

Approved: 

# MEMO

**To:** Kristopher Byrd, Well Construction and Compliance Section Manager  
**From:** Travis Kelly, Well Construction Program Coordinator  
**Subject:** Review of Water Right Application G-19004  
**Date:** September 15, 2020

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

Applicant's Well #1 (DESC 61056): Based on a review of the Well Report, Applicant's Well #1 seems to protect the groundwater resource.

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

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

DESC 61056

11/20/2017

WELL I.D. LABEL# L 127062
START CARD # 1035666
ORIGINAL LOG #

(1) LAND OWNER
Owner Well I.D.
First Name JOHN Last Name LIETZ
Company TARTAN DRUIML LLC
Address 250 NW FRANKLIN AVE SUITE 403
City BEND State OR Zip 97703

(2) TYPE OF WORK
New Well [X] Deepening [ ] Conversion [ ]
Alteration (complete 2a & 10) [ ] Abandonment(complete 5a) [ ]

(2a) PRE-ALTERATION
Dia + From To Gauge Stl Plstc Wld Thrld
Casing: [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]
Material From To Amt sacks/lbs
Seal: [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]

(3) DRILL METHOD
Rotary Air [X] Rotary Mud [ ] Cable [ ] Auger [ ] Cable Mud [ ]
Reverse Rotary [ ] Other [ ]

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

(5) BORE HOLE CONSTRUCTION
Special Standard [ ] (Attach copy)
Depth of Completed Well 603.00 ft.
BORE HOLE
Dia From To Material From To Amt sacks/lbs
12 0 228 Bentonite Chips 0 130 77 S
8 228 603 Calculated 68
Cement 130 228 35 S
Calculated 30

How was seal placed: Method [ ] A [ ] B [X] C [ ] D [ ] E
[X] Other POURED DRY
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 Thrld
8 [X] 2 228 .250 [ ] [ ] [X] [ ]
6 [ ] 5 603 .188 [ ] [ ] [X] [ ]
Shoe [ ] Inside [ ] Outside [ ] Other [ ] Location of shoe(s) [ ]
Temp casing [ ] Yes Dia [ ] From + [ ] To [ ]

(7) PERFORATIONS/SCREENS
Perforations Method MACHINE
Screens Type [ ] Material [ ]
Perf/ Casing/ Screen Dia From To Scrn/slot Slot # of Tele/
Screen Liner Dia From To width length slots pipe size
Perf Liner 6 563 603 .125 3 456 [ ]

(8) WELL TESTS: Minimum testing time is 1 hour
Pump [ ] Bailer [ ] Air [X] Flowing Artesian [ ]
Yield gal/min Drawdown Drill stem/Pump depth Duration (hr)
200 [ ] 600 1.5
Temperature 54 °F Lab analysis [ ] Yes By [ ]
Water quality concerns? [ ] Yes (describe below) TDS amount 83 ppm
From To Description Amount Units

(9) LOCATION OF WELL (legal description)
County DESCHUTES Twp 18.00 S N/S Range 11.00 E E/W WM
Sec 2 SE 1/4 of the SE 1/4 Tax Lot 1900
Tax Map Number [ ] Lot [ ]
Lat [ ] " or 44.03838889 DMS or DD
Long [ ] " or -121.36561111 DMS or DD
Street address of well [ ] Nearest address [ ]
SKYLINE RANCH RD AND CARTWRIGHT TRACT W

(10) STATIC WATER LEVEL
Date SWL(psi) + SWL(ft)
Existing Well / Pre-Alteration [ ] [ ]
Completed Well 8/29/2017 [ ] 362
Flowing Artesian? [ ] Dry Hole? [ ]
WATER BEARING ZONES Depth water was first found 390.00
SWL Date From To Est Flow SWL(psi) + SWL(ft)
8/25/2017 390 603 200 [ ] 362

(11) WELL LOG
Ground Elevation 3801.00
Material From To
SAND PUMICE COBBLES 0 16
PUMICE SAND 16 120
BASALT BROKEN CINDERS CAVING 120 165
SOLID 165 205
CONGLOMERATE BROWN 205 223
BASALT 223 390
BASALT VESICULAR 390 405
SANDSTONE CONGLOMERATE 405 509
BASALT BROKEN FRACTURED 509 545
CONGLOMERATE SANDSTONE BROWN 545 603

