

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date 01/22/2016  
 FROM: Groundwater Section Phillip I. Marcy / Ivan K. Gall  
Reviewer's Name  
 SUBJECT: Application G- 18006 Supersedes review of 07/07/2015  
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 groundwater 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: Diamond Farms LLC County: Baker

A1. Applicant(s) seek(s) 1.84 cfs from 1 well(s) in the Powder Basin,  
 \_\_\_\_\_ subbasin

A2. Proposed use Irrigation (156.7 acres) Seasonality: March 1<sup>st</sup> to October 31st

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	Proposed	1	Basalt	1.84	8S/40E-2 SW-SW	875'N, 1320'E fr SW cor S 2
2						
3						
4						
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	3404	?	?	?	500 (est)	?	0-18	?	?	?	?	?

Use data from application for proposed wells.

A4. **Comments:** POA well is proposed to be 500' deep and produce from fractured volcanic rocks mapped as Tertiary basalt and andesite flows by Brooks and others (1976) that is encountered in some nearby wells at various depths. There is some uncertainty of the completion depth required to produce from these volcanics, as many nearby wells do not encounter any volcanic rock, while others (BAKE 51823) encounter volcanic rock at very shallow depths.

A5.  **Provisions of the** Powder (690-509) Basin rules relative to the development, classification and/or management of groundwater 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. GROUNDWATER AVAILABILITY CONSIDERATIONS, OAR 690-310-130, 400-010, 410-0070**

B1. **Based upon available data**, I have determined that groundwater\* 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 groundwater 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 groundwater 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 groundwater resource; or
- d.  **will, if properly conditioned**, avoid injury to existing groundwater rights or to the groundwater resource:
  - i.  The permit should contain condition #(s) 7N; "Large water use reporting";
  - 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 groundwater production from no deeper than \_\_\_\_\_ ft. below land surface;
- b.  **Condition** to allow groundwater production from no shallower than \_\_\_ ft. below land surface;
- c.  **Condition** to allow groundwater production only from the \_\_\_\_\_ groundwater 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 Groundwater 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. **Groundwater availability remarks:** Groundwater elevations in wells within several miles to the west of the proposed POA location have remained stable since the year 2000 (see attached). These measurements were made in wells producing from alluvial wells in which basalts or other volcanic units were not encountered and so may not represent the same aquifer system as proposed on this application. The proposed POA location is within 200 feet southwest of the mapped contact with Tertiary basalt (Tb) of Brooks and others (1976) on the northeast side of a fault. Wells within 1 mile have encountered volcanic units at very shallow depths on this side of the fault (see attached log for BAKE 51823). Our current conceptual understanding is that fractured basalts at shallow depths here are hydraulically connected to alluvial fill contacted across the fault.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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

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

Well	Aquifer or Proposed Aquifer	Confined	Unconfined
<b>1</b>	<b>Basalt (Tb of Brooks and others)</b>	<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"/>

**Basis for aquifer confinement evaluation:** Static water levels of wells completed within the local basalt aquifer system are the same or similar to the depths at which first water was encountered. Driller’s logs from local wells indicate that these volcanic rocks are extensively fractured, and are described by Brooks and others (1976) as containing beds of palagonite tuff and flow breccia. The proximity of the proposed POA to a mapped fault to the northeast may explain some of the fracturing described on the well logs. As these basalts are expected to be very near the surface at the proposed POA location, there will likely be no confining layer above the production zone.

