7.18	
Parameter Time Water Level Gallons Purged Flow Rate Turbidity (+/- 10%) Diss. Oxygen (+/- 10%)	Units 24 hr Feet Gal mL/min NTU mg/l MeV ms/cm	Vol. (gal/ft) and Observa  1240 2 999 0.19 0.97	0.023 tions During 1250 5 999 0.2	0.041 Well Purging 1257 10 999 0.17 0.99	0.163 1308 15 999 0.19	0.37 1317 20 999 0.18	

### Monitoring Well Development Form Project Name and Number: NYSDEC Gastown Former MGP Site RI #44491 Monitoring Well Number: MW-45 Date: 4/2/2002 Samplers: Amy Tillman Sample Number: QA/QC Collected? Purging / Sampling Method: 1. L = Constructed Total Well Depth (ground): 19 feet Measured Total Well Depth (TOC): 18.6 feet 3. Sand/Silt Accumulation: 0.4 feet 4. D = Casing Diameter (I.D.): 2 inches 5. W = Static Depth to Water (TOC): 5.83 feet C = Column of Water in Casing (L-W): 12.77 feet Well Volume = $C(3.14159)(0.5D^2)(7.48)$ 2.08 gal Multiplier for Casing Diameter Well ID 3/4-inch 1-inch 2-inch 3-inch 4-inch Vol. (gal/ft) 0.65 0.023 0.041 0.163 0.37 Field Parameter Measurements and Observations During Well Purging

Parameter	Units					 
Time	24 hr	930	943	1000	1010	
Water Level	Feet					
Gallons Purged	Gal	5	10	15	20	
Flow Rate	mL/min					
Turbidity (+/- 10%)	NTU	999	999	999	999	
Diss. Oxygen (+/- 10%)	mg/l					
Eh/ORP (+/- 10%)	MeV					
Conductivity (+/- 3%)	ms/cm	2.33	2.37	2.35	2.36	
pH (+/- 0.1)	pH unit	>6.35	<6.81	6.82	6.8	
Temp	С	9.6	9.2	9.6	9.6	
Color		Gray	Gray	Gray	Gray	
Odor		Tar	Tar	Tar	Tar	

Comments:

PID Reading-469

		Monito	ring Well	Developm	ent Form		
Project Name and Num	nber:	NYSDEC G	astown Form	ner MGP Site	RI #4	4491	
Monitoring Well Numbe	er:	MW-46		Date:	4/1/2002		
Samplers:		Amy Tillman	1				
Sample Number:				QA/Q(	C Collected?		
Purging / Sampling Me	thod:						
1. L = Constructed Tota 2. Measured Total Wel 3. Sand/Silt Accumulat 4. D = Casing Diamete 5. W = Static Depth to 6. C = Column of Wate Well Volume = C(3.141	l Depth (T ion: r (I.D.): Water (TC r in Casin	OC): OC): g (L-W):	:	18.6 18.25 0.35 2 4.4 13.85 2.26	feet feet feet inches feet feet gal		
			Multiplier for	Casing Diar	neter		
Field Parameter Meası	Į	Well ID Vol. (gal/ft)	3/4-inch 0.023	1-inch 0.041	2-inch 0.163	3-inch 0.37	4-inch 0.65
Field Parameter Measu	irements a	Vol. (gal/ft)	0.023	0.041	0.163		
Parameter	rements a	Vol. (gal/ft) and Observa	0.023 tions During	0.041 Well Purging	0.163		
<b>Parameter</b> Time	Units 24 hr	Vol. (gal/ft)	0.023	0.041	0.163		
Parameter Time Water Level	Units 24 hr Feet	Vol. (gal/ft) and Observa 1552	0.023 tions During 1600	0.041 Well Purging	0.163		
Parameter Time Water Level Gallons Purged	Units  24 hr  Feet  Gal	Vol. (gal/ft) and Observa	0.023 tions During	0.041 Well Purging	0.163		
Parameter Time Water Level Gallons Purged Flow Rate	Units 24 hr Feet Gal mL/min	Vol. (gal/ft) and Observa 1552 5	0.023 tions During 1600	0.041 Well Purging	0.163		
Parameter Time Water Level Gallons Purged Flow Rate Turbidity (+/- 10%)	Units 24 hr Feet Gal mL/min NTU	Vol. (gal/ft) and Observa 1552	0.023 tions During 1600	0.041 Well Purging 1615	0.163		
Parameter Time Water Level Gallons Purged Flow Rate Turbidity (+/- 10%) Diss. Oxygen (+/- 10%)	Units 24 hr Feet Gal mL/min	Vol. (gal/ft) and Observa 1552 5	0.023 tions During 1600	0.041 Well Purging 1615	0.163		
Parameter Time Water Level Gallons Purged Flow Rate Turbidity (+/- 10%) Diss. Oxygen (+/- 10%)	Units 24 hr Feet Gal mL/min NTU mg/l MeV	Vol. (gal/ft) and Observa 1552 5	0.023 tions During 1600	0.041 Well Purging 1615	0.163		
Parameter Time Water Level Gallons Purged Flow Rate Turbidity (+/- 10%) Diss. Oxygen (+/- 10%) Eh/ORP (+/- 10%) Conductivity (+/- 3%)	Units  24 hr Feet Gal mL/min NTU mg/l	Vol. (gal/ft) and Observa 1552 5 10	0.023 tions During 1600 10	0.041 Well Purging 1615 15	0.163 1622 20 10		
Parameter Time Water Level Gallons Purged Flow Rate Turbidity (+/- 10%) Diss. Oxygen (+/- 10%) Eh/ORP (+/- 10%) Conductivity (+/- 3%) DH (+/- 0.1)	Units  24 hr Feet Gal mL/min NTU mg/l MeV ms/cm	Vol. (gal/ft) and Observa 1552 5 10 1.45	0.023 tions During 1600 10 10 1.45	0.041 Well Purging 1615 15 10	0.163 1622 20 10		
Parameter Time Water Level	Units  24 hr Feet Gal mL/min NTU mg/l MeV ms/cm pH unit	Vol. (gal/ft) and Observa  1552 5 10 1.45 6.22	0.023 tions During 1600 10 10 1.45 6.63	0.041 Well Purging 1615 15 10 1.43 6.73	0.163 1622 20 10 1.44 6.69		

### Monitoring Well Development Form Project Name and Number: NYSDEC Gastown Former MGP Site RI #44491 Monitoring Well Number: MW-47 4/2/2002 Date: Samplers: Amy Tillman QA/QC Collected? Sample Number: Purging / Sampling Method: 1. L = Constructed Total Well Depth (ground): 22 feet 21.63 feet Measured Total Well Depth (TOC): 3. Sand/Silt Accumulation: 0.37 feet 4. D = Casing Diameter (I.D.): 2 inches 5. W = Static Depth to Water (TOC): 5.7 feet 6. C = Column of Water in Casing (L-W): 15.93 feet Well Volume = $C(3.14159)(0.5D^2)(7.48)$ 2.60 Multiplier for Casing Diameter Well ID 4-inch 3/4-inch 1-inch 2-inch 3-inch Vol. (gal/ft) 0.023 0.041 0.163 0.37 0.65 Field Parameter Measurements and Observations During Well Purging

Parameter	Units						
Time	24 hr	1053	1103	1113	1123	1133	
Water Level	Feet						
Gallons Purged	Gal	5	10	15	20	25	
Flow Rate	mL/min						
Turbidity (+/- 10%)	NTU	999	999	999	999	999	
Diss. Oxygen (+/- 10%)	mg/l						
Eh/ORP (+/- 10%)	MeV						
Conductivity (+/- 3%)	ms/cm	2.2	2.11	1.96	1.89	1.9	
pH (+/- 0.1)	pH unit	<7.11	7.02	6.96	6.96	6.91	
Temp	С	8.4	9.6	9.6	9.4	7.6	
Color		Brown	Brown	Brown	Brown	Brown	
Odor		Slight Tar	Slight Tar	Slight Tar	Slight Tar	Slight Tar	

Comments:

PID Reading-0.6

		Monit	oring Well	Developn	nent Form			
Project Name and Num	nber:	NYSDEC G	astown Form	er MGP Site	RI #444	91		
Monitoring Well Numbe	er:	MW-48		Date:	3/29/2002			
Samplers:		Walt Howar	d					
Sample Number:		NA		QA/	QC Collected?	NA		
Purging / Sampling Me	thod:	1 1/2" Poly I	Bailer					
1. L = Constructed Total 2. Measured Total Well 3. Sand/Silt Accumulati 4. D = Casing Diamete 5. W = Static Depth to 6. C = Column of Wate Well Volume = C(3.141	l Depth (T ion: r (I.D.): Water (T0 r in Casin	OC): OC): og (L-W):	: - - - - Multiplier for	0 2 7 16 2.61	feet feet feet inches feet gal			
Field Parameter Measu	ırements	Well ID Vol. (gal/ft) and Observa	3/4-inch 0.023	1-inch 0.041 Well Purging	2-inch 0.163	3-inch 0.37	4-inch 0.65	
Parameter	Units					·	,	
Гime	24 hr	1300	1400					
Vater Level	Feet	7	NM					
Sallons Purged	Gal	1	26					
low Rate	mL/min	NA	NA					
urbidity (+/- 10%)	NTU	Very	Moderate					
Diss. Oxygen (+/- 10%)	mg/l							
Eh/ORP (+/- 10%)	MeV							
Conductivity (+/- 3%)	ms/cm							
H (+/- 0.1)	pH unit							
emp	С						7	
Color		Gray/Brown	Gray/Brown					
Odor		None	None					
Comments:		Measured Available due	e to the use o	f a bailer				

# Monitoring Well Development Form Project Name and Number: NYSDEC Gastown Former MGP Site RI #44491 Monitoring Well Number: PPW-1 Date: 3/29/2002 and 4/3/02 Samplers: Walt Howard Sample Number: NA QA/QC Collected? NA Purging / Sampling Method: 12 volt DC cent. Pump & Bailer on 3/29, Whale sub pump on 4/3

 1. L = Constructed Total Well Depth (ground):
 24.6 feet

 2. Measured Total Well Depth (TOC):
 22.8 feet

 3. Sand/Silt Accumulation:
 1.8 feet

 4. D = Casing Diameter (I.D.):
 6 inches

 5. W = Static Depth to Water (TOC):
 7 feet

6. C = Column of Water in Casing (L-W): 17.6

Well Volume = C(3.14159)(0.5D<sup>2</sup>)(7.48) 26.40

### Multiplier for Casing Diameter

Well ID	3/4-inch	1-inch	2-inch	3-inch	4-inch
Vol. (gal/ft)	0.023	0.041	0.163	0.37	0.65

feet

gal

Field Parameter Measurements and Observations During Well Purging

Parameter	Units	3/29/2002		4/3/2002			
Time	24 hr	1200	1500	1000	1800		
Water Level	Feet	7	10	7	15		*
Gallons Purged	Gal	1	30	Start	260		
Flow Rate	gal/min	1	<0.5	1.5	1		
Turbidity (+/- 10%)	NTU	Very	Very	Very	Moderate		
Diss. Oxygen (+/- 10%)	mg/l						
Eh/ORP (+/- 10%)	MeV						
Conductivity (+/- 3%)	ms/cm						
pH (+/- 0.1)	pH unit						
Temp	С						
Color		Gray/Brown	Gray/Brown	Gray/Brown	Light Brown		
Odor		Strong	Strong	Strong	Strong		

Comments:

