

# Groundwater Application Review Summary Form

Application # G-18115\_

GW Reviewer J. Hootsmans/J. Hackett Date Review Completed: 1/25/2023

## 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).*

**WATER RESOURCES DEPARTMENT**

**MEMO**

**January 25, 2023**

**TO:**            **Application G- 18155**

**FROM:**        **GW: J. Hootsmans/J. Hackett**  
                    (Reviewer's Name)

**SUBJECT: Scenic Waterway Interference Evaluation**

**YES**            The source of appropriation is hydraulically connected to a State Scenic Waterway or its tributaries

**NO**

**YES**

**NO**            Use the Scenic Waterway Condition (Condition 7J)

Per ORS 390.835, the Groundwater 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 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**

**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   [Enter]   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 GROUNDWATER APPLICATIONS

TO: Water Rights Section Date January 25, 2023  
 FROM: Groundwater Section J. Hootsmans/J. Hackett  
Reviewer's Name  
 SUBJECT: Application G- 18115 Supersedes review of June 3, 2016  
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: Gerardo Sanguino County: Umatilla

A1. Applicant(s) seek(s) 0.0625 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 57557	1	Alluvium	0.0625	5N/29E-31 NW-SE	1170' S, 530' E fr C1/4 cor S 31
2						
3						
4						

\* 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	471	55	25	5/26/2015	100	0-30	+1 - 84			200		A

Use data from application for proposed wells.

A4. **Comments:** This re-review includes a review of groundwater levels in the POA and surrounding wells (see Section B3a.).  
 \_\_\_\_\_  
 \_\_\_\_\_

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: \_\_\_\_\_  
 \_\_\_\_\_

**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; medium 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 alluvial 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:** The applicant’s well produces from coarse-grained Missoula Flood sediments that overlie Columbia River Basalt Group aquifers. Water levels in the sedimentary aquifer are relatively stable, as shown by UMAT 3605 (located in 5N/28E-35 NW-SE) the nearest alluvial well with a longer term water level record. Water level data, where available, are also relatively stable in nearby wells within Section 31 completed in the sedimentary or basalt aquifers (See Observation Well Data).

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**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"/>

**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	445	410	21000	<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"/>

**Basis for aquifer hydraulic connection evaluation:** The applicant’s well is not located within 1 mile of any perennial surface water sources.

**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 (SW) source. Limit evaluation to instream rights and minimum stream flows that are pertinent to that SW source, 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"/>

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"/>

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
<b>1</b>	<b>1</b>	%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS		<b>0</b>	<b>0</b>	<b>0.031</b>	<b>0.031</b>	<b>0.031</b>	<b>0.031</b>	<b>0.031</b>	<b>0.031</b>	<b>0.031</b>	<b>0.031</b>	<b>0</b>	<b>0</b>
Interference CFS		<b>0.001</b>	<b>0.001</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>0.001</b>	<b>0.001</b>
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													
<b>(A) = Total Interf.</b>		<b>0.001</b>	<b>0.001</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>0.001</b>	<b>0.001</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>

(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:** Impacts to the Umatilla River from pumping at the applicant's well were calculated for the first year of pumping. A prorated pumping rate of 0.0315 cfs was used to spread the annual duty of 15 Acre-Feet over the 240 day irrigation season. A hydraulic conductivity of 500 ft/day, which is appropriate for coarse sand and gravel, and a specific yield of 0.2 were used in the calculation. Modeling results indicate that pumping impacts will be less than 1% of the natural flow in the Umatilla River during all months of the year.

