

# Groundwater Application Review Summary Form

Application # G- 18718

GW Reviewer Aurora Boochier Date Review Completed: 10/17/2018

## 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).*

# MEMO



**To:** Kristopher Byrd, Well Construction and Compliance Section Manager  
**From:** Joel Jeffery, Well Construction Program Coordinator  
**Subject:** Review of Water Right Application G-18718  
**Date:** October 22, 2018

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

Applicant's Well #1 (DESC 2169, DESC 2167 (deepening), and DESC 60615 (2<sup>nd</sup> deepening)): Based on a review of the Well Reports, Applicant's Well #1 seems to protect the groundwater resource.

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

## WATER RESOURCES DEPARTMENT

MEMO

Date: 10/17/2018TO: Application: G-18718FROM: GW: Aurora Bouchier  
(Reviewer's Name)SUBJECT: Scenic Waterway Interference & General/Local Surface Water  
Evaluation for Deschutes Ground Water Study AreaThe 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 Middle 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.

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

WATER RESOURCES DEPT.  
 SALEM, OREGON

**2169** **DESC** **AUG 15 1989** **SEP - 5 1989**  
 14s/12e/26bc  
 8049

**(1) OWNER:**

Name George Spencer Well Number: \_\_\_\_\_  
 Address 475 Hebb Park Dr.  
 City West Slinn State OR Zip 97068

**(2) TYPE OF WORK:**

New Well  Deepen  Recondition  Abandon

**(3) DRILL METHOD**

Rotary Air  Rotary Mud  Cable  
 Other \_\_\_\_\_

**(4) PROPOSED USE:**

Domestic  Community  Industrial  Irrigation  
 Thermal  Injection  Other \_\_\_\_\_

**(5) BORE HOLE CONSTRUCTION:**

Special Construction approval Yes No Depth of Completed Well \_\_\_\_\_ ft.  
 Yes No    
 Explosives used   Type \_\_\_\_\_ Amount \_\_\_\_\_

HOLE			SEAL			Amount sacks or pounds
Diameter	From	To	Material	From	To	
12"	0	-18	cement	0	-18	6 sacks
8"	-18	-150				

How was seal placed: Method  A  B  C  D  E  
 Other \_\_\_\_\_

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: 8"	+2	-18	.250	<input checked="" 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"/>
Liner: 6"	0	-150	.188	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Final location of shoe(s) \_\_\_\_\_

**(7) PERFORATIONS/SCREENS:**

Perforations Method factory  
 Screens Type \_\_\_\_\_ Material \_\_\_\_\_

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
-130	-150		120	1/2 X 4		<input type="checkbox"/>	<input checked="" 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"/>

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

Pump  Bailer  Air  Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
7 gpm	14ft.		1 hr.

Temperature of water \_\_\_\_\_ 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 Desch Latitude \_\_\_\_\_ Longitude \_\_\_\_\_  
 Township 14S N or S, Range 12E E or W, WM.  
 Section 26 SW 1/4 NW 1/4  
 Tax Lot 1920 Lot \_\_\_\_\_ Block \_\_\_\_\_ Subdivision \_\_\_\_\_  
 Street Address of Well (or nearest address) 69720 S. W. 83rd  
Redmond, Oregon 97756

**(10) STATIC WATER LEVEL:**

97 ft. below land surface. Date 8-7-89  
 Artesian pressure \_\_\_\_\_ lb. per square inch. Date \_\_\_\_\_

**(11) WATER BEARING ZONES:**

Depth at which water was first found 124 ft.

From	To	Estimated Flow Rate	SWL
124	150		97

**(12) WELL LOG:**

Material	From	To	SWL
topsoil	0	3	
brown coarse conglomerate	3	10	
grey hard rock	10	103	97
brown coarse conglomerate	103	124	
grey hard broken rock WB	124	146	
grey hard rock	146	150	

Date started 8-4-89 Completed 8-7-89

**(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 well construction standards. Materials used and information reported above are true to my best 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 well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 570  
 Signed Lang K Crow Date 8-13-89

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

**DESC**  
 2/67

**RECEIVED**

145/12e/26aa

(START CARD) # W17016

(1) **OWNER:** Name George Spencer Well Number: RESOURC  
 Address 69720 S.W. 83rd  
 City Redmond State Ore. Zip 97756

(2) **TYPE OF WORK:**  
 New Well  Deepen  Recondition  Abandon

(3) **DRILL METHOD**  
 Rotary Air  Rotary Mud  Cable  
 Other

(4) **PROPOSED USE:**  
 Domestic  Community  Industrial  Irrigation  
 Thermal  Injection  Other

(5) **BORE HOLE CONSTRUCTION:**  
 Special Construction approval Yes  No  Depth of Completed Well 225 ft.  
 Explosives used  Yes  No  Type \_\_\_\_\_ Amount \_\_\_\_\_

