

LOG OF EXPLORATORY BORING

PROJECT NAME RIVERBEND LANDFILL
 LOCATION McMinnville, Oregon
 DRILLED BY GeoTech Explorations
 DRILL METHOD Hollow Stem Auger
 LOGGED BY Craig D. Fanshler

BORING NO. P-01
 PAGE 1 OF 2
 REFERENCE ELEV. 123.02'
 TOTAL DEPTH 19.00'
 DATE COMPLETED 12/21/92

| SAMPLE NUMBER | RECOVERY PERCENT | SAMPLE TYPE | GROUND WATER LEVEL | DEPTH IN FT. | SAMPLES | WELL DETAILS | LITHO-LOGIC COLUMN | LITHOLOGIC DESCRIPTION |
|---------------|------------------|-------------|--------------------|--------------|---------|--------------|--------------------|--|
| S-1 | 60 | CS | | | | | | 0-0.8 feet: CLAYEY SILT (ML), dark brown, 80-85% silt, 15% clay, 5% roots (2"-6" long), soft, moist, low plasticity, <2% small gray mottles. (ALLUVIUM) |
| S-2 | 76 | CS | | | | | | 0.8-3.2 feet: CLAYEY SILT (ML), gray, 85-95% silt, 5-15% clay, firm, low plasticity, some roots. 3.2-8.3 feet: CLAYEY SILT (ML), brown, 80-90% silt, 10% clay, approx. 5% gray mottles (1/4" dia.), firm to soft, damp, low plasticity, 10-15% rust red mottles, trace water in macro pores, fewer roots with depth. |
| S-3 | 56 | CS | 5.85' | | | | | @ 8 feet: Hard tight drilling. |
| S-4 | 100 | CS | | | | | | 8.3-19 feet: CLAY (CL), light to dark gray, 80-90% high plasticity clay, firm to stiff, damp (texture and color is homogeneous from 12'-19'), occasional black organic lenses and light rust brown mottles. |
| S-5 | 100 | CS | 16.8' | | | | | Total depth drilled 19 feet bgs. Total depth sampled 19 feet bgs. DRILLING METHOD: A CME 55 drill rig was used to advance the borehole using a 7.5-inch O.D. (4 1/4-inch I.D.) Hollow stem auger. A 5-foot long core barrel was used to continuously sample the boring. PIEZOMETER CONSTRUCTION DETAILS: +2.9-8 feet: 2-inch dia. schedule 40 PVC blank casing. |

REMARKS

SS=Spill spoon sample. CS=Continuous sample.



LOG OF EXPLORATORY BORING

PROJECT NAME RIVERBEND LANDFILL
 LOCATION McMinnville, Oregon
 DRILLED BY GeoTech Explorations
 DRILL METHOD Hollow Stem Auger
 LOGGED BY Craig D. Fanshler

BORING NO. P-01
 PAGE 2 OF 2
 REFERENCE ELEV. 123.02'
 TOTAL DEPTH 19.00'
 DATE COMPLETED 12/21/92

| SAMPLE NUMBER | RECOVERY PERCENT | SAMPLE TYPE | GROUND WATER LEVELS | DEPTH IN FT. | SAMPLES | WELL DETAILS | LITHOLOGIC COLUMN | LITHOLOGIC DESCRIPTION |
|---------------|------------------|-------------|---------------------|--------------|---------|--------------|-------------------|---|
| | | | | 30 | | | | 8-18 feet: 2-inch dia. schedule 40 PVC screen with 0.010-inch machined slots. 18-18.4 feet: 2-inch dia. schedule 40 PVC end cap. +0.5-2 feet: Concrete. 2-5.9 feet: 3/8-inch hydrated bentonite chips. 5.9-19 feet: 10x20 gradation Colorado silica sand pack. PVC casing and screen couplings were flush threaded with "O"-rings. The surface completion consisted of a protective cover constructed of a 6-inch dia. by 5-foot long steel pipe positioned over the piezometer, through the concrete and set into the bentonite seal. An expansion well cap was used to cap the piezometer. A steel cover was locked on the protective casing. Three 2-inch dia. by 5-foot long steel pipes anchored 2 feet into the ground with concrete were installed in a triangle pattern around the piezometer. Groundwater sample P01-W-17 collected through the augers at a depth of 19 feet. |
| | | | | 35 | | | | |
| | | | | 40 | | | | |
| | | | | 45 | | | | |
| | | | | 50 | | | | |

REMARKS

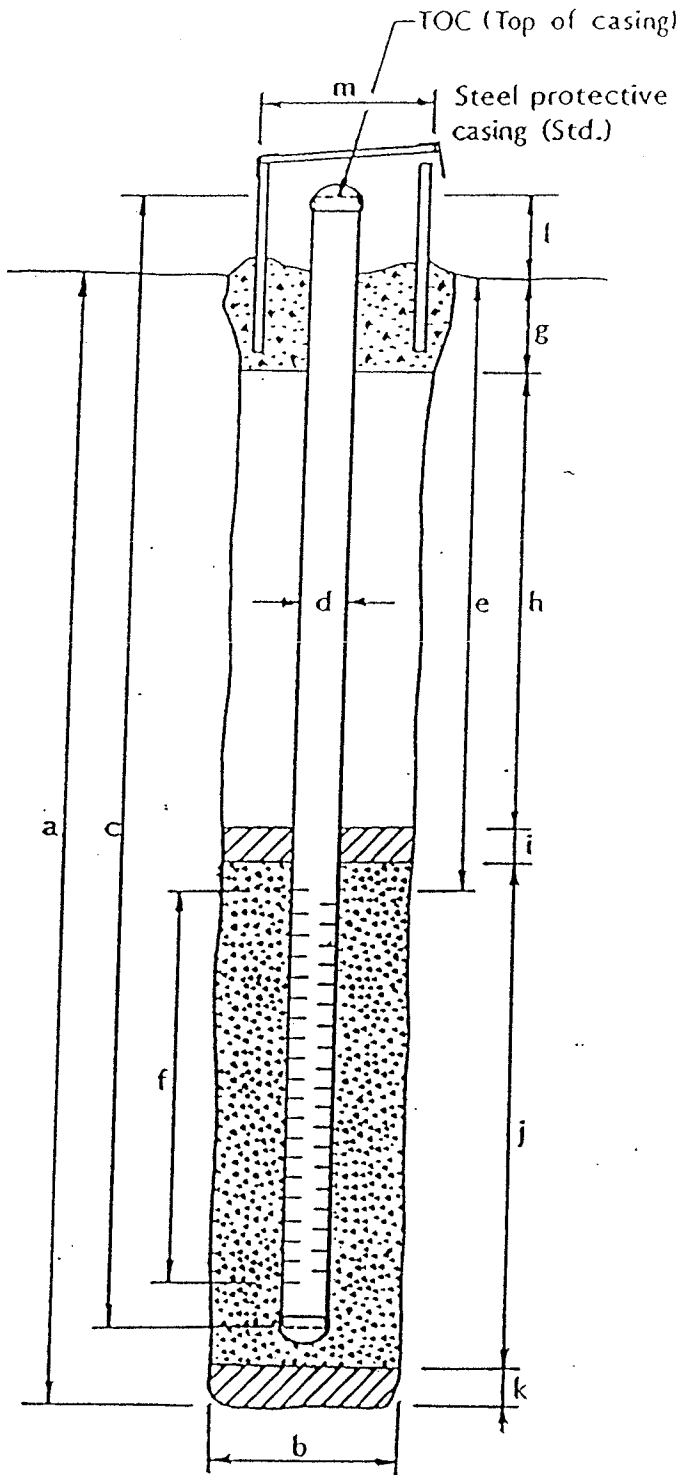
SS=Split spoon sample. CS=Continuous sample.



