STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765)

MULT 105451

Page # 1 of 2
WELL I.D. # L ~~103055~~ 117845
START CARD # 1012280

Instructions for completing this report are on the last page of this form.

(1) OWNER: Well Number EW-1
Name Multnomah County C/O Howard S. Wright
Address P.O. Box 5511
City Portland State OR Zip 97228

(2) TYPE OF WORK
☒ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) DRILL METHOD:
☐ Rotary Air ☒ Rotary Mud ☐ Cable ☐ Auger
☐ Other

(4) PROPOSED USE:
☐ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☒ Other Extraction

(5) BORE HOLE CONSTRUCTION: Heat Pump Well
Special Construction approval ☒ Yes ☐ No Depth of Completed Well 275 ft.
Explosives used ☐ Yes ☒ No Type ____ Amount ____

HOLE Diameter	From	To	SEAL Material	From	To	Sacks or pounds
16"	0	267	Cement Grout w/ 2% Bentonite	5	150	100 sks.
			Bentonite Chips	0	5	7 sks.

How was seal placed: Method ☐ A ☐ B ☒ C ☐ D ☐ E
☐ Other
Backfill placed from 260 ft. to 275 ft. Material pea gravel
Gravel placed from 150 ft. to 260 ft. Size of gravel 6 x 9 sand

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	10"	+2	200	.250	☒	☐	☒	☐
	10"	250	260	.250	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s) N/A

(7) PERFORATIONS/SCREENS:
☒ Perforations Method Mills Knife
☒ Screens Type ____ Material Stainless Steel

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
152	177		125	3/16" x	2 1/4"	☒	☐
186	199		78	3/16" x	2 1/4"	☒	☐
						☐	☐
200	250	60		10"	p.s.	☒	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour

☒ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
SEE ATTACHED PUMP TEST SHEETS			1 hr.

Temperature of water 51° Depth Artesian Flow Found ____
Was a water analysis done? ☐ Yes By whom ____
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other ____
Depth of strata: ____

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MAR 26 2018
WATER RESOURCES DEPARTMENT

(9) LOCATION OF WELL by legal description:
County MULT Latitude ____ Longitude ____
Township 1 S N or (S) Range 3 E (E) or W. WM.
Section 5 NW 1/4 NW 1/4
Tax Lot 2100 Lot ____ Block ____ Subdivision ____
Street Address of Well (or nearest address) 18480 SE. Stark St., Portland, OR East County Courts Project

(10) STATIC WATER LEVEL:
65'7" ft. below land surface. Date 3-18-11
Artesian pressure ____ lb. per square inch. Date ____

(11) WATER BEARING ZONES:
Depth at which water was first found 153'

From	To	Estimated Flow Rate	SWL
153	260	100 gpm	65'7"

(12) WELL LOG:
Ground Elevation ____

Material	From	To	SWL
Asphalt, fill gravel	0	1	
Loose sand, gravel	1	2	
Cemented gravel w/ sand	2	20	
Loose gravel w/ boulders	20	24	
Cemented gravel	24	65	
Lightly cemented brown sand & gravel w/ silt binder	65	69	
Cemented gravel & cobbles	69	78	
Lightly cemented w/ silt binder	78	102	
Cemented gravel w/ silt binder	102	130	
Cemented gravel w/ gray clay	130	140	
Cemented gravel w/ brown clay	140	153	
Cemented gravel	153	177	
Gray clay stone w/ brown seams	177	186	

Date started 2-1-11 Completed 3-18-11

(unbonded) Water Well Constructor Certification: continued on page #

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

WWC Number 1917
Signed ____ Date 3-31-11

(bonded) Water Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 1445
Signed ____ Date 3-31-11

ORIGINAL – WATER RESOURCES DEPARTMENT FIRST COPY – CONSTRUCTOR SECOND COPY – CUSTOMER

OWRD

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765)

MULT 105451

WELL I.D. # L 103055 117845
START CARD # 1012280

Instructions for completing this report are on the last page of this form.

