

APPENDIX A

WELL LOGS FOR POTENTIAL WATER WELL LOGS NEAR THE SITE

STATE OF WASHINGTON
 DEPARTMENT OF CONSERVATION
 AND DEVELOPMENT

WELL LOG

No. Appli. #1212

Date about 1941

Cert. #646-A

Record by No Driller's Record

Source _____

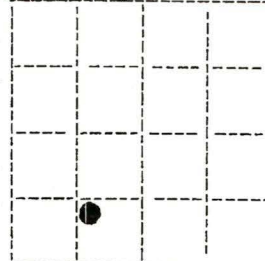
Location State of WASHINGTON

County King

Area _____

Map _____

Lot 16, Shinn's Cloverdale Add. to Kent
 $\frac{1}{4}$ sec 7 T 22 N, R 5 ~~W~~



Drilling Co. Unknown

Address _____

Method of Drilling Drilled Date Unknown 19__

Owner Dwight D. Lewis

Address Gen. Del., Kent, Wash.

Land surface, datum _____ ft above
 _____ below

CORRELATION	MATERIAL	THICKNESS (feet)	DEPTH (feet)
-------------	----------	------------------	--------------

(Transcribe driller's terminology literally but paraphrase as necessary in parentheses. If material water bearing so state and record static level if reported. Give depths in feet below land surface datum unless otherwise indicated. Correlate with stratigraphic column if feasible. Following log of materials list all casings perforations screens etc.)

<u>No log available, driller deceased</u>			
<u>Pump Test:</u>			
<u>Dim.: 149' depth, dia. 6"</u>			
<u>SWL: Artesian Yield: ?</u>			
<u>DD:</u>			
<u>Yield: 100 g.p.m. on Cert.</u>			
<u>Casing: 6" dia. from 0 to 149'</u>			
<u>Perforations:</u>			
<u>None</u>			

Turn up ARTESIAN

Sheet _____ of _____ sheets

STATE OF WASHINGTON
DEPARTMENT OF CONSERVATION
DEVELOPMENT

WELL LOG

No Appli. #1787
Cert. #767A

Date April 14, 19 51

Record by M. H. Hansen

Source Driller record

Location State of WASHINGTON

County King

Area _____

Map _____

~~XXXXXXX~~ sec 7 T 22 N, R 5 E ~~XXX~~

DIAGRAM OF SECTION

Drilling Co Tacoma Pump & Well Drilling Co.

Address Rt. 7, Box 316; Tacoma, Wn.

Method of Drilling _____ Date 4-14- 19 51

Owner O'Brien Water Users Assn. Inc.

Address Rt. 2, Box 600; Kent, Washington

Land surface, datum _____ ft above
below _____

CORRE- LATION	MATERIAL	THICKNESS (feet)	DEPTH (feet)
------------------	----------	---------------------	-----------------

(Transcribe driller's terminology literally but paraphrase as necessary in parentheses. If material water bearing so state and record static level if reported. Give depths in feet below land surface datum unless otherwise indicated. Correlate with stratigraphic column if feasible. Following log of materials list all casings perforations screens etc.)

	Blue clay & gravel	10	10
	Brown sand & clay	25	35
	Sand, gravel, some clay	11	46
	Sandy clay - some water	5	51
	Compacted sand & gravel	4	55
	Brown sand and clay	5	60
	Blue mucky sand & gravel	9	69
	Sand clay w/water	11	80
	Coarse bearing sand	1	81
	Hard blue clay & sand	39	120
	Coarse sand, gravel	1	121
	Sandy clay	5	126
	Hard dry green clay	24	150
	Sand, gravel some water	2	152
	Green clay	11	163
	(over)		

STATE OF WASHINGTON

DEPARTMENT OF CONSERVATION
 DEVELOPMENT

FLOWING

WELL LOG

No Appl. 4140

Date Oct. 4, 1955

Record by J. W. Wilson

Source Driller's Record

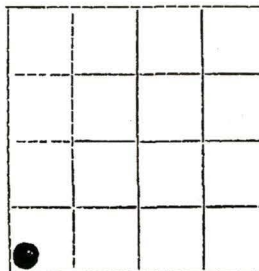


Diagram of Section

Location State of WASHINGTON

County King

Area

Max Govt Lot 7

SW 1/4 SW 1/4 sec 6 T 22 N, R 5 E

Drilling Co J. E. Maxwell

Address 15247 42nd Ave. S. Seattle, Wash.

Method of Drilling Drilled Date , 19

Owner James W. Wilson

Address Rt. 2, Box 1050 Kent, Wn.

Land surface, datum ft above below

File number 22N, 5E-6N

CORRELATION	MATERIAL	THICKNESS (feet)	DEPTH (feet)
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(Transcribe driller's terminology literally but paraphrase as necessary, in parentheses if material water-bearing so state and record static level if reported Give depths in feet below land surface datum unless otherwise indicated Correlate with stratigraphic column if feasible Following log of materials, list all casings, perforations, screens, etc)

	Soil	4	4
	Clay, Sandy, brown	28	32
	Sand, black, coarse	30	62
	Clay, sandy	35	97
	Sand, hard	6	103
	Clay, rubbery blue 80%	63	166
	hardpan layers 20%		
	Sand, hard-some artesian water	3	169
	Clay rubbery, blue, 80% hardpan layers 20%	43	212
	Pump Test:		
	Dia: 2 1/2" X 6"		
	SWL:		
	DD:		

5

STATE OF WASHINGTON
 DEPARTMENT OF CONSERVATION
 DEVELOPMENT

WELL LOG

No. **Appli. 4259**
Cert. 2887-A

Date **June**, 19 **56**

Record by **well driller**

Source **driller's record**

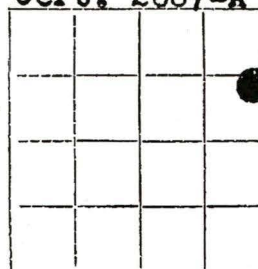


Diagram of Section

Location State of WASHINGTON

County **King**

Area

Map

SE 1/4 NE 1/4 sec 12.22 N, R 4 E

Drilling Co **J. C. Maxwell**

Address **Seattle, Wash.**

Method of Drilling Date, 19

Owner **James T. & George Komoto**

Address **Kent, Wash.**

Land surface, datum ft above/below

CORRE-LATION	MATERIAL	THICKNESS (feet)	DEPTH (feet)
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(Transcribe driller's terminology literally but paraphrase as necessary in parentheses. If material water-bearing so state and record static level if reported. Give depths in feet below land surface datum unless otherwise indicated. Correlate with stratigraphic column if feasible. Following log of materials list all casings perforations screens etc.)

	Clay top soil	4	4
	Mixed sandy clay, some gravel	135	139
	Debris, wood, bark & coal	9	148
	Hardpan	62	210
	Sand & gravel, water 20 gpm. 125' head	8	218
	Gravel	8	226
	Brown clay & fine gravel	21	247
	Sandy clay & small gravel	47	294
	Sand & gravel	27	321
	PUMP TEST:		
	Dim. 321'x6"		
	Flowing well: Measured discharge 75 g.p.m. Shut-in pressure at ground surface 34 lbs. per sq.in. (over)		

Turn up

Sheet of sheets

12 N.W.E. 214
File number

(19)

STATE OF WASHINGTON
DEPARTMENT OF CONSERVATION
AND DEVELOPMENT

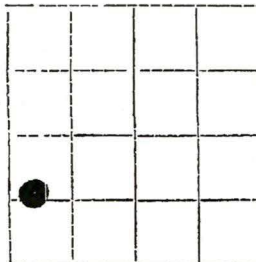
WELL LOG

No Appli. 5267

Date 7-9, 19 59

Record by well driller

Source driller's record



Location State of WASHINGTON

County King

Area Shinn's Cloverdale

Map Add. to Kent

1/4 1/4 sec 7 T 22 N, R 5 E

Diagram of Section

Drilling Co T. M. Stimson

Address Kent, Washington

Method of Drilling Date 5-9, 19 59

Owner Raymond R. & Florence B. Reiter

Address Kent, Wash.

Land surface, datum ft above
below

CORRE- LATION	MATERIAL	THICKNESS (feet)	DEPTH (feet)
------------------	----------	---------------------	-----------------

(Transcribe driller's terminology literally but paraphrase as necessary in parentheses
If material water bearing so state and record static level if reported. Give depths in feet
below land surface datum unless otherwise indicated. Correlate with stratigraphic column,
if feasible. Following log of materials list all casings perforations screens, etc.)

	Topsoil - sand & soft clay	55	55
	Black sand	75	130
	Sandy blue clay	8	138
	Soft blue clay streak		
	Soft clay & sand	32	170
	Water bearing sand & gravel	10	180
	PUMP TEST.		
	Dim. 180'x6"		
	SWL: Flowing		
	DD: 2 ft.		
	Yield: 40 g.p.m.		
	Water Temp. 42°F.		
	Type & size of pump: 1 h.p. Booster		
	FLOWING WELL:		
	Measured discharge 30 g.p.m. on 5-9-59		
	Shut-in pressure at ground surface		
	12 lbs. per sq.in. on 7-4-59		
	Water is controlled by cap and valve.		

Turn up (over) Sheet of sheets

22,56-1M

(7)

(2) LOCATION OF WELL: County King near center of NE 1/4 SE 1/4 Sec 7 T.22 N., R. 5E W.M.
 Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic Industrial Municipal
 Irrigation Test Well Other

(4) TYPE OF WORK: Owner's number of well (if more than one) 0?
 New well Method: Dug Bored
 Deepened Cable Driven
 Reconditioned Rotary Jetted

(5) DIMENSIONS: Diameter of well 12 inches
 Drilled 500 ft. Depth of completed well 435 ft.

(6) CONSTRUCTION DETAILS:
 Casing installed: 12" Diam. from 0 ft. to 422 ft.
 Threaded " Diam. from _____ ft. to _____ ft.
 Welded " Diam. from _____ ft. to _____ ft.

Perforations: Yes No
 Type of perforator used _____
 SIZE of perforations _____ in. by _____ in.
 _____ perforations from _____ ft. to _____ ft.
 _____ perforations from _____ ft. to _____ ft.
 _____ perforations from _____ ft. to _____ ft.

Screens: Yes No
 Manufacturer's Name Johnson U.O.P.
 Type 304 Stainless Steel Model No. _____
 Diam. 10" PS Slot size 20 from 422 ft. to 432 ft.
 Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel packed: Yes No Size of gravel: _____
 Gravel placed from _____ ft. to _____ ft.

Surface seal: Yes No To what depth? 18 ft.
 Material used in seal CCMENT
 Did any strata contain unusable water? Yes No
 Type of water? _____ Depth of strata _____
 Method of sealing strata off N/A

(7) PUMP: Manufacturer's Name _____
 Type: _____ HP

(8) WATER LEVELS: Land-surface elevation above mean sea level... 260 ft.
 Static level 125.4 ft. below top of well Date 2/11/81
 Artesian pressure _____ lbs. per square inch Date _____
 Artesian water is controlled by _____ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
 Was a pump test made? Yes No If yes, by whom? Driller
 Yield: 400 gal./min. with 111 ft. drawdown after 24 hrs.

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
1 min	149.7	50 min	132.1	300 min	130.96
5 min	136.25	100 min	131.6	500 min	130.68
10 min	134.85	160 min	131.32		

Date of test 2/9/81
 Faller test _____ gal./min. with _____ ft. drawdown after _____ hrs.
 _____ flow _____ g.p.m. Date _____
 Treatment of water _____ Was a chemical analysis made? Yes No

(10) WELL LOG:
 Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
Gray till or Till-like clay with gravel	0	109
Gray clay with some sand	109	180
Blue clay	180	220
Gray and green sand & gravel	220	223
Gray green till or till like clay, silt, sand, and gravel	223	286
Gray sand & gravel	286	287
Gray green Till-like clay, silt, sand & gravel	287	421
Dark, Blue-green sand w/ occ. gravel	421	433
Blue-green silty sand and gravel	433	500

RECEIVED
 JUN 18 1981

DEPARTMENT OF ECOLOGY
 NORTHWEST REGION

Work started Nov 17, 1980 Completed FEB 18, 1981

WELL DRILLER'S STATEMENT:
 This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Burt Well Drilling Inc.
 (Person, firm, or corporation) (Type or print)

Address Rt 1 - Box 283 Poulsbo wa

[Signed] George D. Burt
 (Well Driller)

License No. 0048 Date 4-16, 1981



14-12
Spot
17-11-12

16" LURENCE CASING
GROUTED TO 12" CASING

20'

45'

12" CASING

212
ft

247'

277'
282'

6" OF 20 SLOT, 8" P.S.
JOHNSON WATERMARK SCREEN

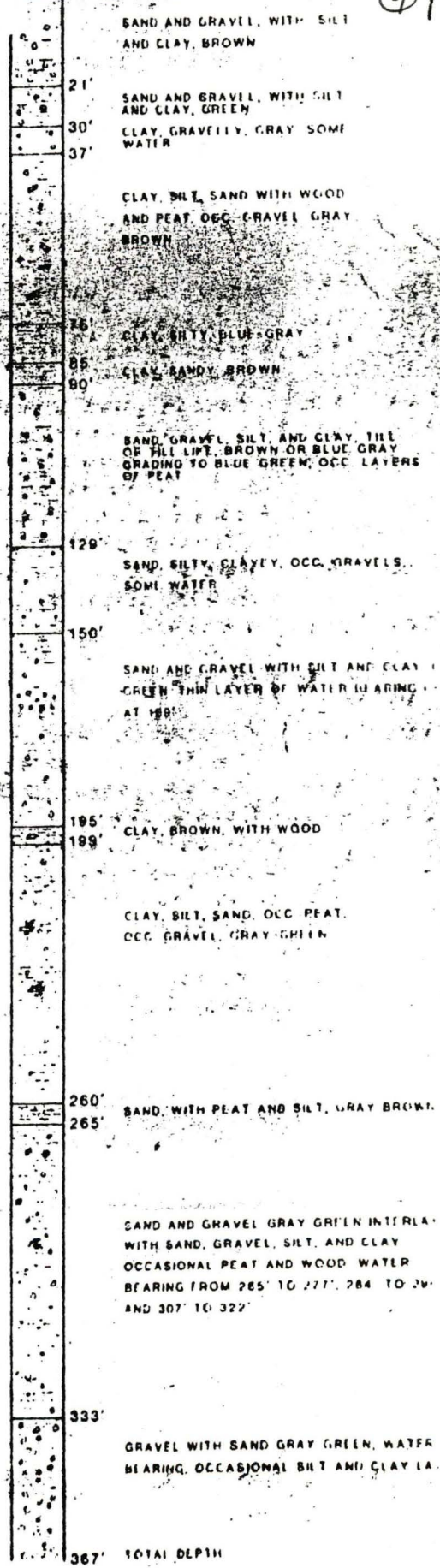
DRIVE SHOE

333'
338'

SCOTLED 4.0 P.L.A.
GRAVEL STABILIZER

3" OF 80 SLOT, 8" P.S.
JOHNSON WATERMARK SCREEN
WITH BAIL

367'



RECEIVED
MAY 22 1987

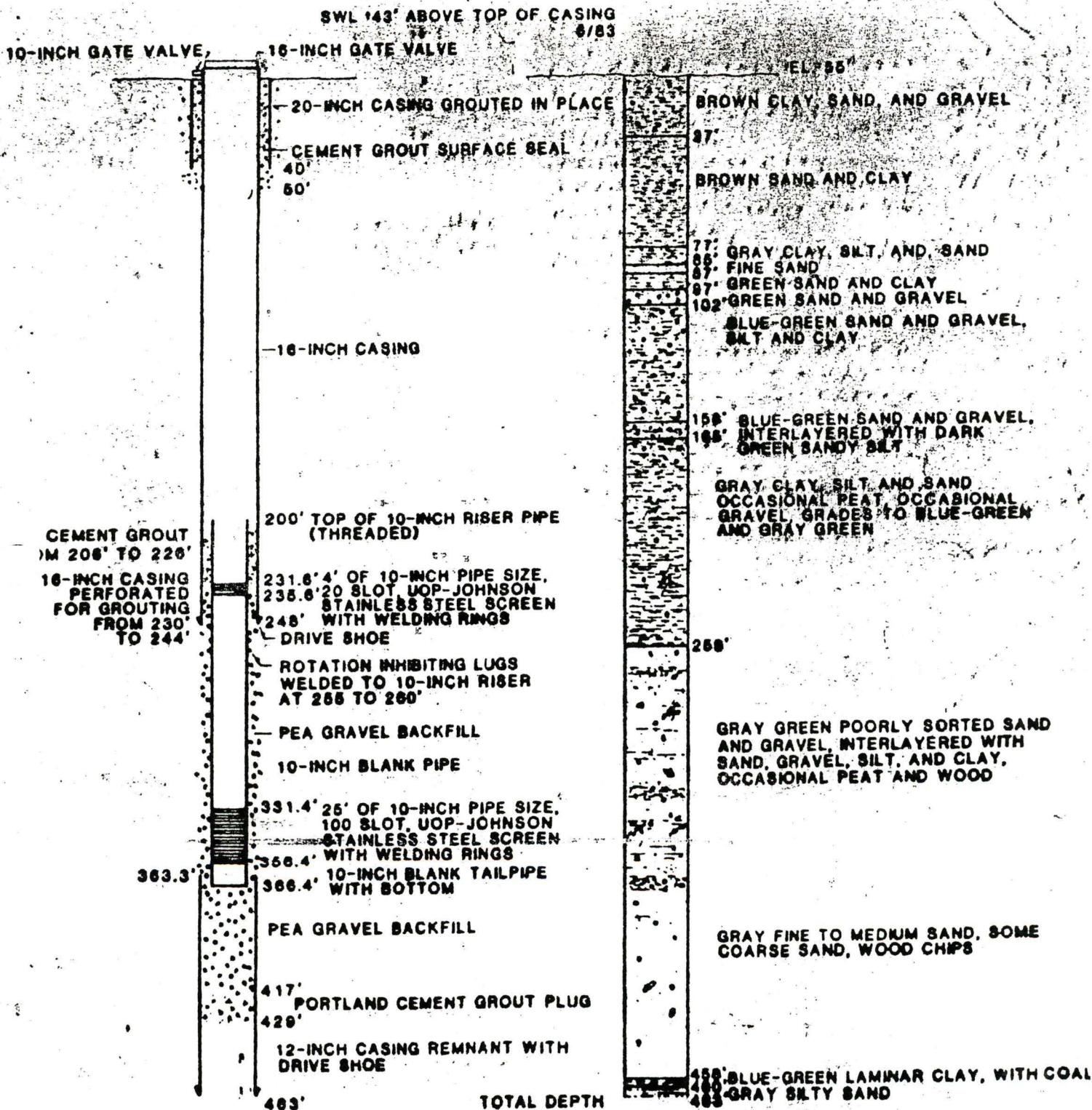
S.E. 1/4 NW 1/4 T22N R5E

Sec 7

CONSTRUCTION DETAIL

GEOLOGIC LOG

13
A. T. Tolbert



RECEIVED
MAY 22 1987

ENTERED WATER WELL REPORT

File Original and First Copy with
Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

Start Card No. W 16300
UNIQUE WELL I.D.: AEH 964
Water Right Permit No. 22-4E-125

STATE OF WASHINGTON

OWNER: Name City of Kent Address N/A

(2) LOCATION OF WELL: County King NE 1/4 SE 1/4 Sec 12 T. 22 N. R. 4E W.M.

(2a) STREET ADDRESS OF WELL (for nearest address) Approx 216^{thrd} Ave Kent

(3) PROPOSED USE: Domestic Industrial Municipal
 Irrigation Test Well Other
 OnWater

(4) TYPE OF WORK: Owner's number of well (if more than one)
Abandoned New well Method: Dug Bored
Deepened Cable Driven
Reconditioned Rotary Jetted

(5) DIMENSIONS: Diameter of well 6^{1/2} inches.
Drilled 85 feet. Depth of completed well 85 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 6 ft. Diam. from 7.2 ft. to 6.5 ft.
Welded Diam. from _____ ft. to _____ ft.
Liner installed Threaded Diam. from _____ ft. to _____ ft.

Perforations: Yes No
Type of perforator used _____
SIZE of perforations _____ in. by _____ in.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.

Screens: Yes No
Manufacturer's Name Johnson
Type Stainless 304 Model No. _____
Diam. 5 Slot size 15 from 80 ft. to 65 ft.
Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel packed: Yes No Size of gravel _____
Gravel placed from _____ ft. to _____ ft.

Surface seal: Yes No To what depth? 20 ft.
Material used in seal Bentonite
Did any strata contain unusable water? Yes No
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

(7) PUMP: Manufacturer's Name _____
Type: _____ H.P.

(8) WATER LEVELS: Land-surface elevation _____ ft.
Static level ground level ft. below top of well Date _____
Artesian pressure _____ lbs. per square inch Date _____
Artesian water is controlled by _____ (Cap. valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes No If yes, by whom? _____
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.
" " " " " " " "
" " " " " " " "

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____
Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.
Airtest _____ gal./min. with stem set at _____ ft. for _____ hrs.
Artesian flow _____ g.p.m. Date _____
Temperature of water _____ Was a chemical analysis made? Yes No

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
<u>Fill</u>	<u>0</u>	<u>2</u>
<u>Silty sand-silt-clay</u>	<u>2</u>	<u>40</u>
<u>Silty fine sand</u>	<u>40</u>	<u>50</u>
<u>Coarse sand some gravel</u>	<u>50</u>	<u>60</u>
<u>Fine to medium sand</u>	<u>60</u>	<u>85</u>

RECEIVED

OCT 16 1998
NWRO-LWR
DEPT OF ECOLOGY

Work Started 8-14-98 19. Completed 8-18-98 19.

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Holt Drilling Inc (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)
Address 10621 Todd Rd E
(Signed) Ruby Holt License No. 1099
(WELL DRILLER)

Contractor's Registration No. HOLDR13606 Date 8-20-98 19

(USE ADDITIONAL SHEETS IF NECESSARY)

Ecology is an Equal Opportunity and Affirmative Action employer. For special accommodation needs, contact the Water Resources Program at (206) 407-6600. The TDD number is (206) 407-6006.

WATER WELL REPORT

STATE OF WASHINGTON

(15)
Start Card No. W116935
UNIQUE WELL I.D. # AEJ 475
Water Right Permit No. 22-5E-7C

(1) OWNER: Name City of Kent Address 220 4th Ave South
(2) LOCATION OF WELL: County King NE 1/4 SW 1/4 Sec 7 T. 22 N. R. 5 E
(2a) STREET ADDRESS OF WELL (or nearest address) OBYEN WELL

(3) PROPOSED USE: Domestic Industrial Municipal
 Irrigation Test Well Other
 DeWater

(4) TYPE OF WORK: Owner's number of well (If more than one) _____
Abandoned New well Method: Dug Bored
Deepened Cable Driven
Reconditioned Rotary Jetted

(5) DIMENSIONS: Diameter of well 12" inches.
Drilled 261 feet. Depth of completed well 252 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 12 ft. Diam. from +2 ft. to 192 ft.
Welded Liner installed Threaded
Type of perforator used _____
SIZE of perforations _____ in. by _____ in.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.

Screens: Yes No
Manufacturer's Name Johnson
304 stainless Model No. _____
1. 10" Slot size 60 from 192 ft. to 207 ft.
Diam. 10" Slot size 30 from 207 ft. to 221 ft.
10" Slot size 30 from 221 ft. to 246 ft.

Gravel packed: Yes No Size of gravel _____
Gravel placed from _____ ft. to _____ ft.
Surface seal: Yes No To what depth? 40 ft.
Material used in seal cement
Did any strata contain unusable water? Yes No
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

(7) PUMP: Manufacturer's Name _____
Type: _____ H.P. _____

(8) WATER LEVELS: Land-surface elevation above mean sea level _____ ft.
Static level Artesian ft. below top of well Date _____
Artesian pressure SPST lbs. per square inch Date _____
Artesian water is controlled by _____ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes No If yes, by whom? Holt
Yield: 1050 gal./min. with 43.5 ft. drawdown after 24 hrs.
" " " " "
" " " " "
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)
Time Water Level Time Water Level Time Water Level

Date of test _____
Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.
Artest _____ gal./min. with stem set at _____ ft. for _____ hrs.
Artesian flow _____ g.p.m. Date _____
Temperature of water _____ Was a chemical analysis made? Yes No

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation: Describe by color, character, size of material and structure, and show thickness of aquifer and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
Gravel Fill	0	2
Brown silty gravels	2	17
Gray silty sand + gravel	17	23
Brown silt	23	27
Brown silty sand + gravel	27	65
Gray + green silty sand + gravel	65	83
Gray silt-sand-peat	83	90
Tight gray silt	90	120
Green-gray silt + some sand	120	167
sand + gravel water	167	257
Hard silt coal Bedrock?	257	262
OCT 20 1995		
Work Started <u>6-22-99</u> , 19. Completed <u>9-20-99</u> , 19		

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Holt Drilling Inc (PERSON, FIRM OR CORPORATION) (TYPE OR PRINT)
Address Po Box 1890
(Signed) Roy Holt License No. 1094
(WELL DRILLER)

Contractor's Registration No. HOLT011360G Date 10-12-99, 19
(USE ADDITIONAL SHEETS IF NECESSARY)

101814

WATER WELL REPORT

Start Card No W 135386

AFR 915

STATE OF WASHINGTON

Water Right Permit No 22-SE-7F

1) OWNER: Name CITY OF KENT Address 220 FOURTH AVE S., KENT, WA 98032

2) LOCATION OF WELL: County KING SE 1/4 NW 1/4 Sec 7 T 22 N, R 5E W.M

2a) STREET ADDRESS OF WELL (or nearest address) 212th ST. TREATMENT FACILITY

3) PROPOSED USE: Domestic Industrial Municipal
 Irrigation Test Well Other
 DeWater

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information

MATERIAL	FROM	TO
Brown Silty CLAY SAND GRAVEL	0	40
DARK GRAY SAND AND GRAVEL	40	43
BROWN SILTY CLAY SAND AND GRAVEL	43	50
BROWN SILTY CLAY WITH SAND	50	70
GREEN AND GRAY SILT AND CLAY	70	90
GRAY SILTY SAND AND GRAVEL	90	100
GREEN GRAY SILTY CLAY SAND + GRAVEL	100	180
GRAY GREEN SILTY SAND AND GRAVEL	180	193.5
GRAY GREEN CLAY	193.5	195.5
GRAY BROWN SAND AND SILT	195.5	229
BLUE, GREEN, GRAY CLAY	229	244
GRAY FINE SAND	244	257
BLUE GRAY BROWN CLAY some part	257	290
GRAY SAND AND GRAVEL with	290	
CLAY layers, wood chips		490
GRAY SILTY SAND	490	522

4) TYPE OF WORK: Owner's number of well (if more than one) WELL 3
 Abandoned New well Method: Dug Bored
 Deepened Cable Driven
 Reconditioned Rotary Jetted

5) DIMENSIONS: Diameter of well 16/12 inches
 Drilled 522 feet. Depth of completed well 495 ft.

6) CONSTRUCTION DETAILS:
 Casing installed: 20 " Diam from +0.3 ft. to 120 ft.
 Welded 16 " Diam from +3.4 ft to 293 ft
 Liner installed
 Threaded 12 " Diam from 213 ft to 290 ft

Perforations: Yes No
 Type of perforator used _____
 SIZE of perforations _____ in by _____ in
 _____ perforations from _____ ft. to _____ ft
 _____ perforations from _____ ft to _____ ft
 _____ perforations from _____ ft to _____ ft

Screens: Yes No
 Manufacturer's Name UOP JOHNSON
STAINLESS Model No 304
 " 0 " Slot size 290-300 from 320-330 ft to 340-360 ft
 Diam _____ Slot size 365-375 from 385-395 ft to 400-410 ft

Gravel packed: Yes No Size of gravel 460-480, 4x8
 Gravel placed from 222 ft to 495 ft

Surface seal: Yes No To what depth? 50' ft
 Material used in seal CEMENT GROUT
 Did any strata contain unusable water? Yes No
 Type of water? _____ Depth of strata _____
 Method of sealing strata off _____

7) PUMP: Manufacturer's Name NA
 Type _____ H.P.

8) WATER LEVELS: Land-surface elevation above mean sea level ~55 ft
 Static level ~45 ft below top of well Date ABOUT
 Artesian pressure ~20 psi lbs per square inch Date _____
 Artesian water is controlled by CAP + VALVE
 (Cap, valve, etc.)

9) WELL TESTS: Drawdown is amount water level is lowered below static level
 Was a pump test made? Yes No If yes, by whom? HOCT, R+N
 Yield 2,500 gal / min. with 66.5 ft drawdown after 12 hrs.
 "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
<u>3/2 M</u>	<u>FLOWS</u>				

 Date of test 6/7/01
 Bailer test _____ gal / min with _____ ft drawdown after _____ hrs
 Artest _____ gal / min with stem set at _____ ft for _____ hrs
 Artesian flow 200+ g p m. Date _____
 Temperature of water 50.2 °F Was a chemical analysis made? Yes No

RECEIVED
 JUL 24 2001
 DEPT OF ECOLOGY

Work started 4/24 Completed 5/11

WELL CONSTRUCTOR CERTIFICATION:
 I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.
 NAME Holt Drilling Inc (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)
 Address PO Box 1890
 (Signed) Rh Holt License No 1099
 Contractor's Registration No HOCT 13606 Date 6/20/01, 19____
 (WELL DRILLER)

140087

"CORRECTED"

22 SE 75 (17)

WATER WELL REPORT

Original & 1st copy - Ecology, 2nd copy - owner, 3rd copy - driller

Construction/Decommission ("x" in circle)

Construction
Decommission ORIGINAL CONSTRUCTION Notice
of Intent Number ~~140087~~

CURRENT

Notice of Intent No. WE01361

Unique Ecology Well ID Tag No. AFT 320

Water Right Permut No. G1-236140

Property Owner Name City of Kent

Well Street Address ^{9615 80, 218TH ST} Crawfish Creek Park

City Kent WA 98032 County: King

Location NE 1/4 1/4 SE 1/4 Sec 7 Twn 22 R5E ^{EWM circle or one}

Lat/Long (s,t,r still) Lat Deg NA Lat Min/Sec NA

REQUIRED) Long Deg NA Long Min/Sec NA

Tax Parcel No. 880.2 4000 66

PROPOSED USE: Domestic Industrial Municipal
 DeWater Irrigation Test Well Other

TYPE OF WORK: Owner's number of well (if more than one) _____
 New Well Reconditioned Method Dug Bored Driven
 Deepened Cable Rotary Jetted

DIMENSIONS: Diameter of well 16 inches, drilled 690 ft
Depth of completed well 645 ft

CONSTRUCTION DETAILS
Casing Welded 20" Diam from +1 ft to 293 ft
Installed: Liner installed 16" Diam from +2 ft to 690 ft
 Threaded _____" Diam from _____ ft to _____ ft

Perforations: Yes No
Type of perforator used _____
SIZE of perfs _____ in by _____ in and no of perfs _____ from _____ ft to _____ ft

Screens: Yes No K-Pac Location _____
Manufacturer's Name ALLOY Machine works
Type 304 stainless steel Model No _____
Diam 10" PS Slot Size 30 from 413 ft to 423 ft
Diam 10" PS Slot Size 30 from 440 ft to 445 ft
380 ft to 630 ft

Gravel/Filter packed: Yes No Size of gravel/sand 10X20
Materials placed from 645 ft to 388 ft

Surface Seal: Yes No To what depth? 30 ft
als used in seal High Solids Bentonite
y strata contain unusable water? Yes No

Type of water? _____ Depth of strata _____
Method of sealing strata off _____

PUMP: Manufacturer's Name NA
Type NA HP NA

WATER LEVELS: Land-surface elevation above mean sea level _____ ft
Static level 149 ft. below top of well Date 1-15-04
Artesian pressure _____ lbs per square inch Date _____
Artesian water is controlled by _____ (cap.valve, etc)

WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes No If yes, by whom? HOKKAIDO
Yield 1000 gal/min. with 32.7 ft drawdown after 1 hrs
Yield 1000 gal/min with 37.0 ft drawdown after 12 hrs
Yield 1000 gal/min with 38.2 ft drawdown after 24 hrs

Recovery data (time taken as zero when pump turned off)(water level measured from well top to water level)
Time Water Level Time Water Level Time Water Level
0 185.3 2min 154.8 2hr 151.1
5min 172.0 35min 153.7 4hr 150.3
10min 170.5 1hr 151.9 6hr 149.9
Date of test 1-15-04
Bailer test _____ gal/min with _____ ft drawdown after _____ hrs
Airtest _____ gal/min with stem set at _____ ft for _____ hrs.
Artesian flow _____ g p m Date _____
Temperature of water _____ Was a chemical analysis made? Yes No

CONSTRUCTION OR DECOMMISSION PROCEDURE
Formation Describe by color, character, size of material and structure, and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information Indicate all water encountered (USE ADDITIONAL SHEETS IF NECESSARY)

MATERIAL	FROM	TO
Brown Gravelly fill	0'	9'
Gray cemented gravel	9'	76'
Gray sand & gravel trace Bentonite	76'	106'
Gray silty clay	106'	140'
Gray sandy silt	140'	150'
Gray sand & gravel	150'	158'
Gray clay	158'	221'
Gray Green silty gravel	221'	239'
Green silty sand w/ brown sand	239'	283'
Green silt bound gravel	283'	291'
Green silty clay	291'	299'
Gray silty clay	299'	320'
Green Gray clay	320'	390'
Gray fine med silty sand	390'	407'
Green silt bound sand & gravel	407'	490'
Gray sand & gravel w/ silt	490'	580'
Gray sand med water bearing w/ some gravel	580'	635'
Gray fine silty sand	635'	690'

Cut casing shoe and back fill from 690' to 640' with High Solids Bentonite

RECEIVED
MAR 2 2 2004
DEPT OF ECOLOGY
Start Date 8-28-03 Completed Date 2-25-04

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all applicable well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Driller/Engineer/Trainee Name (Print) Bob Carper
Driller/Engineer/Trainee Signature Bob Carper
Driller or Trainee License No 1234

Drilling Company HOKKAIDO DRILLING, INC.
Address P.O. BOX 100
City, State, Zip GRAHAM, WA 98338-0100
Contractor's Registration No. HOKKAD1017M8 Date 3/11/04

If trainee, licensed driller's Signature and License no. _____

City of Kent
220 So. 4th St.
Kent, WA 98032

To whom it may concern:


Gentlemen:

We have been contracted to abandon 4 wells located at 208th & East Valley Highway. The wells consisted of 2-2" diameter sand points, 1-3" diameter and a 6" diameter well. All wells were abandoned in accordance with D.O.E. W.A.C. #173-160-320. (Abandonment of artesian well).

Cement grout consisting of 6 gallons of water per sack, was pressure pumped into the wells. Using volumn amounts for size of well, an amount equal to at least 1/3 more than casing would hold was induced under pressure. This method insures that an amount of grout was deposited out side the casing through screens, perforation, or open bottom which ever the case may be.

All work was completed on 11-15-85. All wells were checked for water containment and found to be satisfactory.

Yours truly,


John E. Armstrong
Secretary

*sent copy
to Lynn
at architect*

RECEIVED

MAR 31 1986

DEPARTMENT OF ECOLOGY
NORTHWEST REGION

Name Trammell & Cow Address 5601 6th Ave. S. SEATTLE, WA

LOCATION OF WELL: County King S.W. 1/4, S.W. 1/4 Sec 6 T 22 N., R 5E W.
Bearing and distance from section or subdivision corner 208th St and East Valley Hg. Kant. W. Va.

PROPOSED USE: Domestic Industrial Municipal
Irrigation Test Well Other

(4) TYPE OF WORK: Owner's number of well (if more than one) _____
New well Method: Dug Bored
Deepened Cable Driven
Reconditioned Rotary Jetted

(5) DIMENSIONS: Diameter of well _____ inches.
Drilled _____ ft. Depth of completed well _____ ft.

(6) CONSTRUCTION DETAILS:
Casing installed: _____" Diam. from _____ ft. to _____ ft.
Threaded _____" Diam. from _____ ft. to _____ ft.
Welded _____" Diam. from _____ ft. to _____ ft.

Perforations: Yes No
Type of perforator used _____
SIZE of perforations _____ in. by _____ in.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.

Screens: Yes No
Manufacturer's Name _____
Type _____ Model No. _____
Diam. _____ Slot size _____ from _____ ft. to _____ ft.
Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel packed: Yes No Size of gravel: _____
Gravel placed from _____ ft. to _____ ft.