Date Started 8/16/2017 Completed 8/29/2017

(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 9/6/2017
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 11/20/2017
Signed JACK ABBAS (E-filed)
Contact Info (optional) [ ]

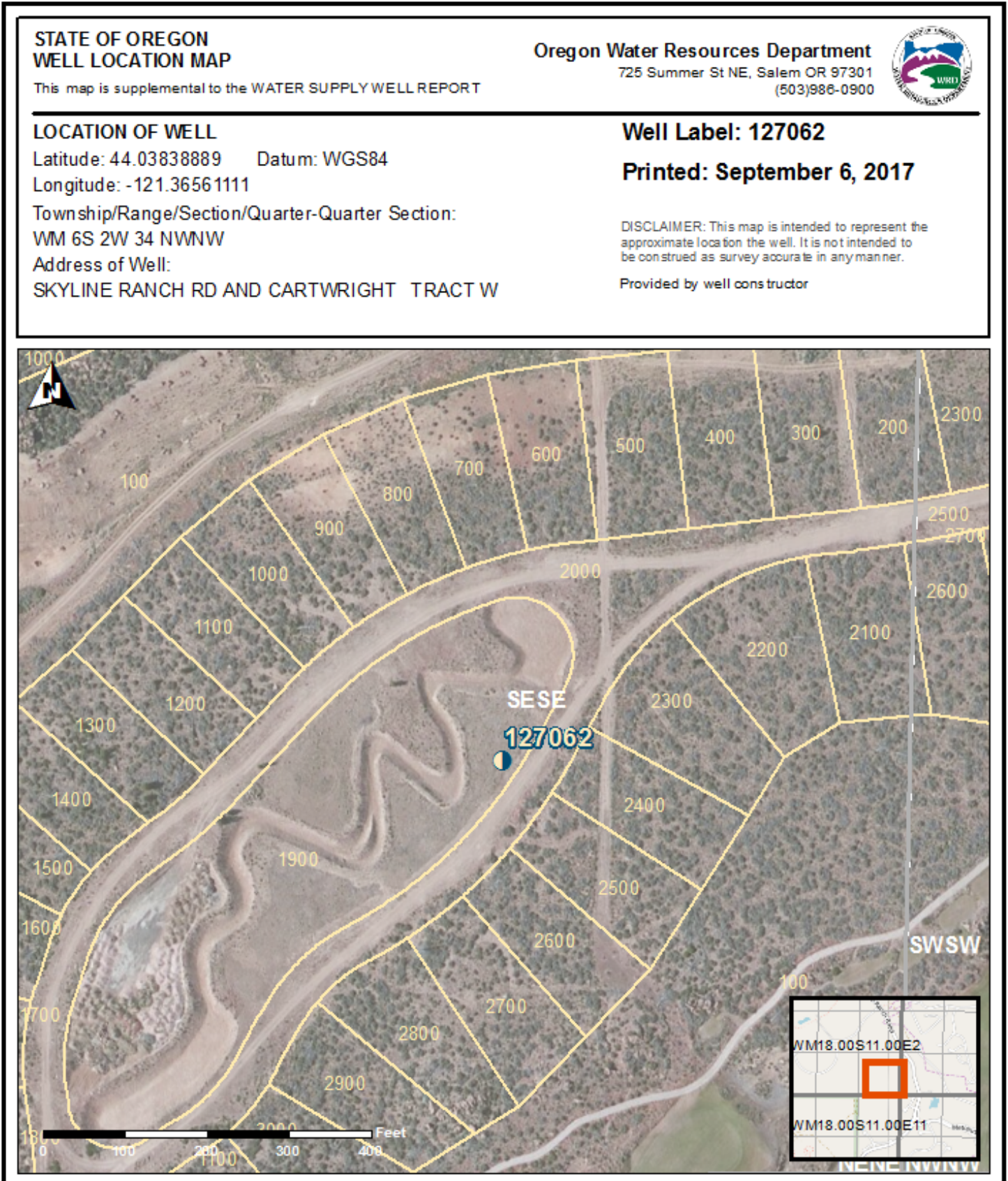


WATER SUPPLY WELL REPORT - Map with location identified must be attached and shall include an approximate scale and north arrow

DESC 61056

11/20/2017

Map of Hole



# Groundwater Application Review Summary Form

Application # G- 19004

GW Reviewer Aurora C Bouchier Date Review Completed: 09/10/2020

## 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**

**09/10/2020**

**TO:**            **Application G- 19004**

**FROM:**        **GW: Aurora C 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 groundwater 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 groundwater will have a localized impact to surface water in the \_\_\_\_\_ 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.

