Appendix E

Regional Stratigraphic Logs

MW-1

RESOURCE PROTECTION WELL REPORT

21/4E/19B

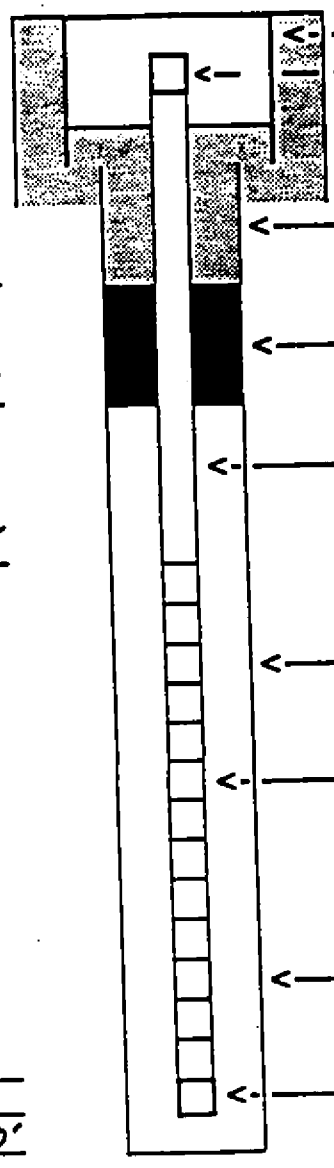
START CARD NO 042205

PROJECT NAME: City of Federal Way
WELL IDENTIFICATION NO. Observation
DRILLING METHOD: Hollow Stem Auger
DRILLER: Larry Gregory
FIRM: Gregory Drilling INC
SIGNATURE: Lawrence N. Gregory
CONSULTING FIRM: Hong West & Assoc.
REPRESENTATIVE: Bob Long

COUNTY: King
LOCATION: NW¼ NE¼ Sec 19 Twn 21N R 4E
STREET ADDRESS OF WELL: Little League ball Park Parking Lot by King Co. Aquatic Center
WATER LEVEL ELEVATION: Hong West
GROUND SURFACE ELEVATION: Hong West
INSTALLED: 5-7-93
DEVELOPED: Hong West

RECEIVED
MAY 17 1993
DEPT. OF ECOLOGY

Soil Type	Depth (in feet below ground surface)
0-6' Gravel Sand SiLT FiLL Material	0
6' - 30' SiLTy-Sand	4
	25
30' - 40' SiLTy SAnd + GRAVELS	30'
	40'



Stick-up Height (if applicable) ____
Monument Type 8" FLush
Well Cap Type J-Plug & PadLock
Grout Type/#Sacks Cement 6 sks
Bentonite Seal/#Sacks 1 sk Gel 7 sks Chips
Well Casing I.D.: 2"
Type of casing P.V.C Monoflex
Type of connection FLush Thread
Filter Pack/size/#Sacks 10-20 4 sks
Well Screen I.D 2"
Type of Screen P.V.C Monoflex
Slot size .020
Diameter of borehole 8"
Endcap Type Threaded End

Remarks: 0-30' 2" BLank
30'-40 2" Screen
5' of Sand Above Screen
Pumped Gel-bentonite Through Tremie To Surface

MW-2

RESOURCE PROTECTION WELL REPORT

21/4E/19B

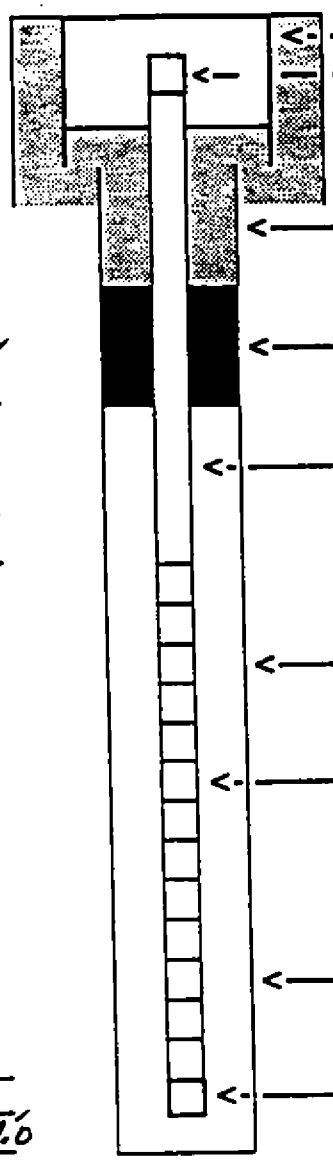
START CARD NO. 042205

PROJECT NAME: City of Federal Way
WELL IDENTIFICATION NO.: Observation
DRILLING METHOD: Hollow Stem Auger
DRILLER: Larry Gregory
FIRM: Gregory Drilling Inc
SIGNATURE: Larry A. Gregory
CONSULTING FIRM: Hong West & Assoc.
REPRESENTATIVE: Bob Long

COUNTY: King
LOCATION: NW¼ NE¼ Sec 19 Twn 21N R 4E
STREET ADDRESS OF WELL: Little League Ballpark Parking Lot by King Co. Aquatic Center
WATER LEVEL ELEVATION: Hong West
GROUND SURFACE ELEVATION: Hong West
INSTALLED: 5-5-93
DEVELOPED: Hong West

RECEIVED
MAY 17 1993
DEPT. OF ECOLOGY

Soil Type	Depth (in feet below ground surface)
0 – 8' Gravel - Sand Silt Fill Material	0
8' – 17' Gravel Sand	3'
	13'
17' – 27' Silt	17'
	27.0



Stick-up Height (if applicable)
Monument Type: 8" Flush
Well Cap Type: J-Plug + Padlock
Grout Type/#Sacks: Cement 8 sks
Bentonite Seal/#Sacks: 2 sks - Gel; 4 sks - Chips
Well Casing I.D.: 2"
Type of casing: P.V.C Monaflex
Type of connection: Flush Thread
Filter Pack/size/#Sacks: 10-20 4 sks
Well Screen I.D: 2"
Type of Screen: P.V.C Monoflex
Slot size: .020
Diameter of borehole: 8"
Endcap Type: T/Eond

Remarks:
0 – 17' 2" Blank
17' – 27' 2" Screen
4' of Sand Pack Above Screen
Pumped bentonite Gel Through Tremie To Surface

MW-3

RESOURCE PROTECTION WELL REPORT 21/4E/19B

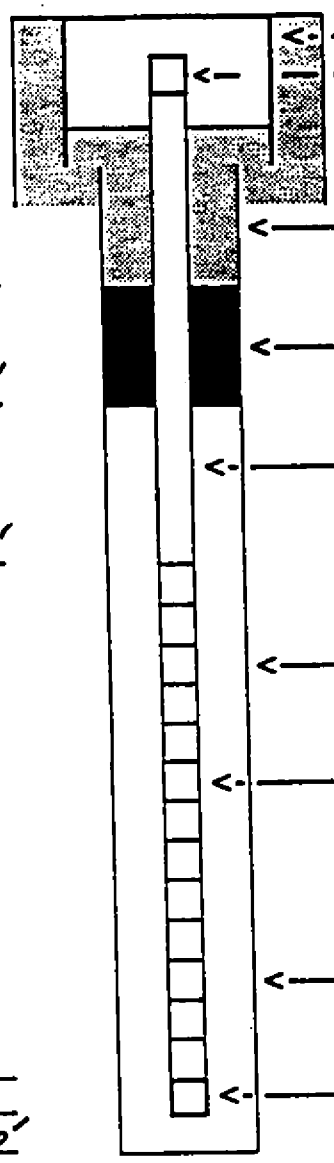
START CARD NO. 092205

PROJECT NAME: City of Federal Way
WELL IDENTIFICATION NO. Observation
DRILLING METHOD: Hollow Stem Auger
DRILLER: Larry Gregory
FIRM: Gregory Drilling Inc
SIGNATURE: Laurence D. Gregory
CONSULTING FIRM: Hong West & Assoc.
REPRESENTATIVE: Bob Long

COUNTY: King
LOCATION: NW¼ NE¼ Sec 19 Twn 21N R 4E
STREET ADDRESS OF WELL: Little League Ballfield Parking Lot by King Co. Aquatic Center
WATER LEVEL ELEVATION: Hong West
GROUND SURFACE ELEVATION: Hong West
INSTALLED: 5-6-93
DEVELOPED: Hong West

RECEIVED
MAY 17 1993
DEPT. OF ECOLOGY

Soil Type	Depth (in feet below ground surface)
0-7' Gravel Sand Silt Fill Material	0
	4'
7'-27' Sand	35'
	40'
27'-40' Sand Silt	
40-50' Sand-Silt Cobbles	
	50'



Stick-up Height (if applicable)
Monument Type 8" Flush
Well Cap Type J-Plug + Padlock
Grout Type/#Sacks Cement 9 sks
Bentonite Seal/#Sacks 2 sks Gel 9 sks Chips
Well Casing I.D.: 2"
Type of casing P.V.C. Monoflex
Type of connection Flush Thread
Filter Pack/size/#Sacks 10-20 4 sks
Well Screen I.D 2"
Type of Screen P.V.C. Monoflex
Slot size .020
Diameter of borehole 8"
Endcap Type Threaded End

