

Groundwater Application Review Summary Form

Application # G- 19245

GW Reviewer Joe Kemper Date Review Completed: 11/16/2023

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

11/16/2023

TO: Application G- 19245

FROM: GW: Joe Kemper
(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 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.

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date 11/16/2023
 FROM: Groundwater Section Joe Kemper
Reviewer's Name
 SUBJECT: Application G- 19245 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: Olin Smith and Virginia Parramore Smith County: Deschutes

A1. Applicant(s) seek(s) 0.045 cfs from 1 well(s) in the Deschutes Basin,
Upper Deschutes subbasin

A2. Proposed use Nursery (9.75 acres) Seasonality: Year-Round

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

POA 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 3370	1	Bedrock	0.045	15S/11E-S31 SE-NW	1780'S, 1360' E of NW cor s 31
2						

* Alluvium, CRB, Bedrock

POA Well	Well Depth (ft)	Seal Interval (ft)	Casing Intervals (ft)	Liner Intervals (ft)	Perforations Or Screens (ft)	Well Yield (gpm)	Drawdown (ft)	Test Type
1	358	0-24	0-24	0-327	307-327	14	-	Air
2								

POA Well	Land Surface Elevation at Well (ft amsl)	Depth of First Water (ft bls)	SWL (ft bls)	SWL Date	Reference Level (ft bls)	Reference Level Date
1	3249	256	256	6/24/1987	256	6/24/1987
2						

Use data from application for proposed wells.

A4. **Comments:** See reference level comments in Section B3.

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: Impacts to surface water in the Deschutes Groundwater Study Area are addressed by the Mitigation program as defined in basin rule.

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) 7RLA (March/25/25);
 - 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 well is drilled through Quaternary volcanics at the foot of the Cascades then encounters the Deschutes regional groundwater system in mixed lavas and volcanoclastic rocks of the Deschutes Formation. Climate recharge is the primary driver for groundwater flux and water level trends in this system. Observation wells on the west side of Sisters (e.g. DESC 3016) track consistently with 5-10 year climate fluctuations. Wells east of Sisters that are further from Cascade recharge show less of a response to precipitation in the mid 2010s (e.g. DESC 3193 & DESC 2929) or steeper declines in response to drier conditions in the last 5-6 years (e.g. DESC 412 and DESC 52870). These data still indicate that aquifer levels in this area are fluctuating in dynamic equilibrium with climatic variations.

Considering the high storage, permeability, and thickness of the target aquifer along with the low requested rate, it is unlikely that any well-to-well interference that results from the proposed use would be of high enough magnitude to be considered injury.

The reference level for DESC 3370 shall be 256 feet BLS, which corresponds to the driller’s measurement taken after well construction. This is the only known water level for the applicant’s well. However, adjacent wells in the target aquifer share very similar trends and elevations, and there are multiple long-term observation wells in the area. Water levels in DESC 3193 and DESC 2929 show a natural dynamic range of 15-20 feet. Measurements at DESC 2929 indicate that the aquifer was at or near a natural high point when DESC 3370 was drilled. Water levels in the target aquifer typically show very little seasonal fluctuation, so the time of year when the driller’s measurement was taken is acceptable.

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

C1. SW / GW Remarks and Conditions: In the Deschutes Groundwater Study Area, wells are assumed to have the Potential for Substantial Interference and that interference is addressed by the Mitigation program as defined in basin rule.

References Used:

Gannett, M. W., Lite Jr, K. E., Morgan, D. S., and Collins, C. A., 2001, Ground-Water Hydrology of the Upper Deschutes Basin, Oregon, USGS Water-Resources Investigations Report 00-4162, 74 p.,
<https://pubs.usgs.gov/wri/wri004162/pdf/WRIR004162.pdf>

Groundwater Information System (GWIS). Oregon Water Resources Department,
https://apps.wrd.state.or.us/apps/gw/gw_info/gw_info_report/gw_search.aspx Accessed 11/16/2023.

