

## Groundwater Application Review Summary Form

Application # G- 1804-RR

GW Reviewer M. Thoma Date Review Completed: 10-09-18

### 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).*



PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date 10/09/2018  
 FROM: Groundwater Section Michael Thoma  
 Reviewer's Name  
 SUBJECT: Application G- 18504 Supersedes review of 07/11/2018  
 Date of Review(s)

\*This re-review is for reconsideration of Potential for Substantial Interference with Sterling Creek

**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: Anthony Tinghitella/John Fulcher County: Jackson

- A1. Applicant(s) seek(s) 0.1849 cfs from 6 well(s) in the Rogue Basin,  
Little Applegate River subbasin
- A2. Proposed use Nursery (20.13 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 62965	1	Bedrock	.01849	38S/2W-27 SW-NE	945' N, 1856' W fr E ¼ cor S 27
2	Proposed	2	Bedrock	.01849	38S/2W-27 SW-NE	1103' N, 1793' W fr E ¼ cor S 27
3	Proposed	3	Bedrock	.01849	38S/2W-27 SW-NE	1220' N, 1787' W fr E ¼ cor S 27
4	Proposed	4	Bedrock	.01849	38S/2W-27 SW-NE	862' N, 2017' W fr E ¼ cor S 27
5	Proposed	5	Bedrock	.01849	38S/2W-27 SW-NE	553' N, 2181' W fr E ¼ cor S 27
6	Proposed	6	Bedrock	.01849	38S/2W-27 SW-NE	716' N, 2327' W fr E ¼ cor S 27

\* 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	3085	50	26	3/30/2017	340	0-39	0-98	0-340	50-70, 60-100, 320-340	16		Air
2	3105											
3	3110											
4	3080											
5	3045											
6	3055											

Use data from application for proposed wells.

A4. **Comments:** The reviewer assumes that proposed wells 2-6 will be constructed similarly and will encounter similar geologic and hydraulic conditions as Well 1.

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: OAR 690-515-0030 restricts use on the waters and tributaries to the Little Applegate River. The proposed POAs are located within the Little Applegate River watershed. If PSI as per OAR-690-009 is found in section C of this application, these basin rules may become applicable.

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 POAs would produce from metasedimentary units of the Applegate Group. Well yields are typically low in this aquifer system; the median yield for wells in TRS 38S/2W-S27 is 10 gpm. There are no OWRD SWL measurements within two miles of the proposed POA so groundwater over-appropriation cannot be determined.

\_\_\_\_\_

There are no groundwater POAs within 1 mile of the applicant’s POAs and relatively few domestic well logs for 38S/2W-27 so it is unlikely that the proposed use would injure adjacent senior water right holders.

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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	Bedrock of Applegate Group	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Bedrock of Applegate Group	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Bedrock of Applegate Group	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	Bedrock of Applegate Group	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5	Bedrock of Applegate Group	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6	Bedrock of Applegate Group	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Basis for aquifer confinement evaluation:** The well log for the applicant’s Well 1 reports *First Water* at 50 feet BLS and a SWL of 26 feet below land surface indicating confined conditions. Well logs for nearby wells report similar confined conditions. The reviewer assumes that proposed wells will encounter similar hydraulic 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	Sterling Creek	3059	2695	> 1 mile	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	1	Sterling Creek	*	2695	> 1 mile	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	1	Sterling Creek	*	2695	> 1 mile	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	1	Sterling Creek	*	2695	> 1 mile	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	1	Sterling Creek	*	2695	> 1 mile	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6	1	Sterling Creek	*	2695	> 1 mile	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	2	Griffin Creek	3059	2705	2725	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	2	Griffin Creek	*	2705	2695	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	2	Griffin Creek	*	2705	2720	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	2	Griffin Creek	*	2705	2875	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	2	Griffin Creek	*	2710	3000	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6	2	Griffin Creek	*	2710	3165	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Basis for aquifer hydraulic connection evaluation:** Groundwater elevations are higher than nearby surface water sources, indicating that water is flowing towards and discharging to surface water. The proposed POAs are within the Sterling Creek WAB but could affect flow paths that would otherwise contribute to Griffin Creek

\*Wells are proposed, but the reviewer assumes the piezometric surface is similar to Well 1 (20-60 feet BLS).

Based on additional information considered in this re-review, including conversations with the local watermaster’s office, review of historic aerial imagery, and consideration of the existing water rights in Sterling Creek in the vicinity of the applicant’s proposed POAs, this re-review finds that the nearest point where Sterling Creek can be considered a viable surface water source for the purposes of OAR 690-009 rules is beyond 1 mile from the applicant’s POAs. Findings related to hydraulic connection with Griffin Creek are not changed by this re-review.