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?			Potential for Subst. Interfer. Assumed?	
						YES	NO	ASSUMED	YES	NO
<b>1</b>	<b>1</b>	<b>Baldock Slough</b>	<b>?</b>	<b>3343</b>	<b>5775</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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"/>	<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"/>

**Basis for aquifer hydraulic connection evaluation:** The proposed POA location lies to the north of a mapped fault (Brooks and others, 1976) that likely limits communication between the fractured volcanic aquifer here and the alluvial valley-fill aquifer to the southwest. Baldock Slough incises into the surficial sediments at the top of the alluvial fill sequence in the valley, in which vertical permeability is likely quite low, owing to thick deposits of fine-grained materials observed in well log reports from nearby wells. Based on the slope of exposed volcanics adjacent to the valley and lithologic information from local well logs, it is estimated that the alluvial fill is greater than 600 feet thick beneath Baldock Slough. In 2014, the groundwater elevation at nearby well BAKE 51823 with similar construction as the proposed POA was measured at 3277 feet ALSD, compared with 3343 feet elevation of surface waters in Baldock Slough. This further suggests that if a hydraulic connection exists, it is quite inefficient.

**Water Availability Basin the well(s) are located within:** Baldock SI > Powder R – At mouth (30920330)

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?
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>

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 #		Q <sub>w</sub> > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Q <sub>w</sub> > 1% ISWR?	80% Natural Flow (cfs)	Q <sub>w</sub> > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
			<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"/>
			<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>

**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.

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

(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:** This section does not apply.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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 groundwater 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:**

**Special condition:**  
The applicant shall coordinate with the driller to ensure that drill cuttings are collected at 10-foot intervals and at changes in formation in each well whenever possible. A split of each sampled interval shall be provided to the Department.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**References Used:**

Brooks, H.C., McIntyre, J.R., Walker, G.W., 1976. Geology of the Oregon Part of the Baker 1<sup>0</sup> by 2<sup>0</sup> Quadrangle. Oregon Department of Geology and Mineral Industries Geological Map Series 7.  
OWRD Ground Water Report #6.  
Ground Water Resources of Baker Valley, Baker County, Oregon, by Frederick D. Trauger, 1951.  
Ground Water of Baker Valley, Baker County, Oregon, by Lystrom, Nees and Hampton, 1967.  
Nearby well logs and application 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