Remarks:
0-40' 2" Blank
40-50 2" Screen
5' of Sand Above Screen
Pumped bentonite Gel through tremie to Surface

MW-4

RESOURCE PROTECTION WELL REPORT

21/4E/19B

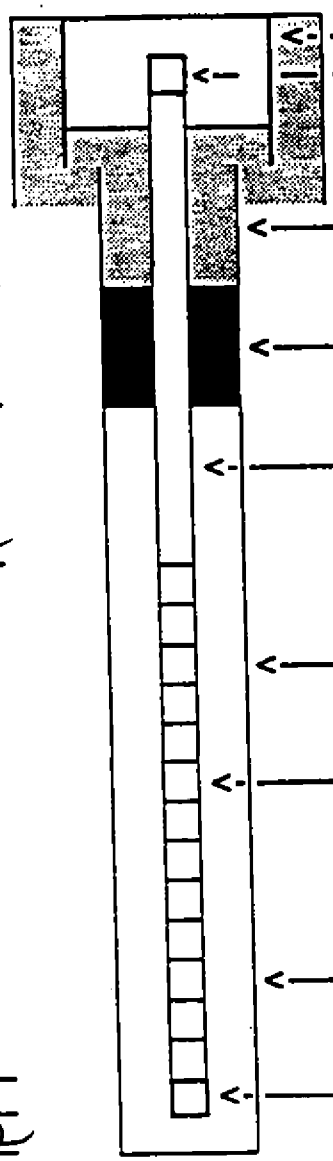
START CARD NO. 042205

PROJECT NAME: City of Federal Way
WELL IDENTIFICATION NO. Observation
DRILLING METHOD: Hollow Stem Auger
DRILLER: Larry Gregory
FIRM: Gregory Drilling INC
SIGNATURE: Laurence N. Gregory
CONSULTING FIRM: Hong West + Assoc.
REPRESENTATIVE: Bob Long

COUNTY: King
LOCATION: NW¼ NE¼ Sec 19 Twn 21N R 4E
STREET ADDRESS OF WELL: Little League ballpark Parking Lot by King Co. Aquatic Center
WATER LEVEL ELEVATION: Hong West
GROUND SURFACE ELEVATION: Hong West
INSTALLED: 5-8-93
DEVELOPED: Hong West

RECEIVED
MAY 17 1993
DEPT OF ECOLOGY

Soil Type	Depth (in feet below ground surface)
0-7' Gravel-Silt Sand Fill Material	0
7'-30' Sand-Silty	3
	28
30'-42' Sand-Silty + Gravel	32
	42



Stick-up Height (if applicable) DEPT OF ECOLOGY
Monument Type 8" Flush
Well Cap Type J-Plug + Padlock
Grout Type/#Sacks Cement 4 sks
Bentonite Seal/#Sacks 1 sk Gel 5 sks Chips
Well Casing I.D.: 2"
Type of casing P.V.C. Monoflex
Type of connection Flush Thread
Filter Pack/size/#Sacks 10-20 4 sks
Well Screen I.D 2"
Type of Screen P.V.C. Monoflex
Slot size .020
Diameter of borehole 8"
Endcap Type Threaded End

Remarks: 0 - 32' 2" Blank
32' - 42' 2" Screen
4' of Sand Above Screen

Pumped Bentonite Gel Through Tremie To Surface

MW-5

RESOURCE PROTECTION WELL REPORT

21/4E/19B

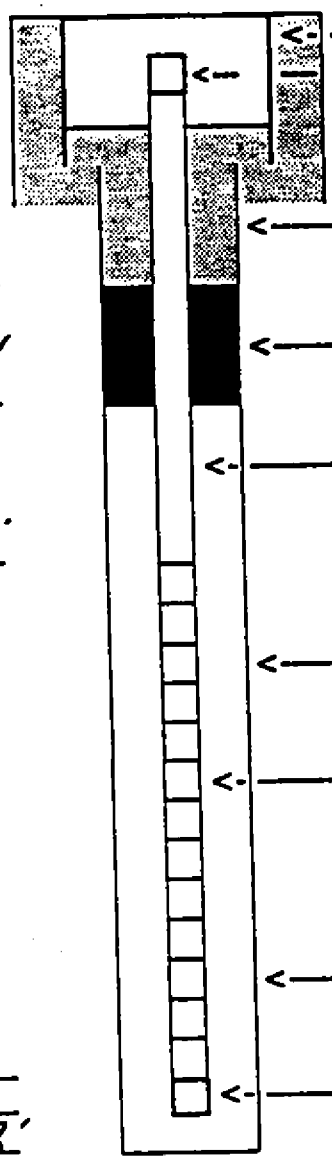
START CARD NO. 042205

PROJECT NAME: City of Federal Way
WELL IDENTIFICATION NO. Observation
DRILLING METHOD: Hollow Stem Auger
DRILLER: Larry Gregory
FIRM: Gregory Drilling Inc
SIGNATURE: Laurence N. Gregory
CONSULTING FIRM: Hong West & Assoc.
REPRESENTATIVE: Bob Long

COUNTY: King
LOCATION: NW¼ NE¼ Sec 19 Twn 21N R 4E
STREET ADDRESS OF WELL: Little League ballpark Parking Lot by King Co. Aquatic Center
WATER LEVEL ELEVATION: Hong West
GROUND SURFACE ELEVATION: Hong West
INSTALLED: 5-9-93
DEVELOPED: Hong West

RECEIVED
MAY 17 1993
DEPT. OF ECOLOGY

Soil Type	Depth (in feet below ground surface)
0-6' Sand-Silt Gravel Fill Material	0
6'-30' Silty Sand	3'
	33'
30'-48' Silty Sand + Gravel	38'
	48'



Stick-up Height (if applicable)
Monument Type 8" Flush
Well Cap Type J-Plug + Padlock
Grout Type/#Sacks Cement 4 sks
Bentonite Seal/#Sacks 1 sk Gel 6 sks Chips
Well Casing I.D.: 2"
Type of casing P.V.C. Monoflex
Type of connection Flush Thread
Filter Pack/size/#Sacks 10-20 5 sks
Well Screen I.D 2"
Type of Screen P.V.C. Monoflex
Slot size .020
Diameter of borehole 8"
Endcap Type Threaded End

Remarks:
0 - 38' 2" Blank
38' - 48' 2" Screen
5' of Sand Above Screen
Pumped bentonite Gel Through Tremie To Surface

MW-6

RESOURCE PROTECTION WELL REPORT

21/4E/19B

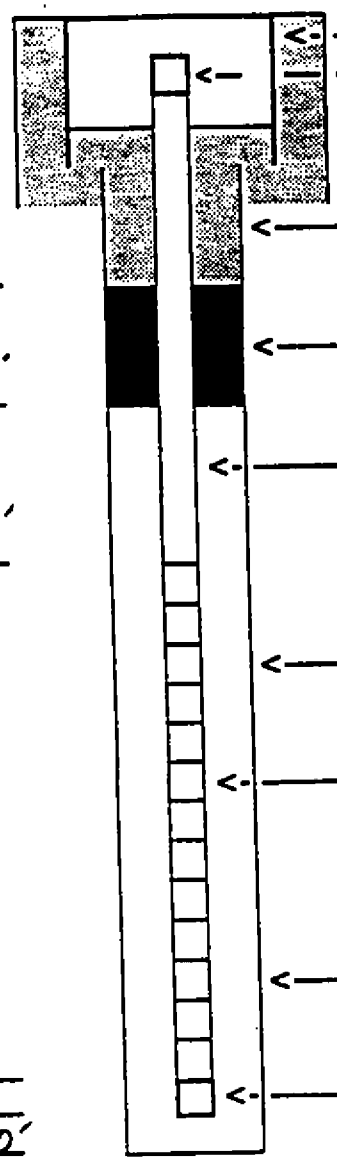
START CARD NO. 042205

PROJECT NAME: City of Federal Way
WELL IDENTIFICATION NO. Observation
DRILLING METHOD: Hollow Stem Auger
DRILLER: Larry Gregory
FIRM: Gregory Drilling INC
SIGNATURE: Larry N. Gregory
CONSULTING FIRM: Hong West & Assoc
REPRESENTATIVE: Bob Long

COUNTY: King
LOCATION: NW¼ NE¼ Sec 19 Twn 21N R 4E
STREET ADDRESS OF WELL: Little League ballPark Parking Lot by King Co. Aquatic Center
WATER LEVEL ELEVATION: Hong West
GROUND SURFACE ELEVATION: Hong West
INSTALLED: 5-8-93
DEVELOPED: Hong West

RECEIVED
MAY 17 1993
DEPT. OF ECOLOGY

Soil Type	Depth (in feet below ground surface)
0 - 5' Gravel Sand SiLT FiLL Material	0
5 - 27' SiLty SAnd	3'
27 - 40' SiLty Sand + Gravel	16'
	30'
	40'



