ecology and environment, inc. DRILLING AND SAMPLE LOG Sheet 1 of 2

VV 3

Project: Resource Recovery
Boring Contr.: Boyles Bros.
Boring Method: Hollow stem auger
Logged by: Randy Holtz / Jim Braddock
Date Completed: 8/2/85

Job No: TDD R-10-8410-14
Boring No: EE-1
Location: 75'11" SE of JUB Control well
Surface Elev: 418.9 ft Datum: AMSL
Casing Elev: 421.1 ft Datum: AMSL
Total Depth: 88 ft. Datum: below top of casing
Groundwater: 363.6 ft. AMSL

WELL DETAILS	DEPTH (Feet)	SYMBOL	LITHOLOGICAL DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	REMARKS
2			SAND with SILT - fine-to very fine-grained, well sorted, subrounded, light gray and frosted; trace surface loam, DRY. SAND - 100%, fine-to medium-grained, well-sorted, subangular to subrounded, light to dark brown and clear to frosted.			
10 4			SAND - 100%, fine-to medium-grained, well to moderately well sorted, subangular to subrounded, light olive brown and clear to frosted; Hard cemented sand layer 19-20'.			
20 8			SAND - 100%, fine-to medium-grained, well to moderately well sorted, pale to dark yellowish brown.			
35 14			SAND - 100%, fine-to very fine-grained, moderately well to well sorted, subrounded, clear to light olive gray; Trace silt, trace pebbles (3-10 mm) scattered throughout.			
40 19			SAND - 100%, medium-to fine-grained, moderately well sorted, subrounded to subangular, frosted and dark yellowish brown. Trace pebbles.			
50						

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ecology and environment, inc. DRILLING AND SAMPLE LOG Sheet 2 of 2

Project: Resource Recovery Job No: R10-8410-14 Boring No: EE-1

WELL DETAILS	DEPTH (Feet)	SYMBOL	LITHOLOGICAL DESCRIPTION	SAMPLE NO. ~~NO.~~	~~TYPE~~	~~REMARKS~~ SAMPLE TYPE
50			SAND - 100%, medium to coarse-grained, poorly sorted, ~~to~~ angular, frosted to moderate olive brown, moist.	85310396 JA 544 MJA210		SOIL COMPOSITE
55			GRAVELLY SAND - Sand - 70%, medium to very coarse-grained, poorly-sorted, subrounded, dark grey to black and frosted, some mica, moist.			
60			SAND — Medium to coarse grain, dark olive brown to dark gray.			
66			SANDY GRAVEL - Gravel 60%, coarse-grained, poorly sorted, subrounded, grey to black; Sand - 40%, medium to very coarse, poorly sorted, subrounded, dark grey to black, frosted, Feldspar, mica, quartz. Large cobbles in lower portion.			
88			TOTAL DEPTH			

ecology and environment, inc. DRILLING AND SAMPLE LOG Sheet 2 of 2

Project: Resource Recovery Job No: R10-8410-14 Boring No: EE-1

WELL DETAILS	DEPTH ~~50~~	SYMBOL		LITHOLOGICAL DESCRIPTION	SAMPLE NUMBER	SAMPLE TYPE
	50--			SAND - 100%, medium- to coarse-grained, poorly sorted to angular, frosted to moderate olive brown, moist.		
	~~55~~ 55--			GRAVELLY SAND - Sand, 70%, medium- to very coarse-grained, poorly sorted, subrounded, dark gray to black and frosted, some mica, moist.		
	~~60~~ 60--			SAND - Medium- to coarse-grained, dark olive brown to dark gray.		
	66--			SANDY GRAVEL - Gravel. 60%, coarse-grained, poorly sorted, subrounded, gray to black. Sand, 40%, medium- to very coarse-grained, poorly sorted, subrounded, dark gray to black, frosted. Feldspar, mica, quartz. Large cobbles in lower part		
					85320877 JA554 MJA221	Aqueous Grab
	--88--			Caps ~~Total Depth - 88 ft~~. TOTAL DEPTH - 88 ft.		

ecology and environment, inc. DRILLING AND SAMPLE LOG Sheet 1 of 2

Project: Resource Recovery
Boring Contr.: Boyle's Bros.
Boring Method: Hollow Stem Auger
Logged by: Randy Holtz / Jim Breddock
Date Completed: 8/6/85