WELL DETAILS



PROJECT NUMBER 0258-001.19 BORING / WELL NO. P - 01
 PROJECT NAME Phase 2 Preliminary Assessment TOP OF CASING ELEV. 125.92
 LOCATION Riverbend Landfill GROUND SURFACE ELEV. 123.12
 WELL PERMIT NO. NA DATUM Mean Sea Level
 INSTALLATION DATE 12-21-92



EXPLORATORY BORING

a. Total depth 19 ft.
 b. Diameter 7.5 in.
 Drilling method Hollow Stem Auger

WELL CONSTRUCTION

c. Total casing length 20.9 ft.
 Material Schedule 40 PVC
 d. Diameter 2 in.
 e. Depth to top perforations 8 ft.
 f. Perforated length 10 ft.
 Perforated interval from 8 to 18 ft.
 Perforation type Machine Slotted
 Perforation size 0.010-Inch
 g. Surface seal 2 ft.
 Seal material Concrete
 h. Backfill 0 ft.
 Backfill material NA
 i. Seal 3.9 ft.
 Seal material 3/8-Inch Bentonite Chips
 j. Gravel pack 13.1 ft.
 Pack material 10 x 20 Gradation Sand
 k. Bottom seal 0 ft.
 Seal material NA
 l. Casing stickup 2.8 ft.
 m. Protective casing diameter 6 in.

NA = Not Applicable

Prepared by: _____

Reviewed by: _____ Date: _____

LOG OF EXPLORATORY BORING

PROJECT NAME RIVERBEND LANDFILL
 LOCATION McMinnville, Oregon
 DRILLED BY GooTech Explorations
 DRILL METHOD Hollow Stem Auger
 LOGGED BY Craig D. Fanshler

BORING NO. P-02
 PAGE 1 OF 2
 REFERENCE ELEV. 120.86'
 TOTAL DEPTH 18.00'
 DATE COMPLETED 12/22/92

| SAMPLE NUMBER | RECOVERY PERCENT | SAMPLE TYPE | GROUND WATER LEVELS | DEPTH IN FT. | SAMPLES | WELL DETAILS | LITHOLOGIC LOGIC COLUMN | LITHOLOGIC DESCRIPTION |
|---------------|------------------|-------------|---------------------|--------------|---------|--------------|-------------------------|---|
| S-1 | 87 | CS | | | | | | 0-5 feet: CLAYEY SILT (ML), dark to medium reddish brown, 80-90% silt, 10-20% clay, firm (softer at top), damp to moist, abundant roots at top of interval, minor roots to 2 feet. (ALLUVIUM) @ 2.7-3 feet: Trace gray mottling |
| S-2 | 40 | CS | 3.55' | 5 | | | | 5-6.5 feet: CLAYEY SILT (ML), reddish brown with 50% light gray mottling, 20% clay, soft to firm, moist to wet, medium plasticity, several horizontal black streaks across core, some horizontal orientation to the mottling. |
| S-3 | 86 | CS | 6.05' | 10 | | | | 6.5-9 feet: CLAY (CL), gray with 20-40% gray mottles, firm, moist, soft, wet at 9.5 feet. (ALLUVIUM) 9-18 feet: CLAY (CL), gray with 10-30% rust red mottles, 80% clay, 20% silt, firm to soft, wet, high to medium plasticity, red and gray horizontally oriented mottles. |
| S-4 | 100 | CS | | 15 | | | | @ 14-18 feet: Firm, some macro pores with water, approx. 15% rust red mottles. |
| 20 | | | | | | | | Total depth drilled 18 feet bgs. Total depth sampled 18 feet bgs. DRILLING METHOD: A CME 55 drill rig was used to advance the borehole using a 7.5-inch O.D. (4 1/4-inch I.D.) hollow stem auger. A 5-foot long core barrel was used to continuously sample the borehole. PIEZOMETER CONSTRUCTION DETAILS: +3-6.8 feet: 2-inch dia. schedule 40 PVC blank casing. 6.8-16.8 feet: 2-inch dia. schedule 40 PVC screen with 0.010-inch machined slots. |
| 25 | | | | | | | | |

REMARKS

SS=Split spoon sample. CS=Continuous sample.



LOG OF EXPLORATORY BORING

PROJECT NAME RIVERBEND LANDFILL
LOCATION McMinnville, Oregon
DRILLED BY GeoTech Explorations
DRILL METHOD Hollow Stem Auger
LOGGED BY Craig D. Fanshler

BORING NO. P- 02
PAGE 2 OF 2
REFERENCE ELEV. 120.86'
TOTAL DEPTH 18.00'
DATE COMPLETED 12/22/92

| SAMPLE NUMBER | RECOVERY PERCENT | SAMPLE TYPE | GROUND WATER LEVELS | DEPTH IN FT. | SAMPLES | WELL DETAILS | LITHO-LOGIC COLUMN | LITHOLOGIC DESCRIPTION |
|---------------|------------------|-------------|---------------------|---|---------|--------------|--------------------|---|
| | | | | <div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 10px;">30</div> <div style="margin-bottom: 10px;">35</div> <div style="margin-bottom: 10px;">40</div> <div style="margin-bottom: 10px;">45</div> <div style="margin-bottom: 10px;">50</div> </div> | | | | <p>16.8-17.2 feet: 2-inch dia. schedule 40 PVC end cap.</p> <p>+0.5-1 feet: Concrete.</p> <p>1-5 feet: 3/8-inch hydrated bentonite chips.</p> <p>5-18 feet: 10x20 gradation Colorado silica sand pack.</p> <p>PVC casing and screen couplings were flush threaded with "O"-rings.</p> <p>The surface completion consisted of a protective cover constructed of a 6-inch dia. by 5-foot long steel pipe positioned over the piezometer, through the concrete and set into the bentonite seal. An expansion well cap was used to cap the piezometer. A steel cover was locked on the protective casing. Three 2-inch dia. by 5-foot long steel pipes anchored 2 feet into the ground with concrete were installed in a triangle pattern around the piezometer.</p> <p>Groundwater sample P02-W-10 collected through the augers at a depth of 10.2 feet.</p> |

REMARKS

SS=Split spoon sample. CS=Continuous sample.



