

Groundwater Application Review Summary Form

Application # G- ~~18643~~ ⁸¹ 18463

GW Reviewer Joe Kemper

Date Review Completed: 6/21/2018

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).

[illegible]

MEMO



To: Kristopher Byrd, Well Construction and Compliance Section Manager
From: Joel Jeffery, Well Construction Program Coordinator
Subject: Review of Water Right Application G-18463
Date: September 12, 2018

The attached application was forwarded to the Well Construction and Compliance Section by Water Rights. Joe Kemper reviewed the application. Please see Joe's Groundwater Review and the Well Logs.

Applicant's Well #1 (Jack 53245): Based on a review of the Well Report, Applicant's Well #1 appears to protect the groundwater resource.

The construction of Applicants Well #1 may not satisfy hydraulic connection issues.

Applicant's Well #2 (Jack 54804): Based on a review of the Well Report, Applicant's Well #2 appears to protect the groundwater resource.

The construction of Applicants Well #2 may not satisfy hydraulic connection issues.

RECEIVED

STATE OF OREGON

JUN 14 1999

WATER SUPPLY WELL REPORT

(as required by ORS 537.765)

WATER RESOURCES DEPT.
OREGON

Instructions for completing this report are on the back of this form

WELL ID # **L28589**(START CARD) # **118224**

(1) OWNER:

Well Number: **2**Name **Greg Hollister**Address **575 Judge road**City **Central Point**State **OR** Zip **97502**

(2) TYPE OF WORK:

☒ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) DRILL METHOD:

☒ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger
☐ Other

(4) PROPOSED USE:

☒ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☐ Other

(5) BORE HOLE CONSTRUCTION:

Special Construction approval ☐ Yes ☒ No Depth of Completed Well **140** ft.
Explosives used ☐ Yes ☒ No Type Amount

HOLE			SEAL			Amount
Diameter	From	To	Material	From	To	sacks or pounds
10	0	18	bentonite	0	18	7 sacks
6	18	140				

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E☒ Other **poured dry**

Backfill placed from _____ ft. to _____ ft. Material _____

Gravel placed from _____ ft. to _____ ft. Size of gravel _____

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	6	+2	18	.250	☒	☐	☐	☐
Liner:	4	3	140	160	☐	☒	☒	☐

Final location of shoe(s) _____

(7) PERFORATIONS/SCREENS:

☒ Perforations Method **skillsaw**
☐ Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
80	140	1/4x6	100			☐	☒

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☐ Bailor ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
20	140	140	1 hr.

Temperature of Water **58** Depth Artesian Flow found _____Was a water analysis done? ☐ Yes By whom _____Did any strata contain water not suitable for intended use? ☐ Too little☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other

Depth of strata: _____

(9) LOCATION OF WELL by legal description:

County **Jackson** Latitude Longitude
Township **35S** N or S. Range **2W** E or W. of WM.
Section **22** NW 1/4 NW 1/4
Tax lot **1300** Lot Block Subdivision
Street Address of Well (or nearest address) **Perry road**

(10) STATIC WATER LEVEL:

9 ft. below land surface. Date **5/16/99**
Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:

Depth at which water was first found **89**

From	To	Estimated Flow Rate	SWL
89	92	20	9

(12) WELL LOG:

Ground elevation _____

Material	From	To	SWL
top soil	0	1	
tan clay	1	8	
grey sandstone	8	89	
brown sandstone	89	92	9
green sandstone	92	140	

ASHLAND DRILLING, INC.
ALL AMERICAN PUMP CO.
 600 South Pacific Hwy.
 Talent, OR 97540
 (541) 488-2827

Date started **5/16/99**Completed **5/16/99**

(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to my best knowledge and belief.

Signed *William J. Ashland* WWC Number **1657**
Date **6/11/99**
Ashland Drilling Inc.

(bonded) Water Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.

Signed *William J. Ashland* WWC Number **1478**
Date **6/11/99**
Ashland Drilling Inc.