HOLE		SEAL		Amount
Diameter	From To	Material	From To	sacks or pounds
6"	150 225			

How was seal placed: Method  A  B  C  D  E  
 Other Not Dist  
 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:					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Liner:					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Final location of shoe(s) \_\_\_\_\_

(7) **PERFORATIONS/SCREENS:**  
 Perforations Method \_\_\_\_\_  
 Screens Type \_\_\_\_\_ Material \_\_\_\_\_

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
						<input type="checkbox"/>	<input type="checkbox"/>

(8) **WELL TESTS: Minimum testing time is 1 hour**  
 Pump  Bailer  Air  Flowing Artesian  
 Yield gal/min 25 Drawdown 10 Drill stem at \_\_\_\_\_ Time 1 hr.

Temperature of water \_\_\_\_\_ 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 Desch Latitude \_\_\_\_\_ Longitude \_\_\_\_\_  
 Township 14 S N or S, Range 12 E E or W, WM.  
 Section 26 N.E.  $\frac{1}{4}$  N.E.  $\frac{1}{4}$   
 Tax Lot 1920 Lot \_\_\_\_\_ Block \_\_\_\_\_ Subdivision \_\_\_\_\_  
 Street Address of Well (or nearest address) 69720 S.W. 83rd Redmond, Ore

(10) **STATIC WATER LEVEL:**  
131 ft. below land surface. Date 12-9-89  
 Artesian pressure \_\_\_\_\_ lb. per square inch. Date \_\_\_\_\_

(11) **WATER BEARING ZONES:**

Depth at which water was first found \_\_\_\_\_

From	To	Estimated Flow Rate	SWL

(12) **WELL LOG:** Ground elevation \_\_\_\_\_

Material	From	To	SWL
<u>Hard Gray Rock</u>	<u>150</u>	<u>212</u>	
<u>Red Cinders</u>	<u>212</u>	<u>225</u>	<u>131</u>

Date started 12-6-89 Completed 12-9-89

(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 well construction standards. Materials used and information reported above are true to my best knowledge and belief.  
 Signed Wayne T. Buehner WWC Number 677 Date 12-9-89

(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 well construction standards. This report is true to the best of my knowledge and belief.  
 Signed Wayne T. Buehner WWC Number 677 Date 12-9-89

STATE OF OREGON WATER SUPPLY WELL REPORT (as required by ORS 537.765 & OAR 690-205-0210)

DESC 60615 6/2/2016

WELL I.D. LABEL# L121600 START CARD # 1030640 ORIGINAL LOG # DESCHUTES 2169

(1) LAND OWNER

Owner Well I.D. First Name GEORGE Last Name SPENCER Company Address 5506 NW 83RD City REDMOND State OR Zip 97756

(2) TYPE OF WORK

New Well Deepening Conversion Alteration (complete 2a & 10) Abandonment (complete 5a)

(2a) PRE-ALTERATION

Casing: Dia + From To Gauge Stl Plstc Wld Thrd Seal: Material From To Amt sacks/lbs

(3) DRILL METHOD

Rotary Air Rotary Mud Cable Auger Cable Mud Reverse Rotary Other

(4) PROPOSED USE

Domestic Irrigation Community Industrial/Commercial Livestock Dewatering Thermal Injection Other

(5) BORE HOLE CONSTRUCTION

Depth of Completed Well 290.00 ft. Special Standard (Attach copy)

BORE HOLE

Table with 7 columns: Dia, From, To, Material, Seal From, To, Amt sacks/lbs. Row 1: 6, 0, 290, Calculated, Calculated.

How was seal placed: Method A B C D E Other DID NOT DISTURB Backfill placed from ft to ft. Material Filter pack from ft to ft. Material Size Explosives used: Yes Type Amount

(5a) ABANDONMENT USING UNHYDRATED BENTONITE

Proposed Amount Actual Amount

(6) CASING/LINER

Casing Liner Dia + From To Gauge Stl Plstc Wld Thrd Shoe Inside Outside Other Location of shoe(s) Temp casing Yes Dia From To

(7) PERFORATIONS/SCREENS

Perforations Method Screens Type Material

Table with 7 columns: Perf/Screen, Casing/Liner, Dia, From, To, Scrn/slot width, Slot length, # of slots, Tele/pipe size

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

Pump Bailer Air Flowing Artesian Yield gal/min Drawdown Drill stem/Pump depth Duration (hr)

Temperature 55 F Lab analysis Yes By Water quality concerns? Yes (describe below) TDS amount 178 ppm From To Description Amount Units

(9) LOCATION OF WELL (legal description)

County DESCHUTES Twp 14.00 S N/S Range 12.00 E E/W WM Sec 26 NE 1/4 of the SW 1/4 Tax Lot 1920 Tax Map Number Lot Lat Long Street address of well Nearest address 5506 NW 83RD, REDMOND, OR 97756