Stick-up Height (if applicable)
Monument Type 8" Flush
Well Cap Type J-Plug → Padlock
Grout Type/#Sacks Cement 5 sks
Bentonite Seal/#Sacks 1 sk Gel 6 sks chips
Well Casing I.D.: 2"
Type of casing P.V.C Monoflex
Type of connection Flush Thread
Filter Pack/size/#Sacks 10-20 4 sks
Well Screen I.D 2"
Type of Screen P.V.C Monoflex
Slot size .020
Diameter of borehole 8"
Endcap Type Threaded End

Remarks:
0 - 30' 2" BLank
30' - 40' 2" Screen
4' of Sand Above Screen
Pumped bentonite Gel Through Tremie To Surface

STATE OF WASHINGTON
Daniel J. Evans, Governor
DEPARTMENT OF WATER RESOURCES
H. MAURICE AHLQUIST, Director

Water-Supply Bulletin No. 28

GEOLOGY AND GROUND-WATER RESOURCES OF SOUTHWESTERN KING COUNTY, WASHINGTON

By
J. E. LUZIER

Prepared in cooperation with
UNITED STATES GEOLOGICAL SURVEY
Water Resources Division
1969

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
21/4-29H2. King County Water Dist. 100, well 9. Drilled by L. B. Richardson. Altitude 248 ft.		
Topsoil	2	2
Hardpan, gray	47	49
Sand, gravel	18	67
Sand, fine	87	154
Sand, clay, blue	118	272
21/4-29J1. A. M. Sterrenburg. Drilled by Northwest Well Drilling Co., 1953. Altitude 210 ft. Casing: 8-inch to 151 ft; perforated 40-55 ft.		
Topsoil	4	4
Sand and gravel	8	12
Hardpan	18	30
Sand and gravel	2	32
Sand, fine, water-bearing	8	40
Gravel, water-bearing	15	55
Sand, fine, water-bearing	89	144
Clay, blue	7	151
21/4-32F1. John Wahl. Drilled by Service Hardware & Implement Co., 1953. Altitude 125 ft. Casing: 8-inch to 399 ft; 6-inch, 0-620 ft.		
Topsoil	2	2
Hardpan	16	18
Hardpan and gravel	11	29
Sand	5	34
Hardpan and gravel	10	44
Sand and gravel	41	85
Sand	18	103
Sand, medium to coarse	20	123
Sand, hard-packed, and clay	2	125
Sand	12	137
Sand and clay	18	155
Clay, gravel	17	172
Clay, sand	10	182
Clay	56	238
Clay and sand, heaving	14	252
Clay, sand	31	283
Clay, hard	57	340
Sand and silt, heaving	2	342
Clay, hard	103	445
Clay and silt	55	500
Clay, gray	210	710
Sandstone	10	720
21/4-36N2. R. J. Pommert. Drilled by Fred Jensen, 1935. Altitude 78 ft. Casing: 2-inch to 171 ft; screened 168-185 ft.		
Silt and sand	12	12
Clay	3	15
Sand	2	17
Gravel, fine	3	20

STATE OF WASHINGTON
Daniel J. Evans, Governor

DEPARTMENT OF WATER RESOURCES
H. MAURICE AHLQUIST, Director

Water Supply Bulletin No. 22

GROUND-WATER OCCURRENCE AND STRATIGRAPHY OF UNCONSOLIDATED DEPOSITS, CENTRAL PIERCE COUNTY, WASHINGTON

By
KENNETH L. WALTERS and GRANT E. KIMMEL

Prepared in cooperation with
UNITED STATES GEOLOGICAL SURVEY
Water Resources Division
1968

Table 7.--Drillers' logs of representative wells.--Continued

Materials	Thickness (feet)	Depth (feet)
Well 20/3-1L1		
Kazue Yotsuuye (Brookville Gardens). Altitude about 15 feet. Drilled by L. R. Gaudio in 1952.		
Sand	30	30
Clay	11	41
Sand and clay, hard	9	50
Clay, sandy, and streaks of clay	90	140
Sand, hard	25	165
Clay	4	169
Sand and streaks of clay	16	185
Casing, 10-inch to 157 ft, 6-inch to 185 ft; perforated 154 to 185 ft.		
Well 20/3-1R1		
Century Amusement Co., Inc. Altitude about 20 feet. Drilled by F. H. Jensen.		
Gravel (fill)	3	3
Muck and sand	3	6
Gravel, fine, and sand	9	15
Gravel, slightly coarser	3	18
Sand, soft	3	21
Sand and silt	15	36
Clay, gray, muck, silt and sand	6	42
Sand and clay, fine hardpacked	2	44
Clay, dark gray, brownish muck, silt and sand	27	71
Sand, fine, black, porous	6	77
Sand and clay	2	79
Sand, silt, and shells	6	85
Sand	7	92
Sand, mucky, and shells	10	102
Clay, soft, dark bluish, with silty sand	4	106
Clay, muck, and some sand	9	115
Silt	6	121
Silt and soft clay	4	125
Sand, fine and silty, gray, and numerous shells	51	176
Sand, lumps of "fatty" clay, fine, gray	7	183
Clay	3	186
Sand and clay, "hole stands"	10	196
Clay, gray and yellow, with wood particles	17	213
Clay, yellow, and fine sand	5	218
Sand, coarser, and occasional small pebbles	34	252
Casing, 2-inch to 238 ft; screen from 238 to 250 ft.		

Table 7.--Drillers' logs of representative wells.--Continued

Materials	Thickness (feet)	Depth (feet)
Well 20/3-2Q1		
George Kowascki. Altitude about 15 feet. Drilled by J. J. Bell and Son, 1950.		
Soil and clay	5	5
Silt, brown, heavy with clay	11	16
Sand, fine, gray; water-bearing	3	19
Clay, gumbo, and wood	36	55
Sand, dirty; water-bearing	17	72
Sand, clean; water-bearing	10	82
Sand, dirty	-	-
Casing, 8-inch, set to 72 ft; 0.020 slot screen from 72 to 82 ft.		
Well 20/3-3L1		
City of Tacoma, Sewer Division. Altitude about 10 feet. Drilled by L. R. Gaudio in 1960.		
Silt and sand	42	42
Sand, black, and small gravel	8	50
Sand, silty	70	120
Gravel, coarse, tight	10	130
Gravel, coarse, brown	20	150
Sand, blue	3	153
"Hardpan," sandy	22	175
"Hardpan"	2	177
Sand and gravel, cemented	21	198
Sand, coarse	11	209
Sand and coarse gravel, cemented	27	236
Sand and clay	4	240
"Hardpan"	6	246
Gravel, coarse, cemented	21	267
Sand and gravel, tight	3	270
Gravel, large, coarse	9	279
"Hardpan"	26	305
Sand and gravel, tight	25	330
"Hardpan"	3	333
Clay, sticky	11	344
Sand and little gravel	36	380
Clay, sandy, blue	10	390
Clay, blue	6	396
"Hardpan"	36	432
Clay, sticky	11	443
"Hardpan"	14	457
Clay, hardpacked, sandy	18	475
"Hardpan," blue	12	487
"Hardpan"	3	490

Table 7.--Drillers' logs of representative wells.--Continued

Materials	Thickness (feet)	Depth (feet)
Well 20/3-3L1--Continued		
Gravel, coarse, tight	20	510
Gravel and coarse sand, very tight	3	513
Gravel, coarse, and sand	10	523
Gravel, coarse, and sand, tight	2	525
"Hardpan," layers; cemented gravel	9	534

Casing, 12-inch to 534 ft; perforated 515 to 527 ft.

Well 20/3-4D1

Tacoma Savings and Loan Association, well 1. Altitude about 120 feet. Drilled by N. C. Jannsen Drilling Co.

Clay, blue	6	6
Sand and gravel	12	18
Clay, yellowish; sand	14	32
Sand, fine, yellowish	8	40
Sand, blue and gray	22	62
Sand, hardpacked, yellowish; some coarse sand	33	95
Gravel, hardpacked, coarse sand	13	108
Sand and gravel	7	115
Sand, finer	11	126
Sand, coarse; little gravel	10	136
Sand, some gravel	12	148
Sand and gravel; some coarse and large	26	174
Sand and gravel	21	195
Sand, fine; some gravel	7	202

Casing to 202 ft; perforated 165 to 185 ft.

Well 20/3-4D2

Tacoma Savings and Loan Association, well 2. Altitude about 120 feet. Drilled by N. C. Jannsen Drilling Co.

Gravel	25	25
Clay, yellowish	20	45
Clay, gray	20	65
Sand, hardpacked	25	90
Gravel and hardpacked sand	18	108
Sand and water, gravel	17	125
Gravel, large; some sand	20	145
Sand	2	147

Casing to 147 ft; screen from 127 to 147 ft.

