WATER RESOURCES DEPARTMENT MEMO June 9, 2015

TO: **Application G-** 17872

FROM: Phil Marcy **- Groundwater Section**

SUBJECT: **Scenic Waterway Interference Evaluation**

_____YES
X NO — The source of appropriation is within or above a Scenic Waterway

_____YES
X NO — Use the Scenic Waterway condition (condition 7J)

_____Per ORS 390.835, the Groundwater Section is able to calculate groundwater interference with surface water that contributes to a Scenic Waterway. The calculated interference distribution is provided below.

_____Per ORS 390.835, the Groundwater Section is unable to calculate groundwater interference with surface water that contributes to a scenic waterway; therefore, the Department is unable to find that there is a preponderance of evidence that the proposed use will measurably reduce the surface flows necessary to maintain the free-flowing character of a scenic waterway.

DISTRIBUTION OF INTERFERENCE

Calculate interference as the monthly fraction of the annual consumptive use and fill in the table below. If interference cannot be calculated, per criteria in 390.839, do not fill in the table but check the "unable" option above, thus informing the Water Rights Section that the Department is unable to make a Preponderance of Evidence finding.

Exercise of this permit is calculated to reduce monthly flows in the _____ Scenic Waterway by the following amounts, expressed as a proportion of the annual consumptive use pumped from the well.

Monthly Fraction of Annual Consumptive Use

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date **June 9, 2015**

FROM: Groundwater Section **Phillip I. Marcy**
Reviewer's Name

SUBJECT: Application G- **17872** Supersedes review of **August 22, 2014**
Date of Review(s)

PUBLIC INTEREST PRESUMPTION; GROUNDWATER

OAR 690-310-130 (1) *The Department shall presume that a proposed groundwater use will ensure the preservation of the public welfare, safety and health as described in ORS 537.525.* Department staff review ground water applications under OAR 690-310-140 to determine whether the presumption is established. OAR 690-310-140 allows the proposed use be modified or conditioned to meet the presumption criteria. **This review is based upon available information and agency policies in place at the time of evaluation.**

A. GENERAL INFORMATION: Applicant's Name: **Brad E. and June C. Allen** County: **Baker**

A1. Applicant(s) seek(s) **3.0*** cfs from **four** well(s) in the **Powder** Basin,

_____ subbasin Quad Map: **Haines**

A2. Proposed use **Supplemental Irrigation, 239.9 acres** Seasonality: **March 1 to October 31**

A3. Well and aquifer data **(attach and number logs for existing wells; mark proposed wells as such under logid)**:

Well	Logid	Applicant's Well #	Proposed Aquifer*	Proposed Rate(cfs)	Location (T/R-S QQ-Q)	Location, metes and bounds, e.g. 2250' N, 1200' E fr NW cor S 36
1	**BAKE 52275**	**B**	**Bedrock**	**2.23**	**7S/39E-14 NW-SW**	**2700' S, 100' E fr NW cor S 14**
2	**BAKE 51323**	**E**	**Bedrock**	**4.46**	**7S/39E-14 SW-NE**	**1450' S, 1820' W fr NE cor S 14**
3	**Proposed**	**B-1**	**Bedrock**	**5.0**	**7S/39E-15 NE-NE**	**1206' S, 520' W fr NE cor S 15**
4	**Proposed**	**B-2**	**Bedrock**	**5.0**	**7S/39E-11 NE-SW**	**1922' N, 1481' E fr SW cor S 11**
5						

* Alluvium, CRB, Bedrock

Well	Well Elev ft msl	First Water ft bls	SWL ft bls	SWL Date	Well Depth (ft)	Seal Interval (ft)	Casing Intervals (ft)	Liner Intervals (ft)	Perforations Or Screens (ft)	Well Yield (gpm)	Draw Down (ft)	Test Type
1	**3272**	**145**	**83**	**06/12/2013**	**385**	**0-85**	**0-155**	**None**	**None**	**1000**		**Air**
2	**3312**	**160**	**11**	**02/25/2005**	**525**	**0-106**	**0-106**	**None**	**None**	**2000**		**Air**
3	**3358**				**400+**	**						
4	**3300**				**500+**	**						

Use data from application for proposed wells.