(1) OWNER: Well Number EW-1
Name Multnomah County C/O Howard S. Wright
Address P.O. Box 5511
City Portland State OR Zip 97228

(2) TYPE OF WORK
☒ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) DRILL METHOD:
☐ Rotary Air ☒ Rotary Mud ☐ Cable ☐ Auger
☐ Other

(4) PROPOSED USE:
☐ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☒ Other Extraction Heat Pump Well

(5) BORE HOLE CONSTRUCTION:
Special Construction approval ☐ Yes ☐ No Depth of Completed Well ____ ft.
Explosives used ☐ Yes ☐ No Type ____ Amount ____

HOLE Diameter	From	To	SEAL Material	From	To	Sacks or pounds

How was seal placed: Method ☐A ☐B ☐C ☐D ☐E
☐ Other
Backfill placed from ____ ft. to ____ ft. Material ____
Gravel placed from ____ ft. to ____ ft. Size of gravel ____

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s)

(7) PERFORATIONS/SCREENS:
☐ Perforations Method
☐ Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
						☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
			1 hr.

Temperature of water ____ Depth Artesian Flow Found ____
Was a water analysis done? ☐ Yes By whom ____
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other ____
Depth of strata: ____

(9) LOCATION OF WELL by legal description:
County MULT Latitude ____ Longitude ____
Township 1 S N or (S) Range 3 (E) (E) or W. WM.
Section 5 NW 1/4 NW 1/4
Tax Lot 2100 Lot ____ Block ____ Subdivision ____
Street Address of Well (or nearest address) 18480 SE. Stark St.
Portland, OR East County Courts Project

(10) STATIC WATER LEVEL:
____ ft. below land surface. Date ____
Artesian pressure ____ lb. per square inch. Date ____

(11) WATER BEARING ZONES:
Depth at which water was first found ____

From	To	Estimated Flow Rate	SWL

(12) WELL LOG:
Ground Elevation ____
Continued from page # 1 of 2

Material	From	To	SWL
Coarse cemented sand w/ gravel	186	189	
Cemented gravel	189	206	
Loose pea gravel	206	212	
Lightly cemented gravel	212	223	
Cemented gravel	223	230	
Cemented gravel w/ loose layers	230	246	
Cemented gravel, hard	246	275	

Date started 2-1-11 Completed 3-18-11

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonme of this well is in compliance with Oregon water supply well construction standards Materials used and information reported above are true to the best of my knowledg and belief.
WWC Number 1917
Signed ____ Date 3-31-1

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.
WWC Number 1445
Signed ____ Date 3-31-1

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MAR 26 2018
OWRD

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HANSEDC947RJ

MULT 105451

Hansen Drilling Co., Inc.

(360) 694-6242

6711 N.E. 58th Avenue
Vancouver, WA 98661-1499

Name: East County Courts C/O Howard S Wright Constructors — Date: 2-22-11
Job Location: 185th & Stark — Phone: 503-220-0895
Unit Description: Extraction Well — Motor: Hp: 30 Ph: 3
Depth: 260' — Static Level: 70'10" — Well Size: 10"

Time	Water Condition	Pumping Level	Water Temp.	GPM	Pressure Gauge Reading	Totalizer Reading	
12:00		Start		100			
12:02	Cloudy	120'		100			
12:03	Cloudy	130'		100			
12:06	Clear	133'		100			
12:08	Clear	135'		100			
12:12	Clear	136'8"		100			
12:15	Clear	138'3"		100			
12:16	Clear	Pump Off					
12:25	Clear	Start		150			
12:35	Clear	163'2"		150			
12:40		166'		150			
12:41		185'		200			
12:43		190'		200			
12:44		Pump Off					
12:46		115' Recovery					
12:53		87'10"Recovery					
12:53		Pump On		200			
1:04		190'		200			
1:04		Pump Off					
1:14		87'10" Recovery					
1:14		Pump On		200			
1:25		190'					
1:25		Pump Off					
1:35		87'10" Recovery					
1:35		Pump On	Pumped	Down	To 190'	Slowed to 150'	
2:40		Leveled Out	At 184				