Table 7.--Drillers' logs of representative wells.--Continued

Materials	Thickness (feet)	Depth (feet)
Well 20/3-4G1		
Northwest Door Co. Altitude about 25 feet. Drilled in 1941.		
Sand, black, salt water	161	161
Silt, brown	17	178
Sand, coarse, and gravel, salt water	8	186
Peat, brown	3	189
Sand and gravel, coarse, fresh water	7	196
Sand, yellow, and clay	79	275
"Hardpan," brown	35	310
"Hardpan," gray	65	375
Clay, blue, and silty sand	48	423
Sand, cemented, and gravel	6	429
"Hardpan," blue, and large rocks	149	578
Gravel, cemented, hard	5	583
Sand, coarse, and gravel; water-bearing	29	612
Clay, brown, laminated, and sand	12	624
Sand, brown, and very fine silty	10	634
Clay, brown, and rocks	6	640
Casing, 12 to 8-inch to 620 ft.		
Well 20/3-4H2		
St. Paul and Tacoma Lumber Co. Altitude about 12 feet. Drilled by N. C. Jannsen in 1940.		
Sand, wood, and mud	84	84
Gravel, sand, and mud	185	269
Gravel, cemented	20	289
Clay and boulders	13	302
Gravel	12	314
Clay	6	320
Gravel	7	327
"Hardpan"	113	440
Clay and boulders	20	460
Gravel and boulders	127	587
Rock	5	592
Shale	90	682
Gravel	132	814
Shale	7	821
Sand	65	886
Gravel	37	923
Clay, blue	44	967
Clay and boulders	47	1,014
Gravel	17	1,031
Shale	72	1,103
Gravel and sand	21	1,124

Table 7.--Drillers' logs of representative wells.--Continued

Materials	Thickness (feet)	Depth (feet)
Well 20/3-4H2--Continued		
Shale	92	1,216
Sand	4	1,220
Clay	28	1,248
Gravel and sand	52	1,300
Shale	51	1,351
Clay, sand	104	1,455
Gravel and boulders	39	1,494
Clay and boulders	7	1,501

Casing, 16-inch to 600 ft, 12-inch from 587 to 1,501 ft; perforated from 655 to 665 ft, 775 to 839 ft, 847 to 919 ft, 937 to 982 ft, 999 to 1,031 ft, 1,263 to 1,295 ft, and from 1,455 to 1,486 ft.

Well 20/3-4J2

Carstens Packing Co. Altitude about 12 feet. Drilled by N. C. Jannsen Drilling Co. in 1936.

Sand, silt, logs	70	70
Sand	60	130
Sand, black	125	255
Gravel, coarse	7	262
Boulders, in part cemented with clay	84	346
Clay and boulders	75	421
Boulders	17	438
Sand, gray; water-bearing	8	446
Boulders	24	470
Gravel and cobbles; water-bearing	25	495
Boulders; water-bearing	29	524
Boulders and gravel	8	532
Gravel, cemented	6	538
Boulders	15	553
Boulders and clay	22	575
Boulders	21	596
Clay	29	625
Gravel; water-bearing	15	640
Clay	65	705

Casing, 10-inch from 0 to 276 ft, 8-inch from 267 to 640 ft; perforated from 356 to 640 ft.

Table 7.--Drillers' logs of representative wells.--Continued

Materials	Thickness (feet)	Depth (feet)
Well 20/3-4J3		
Carstens Packing Co. Altitude about 10 feet. Drilled by L. R. Gaudio in 1958.		
Sand, muddy	30	30
Sand, fine, black and coarse gravel	45	75
Sand, fine, black, muddy	90	165
Sand, fine and small gravel	74	239
Clay, brown	23	262
Gravel, cemented	16	278
Clay	5	283
Gravel, cemented	27	310
Clay, sandy	7	317
Gravel, cemented, some water	27	344
Sand; water-bearing	25	369
Clay	10	379
Sand and gravel; water-bearing	9	388
"Hardpan"	9	397
Sand and gravel; water-bearing	38	435
"Hardpan"	12	447
Sand and gravel; water-bearing	10	457
"Hardpan"	9	466
Clay	4	470
Gravel and sand, cemented	30	500
Gravel and sand, clean; water-bearing	30	530
Gravel and sand, tight	14	544
Sand, coarse	3	547
Casing, 12- to 10-inch to 547 ft; perforated 500 to 530 ft.		
Well 20/3-4P2		
Harmon Manufacturing Co. Altitude about 10 feet. Drilled by J. J. Bell and Son in 1940.		
Cinders (fill)	8	8
Clay, blue, sandy, with shells	20	28
Gravel, cemented, brown; water-bearing	39	67
"Hardpan" and clay	4	71
"Hardpan," yellow	69	140
Sand and gravel, coarse, yellow; water-bearing	5	145
"Hardpan," yellow	33	178
Shale, hard, yellow	17	195
Sand and gravel, hard, yellow	29	224
Sand and gravel, yellow; water-bearing	14	238
Sand, brown, well flowing 135 gpm	12	250
Casing, 12- to 10-inch to 250 ft.		

Table 7.--Drillers' logs of representative wells.--Continued

Materials	Thickness (feet)	Depth (feet)
Well 20/3-4Q1		
Wheeler-Osgood Sales Corp. Altitude about 8 feet. Drilled by E. F. Lawson.		
Silt and sand	25	25
Sand, streaks of "hardpan"	175	200
"Hardpan"	60	260
Clay, blue, sandy	3	263
Gravel, coarse; water-bearing	2	265
"Hardpan," yellow	7	272
Clay, sticky, yellow	3	275
Clay, blue	3	278
"Hardpan"	28	306
Clay, brown and blue	14	320
Gravel, coarse; water-bearing	8	328
"Hardpan"	7	335
Sand, packed	16	351
Sand, loose	64	415
Gravel and cobbles	15	430
"Hardpan"	59	489
Gravel, coarse; water-bearing	3	492
Casing, 10-inch outer casing from 0 to 313 ft, and 8-inch from 0 to 490 ft.		
Well 20/3-7F1		
Allenmore Golf Course. Altitude about 320 feet. Drilled in 1931.		
No record	12	12
"Hardpan"	15	27
"Quicksand," fine	23	50
"Hardpan"	37	87
Sand and gravel, some boulders; water-bearing	65	152
"Hardpan"	8	160
Casing, 12- to 10-inch.		
Well 20/3-7G1		
Allenmore Golf Course. Altitude about 380 feet. Drilled by P. Sylte in 1948.		
Soil	4	4
"Hardpan"	11	15
Sand and gravel, cemented	37	52
Sand and gravel, dry	73	125
Sand and gravel, cemented	5	130

Table 7.--Drillers' logs of representative wells.--Continued

Materials	Thickness (feet)	Depth (feet)
Well 20/3-8R1--Continued		
Gravel, cemented	3	138
Gravel, coarse	2	140
Sand, cemented	11	151
Gravel and sand	21	172
Gravel, cemented	3	175
Sand and clay, layered	9	184
Clay	3	187
Sand and gravel	6	193
Gravel, cemented	3	196
Sand and gravel	2	198
Sand, cemented, some gravel	10	208
Clay	3	211
Sand, fine to coarse	6	217
Clay and gravel	3	220
Sand, fine	1	221

Casing, 8- to 6-inch.

Well 20/3-9A1

Container Corp. of America. Altitude about 20 feet. Drilled by Tacoma Pump and Well Drilling Co. in 1948.

Sand, clay, wood, muck, and fill	40	40
Clay and gravel	10	50
Gravel; water-bearing	2	52
Sand and gravel; water-bearing	8	60
Gravel, "hardpan"	11	71
Clay, blue	9	80
Gravel, "hardpan"	17	97
Gravel (80 percent), and sand	8	105
Sand (80 percent), and gravel	12	117
Sand and gravel	8	125
Sand and gravel, dirty	7	132
Gravel, coarse, clean	5	137
Gravel, hardpacked	10	147
"Hardpan"	3	150
Gravel, clean, and sand	25	175

Casing, 8-inch to 171 ft; 0.120 slot screen from 171 to 175 ft.

Table 7.--Drillers' logs of representative wells.--Continued

Materials	Thickness (feet)	Depth (feet)
Well 20/3-9A3		
Container Corp. of America. Altitude about 20 feet. Drilled by Tacoma Pump and Well Drilling Co. in 1954.		
Soil and fill	4	4
Clay and muck	33	37
Gravel and clay	12	49
Sand and gravel, cemented	24	73
Clay	11	84
Sand and gravel	2	86
"Hardpan"	4	90
Sand and gravel, cemented	5	95
"Hardpan"	4	99
Sand and gravel, cemented	6	105
"Hardpan"	3	108
Sand and gravel, packed	1	109
Sand and gravel, coarse, some clay	3	112
Sand and gravel, slightly cemented	16	128
"Hardpan," large rocks	1	129
Sand and gravel, cemented	12	141
"Hardpan"	4	145
Sand and gravel, cemented	2	147
"Hardpan"	2	149
Sand, cemented	1	150
"Hardpan"	2	152
Sand and gravel, cemented	2	154
Sand, loose, coarse	6	160
Sand and gravel, cemented	3	163
Sand, coarse, with gravel and clay	7	170
Sand and gravel, coarse	15	185
Clay	3	188
Sand and gravel, packed	1	189
Clay and gravel	1	190
Sand and gravel, cemented	4	194
Sand and gravel, coarse	10	204
Sand and gravel, cemented	2	206
Gravel and sand	2	208
Sand, loose	3	211
Sand, cemented	1	212
Sand and coarse gravel, mostly sand	11	223
Sand and gravel, coarse	7	230
Sand and clay, some large rocks	4	234
Clay, sandy	9	243
Gravel, with some sand	2	245
Sand, very little gravel, some clay	2	247
Gravel, some sand	1	248
Sand and large gravel, some clay	5	253
Sand and gravel, cemented	1	254
Clay	5	259
"Hardpan"	18	277

Table 7.--Drillers' logs of representative wells.--Continued

Materials	Thickness (feet)	Depth (feet)
Well 20/3-9A3--Continued		
Sand and gravel, cemented	3	280
Clay	8	288
Sand and gravel, coarse, with clay	15	303
Clay	9	312
"Hardpan"	8	320

Casing, 12-inch to 320 ft; perforated from 199 to 200 ft, 224 to 230 ft, and 244 to 248 ft.