Surface seal: Yes No To what depth? _____ ft.
Material used in seal _____
Did any strata contain unusable water? Yes No
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

(7) PUMP: Manufacturer's Name _____
Type: _____ HP _____

(8) WATER LEVELS: Land-surface elevation _____ ft.
Static level _____ ft. below top of well Date _____
Artesian pressure _____ lbs. per square inch Date _____
Artesian water is controlled by _____ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes No If yes, by whom? _____
Yield: gal./min. with _____ ft. drawdown after _____ hrs.
" " " " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____
E test _____ gal./min. with _____ ft. drawdown after _____ hrs.
A n flow _____ g.p.m. Date _____
Temperature of water _____ Was a chemical analysis made? Yes No

(10) WELL LOG:

Formation: Describes by color, character, size of material and structure, or show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation

MATERIAL	FROM	TO
Abandonment		
2-2" Sand points app 110' deep		
1-3" Well app 115' deep		
1-6" Well app 230' deep		
All wells were Artesian		
They were abandoned by using cement grout with bentonite and pressure pumped down well. Using a volume equal to at least 1/3 or more than casing would hold. This insured grout to be outside of casing sealed.		
Work started	19	Completed

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Armstrong & Charcoal Drilling
(Person, firm, or corporation) (Type or print)

Address 107th Ave East

[Signed] John E. Armstrong
(Well Driller)

License No. 2012 Date 3-27, 1986

APPENDIX B

UNIVAR KENT BORING LOGS

LOG OF EXPLORATORY BORING

PROJECT NAME Van Water & Rogers Inc.
 LOCATION Kent, Washington
 DRILLED BY Cascade Drilling, Inc.
 DRILL METHOD Hollow Stem Auger
 LOGGED BY Nick Garson

BORING NO. MW- 1
 PAGE 1 OF 2
 GROUND ELEV. 1210
 TOTAL DEPTH 20.50'
 DATE COMPLETED 04/13/95

SAMPLE METHOD AND NUMBER	PID (in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
HA	45							0 to 0.8 foot: CONCRETE.
SB SB-1-4.5	100	12-16-19						0.8 to 10.0 feet: SAND (SW), brown, fine to medium, few coarse sand, few to little, fine to coarse, angular to subrounded gravel from 0.8 to 3.0 feet, trace to few, fine to medium, subrounded cobbles from 0.8 to 3.0 feet, trace fines, medium dense to dense, damp to wet, very strong acidic to solvent-like odor at 6.0 feet.
SB SB-1-6	24	37-20-20		5				
SB SB-1-7.5	240	13-15-16	▽ 4/13/95 1210					
SB --	--	7-12-15		10				10.0 to 15.0 feet: SILTY SAND (SM), brown to gray, fine, scattered laminated structures 2- to 6-millimeters-thick, occasional wood debris, low plasticity, wet.
SB --	--	13-15-16		15				15.0 to 20.5 feet: SILT (ML), brown to gray, trace scattered rootlets and peat-like material, medium plasticity, wet.
SB --	--	7-8-10		20				

REMARKS

- (1) SB = Soil samples collected with Dames & Moore 3-inch split-barrel sampler. (2) Blow counts do not represent SPT results.
- (3) White triangle = field estimate of water level at time of drilling. (4) Reference elevation = ground surface(s). HA = Hand augered. (6) Photoionization detector (PID) results in parts per million (ppm).



LOG OF EXPLORATORY BORING

PROJECT NAME **Van Water & Rogers Inc.**
 LOCATION **Kent, Washington**
 DRILLED BY **Cascade Drilling, Inc.**
 DRILL METHOD **Hollow Stem Auger**
 LOGGED BY **Nick Garson**

BORING NO. **MW- 1**
 PAGE **2 OF 2**
 GROUND ELEV. _____
 TOTAL DEPTH **20.50'**
 DATE COMPLETED **04/13/2011**

SAMPLE METHOD AND NUMBER	PID (in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
				25				<p>15.0 to 20.5 feet: SILT (ML), continued.</p> <p>Total depth drilled = 20.5 feet. Total depth sampled = 20.5 feet.</p> <p>WELL COMPLETION DETAILS:</p> <p>0 to 4.0 feet: 2-inch-diameter, flush-threaded, Schedule 40 PVC blank riser pipe.</p> <p>4.0 to 19.0 feet: 2-inch-diameter, flush-threaded, Schedule 40 PVC well screen with 0.010-inch machined slots.</p> <p>19.0 to 19.5 feet: 2-inch-diameter threaded end cap.</p> <p>Ground surface: Flush mount well monument.</p> <p>0 to 1.0 foot: Concrete.</p> <p>1.0 to 3.0 feet: Bentonite chips hydrated with potable water.</p> <p>3.0 to 20.5 feet: #2/12 RMC Monterey sand.</p>
				30				
				35				
				40				



REMARKS

(1) SB = Soil samples collected with Dames & Moore 3-inch split-barrel sampler. (2) Blow counts do not represent SPT results.
 (3) White triangle = field estimate of water level at time of drilling. (4) Reference elevation = ground surface(s). HA = Hand augered. (6) Photoionization detector (PID) results in parts per million (ppm).

LOG OF EXPLORATORY BORING

PROJECT NAME **Van Water & Rogers Inc.**
 LOCATION **Kent, Washington**
 DRILLED BY **Cascade Drilling, Inc.**
 DRILL METHOD **Hollow Stem Auger**
 LOGGED BY **Nick Garson**

BORING NO. **MW- 2**
 PAGE **1 OF 2**
 GROUND ELEV.
 TOTAL DEPTH **20.50'**
 DATE COMPLETED **04/13/95**

SAMPLE METHOD AND NUMBER	PID (in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
HA								0 to 0.3 foot: ASPHALT
SB SB-2-4.5	0	11-10-10						0.3 to 2.0 feet: SAND (SW), brown, fine to medium, few to little, medium to coarse, angular to subangular gravel, few fines, trace fine to medium, subrounded cobbles, trace rootlets and wood debris at 3.0 feet, loose to medium dense, moist.
SB SB-2-6	0	10-11-12		5				2.0 to 10.0 feet: SILTY SAND (SM), brown to gray, fine, low to medium plasticity fines, loose to medium dense, damp to wet.
SB --	--	10-8-6	▽ 4/13/95 1005					
SB --	--	3-7-11		10				10.0 to 11.0 feet: SILT (ML), brown to gray, medium plasticity, soft to stiff, wet.
								11.0 to 15.0 feet: SILTY SAND (SM), brown, fine, low to medium plasticity fines, trace to few organic material, medium dense, wet.
SB --	--	10-12-13		15				15.0 to 16.0 feet: SILT (ML), brown to gray, medium plasticity fines, medium dense, wet.
SB --	--	10-11-12		20				16.0 to 20.5 feet: SILTY SAND (SM), brown, fine, low to medium plasticity fines, trace organic material, medium dense, wet.

REMARKS

(1) SB = Soil samples collected with Dames & Moore 3-inch split-barrel sampler. (2) Blow counts do not represent SPT results. (3) White triangle = field estimate of water level at time of drilling. (4) Reference elevation = ground surface(s). HA = Hand augered. (6) Photoionization detector (PID) results in parts per million (ppm).



LOG OF EXPLORATORY BORING

PROJECT NAME Van Water & Rogers Inc.
 LOCATION Kent, Washington
 DRILLED BY Cascade Drilling, Inc.
 DRILL METHOD Hollow Stem Auger
 LOGGED BY Nick Garson

BORING NO. MW- 2
 PAGE 2 OF 2
 GROUND ELEV.
 TOTAL DEPTH 20.50'
 DATE COMPLETED 04/13/2008

SAMPLE METHOD AND NUMBER	PID (in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
				25				<p>16.0 to 20.5 feet: SILTY SAND (SM), continued.</p> <p>Total depth drilled = 20.5 feet. Total depth sampled = 20.5 feet.</p> <p>WELL COMPLETION DETAILS:</p> <p>0 to 4.0 feet: 2-inch-diameter, flush-threaded, Schedule 40 PVC blank riser pipe.</p> <p>4.0 to 19.0 feet: 2-inch-diameter, flush-threaded, Schedule 40 PVC well screen with 0.010-inch machined slots.</p> <p>19.0 to 19.5 feet: 2-inch-diameter threaded end cap.</p> <p>Ground surface: Flush mount well monument.</p> <p>0 to 1.0 foot: Concrete.</p> <p>1.0 to 3.0 feet: Bentonite chips hydrated with potable water.</p> <p>3.0 to 20.5 feet: #2/12 RMC Monterey sand.</p>
				30				
				35				
				40				



REMARKS
 (1) SB = Soil samples collected with Dames & Moore 3-inch split-barrel sampler. (2) Blow counts do not represent SPT results.
 (3) White triangle = field estimate of water level at time of drilling. (4) Reference elevation = ground surface(s). HA = Hand augered. (6) Photoionization detector (PID) results in parts per million (ppm).

LOG OF EXPLORATORY BORING

PROJECT NAME Van Water & Rogers Inc.
 LOCATION Kent, Washington
 DRILLED BY Cascade Drilling, Inc.
 DRILL METHOD Hollow Stem Auger
 LOGGED BY Nick Garson

BORING NO. MW- 3
 PAGE 1 OF 2
 GROUND ELEV. 20.50'
 TOTAL DEPTH 20.50'
 DATE COMPLETED 04/13/95

SAMPLE METHOD AND NUMBER	PID (in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
								0 to 0.5 foot: CONCRETE
SB SB-3-4.5	0	16-17-18						0.5 to 3.0 feet: SAND (SW), brown, fine to medium, few coarse sand, few to little, medium to coarse, angular to subrounded gravel, trace fines, trace fine subrounded cobbles, medium dense, damp.
SB --	0	8-9-11		5				3.0 to 19.0 feet: SILTY SAND (SM), brown, trace medium sand, low to medium plasticity fines, loose to medium dense, damp to wet.
SB --	--	6-4-4	▽ 4/13/95 0830					
SB --	--	6-5-12		10				
SB --	--	9-13-11		15				
SB --	--	9-13-12		20				19.0 to 20.5 feet: SAND (SW), brown, fine, trace to few fines; description continued on next page.



REMARKS

(1) SB = Soil samples collected with Dames & Moore 3-inch split-barrel sampler. (2) Blow counts do not represent SPT results. (3) White triangle = field estimate of water level at time of drilling. (4) Reference elevation = ground surface(s). HA = Hand augered. (6) Photoionization detector (PID) results in parts per million (ppm).

LOG OF EXPLORATORY BORING

PROJECT NAME Van Waters & Rogers Inc.
LOCATION 8201 South 212th St., Kent, Washington
DRILLED BY Cascade Drilling, Inc.
DRILL METHOD Hollow Stem Auger
LOGGED BY Nick Garson

BORING NO. MW- 4
PAGE 1 OF 2
GROUND ELEV. 33.20'
TOTAL DEPTH 15.00'
DATE COMPLETED 08/13/96

SAMPLE NUMBER (SAMPLE TYPE)	PID (in ppm) (RECOVERY)	BLOWS PER 6 INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
								0 to 0.4 foot: CONCRETE 0.4 to 8.5 feet: SAND (SP) , brown, fine to medium, trace coarse, trace fines, strong organic odor at approximately 7.5 feet bgs, damp to wet. (FILL/ALLUVIUM)
SB-4-1.5 (SB)	1.0 (10/18)	50/4"						
SB-4-3 (SB)	9.0 (8/18)	50/6"						@ 5.0 feet: sampler refusal.
			▽ 5					
SB-4-7.5 (SB)	12 (12/18)	12-10-6						8.5 to 12.5 feet: SILT (ML) , brown, low plasticity, trace fine sand, strong organic odor, wet. (ALLUVIUM)
SB-4-10 (SB)	6.0 (8/18)	10-8-7		10				
SB-4-12.5 (SB)	8.0 (14/18)	5-4-4						12.5 to 15.0 feet: SILT with WOOD DEBRIS (ML) , brown, low to medium plasticity, trace fine sand, abundant scattered wood debris, wet. (ALLUVIUM)
				15				Total depth sampled = 14.0 feet. Total depth drilled = 15.0 feet.
				20				See Page 2 for Well Completion Details.



REMARKS

- (1) SB = Soil sample collected using split barrel sampler (3-inch I.D. by 18-inches long) equipped with stainless steel tube inserts. (2) Blow counts do not represent SPT results. (3) White triangle = field estimate of water level at time of drilling. (4) Reference elevation = top of PVC. (5) Photoionization detector (PID) results in parts per million (ppm).

LOG OF EXPLORATORY BORING

PROJECT NAME **Van Waters & Rogers Inc.**
 LOCATION **8201 South 212th St., Kent, Washington**
 DRILLED BY **Cascade Drilling, Inc.**
 DRILL METHOD **Hollow Stem Auger**
 LOGGED BY **Nick Garson**

BORING NO. **MW- 4**
 PAGE **2 OF 2**
 GROUND ELEV. **33.20'**
 TOTAL DEPTH **15.0**
 DATE COMPLETED **08/1...**

SAMPLE NUMBER (SAMPLE TYPE)	PID (in ppm) (RECOVERY)	BLOWS PER 6 INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
				25				<p>WELL COMPLETION DETAILS:</p> <p>0 to 4.5 feet: 2-inch-diameter, flush-threaded, Schedule 40 PVC blank riser pipe.</p> <p>4.5 to 14.5 feet: 2-inch-diameter, flush-threaded, Schedule 40 PVC well screen with 0.020-inch machined slots and a 2-inch-diameter, flush-threaded, Schedule 40 PVC end cap.</p> <p>0 to 1.0 foot: Steel flush-mount monument.</p> <p>0 to 1.0 foot: Concrete.</p> <p>1.0 to 3.0 feet: Bentonite chips hydrated with potable water.</p> <p>3.0 to 15.0 feet: 20 - 40 Colorado silica sand.</p>
				30				
				35				
				40				



REMARKS

(1) SB = Soil sample collected using split barrel sampler (3-inch I.D. by 18-inches long) equipped with stainless steel tube inserts. (2) Blow counts do not represent SPT results. (3) White triangle = field estimate of water level at time of drilling. (4) Reference elevation = top of PVC. (5) Photoionization detector (PID) results in parts per million (ppm).

LOG OF EXPLORATORY BORING

PROJECT NAME Van Waters & Rogers Inc.
LOCATION 8201 South 212th St., Kent, Washington
DRILLED BY Cascade Drilling, Inc.
DRILL METHOD Hollow Stem Auger
LOGGED BY Nick Garson

BORING NO. MW- 5
PAGE 1 OF 2
GROUND ELEV. 32.77'
TOTAL DEPTH 15.00'
DATE COMPLETED 08/13/96

SAMPLE NUMBER (SAMPLE TYPE)	PID (in ppm) (RECOVERY)	BLOWS PER 6 INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
								0 to 0.2 foot: ASPHALT
SB-5-1.5 (SB)	2.2 (12/18)	6-7-6						0.2 to 4.0 feet: SAND (SP), reddish-brown, fine, trace fines, damp. (FILL/ALLUVIUM)
SB-5-3 (SB)	2.2 (14/18)	7-6-6						
SB-5-5 (SB)	0.8 (15/18)	2-2-1	▽	5				4.0 to 5.5 feet: SILTY SAND (SM), reddish-brown, fine, some low plasticity fines, damp to wet. (ALLUVIUM)
SB-5-7.5 (SB)	1.0 (16/18)	2-2-3						5.5 to 7.5 feet: SANDY SILT (ML), brown, low plasticity, little fine sand, wet. (ALLUVIUM)
SB-5-10 (SB)	0.4 (12/18)	2-2-2		10				7.5 to 12.5 feet: SILTY SAND (SM), brown, fine, some low plasticity fines, trace rootlets, wet. (ALLUVIUM)
SB-5-12.5 (SB)	0.4 (13/18)	1-1-1						12.5 to 15.0 feet: SAND (SP), brown, fine, trace fines, scattered wood debris, wet. (ALLUVIUM)
				15				Total depth sampled = 14.0 feet. Total depth drilled = 15.0 feet.
				20				See Page 2 for Well Completion Details.



REMARKS

(1) SB = Soil sample collected using split barrel sampler (3-inch I.D. by 18-inches long) equipped with stainless steel tube inserts. (2) Blow counts do not represent SPT results. (3) White triangle = field estimate of water level at time of drilling. (4) Reference elevation = top of PVC. (5) Photoionization detector (PID) results in parts per million (ppm).

LOG OF EXPLORATORY BORING

PROJECT NAME Van Waters & Rogers Inc.
LOCATION 8201 South 212th St., Kent, Washington
DRILLED BY Cascade Drilling, Inc.
DRILL METHOD Hollow Stem Auger
LOGGED BY Nick Garson

BORING NO. MW- 5
PAGE 2 OF 2
GROUND ELEV. 32.77'
TOTAL DEPTH 15.0
DATE COMPLETED 08/1

SAMPLE NUMBER (SAMPLE TYPE)	PID (in ppm) (RECOVERY)	BLOWS PER 6 INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
				25				<p>WELL COMPLETION DETAILS:</p> <p>0 to 4.5 feet: 2-inch-diameter, flush-threaded, Schedule 40 PVC blank riser pipe.</p> <p>4.5 to 14.5 feet: 2-inch-diameter, flush-threaded, Schedule 40 PVC well screen with 0.020-inch machined slots and a 2-inch-diameter, flush-threaded, Schedule 40 PVC end cap.</p> <p>0 to 1.0 foot: Steel flush-mount monument.</p> <p>0 to 1.0 foot: Concrete.</p> <p>1.0 to 3.0 feet: Bentonite chips hydrated with potable water.</p> <p>3.0 to 15.0 feet: 20 - 40 Colorado silica sand.</p>
				30				
				35				
				40				



REMARKS

(1) SB = Soil sample collected using split barrel sampler (3-inch I.D. by 18-inches long) equipped with stainless steel tube inserts. (2) Blow counts do not represent SPT results. (3) White triangle = field estimate of water level at time of drilling. (4) Reference elevation = top of PVC. (5) Photoionization detector (PID) results in parts per million (ppm).

LOG OF EXPLORATORY BORING

PROJECT NAME Van Waters & Rogers Inc.
LOCATION 8201 South 212th St., Kent, Washington
DRILLED BY Cascade Drilling, Inc.
DRILL METHOD Hollow Stem Auger
LOGGED BY Nick Garson

BORING NO. MW- 6
PAGE 1 OF 2
GROUND ELEV. 33.33'
TOTAL DEPTH 15.00'
DATE COMPLETED 08/13/96

SAMPLE NUMBER (SAMPLE TYPE)	PID (in ppm) (RECOVERY)	BLOWS PER 6 INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
								0 to 0.2 foot: ASPHALT
SB-6-1.5 (SB)	0.4 (8/18)	9-8-13						0.2 to 5.5 feet: SAND (SP), brown, fine, trace fines, damp to wet. (FILL/ALLUVIUM)
SB-6-3 (SB)	0.4 (12/18)	7-5-4						
SB-6-5 (SB)	1.7 (16/18)	3-4-2	▽	5				5.5 to 8.0 feet: SILTY SAND (SM), brown, fine, some low plasticity fines, trace rootlets, wet. (ALLUVIUM)
SB-6-7.5 (SB)	1.7 (16/18)	3-3-2						8.0 to 10.5 feet: SILT (ML), gray, low to medium plasticity, trace fine sand, wet. (ALLUVIUM)
SB-6-10 (SB)	1.7 (15/18)	2-3-3		10				10.5 to 14.0 feet: SILTY SAND (SM), gray, fine, some low plasticity fines, wet. (ALLUVIUM)
SB-6-14 (SB)	5.0 (15/18)	1-2-1		15				14.0 to 15.0 feet: SILT (ML), gray, low to medium plasticity, trace fine sand, wet. (ALLUVIUM)
				20				Total depth sampled = 15.5 feet. Total depth drilled = 15.0 feet.
								See Page 2 for Well Completion Details.



REMARKS

- (1) SB = Soil sample collected using split barrel sampler (3-inch I.D. by 18-inches long) equipped with stainless steel tube inserts. (2) Blow counts do not represent SPT results. (3) White triangle = field estimate of water level at time of drilling. (4) Reference elevation = top of PVC. (5) Photoionization detector (PID) results in parts per million (ppm).

LOG OF EXPLORATORY BORING

PROJECT NAME **Van Waters & Rogers Inc.**
 LOCATION **8201 South 212th St., Kent, Washington**
 DRILLED BY **Cascade Drilling, Inc.**
 DRILL METHOD **Hollow Stem Auger**
 LOGGED BY **Nick Garson**

BORING NO. **MW- 6**
 PAGE **2 OF 2**
 GROUND ELEV. **33.33'**
 TOTAL DEPTH **15.0**
 DATE COMPLETED **08/1**

SAMPLE NUMBER (SAMPLE TYPE)	PID (in ppm) (RECOVERY)	BLOWS PER 6 INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
				25				<p>WELL COMPLETION DETAILS:</p> <p>0 to 4.5 feet: 2-inch-diameter, flush-threaded, Schedule 40 PVC blank riser pipe.</p> <p>4.5 to 14.5 feet: 2-inch-diameter, flush-threaded, Schedule 40 PVC well screen with 0.020-inch machined slots and a 2-inch-diameter, flush-threaded, Schedule 40 PVC end cap.</p> <p>0 to 1.0 foot: Steel flush-mount monument.</p> <p>0 to 1.0 foot: Concrete.</p> <p>1.0 to 3.0 feet: Bentonite chips hydrated with potable water.</p> <p>3.0 to 15.0 feet: 20 - 40 Colorado silica sand.</p>
				30				
				35				
				40				



REMARKS

(1) SB = Soil sample collected using split barrel sampler (3-inch I.D. by 18-inches long) equipped with stainless steel tube inserts. (2) Blow counts do not represent SPT results. (3) White triangle = field estimate of water level at time of drilling. (4) Reference elevation = top of PVC. (5) Photoionization detector (PID) results in parts per million (ppm).

LOG OF EXPLORATORY BORING

PROJECT NAME **Van Waters & Rogers**
 LOCATION **Kent, Washington**
 DRILLED BY **Cascade Drilling, Inc.**
 DRILL METHOD **Hollow Stem Auger**
 LOGGED BY **Michelle Lange**

BORING NO. **MW- 7**
 PAGE **1 OF 2**
 REFERENCE ELEV. **33.24'**
 TOTAL DEPTH **15.00'**
 DATE COMPLETED **12/12/97**

SAMPLE NUMBER	PID (in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
7-2.5	0	4-5-7						<p>0 to 0.3 foot: ASPHALT</p> <p>0.3 to 2.0 feet: SAND (SP); brown; fine to medium; few coarse sand to fine subangular to subrounded gravel; trace fines; loose; damp. (FILL)</p> <p>2.0 to 5.5 feet: SILTY SAND (SM); mottled brown and red; fine; little nonplastic silt; moist. (FILL/ALLUVIUM)</p>
7-5	0	3-2-1	▽	5				<p>@ 5.5 feet: wet.</p> <p>5.5 to 12.0 feet: SILTY SAND (SM); brown; fine; little nonplastic silt; wet. Lenses of fine sand and silt. (ALLUVIUM)</p>
7-7.5	0	1-2-1						
7-10	0	2-2-2		10				<p>@ 10.0 to 11.5 feet: grades to sand with silt, trace scattered wood debris.</p>
7-12.5	0	2-2-2		15				<p>12.0 to 15.0 feet: SAND, (SP); gray/brown; fine; trace fines; scattered wood debris; wet. (ALLUVIUM)</p>
								<p>Total depth drilled = 15.0 feet. Total depth sampled = 14.0 feet.</p>
								See Page 2 for Well Completion Details.



REMARKS

(1) PID = Photoionization detector calibrated using +/- 100 ppm isobutylene gas. (2) Reference elevation = top of PVC. (3) Open triangle = field estimate of water table at time of drilling. (4) Samples collected with a 2.5-inch inside diameter split-spoon sampler. (5) Blow counts do not represent SPT results. (6) Hand dug to 2 feet for utility clearance.

LOG OF EXPLORATORY BORING

PROJECT NAME **Van Waters & Rogers**
 LOCATION **Kent, Washington**
 DRILLED BY **Cascade Drilling, Inc.**
 DRILL METHOD **Hollow Stem Auger**
 LOGGED BY **Michelle Lange**

BORING NO. **MW- 7**
 PAGE **2 OF 2**
 REFERENCE ELEV. **33.24'**
 TOTAL DEPTH **15.0'**
 DATE COMPLETED **12/1/**

SAMPLE NUMBER	PID (in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
				25				<p>WELL COMPLETION DETAILS:</p> <p>0.5 to 4.5 feet: 2-inch-diameter, flush-threaded, Schedule 40 PVC blank riser pipe.</p> <p>4.5 to 14.5 feet: 2-inch-diameter, flush-threaded, Schedule 40 PVC well screen with 0.020-inch machined slots.</p> <p>14.5 to 15.0 feet: 2-inch-diameter, flush-threaded, Schedule 40 PVC end cap.</p> <p>0 to 2.0 feet: Flush-mount monument and concrete.</p> <p>2.0 to 3.5 feet: Medium bentonite chips hydrated with potable water.</p> <p>3.5 to 15.0 feet: 2/12 Lonestar silica sand.</p>
				30				
				35				
				40				



REMARKS

(1) PID = Photoionization detector calibrated using +/- 100 ppm isobutylene gas. (2) Reference elevation = top of PVC.
 (3) Open triangle = field estimate of water table at time of drilling. (4) Samples collected with a 2.5-inch inside diameter split-spoon sampler. (5) Blow counts do not represent SPT results. (6) Hand dug to 2 feet for utility clearance.

LOG OF EXPLORATORY BORING

PROJECT NAME **Van Waters & Rogers**
 LOCATION **Kent, Washington**
 DRILLED BY **Cascade Drilling, Inc.**
 DRILL METHOD **Hollow Stem Auger**
 LOGGED BY **Michelle Lange**

BORING NO. **MW- 8**
 PAGE **1 OF 2**
 REFERENCE ELEV. **33.83'**
 TOTAL DEPTH **15.00'**
 DATE COMPLETED **12/12/97**

SAMPLE NUMBER	PID (in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
8-2.5	0	4-5-4						<p>0 to 0.2 foot: ASPHALT</p> <p>0.2 to 7.0 feet: SAND WITH SILT (SP-SM); brown with local iron staining; fine; few to little fines; scattered wood debris; damp to wet. (FILL/ALLUVIUM)</p> <p>@ 0.2 to 2.5 feet: few medium sand to fine subangular to subrounded gravel.</p>
8-5	0	3-3-2	▽	5				<p>@ 5.0 to 7.5 feet: sandy silt lenses.</p> <p>@ 6.0 feet: wet.</p>
8-7.5	0	1-1-1						<p>7.0 to 12.0 feet: SILTY SAND (SM); brown; fine; some nonplastic silt; scattered wood debris; wet. (ALLUVIUM)</p>
8-10	0	1-1-1		10				<p>@ 10.0 to 12.5 feet: sandy intervals.</p> <p>@ 12.0 feet: grades to sand.</p>
8-12.5	0	2-3-6		15				<p>12.0 to 15.0 feet: SAND (SP); gray/brown; fine; trace fines; scattered wood debris; wet. (ALLUVIUM)</p>
								<p>Total depth drilled = 15.0 feet. Total depth sampled = 14.0 feet.</p>
								<p>See Page 2 for Well Completion Details.</p>



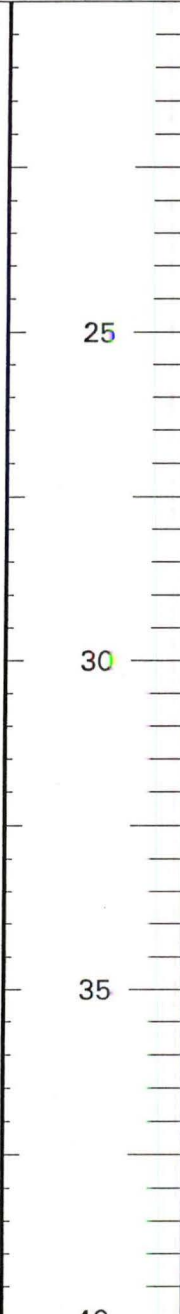
REMARKS

(1) PID = Photoionization detector calibrated using +/- 100 ppm isobutylene gas. (2) Reference elevation = top of PVC.
 (3) Open triangle = field estimate of water table at time of drilling. (4) Samples collected with a 2.5-inch inside diameter split-spoon sampler. (5) Blow counts do not represent SPT results. (6) Hand dug to 2 feet for utility clearance.

LOG OF EXPLORATORY BORING

PROJECT NAME **Van Waters & Rogers**
 LOCATION **Kent, Washington**
 DRILLED BY **Cascade Drilling, Inc.**
 DRILL METHOD **Hollow Stem Auger**
 LOGGED BY **Michelle Lange**

BORING NO. **MW- 8**
 PAGE **2 OF 2**
 REFERENCE ELEV. **33.83'**
 TOTAL DEPTH **15.0'**
 DATE COMPLETED **12/1:**

SAMPLE NUMBER	PID (in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
				<div style="display: flex; align-items: center;"> <div style="margin-right: 5px;">25</div>  </div>				<p>WELL COMPLETION DETAILS:</p> <p>0.5 to 4.5 feet: 2-inch-diameter, flush-threaded, Schedule 40 PVC blank riser pipe.</p> <p>4.5 to 14.5 feet: 2-inch-diameter, flush-threaded, Schedule 40 PVC well screen with 0.020-inch machined slots.</p> <p>14.5 to 15.0 feet: 2-inch-diameter, flush-threaded, Schedule 40 PVC end cap.</p> <p>0 to 2.0 feet: Flush-mount monument and concrete.</p> <p>2.0 to 3.5 feet: Medium bentonite chips hydrated with potable water.</p> <p>3.5 to 14.5 feet: 2/12 Lonestar silica sand.</p>



REMARKS

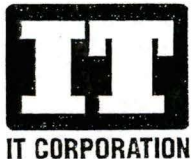
(1) PID = Photoionization detector calibrated using +/- 100 ppm isobutylene gas. (2) Reference elevation = top of PVC.
 (3) Open triangle = field estimate of water table at time of drilling. (4) Samples collected with a 2.5-inch inside diameter split-spoon sampler. (5) Blow counts do not represent SPT results. (6) Hand dug to 2 feet for utility clearance.

LOG OF EXPLORATORY BORING

PROJECT NAME **Vopak USA, Inc.**
 LOCATION **8201 South 212th Street, Kent, Washington**
 DRILLED BY **Cascade Drilling, Inc.**
 DRILL METHOD **Hollow-stem Auger**
 LOGGED BY **Erin McQuillan**

BORING NO. **MW-9**
 PAGE **1 of 2**
 REFERENCE ELEV.
 TOTAL DEPTH **15.0'**
 DATE COMPLETED **6/26/01**

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL (PID in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
	(0)							0 to 7-inches: CONCRETE
	(0)							7-inches to 5.0 feet: SILTY SAND (SM) , reddish brown, fine sand, little to some silt (20 percent), nonplastic fines, few fine gravels (10 percent, approximately 10 to 20 mm), damp, no noticeable odor.
(SS)	5-6.5 (0)	6 5 5		5				5.0 to 7.5 feet: SAND (SP) , reddish brown, fine sand, trace fines, damp, no noticeable odor.
(SS)	7.5-9 (0)	2 1 2	▽					7.5 to 10.0 feet: SANDY SILT (ML) , grayish brown, low plasticity, some to little fine sand (15 percent), wet, no noticeable odor.
(SS)	10-11.5 (0)	5 6 7		10				10.0 to 13.5 feet: SAND (SP) , brown, fine, trace fines (5 percent), wet, no noticeable odor.
(SS)	12.5-14 (0)	2 4 6		15				13.5 to 15.0 feet: SANDY SILT (ML) , brown, medium to low plasticity, little fine sand (20 percent), wet, no noticeable odor.
								Bottom of boring at 15.0 feet.
								See page 2 for Well Completion Details.
				20				



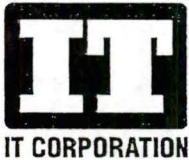
REMARKS

LOG OF EXPLORATORY BORING

PROJECT NAME Vopak USA, Inc.
LOCATION 8201 South 212th Street, Kent, Washington
DRILLED BY Cascade Drilling, Inc.
DRILL METHOD Hollow-stem Auger
LOGGED BY Erin McQuillan

BORING NO. MW-9
PAGE 2 of 2
REFERENCE ELEV.
TOTAL DEPTH 15.0'
DATE COMPLETED 6/26/01

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL (PID in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
				25				<p>WELL COMPLETION DETAILS</p> <p>0 to 5.0 feet: 2-inch-diameter, flush-threaded, Schedule 40 PVC blank riser pipe.</p> <p>5.0 to 15.0 feet: 2-inch-diameter, flush-threaded, Schedule 40 PVC well screen with 0.020-inch machined slots and 2-inch-diameter threaded end cap.</p> <p>0 to 1.0 foot: Concrete.</p> <p>1.0 to 4.0 feet: Bentonite chips hydrated with potable water.</p> <p>4.0 to 15.0 feet: 2/12 Monterey sand.</p> <p>Surface completion: flush mount, traffic rated well box.</p>
				30				
				35				
				40				



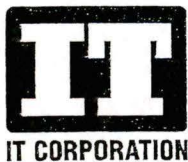
REMARKS

LOG OF EXPLORATORY BORING

PROJECT NAME Vopak USA, Inc.
 LOCATION 8201 South 212th Street, Kent, Washington
 DRILLED BY Cascade Drilling, Inc.
 DRILL METHOD Hollow-stem Auger
 LOGGED BY Erin McQuillan

BORING NO. MW-10
 PAGE 1 of 2
 REFERENCE ELEV.
 TOTAL DEPTH 15.0'
 DATE COMPLETED 6/26/01

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL (PID in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
	(0)							0 to 7-inches: CONCRETE
	(0)							7-inches to 5.0 feet: SILTY SAND (SM), reddish brown, fine sand, some fines (approximately 30 percent), damp, no noticeable odor.
(SS)	5-6.5 (0)	4 4 3	▽	5				5.0 to 7.5 feet: SANDY SILT (ML), grayish brown, low plasticity, damp, some fine sand (25 percent), no noticeable odor.
(SS)	7.5-9 (0)	1 1 1						7.5 to 12.5 feet: SILTY SAND (SM), brown, fine sand, some fines (20 to 30 percent), wet, no noticeable odor, few small silt lenses (<5 mm).
(SS)	10-11.5 (0)	2 3 3		10				12.5 to 15.0 feet: SAND (SP), gray, fine sand, trace fines, wet, no noticeable odor.
(SS)	12.5-14 (0)	6 5 5		15				Bottom of boring at 15.0 feet.
				20				See page 2 for Well Completion Details.



