Water Right Conditions Tracking Slip

Groundwater/Hydrology Section

FILE # G-17487

ROUTED TO: Water Rights

TOWNSHIP/
RANGE-SECTION: 14S/31E-25cb

CONDITIONS ATTACHED? [✓] yes [ ] no

REMARKS OR FURTHER INSTRUCTIONS:

Reviewer: Mike Zwart

WATER RESOURCES DEPARTMENT

MEMO September 23 2001

TO: **Application G-** 17487

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

PUBLIC INTEREST REVIEW FOR GROUND WATER APPLICATIONS

TO: Water Rights Section Date **September 23, 2011**

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

SUBJECT: Application G- **17487** 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: **Leo and Diane Holthouse** County: **Grant**

A1. Applicant(s) seek(s) **0.0334** cfs from **one** well(s) in the **John Day** Basin, **Canyon Creek** subbasin Quad Map: **Canyon Mountain**

A2. Proposed use: **Irrigation, 2.0 acres** Seasonality: **March 1 to October 31**

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**	**0.0334**	**14S/31E-25 NW-SW**	**90' S, 900' E fr W ¼ cor S 25**
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	**3670**				**200±**	**0-100±**	**0-150±**		**150-200±**			

Use data from application for proposed wells.

A4. **Comments: The proposed well design is targeting the fractured bedrock aquifer that most nearby wells develop. The bedrock is described as basalt, serpentine or shale on well logs and yields only small quantities of water to wells. Several well logs report no water, but the requested 15 gallons per minute is possible, however it may require multiple wells or an alternate well site. There is a shallow alluvial aquifer described in one local well log, but it is clear that the proposed depth of casing and seal is more than adequate to preclude its development.**

A5. ☒ **Provisions of the John Day** 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) **7E**;
   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 **bedrock** 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:** **There are few State Observation wells in Grant County and the local geology is complex, such that water level trends at these wells are not likely to be an indicator of trends in this area. I suspect that the fractured bedrock aquifer in this area is of such very low overall permeability that it is difficult to produce groundwater in quantities sufficient to cause substantial interference with nearby wells unless the wells coincidentally develop the same fracture system. Interference has been alleged by some bedrock well owners near Canyon City, about four miles to the north. Several of the wells were selected to be measured quarterly, but there is not yet a sufficient record to reach any conclusions regarding water level trends or the potential for interference. It is possible that the seasonal fluctuation in groundwater levels is great enough to result in perceived interference problems that are instead the result of pumping drawdown combined with the seasonal decline in water level. I recommend that the pump size and setting be selected with care to allow for not only the expected drawdown, but also for a seasonal water level fluctuation of at least 20 to 30 feet.**

Application G-17487 continued Date: September 23, 2011

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
1	**Fractured bedrock, likely gabbro or serpentinite of**	☒	☐
	the Canyon Mountain Complex (Trcg or Trcs)	☐	☐
		☐	☐
		☐	☐
		☐	☐

Basis for aquifer confinement evaluation: **The local well logs typically report water levels somewhat above the depth that groundwater was first encountered.**

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	**Canyon Creek**	**Unk.**	**3650±**	**170**	☐	☒	☐	☐	☒
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐

Basis for aquifer hydraulic connection evaluation: **While it is likely that the bedrock aquifer is discharging to the alluvial aquifer and/or directly to the creek on a regional basis, it is problematic to make a finding that hydraulic connection exists with the nearby reach, or any specific reach, of the creek. This is because the location and orientation of the local fracture system that will be developed is unknown. The head relationship is also unknown prior to well completion. The great relief in the area also makes it difficult to infer the head relationship from the well logs on file. I believe that the very low permeability of the bedrock aquifer results in generally poor local hydraulic connection.**

Water Availability Basin the well(s) are located within: **Canyon Cr > John Day R at mouth (205).**

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?
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐

Application G-17487 continued Date: September 23, 2011

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													
		%	%	%	%	%	%	%	%	%	%	%	%
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) **7J**;

ii. ☐ The permit should contain special condition(s) as indicated in "Remarks" below;

C6. **SW / GW Remarks and Conditions**

References Used: **Local well logs; Groundwater Assessment of the John Day Basin, by Marshall Gannett, 1984; Geologic map of the Canyon City Quadrangle, Northeastern Oregon, by C. Ervin Brown and T. P. Thayer, USGS Miscellaneous Geologic Inestigations Map I-447, 1966.**

