

Approved:



MEMO

To: Kristopher Byrd, Well Construction and Compliance Section Manager
From: Travis Kelly, Well Construction Compliance Coordinator
Subject: Review of Water Right Application G-19198
Date: March 1, 2022

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

Applicant's Well #1 (DESC 60049): Based on a review of the Well Report, Applicant's Well #1 does not appear to comply with current minimum well construction standards (See OAR 690 Division 210). The problem is that according to the Water Supply Well Report, the well was not sealed to the proper depth. In order to meet minimum well construction standards, the well must be resealed with an approved grout to a minimum depth of 114 feet below land surface.

My recommendation is that the Department **not issue** a permit for Applicant's Well #1 unless it is brought into compliance with current minimum well construction standards or information is provided showing that it is constructed to meet current minimum well construction standards.

The repair of Applicant's Well #1 may not satisfy hydraulic connection issues.

WELL LABEL # L 111742

START CARD # 196694

DRAFT

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

(1) LAND OWNER
Owner Well I.D. _____
First Name DAVID Last Name ROTH
Company _____
Address PO Box 358
City CHRISTMAS Valley State OR Zip 97641

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

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

(4) PROPOSED USE Domestic Irrigation Community
 Industrial/Commercial Livestock Dewatering Injection
 Thermal Other _____

(5) BORE HOLE CONSTRUCTION Special Standard: Yes (attach copy)
Depth of Completed Well 600 ft.

BORE HOLE			SEAL				
Dia	From	To	Material	From	To	Amount	Scks/lbs
20"	0	50"	Bent	0	50	96	5cr
18"	50	115					
16"	115	200					
14"	200	600					

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

Backfill placed from _____ ft. to _____ ft. Material _____

Filter pack from _____ ft. to _____ ft. Material _____ Size _____

Explosives used: Yes Type _____ Amount _____

(6) CASING/LINER

Csng/Linr	Dia	+	From	To	Gauge	Steel	Plastic	Welded	Thrd
X	16"	+	1	118	.250	X		X	

Shoe Inside Outside Other Location of shoe(s) _____
Temporary casing Yes Diameter _____ From _____ To _____

(7) PERFORATIONS/SCREENS
Perforations Method _____
Screens Type _____ Material _____

Perf	Scrn	Csng	Linr	Screen Dia	From	To	Screen/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 1000 Drawdown _____ Drill stem/Pump depth 600 Duration (hr) 2.4

Temperature 60 °F Lab analysis Yes By _____
Water quality concerns? Yes (describe below)

From	To	Description	Amount	Units

(9) LOCATION OF WELL (legal description)
County Desch Twp 22 N or S Range 20 E or W W.M.
Sec 4 1/4 of the _____ 1/4 Tax Lot _____
Tax Map Number _____ Lot _____
Lat _____ " or _____ DMS or DD
Long _____ " or _____ DMS or DD
Street Address of Well (or nearest address) 40105 Hwy 20
Bellevue OR 97112

(10) STATIC WATER LEVEL

	Date	SWL (psi)	+	SWL (ft)
Existing Well/Predeepening				147
Completed Well	4-5-11			147

Flowing Artesian? Yes Dry Hole? Yes
WATER BEARING ZONES Depth water was first found 200

SWL Date	From	To	Est Flow	SWL (psi)	+	SWL (ft)
	200	200'	200'			147

(11) WELL LOG Ground Elevation _____

Material	From	To
TOP Soil	0	2
Brown Clay	2	25
Gray Basalt	25	100
Sand Brown Dr	100	109
Basalt Brn	109	115
Gray Basalt	115	205
Sand gravel clay	205	280
Red gravel rock	280	320
Pumice with gravel sand concrete	320	600

Date Started 1-22-11 Completed 4-5-11

(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 _____ 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.

License Number 1654 Date 7-14-11

Signed _____

Contact Info. (optional) _____

RECEIVED BY OWRD

AUG 01 2014

Groundwater Application Review Summary Form

Application # G- 19198

GW Reviewer M. Thoma Date Review Completed: 12/08/2021

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

12/08/2021

TO: Application G- 19198

FROM: GW: M. Thoma
(Reviewer's Name)

SUBJECT: Scenic Waterway Interference Evaluation

YES The source of appropriation is hydraulically connected to a State Scenic Waterway or its tributaries

NO

YES Use the Scenic Waterway Condition (Condition 7J)

NO

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**

COMMENTS: *Full impacts from groundwater pumping under this proposed right may extend outside of the Deschutes Basin so total impacts to the Deschutes Scenic Waterway cannot be reasonably determined or assumed.*