REMARKS

LOG OF EXPLORATORY BORING

PROJECT NAME Vopak USA, Inc.
LOCATION 8201 South 212th Street, Kent, Washington
DRILLED BY Cascade Drilling, Inc.
DRILL METHOD Hollow-stem Auger
LOGGED BY Erin McQuillan

BORING NO. MW-10
PAGE 2 of 2
REFERENCE ELEV.
TOTAL DEPTH 15.0'
DATE COMPLETED 6/26/01

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL (PID in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
				25				<p>WELL COMPLETION DETAILS</p> <p>0 to 5.0 feet: 2-inch-diameter, flush-threaded, Schedule 40 PVC blank riser pipe.</p> <p>5.0 to 15.0 feet: 2-inch-diameter, flush-threaded, Schedule 40 PVC well screen with 0.020-inch machined slots and 2-inch-diameter threaded end cap.</p> <p>0 to 1.0 foot: Concrete.</p> <p>1.0 to 4.0 feet: Bentonite chips hydrated with potable water.</p> <p>4.0 to 15.0 feet: 2/12 Monterey sand.</p> <p>Surface completion: flush mount, traffic rated well box.</p>
				30				
				35				
				40				



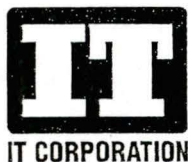
REMARKS

LOG OF EXPLORATORY BORING

PROJECT NAME Vopak USA, Inc.
 LOCATION 8201 South 212th Street, Kent, Washington
 DRILLED BY Cascade Drilling, Inc.
 DRILL METHOD Hollow-stem Auger
 LOGGED BY Erin McQuillan

BORING NO. MW-11
 PAGE 1 of 2
 REFERENCE ELEV. 20.0'
 TOTAL DEPTH 6/26/01
 DATE COMPLETED

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL (PID in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
	(0)							0 to 8-inches: CONCRETE
	(0)							8-inches to 3.0 feet: SAND (SP), reddish brown, fine sand, few fines (10 to 15 percent), damp, no noticeable odor, trace fine gravels (5 percent, <20 mm).
(SS)	5-6.5 (0)	4 4 3	▽ ADT	5				3.0 to 7.5 feet: SILTY SAND (SM), grayish brown, mottled, fine sand, some fines/silt (30 percent), some scattered wood debris, damp, no noticeable odor. @ 5.0 feet: same as above.
(SS)	7.5-9 (0)	4 5 6						7.5 to 10.0 feet: SILT (ML), brown, low plasticity, few fine sands (10 percent), wet.
MW-11-10' @ 1300 (SS)	10-11.5 (0)	1 4 5		10				10.0 to 15.0 feet: SILTY SAND (SM), brown, fine sand, low to nonplastic fines (25 percent), wet, no noticeable odor.
(SS)	12.5-14 (0)	6 4 3						15.0 to 16.5 feet: SAND (SP), grayish brown, fine sands, few silts (10 percent), wet, no noticeable odor.
(SS)	15-16.5 (0)	6 8 10		15				16.5 to 18.0 feet: SILTY SAND (SM), brown, fine sand, fines (30 percent), nonplastic, wet, no noticeable odor.
(SS)	17.5-19 (0)	4 6 7						18.0 to 20.0 feet: SAND (SP), gray, fine sand, trace fines (5 percent), wet, no noticeable odor.
				20				



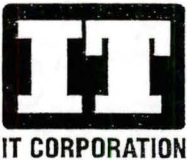
REMARKS

LOG OF EXPLORATORY BORING

PROJECT NAME Vopak USA, Inc.
 LOCATION 8201 South 212th Street, Kent, Washington
 DRILLED BY Cascade Drilling, Inc.
 DRILL METHOD Hollow-stem Auger
 LOGGED BY Erin McQuillan

BORING NO. MW-11
 PAGE 2 of 2
 REFERENCE ELEV.
 TOTAL DEPTH 20.0'
 DATE COMPLETED 6/26/01

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL (PID in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVEL	DEPTH IN FEET SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
				<div style="display: flex; align-items: center;"> <div style="border-left: 1px solid black; border-right: 1px solid black; height: 100%; position: relative;"> <div style="position: absolute; top: 0; left: 0; right: 0; border-bottom: 1px solid black; height: 5px;"></div> <div style="position: absolute; top: 10%; left: 0; right: 0; border-bottom: 1px solid black; height: 5px;"></div> <div style="position: absolute; top: 20%; left: 0; right: 0; border-bottom: 1px solid black; height: 5px;"></div> <div style="position: absolute; top: 30%; left: 0; right: 0; border-bottom: 1px solid black; height: 5px;"></div> <div style="position: absolute; top: 40%; left: 0; right: 0; border-bottom: 1px solid black; height: 5px;"></div> <div style="position: absolute; top: 50%; left: 0; right: 0; border-bottom: 1px solid black; height: 5px;"></div> <div style="position: absolute; top: 60%; left: 0; right: 0; border-bottom: 1px solid black; height: 5px;"></div> <div style="position: absolute; top: 70%; left: 0; right: 0; border-bottom: 1px solid black; height: 5px;"></div> <div style="position: absolute; top: 80%; left: 0; right: 0; border-bottom: 1px solid black; height: 5px;"></div> <div style="position: absolute; top: 90%; left: 0; right: 0; border-bottom: 1px solid black; height: 5px;"></div> </div> <div style="margin-left: 5px;"> <p style="margin: 0;">25</p> <p style="margin: 0;">30</p> <p style="margin: 0;">35</p> <p style="margin: 0;">40</p> </div> </div>			<p>Bottom of boring at 20.0 feet.</p> <p>WELL COMPLETION DETAILS</p> <p>0 to 5.0 feet: 2-inch-diameter, flush-threaded, Schedule 40 PVC blank riser pipe.</p> <p>5.0 to 20.0 feet: 2-inch-diameter, flush-threaded, Schedule 40 PVC well screen with 0.020-inch machined slots and 2-inch-diameter threaded end cap.</p> <p>0 to 1.0 foot: Concrete.</p> <p>1.0 to 4.0 feet: Bentonite chips hydrated with potable water.</p> <p>4.0 to 20.0 feet: 2/12 Monterey sand.</p> <p>Surface completion: flush mount, traffic rated well box.</p>



REMARKS

LOG OF EXPLORATORY BORING

PROJECT NAME Vopak USA, Inc.
LOCATION 8201 South 212th Street, Kent, Washington
DRILLED BY Cascade Drilling, Inc.
DRILL METHOD Hollow-stem Auger
LOGGED BY Erin McQuillan

BORING NO. MW-12
PAGE 1 of 2
REFERENCE ELEV.
TOTAL DEPTH 20.0'
DATE COMPLETED 6/26/01

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL (PID in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
	(0)							0 to 7-inches: CONCRETE
	(0)							7-inches to 4.0 feet: SAND (SP), reddish brown, fine sand, little silt (20 percent), few fine gravels (10 percent), damp, no noticeable odor.
(SS)	5-6.5 (0)	4 5 3		5				4.0 to 8.75 feet: SILTY SAND (SM), reddish brown, mottled, fine sand, some silt (20 to 30 percent), nonplastic, damp, no noticeable odor. @ 7.0 feet: wet.
(SS)	7.5-9 (0)	4 5 6						8.75 to 11.0 feet: SANDY SILT (ML), brown, low plasticity, few fine sands (10 to 15 percent), wet.
(SS)	10-11.5 (0)	2 3 7		10				11.0 to 15.0 feet: SILTY SAND (SM), brown, fine sand, some nonplastic fines (20 to 30 percent), wet, no noticeable odor. @ 12.5 feet: same as above, some scattered wood debris.
(SS)	12.5-14 (0)	2 4 8						15.0 to 16.0 feet: SAND (SP), grayish brown, fine sand, few silts (5 to 10 percent), wet, no noticeable odor.
(SS)	15-16.5 (0)	5 7 11		15				16.0 to 17.5 feet: SILTY SAND (SM), brown, fine sand, some fines (20 to 30 percent), wet, no noticeable odor. 17.5 to 20.0 feet: SAND (SP), gray, fine sand, trace silt/fines (5 percent), wet, no noticeable odor.
(SS)	17.5-19 (0)	4 5 7						
				20				



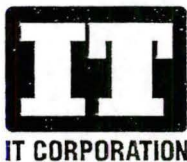
REMARKS

LOG OF EXPLORATORY BORING

PROJECT NAME Vopak USA, Inc.
LOCATION 8201 South 212th Street, Kent, Washington
DRILLED BY Cascade Drilling, Inc.
DRILL METHOD Hollow-stem Auger
LOGGED BY Erin McQuillan

BORING NO. MW-12
PAGE 2 of 2
REFERENCE ELEV.
TOTAL DEPTH 20.0'
DATE COMPLETED 6/26/01

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL (PID in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
				<div style="display: flex; align-items: center;"> <div style="border-right: 1px solid black; width: 100%; height: 100%; position: relative;"> <!-- Vertical scale for depth --> <div style="position: absolute; top: 0; left: 0; right: 0; bottom: 0; border-bottom: 1px solid black;"> <!-- Major ticks --> <div style="position: absolute; top: 0; left: 0; right: 0; border-bottom: 1px solid black; height: 10px;"></div> <div style="position: absolute; top: 10%; left: 0; right: 0; border-bottom: 1px solid black; height: 10px;"></div> <div style="position: absolute; top: 20%; left: 0; right: 0; border-bottom: 1px solid black; height: 10px;"></div> <div style="position: absolute; top: 30%; left: 0; right: 0; border-bottom: 1px solid black; height: 10px;"></div> <div style="position: absolute; top: 40%; left: 0; right: 0; border-bottom: 1px solid black; height: 10px;"></div> <div style="position: absolute; top: 50%; left: 0; right: 0; border-bottom: 1px solid black; height: 10px;"></div> <div style="position: absolute; top: 60%; left: 0; right: 0; border-bottom: 1px solid black; height: 10px;"></div> <div style="position: absolute; top: 70%; left: 0; right: 0; border-bottom: 1px solid black; height: 10px;"></div> <div style="position: absolute; top: 80%; left: 0; right: 0; border-bottom: 1px solid black; height: 10px;"></div> <div style="position: absolute; top: 90%; left: 0; right: 0; border-bottom: 1px solid black; height: 10px;"></div> </div> <!-- Labels for major ticks --> <div style="position: absolute; top: 0; left: 50%; transform: translate(-50%, -50%);">25</div> <div style="position: absolute; top: 30%; left: 50%; transform: translate(-50%, -50%);">30</div> <div style="position: absolute; top: 60%; left: 50%; transform: translate(-50%, -50%);">35</div> <div style="position: absolute; top: 90%; left: 50%; transform: translate(-50%, -50%);">40</div> </div> </div>			Bottom of boring at 20.0 feet. WELL COMPLETION DETAILS 0 to 5.0 feet: 2-inch-diameter, flush-threaded, Schedule 40 PVC blank riser pipe. 5.0 to 20.0 feet: 2-inch-diameter, flush-threaded, Schedule 40 PVC well screen with 0.020-inch machined slots and 2-inch-diameter threaded end cap. 0 to 1.0 foot: Concrete. 1.0 to 4.0 feet: Bentonite chips hydrated with potable water. 4.0 to 20.0 feet: 2/12 Monterey sand. Surface completion: flush mount, traffic rated well box.	



REMARKS



FIELD WELL COMPLETION FORM

JO ME: Univar Kent	
JOB ADDRESS: 8201 S. 212th Street, Kent, WA	
JOB NO.: 816.003.01	PROJECT Bill
LOGGED BY: Haldeman	MANAGER: Haldeman
WELL NAME:	EDITED BY:
MW-13	DATE: 3/19/03
DRILLING COMPANY: Cascade Drilling Co.	
EQUIPMENT:	DRILLER: James Goble
<input checked="" type="checkbox"/> 4-1/4" * HOLLOW STEM AUGER	HELPER: Andy
<input type="checkbox"/> * ROTARY WASH	HOURS DRILLED: 3
GALLONS OF WATER USED DURING DRILLING: 15	GALLONS
METHOD OF DECONTAMINATION PRIOR TO DRILLING: Steam pressure wash	

DEVELOPMENT

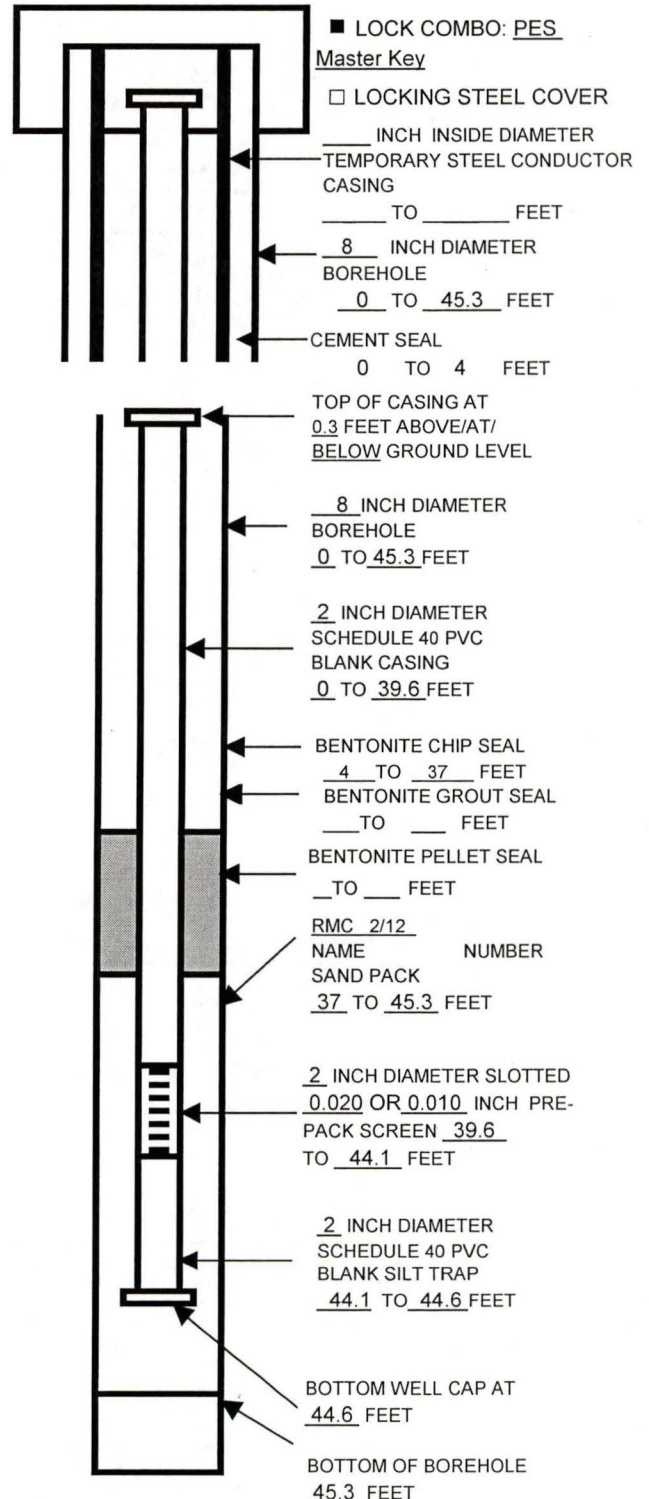
METHOD OF DEVELOPMENT:			
DEVELOPMENT BEGAN DATE: 3/27/04		TIME:	
YIELD: 0.25 - 1	TIME FROM:	TO:	DATE:
YIELD: GPM	TIME FROM:	TO:	DATE:
TOTAL WATER REMOVED DURING DEVELOPMENT: 55		GALLONS	
DESCRIPTION OF TURBIDITY AT END OF DEVELOPMENT: <input checked="" type="checkbox"/> CLEAR-Turb = 16.1 <input type="checkbox"/> SLIGHTLY CLOUDY <input type="checkbox"/> MOD. TURBID <input type="checkbox"/> VERY MUDDY			
ODOR OF WATER:			
WATER DISCHARGED TO: <input type="checkbox"/> GROUND SURFACE <input type="checkbox"/> TANK TRUCK <input type="checkbox"/> STORM SEWERS <input type="checkbox"/> STORAGE TANK <input checked="" type="checkbox"/> DRUMS <input type="checkbox"/> OTHER _____			
DEPTH TO WATER AFTER DEVELOPMENT: _____ FEET			

MATERIALS AND EQUIPMENT USED

Sack of Sand	Ft of 2" PVS Blank Casing
Sacks of Cement	Ft of 2" PVC Slotted Screen
Sacks of Con Mix	Ft of Steel Conductor
Yards of Grout	
(14) Sacks of Bentonite Chips	Yd ³ Cement-Sand
Lbs/Bags of Bentonite pellets	55-Gallon Drums

ADDITIONAL NOTES:

- 1) Prepack screen with 20 x 40 sand;
- 2) 10 x 20 sand around pre-packed assembly;
- 3) nonument flush with grade.
- 4) remove plug from 44.6 to 45.0 feet, slough from 45.0 to 45.3 feet.
- 5) See SB-30 for lithologic log.





FIELD WELL COMPLETION FORM

JOB NAME: Univar Kent	
JOB ADDRESS: 8201 S. 212th Street, Kent, WA	
JOB NO.: 816.003.01	PROJECT: Bill
LOGGED BY: McQuillan	MANAGER: Haldeman
WELL NAME:	EDITED BY:
MW-14	DATE: 10/7/03
DRILLING COMPANY: Cascade Drilling Co.	
EQUIPMENT:	DRILLER: James Goble
<input checked="" type="checkbox"/> * HOLLOW STEM AUGER	HELPER: Steve & Sean
<input type="checkbox"/> * ROTARY WASH	HOURS DRILLED:
GALLONS OF WATER USED DURING DRILLING: 40' = _____ GALLONS	
METHOD OF DECONTAMINATION PRIOR TO DRILLING: Steam pressure wash	

DEVELOPMENT

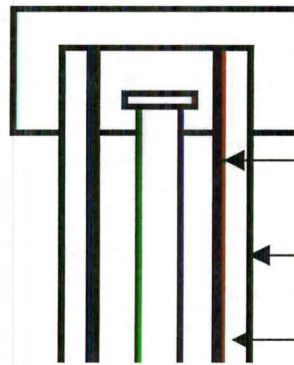
METHOD OF DEVELOPMENT:				
DEVELOPMENT BEGAN DATE:		TIME:		
YIELD:	GPM	TIME FROM:	TO:	DATE:
YIELD:	GPM	TIME FROM:	TO:	DATE:
TOTAL WATER REMOVED DURING DEVELOPMENT: _____ GALLONS				
DESCRIPTION OF TURBIDITY AT END OF DEVELOPMENT:	<input type="checkbox"/> CLEAR	<input type="checkbox"/> SLIGHTLY CLOUDY		
	<input type="checkbox"/> MOD. TURBID	<input type="checkbox"/> VERY MUDDY		
ODOR OF WATER:				
WATER DISCHARGED TO:	<input type="checkbox"/> GROUND SURFACE	<input type="checkbox"/> TANK TRUCK		
	<input type="checkbox"/> STORM SEWERS	<input type="checkbox"/> STORAGE TANK		
	<input checked="" type="checkbox"/> DRUMS	<input type="checkbox"/> OTHER _____		
DEPTH TO WATER AFTER DEVELOPMENT: _____ FEET				

MATERIALS AND EQUIPMENT USED

(11) Sack of Sand 10 x 20	32	Ft of 2" PVS Blank Casing
Sacks of Cement	10	Ft of 2" PVC Slotted Screen
Sacks of Con Mix		Ft of Steel Conductor
Yards of Grout		
(12) Sacks of pellets Bentonite	Yd ³	Cement-Sand
50 Lbs/Bags of Bentonite pellets		55-Gallon Drums

ADDITIONAL NOTES:

<p>1) Prepack Screen with 20 x 40 Sand;</p> <p>2) Around prepack is 10 x 20 Sand;</p> <p>3) Well flush with ground-thea cutoff 4" for 4" bgs surface completion.</p>
--



LOCK COMBO: PES
Master Key

LOCKING STEEL COVER

_____ INCH INSIDE DIAMETER
TEMPORARY STEEL CONDUCTOR
CASING
_____ TO _____ FEET

_____ INCH DIAMETER
BOREHOLE
_____ TO _____ FEET

BENTONITE CHIP SEAL
_____ TO _____ FEET



TOP OF CASING AT
_____ FEET ABOVE/AT/
BELOW GROUND LEVEL

10 1/4 INCH DIAMETER
BOREHOLE
0 TO 42 FEET

2 INCH DIAMETER
SCHEDULE 40 PVC
BLANK CASING
0 TO 32 FEET

BENTONITE CHIP SEAL
_____ TO _____ FEET

BENTONITE GROUT SEAL
_____ TO _____ FEET

BENTONITE PELLET SEAL
3 TO 30 FEET

COLORADO 10 X 20
NAME NUMBER
SAND PACK
30 TO 43 FEET

2 INCH DIAMETER SLOTTED
0.020 OR 0.010 INCH PRE-
PACK SCREEN 42.21
TO 32.69 FEET

2 INCH DIAMETER
SCHEDULE 40 PVC
BLANK SILT TRAP
42.42 TO 42.75 FEET

BOTTOM WELL CAP AT
42.75 FEET

BOTTOM OF BOREHOLE
42.75 FEET



FIELD WELL COMPLETION FORM

JOB NO.: 816.003.01		PROJECT: Bill
LOGGED BY: McQuillan		MANAGER: Haldeman
WELL NAME: MW-15		EDITED BY:
DRILLING COMPANY: Cascade Drilling Co.		DATE: 10/7/03
EQUIPMENT:		DRILLER: James Goble
<input checked="" type="checkbox"/> * HOLLOW STEM AUGER		HELPER: Sean
<input type="checkbox"/> * ROTARY WASH		HOURS DRILLED:
GALLONS OF WATER USED DURING DRILLING: 40' = _____ GALLONS		
METHOD OF DECONTAMINATION PRIOR TO DRILLING:		

DEVELOPMENT

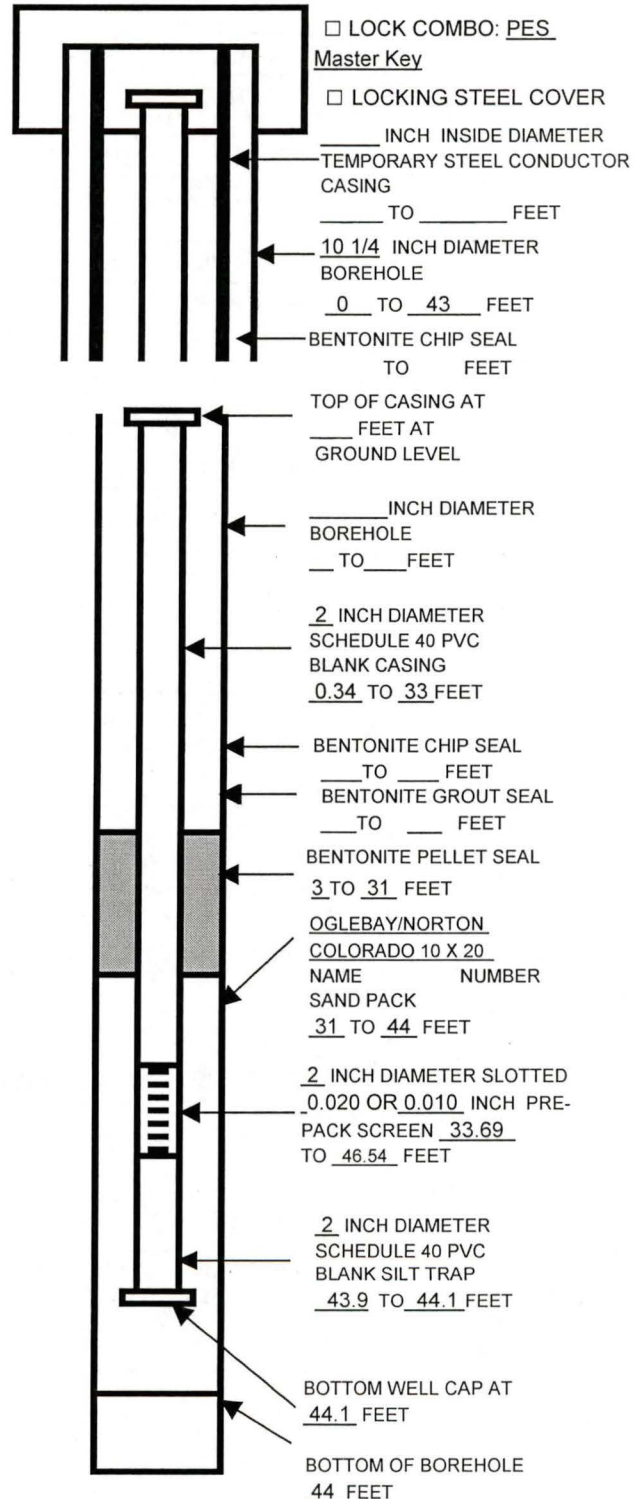
METHOD OF DEVELOPMENT:				
DEVELOPMENT BEGAN DATE:		TIME:		
YIELD: _____ GPM	TIME FROM: _____	TO: _____	DATE: _____	
YIELD: _____ GPM	TIME FROM: _____	TO: _____	DATE: _____	
TO _____ WATER REMOVED DU _____ DEVELOPMENT: _____ GALLONS				
DESCRIPTION OF TURBIDITY AT END OF DEVELOPMENT:				
<input type="checkbox"/> CLEAR		<input type="checkbox"/> SLIGHTLY CLOUDY		
<input type="checkbox"/> MOD. TURBID		<input type="checkbox"/> VERY MUDDY		
ODOR OF WATER:				
WATER DISCHARGED TO:				
<input type="checkbox"/> GROUND SURFACE		<input type="checkbox"/> TANK TRUCK		
<input type="checkbox"/> STORM SEWERS		<input type="checkbox"/> STORAGE TANK		
<input checked="" type="checkbox"/> DRUMS		<input type="checkbox"/> OTHER _____		
DEPTH TO WATER AFTER DEVELOPMENT: _____ FEET				

MATERIALS AND EQUIPMENT USED

(11) Sack of Sand 10 x 20	35	Ft of 2" PVS Blank Casing
Sacks of Cement	10	Ft of 2" PVC Slotted Screen
Sacks of Con Mix		Ft of Steel Conductor
Yards of Grout		
Sacks of pellets Bentonite		Yd ³ Cement-Sand
10 50 Lbs. Bags of Bentonite pellets		55-Gallon Drums

ADDITIONAL NOTES:

- 1) Prepack Screen with 20 x 40 Sand;
- 2) _____ d prepack is 10 x 20 Sand;
- 3) well flush with ground-thea cutoff 4" for 4" bgs surface completion.





FIELD WELL COMPLETION FORM

JOB NAME: Univar Kent Deep Aquifer	
JOB ADDRESS: 8201 S. 212th Street, Kent, WA	
JOB NO.: 816.003.01	PROJECT: Bill
LOGGED BY: McQuillan	MANAGER: Haldeman
WELL NAME:	EDITED BY:
MW-16	DATE: 10/22/03
DRILLING COMPANY: Cascade Drilling Co.	
EQUIPMENT:	DRILLER: Andy Flaggerty
<input checked="" type="checkbox"/> 4" ID * HOLLOW STEM AUGER	HELPER: Sean
<input type="checkbox"/> * ROTARY WASH	HOURS DRILLED:
GALLONS OF WATER USED DURING DRILLING: 20 GALLONS	
METHOD OF DECONTAMINATION PRIOR TO DRILLING: Steam Pressure Wash	

DEVELOPMENT

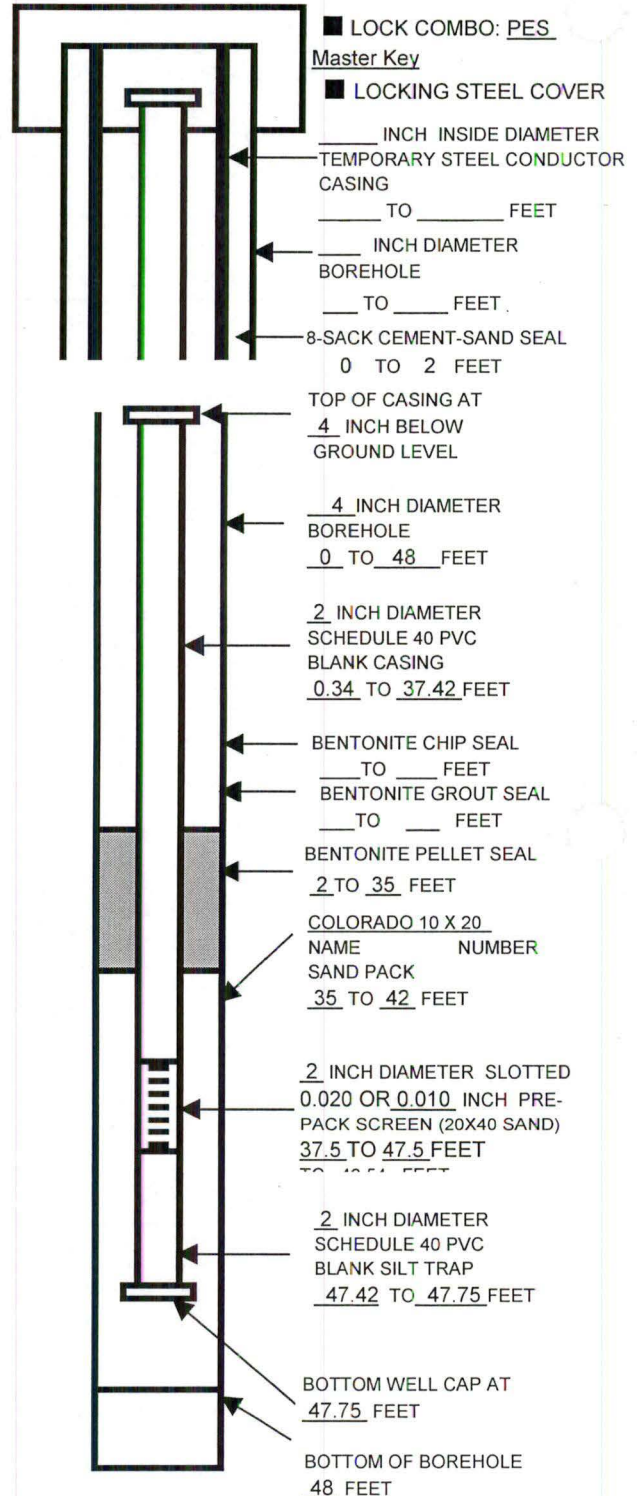
METHOD OF DEVELOPMENT:				
DEVELOPMENT BEGAN DATE:		TIME:		
YIELD:	GPM	TIME FROM:	TO:	DATE:
YIELD:	GPM	TIME FROM:	TO:	DATE:
TOTAL WATER REMOVED DURING DEVELOPMENT: GALLONS				
DESCRIPTION OF TURBIDITY AT END OF DEVELOPMENT:				
<input type="checkbox"/> CLEAR		<input type="checkbox"/> SLIGHTLY CLOUDY		
<input type="checkbox"/> MOD. TURBID		<input type="checkbox"/> VERY MUDDY		
ODOR OF WATER:				
WATER DISCHARGED TO:				
<input type="checkbox"/> GROUND SURFACE		<input type="checkbox"/> TANK TRUCK		
<input type="checkbox"/> STORM SEWERS		<input type="checkbox"/> STORAGE TANK		
<input checked="" type="checkbox"/> DRUMS		<input type="checkbox"/> OTHER _____		
DEPTH TO WATER AFTER DEVELOPMENT: FEET				

MATERIALS AND EQUIPMENT USED

(2) Sack of Sand 10 x 20	38 Ft of 2" PVS Blank Casing
Sacks of Cement	10 Ft of 2" PVC Slotted Screen
Sacks of Con Mix	Ft of Steel Conductor
Yards of Grout	
Sacks of pellets Bentonite	Yd ³ Cement-Sand
10 50 Lbs.Bags of Bentonite pellets	3 55-Gallon Drums Steel open

ADDITIONAL NOTES:

- 1) Prepack Screen with 20 x 40 Sand;
- 2) Screen slots from 37.17 to 47.17 feet;
- 3) Native Sand (~ 16x30) collapse around prepack 42 to 48 feet;
- 4) 10 x 20 Sand poured around prepack 35 to 42 feet.





FIELD WELL COMPLETION FORM

JOB NAME: Univar Kent	
JOB ADDRESS: 8201 S. 212th Street, Kent, WA	
JOB NO.: 816.003.01	PROJECT: Bill
LOGGED BY: McQuillan	MANAGER: Haldeman
WELL NAME:	EDITED BY:
MW-17	DATE:
DRILLING COMPANY: Cascade Drilling Co.	
EQUIPMENT:	DRILLER: Brian
<input checked="" type="checkbox"/> * HOLLOW STEM AUGER	HELPER:
<input type="checkbox"/> * ROTARY WASH	HOURS DRILLED:
GALLONS OF WATER USED DURING DRILLING: ~ 30 GALLONS	
METHOD OF DECONTAMINATION PRIOR TO DRILLING: Steam Clean Pressure Wash	

DEVELOPMENT

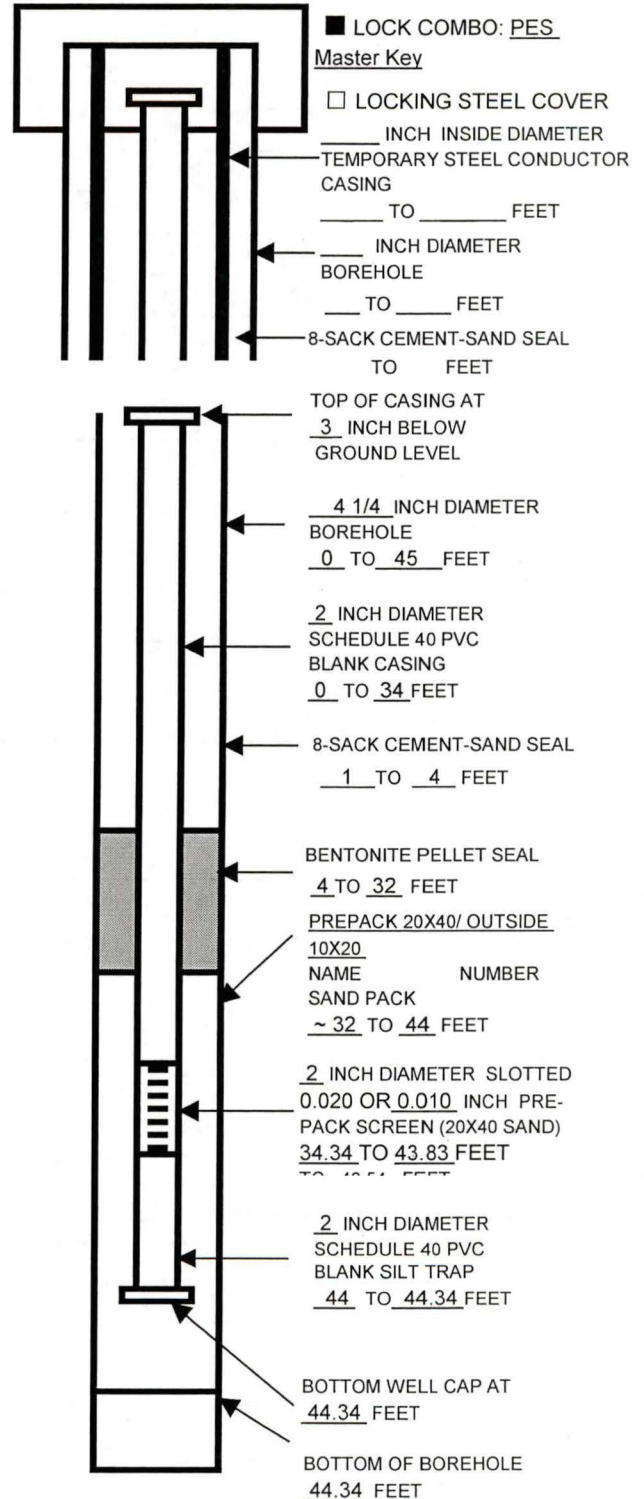
METHOD OF DEVELOPMENT: Surge & purge with peristaltic pump			
DEVELOPMENT BEGAN DATE: 10/28/03		TIME: 9:28	
YIELD: 0.75 GPM	TIME FROM: 9:28	TO: 10:45	DATE: 10/28/2003
YIELD: GPM	TIME FROM:	TO:	DATE:
T WATER REMOVED		45 GALLONS	
D DEVELOPMENT:			
DESCRIPTION OF TURBIDITY AT END OF DEVELOPMENT: <input checked="" type="checkbox"/> CLEAR 10.2 NTU <input type="checkbox"/> SLIGHTLY CLOUDY <input type="checkbox"/> MOD. TURBID <input type="checkbox"/> VERY MUDDY			
ODOR OF WATER: No odor			
WATER DISCHARGED TO: <input type="checkbox"/> GROUND SURFACE <input type="checkbox"/> TANK TRUCK <input type="checkbox"/> STORM SEWERS <input type="checkbox"/> STORAGE TANK <input checked="" type="checkbox"/> DRUMS <input type="checkbox"/> OTHER _____			
DEPTH TO WATER AFTER DEVELOPMENT: FEET			

MATERIALS AND EQUIPMENT USED

(12) Sack of Sand 10 x 20	34 Ft of 2" PVS Blank Casing
Sacks of Cement	10 Ft of 2" PVC Slotted Screen
Sacks of Con Mix	Ft of Steel Conductor
Yards of Grout	
(12) Sacks of pellets Bentonite	Yd ³ Cement-Sand
50 Lbs.Bags of Bentonite pellets	55-Gallon Drums Steel open

ADDITIONAL NOTES:

- 1) Prepack Screen 0.010 slot packed with 20 X 40 sand;
- 2) 20 sand around prepack.





