

## Groundwater Application Review Summary Form

Application # G- 18462

GW Reviewer Aurora Bauchial Date Review Completed: June 7, 2017

### 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

Date: June 7, 2017

TO: Application: G-18462

FROM: GW: Aurora Bouchier  
(Reviewer's Name)

SUBJECT: Scenic Waterway Interference & General/Local Surface Water  
Evaluation for Deschutes Ground Water Study Area

The source of appropriation is within or above the Deschutes  
Scenic Waterway.

Use the Scenic Waterway condition (Condition 7J).

PREPONDERANCE OF EVIDENCE FINDING UNDER ORS 390.835:

Department has found that there is a preponderance of evidence that the proposed use of ground water will measurably reduce the surface water flows necessary to maintain the free-flowing character of the Deschutes Scenic Waterway in quantities necessary for recreation, fish and wildlife.

LOCALIZED IMPACT FINDING

The proposed use of ground water will have a localized impact to surface water in the Little Deschutes River/Creek Subbasin.

If the localized impact box above is checked, then the water use under any right issued pursuant to this application is presumed to have a localized impact on surface water within the identified subbasin. Mitigation of the impact, originating from within the Local Zone of Impact identified by the Department, will be required before a permit may be issued for the proposed use.

If the localized impact box above is not checked, then the water use under any right issued pursuant to this application is presumed to have a general (regional) impact on surface water. Mitigation of the impact, originating anywhere within the Deschutes Basin above the Madras gage, will be required before a permit may be issued for the proposed use.

Surface Water Mitigation of the Impact originating anywhere within the Deschutes Basin above the Madras gage will be required before a permit may be issued for the proposed use.

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date June 7, 2017  
 FROM: Groundwater Section Aurora C Bouchier  
 Reviewer's Name  
 SUBJECT: Application G- 18462 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: K Bar J Ranch, LLC County: Deschutes

A1. Applicant(s) seek(s) 0.535 cfs from 2 well(s) in the Deschutes Basin,  
Little Deschutes (Little Deschutes zone) subbasin (Finley Butte and La Pine quadrangles)

A2. Proposed use Irrigation (42.5 acres) Seasonality: Irrigation Season

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	proposed	1	See comments	0.145 (65 gpm)	22S/10E-2 SE-NW	345' N, 580' E fr SW cor of SWNW ¼ ¼ of Sec 2
2	proposed	2	See comments	0.39 (175 gpm)	22S/10E-10 NW-NW	320' N, 65' E fr SW cor NWNW ¼ ¼ of Sec 10
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	4201				TBD	0-18	TBD					
2	4222				TBD	0-18	TBD					

Use data from application for proposed wells.

A4. **Comments:** The proposed wells list no estimated well depths and Deschutes as the target aquifer. Within the La Pine subbasin wells produce from basin fill (shallow) or lavas from the Cascade Range or the Newberry Volcano (deep at this central location within the subbasin). The information provided in the application is not sufficient to determine which aquifer system the applicant is targeting. However, in either system the groundwater gradient is toward the Little Deschutes River. Regional groundwater flow is toward the north-northeast. The proposed wells are within the USGS Study Area Boundary and therefore subject to the pertinent rules (OAR 690-505-0500 to -0620).

A5.  **Provisions of the** Deschutes 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: Within USGS Study Area Boundary.

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) 7N;
  - 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 proposed wells are located in approximately the center of the La Pine Graben, which contains some 1,800 to 2,400 feet of structural relieve and has been filled with predominately fine-grained sediment. Mainly at the margins of the graben, the fine-grained sediment is juxtaposed with, and potentially interbedded with, permeable lava flows from the Newberry Volcano and the Cascade Range (Lite and Gannett, 2002).

The OWRD Well Log database show 126 shallow wells (total depth less than 120 feet) and 4 deep wells (total depths greater than 300 feet) completed in Sections 2, 9 and 10 (the sections the proposed wells are in or directly adjacent to). For the shallow wells, the listed well yield ranges from 0.5 to 30 gpm with a median yield of 15 gpm. For the deep wells, the listed yield ranges from 20 to 950 gpm, with a median yield of 70 gpm.

The nearest State Observation Well is DESC 8108, located approximately 1.5 miles to the southwest of well 1 and approximately 1.1 miles to the southeast of well 2. DESC 8108 has been monitored periodically since 1985. The long-term trend shows a decadal-scale water level fluctuation that is coincident with climate cycles. The decadal fluctuation has a maximum amplitude of approximately 10-12 feet. A nearby USGS monitoring well, DESC 52684 (located approximately 1.2 miles east of well 1 and approximately 1.1 miles northeast of well 2) was monitored from late 1999 through early 2002 and shows a relationship with the Little Deschutes River flow and the dry year of 2001.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**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
		<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 confinement evaluation:** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

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
						<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"/>
						<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"/>

**Basis for aquifer hydraulic connection evaluation:** \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**Water Availability Basin the well(s) are located within:** \_\_\_\_\_

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?
		<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"/>
		<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"/>
		<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: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

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													
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													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
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:** \_\_\_\_\_

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\_\_\_\_\_  
\_\_\_\_\_

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

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\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**References Used:** \_\_\_\_\_

Application file: G-18462, and nearby G-16294, G-16985, G-18292, and G-18349.