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WATER RESOURCES DEPT
SALEM, OREGON

MULT 105451

Preliminary Pumping Test Data
Step Testing - EW-1
East County Courts
Gresham, OR

Date/Time	Total ET (min)	Step 1 ET (min)	Step 2 ET (min)	Step 3 ET (min)	Recovery ET (min)	t/t'	Depth to Water ft	in	Ft.	Draw-Down (ft)	Recovery Distance (ft)	Flow Rate (gpm)	Remarks
3/18/11 9:51	0	0	--	--	--	--	68	7.0	68.58	--	--	70	Begin pumping, Step 1. Totalizer 1468700 gal
3/18/11 9:52	1	1	--	--	--	--	81	7.0	81.58	13.00	--	70	
3/18/11 9:53	2	2	--	--	--	--	85	4.5	85.38	16.79	--	70	
3/18/11 9:54	3	3	--	--	--	--	87	3.5	87.29	18.71	--	70	
3/18/11 9:55	4	4	--	--	--	--	88	7.0	88.58	20.00	--	70	
3/18/11 9:56	5	5	--	--	--	--	89	5.5	89.46	20.88	--	--	
3/18/11 9:57	6	6	--	--	--	--	89	10.0	89.83	21.25	--	70	
3/18/11 9:58	7	7	--	--	--	--	90	2.5	90.21	21.63	--	--	
3/18/11 9:59	8	8	--	--	--	--	90	7.0	90.58	22.00	--	70	
3/18/11 10:00	9	9	--	--	--	--	90	10.0	90.83	22.25	--	--	
3/18/11 10:01	10	10	--	--	--	--	91	2.0	91.17	22.58	--	70	
3/18/11 10:02	11	11	--	--	--	--	91	6.0	91.50	22.92	--	--	
3/18/11 10:03	12	12	--	--	--	--	91	9.5	91.79	23.21	--	--	
3/18/11 10:04	13	13	--	--	--	--	92	1.0	92.08	23.50	--	--	
3/18/11 10:05	14	14	--	--	--	--	92	3.0	92.25	23.67	--	--	
3/18/11 10:06	15	15	--	--	--	--	92	6.0	92.50	23.92	--	--	
3/18/11 10:07	16	16	--	--	--	--	92	6.5	92.54	23.96	--	65-70	
3/18/11 10:08	17	17	--	--	--	--	92	7.5	92.63	24.04	--	65	
3/18/11 10:09	18	18	--	--	--	--	92	7.5	92.63	24.04	--	65	
3/18/11 10:10	19	19	--	--	--	--	92	8.0	92.67	24.08	--	65	
3/18/11 10:11	20	20	--	--	--	--	92	9.5	92.79	24.21	--	--	
3/18/11 10:12	21	--	--	--	--	--	99	4.0	99.33	30.75	--	120	Begin Step 2
3/18/11 10:13	22	--	1	--	--	--	105	7.0	105.58	37.00	--	120	
3/18/11 10:15	24	--	3	--	--	--	107	4.0	107.33	38.75	--	--	
3/18/11 10:16	25	--	4	--	--	--	107	9.0	107.75	39.17	--	120	
3/18/11 10:17	26	--	5	--	--	--	108	3.5	108.29	39.71	--	120	
3/18/11 10:18	27	--	6	--	--	--	108	10.0	108.83	40.25	--	120	Totalizer 1471200 gal
3/18/11 10:19	28	--	7	--	--	--	109	6.0	109.50	40.92	--	120	
3/18/11 10:20	29	--	8	--	--	--	110	0.0	110.00	41.42	--	--	
3/18/11 10:21	30	--	9	--	--	--	110	7.0	110.58	42.00	--	115	
3/18/11 10:22	31	--	10	--	--	--	110	4.5	110.38	41.79	--	115	
3/18/11 10:23	32	--	11	--	--	--	110	5.0	110.42	41.83	--	110-115	
3/18/11 10:24	33	--	12	--	--	--	110	8.5	110.71	42.13	--	115	Totalizer 1471900 gal