Well 20/3-9C2

Cammarano Bros. Altitude about 30 feet. Western Drilling and Equipment Co. in 1937.

Clay, silty, gray	10	10
"Hardpan"	16	26
Gravel; water-bearing	2	28
Gravel	20	48
Clay, silty, gray and blue	30	78
Gravel	12	90
Rocks, coarse, sand; water-bearing	19	109
Clay, green, and rocks	4	113
Sand and gravel	16	129
Sand and gravel, loose; water-bearing	9	138
"Hardpan"	7	145
Sand, gravel and clay; water-bearing	36	181
Sand, hardpacked, gravel and clay; water-bearing	9	190
Gravel, pea; water-bearing	1	191
Gravel and sand mixed with clay	7	198
Sand and gravel	17	215
Sand, fine, hardpacked	48	263
Sand, fine, small amount of gravel	28	291
Sand, coarse; water-bearing	6	297
Sand, fine, and gravel	4	301

Casing, 8-inch 0 to 145 ft, 6-inch 0 to 290 ft; screened 290 to 300 ft.

Well 20/3-9D2

Carling Brewing Co., well 1. Altitude about 80 feet. Drilled by C. E. Miller in 1936.

Clay	6	6
Clay and sand	22	28
Gravel	6	34
Sand and gravel, tight	29	63
Clay, blue	7	70
Gravel, "hardpan"	15	85

Table 7.--Drillers' logs of representative wells.--Continued

Materials	Thickness (feet)	Depth (feet)
Well 20/3-9D2--Continued		
Gravel, loose; water-bearing	19	104
Clay, carbonaceous	1	105
Clay, "hardpan," gray	25	130
Gravel	4	134
Gravel, coarse	2	136
Gravel, fine to coarse	6	142
"Hardpan" and clay	2	144
Sand, coarse, and gravel	9	153
Gravel, some clay	2	155
Gravel, tight	15	170
Sand and gravel, loose; water-bearing	8	178
Gravel, tight	6	184
Gravel, loose; water-bearing	14	198
Gravel, tight	4	202
Clay, "hardpan"	2	204
Gravel, tight	4	208
Clay, "hardpan"	11	219
Sand, loose; water-bearing	1	220
Gravel, tight	2	222
Clay, "hardpan"	13	235
Sand and gravel	5	240
Sand, coarse, and gravel	5	245
"Hardpan," and cement gravel	2	247

Casing, 10-inch.

Well 20/3-9D3

Carling Brewing Co., well 5. Altitude is 110.94 feet. Drilled by N. C. Jannsen Drilling Co. in 1949.

Sand and gravel, hardpacked	260	260
Clay	15	275
Sand and gravel, coarse	15	290
Gravel and clay	10	300
Gravel and clay, with sand	45	345
Sand	5	350
Clay, sandy	25	375
Sand	63	438
Sand and gravel	122	560
Sand, coarse	91	651
Clay	26	677

Casing, 22-inch outer casing from 0 to 107 ft, 14-inch casing from 0 to 235 ft, 12-inch from 235 to 677 ft; perforated from 405 to 652 ft.

Table 7.--Drillers' logs of representative wells.--Continued

Materials	Thickness (feet)	Depth (feet)
Well 20/3-9D4		
Carling Brewing Co., well 4. Altitude is 105.95 feet. Drilled by N. C. Jannsen Drilling Co. in 1948.		
"Hardpan," clay, and boulders	100	100
Gravel, hard, cemented	20	120
Clay, wood	5	125
Clay and "hardpan"	9	134
Gravel and boulders	26	160
Gravel with sand	30	190
Gravel and sand, fine	30	220
Sand, hardpacked, gray, sand with gravel	20	240
Sand and gravel	40	280
Sand, fine, with clay	14	294
Clay shot with gravel	26	320
Clay, sandy	20	340
Sand, fine	20	360
Clay, sandy	15	375
Gravel	55	430
Sand and gravel; water-bearing	90	520
Clay	20	540
Casing, 20inch to 12-inch to 540 ft; perforated 379 to 540 ft.		
Well 20/3-9E3		
Pacific Refrigerating Co. Altitude about 145 feet. Drilled by R. J. Strasser in 1935.		
No record	18	18
Gravel, cemented	18	36
Gravel, loose	34	70
Gravel, with boulders	22	92
Sand and gravel, cemented	4	96
Gravel; water-bearing	9	105
Sand	4	109
Gravel, cemented	9	118
Gravel, loose; water-bearing	14	132
Clay, blue	5	137
Gravel, cemented	11	148
Boulder, "granite"	4	152
Gravel, loose; water-bearing	8	160
Gravel, cemented	13	173
Sand and clay	11	184
Gravel, cemented	10	194
Boulders	11	205
Gravel, loose; water-bearing	4	209
Gravel, cemented	7	216
Sand and gravel; water-bearing	20	236

Table 7.--Drillers' logs of representative wells.--Continued

Materials	Thickness (feet)	Depth (feet)
Well 20/3-9E3--Continued		
Sand and gravel, packed	9	245
Gravel, loose; water-bearing	14	259

Casing, 12-inch from 0 to 129½, 10-inch from 123 to 168, and 8-inch from 161 to 259 ft; perforated from 204 to 217 ft, 200 to 235 ft, and 242 to 256 ft.

Well 20/3-9F1

Silver Springs Brewing Co. Altitude about 40 feet. Drilled by P. Sylte in 1950.

Fill dirt, gravel and clay	23	23
Clay, brown	13	36
"Hardpan"	35	71
Clay, sandy	21	92
"Hardpan"	73	165
Gravel, sandy, small flow of water	1	166
"Hardpan"	4	170
Gravel, sandy, and clay	25	195
Clay, blue	7	202
"Hardpan"	4	206
Gravel, cemented	11	217
Clay, brown, and a little gravel	6	223
"Hardpan"	4	227
Gravel, and blue clay	59	286
Sand, hardpacked	53	339
Sand, gray, and clay	14	353
Sand and gravel, hardpacked	16	369
Sand, fine to coarse, and small gravel, small flow of water	1	370
Gravel, cemented	45	415
Sand, heaving	4	419
Sand, hardpacked, some clay	13	432
Gravel, cemented	23	455
Clay, blue	12	467
Sand and gravel, cemented	7	474
Clay, sandy	18	492
Sand and gravel, cemented	105	597
Sand and gravel, good flow of water	12	609
"Hardpan"	9	618

Casing, 8-inch from 0 to 560 ft, and 6-inch from 560 to 595 ft; 0.020 slot screen from 595 to 610 ft. Open hole (?) 610 to 618 ft.

Table 7.--Drillers' logs of representative wells.--Continued

Materials	Thickness (feet)	Depth (feet)
Well 20/3-10B1		
Medosweet-Foremost Dairies. Altitude about 25 feet. Drilled by P. Sylte in 1951.		
Soil and clay	8	8
Sand and gravel, cemented	18	26
"Hardpan"	9	35
Sand and gravel, muddy, little water	9	44
Clay and gravel	13	57
Sand and gravel, little water	2	59
Gravel, and clay, hard	19	78
Clay and gravel, soft, little water	18	96
Sand and gravel, cemented	20	116
Sand, hard, dry	10	126
Sand and gravel, little water	10	136
Clay, blue, and gravel	46	182
Clay, green, and gravel	29	211
Sand and gravel	6	217
Sand and gravel, cemented	18	235
Sand and gravel, small flow of water	2	237
Sand, fine, small flow of water	5	242
Sand and gravel, flowing	6	248
Clay	7	255
Sand, black, and gravel, flowing	8	263
Clay and gravel	6	269
Clay and gravel, open hole	6	275
Casing, 10-inch to 269 ft; perforated 247 to 264 ft.		
Well 20/3-11C1		
The Milwaukee Road. Altitude about 20 feet. Drilled by F. H. Jensen.		
Silt and fine sand	42	42
Clay and silt	8	50
Sand, coarse	12	62
Sand, fine, wood particles, shell and clay	11	73
Silt and clay, many shells	19	92
Sand and shells	2	94
Sand, fine, fairly clean, shells	10	104
Silt, clay, and shells	15	119
Sand, medium, with clay and vegetable matter	5	124
Sand, fine to coarse	36	160
Casing, 3-inch.		