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date 09/10/2020
FROM: Groundwater Section Aurora C Bouchier Reviewer's Name
SUBJECT: Application G- 19004 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: Tartan Druim HOA County: Deschutes

A1. Applicant(s) seek(s) 0.56 cfs from 1 well(s) in the Deschutes Basin, Upper Deschutes (General ZOI) subbasin

A2. Proposed use Nursery (22.3 acres) Seasonality: Year Round

A3. Well and aquifer data (attach and number logs for existing wells; mark proposed wells as such under logid):

Table with 7 columns: 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

\* Alluvium, CRB, Bedrock

Table with 13 columns: 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

Use data from application for proposed wells.

A4. Comments: This application is for year-round nursery use on 22.3 acres. A recent permit (app G-18397/permit G-18190) authorized a maximum rate of 0.04 cfs out of the same well (DESC 61056). It appears that the POU covered under permit G-18190 for irrigation is also included in the POU for this year-round nursery use. The combined rate of 0.6 cfs (268.8 gpm) (0.04 cfs authorized under permit G-18190 plus the 0.56 cfs requested under this application) exceed the estimated yield of 200 gpm listed on the well log. Permit G-18190 has a water-level and decline condition. To date, it does not appear that any water-levels have been submitted.

Groundwater flow is towards the north, with the nearest likely discharge area (Deschutes River) approximately 22-miles distant. The water level in the well, and other wells in the area, is below the nearest surface water source (Deschutes River).

A5. [X] Provisions of the Deschutes Basin rules relative to the development, classification and/or management of groundwater hydraulically connected to surface water [X] are, or [ ] are not, activated by this application. (Not all basin rules contain such provisions.)

Comments: Within the USGS Deschutes Groundwater Study Area (DGWSA) boundary and subject to Division 690-505-0500 to -0620.

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 site is located within the Sisters Fault Zone, south of Awbrey Butte. As such, relevant observation wells should be similarly located within the fault zone. Unfortunately, it appears that there are no long-term observation wells within this portion of the fault zone. The groundwater in nearby wells appear relatively stable..

For comparison sake, wells located up-gradient of the fault zones (i.e. DESC 7620 located in La Pine) continue to show a strong response to climate cycles through present. However, wells located down-gradient of the fault zones (i.e. DESC 3581 located in Redmond and DESC 5045 located in Bend) show a persistent decline since the mid 1990’s through present.

It appears that the fault zone acts to retard the propagation of the groundwater decline. It is likely that addition groundwater production within the USGS Deschutes Ground Water Study Area (DGWSA) will act to further exacerbate the groundwater declines seen down-gradient of the fault zones (Sisters and Brothers fault zones). However, the cumulative 200 cfs cap on groundwater permits has not yet been reached (Division 690-505-0500).

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



**C. GROUNDWATER/SURFACE WATER CONSIDERATIONS, OAR 690-09-040**

The USGS Deschutes groundwater study concludes that groundwater and surface water are directly linked within the DGWSA, with virtually the entire flow of the Deschutes River at Madras supplied by groundwater discharge during the summer and early fall (Gannett et al., 2001). Management rules within the DGWSA (OAR Division 690-505-0500 to 0620) were crafted to allow a limited number of additional groundwater permits to be granted while still maintaining the Deschutes River Oregon Scenic Waterway/Federal Wild and Scenic River. Therefore, the following sections of groundwater reviews are not required to establish surface water groundwater connections.

**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"/>

**Basis for aquifer confinement evaluation:** Not required to be evaluated within the DGWSA.

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**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"/>

**Basis for aquifer hydraulic connection evaluation:** Not required to be evaluated within the DGWSA.

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**Water Availability Basin the well(s) are located within:** Not required to be evaluated within the DGWSA.