MULT 105451

Preliminary Pumping Test Data
Step Testing - EW-1
East County Courts
Gresham, OR

	Total ET	Step 1 ET	Step 2 ET	Step 3 ET	Recovery ET		Depth to Water			Draw-Down	Recovery Distance	Flow Rate	
3/18/11 10:25	34	--	13	--	--	--	110	11.0	110.92	42.33	--	--	
3/18/11 10:26	35	--	14	--	--	--	111	2.0	111.17	42.58	--	115	
3/18/11 10:27	36	--	15	--	--	--	111	6.0	111.50	42.92	--	115	
3/18/11 10:28	37	--	16	--	--	--	111	8.5	111.71	43.13	--	--	
3/18/11 10:29	38	--	17	--	--	--	111	8.0	111.67	43.08	--	--	
3/18/11 10:30	39	--	18	--	--	--	111	5.5	111.46	42.88	--	110-115	
3/18/11 10:31	40	--	19	--	--	--	111	4.0	111.33	42.75	--	110	
3/18/11 10:32	41	--	20	--	--	--	111	1.0	111.08	42.50	--	100	
3/18/11 10:33	42	--	21	--	--	--	111	0.0	111.00	42.42	--	100	
3/18/11 10:34	43	--	22	--	--	--	111	0.0	111.00	42.42	--	100	
3/18/11 10:35	44	--	23	--	--	--	111	0.0	111.00	42.42	--	100	Totalizer 1473300 gal
3/18/11 10:36	45	--	24	--	--	--	111	5.5	111.46	42.88	--	105	
3/18/11 10:37	46	--	25	--	--	--	111	6.5	111.54	42.96	--	100	
3/18/11 10:38	47	--	26	--	--	--	111	8.0	111.67	43.08	--	100	
3/18/11 10:39	48	--	27	--	--	--	111	8.0	111.67	43.08	--	100	
3/18/11 10:40	49	--	28	--	--	--	111	9.0	111.75	43.17	--	--	
3/18/11 10:41	50	--	29	--	--	--	111	11.5	111.96	43.38	--	100	
3/18/11 10:42	51	--	30	--	--	--	112	1.5	112.13	43.54	--	100	
3/18/11 10:44	53	--	32	--	--	--	112	9.0	112.75	44.17	--	100	
3/18/11 10:45	54	--	33	--	--	--	112	10.5	112.88	44.29	--	100	
3/18/11 10:46	55	--	34	--	--	--	112	11.0	112.92	44.33	--	--	
3/18/11 10:47	56	--	35	--	--	--	112	11.5	112.96	44.38	--	100	
3/18/11 10:48	57	--	36	--	--	--	113	1.0	113.08	44.50	--	--	
3/18/11 10:49	58	--	37	--	--	--	113	2.5	113.21	44.63	--	100	
3/18/11 10:50	59	--	38	--	--	--	113	3.5	113.29	44.71	--	--	
3/18/11 10:51	60	--	39	--	--	--	113	5.0	113.42	44.83	--	--	Begin Step 3
3/18/11 10:52	61	--	--	1	--	--	118	1.5	118.13	49.54	--	140	
3/18/11 10:53	62	--	--	2	--	--	121	3.0	121.25	52.67	--	135-140	
3/18/11 10:54	63	--	--	3	--	--	123	6.0	123.50	54.92	--	--	
3/18/11 10:55	64	--	--	4	--	--	124	1.5	124.13	55.54	--	140	
3/18/11 10:56	65	--	--	5	--	--	124	8.5	124.71	56.13	--	140	
3/18/11 10:57	66	--	--	6	--	--	125	3.0	125.25	56.67	--	140	
3/18/11 10:58	67	--	--	7	--	--	125	9.0	125.75	57.17	--	140	Totalizer 1476100 gal
3/18/11 10:59	68	--	--	8	--	--	126	1.0	126.08	57.50	--	140-145	

