

US EPA ARCHIVE DOCUMENT



**Goldman
Environmental
Consultants, Inc.**

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Superfund Records Center

SITE: Centre dale

BREAK: 17-1

OTHER: 27010

April 14, 1999

Mr. Ted Bzenas
USEPA
One Congress Street
Suite 1100
Mail Code HBR
Boston, Massachusetts 02114-2023

**Re: Subsurface Investigation
Brook Village
2072 Smith Street
North Providence, Rhode Island
GEC Project No. 911-9020**

Ted:

Enclosed please find copies of Goldman Environmental Consultants, Inc.'s (GEC's) boring logs for Brook Village. The locations of the borings/monitoring wells appear on the Site Plan I sent earlier this week.

I hope these are helpful.

Sincerely,
Goldman Environmental Consultants, Inc.


Heather A. Boyd
Environmental Scientist

GECGoldman Environmental
Consultants, Inc.**PROJECT**

WINN MGT.: Brook Village

911-8010

BORING LOG # B-1/GEC-1

Date 3/12/99

Sheet 1 of 1

Boring Contractor Earth Exploration**Boring Location** Northwest corner of front/handicap pk.lot

Cloudy, rain and

Foreman Matt Solitro**Ground Elev.** 100.04' @ PVC riser top **Weather** snow, 30s**GEC Engineer** Rick Kranes**Date Started** 3/12/99 **Date Completed** 3/12/99**KEY**

Cement seal 
Clean Backfill 
Bentonite seal 
Sand pack 
Slotted screen 

DRILLING METHOD:

Hollow-stem auger

Groundwater Readings

Measuring Point (M.P.): Top of PVC for survey

Date	Depth from M.P.	Stabilization Time
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03/12/99	6.57 ft.	1 hr.
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SAMPLER:

Type: Split Spoon (1-3/8")

Hammer: 140/300 lb. Fall: 30"

Depth	Cas. bl / ft.	SAMPLE				SAMPLE DESCRIPTION	Strata Change	WELL CONSTRUCTION	SCREENING PPM (FID)
		No.	Pen./Rec.	Depth	Blows/6"				
0						Auger through asphalt pvt. to 0.5 ft.			
1		B1S1	24/15	0.5-2.5	20	0-5 Tan, f-m sand, some m-c gravel.	FILL		<0.2 ppm
					39	5-12 Dark Tan, silt & f.sand, some rock fragments.			
2					34	12-15 Black, silt & f. sand, m. gravel, brick fragments			
3					35	no odor. Sample = FILL			
4									
5		B1S2	24/2	5-7	16	0-2 Tan, m-c sand, f-m gravel sample wet, no odor	SAND SILT and GRAVEL		0.2 ppm
6					7	Attempt sample w/ 3" splitspoon, no recovery.			
7					5	Auger to 10', cuttings only damp			
8									
9									
10		B1S3	24/6	10-12	19	0-6 Tan, m-c SAND, little to some f. gravel, some silt. No odor.	TILL		<0.2 ppm
11					45/60				
12		First 6" with 140# hammer 6-12" 45 blows with 140# hammer, spoon not advance. 60 blows with 300# hammer, spoon not advance.				Auger to 15'. Two feet of sand blows into auger stem. Collect sample, S-4. Sample gray-tan, m. sand and fine to m. gravel. No odor.			
13									
14									
15									
20									
25									

Install well to 14.5 ft. Groundwater at 6.57 ft.
Well construction: Schedule 40 2" I.D. PVC
with 10' of 0.010 slot screen, 4' riser,
Sand to 2', bentonite to 1', flush mounted roadbox.