A4. **Comments: *Rate has been adjusted to 1/80 of the maximum duty (719.7 AF) to account for the applicant's withdrawal of primary irrigation acreage from the permit application.**

****Wells are proposed to be sealed six feet into basalt.**

A5. ☒ **Provisions of the Powder** Basin rules relative to the development, classification and/or management of ground water hydraulically connected to surface water ☐ **are**, *or* ☒ **are not**, activated by this application. (Not all basin rules contain such provisions.)
Comments: _____

A6. ☐ **Well(s) #** _____, _____, _____, _____, _____, tap(s) an aquifer limited by an administrative restriction.
Name of administrative area: _____
Comments: _____

B. GROUND WATER AVAILABILITY CONSIDERATIONS, OAR 690-310-130, 400-010, 410-0070

B1. **Based upon available data**, I have determined that ground water* for the proposed use:

a. ☐ **is** over appropriated, ☐ **is not** over appropriated, *or* ☒ **cannot be determined to be** over appropriated during any period of the proposed use. * This finding is limited to the ground water portion of the over-appropriation determination as prescribed in OAR 690-310-130;

b. ☐ **will not** *or* ☐ **will** likely be available in the amounts requested without injury to prior water rights. * This finding is limited to the ground water portion of the injury determination as prescribed in OAR 690-310-130;

c. ☐ **will not** *or* ☐ **will** likely to be available within the capacity of the ground water resource; or

d. ☒ **will, if properly conditioned**, avoid injury to existing ground water rights or to the ground water resource:
   i. ☒ The permit should contain condition #(s) **7N**;
   ii. ☐ The permit should be conditioned as indicated in item 2 below.
   iii. ☒ The permit should contain special condition(s) as indicated in item 3 below;

B2. a. ☐ **Condition** to allow ground water production from no deeper than _____ ft. below land surface;

b. ☐ **Condition** to allow ground water production from no shallower than _____ ft. below land surface;

c. ☐ **Condition** to allow ground water production only from the _____ ground water reservoir between approximately_____ ft. and_____ ft. below land surface;

d. ☐ **Well reconstruction** is necessary to accomplish one or more of the above conditions. The problems that are likely to occur with this use and without reconstructing are cited below. Without reconstruction, I recommend withholding issuance of the permit until evidence of well reconstruction is filed with the Department and approved by the Ground Water Section.

Describe injury –as related to water availability– that is likely to occur without well reconstruction (interference w/ senior water rights, not within the capacity of the resource, etc): _____

B3. **Ground water availability remarks:** _____

C. GROUND WATER/SURFACE WATER CONSIDERATIONS, OAR 690-09-040

C1. **690-09-040 (1):** Evaluation of aquifer confinement:

Well	Aquifer or Proposed Aquifer	Confined	Unconfined
1	**Basalt or Andesite (Tba)**	☒	☐
2	**Basalt or Andesite (Tba)**	☐	☐
3	**Basalt or Andesite (Tba)**	☐	☐
4	**Basalt or Andesite (Tba)**	☐	☐
		☐	☐

Basis for aquifer confinement evaluation: **The water-bearing zones in local bedrock wells are typically below the static water levels. The presence of unfractured basalt above the water-bearing zone is likely responsible for any confinement, therefore the proposed wells should be constructed in a manner similar to the applicant's existing wells.**

C2. **690-09-040 (2) (3):** Evaluation of distance to, and hydraulic connection with, surface water sources. All wells located a horizontal distance less than ¼ mile from a surface water source that produce water from an unconfined aquifer shall be assumed to be hydraulically connected to the surface water source. Include in this table any streams located beyond one mile that are evaluated for PSI.

Well	SW #	Surface Water Name	GW Elev ft msl	SW Elev ft msl	Distance (ft)	Hydraulically Connected? YES	NO	ASSUMED	Potential for Subst. Interfer. Assumed? YES	NO
1	1	**Powder River**	3189	3275	2400	☐	☒	☐	☐	☒
2	1	**Powder River**	3301	3268	1400	☐	☒	☐	☐	☒
3	1	**Powder River**	3200±	3275	850	☐	☒	☐	☐	☒
4	1	**Powder River**	3200±	3270	300	☐	☒	☐	☐	☒
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐

Basis for aquifer hydraulic connection evaluation: **The local bedrock aquifers are in indirect hydraulic connection, at best, with alluvial deposits, which may overlie and are adjacent to these rocks. The alluvial deposits are in good hydraulic connection with the river. The shallowest water-bearing zones reported at the existing wells are below the elevation of the nearby reaches of the river. Most water levels at local bedrock wells are also below the river.**

Water Availability Basin the well(s) are located within: **POWDER R > SNAKE R - AB UNN STR (72191).**

C3a. **690-09-040 (4):** Evaluation of stream impacts for each well that has been determined or assumed to be **hydraulically connected and less than 1 mile** from a surface water source. Limit evaluation to instream rights and minimum stream flows that are pertinent to that surface water source, and not lower SW sources to which the stream under evaluation is tributary. Compare the requested rate against the 1% of 80% *natural* flow for the pertinent Water Availability Basin (WAB). If Q is not distributed by well, use full rate for each well. Any checked ☒ box indicates the well is assumed to have the potential to cause PSI.

