

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date November 2, 2016
 FROM: Groundwater Section Michael J Thoma
 Reviewer's Name
 SUBJECT: Application G- 18361 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 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: Darren Glahn County: Jackson

A1. Applicant(s) seek(s) 0.05 cfs from 1 well(s) in the Rogue Basin,
Middle Rogue subbasin

A2. Proposed use Nursery (7 ac) 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	Proposed	1	Bedrock	0.05	35S/01 W-22 NESW	2225'N, 2315'E of SW cor S 22
2						
3						

* 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	1390		10-20*		150-300†	0-18	0-50					

Use data from application for proposed wells.

A4. **Comments:** *The applicant's well is proposed; SWL was estimated from well logs in the surrounding section.
†The applicant provides a range for the well depth; the area is underlain by volcanoclastic rocks of the Early Western Cascades (Hladky 1992) and is considered a single geologic unit between 150 and 300 ft BLS – see special restrictions in Section B2.

A5. **Provisions of the** Rogue (OAR 690-515) 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) 7C (7-year SWL); 7J (Scenic); Medium Water-use;
 - 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 a single aquifer within the bedrock 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:** There are few Observation Well data in the area of the proposed POA so groundwater over-appropriation could not be established. There are also few permitted groundwater rights in the area but applications for groundwater have been increasing in the region over the past year and concerns have been raised by the public about over-appropriation of the resource and interference with existing groundwater users (both permitted rights and domestic uses). However, taxlot density (as a proxy for domestic groundwater use) is relatively low in the area and it is unlikely that the proposed use, at the rate requested, will cause significant interference and injury to existing users. Regardless, conditions in Section B1 and standard interference conditions should be applied to any resulting permit.

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	Bedrock of Early Western Cascades	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>

Basis for aquifer confinement evaluation: Well logs for the area typically report *SWL* above *first water*, indicating confined aquifer conditions.

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	Hog Cr.	1380	1330	4500	<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"/>

Basis for aquifer hydraulic connection evaluation: Hog Creek is mapped as a perennial stream on USGS Topographic maps but is used as a conveyance for the Eagle Point Irrigation District (EPID) in the summer and does not likely sustain natural flows through much of the summer-fall months (as evident by lack of riparian vegetation in all but the lower reach of the creek). There is a single surface water right (Cert 49920, owned by EPID) upstream from the proposed POA but the nearest downstream POD is 4500 ft from the applicant's proposed POA. From this downstream POD to the mouth of the creek there is sufficient riparian vegetation to assume that the creek sustains year-round flows and is hydraulically connected to groundwater.

Water Availability Basin the well(s) are located within: Rogue R > Pacific Ocean – AB Curry G At Gage 14359000

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	<input type="checkbox"/>	<input type="checkbox"/>	NA	NA	<input type="checkbox"/>	1130	<input type="checkbox"/>	**	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>

Comments: **Interference @ 30 d was not 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).

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

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	No surface water sources beyond 1 mile were evaluated												
Interference CFS													
Distributed Wells													
Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
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 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:** The applicant's proposed well would be producing from an aquifer that has been found to be hydraulically connected to surface water at a distance of < 1 mile. However, the reviewer is unable to find sufficient evidence to assume that the proposed use will have the Potential for Substantial Interference (PSI) with surface water.

References Used:

Hladky, F. R. 1992. *Geology and Mineral Resources Map of the Shady Cove Quadrangle, Jackson County, Oregon*. Oregon Dept. of Geol. and Mineral Industries. GMS-52.

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

OWRD Well Log Database – Accessed 11/02/2016.