<b style="font-size: 2em;">GEC	Goldman Environmental Consultants, Inc.	PROJECT		BORING LOG # <u>B-2/GEC-2</u>	
		WINN MGT.: Brook Village		Date <u>3/12/99</u>	
		# <u>911-8010</u>	Sheet <u>1</u> of <u>1</u>		

Boring Contractor <u>Earth Exploration</u>	Boring Location <u>North center of pk.lot #2 by UST</u>
Foreman <u>Matt Solitro</u>	Ground Elev. <u>99.41 ft. @ PVC riser top</u> Weather <u>Cloudy, windy, 30s</u>
GEC Engineer <u>Rick Kranes</u>	Date Started <u>3/11/99</u> Date Completed <u>3/11/99</u>

KEY Cement seal Clean Backfill Bentonite seal Sand pack Slotted screen	DRILLING METHOD: Hollow-stem auger SAMPLER: Type: <u>Split Spoon (1-3/8")</u> Hammer: <u>140/300 lb. Fall: 30"</u>	Groundwater Readings Measuring Point (M.P.): Top of PVC for survey <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Date</th> <th>Depth from M.P.</th> <th>Stabilization Time</th> </tr> <tr> <td>03/12/99</td> <td>7.45 ft.</td> <td>1 hr.</td> </tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </table>	Date	Depth from M.P.	Stabilization Time	03/12/99	7.45 ft.	1 hr.									
Date	Depth from M.P.	Stabilization Time															
03/12/99	7.45 ft.	1 hr.															

Depth	Cas. bl / ft.	SAMPLE				SAMPLE DESCRIPTION	Strata Change	WELL CONSTRUCTION	SCREENING PPM (FID)
		No.	Pen./Rec.	Depth	Blows/6"				
0						Auger through asphalt pvt. to 0.5 ft.			
1		B2S1	24/3	0.5-2.5	25	0-3 Tan, m.sand and m.gravel FILL.. Collect sample from auger cuttings	FILL		<0.2 ppm
2					36				
3					20				
4					40				
5									
5		B2S2	24/18	5-7	14	0-5.5 Gray, m.SAND, tr. gravel, tr. silt.	SAND and GRAVEL		0.6 ppm
6					40	5.5-18 Drk.gray-black, m-c SAND, c.gravel, some silt at top of spoon. No odor			
7					90				
8					50	Auger to 10', heavy grinding @ 8.5' Cuttings contain wood fragments, appear to be finished wood.			
9									
10		B2S3	24/12	10-12	40	0-12 Drk gray-tan, m-c SAND with m-cgravel and tr-some silt. Sample wet no sheen, no odor.	TILL		<0.2 ppm
11					50				
12					30	Sample collected with 300# splitspoon.			
13					45	Auger to 15' to set well. Drilling very blocky/difficult.			
14									
15									
20									
25									

Install well to 15 ft. Groundwater at 7.45 ft.
 Well construction: Schedule 40 2" I.D. PVC with 10' of 0.010 slot screen, 5' riser, Sand to 3', bentonite to 1.5', flush mounted roadbox.

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PROJECT

WINN MGT.: Brook Village

911-8010

BORING LOG # B-3/GEC-3

Date 3/15/99

Sheet 1 of 1

Boring Contractor Earth Exploration

Boring Location Northeast corner of resident pk.lot #1

Foreman Matt Solitro

Ground Elev. 99.29' @ PVC riser top **Weather** Cloudy, windy, 30s

GEC Engineer Rick Kranes

Date Started 3/11/99 **Date Completed** 3/11/99

KEY

Cement seal 
Clean Backfill 
Bentonite seal 
Sand pack 
Slotted screen 

DRILLING METHOD:

Hollow-stem auger

SAMPLER:

Type: Split Spoon (1-3/8")

Hammer: 140/300 lb. Fall: 30"

Groundwater Readings

Measuring Point (M.P.): Top of PVC for survey

Date **Depth from M.P.** **Stabilization Time**

03/12/99 7.05 ft. 1 hr.