(10) STATIC WATER LEVEL

Table with 4 columns: Date, SWL(psi), +, SWL(ft). Existing Well / Pre-Alteration 6/1/2016 151 Completed Well 6/1/2016 151

WATER BEARING ZONES

Depth water was first found 225.00

Table with 6 columns: SWL Date, From, To, Est Flow, SWL(psi), +, SWL(ft). Row 1: 6/1/2016, 225, 290, 40, 151

(11) WELL LOG

Ground Elevation 2734.00

Table with 3 columns: Material, From, To. NONE 0 225 BASALT CONGLOMERATE 225 280 BASALT BROKEN 280 290

Date Started 6/1/2016 Completed 6/1/2016

(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.

License Number 758 Date 6/2/2016

Signed THOMAS R PECK (E-filed)

(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.

License Number 1720 Date 6/2/2016

Signed JACK ABBAS (E-filed)

Contact Info (optional)

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date 10/17/2018  
 FROM: Groundwater Section Aurora C Bouchier  
 Reviewer's Name  
 SUBJECT: Application G- 18718 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: Brian & Jackie Thorsness County: Deschutes

A1. Applicant(s) seek(s) 0.09 cfs from 1 well(s) in the Deschutes Basin,  
Deschutes (Middle Zone) subbasin (Cline Falls quad map)

A2. Proposed use Irrigation (8 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	DESC 2169	1	Deschutes Fm	0.09	14S/12E-26 NE-SW	1550' N, 2360' E fr SW cor S 26
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		124	124	8/7/1989	290	0-18	-2-18	0-150	130-150	7*	14	B

Use data from application for proposed wells.

A4. **Comments:** The well was deepened twice. The first deepening (DESC 2167) lists a static water level of 131-ft (12/9/1989) and a yield of 25 gpm with 0 drawdown after 1-hr of pumping. The second deepening (DESC 60615) lists a static water level of 151-ft (6/1/2016) and a yield of 40 gpm after 1-hr of an air test. The well is constructed into water bearing zones within the Deschutes Fm. Groundwater flow is towards the north-northeast with the nearest discharge area (Deschutes River) approximately 1.5 miles distant. The water level in the well is below the elevation of the nearest surface water source (also Deschutes River). The well is located within the USGS Deschutes Groundwater Study Area and is subject to division 690-505-0400 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 the 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:
- 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;
  - 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;
  - will not** *or*  **will** likely to be available within the capacity of the groundwater resource; *or*
  - will, if properly conditioned**, avoid injury to existing groundwater rights or to the groundwater resource:
    - The permit should contain condition #(s) 7N, 7T \_\_\_\_\_;
    - The permit should be conditioned as indicated in item 2 below.
    - The permit should contain special condition(s) as indicated in item 3 below;
- B2.
- Condition** to allow groundwater production from no deeper than \_\_\_\_\_ ft. below land surface;
  - Condition** to allow groundwater production from no shallower than \_\_\_\_\_ ft. below land surface;
  - Condition** to allow groundwater production only from the \_\_\_\_\_ groundwater reservoir between approximately \_\_\_\_\_ ft. and \_\_\_\_\_ ft. below land surface;
  - 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 well is located approximately halfway between two long term observation wells: DESC 3581 (located approximately 4.4-miles to the south outside of Redmond), and DESC 8626 (located approximately 3.8-miles to the north-northwest in the Lower Bridge area), which have both been monitored since 1993. The two long term observation wells both show a fairly linear decline over the period of record with a lessening of decline in the late 1990's through mid-2000's following a high precipitation cycle in the mid 1990's. The USGS has attributed the lack of a water-level rise in response the wet period in the mid 1990's as diffusion as the recharge pulse moved west from the Cascade Range which was insufficient to overcome the longer duration drying trend in the central part of the basin (Gannett and Lite, 2013).
- At the time of the USGS report (using data through 2008), the water level at the Lower Bridge Area had declined 5-6 feet and simulations indicated that 60-70 percent of the decline was attributable to climate, about 20-30 percent was attributable to increased groundwater pumping, and about 10 percent was due to canal lining (Gannett and Lite, 2013). More recent water level measurements show that the water level at DESC 8626 has declined by approximately 9 feet between 1994 and 2018 (~1/3 ft/yr).
- Also at the time of the USGS report, the water level in the Redmond area had declined some 12-14 feet with simulations indicating that 60-70 percent of the decline was attributable to climate, about 20-25 percent was attributable to increased groundwater pumping, and about 5-10 percent was due to canal lining (Gannett and Lite, 2013). More recent water level measurements show that the water level at DESC 3581 has declined by approximately 20 feet between 1994 and 2018 (~8/10 ft/yr).
- There are no nearby wells with a current observation record. However, the scatter of well log water levels and three nearby wells which were monitored by the USGS during the 1990's indicate that locally the groundwater is also experiencing a decline. Annual water level measurements at the applicant's well are therefore recommended, as well as a dedicated measuring tube.