FIELD WELL COMPLETION FORM

JOB NAME: Univar Kent Deep Well Installation	
JOB ADDRESS: 8201 S. 212th Street, Kent, WA	
JOB NO.: 816.003.01	PROJECT Bill
LOGGED BY: McQuillan	MANAGER: Haldeman
WELL NAME:	EDITED BY:
MW-18	DATE:
DRILLING COMPANY: Cascade Drilling Co.	
EQUIPMENT:	DRILLER:
<input checked="" type="checkbox"/> * HOLLOW STEM AUGER	HELPER:
<input type="checkbox"/> * ROTARY WASH	HOURS DRILLED:
GALLONS OF WATER USED DURING DRILLING: _____ GALLONS	
METHOD OF DECONTAMINATION PRIOR TO DRILLING: Steam Clean Pressure Wash	

DEVELOPMENT

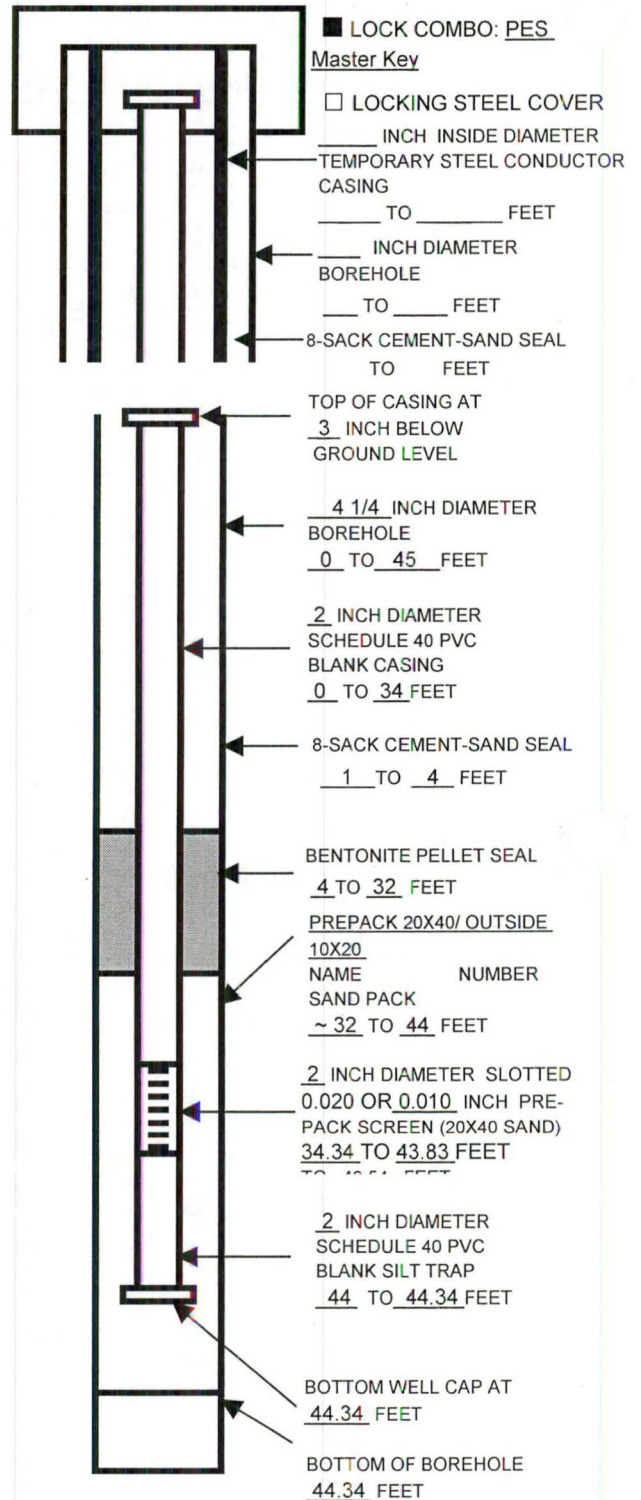
METHOD OF DEVELOPMENT:				
DEVELOPMENT BEGAN DATE:		TIME: 9:28		
YIELD:	GPM	TIME FROM:	TO:	DATE:
YIELD:	GPM	TIME FROM:	TO:	DATE:
TOTAL WATER REMOVED DURING DEVELOPMENT:		45 GALLONS		
DESCRIPTION OF TURBIDITY AT END OF DEVELOPMENT:		<input checked="" type="checkbox"/> CLEAR 10.2 NTU <input type="checkbox"/> SLIGHTLY CLOUDY <input type="checkbox"/> MOD. TURBID <input type="checkbox"/> VERY MUDDY		
ODOR OF WATER: No odor				
WATER DISCHARGED TO:				
<input type="checkbox"/> GROUND SURFACE		<input type="checkbox"/> TANK TRUCK		
<input type="checkbox"/> STORM SEWERS		<input type="checkbox"/> STORAGE TANK		
<input checked="" type="checkbox"/> DRUMS		<input type="checkbox"/> OTHER _____		
DEPTH TO WATER AFTER DEVELOPMENT:		FEET		

MATERIALS AND EQUIPMENT USED

(12) Sack of Sand 10 x 20	34 Ft of 2" PVS Blank Casing
Sacks of Cement	10 Ft of 2" PVC Slotted Screen
Sacks of Con Mix	Ft of Steel Conductor
Yards of Grout	
(12) Sacks of pellets Bentonite	Yd ³ Cement-Sand
50 Lbs. Bags of Bentonite pellets	55-Gallon Drums Steel open

ADDITIONAL NOTES:

- 1) Prepack Screen 0.010 slot packed with 20 X 40 sand;
- 2) 10 x 20 sand around prepack.





WELL CONSTRUCTION DETAIL

	PID (ppm)	BLOWS (6 inches)	DEPTH (FT)	SAMPLES	SYMBOLS	MATERIALS DESCRIPTION
						CONCRETE
						BROWN SILTY SAND (SM) , moist, fine sand, some nonplastic silt
5						
10	0.5	5	10	X		@ 11.0 feet: becomes black sand (SP), wet, fine sand, few silt
11		5				BROWN SILTY SAND (SM) , wet, fine sand, some silt
12		8				
15	0.6	5	15	X		@ 16.0 feet: silt decreases to little
16		5				
17		6				
20			20			

UNIVAR4 UNIVAR4.GPJ 1/8/04

PROJECT	Univar-Kent Deep Well Installation	DIAMETER OF HOLE	6 1/4 inches	PLATE
LOCATION	Kent, Washington	TOTAL DEPTH OF HOLE	45 feet	
JOB NUMBER	816.003.01	DATE STARTED	10/8/03	
GEOLOGIST/ENGINEER	Erin McQuillan	DATE COMPLETED	10/8/03	
DRILL RIG	Hollow-stem Auger			



WELL CONSTRUCTION DETAIL

WELL CONSTRUCTION DETAIL		PID (ppm)	BLOWS (6 inches)	DEPTH (FT)	SAMPLES	SYMBOLS	MATERIALS DESCRIPTION
<p>25 30 35 40</p> <p>Bentonite Chips Seal</p> <p>2-inch Diameter Schedule 40 PVC Blank Casing</p> <p>Colorado Silica 10/20 Sandpack</p> <p>2-inch Diameter Slotted 0.030-inch PVC Screen</p> <p>(Continued)</p>	20.9	5 3 3					BLACK SAND (SP) , wet, fine sand, few fines
	6.1	6 5 5	25				Becomes fine to medium sand, trace fines
	3.7	6 6 4	30				
	6.2	18	35				@ 35.0 feet: driller notes heaving sand
				40			(Continued)

UNIVAR4 UNIVAR4.GPJ 1/8/04

PROJECT	Univar-Kent Deep Well Installation	DIAMETER OF HOLE	6 1/4 inches	PL...
LOCATION	Kent, Washington	TOTAL DEPTH OF HOLE	45 feet	
JOB NUMBER	816.003.01	DATE STARTED	10/8/03	
GEOLOGIST/ENGINEER	Erin McQuillan	DATE COMPLETED	10/8/03	
DRILL RIG	Hollow-stem Auger			



WELL CONSTRUCTION DETAIL

	PID (ppm)	BLOWS (6 inches)	DEPTH (FT)	SAMPLES	SYMBOLS	MATERIALS DESCRIPTION
<p>2-inch Diameter Slotted 0.030-inch PVC Screen</p> <p>45</p>	62	4				
			5			
			5			
	32	5				
			5			
			5			
	23	8				GRAYISH BROWN SILT (ML) , moist, trace fine sand, low to medium plasticity, organic material-roots
			6			
			6			
				45		
			50			
			55			
			60			

UNIVAR4 UNIVAR4 cp 1 1/8/04

PROJECT	Univar-Kent Deep Well Installation	DIAMETER OF HOLE	6 1/4 inches
LOCATION	Kent, Washington	TOTAL DEPTH OF HOLE	45 feet
JOB NUMBER	816.003.01	DATE STARTED	10/8/03
GEOLOGIST/ENGINEER	Erin McQuillan	DATE COMPLETED	10/8/03
DRILL RIG	Hollow-stem Auger		

PLATE



WELL CONSTRUCTION DETAIL



UNIVAR6 UNIVAR6.GPJ 7/14/04

PROJECT: Univar-Kent
 LOCATION: Kent, Washington
 JOB NUMBER: 816.003.01
 GEOLOGIST/ENGINEER: Erin McQuillan
 DRILL RIG: Hollow-stem Auger

DIAMETER OF HOLE: 4 1/4 inches
 TOTAL DEPTH OF HOLE: 50.5 feet
 DATE STARTED: 1/29/04
 DATE COMPLETED: 1/29/04

PL...



WELL CONSTRUCTION DETAIL

		PID in ppm	BLOWS PER 6 INCHES	DEPTH (FT)	SAMPLES	SYMBOLS	MATERIALS DESCRIPTION
		0.4	4 8 11				BLACK SAND (SP) , silt decreases to few
	25	0.4	3 6 9	25			@ 24.0 feet: driller notes a layer that is not heaving as much, silty
		0.4	3 6 9	30			
	35	0.4	9 10 11	35			
40				40			

UNIVAR6 UNIVAR6.GPJ 7/14/04

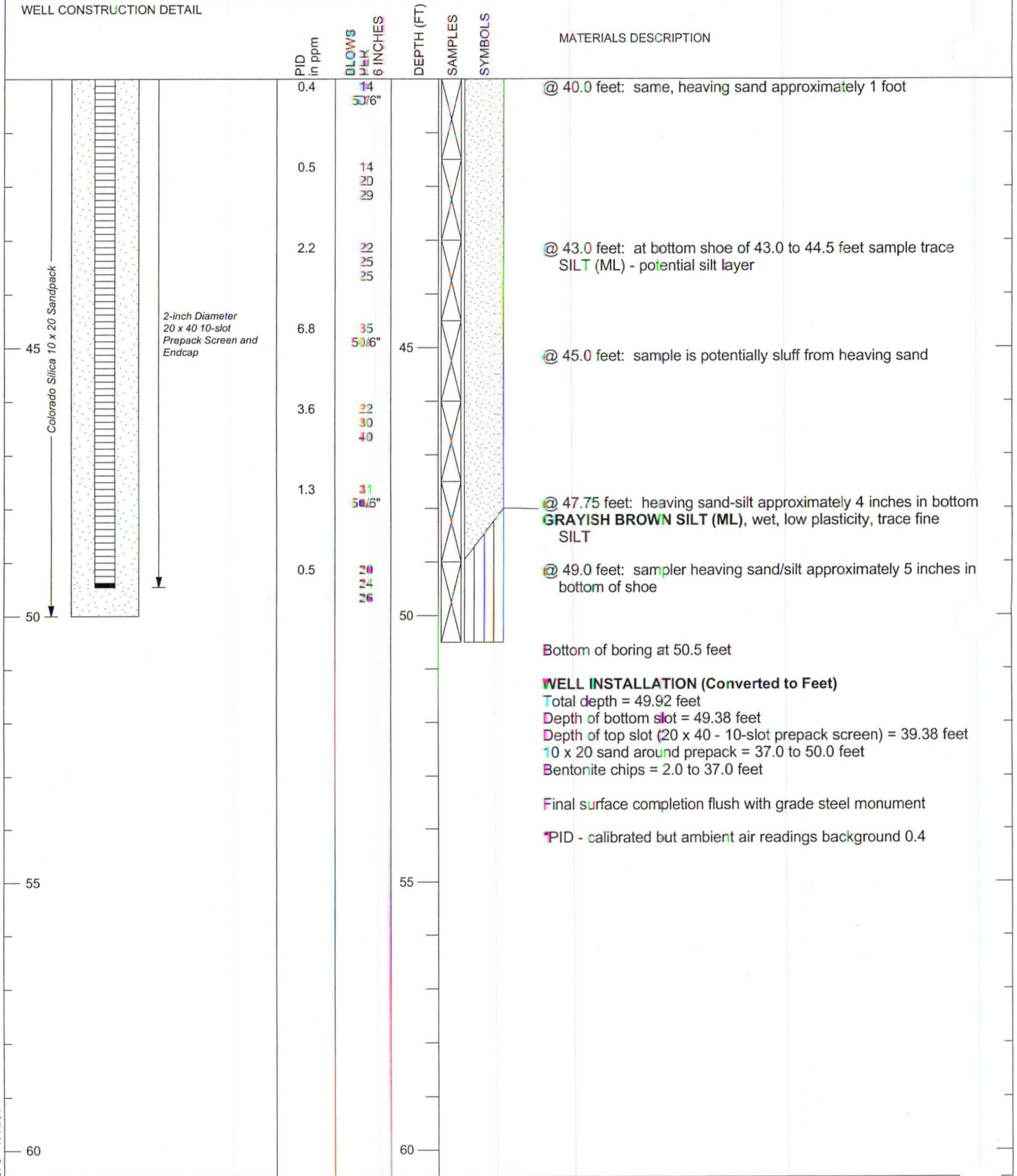
PROJECT Univar-Kent
 LOCATION Kent, Washington
 JOB NUMBER 816.003.01
 GEOLOGIST/ENGINEER Erin McQuillan
 DRILL RIG Hollow-stem Auger

DIAMETER OF HOLE 4¼ inches
 TOTAL DEPTH OF HOLE 50.5 feet
 DATE STARTED 1/29/04
 DATE COMPLETED 1/29/04

PLATE



WELL CONSTRUCTION DETAIL



UNIVAR6 UNIVAR6.GPJ 7/14/04

PROJECT Univar-Kent
 LOCATION Kent, Washington
 JOB NUMBER 816.003.01
 GEOLOGIST/ENGINEER Erin McQuillan
 DRILL RIG Hollow-stem Auger

DIAMETER OF HOLE 4 1/4 inches
 TOTAL DEPTH OF HOLE 50.5 feet
 DATE STARTED 1/29/04
 DATE COMPLETED 1/29/04

PLA

LOG OF EXPLORATORY BORING

PROJECT NAME Vopak USA, Inc.
LOCATION 8201 South 212th Street, Kent, Washington
DRILLED BY Cascade Drilling, Inc.
DRILL METHOD Hollow-stem Auger
LOGGED BY Amy Ott

BORING NO. INJ-1
PAGE 1 of 2
REFERENCE ELEV.
TOTAL DEPTH 20.5'
DATE COMPLETED 6/25/01

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL (PID in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
								0 to 1.0 foot: ASPHALT AND BASE GRAVEL
								1.0 to 6.0 feet: SANDY SILT (ML); brown, medium plasticity, some fine sand, wet, no odor.
(SS)	5-6.5 (0)	5 4		5				
(SS)	7-8.5	1 1		2				6.0 to 15.0 feet: SILTY SAND (SM), brown, fine, some silt, wet, no odor.
BT-1 (SS)	9-10.5 (0)	6 7		10				@ 9.0 to 12.0 feet: baseline sample collected for chemical oxidation bench study.
	10.5-12	4 5 6						
(SS)	12.5-14 (0)	4 6 7						
(SS)	15-16.5 (0)	6 10 10		15				15.0 to 19.0 feet: SAND (SP), dark gray, fine to medium, little silt, wet, no odor.
(SS)	17-17.5 (0)	6 10 10						
(SS)	19-20.5 (0)	4 6		20				19.0 to 20.5 feet: SAND (SP), brown to gray, fine, little silt, wet, no odor.



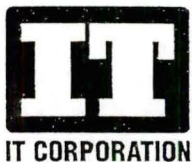
REMARKS

LOG OF EXPLORATORY BORING

PROJECT NAME Vopak USA, Inc.
LOCATION 8201 South 212th Street, Kent, Washington
DRILLED BY Cascade Drilling, Inc.
DRILL METHOD Hollow-stem Auger
LOGGED BY Amy Ott

BORING NO. INJ-1
PAGE 2 of 2
REFERENCE ELEV.
TOTAL DEPTH 20.5'
DATE COMPLETED 6/25/01

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL (PID in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
		10		19.0	19.0 to 20.5 feet: SAND (SP), continued.			19.0 to 20.5 feet: SAND (SP), continued. Bottom of boring at 20.5 feet. WELL COMPLETION DETAILS 0 to 10.0 feet: 2-inch-diameter, flush-threaded, Schedule 40 PVC blank riser pipe. 10.0 to 20.0 feet: 2-inch-diameter, flush-threaded, Schedule 40 PVC well screen with 0.010-inch machined slots and 2-inch-diameter threaded end cap. 0 to 6.0 feet: Concrete. 6.0 to 9.0 feet: Bentonite chips hydrated with potable water. 9.0 to 20.5 feet: 20-40 Colorado Silica Sand. Surface completion: flush mount, traffic rated well box.
				25				
				30				
				35				
				40				



REMARKS

LOG OF EXPLORATORY BORING

PROJECT NAME Vopak USA, Inc.
 LOCATION 8201 South 212th Street, Kent, Washington
 DRILLED BY Cascade Drilling, Inc.
 DRILL METHOD Hollow-stem Auger
 LOGGED BY Amy Ott

BORING NO. INJ-2
 PAGE 1 of 2
 REFERENCE ELEV.
 TOTAL DEPTH 20.5'
 DATE COMPLETED 6/25/01

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL (PID in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
				5			0 to 1.5 feet: CONCRETE	
(SS)	5-6.5 (0)	4 4 4					1.5 to 6.0 feet: SILTY SAND (SM), brown, fine, some silt, damp, no odor.	
				10			6.0 to 8.5 feet: SANDY SILT (ML), brown, medium to low plasticity, some sand, wet, no odor.	
INJ-2-10 (SS)	8.5-10 (0)	3 4 5					8.5 to 14.5 feet: SILTY SAND (SM), brown, fine, some silt, wet, no odor.	
(SS)	10-11.5 (0)	4 4 5						
(SS)	11.5-13 (0)	7 7 7						
(SS)	13-14.5 (0)	2 5 7						
(SS)	14.5-16	8 9 11		15			14.5 to 19.0 feet: SAND (SM-SP), dark gray to brown, fine, little silt, wet, no odor, grades to medium sand, trace silt.	
(SS)	16-17.5 (0)	4 5 7						
(SS)	17.5-19 (0)	5 7 8						
(SS)	19-20.5 (0)	5 8		20			19.0 to 20.5 feet: SAND (SP), dark gray, fine to medium, trace silt, wet, no odor.	



REMARKS

LOG OF EXPLORATORY BORING

PROJECT NAME Vopak USA, Inc.
LOCATION 8201 South 212th Street, Kent, Washington
DRILLED BY Cascade Drilling, Inc.
DRILL METHOD Hollow-stem Auger
LOGGED BY Amy Ott

BORING NO. INJ-2
PAGE 2 of 2
REFERENCE ELEV.
TOTAL DEPTH 20.5'
DATE COMPLETED 6/25/01

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL (PID in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN LITHOLOGIC DESCRIPTION
		8		25	25		<p>19.0 to 20.5 feet: SAND (SP), continued.</p> <p>Bottom of boring at 20.5 feet.</p> <p>WELL COMPLETION DETAILS</p> <p>0 to 10.0 feet: 2-inch-diameter, flush-threaded, Schedule 40 PVC blank riser pipe.</p> <p>10.0 to 20.0 feet: 2-inch-diameter, flush-threaded, Schedule 40 PVC well screen with 0.010-inch machined slots and 2-inch-diameter threaded end cap.</p> <p>0 to 6.0 feet: Concrete.</p> <p>6.0 to 9.0 feet: Bentonite chips hydrated with potable water.</p> <p>9.0 to 20.5 feet: 20-40 Colorado Silica Sand.</p> <p>Surface completion: flush mount, traffic rated well box.</p>
				30			
				35			
				40			



IT CORPORATION

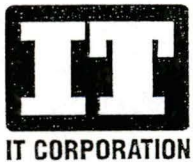
REMARKS

LOG OF EXPLORATORY BORING

PROJECT NAME Vopak USA, Inc.
 LOCATION 8201 South 212th Street, Kent, Washington
 DRILLED BY Cascade Drilling, Inc.
 DRILL METHOD Hollow-stem Auger
 LOGGED BY Amy Ott

BORING NO. INJ-3
 PAGE 1 of 2
 REFERENCE ELEV.
 TOTAL DEPTH 21.0'
 DATE COMPLETED 6/25/01

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL (PID in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
				0			0 to 1.5 feet	CONCRETE
				5			1.5 to 9.0 feet	SILTY SAND (SM), light brown, fine, some silt, wet, no odor.
(SS)	5-6.5 (0)	2 5 3		5				
(SS)	9-10.5 (0)	3 3 3		10			9.0 to 10.5 feet	SANDY SILT (ML), brown, medium plasticity, some sand, wet, no odor. Interbedded peat layers (<0.5-inch thick).
(SS)	10.5-12 (0)	4 5 6		10.5			10.5 to 15.0 feet	SAND (SP), dark gray, fine to medium, little silt, wet, no odor.
(SS)	12-13.5 (0)	4 5 5		12				
(SS)	13.5-15 (0)	3 3 6		13.5				
(SS)	15-16.5 (0)	4 7 11		15			15.0 to 16.5 feet	SILTY SAND (SM), brown, fine, some silt, damp to wet, no odor.
(SS)	16.5-18 (0)	4 6 6		16.5			16.5 to 19.5 feet	PEAT (PT) interbedded with SAND (SP), dark gray, fine to medium, little silt, wet, no odor.
(SS)	18-19.5 (0)	5 9 6 6		18				
		1		20				



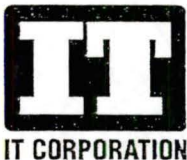
REMARKS

LOG OF EXPLORATORY BORING

PROJECT NAME: Vopak USA, Inc.
 LOCATION: 8201 South 212th Street, Kent, Washington
 DRILLED BY: Cascade Drilling, Inc.
 DRILL METHOD: Hollow-stem Auger
 LOGGED BY: Amy Ott

BORING NO.: INJ-3
 PAGE: 2 of 2
 REFERENCE ELEV.:
 TOTAL DEPTH: 21.0'
 DATE COMPLETED: 6/25/01

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL (PID in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
(SS)	19.5-21 (0)	5 5		25	25			<p>19.5 to 21.0 feet: SAND (SP), dark gray, fine to medium, little silt, wet, no odor.</p> <p>Bottom of boring at 21.0 feet.</p> <p>WELL COMPLETION DETAILS</p> <p>0 to 10.0 feet: 2-inch-diameter, flush-threaded, Schedule 40 PVC blank riser pipe.</p> <p>10.0 to 20.0 feet: 2-inch-diameter, flush-threaded, Schedule 40 PVC well screen with 0.010-inch machined slots and 2-inch-diameter threaded end cap.</p> <p>0 to 6.0 feet: Concrete.</p> <p>6.0 to 9.0 feet: Bentonite chips hydrated with potable water.</p> <p>9.0 to 21.0 feet: 20-40 Colorado Silica Sand.</p> <p>Surface completion: flush mount, traffic rated well box.</p>
				30				
				35				
				40				



REMARKS

LOG OF EXPLORATORY BORING

PROJECT NAME Vopak USA, Inc.
 LOCATION 8201 South 212th Street, Kent, Washington
 DRILLED BY Cascade Drilling, Inc.
 DRILL METHOD Hollow-stem Auger
 LOGGED BY B. Peters, K. Hansen

BORING NO. INJ-3A
 PAGE 1 of 1
 REFERENCE ELEV.
 TOTAL DEPTH 20.0'
 DATE COMPLETED 8/30/01

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL (PID in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
								<p>Located 3.0 feet west of INJ-3. Overdrilled to 20.0 feet bgs with 6¼-inch I.D. auger. Wood plug inserted on bottom auger. No samples collected from boring.</p> <p>WELL COMPLETION DETAILS 0 to 9.0 feet: 2-inch-diameter, flush-threaded, Schedule 40 PVC blank riser pipe. 9.0 to 19.0 feet: 2-inch-diameter, flush-threaded, Schedule 40 PVC well screen with 0.020-inch machined slots. 19.0 to 19.5 feet: 2-inch-diameter threaded end cap.</p> <p>0.5 to 4.0 feet: Concrete (4 bags). 4.0 to 8.0 feet: Bentonite chips hydrated with potable water (3.5 bags). 8.0 to 20.0 feet: 20-40 Colorado Silica Sand (9 bags).</p> <p>Surface completion: flush mount, traffic-rated well box.</p> <p>Added approximately 25 gallons of water during drilling installation.</p> <p>Total depth of boring at 20.0 feet.</p>



REMARKS

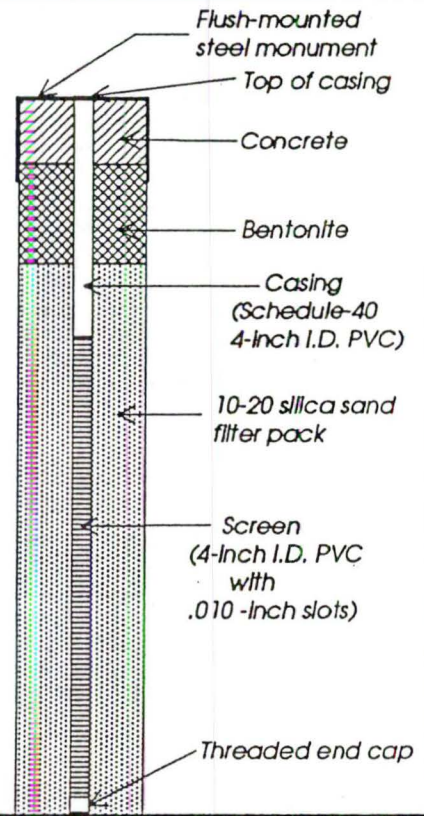
PROJECT: Exxon Service Station No. 73383 W.O.W-6975-1 WELL NO. MW-4

Elevation reference: 100.00 feet
 Ground surface elevation: 99.53

Well completed: 23 March 1992
 Casing elevation: 99.31

AS-BUILT DESIGN

DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	OVM READING	GROUND WATER
0	Asphalt over gravel paving					
	Medium Dense, moist, brown, silty fine to coarse SAND; with some gravel.					
	Loose, moist, gray to brown, gravelly, fine to medium SAND; with some silt.		S-1	5	76	
5	Soft, wet, fine sandy SILT with some organic SAND gravel					
	Loose, wet, to saturated, gray to dark brown, silty, fine to medium SAND.		S-2	4	9	ATD
10						
	Loose, saturated, gray, silty, fine to medium SAND; with some gravel and organics.		S-3	3	0	
15	Bottom of boring at 15 feet.					
20						
25						
30						



TESTING

8015
8020
7420

LEGEND

I 2-inch O.D. split-spoon sample

▽ Observed groundwater level
 ATD ATD = at time of drilling

RZA AGRA, Inc.
 Geotechnical & Environmental Group

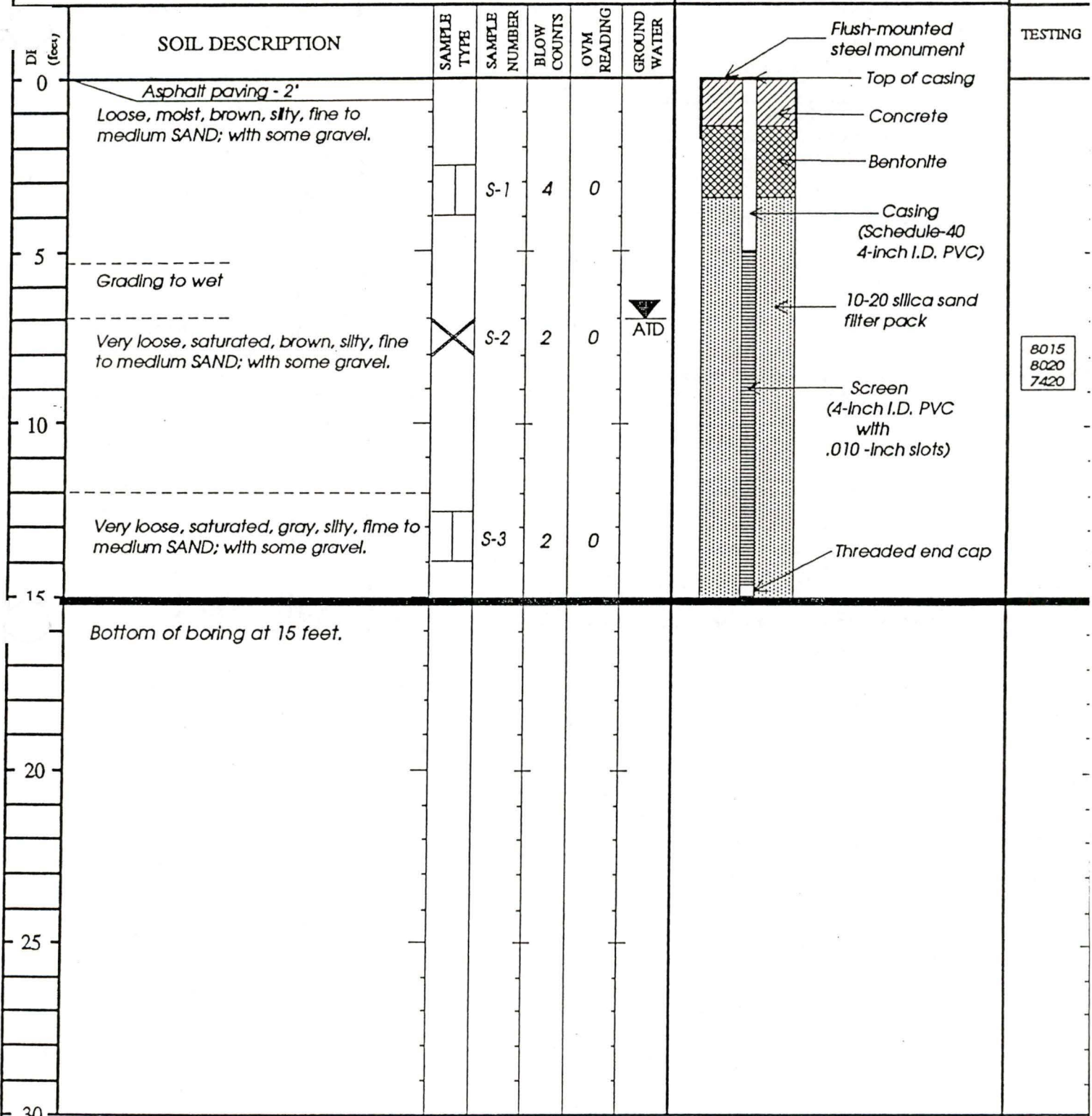
11335 NE 122nd Way, Suite 100
 Kirkland, Washington 98034-6918

PROJECT: Exxon Service Station No. 73383 W.O.W-6975-1 WELL NO. MW-5

Elevation reference: 100.00 feet
 Ground surface elevation: 100.36

Well completed: 23 March 1992
 Casing elevation: 100.01

AS-BUILT DESIGN



LEGEND

I 2-inch O.D. split-spoon sample

▽ ATD Observed groundwater level
 ATD = at time of drilling

X Sample not recovered

RZA AGRA, Inc.
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11335 NE 122nd Way, Suite 100
 Kirkland, Washington 98034-6918

Drilling started: 23 March 1992 Drilling completed: 23 March 1992 Logged by: JTC

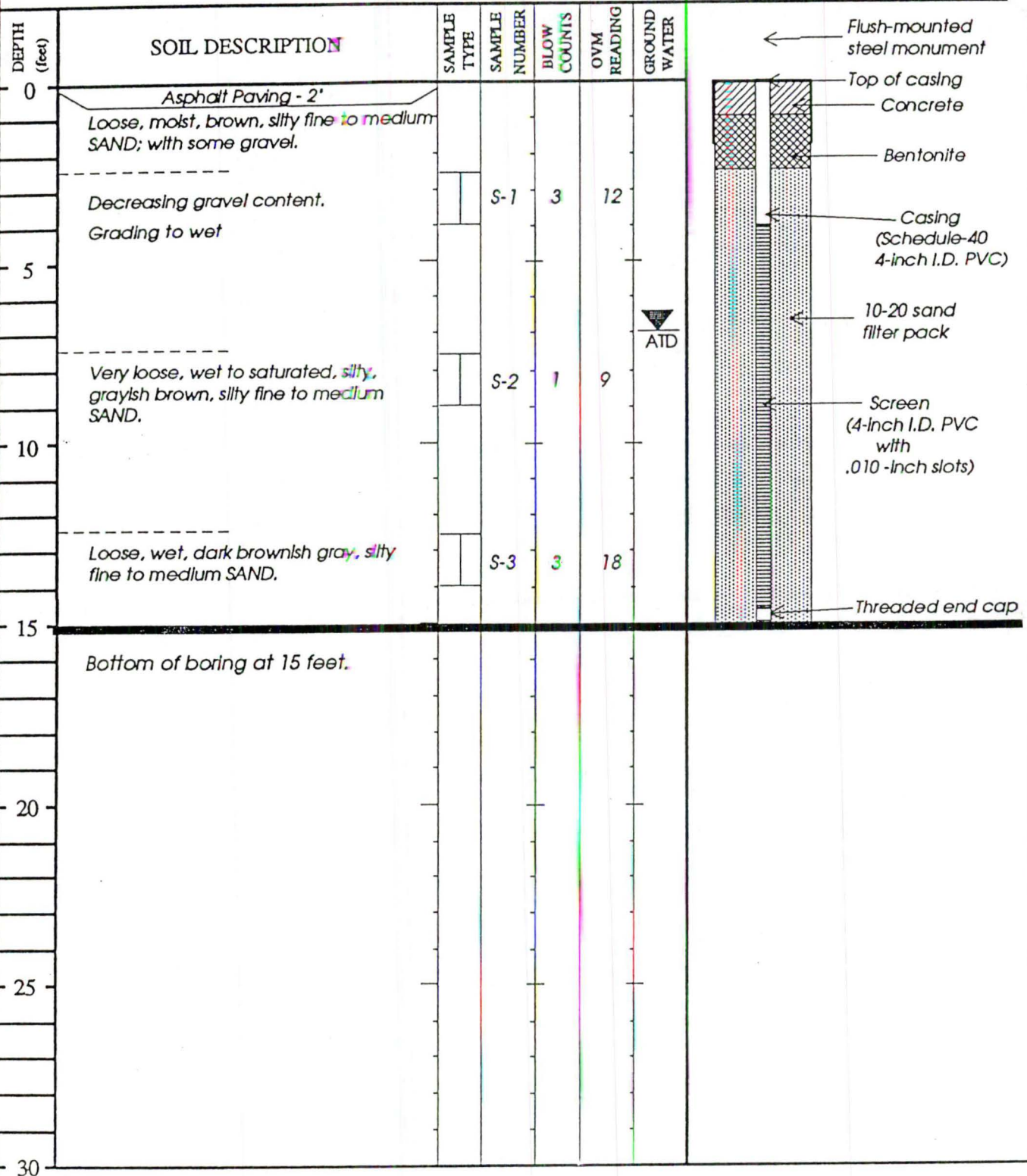
PROJECT: Exxon Service Station No. 73383 W.O.W-6975-1 WELL NO. MW-6

Elevation reference: 100.00 feet
 Ground surface elevation: 100.36

Well completed: 25 March 1992
 Casing elevation: 99.98

AS-BUILT DESIGN

Page



TEST

8015
802C
7420

LEGEND

I 2-inch O.D. split-spoon sample

ATD Observed groundwater level
 ATD = at time of drilling

RZA AGRA, Inc.
 Geotechnical & Environmental Group

11335 NE 122nd Way, Suite 100
 Kirkland, Washington 98034-6918

Drilling started:

25 March 1992

Drilling completed:

25 March 1992

Logged by:

DAS

PROJECT: Exxon Service Station No. 73383 W.O.W-6975-1 WELL NO. MW-7

Elevation reference: 100.00 feet
 Ground surface elevation: 100.31
 Well completed: 25 March 1992
 Casing elevation: 99.96

