GEC
Goldman
Environmental
Consultants, Inc.
60 Brooks Drive
Braintree, MA 02184
781-356-9140
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Centredale OU
17.7
Doc # 10942

August 11, 1999

Ms. Anna Krasko
Senior Regional Project Manager
USEPA
One Congress Street
Suite 1100
Boston, Massachusetts 02114-2023

By facsimile [(617) 918-1291] and U.S. Mail

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

Dear Ms. Krasko:

Following are boring logs and groundwater elevation data for the Brook Village property, as we discussed.

I apologize for the delay - things are hectic over here!!

Let me know if you need any thing else.

Sincerely,
Goldman Environmental Consultants, Inc.

Heather A. Boyd
Environmental Scientist

GEC *Goldman Environmental Consultants, Inc.*

PROJECT	BORING LOG # B-1/GEC-1
WINN MGT.: Brook Village	Date 3/12/99
# 911-8010	Sheet 1 of 1

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

Foreman Matt Solitro **Ground Elev.** 100.04' @ PVC riser top **Weather** Cloudy, rain and 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

SAMPLER:

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

Hammer: 140/300 lb. **Fall:** 30"

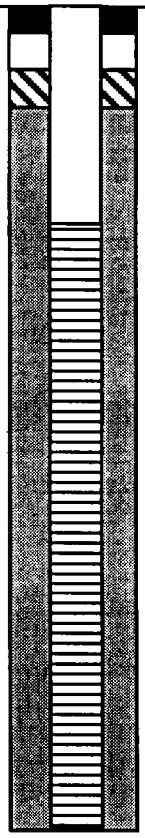
Groundwater Readings

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

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

Depth	Cas. bl / ft.	SAMPLE No.	Pen./Rec.	Depth	Blows/6"	SAMPLE DESCRIPTION	Strata Change	WELL CONSTRUCTION	SCREENING PPM (FID)
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.			
					39				
					34	5-12 Dark Tan, silt & f.sand, some rock fragments.	FILL		
2					35				<0.2 ppm
3						12-15 Black, silt & f. sand, m. gravel, brick fragments 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			
6					7	Attempt sample w/ 3" splitspoon, no recovery.			0.2 ppm
					3		SAND SILT and GRAVEL		
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.			<0.2 ppm
11					45/60				
12						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.	TILL		
13									
14									<0.2 ppm
15									
20									
25									

First 6" with 140# hammer
6-12" 45 blows with 140# hammer, spoon not advance.
60 blows with 300# hammer, spoon not advance.



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.

GEC *Goldman Environmental Consultants, Inc.*

PROJECT	BORING LOG # B-2/GEC-2
WINN MGT.: Brook Village	Date 3/12/99
# 911-8010	Sheet 1 of 1

Boring Contractor Earth Exploration **Boring Location** North center of pk.lot #2 by UST

Foreman Matt Solitro **Ground Elev.** 99.41 ft. @ 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")

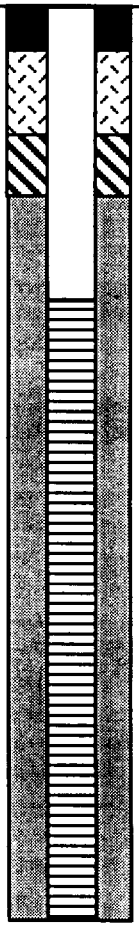
Hammer: 140/300 lb. **Fall:** 30"

Groundwater Readings

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

Date	Depth from M.P.	Stabilization Time
03/12/99	7.45 ft.	1 hr.

Depth	Cas. bl / ft.	SAMPLE No.	Pen./Rec.	Depth	Blows/6"	SAMPLE DESCRIPTION	Strata Change	WELL CONSTRUCTION	SCREENING PPM (FID)
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		
					36				
2					20				<0.2 ppm
					40				
3									
4									
5		B2S2	24/18	5-7	14	0-5.5 Gray, m.SAND, tr. gravel, tr. silt.	SAND and GRAVEL		
6					40	5.5-18 Drk.gray-black, m-c SAND, c.gravel, some silt at top of spoon. No odor			0.6 ppm
					90				
7					50				
						Auger to 10', heavy grinding @ 8.5' Cuttings contain wood fragments, appear to be finished wood.			
8									
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				
					30				
12					45	Sample collected with 300# splitspoon.			
13						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.

