Water Right Conditions Tracking Slip

Groundwater/Hydrology Section

FILE ## G-17225

ROUTED TO: Water Rights

TOWNSHIP/
RANGE-SECTION: 85/46E-24, 25, 26

CONDITIONS ATTACHED? [✓] yes [ ] no

REMARKS OR FURTHER INSTRUCTIONS:

Reviewer: Mike Zwart

PUBLIC INTEREST REVIEW FOR GROUND WATER APPLICATIONS

TO: Water Rights Section Date **September 17, 2009**

FROM: Ground Water/Hydrology Section **Michael Zwart**
Reviewer's Name

SUBJECT: Application G- **17225** Supersedes review of _____
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: **Pine Valley Land, LLC** County: **Baker**

A1. Applicant(s) seek(s) **11.61** cfs from **five** well(s) in the **Powder** Basin, **Pine Creek** subbasin Quad Map: **Posy Valley**

A2. Proposed use: **Irrigation, 928.5 acres (S)** Seasonality: **4/1 to 9/30 for irrig.; year round for gen. ag use**

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 51941**	**1**	**CRB**	**11.61**	**8S/46E-25 NE-NE**	**702' S, 1012' W fr NE cor S 25**
2	**Proposed**	**2**	**CRB**	**11.61**	**8S/46E-25 NE-NW**	**776' S, 1439' E fr NW cor S 25**
3	**Proposed**	**3**	**CRB**	**11.61**	**8S/46E-26 NE-NE**	**91' S, 1213' W fr NE cor S 26**
4	**Proposed**	**4**	**CRB**	**11.61**	**8S/46E-25 NE-NE**	**483' S, 1188' W fr NE cor S 25**
5	**Proposed**	**5**	**CRB**	**11.61**	**8S/46E-24 SE-SW**	**981' N, 2152' E fr SW cor S 24**

* 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	**2585**	**140**	**96**	**12/01/08**	**740**	**0-125**	**0-125**	**None**	**None**	**600**		**Air**
2	**2545**				**1000**	**0-160**	**0-160**					
3	**2525**				**1000**	**0-210**	**0-210**					
4	**2575**				**1000**	**0-135**	**0-135**					
5	**2510**				**1000**	**0-60**	**0-60**					

Use data from application for proposed wells.

A4. **Comments: The application proposes to construct the minimum number of wells needed to produce the desired rate. The proposed construction for wells 2 to 5 is from the application. The proposed wells may include up to 940 feet of open borehole below the seal and therefore may commingle water from multiple basalt aquifers. Well #1 does not report any information that suggests that it may be commingling multiple aquifers. However, its construction, and that being proposed for the additional wells, does increase the potential for commingling to occur.**

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 **basalt** ground water reservoir;

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:** **Proposed condition language: The proposed wells shall be cased and sealed at least twenty feet into competent basalt and shall be constructed in such a manner to produce water from a single basalt aquifer. The permittee shall coordinate with the East Region Manager for the purpose of obtaining a video record of the wells prior to pump installation. Each well shall be equipped with a dedicated 3/4-inch diameter (minimum) water-level measurement tube, separate from other methods of measuring the water level such as air lines or transducers. The annual water-level measurement required in the permit shall be measured through the measuring tube.**

There are no nearby basalt wells with a long-term water level record. BAKE 778 develops overlying glaciofluvial and valley-fill sediments and displays a relatively stable water-level trend.

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
All	**Basalt of the Columbia River Basalt Group**	☒	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐

Basis for aquifer confinement evaluation: **Basalt aquifers are typically confined.**

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**	**Pine Creek**	**2389**	**2455**	**5600**	☐	☒	☐	☐	☒
2	**1**	**Pine Creek**	**2385±**	**2465**	**4250**	☐	☒	☐	☐	☒
3	**1**	**Pine Creek**	**2385±**	**2472**	**2800**	☐	☒	☐	☐	☒
4	**1**	**Pine Creek**	**2385±**	**2455**	**5300**	☐	☒	☐	☐	☒
5	**1**	**Pine Creek**	**2385±**	**2460**	**3000**	☐	☒	☐	☐	☒
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐

Basis for aquifer hydraulic connection evaluation: **Basalt aquifers are well below the nearby reaches of the creek due to faulting. There may be some ground-water discharge to adjacent and overlying sediments, but it is judged that there is not an efficient hydraulic connection with Pine Creek.**

Water Availability Basin the well(s) are located within: **Pine Cr > Snake R ab Long Br (70863).**

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.

Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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**

References Used: **Local knowledge; regional geologic mapping; Review draft: Review of the Geology and Hydrogeology of Pine Valley, Baker County, Oregon...by NGS, Inc., 1996.**

D. WELL CONSTRUCTION, OAR 690-200

D1. **Well #:** 1 **Logid:** BAKE 51941

D2. **THE WELL does not 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:**

a. ☐ constitutes a health threat under Division 200 rules;
b. ☐ commingles water from more than one ground water reservoir;
c. ☐ permits the loss of artesian head;
d. ☐ permits the de-watering of one or more ground water reservoirs;
e. ☐ other: (specify) _____

D4. **THE WELL construction deficiency is described as follows:** _____

D5. **THE WELL**

a. ☐ **was,** *or* ☐ **was not** constructed according to the standards in effect at the time of original construction or most recent modification.

b. ☐ I don't know if it met standards at the time of construction.