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

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

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date 12/08/2021
 FROM: Groundwater Section M. Thoma
Reviewer's Name
 SUBJECT: Application G- 19198 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: Yreka Butte Enterprises County: Deschutes

A1. Applicant(s) seek(s) 0.067 cfs from 1 well(s) in the Deschutes Basin,
Hampton Buttes subbasin

A2. Proposed use Irrigation (53.4 ac) Seasonality: April 1 – October 31 (214 d)

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	DESC0060049	1	Bedrock	0.067	22.00S-20.00E-4-SW SE	4287 FEET SOUTH AND 3712 FEET EAST FROM NW CORNER, SECTION 4
2						

* 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	4430	200	147	4/5/14	600	0-50	+1-118	-	-	1000		A

Use data from application for proposed wells.

A4. **Comments:** _____

A5. **Provisions of the** Deschutes (OAR 690-505) 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 proposed POA is outside of the Deschutes Groundwater Study Area

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) _____;
 - 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:** Groundwater levels in the area of the proposed POA have been showing small but persistent declines since at least the early 2000s. Additional groundwater development in this area will likely contribute to those declines which could impair the function of the aquifer by precluding its perpetual use (i.e., additional appropriation could interfere with existing groundwater users abilities to exercise their senior water rights). Therefore, the new use is found to be not within the capacity of the resource as defined in OAR 690-400-0010.

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 Basin and Range Volcanics	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>

Basis for aquifer confinement evaluation: Most wells in the area report similar SWL depths regardless of total depth or reported "First Water" implying little confinement with depth.

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	South Fork Crooked R	4280	4300	58,000	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Basis for aquifer hydraulic connection evaluation: The nearest point of hydraulic connection to surface water is likely the South Fork Crooked River where the river elevation is coincident with the groundwater elevation; this distance is approximately 11 miles from the proposed POA

Water Availability Basin the well(s) are located within: S FK CROOKED R > CROOKED R – AT MOUTH (ID# 70358)

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 (SW) source. Limit evaluation to instream rights and minimum stream flows that are pertinent to that SW source, 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"/>

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"/>

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
1	1	%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS					0.067	0.067	0.067	0.067	0.067	0.067	0.067		
Interference CFS													
Distributed Wells													
Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
(A) = Total Interf.	see comments below												
(B) = 80 % Nat. Q	29.2	62.5	87.7	96.8	36.4	19.10	7.49	4.84	7.86	18.3	29.1	33.3	
(C) = 1 % Nat. Q	0.29	0.63	0.88	0.97	0.36	0.19	0.08	0.05	0.08	0.18	0.29	0.33	
(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.

Comments: Stream depletion was not estimated because the complex geology (Hampton Buttes) and large distance between the proposed POA and the stream would result in very low confidence in the modeled results. However, give the distance, stream depletion is likely to be very low and significantly lower than 1% of the 80%-exceedance natural flows

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 proposed POA has been found to be producing from an aquifer that is hydraulically connected to surface water but at a substantial distance. Additionally, impact from pumping may extend beyond the encompassing WAB and outside of the Deschutes Basin. Stream depletion is likely to be below the thresholds laid out in OAR 690-009 and so Potential for Substantial Interference is not assumed.

REFERENCES USED:

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

OWRD Well Log Database, Accessed 12/08/2021 [https://apps.wrd.state.or.us/apps/gw/well_log/Default.aspx]

OWRD Groundwater Information System Database, Accessed 12/08/2021 [https://apps.wrd.state.or.us/apps/gw/gw_info/gw_info_report/gw_search.aspx]