Well	SW #	Well < ¼ mile?	Qw > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Qw > 1% ISWR?	80% Natural Flow (cfs)	Qw > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐

C3b. **690-09-040 (4):** Evaluation of stream impacts by total appropriation for all wells determined or assumed to be **hydraulically connected and less than 1 mile** from a surface water source. **Complete only if Q is distributed among wells**. Otherwise same evaluation and limitations apply as in C3a above.

	SW #		Qw > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Qw > 1% ISWR?	80% Natural Flow (cfs)	Qw > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
			☐			☐		☐		☐
			☐			☐		☐		☐
			☐			☐		☐		☐
			☐			☐		☐		☐

Comments: **This section does not apply.**

C4a. **690-09-040 (5):** Estimated impacts on **hydraulically connected surface water sources greater than one mile** as a percentage of the proposed pumping rate. Limit evaluation to the effects that will occur up to one year after pumping begins. This table encompasses the considerations required by 09-040 (5)(a), (b), (c) and (d), which are not included on this form. Use additional sheets if calculated flows from more than one WAB are required.

Non-Distributed Wells

Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													

Distributed Wells

Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
(A) = Total Interf.													
(B) = 80 % Nat. Q													
(C) = 1 % Nat. Q													
(D) = (A) > (C)													
(E) = (A / B) x 100		%	%	%	%	%	%	%	%	%	%	%	%

(A) = total interference as CFS; (B) = WAB calculated natural flow at 80% exceed. as CFS; (C) = 1% of calculated natural flow at 80% exceed. as CFS; (D) = highlight the checkmark for each month where (A) is greater than (C); (E) = total interference divided by 80% flow as percentage.

Basis for impact evaluation:

C4b. **690-09-040 (5) (b) The potential to impair or detrimentally affect the public interest is to be determined by the Water Rights Section.**

C5. ☒ **If properly conditioned**, the surface water source(s) can be adequately protected from interference, and/or ground water use under this permit can be regulated if it is found to substantially interfere with surface water:

i. ☐ The permit should contain condition #(s)_____;

ii. ☒ The permit should contain special condition(s) as indicated in "Remarks" below;

C6. **SW / GW Remarks and Conditions** **The evaluation of Potential for Substantial Interference (PSI) to surface waters due to pumping at the proposed POA locations is largely based on the construction of the two proposed wells. Therefore, it is critical that the new wells produce water from the same confined system as the two existing wells. See special conditions below.**

Special Condition (modified 7K): The wells shall be constructed in such a manner that only allows for development of groundwater from the confined basalt aquifer as in the applicant's two existing wells (BAKE 51323 and BAKE 52275). The wells shall be continuously cased and continuously sealed to a depth at least five feet into unfractured basalt overlying the aquifer developed by the existing wells. The wells may not be completed in such a manner that it allows groundwater to be developed from the shallow alluvium.

Special Condition: Cuttings shall be collected during the drilling of the proposed wells, at intervals no greater than ten feet, in addition to intervals where a change in lithology occurs.

References Used: Geology of the Oregon Part of the Baker 1° by 2° Quad, Brooks, 1976; OWRD Ground Water Report #6; Ground Water Resources of Baker Valley, Baker County, Oregon, by Frederick D. Trauger; Ground Water of Baker Valley, Baker County, Oregon, by Lystrom, Nees and Hampton, 1967; past personal communications with DOGAMI Regional Geologist Mark Ferns and other OWRD staff; nearby reviews.

