

Groundwater Application Review Summary Form

Application # G- 18747

GW Reviewer M. Thoma Date Review Completed: 06-07-19

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.

✓
6/10/19

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).

MEMO

06-07, 20 19

SUBJECT: Scenic Waterway Interference Evaluation

☐ NO

The source of appropriation is within or above a Scenic Waterway

☐ 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 Reese Scenic Waterway by the following amounts expressed as a proportion of the consumptive use by which surface water flow is reduced.

[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-18747
Date: June 10, 2019

The attached application was forwarded to the Well Construction and Compliance Section by Water Rights. Mike Thoma reviewed the application. Please see Mike's Groundwater Review and the Well Log.

Applicant's Well #1 (JACK 51245): 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.

RECEIVED

JACK
51245

JUL 28 1997

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

WATER RESOURCES DEPT.

(START CARD) # 74467

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

(1) OWNER:

Name John Collinsworth Well Number L07215
Address 900 S. Front St.
City Central Point State ORE Zip 92502

(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 220 ft.
Explosives used ☐ Yes ☒ No Type _____ Amount _____

HOLE

SEAL

Diameter	From	To	Material	From	To	Sacks or pounds
10"	0	19	Bentonite	0	19	400#
6"	19	220				

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"	+1	19	250	☒	☐	☐	☐
Liner: 4"	0	220	160	☐	☒	☒	☐

Final location of shoe(s) none

(7) PERFORATIONS/SCREENS:

☒ Perforations Method Saw
☐ Screens Type _____ Material _____

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
100	120	6"	40	1/4		☐	☒
140	160	6"	40	1/4		☐	☒
180	200	6"	40	1/4		☐	☒

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

☐ Pump ☐ Bailer ☒ Air ☐ Flowing
Yield gal/min 10 gpm Drawdown 220 Drill stem at 220 Time 1 hr.

Temperature of water 56° 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: _____

SALEM, OREGON

(9) LOCATION OF WELL by legal description:

County Jackson Latitude _____ Longitude _____
Township 35 N or S Range 24 E or W. WM.
Section 22 NE 1/4 SW 1/4
Tax Lot 2003 Lot _____ Block _____ Subdivision _____
Street Address of Well (or nearest address) 8650 Hwy 234
central Point OR 92502

(10) STATIC WATER LEVEL:

47' ft. below land surface. Date 7-12-97
Artesian pressure _____ lb. per square inch. Date _____

(11) WATER BEARING ZONES:

Depth at which water was first found 120'

From	To	Estimated Flow Rate	SWL
120	125	5 gpm	47'
145	150	3 gpm	47'
200	203	2 gpm	47'

(12) WELL LOG:

Ground Elevation _____

Material	From	To	SWL
clay (Brown)	0	11	
claystone (Grey)	11	220	47

Date started 7-12-97 Completed 7-12-97

(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 1486

Signed _____

Date 7-12-97

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date 6/7/2019
 FROM: Groundwater Section Michael Thoma
 Reviewer's Name
 SUBJECT: Application G- 18747 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: Daniel Keim County: Jackson

A1. Applicant(s) seek(s) 0.011 cfs from 1 well(s) in the Rogue Basin,
Sams Valley subbasin

A2. Proposed use Irrigation (5.5 ac) 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 51245	1	Bedrock	0.011	35S/2W-32SWSE	850' N, 200' E fr S1/4 cor S 32

* 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	1244	120	47	7/12/1997	220	0-19	0-19	0-220	100-120,140-160,180-200	10	220	A

Use data from application for proposed wells.

A4. **Comments:** _____

A5. ☐ **Provisions of the** Rogue (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: _____

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); 7J (Scenic); 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:** There is one nearby OWRD Obs. Well (JACK 34198) less than ½ mile from the proposed POA that reports a stable long-term water-level trend but otherwise there are limited water level data in the aquifer and vicinity of the applicant's proposed POA so Capacity of the Resource cannot be determined and water-level reporting conditions in B1(d) are recommended. There are three permitted groundwater rights within 1 mile of the applicant's proposed POA but none are within ¼ mile. Given the generally low transmissivity of the aquifer and low rate of appropriation proposed on this application (~5 gpm), it is unlikely that the applicant's use would result in injury to these permitted water rights. However, standard interference conditions should be applied

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	Fractured Bedrock of Payne Cliffs Fm	☒	☐
		☐	☐

Basis for aquifer confinement evaluation: Groundwater elevation reported on the well log for the applicant's POA is above reported 'First Water' indicating some level of aquifer confinement; nearby OWRD Obs. Well JACK 34198 often reports water levels above land surface in winter months, further indicating aquifer confinement.