D. WELL CONSTRUCTION, OAR 690-200

D1. **Well #:** _____ **Logid:** _____

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).**

ANN	181,000.00	28,600.00	152,000.00	0.00	57,300.00	97,100.00

Detailed Report of Consumptive Uses and Storage

Consumptive Uses and Storages in Cubic Feet per Second

Month	Storage	Irrigation	Municipal	Industrial	Commercial	Domestic	Agricultural	Other	Total
JAN	0.62	0.00	1.99	0.51	0.03	0.66	0.22	0.00	4.03
FEB	0.86	0.00	1.99	0.51	0.03	0.66	0.22	0.00	4.27
MAR	1.10	0.00	1.99	0.51	0.03	0.66	0.22	0.00	4.51
APR	1.61	23.60	1.99	0.51	0.03	0.66	0.22	0.00	28.70
MAY	1.80	53.90	1.99	0.51	0.03	0.66	0.22	0.00	59.10
JUN	1.29	72.20	3.97	0.51	0.03	0.66	0.22	0.00	78.80
JUL	0.47	107.00	3.97	0.51	0.03	0.66	0.22	0.00	112.00
AUG	0.27	82.50	3.97	0.51	0.03	0.66	0.22	0.00	88.10
SEP	0.26	54.00	3.97	0.51	0.03	0.66	0.22	0.00	59.70
OCT	0.35	20.40	1.99	0.51	0.03	0.66	0.22	0.00	24.20
NOV	0.42	0.00	1.99	0.51	0.03	0.66	0.22	0.00	3.83
DEC	0.56	0.00	1.99	0.51	0.03	0.66	0.22	0.00	3.97

Detailed Report of Reservations for Storage and Consumptive Uses

Reserved Streamflow in Cubic Feet per Second

No reservations were found for this watershed.

Detailed Report of Instream Flow Requirements

Instream Flow Requirements in Cubic Feet per Second

Application #	Status	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
MF212B	CERTIFICATE	80.00	118.00	118.00	118.00	118.00	80.00	50.00	30.00	30.00	50.00	80.00	80.00
Maximum		**80.00**	**118.00**	**118.00**	**118.00**	**118.00**	**80.00**	**50.00**	**30.00**	**30.00**	**50.00**	**80.00**	**80.00**

Detailed Reports for Watershed ID #205

CANYON CR > JOHN DAY R - AT MOUTH
JOHN DAY BASIN
Water Availability as of 9/23/2011

Watershed ID #: 205
Date: 9/23/2011

Exceedance Level: 80%
Time: 1:59 PM

Water Availability Calculation

Monthly Streamflows in Cubic Feet per Second
Storage 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	14.50	2.21	12.30	0.00	25.00	-12.70
FEB	21.20	2.21	19.00	0.00	34.00	-15.00
MAR	39.90	2.21	37.70	0.00	34.00	3.69
APR	97.20	2.90	94.30	0.00	34.00	60.30
MAY	82.00	3.76	78.20	0.00	34.00	44.20
JUN	33.00	5.49	27.50	0.00	25.00	2.51
JUL	10.40	6.47	3.93	0.00	15.00	-11.10
AUG	5.15	5.79	-0.64	0.00	9.00	-9.64
SEP	4.09	4.97	-0.88	0.00	9.00	-9.88
OCT	5.03	2.79	2.24	0.00	9.00	-6.76
NOV	9.13	2.21	6.92	0.00	15.00	-8.08
DEC	13.00	2.21	10.80	0.00	25.00	-14.20
ANN	34,500.00	2,610.00	31,800.00	0.00	16,100.00	17,600.00

Detailed Report of Consumptive Uses and Storage

Consumptive Uses and Storages in Cubic Feet per Second

Month	Storage	Irrigation	Municipal	Industrial	Commercial	Domestic	Agricultural	Other	Total
JAN	0.00	0.00	1.57	0.00	0.00	0.56	0.08	0.00	2.21
FEB	0.00	0.00	1.57	0.00	0.00	0.56	0.08	0.00	2.21
MAR	0.00	0.00	1.57	0.00	0.00	0.56	0.08	0.00	2.21
APR	0.01	0.68	1.57	0.00	0.00	0.56	0.08	0.00	2.90
MAY	0.01	1.54	1.57	0.00	0.00	0.56	0.08	0.00	3.76
JUN	0.00	2.06	2.79	0.00	0.00	0.56	0.08	0.00	5.49
JUL	0.00	3.04	2.79	0.00	0.00	0.56	0.08	0.00	6.47
AUG	0.00	2.36	2.79	0.00	0.00	0.56	0.08	0.00	5.79
SEP	0.00	1.54	2.79	0.00	0.00	0.56	0.08	0.00	4.97
OCT	0.00	0.58	1.57	0.00	0.00	0.56	0.08	0.00	2.79
NOV	0.00	0.00	1.57	0.00	0.00	0.56	0.08	0.00	2.21
DEC	0.00	0.00	1.57	0.00	0.00	0.56	0.08	0.00	2.21

Detailed Report of Reservations for Storage and Consumptive Uses

Reserved Streamflow in Cubic Feet per Second

No reservations were found for this watershed.

Detailed Report of Instream Flow Requirements

Instream Flow Requirements in Cubic Feet per Second

Application #	Status	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
MF205A	CERTIFICATE	25.00	34.00	34.00	34.00	34.00	25.00	15.00	9.00	9.00	9.00	15.00	25.00
Maximum		**25.00**	**34.00**	**34.00**	**34.00**	**34.00**	**25.00**	**15.00**	**9.00**	**9.00**	**9.00**	**15.00**	**25.00**

Application G-17487, Leo and Diane Holthouse