ORIGINAL & FIRST COPY - WATER RESOURCES DEPARTMENT

SECOND COPY - CONSTRUCTOR

THIRD COPY - CUSTOMER

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765)

Instructions for completing this report are on the last page of this form.

Jack
54804

WELL I.D. # L 46971
START CARD # 137776

(1) OWNER: _____ Well Number _____
 Name GREGORY C. HAMILSTER
 Address 13799 Percy Rd.
 City Central Point, OR State OR Zip 97502

(2) TYPE OF WORK
☒ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) **DRILL METHOD:**

☒ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger

☐ Other _____

(4) PROPOSED USE:

☒ Domestic	☐ Community	☐ Industrial	☐ Irrigation
☐ Thermal	☐ Injection	☐ Livestock	☐ Other _____

(5) BORE HOLE CONSTRUCTION: Special Construction approval ☐ Yes ☒ No Depth of Completed Well 200 ft.
Explosives used ☐ Yes ☐ No Type _____ Amount _____

HOLE			SEAL			
Diameter	From	To	Material	From	To	Sacks or pounds
10"	0	19'	BENTONITE	0	19'	12 ⁵⁰
6"	19	300				

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E
☒ Other Tongues in bag

Backfill placed from _____ ft. to _____ ft. Material _____
Gravel placed from _____ ft. to _____ ft. Size of gravel _____

(6) CASING/LINER:								
	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	6	1	19	250	☒	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:	None				☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s)

(7) PERFORATIONS/SCREENS:

☐ Perforations Method _____

☐ Screens Type _____ Material _____

From	To	Slot size	Number	Diameter	Tel./pipe size	Casing	Line
						☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump	☐ Bailer	☒ Air	☐ Flowing ☐ Artesian
Yield gal/min	Drawdown	Drill stem at	Time
6	300	300	1 hr.

Temperature of water, 57° Depth Artesian Flow Found

Was a water analysis done? ☐ Yes By whom _____

Did any strata contain water not suitable for intended use? ☐ Too little

☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other

Depth of strata: _____

(9) LOCATION OF WELL by legal description:
County OKEN Latitude _____ Longitude _____
Township 35 N or S Range 2 E or W WM.
Section 22 SW 1/4 NE 1/4
Tax Lot 130 Lot _____ Block _____ Subdivision _____
Street Address of Well (or nearest address) SAME

(10) STATIC WATER LEVEL:
42 ft. below land surface. Date 7-16-07
 Artesian pressure _____ lb. per square inch. Date _____

(11) WATER BEARING ZONES:

Depth at which water was first found 22.5'

From	To	Estimated Flow Rate	SWL
224	225	6	92

(12) WELL LOG: _____
Ground Elevation _____

[illegible]

Date started 7-16-01 Completed 7-16-01
(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

WWC Number _____
Signed _____ Date _____

(bonded) Water Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 1457
Signed _____ Date 7-10-00

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date 6/21/2018

FROM: Groundwater Section Joe Kemper
Reviewer's Name

SUBJECT: Application G- 18463 Supersedes review of NA
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: Darrell Silkensen County: Jackson

A1. Applicant(s) seek(s) 0.058 cfs from 2 well(s) in the Rogue Basin,
Upper Rogue subbasin

A2. Proposed use Nursery (2.5 acres) Seasonality: Year-round

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	JACK 53245	1	Bedrock	0.044	35S/2W-22 SW-NW	1654' S, 384' E fr NW cor S 22
2	JACK 54804	2	Bedrock	0.013	35S/2W-22 SW-NW	2600' S, 745' E fr NW cor S 22
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	1348	89	9	5/16/1999	140	0-18	+2-18	+3-140	80-140	20	140	Air
2	1329	229	42	7/16/2001	300	0-19	+1-19	NA	NA	6	140	Air

Use data from application for proposed wells.

A4. **Comments:** _____

A5. ☒ **Provisions of the** Rogue (OAR 690-515) 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 Rogue Basin rules contain no such provision.