L (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	OVM READING	GROUND WATER	AS-BUILT DESIGN		TESTING
0	Landscaping Bark						Flush-mounted steel monument		
	Loose, damp to moist, brown, silty fine to medium SAND.						Top of casing		
	Increasing gravel.						Concrete		
		S-1	4	3			Bentonite		
5							Casing (Schedule-40 4-inch I.D. PVC)		
	Loose, moist, brown silty fine to medium SAND						10-20 sand filter pack		
		S-2	3	15			Screen (4-inch I.D. PVC with .010 -inch slots)		
10									
	Loose, wet, gray, silty, fine to medium SAND.								
		S-3	4	9		ATD			
15									
		S-4	5	1					
20	Bottom of boring at 20 feet.						Threaded end cap		
25									
30									

8015
8020
7420

LEGEND

2-inch O.D. split-spoon sample

Observed groundwater level
 ATD = at time of drilling

RZA AGRA, Inc.
 Geotechnical & Environmental Group

11335 NE 122nd Way, Suite 100
 Kirkland, Washington 98034-6918

Drilling started: 25 March 1992 Drilling completed: 25 March 1992 Logged by: DAS

LOG OF EXPLORATORY BORING

PROJECT NAME **Van Waters & Rogers, Inc.**
 LOCATION **Kent, Washington**
 DRILLED BY **TEG**
 DRILL METHOD **Strataprobe**
 LOGGED BY **Michelle Lange**

BORING NO. **GP- 1**
 PAGE **1 OF 1**
 GROUND ELEV.
 TOTAL DEPTH **8.50'**
 DATE COMPLETED **10/10**

SAMPLE NUMBER (SAMPLE TYPE)	PID (in ppm)	RECOVERY PERCENT	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
1-2 (GP)	2	70	▽	5 10 15 20	[Diagonal Hatching] [Dotted Pattern]	[Diagonal Hatching] [Dotted Pattern]	[Diagonal Hatching] [Dotted Pattern]	<p>0 to 0.2 feet: ASPHALT</p> <p>0.2 to 3.0 feet: SAND WITH SILT (SP-SM); grayish brown; fine; few medium sand; few nonplastic silt; trace coarse sand to medium subangular to subrounded gravel; loose; damp. (FILL/ALLUVIUM)</p> <p>Boring not logged below 3 feet. See EMW-7 for deeper lithology.</p> <hr/> <p>Total depth drilled = 8.5 feet. Total depth sampled = 4.0 feet.</p> <p>Groundwater sample collected from a temporary screen installed between 6 and 8.5 feet bgs. Boring was backfilled with hydrated bentonite chips from 8.5 to 3.0 feet bgs, and asphalt from 3 to 0 feet bgs.</p>



REMARKS

- (1) Photoionization detector calibrated using +/- 100 ppm isobutylene gas. (2) Background PID reading = 2 ppm.
- (3) Reference elevation = ground surface. (4) Open triangle = field estimate of water table at time of drilling.
- (5) GP = Samples collected with a 1.5-inch inside-diameter split-spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME **Van Waters & Rogers, Inc.**
 LOCATION **Kent, Washington**
 DRILLED BY **TEG**
 DRILL METHOD **Strataprobe**
 LOGGED BY **Michelle Lange**

BORING NO. **GP- 2**
 PAGE **1 OF 1**
 GROUND ELEV.
 TOTAL DEPTH **10.50'**
 DATE COMPLETED **10/10/97**

SAMPLE NUMBER (SAMPLE TYPE)	PID (in ppm)	RECOVERY PERCENT	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
2-2 (GP)	2	83		<div style="text-align: center;"> </div>	<div style="text-align: center;"> </div>		<div style="text-align: center;"> </div>	<p>0 to 0.2 foot: ASPHALT</p> <p>0.2 to 3.5 feet: SAND (SP); brown; fine; trace nonplastic silt; scattered organics; loose; damp. (FILL/ALLUVIUM)</p> <p>Boring not logged below 3.5 feet. See EMW-7 for deeper lithology.</p> <p>Total depth drilled = 10.5 feet. Total depth sampled = 4.0 feet.</p> <p>Groundwater sample collected from a temporary screen installed between 8 and 10.5 feet bgs. Boring was backfilled with hydrated bentonite chips from 10.5 to 3.0 feet bgs, and asphalt from 3 to 0 feet bgs.</p>



REMARKS

- (1) Photoionization detector calibrated using +/- 100 ppm isobutylene gas. (2) Background PID reading = 2 ppm.
- (3) Reference elevation = ground surface. (4) Open triangle = field estimate of water table at time of drilling.
- (5) GP = Samples collected with a 1.5-inch inside-diameter split-spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME **Van Waters & Rogers, Inc.**
 LOCATION **Kent, Washington**
 DRILLED BY **TEG**
 DRILL METHOD **Strataprobe**
 LOGGED BY **Michelle Lange**

BORING NO. **GP- 3**
 PAGE **1 OF 1**
 GROUND ELEV.
 TOTAL DEPTH **10.5**
 DATE COMPLETED **10/1**

SAMPLE NUMBER (SAMPLE TYPE)	PID (in ppm)	RECOVERY PERCENT	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
3-2 (GP)	2	50	▽	5 10 15 20	■			<p>0 to 0.2 foot: ASPHALT</p> <p>0.2 to 2.5 feet: SAND WITH SILT (SP-SM); brown with local iron staining; fine; few nonplastic silt; trace medium to coarse sand; scattered organics; loose; damp. (FILL/ALLUVIUM)</p> <p>Boring not logged below 2.5 feet. See MW-5 for deeper lithology.</p> <p>Total depth drilled = 10.5 feet. Total depth sampled = 4.0 feet.</p> <p>Groundwater sample collected from a temporary screen installed between 8 and 10.5 feet bgs. Boring was backfilled with hydrated bentonite chips from 10.5 to 3.0 feet bgs, and asphalt from 3 to 0 feet bgs.</p>



REMARKS

- (1) Photoionization detector calibrated using +/- 100 ppm isobutylene gas.
- (2) Background PID reading = 2 ppm.
- (3) Reference elevation = ground surface.
- (4) Open triangle = field estimate of water table at time of drilling.
- (5) GP = Samples collected with a 1.5-inch inside-diameter split-spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME **Van Waters & Rogers, Inc.**
 LOCATION **Kent, Washington**
 DRILLED BY **TEG**
 DRILL METHOD **Strataprobe**
 LOGGED BY **Michelle Lange**

BORING NO. **GP- 4**
 PAGE **1 OF 1**
 GROUND ELEV. _____
 TOTAL DEPTH **10.50'**
 DATE COMPLETED **10/10/97**

SAMPLE NUMBER (SAMPLE TYPE)	PID (in ppm)	RECOVERY PERCENT	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
4-2 (GP)	16	83	▽	5	10	15	20	<p>0 to 0.2 foot: ASPHALT</p> <p>0.2 to 3.5 feet: SAND WITH SILT (SP-SM); brown with local iron staining; fine; few nonplastic silt; trace medium to coarse sand; scattered organics; loose; damp. (FILL/ALLUVIUM)</p> <p>Boring not logged below 3.5 feet. See EMW-7 for deeper lithology.</p> <p>Total depth drilled = 10.5 feet. Total depth sampled = 4.0 feet.</p> <p>Groundwater sample collected from a temporary screen installed between 8 and 10.5 feet bgs. Boring was backfilled with hydrated bentonite chips from 10.5 to 3.0 feet bgs, and asphalt from 3 to 0 feet bgs.</p>

REMARKS

- (1) Photoionization detector calibrated using +/- 100 ppm isobutylene gas. (2) Background PID reading = 2 ppm.
- (3) Reference elevation = ground surface. (4) Open triangle = field estimate of water table at time of drilling.
- (5) GP = Samples collected with a 1.5-inch inside-diameter split-spoon sampler.



LOG OF EXPLORATORY BORING

PROJECT NAME **Van Waters & Rogers, Inc.**
 LOCATION **Kent, Washington**
 DRILLED BY **TEG**
 DRILL METHOD **Strataprobe**
 LOGGED BY **Michelle Lange**

BORING NO. **GP- 5**
 PAGE **1 OF 1**
 GROUND ELEV.
 TOTAL DEPTH **10.5'**
 DATE COMPLETED **10/11**

SAMPLE NUMBER (SAMPLE TYPE)	PID (in ppm)	RECOVERY PERCENT	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
5-2 (GP)	0	67	▽	5 10 15 20				<p>0 to 0.5 foot: CONCRETE</p> <p>0.5 to 3.0 feet: SAND WITH SILT (SP-SM); grayish brown with reddish grains; fine; few nonplastic silt; trace medium sand to fine subangular to subrounded gravel; scattered organics; loose; damp. (FILL/ALLUVIUM)</p> <p>Boring not logged below 3 feet. See MW-5 for deeper lithology.</p> <p>Total depth drilled = 10.5 feet. Total depth sampled = 4.0 feet.</p> <p>Groundwater sample collected from a temporary screen installed between 8 and 10.5 feet bgs. Boring was backfilled with hydrated bentonite chips from 10.5 to 3.0 feet bgs, and concrete from 3 to 0 feet bgs.</p>




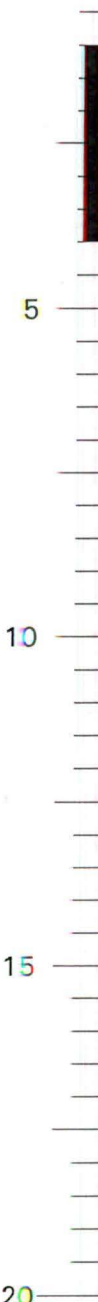



REMARKS

- (1) Photoionization detector calibrated using +/- 100 ppm isobutylene gas. (2) Background PID reading = 2 ppm.
- (3) Reference elevation = ground surface. (4) Open triangle = field estimate of water table at time of drilling.
- (5) GP = Samples collected with a 1.5-inch inside-diameter split-spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME **Van Waters & Rogers, Inc.**
LOCATION **Kent, Washington**
DRILLED BY **TEG**
DRILL METHOD **Strataprobe**
LOGGED BY **Michelle Lange**

BORING NO. **GP- 7**
PAGE **1 OF 1**
GROUND ELEV.
TOTAL DEPTH **10.5'**
DATE COMPLETED **10/10**

SAMPLE NUMBER (SAMPLE TYPE)	PID (in ppm)	RECOVERY PERCENT	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
7-2 (GP)	33	67						<p>0 to 0.5 foot: CONCRETE</p> <p>0.5 to 3.0 feet: SAND WITH SILT (SP-SM); brown; fine; few medium sand; few nonplastic silt; trace coarse sand to fine subangular to subrounded gravel; loose; damp. (FILL/ALLUVIUM)</p> <p>Boring not logged below 3 feet. See MW-5 for deeper lithology.</p> <p>Total depth drilled = 10.5 feet. Total depth sampled = 4.0 feet.</p> <p>Groundwater sample collected from a temporary screen installed between 8 and 10.5 feet bgs. Boring was backfilled with hydrated bentonite chips from 10.5 to 3.0 feet bgs, and concrete from 3 to 0 feet bgs.</p>

REMARKS

- (1) Photoionization detector calibrated using +/- 100 ppm isobutylene gas. (2) Background PID reading = 2 ppm.
- (3) Reference elevation = ground surface. (4) Open triangle = field estimate of water table at time of drilling.
- (5) GP = Samples collected with a 1.5-inch inside-diameter split-spoon sampler.



EMCON

LOG OF EXPLORATORY BORING

PROJECT NAME **Van Waters & Rogers, Inc.**
 LOCATION **Kent, Washington**
 DRILLED BY **TEG**
 DRILL METHOD **Strataprobe**
 LOGGED BY **Michelle Lange**

BORING NO. **GP- 8**
 PAGE **1 OF 1**
 GROUND ELEV. _____
 TOTAL DEPTH **10.50'**
 DATE COMPLETED **10/10/97**

SAMPLE NUMBER (SAMPLE TYPE)	PID (in ppm)	RECOVERY PERCENT	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
8-2 (GP)	2	100						<p>0 to 0.2 foot: ASPHALT</p> <p>0.2 to 4.0 feet: SAND WITH SILT (SP-SM); brown; fine; few medium sand; few nonplastic silt; trace coarse sand to medium subangular to subrounded gravel; loose; damp. (FILL/ALLUVIUM)</p> <hr style="border-top: 1px dashed black;"/> <p>Boring not logged below 4 feet. See MW-5 for deeper lithology.</p> <hr style="border-top: 1px solid black;"/> <p>Total depth drilled = 10.5 feet. Total depth sampled = 4.0 feet.</p> <p>Groundwater sample collected from a temporary screen installed between 8 and 10.5 feet bgs. Boring was backfilled with hydrated bentonite chips from 10.5 to 3.0 feet bgs, and asphalt from 3 to 0 feet bgs.</p>




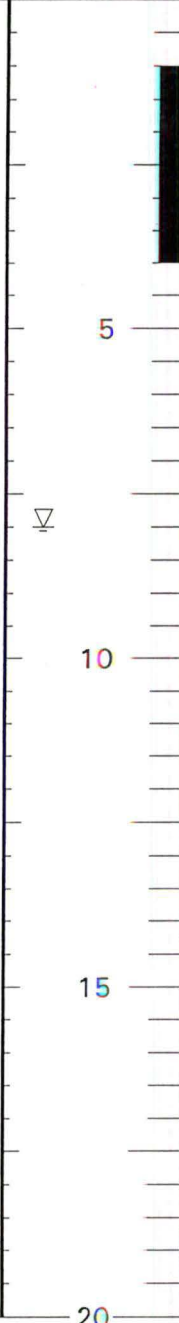



REMARKS

- (1) Photoionization detector calibrated using +/- 100 ppm isobutylene gas. (2) Background PID reading = 2 ppm.
- (3) Reference elevation = ground surface. (4) Open triangle = field estimate of water table at time of drilling.
- (5) GP = Samples collected with a 1.5-inch inside-diameter split-spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME **Van Waters & Rogers, Inc.**
 LOCATION **Kent, Washington**
 DRILLED BY **TEG**
 DRILL METHOD **Strataprobe**
 LOGGED BY **Michelle Lange**

BORING NO. **GP- 9**
 PAGE **1 OF 1**
 GROUND ELEV.
 TOTAL DEPTH **10.5(**
 DATE COMPLETED **10/1(**

SAMPLE NUMBER (SAMPLE TYPE)	PID (in ppm)	RECOVERY PERCENT	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
9-2 (GP)	2	83						<p>0 to 0.2 foot: ASPHALT</p> <p>0.2 to 3.5 feet: SAND (SP); brown with localized iron staining; fine; trace medium sand; trace nonplastic silt; loose; damp. (FILL/ALLUVIUM)</p> <p>Boring not logged below 3.5 feet. See MW-5 for deeper lithology.</p> <p>Total depth drilled = 10.5 feet. Total depth sampled = 4.0 feet.</p> <p>Groundwater sample collected from a temporary screen installed between 8 and 10.5 feet bgs. Boring was backfilled with hydrated bentonite chips from 10.5 to 3.0 feet bgs, and asphalt from 3 to 0 feet bgs.</p>



REMARKS

- (1) Photoionization detector calibrated using +/- 100 ppm isobutylene gas. (2) Background PID reading = 2 ppm.
- (3) Reference elevation = ground surface. (4) Open triangle = field estimate of water table at time of drilling.
- (5) GP = Samples collected with a 1.5-inch inside-diameter split-spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME **Van Waters & Rogers, Inc.**
 LOCATION **Kent, Washington**
 DRILLED BY **TEG**
 DRILL METHOD **Strataprobe**
 LOGGED BY **Michelle Lange**

BORING NO. **GP-10**
 PAGE **1 OF 1**
 GROUND ELEV.
 TOTAL DEPTH **10.50'**
 DATE COMPLETED **10/10/97**

SAMPLE NUMBER (SAMPLE TYPE)	PID (in ppm)	RECOVERY PERCENT	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
10-2 (GP)	2	67						<p>0 to 0.2 foot: ASPHALT</p> <p>0.2 to 3.0 feet: SAND (SP); brown with localized iron staining; fine; trace medium sand; trace nonplastic silt; loose; damp. (FILL/ALLUVIUM)</p> <p>Boring not logged below 3 feet. See MW-5 for deeper lithology.</p> <p>Total depth drilled = 10.5 feet. Total depth sampled = 4.0 feet.</p> <p>Groundwater sample collected from a temporary screen installed between 8 and 10.5 feet bgs. Boring was backfilled with hydrated bentonite chips from 10.5 to 3.0 feet bgs, and asphalt from 3 to 0 feet bgs.</p>



REMARKS

- (1) Photoionization detector calibrated using +/- 100 ppm isobutylene gas. (2) Background PID reading = 2 ppm.
- (3) Reference elevation = ground surface. (4) Open triangle = field estimate of water table at time of drilling.
- (5) GP = Samples collected with a 1.5-inch inside-diameter split-spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Van Waters & Rogers Facility
 LOCATION Kent, Washington
 DRILLED BY Cascade Drilling, Inc.
 DRILL METHOD Geoprobe
 LOGGED BY Michelle Macias

BORING NO. GP-11
 PAGE 1 OF 3
 GROUND ELEVATION 34.20'
 TOTAL DEPTH 46'
 DATE COMPLETED 1/6/99

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)	GROUND WATER LEVEL	DEPTH IN FT.	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
11-0	GP*							0.0 to 0.2 foot: ASPHALT.
								0.2 to 2.0 feet: SAND WITH SILT (SP-SM); dark brown; fine, trace medium sand; few nonplastic silt; damp. (FILL)
11-3	GP*							2.0 to 6.0 feet: SAND (SP); mottled brown and orange; fine; trace silt; moist to wet. (FILL/ALLUVIUM)
								@ 4.0 to 5.0 feet: sand with silt interbed.
			▽	5				@ 5.5 to 5.6 feet: silt interbed.
11-6	GP							6.0 to 10.0 feet: SILTY SAND (SM); mottled brown and orange; fine; some nonplastic to low-plasticity silt; wet. (ALLUVIUM)
								@ 6.75 feet: orange; trace organic debris.
11-8	GP							@ 8.0 to 10.0 feet: brown.
				10				@ 9.75 feet: grading to sand.
11-10	GP							10.0 to 44.0 feet: SAND (SP); dark gray to black with reddish grains; fine; wet. (ALLUVIUM)
								@ 10.6 to 10.7 feet: trace silt.
11-12	GP							@ 12.0 to 14.0 feet: sand with silt laminations.
11-14	GP							
				15				@ 15.4 feet: 1/2-inch-thick sandy silt interbed.
11-16	GP							
11-18	GP							
				20				

REMARKS

(1) PID = Photoionization detector calibrated to +/- 100 parts per million (ppm). At 38.0 to 48.0 feet: background PID = 2 ppm. (2) GP* = Sample collected with a 3-foot-long by 1.4-inch inside diameter split spoon sampler. (3) GP = Sample collected with a 2-foot-long by 1-inch inside diameter sampler lined with a plastic sleeve. (4) White triangle = Field estimate of water table at time of drilling.



LOG OF EXPLORATORY BORING

PROJECT NAME Van Waters & Rogers Facility
 LOCATION Kent, Washington
 DRILLED BY Cascade Drilling, Inc.
 DRILL METHOD Geoprobe
 LOGGED BY Michelle Macias

BORING NO. GP-11
 PAGE 2 OF 3
 GROUND ELEVATION 34.20'
 TOTAL DEPTH 46'
 DATE COMPLETED 1/6/99

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)	GROUND WATER LEVEL	DEPTH IN FT.	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
11-20	GP							@ 20.0 to 32.0 feet: increasing medium sand.
11-22	GP	0						
11-24	GP	0		25				
11-26	GP	0						
28	GP	0						
11-30	GP	0		30				
11-32	GP	0						
11-34	GP	0		35				
11-36	GP	0						@ 36.0 to 38.0 feet: trace scattered light brown silt nodules.
11-38	GP	2		40				@ 38.0 to 38.7 feet: sandy silt (SM), brownish gray, fine, some nonplastic silt.



REMARKS

(1) PID = Photoionization detector calibrated to +/- 100 parts per million (ppm). At 38.0 to 48.0 feet: background PID = 2 ppm. (2) GP* = Sample collected with a 3-foot-long by 1.4-inch inside diameter split spoon sampler. (3) GP = Sample collected with a 2-foot-long by 1-inch inside diameter sampler lined with a plastic sleeve. (4) White triangle = Field estimate of water table at time of drilling.

LOG OF EXPLORATORY BORING

PROJECT NAME Van Waters & Rogers Facility
 LOCATION Kent, Washington
 DRILLED BY Cascade Drilling, Inc.
 DRILL METHOD Geoprobe
 LOGGED BY Michelle Macias

BORING NO. GP-11
 PAGE 3 OF 3
 GROUND ELEVATION 34.20'
 TOTAL DEPTH 46'
 DATE COMPLETED 1/6/99

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)	GROUND WATER LEVEL	DEPTH IN FT.	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
11-40	GP	2						
11-42	GP	3						@ 41.5 feet: 1/2-inch-thick silt lamination.
11-44	GP	2		45				44.0 to 48.0 feet: SILT (ML) ; brown; low plasticity; some organic and wood debris.
11-46	GP	2						@ 45.25 to 46.0 feet: sand (SP), dark gray to black with reddish grains, fine, wet. @ 46.0 to 48.0 feet: gray, low to medium plasticity.
								Total depth drilled = 46.0 feet. Total depth sampled = 48.0 feet.
								Boring abandoned with grout to 6 feet below ground surface, medium bentonite chips to 2 inches below ground surface and sealed with an asphalt patch.

REMARKS

(1) PID = Photoionization detector calibrated to +/- 100 parts per million (ppm). At 38.0 to 48.0 feet: background PID = 2 ppm. (2) GP* = Sample collected with a 3-foot-long by 1.4-inch inside diameter split spoon sampler. (3) GP = Sample collected with a 2-foot-long by 1-inch inside diameter sampler lined with a plastic sleeve. (4) White triangle = Field estimate of water table at time of drilling.



LOG OF EXPLORATORY BORING

PROJECT NAME Van Waters & Rogers Facility
 LOCATION Kent, Washington
 DRILLED BY Cascade Drilling, Inc.
 DRILL METHOD Geoprobe
 LOGGED BY Michelle Macias

BORING NO. GP-12
 PAGE 1 OF 1
 GROUND ELEVATION 34.20'
 TOTAL DEPTH 40'
 DATE COMPLETED 1/6/99

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)	GROUND WATER LEVEL	DEPTH IN FT.	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
				5	> <			See GP-11 boring log for lithologic description.
				10	> <			
2-15-0199	GP			15	> <			
315				20	> <			
				25	> <			
2-23-0199	GP			30	> <			Total depth drilled = 40.0 feet. Total depth sampled = 40.0 feet. Boring abandoned with grout to 6 feet below ground surface, medium bentonite chips to 2 inches below ground surface and sealed with an asphalt patch.
@1330				35	> <			
2-31-0199	GP			40	> <			
@1400								
2-39-0199	GP							
@1430								



REMARKS

- (1) GP = Groundwater samples collected by exposing a 1-inch-diameter by 1-foot-long screen.
- (2) See GP-11 boring log for lithology.

LOG OF EXPLORATORY BORING

PROJECT NAME Van Waters & Rogers Facility
 LOCATION Kent, Washington
 DRILLED BY Cascade Drilling Inc.
 DRILL METHOD Mobile B61/Hollow Stem Auger
 LOGGED BY Michelle Macias

BORING NO. P-1
 PAGE 1 OF 2
 GROUND ELEVATION 33.85'
 TOTAL DEPTH 44.5'
 DATE COMPLETED 1/7/99

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)	GROUND WATER LEVEL	DEPTH IN FT.	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
				5 10 15 20 25 30 35 40				<p>See GP-11 boring log for lithologic description.</p> <p>PIEZOMETER COMPLETION DETAILS: 0.38 to 39.0 feet: 2-inch inside diameter, flush-threaded Schedule 40 PVC blank riser pipe. 39.0 to 44.0 feet: 2-inch inside diameter, flush-threaded Schedule 40 PVC well screen with 0.010-inch machine-cut slots. 44.0 to 44.5 feet: 2-inch inside diameter, flush-threaded Schedule 40 PVC end cap.</p> <p>0.0 to 2.0 feet: flush-mount monument and concrete. 2.0 to 37.0 feet: medium bentonite chips. 37.0 to 44.5 feet: 20/40 CSSI sand. 44.5 to 46.5 feet: slough/boring collapse.</p>

REMARKS


- (1) Reference elevation = top of PVC.
- (2) See GP-11 boring log for lithology.
- (3) U = Undisturbed Shelby tube sample.



LOG OF EXPLORATORY BORING

PROJECT NAME Van Waters & Rogers Facility
 LOCATION Kent, Washington
 DRILLED BY Cascade Drilling, Inc.
 DRILL METHOD Mobile B61/Hollow Stem Auger
 LOGGED BY Michelle Macias

BORING NO. P-1
 PAGE 2 OF 2
 GROUND ELEVATION 33.85'
 TOTAL DEPTH 44.5'
 DATE COMPLETED 1/7/99

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)	GROUND WATER LEVEL	DEPTH IN FT.	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
1-44.5	U			45				<p>Total depth drilled = 44.5 feet. Total depth sampled = 46.5 feet.</p>



REMARKS

- (1) Reference elevation = top of PVC.
- (2) See GP-11 boring log for lithology.
- (3) U = Undisturbed Shelby tube sample.

LOG OF EXPLORATORY BORING

PROJECT NAME VWR
 LOCATION Kent Facility
 DRILLED BY Cascade, Inc. Drilling
 DRILL METHOD Hollow Stem Auger (6 1/4" ID)
 LOGGED BY Nick Garson

BORING NO. SB- 8
 PAGE 1 OF 1
 GROUND ELEV.
 TOTAL DEPTH 6.50
 DATE COMPLETED 08/1

SAMPLING METHOD AND NUMBER	PID (in ppm)	BLOWS PER 8 INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
								0 to 0.5 foot: ASPHALT
SB SB-8-1.0	1.6 27	18-23-25						0.5 to 6.5 feet: SAND (SW), (2.5YR 4/N4), light gray to brown, fine to medium, little fine to medium, angular to subangular, gravel, medium dense, moist. (GRADE FILL)
SB	54	18-21-23						@ 4.5 feet: concrete and rebar debris. Ash-like odor. @ 5.0 to 6.0 feet: solvent-like odor.
SB SB-8-6.0	100 1200	10-16-18		5				@ 6.5 feet: grades to wet. Total depth drilled = 6.5 feet. Total depth sampled = 6.5 feet.

REMARKS

(1) Boring was drilled using a 4 1/4-inch I.D./9.5 O.D. hollow-stem auger. (2) SB = Samples collected with split-barrel sampler using stainless steel tubes. (3) Sampler was dropped 30-inches and driven with a 140 pound hammer. (4) White triangle = field estimate of water at time of drilling. (5) Sample numbers preceded by SB (Eg. SB-1-0.5). (6) Reference elevation = ground surface.



LOG OF EXPLORATORY BORING

PROJECT NAME Van Water & Rogers Inc.
 LOCATION Kent Facility
 DRILLED BY Cascade, Inc. Drilling
 DRILL METHOD Hollow Stem Auger (4 1/4" ID)
 LOGGED BY Nick Garson

BORING NO. SB- 9
 PAGE 1 OF 1
 GROUND ELEV.
 TOTAL DEPTH 6.50'
 DATE COMPLETED 01/20/95

SAMPLING METHOD AND NUMBER	PID (in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	LITHOLOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
				5 10 15 20				<p>0 to 0.5 foot: ASPHALT</p> <p>0.5 to 6.5 feet: SAND (SW), (2.5YR 4/N4), light gray to brown, fine to medium, little fine to medium, angular to subangular, gravel, medium dense, moist. (GRADE FILL)</p> <p>@ 5.0 feet: grades to wet. @ 5.0 to 6.0 feet: solvent-like odor.</p> <p>Total depth drilled = 6.5 feet. Total depth sampled = 6.5 feet.</p>



REMARKS

(1) Boring was drilled using a 4 1/4-inch I.D./9.5 O.D. hollow-stem auger. (2) Boring logged by observing cuttings. (3) White triangle = field estimate of water at time of drilling. (4) Reference elevation = ground surface.

LOG OF EXPLORATORY BORING

PROJECT NAME Van Waters & Rogers Inc.
LOCATION 8201 South 212th St., Kent, Washington
DRILLED BY Cascade Drilling, Inc.
DRILL METHOD Hollow Stem Auger
LOGGED BY Nick Garson

BORING NO. SB-10
PAGE 1 OF 1
GROUND ELEV. NA
TOTAL DEPTH 9.00
DATE COMPLETED 08/1...

SAMPLE NUMBER (SAMPLE TYPE)	PID (in ppm) (RECOVERY)	BLOWS PER 6 INCHES	GROUND WATER LEVELS	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
SB-10-1.5 (PD)	1.7 (NA)	NA						0 to 0.4 foot: CONCRETE 0.4 to 4.5 feet: SAND (SP) , brown, fine, trace fines, slight organic odor, damp to wet. (FILL/ALLUVIUM)
SB-10-3 (PD)	1.7 (NA)	NA						
			▽	5				4.5 to 9.0 feet: see MW-1 boring log for lithology.
				10				Total depth sampled = 3.5 feet. Total depth drilled = 9.0 feet.
				15				TEMPORARY WELL POINT DETAILS: 0 to 4.0 feet: Temporary 2-inch-diameter, flush-threaded, Schedule 40 PVC blank riser pipe. 4.0 to 9.5 feet: Temporary 2-inch-diameter, flush-threaded, Schedule 40 PVC well screen with 0.020-inch machined slots and a 2-inch-diameter, flush-threaded, Schedule 40 PVC end cap.
				20				0 to 1.0 foot: Concrete. 1.0 to 9.0 feet: Bentonite chips hydrated with potable water.



REMARKS

(1) PD = Soil samples collected using posthole digger. (2) White triangle = field estimate of water level at time of drilling.
 (3) Reference elevation = ground surface. (4) Photoionization detector (PID) results in parts per million (ppm).

LOG OF EXPLORATORY BORING

PROJECT NAME Vopak USA, Inc.
LOCATION 8201 South 212th Street, Kent, Washington
DRILLED BY Cascade Drilling, Inc.
DRILL METHOD Geoprobe
LOGGED BY Amy Ott

BORING NO. SB-11
PAGE 1 of 1
REFERENCE ELEV.
TOTAL DEPTH 12.0'
DATE COMPLETED 6/13/01

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL (PID in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
				5				0 to 0.2 foot: ASPHALT 0.2 to 3.5 feet: SAND (SP), brown, fine to medium, little silt, dry, no odor.
SB-11-4	1-3 (0)							3.5 to 5.0 feet: SILTY SAND (SM), mottled brown/orange, fine to medium, little silt, dry, no odor.
	3-5 (0)							5.0 to 6.0 feet: SAND (SP), brown to orange, fine, few medium gravel, damp, unidentifiable odor.
SB-11-6	5-7 (0)		▽					6.0 to 7.0 feet: SANDY SILT (ML), brown, low plasticity, some sand, wet, unidentifiable odor.
								@ 7.0 feet: no sample recovery.
				10				8.0 to 12.0 feet: screen set.
				15				Bottom of boring at 12.0 feet.
				20				Boring abandoned with bentonite and completed with an asphalt patch. Water sample taken (SB-11).



REMARKS

LOG OF EXPLORATORY BORING

PROJECT NAME Vopak USA, Inc.
LOCATION 8201 South 212th Street, Kent, Washington
DRILLED BY Cascade Drilling, Inc.
DRILL METHOD Geoprobe
LOGGED BY Amy Ott

BORING NO. SB-12
PAGE 1 of 1
REFERENCE ELEV.
TOTAL DEPTH 10.0'
DATE COMPLETED 6/13/01

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL (PID in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
SB-12-2	1-3 (0)							0 to 0.2 foot: ASPHALT 0.2 to 1.5 feet: SAND (SP) , brown, fine, dry, trace medium gravel, no odor. 1.5 to 3.0 feet: SAND (SP) , brown to orange, mottled, medium, dry, no odor.
SB-12-4	3-5 (0)							3.0 to 5.5 feet: SILTY SAND (SM) , light brown, mottled orange, some silt, damp, unidentifiable odor.
SB-12-6	5-7 (0)		▽	5				5.5 to 7.0 feet: SANDY SILT (ML) , light brown, low to medium plasticity, some sand, wet, unidentifiable odor.
								@ 7.0 feet: no sample recovery.
								8.0 to 10.0 feet: screen set.
				10				Bottom of boring at 10.0 feet. Boring abandoned with bentonite and completed with an asphalt patch. Water sample taken (SB-12).
				15				
				20				



REMARKS

LOG OF EXPLORATORY BORING

PROJECT NAME Vopak USA, Inc.
 LOCATION 8201 South 212th Street, Kent, Washington
 DRILLED BY Cascade Drilling, Inc.
 DRILL METHOD Geoprobe
 LOGGED BY Amy Ott

BORING NO. SB-13
 PAGE 1 of 1
 REFERENCE ELEV.
 TOTAL DEPTH 10.0'
 DATE COMPLETED 6/13/01

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL (PID in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
SB-13-2	1-3 (0)							0 to 0.2 foot: ASPHALT
SB-13-4	3-5 (0)							0.2 to 5.5 feet: SAND (SP), brown, fine, trace silt, dry to damp, no odor. @ 3.5 feet: medium sand (6-inches thick). @ 4.0 to 4.5 feet: interbedded silt layers (1- to 2-cm thick), wet.
SB-13-6	5-7 (0)		▽	5				5.5 to 7.0 feet: SANDY SILT (ML), gray to light brown, low plasticity, some sand, wet, no odor. @ 7.0 feet: no sample recovery.
				10				8.0 to 10.0 feet: screen set.
				15				Bottom of boring at 10.0 feet. Boring abandoned with bentonite and completed with an asphalt patch. Water sample taken (SB-13).
				20				

REMARKS



IT CORPORATION

LOG OF EXPLORATORY BORING

PROJECT NAME	Vopak USA, Inc.	BORING NO.	SB-14
LOCATION	8201 South 212th Street, Kent, Washington	PAGE	1 of 1
DRILLED BY	Cascade Drilling, Inc.	REFERENCE ELEV.	
DRILL METHOD	Geoprobe	TOTAL DEPTH	16.0'
LOGGED BY	Amy Ott	DATE COMPLETED	6/13/01

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL (PID in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
								0 to 1.0 foot: CONCRETE AND FILL
SB-14-4	1-3 (0)							1.0 to 4.8 feet: SAND (SP), brown, medium, few medium to coarse gravel, damp, unidentifiable odor.
	3-5 (0)							@ 4.0 feet: gray, strong odor.
SB-14-6	5-7 (8.2)			5				4.8 to 5.0 feet: PEAT (PT), dark brown, wood fragments, dry, unidentifiable odor.
	7-9 (5.8)							5.0 to 9.0 feet: SAND (SP), dark grayish brown, fine, dry to damp, unidentifiable odor.
SB-14-9			▽					9.0 to 11.0 feet: SANDY SILT (ML), dark gray, low plasticity, wet, strong odor.
				10				@ 11.0 feet: no sample recovery.
								12.0 to 16.0 feet: screen set.
				15				Bottom of boring at 16.0 feet.
								Boring abandoned with bentonite and completed with an asphalt patch.
								Water sample taken (SB-14).
				20				



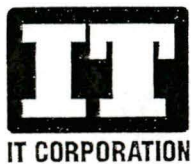
REMARKS

LOG OF EXPLORATORY BORING

PROJECT NAME Vopak USA, Inc.
LOCATION 8201 South 212th Street, Kent, Washington
DRILLED BY Cascade Drilling, Inc.
DRILL METHOD Geoprobe
LOGGED BY Amy Ott

BORING NO. SB-15
PAGE 1 of 1
REFERENCE ELEV.
TOTAL DEPTH 4.5'
DATE COMPLETED 6/13/01

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL (PID in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
				0				0 to 1.0 foot: ASPHALT AND FILL
	1-3 (0)			1.0				1.0 to 3.0 feet: SAND (SP), brown, coarse to medium, few medium gravel, dry, unidentifiable odor.
				4.5				Refusal at 4.5 feet. Boring abandoned with bentonite and completed with an asphalt patch.
				5				
				10				
				15				
				20				



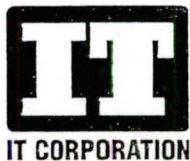
REMARKS

LOG OF EXPLORATORY BORING

PROJECT NAME **Vopak USA, Inc.**
 LOCATION **8201 South 212th Street, Kent, Washington**
 DRILLED BY **Cascade Drilling, Inc.**
 DRILL METHOD **Geoprobe**
 LOGGED BY **Amy Ott**

BORING NO. **SB-16**
 PAGE **1 of 1**
 REFERENCE ELEV.
 TOTAL DEPTH **14.0'**
 DATE COMPLETED **6/13/01**

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL (PID in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
				0				0 to 1.0 foot: CONCRETE AND FILL
SB-16-4	1-3 (0)			1				1.0 to 5.0 feet: SAND (SP), brownish orange, medium, little medium to coarse gravel, damp, unidentifiable odor.
	3-5 (0)			3				@ 4.8 feet: gray, damp, unidentifiable odor.
SB-16-6	5-7 (0)			5				5.0 to 5.5 feet: PEAT (PT), dark brown, wood fragments, damp.
	5-7 (0)			6				5.5 to 7.5 feet: SAND (SP), dark grayish brown, fine, trace silt, dry to damp, unidentifiable odor.
SB-16-8	7-9 (0)		▽	7				7.5 to 9.0 feet: SANDY SILT (ML), dark gray, low to medium plasticity, some fine sand, no odor.
				8				@ 8.0 feet: wet.
				9				@ 9.0 feet: no sample recovery.
				10				10.0 to 14.0 feet: screen set.
				15				Bottom of boring at 14.0 feet.
				20				Boring abandoned with bentonite and completed with an asphalt patch. Water sample taken (SB-16).