watershed ID #: 30920330  
Time: 2:30 PM

BALDOCK SL > POWDER R - AT MOUTH  
Basin: POWDER

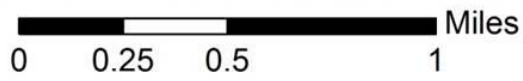
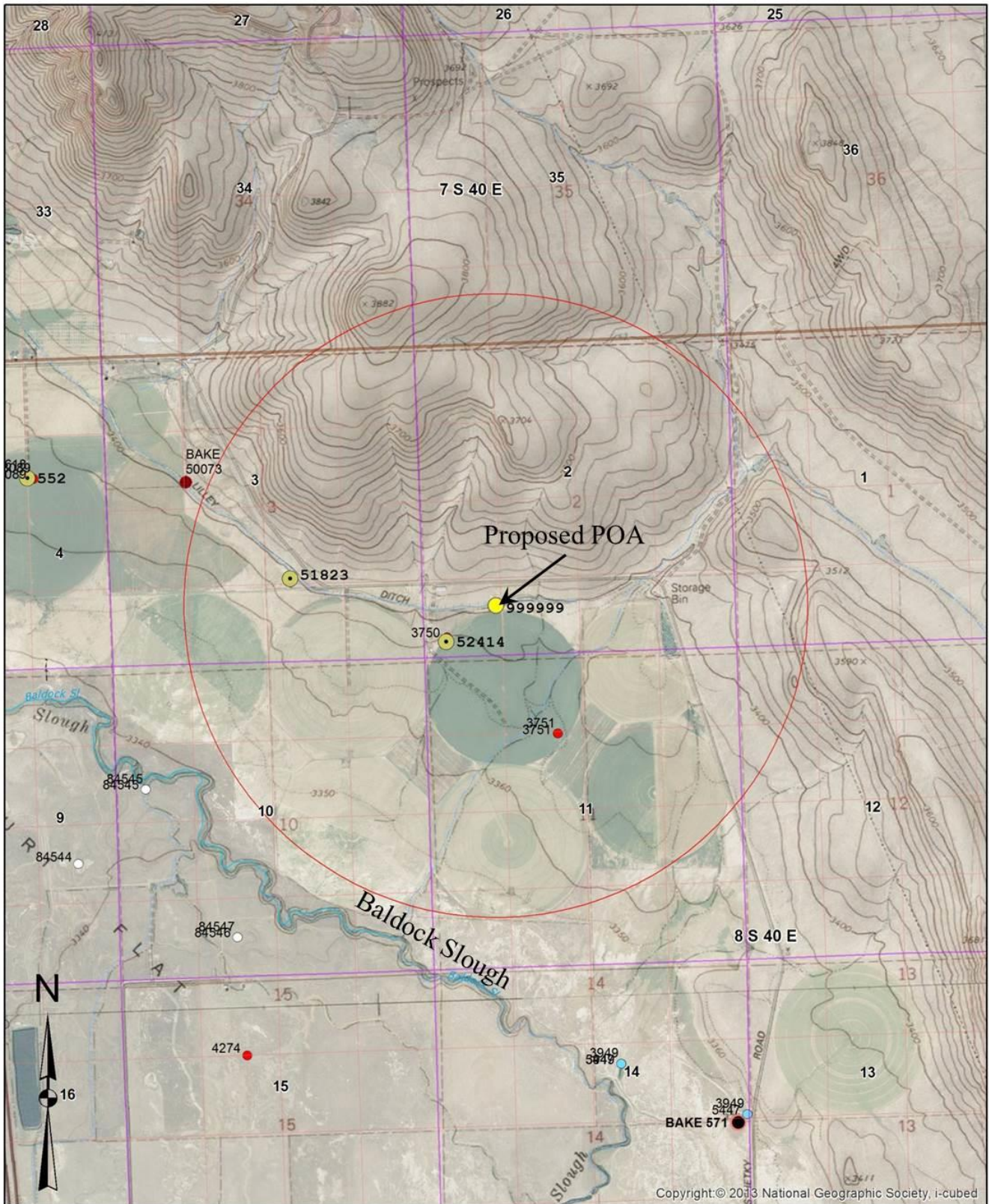
Exceedance Level: 80  
Date: 06/22/2015

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	0.58	0.24	0.34	0.00	0.00	0.34
FEB	2.18	0.24	1.94	0.00	0.00	1.94
MAR	4.32	0.28	4.04	0.00	0.00	4.04
APR	10.90	1.53	9.37	0.00	0.00	9.37
MAY	3.49	4.70	-1.21	0.00	0.00	-1.21
JUN	0.75	5.31	-4.56	0.00	0.00	-4.56
JUL	0.17	3.02	-2.85	0.00	0.00	-2.85
AUG	0.07	1.30	-1.23	0.00	0.00	-1.23
SEP	0.06	0.83	-0.77	0.00	0.00	-0.77
OCT	0.06	0.49	-0.43	0.00	0.00	-0.43
NOV	0.17	0.24	-0.07	0.00	0.00	-0.07
DEC	0.35	0.24	0.11	0.00	0.00	0.11
ANN	3,770	1,120	3,180	0	0	3,180