WELL DETAILS



EMCON

PROJECT NUMBER 0258-001.19

BORING / WELL NO. P-02

PROJECT NAME Phase 2 Preliminary Assessment

TOP OF CASING ELEV. 123.86

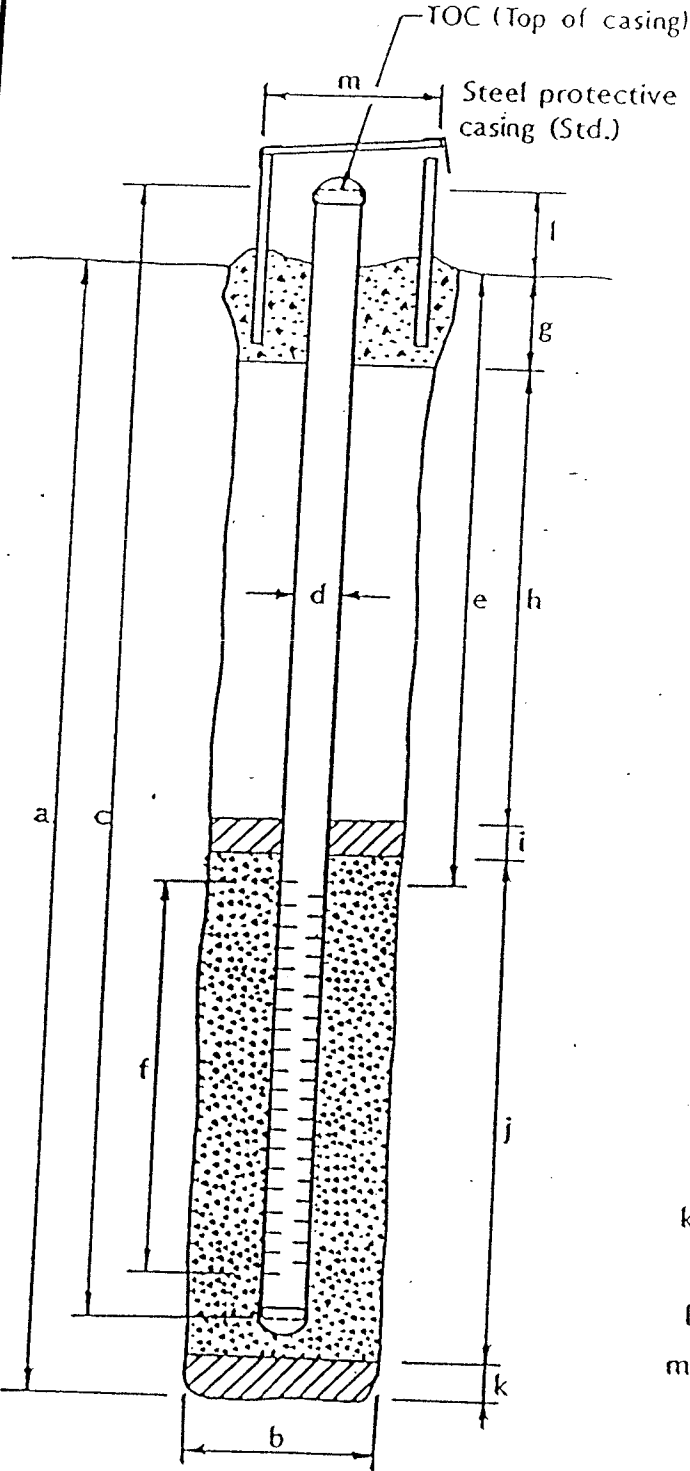
LOCATION Riverbend Landfill

GROUND SURFACE ELEV. 120.86

WELL PERMIT NO. NA

DATUM Mean Sea Level

INSTALLATION DATE 12-22-92



EXPLORATORY BORING

- a. Total depth 18.0 ft.
- b. Diameter 7.5 in.
- Drilling method Hollow Stem Auger

WELL CONSTRUCTION

- c. Total casing length 19.8 ft.
Material Schedule 40 PVC
- d. Diameter 2 in.
- e. Depth to top perforations 6.8 ft.
- f. Perforated length 10 ft.
Perforated interval from 6.8 to 16.8 ft.
Perforation type Machine Slotted
Perforation size 0.010-Inch
- g. Surface seal 1 ft.
Seal material Concrete
- h. Backfill 0 ft.
Backfill material NA
- i. Seal 4 ft.
Seal material 3/8-Inch Bentonite Chips
- j. Gravel pack 13 ft.
Pack material 10 x 20 Gradation Sand
- k. Bottom seal 0 ft.
Seal material NA
- l. Casing stickup 3 ft.
- m. Protective casing diameter 6 in.