REMARKS

LOG OF EXPLORATORY BORING

PROJECT NAME Vopak USA, Inc.
LOCATION 8201 South 212th Street, Kent, Washington
DRILLED BY Cascade Drilling, Inc.
DRILL METHOD Geoprobe
LOGGED BY Amy Ott

BORING NO. SB-17
PAGE 1 of 1
REFERENCE ELEV.
TOTAL DEPTH 14.0'
DATE COMPLETED 6/13/01

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL (PID in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
				0				0 to 1.0 foot: CONCRETE AND FILL
	1-3 (0)			1				1.0 to 5.0 feet: SAND (SP), brownish orange, medium, little medium to coarse gravel, damp, unidentifiable odor.
SB-17-4	3-5 (0)			2				
	5-7 (0)			3				5.0 to 5.5 feet: PEAT (PT), dark brown, wood fragments, damp.
SB-17-6	5-7 (0)			4				5.5 to 7.5 feet: SAND (SP), dark grayish brown, fine, trace silt, dry to damp, unidentifiable odor.
	7-9 (0)			5				7.5 to 9.0 feet: SANDY SILT (ML), dark gray, low to medium plasticity, some sand, wet, no odor.
SB-17-8	7-9 (0)		▽	6				@ 9.0 feet: no sample recovery.
				7				10.0 to 14.0 feet: screen set.
				8				
				9				
				10				
				11				
				12				
				13				
				14				Bottom of boring at 14.0 feet.
				15				Boring abandoned with bentonite and completed with an asphalt patch. Water sample taken (SB-17).
				16				
				17				
				18				
				19				
				20				



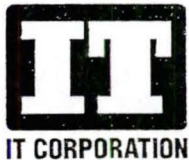
REMARKS

LOG OF EXPLORATORY BORING

PROJECT NAME Vopak USA, Inc.
LOCATION 8201 South 212th Street, Kent, Washington
DRILLED BY Cascade Drilling, Inc.
DRILL METHOD Geoprobe
LOGGED BY Amy Ott

BORING NO. SB-18
PAGE 1 of 1
REFERENCE ELEV.
TOTAL DEPTH 10.0'
DATE COMPLETED 6/13/01

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL (PID in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
								0 to 1.0 foot: ASPHALT AND FILL
SB-18-2	1-3 (0)							1.0 to 3.0 feet: SAND (SP), gray, medium, few fine to medium gravel, damp, no odor.
SB-18-4	3-5 (0)		▽					3.0 to 4.0 feet: PEAT (PT), dark brown, wood fragments, damp, no odor.
				5				4.0 to 5.0 feet: SANDY SILT (ML), dark gray, some sand, wet, no odor.
								@ 5.0 feet: no sample recovery.
								5.0 to 10.0 feet: screen set.
				10				Bottom of boring at 10.0 feet.
								Boring abandoned with bentonite and an asphalt patch. Water sample taken (SB-18).
				15				
				20				



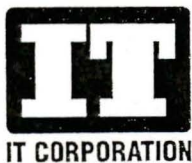
REMARKS

LOG OF EXPLORATORY BORING

PROJECT NAME Vopak USA, Inc.
LOCATION 8201 South 212th Street, Kent, Washington
DRILLED BY Cascade Drilling, Inc.
DRILL METHOD Geoprobe
LOGGED BY K. Hansen

BORING NO. SB-19
PAGE 1 of 1
REFERENCE ELEV.
TOTAL DEPTH 11.0'
DATE COMPLETED 11/20/01

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL (PID in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
SB-19-11201	(0)			5			0 to 1.0 foot: CONCRETE	
				10			9.0 to 10.5 feet: FINE SILTY SAND (SM), dark brown, fine to medium (medium sand <5 percent), moist to very wet, no sheen or odor.	
				15			10.5 to 11.0 feet: FINE SILTY SAND (SM), light brown, fine, wet, fines 50 percent, no sheen or odor. Bottom of boring at 11.0 feet.	
				20			Boring abandoned with bentonite and a concrete patch to surface.	



REMARKS
 Boring located approximately 3.0 feet from monitoring well MW-11.

LOG OF EXPLORATORY BORING

PROJECT NAME Vopak USA, Inc.
LOCATION 8201 South 212th Street, Kent, Washington
DRILLED BY Cascade Drilling, Inc.
DRILL METHOD Geoprobe
LOGGED BY K. Hansen

BORING NO. SB-20
PAGE 1 of 1
REFERENCE ELEV.
TOTAL DEPTH 11.0'
DATE COMPLETED 11/20/01

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL (PID in ppm)	BLOWS PER 6 INCHES	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHOLOGIC COLUMN	LITHOLOGIC DESCRIPTION
SB-20-112001	(0)							<p>0 to 1.0 foot: CONCRETE</p> <p>9.0 to 10.0 feet: SILTY SAND (SM), orange tan to dark brown, fine to medium (10 percent fines), moist to wet, blotchy sheen, no noticeable odor. Dark striations of dark sand.</p> <p>10.0 to 11.0 feet: SILTY SAND (SM), light tan, fine to medium (7 percent fines, very moist to wet, no noticeable odor. Dark striations of dark sand.</p> <p>Bottom of boring at 11.0 feet.</p> <p>Boring abandoned with bentonite and a concrete patch to surface.</p>

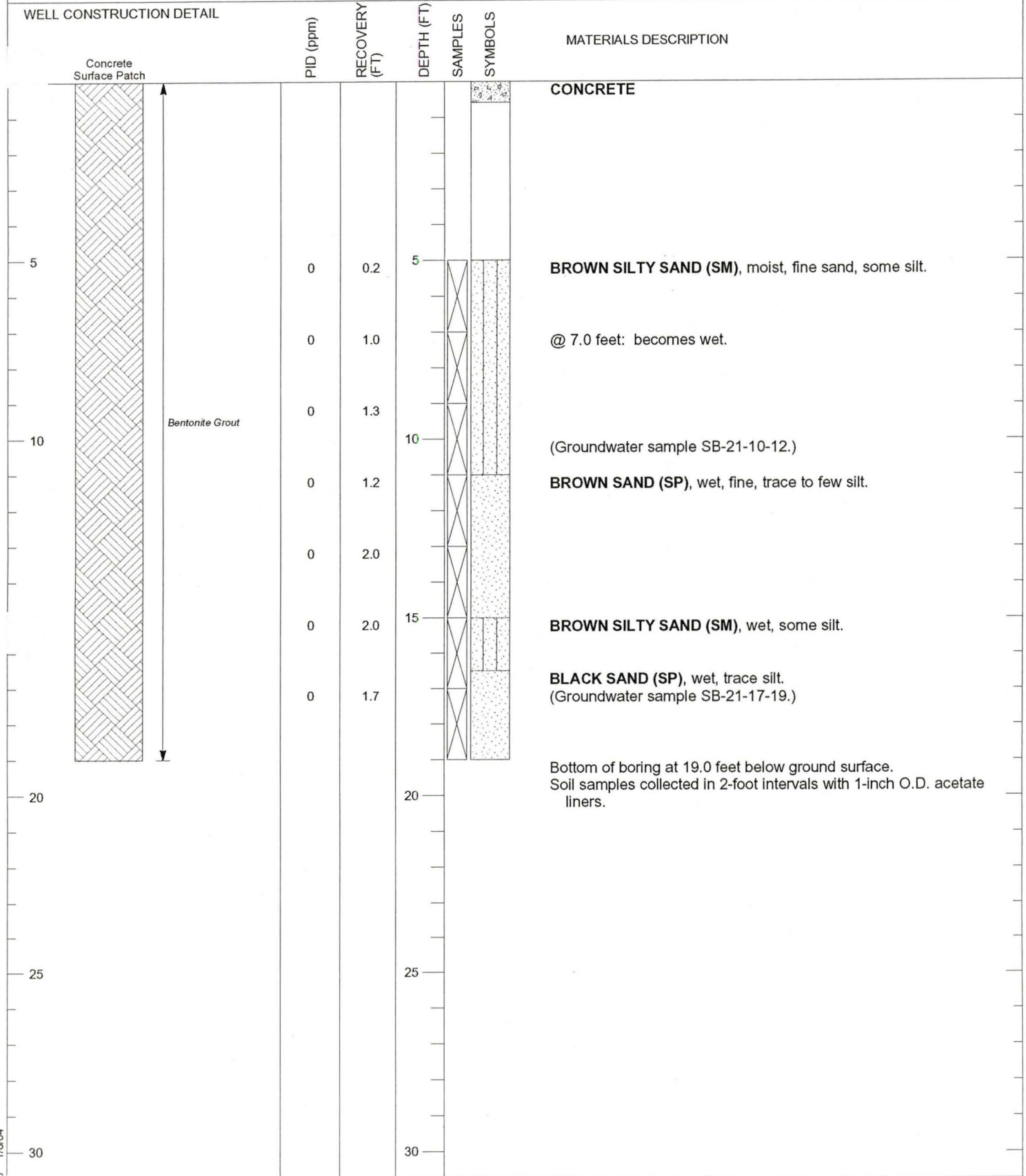


REMARKS

Boring located approximately 3.0 feet from injection well INJ-2.



WELL CONSTRUCTION DETAIL

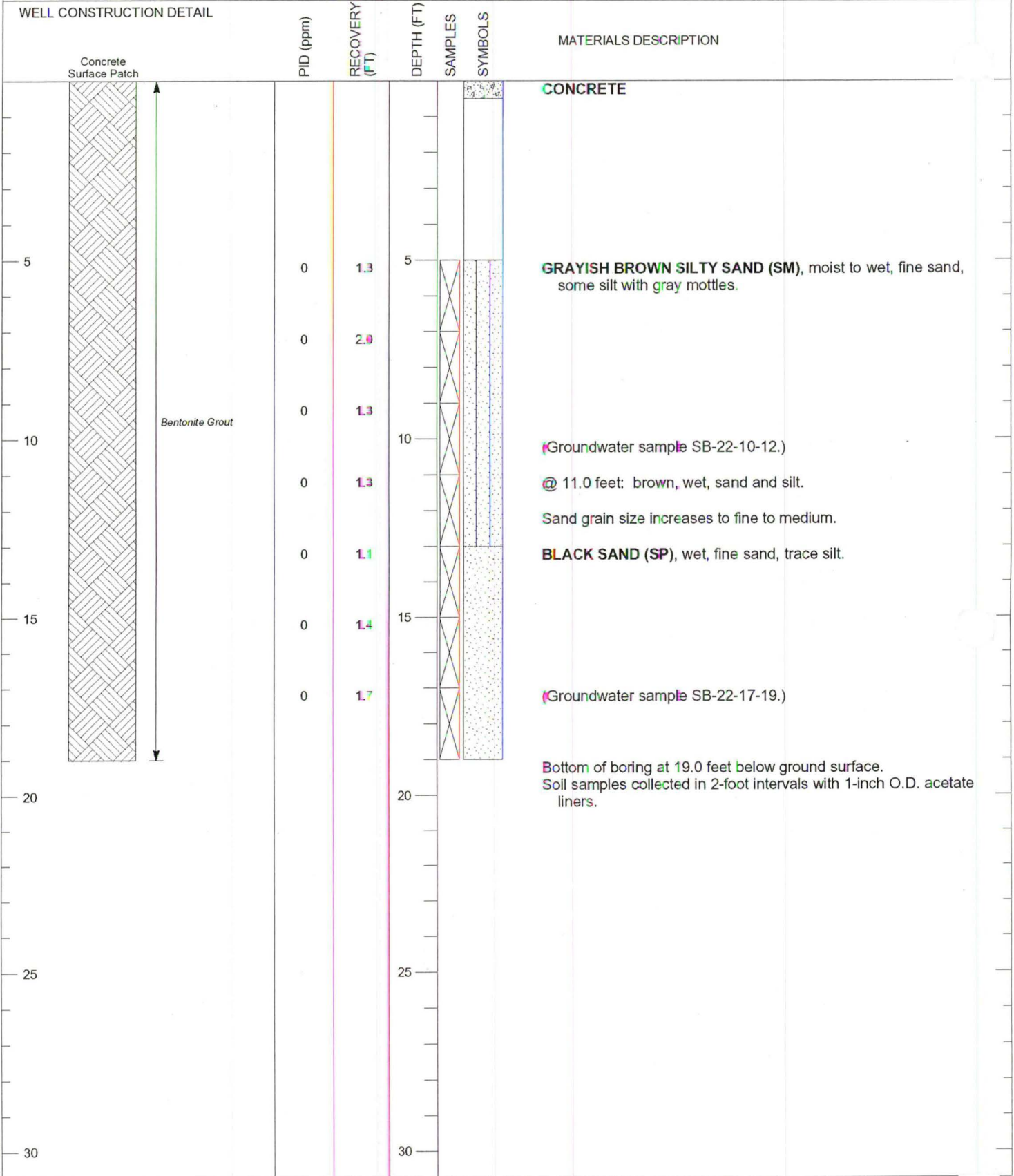


UNIVAR UNIVAR (SPJ) 1/8/04

PROJECT	Univar	DIAMETER OF HOLE	2 inches	PLATE
LOCATION	Kent, Washington	TOTAL DEPTH OF HOLE	19 feet	
JOB NUMBER	816.003.01.001	DATE STARTED	9/12/02	
GEOLOGIST/ENGINEER	Erin McQuillan	DATE COMPLETED	9/12/02	
DRILL RIG	Direct Push			



WELL CONSTRUCTION DETAIL



UNIVAR UNIVAR GPJ 1/8/04

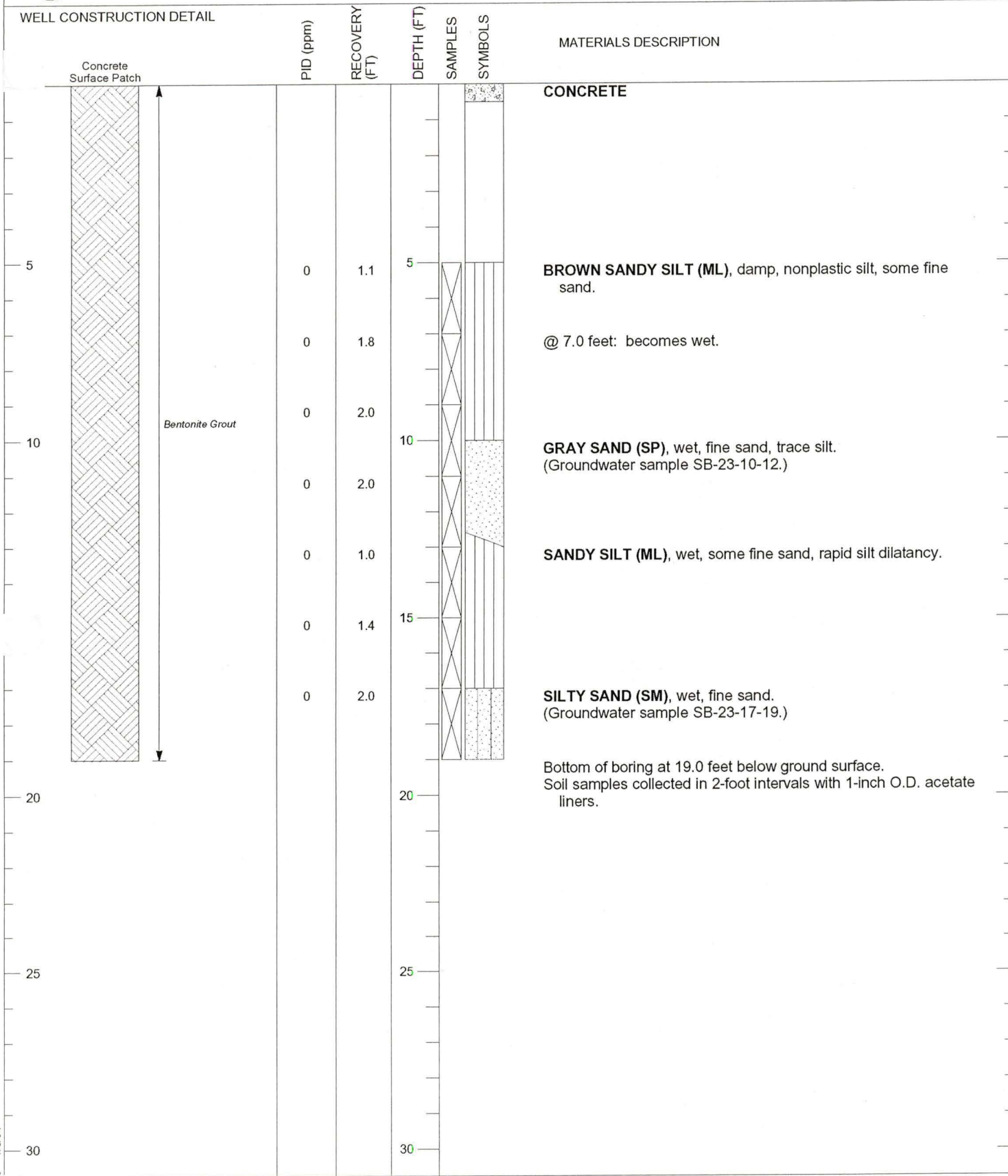
PROJECT: Univar
 LOCATION: Kent, Washington
 JOB NUMBER: 816.003.01.001
 GEOLOGIST/ENGINEER: Erin McQuillan
 DRILL RIG: Direct Push

DIAMETER OF HOLE: 2 inches
 TOTAL DEPTH OF HOLE: 19 feet
 DATE STARTED: 9/12/02
 DATE COMPLETED: 9/12/02

PL/



WELL CONSTRUCTION DETAIL



UNIVAR UNIVAR GPJ 1/8/04

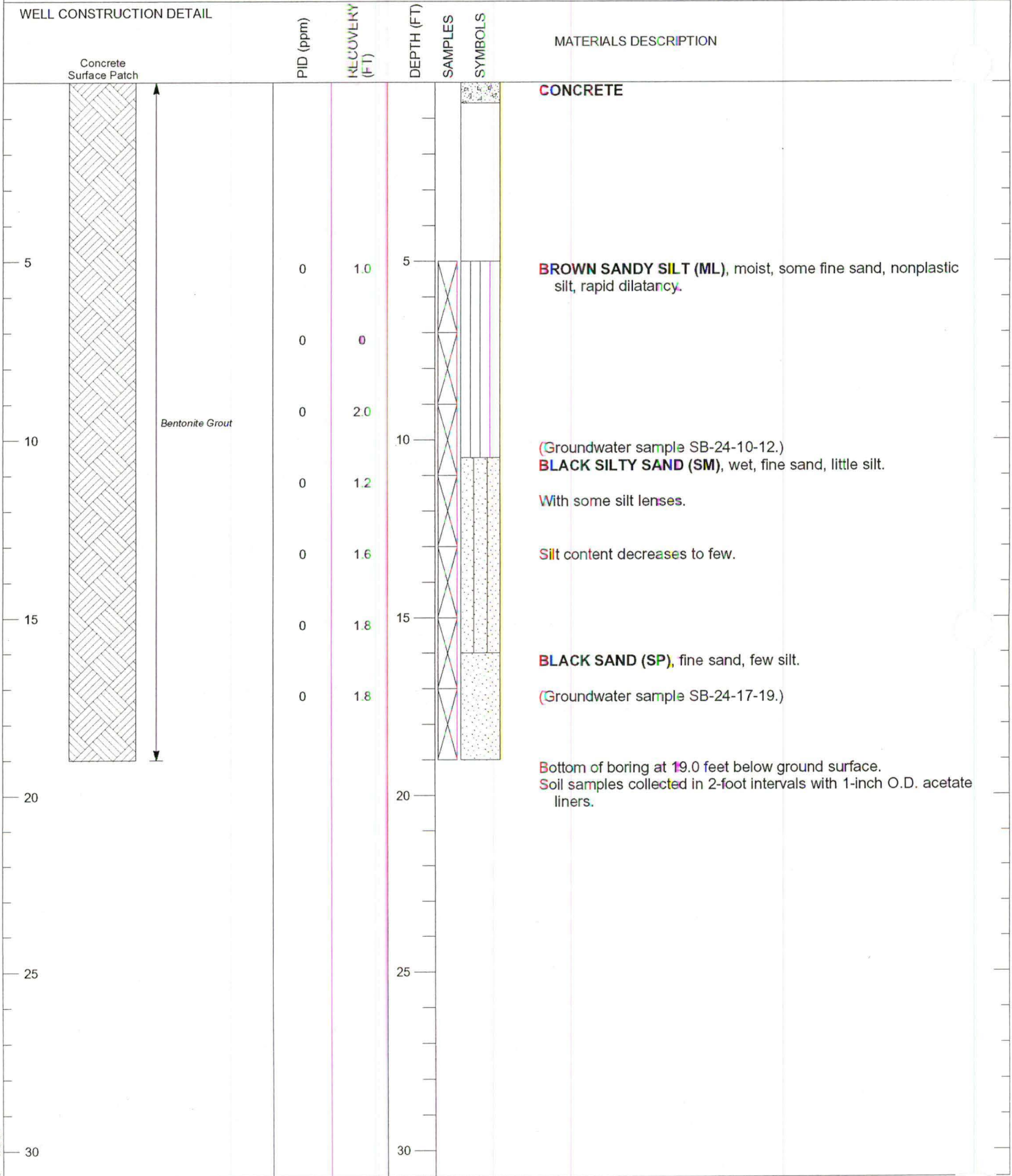
PROJECT: Univar
 LOCATION: Kent, Washington
 JOB NUMBER: 816.003.01.001
 GEOLOGIST/ENGINEER: Erin McQuillan
 DRILL RIG: Direct Push

DIAMETER OF HOLE: 2 inches
 TOTAL DEPTH OF HOLE: 19 feet
 DATE STARTED: 9/12/02
 DATE COMPLETED: 9/12/02

PLATE



WELL CONSTRUCTION DETAIL



UNIVAR UNIVAR GPJ 1/8/04

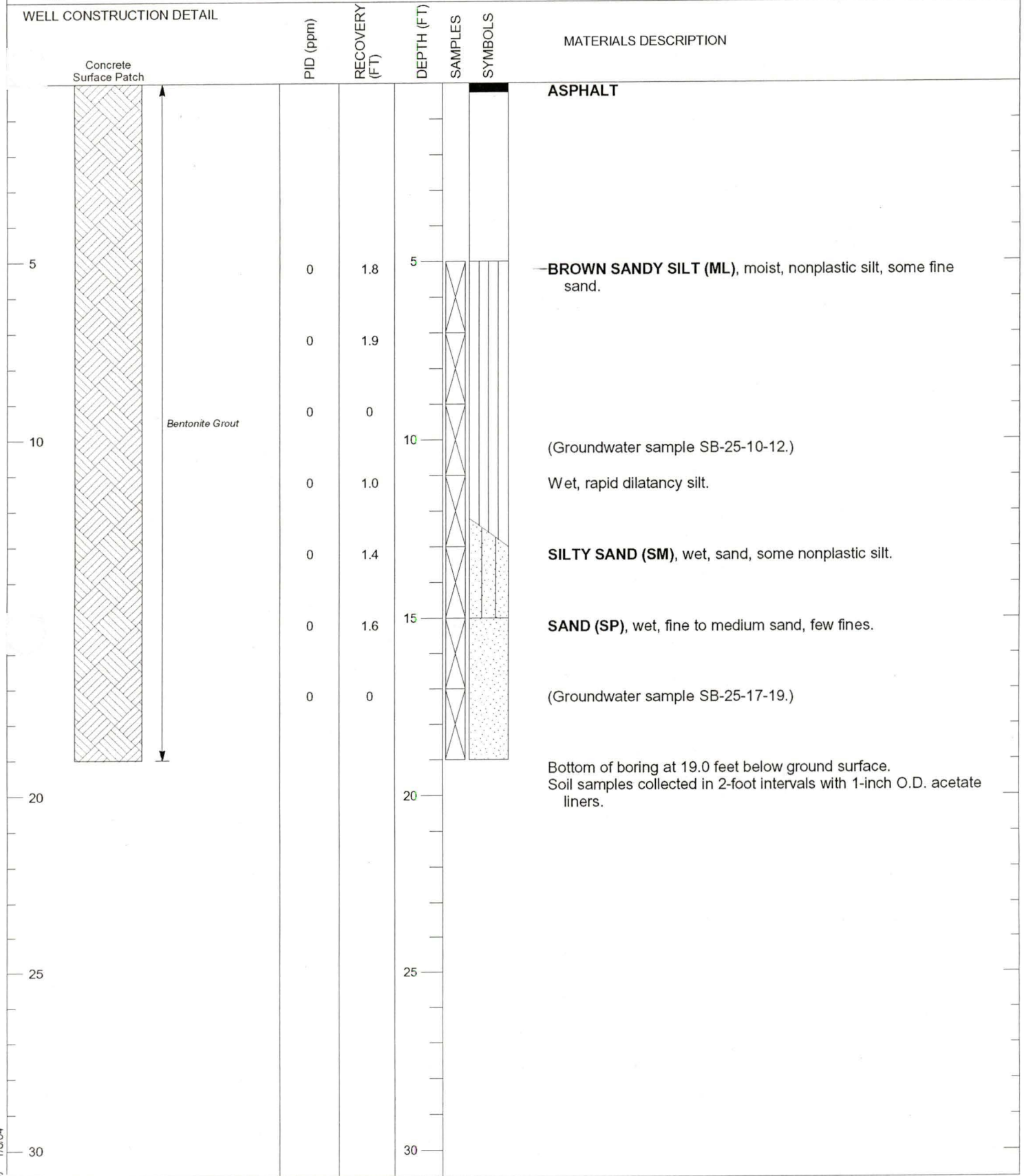
PROJECT: Univar
 LOCATION: Kent, Washington
 JOB NUMBER: 816.003.01.001
 GEOLOGIST/ENGINEER: Erin McQuillan
 DRILL RIG: Direct Push

DIAMETER OF HOLE: 2 inches
 TOTAL DEPTH OF HOLE: 19 feet
 DATE STARTED: 9/12/02
 DATE COMPLETED: 9/12/02

PL



WELL CONSTRUCTION DETAIL



UNIVAR UNIVAR GPJ 1/8/04

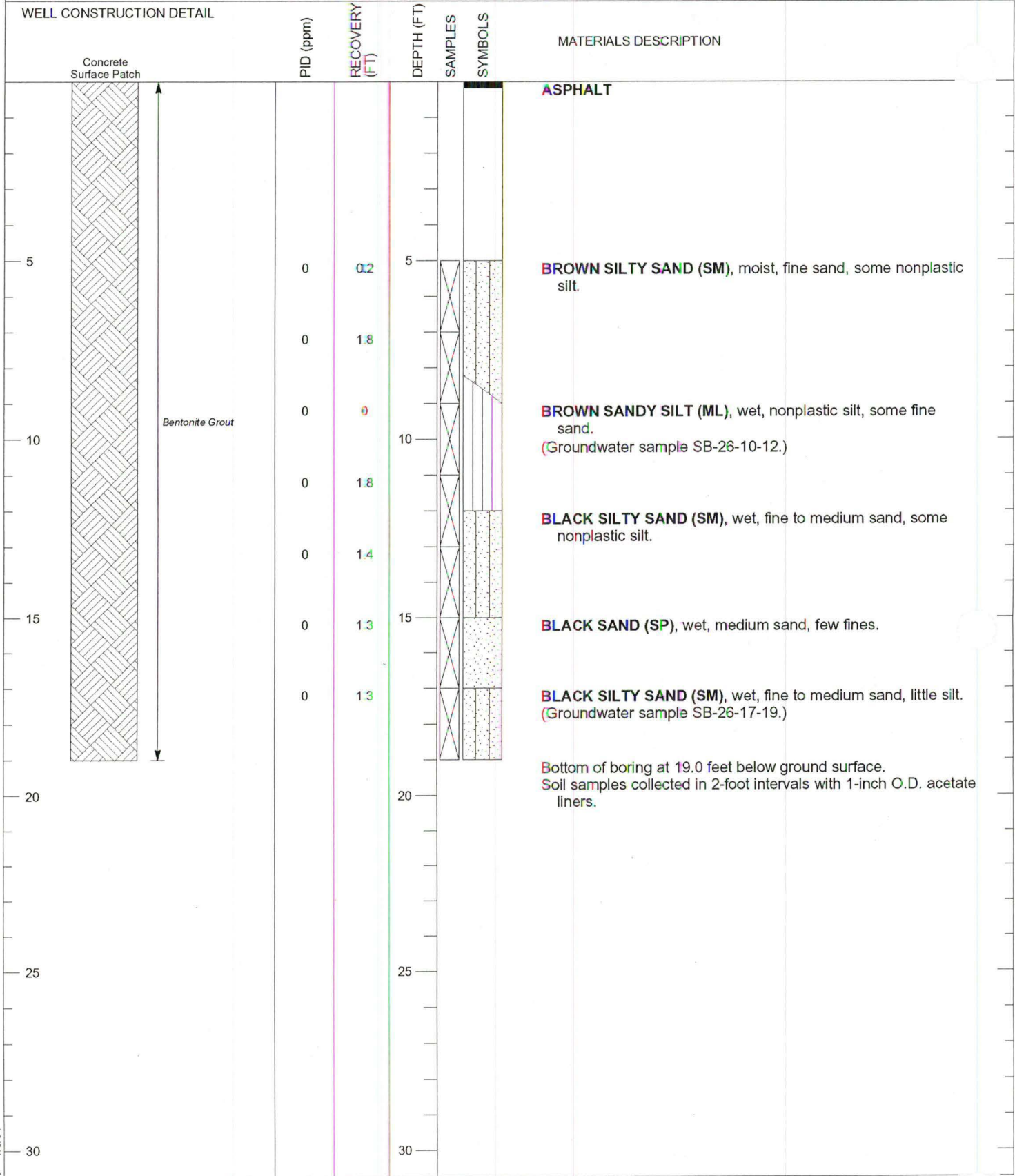
PROJECT: Univar
 LOCATION: Kent, Washington
 JOB NUMBER: 816.003.01.001
 GEOLOGIST/ENGINEER: Erin McQuillan
 DRILL RIG: Direct Push

DIAMETER OF HOLE: 2 inches
 TOTAL DEPTH OF HOLE: 19 feet
 DATE STARTED: 9/12/02
 DATE COMPLETED: 9/12/02

PLATE



WELL CONSTRUCTION DETAIL



UNIVAR UNIVAR GPJ 1/8/04

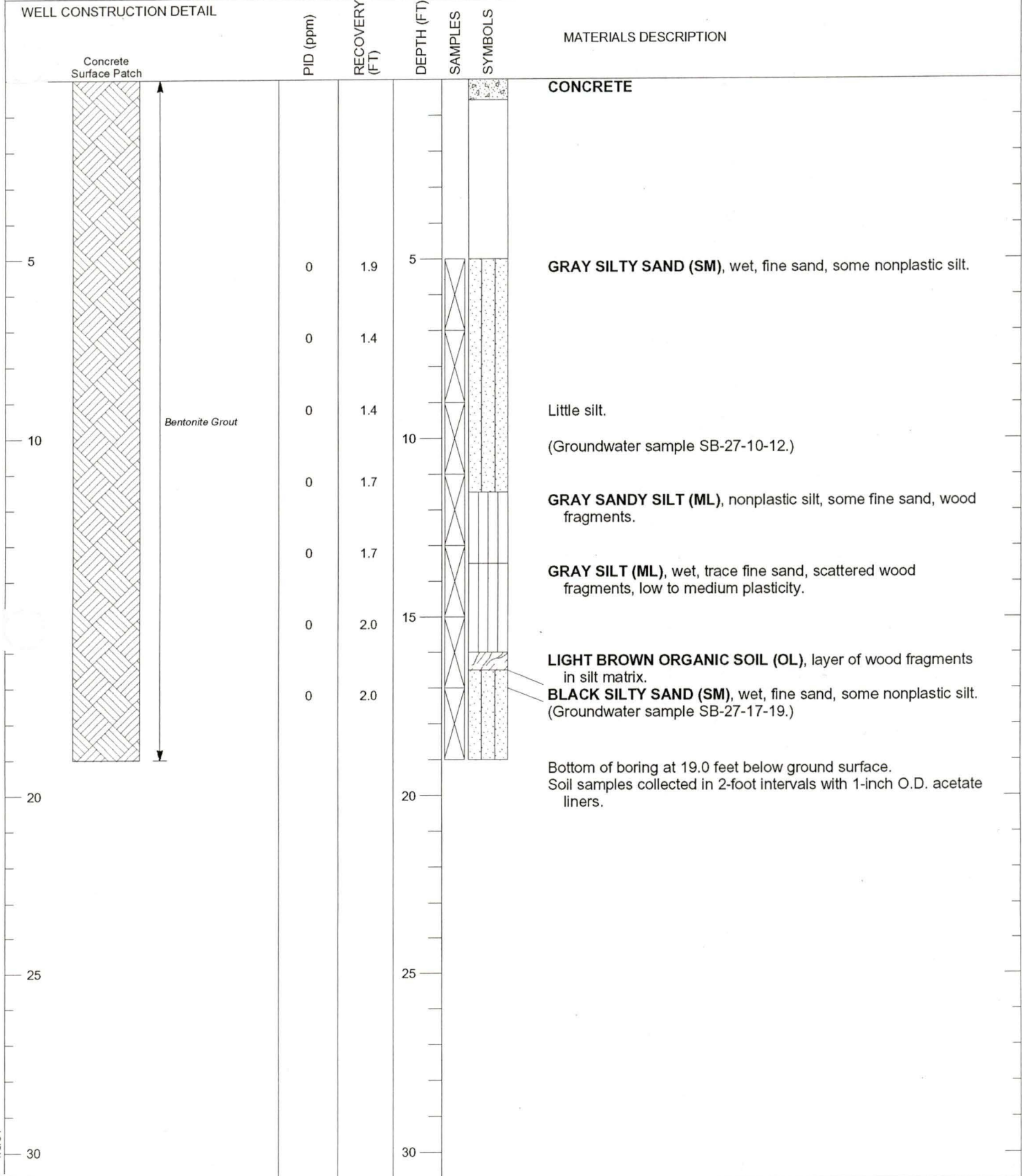
PROJECT: Univar
 LOCATION: Kent, Washington
 JOB NUMBER: 816.003.01.001
 GEOLOGIST/ENGINEER: Erin McQuillan
 DRILL RIG: Direct Push

DIAMETER OF HOLE: 2 inches
 TOTAL DEPTH OF HOLE: 19 feet
 DATE STARTED: 9/13/02
 DATE COMPLETED: 9/13/02

PL



WELL CONSTRUCTION DETAIL



UNIVAR UNIVAR GP-1 1/8/04

PROJECT: Univar
 LOCATION: Kent, Washington
 JOB NUMBER: 816.003.01.001
 GEOLOGIST/ENGINEER: Erin McQuillan
 DRILL RIG: Direct Push

DIAMETER OF HOLE: 2 inches
 TOTAL DEPTH OF HOLE: 19 feet
 DATE STARTED: 9/13/02
 DATE COMPLETED: 9/13/02

PLATE



WELL CONSTRUCTION DETAIL

	PID (ppm)	RECOVERY (FT)	DEPTH (FT)	SAMPLES	SYMBOLS	MATERIALS DESCRIPTION
	1242		5			<p>CONCRETE</p> <p>Variable concrete and sand fill.</p> <p>(Minimal sample recovery 3 to 5 feet.)</p> <p>Hydrocarbon-like odor.</p> <p>Refusal at 5.0 feet below ground surface.</p> <p>Soil samples collected in 2-foot intervals with 1-inch O.D. acetate liners.</p>
5			5			
10			10			
15			15			
20			20			
25			25			
30			30			