Sherrod, D. R., Taylor, E. M., Ferns, M. L., Scott, W. E., Conrey, R. M. and Smith, G. A., 2004, Geologic Map of the Bend 30-x-60-Minute Quadrangle, Central Oregon. U. S. Geological Survey Geologic Investigations Series Map I-2683. 49p.,
<https://pubs.usgs.gov/imap/i2683/>

D. WELL CONSTRUCTION, OAR 690-200

D1. Well #: _____ Logid: _____

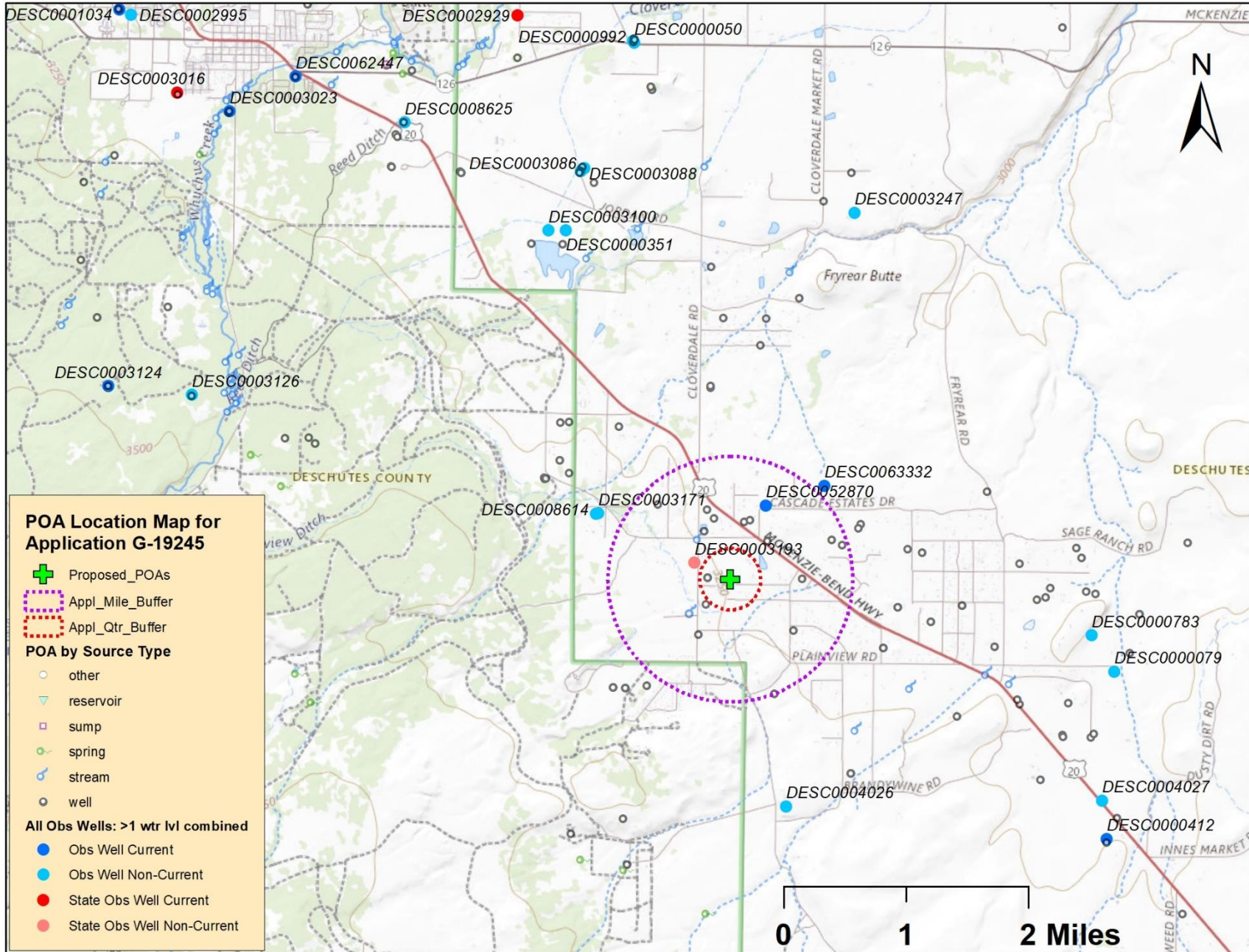
D2. **THE WELL does not appear to meet current well construction standards based upon:**