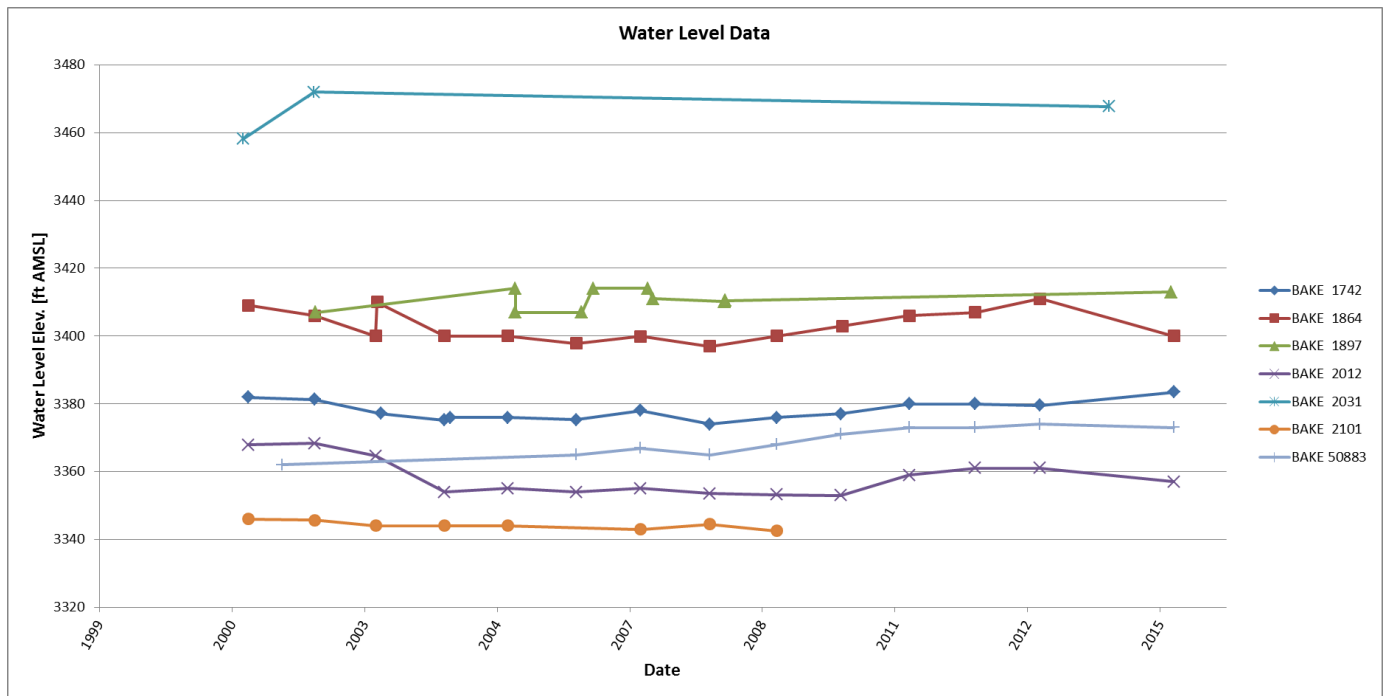
**Well logs attached:**

- BAKE 51823 (Well 3500 feet away, along strike of same fault as POA)
- BAKE 52350 (deepening of BAKE 51823)

Well Location Map



### Water-Level Trends in Nearby Wells





# BAKE 51823

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

WELL I.D. # 1  
START CARD # 193126

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

(1) LAND OWNER: Name Kody Justus Well Number 1  
Address 20539 Hwy 203  
City Baker City State OR Zip 97814

(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 120 ft.  
Explosives used  Yes  No Type \_\_\_\_\_ Amount \_\_\_\_\_

HOLE		SEAL			
Diameter	From To	Material	From To	Sacks or pounds	
10"	0 18	Bentonite	0 18	8	
6"	18 120				

How was seal placed: Method  A  B  C  D  E  
 Other Dry Bentonite 3/8" Powder  
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: 6"	0	18	1250	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Liner: 4 1/2"	10	120	5026	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Drive Shoe used  Inside  Outside  None  
Final location of shoe(s) \_\_\_\_\_

(7) PERFORATIONS/SCREENS:

Perforations Method Slotted pipe  
 Screens Type \_\_\_\_\_ Material \_\_\_\_\_

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
80	120	8"	84	1 1/2"	4 1/2"	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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

Yield gal/min	Drawdown	Drill stem at	Flowing Time
25	40	120	1 hr.