**Water Availability Basin the well(s) are located within:** LITTLE APPELGATE R > APPELGATE R - AT MOUTH #70982; availability also evaluated for GRIFFIN CR > BEAR CR - AT MOUTH #71200

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	2	<input type="checkbox"/>	<input type="checkbox"/>	IS71200A	0.4	<input checked="" type="checkbox"/>	0.31	<input checked="" type="checkbox"/>	**	<input checked="" type="checkbox"/>
2	2	<input type="checkbox"/>	<input type="checkbox"/>	IS71200A	0.4	<input checked="" type="checkbox"/>	0.31	<input checked="" type="checkbox"/>	**	<input checked="" type="checkbox"/>
3	2	<input type="checkbox"/>	<input type="checkbox"/>	IS71200A	0.4	<input checked="" type="checkbox"/>	0.31	<input checked="" type="checkbox"/>	**	<input checked="" type="checkbox"/>
4	2	<input type="checkbox"/>	<input type="checkbox"/>	IS71200A	0.4	<input checked="" type="checkbox"/>	0.31	<input checked="" type="checkbox"/>	**	<input checked="" type="checkbox"/>
5	2	<input type="checkbox"/>	<input type="checkbox"/>	IS71200A	0.4	<input checked="" type="checkbox"/>	0.31	<input checked="" type="checkbox"/>	**	<input checked="" type="checkbox"/>
6	2	<input type="checkbox"/>	<input type="checkbox"/>	IS71200A	0.4	<input checked="" type="checkbox"/>	0.31	<input checked="" type="checkbox"/>	**	<input checked="" 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:** **\*\*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).**

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>1-6</b>	<b>1</b>	%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS		<b>0.18</b>	<b>0.18</b>	<b>0.18</b>	<b>0.18</b>	<b>0.18</b>	<b>0.18</b>	<b>0.18</b>	<b>0.18</b>	<b>0.18</b>	<b>0.18</b>	<b>0.18</b>	<b>0.18</b>
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:** **\*\*Similarly to Section C3b, stream-depletion could not be estimated. However, given the distance between the POAs and the stream and appropriate aquifer parameters, stream-depletion is likely less than 1% of the pertinent adopted minimum perennial streamflow for Sterling Cr.**

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 applicant's wells would produce from an aquifer system that has been found to be hydraulically connected to adjacent surface water sources. The proposed rate, 0.1849 cfs, is larger than 1% of expected natural flows in Griffin Creek WAB. It is also larger than 1% of the instream water right for Griffin Creek. As a result, the proposed use is assumed to have the Potential for Substantial Interference (PSI) as per OAR 690-009.

If the rate of appropriation were reduced to < 0.003 cfs (1900 gal/day) Division 9 rules would no longer require an automatic assumption of PSI.

**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 10/9/2018.

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

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

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Figure 1. Water Availability Tables

LITTLE APPLGATE R > APPLGATE R - AT MOUTH  
ROGUE BASIN

Water Availability as of 7/9/2018

Watershed ID #: 70982 (Map)  
Date: 7/9/2018

Exceedance Level: 80%  
Time: 12:40 PM

<b>Water Availability Calculation</b>	<b>Consumptive Uses and Storages</b>	<b>Instream Flow Requirements</b>	<b>Reservations</b>
<b>Water Rights</b>		<b>Watershed Characteristics</b>	

**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	18.70	1.28	17.40	0.00	45.90	-28.50
FEB	33.10	1.82	31.30	0.00	85.00	-53.70
MAR	44.30	1.32	43.00	0.00	76.20	-33.20
APR	56.30	10.30	46.00	0.00	75.90	-29.90
MAY	63.40	15.80	47.60	0.00	73.20	-25.70
JUN	25.50	21.90	3.61	0.00	50.00	-46.40
JUL	1.87	29.00	-27.10	0.00	14.60	-41.70
AUG	3.56	24.10	-20.50	0.00	2.01	-22.50
SEP	0.11	16.10	-16.00	0.00	1.51	-17.50
OCT	1.29	5.91	-4.62	0.00	11.50	-16.10
NOV	15.90	1.25	14.60	0.00	25.40	-10.70
DEC	17.90	1.26	16.60	0.00	29.40	-12.80
ANN	31,700.00	7,890.00	26,900.00	0.00	29,400.00	880.00

GRIFFIN CR > BEAR CR - AT MOUTH  
ROGUE BASIN

Water Availability as of 7/9/2018

Watershed ID #: 71200 (Map)  
Date: 7/9/2018

Exceedance Level: 80%  
Time: 12:41 PM

<b>Water Availability Calculation</b>	<b>Consumptive Uses and Storages</b>	<b>Instream Flow Requirements</b>	<b>Reservations</b>
<b>Water Rights</b>		<b>Watershed Characteristics</b>	