UNIVAR UNIVAR GPJ 1/8/04

PROJECT Univar
 LOCATION Kent, Washington
 JOB NUMBER 816.003.01.001
 GEOLOGIST/ENGINEER Erin McQuillan
 DRILL RIG Direct Push

DIAMETER OF HOLE 2 inches
 TOTAL DEPTH OF HOLE 5 feet
 DATE STARTED 9/13/02
 DATE COMPLETED 9/13/02

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WELL CONSTRUCTION DETAIL		PID (ppm)	RECOVERY (FT)	DEPTH (FT)	SAMPLES	SYMBOLS	MATERIALS DESCRIPTION
	<p>Concrete Surface Patch</p> <p>Bentonite Grout</p>	1300		<p>5</p> <p>10</p> <p>15</p> <p>20</p> <p>25</p> <p>30</p>			<p>CONCRETE</p> <p>Variable concrete and sand fill.</p> <p>(Minimal sample recovery 3 to 6 feet.)</p> <p>Hydrocarbon-like odor. Refusal at 6.0 feet below ground surface. Soil samples collected in 2-foot intervals with 1-inch O.D. acetate liners.</p>

UNIVAR UNIVAR GPJ 1/6/04

SUBJECT: Univar
 LOCATION: Kent, Washington
 JOB NUMBER: 816.003.01.001
 GEOLOGIST/ENGINEER: Erin McQuillan
 DRILL RIG: Direct Push

DIAMETER OF HOLE: 2 inches
 TOTAL DEPTH OF HOLE: 6 feet
 DATE STARTED: 9/13/02
 DATE COMPLETED: 9/13/02

PLATE



WELL CONSTRUCTION DETAIL

WELL CONSTRUCTION DETAIL		PID (ppm)	RECOVERY (FT)	DEPTH (FT)	SAMPLES	SYMBOLS	MATERIALS DESCRIPTION
Concrete Surface Patch							ASPHALT
5				5			(Groundwater sample SB-30-5-7.)
		53.1	1.5				GRAY SILTY SAND (SM) , wet, fine sand, some fines, hydrocarbon-like odor. @ 7.0 feet: fines increase.
		26.5	1.5				GRAY SANDY SILT (ML) , wet, some fine sand, slight odor.
10		30.2	1.5	10			SILTY SAND (SM) , wet, fine sand, some fines. (Groundwater sample SB-30-10-12.)
		20	1.8				GRAY SANDY SILT (ML) , wet, some fine sand, low to medium plasticity.
		17.2	1.4				@ 14.0 feet: wood fragments in silt.
15	Bentonite Grout	15	1.5	15			(Groundwater sample SB-30-15-17.) @ 16.0 feet: grades sandier.
		16	1.5				GRAY SILT (ML) , moist, trace fine sand, slow dilatancy, medium plasticity.
20		10	1.7	20			(Groundwater sample SB-30-20-22.)
		58	1.5				SILTY SAND (SM) , wet, sweet odor (tube shattered - disturbed sample).
		82.2	2.0				GRAY SAND (SP) , wet, fine sand, trace fines, odor. (Groundwater sample SB-30-24-26.)
25		13.3	1.5	25			GRAY SILTY SAND (SM) , wet, fine sand.
		19.0	2.0				(Groundwater sample SB-30-28-30.) BLACK SAND (SP) , wet, fine to medium sand, trace fines.
30	(Continued)			30	(Continued)		

UNIVAR UNIVAR.GPJ 1/8/04

PROJECT Univar
LOCATION Kent, Washington
JOB NUMBER 816.003.01.001
GEOLOGIST/ENGINEER Erin McQuillan
DRILL RIG Direct Push

DIAMETER OF HOLE 2 inches
TOTAL DEPTH OF HOLE 46 feet
DATE STARTED 11/21/02
DATE COMPLETED 11/21/02

PLA



WELL CONSTRUCTION DETAIL		PID (ppm)	RECOVERY (F-T)	DEPTH (FT)	SAMPLES	SYMBOLS	MATERIALS DESCRIPTION
<p>Bentonite Grout</p>	5.6	0					(No recovery - tube shattered.)
	5.6	1.6					
		1.0	35				@ 35.0 feet: wood fragments present, sweet odor. (Groundwater sample SB-30-35-37.)
	60	1.6	60				
	210	0.5					
	100	1.5	40				(Groundwater sample SB-30-40-42.)
	40	1.4					@ 42.0 feet: odor diminishes.
	1.5	10				GRAY SANDY SILT (ML) , damp/moist, trace to few fine sand, low plasticity, some wood fragments.	
				45			Bottom of boring at 46.0 feet. Boring backfilled with bentonite grout upon completion. Soil samples collected in 2-foot intervals with 1-inch O.D. acetate liners.
				50			
				55			
				60			

UNIVAR UNIVAR GPJ 1/8/04

SUBJECT Univar LOCATION Kent, Washington JOB NUMBER 816.003.01.001 GEOLOGIST/ENGINEER Erin McQuillan DRILL RIG Direct Push	DIAMETER OF HOLE 2 inches TOTAL DEPTH OF HOLE 46 feet DATE STARTED 11/21/02 DATE COMPLETED 11/21/02	PLATE
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WELL CONSTRUCTION DETAIL

WELL CONSTRUCTION DETAIL		PID (ppm)	RECOVERY (FT)	DEPTH (FT)	SAMPLES	SYMBOLS	MATERIALS DESCRIPTION
Concrete Surface Patch							CONCRETE No soil samples collected from 0.7 to 5.0 feet.
5				5			(Groundwater sample SB-31-5-7.)
		40	0.75				BROWN SAND AND GRAVEL FILL
		26	0.53				@ 8.0 feet: fines increase, becomes moist.
10		7.0	1.2	10			GRAY SILTY SAND (SM) , moist, fine sand, some fines. (Groundwater sample SB-31-10-12.)
		7.6	1.4				GRAY SILT (ML) , moist, trace fine sand, low to medium plasticity, some wood fragments.
15	Bentonite Grout	14.3	1.3	15			(Groundwater sample SB-31-15-17.)
		8.6	1.3				@ 16.0 feet: becomes PINKISH GRAY SILT (ML), wet, medium plasticity.
		9.0	1.3				@ 18.0 feet: SILTY SAND LENS (SM), 2-inch-thick lens. @ 19.0 feet: gray, rapid dilatancy.
20		13	1.2	20			GRAY/BLACK SAND (SP) , wet, fine sand, few fines. (Groundwater sample SB-31-20-22.)
		22.5	1.5				@ 22.0 feet: sweet odor.
25		4.3	1.3	25			@ 24.0 feet: fines decrease to trace. (Groundwater sample SB-31-24-26.)
		39	0.5				
		6.8	1.3				@ 28.0 feet: fines increase to few. (Groundwater sample SB-31-28-30.)
30	(Continued)			30	(Continued)		

UNIVAR UNIVAR GPJ 1/8/04

PROJECT: Univar
LOCATION: Kent, Washington
JOB NUMBER: 816.003.01.001
GEOLOGIST/ENGINEER: Erin McQuillan
DRILL RIG: Direct Push

DIAMETER OF HOLE: 2 inches
TOTAL DEPTH OF HOLE: 48 feet
DATE STARTED: 11/21/02
DATE COMPLETED: 11/21/02

PL



WELL CONSTRUCTION DETAIL

	PID (ppm)	RECOVERY (FT)	DEPTH (FT)	SAMPLES	SYMBOLS	MATERIALS DESCRIPTION
	5.9	1.8				GRAY SILTY SAND (SM) , fine sand, some fines.
	6.2	1.6				GRAYISH BLACK SAND (SP) , wet, fine to medium sand, trace fines. @ 33.0 feet: becomes black, sweet odor.
	36	0.7	35			(Groundwater sample SB-31-34-36, duplicate sample SB-31-50-52.)
			2.0			
	5.6	1.5				
	1.8	1.8	40			@ 40.0 feet: no odor. (Groundwater sample SB-31-40-42.)
	1.6	1.6				
	1.8	1.8	45			BROWNISH GRAY SANDY SILT (ML) , moist, little fine sand, slow to rapid dilatancy, low plasticity, few wood fragments.
	1.9	1.9				@ 46.0 feet: color change to brown, medium plasticity.
						Bottom of boring at 48.0 feet. Boring backfilled with bentonite grout upon completion. Soil samples collected in 2-foot intervals with 1-inch O.D. acetate liners.

UNIVAR UNIVAR GPJ 1/8/04

PROJECT: Univar
 LOCATION: Kent, Washington
 JOB NUMBER: 816.003.01.001
 GEOLOGIST/ENGINEER: Erin McQuillan
 DRILL RIG: Direct Push

DIAMETER OF HOLE: 2 inches
 TOTAL DEPTH OF HOLE: 48 feet
 DATE STARTED: 11/21/02
 DATE COMPLETED: 11/21/02

PLATE



WELL CONSTRUCTION DETAIL

WELL CONSTRUCTION DETAIL		PID (ppm)	RECOVERY (%)	DEPTH (FT)	SAMPLES	SYMBOLS	MATERIALS DESCRIPTION
<p>Concrete Surface Patch</p> <p>Bentonite Grout</p> <p>(Continued)</p>							CONCRETE
		5.1	1.5	5			BROWN SILTY SAND (SM) , moist to wet, fine sand, some low plasticity fines.
		5.0	1.4				
		0	0.8	10			(No tube capped for sample.)
		0	0				
		0	1.1	15			(Groundwater sample SB-32-15-17.)
		0	1.6				BLACK SAND (SP) , wet, fine sand, few to little fines.
		0	1.6				@ 18.0 feet: fines decrease to few.
		0	1.3	20			(Groundwater sample SB-32-20-22.)
		0	0.7				
		0	1.6	25			(Groundwater sample SB-32-25-27.)
		0	0.5				(No tubes capped for sample.)
	0	0.3	30			(No tubes capped for sample.)	

UNIVAR UNIVAR GPJ 1/8/04

PROJECT: Univar
 LOCATION: Kent, Washington
 JOB NUMBER: 816.003.01.001
 GEOLOGIST/ENGINEER: Erin McQuillan
 DRILL RIG: Direct Push

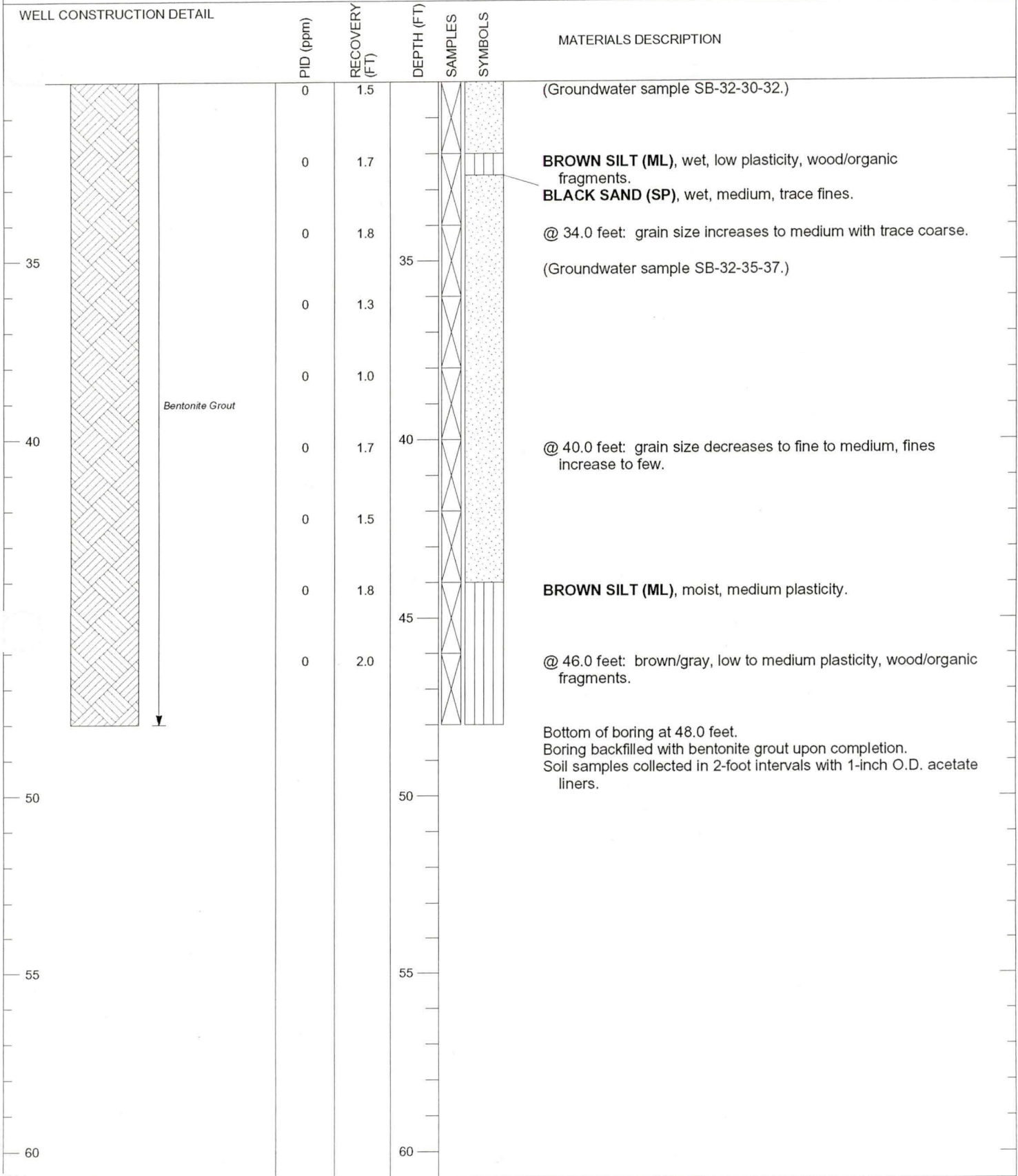
DIAMETER OF HOLE: 2 inches
 TOTAL DEPTH OF HOLE: 48 feet
 DATE STARTED: 11/22/02
 DATE COMPLETED: 11/22/02

PL



WELL CONSTRUCTION DETAIL

MATERIALS DESCRIPTION



UNIVAR UNIVAR GPI 11/8/04

PROJECT	Univar	DIAMETER OF HOLE	2 inches	PLATE
LOCATION	Kent, Washington	TOTAL DEPTH OF HOLE	48 feet	
JOB NUMBER	816.003.01.001	DATE STARTED	11/22/02	
GEOLOGIST/ENGINEER	Erin McQuillan	DATE COMPLETED	11/22/02	
DRILL RIG	Direct Push			



WELL CONSTRUCTION DETAIL

WELL CONSTRUCTION DETAIL		PID (ppm)	RECOVERY (FT)	DEPTH (FT)	SAMPLES	SYMBOLS	MATERIALS DESCRIPTION
Concrete Surface Patch							CONCRETE
5		0	0	5			ORANGE BROWN SILTY SAND (SM), wet.
		1.6	1.6				
10		0	2.0	10			(Groundwater sample SB-33-10-12.)
		0	1.7				
		0	1.1				BLACK SAND (SP), wet, medium sand, few fines. SILTY SAND (SM), wet, fine sand, fines increase to some.
15	Bentonite Grout	0	1.6	15			(Groundwater sample SB-33-15-17.) BLACK SAND (SP), wet, fine, few fines.
		0	1.5				
20		0	1.5	20			(Groundwater sample SB-33-20-22.)
		0	1.4				@ 22.0 feet: fines decrease to trace, sand increases to fine to medium.
		0	1.6				@ 24.0 feet: fines vary from trace to some.
25		0	1.2	25			(Groundwater sample SB-33-25-27.)
		0	1.5				@ 29.5 feet: fines increase to little.
30	(Continued)	0		30	(Continued)		

UNIVAR UNIVAR GPJ 1/8/04

PROJECT: Univar
 LOCATION: Kent, Washington
 JOB NUMBER: 816.003.01.001
 GEOLOGIST/ENGINEER: Erin McQuillan
 DRILL RIG: Direct Push

DIAMETER OF HOLE: 2 inches
 TOTAL DEPTH OF HOLE: 48 feet
 DATE STARTED: 11/22/02
 DATE COMPLETED: 11/22/02

PL



WELL CONSTRUCTION DETAIL		PID (ppm)	RECOVERY (FT)	DEPTH (FT)	SAMPLES	SYMBOLS	MATERIALS DESCRIPTION
<p>Bentonite Grout</p>	0	1.5	30.0			@ 30.0 feet: few fines. (Groundwater sample SB-33-30-32.)	
	0	1.0				(Not enough recovery for tube sample.)	
	0	1.0	35.0			(Groundwater sample SB-33-35-37.)	
	0	1.3				@ 36.0 feet: sand size decreases to fine.	
	0	1.5				@ 38.0 feet: grain size increases to medium, trace fines.	
	0	1.7	40.0			(Groundwater sample SB-33-40-42.)	
	0	1.4					
	0	1.8	45.0			BROWN SILT (ML) , moist, trace fine sand, medium to high plasticity, some organic/wood fragments.	
	0	1.7					
				48.0			Bottom of boring at 48.0 feet. Boring backfilled with bentonite grout upon completion. Soil samples collected in 2-foot intervals with 1-inch O.D. acetate liners.

UNIVAR UNIVAR.GPJ 1/8/04

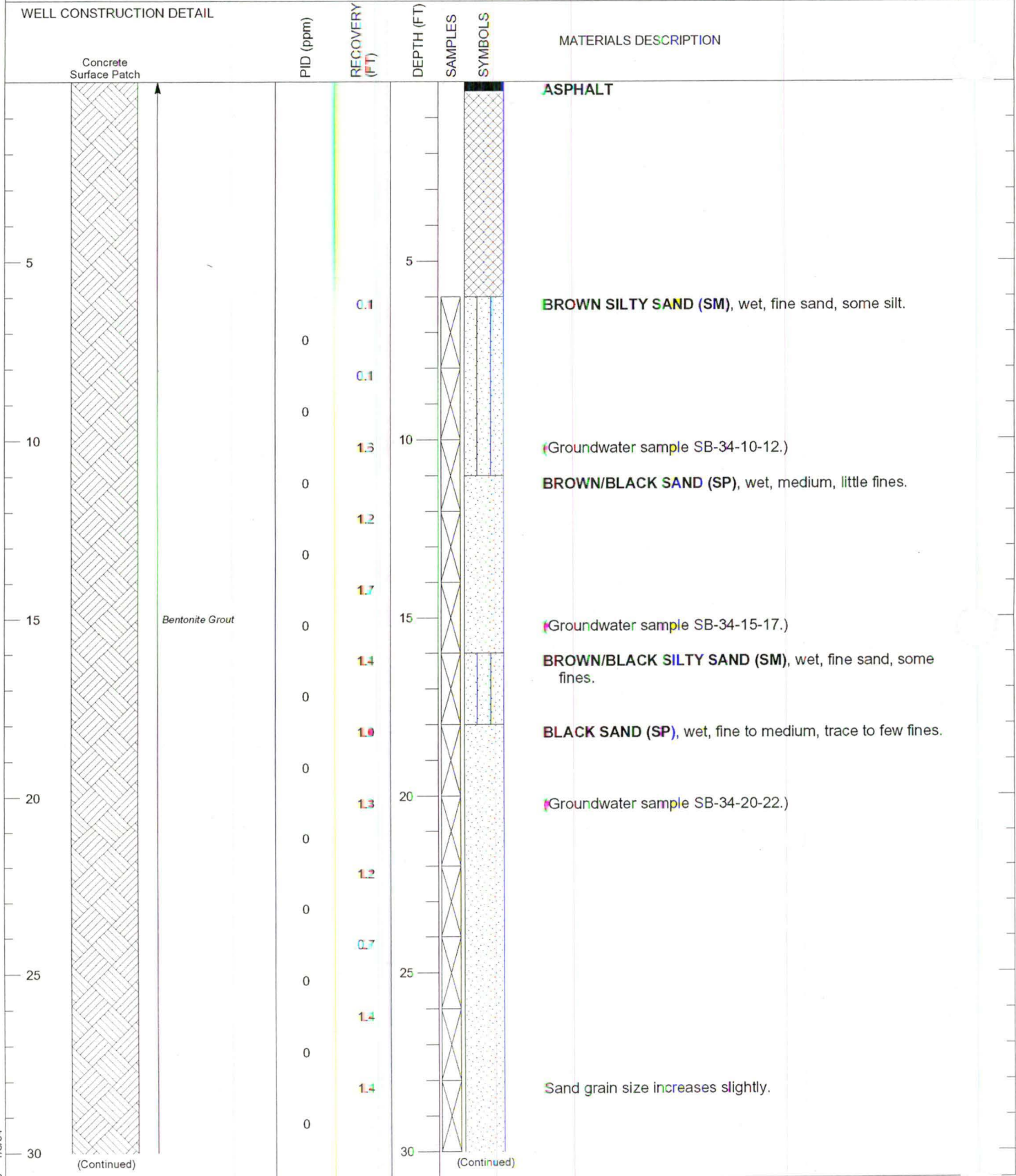
PROJECT: Univar
 LOCATION: Kent, Washington
 JOB NUMBER: 816.003.01.001
 GEOLOGIST/ENGINEER: Erin McQuillan
 DRILL RIG: Direct Push

DIAMETER OF HOLE: 2 inches
 TOTAL DEPTH OF HOLE: 48 feet
 DATE STARTED: 11/22/02
 DATE COMPLETED: 11/22/02

PLATE



WELL CONSTRUCTION DETAIL



UNIVAR UNIVAR GPJ 1/8/04

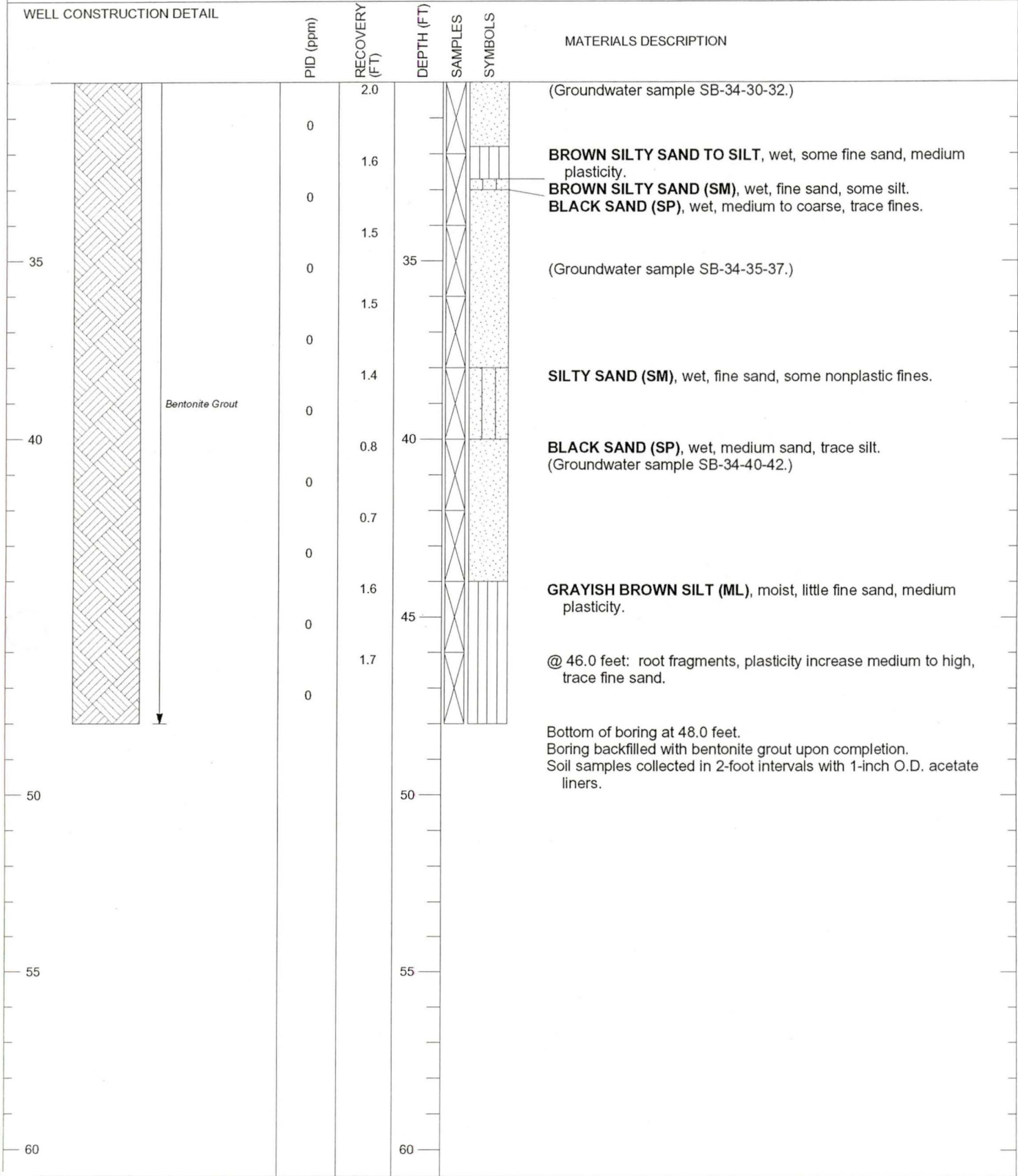
PROJECT: Univar
 LOCATION: Kent, Washington
 JOB NUMBER: 816.003.01.001
 GEOLOGIST/ENGINEER: Erin McQuillan
 DRILL RIG: Direct Push

DIAMETER OF HOLE: 2 inches
 TOTAL DEPTH OF HOLE: 48 feet
 DATE STARTED: 11/25/02
 DATE COMPLETED: 11/25/02

PL



WELL CONSTRUCTION DETAIL



UNIVAR UNIVAR.GPJ 1/8/04

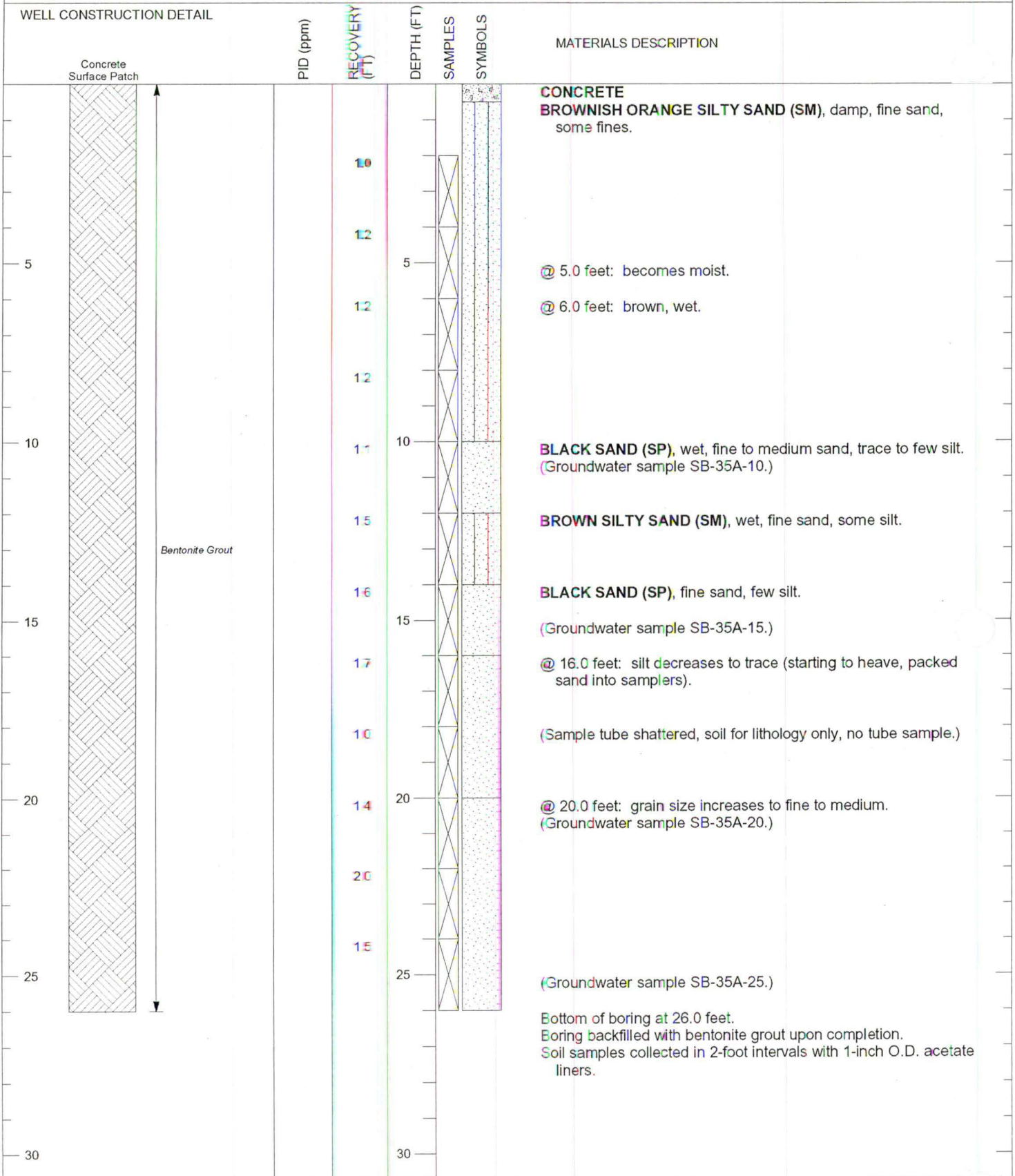
PROJECT: Univar
 LOCATION: Kent, Washington
 JOB NUMBER: 816.003.01.001
 GEOLOGIST/ENGINEER: Erin McQuillan
 DRILL RIG: Direct Push

DIAMETER OF HOLE: 2 inches
 TOTAL DEPTH OF HOLE: 48 feet
 DATE STARTED: 11/25/02
 DATE COMPLETED: 11/25/02

PLATE



WELL CONSTRUCTION DETAIL

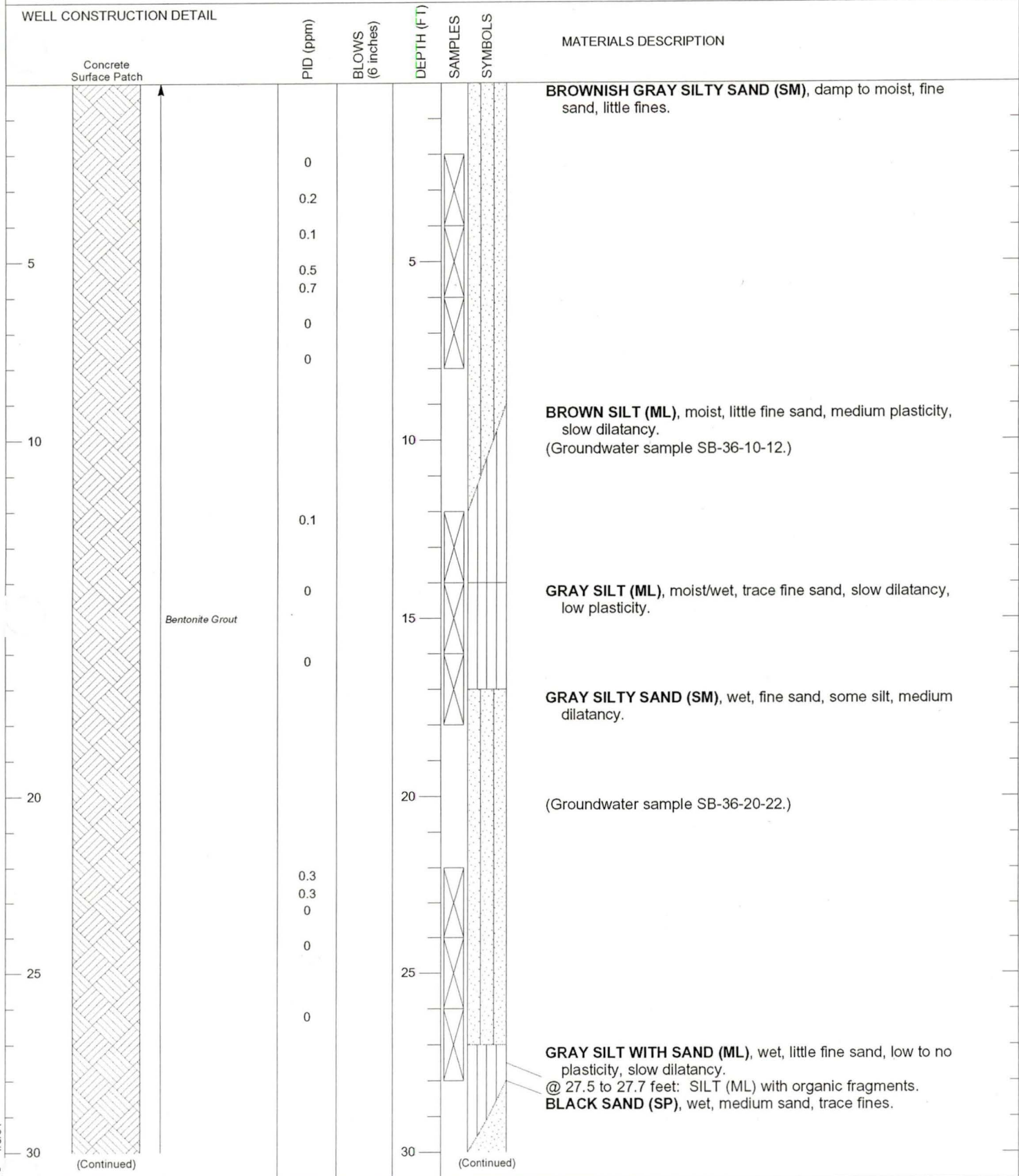


UNIVAR UNIVAR GPU 1/8/04

PROJECT	Univar	DIAMETER OF HOLE	2 inches	PLA
LOCATION	Kent, Washington	TOTAL DEPTH OF HOLE	26 feet	
JOB NUMBER	816.003.01.001	DATE STARTED	3/19/03	
GEOLOGIST/ENGINEER	Erin McQuillan	DATE COMPLETED	3/19/03	
DRILL RIG	Direct Push			



WELL CONSTRUCTION DETAIL



UNIVAR4 UNIVAR GPJ 1/8/04

PROJECT Univar
 LOCATION Kent, Washington
 JOB NUMBER 816.003.01.001
 GEOLOGIST/ENGINEER Erin McQuillan
 DRILL RIG Direct Push

DIAMETER OF HOLE 2 inches
 TOTAL DEPTH OF HOLE 46 feet
 DATE STARTED 5/28/03
 DATE COMPLETED 5/28/03

PLATE



WELL CONSTRUCTION DETAIL

	PID (ppm)	BLOWS (6 inches)	DEPTH (FT)	SAMPLES	SYMBOLS	MATERIALS DESCRIPTION
<p>Bentonite Grout</p>	0		0			(Groundwater sample SB-36-30-32.)
			35			(Groundwater sample SB-36-35-37.)
	0		37.0			(@ 37.0 feet: tube shattered, disturbed recovery, baggies sample only.)
			40			(Groundwater sample SB-36-40-42.)
	0		42.0			GRAY SILT WITH SAND (ML) , wet, little fine sand, low plasticity, slow dilatancy. (@ 42.0 to 44.0 feet: transitional zone-disturbed sample.)
		44.0			GRAY SILTY SAND (SM) , wet, fine sand.	
		45.0			GRAY SILT (ML) , damp, trace sand, trace organics, medium plasticity, slow dilatancy.	
			46.0			Bottom of boring at 46.0 feet. Boring backfilled with bentonite grout upon completion. Soil samples collected in 2-foot intervals with 1-inch O.D. acetate liners.
			50			
			55			
			60			

UNIVAR4 UNIVAR GPJ 1/8/04

PROJECT Univar
 LOCATION Kent, Washington
 JOB NUMBER 816.003.01.001
 GEOLOGIST/ENGINEER Erin McQuillan
 DRILL RIG Direct Push

