

Approved:



# MEMO

**To:** Kristopher Byrd, Well Construction and Compliance Section Manager  
**From:** Travis Kelly, Well Construction Program Coordinator  
**Subject:** Review of Water Right Application G-19073  
**Date:** April 23, 2021

The attached application was forwarded to the Well Construction and Compliance Section by the Groundwater Section. Jen Woody reviewed the application. Please see Jen's Groundwater Review and the Well Report.

Applicant's Well POLK 54000 (POLK 54000): Based on a review of the Well Report, Applicant's Well POLK 54000 seems to protect the groundwater resource.

The construction of Applicant's Well POLK 54000 may not satisfy hydraulic connection issues.



# Groundwater Application Review Summary Form

Application # G- 19073

GW Reviewer Jen Woody Date Review Completed: 04/22/2021

## 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**

04/22/2021

**TO:** Application G- 19073

**FROM:** GW: Jen Woody  
(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** Use the Scenic Waterway Condition (Condition 7J)

**NO**

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 04/22/2021  
 FROM: Groundwater Section Jen Woody  
 Reviewer's Name  
 SUBJECT: Application G- 19073 Supersedes review of n/a  
 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: McKee Family Farms LLC County: Polk

A1. Applicant(s) seek(s) 0.11 cfs up to 20 acre-feet from 1 well(s) in the Willamette Basin,  
Middle Willamette 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	POLK 54000	POLK 54000	alluvium	0.11	9S/4W-4 SE ¼ SW ¼	1100' N, 1400' E fr SW cor S 4
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	200	25	16	2/27/2017	80	0-18	2-78	n/a	25-70	50	37	pump

Use data from application for proposed wells.

A4. **Comments:** There are 2 other current authorizations on this well: LL-1695 for 50 gpm up to 5 acre-feet per year and LL-1743, for 50 gpm up to 6 acre-feet per year to establish 50.6 acres of filberts.

A5.  **Provisions of the** Willamette 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: The well produces from a confined aquifer and is located greater than ¼ mile from the Willamette River; the pertinent basin rules (OAR 690-502-0240) do not apply.

A6.  **Well(s) #** \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, tap(s) an aquifer limited by an administrative restriction.  
 Name of administrative area: none  
 Comments: n/a

**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) 7C, 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 proposed well is located on the western margin of the Willamette River floodplain. Fine-grained sedimentary material is found from land surface to a depth of approximately 25 feet. Approximately 40 feet of alluvial sands and gravels underlie the fine-grained material. Production in this well and nearby wells comes from the sands and gravels. The aquifer is bounded by clays found beneath the sands and gravels and by low-permeability Tertiary marine sediments to the west and south (Conlon et al., 2005).

\_\_\_\_\_

Water level data is sparse in this area, but reported levels from the subject well and POLK 3019 indicate stability at the current level of use (See Figure 3). Water level monitoring and reporting is recommended to assess the impact of the additional proposed use under this application.

\_\_\_\_\_

The potential to interfere with a domestic well located approximately 300 feet from the subject well is assessed in Figure 4. An additional 4 feet of drawdown at the neighboring well is not expected to prevent that well from accessing their usual amount of water, given water levels under current conditions.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**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 checked="" 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:** The well log reports a static water level above the water-bearing zone, indicating a confined aquifer.

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	Willamette River	185	135	7040	<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 Willamette River incises into the alluvial aquifer system. Groundwater elevation levels and published water-table maps indicate that groundwater in the alluvial aquifer flows toward, and discharges to, the Willamette River (Conlon et al., 2005), indicating hydraulic connection.

**Water Availability Basin the well(s) are located within:** Watershed ID # 183: Willamette R>Columbia R-AB Mill Cr at gage 14191000

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:** n/a. The closest surface water is located greater than 1 mile from the subject well.