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**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"/>
		<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"/>





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

D1. Well #: 1 Logid: DESC 61056

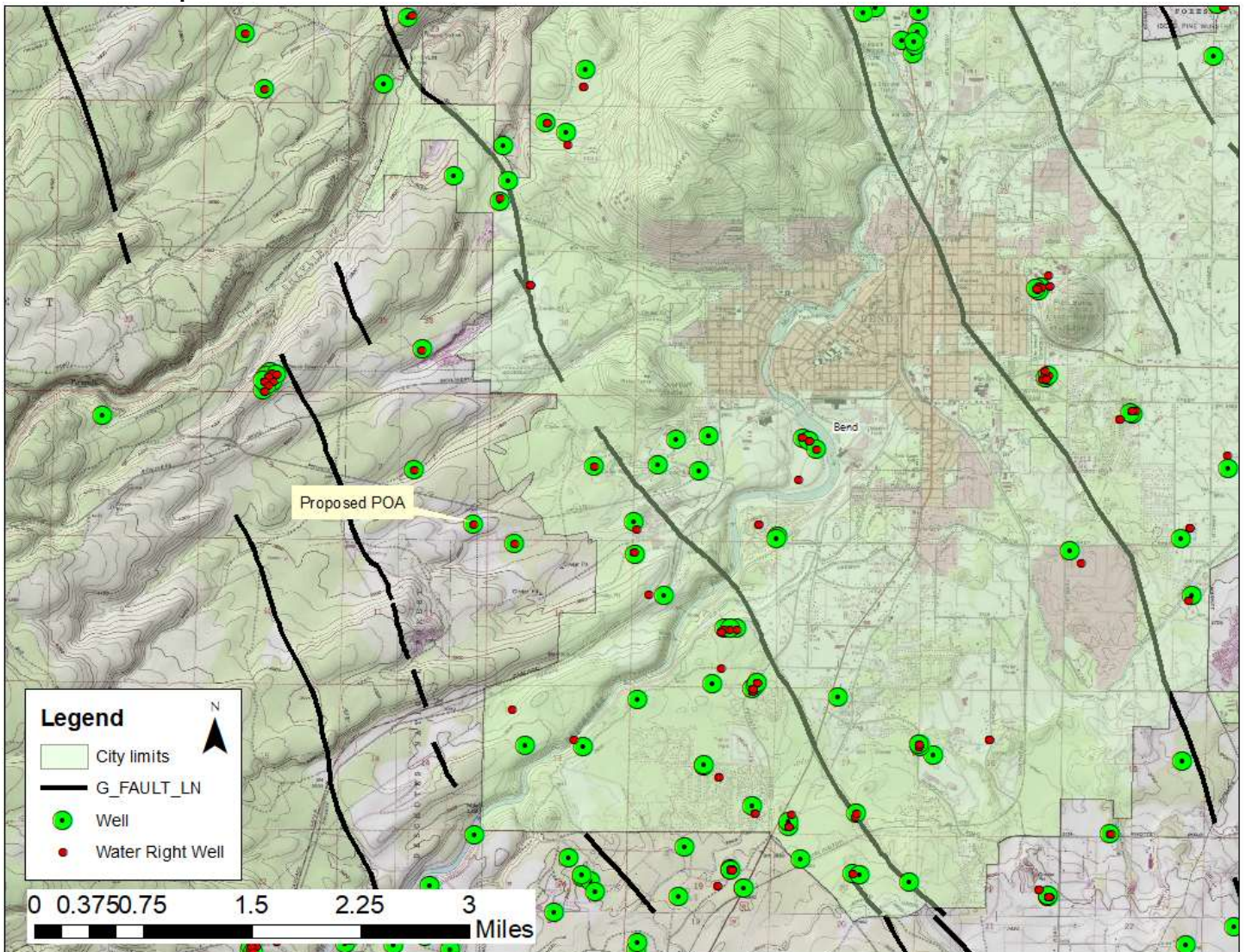
D2. THE WELL does not appear to meet current well construction standards based upon:

- a.  review of the well log;
- b.  field inspection by \_\_\_\_\_;
- c.  report of CWRE \_\_\_\_\_;
- d.  other: (specify) \_\_\_\_\_

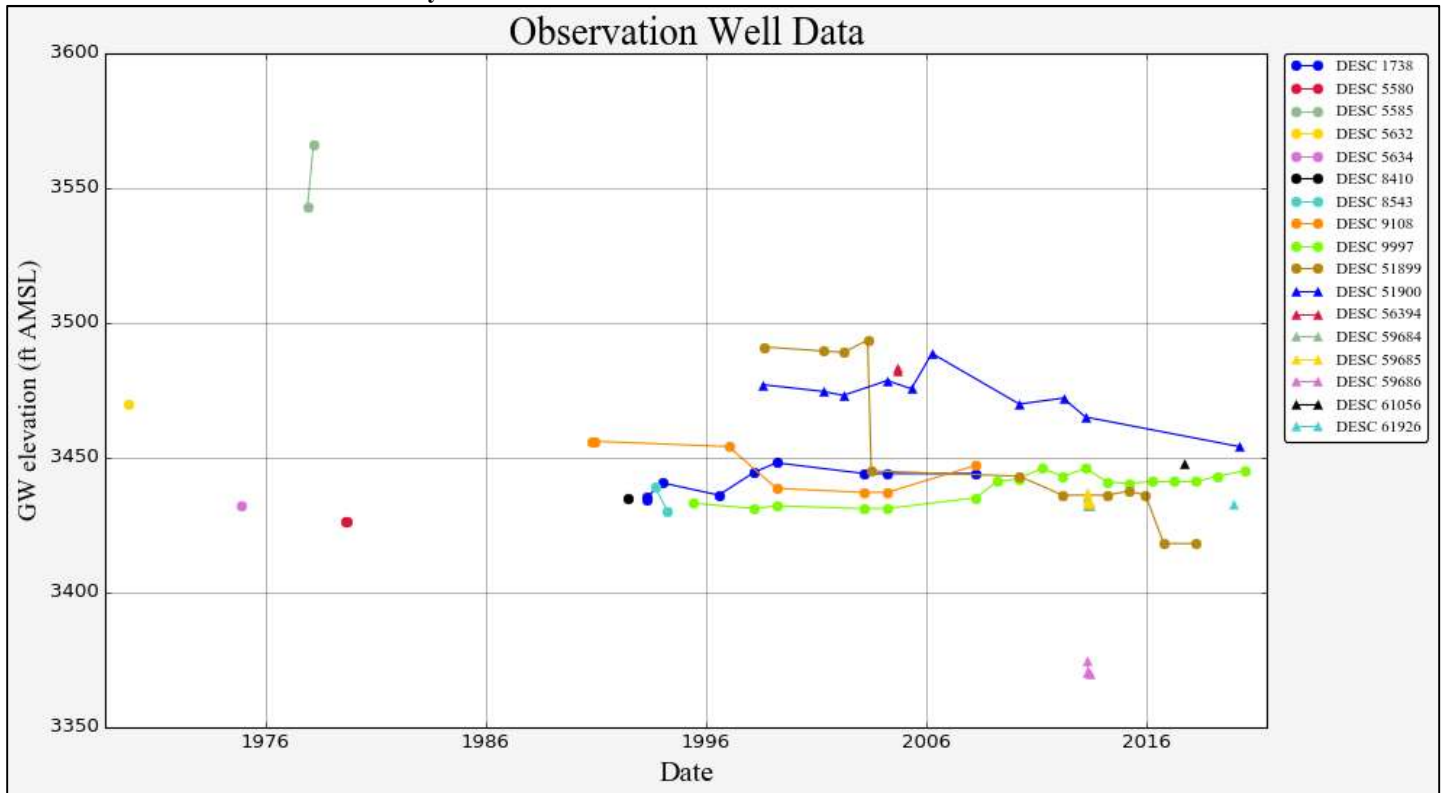
D3. THE WELL construction deficiency or other comment is described as follows: \_\_\_\_\_

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

Well Location Map



### Water-Level Measurements in Nearby Wells



### Comparison Hydrograph