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	Rock Creek	1230-1250*	< 1215	> 7400†	☒	☐	☐	☐	☐
						☐	☐	☐	☐	☐

Basis for aquifer hydraulic connection evaluation: Groundwater elevation is near surface water elevation implying that groundwater is flowing towards and discharging to surface water. Despite the finding of confinement in C1, the Payne Cliffs aquifer system lacks a laterally-extensive, low-conductivity confining layer near the surface that would reduce hydraulic connection to surface water. Instead, confinement is likely a local affect dependent on the degree of weathering in the upper portion of the bedrock. Shallow, or above-land-surface water levels in nearby wells occur contemporaneous with seasonal streamflow in nearby reaches implying that the proximity to hydraulically-connected stream reaches also varies seasonally.

*Groundwater elevation was taken as the range of water levels from nearby well JACK 34198 which is < 0.5 miles from the proposed POA and producing from the same aquifer system and so represents a better dataset for aquifer conditions than what is reported on the well log for the applicant's POA

†The distance measured is to the nearest point on Rock Creek where there is a surface water POD not associated with a reservoir (i.e., taking live flow).

Water Availability Basin the well(s) are located within: Sams Cr > Rogue R – At Mouth (ID# 274)

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?
		☐	☐			☐		☐		☐

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?
			☐			☐		☐		☐

Comments: No surface water sources were evaluated within 1 mile

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	< 10%	< 10%	< 10%	< 10%	< 10%	< 10%	< 10%	< 10%	< 10%	< 10%	< 10%	< 10%
Well Q as CFS		0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Interference CFS		< .001	< .001	< .001	< .001	< .001	< .001	< .001	< .001	< .001	< .001	< .001	< .001
Distributed Wells – NOT USED													
Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
(A) = Total Interf.		< .001	< .001	< .001	< .001	< .001	< .001	< .001	< .001	< .001	< .001	< .001	< .001
(B) = 80 % Nat. Q		8.17	14.70	12.80	6.14	2.83	1.11	0.56	0.46	0.32	0.36	0.76	3.55
(C) = 1 % Nat. Q		0.08	0.15	0.13	0.06	0.03	0.01	0.006	0.005	0.003	0.004	0.008	0.04
(D) = (A) > (C)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
(E) = (A / B) x 100		< 1%	< 1%	< 1%	< 1%	< 1%	< 1%	< 1%	< 1%	< 1%	< 1%	< 1%	< 1%

(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: Stream-depletion was estimated with the Hunt (2003) stream-depletion model and a reasonable range of parameter values representative of the aquifer system.

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:

- ☐ The permit should contain condition #(s) _____;
- ☐ The permit should contain special condition(s) as indicated in "Remarks" below;

C6. **SW / GW Remarks and Conditions:** The applicant's proposed POA would be producing from an aquifer that has been found to be hydraulically connected to surface water – specifically Rock Creek at a distance of greater than 1 mile. The estimated impact to the surface water source is less than 1% of the 80%-exceedance Natural Streamflow so, per OAR 690-009-0040(4), the POA is assumed to **not** have the Potential for Substantial Interference

References Used:

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

Oregon Department of Geology and Mineral Industries, *Geologic Map of Oregon*. <http://www.oregongeology.org/geologicmap/>

OWRD Well Log Database – Accessed 6/7/2019

Smith, J. G., N. J. Page, M. G. Johnson, B. C. Moring, F. Gray. 1982. *Preliminary Geologic Map of the Medford 1 by 2 Degree Quadrangle, Oregon and California*. USGS Open-file Report 82-955

Wiley, T. J., J. D. McClaughry, and J. A. D'Allura. 2011. *Geologic Database and Generalized Geologic Map of Bear Creek Valley, Jackson County, Oregon*. Oregon Dept. of Geology and Mineral Industries. OFR O-11-11.

Wiley, T. K. and J. G. Smith. 1993. *Preliminary Geologic Map of the Medford East, Medford West, Eagle Point, and Sams Valley Quadrangles, Jackson County, Oregon*. Oregon Dept. of Geology and Mineral Industries. OFR O-93-13

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

Water Availability Analysis

Detailed Reports

SAMS CR > ROGUE R - AT MOUTH
ROGUE BASIN

Water Availability as of 6/7/2019

Watershed ID #: 274 ([Map](#))