Initial cent. Pump failed on 3/29

Approx 1 foot of DNAPL appears accumulated on bottom of well(on silt) at start of purge

slugs of DNAPL continued entering well during entire purge event

Purged total of approx. 260 gallons, used dropping bit fabricated on site to churn up silt from the bottom of the well, removed significant volume of silt, but still coming into

bottom of well at end of purge

Project Name and Nur	nber:	NYSDEC G	Sastown For	mer MGP S	Site RI	#44491	
Monitoring Well Numb	er:	VW-1		Date:	10/4/2001		
J				-			
Samplers:		Paul Wheel	ler				
Sample Number:				QA/QC	Collected?		
Purging / Sampling Me	thod:	Watera Pur	mp/Bailer				
1. L = Constructed Tot 2. Measured Total We 3. Sand/Silt Accumulat 4. D = Casing Diamete 5. W = Static Depth to 6. C = Column of Wate Well Volume = C(3.14	ll Depth (1 ion: r (I.D.): Water (To er in Casir	OC): OC): ng (L-W):	<b>3)</b> :	21.5 21.48 0.02 2 7.82 13.66 2.22			
				0	Commence Commence		
			Multiplier f	or Casing D	iameter		
	1	Wall ID				2 in ah	4 in ab
Field Parameter Measu	uromonts	Well ID Vol. (gal/ft)	3/4-inch 0.023	1-inch 0.041	2-inch 0.163	3-inch 0.37	4-inch 0.65
	urements <b>Units</b>	Vol. (gal/ft)	3/4-inch 0.023	1-inch 0.041	2-inch 0.163		
Field Parameter Measu <b>Parameter</b> Time		Vol. (gal/ft)	3/4-inch 0.023	1-inch 0.041	2-inch 0.163		
Parameter	Units	Vol. (gal/ft) and Observa	3/4-inch 0.023 ations Durin	1-inch 0.041 g Well Purg	2-inch 0.163 ging	0.37	
<b>Parameter</b> Time	Units 24 hr	Vol. (gal/ft) and Observa	3/4-inch 0.023 ations Durin	1-inch 0.041 g Well Purg	2-inch 0.163 ging	0.37	
Parameter Time Water Level	Units 24 hr Feet	Vol. (gal/ft) and Observa	3/4-inch 0.023 ations Durin	1-inch 0.041 g Well Purg	2-inch 0.163 ging	0.37	
Parameter Time Water Level Gallons Purged Flow Rate	Units 24 hr Feet Gal	Vol. (gal/ft) and Observa	3/4-inch 0.023 ations Durin	1-inch 0.041 g Well Purg	2-inch 0.163 ging	0.37	
Parameter Time Water Level Gallons Purged	Units 24 hr Feet Gal mL/min	Vol. (gal/ft) and Observa	3/4-inch 0.023 ations Durin	1-inch 0.041 g Well Purg	2-inch 0.163 ging	12	
Parameter Time Water Level Gallons Purged Flow Rate Turbidity (+/- 10%) Diss. Oxygen (+/- 10%)	Units 24 hr Feet Gal mL/min NTU	Vol. (gal/ft) and Observa	3/4-inch 0.023 ations Durin	1-inch 0.041 g Well Purg	2-inch 0.163 ging	12	
Parameter Time Water Level Gallons Purged Flow Rate Turbidity (+/- 10%) Diss. Oxygen (+/- 10%) Eh/ORP (+/- 10%)	Units 24 hr Feet Gal mL/min NTU mg/l	Vol. (gal/ft) and Observa	3/4-inch 0.023 ations Durin	1-inch 0.041 g Well Purg	2-inch 0.163 ging	12	
Parameter Time Water Level Gallons Purged Flow Rate Turbidity (+/- 10%) Diss. Oxygen (+/- 10%) Eh/ORP (+/- 10%) Conductivity (+/- 3%)	Units 24 hr Feet Gal mL/min NTU mg/l MeV	Vol. (gal/ft) and Observa 4 79	3/4-inch 0.023 ations Durin 6	1-inch 0.041 g Well Purg 8	2-inch 0.163 ging 10	12	
Parameter Time Water Level Gallons Purged Flow Rate Turbidity (+/- 10%) Diss. Oxygen (+/- 10%) Eh/ORP (+/- 10%) Conductivity (+/- 3%) pH (+/- 0.1)	Units 24 hr Feet Gal mL/min NTU mg/l MeV ms/cm	Vol. (gal/ft) and Observa 4 79 1.79	3/4-inch 0.023 ations Durin 6 136	1-inch 0.041 g Well Purg 8 106	2-inch 0.163 ging 10	12 145 1.79	
Parameter Time Water Level Gallons Purged Flow Rate Turbidity (+/- 10%)	Units  24 hr Feet Gal mL/min NTU mg/l MeV ms/cm pH unit	Vol. (gal/ft) and Observa  4  79  1.79 6.67	3/4-inch 0.023 ations Durin 6 136 1.81 6.2	1-inch 0.041 g Well Purg 8 106 1.78 6.68	2-inch 0.163 ging 10 108 1.79 6.71	12 145 1.79 6.7	

		Monit	oring Well	Developm	ent Form			
Project Name and Nur	mber:	NYSDEC G	astown Form	er MGP Site I	RI #444	191	<i>a</i>	
Monitoring Well Numb	er:	VW-2		Date:	10/4/2001	A SERVEN		
Samplers:		Paul Wheel	er					
Sample Number:				QA/Q	C Collected?			
Purging / Sampling Me	ethod:	Watera Pum	np/Bailer					
1. L = Constructed Tot. 2. Measured Total Wel 3. Sand/Silt Accumulat 4. D = Casing Diamete 5. W = Static Depth to 6. C = Column of Wate Well Volume = C(3.14	ll Depth ( <sup>*</sup> ion: er (I.D.): Water (T <sup>i</sup> er in Casir	TOC):  OC): ng (L-W):	):		feet feet feet inches feet feet gal		*	
			Multiplier for	Casing Diam	neter			
Field Parameter Measu	urements	Well ID Vol. (gal/ft) and Observa	3/4-inch 0.023	1-inch 0.041 Well Puraina	2-inch 0.163	3-inch 0.37	4-inch 0.65	
Parameter	Units		3	3-0				
Time	24 hr	4	6	8	10	12		
Water Level	Feet							
Gallons Purged	Gal			,				
Flow Rate	mL/min							
Turbidity (+/- 10%)	NTU	147	125	373	164	140		
Diss. Oxygen (+/- 10%)	mg/l							
Eh/ORP (+/- 10%)	MeV							
Conductivity (+/- 3%)	ms/cm	2.14	2.1	2.11	2.12	2.08		
pH (+/- 0.1)	pH unit	6.23	6.53	6.67	6.7	6.73		
Temp	С	15.6	15.4	15.4	15.3	15.2		
Color		Dark Brown	Dark Brown	Dark Brown	Dark Brown	Dark Brown		
Odor		Strong Coal Tar	Strong Coal Tar	Strong Coal Tar	Strong Coal Tar			
Comments:	Heavy sl	heen on wate	er					

		Monitor	ing Well	Developn	nent Form	1		
Project Name and Nun	nber:	NYSDEC C	Sastown Fo	mer MGP S	Site RI	#44491		
Monitoring Well Number	er:	VW-3		Date:	10/4/2001			
Samplers:		Paul Whee	ler		17 1700			_
Sample Number:				_ QA/QC	Collected?			
Purging / Sampling Me	thod:	Bailer					-	
1. L = Constructed Total 2. Measured Total Wel 3. Sand/Silt Accumulat 4. D = Casing Diamete 5. W = Static Depth to 6. C = Column of Wate Well Volume = C(3.141	ll Depth ( ion: r (I.D.): Water (T er in Casir	TOC):  OC): ng (L-W):	i):		feet feet feet inches feet feet gal			
			Multiplier f	or Casing D	iameter			
		Well ID Vol. (gal/ft)	3/4-inch 0.023	1-inch 0.041	2-inch 0.163	3-inch 0.37	4-inch 0.65	
eld Parameter Measurements and Observations During Well Purging  arameter Units								
Time	24 hr	4	8	10	12	14		
Water Level	Feet							
Gallons Purged	Gal							
Flow Rate	mL/min							
Turbidity (+/- 10%)	NTU	999	285	816	825	782		
Diss. Oxygen (+/- 10%)	mg/l					,		
Eh/ORP (+/- 10%)	MeV							
Conductivity (+/- 3%)	ms/cm	2.01	1.94	1.96	1.97	1.95		
oH (+/- 0.1)	pH unit	7.16	7.02	6.92	6.9	6.85		
Temp	С	14.7	14.5	14.1	14.2	14.2		
Color		Dark Gray	Dark Gray	Dark Gray	Dark Gray	Dark Gray		
Odor		Coal Tar	Coal Tar	Coal Tar	Coal Tar	Coal Tar		
Comments:	No DNA	PL encounte	ered					

APPENDIX F

**SURVEYING DATA** 

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## Summary of Survey Data and Elevation Modifications

	Survey Data from Popli Consulting Engineers & Surveyors	pli Consulting Eng	ineers & Surveyo	ors	<b>Elevation Modifications by Earth Tech</b>	arth Tech
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION	DESCRIPTION distance To MP	MP Elev.
DP-1	1101248.40	1071688.40	574.40	AT GROUND	Use Gr Elev of DPW-1 = 573.32'	
DP-2	1101322.90	1071465.30	576.55	AT GROUND		
DP-3	1101177.40	1071384.90	575.82	AT GROUND		
DP-4	1101143.00	1071329.40	575.74	AT GROUND		
DP-5	1101243.60	1071364.10	576.13	AT GROUND		
DP-6	1100994.40	1071534.10	576.07	AT GROUND		
DP-7	1101153.10	1071495.60	576.10	AT GROUND		
DP-8	1101080.70	1071397.80	576.45	AT GROUND		
DP-9	1101157.10	1071396.90	575.97	AT GROUND		
DP-10	1101187.30	1071304.70	575.22	AT GROUND		
DP-11	1101203.50	1071487.80	577.07	AT GROUND		
DP-12	1101261.40	1071549.50	576.35	AT GROUND		
DP-13	1101302.30	1071367.90	576.15	AT GROUND		
DP-14	1101250.80	1071249.00	574.03	AT GROUND		
DP-15	1101021.40	1071645.30	582.65	AT GROUND		
DP-16	1101122.90	1071606.10	584.05	AT GROUND		
DP-17	1101180.40	1071442.90	576.64	AT GROUND		
DP-18	1101356.30	1071489.10	574.55	AT GROUND		
DP-19	1101326.00	1071426.20	576.01	AT GROUND		
DP-20	1101116.60	1071390.00	575.64	AT GROUND		
DP-21	1101202.70	1071517.40	577.08	AT GROUND		
DP-22	1101285.20	1071484.40	576.98	AT GROUND		
DP-23	1101227.10	1071292.80	575.05	AT GROUND		
DP-24	1101118.50	1071182.20	573.33	AT GROUND		
DP-25	1101013.30	1071238.40	574.67	AT GROUND		
DP-26	1101289.80	1071660.80	574.10	AT GROUND		
DP-27	1101118.20	1071449.30	576.02	AT GROUND		



POINT DP-28 DP-30 DP-31 DP-35 DP-37 DP-37 DP-38 DP-38 DP-39 DP-41 DP-42 DP-42 DP-45 DP-46	NORTHING 1101315.10 11013254.50 1101335.00 1101335.00 1101090.60 1101249.40 1101032.40 1101245.10 1101298.70 1101456.30 1101432.60 1101381.80	NORTHING         EASTING         ELEN           1101315.10         1071218.10         57           1101335.50         1071900.80         57           1101335.00         1071900.80         57           1101335.00         1071900.80         57           1101335.00         1071034.00         57           1101249.40         1071078.70         57           1101249.40         1071078.70         57           1101232.40         1071137.50         57           1101245.10         1070962.80         57           1101298.70         1071141.90         57           1101456.30         1071808.80         57           1101381.80         1072119.90         57	ELEVATION D 573.37 573.48 574.93 574.82 572.22 571.51 573.26 573.81	DESCRIPTION AT GROUND AT GROUND AT GROUND AT GROUND AT GROUND AT GROUND AT GROUND AT GROUND AT GROUND AT GROUND AT GROUND AT GROUND AT GROUND AT GROUND AT GROUND AT GROUND AT GROUND	DESCRIPTION  DESCRIPTION  Note: On most D elevation was a 2 well. Actual well for water levels it below the 2" con measurements a provided below. corrected MP Ele	DESCRIPTION distance To MP MP Elev.  Note: On most DPW wells, surveyed "riser" elevation was a 2" pvc conductor pipe, not actual well. Actual well riser and measuring point (MP) for water levels is a 3/4" pvc pipe inside and below the 2" conductor pipe. Earth Tech measurements and corrected MP Elevations provided below. Also below is Earth Tech corrected MP Elevation for MW-40 to reflect
DP-47 DP-48	1100960.80 1101484.80	1070951.10	575.44 572.79	AT GROUND AT GROUND	raising the protective well casing/riser after survey.	tive well casir
DPW-1				l		
			573.33			
			573.10	_	2" conductor	-0.3
DPW-32	1101177.80	1071710.00	572.78	AT GROUND		
			572.77	AT CASING		
			572.48	AT RISER	no change, no 2" conductor	conductor
DPW-33	1101001.50	1070908.30	574.34	AT GROUND		
			574.35	AT CASING		
			574.06	AT RISER	2" conductor	-0.07
DPW-34	1101389.60	1071426.90	573.11	AT GROUND		
			573.13	AT CASING		
			572.87	AT RISER	2" conductor	-0.07
	1101146 50	1070971.00	574.81	AT GROUND		



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# Summary of Survey Data and Elevation Modifications

	Survey Data from Popli Consulting Engineers & Surveyors	pli Consulting Eng	ineers & Survey	ors	Elevation M	Elevation Modifications by Earth Tech	arth Tech
	<u> </u>						
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION	DESCRIPTION	distance To MP	MP Elev.
			574.83	AT CASING			
			574.60	AT RISER	2" conductor	-0.25	574.35
DPW-40	1101390.70	1071824.40	572.27	AT GROUND			
				AT CASING			
	-		572.09	AT RISER	2" conductor	-0.12	571.97
DPW-43	1101235.50	1071880.20	572.57	AT GROUND			
			572.56	AT CASING			
			572.29	AT RISER	2" conductor	-0.15	572.14
DPW-44	1101431.00	1072154.90	572.33	AT GROUND			
			572.30	AT CASING			
			571.96	AT RISER	2" conductor	-0.13	571.83
DPW-49	1101457.80	1071603.40	572.00	AT GROUND			
			572.03	AT CASING			
			571.82	AT RISER	2" conductor	-0.09	571.73
DPW-50	1101523.30	1071774.40	571.40	AT GROUND			
			571.37	AT CASING			
			571.15	AT RISER	2" conductor	-0.15	571.00
DPW-51	1101567.70	1071948.40	571.02	AT GROUND			
			571.03	AT CASING			
			570.82	AT RISER	2" conductor	-0.11	570.71
DPW-52	1101585.30	1072160.30	571.24	AT GROUND			
			571.30	AT CASING			
			571.07	AT RISER	2" conductor	-0.11	570.96
DPW-53	1101543.70	1072448.70	570.98	AT GROUND			
			571.03	AT CASING			
			570.84	AT RISER	2" conductor	-0.13	570.71
DPW-54	1101215.10	1070931.90	571.81	AT GROUND			