\_\_\_\_\_  
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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:** \_\_\_\_\_

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**References Used:** Application Files G18115, 2015 and 2016 GW Reviews

Wozniak, K.C., 1995, Hydrogeology of the Lower Umatilla Basin, in Grondin and others, Hydrogeology, Groundwater Chemistry and land uses in the Lower Umatilla Basin Groundwater Management Area, Oregon Department of Environmental Quality

Hunt, B., 1999, Unsteady stream depletion from ground water pumping: Ground Water, v. 37, no. 1, p. 98-102

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**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.**

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Water Availability Tables

**Water Availability Analysis**  
Detailed Reports

UMATILLA R > COLUMBIA R - AT MOUTH  
UMATILLA BASIN

Watershed ID #: 221 [\(Map\)](#)  
Date: 1/24/2023

Water Availability as of 1/24/2023

Exceedance Level: 80%   
Time: 2:05 PM

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	292.00	384.00	-92.10	0.00	250.00	-342.00
FEB	548.00	473.00	75.30	0.00	250.00	-175.00
MAR	697.00	612.00	85.20	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	56.80	238.00	-182.00	0.00	250.00	-432.00
OCT	67.90	138.00	-70.20	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**

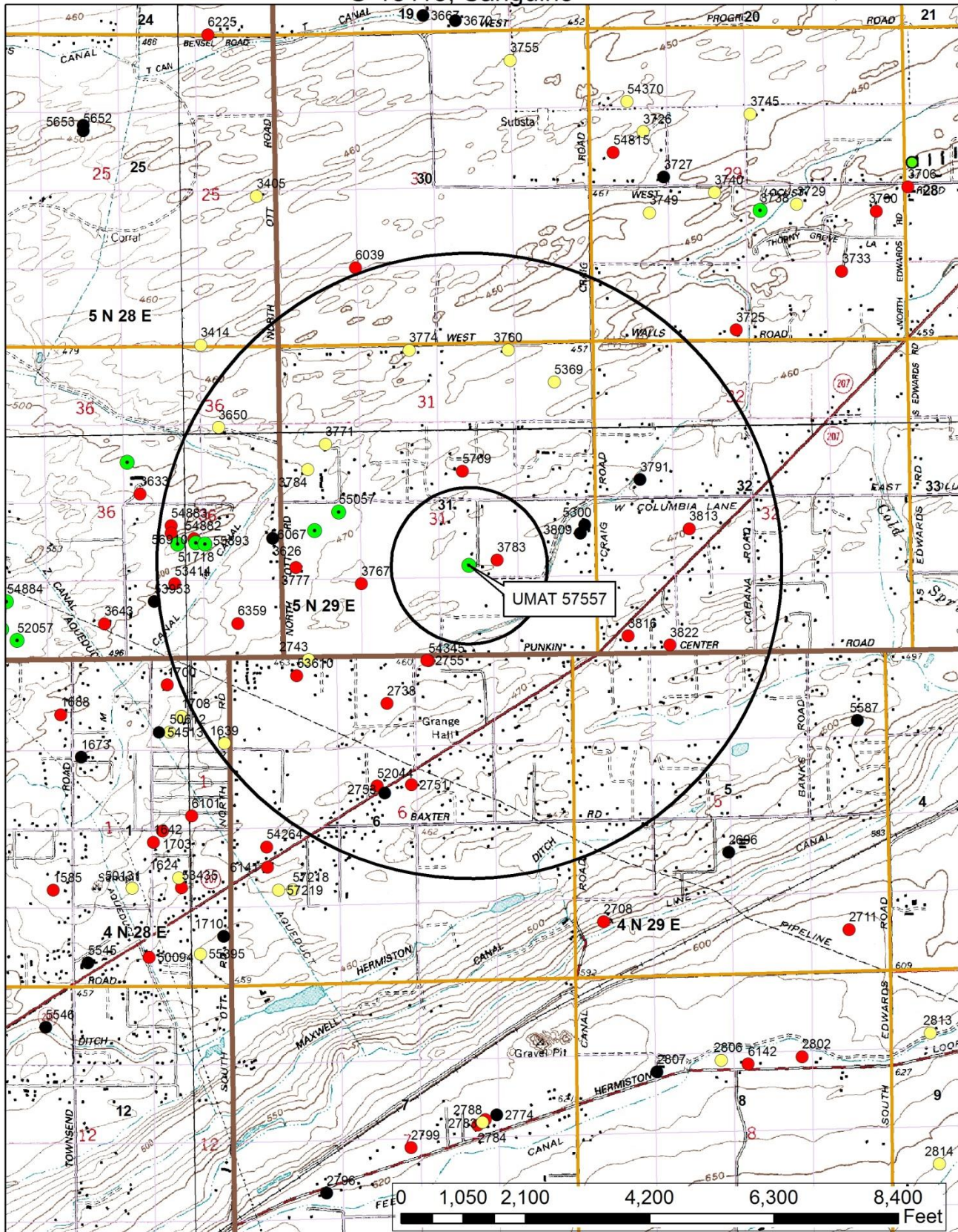
Instream Flow Requirements in Cubic Feet per Second