---



---



---

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
1	1	3.6 %	3.6 %	2.3 %	2.7 %	3.2 %	3.6 %	4.0 %	4.5 %	4.9 %	5.4 %	3.6 %	3.6 %
Well Q as CFS		0	0	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0	0
Interference CFS		0.004	0.004	0.003	0.003	0.003	0.004	0.004	0.005	0.005	0.006	0.004	0.004
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</b>	<b>0</b>	<b>0.003</b>	<b>0.003</b>	<b>0.003</b>	<b>0.004</b>	<b>0.004</b>	<b>0.005</b>	<b>0.005</b>	<b>0.006</b>	<b>0.004</b>	<b>0.004</b>
<b>(B) = 80 % Nat. Q</b>		<b>18400</b>	<b>20100</b>	<b>19600</b>	<b>18000</b>	<b>15500</b>	<b>8310</b>	<b>4710</b>	<b>3620</b>	<b>3680</b>	<b>4650</b>	<b>9400</b>	<b>16700</b>
<b>(C) = 1 % Nat. Q</b>		<b>184</b>	<b>201</b>	<b>196</b>	<b>180</b>	<b>155</b>	<b>831</b>	<b>47.1</b>	<b>36.2</b>	<b>36.8</b>	<b>46.5</b>	<b>94.0</b>	<b>16.7</b>
<b>(D) = (A) &gt; (C)</b>													
<b>(E) = (A / B) x 100</b>		<b>&lt;&lt;1 %</b>	<b>&lt;&lt;1 %</b>	<b>&lt;&lt;1 %</b>	<b>&lt;&lt;1 %</b>	<b>&lt;&lt;1 %</b>	<b>&lt;&lt;1 %</b>	<b>&lt;&lt;1 %</b>	<b>&lt;&lt;1 %</b>	<b>&lt;&lt;1 %</b>	<b>&lt;&lt;1 %</b>	<b>&lt;&lt;1 %</b>	<b>&lt;&lt;1 %</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:** Potential depletion of Willamette River flows by Well 1 was estimated with the Hunt 2003 analytical stream depletion model using the maximum rate requested during the irrigation season. This should include the cumulative impact of uses under LL-1695, LL-1743 and application G-19073. In all months, stream depletion will be much less than 1% of the 80% exceedance flows in the first year of pumping. See Figure 5 for details.

---



---



---



---



---



---



---



---





**D. WELL CONSTRUCTION, OAR 690-200**

D1. Well #:   n/a   Logid:   n/a  

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.**

---

---

Figure 1. Water Availability Tables

## Water Availability Analysis Detailed Reports

WILLAMETTE R > COLUMBIA R - AB MILL CR AT GAGE 14191000  
WILLAMETTE BASIN

Water Availability as of 4/21/2021

Watershed ID #: 183 [\(Map\)](#)

Exceedance Level:80%

Date: 4/21/2021

Time: 11:55 AM

## 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	18,400.00	2,240.00	16,200.00	0.00	1,300.00	14,900.00
FEB	20,100.00	7,430.00	12,700.00	0.00	1,300.00	11,400.00
MAR	19,600.00	7,220.00	12,400.00	0.00	1,300.00	11,100.00
APR	18,000.00	6,870.00	11,100.00	0.00	1,300.00	9,830.00
MAY	15,500.00	4,170.00	11,300.00	0.00	1,300.00	10,000.00
JUN	8,310.00	1,690.00	6,620.00	0.00	1,300.00	5,320.00
JUL	4,710.00	1,450.00	3,260.00	0.00	1,300.00	1,960.00
AUG	3,620.00	1,330.00	2,290.00	0.00	1,300.00	990.00
SEP	3,680.00	1,150.00	2,530.00	0.00	1,300.00	1,230.00
OCT	4,650.00	745.00	3,910.00	0.00	1,300.00	2,610.00
NOV	9,400.00	854.00	8,550.00	0.00	1,300.00	7,250.00
DEC	16,700.00	915.00	15,800.00	0.00	1,300.00	14,500.00
ANN	13,500,000.00	2,160,000.00	11,300,000.00	0.00	942,000.00	10,400,000.00

