Groundwater Transfer Review Summary Form

Transfer/PA # T- _14898_

GW Reviewer _Byron Ebner_ Date Review Completed: _8/20/2026_

Summary of Same Source Review:

☐ The proposed change in point of appropriation is not within the same aquifer as per OAR 690-380-2110(2).

Summary of Water Level Decline Condition Review:

☐ Water levels at the original point(s) of appropriation have exceeded the allowed decline threshold defined by conditions in the originating water right.

Summary of Injury Review:

☐ The proposed transfer will result in another, existing water right not receiving previously available water to which it is legally entitled or result in significant interference with a surface water source as per 690-380-0100(3).

Summary of GW-SW Transfer Similarity Review:

☐ The proposed SW-GW transfer doesn’t meet the definition of “similarly” as per OAR 690-380-2130.

This is only a summary. Documentation is attached and should be read thoroughly to understand the basis for determinations.

OREGON WATER RESOURCES DEPARTMENT

Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem, Oregon 97301-1271
(503) 986-0900
www.wrd.state.or.us

Ground Water Review Form:

☒ **Water Right Transfer**
☐ **Permit Amendment**
☐ **GR Modification**
☐ **Other**

Application: T-14898 Applicant Name: Shane Ruddell

Proposed Changes: ☐ POA ☐ APOA ☒ SW→GW ☐ RA
☐ USE ☐ POU ☐ OTHER

Reviewer(s): Byron Ebner Date of Review: 8/20/2026

Date Reviewed by GW Lead and Returned to WRSD: Travis Brown, 8/24/2026

The information provided in the application is insufficient to evaluate whether the proposed transfer may be approved because:

☐ The water well reports provided with the application do not correspond to the water rights affected by the transfer.

☐ The application does not include water well reports or a description of the well construction details sufficient to establish the ground water body developed or proposed to be developed.

☐ Other _____

- -

1. Basic description of the changes proposed in this transfer: Transfer 4 surface water PODs in a McKenzie River Slough (Irving Slough) from Certificates 23812, 28696, and 28886 to groundwater POA (LANE 11359). Applicant specified that the reason for this transfer is due to Irving Slough's tendency to go dry mid-spring.

   Combined max rate for all authorized PODs is 0.65 CFS for yearlong use (1/1 – 12/31).

2. Will the proposed POA develop the same aquifer (source) as the existing authorized POA?
   ☒ Yes ☐ No Comments: The proposed POA is completed in the Upper Sedimentary Unit (USU) and likely the Middle Sedimentary Unit (MSU) of the Willamette Basin as described in Conlon et al. (2005). The proposed POA is 500 ft from the McKenzie River and is hydraulically connected to the McKenzie River.

3. a) Is the existing authorized POA subject to a water level decline condition?
   ☐ Yes ☒ No Comments: _____

   b) If yes, for each POA identify the reference level, most recent spring-high water level, and whether an applicable permit decline condition has been exceeded: _____

4. a) Is there more than one source developed under the right (e.g., basalt and alluvium)?
   ☐ Yes ☒ No Comments:_____

   b) If yes, estimate the portion of the right supplied by each of the sources and describe any limitations that will need to be placed on the proposed change (rate, duty, etc.): _____

5. a) Will this proposed change, at its maximum allowed rate of use, likely result in an increase in interference with **another ground water right**?

   ☒ Yes ☐ No Comments: The proposed POA is approximately 500 ft S from the McKenzie River and is approximately 1355 ft NE from the POA for S-54913 (LANE 75820), which is an irrigation well that is authorized through a previous surface water to groundwater transfer (T-11927). Increased pumping from the proposed POA may cause an increase in interference with LANE 75820.

   b) If yes, would this proposed change, at its maximum allowed rate of use, likely result in another groundwater right not receiving the water to which it is legally entitled?

   ☐ Yes ☒ No If yes, explain: However, the cone of depression caused by pumping from the proposed POA would likely stabilize and reach a new equilibrium once the cone reaches the recharge boundary of the McKenzie River, which would make injury unlikely in this case.

6. a) Will this proposed change, at its maximum allowed rate of use, likely result in an increase in interference with **another surface water source**?

   ☒ Yes ☐ No Comments: The proposed well will purposely impact the McKenzie River.

   b) If yes, at its maximum allowed rate of use, what is the expected change in degree of interference with any **surface water sources** resulting from the proposed change?