NA = Not Applicable

Prepared by: _____

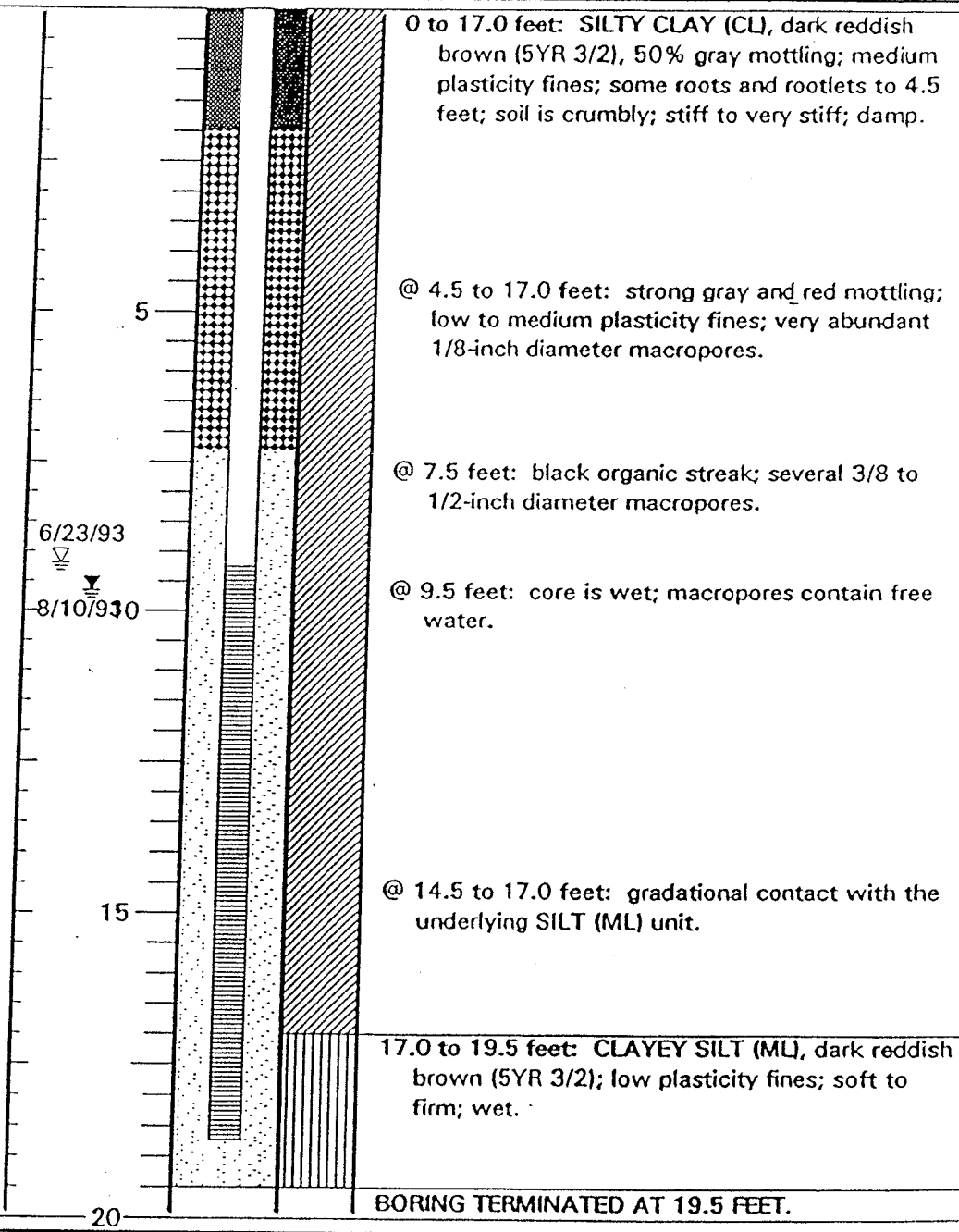
Reviewed by: _____ Date: _____

LOG OF EXPLORATORY BORING

PROJECT NAME Remedial Investigation
LOCATION Riverbend Landfill; McMinnville, Oregon
DRILLED BY GeoTech Explorations
DRILL METHOD Hollow Stem Auger
LOGGED BY Craig D. Fanshier

BORING NO. P-03
PAGE 1 OF 1
GROUND ELEV. 121.10'
TOTAL DEPTH 21.00'
DATE COMPLETED 06/23/93

| RECOVERY PERCENT | POCKET PENETROMETER (Tons/SF) | PENETRATION (Blows/Ft) | GROUND WATER LEVELS | DEPTH IN FEET | SAMPLES | WELL DETAILS | LITHOLOGIC COLUMN | LITHOLOGIC DESCRIPTION |
|------------------|-------------------------------|------------------------|---------------------|---------------|---------|--------------|-------------------|------------------------|
|------------------|-------------------------------|------------------------|---------------------|---------------|---------|--------------|-------------------|------------------------|



REMARKS

Drilled w/8" (4.25" ID) HSA. Samples continuously collected w/5'-long, 3" ID split barrel and 1.5'-long, 3" OD split spoon fitted w/rings. A 2" piezometer was constructed in the borehole. Well construction information presented in Well Details. See explanation for definition of symbols.

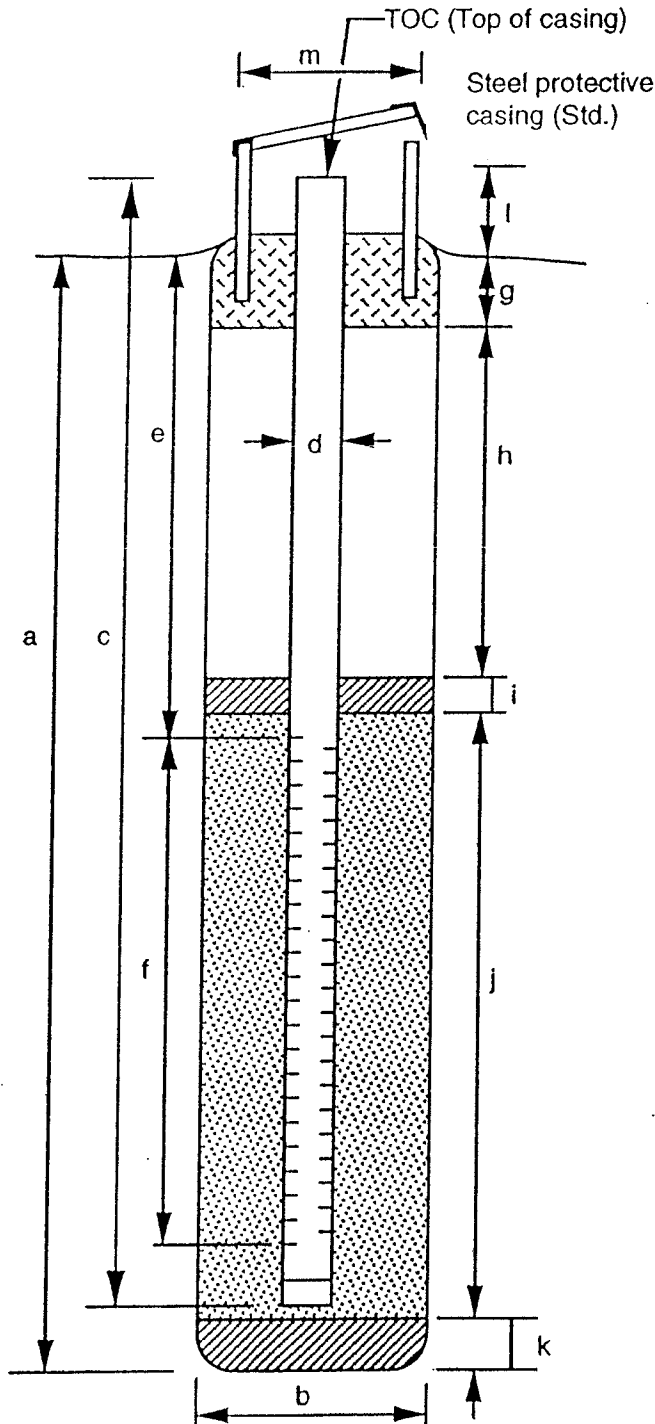


**EMCON
NORTHWEST**

WELL DETAILS

CLIENT Riverbend Landfill Company, Inc.
 PROJECT NUMBER 0258-001.24
 PROJECT NAME Remedial Investigation
 LOCATION McMinnville, Oregon
 WELL PERMIT NO. 52011

BORING / WELL NO. P-03
 TOP OF CASING ELEV. 123.63
 GROUND SURFACE ELEV. 121.1
 DATUM Feet-Mean Sea Level
 INSTALLATION DATE 6/23/93



EXPLORATORY BORING

a. Total depth 19.5 ft.
 b. Diameter 8 in.
 Drilling method Hollow Stem Auger

WELL CONSTRUCTION

c. Total casing length 21.5 ft.
 Material Schedule 40 PVC
 d. Diameter 2 in.
 e. Depth to top perforations 9.3 ft.
 f. Perforated length 9.5 ft.
 Perforated interval from 9.3 to 18.8 ft.
 Perforation type Machine Slotted
 Perforation size 0.010 Inches
 g. Surface seal (0 to 2.0) 2.0 ft.
 Material Concrete
 h. Backfill NA ft.
 Material NA
 i. Seal (2.0 to 7.3) 5.3 ft.
 Material Bentonite Chips
 j. Gravel pack 12.2 ft.
 Gravel pack interval from 7.3 to 19.5 ft.
 Material 10-20 Gradation Sand
 k. Bottom seal/fill NA ft.
 Material NA
 l. Casing stickup 2.5 ft.
 m. Protective casing diameter 6.5 in.