Job No: TDD R10-8410-14 Boring No: EE2
Location: 30' SE of Area A
Surface Elev: 416.8 ft Datum: AMSL
Casing Elev: 419.2 ft Datum: AMSL
Total Depth: 86" ft Datum: below top of casing.
Groundwater: 348.8 ft AMSL

WELL DETAILS	DEPTH (Feet)	SYMBOL	LITHOLOGICAL DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	REMARKS
	2		SILTY SAND. Sand - 80%, fine-to very fine-grained, well-sorted, subrounded, light gray, and frosted; Silt - 20%, [redacted] dry.	85 [illegible]		
CEMENT 2 INCH SS CASING	10		SILTY SAND. Sand - 80%, fine-grained, well-sorted, subrounded, frosted and light to dark brown; Silt - 20%, light to dark brown, semi-dry; Micaceous flakes mixed in. Garbage hit at 2', 1' layer of cemented sand at 8'.			
BENTONITE	13		SAND - 100%, fine-grained, well-to moderately well-sorted, subrounded, frosted and light to dark brown; Silt - 20%, light to dark brown; ~~semi-~~ Micaceous flakes intermixed. Garbage at 2', 1' layer of cemented sand at 8'.	85320882 JA 546 MJA 212		Soil Composite
BENTONITE SLURRY				85320883 JA 547 MJA 213		Soil Composite
	40		SAND - 100%, coarse-to medium-grained, poorly-sorted, subrounded to subangular, frosted and dusky olive brown to dark olive gray.			

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ecology and environment, inc. DRILLING AND SAMPLE LOG Sheet 2 of 2

Project: Resource Recovery Job No: R10-8410-14 Boring No: EE2

WELL DETAILS	DEPTH (Feet)	SYMBOL	LITHOLOGICAL DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	REMARKS
BENTONITE SLURRY 2 INCH SS CASING	60		SANDY GRAVEL. Gravel - poorly-sorted, subangular to angular, light gray and frosted; Sand - coarse-to very coarse-GRAINED, Subangular above 55', subrounded below 55', ~~mostly~~ dark gray and black, some frosted.			
FINE SAND CAP GRAVEL PACK	66		GRAVELLY SAND. Gravel - poorly sorted, angular, ~~mostly~~ dark gray to black; WITH SAND AS ABOVE			
	86					
	88		TOTAL DEPTH = 88 FEET			Cobbles and pebbles at 88'.

ecology and environment, inc. DRILLING AND SAMPLE LOG

Project: Resource Recovery **Job No:** R10-8410-14 **Boring No:** EE-2

WELL DETAILS	DEPTH 50'	SYMBOL		LITHOLOGICAL DESCRIPTION	SAMPLE NUMBER	SAMPLE TYPE
	60			GRAVELLY SAND. Gravel - poorly sorted, angular, mostly dark gray to black, some frosted. Water at 65'.		
	86				85320885 JA572 MJA249	Aqueous grab
	88			TOTAL DEPTH ~~BOTTOM OF BORING~~ - 88'.		

ecology and environment, inc. DRILLING AND SAMPLE LOG Sheet 1 of 2

Project: Resource Recovery
Boring Contr.: Boyles Bros.
Boring Method: Hollow Stem Auger
Logged by: Randy Holtz / Jim Braddock
Date Completed: 8/4/85

Job No: TDD R10-8410-14
Location: 30' West of Area A
Surface Elev: 415.1 ft Datum: AMSL
Casing Elev: 417.2 ft Datum: AMSL
Total Depth: 87 ft Datum: below top of casing
Groundwater: 353.1 ft. AMSL