   Stream: McKenzie River ☐ Minimal ☐ Significant

   Stream: _____ ☐ Minimal ☐ Significant

   Provide context for minimal/significant impact:

7. For SW-GW transfers, will the proposed change in point of diversion affect the surface water source similarly (as per OAR 690-380-2130) to the authorized point of diversion specified in the water use subject to transfer?

   ☒ Yes ☐ No Comments: Streamflow depletion estimates were made using Jenkins (1968), Hunt (1999) and Hunt (2003) models. Aquifer parameters like specific yield, aquifer thickness, and hydraulic conductivity were taken from McFarland and Morgan (1996) and Woodward et al (1998). Transmissivity values were taken from nearby pump tests in T17S-R3W, specifically pump tests from LANE 68859, LANE 54485, and LANE 11138. Streamflow depletion estimates using Jenkins (1970) and Hunt (1999) models show high values of streamflow depletion at 94.5% and 87.5% respectively after 10 days of continuous pumping. The Hunt (2003) model shows streamflow depletion of 50% after 31 days of continuous pumping. Based on the hydrogeologic setting, the Hunt (1999) model would be most appropriate and would affect the McKenzie River similarly as defined in OAR 690-380-2130. The streamflow depletion estimates and aquifer parameters are included below as a figure 2.

8. What conditions or other changes in the application are necessary to address any potential issues identified above:

9. Any additional comments:

References:

- Application File: T-11927
- Application File: T-14898
- Conlon, T. D., Wozniak, K. C., Woodcock, D., Herrera, N. B., Fisher, B. J., Morgan, D. S., Lee, K. K., & Hinkle, S. R. (2005). *Ground-Water Hydrology of the Willamette Basin, Oregon* (USGS Numbered Series Nos. 2005–5168; Scientific Investigations Report, p. 95). U. S. Geological Survey. GW Library (C3). https://pubs.usgs.gov/sir/2005/5168/
- Hunt, B. (1999). Unsteady Stream Depletion from Ground Water Pumping. *Groundwater*, *37*(1), 98–102. https://doi.org/10.1111/j.1745-6584.1999.tb00962.x
- Hunt, B. (2003). Unsteady Stream Depletion when Pumping from Semiconfined Aquifer. *Journal of Hydrologic Engineering*, *8*(1), 12–19. https://doi.org/10.1061/(ASCE)1084-0699(2003)8:1(12)
- Jenkins, C. T. (1968). Techniques for Computing Rate and Volume of Stream Depletion by Wells. *Groundwater*, *6*(2), 37–46.
- McFarland, W. D., & Morgan, D. S. (1996). Description of the ground-water flow system in the Portland Basin, Oregon and Washington. In *Description of the ground-water flow system in the Portland Basin, Oregon and Washington* (USGS Numbered Series WSP 2470-A; Water Supply Paper, p. 58). U. S. Geological Survey. GW Library (B3). https://doi.org/10.3133/wsp2470A
- Woodward, D. G., Gannett, M. W., & Vaccaro, J. J. (1998). *Hydrogeologic framework of the Willamette Lowland Aquifer system, Oregon and Washington* (USGS Numbered Series Nos. 1424-B; Professional Paper, p. 82). U. S. Geological Survey. GW Library (C3). https://pubs.er.usgs.gov/publication/pp1424B
- Pump Tests for LANE 68859, LANE 54485, and LANE 11138