D6. ☐ **Route to the Enforcement Section.** I recommend withholding issuance of the permit until evidence of well reconstruction is filed with the Department and approved by the Enforcement Section and the Ground Water Section.

THIS SECTION TO BE COMPLETED BY ENFORCEMENT PERSONNEL

D7. ☐ Well construction deficiency has been corrected by the following actions: _____

_____ _____, 200____.

(Enforcement Section Signature)

D8. ☐ **Route to Water Rights Section (attach well reconstruction logs to this page).**

WATER RESOURCES DEPARTMENT

MEMO September 17, 2009

TO: **Application G-** 17225

FROM: **GW:** Mike Zwart
(Reviewer's Name)

SUBJECT: **Scenic Waterway Interference Evaluation**

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

_____YES
Use the Scenic Waterway condition (Condition 7J)
✓ NO

_____Per ORS 390.835, the Ground Water Section is **able** to calculate ground water interference with surface water that contributes to a Scenic Waterway. The calculated interference is distributed below.

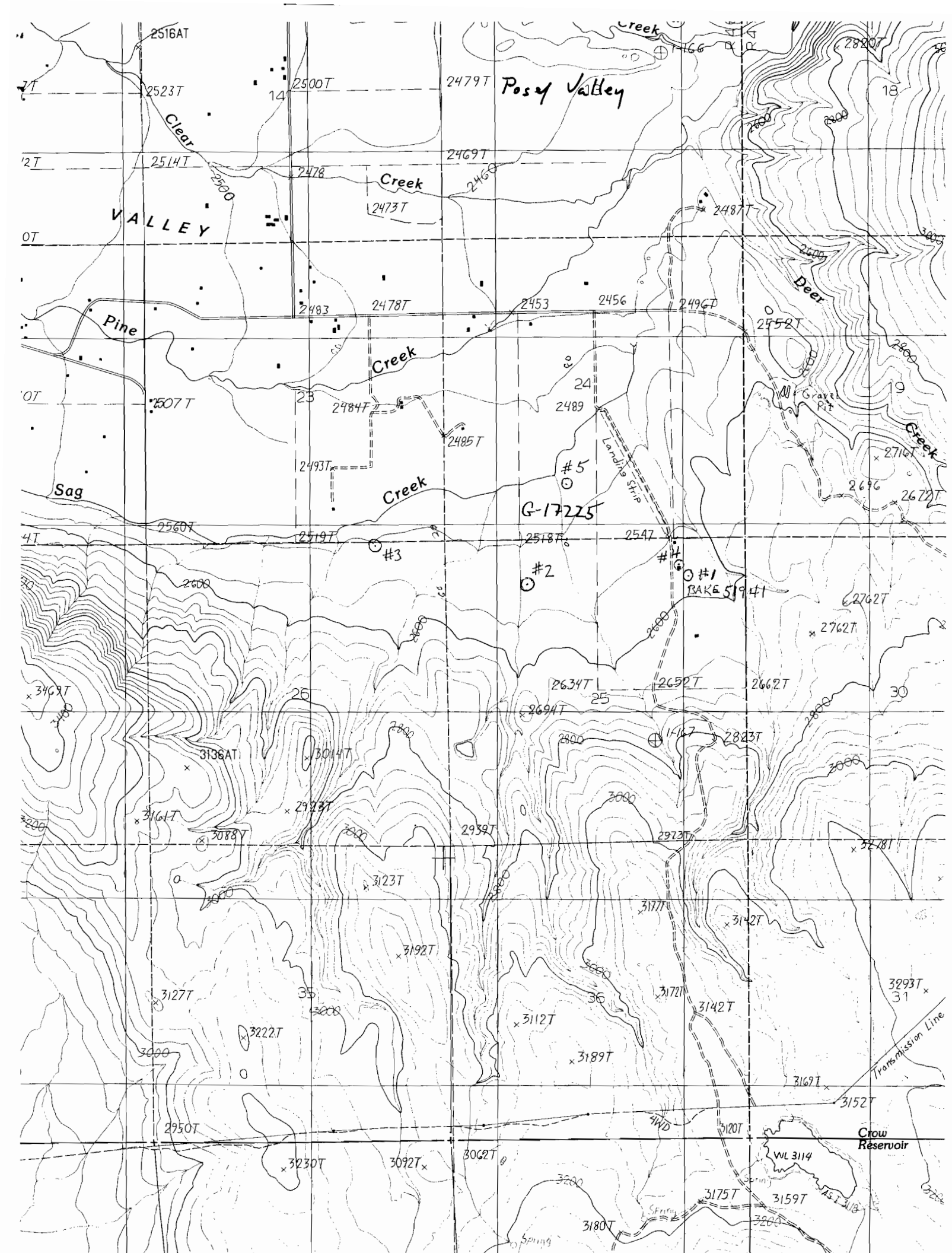
_____Per ORS 390.835, the Ground Water Section is **unable** to calculate ground water interference with surface water that contributes to a scenic waterway; **therefore, the Department is unable to find that there is a preponderance of evidence that the proposed use will measurably reduce the surface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

DISTRIBUTION OF INTERFERENCE

Calculate the percentage of consumptive use by month and fill in the table below. If interference cannot be calculated, per criteria in 390.835, do not fill in the table but check the "unable" option above, thus informing Water Rights that the Department is unable to make a Preponderance of Evidence finding.