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) _____

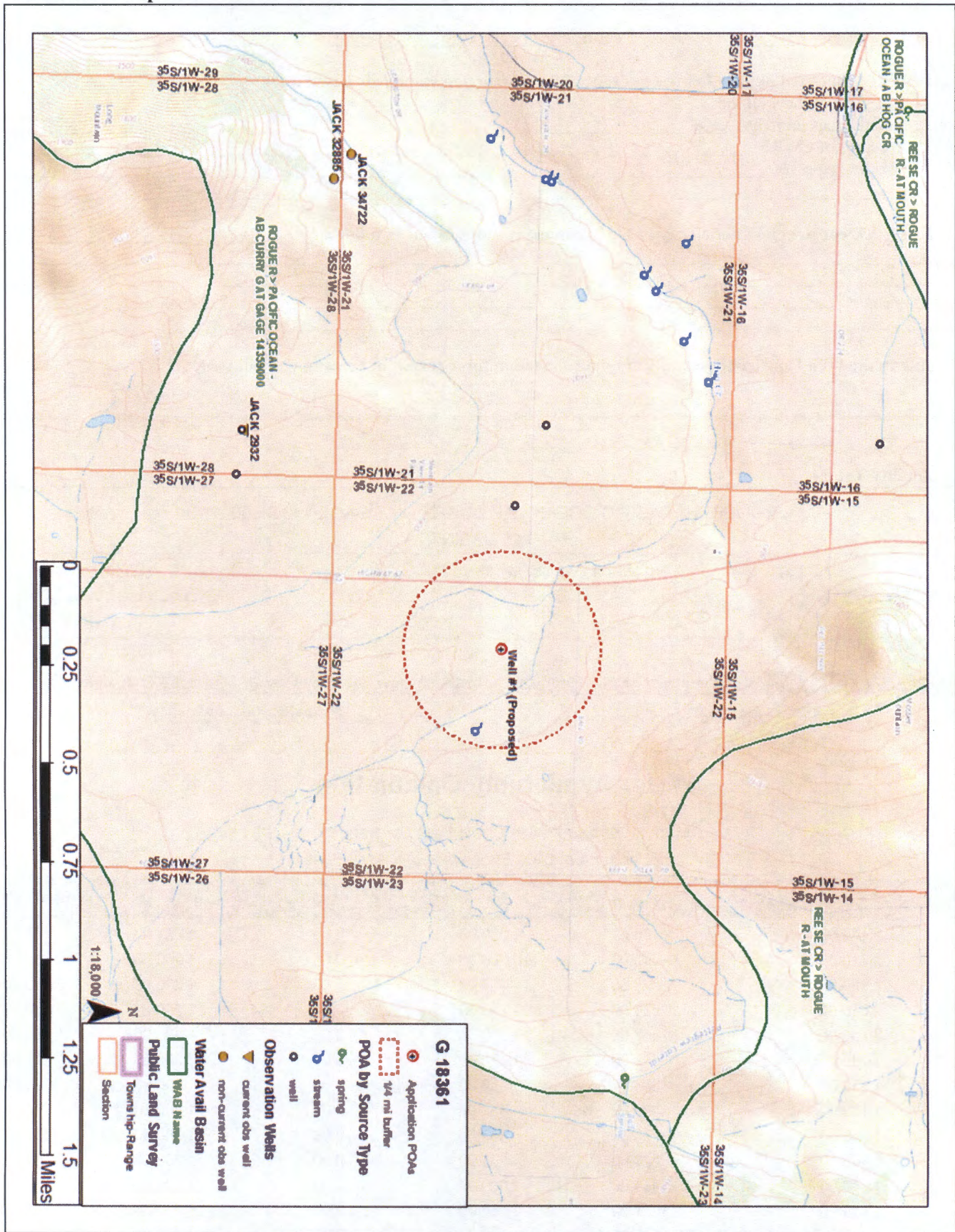
D3. **THE WELL construction deficiency or other comment is described as follows:** _____

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

Water Availability Tables

ROGUE R > PACIFIC OCEAN - AB CURRY G AT GAGE 14359000 ROGUE BASIN Water Availability as of 11/2/2016							
Watershed ID #: 270 (Map)				Exceedance Level: 80% ▾			
Date: 11/2/2016				Time: 8:58 AM			
Water Availability Calculation		Consumptive Uses and Storages		Instream Flow Requirements		Reservations	
Water Rights				Watershed Characteristics			
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	2,180.00	1,130.00	1,050.00	0.00	1,200.00	-147.00	
FEB	2,710.00	2,040.00	666.00	0.00	1,200.00	-534.00	
MAR	2,750.00	1,820.00	934.00	0.00	1,200.00	-266.00	
APR	2,810.00	1,030.00	1,780.00	0.00	1,200.00	576.00	
MAY	2,750.00	367.00	2,380.00	0.00	1,200.00	1,180.00	
JUN	1,760.00	343.00	1,420.00	0.00	1,200.00	217.00	
JUL	1,330.00	368.00	962.00	0.00	1,200.00	-238.00	
AUG	1,160.00	330.00	830.00	0.00	1,200.00	-370.00	
SEP	1,130.00	275.00	855.00	0.00	1,200.00	-345.00	
OCT	1,160.00	227.00	933.00	0.00	1,200.00	-267.00	
NOV	1,370.00	344.00	1,030.00	0.00	1,200.00	-174.00	
DEC	1,810.00	561.00	1,250.00	0.00	1,200.00	49.00	
ANN	1,900,000.00	528,000.00	1,370,000.00	0.00	869,000.00	533,000.00	

Well Location Map



Well Log Database Statistics for TRS 35S/01W-22