MULT 105451

Preliminary Pumping Test Data
Step Testing - EW-1
East County Courts
Gresham, OR

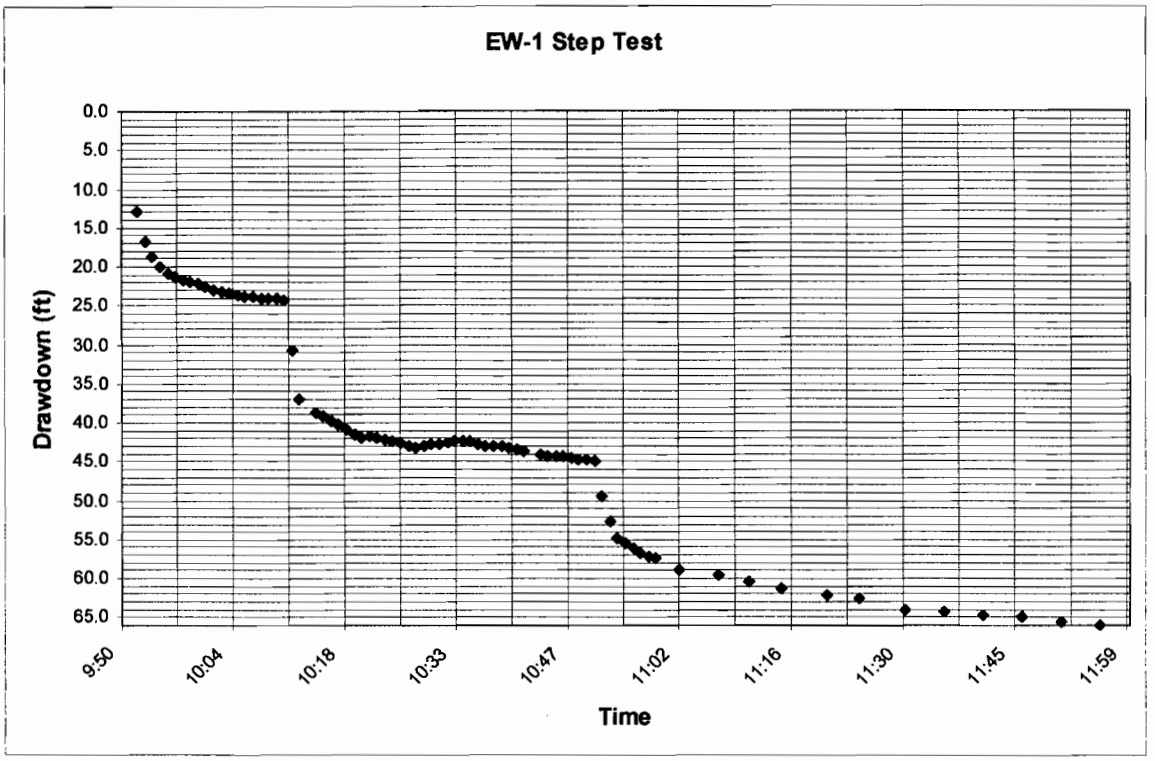
	Total ET	Step 1 ET	Step 2 ET	Step 3 ET	Recovery ET		Depth to Water			Draw-Down	Recovery Distance	Flow Rate	
3/18/11 11:02	71	--	--	11	--	--	127	6.0	127.50	58.92	--	140-145	
3/18/11 11:07	76	--	--	16	--	--	128	2.5	128.21	59.63	--	140	
3/18/11 11:11	80	--	--	20	--	--	128	11.5	128.96	60.38	--	140	
3/18/11 11:15	84	--	--	24	--	--	129	10.5	129.88	61.29	--	140	Totalizer 1478900 gal
3/18/11 11:21	90	--	--	30	--	--	130	8.0	130.67	62.08	--	140	
3/18/11 11:25	94	--	--	34	--	--	131	3.0	131.25	62.67	--	140	Water Temp = 51 F
3/18/11 11:31	100	--	--	40	--	--	132	6.5	132.54	63.96	--	140	
3/18/11 11:36	105	--	--	45	--	--	132	10.0	132.83	64.25	--	140	
3/18/11 11:41	110	--	--	50	--	--	133	3.0	133.25	64.67	--	140	
3/18/11 11:46	115	--	--	55	--	--	133	7.0	133.58	65.00	--	140	
3/18/11 11:51	120	--	--	60	--	--	134	1.0	134.08	65.50	--	140	
3/18/11 11:56	125	--	--	65	--	--	134	8.0	134.67	66.08	--	140	Totalizer 1485300 gal
3/18/11 12:01	130	--	--	70	--	--	135	1.0	135.08	66.50	--	140	
3/18/11 12:06	135	--	--	75	--	--	135	6.5	135.54	66.96	--	140	
3/18/11 12:10	139	--	--	79	--	--	135	10.0	135.83	67.25	--	140	Totalizer 1487700 gal