Prepared by: Craig Fanshier

LOG OF EXPLORATORY BORING

PROJECT NAME Additional Hydrogeologic Investigation
 LOCATION Riverbend Landfill; McMinnville, Oregon
 DRILLED BY Geo-Tech Explorations, Inc.
 DRILL METHOD Hollow Stem Auger
 LOGGED BY Craig D. Fanshier

BORING NO. P-04A
 PAGE 1 OF 2
 GROUND ELEV. 139.00'
 TOTAL DEPTH 32.50'
 DATE COMPLETED 10/28/93

| RECOVERY PERCENT | POCKET PENETRO-METER (Tons/SF) | PENETRA-TION (Blows/FT) | GROUND WATER LEVELS | DEPTH IN FEET | SAMPLES | LITHOLOGIC COLUMN | WELL DETAILS | LITHOLOGIC DESCRIPTION |
|------------------|--------------------------------|-------------------------|---------------------|---------------|---------|-------------------|--------------|--|
| 95 | 3.5 | | | | | | | 0 to 12.75 feet: SILTY CLAY (CL), dark brown (7.5YR 3/2), patchy lenses of shades of brown and gray; medium plasticity fines; no macro pores; hard; damp. (FILL MATERIAL) |
| | 4.5 | | | | | | | |
| | 4.5 | | | | | | | |
| | 3.0 | | | | | | | |
| 100 | 2.0 | | | 5 | | | | @ 6.5 feet: wood chips, 2-inch black organic layer. |
| | 1.5 | | | | | | | @ 6.7 feet: color changes to dark greenish gray (5GY 4/1) mixed with light olive brown mottling; changes to a medium to high plasticity clay; no pores, no bedding structure. |
| | 2.5 | | | | | | | |
| | 3.0 | | | | | | | |
| | 3.0 | | | | | | | |
| 100 | 2.5 | | | 10 | | | | |
| | 2.75 | | | | | | | |
| | 2.5 | | | | | | | |
| | 4.5 | | 1/5/94 | | | | | 12.75 to 29.0 feet: CLAYEY SILT (ML), brown (10YR 4/3), slight olive tint; low to medium plasticity fines; abundant macro pores (open), small 1/16- to 1/32-inch-diameter, some larger 1/8-inch vertical, trace of roots; very stiff; moist. (NATIVE SOIL) |
| 100 | 2.0 | | | 15 | | | | @ 12.75 to 14.75 feet: dark grayish brown. |
| | 2.5 | | | | | | | @ 14.5 feet: moist. |
| | 1.5 | | | | | | | |
| | 2.0 | | 10/26/93 | | | | | @ 17.5 feet: wet (large macro pore approximately half full with free water) and along poorly developed granular soil peds. |
| | 1.5 | | | | | | | @ 19.0 feet: minor interbedded CLAYEY SANDS (SC) and SILTY SANDS (SM) lenses. |
| 100 | | | | 20 | | | | |

REMARKS

Drilled with 8-inch O.D. (4.25-inch I.D.) Hollow Stem Auger. Samples continuously collected with 5-foot long, 3-inch I.D. split barrel and 1.5-foot long, 3-inch O.D. split spoon fitted with rings. A 2-inch PVC monitoring well was constructed in the borehole. Well construction information presented in Well Details. See explanation for definition of symbols.



LOG OF EXPLORATORY BORING

PROJECT NAME Additional Hydrogeologic Investigation
 LOCATION Riverbend Landfill; McMinnville, Oregon
 DRILLED BY Geo-Tech Explorations, Inc.
 DRILL METHOD Hollow Stem Auger
 LOGGED BY Craig D. Fanshier

BORING NO. P-04A
 PAGE 2 OF 2
 GROUND ELEV. 139.00'
 TOTAL DEPTH 32.50'
 DATE COMPLETED 10/28/93

| RECOVERY PERCENT | POCKET PENETRO-METER (Tone/SF) | PENETRA-TION (Blows/Ft) | GROUND WATER LEVELS | DEPTH IN FEET | SAMPLES | LITHOLOGIC COLUMN | WELL DETAILS | LITHOLOGIC DESCRIPTION |
|------------------|--------------------------------|-------------------------|---------------------|---------------|---------|-------------------|--------------|---|
| | 1.75 | | | | | | | 12.75 to 29.0 feet: CLAYEY SILT (ML), continued. |
| | 2.0 | | | | | | | @ 20.0 feet: slight mix of light, indistinct reddish brown and tan brown mottling, minor horizontal parting (weakly developed), trace fine sands, well rounded, spherical, minor amounts of mica, abundant (approximately 5 to 10 per square inch) macro pores; stiff; moist. |
| | 1.0 | | | | | | | @ 24.5 to 26.5 feet: well developed 3/8- to 1/2-inch-thick platy horizontal soil partings. |
| | 1.5 | | | | | | | @ 27.5 feet: color changes to dark greenish gray (5G 4/1) with 50 percent indistinctly mottled light olive brown mottling (2.5Y 5/3), occurring at separate 0.3- to 0.5-foot-thick layers. |
| 100 | 1.5 | | | 25 | | | | 29.0 to 32.5 feet: SILTY CLAY (CL), dark greenish gray (5GRY 4/1); medium to high plasticity fines; glazed (glistening) soil ped partings, irregular soil partings, stiff; wet. |
| | 1.5 | | | | | | | |
| | 1.5 | | | | | | | |
| | 0.5 | | | | | | | |
| | 1.0 | | | | | | | |
| 100 | 1.5 | | | 30 | | | | |
| | 1.0 | | | | | | | |
| | 1.0 | | | | | | | |
| | | | | | | | | BORING TERMINATED AT 32.5 FEET. |
| | | | | 35 | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | 40 | | | | |

REMARKS

Drilled with 8-inch O.D. (4.25-inch I.D.) Hollow Stem Auger. Samples continuously collected with 5-foot long, 3-inch I.D. split barrel and 1.5-foot long, 3-inch O.D. split spoon fitted with rings. A 2-inch PVC monitoring well was constructed in the borehole. Well construction information presented in Well Details. See explanation for definition of symbols.