Exceedance Level

Date: 6/7/2019

Time: 12:06 PM

Water Availability Calculation

Consumptive Uses and Storages

Instream Flow Requirements

Reservations

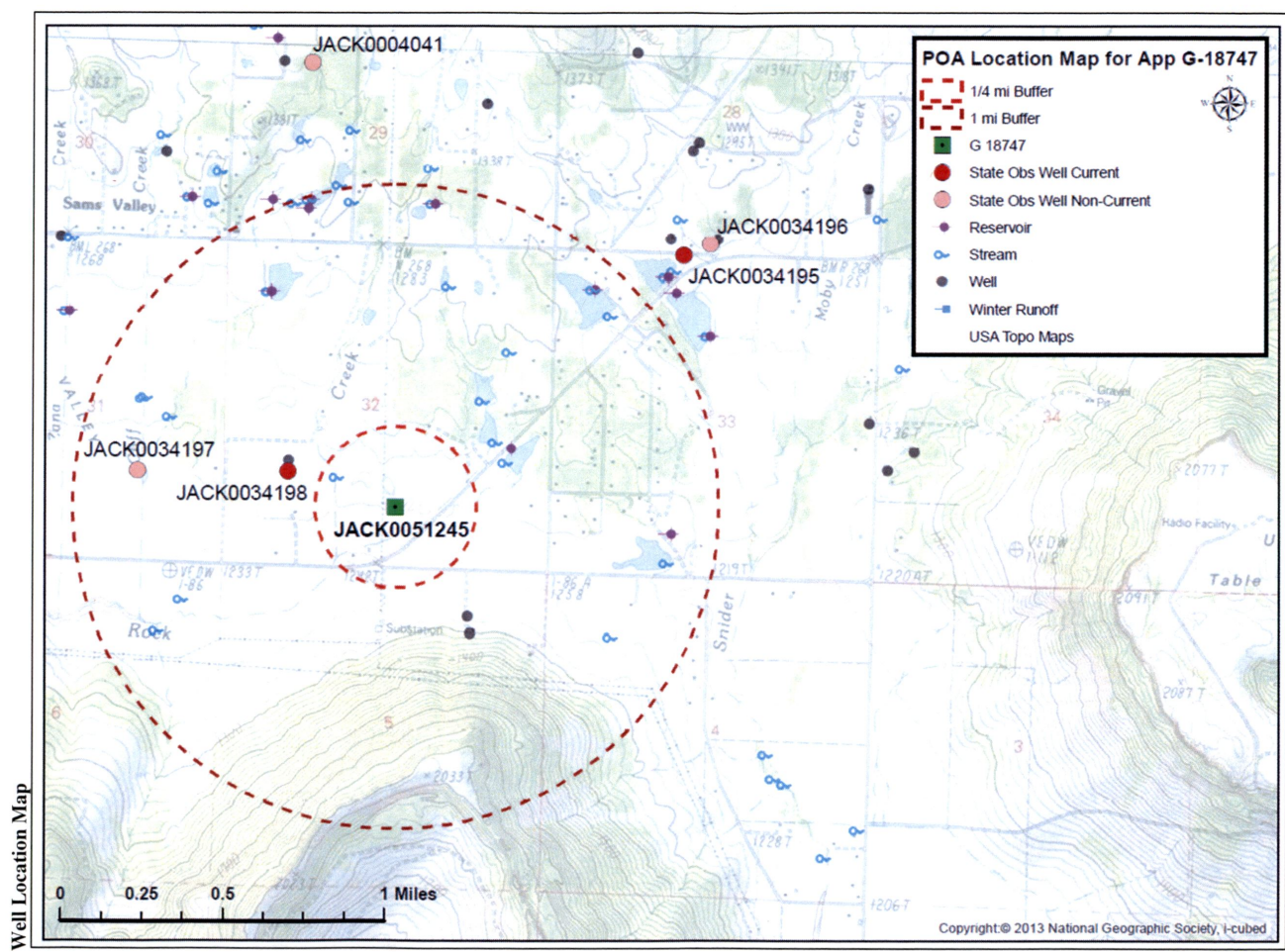
Water Rights

Watershed Characteristics

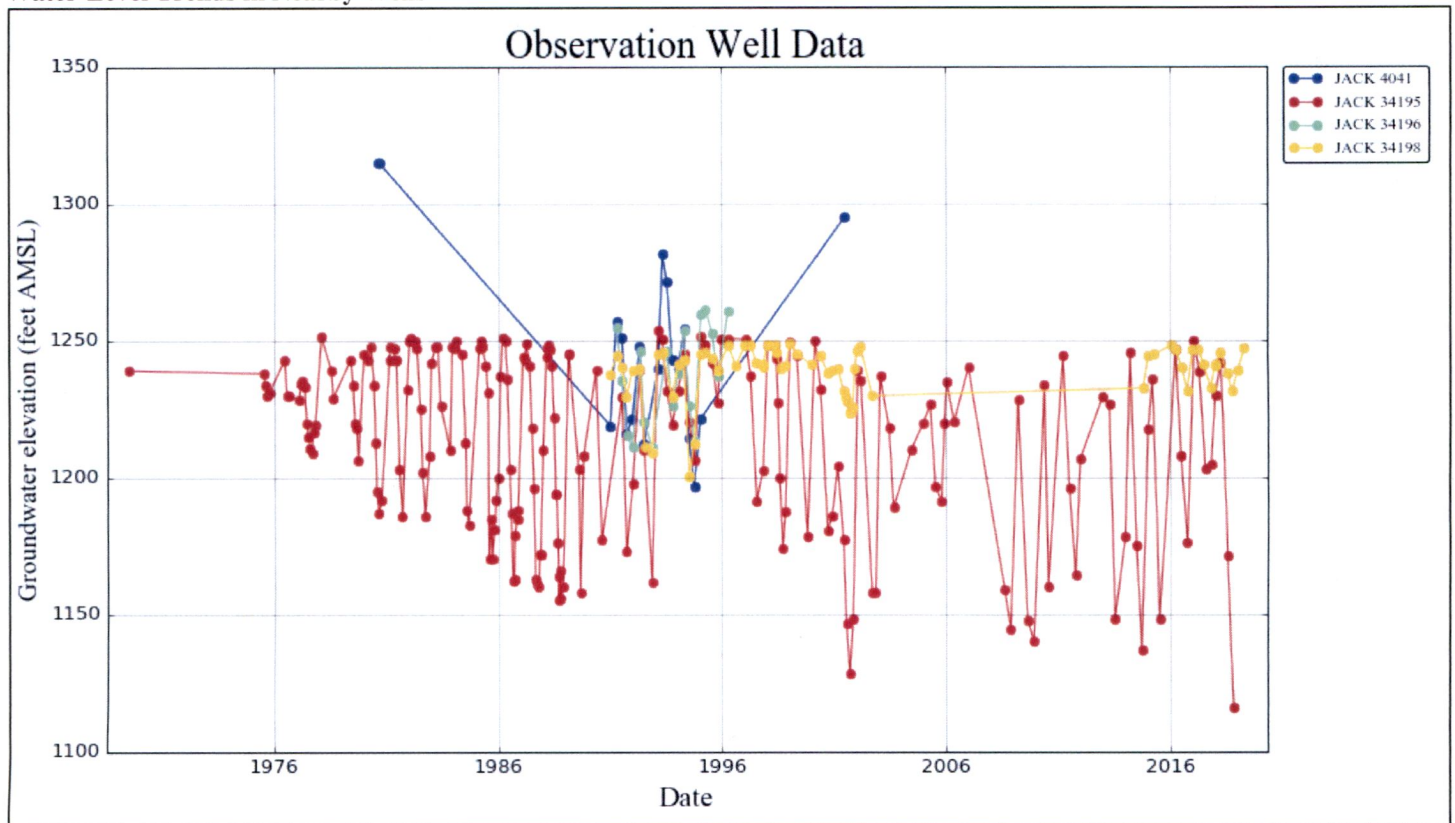
Water Availability Calculation

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	8.17	5.60	2.57	0.00	5.00	-2.43
FEB	14.70	7.15	7.55	0.00	5.00	2.55
MAR	12.80	6.19	6.61	0.00	5.00	1.61
APR	6.14	0.97	5.17	0.00	5.00	0.17
MAY	2.83	1.42	1.41	0.00	2.00	-0.59
JUN	1.11	1.96	-0.85	0.00	1.00	-1.85
JUL	0.56	2.62	-2.06	0.00	1.00	-3.06
AUG	0.46	2.17	-1.71	0.00	1.00	-2.71
SEP	0.32	1.43	-1.11	0.00	2.00	-3.11
OCT	0.36	0.49	-0.13	0.00	5.00	-5.13
NOV	0.76	0.50	0.26	0.00	5.00	-4.74
DEC	3.55	4.31	-0.76	0.00	5.00	-5.76
ANN	7,590.00	2,090.00	5,750.00	0.00	2,530.00	3,980.00



Water-Level Trends in Nearby Wells



Stream-Depletion Model Results

76 PyHunt stream depletion analysis tool

Application type:	G
Application number:	18747
Well number:	1
Stream Number:	1
Pumping rate (cfs):	0.01
Pumping duration (days):	365
Pumping start month number (3=March)	1

Parameter	Symbol	Scenario 1	Scenario 2	Scenario 3	Units
Distance from well to stream	a	7400	7400	7400	ft
Aquifer transmissivity	T	100	250	500	ft ² /day
Aquifer storativity	S	0.001	0.0001	0.0005	-
Aquitard vertical hydraulic conductivity	Kva	0.005	0.001	0.0005	ft/day
Aquitard saturated thickness	ba	10	10	10	ft
Aquitard thickness below stream	babs	1	1	1	ft
Aquitard specific yield	Sya	0.2	0.2	0.2	-
Stream width	ws	30	30	30	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