3/18/11 12:16	145	--	--	85	--	--	136	4.0	136.33	67.75	--	140	Switch e-tapes, battery dead
3/18/11 12:25	154	--	--	94	--	--	137	2.0	137.17	68.58	--	--	Turn off pump, begin recovery
3/18/11 12:26	155	--	--	--	1	155	113	3.5	113.29	44.71	23.88	--	
3/18/11 12:27	156	--	--	--	2	78	103	9.0	103.75	35.17	33.42	--	
3/18/11 12:28	157	--	--	--	3	52	100	11.5	100.96	32.38	36.21	--	
3/18/11 12:29	158	--	--	--	4	39	99	1.5	99.13	30.54	38.04	--	
3/18/11 12:30	159	--	--	--	5	32	97	11.0	97.92	29.33	39.25	--	
3/18/11 12:31	160	--	--	--	6	27	96	8.0	96.67	28.08	40.50	--	
3/18/11 12:32	161	--	--	--	7	23	95	7.0	95.58	27.00	41.58	--	
3/18/11 12:33	162	--	--	--	8	20	94	10.0	94.83	26.25	42.33	--	
3/18/11 12:34	163	--	--	--	9	18	94	2.0	94.17	25.58	43.00	--	
3/18/11 12:35	164	--	--	--	10	16	93	6.0	93.50	24.92	43.67	--	
3/18/11 12:36	165	--	--	--	11	15	92	11.0	92.92	24.33	44.25	--	
3/18/11 12:37	166	--	--	--	12	14	90	11.0	90.92	22.33	46.25	--	
3/18/11 12:38	167	--	--	--	13	13	91	11.0	91.92	23.33	45.25	--	
3/18/11 12:39	168	--	--	--	14	12	91	1.0	91.08	22.50	46.08	--	
3/18/11 12:40	169	--	--	--	15	11	90	11.0	90.92	22.33	46.25	--	
3/18/11 12:41	170	--	--	--	16	11	90	5.0	90.42	21.83	46.75	--	
3/18/11 12:42	171	--	--	--	17	10	90	0.0	90.00	21.42	47.17	--	