POINT	NORTHING  1101047.90	NORTHING         EASTING         ELEVATION         D           1101047.90         1071073.20         573.97         -	gineel	ELEVATION 571.88 573.97	EVATION DESCRIPTION 71.88 AT CASING 71.56 AT RISER 73.97 AT GROUND	Elevation Modifications by Earth Tech  EVATION DESCRIPTION DESCRIPTION distance To MP Ele  71.88 AT CASING  71.56 AT RISER 2" conductor -0.11 571.44
1	014	<u> </u>	·   ·   ·	96	AT AT	AT AT
1	1101014.90	1070951.70	10 10 1	$\omega  \omega $	AT (	AT GROUND AT CASING
	1101108.50	1070874.40	574.40 574.84		AT RISER AT GROUND	AT AT
			574.83	$ \omega $	AT	AT CASING
ä	1		١.	$\frac{1}{\omega}$	AT	AT
DE 11 - 10	11010/0.10	TO / T#00.00	575.63		AT CASING	AT
			575.23		AT	AT
MW-11	1071630.94	1101182.17	574.59		AT CASING	AT CASING
7 C - WIM	1071606 03	1101038 45	574.18	.   ~	AT RISER	AT
		1	573.85		AT	AT
MW-2S	1071608.50	1101276.27	574.07	7	7 AT CASING	AT
SE-MW	1071582 87	1101341 16	573.54	7   #	AT RISER	AT
			573.30	0		AT
MW-13	1071595.94	1101190.54	575.10	0	0 AT CASING	AT
MW - 17	ایہ	11012/0 63	574.88	1 8	AT	AT
/ T - 4457	エク・エンキエ・フェ	1101210.00	575.77	7		ŀ
EC-MW	1071458.73	1101323 46	17 272		AT	AT



	Survey Data from Popli Consulting Engineers & Surveyors	pli Consulting Eng	ineers & Survey	ors	Elevation M	Elevation Modifications by Earth Tech	arth Tech
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION	DESCRIPTION	distance To MP	MP Elev.
			575.50	AT RISER			
MW-27	1071585.38	1101293.88	574.12	AT CASING			
			573.93	AT RISER			
MW-34	1071681.86	1101264.62	573.50	AT CASING			
			573.33	AT RISER			
MW-35	1071696.97	1101228.84	573.26	AT CASING			
			573.08	AT RISER			
MW-36	1071666.64	1101165.83	573.01	AT CASING	Note: replaced N	Note: replaced MVV-40 casing and extended riser	extended
			572.91	AT RISER	helow but new	o. To obward of toloroz. New life elev provided	not surve
MW-40	1101150.60	1071336.70	574.60	AT GROUND	20000	9	
			574.82	AT CASING	not resurveyed > 574.82	> 574.82	
			574.61	AT RISER	raised	0.16	574.77
MW-41	1101251.50	1071252.50	573.07	AT GROUND			
			573.09	AT CASING			
			572.81	AT RISER			
MW-42	1101292.50	1071666.40	573.49	AT GROUND			
			573.51	AT CASING			
			573.05	AT RISER			
MW-43	1101194.60	1071486.70	576.28	AT GROUND			
			576.35	AT CASING			
			575.97	AT RISER			
MW-44	1101243.50	1071674.90	573.46	AT GROUND			
			573.52	AT CASING			
			573.00	AT RISER			
MW-45	1101317.50	1071192.20	571.37	AT GROUND			
			571.52	AT CASING			
			571.13	AT RISER			





	Survey Data from Popli Consulting Engineers & Surveyors	pli Consulting Eng	ineers & Surveyo	ors	Elevation M	Elevation Modifications by Earth Tech	arth Tech
	-						
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION	DESCRIPTION	distance To MP	MP Elev.
MW-46	1101268.50	1071087.20	571.50	AT GROUND			
			571.56	AT CASING			
			571.26	AT RISER			
MW-47	1101149.20	1071572.40	576.27	AT GROUND			
			576.31	AT CASING			
			575.95	AT RISER			
MW-48	1101267.90	1071530.00	575.70	AT GROUND			
			575.63	AT CASING			
			575.17	AT RISER			
PPW-1	1101209.40	1071544.10	576.24	AT GROUND			
			576.38	AT CASING			
				*NO RISER*			
VW-1	1101230.60	1071582.10	574.91	AT GROUND			
			574.92	AT CASING			
			574.63	AT RISER			
VW-2	1101219.40	1071609.80	574.39	AT GROUND			
			574.45	AT CASING			
			574.15	AT RISER			
VW-3	1101210.10	1071598.90	574.89	AT GROUND			
			574.87	AT CASING			
			574.37	AT RISER			
SG1	1101331.90	1071171.80	570.96	AT RISER			
	WELLS	WELLS LOCATED AS OF 9-8-04	F 9-8-04				
MW-50B	1101424.338	1071465.346	573.37	AT GROUND			
			573.43	AT CASING			



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# Summary of Survey Data and Elevation Modifications

	Survey Data from Popli Consulting Engineers & Surveyors	pli Consulting Eng	ineers & Surveyo	ors	Elevation M	Elevation Modifications by Earth Tech	irth Tech
POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION	DESCRIPTION	distance To MP	MP Elev.
			572.98	AT RISER			
DP-59	1101289.691	1071379.892	576.99	AT GROUND			
DP-63	1101292.15	1071432.818	577.07	AT GROUND			
TW-1	1101285.157	1071474.015	577.05	AT GROUND			
			577.10	AT CASING			
			576.68	AT RISER			
MW-46B	1101265.547	1071078.235	572.48	AT GROUND			
			572.59	AT CASING			
			571.84	AT RISER			
MW-49	1100973.158	1071561.367	576.00	AT GROUND			
			576.25	AT CASING			
			576.02	AT RISER			
MW-49B	1100968.567	1071571.444	576.03	AT GROUND			
			576.14	AT CASING			
			575.39	AT RISER			
DP-61	1101197.879	1071429.436	577.06	AT GROUND			
DP-60	1101241.199	1071416.646	576.72	AT GROUND			
TW-2	1101221.474	1071370.613	575.81	AT GROUND			
			575.84	AT CASING			
			575.11	AT RISER			
DP-62	1101259.249	1071327.509	576.08	AT GROUND			



### APPENDIX G

NYSDEC SEDIMENT SAMPLING LOGS AND LABORATORY ANALYTICAL RESULTS

### Sediment Boring Logs-Collected on October 9 and 10, 2001, logged on October 10

Gastown MGP Site; North Tonawanda, NY

General Notes: Surprisingly little evidence of MGP contamination, given proximity to the site and evidence that tar transport reaches the banks of Tonowanda Creek, immediately west of the RR drawbridge. Unless otherwise noted, there were no sheens or odors, other than the kind ordinarily detected in slightly anoxic sediments—no H<sub>2</sub>S and no clear MGP odors either.

Boring	Time Extruded	Recovery (in)	Observations
3	10:00	9	0-4 Medium olive gray, loose silty clay, some organic debris
			4-6 Slightly plastic organic clay, color a/a, 1 cm mussel shell
			@6 Thin (1/4 inch) gravelly clay seam
			6-9 Olive gray clay, plastic, some organic fibers
5	12:10	6	Mottled/streaked gray-brown clay, some silt, trace leaf litter. Uniform
~			throughout. No odors or sheen, but sampled for Category B deliverables.
6	11:08	21	0-12 Medium olive gray clay, some silt, some organic fibers, moderately loose
			@12 Thin (½ inch) sand seam, medium-coarse sand, sone silt and clay, olive brown
			12-18 Dark gray organic silty clay, shorter organic fibers (all less than 5 mm)

			18-20 Dark gray medium-coarse sand, some gravel, moderately rounded, lithic 20-21 Olive brown fine sand, trace silt
6A	3:55	15	0-2 Dark olive gray silt and clay, trace fine sand, trace gravel
			2-7 Dark gray to black silty clay, trace fine sand. Slight odor, seems like petroleum to Bill Ottaway, seems ordinary sed odor to GWC
			7-9 Dark gray fine-coarse sand, poorly sorted, some silt and clay, loose.
		4	9-15 Dark gray silt and clay, some fine to coarse sand, trace gravel. No sorting. Very faint petroleum odor.
7	10:30	30	0-6 Dark gray-black organic clay and silt, some fibrous organics. Loose
			6-10 a/a, but slightly stiffer, organic fibers shorter
			10-11 Olive brown clay and silt with fine sand, 1-inch rounded gravel piece
			11-14 a/a, but less fine sand at top, coarsening downward to clay and silt with fine sand
			@14 Thin seam (1/4 inch) clean medium-coarse fine sand, some gravel, no sheens or odor
			14-24 Two coarsening downward cycles: olive fine sand and silt @ bottoms, fining to dark gray fibrous organic silty clay @top.

			24-30 Medium gray-brown silt with clay, darker and more fibrous than above. Slight petroleum odor (not evidently MGP) No sheens.
7A	1:30	23	0-4 Mottled/streaked gray/brown clay, trace fine sand, some silt. Very loose
			4-12 a/a, but medium olive brown, slightly more firm, some organic fibers
			12-14 Gray fine-coarse sand and silt, slight spots of sheen. No detectable odor (GWC's nose) Sampled for analysis
			14-23 Dark gray brown silt and clay, some fine sand, some short organic fibers. No odor or sheen.
9	4:07	21	0-2 Medium olive gray clay, some silt, very loose
			2-21 Dark olive gray clay, some silt, firmer than above, some organic fibers, anoxic sediment odor. One seam of brownish silt 12-13
10	11:00	6	0-6 Dark gray fibrous silty clay, loose, no odor or sheen
11	11:30	4	0-4 Dark gray clay, some silt, no organic fibers, loose
12B	4:20	` 16	0-2 Medium olive gray clay and silt, trace fine sand, trace organic fibers, very loose and sloppy.
		,	2-11 a/a, but firmer (med loose), trace gravel
			11-13 Olive brown fine sand, some silt.

12B			13-16 Medium olive brown silt and clay, trace fine sand, trace gravel.
13	4:30	30	Medium olive gray silt and clay, trace fine sand, trace gravel. Largely uniform throughout, but slightly firmer near bottom.
14	10:52	21	0-9 Mottled/streaked gray/brown silty clay, loose, long organic fibers
			9-11 Mostly organic fibers, some clay and silt, one 2-inch wood piece
			11-21 Dark olive brown silt and fine sand, some organic fibers
16	4:40	6	Medium olive gray clay, plastic, some silt, no sand. No sheen or odor.
17 (1?)	10:15	17	0-9 Medium olive gray clay, some organics, slight anoxic sed odor
			9-17 Slightly darker gray clay, trace silt, more organics, grading to slightly stiff silt, some clay at bottom.
			Apparent confusion in core labeling—core was originally identified as core number 1, ID revised in consultation with Doug MacNeal, who collected the samples.
19	12:00	18	Dark gray clay and silt, some organic fibers, trace gravel. Uniform throughout
			One spot of sheen @12, very weak, this spot included in sample from 10-14
20	11:45	22	Medium to dark gray silty clay, some

			organic fibers. Uniform throughout, except slightly more silt 12-14
21	11:52	9	0-2 Medium dark gray clay, some organics at bottom, one green plant fragment. Very loose, sloppy
			2-9 Light olive brown clay and silt, several white 5 mm clam shells
22	11:37	17	0-3 Mottled/streaked gray/brown silty clay, very loose
			3-11 Dark gray silt and clay, some organic fibers throughout, longer near top. Moderately loose. Single 1 ½ inch rounded gravel piece at bottom.
			11-17 a/a, but slightly stiffer, lighter olive brown

1D	DEPTH OF WATER	PUSH	RECOVERY (FT)	OBSERVATIONS	SAMPLE DEPTH	PAHS
1	13	0.5	0.00	s. sheen	0-6"	1,980
3	10	1.0		clean	0-6"	3,150
5	0	0.0	0.00	clean	0-6"	4,012
6	10	5.0	2.00	clean	0-6"	4,092
6	10	5.0		odor?	0-6", 20"-22"	45,710
6A	12	2.0		odor	0-6"	40,920
7	7	3.5	2.30	clean	12"-14"	244,800
9	6	2.5	2.00	clean	0-6"	19,440
10	3	1.0	0.80	clean	0-6"	1,430
11	8	3.6	0.40	clean	0-4"	0
12	6	2.5	1.60	clean	0-6"	4,260
13	11	3.0		clean	0-6"	8,970
14	9	4.0	1.90	clean	0-6"	10,120
16	10	1.0	0.70	clean	0-6"	10,160
19	7	3.5	1.50	clean	10"-14"	16,820
20	7.	3.5	2.50	clean	0-6"	7,470
21	4	1.5	1.00	clean	0-6"	6,070
22	9	2.0	1.50	clean	0-6"	14,290