Figure 2. Well Location Map

G-19073 McKee: T9S/R4W- Section 4

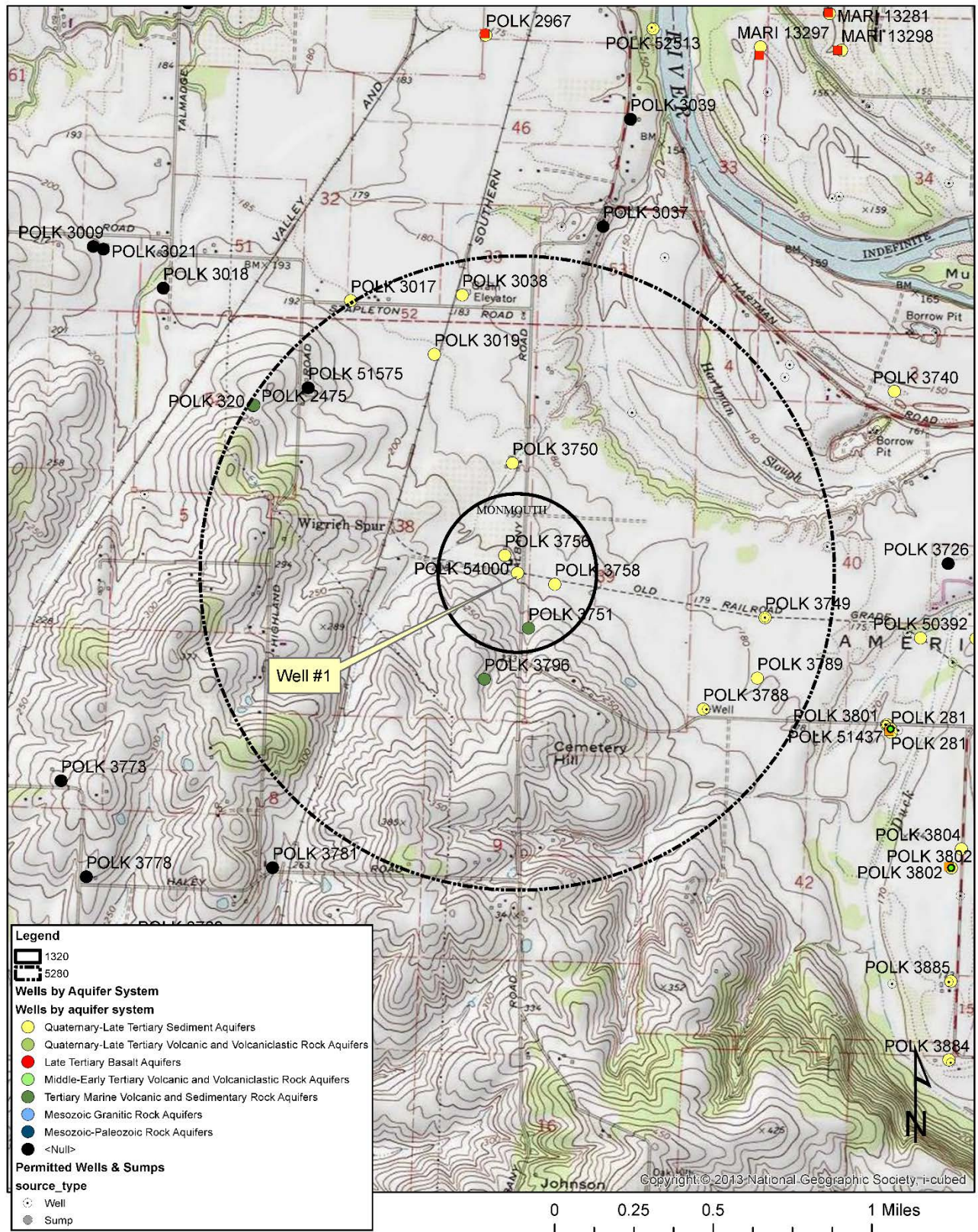


Figure 3. Water-Level Measurements in Nearby Wells

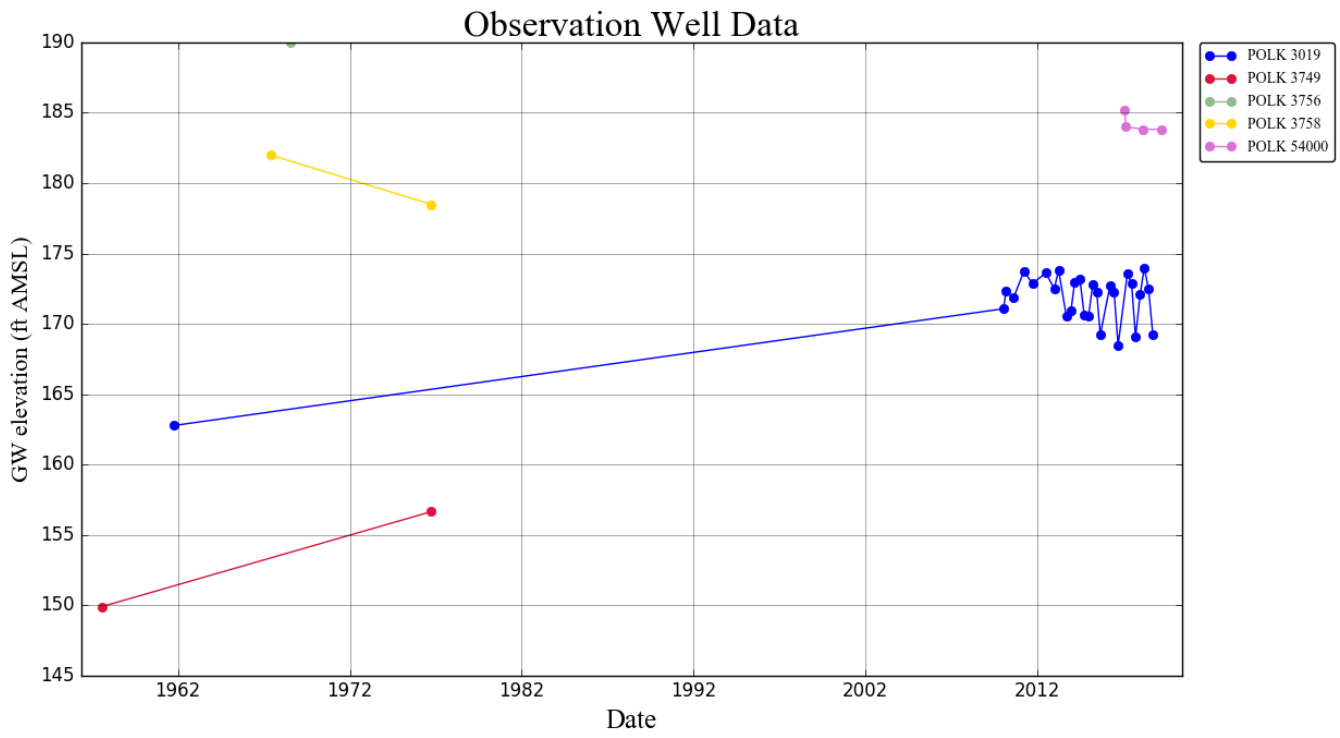


Figure 4. Well to Well Interference Estimate

This Drawdown and Recovery at r = 300 ft From Pumping Well

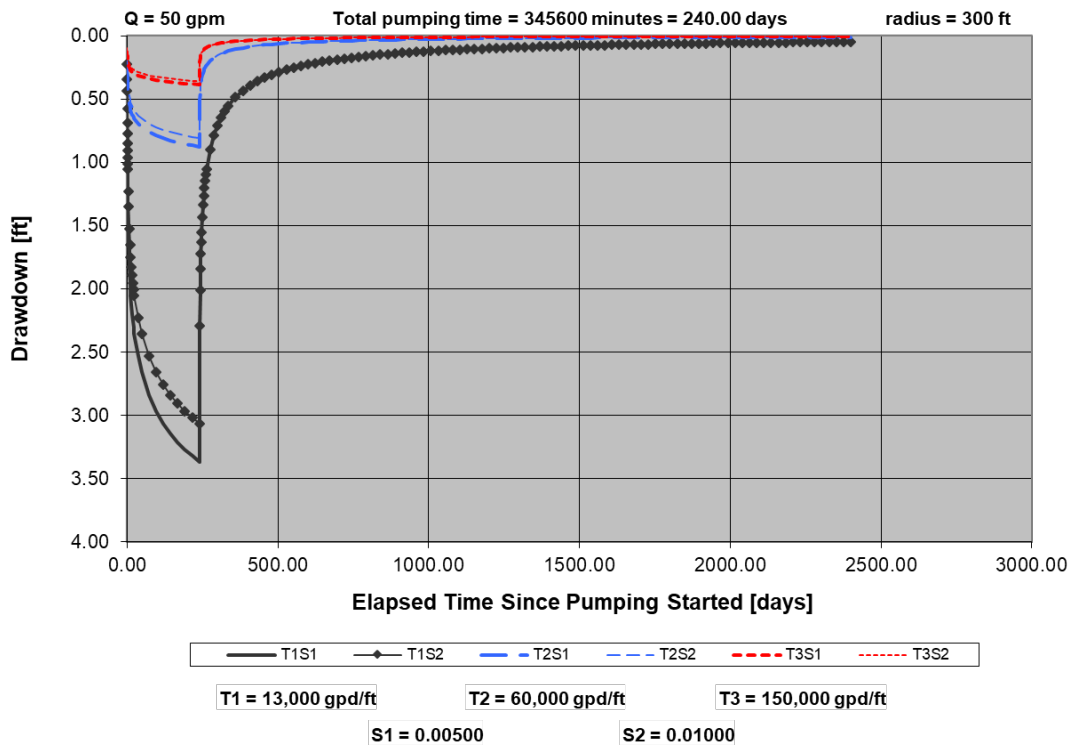
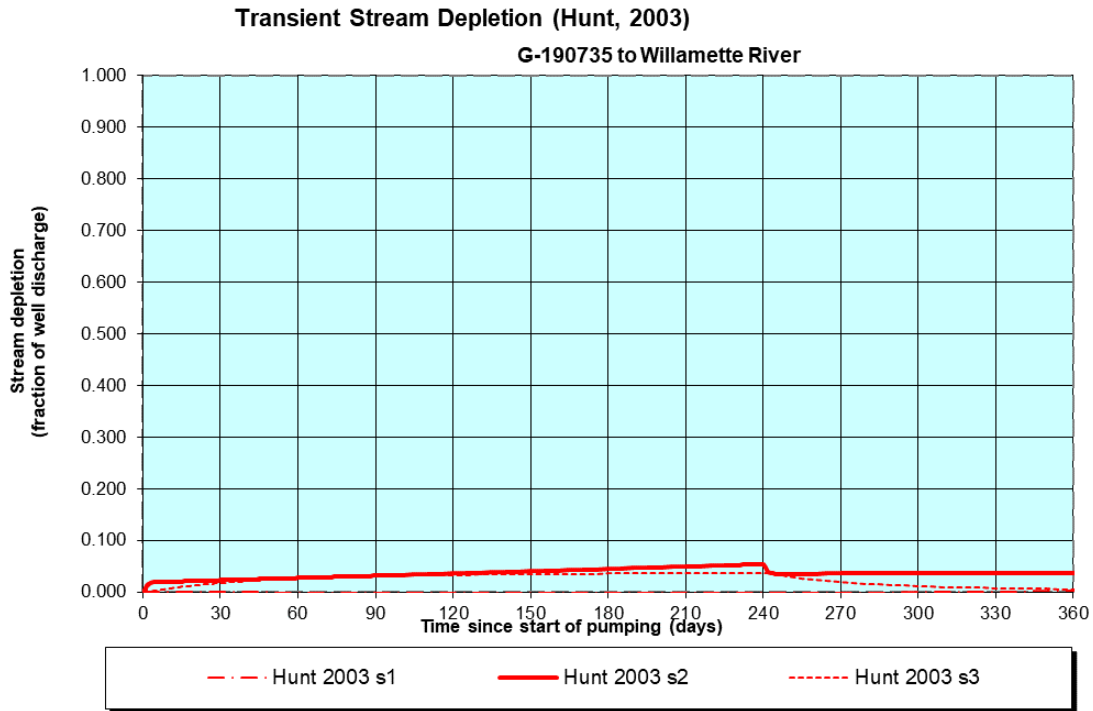


Figure 5. Stream Depletion



Output for Stream Depletion, Scenerio 2 (s2):						Time pump on (pumping duration) = 240 days							
