

## Groundwater Application Review Summary Form

Application # G- 18394

GW Reviewer J. Hackett Date Review Completed: 11/13/2017

### 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).*







**PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS**

TO: Water Rights Section Date November 13, 2017

FROM: Groundwater Section J. Hackett  
Reviewer's Name

SUBJECT: Application G- 18394 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: Joshua Reeve County: Umatilla

A1. Applicant(s) seek(s) 0.062 cfs from 1 well(s) in the Umatilla Basin,  
 \_\_\_\_\_ subbasin

A2. Proposed use Irrigation Seasonality: March 1 – 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	UMAT 2791	1	Alluvium	0.062	4N/29E-7 SW-NE	120' N, 100' E fr C1/4 cor S 7
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	617	85	24	2/13/1974	105	0-20	0 – 57			20		A

Use data from application for proposed wells.

A4. **Comments:** \_\_\_\_\_  
 \_\_\_\_\_

A5.  **Provisions of the** Umatilla 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: \_\_\_\_\_  
 \_\_\_\_\_





**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	Alluvium	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>

**Basis for aquifer confinement evaluation:** Reported water level in applicant's well rose above water-bearing zone, suggesting some confinement. However, the shallow alluvial aquifer locally acts as an unconfined system.

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	Umatilla River	590	410	19000	<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"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Basis for aquifer hydraulic connection evaluation:** There are several canals within the area but no perennial streams within 1 mile of the applicant's well.

**Water Availability Basin the well(s) are located within:** #221: UMATILLA R > COLUMBIA R – 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?
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>

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

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.

<b>Non-Distributed Wells</b>													
Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>1</b>	<b>1</b>	%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS		0	0	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0	0
Interference CFS		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>Distributed Wells</b>													
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													
<b>(A) = Total Interf.</b>		<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>
<b>(B) = 80 % Nat. Q</b>		<b>292.0</b>	<b>548.0</b>	<b>697.0</b>	<b>984.0</b>	<b>569.0</b>	<b>187.0</b>	<b>82.70</b>	<b>48.10</b>	<b>56.60</b>	<b>67.90</b>	<b>101.0</b>	<b>215.0</b>
<b>(C) = 1 % Nat. Q</b>		<b>2.92</b>	<b>5.48</b>	<b>6.97</b>	<b>9.84</b>	<b>5.69</b>	<b>1.87</b>	<b>0.827</b>	<b>0.481</b>	<b>0.566</b>	<b>0.679</b>	<b>1.01</b>	<b>2.15</b>
<b>(D) = (A) &gt; (C)</b>		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>(E) = (A / B) x 100</b>		<b>0.0 %</b>	<b>0.0 %</b>	<b>0.0 %</b>	<b>0.0 %</b>	<b>0.0 %</b>	<b>0.0 %</b>	<b>0.0 %</b>	<b>0.0 %</b>	<b>0.0 %</b>	<b>0.0 %</b>	<b>0.0 %</b>	<b>0.0 %</b>





**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**

**UMATILLA R > COLUMBIA R - AT MOUTH  
UMATILLA BASIN**

Water Availability as of 11/13/2017

Watershed ID #: 221 ([Map](#))

Exceedance Level:

Date: 11/13/2017

Time: 2:12 PM

<a href="#">Water Availability Calculation</a>	<a href="#">Consumptive Uses and Storages</a>	<a href="#">Instream Flow Requirements</a>	<a href="#">Reservations</a>
<a href="#">Water Rights</a>	<a href="#">Watershed Characteristics</a>		

**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	292.00	384.00	-92.10	0.00	250.00	-342.00
FEB	548.00	473.00	75.40	0.00	250.00	-175.00
MAR	697.00	612.00	85.40	0.00	250.00	-165.00
APR	984.00	860.00	124.00	0.00	250.00	-126.00
MAY	569.00	1,130.00	-565.00	0.00	250.00	-815.00
JUN	187.00	793.00	-606.00	0.00	250.00	-856.00
JUL	82.70	421.00	-338.00	0.00	120.00	-458.00
AUG	48.10	314.00	-266.00	0.00	85.00	-351.00
SEP	56.60	238.00	-182.00	0.00	250.00	-432.00
OCT	67.90	138.00	-70.10	0.00	300.00	-370.00
NOV	101.00	188.00	-86.80	0.00	300.00	-387.00
DEC	215.00	357.00	-142.00	0.00	250.00	-392.00
ANN	424,000.00	357,000.00	150,000.00	0.00	169,000.00	80,600.00

**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
MF221A	CERTIFICATE	250.0 0	250.0 0	250.0 0	250.0 0	250.0 0	250.0 0	120.0 0	85.0 0	250.0 0	300.0 0	300.0 0	250.0 0
<b>Maximum</b>		<b>250.0 0</b>	<b>250.0 0</b>	<b>250.0 0</b>	<b>250.0 0</b>	<b>250.0 0</b>	<b>250.0 0</b>	<b>120.0 0</b>	<b>85.0 0</b>	<b>250.0 0</b>	<b>300.0 0</b>	<b>300.0 0</b>	<b>250.0 0</b>