### LABORATORY ANALYTICAL REPORT

### SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

### FIELD SAMPLE ID:

Site Name:	Gastowr	n			
Site Code:	915171		_		
Matrix: (soil/w	vater)	SOIL			
Sample wt/vo	1:	12.98	(g/ml) (	3	
Level: (low/m	ied)	LOW			
Extraction: (S	SepF/Cor	nt/Sonc/	SPE/ASE	) SONC	
% Moisture:	52	_	decanted	:(Y/N)	Ν
Concentrated	Extract \	Volume:	2000	(uL)	
Injection Volu	me: 2	.0 (uL	.) pH:		_
GPC Cleanup	: (Y/N)	Y			
		CON	CENTRAT	TINU NOI	S:

_		-
	SED-1	

SDG No.: 285-01

Lab Sample ID: 901-285-01

Lab File ID: 01F0596A.D

Date Received: 10/12/01

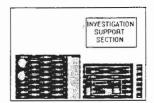
Date Extracted: 10/15/01

Date Analyzed: 10/18/01

Dilution Factor: 1.0

	CONCENTRAT	ION UNITS:	
CAS NO.	COMPOUND (ug/L or ug/Kg	g) UG/KG	Q
51-28-5	2,4-Dinitrophenol	6400	U
132-64-9	Dibenzofuran	3200	U
100-02-7	4-Nitrophenol	6400	U
121-14-2	2,4-Dinitrotoluene	3200	U
86-73-7	Fluorene	3200	U
7005-72-3	4-Chlorophenyl-phenylether	3200	U
84-66-2	Diethylphthalate	3200	U
100-01-6	4-Nitroaniline	6400	U
534-52-1	4,6-Dinitro-2-methylphenol	6400	U
86-30-6	n-Nitrosodiphenylamine	3200	U
101-55-3	4-Bromophenyi-phenylether	3200	U
118-74-1	Hexachlorobenzene	3200	U
87-86-5	Pentachlorophenol	6400	Ü
85-01-8	Phenanthrene	3200 -	U
120-12-7	Anthracene	3200	U
86-74-8	Carbazole	3200	U
84-74-2	Di-n-butylphthalate	3200	U
206-44-0	Fluoranthene	670	J
129-00-0	Pyrene	470	J
85-68-7	Butylbenzylphthalate	3200	U
56-55-3	Benzo[a]anthracene	3200	Ū
218-01-9	Chrysene	350	J
91-94-1	3,3'-Dichlorobenzidine	3200	U
117-81-7	bis(2-Ethylhexyl)phthalate	410	J
117-84-0	Di-n-octylphthalate	3200	U
205-99-2	Benzo[b]fluoranthene	490	J
207-08-9	Benzo[k]fluoranthene	3200	U
50-32-8	Benzo[a]pyrene	3200	U
193-39-5	Indeno[1,2,3-cd]pyrene	3200	U
53-70-3	Dibenz[a,h]anthracene	3200	U.
191-24-2	Benzo[g,h,i]perylene	3200	U

GPC	Cleanup. (1/14)	T		
	ONCENTRATIO	ON UNITS	S:	
CAS NO.	COMPOUND (	ug/L or ug/Kg)	UG/KG	Q
108-95-2	Phenol		3200	U.
95-57-8	2-Chlorophenol		3200	U
111-44-4	bis(2-Chloroethyl)eth	ner	3200	U
541-73-1	1,3-Dichlorobenzene		3200	U
06-46-7	1,4-Dichlorobenzene		3200	U
95-50-1	1,2-Dichlorobenzene		3200	U
100-51-6	Benzyl alcohol		3200	U
108-60-1	2,2'-Oxybis(1-chloro	oropane)	3200	U
95-48-7	2-Methylphenol		3200	U
67-72-1	Hexachloroethane		3200	U
621-64-7	N-Nitroso-di-n-propy	amine	3200	U
106-44-5	4-Methylphenol		3200	U
98-95-3	Nitrobenzene		3200	U
78-59-1	Isophorone		3200	U
88-75-5	2-Nitrophenol		3200	U
105-67-9	2,4-Dimethylphenol		3200	U
111-91-1	bis(2-Chloroethoxy)r	nethane	3200	U
120-83-2	2,4-Dichlorophenol		3200	U
120-82-1	1,2,4-Trichlorobenze	ne	3200	U
91-20-3	Naphthalene		3200	U
106-47-8	4-Chloroaniline		3200	U
87-68-3	Hexachlorobutadiene		3200	U
59-50-7	4-Chloro-3-methylph		3200	U
91-57-6	2-Methylnaphthalene		3200	U
77-47-4	Hexachiorocyclopen		3200	U
88-06-2	2,4,6-Trichloropheno		3200	U.
95-95-4	2,4,5-Trichloropheno		3200	U
91-58-7	2-Chloronaphthalene		3200	U
88-74-4	2-Nitroaniline		6400	U
208-96-8	Acenaphthylene		3200	U
31-11-3	Dimethylphthalate		3200	U
26-20-2	2,6-Dinitrotoluene		3200	U
83-32-9	Acenaphthene		3200	U
99-09-2	3-Nitroaniline		6400	U



### LABORATORY ANALYTICAL REPORT

### SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

### FIELD SAMPLE ID:

SED-6@0-6

Site Name:	Gastow	n			
Site Code:	915171		_	0.0	
Matrix: (soil/	water)	SOIL			
Sample wt/ve	ol:	12.23	(g/ml) (	3	
Level: (low/r	ned)	LOW			
Extraction: (	SepF/Co	nt/Sonc	SPE/ASE	) SONC	
% Moisture:	58	_	decanted	I:(Y/N)	N
Concentrate	d Extract	Volume	2000	(uL)	
Injection Vol	ume: 2	.0 (u	L) pH:		_
GPC Cleanu	p: (Y/N)	Υ			

S	DG No.: 285-01
Lab Sample ID:	901-285-03
Lab File ID:	01F0598A.D
Date Received:	10/12/01
Date Extracted:	10/15/01
Date Analyzed:	10/18/01

Dilution Factor: 1.0

CONCENTRATION UNITS:

### CONCENTRATION UNITS:

	CONCENTR	ATION UNITS	5:		OOITOEITIVAI	1014 014110.	
CAS NO.	COMPOUND (ug/L or ug/l	Kg) UG/KG	Q	CAS NO.	COMPOUND (ug/L or ug/Kg	g) UG/KG	Q
108-95-2	Phenol	3900	U	51-28-5	2,4-Dinitrophenol	7800	U
95-57-8	2-Chlorophenol	3900	U	132-64-9	Dibenzofuran	3900	U
111-44-4	bis(2-Chloroethyl)ether	3900	U	100-02-7	4-Nitrophenol	7800	U
541-73-1	1,3-Dichlorobenzene	3900	U	121-14-2	2,4-Dinitrotoluene	3900	U
106-46-7	1,4-Dichlorobenzene	3900	U	86-73-7	Fluorene	3900	U
95-50-1	1,2-Dichlorobenzene	3900	U	7005-72-3	4-Chlorophenyl-phenylether	3900	U
100-51-6	Benzyl alcohol	3900	U	84-66-2	Diethylphthalate	3900	U
108-60-1	2,2'-Oxybis(1-chloropropane)	3900	U	100-01-6	4-Nitroaniline	7800	U
95-48-7	2-Methylphenol	3900	U	534-52-1	4,6-Dinitro-2-methylphenol	7800	U
67-72-1	Hexachloroethane	3900	U	86-30-6	n-Nitrosodiphenylamine	3900	U
621-64-7	N-Nitroso-di-n-propylamine	3900	U	101-55-3	4-Bromophenyl-phenylether	3900	U
106-44-5	4-Methylphenol	3900	U	118-74-1	Hexachlorobenzene	3900	U
98-95-3	Nitrobenzene	3900	U	87-86-5	Pentachlorophenol	7800	U
78-59-1	Isophorone	3900	U	85-01-8	Phenanthrene	1400	J
88-75-5	2-Nitrophenol	3900	U	120-12-7	Anthracene	450	J
105-67-9	2,4-Dimethylphenol	3900	U	86-74-8	Carbazole	3900	U
111-91-1	bis(2-Chloroethoxy)methane	3900	U	84-74-2	Di-n-butylphthalate	3900	U
120-83-2	2,4-Dichlorophenol	3900	U	206-44-0	Fluoranthene	2200	J
120-82-1	1,2,4-Trichlorobenzene	3900	U	129-00-0	Pyrene	1600	J
91-20-3	Naphthalene	3900	U	85-68-7	Butylbenzylphthalate	3900	U
106-47-8	4-Chloroaniline	3900	U	56-55-3	Benzo[a]anthracene	850	J
87-68-3	Hexachlorobutadiene	3900	U	218-01-9	Chrysene	1000	J
59-50-7	4-Chloro-3-methylphenol	3900	J	91-94-1	3,3'-Dichlorobenzidine	3900	U
91-57-6	2-Methylnaphthalene	3900	٦	117-81-7	bis(2-Ethylhexyl)phthalate	820	J
77-47-4	Hexachlorocyclopentadiene	3900	٦	117-84-0	Di-n-octylphthalate	3900	U
88-06-2	2,4,6-Trichlorophenol	3900	U	205-99-2	Benzo[b]fluoranthene	1200	J
95-95-4	2,4,5-Trichlorophenol	3900	U	207-08-9	Benzo[k]fluoranthene	490	J
91-58-7	2-Chloronaphthalene	3900	U	50-32-8	Benzo[a]pyrene	870	J
88-74-4	2-Nitroaniline	7800	U	193-39-5	Indeno[1,2,3-cd]pyrene	600	J
208-96-8	Acenaphthylene	3900	J	53-70-3	Dibenz[a,h]anthracene	3900	U
131-11-3	Dimethylphthalate	3900	IJ	191-24-2	Benzo[g,h,i]perylene	680	J
606-20-2	2,6-Dinitrotoluene	3900	U				

83-32-9

99-09-2

Acenaphthene

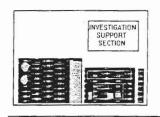
3-Nitroaniline

3900

7800

U

U



### LABORATORY ANALYTICAL REPORT

### SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

### FIELD SAMPLE ID:

SDG No.: 285-01

01F0599A.D

10/12/01

1.0

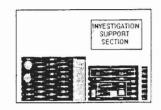
SED-6A

Site Name: Gastown Site Code: 915171 Matrix: (soil/water) SOIL Sample wt/vol: Lab Sample ID: 901-285-05 12.29 (g/ml) G Level: (low/med) LOW Lab File ID: Extraction: (SepF/Cont/Sonc/SPE/ASE) SONC Date Received: % Moisture: 55 decanted:(Y/N) N Date Extracted: 10/15/01 Concentrated Extract Volume: 2000 Date Analyzed: 10/18/01 (uL) Injection Volume: 2.0 (uL) pH: Dilution Factor: GPC Cleanup: (Y/N)

CAS NO.	COMPOUND (ug/L or ug/K	g) UG/KG	Q
51-28-5	2,4-Dinitrophenol	7200	U
132-64-9	Dibenzofuran	420	J
100-02-7	4-Nitrophenol	7200	U
121-14-2	2,4-Dinitrotoluene	3600	U
86-73-7	Fluorene	2300	J
7005-72-3	4-Chlorophenyl-phenylether	3600	U
84-66-2	Diethylphthalate	3600	U
100-01-6	4-Nitroaniline	7200	U
534-52-1	4,6-Dinitro-2-methylphenol	7200	U
86-30-6	n-Nitrosodiphenylamine	3600	U
101-55-3	4-Bromophenyl-phenylether	3600	U
118-74-1	Hexachlorobenzene	3600	U
87-86-5	Pentachlorophenol	7200	U
85-01-8	Phenanthrene	6900	
120-12-7	Anthracene	1500	J
86-74-8	Carbazole	490	J
84-74-2	Di-n-butylphthalate	400	J
206-44-0	Fluoranthene	4700	
129-00-0	Pyrene	4500	
85-68-7	Butylbenzylphthalate	3600	U
56-55-3	Benzo[a]anthracene	2200	J
218-01-9	Chrysene	2200	J
91-94-1	3,3'-Dichlorobenzidine	3600	U
117-81-7	bis(2-Ethylhexyl)phthalate	3600	U
117-84-0	Di-n-octylphthalate	3600	U
205-99-2	Benzo[b]fluoranthene	2100	J
207-08-9	Benzo[k]fluoranthene	1100	J
50-32-8	Benzo[a]pyrene	2500	J
193-39-5	Indeno[1,2,3-cd]pyrene	1300	J
53-70-3	Dibenz[a,h]anthracene	3600	U
191-24-2	Benzo[g,h,i]perylene	1500	J