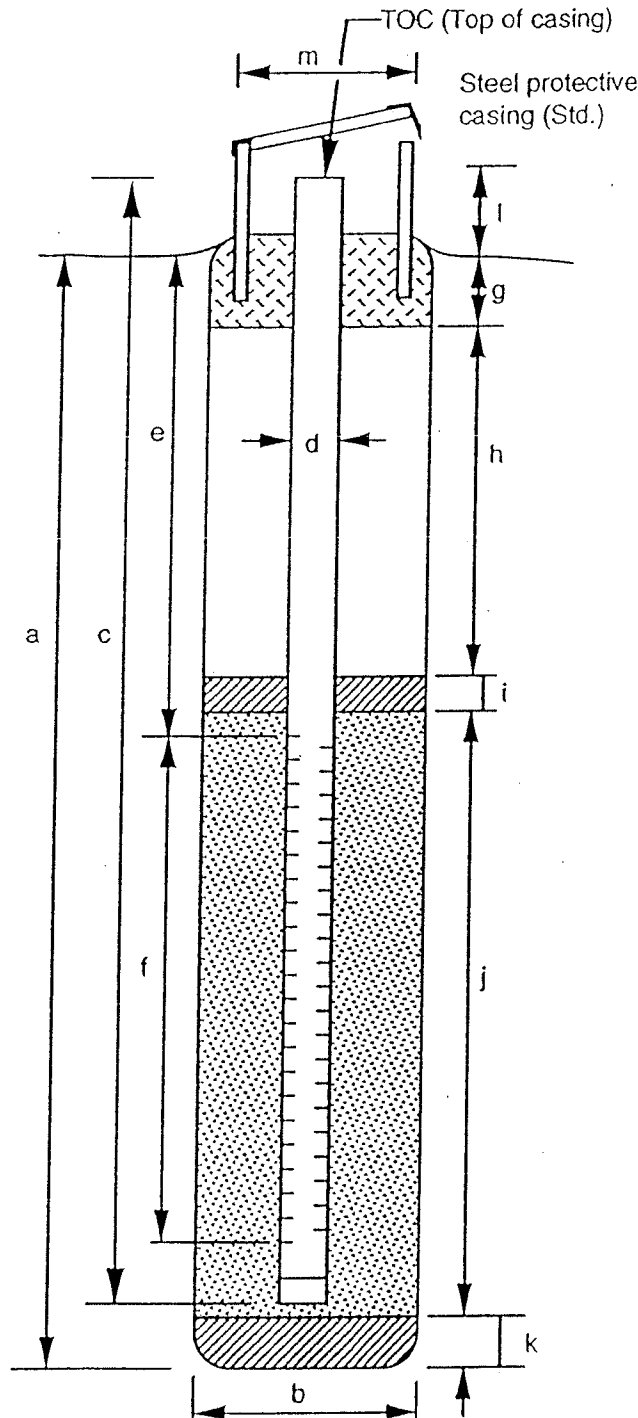


**EMCON
NORTHWEST**

WELL DETAILS

CLIENT Riverbend Landfill Company, Inc.
 PROJECT NUMBER 0258-001.28
 PROJECT NAME Additional Hydrogeologic Inv.
 LOCATION McMinnville, Oregon
 WELL PERMIT NO. 59130

BORING / WELL NO. P-04A
 TOP OF CASING ELEV. 141.15
 GROUND SURFACE ELEV. 139.0
 DATUM Feet-Mean SeaLevel
 INSTALLATION DATE 10/28/93



EXPLORATORY BORING

a. Total depth 32.5 ft.
 b. Diameter 8 in.
 Drilling method Hollow Stem Auger

WELL CONSTRUCTION

c. Total casing length (+2.2 to 29.6) 31.8 ft.
 Material Schedule 40 PVC
 d. Diameter 2 in.
 e. Depth to top perforations 19.3 ft.
 f. Perforated length 9.5 ft.
 Perforated interval from 19.3 to 28.8 ft.
 Perforation type Machine Slotted
 Perforation size 0.010 Inches
 g. Surface seal (0 to 2.0) 2.0 ft.
 Material Concrete
 h. Backfill N.A. ft.
 Material N.A.
 i. Seal (2.0 to 15.9) 13.9 ft.
 Material Bentonite
 j. Gravel pack 13.9 ft.
 Gravel pack interval from 15.9 to 29.8 ft.
 Material 10-20 Gradation Sand
 k. Bottom seal/fill (29.8 to 32.5) 2.7 ft.
 Material Bentonite
 l. Casing stickup 2.2 ft.
 m. Protective casing diameter 6.5 in.

Prepared by: Craig Fanshier

LOG OF EXPLORATORY BORING

PROJECT NAME Additional Hydrogeologic Investigation
 LOCATION Riverbend Landfill; McMinnville, Oregon
 DRILLED BY Geo-Tech Explorations, Inc.
 DRILL METHOD Hollow Stem Auger
 LOGGED BY Craig D. Fanshier

BORING NO. P-04B
 PAGE 1 OF 4
 GROUND ELEV. 139.00'
 TOTAL DEPTH 75.80'
 DATE COMPLETED 11/09/93

| RECOVERY PERCENT | POCKET PENETRO-METER (Tons/SF) | PENETRA-TION (Blows/Ft) | GROUND WATER LEVELS | DEPTH IN FEET | SAMPLES | LITHOLOGIC COLUMN | WELL DETAILS | LITHOLOGIC DESCRIPTION |
|------------------|--------------------------------|-------------------------|---------------------|---------------|---------|-------------------|--------------|--|
| 9.2 | > 4.5 | | | | | | | 0 to 12.5 feet: SILTY CLAY (CL), dark reddish brown (5YR 3/3); medium plasticity fines; hard; damp. (FILL) |
| | > 4.5 | | | | | | | |
| | 4.0 | | | | | | | |
| | > 4.5 | | | | | | | |
| 100 | 3.5 | | | 5 | | | | @ 7.5 feet: color changes to dark olive gray (5Y 3/2); slight odor. |
| | 3.5 | | | | | | | |
| | 2.5 | | | | | | | |
| | 3.0 | | | | | | | @ 9.0 feet: very stiff. |
| | 2.5 | | | | | | | |
| 80 | | 32 | | 10 | | | | |
| 100 | 1.5 | | | | | | | |
| | 3.5 | | | | | | | |
| | 2.5 | | | | | | | |
| 94 | 2.0 | | ▽ 1/5/94 | 15 | | | | 12.5 to 21.0 feet: CLAYEY SILT (ML), very dark grayish brown (10YR 3/2); very abundant small macro pores and some large vertical macro pores, some very fine roots; very stiff; damp. @ 14.0 feet: moist. |
| | 3.0 | | | | | | | @ 15.5 feet: color changes to dark brown (7.5YR 3/2). |
| | 2.0 | | ▽ 11/9/93 | | | | | @ 16.7 feet: wet. |
| | 1.5 | | | | | | | @ 17.0 feet: approximately 10 percent gray mottling, as rinds around vertical macro pores. |
| | 2.0 | | | | | | | @ 17.0 to 21.0 feet: approximately 10 percent light reddish brown mottling, approximately 10 percent black mottling. |
| 100 | 2.0 | | | 20 | | | | |

REMARKS

Drilled with 10-inch O.D. (6.5-inch I.D.) Hollow Stem Auger. Samples continuously collected with 5-foot long, 3-inch I.D. split barrel and 1.5-foot long, 3-inch O.D. split spoon fitted with rings. Bedrock was cored with NX (3.5-inch O.D.) diamond core. A 2-inch PVC monitoring well was constructed in the borehole. Well construction information presented in Well Details. See explanation for definition of symbols.



