

PUBLIC INTEREST REVIEW FOR GROUND WATER APPLICATIONS

TO: Water Rights Section Date May 19, 2009

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

SUBJECT: Application G- 17183 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: Jordan Creek Ranch, LLC County: Union

A1. Applicant(s) seek(s) 2.96 cfs from two well(s) in the Grande Ronde Basin,
_____subbasin Quad Map: Hilgard, LaGrande Reservoir, Kamela SE,
Little Beaver Creek

A2. Proposed use: Irrigation, 237 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 1	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	CRB	1.288	3S/36E-36 SE-SE	1115' N, 1295' W fr SE cor S 36
2	Proposed	2	CRB	1.676	4S/36E-12 SW-SE	1245' N, 40' E fr S ¼ cor S 12
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	3930	150	150		2-500	Basalt	Basalt					
2	4480	150	150		2-500	Basalt	Basalt					

Use data from application for proposed wells.

A4. **Comments:** All information from application. There are no local well logs on file to evaluate. The proposed well construction would allow up to 480 feet of open borehole since it is likely that basalt is at or very close to land surface. This large of an open interval would likely allow commingling of multiple basalt aquifers within the well bore. Therefore, up-hole or down-hole flow may result if the proposed well is constructed in this manner. A well construction condition is proposed (see B3) to address this concern.

A5. ☒ **Provisions of the Grande Ronde** 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: _____

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
1,2	Basalt of the Columbia River Basalt Group	☒	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐

Basis for aquifer confinement evaluation: Basalt aquifers are typically confined. However, the proposed wells could penetrate shallow water-bearing zones that may be poorly confined to 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	Jordan Creek	3780±	3600	3400	☒	☐	☐	☐	☒
1	1A	Springs @ unn trib Jordan C.	3780±	3730	1900	☒	☐	☐	☐	☒
2	1	Jordan Creek	4330±	4060	4000	☒	☐	☐	☐	☒
2	2	Unn Trib Beaver Creek	4330±	4300	3500	☒	☐	☐	☐	☒
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐

Basis for aquifer hydraulic connection evaluation: The water-bearing zones targeted by the proposed wells are very likely all incised by the surface water sources within the nearby reaches. See additional comments at C6.

Water Availability Basin the well(s) are located within: 1) Jordon (Jordan?) Cr > Grand Ronde R at mouth (30810412). 2) Beaver Cr > Grande Ronde R at mouth (70872).

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	☐	☐			☐	0.78	☒	<25%	☒
1	1A	☐	☐			☐	0.78	☒	<25%	☒
2	1	☐	☐			☐	0.78	☒	<25%	☒
2	2	☐	☐	70872	5.36	☒	3.81	☒	<25%	☒
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐

		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐

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 #		Q _w > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Q _w > 1% ISWR?	80% Natural Flow (cfs)	Q _w > 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		%	%	%	%	%	%	%	%	%	%	%	%

(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:
- ☒ The permit should contain condition #(s) 7J;
 - ☐ The permit should contain special condition(s) as indicated in "Remarks" below;

C6. **SW / GW Remarks and Conditions** The local area has a great deal of relief and the creeks are deeply incised into basalt rocks. In addition, the local stream gradient is steep, well over 100 feet per mile near both proposed wells. The proposed well sites are at high elevations, especially well #2. At the proposed maximum depth of 500 feet, the bottom-hole elevations are below the nearest reaches of the creeks. However, at downstream reaches the elevations of the creeks are below the deepest bottom-hole elevations of the proposed wells. Therefore, it is reasonable to conclude that the water-bearing zones that the proposed wells would develop are incised by the local creeks. Springs are also identified within one mile of well #1 and it is also reasonable to conclude that the shallow water-bearing zones potentially developed are likely discharging to Jordan Creek through these and possibly other unidentified springs and seeps within the stream bed or the adjacent canyons of the creek and tributaries. The proposed wells will develop a relatively local ground water flow system and will interfere with local creeks and springs. Interference with these surface water sources could be eliminated if the proposed wells were to develop a deeper regional flow system. This would require a proposal that includes much deeper wells and, in particular, much deeper casing and seal depths.

References Used: General knowledge of CRB hydrogeology; recent reviews; Reconnaissance Geologic Map of the Pendleton Quadrangle, Oregon and Washington, Walker, G. W., 1973.

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).**