Application #	Status	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
MF221A	CERTIFICATE	250.00	250.00	250.00	250.00	250.00	250.00	120.00	85.00	250.00	300.00	300.00	250.00
<b>Maximum</b>		<b>250.00</b>	<b>250.00</b>	<b>250.00</b>	<b>250.00</b>	<b>250.00</b>	<b>250.00</b>	<b>120.00</b>	<b>85.00</b>	<b>250.00</b>	<b>300.00</b>	<b>300.00</b>	<b>250.00</b>

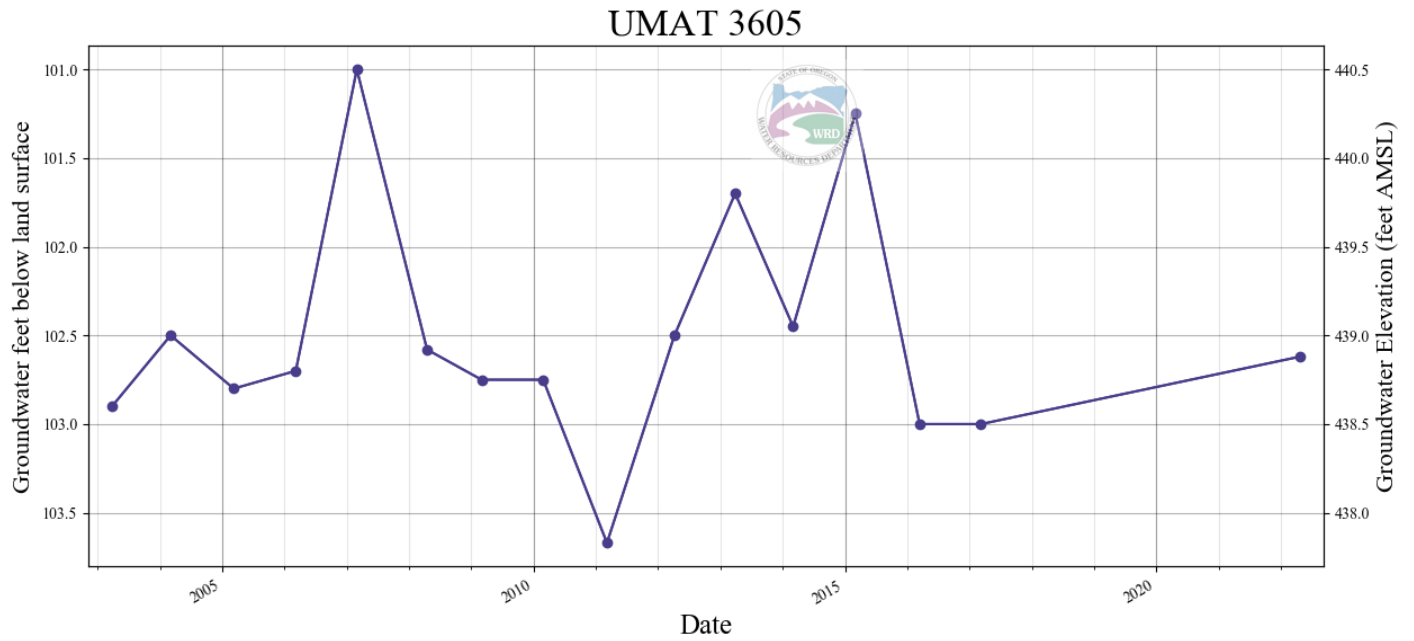
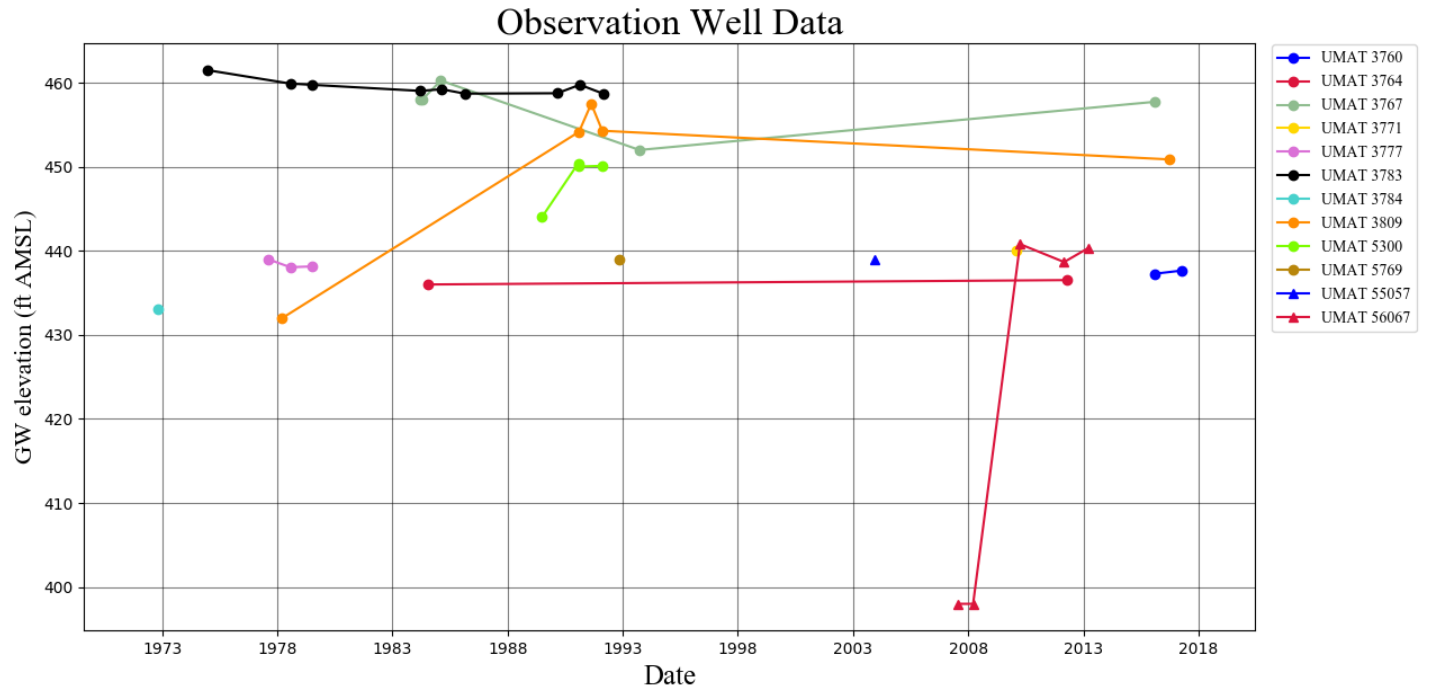
Well Location Map