D. WELL CONSTRUCTION, OAR 690-200

D1. **Well #:** _____ **Logid:** _____

D2. **THE WELL does not appear to meet current well construction standards based upon:**

a. ☐ review of the well log;
b. ☐ field inspection by _____;
c. ☐ report of CWRE _____;
d. ☐ other: (specify) _____

D3. **THE WELL construction deficiency or other comment is described as follows:** _____

D4. ☐ **Route to the Well Construction and Compliance Section for a review of existing well construction.**

Water Availability Tables

DETAILED REPORT ON THE WATER AVAILABILITY CALCULATION

POWDER R > SNAKE R - AB UNN STR

Watershed ID #: 72191 Basin: POWDER Exceedance Level: 80
Time: 1:46 PM Date: 06/09/2015

Month	Natural Stream Flow	Consumptive Use and Storage	Expected Stream Flow	Reserved Stream Flow	Instream Requirements	Net Water Available
	Monthly values are in cfs. Storage is the annual amount at 50% exceedance in ac-ft.					
JAN	65.90	89.00	-23.10	0.00	25.00	-48.10
FEB	103.00	108.00	-5.34	21.30	30.00	-56.60
MAR	203.00	193.00	10.10	62.40	40.00	-92.30
APR	456.00	352.00	104.00	259.00	40.00	-196.00
MAY	714.00	844.00	-130.00	153.00	40.00	-323.00
JUN	593.00	995.00	-402.00	0.00	40.00	-442.00
JUL	204.00	530.00	-326.00	0.00	25.00	-351.00
AUG	107.00	313.00	-206.00	0.00	25.00	-231.00
SEP	72.70	240.00	-167.00	0.00	25.00	-192.00
OCT	70.30	90.20	-19.90	0.00	25.00	-44.90
NOV	75.10	71.30	3.82	0.00	25.00	-21.20
DEC	77.90	82.90	-5.00	0.00	25.00	-30.00
ANN	241,000	236,000	47,100	29,900	22,000	4,150

Well logs attached:

BAKE 52275 (POA 1 on application)
BAKE 51323 (POA 2 on application)

Figure 1: Location map of proposed POAs on application G 17872.

Page 1 of 1

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765 & OAR 690-205-0210)

BAKE 52275
7/10/2013

WELL I.D. LABEL # L 109112
START CARD # 208403
ORIGINAL LOG #

(1) LAND OWNER
Owner Well ID
First Name BRAD Last Name ALLEN
Company
Address 48748 MCCARTY BRIDGE RD
City NORTH POWDER State OR Zip 97867

(2) TYPE OF WORK
[X] New Well [ ] Deepening [ ] Conversion [ ] Alteration (complete 2a & 10) [ ] Abandonment (complete 5a)

(2a) PRE-ALTERATION
	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
Casing:									

	Material	From	To	Amt	sacks/lbs
Seal:					

(3) DRILL METHOD
[X] Rotary Air [ ] Rotary Mud [ ] Cable [ ] Auger [ ] Cable Mud
[ ] Reverse Rotary [ ] Other

(4) PROPOSED USE
[ ] Domestic [X] Irrigation [ ] Community
[ ] Industrial/ Commercial [ ] Livestock [ ] Dewatering
[ ] Thermal [ ] Injection [ ] Other

(5) BORE HOLE CONSTRUCTION
Special Standard [ ] (Attach copy)
Depth of Completed Well 385.00 ft.

BORE HOLE

Dia	From	To
14	0	85
12	85	155
10	155	385

SEAL

Material	From	To	Amt	sacks/lbs
Bentonite	0	6	3	S
Cement	6	85	44	S

How was seal placed: Method [ ] A [ ] B [X] C [ ] D [ ] E
[X] Other POURED BENTONITE
Backfill placed from ft. to ft. Material
Filter pack from ft. to ft. Material Size
Explosives used: [ ] Yes Type Amount

(5a) ABANDONMENT USING UNHYDRATED BENTONITE
Proposed Amount Actual Amount

(6) CASING/LINER

Casing	Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
●		10	X	3	155	.250	●		X	

Shoe [ ] Inside [X] Outside [ ] Other Location of shoe(s) 155
Temp casing [X] Yes Dia 14 From 0 To 18

(7) PERFORATIONS/SCREENS
Perforations Method
Screens Type Material

Perf/ Screen	Casing/ Liner	Screen Dia	From	To	Scrn/slot width	Slot length	# of slots	Tele/ pipe size

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

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)
1000		360	2

Temperature 54 °F Lab analysis [ ] Yes By
Water quality concerns? [ ] Yes (describe below) TDS amount