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) 7C (7-yr SWL); 7J; 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 _____ 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:** SWLs observed at wells close to the proposed POAs (< 1 mile) show stable trends from 2000 – 2008 (see Figure 3). SWLs observed at SOW JACK 34195 (2 miles away) show stable trends from 1970 to present. It is reasonable to conclude from this combination of spatial and temporal data observed in this aquifer system that the resource is not over appropriated.

There are few permitted groundwater POAs adjacent to the proposed POAs, all at least ½ mile away. As such, there is not likely to be significant injury or interference to senior users.

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	Bedrock of Payne Cliffs Fm.	☒	☐
2	Bedrock of Payne Cliffs Fm.	☒	☐
		☐	☐
		☐	☐
		☐	☐

Basis for aquifer confinement evaluation: The well logs for the applicant's wells report "First Water" at 89 and 224 feet BLS and a SWL of 8 and 42 feet, respectively, indicating confined conditions. Well logs for nearby wells report similar confined conditions.

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	Snider Creek	1339	1315	4750	☒	☐	☐	☐	☒
2	1	Snider Creek	1287*	1315	4775	☒	☐	☐	☐	☒
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐

Basis for aquifer hydraulic connection evaluation: GW elevations are above or coincident with Snider Creek suggesting that groundwater flowing towards and discharging to surface water.

*The SWL reported on the well log for Well 2 is likely lower than the true piezometric surface. The measurement was taken the same day the well was drilled and air tested. Low yield wells typically take several days to fully recover from well tests to reflect the water level of the overall aquifer system.

Water Availability Basin the well(s) are located within: SNIDER CR > ROGUE R - AT MOUTH ID #: 71626

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	☐	☐	IS71626A	0.96	☒	0.90	☒	<1%	☒
2	1	☐	☐	IS71626A	0.96	☒	0.90	☒	<1%	☒
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐

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?
	1		☐	IS71626A	0.96	☒	0.90	☒	<1%	☒
			☐			☐		☐		☐
			☐			☐		☐		☐
			☐			☐		☐		☐

Comments: Pumping effects on adjacent surface water sources are evaluated using the Hunt (2003) stream depletion model with aquifer parameters representative of the local geology. Model results for the closest well-surface water source combination are presented in Figure 4.

Nearby Molby Creek was not evaluated against for PSI because 1) there are no surface-water rights on the creek near the proposed POA, 2) there is no distinct riparian area observed on aerial imagery, and 3) per conversations with the local watermaster, the creek flows only following precipitation events and does not likely have a significant baseflow component.

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													
(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: No streams outside of 1 mile were evaluated for PSI as per OAR 690-009.

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: _____

The proposed POAs are determined to be hydraulically connected within 1 mile of Snider Creek. The proposed rate of 0.058 cfs is larger than 1% of the instream water right on Snider Creek (1% of 0.96 cfs) and 1% of the expected natural flows on Snider Creek (1% of 0.90 cfs), thus triggering an assumption of PSI per OAR 690-0040(4). The applicant would need to reduce their total proposed rate to < 0.009 cfs or 4 gpm to avoid triggering an automatic assumption of PSI.

References Used:

Hunt, B. 2003. *Unsteady Stream Depletion when Pumping from a Semiconfined Aquifer*. Journal of Hydrologic Engineering. Vol 8(1), pp 12-19

OWRD Groundwater Site Information System Database – Accessed 6/21/2018.

Wiley, T. J., and Hladky, F. R. , 1991, Geology and mineral resources of the Boswell Mountain quadrangle, Jackson County, Oregon: Oregon Department of Geology and Mineral Industries Geologic Map Series GMS-70, scale 1:24,000.

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.