Depth	Cas. bl / ft.	SAMPLE				SAMPLE DESCRIPTION	Strata Change	WELL CONSTRUCTION	SCREENING PPM (FID)		
		No.	Pen./Rec.	Depth	Blows/6"						
0						Auger through asphalt pvt. to 0.5'	FILL		<0.2 ppm		
1		B3S1	24/17	0.5-2.5	30	0-11.5 Tan, m-c sand, m-c gravel tr. silt.					
					50	Sample is FILL.					
2					25	11.5-17 Tan, F-m SAND,					
					31	Some lgt. rusty coloration bands					
3						No odor.	SAND and SILT			<0.2 ppm	
4											
5		B3S2	24/12	5-7	10	0-5.5 Tan, f-m SAND. Iron stain/rings throughout sample.					
6					23	5.5-12 Drk. brown, SILT, f-m sand					
					38	m. gravel, brick wedged in tip of splitspoon. No odor.					
7					23	Sample has appearance of former top soil.	TILL				insufficient sample for headspace
					0						
8		B3S3	24/2	8-10	24	No sample with 2" splitspoon. Sample obtained with 3" spoon.					
9					39	0-2 Black, M-c SAND & c. gravel					
					38	Wood plug in end of spoon.					
10		B3S4	24/11.5	10-12	12	End of spoon wet. No odor.					<0.2 ppm
11					16	0-11.5 Gray, M-c SAND and m-c gravel, wet, black stain on gravel @ 0-2". No odor.					
					12						
12					14						
	Use 300# hammer for 10-12 ft interval.										
13											
14											
15											

Use 300# hammer for 10-12 ft interval.

Install well to 15 ft. Groundwater at 7.05 ft.
Well construction: Schedule 40 2" I.D. PVC with 10' of 0.010 slot screen, 5' riser, Sand to 3', bentonite to 1.5', flush mounted roadbox.

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WINN MGT.: Brook Village

911-8010

BORING LOG # B-4/GEC-4

Date 3/15/99

Sheet 1 of 1

Boring Contractor Earth Exploration**Boring Location** North center of resident pk.lot #2**Foreman** Matt Solitro**Ground Elev.** 97.96' @ PVC riser top **Weather** Cloudy, windy, 30s**GEC Engineer** Rick Kranes**Date Started** 3/11/99**Date Completed** 3/11/99**KEY**

Cement seal



Clean Backfill



Bentonite seal



Sand pack



Slotted screen

**DRILLING METHOD:**

Hollow-stem auger

Groundwater Readings

Measuring Point (M.P.): Top of PVC for survey

Date	Depth from M.P.	Stabilization Time
03/12/99	6.35 ft.	1 day.

SAMPLER:

Type: Split Spoon (1-3/8")

Hammer: 140/300 lb. Fall: 30"

Depth	Cas. bl / ft.	SAMPLE				SAMPLE DESCRIPTION	Strata Change	WELL CONSTRUCTION	SCREENING PPM (FID)
		No.	Pen./Rec.	Depth	Blows/6"				
0						Auger through asphalt pvt. to 0.5'			
1		B4S1	24/11	0.5-2.5	9	0-5.5 Tan, F-c Sand w/ m-c gravel	FILL		<0.2 ppm
					9	5.5-10 Olive tan, f.sand and silt			
					9	tr. c-sand			
2					10	10-11 Drk brown, SILT & m.sand, no odor.			
3									
4									
5		B4S2	24/18	5-7	20	0-5 Drk brown-black coarse FILL w/ brick fragments and angular gravel.	SAND and SILT		<0.2 ppm
					13	5-13.5 Blk-bm, SILT and f.sand,			
6					6	13.5-14.5 Brn. SILT and f.sand w/ tr. root matter. No odor.			
7					5	Appears to be former top soil.			
8		B4S3	24/9	8-10	10	14.5-18 Drk olive tan, f.silt & f.sand	TILL		<0.2 ppm
					20	0-9 Drk. olive, m-c sand and c. gravel and broken rocks. No odor.			
9					50				
10						Use 300# hammer for 8-10 ft interval.			
11									
12									
13									
14									
15									
20									
25									

Install well to 15 ft. Groundwater at 6.35 ft.
Well construction: Schedule 40 2" I.D. PVC
with 10' of 0.010 slot screen, 5' riser,
Sand to 3', bentonite to 1.5', flush mounted
roadbox.