Boring No: EE-3

WELL DETAILS	DEPTH (Feet)	SYMBOL		LITHOLOGICAL DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	REMARKS
0				SILTY SAND. Sand-80%, fine-grained, well-sorted, subrounded to subangular, light gray and opaque, mica granules; Silt-20%, light gray, dry.			
2				SAND with SILT. Sand-90%, fine-grained, well-sorted, subangular to subrounded, frosted and light to dark brown; Silt-10%, semi-dry. large amounts of garbage (wood, cans, plastic, etc.) from 3'-17'			
				100%			
10				SAND - fine-to medium-grained, moderately well-sorted, subangular to angular, dusky yellowish brown and frosted, mica flakes. ~~semi-dry~~.			
17				SAND - 100%, medium-grained, moderately well sorted, subangular to subrounded, dark olive brown, trace gravel.			
20				SAND - 100%, fine-grained, well- to moderately well-sorted, ~~moderately~~ frosted, some moderate to dark olive brown; Trace fine pebbles (4-10 mm) at 25' and 38'.			
40				GRAVELLY SAND — poorly sorted, angular to subangular, dark gray, and frosted. ~~Salt and pepper appearance.~~			
50							

ecology and environment, inc. DRILLING AND SAMPLE LOG Sheet 2 of 2

USE 2nd form

Project: Resource Recovery
Job No: R10-8410-14
Boring No: EE3
Boring Contr.:
Location:
Boring Method:
Surface Elev: Datum:
Logged by:
Casing Elev: Datum:
Date Completed:
Total Depth: Datum:
Groundwater:

WELL DETAILS	DEPTH (Feet)	SYMBOL	LITHOLOGICAL DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	REMARKS
50			GRAVELLY SAND - coarse-GRAINED, poorly sorted, subrounded to subangular, dark grey to black, and frosted, Gravel approx 3 mm size, small pebbles (10-15mm) at 57', flowing sands at 64'.			
87						

ecology and environment, inc. DRILLING AND SAMPLE LOG Sheet 1 of 2

Project: Resource Recovery
Boring Contr.: Boyles Bros.
Boring Method: Hollow Stem auger
Logged by: Randy Holtz / Jim Braddock
Date Completed: 7/17/85

Job No: TDD R10-8410-14 Boring No: EE 4
Location: 30' SE of Area B
Surface Elev: 397.6 ft Datum: AMSL
Casing Elev: 396.4 ft Datum: AMSL
Total Depth: 72 ft Datum: below top of casing
Groundwater: 353.4 ft AMSL

WELL DETAILS	DEPTH (Feet)	SYMBOL	LITHOLOGICAL DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	REMARKS
		SM	SILTY SAND. Sand - 80%, very fine-grained, well-sorted, subangular to subrounded, light grey, frosted, and clear. ~~very dry~~			Surficial loam from 0'-1'. Eolian Sand.
	2	SW	SAND - 100%, fine to medium-grained, moderately well-sorted, subangular, frosted and dark yellowish brown; ~~Feldspar, mica, hornblende, or basalt.~~ Cemented sand 13'-14', increasingly coarser below 14'.	85290825 JA 562 MJA 231		
	18	SP	SAND - 100%, coarse-grained, poorly-sorted, subangular medium olive grey, frosted, trace gravel and 5-8mm pebbles.			
	20		SAND with GRAVEL. Sand - 90%, medium to coarse grained, moderately poorly to poorly sorted, angular to subangular, dark yellowish brown and frosted; Gravel - 10%, coarse-grained, dark gray or black. Gravel found between 26'-30'.	85290826 JA 563 MJA 230		
	30		~~SANDY GRAVEL - moderately poorly to poorly sorted, angular to subrounded, semi-dry, light to moderate brown, and frosted. Gravel found between 26'-30'.~~			OK
	35		GRAVELLY SAND. Sand - 80%, poorly sorted, angular to subangular, olive gray to dark gray, and frosted; Gravel - 20%, coarse, subangular, olive gray to dark gray			
	45		GRAVEL - 100%, coarse to very coarse, poorly sorted, ~~flowing~~, dark gray to black, ~~and frosted~~. Trace sand, Trace pebbles and small cobbles at 60'.			