	,	CONCENTRATION UNITS:
CAS NO.	COMPOUND	(ua/L or ua/Ka) UG/KG

108-95-2         Phenol         3600         U           95-57-8         2-Chlorophenol         3600         U           111-44-4         bis(2-Chloroethyl)ether         3600         U           541-73-1         1,3-Dichlorobenzene         3600         U           106-46-7         1,4-Dichlorobenzene         3600         U           95-50-1         1,2-Dichlorobenzene         3600         U           100-51-6         Benzyl alcohol         3600         U           108-60-1         2,2'-Oxybis(1-chloropropane)         3600         U           95-48-7         2-Methylphenol         3600         U           95-48-7         2-Methylphenol         3600         U           621-64-7         N-Nitroso-di-n-propylamine         3600         U           106-44-5         4-Methylphenol         3600         U           98-95-3         Nitrobenzene         3600         U           78-59-1         Isophorone         3600         U           105-67-9         2,4-Dimethylphenol         3600         U           111-91-1         bis(2-Chloroethoxy)methane         3600         U           120-83-2         2,4-Dichlorophenol         3600         U <th>CAS NO.</th> <th>COMPOUND (ug/L or ug/h</th> <th>(g) UG/KG</th> <th>Q</th>	CAS NO.	COMPOUND (ug/L or ug/h	(g) UG/KG	Q
111-44-4         bis(2-Chloroethyl)ether         3600         U           541-73-1         1,3-Dichlorobenzene         3600         U           106-46-7         1,4-Dichlorobenzene         3600         U           95-50-1         1,2-Dichlorobenzene         3600         U           100-51-6         Benzyl alcohol         3600         U           108-60-1         2,2'-Oxybis(1-chloropropane)         3600         U           95-48-7         2-Methylphenol         3600         U           67-72-1         Hexachloroethane         3600         U           621-64-7         N-Nitroso-di-n-propylamine         3600         U           106-44-5         4-Methylphenol         3600         U           98-95-3         Nitrobenzene         3600         U           98-95-3         Nitrobenzene         3600         U           88-75-5         2-Nitrophenol         3600         U           105-67-9         2,4-Dimethylphenol         3600         U           111-91-1         bis(2-Chloroethoxy)methane         3600         U           120-82-1         1,2,4-Trichlorophenol         3600         U           106-47-8         4-Chloro-3-methylphenol         3600	108-95-2	Phenol	3600	U
541-73-1         1,3-Dichlorobenzene         3600         U           106-46-7         1,4-Dichlorobenzene         3600         U           95-50-1         1,2-Dichlorobenzene         3600         U           100-51-6         Benzyl alcohol         3600         U           108-60-1         2,2'-Oxybis(1-chloropropane)         3600         U           95-48-7         2-Methylphenol         3600         U           67-72-1         Hexachloroethane         3600         U           621-64-7         N-Nitroso-di-n-propylamine         3600         U           106-44-5         4-Methylphenol         3600         U           98-95-3         Nitrobenzene         3600         U           98-95-1         Isophorone         3600         U           88-75-5         2-Nitrophenol         3600         U           105-67-9         2,4-Dimethylphenol         3600         U           120-83-2         2,4-Dichlorophenol         3600         U           120-82-1         1,2,4-Trichlorophenol         3600         U           106-47-8         4-Chloro-3-methylphenol         3600         U           87-68-3         Hexachlorobutadiene         3600         <	95-57-8	2-Chlorophenol	3600	U
106-46-7         1,4-Dichlorobenzene         3600         U           95-50-1         1,2-Dichlorobenzene         3600         U           100-51-6         Benzyl alcohol         3600         U           108-60-1         2,2'-Oxybis(1-chloropropane)         3600         U           95-48-7         2-Methylphenol         3600         U           67-72-1         Hexachloroethane         3600         U           621-64-7         N-Nitroso-di-n-propylamine         3600         U           106-44-5         4-Methylphenol         3600         U           106-44-5         4-Methylphenol         3600         U           98-95-3         Nitrobenzene         3600         U           78-59-1         Isophorone         3600         U           88-75-5         2-Nitrophenol         3600         U           105-67-9         2,4-Dimethylphenol         3600         U           111-91-1         bis(2-Chloroethoxy)methane         3600         U           120-83-2         2,4-Dichlorophenol         3600         U           120-82-1         1,2,4-Trichlorobenzene         3600         U           91-50-3         Naphthalene         640         J	111-44-4	bis(2-Chloroethyl)ether	3600	U
95-50-1         1,2-Dichlorobenzene         3600         U           100-51-6         Benzyl alcohol         3600         U           108-60-1         2,2'-Oxybis(1-chloropropane)         3600         U           95-48-7         2-Methylphenol         3600         U           67-72-1         Hexachloroethane         3600         U           621-64-7         N-Nitroso-di-n-propylamine         3600         U           106-44-5         4-Methylphenol         3600         U           106-44-5         4-Methylphenol         3600         U           98-95-3         Nitrobenzene         3600         U           98-95-3         Nitrobenzene         3600         U           98-95-3         Nitrobenzene         3600         U           98-95-3         Nitrobenzene         3600         U           88-75-5         2-Nitrophenol         3600         U           105-67-9         2,4-Dimethylphenol         3600         U           111-91-1         bis(2-Chloroethoxy)methane         3600         U           120-83-2         2,4-Dichlorophenol         3600         U           120-82-1         1,2,4-Trichlorophenol         3600         U     <	541-73-1	1,3-Dichlorobenzene	3600	J
100-51-6         Benzyl alcohol         3600         U           108-60-1         2,2'-Oxybis(1-chloropropane)         3600         U           95-48-7         2-Methylphenol         3600         U           67-72-1         Hexachloroethane         3600         U           621-64-7         N-Nitroso-di-n-propylamine         3600         U           106-44-5         4-Methylphenol         3600         U           98-95-3         Nitrobenzene         3600         U           78-59-1         Isophorone         3600         U           88-75-5         2-Nitrophenol         3600         U           105-67-9         2,4-Dimethylphenol         3600         U           11-91-1         bis(2-Chloroethoxy)methane         3600         U           120-83-2         2,4-Dichlorophenol         3600         U           120-82-1         1,2,4-Trichlorophenol         3600         U           91-20-3         Naphthalene         640         J           106-47-8         4-Chloro-3-methylphenol         3600         U           87-68-3         Hexachlorocyclopentadiene         3600         U           91-57-6         2-Methylnaphthalene         6200 <td>106-46-7</td> <td>1,4-Dichlorobenzene</td> <td>3600</td> <td>2</td>	106-46-7	1,4-Dichlorobenzene	3600	2
108-60-1         2,2'-Oxybis(1-chloropropane)         3600         U           95-48-7         2-Methylphenol         3600         U           67-72-1         Hexachloroethane         3600         U           621-64-7         N-Nitroso-di-n-propylamine         3600         U           106-44-5         4-Methylphenol         3600         U           98-95-3         Nitrobenzene         3600         U           78-59-1         Isophorone         3600         U           88-75-5         2-Nitrophenol         3600         U           105-67-9         2,4-Dimethylphenol         3600         U           11-91-1         bis(2-Chloroethoxy)methane         3600         U           120-83-2         2,4-Dichlorophenol         3600         U           120-83-2         2,4-Dichlorophenol         3600         U           91-20-3         Naphthalene         640         J           106-47-8         4-Chloroaniline         3600         U           87-68-3         Hexachlorobutadiene         3600         U           91-57-6         2-Methylnaphthalene         6200           77-47-4         Hexachlorocyclopentadiene         3600         U	95-50-1	1,2-Dichlorobenzene	3600	٦
95-48-7         2-Methylphenol         3600         U           67-72-1         Hexachloroethane         3600         U           621-64-7         N-Nitroso-di-n-propylamine         3600         U           106-44-5         4-Methylphenol         3600         U           98-95-3         Nitrobenzene         3600         U           78-59-1         Isophorone         3600         U           88-75-5         2-Nitrophenol         3600         U           105-67-9         2,4-Dimethylphenol         3600         U           111-91-1         bis(2-Chloroethoxy)methane         3600         U           120-83-2         2,4-Dichlorophenol         3600         U           120-82-1         1,2,4-Trichlorobenzene         3600         U           91-20-3         Naphthalene         640         J           106-47-8         4-Chloroaniline         3600         U           87-68-3         Hexachlorobutadiene         3600         U           91-57-6         2-Methylnaphthalene         6200           77-47-4         Hexachlorocyclopentadiene         3600         U           88-06-2         2,4,5-Trichlorophenol         3600         U <tr< td=""><td>100-51-6</td><td>Benzyl alcohol</td><td>3600</td><td>J</td></tr<>	100-51-6	Benzyl alcohol	3600	J
67-72-1         Hexachloroethane         3600         U           621-64-7         N-Nitroso-di-n-propylamine         3600         U           106-44-5         4-Methylphenol         3600         U           98-95-3         Nitrobenzene         3600         U           78-59-1         Isophorone         3600         U           88-75-5         2-Nitrophenol         3600         U           105-67-9         2,4-Dimethylphenol         3600         U           111-91-1         bis(2-Chloroethoxy)methane         3600         U           120-83-2         2,4-Dichlorophenol         3600         U           120-83-2         2,4-Dichlorophenol         3600         U           120-82-1         1,2,4-Trichlorobenzene         3600         U           91-20-3         Naphthalene         640         J           106-47-8         4-Chloroaniline         3600         U           87-68-3         Hexachlorobutadiene         3600         U           91-57-6         2-Methylnaphthalene         6200           77-47-4         Hexachlorocyclopentadiene         3600         U           88-06-2         2,4,5-Trichlorophenol         3600         U	108-60-1	2,2'-Oxybis(1-chloropropane)	3600	U
621-64-7         N-Nitroso-di-n-propylamine         3600         U           106-44-5         4-Methylphenol         3600         U           98-95-3         Nitrobenzene         3600         U           78-59-1         Isophorone         3600         U           88-75-5         2-Nitrophenol         3600         U           105-67-9         2,4-Dimethylphenol         3600         U           11-91-1         bis(2-Chloroethoxy)methane         3600         U           120-83-2         2,4-Dichlorophenol         3600         U           120-82-1         1,2,4-Trichlorobenzene         3600         U           91-20-3         Naphthalene         640         J           106-47-8         4-Chloroaniline         3600         U           87-68-3         Hexachlorobutadiene         3600         U           95-50-7         4-Chloro-3-methylphenol         3600         U           91-57-6         2-Methylnaphthalene         6200           77-47-4         Hexachlorocyclopentadiene         3600         U           88-06-2         2,4,5-Trichlorophenol         3600         U           91-58-7         2-Chloronaphthalene         3600         U </td <td>95-48-7</td> <td>2-Methylphenol</td> <td>3600</td> <td>U</td>	95-48-7	2-Methylphenol	3600	U
106-44-5         4-Methylphenol         3600         U           98-95-3         Nitrobenzene         3600         U           78-59-1         Isophorone         3600         U           88-75-5         2-Nitrophenol         3600         U           105-67-9         2,4-Dimethylphenol         3600         U           111-91-1         bis(2-Chloroethoxy)methane         3600         U           120-83-2         2,4-Dichlorophenol         3600         U           120-82-1         1,2,4-Trichlorobenzene         3600         U           91-20-3         Naphthalene         640         J           106-47-8         4-Chloroaniline         3600         U           87-68-3         Hexachlorobutadiene         3600         U           87-68-3         Hexachloro-3-methylphenol         3600         U           91-57-6         2-Methylnaphthalene         6200           77-47-4         Hexachlorocyclopentadiene         3600         U           88-06-2         2,4,6-Trichlorophenol         3600         U           91-58-7         2-Chloronaphthalene         3600         U           88-74-4         2-Nitroaniline         7200         U <t< td=""><td>67-72-1</td><td>Hexachloroethane</td><td>3600</td><td>U</td></t<>	67-72-1	Hexachloroethane	3600	U
98-95-3         Nitrobenzene         3600         U           78-59-1         Isophorone         3600         U           88-75-5         2-Nitrophenol         3600         U           105-67-9         2,4-Dimethylphenol         3600         U           111-91-1         bis(2-Chloroethoxy)methane         3600         U           120-83-2         2,4-Dichlorophenol         3600         U           120-82-1         1,2,4-Trichlorobenzene         3600         U           91-20-3         Naphthalene         640         J           106-47-8         4-Chloroaniline         3600         U           87-68-3         Hexachlorobutadiene         3600         U           91-57-6         2-Methylnaphthalene         6200           77-47-4         Hexachlorocyclopentadiene         3600         U           88-06-2         2,4,6-Trichlorophenol         3600         U           95-95-4         2,4,5-Trichlorophenol         3600         U           91-58-7         2-Chloronaphthalene         3600         U           88-74-4         2-Nitroaniline         7200         U           208-96-8         Acenaphthylene         380         J	621-64-7	N-Nitroso-di-n-propylamine	3600	U
78-59-1         Isophorone         3600         U           88-75-5         2-Nitrophenol         3600         U           105-67-9         2,4-Dimethylphenol         3600         U           111-91-1         bis(2-Chloroethoxy)methane         3600         U           120-83-2         2,4-Dichlorophenol         3600         U           120-82-1         1,2,4-Trichlorobenzene         3600         U           91-20-3         Naphthalene         640         J           106-47-8         4-Chloroaniline         3600         U           87-68-3         Hexachlorobutadiene         3600         U           99-50-7         4-Chloro-3-methylphenol         3600         U           91-57-6         2-Methylnaphthalene         6200           77-47-4         Hexachlorocyclopentadiene         3600         U           88-06-2         2,4,6-Trichlorophenol         3600         U           95-95-4         2,4,5-Trichlorophenol         3600         U           91-58-7         2-Chloronaphthalene         3600         U           88-74-4         2-Nitroaniline         7200         U           208-96-8         Acenaphthylene         3600         U	106-44-5	4-Methylphenoi	3600	U
88-75-5         2-Nitrophenol         3600         U           105-67-9         2,4-Dimethylphenol         3600         U           111-91-1         bis(2-Chloroethoxy)methane         3600         U           120-83-2         2,4-Dichlorophenol         3600         U           120-82-1         1,2,4-Trichlorobenzene         3600         U           91-20-3         Naphthalene         640         J           106-47-8         4-Chloroaniline         3600         U           87-68-3         Hexachlorobutadiene         3600         U           59-50-7         4-Chloro-3-methylphenol         3600         U           91-57-6         2-Methylnaphthalene         6200           77-47-4         Hexachlorocyclopentadiene         3600         U           88-06-2         2,4,6-Trichlorophenol         3600         U           95-95-4         2,4,5-Trichlorophenol         3600         U           91-58-7         2-Chloronaphthalene         3600         U           88-74-4         2-Nitroaniline         7200         U           208-96-8         Acenaphthylene         380         J           131-11-3         Dimethylphthalate         3600         U	98-95-3	Nitrobenzene	3600	U
105-67-9         2,4-Dimethylphenol         3600         U           111-91-1         bis(2-Chloroethoxy)methane         3600         U           120-83-2         2,4-Dichlorophenol         3600         U           120-82-1         1,2,4-Trichlorobenzene         3600         U           91-20-3         Naphthalene         640         J           106-47-8         4-Chloroaniline         3600         U           87-68-3         Hexachlorobutadiene         3600         U           59-50-7         4-Chloro-3-methylphenol         3600         U           91-57-6         2-Methylnaphthalene         6200           77-47-4         Hexachlorocyclopentadiene         3600         U           88-06-2         2,4,6-Trichlorophenol         3600         U           95-95-4         2,4,5-Trichlorophenol         3600         U           91-58-7         2-Chloronaphthalene         3600         U           88-74-4         2-Nitroaniline         7200         U           208-96-8         Acenaphthylene         380         J           131-11-3         Dimethylphthalate         3600         U           3606-20-2         2,6-Dinitrotoluene         3600         U<	78-59-1	Isophorone	3600	U
111-91-1         bis(2-Chloroethoxy)methane         3600         U           120-83-2         2,4-Dichlorophenol         3600         U           120-82-1         1,2,4-Trichlorobenzene         3600         U           91-20-3         Naphthalene         640         J           106-47-8         4-Chloroaniline         3600         U           87-68-3         Hexachlorobutadiene         3600         U           59-50-7         4-Chloro-3-methylphenol         3600         U           91-57-6         2-Methylnaphthalene         6200           77-47-4         Hexachlorocyclopentadiene         3600         U           88-06-2         2,4,6-Trichlorophenol         3600         U           95-95-4         2,4,5-Trichlorophenol         3600         U           91-58-7         2-Chloronaphthalene         3600         U           88-74-4         2-Nitroaniline         7200         U           208-96-8         Acenaphthylene         380         J           131-11-3         Dimethylphthalate         3600         U           306-20-2         2,6-Dinitrotoluene         3600         U           83-32-9         Acenaphthene         7100	88-75-5	2-Nitrophenol	3600	U
120-83-2         2,4-Dichlorophenol         3600         U           120-82-1         1,2,4-Trichlorobenzene         3600         U           91-20-3         Naphthalene         640         J           106-47-8         4-Chloroaniline         3600         U           87-68-3         Hexachlorobutadiene         3600         U           59-50-7         4-Chloro-3-methylphenol         3600         U           91-57-6         2-Methylnaphthalene         6200           77-47-4         Hexachlorocyclopentadiene         3600         U           88-06-2         2,4,6-Trichlorophenol         3600         U           95-95-4         2,4,5-Trichlorophenol         3600         U           91-58-7         2-Chloronaphthalene         3600         U           88-74-4         2-Nitroaniline         7200         U           208-96-8         Acenaphthylene         380         J           131-11-3         Dimethylphthalate         3600         U           3606-20-2         2,6-Dinitrotoluene         3600         U           83-32-9         Acenaphthene         7100	105-67-9	2,4-Dimethylphenol	3600	U
120-82-1         1,2,4-Trichlorobenzene         3600         U           91-20-3         Naphthalene         640         J           106-47-8         4-Chloroaniline         3600         U           87-68-3         Hexachlorobutadiene         3600         U           59-50-7         4-Chloro-3-methylphenol         3600         U           91-57-6         2-Methylnaphthalene         6200           77-47-4         Hexachlorocyclopentadiene         3600         U           88-06-2         2,4,6-Trichlorophenol         3600         U           95-95-4         2,4,5-Trichlorophenol         3600         U           91-58-7         2-Chloronaphthalene         3600         U           88-74-4         2-Nitroaniline         7200         U           208-96-8         Acenaphthylene         380         J           131-11-3         Dimethylphthalate         3600         U           3606-20-2         2,6-Dinitrotoluene         3600         U           83-32-9         Acenaphthene         7100	111-91-1	bis(2-Chloroethoxy)methane	3600	U
91-20-3         Naphthalene         640         J           106-47-8         4-Chloroaniline         3600         U           87-68-3         Hexachlorobutadiene         3600         U           59-50-7         4-Chloro-3-methylphenol         3600         U           91-57-6         2-Methylnaphthalene         6200           77-47-4         Hexachlorocyclopentadiene         3600         U           88-06-2         2,4,6-Trichlorophenol         3600         U           95-95-4         2,4,5-Trichlorophenol         3600         U           91-58-7         2-Chloronaphthalene         3600         U           88-74-4         2-Nitroaniline         7200         U           208-96-8         Acenaphthylene         380         J           131-11-3         Dimethylphthalate         3600         U           3606-20-2         2,6-Dinitrotoluene         3600         U           83-32-9         Acenaphthene         7100	120-83-2	2,4-Dichlorophenol	3600	U
106-47-8         4-Chloroaniline         3600         U           87-68-3         Hexachlorobutadiene         3600         U           59-50-7         4-Chloro-3-methylphenol         3600         U           91-57-6         2-Methylnaphthalene         6200           77-47-4         Hexachlorocyclopentadiene         3600         U           88-06-2         2,4,6-Trichlorophenol         3600         U           95-95-4         2,4,5-Trichlorophenol         3600         U           91-58-7         2-Chloronaphthalene         3600         U           88-74-4         2-Nitroaniline         7200         U           208-96-8         Acenaphthylene         380         J           131-11-3         Dimethylphthalate         3600         U           3606-20-2         2,6-Dinitrotoluene         3600         U           83-32-9         Acenaphthene         7100	120-82-1	1,2,4-Trichlorobenzene	3600	U
87-68-3         Hexachlorobutadiene         3600         U           59-50-7         4-Chloro-3-methylphenol         3600         U           91-57-6         2-Methylnaphthalene         6200           77-47-4         Hexachlorocyclopentadiene         3600         U           88-06-2         2,4,6-Trichlorophenol         3600         U           95-95-4         2,4,5-Trichlorophenol         3600         U           91-58-7         2-Chloronaphthalene         3600         U           88-74-4         2-Nitroaniline         7200         U           208-96-8         Acenaphthylene         380         J           131-11-3         Dimethylphthalate         3600         U           3606-20-2         2,6-Dinitrotoluene         3600         U           83-32-9         Acenaphthene         7100			640	
59-50-7       4-Chloro-3-methylphenol       3600       U         91-57-6       2-Methylnaphthalene       6200         77-47-4       Hexachlorocyclopentadiene       3600       U         88-06-2       2,4,6-Trichlorophenol       3600       U         95-95-4       2,4,5-Trichlorophenol       3600       U         91-58-7       2-Chloronaphthalene       3600       U         88-74-4       2-Nitroaniline       7200       U         208-96-8       Acenaphthylene       380       J         131-11-3       Dimethylphthalate       3600       U         406-20-2       2,6-Dinitrotoluene       3600       U         83-32-9       Acenaphthene       7100			3600	U
91-57-6         2-Methylnaphthalene         6200           77-47-4         Hexachlorocyclopentadiene         3600 U           88-06-2         2,4,6-Trichlorophenol         3600 U           95-95-4         2,4,5-Trichlorophenol         3600 U           91-58-7         2-Chloronaphthalene         3600 U           88-74-4         2-Nitroaniline         7200 U           208-96-8         Acenaphthylene         380 J           131-11-3         Dimethylphthalate         3600 U           406-20-2         2,6-Dinitrotoluene         3600 U           83-32-9         Acenaphthene         7100			3600	U
77-47-4         Hexachlorocyclopentadiene         3600         U           88-06-2         2,4,6-Trichlorophenol         3600         U           95-95-4         2,4,5-Trichlorophenol         3600         U           91-58-7         2-Chloronaphthalene         3600         U           88-74-4         2-Nitroaniline         7200         U           208-96-8         Acenaphthylene         380         J           131-11-3         Dimethylphthalate         3600         U           406-20-2         2,6-Dinitrotoluene         3600         U           83-32-9         Acenaphthene         7100		4-Chloro-3-methylphenol	3600	U
88-06-2       2,4,6-Trichlorophenol       3600       U         95-95-4       2,4,5-Trichlorophenol       3600       U         91-58-7       2-Chloronaphthalene       3600       U         88-74-4       2-Nitroaniline       7200       U         208-96-8       Acenaphthylene       380       J         131-11-3       Dimethylphthalate       3600       U         406-20-2       2,6-Dinitrotoluene       3600       U         83-32-9       Acenaphthene       7100		2-Methylnaphthalene	6200	
95-95-4       2,4,5-Trichlorophenol       3600       U         91-58-7       2-Chloronaphthalene       3600       U         88-74-4       2-Nitroaniline       7200       U         208-96-8       Acenaphthylene       380       J         131-11-3       Dimethylphthalate       3600       U         306-20-2       2,6-Dinitrotoluene       3600       U         83-32-9       Acenaphthene       7100	77-47-4	Hexachlorocyclopentadiene	3600	U
91-58-7       2-Chloronaphthalene       3600       U         88-74-4       2-Nitroaniline       7200       U         208-96-8       Acenaphthylene       380       J         131-11-3       Dimethylphthalate       3600       U         306-20-2       2,6-Dinitrotoluene       3600       U         83-32-9       Acenaphthene       7100	88-06-2	2,4,6-Trichlorophenol	3600	U
88-74-4       2-Nitroaniline       7200       U         208-96-8       Acenaphthylene       380       J         131-11-3       Dimethylphthalate       3600       U         406-20-2       2,6-Dinitrotoluene       3600       U         83-32-9       Acenaphthene       7100	95-95-4	2,4,5-Trichlorophenol	3600	U
208-96-8       Acenaphthylene       380       J         131-11-3       Dimethylphthalate       3600       U         606-20-2       2,6-Dinitrotoluene       3600       U         83-32-9       Acenaphthene       7100	91-58-7		3600	U
131-11-3         Dimethylphthalate         3600         U           306-20-2         2,6-Dinitrotoluene         3600         U           83-32-9         Acenaphthene         7100	88-74-4	2-Nitroaniline	7200	U
306-20-2         2,6-Dinitrotoluene         3600         U           83-32-9         Acenaphthene         7100	208-96-8	Acenaphthylene	380	J
83-32-9 Acenaphthene 7100	131-11-3	Dimethylphthalate	3600	U
	606-20-2	2,6-Dinitrotoluene	3600	U
99-09-2 3-Nitroaniline 7200 U	83-32-9	Acenaphthene	7100	
	99-09-2	3-Nitroaniline	7200	U