**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	4.60	0.03	4.57	0.00	10.00	-5.43
FEB	5.79	0.04	5.75	0.00	13.00	-7.25
MAR	5.43	0.03	5.40	0.00	11.00	-5.60
APR	3.64	0.14	3.50	0.00	7.00	-3.50
MAY	2.38	0.22	2.16	0.00	5.00	-2.84
JUN	1.56	0.31	1.25	0.00	3.00	-1.75
JUL	0.60	0.41	0.19	0.00	1.00	-0.81
AUG	0.37	0.34	0.03	0.00	0.50	-0.47
SEP	0.31	0.23	0.08	0.00	0.40	-0.32
OCT	0.35	0.08	0.27	0.00	0.50	-0.23
NOV	0.75	0.01	0.74	0.00	2.00	-1.26
DEC	2.44	0.02	2.42	0.00	7.00	-4.58
ANN	3,610.00	113.00	3,500.00	0.00	3,620.00	19.10

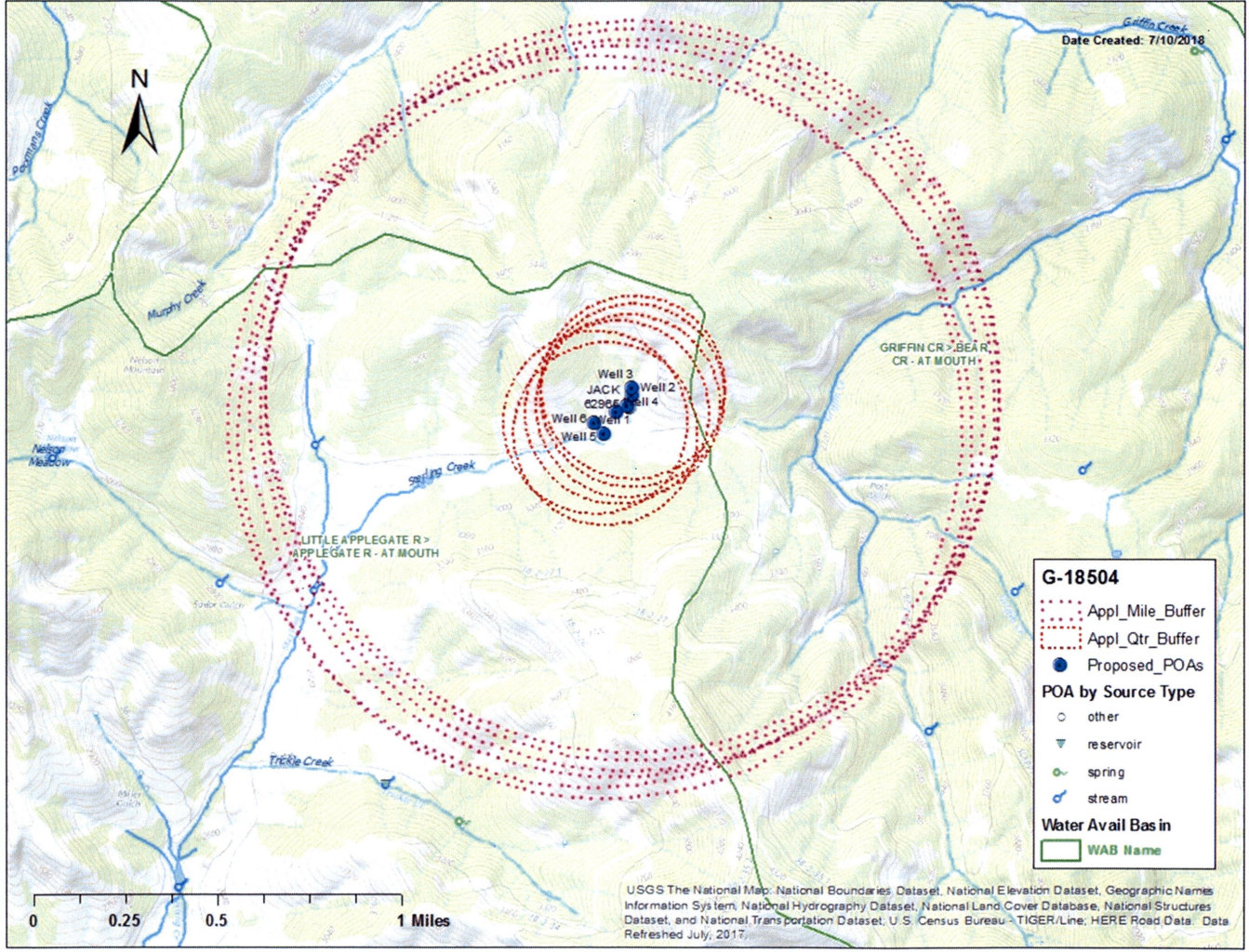


Figure 2. Well Location Map