MULT 105451

Preliminary Pumping Test Data
Step Testing - EW-1
East County Courts
Gresham, OR

	Total ET	Step 1 ET	Step 2 ET	Step 3 ET	Recovery ET		Depth to Water			Draw-Down	Recovery Distance	Flow Rate	
3/18/11 12:43	172	--	--	--	18	10	89	9.0	89.75	21.17	47.42	--	
3/18/11 12:44	173	--	--	--	19	9	89	4.5	89.38	20.79	47.79	--	
3/18/11 12:45	174	--	--	--	20	9	89	0.0	89.00	20.42	48.17	--	
3/18/11 12:46	175	--	--	--	21	8	88	8.5	88.71	20.13	48.46	--	
3/18/11 12:47	176	--	--	--	22	8	88	5.0	88.42	19.83	48.75	--	
3/18/11 12:48	177	--	--	--	23	8	88	2.0	88.17	19.58	49.00	--	
3/18/11 12:49	178	--	--	--	24	7	87	10.0	87.83	19.25	49.33	--	
3/18/11 12:51	180	--	--	--	26	7	87	5.5	87.46	18.88	49.71	--	
3/18/11 12:57	186	--	--	--	32	6	86	3.0	86.25	17.67	50.92	--	
3/18/11 13:01	190	--	--	--	36	5	85	3.5	85.29	16.71	51.88	--	
3/18/11 13:06	195	--	--	--	41	5	84	4.5	84.38	15.79	52.79	--	
3/18/11 13:11	200	--	--	--	46	4	83	7.5	83.63	15.04	53.54	--	
3/18/11 13:16	205	--	--	--	51	4	82	11.0	82.92	14.33	54.25	--	
3/18/11 13:21	210	--	--	--	56	4	82	4.0	82.33	13.75	54.83	--	
3/18/11 13:27	216	--	--	--	62	3	81	8.5	81.71	13.13	55.46	--	End Test

MULT 105451



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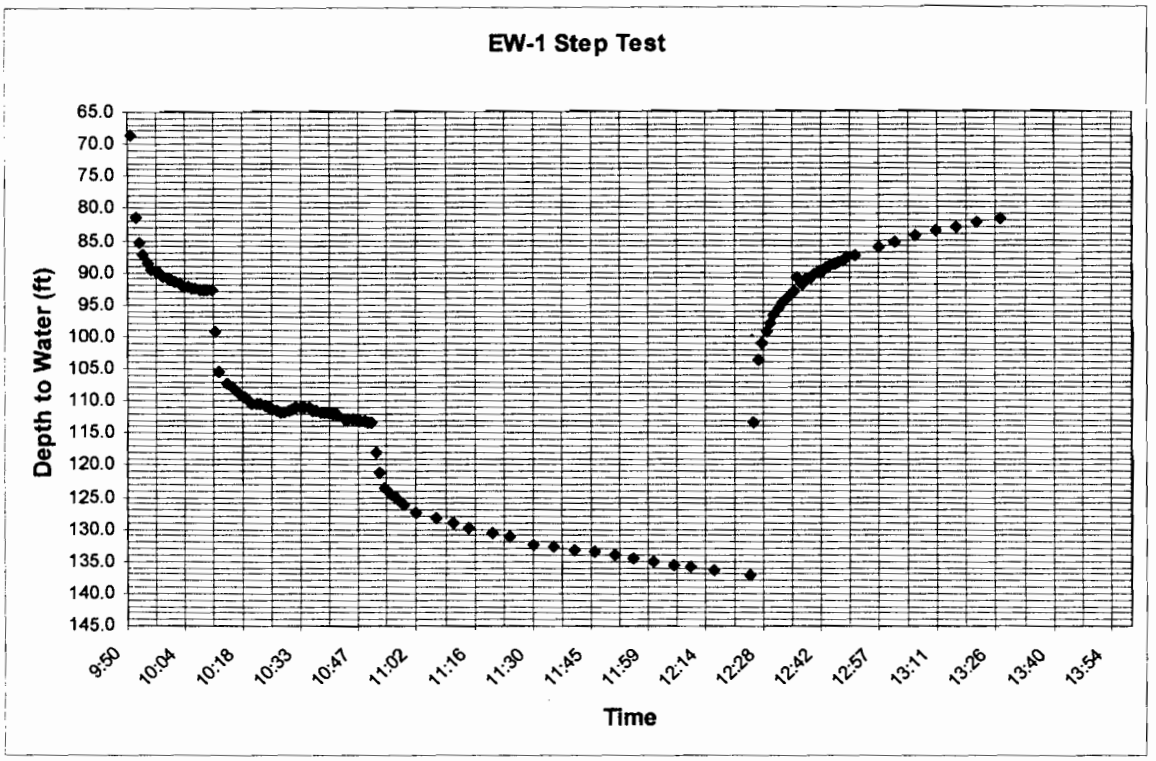

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