### LABORATORY ANALYTICAL REPORT

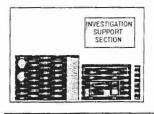
### SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

### FIELD SAMPLE ID:

Site Name: Gastov		· · · · · · · · · · · · · · · · · · ·		SED-9
Site Code: 915171			L	
Matrix: (soil/water)	SOIL			SDG No.: 285-01
Sample wt/vol:	12.43	(g/ml) G	Lab Sample ID	901-285-07
Level: (low/med)	LOW		Lab File ID:	01F0628A.D
Extraction: (SepF/Co	ont/Sonc/S	PE/ASE) SONC	Date Received	10/12/01
% Moisture: 49	) .	decanted:(Y/N) N	Date Extracted	d: 10/15/01
Concentrated Extract	t Volume:	2000 (uL)	Date Analyzed	10/23/01
Injection Volume:	2.0 (uL)	pH:	Dilution Factor	1.0
CBC Cleanus: (V/N)	V			

CAS NO.	COMPOUND (ug/L or ug/K	g) UG/KG	
51-28-5	2,4-Dinitrophenol	6300	U
132-64-9	Dibenzofuran	3200	U
100-02-7	4-Nitrophenol	6300	U
121-14-2	2,4-Dinitrotoluene	3200	U
86-73-7	Fluorene	3200	U
7005-72-3	4-Chlorophenyl-phenylether	3200	U
84-66-2	Diethylphthalate	3200	U
100-01-6	4-Nitroaniline	6300	J
534-52-1	4,6-Dinitro-2-methylphenol	6300	U
86-30-6	n-Nitrosodiphenylamine	3200	U
101-55-3	4-Bromophenyl-phenylether	3200	U
118-74-1	Hexachlorobenzene	3200	U
87-86-5	Pentachlorophenol	6300	U
85-01-8	Phenanthrene	1700	J
120-12-7	Anthracene	490	J
86-74-8	Carbazole	3200	U
84-74-2	Di-n-butylphthalate	370	J
206-44-0	Fluoranthene	3500	
129-00-0	Pyrene	2900	J
85-68-7	Butylbenzylphthalate	3200	U
56-55-3	Benzo[a]anthracene	1900	J
218-01-9	Chrysene	1800	J
91-94-1	3,3'-Dichlorobenzidine	3200	U
117-81-7	bis(2-Ethylhexyl)phthalate	3200	U
117-84-0	Di-n-octylphthalate	3200	U
205-99-2	Benzo[b]fluoranthene	1900	J
207-08-9	Benzo[k]fluoranthene	720	J
50-32-8	Benzo[a]pyrene	1700	J
193-39-5	Indeno[1,2,3-cd]pyrene	930	J
53-70-3	Dibenz[a,h]anthracene	330	J
191-24-2	Benzo[g,h,i]perylene	1100	J