ecology and environment, inc. DRILLING AND SAMPLE LOG Sheet 2 of 2

Project: Resource Recovery Job No: TDD R10-8410-14 Boring No: EE 4

WELL DETAILS	DEPTH (Feet)	SYMBOL	LITHOLOGICAL DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	REMARKS
	50		GRAVEL - cont'd			
				8528 1029 JA569 MJA 234		
	72		TOTAL DEPTH			

ecology and environment, inc. DRILLING AND SAMPLE LOG Sheet 2 of 2

Project: Resource Recovery Job No: R10-8410-14 Boring No: EE 6

WELL DETAILS		DEPTH (Feet)	SYMBOL	LITHOLOGICAL DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	REMARKS
		58	GC	SANDY GRAVEL with CLAY. Gravel - coarse to very coarse, subangular, dark grey to black. SAND - coarse, poorly sorted, subangular to subrounded, frosted and dark olive grey. Clay - silty clay in occasional seams. - Small granules and pebbles at 58'			
BENTONITE SLURRY		60	SP	GRAVELLY SAND with PEBBLES - coarse grained, poorly sorted, subangular to angular, dark grey to black, and frosted Pebbles - 10-20 mm.			
	2" S.S CASING						
FINE SAND		72½					
		75	GP	GRAVEL with SAND - very coarse grained, very poorly sorted, angular, dark grey to black, and frosted, Salt and pepper appearance. ~~great amount of flow~~			
		80					
COARSE SAND AND ~~MAT-ERIAL~~ GRAVEL to 102'	2" SS 0.010 SLOT SCREEN						
	2" SS SUMP	100					
		102		TOTAL DEPTH ~~TOTAL DEPTH~~ 102'	85320878 JA575 MJA227		Aqueous grab

ecology and environment, inc. DRILLING AND SAMPLE LOG Sheet 1 of 2

Project: Resource Recovery
Boring Contr.: Boyles Bros
Boring Method: Hollow stem auger.
Logged by: Randy Holtz / Jim Braddock
Date Completed: 7/31/85

Job No: R10-8410-14 Boring No: EE-6
Location: 30' SW of Area C-D
Surface Elev: 424.9 ft Datum: AMSL
Casing Elev: 427.0 ft Datum: AMSL
Total Depth: 100 ft Datum: below top of casing
Groundwater: 352.4 ft AMSL

WELL DETAILS	DEPTH (Feet)	SYMBOL	LITHOLOGICAL DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	REMARKS
	0	SM	SILTY SAND - well sorted, light to medium gray, frosted, and transparent. Mostly quartz, dry. ~~Surficial loam found. Eolian origin~~			
CEMENT	5	SW	SAND with ~~some~~ SILT. Sand - fine to very fine grained, well sorted, light to medium brown. Most silt found 2'-5'; ~~pebbles, cobbles and garbage 3'-6'.~~ SAND 100%,			
BEN-TONITE	10 12 14	SW	SAND - 100%, fine to coarse-grained, well to moderately well sorted, subrounded to subangular, ~~most~~ frosted to ~~dark~~ dark yellowish to olive brown; ~~semi dry~~, occasional cemented layers, 4-6 mm pebbles in lower part.	85310394 JA552 MJA218		
2" S.S CASING						
BEN-TONITE				85310395 JA553 MJA219		
	40	SP	SAND - SAND, 100%, coarse- to medium-grained, moderately poorly to poorly sorted, subangular to angular, frosted ~~and~~ to dark olive gray; moist.			
	50					

use first sheet (attached)

ecology and environment, inc. DRILLING AND SAMPLE LOG Sheet 1 of 2

Project: _____ Job No: _____ Boring No: EE7

WELL DETAILS	DEPTH (Feet)	SYMBOL	LITHOLOGICAL DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	REMARKS
	0	SM	SILTY SAND, well sorted, subrounded, light grey, frosted and clear. Surficial loam and debris present. ~~Golden origin~~			
CEMENT	2	SM	SILTY SAND - fine-to very fine-grained, well to moderately well sorted, subangular, light to medium brown, and frosted. Fill material (old car parts, glass, wood, etc) between 6' - 9'.			
BENTON.	10	SW	100% SAND — fine-to medium-grained, moderately well sorted, subangular to subrounded, mostly frosted quartz, some dark to moderate olive brown, 1-2mm granules at 14', micaceous flakes at 16'	85310392 JA 557 MJA 224		
2" SS CASING	20	SW	100% SAND medium to fine-grained, moderately well sorted, subangular to subrounded. Mostly frosted, some dark to moderate olive brown.	85310393 JA 558 MJA 225		
BENTONITE SLURRY	40	GP	SANDY GRAVEL - medium-to coarse-grained, poorly sorted, subangular to subrounded, cloudy, and greyish olive brown, ~~becomes cloud, and dark greyish brown and angular below 50'. Small pebbles (10-15 mm) at 58~~			