Days	30	60	90	120	150	180	210	240	270	300	330	360	
H SD 2003	2.28%	2.71%	3.15%	3.59%	4.03%	4.48%	4.93%	5.38%	3.56%	3.59%	3.63%	3.66%	
Qw, cfs	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	
H SD 03, cfs	0.003	0.003	0.003	0.004	0.004	0.005	0.005	0.006	0.004	0.004	0.004	0.004	
Parameters:		Scenario 1	Scenario 2	Scenario 3	Units								
Net steady pumping rate of well	Qw	0.11	0.11	0.11	cfs								
Time pump on (pumping duration)	tpon	240	240	240	days								
Perpendicular from well to stream	a	7040	7040	7040	ft								
Well depth	d	80	80	80	ft								
Aquifer hydraulic conductivity	K	80	500	1000	ft/day								
Aquifer saturated thickness	b	20	20	20	ft								
Aquifer transmissivity	T	1600	10000	20000	ft*ft/day								
Aquifer storativity or specific yield	S	0.01	0.001	0.005									
Aquitard vertical hydraulic conductivity	Kva	0.1	0.01	0.001	ft/day								
Aquitard saturated thickness	ba	5	10	15	ft								
Aquitard thickness below stream	babs	3	3	3	ft								
Aquitard porosity	n	0.2	0.2	0.2									
Stream width	ws	400	400	400	ft								