GEC *Goldman Environmental Consultants, Inc.*

PROJECT	BORING LOG # B-3/GEC-3
WINN MGT.: Brook Village	Date 3/15/99
# 911-8010	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"

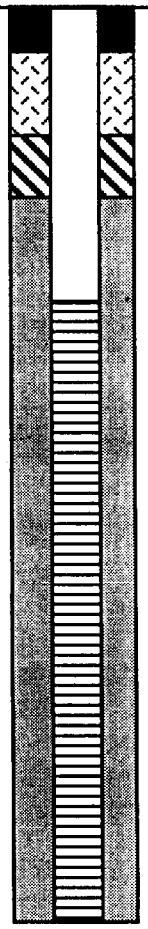
Groundwater Readings

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 No.	Pen./Rec.	Depth	Blows/6"	SAMPLE DESCRIPTION	Strata Change	WELL CONSTRUCTION	SCREENING PPM (FID)
0						Auger through asphalt pvt. to 0.5'			
1		B3S1	24/17	0.5-2.5	30	0-11.5 Tan, m-c sand, m-c gravel tr. silt. Sample is FILL.	FILL		
					50				
					25				
2					31	11.5-17 Tan, F-m SAND, Some lgt. rusty coloration bands No odor.			<0.2 ppm
3									
4									
5		B3S2	24/12	5-7	10	0-5.5 Tan, f-m SAND. Iron stainrings throughout sample.	SAND and SILT		
6					23				<0.2 ppm
					38	5.5-12 Drk. brown, SILT, f-m sand m.gravel, brick wedged in tip of splitspoon. No odor.			
7					23				
					0	Sample has appearance of former top soil.			
8		B3S3	24/2	8-10	24	No sample with 2" splitspoon. Sample obtained with 3" spoon.			insufficient sample for headspace
9					39	0-2 Black, M-c SAND & c.gravel Wood plug in end of spoon.	TILL		
					38	End of spoon wet. No odor.			
					89				
10		B3S4	24/11.5	10-12	12	0-11.5 Gray, M-c SAND,and m-c gravel, wet, black stain on gravel @ 0-2". No odor.			<0.2 ppm
11					16				
					12				
12					14				
13									
14									
15									
20									
25									

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.

GEC *Goldman Environmental Consultants, Inc.*

PROJECT	BORING LOG # B-4/GEC-4
WINN MGT.: Brook Village	Date 3/15/99
# 911-8010	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

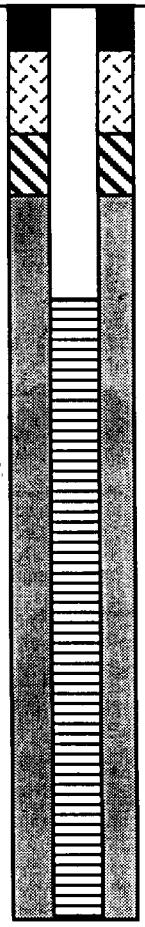
DRILLING METHOD: Hollow-stem auger

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	6.35 ft.	1 day.

Depth	Cas. bl / ft.	SAMPLE No.	Pen./Rec.	Depth	Blows/6"	SAMPLE DESCRIPTION	Strata Change	WELL CONSTRUCTION	SCREENING PPM (FID)
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			
					9	5.5-10 Olive tan, f.sand and silt tr. c-sand	FILL		<0.2 ppm
					9				
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.			
					13				
6					6	5-13.5 Blk-brn, SILT and f.sand,			<0.2 ppm
					5	13.5-14.5 Brn. SILT and f.sand w/ tr. root matter. No odor. Appears to be former top soil.	SAND and SILT		
7						14.5-18 Drk olive tan, f.silt & f.sand			
8		B4S3	24/9	8-10	10				
					20	0-9 Drk. olive, m-c sand and c. gravel and broken rocks. No odor.			
9		Spoon refusal @ 16" penetration			50		TILL		<0.2 ppm
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 *Goldman Environmental Consultants, Inc.*

PROJECT	BORING LOG # B-5/GEC-5
WINN MGT.: Brook Village	Date 3/15/99
# 911-8010	Sheet 1 of 1

Boring Contractor Earth Exploration **Boring Location** Southeast corner of resident pk.lot #2

Foreman Matt Solitro **Ground Elev.** 99.17' @ 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")

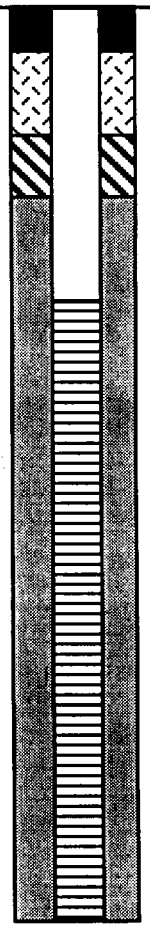
Hammer: 300 lb. **Fall:** 30"

Groundwater Readings

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

Date	Depth from M.P.	Stabilization Time
03/12/99	7.23 ft.	1 day.

