

Groundwater Application Review Summary Form

Application # G- 18472

GW Reviewer Joc Kempo Date Review Completed: 7/9/2018

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.
21 7/11/18

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).

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.083	0.083	0.083	0.083	0.083	0.083	0.683	0.083	0.083	0.083	0.083	0.083

OK-KHJ

MEMO

To: Kristopher Byrd, Well Construction and Compliance Section Manager
From: Joel Jeffery, Well Construction Program Coordinator
Subject: Review of Water Right Application G-18472
Date: July 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 Log.

Applicant's Well #1 (JACK 58964): 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.

JACK 58964
JACK 58964

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

WELL I.D. # L 86892
START CARD # 188504

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

(1) LAND OWNER Well Number _____
Name DARRELL WILLIAMSON
Address 15481 JAMES RD
City CENTRAL POINT State OR Zip 97502

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

(3) DRILL METHOD
☐ Rotary Air ☐ Rotary Mud ☒ Cable ☐ Auger ☐ Cable Mud
☐ Other _____

(4) PROPOSED USE
☒ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☐ Other _____

(5) BORE HOLE CONSTRUCTION Special Construction: ☐ Yes ☒ No
Depth of Completed Well 120' ft.
Explosives used: ☐ Yes ☒ No Type _____ Amount _____

BORE HOLE			SEAL			Sacks or Pounds
Diameter	From	To	Material	From	To	
10"	0	22'	BENTONITE	0	22'	16 SACKS
6"	22'	120'				

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E
☒ Other BENTONITE PULVERIZED DRY
Backfill placed from _____ ft. to _____ ft. Material _____
Gravel placed from _____ ft. to _____ ft. Size of gravel _____

(6) CASING/LINER			Gauge	Steel	Plastic	Welded	Threaded
Diameter	From	To					
Casing: 6"	0	40'	1.250	☒	☐	☒	☐
Liner: 4"	0	120'	1.600	☐	☒	☐	☐

Drive Shoe used ☐ Inside ☒ Outside ☐ None
Final location of shoe(s) 40'

(7) PERFORATIONS/SCREENS							
☒ Perforations		Method <u>SAW</u>		Material _____			
☐ Screens		Type _____		Material _____			
From	To	Slot Size	Number	Diameter	Tele/pipe size	Casing	Liner
40'	120'	1/4"	20'	4"	1.600	☐	☒

(8) WELL TESTS: Minimum testing time is 1 hour
☐ Pump ☒ Bailer ☐ Air ☐ Flowing Artesian
Yield gal/min 69gpm Drawdown 115' Drill stem at _____ Time 1 hr 5 min
Temperature of water 50' Depth Artesian Flow Found _____
Was a water analysis done? ☐ Yes By whom _____
Did any strata contain _____ for intended use _____ little
☐ Salty ☐ Colored ☐ Other _____
Depth of strata: _____

(9) LOCATION OF WELL (legal description)
County JACKSON
Tax Lot 200 Lot _____
Township 36 N or S Range 3W E or W WM
Section 36D NE 1/4 SE 1/4
Lat _____ " or 42.39320 (degrees or decimal) -6'
Long _____ " or -122.99390 (degrees or decimal)
Street Address of Well (or nearest address) 5529 OLD STAGE RD
CENTRAL POINT OR 97502

(10) STATIC WATER LEVEL
15' ft. below land surface. Date Sept 12, 08
_____ ft. below land surface. Date _____
Artesian pressure _____ lb. per square inch Date _____

(11) WATER BEARING ZONES			
From	To	Estimated Flow Rate	SWL
45'	46'	44gpm	18'
100'	101'	23gpm	18'

(12) WELL LOG			
Material	From	To	SWL
Silt (Brown)	0	5'	
CLAY + GRAVEL (GREEN)	5'	15'	
Rock (Green)	15'	120'	18'

Amended by Scott P. Gorman 8/09

Date Started Aug 27, 08 Completed Sept 12, 08

(unbonded) Water Well Constructor Certification
I certify that the work I performed on the construction, deepening, 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 _____ Date _____

Signed _____

(bonded) Water Well Constructor Certification
I accept responsibility for the construction, deepening, 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 1705 Date Sept 12, 08

Signed Scott P. Gorman

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date 7/9/2018
 FROM: Groundwater Section Joe Kemper
 SUBJECT: Application G- 18472 Reviewer's Name
 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: Ezra Potts County: Jackson

A1. Applicant(s) seek(s) 0.0133 cfs from 1 well(s) in the Rogue Basin,
Kane Creek subbasin

A2. Proposed use Irrigation (1 acre) Seasonality: June 1st to October 1st

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 58964	1	Bedrock	0.0133	36S/3W-S36 NE-SE	None given
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	1532	45	18	9/12/2008	120	0-22	0-40	0-120	40-120	6	115	Bailer

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 plan has no such provisions.