G-18115, Sanguino

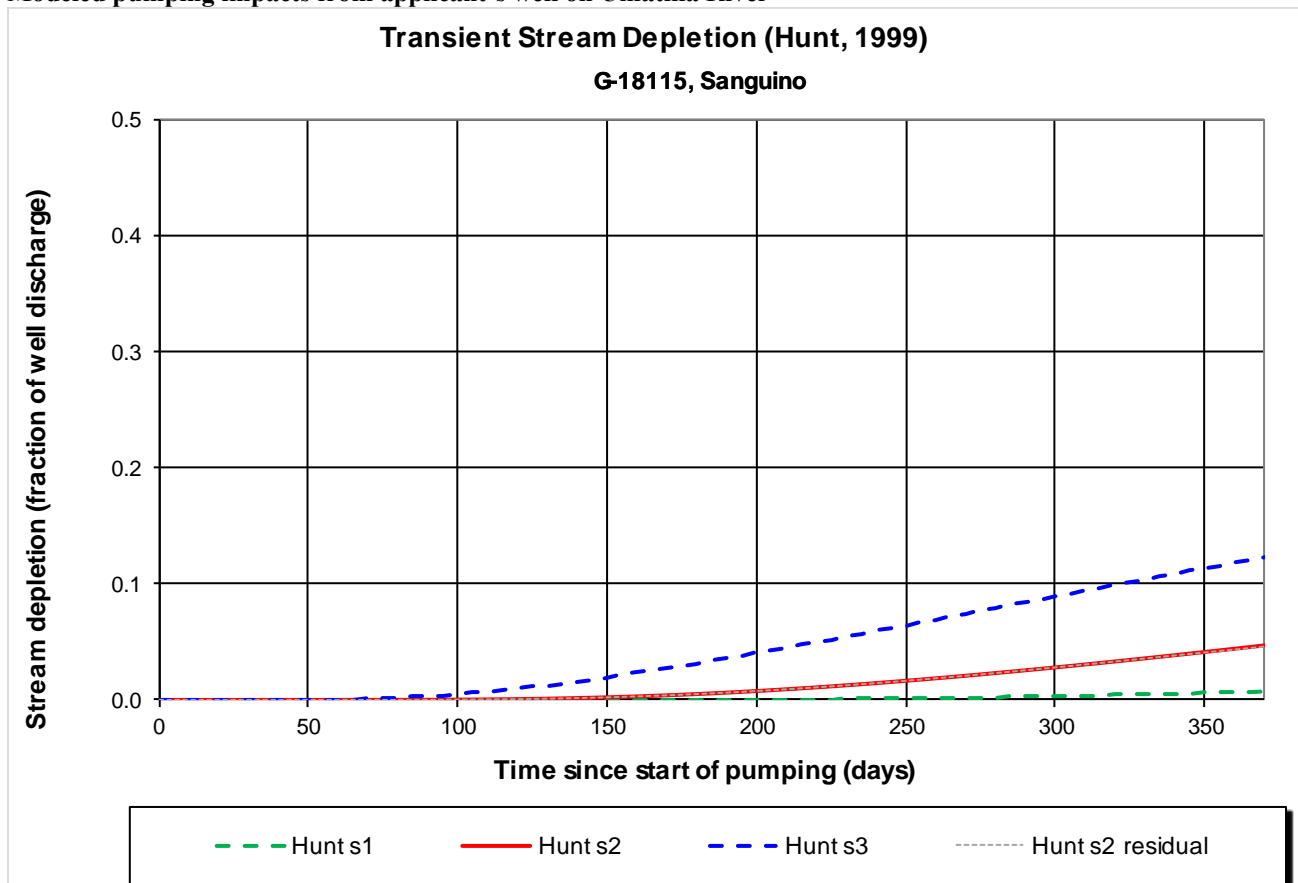
1:24,000 scale



Water-Level Measurements in Nearby Wells



Modeled pumping impacts from applicant’s well on Umatilla River



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	0.00	0.03	0.17	0.51	1.06	1.80	2.69	3.69	4.77	5.88	6.90
Jen 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
Hunt SD s2 %	0.00	0.00	0.01	0.07	0.22	0.50	0.91	1.45	2.08	2.79	3.57	4.34
Hunt SD s2 cfs	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.001	0.001

Parameters:		Scenario 1	Scenario 2	Scenario 3	Units
Net steady pumping rate	Qw	0.0315	0.0315	0.0315	cfs
Distance to stream	a	21000	21000	21000	ft
Aquifer hydraulic conductivity	K	250	500	1000	ft/day
Aquifer thickness	b	75	75	75	ft
Aquifer transmissivity	T	18750	37500	75000	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	4704.0000	2352.0000	1176.0000	days
Streambed factor (Hunt)	sbf	28.0000	14.0000	7.0000	