Table 7.--Drillers' logs of representative wells.--Continued

Materials	Thickness (feet)	Depth (feet)
Well 20/3-11P1		
J. J. McDonald. Altitude about 25 feet. Drilled by Service Hardware and Implement Co.		
Soil	5	5
Gravel	15	20
"Hardpan"	10	30
Gravel, cemented	53	83
Gravel	5	88
Casing, 6-inch to 88 ft.		
Well 20/3-11P2		
Tony Banaszak. Altitude about 25 feet. Drilled by Service Hardware and Implement Co.		
Soil	9	9
Clay, brown, some water at 20 ft	11	20
Clay, blue	18	38
Gravel; water-bearing	3	41
Casing, 6-inch to 41 ft.		
Well 20/3-11P4		
E. Barker. Altitude about 25 feet. Drilled by Service Hardware and Implement Co.		
Clay	45	45
"Hardpan"	43	88
Gravel	2	90
Casing, 6-inch to 85 ft.		
Well 20/3-12C1		
Colonial Gardens. Altitude about 15 feet. Drilled by F. H. Jensen.		
Sand, fine, muck, some clay and wood	18	18
Clay and silt	12	30
Clay and silty sand	31	61
Sand, medium, some clay	17	78
Sand and fine, mucky clay	4	82
Sand, medium, many shells	5	87
Muck, many shells	5	92
Muck, soft, and clay with shells	9	101

Table 7.--Drillers' logs of representative wells.--Continued

Materials	Thickness (feet)	Depth (feet)
Well 20/3-12C1--Continued		
Clay, gray, hard and packed, shells and sand between layers	21	122
Clay and some coarse sand	8	130
Muck, sandy, very soft	4	134
Sand, hardpacked	9	143
Muck and clay	20	163
Sand, fine, with clay and some coarse sand	30	193
Clay	7	200
Sand, medium, and clay	3	203
Muck	7	210
Sand and clay	9	219
Sand, coarse	5	224
Sand, fine	6	230
Clay and fine sand	2	232
Sand, fine and open	3	235
Sand, medium	3	238
Sand, coarse	4	242
Sand, very fine, with occasional coarser sand	3	245
Sand, fine	14	259
Sand, medium	6	265
Sand, coarse	12	277
Sand, fine and mucky	-	-

Casing, 3-inch; screened at bottom.

Well 20/3-13G1

Leon P. Zabroski. Altitude about 20 feet. Drilled by Service Hardware and Implement Co. in 1951.

Soil and fine sand	20	20
Sands and clay; water-bearing	50	70
Sand, black; water-bearing: 20 percent shells from 83 to 86 ft	16	86

Casing, 8-inch.

Well 20/3-13H2

Walter Stemp. Altitude about 20 feet. Drilled by Service Hardware and Implement Co. in 1951.

Silt and sand	20	20
Clay, brown	10	30
Sand, coarse	8	38

Casing, 4-inch to 38 ft.

Table 7.--Drillers' logs of representative wells.--Continued

Materials	Thickness (feet)	Depth (feet)
Well 20/4-3R1		
L. Reisinger. Altitude about 330 feet. Drilled by Service Hardware and Implement Co. in 1953.		
Gravel, boulders, and clay	14	14
Gravel and clay	8	22
Gravel, hard	12	34
Gravel, very hard	4	38
Gravel, hard	27	65
Sand, brown	4	69
Gravel, hard	5	74
Gravel and boulders	8	82
Gravel, hard	22	104
Gravel and clay	16	120
Gravel, cemented	11	131
Gravel and clay, bailed 20 gpm for 30 minutes with dd of 12 ft. Static water level about 113 ft	7	138
No record	11	149
Gravel, hard, and clay, water at 167 ft	36	185
Gravel, fine, hard	19	204
Gravel, hard, with clay, a little water at 225 ft	25	229
No record	9	238
Gravel, fine, and coarse sand	2	240
Gravel and clay	5	245
Gravel, very hard	7	252
Gravel, hard, some clay	21	273
No record	36	309
Gravel, hard	7	316
Sand, clay, and rock	3	319
Gravel and clay	8	327
No record	44	371
Casing, 10- to 8-inch to 362 ft; perforated from 65 to 70 ft, 80 to 95 ft, 120 to 123 ft, 130 to 175 ft, 180 to 192 ft, and 220 to 240 ft.		
Well 20/4-5E1		
Fusfield and Oppheim (Richfield Service Station). Altitude about 30 feet. Drilled by N. C. Jannsen Drilling Co. in 1930.		
Clay, sand, and gravel	18	18
Sand and gravel	6	24
Sand, gravel, and silt	14	38
Sand and gravel	22	60
Sand and silt	20	80
Sand, loose	25	105
Clay, sandy	14	119
Silt	37	156
Sand, clay, and silt	15	171

Table 7.--Drillers' logs of representative wells.--Continued

Materials	Thickness (feet)	Depth (feet)
Well 20/4-5E1--Continued		
Silt	20	191
Clay, sandy	9	200
Clay	29	229
Clay, some gravel	11	240
Clay	110	350

Casing, 4-inch.

Well 20/4-5Q2

Town of Milton, well 2. Altitude about 50 feet. Drilled by Pete Sylte in 1945.

Soil	5	5
Sand, dry	7	12
Sand, dirty	20	32
Sand, coarse, some gravel; water-bearing	40	72
Sand, fine, muddy, small flow of water	22	94
Sand, very fine, blue	5	99
Silt, blue, dry	21	120
Clay, hard, blue	52	172
Sand and silt, brown	1	173
Clay, sandy, brown	11	184
Sand, fine, blue	3	187
Silt, hard, blue, and some blue clay	32	219
Clay, blue	37	256
Silt, dry	2	258
Silt, dry, some pea gravel	20	278
Clay, sandy, small flow of water	10	288
Sand, fine, muddy, small flow of water	27	315
Sand, fine, gray	1	316
Sand, fine, muddy	16	332
Clay, blue	3	335
Clay, blue, and silt	55	390
Clay, blue	25	415
Sand, heaving	65	480
Quicksand	60	540

Casing, 12-inch 0 to 364 ft, 10-inch 364 to 529 ft, and 8-inch 529 to 540 ft; perforated 35 to 75 ft.

Table 7.--Drillers' logs of representative wells.--Continued

Materials	Thickness (feet)	Depth (feet)
Well 20/4-5Q6		
Town of Milton, well 4. Altitude about 50 feet. Drilled in 1958.		
Fill dirt	8	8
Sand, silt, and clay	12	20
Sand, medium to coarse	20	40
Sand, coarse, few pebbles	13	53
Tight cemented streak	-	53
Sand, coarse, few pebbles	17	70
Sand, medium to coarse	6	76
Clay, silty, brown	4	80
Casing, 18-inch to 43 ft; screened 47 to 73 ft.		
Well 20/4-7Q1		
L. V. Ambuehl. Altitude about 24 feet. Drilled by J. L. Bell Drilling Co. in 1960.		
Topsoil	2	2
Silt, brown	22	24
Sand and gravel, gray, some water	16	40
Clay, blue, and silt	41	81
Silt, blue and fine sand, clay; water-bearing	33	114
Sand, fine; water-bearing	6	120
Clay, blue	43	163
Sand, blue; water-bearing	27	190
Casing, 8-inch to 170 ft; perforated 170 to 190 ft.		
Well 20/4-8M1		
Akinobu Yotsuuye. Altitude about 25 feet. Drilled by J. L. Bell Drilling Co. in 1959.		
Topsoil	1	1
Sand, brown, and clay	13	14
Clay and wood	2	16
Clay, silty, gray	25	41
Wood	1	42
Clay, brown, and wood	38	80
Clay, silty, blue; wood and shells; water-bearing	16	96
Sand, very fine, blue	5	101
Clay, blue	14	115
Silt, blue	25	140
Silt, blue, lots of wood	6	146

Table 7.--Drillers' logs of representative wells.--Continued

Materials	Thickness (feet)	Depth (feet)
Well 21/3-25L1--Continued		
Sand, gravel; water, fairly clean	2	52
Clay, sandy, blue	10	62
Sand, gravel; water-bearing	1	63
Sand, dry, clay, thin layers of sand with water	24	87
Sand, dry, hardpacked, gravel and clay	24	111
Sand, hardpacked, gravel, clay; water-bearing	9	120
Sand, cleaner; gravel and water	2	122
Sand, cleaner; gravel, slightly looser	8	130
Gravel, loose, coarse, sand; water-bearing	2	132
Clay, hardpacked; water-bearing	10	142
Gravel, loose, water, some clay	2	144
Sand, gravel and clay, hardpacked	8	152
Sand, fine, gravel and clay; water-bearing	6	158
Sand, fine, gravel and clay; loose, with more water	6	164
Clay; less water	6	170
Sand, blue, gravel and clay, looser	3	173
Sand, loose, clean and gravel; water-bearing	7	180
Clay, hardpacked	3	183
Gravel, loose, coarse and sand; water-bearing	10	193
Clay, blue	3	196

Casing, 8-inch to 193 ft.