Gannett, M.W. and Lite, K.E., Jr. 2004. Simulation of regional ground-water flow in the Upper Deschutes Basin, Oregon: U.S. Geological Survey Water-Resources Investigations Report WRI 2003-4195.

Gannett, M.W. and Lite, K.E., Jr. 2013. Analysis of 1997-2008 Groundwater Level Changes in the Upper Deschutes Basin, Central Oregon: U.S. Geological Survey Scientific Investigations Report 2013-5092.

Gannett, M.W., Lite, K.E., Jr., Morgan, D.S., and Collins, C.A. 2001. Ground-water hydrology of the upper Deschutes basin, Oregon: U.S. Geological Survey Water-Resources Investigations Report WRI 2000-4162.

Lite, K.E., Jr. and Gannett, M.W. 2002. Geologic framework of the regional ground-water flow system in the upper Deschutes Basin, Oregon: U.S. Geological Survey Water-Resources Investigations Report WRI 2002-4015.

OWRD Well log and water level database.

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

D1. Well #: \_\_\_\_\_ Logid: \_\_\_\_\_

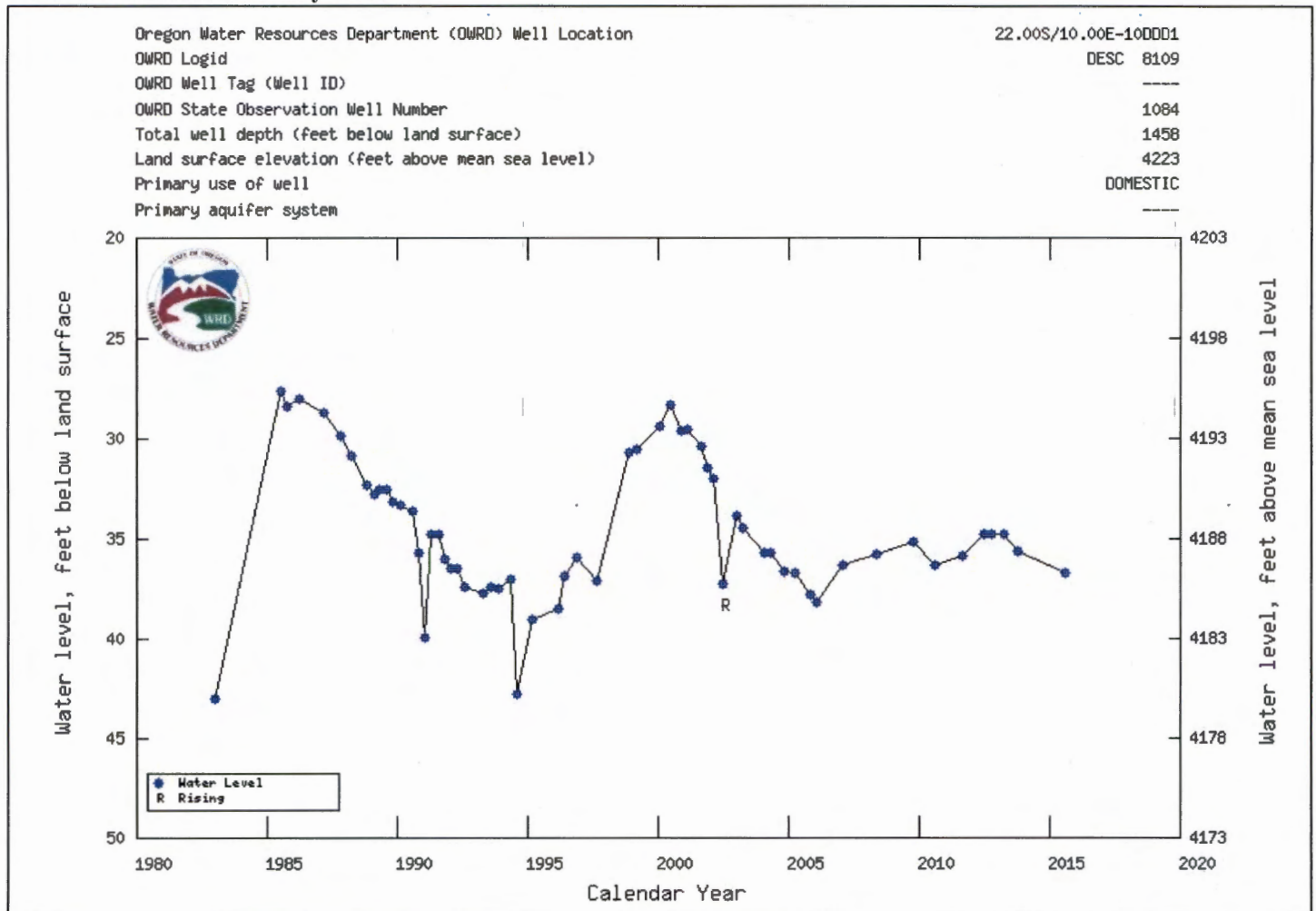
D2. THE WELL does not appear to meet current well construction standards based upon:

- 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: \_\_\_\_\_

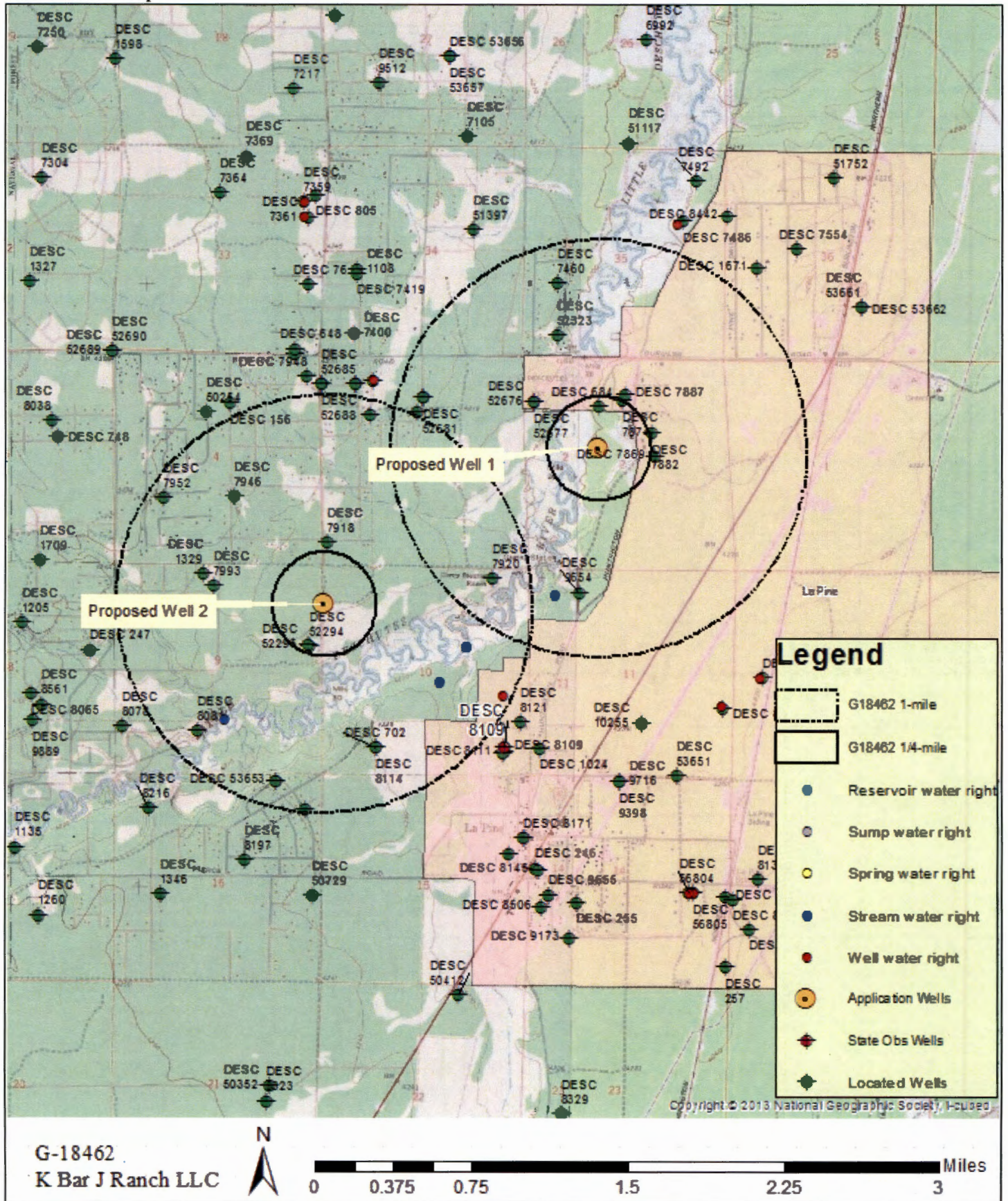
D4.  Route to the Well Construction and Compliance Section for a review of existing well construction.

**Water-Level Trends in Nearby Wells**

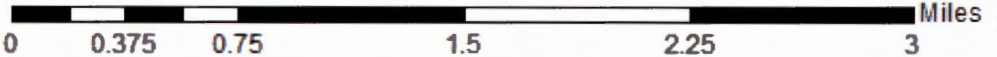




Well Location Map



G-18462  
K Bar J Ranch LLC



DESC 52684 Hydrograph and Little Deschutes River Mean Daily Flow

