

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the

RECEIVED
1800
1973
STATE OF OREGON
STATE ENGINEER
SALEM, OREGON

ad
14519E-16
State Well No. 14519E-16
Permit No. G-8501

STATE ENGINEER, SALEM, OREGON
within 30 days from the date of well completion.

STATE ENGINEER (use type or print)
SALEM, OREGON

STATE ENGINEER (use type or print)
SALEM, OREGON

(1) OWNER:

Name EPHRAIM RESOURCE
Address 447 E GREENWOOD RENO, ORE.
97710

(2) TYPE OF WORK (check):

New Well Deepening Reconditioning Abandon
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:

Rotary Driven
Cable Jetted
 Bored

(4) PROPOSED USE (check):

Domestic Industrial Municipal
Irrigation Test Well Other

(5) CASING INSTALLED:

Threaded Welded
1/2" Diam. from 12 ft. to 287 ft. Gage 1312
" Diam. from ft. to ft. Gage
" Diam. from ft. to ft. Gage

(6) PERFORATIONS:

Perforated? Yes No.
Type of perforator used TORCH
Size of perforations 3/16 in. by 6 in.
540 perforations from 245 ft. to 286 ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS:

Well screen installed? Yes No
Manufacturer's Name
Type Model No.
Diam. Slot size Set from ft. to ft.
Diam. Slot size Set from ft. to ft.

(8) WELL TESTS:

Drawdown is amount water level is lowered below static level
Was a pump test made? Yes No If yes, by whom? CORNELL
4: 620 gal./min. with 15 ft. drawdown after 1 hrs.
" 620 " " 15 " " 4 "
" 805 " " 12 " " 48 "
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m.
Temperature of water 42° Depth artesian flow encountered ft.

(9) CONSTRUCTION:

Well seal—Material used CEMENT GROUT
Well sealed from land surface to 150 ft.
Diameter of well bore to bottom of seal 24 in.
Diameter of well bore below seal 18 in.
Number of sacks of cement used in well seal 530 sacks
Number of sacks of bentonite used in well seal _____ sacks
Name of bentonite _____
Number of pounds of bentonite per 100 gallons _____ lbs./100 gals.
Was a drive shoe used? Yes No Plugs _____ Size: location _____ ft.
Did any strata contain unusable water? Yes No
Type of water? _____ depth of strata _____
Method of sealing strata off _____
Was well gravel packed? Yes No Size of gravel: _____
Gravel placed from _____ ft. to _____ ft.

(10) LOCATION OF WELL:

County Washington Driller's well number
SE 1/4 NE 1/4 Section 16 T. 145 R. 9 E W.M.
Bearing and distance from section or subdivision corner

(11) WATER LEVEL: Completed well.

Depth at which water was first found 260 ft.
Static level 245 ft. below land surface. Date 2/28/73
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:

Diameter of well below casing _____
Depth drilled 287 ft. Depth of completed well 287 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	BWL
TOP SOIL BLACK	0	2	
CLAY & GRAVEL BROWN	2	12	
LAVA GREY HARD	12	22	
CLAY BROWN & LAVA BROKEN	22	99	
BASALT GREY (HARD)	99	112	
CLAY & BASALT BROWN BROKEN	112	138	
BASALT GREY HARD	138	159	
CINDERS RED BASALT BROKEN	159	178	
BASALT GREY HARD	178	219	
CLAY BROWN BASALT BROKEN	219	249	
BASALT GREY HARD	249	260	
CINDERSTONE RED & MULTI-			
COLORADO GRAVEL	260	282	
BASALT BLACK HARD	282	287	

Work started 11/25 1972 Completed 2/22 1973
Date well drilling machine moved off of well 2/23 1973

Drilling Machine Operator's Certification:

This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] _____ Date 2/28, 1973
(Drilling Machine Operator)
Drilling Machine Operator's License No. 348

