

MEMO

March 8, 2016

FROM: GW: Sen Woody
(Reviewer's Name)

☒ YES☐ NO☒ YES☐ NO

Per ORS 390.835, the Groundwater 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.**

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.

[illegible]

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date 03/08/2016

FROM: Groundwater Section Jen Woody
Reviewer's Name

SUBJECT: Application G- 18235 Supersedes review of n/a
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: Erich Buer County: Josephine

A1. Applicant(s) seek(s) 0.022 cfs from 1 well(s) in the Rogue Basin,
Williams Creek subbasin

A2. Proposed use nursery Seasonality: year-round

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	JOSE 2000		Granitic Pluton	0.022	38S/5W-13 NE ¼ SW ¼	41' S, 1094' W fr center S 14
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	1348	62	21	11/16/1971	82	0-20	0-58	n/a	n/a	10		air

Use data from application for proposed wells.

A4. **Comments:** _____

A5. ☐ **Provisions of the** _____ **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 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) 7J, Medium 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:** _____

The subject site is characterized by approximately 50 feet of alluvial clay, sand, gravel and boulders overlying the water-bearing granitic materials of the Grayback Pluton (Wiley, 2006). The granitic aquifer is a fractured rock aquifer which is typically low-yielding, increasingly confined with depth and replenished by precipitation annually. There are few groundwater level data in this area, but existing monitoring data show stable water levels both in the unconsolidated alluvium and in fractured granitic aquifer (see hydrograph).

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

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
1	Granitic Aquifer of the Grayback Pluton	☒	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐

Basis for aquifer confinement evaluation: The well log reports the static water level is tens of feet above the water-bearing zone, indicating the aquifer is more confined than unconfined. Tens of feet of fine-grained alluvium overlie the granitic aquifer in the vicinity of the applicant's well.

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
1	1	Powell Creek	1327	1327	1325	☒	☐	☐	☐	☒
1	2	Williams Creek	1327	1270	2650	☒	☐	☐	☐	☒
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐

Basis for aquifer hydraulic connection evaluation: The groundwater level is coincident with surface water within one mile, indicating groundwater is hydraulically connected to surface water. There are over 50 feet of clay and other alluvial deposits overlying the water-bearing granitic aquifer. This will act as a resistor to efficient groundwater-surface water connection.

Water Availability Basin the well(s) are located within: Watershed ID #: 71026 POWELL CR > WILLIAMS CR - AT MOUTH; Watershed ID #: 70981 WILLIAMS CR > APPLGATE R - AT MOUTH

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?
1	1	☐	☐	IS71026 A	2.28	☐	1.96	☒	*	☒
1	2	☐	☐	IS70981 A	2.37	☐	1.89	☒	*	☒
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐

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: PSI is triggered because the proposed pumping rate (0.022 cfs) is greater than 1% of 80% Natural Flow in both Powell and Williams Creeks (1.96 and 1.89 cfs, respectively).

*Interference @ 30 d could not be estimated because the terrain (high-relief slopes) and geology (fractured bedrock aquifer) do not meet model assumptions of the widely accepted techniques for determining stream depletion (e.g., Hunt 1999, 2003).

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													
(A) = Total Interf.													
(B) = 80 % Nat. Q													
(C) = 1 % Nat. Q													

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

Water Availability Analysis Detailed Reports

POWELL CR > WILLIAMS CR - AT MOUTH ROGUE BASIN

Water Availability as of 3/8/2016

Watershed ID #: 71026 ([Map](#))

Exceedance Level: 80%

Date: 3/8/2016

Time: 9:08 AM

Water Availability Calculation

Monthly Streamflow in Cubic Feet per Second
Annual Volume at 50% Exceedance in Acre-Feet

Month	Natural Stream Flow	Consumptive Uses and Storages	Expected Stream Flow	Reserved Stream Flow	Instream Flow Requirement	Net Water Available
JAN	9.12	0.18	8.94	0.00	24.60	-15.70
FEB	15.80	0.21	15.60	0.00	27.70	-12.10
MAR	13.70	0.17	13.50	0.00	22.90	-9.37
APR	9.96	0.42	9.54	0.00	17.20	-7.66
MAY	6.36	0.65	5.71	0.00	8.53	-2.82
JUN	3.98	0.90	3.08	0.00	5.86	-2.78
JUL	3.42	1.19	2.23	0.00	4.62	-2.39
AUG	2.73	0.99	1.74	0.00	3.66	-1.92
SEP	2.25	0.65	1.60	0.00	2.62	-1.02
OCT	1.96	0.22	1.74	0.00	2.28	-0.54
NOV	1.98	0.04	1.94	0.00	3.65	-1.71
DEC	3.52	0.13	3.40	0.00	15.20	-11.80
ANN	8,330.00	348.00	7,980.00	0.00	8,330.00	0.00

Water Availability Analysis Detailed Reports

WILLIAMS CR > APPLGATE R - AT MOUTH ROGUE BASIN

Water Availability as of 3/8/2016

Watershed ID #: 70981 ([Map](#))