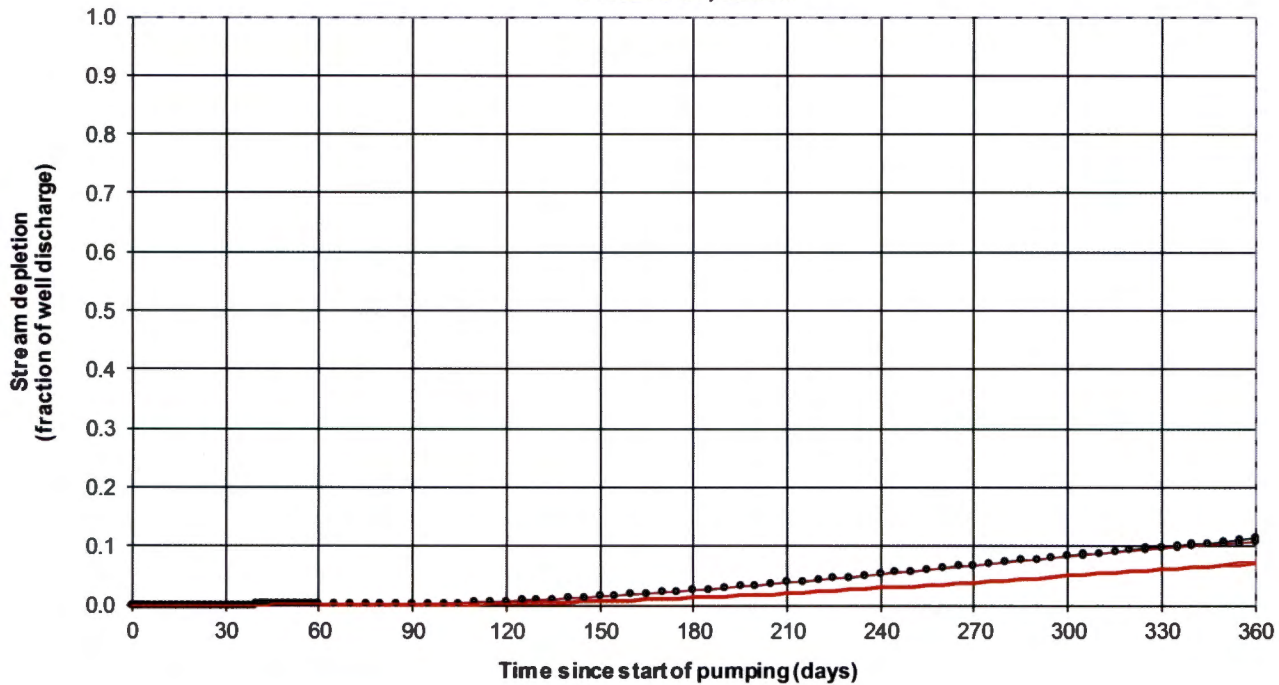




Modeled pumping impacts from applicant's well on Umatilla River

**Transient Stream Depletion (Jenkins, 1970; Hunt, 1999)**

04N/29E-07, Reeve



**Output for Hunt Stream Depletion, Scenerio 2 (s2):** Time pump on = 240 days

Days	30	60	90	120	150	180	210	240	270	300	330	360
Qw, cfs	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032
Jenk SD s2 %	0.00	0.01	0.15	0.61	1.42	2.51	3.82	5.25	6.75	8.27	9.66	10.72
Jen SD s2 cfs	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.002	0.002	0.003	0.003	0.003
Hunt SD s2 %	0.00	0.00	0.05	0.25	0.64	1.23	2.00	2.90	3.90	4.96	6.02	6.95
Hunt SD s2 cfs	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.001	0.002	0.002	0.002

**Parameters:**

		Scenario 1	Scenario 2	Scenario 3	Units
Net steady pumping rate	Qw	0.0315	0.0315	0.0315	cfs
Distance to stream	a	19000	19000	19000	ft
Aquifer hydraulic conductivity	K	500	500	500	ft/day
Aquifer thickness	b	80	80	80	ft
Aquifer transmissivity	T	40000	40000	40000	ft*ft/day
Aquifer storage coefficient	S	0.2	0.2	0.2	
Stream width	ws	75	75	75	ft
Streambed hydraulic conductivity	Ks	1	1	1	ft/day
Streambed thickness	bs	3	3	3	ft
Streambed conductance	sbc	25	25	25	ft/day
Stream depletion factor (Jenkins)	sdf	1805	1805	1805	days
Streambed factor (Hunt)	sbf	11.875	11.875	11.875	

### Water Levels in Nearby Wells