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

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

**References Used:** \_\_\_\_\_  
Application files: G-18718.

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.

Gannett, M.W., Lite, K.E., Jr., Risley, J.C., Pischel, E.M., and La Marche, J.L., 2017, Simulation of groundwater and surface-water flow in the upper Deschutes Basin, Oregon: U.S. Geological Survey Scientific Investigations Report 2017-5097, 68p.

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) \_\_\_\_\_

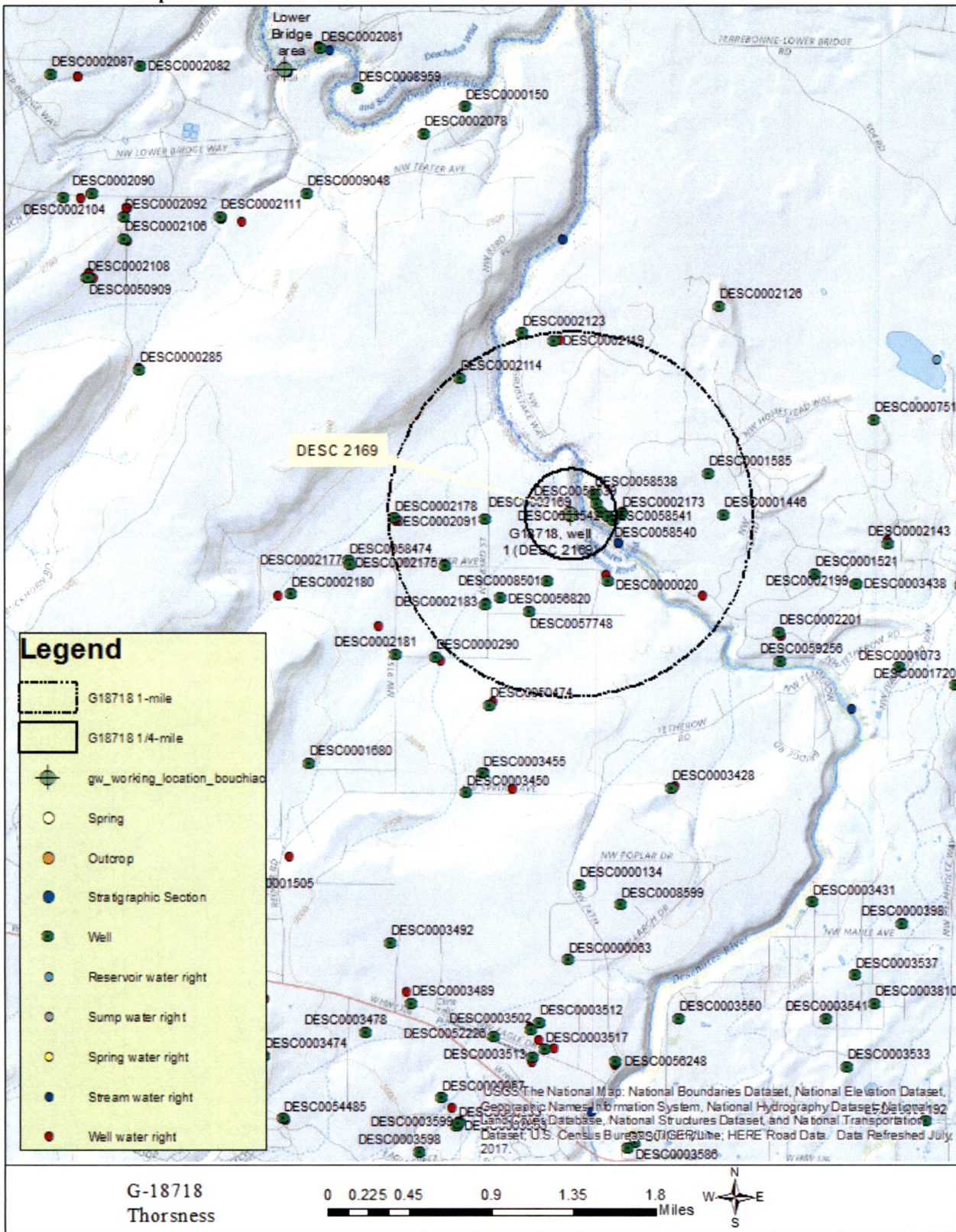
D3. **THE WELL construction deficiency or other comment is described as follows:** \_\_\_\_\_

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

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

\_\_\_\_\_

### Well Location Map



### Water-Level Trends in Nearby Wells