Exceedance Level: 80%

Date: 3/8/2016

Time: 9:08 AM

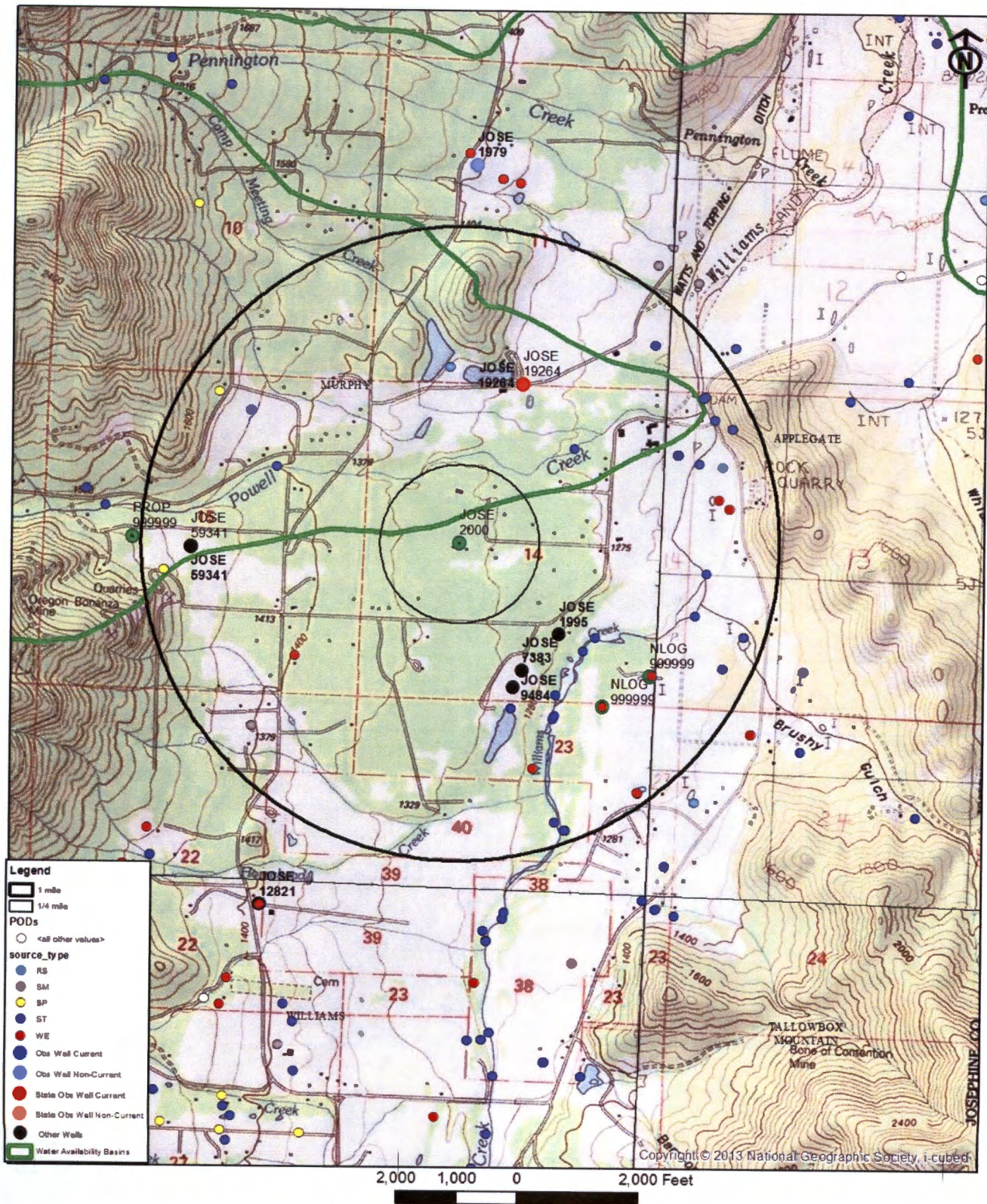
Water Availability Calculation

Monthly Streamflow in Cubic Feet per Second
Annual Volume at 50% Exceedance in Acre-Feet

Month	Natural Stream Flow	Consumptive Uses and Storages	Expected Stream Flow	Reserved Stream Flow	Instream Flow Requirement	Net Water Available
JAN	67.30	1.16	66.10	0.00	110.00	-43.90
FEB	110.00	1.56	108.00	0.00	110.00	-1.56
MAR	107.00	1.16	106.00	0.00	110.00	-4.16
APR	62.70	3.75	59.00	0.00	110.00	-51.00
MAY	29.50	5.82	23.70	0.00	65.00	-41.30
JUN	10.30	8.11	2.19	0.00	40.00	-37.80
JUL	4.24	10.80	-6.56	0.00	15.00	-21.60
AUG	2.68	8.94	-6.26	0.00	5.00	-11.30
SEP	1.89	5.92	-4.03	0.00	50.00	-54.00
OCT	2.28	2.06	0.22	0.00	80.00	-79.80
NOV	6.60	0.38	6.22	0.00	80.00	-73.80
DEC	32.30	0.82	31.50	0.00	110.00	-78.50
ANN	54,800.00	3,060.00	52,600.00	0.00	53,300.00	15,200.00

Well Location Map

G-18235 Buer
T38S/R5W- Section 14



Water-Level Trends in Nearby Wells