Injecti	on Volume: 2.0 (uL) pH:		
GPC (	Cleanup: (Y/N) Y		
	CONCENTRA	ATION UNITS	S:
CAS NO.	COMPOUND (ug/L or ug/k	(g) UG/KG	Q
108-95-2	Phenol	3200	U.
95-57-8	2-Chlorophenol	3200	U
111-44-4	bis(2-Chloroethyl)ether	3200	U
541-73-1	1,3-Dichlorobenzene	3200	U
106-46-7	1,4-Dichlorobenzene	3200	U
95-50-1	1,2-Dichlorobenzene	3200	U
100-51-6	Benzyl alcohol	3200	U
108-60-1	2,2'-Oxybis(1-chloropropane)	3200	U
95-48-7	2-Methylphenol	3200	U
67-72-1	Hexachloroethane	3200	U
621-64-7	N-Nitroso-di-n-propylamine	3200	U
106-44-5	4-Methylphenol	3200	U
98-95-3	Nitrobenzene	3200	U
78-59-1	Isophorone	3200	U
88-75-5	2-Nitrophenol	3200	U
105-67-9	2,4-Dimethylphenol	3200	U
111-91-1	bis(2-Chloroethoxy)methane	3200	U
120-83-2	2,4-Dichlorophenol	3200	U
120-82-1	1,2,4-Trichlorobenzene	3200	U
91-20-3	Naphthalene	3200	U
106-47-8	4-Chloroaniline	3200	U
87-68-3	Hexachlorobutadiene	3200	U
59-50-7	4-Chloro-3-methylphenol	3200	U
91-57-6	2-Methylnaphthalene	3200	U
77-47-4	Hexachlorocyclopentadiene	3200	U
88-06-2	2,4,6-Trichlorophenol	3200	U
95-95-4	2,4,5-Trichlorophenol	3200	U
91-58-7	2-Chloronaphthalene	3200	U
88-74-4	2-Nitroaniline	6300	U
208-96-8	Acenaphthylene	3200	U
131-11-3	Dimethylphthalate	3200	U
606-20-2	2,6-Dinitrotoluene	3200	U
83-32-9	Acenaphthene	470	J
99-09-2	3-Nitroaniline	6300	U



### LABORATORY ANALYTICAL REPORT

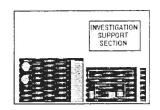
### SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

### FIELD SAMPLE ID:

Site Name:	Gastow	'n				SED-11
Site Code:	915171				L	3EB-11
Matrix: (soil/v	vater)	SOIL				SDG No.: 285-01
Sample wt/vo	ol:	12.23	(g/ml) G		Lab Sample ID	901-285-09
Level: (low/m	ned)	LOW			Lab File ID:	01F0602A.D
Extraction: (S	SepF/Co	nt/Sonc/S	SPE/ASE) SONC		Date Received	10/12/01
% Moisture:	58		decanted:(Y/N)	N	Date Extracted	1: 10/15/01
Concentrated	Extract	Volume:	2000 (uL)		Date Analyzed	: 10/18/01
Injection Volu	ıme: 2	2.0 (uL	) pH:		Dilution Factor	: 1.0
GPC Cleanur	o: (Y/N)	Y		-		

CAS NO.	COMPOUND (ug/L or ug/K	g) UG/KG	C
51-28-5	2,4-Dinitrophenol	7800	U
132-64-9	Dibenzofuran	3900	U
100-02-7	4-Nitrophenol	7800	U
121-14-2	2,4-Dinitrotoluene	3900	U
86-73-7	Fluorene	3900	ט
7005-72-3	4-Chlorophenyl-phenylether	3900	U
84-66-2	Diethylphthalate	3900	U
100-01-6	4-Nitroaniline	7800	J
534-52-1	4,6-Dinitro-2-methylphenol	7800	U
86-30-6	n-Nitrosodiphenylamine	3900	U
101-55-3	4-Bromophenyl-phenylether	3900	U
118-74-1	Hexachlorobenzene	3900	U
87-86-5	Pentachlorophenol	7800	U
85-01-8	Phenanthrene	3900	U
120-12-7	Anthracene	3900	U
86-74-8	Carbazole	3900	U
84-74-2	Di-n-butylphthalate	3900	U
206-44-0	Fluoranthene	3900	U
129-00-0	Pyrene	3900	U
85-68-7	Butylbenzylphthalate	3900	U
56-55-3	Benzo[a]anthracene	3900	Ų
218-01-9	Chrysene	3900	U
91-94-1	3,3'-Dichlorobenzidine	3900	U
117-81-7	bis(2-Ethylhexyl)phthalate	3900	U
117-84-0	Di-n-octylphthalate	3900	U
205-99-2	Benzo[b]fluoranthene	3900	U
207-08-9	Benzo[k]fluoranthene	3900	U
50-32-8	Benzo[a]pyrene	3900	U
193-39-5	Indeno[1,2,3-cd]pyrene	3900	U
53-70-3	Dibenz[a,h]anthracene	3900	U
191-24-2	Benzo[g,h,i]perylene	3900	U

,				
GPC	Cleanup: (Y/N)	Υ		
		CONCENTRAT	ION UNITS	3:
CAS NO.	COMPOUND	(ug/L or ug/Kg	) UG/KG	Q
108-95-2	Phenol		3900	U
95-57-8	2-Chlorophenol		3900	U
111-44-4	bis(2-Chloroethy	l)ether	3900	U
541-73-1	1,3-Dichlorobenz		3900	U
106-46-7	1,4-Dichlorobenz	zene	3900	U
95-50-1	1,2-Dichlorobenz	zene	3900	U
100-51-6	Benzyi alcohoi		3900	U
108-60-1	2,2'-Oxybis(1-ch	loropropane)	3900	U
95-48-7	2-Methylphenol		3900	U
67-72-1	Hexachloroethar	ne	3900	U
621-64-7	N-Nitroso-di-n-pr	opylamine	3900	U
106-44-5	4-Methylphenol		3900	U
98-95-3	Nitrobenzene		3900	U
78-59-1	Isophorone		3900	U
88-75-5	2-Nitrophenol		3900	U
105-67-9	2,4-Dimethylphe	nol	3900	U
111-91-1	bis(2-Chloroetho	xy)methane	3900	U
120-83-2	2,4-Dichloropher	nol	3900	U
120-82-1	1,2,4-Trichlorobe	nzene	3900	U
91-20-3	Naphthalene		3900	U
106-47-8	4-Chloroaniline		3900	U
87-68-3	Hexachlorobutac	liene	3900	U
59-50-7	4-Chloro-3-methy	ylphenol	3900	Ų
91-57-6	2-Methylnaphtha		3900	U
77-47-4	Hexachlorocyclo	pentadiene	3900	U
88-06-2	2,4,6-Trichloroph	enol	3900	U
95-95-4	2,4,5-Trichloroph	enol	3900	U
91-58-7	2-Chloronaphtha	lene	3900	U
88-74-4	2-Nitroaniline		7800	U
208-96-8	Acenaphthylene		3900	U
131-11-3	Dimethylphthala	te	3900	U
06-20-2	2,6-Dinitrotoluen	9	3900	U
83-32-9	Acenaphthene		3900	U
99-09-2	3-Nitroaniline		7800	Ū



### LABORATORY ANALYTICAL REPORT

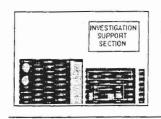
### SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

### FIELD SAMPLE ID:

Site Name:	Gastow	n				SED-13
Site Code:	915171					
Matrix: (soil/v	vater)	SOIL			S	DG No.: 285-01
Sample wt/vo	ol:	12.68	 (g/ml) G		Lab Sample ID:	901-285-11
Level: (low/m	ned)	LOW			Lab File ID:	01F0604A.D
Extraction: (S	SepF/Cor	nt/Sonc/S	PE/ASE) SONC		Date Received:	10/12/01
% Moisture:	53	d	ecanted:(Y/N)	Ν	Date Extracted:	10/15/01
Concentrated	Extract	Volume:	2000 (uL)		Date Analyzed:	10/19/01
Injection Volu	ıme: 2	.0 (uL)	pH:	_	Dilution Factor:	1.0
CBC Cleanur	· (V/NI)	~				

CAS NO.	COMPOUND (ug/L or ug/Kg	g) UG/KG	Q
51-28-5	2,4-Dinitrophenol	6700	U
132-64-9	Dibenzofuran	3400	U
100-02-7	4-Nitrophenol	6700	U
121-14-2	2,4-Dinitrotoluene	3400	U
86-73-7	Fluorene	3400	U
7005-72-3	4-Chlorophenyl-phenylether	3400	U
84-66-2	Diethylphthalate	3400	U
100-01-6	4-Nitroaniline	6700	٦
534-52-1	4,6-Dinitro-2-methylphenol	6700	U
86-30-6	n-Nitrosodiphenylamine	3400	U
101-55-3	4-Bromophenyl-phenylether	3400	U
118-74-1	Hexachlorobenzene	3400	U
87-86-5	Pentachlorophenol	6700	U
85-01-8	Phenanthrene	520	J
120-12-7	Anthracene	3400	U
86-74-8	Carbazole	3400	U
84-74-2	Di-n-butylphthalate	3400	U
206-44-0	Fluoranthene	1600	J
129-00-0	Pyrene	1200	J
85-68-7	Butylbenzylphthalate	3400	U
56-55-3	Benzo[a]anthracene	700	J
218-01-9	Chrysene	840	J
91-94-1	3,3'-Dichlorobenzidine	3400	U
117-81-7	bis(2-Ethylhexyl)phthalate	910	J
117-84-0	Di-n-octylphthalate	3400	U
205-99-2	Benzo[b]fluoranthene	1300	J
207-08-9	Benzo[k]fluoranthene	430	J
50-32-8	Benzo[a]pyrene	920	J
193-39-5	Indeno[1,2,3-cd]pyrene	660	J
53-70-3	Dibenz[a,h]anthracene	3400	U
191-24-2	Benzo[g,h,i]perylene	800	J.

Inject	tion volume: $\frac{2.0}{1000}$ (uL) pH	:	
GPC	Cleanup: (Y/N) Y		
	CONCENTRA	ATION UNITS	S:
CAS NO.	COMPOUND (ug/L or ug/k	(g) UG/KG	Q
108-95-2	Phenol	3400	U
95-57-8	2-Chlorophenol	3400	U
111-44-4	bis(2-Chloroethyl)ether	3400	U
541-73-1	1,3-Dichlorobenzene	3400	U.
106-46-7	1,4-Dichlorobenzene	3400	U
95-50-1	1,2-Dichlorobenzene	3400	U
100-51-6	Benzyl alcohol	3400	U
108-60-1	2,2'-Oxybis(1-chloropropane)	3400	U
95-48-7	2-Methylphenol	3400	U
67-72-1	Hexachloroethane	3400	U
621-64-7	N-Nitroso-di-n-propylamine	3400	U
106-44-5	4-Methylphenol	3400	U
98-95-3	Nitrobenzene	3400	U
78-59-1	Isophorone	3400	. U
88-75-5	2-Nitrophenol	3400	U
105-67-9	2,4-Dimethylphenol	3400	U
111-91-1	bis(2-Chloroethoxy)methane	3400	U
120-83-2	2,4-Dichlorophenol	3400	U
120-82-1	1,2,4-Trichlorobenzene	3400	U
91-20-3	Naphthalene	3400	U
106-47-8	4-Chloroaniline	3400	Ų
87-68-3	Hexachlorobutadiene	3400	U
59-50-7	4-Chloro-3-methylphenol	3400	U
91-57-6	2-Methylnaphthalene	3400	U
77-47-4	Hexachlorocyclopentadiene	3400	U
88-06-2	2,4,6-Trichlorophenol	3400	U
95-95-4	2,4,5-Trichlorophenol	3400	U
91-58-7	2-Chloronaphthalene	3400	U
88-74-4	2-Nitroaniline	6700	U
208-96-8	Acenaphthylene	3400	U
131-11-3	Dimethylphthalate	3400	U
606-20-2	2,6-Dinitrotoluene	3400	U
83-32-9	Acenaphthene	3400	U
99-09-2	3-Nitroaniline	6700	U



### LABORATORY ANALYTICAL REPORT

### SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

### FIELD SAMPLE ID:

SED-16

Site Name: Gastown Site Code: 915171 SOIL Matrix: (soil/water) Sample wt/vol: 12.32 (g/ml) G LOW Level: (low/med) Extraction: (SepF/Cont/Sonc/SPE/ASE) SONC % Moisture: 61 decanted:(Y/N) N Concentrated Extract Volume: 2000 (uL)

pH:

Injection Volume: 2.0 (uL) GPC Cleanup: (Y/N) Y

Lab Sample ID: 901-285-13 Lab File ID: Date Received: 10/12/01 Date Extracted: 10/15/01

