

MEMO

8-24, 2016

TO: Application G- 18303

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

☒ 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 Groundwater 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 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 8/24/2016

FROM: Groundwater Section Jen Woody
Reviewer's Name

SUBJECT: Application G- 18303 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: R William Lawson Cosseboom County: Jackson

A1. Applicant(s) seek(s) 0.05 cfs from 2 well(s) in the Rogue Basin,
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	JACK 32815	1	Bedrock	0.05	T38S/R2E-23 SW ¼ NW ¼	930' N, 780' E fr W ¼ cor S 23
2	PROP 999999	2	Bedrock	0.05	T38S/R2E-23 SW ¼ NW ¼	538' N, 860' E fr W ¼ cor S 23
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	4040	210	188	1/15/2009	240	0-22	0-29	n/a	n/a	16.05		bailer
2	3960	210*			240							

Use data from application for proposed wells.

A4. **Comments:** *Well 2 is not yet constructed. This review assumes it will be completed similarly to Well 1 (JACK 32815/59013).

A5. ☐ **Provisions of the** Rogue 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: Rogue Basin Rules do not contain a provision that specifies management of groundwater hydraulically connected to surface water.

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

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) 7J, Medium Water Use Reporting Condition;
 - 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): N/A

- B3. **Groundwater availability remarks:** The application proposes to use 22.4 gallons per minute (gpm) from the bedrock aquifer. Groundwater development is sparse in this area, with 10 well logs on file for Section 23. Well yields in that section range from 6 to 50 gpm, with a median yield of 16 gpm. There are no nearby static water level data to determine local over-appropriation of the groundwater resource.

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	Volcanics or volcanics of the Roxy Formation	☒	☐
2	Volcanics or volcanics of the Roxy Formation	☒	☐
		☐	☐
		☐	☐
		☐	☐

Basis for aquifer confinement evaluation: The static water level rises tens of feet above the water-bearing zone, indicating the aquifer is more confined than unconfined.

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	West unnamed tributary to Babe Cr	3852	3850	850	☒	☐	☐	☐	☒
2	1	West unnamed tributary to Babe Cr	3772	3770	820	☒	☐	☐	☐	☒
1	2	East unnamed tributary to Babe Cr	3852	3850	1450	☒	☐	☐	☐	☒
2	2	East unnamed tributary to Babe Cr	3772	3770	1840	☒	☐	☐	☐	☒
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐

Basis for aquifer hydraulic connection evaluation: The static groundwater level is above or coincident to nearby surface water, indicating groundwater discharges to surface water and is therefore hydraulically connected.

Water Availability Basin the well(s) are located within: Watershed ID #: 71207 WALKER CR > BEAR CR - 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	☒	☐	n/a	n/a	☐	5.08	☐	*	☐
2	1	☒	☐	n/a	n/a	☐	5.08	☐	*	☐
1	2	☐	☐	n/a	n/a	☐	5.08	☐	*	☐
2	2	☐	☐	n/a	n/a	☐	5.08	☐	*	☐
		☐	☐			☐		☐		☐

- 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: ** Interference at 30 days 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) = (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: N/A

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:
- ☐ The permit should contain condition #(s) _____;
 - ☐ The permit should contain special condition(s) as indicated in "Remarks" below;

C6. **SW / GW Remarks and Conditions:** The applicant's proposed POAs are located within ¼ mile of an unnamed tributary to Babe Creek and have been found to be hydraulically connected those reaches reaches based on analysis of the geology and hydrogeology of the area. Under OAR 690-009 the proposed use will have the potential for substantial interference with that creek because the distance between the well and the point of expected hydraulic connection is less than ¼ mile.

References Used: _____

Hunt, B. 1999. Unsteady Stream Depletion from Ground Water Pumping. Journal of Hydrologic Engineering, Vol 8(1), pp 12-19

Hunt, B. 2003. Unsteady Stream Depletion when Pumping from a Semiconfined Aquifer. Journal of Hydrologic Engineering. Vol 8(1), pp 12-19.

Beaulieu, J.D., Hughes, P.W. 1977 Land Use Geology of Central Jackson County, Oregon. State of Oregon Department of Geology and Mineral Industries Bulletin 94, 87 p.

U.S. Geological Survey topographic map, Grizzly Peak and Emigrant Lake Quadrangles.

D. WELL CONSTRUCTION, OAR 690-200

D1. Well #: _____ Logid: this section does not apply

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

WALKER CR > BEAR CR - AT MOUTH ROGUE BASIN

Water Availability as of 8/23/2016

Watershed ID #: 71207 ([Map](#))

Exceedance Level: 80%

Date: 8/23/2016

Time: 2:17 PM

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	14.80	0.55	14.20	0.00	27.00	-12.80
FEB	18.40	0.55	17.80	0.00	27.00	-9.15
MAR	19.50	0.55	18.90	0.00	27.00	-8.05
APR	18.00	1.06	16.90	0.00	27.00	-10.10
MAY	17.00	1.37	15.60	0.00	27.00	-11.40
JUN	15.20	1.72	13.50	0.00	16.00	-2.52
JUL	7.90	2.12	5.78	0.00	11.00	-5.22
AUG	5.63	1.84	3.79	0.00	7.00	-3.21
SEP	5.08	1.39	3.69	0.00	6.00	-2.31
OCT	5.54	0.81	4.73	0.00	7.00	-2.27
NOV	8.16	0.55	7.61	0.00	13.00	-5.39
DEC	10.60	0.55	10.00	0.00	21.00	-11.00
ANN	15,400.00	791.00	14,600.00	0.00	13,000.00	2,000.00

Well Location Map

G-18303 Cosseboom
T38 S/R2E-Section 23