Exercise of this permit is calculated to reduce monthly flows in _____Scenic Waterway by the following amounts expressed as a proportion of the consumptive use by which surface water flow is reduced.

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


Posey Valley
Clear Creek
Pine Creek
Sag Creek
Deer Creek
Creek
VALLEY
Gravel Pit
Landing Strip
#1
#2
#3
#4
#5
BAKE 51941
G-17225
Transmission Line
4WD
Crow Reservoir
WL 3114
Spring
2516AT
2523T
2514T
2500T
2479T
2478
2473T
2469T
2460
2487T
2483
2478T
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2456
2496T
2552T
2507T
2484T
2485T
2493T
2489
2716T
2696
2672T
2560T
2519T
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2547
2762T
2634T
2652T
2662T
2694T
3469T
3136AT
3014T
3161T
2928T
3088T
2939T
2973T
3123T
3177T
3142T
3192T
3127T
3222T
3112T
3189T
3172T
3293T
3169T
3152T
2950T
3230T
3092T
3062T
3120T
3175T
3159T
3180T
3114
3118

Ground Water

Oregon Water Resources Department
(503)378-8455 • 158 12th St. NE, Salem, OR 97310

Hydrograph for State Well BAKE 778, State Observation Well # 6

Well Location	8.00S46.00E15ABB
Oregon Water Resources Department Well Log ID	BAKE 778
Oregon Water Resources Department State Observation Well Number	6
Well depth, in feet below land surface	275
Land surface elevation, in feet above mean sea level	2555
Primary use of well	IRRIGATION

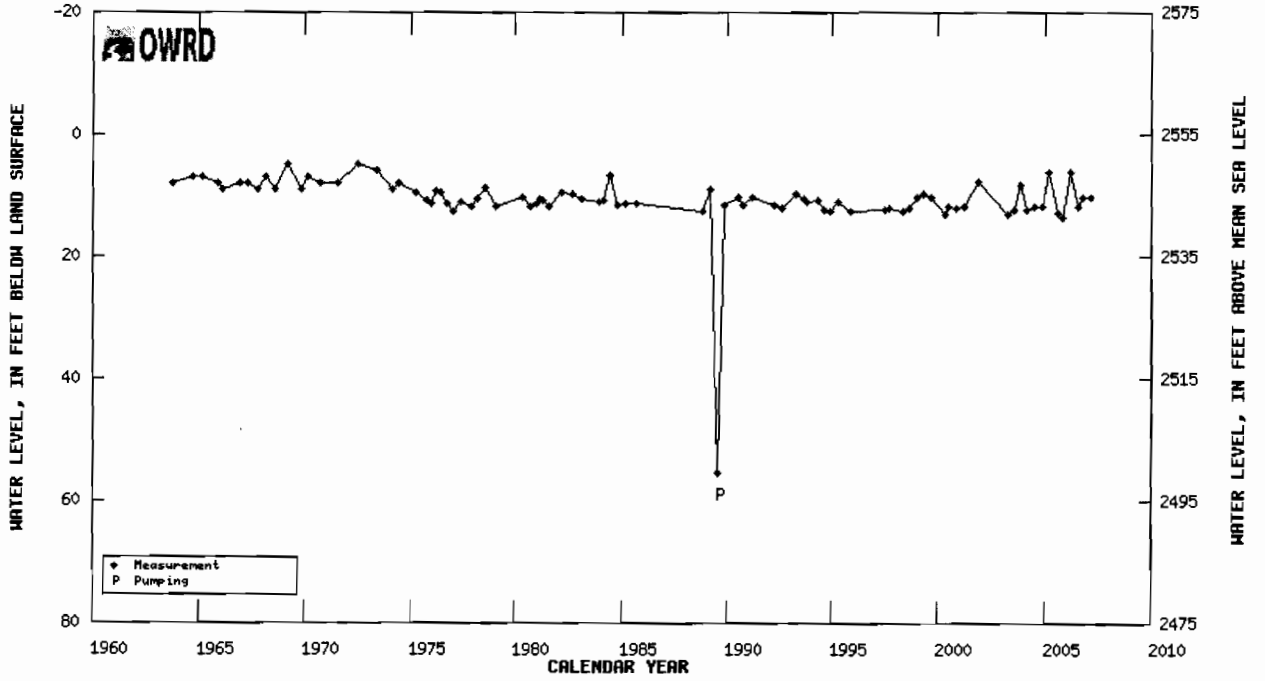

Table showing water-level data for State Well BAKE 778, State Observation Well # 6