LOG OF EXPLORATORY BORING

PROJECT NAME Additional Hydrogeologic Investigation
 LOCATION Riverbend Landfill; McMinnville, Oregon
 DRILLED BY Geo-Tech Explorations, Inc.
 DRILL METHOD Hollow Stem Auger
 LOGGED BY Craig D. Fanshier

BORING NO. P-04B
 PAGE 2 OF 4
 GROUND ELEV. 139.00'
 TOTAL DEPTH 75.80'
 DATE COMPLETED 11/09/93

| RECOVERY PERCENT | POCKET PENETROMETER (Tone/SF) | PENETRATION (Blows/Ft) | GROUND WATER LEVELS | DEPTH IN FEET | SAMPLES | LITHOLOGIC COLUMN | WELL DETAILS | LITHOLOGIC DESCRIPTION |
|------------------|-------------------------------|------------------------|---------------------|---------------|---------|-------------------|--------------|---|
| | 2.5 | | | | | | | 12.5 to 21.0 feet: CLAYEY SILT (ML), continued. |
| | 2.5 | | | | | | | 21.0 to 30.0 feet: SILT (ML), light yellowish brown (2.5Y 6/3); low plasticity fines; less macro pores than above (approximately 3 to 5 per square inch), no large ones; some 1/4-inch platy varves; stiff; wet. |
| 67 | 2.0 | 17 | | 25 | | | | @ 25.5 to 29.0 feet: approximately 1- to 3-inch-thick bands of grayish coloration. |
| 100 | 1.0 | | | | | | | @ 27.0 to 29.0 feet: abundant small bedding structures approximately 1/16- to 1/8-inch-thick, appears to have more clay than 13.0 to 25.0 feet zone above. |
| | 2.5 | | | | | | | @ 29.0 feet: approximately 50 percent gray and 50 percent brown. |
| 100 | 1.0 | | | 30 | | | | 30.0 to 37.0 feet: SILTY CLAY (CL), dark bluish gray (5B 4/1); medium to high plasticity fines; approximately 1 to 2 macro pores per square inch (small), some vertical root traces; stiff; wet. |
| | 1.5 | | | | | | | @ 32.0 feet: slightly harder/sticky drilling, smooth, glassy, glazed soil, ped surface. |
| 100 | | 21 | | 35 | | | | |
| 100 | 1.25 | | | | | | | |
| | 1.25 | | | | | | | |
| | 1.0 | | | | | | | 37.0 to 38.0 feet: CLAYEY SAND (SC), dark bluish gray (5B 4/1), with 50 percent large oval shaped olive brown mottling; 20 to 25 percent low to medium plasticity fines; 75 to 80 percent fine sand, angular moderately well sorted; minor brown root hairs; appears medium, continues. |
| 100 | | | | 40 | | | | |

REMARKS

Drilled with 10-inch O.D. (6.5-inch I.D.) Hollow Stem Auger. Samples continuously collected with 5-foot long, 3-inch I.D. split barrel and 1.5-foot long, 3-inch O.D. split spoon fitted with rings. Bedrock was cored with NX (3.5-inch O.D.) diamond core. A 2-inch PVC monitoring well was constructed in the borehole. Well construction information presented in Well Details. See explanation for definition of symbols.



LOG OF EXPLORATORY BORING

PROJECT NAME Additional Hydrogeologic Investigation
 LOCATION Riverbend Landfill; McMinnville, Oregon
 DRILLED BY Geo-Tech Explorations, Inc.
 DRILL METHOD Hollow Stem Auger
 LOGGED BY Craig D. Fanshier

BORING NO. P-04B
 PAGE 3 OF 4
 GROUND ELEV. 139.00'
 TOTAL DEPTH 75.80'
 DATE COMPLETED 11/09/93

| RECOVERY PERCENT | POCKET PENETRO-METER (Tons/SF) | PENETRA-TION (Blows/Ft) | GROUND WATER LEVELS | DEPTH IN FEET | SAMPLES | LITHOLOGIC COLUMN | WELL DETAILS | LITHOLOGIC DESCRIPTION |
|------------------|--------------------------------|-------------------------|---------------------|---------------|---------|-------------------|--------------|---|
| 60 | | | | 45 | | | | <p>37.0 to 38.0 feet: CLAYEY SAND (SC), continued: dense; moist. Unit grades into the sand below.</p> <p>38.0 to 39.0 feet: SAND (SP), dusky red (G5YR 3/3); 5 percent low plasticity fines; 95 percent fine to medium sand, angular; appears medium dense; moist.</p> <p>39.0 to 41.0 feet: CLAYEY SAND (SC), light tannish brown; 30 percent low to medium plasticity fines; 70 percent fine sand; appears medium dense; moist.</p> <p>41.0 to 45.0 feet: SAND (SP), and GRAVELLY SAND (SP), dusky red (10R 3/3); little to no fines; 70 to 90 percent fine to coarse sand (F:M:C = 1:3:2); 10 to 30 percent gravels (F:C = 3:1); appears medium dense; wet.</p> <p>@ 41.0 to 42.5 and 42.5 to 44.0 feet: two distinct fining upwards sequences, each grades from a fine sand at the top to a gravelly sand at the bottom.</p> <p>@ 42.5 feet: 1 inch sand lense, color changes to brown (7.5YR 4/3).</p> <p>@ 44.0 feet: large 2 to 3 inch gravels.</p> <p>45.0 to 55.0 feet: CLAYEY GRAVEL (GC), dark yellowish brown (10YR 4/3); 20 percent low to medium plasticity fines (as matrix), sticky; 20 to 30 percent SAND (F:M:C = 1:1:1); 40 to 50 percent gravels (F:C = 1:2), rounded, matrix supported; appears dense; wet.</p> <p>@ 55.0 feet: drillers note less gravels, hard dense drilling.</p> <p>55.0 to 59.5 feet: SILTY SAND (SM), inferred from drilling action.</p> |
| 80 | | | | 50 | | | | |
| 100 | | 71 | | 55 | | | | |
| | | | | 60 | | | | 59.5 to 65.0 feet: SANDY SILT (SM), continues. |

REMARKS

Drilled with 10-inch O.D. (6.5-inch I.D.) Hollow Stem Auger. Samples continuously collected with 5-foot long, 3-inch I.D. split barrel and 1.5-foot long, 3-inch O.D. split spoon fitted with rings. Bedrock was cored with NX (3.5-inch O.D.) diamond core. A 2-inch PVC monitoring well was constructed in the borehole. Well construction information presented in Well Details. See explanation for definition of symbols.