Well 21/3-26N1

City of Tacoma, tideflats, well 1. Altitude 10.9 feet. Drilled by N. C. Jannsen in 1927.

Pit	10	10
Sand	132	142
Sand and sandy clay	20	162
Sand	20	182
Clay	20	202
Clay, sandy	24	226
Clay	64	290
Sand, fine	20	310
Sand and gravel, in streaks	30	340
Clay, contains marine shells	92	432
Clay, sandy	16	448
Clay, sticky, blue	2	450
Clay	6	456
Gravel	2	458
Clay	10	468
Gravel, loose; water-bearing	17	485
Sand and gravel	21	506
Gravel, loose; water-bearing	14	520
Gravel and cemented gravel	10	530
Gravel and streaks of blue clay	12	542

Table 7.--Drillers' logs of representative wells.--Continued

Materials	Thickness (feet)	Depth (feet)
Well 21/3-26N1--Continued		
Sand and gravel, hard	15	557
Sand, hard	5	562
Gravel, coarse, and sand	9	571
Gravel, coarse	17	588
Gravel, cemented	4	592
Gravel, cemented, and boulders	16	608
Clay, blue	6	614
Boulders	4	618
Clay, blue	7	625
Clay, blue, and sand	12	637
Clay, blue	8	645
Sand	8	653
Sand, compact	7	660
Gravel and sand; water-bearing	6	666
Gravel, coarse; water-bearing	12	678
Gravel and sand	6	684
Gravel, coarse; water-bearing	52	736
Gravel, coarse, with sand	4	740
Gravel, cemented	4	744
Sand, fine	12	756
Sand (log at 758 ft)	2	758
Shale (?)	4	762
Sand	2	764
Shale (?)	21	785

Casing, 24-inch to 779 ft; perforated 465 to 595 ft.

Well 21/3-27J1

Hooker Chemical Corp. Altitude about 10 feet. Drilled by N. C. Jannsen in 1938.

Sand and wood	86	86
Clay, sandy, blue	61	147
Gravel, cemented	27	174
Gravel and clay	16	190
Gravel, cemented, and boulders	53	243
Gravel	19	262
Gravel, cemented	4	266
Gravel, loose, with boulders	38	304
Gravel	24	328
"Hardpan"	24	352
Wood	2	354
Gravel	20	374
Clay, blue	24	398
Clay and gravel	16	414
Gravel, cemented	6	420
Gravel	10	430

Table 7.--Drillers' logs of representative wells.--Continued

Materials	Thickness (feet)	Depth (feet)
Well 21/3-27J1--Continued		
Gravel and clay	10	440
Clay, sandy	14	454
Clay, blue	73	527
Gravel	18	545
Shale (?) green	25	570
Sand, fine	40	610
Sandstone (?)	10	620
Clay, blue	137	757
Gravel; water-bearing	53	810
Clay	90	900
Sand and gravel	6	906
Clay	16	922
Gravel, cemented	12	934
Gravel and clay	14	948
Clay, sandy	20	968
Gravel	4	972
Clay, hard, and gravel	36	1,008
Clay	4	1,012
Gravel, cemented; water-bearing	123	1,135
Clay and gravel	3	1,138
Sand and gravel	8	1,146
Clay and gravel	70	1,216

Casing, 18-inch, 0 to 247 ft; 16-inch, 220 to 660 ft; 12-inch, 0 to 100 ft; 10-inch, 100 to 1,157 ft; perforated 757 to 763 ft, 792 to 810 ft, 965 to 975 ft, 1,000 to 1,025 ft, 1,070 to 1,093 ft, and 1,120 to 1,145 ft.

Well 21/3-35B1

Buffelen Woodworking Co. Altitude about 7 feet. Drilled by N. C. Jannsen in 1927.

Clay	45	45
Sand	43	88
Clay	164	252
Sand, brown, some gravel	50	302
Sand	28	330
Sand, fine	86	416
Clay, blue	30	446
Sand	12	458
Clay	23	481
Gravel and boulders	53	534
Clay	27	561
Gravel, cemented	29	590
Clay	153	743
Sandstone (?)	27	770
Sand, gravel, and cobbles	42	812

Table 7.--Drillers' logs of representative wells.--Continued

Materials	Thickness (feet)	Depth (feet)
Well 21/3-35B1--Continued		
Sand, hard; log at bottom	8	820
Gravel	15	835
Gravel, clean	21	856

Casing, 18-inch to 782 ft, 12-inch 750 to 856 ft; perforated 835 to 850 ft.

Well 21/3-36L1

Kaiser Aluminum Corp. Altitude about 19 feet. Drilled by A. A. Durand and Son in 1952.

Sand, fine, silty, gray	30	30
Clay and silt, brown	10	40
Sand, fine to medium, contains some coarse sand and pebbles	85	125
Sand, medium to coarse, gray, contains pebbles and many shell fragments	5	130
Sand, fine to medium, gray	50	180
Sand, fine to coarse, gravel	57	237
Silt and very fine sand	53	290
Sand, fine to medium, gray	25	315
Sand, coarse (uniform), gray	29	344
Clay and silt, hard, brown, laminated, contains wood fragments	8	352
Sand, fine, gray	148	500
Silt and very fine sand, brown, several shell fragments	40	540
Silt and clay, brown	70	610
Boulders, gravel, and sand	5	615
Clay, gray	70	685
Clay, silt, and very fine gray sand	35	720
Silt and very fine gray sand	15	735
Clay and silt	40	775
Silt and very fine sand, gray	105	880
Sand, very fine to fine, gray	27	907
Sand, medium to coarse	23	930
Sand, medium	20	950

Casing, 8-inch.

Well 21/3-36L2

Kaiser Aluminum Corp. Altitude about 15 feet. Drilled by N. C. Jannsen in 1942.

Clay	29	29
Sand	11	40
Clay	18	58
Sand	8	66
Gravel	6	72

Table 7.--Drillers' logs of representative wells.--Continued

Materials	Thickness (feet)	Depth (feet)
Well 21/3-36L2--Continued		
Clay	9	81
Gravel	57	138
Clay	72	210
Sand	16	226
Clay	82	308
Sand	222	530
Clay	96	626
Gravel	38	664
Clay	18	682
Gravel	32	714
Sand	28	742
Gravel	30	772
Sand	6	778
Gravel	50	828
Cap rock (?)	8	836

Casing, 24- to 18-inch.

Well 21/3-36P1

Kaiser Aluminum Corp. Altitude about 19 feet. Drilled by N. C. Jannsen in 1942.

Clay	28	28
Sand	20	48
Clay	18	66
Sand	23	89
Clay	15	104
Sand	6	110
Clay	37	147
Shale (?)	30	177
Sand	28	205
Clay	20	225
Sand	16	241
Gravel	47	288
Sand	177	465
Gravel, fine	44	509
Sand	6	515
Clay	105	620
Gravel; water-bearing	60	680
Clay	62	742
Gravel; water-bearing	11	753
Clay	29	782
Gravel; water-bearing	32	814
Gravel, cemented	10	824

Casing, 18-inch to 824 ft.

KAISER ALUMINUM & CHEMICAL CORP. - { view PDF | view TIFF }
Public Land Survey: (blank), SW, S-36, T-21-N, R-03-E, Tax Parcel Number: (blank)
County: PIERCE, Well Address: (blank)
Well Log ID: 49299, Well Tag ID: (blank) , Notice of Intent Number: (blank)
Well Diameter: (blank) , Well Depth: (blank)

Well Type: Water, Well Completion Date: 1/29/1953, Well Log Received Date: (blank)

Depth of 307 ft

49299

STATE OF WASHINGTON
DEPARTMENT OF CONSERVATION
AND DEVELOPMENT

WELL LOG

No. Appli. #2031
Cert. #1449-A

Date March 11, 1953
Record by O. T. Linton
Source Driller's Record

Location: State of WASHINGTON
County Pierce
Area
Map
¼ SW ¼ sec. 36 T. 21 N., R. 3 E. W.M.

DIAGRAM OF SECTION

Drilling Co. A. A. Durand & Son
Address 115 Reese Ave.; Walla Walla, Washington
Method of Drilling drilled Date Jan. 29 1953
Owner Kaiser Aluminum & Chemical Corp.
Address 3400 Taylor Way, Tacoma, Washington
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.)		
	WELL NO. 3		
	Sand	217	217
	Coarse sand & fine gravel	20	237
	Muddy sand	50	287
	Fine sand	28	315
	Sand	35	350
	Hard sand	45	395
	Muddy sand	110	505
	Blue clay	37	542
	Sand (some boulders)	73	615
	Blue clay	70	685
	Sandy clay	35	720
	Muddy clay	5	725
	Muddy sand	10	735
	Dark clay	40	775
	Muddy sand	105	880
	Sand (Dark Grey)	27	907

Turn up (over) Sheet of sheet

KAISER ALUMINUM & CHEMICAL CORP. - { view PDF | view TIFF }
Public Land Survey: SE, SW, S-36, T-21-N, R-03-E, Tax Parcel Number: (blank)
County: PIERCE, Well Address: (blank)
Well Log ID: 276388, Well Tag ID: (blank) , Notice of Intent Number: (blank)
Well Diameter: 12 (inches), Well Depth: 883 (feet)

Well Type: Water, Well Completion Date: (blank) , Well Log Received Date: (blank)

276388

STATE OF WASHINGTON
DEPARTMENT OF CONSERVATION
DIVISION OF WATER RESOURCES

Appli. 9906
Permit 8998

WELL LOG

Record by Driller
Source Driller's Record

Location: State of WASHINGTON
County Pierce
Area
Map
SE ¼ SW ¼ sec. 36 T. 21 N., R. 3 E. W.