ecology and environment, inc. DRILLING AND SAMPLE LOG Sheet 2 of 2

Project: Resource Recovery Job No: R10 8410-14 Boring No: EE 8

WELL DETAILS	DEPTH (Feet)	SYMBOL	LITHOLOGICAL DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	REMARKS
BENTONITE SLURRY	50		SANDY GRAVEL — poorly sorted, subangular to subrounded, dark grayish brown to black, frosted, ~~changes to dusky yellow brown and frosted below 60'~~; Pebbles (10-20mm) at 54'.			
FINE SAND						
COARSE SAND 2" SS CASING	70		GRAVELLY SAND — poorly sorted, subangular to angular gravel and subrounded sand, dusky yellowish brown to grayish black, ~~darker between 50'~~ ~~becomes darker~~ between 70' and 80'			
	78					
2" SS 0.010 SLOT SCREEN						
2" SS SUMP	98					
	100		Bottom of boring			

85310391
JA 674
MJA 223

ecology and environment, inc. DRILLING AND SAMPLE LOG Sheet 1 of 2

Project: Resource Recovery
Boring Contr.: Boyles Bros
Boring Method: Hollow Stem Auger
Logged by: Randy Holtz / Jim Breddock
Date Completed: 7/25/85

Job No: R 10-8410-14 Boring No: EE-9
Location:
Surface Elev: 426.2 ft. Datum: AMSL
Casing Elev: 424.8 ft Datum: AMSL
Total Depth: 97 ft. Datum: BELOW Top of Casing - AMSL
Groundwater: 352.7 ft

WELL DETAILS		DEPTH (Feet)	SYMBOL	LITHOLOGICAL DESCRIPTION	SAMPLE NO.	SAMPLE ~~TYPE~~	REMARKS
		0	Sm	SILTY SAND - fine-to very fine-grained, well sorted, subrounded to subangular, light to medium grey, clear and frosted			~~Eolian origin~~
		2	Sw	SAND - 100% fine-to medium-grained, well to moderately well sorted, subangular to angular, light to dark brown, ~~and frosted~~, Large pebbles and fill material 8'-10'.			
Cement							
BEN-TONITE PELLET		10	Sw	SAND - 100% fine-to medium-grained, moderately well to well sorted, subangular to subrounded, mostly frosted, also dark to moderate olive brown. Large mica flakes, Pebbles (4-10mm) at 18', Occasional cemented sand.	8530 0852 JA 550 MJA 216		
	2" SS CASING	12					
BEN-TONITE SLURRY							
		30	SP	SAND - 100% Medium-grained, ~~moderately poorly~~ ~~to~~ poorly sorted, ~~mostly~~ frosted ~~to~~ ~~also~~ moderate olive brown, Extensive cemented sand at 35' and 44'.	8531 0853 JA 551 MJA 217		
		50					

ecology and environment, inc. DRILLING AND SAMPLE LOG Sheet 2 of 2

Project: Resource Recovery Job No: R 10-8410-14 Boring No: EE-9

WELL DETAILS	DEPTH (Feet)	SYMBOL	LITHOLOGICAL DESCRIPTION	SAMPLE NO.	SAMPLE TYPE	REMARKS
BENTONITE SLURRY	50					
FINE SAND	52	SP	SAND WITH GRAVEL. Sand - coarse-grained, poorly sorted, subrounded, dark grey and frosted; Gravel - very well sorted, subrounded. Small pebbles (5-8 mm) at 55', becomes coarse below 58'.			
	54					
	61					
	63	GP	SANDY GRAVEL - poorly sorted, subangular, dark grey to black, ~~tod~~ frosted.			
2" SS CASING		SP	GRAVELLY SAND. Sand - poorly sorted, angular, dark grey to black, saturated. Gravel - very well sorted, cobbles and pebbles ~~at~~ 85'-100. ~~Flowing Sand at 77'. Salt and pepper appearance~~			
COARSE SAND AND NATURAL GRAVEL	75					
2" SS 0.010 SLOT SCREEN						23 12 14 39.5 21 24 52 Sa
2" SS SUMP	95					
	97		TOTAL DEPTH ~~— 97'~~			
	100			85310390 JA571 MJA222		