LOG OF EXPLORATORY BORING

PROJECT NAME Additional Hydrogeologic Investigation
LOCATION Riverbend Landfill; McMinnville, Oregon
DRILLED BY Geo-Tech Explorations, Inc.
DRILL METHOD Hollow Stem Auger
LOGGED BY Craig D. Fanshier

BORING NO. P-04B
PAGE 4 OF 4
GROUND ELEV. 139.00'
TOTAL DEPTH 75.80'
DATE COMPLETED 11/09/93

| RECOVERY PERCENT | POCKET PENETRO-METER (Tons/SF) | PENETRATION (Blows/Ft) | GROUND WATER LEVELS | DEPTH IN FEET | SAMPLES | LITHOLOGIC COLUMN | WELL DETAILS | LITHOLOGIC DESCRIPTION |
|------------------|--------------------------------|------------------------|---------------------|---------------|---------|-------------------|--------------|---|
| 86 | | | | 65 | | | | 59.5 to 65.0 feet: SANDY SILT (SM), continued: dark greenish gray (5G 4/1); 70 to 75 percent low plastic fines; 25 to 30 percent fine sand; moderately well sorted; 3 percent wood fragments, several 1/4 by 3/8-inch; brown leaf fossils, dense; wet. Note: very similar to the lower section of MW-7B. @ 64.0 to 66.0 feet: very hard drilling. |
| 100 | | | | 70 | | | | 65.0 to 75.8 feet: BASALT, olive gray (5Y 3/2) (GSA rock color chart); medium grain; weathered zone approximately 1-inch-thick, drilled with hollow stem auger to 65.8 feet. @ 65.8 to 68.5 feet: abundant fracture filling, quartz veining, zeolites. |
| | | | | 75 | | | | BORING TERMINATED AT 75.8 FEET. |
| | | | | 80 | | | | |

REMARKS

Drilled with 10-inch O.D. (6.5-inch I.D.) Hollow Stem Auger. Samples continuously collected with 5-foot long, 3-inch I.D. split barrel and 1.5-foot long, 3-inch O.D. split spoon fitted with rings. Bedrock was cored with NX (3.5-inch O.D.) diamond core. A 2-inch PVC monitoring well was constructed in the borehole. Well construction information presented in Well Details. See explanation for definition of symbols.

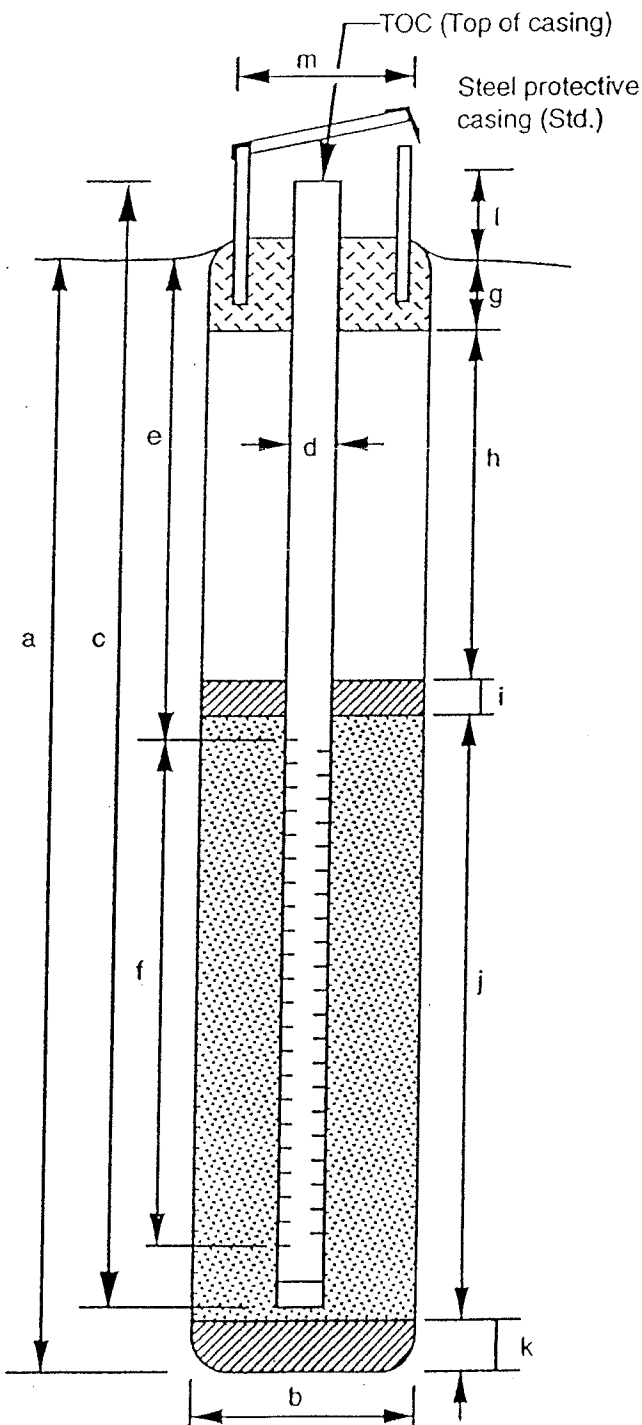


**EMCON
NORTHWEST**

WELL DETAILS

CLIENT Riverbend Landfill Company, Inc.
 PROJECT NUMBER 0258-001.28
 PROJECT NAME Additional Hydrogeologic Inv.
 LOCATION McMinnville, Oregon
 WELL PERMIT NO. 59135

BORING / WELL NO. P-04B
 TOP OF CASING ELEV. 141.65
 GROUND SURFACE ELEV. 139.0
 DATUM Feet-Mean Sea Level
 INSTALLATION DATE 11/10/93



EXPLORATORY BORING

a. Total depth 75.8 ft.
 b. Diameter 10 in.
 Drilling method Hollow Stem Auger

WELL CONSTRUCTION

c. Total casing length (+2.7 to 52.6) 55.3 ft.
 Material Schedule 40 PVC
 d. Diameter 2 in.
 e. Depth to top perforations 42.3 ft.
 f. Perforated length 9.5 ft.
 Perforated interval from 42.3 to 51.8 ft.
 Perforation type Machine Slotted
 Perforation size 0.010 Inches
 g. Surface seal (0 to 2.0) 2.0 ft.
 Material Concrete
 h. Backfill N.A. ft.
 Material N.A.
 i. Seal (2.0 to 39.0) 37.0 ft.
 Material Bentonite
 j. Gravel pack 13.4 ft.
 Gravel pack interval from 39.0 to 52.4 ft.
 Material 10-20 Gradation Sand
 k. Bottom seal/fill (52.4 to 75.8) 23.4 ft.
 Material Bentonite
 l. Casing stickup 2.7 ft.
 m. Protective casing diameter 6.5 in.
 Centralizers at 15.0 and 41.0 feet bgs.

Prepared by: Craig Fanshier