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

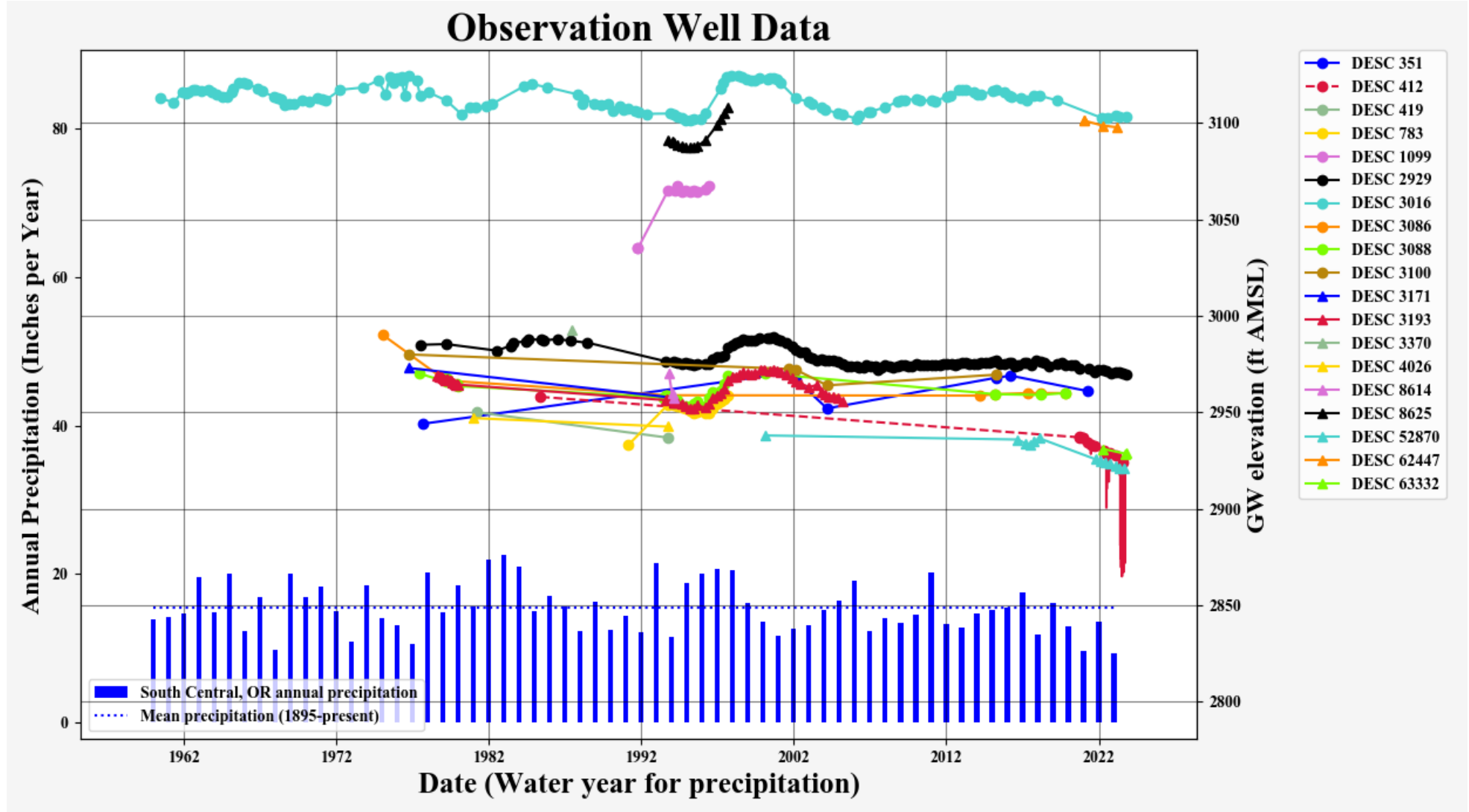
D3. **THE WELL construction deficiency or other comment is described as follows:** _____

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

Well Location Map



Water-Level Measurements in Nearby Wells



Water-Level Measurements for Reference Level Selection