GEC <i>Goldman Environmental Consultants, Inc.</i>	PROJECT		BORING LOG # <u>B-5/GEC-5</u>	
	WINN MGT.: Brook Village		Date <u>3/15/99</u>	
	# <u>911-8010</u>	Sheet <u>1</u> of <u>1</u>		

Boring Contractor <u>Earth Exploration</u>	Boring Location <u>Southeast corner of resident pk.lot #2</u>	
Foreman <u>Matt Solitro</u>	Ground Elev. <u>99.17' @ PVC riser top</u>	Weather <u>Cloudy, windy, 30s</u>
GEC Engineer <u>Rick Kranes</u>	Date Started <u>3/11/99</u>	Date Completed <u>3/11/99</u>

KEY Cement seal Clean Backfill Bentonite seal Sand pack Slotted screen	DRILLING METHOD: Hollow-stem auger SAMPLER: Type: <u>Split Spoon (1-3/8")</u> Hammer: <u>300</u> lb. Fall: <u>30"</u>	Groundwater Readings Measuring Point (M.P.): <u>Top of PVC for survey</u> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Date</th> <th>Depth from M.P.</th> <th>Stabilization Time</th> </tr> <tr> <td>03/12/99</td> <td>7.23 ft.</td> <td>1 day.</td> </tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </table>	Date	Depth from M.P.	Stabilization Time	03/12/99	7.23 ft.	1 day.									
Date	Depth from M.P.	Stabilization Time															
03/12/99	7.23 ft.	1 day.															

Depth	Cas. bl / ft.	SAMPLE				SAMPLE DESCRIPTION	Strata Change	WELL CONSTRUCTION	SCREENING PPM (FID)
		No.	Pen./Rec.	Depth	Blows/6"				
0						Auger through asphalt pvt. to 0.5'			
1		B5S1	24/8	0.5-2.5	15	0-8 Tan, f-c sand, some m-c gravel. Sample is FILL	FILL		<0.2 ppm
2					5				
3					7				
4					5				
5		B5S2	24/22	5-7	6	0-7.5 Variable colored FILL; crushed stone with layers of f. sand, dry, no odor			<0.2 ppm
6					22	7.5-22 Black w. Tan lenses, SILT and f. sand, little gravel & ash?, no sig. odor, dry.			
7					13				
8					8				
8		B5S3	24/20	8-10	1	0-3 Black, SILT & f.sand tr. c.gravel	SAND and SILT		<0.2 ppm
9					1	3-7 Drk. olive, SILT & f. sand, tr. c. sand			
10					10	7-11 Olive, SILT & f-m sand			
10		B5S4	24/19	10-12	15	11-16 Broken rock			
11					14	16-20 Rusty orange, m-c sand Wet @ tip of spiltspoon. No odor.			
11					24	0-3 Mottled blk & tan SILT and fine sand, tr. m. gravel.	TILL		<0.2 ppm
12					27	3-15.5 Black, M-c SAND, some f-m gravel. No odor.			
12					24	Spoon length wet. Auger to 15', install well.			
13									
14									
15									
20									
25									

Install well to 15 ft. Groundwater at 7.23 ft.
 Well construction: Schedule 40 2" I.D. PVC with 10' of 0.010 slot screen, 5' riser, Sand to 3', bentonite to 1.5', flush mounted roadbox.

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WINN MGT.: Brook Village

911-8010

BORING LOG # B-6/GEC-6

Date 3/15/99

Sheet 1 of 1

Boring Contractor Earth Exploration**Boring Location** Southeast corner of Visitor's pk.lot**Foreman** Matt Solitro**Ground Elev.** 95.31 @ top of PVC riser **Weather** Cloudy, windy,
snow and sleet, 30s**GEC Engineer** Rick Kranes**Date Started** 3/12/99 **Date Completed** 3/12/99**KEY**

Cement seal



Clean Backfill



Bentonite seal



Sand pack



Slotted screen

**DRILLING METHOD:**

Hollow-stem auger

Groundwater Readings

Measuring Point (M.P.): Top of PVC for survey

Date	Depth from M.P.	Stabilization Time
03/12/99	2.64 ft.	1 hr.

