

Groundwater Application Review Summary Form

Application # G- 18651

GW Reviewer J. Hackett Date Review Completed: 1-8-2019

Summary of GW Availability and Injury Review:

[] Groundwater for the proposed use is either over appropriated, will not likely be available in the amounts requested without injury to prior water rights, OR will not likely be available within the capacity of the groundwater resource per Section B of the attached review form.

Summary of Potential for Substantial Interference Review:

[] There is the potential for substantial interference per Section C of the attached review form.

Summary of Well Construction Assessment:

[] The well does not appear to meet current well construction standards per Section D of the attached review form. Route through Well Construction and Compliance Section.

This is only a summary. Documentation is attached and should be read thoroughly to understand the basis for determinations and for conditions that may be necessary for a permit (if one is issued).

MEMO

January 8, 2019

FROM: GW: J. Hackett
(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 January 8, 2019
 FROM: Groundwater Section J. Hackett
 Reviewer's Name
 SUBJECT: Application G- 18651 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: Rick & Jody Hale County: Wheeler

A1. Applicant(s) seek(s) 1.0 cfs from 2 well(s) in the John Day Basin,
 subbasin

A2. Proposed use: Livestock, Fire Protection, Wildlife; Irrigation; Pond Maintenance
 Seasonality: Year Round; March 1 – October 31; March 1 – November 30

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	Sed. Rocks	1.0	6S/24E-10 SW-SW	100' N, 300' E fr SW cor S 10
2	NLOG 57861 ¹	2	Sed. Rocks	1.0	6S/24E-16 NE-NE	320' S, 470' W fr NW cor S 16
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	3300				650 est.	0-50	0-450		400-650			
2	3190				6							

Use data from application for proposed wells.

A4. **Comments:** ¹ Applicant's Well #2 (NLOG 57861) is a 660' long horizontal drain pipe that captures shallow groundwater and discharges via gravity flow to Reservoir #6.

A5. ☒ **Provisions of the** John Day 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:** Primary geologic units underlying the applicant's wells are the John Day and Clarno Formations. The Oligocene to early Miocene John Day Formation is locally up to several hundred feet and is composed primarily of tuffaceous claystone, air fall tuff, and ashflow tuff. The Eocene Clarno Formation is made up of siliceous lava flows, volcanic breccia, mudflows, tuff, and tuffaceous sediment and is locally several thousand feet thick. Both formations contain primarily fine-grained material which restricts water movement and results in wells with low production rates. Gannett (1984) reported median well yields of 15 gpm and 6 gpm in the John Day and Clarno Formations, respectively.

The applicant's existing well (NLOG 57861) is a 8" perforated horizontal drain pipe approximately 660 feet in length that is buried to a depth of 6 feet. This well collects shallow groundwater and gravity feeds it to a reservoir (applicant's Reservoir #6). Groundwater collected by this well is likely locally derived precipitation that has percolated to the depth of the pipe.

The applicant's proposed well will be 650 feet deep and will produce from mostly fine-grained material that is confined by several hundred feet of other fine-grained material. Due to the low permeability of the aquifer, the applicant's proposed well may have difficulty obtaining the requested 448.8 gpm.

Local groundwater level data does not exist, so this permit should include an annual static water level measurement condition.

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	John Day Formation	☒	☐
2	John Day Formation	☐	☒
		☐	☐
		☐	☐
		☐	☐

Basis for aquifer confinement evaluation: Water-bearing zones in Proposed Well #1 will be confined by several hundred feet of fine-grained sediments. Well #2 (Horizontal Drain Pipe) will intercept water infiltrating above or at the local water table.

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	Brown Creek	3100	3200-3100	685	☐	☒	☐	☐	☒
2	1	Brown Creek	3100	3200-3100	125	☐	☒	☐	☐	☒

Basis for aquifer hydraulic connection evaluation: District 21 Watermaster indicates that Brown Creek is not perennial locally.

Water Availability Basin the well(s) are located within: 30620427: Rock Cr > John Day R – AB Wallace Can

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: _____

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		%	%	%	%	%	%	%	%	%	%	%	%

Basis for impact evaluation: _____

[illegible]

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:

Gannett, M. W., 1984, Ground Water Assessment of the John Day Basin, OWRD Misc. Report, 99p.

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

ROCK CR > JOHN DAY R - AB WALLACE CAN
JOHN DAY BASIN

Water Availability as of 1/8/2019

Watershed ID #: 30620427 ([Map](#))

Exceedance Level: 80% ▼

Date: 1/8/2019

Time: 12:00 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	10.70	0.01	10.70	0.00	0.00	10.70
FEB	22.70	0.25	22.40	0.00	0.00	22.40
MAR	45.00	4.85	40.10	0.00	0.00	40.10
APR	27.30	2.12	25.20	0.00	0.00	25.20
MAY	17.10	5.39	11.70	0.00	0.00	11.70
JUN	7.70	4.35	3.35	0.00	0.00	3.35
JUL	1.90	1.45	0.45	0.00	0.00	0.45
AUG	0.90	0.58	0.32	0.00	0.00	0.32
SEP	0.70	0.30	0.40	0.00	0.00	0.40
OCT	1.00	0.14	0.86	0.00	0.00	0.86
NOV	4.10	0.01	4.09	0.00	0.00	4.09
DEC	6.80	0.00	6.80	0.00	0.00	6.80
ANN	19,300.00	1,180.00	18,100.00	0.00	0.00	18,100.00

G-18651, Hale

1:24,000 scale