Figure 1. Water Availability Tables

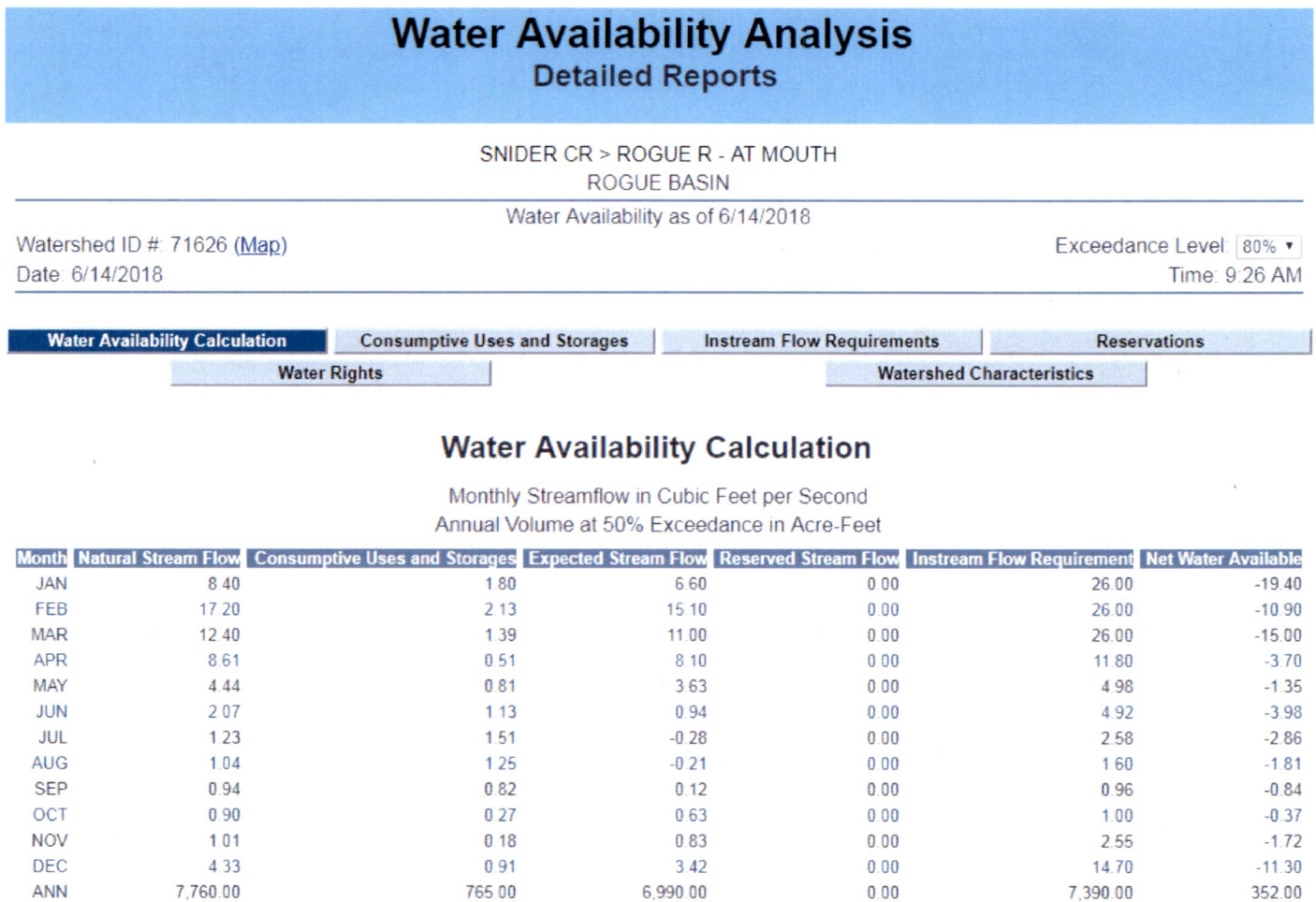


Figure 2. Well Location Map

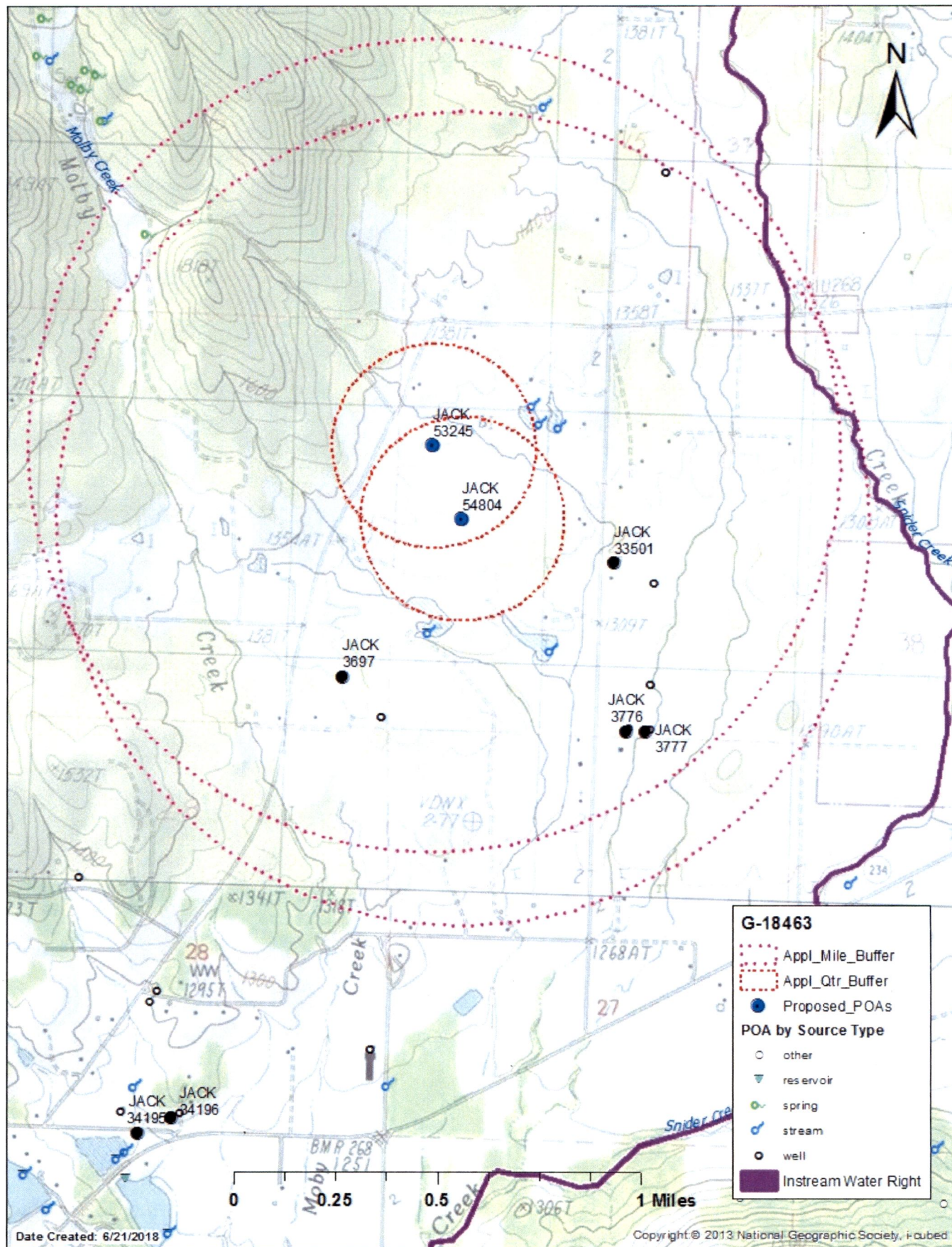


Figure 3. Water-Level Trends in Nearby Wells

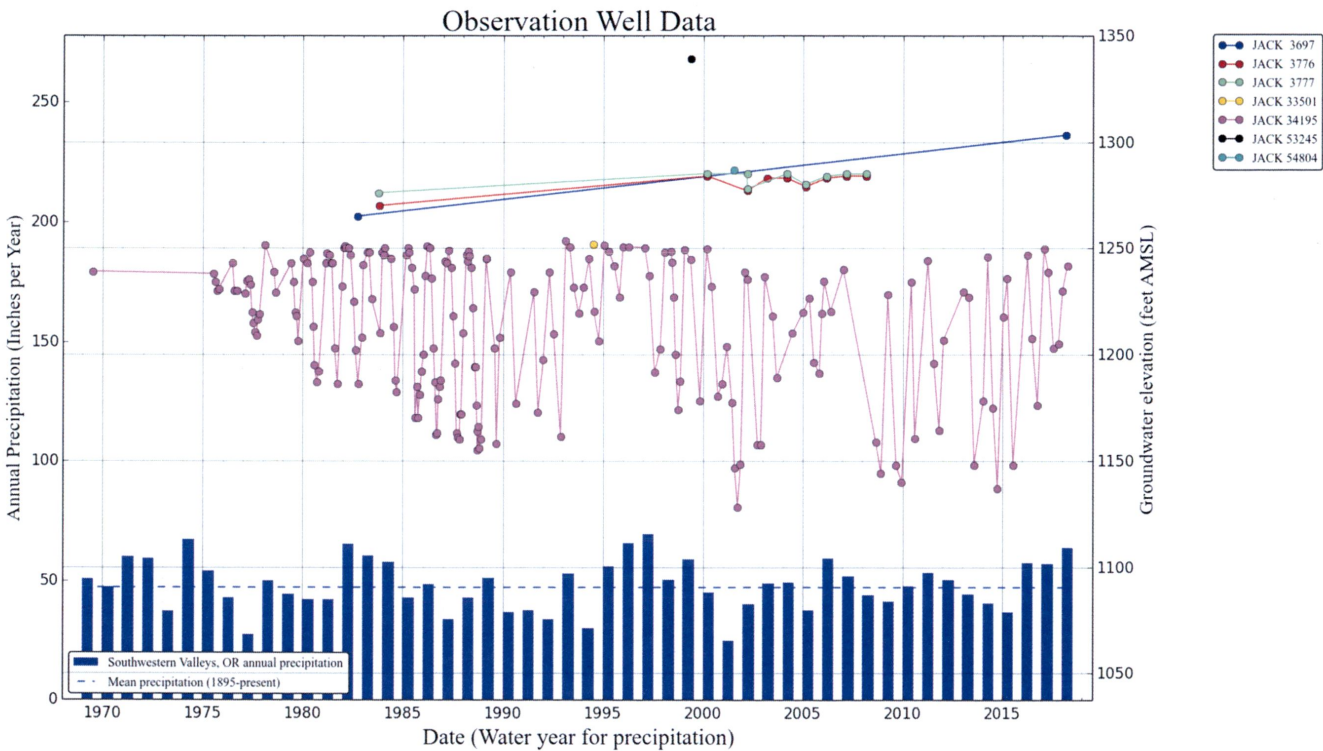


Figure 4. Stream Depletion Model Parameters and Results

Application type:	G
Application number:	18463
Well number:	1
Stream Number:	1
Pumping rate (cfs):	0.020
Pumping duration (days):	365

Parameter	Symbol	Scenario 1	Scenario 2	Scenario 3	Units
Distance from well to stream	a	4750	4750	4750	ft
Aquifer transmissivity	T	500	1000	5000	ft ² /day
Aquifer storativity	S	0.1	0.01	0.001	-
Aquitard vertical hydraulic conductivity	Kva	0.01	0.05	0.1	ft/day
Aquitard saturated thickness	ba	10.0	20	30.0	ft
Aquitard thickness below stream	babs	4.0	3.0	2.0	ft
Aquitard specific yield	Sya	0.2	0.2	0.2	-
Stream width	ws	20	20	20	ft

Stream depletion for Scenario 2:

Days	10	30	60	90	120	150	180	210	240	270	300	330	360
Depletion (%)	0	0	0	0	0	0	0	0	0	0	0	0	0
Depletion (cfs)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