DIAMETER OF HOLE 2 inches
 TOTAL DEPTH OF HOLE 46 feet
 DATE STARTED 5/28/03
 DATE COMPLETED 5/28/03

PLATE



WELL CONSTRUCTION DETAIL

WELL CONSTRUCTION DETAIL		PID (ppm)	RECOVERY (FT)	DEPTH (FT)	SAMPLES	SYMBOLS	MATERIALS DESCRIPTION	
<p>Concrete Surface Patch</p> <p>Bentonite Grout</p> <p>(Continued)</p>							ASPHALT	
		0	1.1				BROWN SILTY SAND (SM) , moist, fine sand, some nonplastic silt.	
		0	1.7	5			Gray, wet.	
		0	1.4					
				10				GRAY SILT (ML) , moist/wet, low plasticity, slow dilatancy, trace organics. (Groundwater sample SB-37-10-12.)
		0	1.3					ORGANIC SOIL (OL)
		0	1.3	15				GRAY SILT (ML) , moist/wet, trace fine sand, medium plasticity.
		0	1.6					BLACK SAND (SP) , wet, fine sand, trace fines. @ 17.0 feet: fines increase to few.
				20				(Groundwater sample SB-37-20-22.)
		0	0.6					Few fines.
		0	1.5	25				BROWN SILTY SAND (SM) , fine sand, some nonplastic fines.
		0	1.5					BLACK SAND (SP) , wet, fine sand, few fines.
			30				BROWN SILTY SAND (SM) , wet, fine sand, some fines.	
							BLACK SAND (SP) , wet, fine to medium, trace fines.	
				30			(Continued)	

UNIVAR UNIVAR GPJ 1/8/04

JECT Univar
 LOCATION Kent, Washington
 JOB NUMBER 816.003.01.001
 GEOLOGIST/ENGINEER Erin McQuillan
 DRILL RIG Direct Push

DIAMETER OF HOLE 2 inches
 TOTAL DEPTH OF HOLE 45 feet
 DATE STARTED 6/2/03
 DATE COMPLETED 6/2/03

PLATE



WELL CONSTRUCTION DETAIL

	PID (ppm)	RECOVERY (FT)	DEPTH (FT)	SAMPLES	SYMBOLS	MATERIALS DESCRIPTION
<p>Bentonite Grout</p>	0	1.4	32.0	X		(Groundwater sample SB-37-30-32.)
	0	1.2	37.0	X		(Groundwater sample SB-37-35-37.)
	0	1.2	40.0	X		(Groundwater sample SB-37-40-42.)
	0	1.8	45.0	X		GRAY SILT (ML), moist, trace fine sand, trace organics, medium plasticity, slow dilatancy.
			45.0			Bottom of boring at 45.0 feet. Boring backfilled with bentonite grout upon completion. Soil samples collected in 2-foot intervals with 1-inch O.D. acetate liners.
			50.0			
			55.0			
			60.0			

UNIVAR UNIVAR GPJ 1/8/04

PROJECT Univar
 LOCATION Kent, Washington
 JOB NUMBER 816.003.01.001
 GEOLOGIST/ENGINEER Erin McQuillan
 DRILL RIG Direct Push

DIAMETER OF HOLE 2 inches
 TOTAL DEPTH OF HOLE 45 feet
 DATE STARTED 6/2/03
 DATE COMPLETED 6/2/03

PLJ



WELL CONSTRUCTION DETAIL

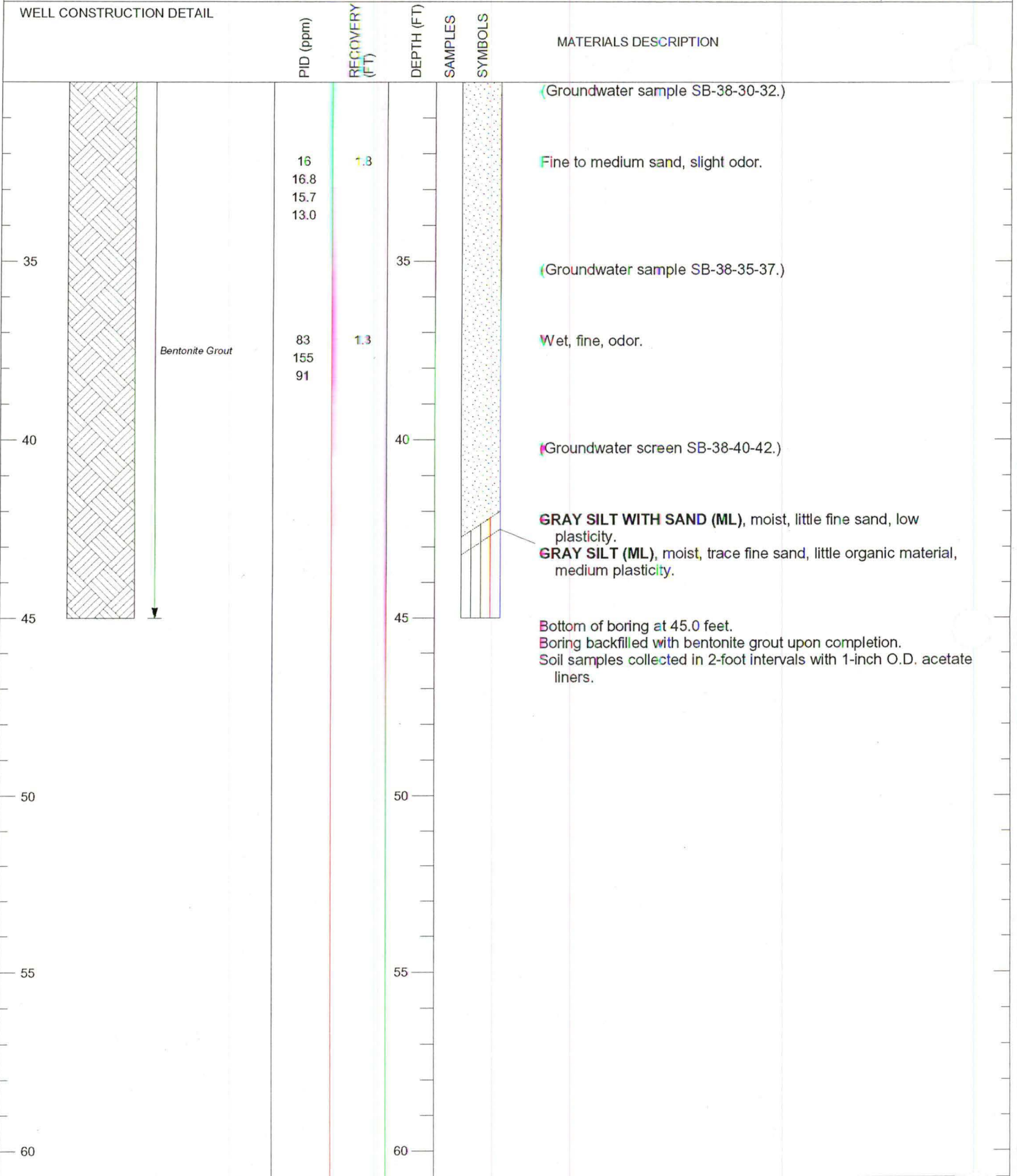
WELL CONSTRUCTION DETAIL		PID (ppm)	RECOVERY (FT)	DEPTH (FT)	SAMPLES	SYMBOLS	MATERIALS DESCRIPTION
	Concrete Surface Patch						DARK GRAY SILTY SAND (SM) , moist, sand fine, some nonplastic silt, odor.
		850	1.0				
		940	0				BLACK SILT (ML) , moist, trace fine sand, slow dilatancy, low plasticity, slight odor.
	5	80		5			
		24					
		3.4	1.3				
							(Groundwater sample SB-38-10-12, good water recovery, likely sandier.)
		18	1.3				Brown, wet.
		3.5					
		5.7					BROWN ORGANIC SOIL (OL) , moist.
		2.3	1.3				
		2.7					SILT WITH SAND (ML) , little fine sand, low plasticity, slow dilatancy. Sand decreases to trace.
		4.8		15			
		0.4	1.3				BROWN SILTY SAND (SM) , wet, fine sand, some nonplastic silt, slight odor?
		1.3					
	1.6					(Groundwater sample SB-38-20-22.)	
						(Disturbed sample with slough.)	
	51	0.7					
						(Disturbed sample with slough.) Brown/gray, sweet odor.	
	36	0.8					
	6.5					BLACK SAND (SP) , wet, fine, trace fines, odor.	
	57						
	45						
	46						
30	(Continued)			30	(Continued)		

UNIVAR UNIVAR GPJ 1/8/04

JECT Univar
 LOCATION Kent, Washington
 JOB NUMBER 816.003.01.001
 GEOLOGIST/ENGINEER Erin McQuillan
 DRILL RIG Direct Push

DIAMETER OF HOLE 2 inches
 TOTAL DEPTH OF HOLE 45 feet
 DATE STARTED 5/28/03
 DATE COMPLETED 5/28/03

PLATE



UNIVAR UNIVAR GPJ 1/8/04

PROJECT Univar
 LOCATION Kent, Washington
 JOB NUMBER 816.003.01.001
 GEOLOGIST/ENGINEER Erin McQuillan
 DRILL RIG Direct Push

DIAMETER OF HOLE 2 inches
 TOTAL DEPTH OF HOLE 45 feet
 DATE STARTED 5/28/03
 DATE COMPLETED 5/28/03

PLA



WELL CONSTRUCTION DETAIL

	PID (ppm)	BLOWS (6 inches)	DEPTH (FT)	SAMPLES	SYMBOLS	MATERIALS DESCRIPTION
Concrete Surface Patch						CONCRETE FILL
	2.2					GRAY SILTY SAND (SM) , moist to wet, fine sand, some silt.
5	0.8		5			
	0.9					BLACK SAND (SP) , wet, fine to medium sand, trace fines.
						GRAY/BLACK SILT (ML) , wet, trace fine sand, few organic material, fines low plasticity.
10			10			(Groundwater sample SB-39-10-12.)
	0.2					BROWN PEAT (PT) , moist, little silt.
	1.0		15			
Bentonite Grout	0.5					GRAY SILTY SAND (SM) , wet, fine sand, some nonplastic silt.
						GRAY SILT (ML) , moist/wet, low plasticity, trace fine sand.
						GRAY SILTY SAND (SM) , wet, fine sand, some silt nonplastic.
20			20			(Groundwater sample SB-39-20-22.)
	0.3					
	0.4		25			
	0.3					@ 26.0 feet: silt decreases to little.
						BLACK SAND (SP) , wet, fine to medium sand, trace fines.
30			30			

UNIVAR4 UNIVAR GPI 1/8/04

PROJECT Univar
 LOCATION Kent, Washington
 JOB NUMBER 816.003.01.001
 GEOLOGIST/ENGINEER Erin McQuillan
 DRILL RIG Direct Push

DIAMETER OF HOLE 2 inches
 TOTAL DEPTH OF HOLE 45 feet
 DATE STARTED 5/29/03
 DATE COMPLETED 5/29/03

PLATE



WELL CONSTRUCTION DETAIL

		PID (ppm)	BLOWS (6 inches)	DEPTH (FT)	SAMPLES	SYMBOLS	MATERIALS DESCRIPTION
							(Groundwater sample SB-39-30-32.)
		0					
35				35			(Groundwater sample SB-39-35-37, duplicate SB-39-50-52.)
		0					(Sample disturbed sample tube buckled, unrecoverable.)
40				40			(Groundwater sample SB-39-40-42.)
							GRAY SILT (ML) , damp, medium plasticity, trace fine sand.
45				45			Trace organics. Bottom of boring at 45.0 feet. Boring backfilled with bentonite grout upon completion. Soil samples collected in 2-foot intervals with 1-inch O.D. acetate liners.
50				50			
55				55			
60				60			

Bentonite Grout

UNIVAR4 UNIVAR GPJ 1/8/04

PROJECT Univar
LOCATION Kent, Washington
JOB NUMBER 816.003.01.001
GEOLOGIST/ENGINEER Erin McQuillan
DRILL RIG Direct Push

DIAMETER OF HOLE 2 inches
TOTAL DEPTH OF HOLE 45 feet
DATE STARTED 5/29/03
DATE COMPLETED 5/29/03

PLATE



WELL CONSTRUCTION DETAIL

	PID (ppm)	RECOVERY (FT)	DEPTH (FT)	SAMPLES	SYMBOLS	MATERIALS DESCRIPTION
Concrete Surface Patch						CONCRETE. (Dock level approximately 4 feet higher than adjacent ground surface.) FILL
5	0	1.5				
	0.1	1.7	5			
	1.3	0.8				BROWN SILTY SAND (SM) , moist, fine sand, some fines.
	0.4	1.7				
10	0.7	1.3	10			GRAY SILT (ML) , moist/wet, medium plasticity, trace fine sand, trace organics. Wet, sand decreases to trace, high dilatancy, low plasticity.
						(Groundwater sample SB-40-14-16.)
	0.1	1.4	15			15.5 to 17.0 feet: gray mottled with orange, with organic matter.
	0.2	1.8				18.0 to 20.0 feet: trace sand, trace organics.
20	0.2	1.1	20			Few fine sand, low plasticity.
						GRAY-BLACK SILTY SAND (SM) , wet, fine sand, some nonplastic silt.
						(Groundwater sample SB-40-24-26.)
25	0.2	1.9	25			
	0.2	1.8				@ 28.0 feet: fines decrease to little.
30			30			

Bentonite Grout

Concrete Surface Patch

(Continued)

(Continued)

UNIVAR UNIVAR.GPJ 1/8/04

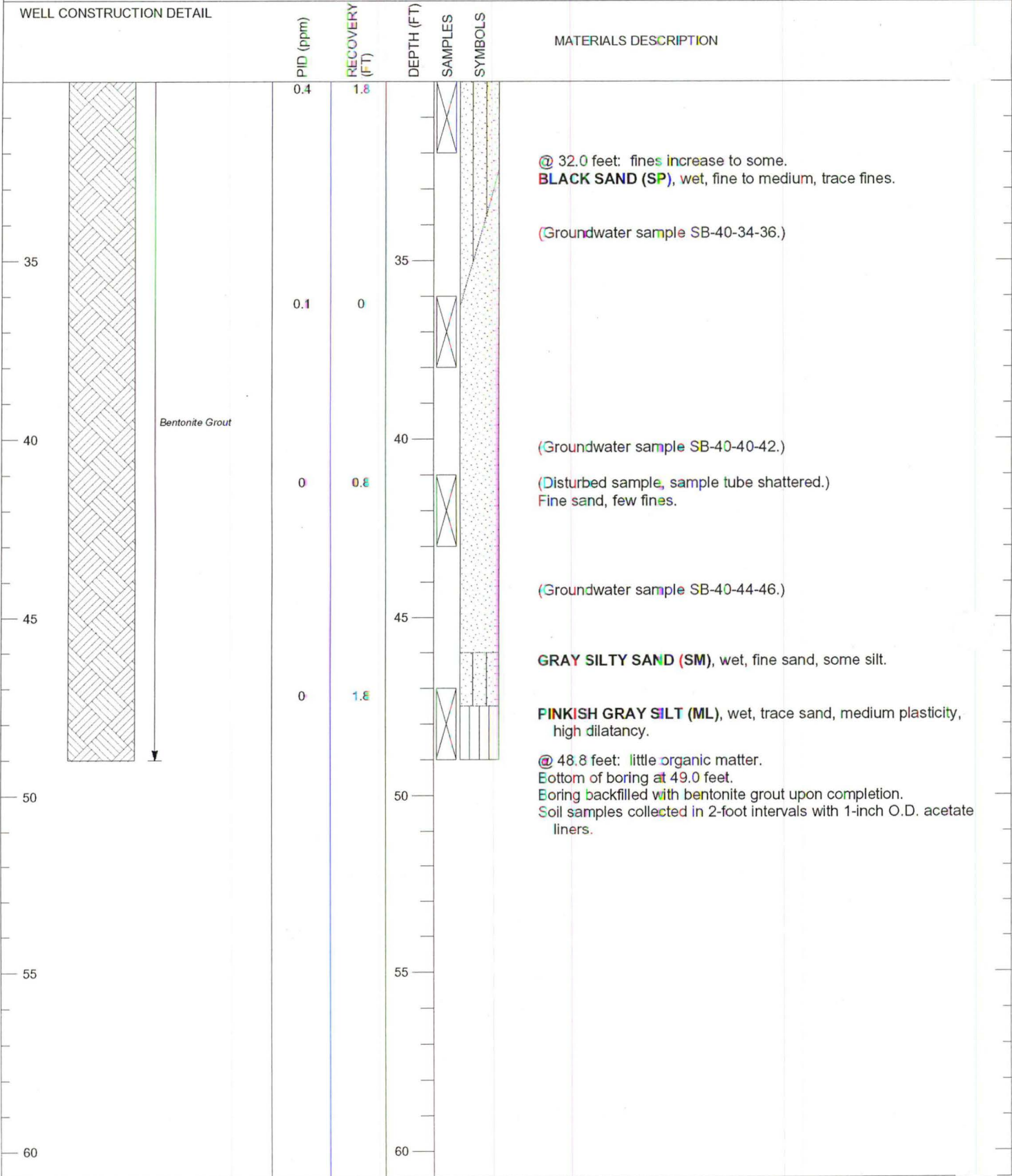
PROJECT: Univar
LOCATION: Kent, Washington
JOB NUMBER: 816.003.01.001
GEOLOGIST/ENGINEER: Erin McQuillan
DRILL RIG: Direct Push

DIAMETER OF HOLE: 2 inches
TOTAL DEPTH OF HOLE: 49 feet
DATE STARTED: 5/29/03
DATE COMPLETED: 5/29/03

PLATE



WELL CONSTRUCTION DETAIL



UNIVAR UNIVAR GPJ 1/8/04

PROJECT: Univar
 LOCATION: Kent, Washington
 JOB NUMBER: 816.003.01.001
 GEOLOGIST/ENGINEER: Erin McQuillan
 DRILL RIG: Direct Push

DIAMETER OF HOLE: 2 inches
 TOTAL DEPTH OF HOLE: 49 feet
 DATE STARTED: 5/29/03
 DATE COMPLETED: 5/29/03

PL



WELL CONSTRUCTION DETAIL		PID (ppm)	RECOVERY (FT)	DEPTH (FT)	SAMPLES	SYMBOLS	MATERIALS DESCRIPTION
<p>Concrete Surface Patch</p> <p>Bentonite Grout</p> <p>(Continued)</p>							<p>CONCRETE. (Dock level approximately 4 feet higher than adjacent ground surface.) FILL</p>
		0.3	0.3				
	5	0.5	1.3	5			
		2.2	1.2				
		1.3	1.3				<p>GRAY SILT (ML), moist, few fine sand, low plasticity, medium dilatancy.</p>
	10	0	1.1	10			<p>(Groundwater sample SB-41-10-12.) @ 10.5 feet: trace organic material.</p>
		0	1.3	15			<p>BROWN PEAT (PT), with organic soil.</p>
		0	1.7				<p>GRAY SILTY SAND (SM), wet, fine sand, some fines.</p>
	20	0	1.7	20			<p>(Groundwater sample SB-41-24-26.)</p>
		0	1.6	25			<p>GRAY BLACK SAND (SP), wet, fine to medium sand, few silt.</p>
	0	0.8	30			<p>GRAY SILTY SAND (SM), wet, fine sand, some silt. (Disturbed sample, poured out of sample tube.) BLACK SAND (SP), wet, fine to medium sand, few fines. (Disturbed sample, tube shattered broken.)</p>	
				30			<p>(Continued)</p>

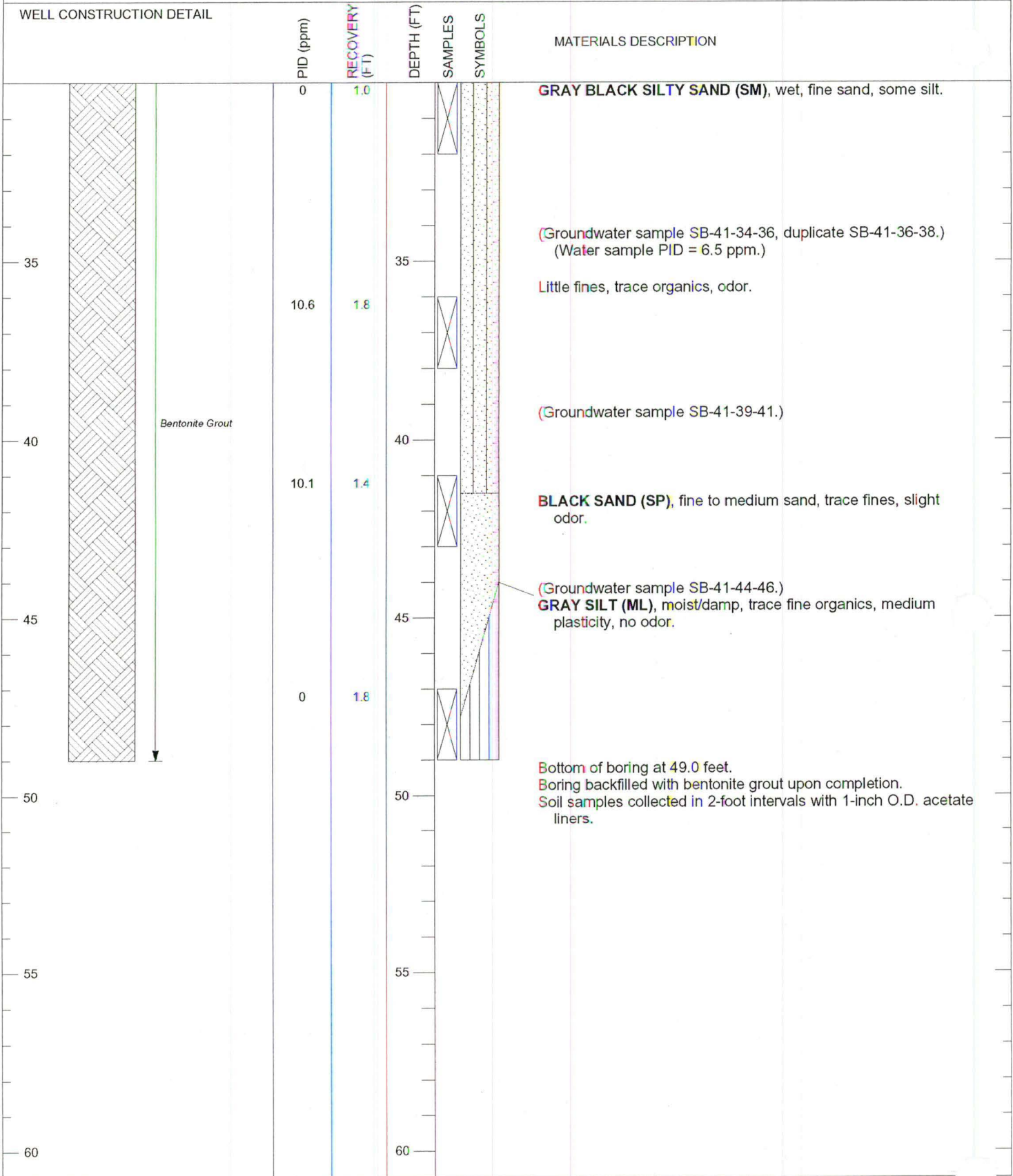
UNIVAR UNIVAR GPJ 1/8/04

PROJECT	Univar	DIAMETER OF HOLE	2 inches	PLATE
LOCATION	Kent, Washington	TOTAL DEPTH OF HOLE	49 feet	
JOB NUMBER	816.003.01.001	DATE STARTED	6/2/03	
GEOLOGIST/ENGINEER	Erin McQuillan	DATE COMPLETED	6/2/03	
DRILL RIG	Direct Push			



WELL CONSTRUCTION DETAIL

MATERIALS DESCRIPTION



UNIVAR UNIVAR.GPJ 1/8/04

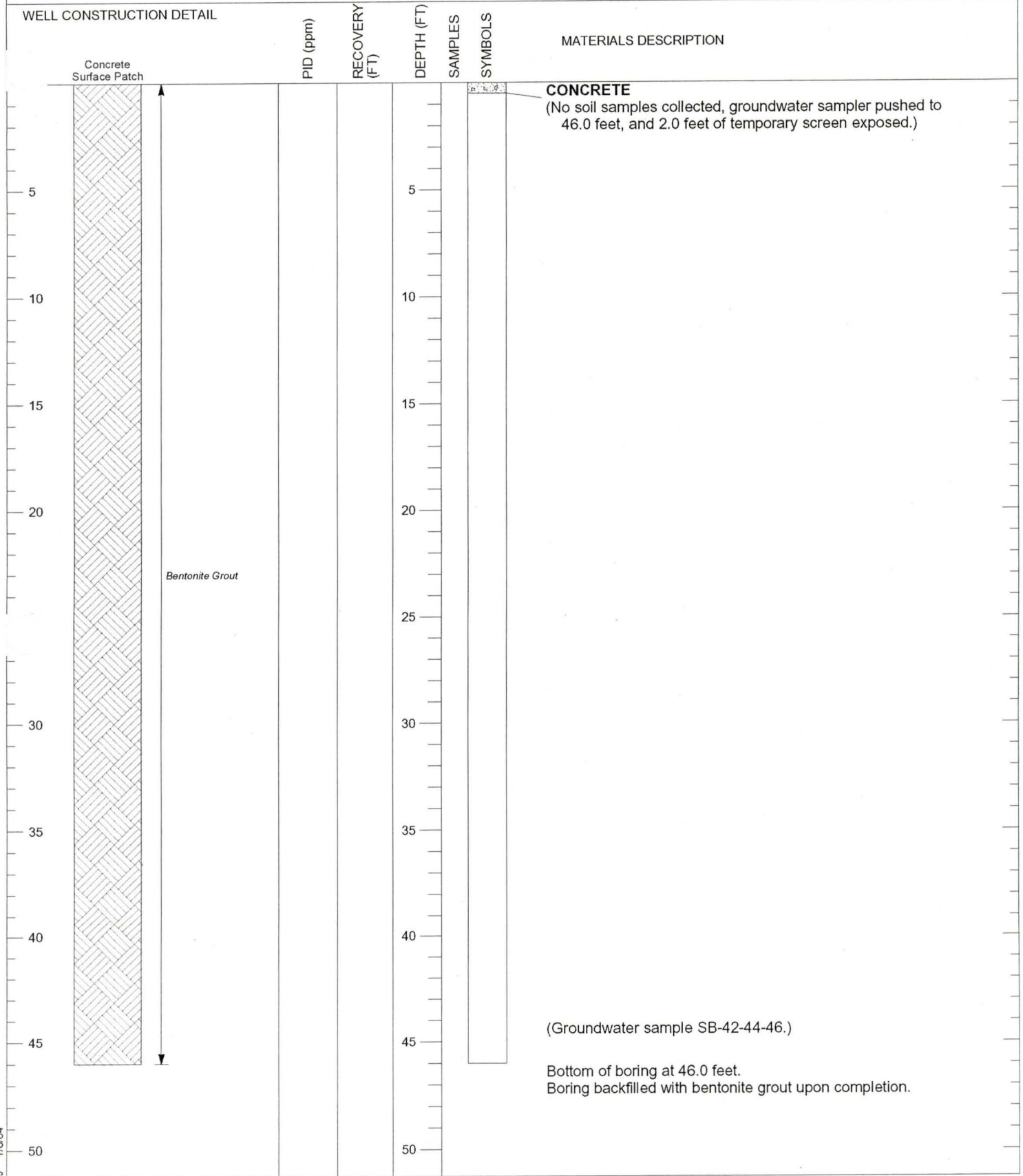
PROJECT Univar
LOCATION Kent, Washington
JOB NUMBER 816.003.01.001
GEOLOGIST/ENGINEER Erin McQuillan
DRILL RIG Direct Push

DIAMETER OF HOLE 2 inches
TOTAL DEPTH OF HOLE 49 feet
DATE STARTED 6/2/03
DATE COMPLETED 6/2/03

PLATE



WELL CONSTRUCTION DETAIL



UNIVAR UNIVAR GPJ 1/8/04

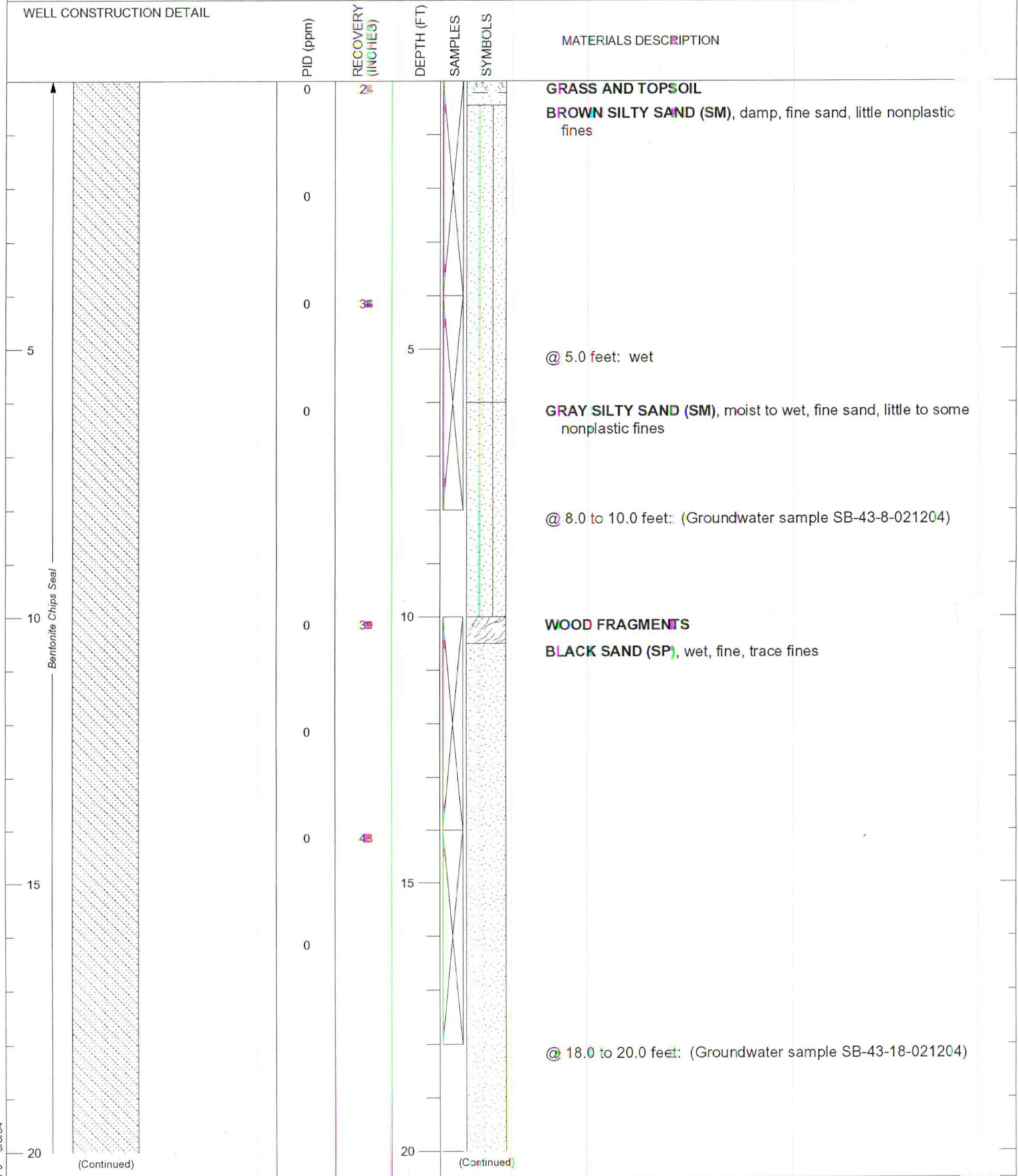
PROJECT: Univar
 LOCATION: Kent, Washington
 JOB NUMBER: 816.003.01.001
 GEOLOGIST/ENGINEER: Erin McQuillan
 DRILL RIG: Direct Push

DIAMETER OF HOLE: 2 inches
 TOTAL DEPTH OF HOLE: 46 feet
 DATE STARTED: 6/2/03
 DATE COMPLETED: 6/2/03

PLATE



WELL CONSTRUCTION DETAIL



UNIVAR5 UNIVAR5.GPJ 3/8/04

PROJECT Univar-Kent
 LOCATION Kent, Washington
 JOB NUMBER 816.003.01
 GEOLOGIST/ENGINEER Erin McQuillan
 DRILL RIG Geoprobe

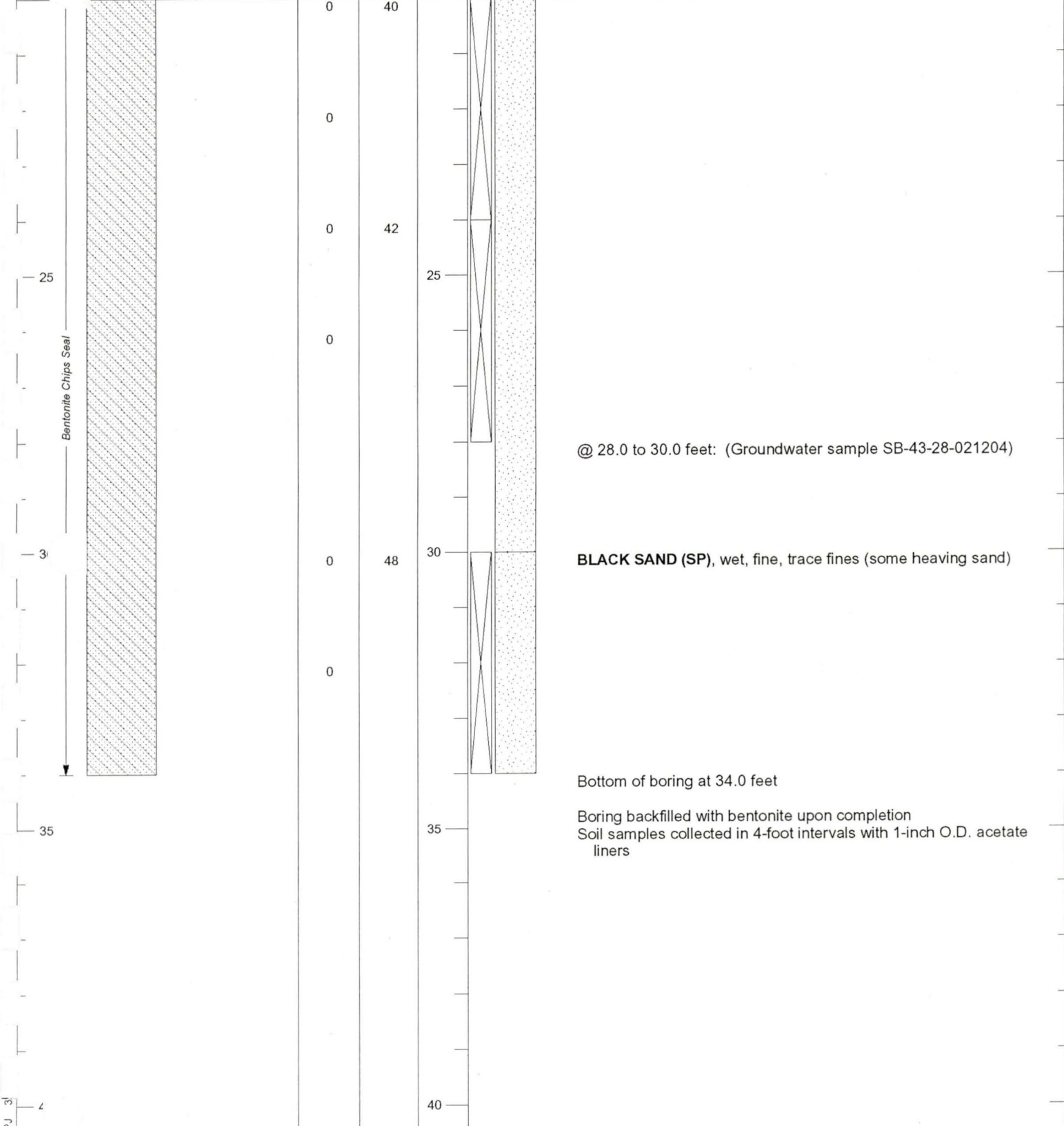
DIAMETER OF HOLE 2 inches
 TOTAL DEPTH OF HOLE 34 feet
 DATE STARTED 2/12/04
 DATE COMPLETED 2/12/04

PLATE



WELL CONSTRUCTION DETAIL

PID (ppm) RECOVERY (INCHES) DEPTH (FT) SAMPLES SYMBOLS MATERIALS DESCRIPTION



PROJECT	Univar-Kent	DIAMETER OF HOLE	2 inches	PLATE
LOCATION	Kent, Washington	TOTAL DEPTH OF HOLE	34 feet	
JOB NUMBER	816.003.01	DATE STARTED	2/12/04	
GEOLOGIST/ENGINEER	Erin McQuillan	DATE COMPLETED	2/12/04	
DRILL RIG	Geoprobe			