SAMPLER:

Type: Split Spoon (1-3/8")

Hammer: 300 lb. Fall: 30"

Depth	Cas. bl / ft.	SAMPLE				SAMPLE DESCRIPTION	Strata Change	WELL CONSTRUCTION	SCREENING PPM (FID)
		No.	Pen./Rec.	Depth	Blows/6"				
0						Auger through asphalt pvt. to 0.5'			
1		B6S1	24/17	0.5-2.5	9	0-3.5 Tan, F-m Sand w/ m-c gravel tr. silt	FILL		28 ppm
					9	3.5-5.5 Wood			
2					9	5.5-11 Concrete			
					10	11-17 Choc. brown, SILT & f.sand, Possible former top soil (11-17).	SAND and SILT		5.0 ppm
3		B6S2	24/18	2.5-4.5	6	0-9 Drk. olive-black, c. weathered granite cobble, wet.			
					5	9-18 Choc. brown to black SILT and f. sand, no odor Possible former wetland deposit			
4					5		TILL		1.2 ppm
		B6S3	24/12	4.5-6.5	6	0-12 Gray, coarse weathered granite, Black layer @ ~9-10'			
5					12				
6					11				<0.2 ppm
					11				
7									
8									
9									
10		B6S4	24/12	10-12	13	0-12 Tan, m-c SAND and m. gravel, cobble to 2"			
					22				
11					17				
12					14				
13									
14									
15									
20									
25									

Install well to 11 ft. Groundwater at 2.64ft.
Well construction: Schedule 40 2" I.D. PVC with 10' of 0.010 slot screen, 1' riser, Sand to 3', bentonite to 1', flush mounted roadbox.

Install well to 11 ft. Groundwater at 2.64ft.
Well construction: Schedule 40 2" I.D. PVC
with 10' of 0.010 slot screen, 1' riser,
Sand to 3', bentonite to 1', flush mounted
roadbox.

GEC**Goldman Environmental
Consultants, Inc.****PROJECT**

WINN MGT.: Brook Village

911-8010

BORING LOG # B-7/GEC-7**Date** 3/15/99**Sheet** 1 of 1**Boring Contractor** Earth Exploration**Boring Location** Southeast corner of Visitor's pk.lot**Foreman** Matt Solitro**Ground Elev.** 94.57 @ top of PVC riser **Weather** snow and sleet, 30s**GEC Engineer** Rick Kranes**Date Started** 3/12/99**Date Completed** 3/12/99**KEY**

Cement seal



Clean Backfill



Bentonite seal



Sand pack



Slotted screen

**DRILLING METHOD:**

Hollow-stem auger

SAMPLER:**Type:** Split Spoon (1-3/8")**Hammer:** 300 lb. Fall: 30"**Groundwater Readings**

Measuring Point (M.P.): Top of PVC for survey

Date **Depth from M.P.** **Stabilization Time**

03/12/99 3.41 ft. 1 hr.

Depth	Cas. bl / ft.	SAMPLE				SAMPLE DESCRIPTION	Strata Change	WELL CONSTRUCTION	SCREENING PPM (FID)
		No.	Pen./Rec.	Depth	Blows/6"				
0						Auger through asphalt pvt. to 0.5'			
1		B7S1	24/15	0.5-2.5	6	0-2 Tan, m-c SAND, some gravel	FILL		<0.2 ppm
2					12	2-6.5 Drk. choc. bm, SILT & f. sand some m. gravel, rounded			
3					23	6.5-11 Broken concrete, angular			
4		B7S2	24/15	2.5-4.5	7	11-15 Black SILT, tr. m. gravel.	SAND and SILT		<0.2 ppm
5					5	0-4 Olive-tan, f-m SAND, little to some m-c gravel, tr. coal(?)			
6					5	4-7 Choc. bm, f-m SAND & silt f-m gravel, shiny angular grains			
7					13	@ 6.5" (coal ash?)			
8		B7S3	24/15.5	4.5-6.5	6	7-9 Olive, f-m SAND w/ thin bands of rust staining.			
9					7	9-15 Choc. bm, SILT & f.sand			
10					7	0-15.5 Banded gray/black & tan, m-c SAND, angular			
11					9	(Rock appears weathered) Wet at tip of spoon			
12									
13									
14									
15									
20									
25									

Install well to 12 ft. Groundwater at 3.411ft.
Well construction: Schedule 40 2" I.D. PVC
with 10' of 0.010 slot screen, 2' riser,
Sand to 3', bentonite to 1', flush mounted
roadbox.