Water Well Contractor's Certification:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name C.P.R. DRILLING CO
(Person, firm or corporation) (Type or print)
Address 1225 Madison Hwy PRINEVILLE
97759
[Signed] _____
(Water Well Contractor)
Contractor's License No. 540 Date 2/28, 1973

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WATER RESOURCES DEPT
SALEM, OREGON

11381

#11

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

DESC
914

JUN 17 1991
WATER RESOURCES DEPT.
SALEM, OREGON (START CARD) # 23611

145/9E/16-AD

(1) OWNER: Well Number: _____
Name Black Butte Ranch Association
Address P.O. Box 8000
City Black Butte Ranch State Or. Zip 97759

(2) TYPE OF WORK:
 New Well Deepen Recondition Abandon

(3) DRILL METHOD
 Rotary Air Rotary Mud Cable
 Other _____

(4) PROPOSED USE:
 Domestic Community Industrial Irrigation
 Thermal Injection Other _____

(5) BORE HOLE CONSTRUCTION:
Special Construction approval Yes No Depth of Completed Well 370 ft.
Explosives used Yes No Type _____ Amount _____

HOLE Diameter	From	To	SEAL		Amount
			Material	From To	
16"	0	+287	Undisturbed		
15"	232	353			
12"	353	370			

How was seal placed: Method A B C D E
 Other _____

Backfill placed from _____ ft. to _____ ft. Material _____
Gravel placed from -50 ft. to 353 ft. Size of gravel 1/2 x 3/8

(6) CASING/LINER:

Diameter	From	To	Gauge	Material			
				Steel	Plastic	Welded	Threaded
Casing:				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Liner:	12"	+1 1/2	-354	.25	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Final location of sheets: +354

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

From	To	Slot size	Number	Diameter	Telo/pipe size	Casing	Liner
324	354	1/8	1392			<input checked="" type="checkbox"/>	<input type="checkbox"/>
		* 3				<input type="checkbox"/>	<input type="checkbox"/>

(8) WELL TESTS: Minimum testing time is 1 hour
 Pump Bailor Air Flowing Artesian
Yield gal/min 25 Drawdown 0 Drill stem at 370 Time 16 hr.

Temperature of water 49° 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 Deschutes Latitude _____ Longitude _____
Township 14 N. Range 9 E. W.M. _____
Section 16 SE 1/4 NE 1/4
Tax Lot 4800 Lot _____ Block _____ Subdivision _____
Street Address of Well (or nearest address) Hawksbeard Rd.
Black Butte Ranch

(10) STATIC WATER LEVEL:
265 ft. below land surface. Date 4-26-91
Artesian pressure _____ lb. per square inch. Date _____

(11) WATER BEARING ZONES:
Depth at which water was first found 315

From	To	Estimated Flow Rate	SWL
315	327	300 GPM	265
327	353	500 GPM	265

(12) WELL LOG: Ground elevation _____

Material	From	To	SWL
28 1/2 yds 22 sk cement slurry pumped	287	232	
Hard Black Basalt	287	315	
Red Cinder Conglomerate	315	327	265
Black Sand/Gravel/Boulder	327	353	
Fractured Gray Lava	353	370	
9.1 yds gravel used			

Well drilled by C&R Drilling Co.
540 2-28-73

Date started 4-18-91 Completed 6-7-91

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.
Signed _____ WWC Number _____
Date _____

(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 well construction standards. This report is true to the best of my knowledge and belief.
Signed [Signature] WWC Number 685
Date 6-14-91

T 11381

Desc
9719

145/9E/9bb

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

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

Page 2 of 2

(START CARD) #

(1) OWNER: Well Number 4

Name Black Butte Ranch
Address PO Box 8000
City Black Butte Ranch State OR Zip 97759

(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

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

HOLE		SEAL	
Diameter	From To	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:				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Liner:				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Final location of shoe(s)

(7) PERFORATIONS/SCREENS:

Perforations Method
 Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>

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

Pump Bailor 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 No 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 Latitude Longitude
Township N or S Range E or W. WM.
Section 1/4 1/4
Tax Lot Lot Block Subdivision
Street Address of Well (or nearest address)

(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

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SALEM, OREGON

(12) WELL LOG:
Ground Elevation

Material	From	To	SWL
andosite basalt grey with some red hard	285	290	
andosite basalt gray with more red hard	290	302	
lava red vasicular with some cinders fractured	302	322	
andosite basalt gray with trace of red hard	322	359	
lava red cinders loose	359	380	
basalt gray med	380	396	
lava gravel red vasicular	396	420	

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WATER RESOURCES DEPT
SALEM, OREGON

Date started 10-22-94 Completed 1-16-95

(unbonded) Water Well Constructor Certification:
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 1523
Signed Date 1/23/95

(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 1358
Signed Date 1/23/95

T 11801

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

Desc
9217

14S/9E/966
165263

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

Page 1 of 2

(START CARD) #

(1) OWNER: Well Number 4
 Name Black Butte Ranch
 Address PO Box 8000
 City Black Butte Ranch State OR Zip 97759

(2) TYPE OF WORK
 New Well Deepening Alteration (repairs/recondition) Abandonment

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

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

(5) BORE HOLE CONSTRUCTION:
 Special Construction approval Yes No Depth of Completed Well 420 ft.
 Explosives used Yes No Type _____ Amount _____

HOLE			SEAL			Sacks or pounds
Diameter	From	To	Material	From	To	
20	0	420	cement	0	100	45 bags
			pea gravel	100	304	7 yards
			cement	304	345	35
	345	350	Bentonite			

How was seal placed: Method A B C D E
 Other

Backfill placed from 100 ft. to 350 ft. Material cement/pea gravel
 Gravel placed from 420 ft. to 350 ft. Size of gravel 8-12

(6) CASING/LINER:

Diameter	From	To	Gauge	Method			
				Steel	Plastic	Welded	Threaded
Casing: 16	+1	367	365	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
				<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Liner: 12"	363	367	250	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	417	420	250	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Final location of shoe(s) _____

(7) PERFORATIONS/SCREENS:

From	To	Slot size	Method		Material	Casing	Liner
			Type	Houston			
367	417	60			SS/304	<input type="checkbox"/>	<input checked="" type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>

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

Yield gal/min	Drawdown	Drill stem at	Time
50	0		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: _____

(9) LOCATION OF WELL by legal description:
 County Deschutes Latitude _____ Longitude _____
 Township 14S N or S Range 9E E or W. WM. _____
 Section 9 NW 1/4 NW 1/4 _____
 Tax Lot _____ Lot _____ Block _____ Subdivision _____
 Street Address of Well (or nearest address) Hawks Beard

(10) STATIC WATER LEVEL:
304 ft. below land surface. Date 1-16-95
 Artesian pressure _____ lb. per square inch. Date _____

(11) WATER BEARING ZONES:
 Depth at which water was first found 359

From	To	Estimated Flow Rate	SWL
359	420	1,000 GPM	304

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 SALEM, OREGON

(12) WELL LOG:
 Ground Elevation _____

Material	From	To	SWL
pumice sand & broken rock	0	8	
broken lava	8	9	
pumice sand & broken rock	9	13	
lava grey hard with broken seams	13	35	
lava gray & red with broken seams	35	46	
lava gravel medium well rounded	46	82	
lava gray hard	82	105	
andosite gray very hard	105	136	
lava reddish gray weathered slightly vascular med. hard with broken seams	136	178	
lava reddish gray w/ andosite	178	188	
lava reddish gray weathered	188	200	
lava red broken with cinders loose	200	238	
andosite basalt gray hard	238	285	

Date started 10-22-94 Completed 1-16-95
 (unbonded) Water Well Constructor Certification:

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.

Signed [Signature] WWC Number 1523
 Date 1/23/95

(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.

Signed [Signature] WWC Number 1358
 Date 1/23/95