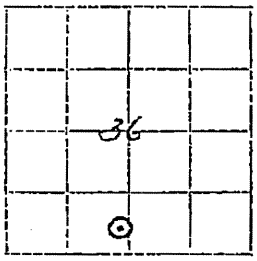


Diagram of Section

Drilling Co. L. R. Gaudio Co. (deepening of original well)
Address Tacoma, Washington
Method of Drilling ..... Date Sept., 19 68
Owner Kaiser Aluminum & Chemical Corp.
Address Tacoma, Washington
Land surface, datum ..... ft. above / below
SWL: 11.0' Date Oct. 3, 19 68 Dims. 12"x883'

CORRELATION	MATERIAL	From (feet)	To (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.)		
	Industrial supply		
	Clay and sand	0	241
	Gravel	241	288
	Sand	288	465
	Gravel	465	515
	Clay	515	620
	Gravel	620	680
	Clay	680	742
	Gravel	742	753
	Clay	753	782
	Gravel	782	814
	Gravel, cemented	814	824
	Silt, w/sandy seams	824	830
	Sand, clean, med. & coarse	830	840
	Gravel, all sizes to 6" dia. contains 50% coarse sand, very permeable	840	up to 883

Turn up

Sheet ..... of ..... sheets

276388

WELL LOG.—Continued No...../.....-.....

Correlation	Material	From (feet)	To (feet)
	Depth forward	———	
	Casing: 24" from 0' to ?		
	18" from 0' to 814'		
	12" from 3.2' to 848'		
	Screens: from 847' to 852'		
	from 852' to 883'		
	sealed: ?		
	Yield: 1266 gpm with 18.6' DD after 80 min.		
	Specific capacity of 152' gpm/ft of DD		
	Date of test: Oct. 3, 1968		
	Pump: submersible (suggested)		

S. F. No. 7449—OS—12-65.

GENERAL METALS - { view PDF | view TIFF }
Public Land Survey: NW, NW, S-36, T-21-N, R-03-E, Tax Parcel Number: (blank)
County: PIERCE, Well Address: (blank)
Well Log ID: 276182, Well Tag ID: (blank) , Notice of Intent Number: (blank)
Well Diameter: (blank) , Well Depth: (blank)
Well Type: Resource Protection, Well Completion Date: (blank) , Well Log Received Date: (blank)

depth of 90 ft

276182

	THICKNESS (FT)	DEPTH (FT)
Sand	10	10
Sand and clay	17	27
Clay	16	43
Sand and clay	15	58
Clay	5	63
Sand and clay	9	72
Clay	15	87
Sand	6	93
Clay	19	112
Sand	4	116
Sand and clay	22	138
Sand	16	154
Clay	6	160
Sand	6	166
Clay	3	169
Sand and gravel	6	175
Sand and clay	13	188
Clay	3	191
Sand and clay	20	211
Sand and gravel	6	217
Sand, clay and gravel	18	235
Sand and clay	24	259
Sand and clay	12	271
Sand and clay	30	301
Sand and clay	8	309
Sand and clay	20	329
Sand and clay	16	345
Sand	4	349
Sand and clay	8	357

276182

	THICKNESS (FT)	DEPTH (FT)
Sand	13	370
Sand and clay	38	408
Sand	10	418
Sand and clay	14	432
Clay	13	445
Sand	23	468
Clay	147	615
Sand and gravel	2	617
Clay	56	673
Clay and sand	20	693
Clay	9	702
Sand and clay	67	769
Sand	2	771
Clay	4	775
Sand	3	778
Clay	4	782
Sand and clay	10	792
Sand	28	820
Sand and clay	40	860
Sand and gravel	11	871
Sand and gravel	6	877
Sand and gravel	11	888
Sand and gravel	6	894
Sand	7	901

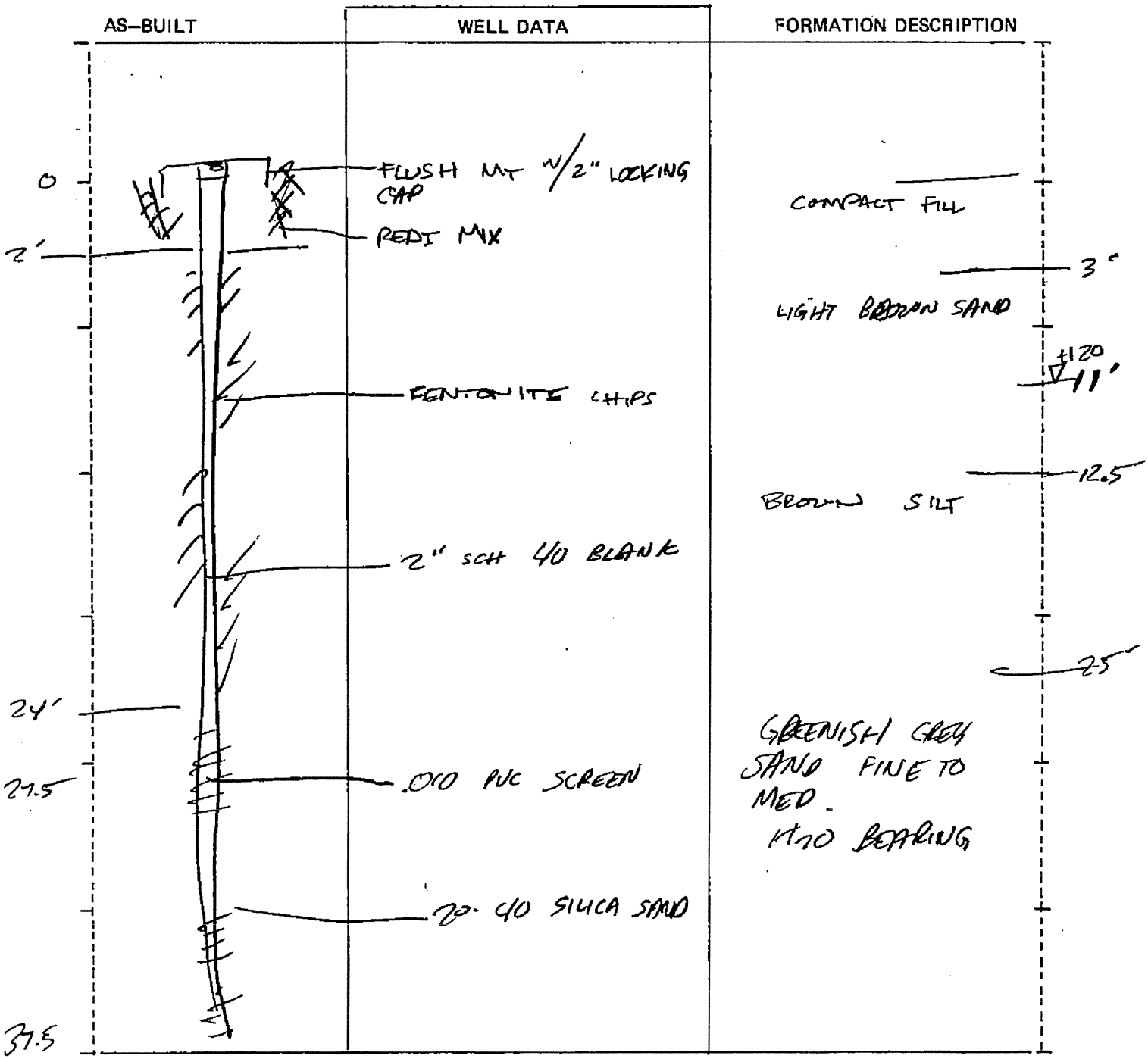
276182

RESOURCE PROTECTION WELL REPORT

START CARD NO. 037946

PROJECT NAME: GENERAL METALS
WELL INDENTIFICATION NO. GM 8d
DRILLING METHOD: HSA
DRILLER: ERIC HANSEN
FIRM: TACOMA PUMP & DRILLING
SIGNATURE: Eric Hansen
CONSULTING FIRM: SE/EMCON
REPRESENTATIVE: BILL EHORN

LOCATION: T 21N, R 3E, SEC. 36 NW¼ NW¼
DISTANCE: _____ FT. FROM N/S SECTION LINE
_____ FT. FROM E/W SECTION LINE
DATUM: _____
WATER LEVEL ELEVATION: 11'
INSTALLED: 4.6.92
DEVELOPED: _____



SCALE: 1"= _____ PAGE ____ OF ____