From	To	Description	Amount	Units

(9) LOCATION OF WELL (legal description)
County BAKER Twp 7.00 S N/S Range 39.00 E E/W WM
Sec 14 NW 1/4 of the SW 1/4 Tax Lot 2500
Tax Map Number Lot
Lat ° ' " or DMS or DD
Long ° ' " or DMS or DD
(●) Street address of well ( ) Nearest address
CONROE LANE HAINES OR

(10) STATIC WATER LEVEL

	Date	SWL(psi)	+	SWL(ft)
Existing Well / Pre-Alteration				
Completed Well	6/11/2013			83

Flowing Artesian? [ ] Dry Hole? [ ]

WATER BEARING ZONES Depth water was first found 145.00

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)
6/11/2013	145	385	1000			83

(11) WELL LOG
Ground Elevation

Material	From	To
Top soil	0	3
Brown clay & gravels	3	22
Brown clay	22	38
Grey clay	38	75
Black basalt	75	142
Fractured black basalt	142	385

Date Started 5/24/2013 Complete 6/11/2013

(unbonded) Water Well Constructor Certification
I certify that the work I performed on the construction, deepening, 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.
License Number Date
Signed

(bonded) Water Well Constructor Certification
I accept responsibility for the construction, deepening, 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.
License Number 1640 Date 7/10/2013
Signed JEFF STOFFEL (E-filed)
Contact Info (optional) Jeff Stoffel

ORIGINAL - WATER RESOURCES DEPARTMENT
THIS REPORT MUST BE SUBMITTED TO THE WATER RESOURCES DEPARTMENT WITHIN 30 DAYS OF COMPLETION OF WORK. Form Version:

RECEIVED BAKE 51323

MAR 0 3 2005

WATER RESOURCES DEPT
SALEM, OREGON

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

WELL I.D. # L 74727
START CARD # 170793

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

(1) LAND OWNER Well Number
Name Brad Allen
Address 44821 Pocahontas Rd
City Haines State Or Zip 97833

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

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

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

(5) BORE HOLE CONSTRUCTION Special Construction: ☐ Yes ☑ No
Depth of Completed Well 525 ft.
Explosives used ☐ Yes ☑ No Type Amount

BORE HOLE			SEAL			
Diameter	From	To	Material	From	To	Sacks or Pounds
16	0	106	Cement	10	106	40 sacks
10	106	525	Bentonite	0	10	8 sacks

How was seal placed: Method ☐ A ☐ B ☑ C ☐ D ☐ E
☐ Other Poured Bentonite
Backfill placed from ___ ft. to ___ ft. Material None
Gravel placed from ___ ft. to ___ ft. Size of gravel

(6) CASING/LINER

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing	12	+2	106	.375	☑	☐	☑	☐
Liner	None							

Drive Shoe used ☐ Inside ☐ Outside ☐ None
Final location of shoe(s) 106' 8" 12"

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

From	To	Slot Size	Number	Diameter	Tele/pipe size	Casing	Liner
		None					

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

Yield gal/min	Drawdown	Drill stem at	Time
2000		520	2 hr

Temperature of water 67° 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 (legal description)
County Baker
Tax Lot 2500 Lot
Township 7S N or S Range 39E E or W WM
Section 14 SW 1/4 NE 1/4
Lat ° ' " or (degrees or decimal)
Long ° ' " or (degrees or decimal)
Street Address of Well (or nearest address) Carlee Lane Haines Or

(10) STATIC WATER LEVEL
11 ft. below land surface. Date 2-25-05
ft. below land surface. Date
Artesian pressure lb. per square inch Date

(11) WATER BEARING ZONES
Depth at which water was first found 160

From	To	Estimated Flow Rate	SWL
160	525	2000	11

(12) WELL LOG Ground Elevation

Material	From	To	SWL
Top Soil	0	3	
Tan Clay	3	22	
Green Soft Clay	22	37	
Blue Soft Clay	37	65	
Tan sticky clay	65	95	
Black Basalt	95	160	
Fractured Black Basalt	160	480	
Brown Shale	480	525	11'

Date Started 2-12-05 Completed 2-25-05

(unbonded) Water Well Constructor Certification
I certify that the work I performed on the construction, deepening, 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 1737 Date 2-21-05
Signed [signature]

(bonded) Water Well Constructor Certification
I accept responsibility for the construction, deepening, 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 415 Date 2-21-05
Signed Robert V. Staff

ORIGINAL - WATER RESOURCES DEPARTMENT FIRST COPY - CONSTRUCTOR SECOND COPY - CUSTOMER 06/16/2004