Figure 1: Map

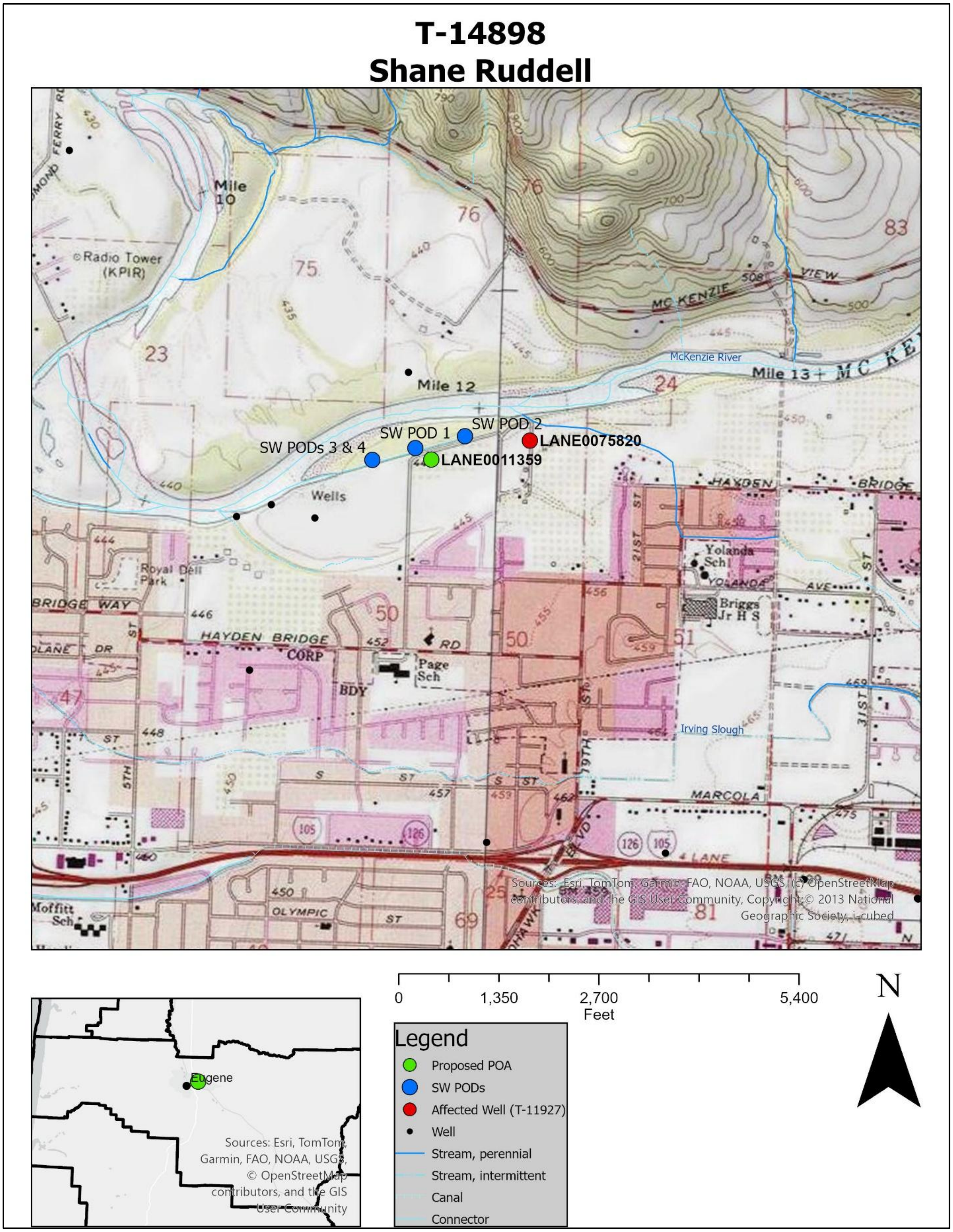
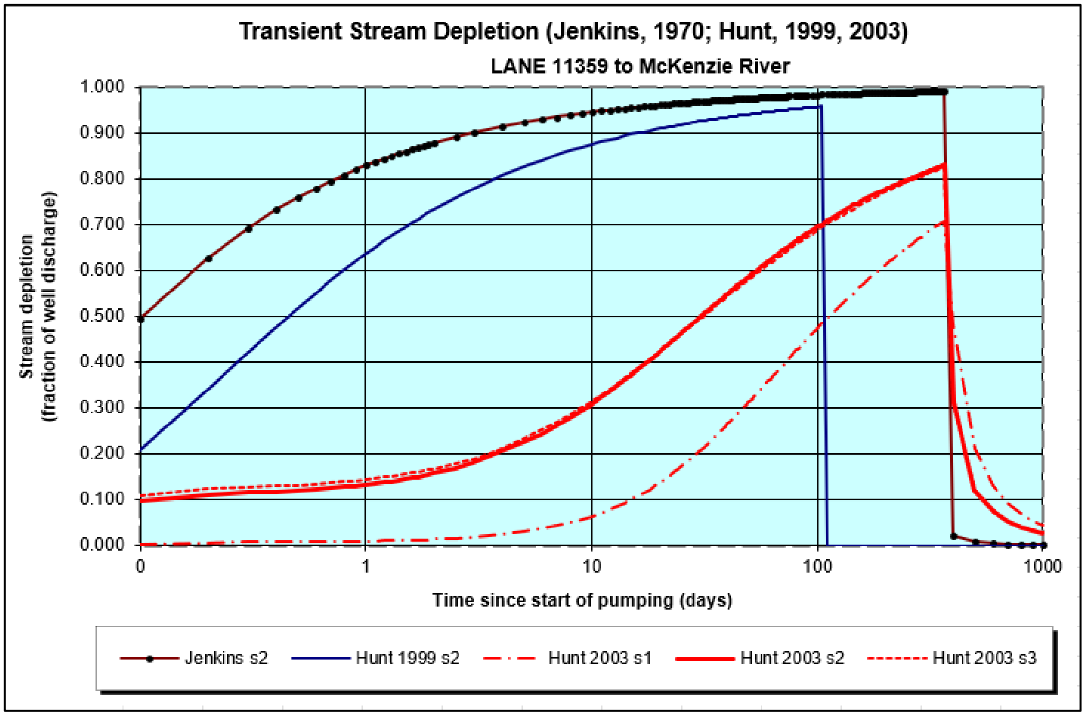