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) _____

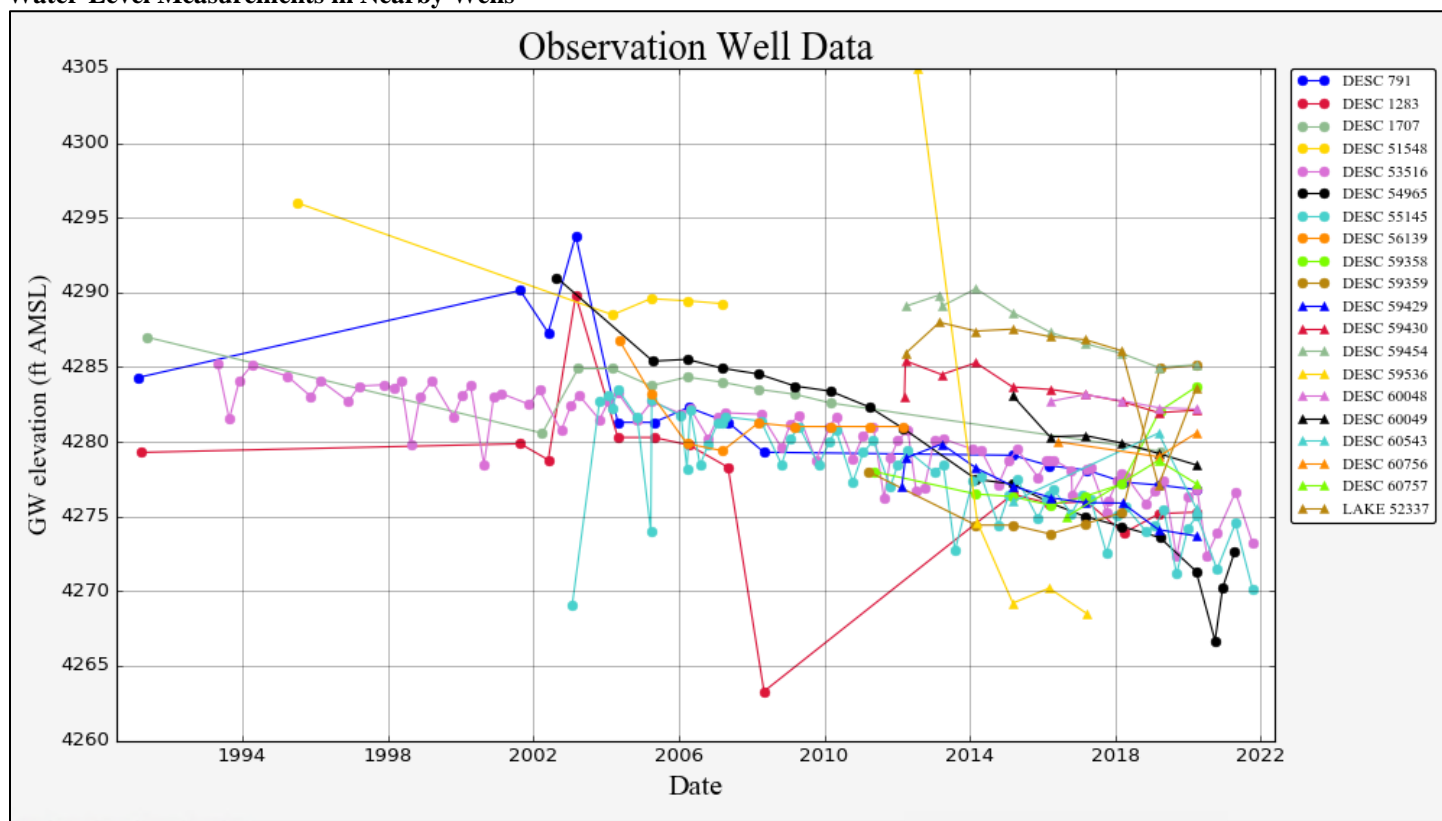
D3. **THE WELL construction deficiency or other comment is described as follows:** _____

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

Water Availability Tables

DETAILED REPORT ON THE WATER AVAILABILITY CALCULATION						
Watershed ID #: 70358		S FK CROOKED R > CROOKED R - AT MOUTH			Exceedance Level: 80	
Time: 11:58 AM		Basin: DESCHUTES			Date: 12/08/2021	
Month	Natural Stream Flow	Consumptive Use and Storage	Expected Stream Flow	Reserved Stream Flow	Instream Requirements	Net Water Available
Monthly values are in cfs. Storage is the annual amount at 50% exceedance in ac-ft.						
JAN	29.20	1.37	27.80	0.00	4.00	23.80
FEB	62.50	2.85	59.60	0.00	15.00	44.60
MAR	87.70	15.80	71.90	0.00	21.00	50.90
APR	96.80	24.20	72.60	0.00	21.00	51.60
MAY	36.40	44.80	-8.41	0.00	21.00	-29.40
JUN	19.10	36.40	-17.20	0.00	15.00	-32.20
JUL	7.49	10.60	-3.10	0.00	4.00	-7.10
AUG	4.84	5.42	-0.58	0.00	4.00	-4.58
SEP	7.86	5.72	2.14	0.00	4.00	-1.86
OCT	18.30	3.20	15.10	0.00	4.00	11.10
NOV	29.10	0.94	28.20	0.00	4.00	24.20
DEC	33.30	1.24	32.10	0.00	4.00	28.10
ANN	36,300	9,230	27,800	0	7,270	22,800

Water-Level Measurements in Nearby Wells



Well Location Map