01F0609A.D

SDG No.: 285-01

Date Analyzed: 10/19/01

Dilution Factor: 1.0

	CONCENTRA	HON UNITS.	
CAS NO.	COMPOUND (ug/L or ug/K	g) UG/KG	Q
51-28-5	2,4-Dinitrophenol	8300	U
132-64-9	Dibenzofuran	4200	U
100-02-7	4-Nitrophenol	8300	U
121-14-2	2,4-Dinitrotoluene	4200	U
86-73-7	Fluorene	4200	J
7005-72-3	4-Chlorophenyl-phenylether	4200	U
84-66-2	Diethylphthalate	4200	ט
100-01-6	4-Nitroaniline	8300	Ü
534-52-1	4,6-Dinitro-2-methylphenol	8300	U
86-30-6	n-Nitrosodiphenylamine	4200	U
101-55-3	4-Bromophenyl-phenylether	4200	U
118-74-1	Hexachlorobenzene	4200	U
87-86-5	Pentachlorophenol	8300	٦
85-01-8	Phenanthrene	620	J
120-12-7	Anthracene	4200	U
86-74-8	Carbazole	4200	U
84-74-2	Di-n-butylphthalate	4200	U
206-44-0	Fluoranthene	1900	J
129-00-0	Pyrene	1400	J
85-68-7	Butylbenzylphthalate	4200	U
56-55-3	Benzo[a]anthracene	620	J
218-01-9	Chrysene	1000	J
91-94-1	3,3'-Dichlorobenzidine	4200	U
117-81-7	bis(2-Ethylhexyl)phthalate	1600	J
117-84-0	Di-n-octylphthalate	4200	U
205-99-2	Benzo[b]fluoranthene	1500	J
207-08-9	Benzo[k]fluoranthene	600	J
50-32-8	Benzo[a]pyrene	920	J
193-39-5	Indeno[1,2,3-cd]pyrene	730	J
53-70-3	Dibenz[a,h]anthracene	4200	U
191-24-2	Benzo[g,h,i]perylene	870	J

01.0	CONCENT	RATION UNITS	3.
CAS NO.	COMPOUND (ug/L or u		Q.
108-95-2	Phenol	4200	U
95-57-8	2-Chlorophenol	4200	U
111-44-4	bis(2-Chloroethyl)ether	4200	U
541-73-1	1,3-Dichlorobenzene	4200	U
106-46-7	1,4-Dichlorobenzene	4200	J
95-50-1	1,2-Dichlorobenzene	4200	U
100-51-6	Benzyl alcohol	4200	U
108-60-1	2,2'-Oxybis(1-chloropropane)	4200	U
95-48-7	2-Methylphenol	4200	U
67-72-1	Hexachloroethane	4200	U
621-64-7	N-Nitroso-di-n-propylamine	4200	U
106-44-5	4-Methylphenol	4200	U
98-95-3	Nitrobenzene	4200	U
78-59-1	Isophorone	4200	U
88-75-5	2-Nitrophenol	4200	U
105-67-9	2,4-Dimethylphenol	4200	U
111-91-1	bis(2-Chloroethoxy)methane	4200	U
120-83-2	2,4-Dichlorophenol	4200	U
120-82-1	1,2,4-Trichlorobenzene	4200	U
91-20-3	Naphthalene	4200	U
106-47-8	4-Chloroaniline	4200	U
87-68-3	Hexachlorobutadiene	4200	U
59-50-7	4-Chloro-3-methylphenol	4200	U
91-57-6	2-Methylnaphthalene	4200	U
77-47-4	Hexachlorocyclopentadiene	4200	U
88-06-2	2,4,6-Trichlorophenol	4200	U
95-95-4	2,4,5-Trichlorophenol	4200	U
91-58-7	2-Chloronaphthalene	4200	U
88-74-4	2-Nitroaniline	8300	U
208-96-8	Acenaphthylene	4200	U
131-11-3	Dimethylphthalate	4200	U
06-20-2	2,6-Dinitrotoluene	4200	Ü
83-32-9	Acenaphthene	4200	U
99-09-2	3-Nitroaniline	8300	U



### LABORATORY ANALYTICAL REPORT

### SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

### FIELD SAMPLE ID:

Site Name: Gastown Site Code: 915171 Matrix: (soil/water) SOIL Sample wt/vol: 12.75 (g/ml) G LOW Level: (low/med) Extraction: (SepF/Cont/Sonc/SPE/ASE) SONC % Moisture: 54 decanted:(Y/N) N Concentrated Extract Volume: 2000 (uL) Injection Volume: 2.0 (uL) pH: GPC Cleanup: (Y/N)

	_	CONCENTRA	TION UNITS	5:
CAS NO.	COMPOUND	(ug/L or ug/Kg	g) UG/KG	Q
108-95-2	Phenol		3400	U
95-57-8	2-Chlorophenol		3400	U
111-44-4	bis(2-Chloroethyl)	ether	3400	U
541-73-1	1,3-Dichlorobenze	ene	3400	U
106-46-7	1,4-Dichlorobenze	ene	3400	U
95-50-1	1,2-Dichlorobenze	ene	3400	U
100-51-6	Benzyl alcohol		3400	U
108-60-1	2,2'-Oxybis(1-chlo	propropane)	3400	U
95-48-7	2-Methylphenol		3400	U
67-72-1	Hexachloroethan	Э	3400	U
621-64-7	N-Nitroso-di-n-pro	pylamine	3400	U
106-44-5	4-Methylphenol		3400	U
98-95-3	Nitrobenzene		3400	U
78-59-1	Isophorone		3400	U
88-75-5	2-Nitrophenol		3400	U
105-67-9	2,4-Dimethylphen	ol	3400	U
111-91-1	bis(2-Chloroethox	y)methane	3400	U
120-83-2	2,4-Dichloropheno	ol	3400	U
120-82-1	1,2,4-Trichlorober	nzene	3400	U
91-20-3	Naphthalene		3400	U
106-47-8	4-Chloroaniline		3400	U
87-68-3	Hexachlorobutadi	ene	3400	U
59-50-7	4-Chloro-3-methy	phenol	3400	U
91-57-6	2-Methylnaphthal	ene	3400	U
77-47-4	Hexachlorocyclop	entadiene	3400	U
88-06-2	2,4,6-Trichlorophe		3400	U
95-95-4	2,4,5-Trichlorophe	enol	3400	U
91-58-7	2-Chloronaphthale	ene	3400	U
88-74-4	2-Nitroaniline		6800	U
208-96-8	Acenaphthylene		3400	U
131-11-3	Dimethylphthalate	9	3400	U
606-20-2	2,6-Dinitrotoluene		3400	U
83-32-9	Acenaphthene		3400	U
99-09-2	3-Nitroaniline		6800	U

SED-20	

SDG No.: 285-01 Lab Sample ID: 901-285-15 Lab File ID: 01F0611A.D Date Received: 10/12/01 Date Extracted: 10/15/01

Date Analyzed: 10/19/01 Dilution Factor: 1.0

### CONCENTRATION UNITS:

	CONCENTRA	HON DIVITS:	
CAS NO.	COMPOUND (ug/L or ug/K	g) UG/KG	Q
51-28-5	2,4-Dinitrophenol	6800	U
132-64-9	Dibenzofuran	3400	U
100-02-7	4-Nitrophenol	6800	U
121-14-2	2,4-Dinitrotoluene	3400	U
86-73-7	Fluorene	3400	U
7005-72-3	4-Chlorophenyl-phenylether	3400	U
84-66-2	Diethylphthalate	3400	U
100-01-6	4-Nitroaniline	6800	U
534-52-1	4,6-Dinitro-2-methylphenol	6800	U
86-30-6	n-Nitrosodiphenylamine	3400	U
101-55-3	4-Bromophenyl-phenylether	3400	U
118-74-1	Hexachlorobenzene	3400	U
87-86-5	Pentachlorophenol	6800	U
85-01 <i>-</i> 8	Phenanthrene	350	J
120-12-7	Anthracene	3400	U
86-74-8	Carbazole	3400	U
84-74-2	Di-n-butylphthalate	3400	U
206-44-0	Fluoranthene	1400	J
129-00-0	Pyrene	1100	J
85-68-7	Butylbenzylphthalate	3400	U
56-55-3	Benzo[a]anthracene	530	J
218-01-9	Chrysene	700	J
91-94-1	3,3'-Dichlorobenzidine	3400	U
117-81-7	bis(2-Ethylhexyl)phthalate	880	J
117-84-0	Di-n-octylphthalate	3400	U
205-99-2	Benzo[b]fluoranthene	1200	J
207-08-9	Benzo[k]fluoranthene	350	J
50-32-8	Benzo[a]pyrene	720	J
193-39-5	Indeno[1,2,3-cd]pyrene	530	J
53-70-3	Dibenz[a,h]anthracene	3400	U
191-24-2	Benzo[g,h,i]perylene	590	J



### LABORATORY ANALYTICAL REPORT

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### SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

### FIELD SAMPLE ID:

Site Name: Gastown Site Code: 915171 Matrix: (soil/water) SOIL Sample wt/vol: 12.58 (g/ml) G Level: (low/med) LOW Extraction: (SepF/Cont/Sonc/SPE/ASE) SONC % Moisture: 56 decanted:(Y/N) N Concentrated Extract Volume: 2000 Injection Volume: 2.0 pH: (uL) GPC Cleanup: (Y/N)

SED-22

SDG No.: 285-01

Lab Sample ID: 901-285-17

Lab File ID: 01F0616A.D

Date Received: 10/12/01

Date Extracted: 10/15/01

Date Analyzed: 10/19/01

Dilution Factor: 1.0

CAS NO.	COMPOUND (ug/L or ug/K	g) UG/KG	Q
51-28-5	2,4-Dinitrophenol	7200	U
132-64-9	Dibenzofuran	3600	U
100-02-7	4-Nitrophenol	7200	U
121-14-2	2,4-Dinitrotoluene	3600	U
86-73-7	Fluorene	3600	U
7005-72-3	4-Chlorophenyl-phenylether	3600	U
84-66-2	Diethylphthalate	3600	U
100-01-6	4-Nitroaniline	7200	U
534-52-1	4,6-Dinitro-2-methylphenol	7200	U
86-30-6	n-Nitrosodiphenylamine	3600	U
101-55-3	4-Bromophenyl-phenylether	3600	U
118-74-1	Hexachlorobenzene	3600	U
87-86-5	Pentachlorophenol	7200	U
85-01-8	Phenanthrene	370	J
120-12-7	Anthracene	3600	U
86-74-8	Carbazole	3600	U
84-74-2	Di-n-butylphthalate	3600	U
206-44-0	Fluoranthene	2100	J
129-00-0	Pyrene	2300	J
85-68-7	Butylbenzylphthalate	3600	U
56-55-3	Benzo[a]anthracene	1600	J
218-01-9	Chrysene	1700	J
91-94-1	3,3'-Dichlorobenzidine	3600	U
117-81-7	bis(2-Ethylhexyl)phthalate	3600	U
117-84-0	Di-n-octylphthalate	3600	U
205-99-2	Benzo[b]fluoranthene	1900	J
207-08-9	Benzo[k]fluoranthene	690	J
50-32-8	Benzo[a]pyrene	1400	J
193-39-5	Indeno[1,2,3-cd]pyrene	870	J
53-70-3	Dibenz[a,h]anthracene	3600	U
191-24-2	Benzo[g,h,i]perylene	910	J

CAS NO.	COMPOUND	(ug/L or ug/Kg)		
108-95-2	Phenol		3600	l
95-57-8	2-Chlorophenol		3600	Ī
111-44-4	bis(2-Chloroethy	I)ether	3600	Į

108-95-2	Phenol	3600	U
95-57-8	2-Chlorophenol	3600	U
111-44-4	bis(2-Chloroethyl)ether	3600	U
541-73-1	1,3-Dichlorobenzene	3600	U
106-46-7	1,4-Dichlorobenzene	3600	U
95-50-1	1,2-Dichlorobenzene	3600	U
100-51-6	Benzyl alcohol	3600	U
108-60-1	2,2'-Oxybis(1-chloropropane)	3600	U
95-48-7	2-Methylphenol	3600	U
67-72-1	Hexachloroethane	3600	U
621-64-7	N-Nitroso-di-n-propylamine	3600	U
106-44-5	4-Methylphenol	3600	U
98-95-3	Nitrobenzene	3600	· U
78-59-1	Isophorone	3600	U
88-75-5	2-Nitrophenol	3600	U
105-67-9	2,4-Dimethylphenol	3600	U
111-91-1	bis(2-Chloroethoxy)methane	3600	U
120-83-2	2,4-Dichlorophenol	3600	U
120-82-1	1,2,4-Trichlorobenzene	3600	U
91-20-3	Naphthalene	3600	U
106-47-8	4-Chloroaniline	3600	U
87-68-3	Hexachlorobutadiene	3600	U
59-50-7	4-Chloro-3-methylphenol	3600	U
91-57-6	2-Methylnaphthalene	3600	U
77-47-4	Hexachlorocyclopentadiene	3600	U
88-06-2	2,4,6-Trichlorophenol	3600	U
95-95-4	2,4,5-Trichlorophenol	3600	U
91-58-7	2-Chloronaphthalene	3600	U
88-74-4	2-Nitroaniline	7200	U
208-96-8	Acenaphthylene	3600	U
131-11-3	Dimethylphthalate	3600	U
606-20-2	2,6-Dinitrotoluene	3600	U
83-32-9	Acenaphthene	450	J
99-09-2	3-Nitroaniline	7200	U