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:** The applicant's well produces from metasedimentary units of the Applegate Group. Well yields are typically low in this aquifer system; the median yield for wells in 36S/3W-S36 & 36S/2W-S31 is 5 gpm. There are very little OWRD Observation Well data in the area of the proposed POA so groundwater over-appropriation cannot be determined (see Figure 3).

There are several groundwater POAs and water right on a spring within 1 mile of the proposed POA. The distance between PODs, low proposed rate, and local geology (deformed and fractured metasedimentary units of the Applegate Terrane) decrease the likelihood of injury to senior water rights. Furthermore, the applicant's well is on the northeast side of valley created by the East Fork Kane Creek, opposite from the spring. This topography further lessens the likelihood of injury.

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 Applegate Group	☒	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐

Basis for aquifer confinement evaluation: The well log for the applicant's well reports "First Water" at 45 feet BLS and a SWL of 18 feet below land surface 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	Lane Creek	1514	1608	4450	☐	☒	☐	☐	☒
1	2	Kane Creek	1514	1285	8000*	☒	☐	☐	☐	☒
						☐	☐	☐	☐	☐

Basis for aquifer hydraulic connection evaluation: GW elevations are higher than adjacent streams indicating that groundwater is flowing towards and discharging to surface water. Distance to Kane Creek is determined to where it is mapped as perennial and thus assumed to be hydraulically connected to groundwater. An upstream reach of Lane Creek is perennial within one mile, but this reach lies in a different watershed separated by steep terrain and is at a higher elevation than SWL in the proposed POA. As such, it is not determined to be hydraulically connected to the applicant's POA.

Water Availability Basin the well(s) are located within: KANE CR > ROGUE R - AT MOUTH ROGUE BASIN #260;

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: There are no surface water sources within 1 mile that are determined to be hydraulically connected.

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	2	* %	* %	* %	* %	* %	* %	* %	* %	* %	* %	* %	* %
Well Q as CFS**	0.00345	0.00345	0.00345	0.00345	0.00345	0.00345	0.00345	0.00345	0.00345	0.00345	0.00345	0.00345	0.00345
Interference CFS	*	*	*	*	*	*	*	*	*	*	*	*	*
(A) = Total Interf.	*	*	*	*	*	*	*	*	*	*	*	*	*
(B) = 80 % Nat. Q	2.8	5.16	4.49	2.13	0.99	0.4	0.2	0.17	0.12	0.13	0.25	1.15	
(C) = 1 % Nat. Q	0.028	0.0516	0.0449	0.0213	0.0099	0.004	0.002	0.0017	0.0012	0.0013	0.0025	0.0115	
(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: _____

*Impacts of surface water could not be reliably estimated because the complex geology (high relief slopes, complex fractured bedrock aquifer) do not meet model assumptions of the widely accepted techniques for determining stream depletion (e.g., Hunt 1999, 2003). However, considering the low proposed rate, the distance between the proposed POA and Kane Creek (~8000 ft), and confined aquifer conditions, stream-depletion after one year of pumping is likely less than 1% of the 80% expected flows in Kane Creek.

**To evaluate impact on surface water, the reviewer assumes the applicant's well produces at a constant rate of 0.00345 cfs, which represents the maximum duty (2.5 ft) for 1 acre of in-ground nursery use prorated across 365 days.

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 determined to be hydraulically connected to adjacent surface water sources. The reviewer, however, has not found a preponderance of evidence to assume the Potential for Substantial Interference (PSI) with surface water as per OAR 690-009.

References Used:

Hunt, B. 1999. *Unsteady Stream Depletion from Ground Water Pumping*. Journal of Hydrologic Engineering, Vol 8(1), pp 12-19

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 7/10/2018.

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.