Depth	Cas. bl / ft.	SAMPLE No.	Pen./Rec.	Depth	Blows/6"	SAMPLE DESCRIPTION	Strata Change	WELL CONSTRUCTION	SCREENING PPM (FID)
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
					5				
2					7				
					5				
3									
4									
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				
					13	7.5-22 Black w. Tan lenses, SILT and f. sand, little gravel & ash?, no sig. odor, dry.			
7					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	7-11 Olive, SILT & f-m sand			
					15	11-16 Broken rock			
10		B5S4	24/19	10-12	14	16-20 Rusty orange, m-c sand Wet @ tip of splitspoon. No odor.			
11					24	0-3 Mottled blk & tan SILT and fine sand, tr. m. gravel.	TILL		<0.2 ppm
					27	3-15.5 Black, M-c SAND, some f-m gravel. No odor.			
12					24	Spoon length wet.			
13						Auger to 15', install well.			
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.

GEC *Goldman Environmental Consultants, Inc.*

PROJECT
WINN MGT.: Brook Village
911-8010

BORING LOG # B-6/GEC-6
Date 3/15/99
Sheet 1 of 1

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

KEY
Cement seal
Clean Backfill
Bentonite seal
Sand pack
Slotted screen

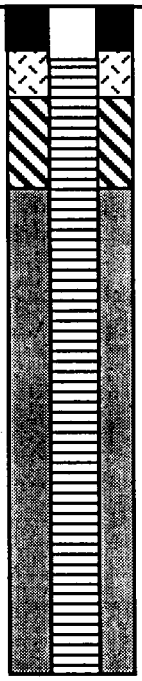
DRILLING METHOD:
Hollow-stem auger

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	2.64 ft.	1 hr.

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

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 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

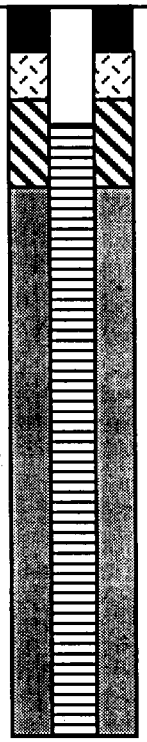
DRILLING METHOD:
Hollow-stem auger

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 No.	Pen./Rec.	Depth	Blows/6"	SAMPLE DESCRIPTION	Strata Change	WELL CONSTRUCTION	SCREENING PPM (FID)
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			
					12	2-6.5 Drk. choc. brn, SILT & f. sand some m. gravel, rounded	FILL		<0.2 ppm
2					23	6.5-11 Broken concrete, angular			
					29	11-15 Black SILT, tr. m. gravel.			
3		B7S2	24/15	2.5-4.5	7	0-4 Olive-tan, f-m SAND, little to some m-c gravel, tr. coal(?)			<0.2 ppm
					5	4-7 Choc. brn, f-m SAND & silt f-m gravel, shiney angular grains @ 6.5" (coal ash?)			
4					5				
					13	7-9 Olive, f-m SAND w/ thin bands of rust staining.	SAND and SILT		
5		B7S3	24/15.5	4.5-6.5	6	9-15 Choc. brn, SILT & f.sand			<0.2 ppm
					7				
6					7	0-15.5 Banded gray/black & tan, m-c SAND, angular (Rock appears weathered) Wet at tip of spoon			
					9				
7									
8									
9									
10		B7S4	24/16	10-12	19	0-9 Gray-tan, m.SAND, tr-some f.sand & silt			<0.2 ppm
					19	9-14 Tan, m-cSAND, angular tr. semi-angular gravel			
11					21	14-16 Gray-tan, SILT, f.sand, m-c gravel, compact (basal till?)			
					21				
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.

Table _
Groundwater Elevation Measurements
Brook Village
2072 Smith Street
North Providence, Rhode Island
(units, feet)

Well Number	Survey Date	Depth to Water	Measuring Point Elevation	Groundwater Elevation
GEC-1	03/22/99	6.57	100.04	93.47
GEC-2	03/22/99	7.45	99.41	91.96
GEC-3	03/22/99	7.05	99.29	92.24
GEC-4	03/22/99	6.35	97.96	91.61
GEC-5	03/22/99	7.23	99.17	91.94
GEC-6	03/22/99	2.64	95.31	92.67
GEC-7	03/22/99	3.41	94.57	91.16

Notes:

1. Assumed elevation of 100' established at the bolt on the largest UST cover (fill) closest to the River
2. Measuring point is the top of the PVC riser pipe for each well.

Prepared by HB
Reviewed by SWB
Last Revised 3/31/99