T-14898
Shane Ruddell
SW PODs 3 & 4
SW POD 1
SW POD 2
LANE0011359
LANE0075820
McKenzie River
Irving Slough
Wells
Mile 12
Mile 13
Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community, Copyright:© 2013 National Geographic Society, i-cubed
Eugene
Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community
0
1,350
2,700
5,400
Feet
N
Legend
Proposed POA
SW PODs
Affected Well (T-11927)
Well
Stream, perennial
Stream, intermittent
Canal
Connector

Figure 2: Streamflow Depletion Estimates and Aquifer Parameters



Output for Stream Depletion, Scenerio 2 (s2):						Time pump on (pumping duration) = 365 days						
Days	30	60	90	120	150	180	210	240	270	300	330	360
J SD	96.8%	97.8%	98.2%	98.4%	98.6%	98.7%	98.8%	98.9%	98.9%	99.0%	99.0%	99.1%
H SD 1999	92.5%	94.6%	95.5%	######	######	######	######	######	######	######	######	######
H SD 2003	49.69%	61.75%	68.05%	71.89%	74.56%	76.62%	78.17%	79.37%	80.40%	81.37%	82.17%	82.90%
Qw, cfs	0.650	0.650	0.650	0.650	0.650	0.650	0.650	0.650	0.650	0.650	0.650	0.650
H SD 99, cfs	0.601	0.615	0.621	######	######	######	######	######	######	######	######	######
H SD 03, cfs	0.323	0.401	0.442	0.467	0.485	0.498	0.508	0.516	0.523	0.529	0.534	0.539

Parameters:		Scenario 1	Scenario 2	Scenario 3	Units
Net steady pumping rate of well	Qw	0.65	0.65	0.65	cfs
Time pump on (pumping duration)	tpon	365	365	365	days
Perpendicular from well to stream	a	500	500	500	ft
Well depth	d	100	100	100	ft
Aquifer hydraulic conductivity	K	30	400	600	ft/day
Aquifer saturated thickness	b	20	20	20	ft
Aquifer transmissivity	T	600	8000	12000	ft*ft/day
Aquifer storativity or specific yield	S	0.003	0.003	0.003	
Aquitard vertical hydraulic conductivity	Kva	1	1	1	ft/day
Aquitard saturated thickness	ba	20	20	20	ft
Aquitard thickness below stream	babs	10	10	10	ft
Aquitard porosity	n	0.2	0.2	0.2	
Stream width	ws	250	250	250	ft
Streambed conductance (lambda)	sbc	25.000000	25.000000	25.000000	ft/day
Stream depletion factor	sdf	1.250000	0.093750	0.062500	days
Streambed factor	sbf	20.833333	1.562500	1.041667	
input #1 for Hunt's Q_4 function	t'	0.800000	10.666667	16.000000	
input #2 for Hunt's Q_4 function	K'	20.833333	1.562500	1.041667	
input #3 for Hunt's Q_4 function	epsilon'	0.015000	0.015000	0.015000	
input #4 for Hunt's Q_4 function	lamda'	20.833333	1.562500	1.041667	