Temperature of water 53° 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 Baker Latitude \_\_\_\_\_ Longitude \_\_\_\_\_  
Township 8 N or S Range 40 E or W. WM.  
Section 3 NW 1/4 SE 1/4  
Tax Lot 8709 Lot \_\_\_\_\_ Block \_\_\_\_\_ Subdivision \_\_\_\_\_  
Street Address of Well (or nearest address) 45508 Schetzky Ln Baker City, OR 97814

(10) STATIC WATER LEVEL:  
80 ft. below land surface. Date 10/12/07  
Artesian pressure \_\_\_\_\_ lb. per square inch Date \_\_\_\_\_

(11) WATER BEARING ZONES:

Depth at which water was first found 80

From	To	Estimated Flow Rate	SWL
80	120	25	80

(12) WELL LOG:  
Ground Elevation \_\_\_\_\_

Material	From	To	SWL
Gravel	0	1	
Topsoil	1	2	
Brown basalt fractured	2	80	
Red basalt fractured W/B	80	82	80
Tan basalt fractured W/B	82	116	80
Brown basalt fractured W/B	116	120	80

Date started 10/9/07 Completed 10/12/07

(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 \_\_\_\_\_ Date \_\_\_\_\_ WWC Number \_\_\_\_\_

(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 Love Russell WWC Number 1837 Date 11/1/07

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

BAKE 52350

WELL I.D. LABEL# L91390 START CARD # 1023865 ORIGINAL LOG #

8/8/2014

(1) LAND OWNER Owner Well I.D. First Name LESTER Last Name ODELL Company Address 45508 SCHETKY RD. City BAKER CITY State OR Zip 97814

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

(2a) PRE-ALTERATION Casing: Dia 6 From 2 To 18 Gauge 0.25 Std Plstc Wld Thrd Seal: Bentonite Chips From 0 To 18 Amt 8 Sacks

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

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

(5) BORE HOLE CONSTRUCTION Special Standard (Attach copy) Depth of Completed Well 250.00 ft.

Table with columns: Dia, From, To, Material, From, To, Amt, sacks/lbs. Rows show seal hole details for diameters 6 and 120.

How was seal placed: Method A B C D E 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 Std Plstc Wld Thrd Shoe Inside Outside Other Location of shoe(s) 247 Temp casing Yes Dia From To

(7) PERFORATIONS/SCREENS Perforations Method TORCH Screens Type Material Perf/ Casing/ Screen Liner Dia From To Scm/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)

Table for well tests with columns: Yield gal/min, Drawdown, Drill stem/Pump depth, Duration (hr). Rows show test results at 45 and 65 gpm.

Temperature 59 °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 8.00 S N/S Range 40.00 E E/W WM Sec 3 NW 1/4 of the SE 1/4 Tax Lot 8709 Tax Map Number Lot Lat Long Street address of well Nearest address 45508 SCHETKY RD. BAKER CITY, OR 97814

(10) STATIC WATER LEVEL Date SWL(psi) + SWL(ft) Existing Well / Pre-Alteration 7/31/2014 120 Completed Well 8/4/2014 121 Flowing Artesian? Dry Hole? WATER BEARING ZONES Depth water was first found 148.00 SWL Date From To Est Flow SWL(psi) + SWL(ft)

(11) WELL LOG Ground Elevation Material From To ORIGINAL HOLE 0 120 FRACTURED BASALT, BROWN 120 148 FRACTURED BASALT, GRAY 148 161 FRACTURED BASALT, BROWN 161 172 FRACTURED BASALT, GRAY 172 187 FRACTURED BASALT, BLACK 187 206 FRACTURED BASALT, GREEN, GRANITE GRAY 206 211 FRACTURED BASALT, BROWN, GRANITE GRAY 211 219 FRACTURED BASALT, TAN, GRANITE GRAVEL 219 224 FRACTURED BASALT, GREEN 224 232 FRACTURED BASALT, TAN 232 250

Date Started 7/31/2014 Complete 8/4/2014

(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. 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. License Number 1775 Date 8/8/2014 Signed JASON ACQUISTAPACE (E-filed) Contact Info (optional)