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:** NA

D4. ☐ **Route to the Well Construction and Compliance Section for a review of existing well construction.**

Figure 1. Water Availability Tables

KANE CR > ROGUE R - AT MOUTH
ROGUE BASIN

Water Availability as of 7/3/2018

Watershed ID #: 260 (Map)

Exceedance Level: 80% ▾

Date: 7/3/2018

Time: 3:47 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	2.80	0.12	2.68	0.00	4.00	-1.32
FEB	5.16	0.16	5.00	0.00	4.00	1.00
MAR	4.49	0.13	4.36	0.00	4.00	0.36
APR	2.13	0.21	1.92	0.00	4.00	-2.08
MAY	0.99	0.32	0.67	0.00	2.00	-1.33
JUN	0.40	0.44	-0.04	0.00	1.00	-1.04
JUL	0.20	0.59	-0.39	0.00	1.00	-1.39
AUG	0.17	0.49	-0.32	0.00	1.00	-1.32
SEP	0.12	0.33	-0.21	0.00	1.00	-1.21
OCT	0.13	0.12	0.01	0.00	4.00	-3.99
NOV	0.25	0.04	0.21	0.00	4.00	-3.79
DEC	1.15	0.10	1.05	0.00	4.00	-2.95
ANN	2,640.00	185.00	2,500.00	0.00	2,050.00	1,160.00

Figure 2. Well Location Map

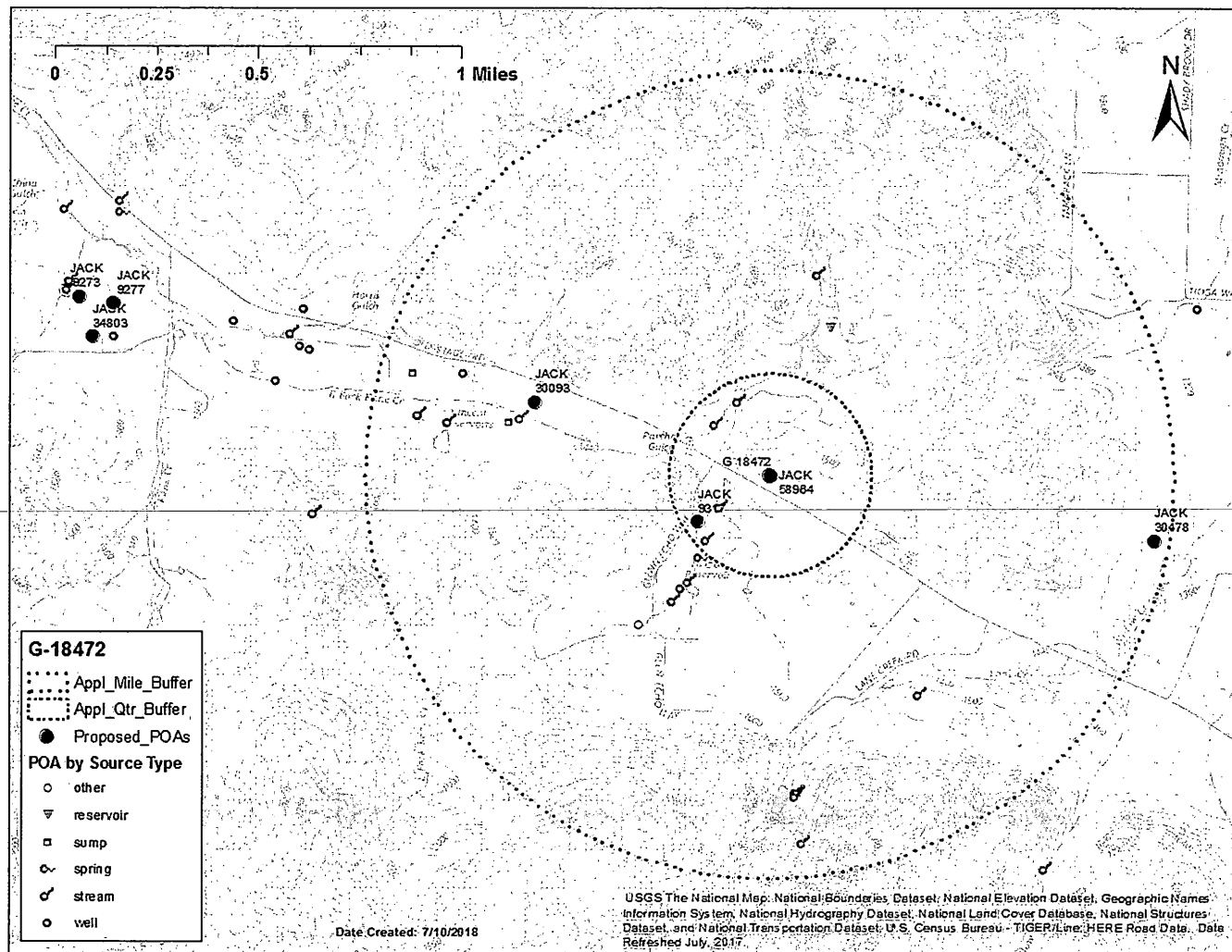


Figure 3. Water-Level Trends in Nearby Wells

