Groundwater Transfer Review Summary Form

Transfer/PA # T- _13597 (temp)_

GW Reviewer _Travis Brown_ Date Review Completed: _3/4/2021_

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 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.

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Ground Water Review Form:

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

Application: T-13597 (temp) Applicant Name: Leon Kuenzi, Roger Kuenzi

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

Reviewer(s): Travis Brown Date of Review: 3/4/2021

Date Reviewed by GW Mgr. and Returned to WRSD: JTI 3/10/21

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 _____

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Basic description of the changes proposed in this transfer: Applicant proposes to temporarily transfer 41.7 acres of the POU under **Certificate 55131*** and irrigate the transferred acreage with a different POA (**MARI 4399**). **Certificate 55131*** authorizes irrigation of 56.3 acres total from a single POA (**MARI 4345**) at a maximum rate of 0.47 cfs. A proportional rate of 0.35 cfs could be withdrawn from the proposed To-POA (**MARI 4399**) under **Certificate 551313*** based on the proposed POU acreage (41.7 acres transferred of 56.3 acres total). The proposed To-POA (**MARI 4399**) is already an authorized POA under **Certificate 34625***, for irrigation of 34.8 acres at a maximum rate of 0.44 cfs, and under **Certificate 40110***, for supplemental irrigation of 25.0 acres at a maximum rate of 0.31 cfs. The proposed combined maximum pumping rate from the proposed To-POA (**MARI 4399**) under all applicable rights would be 1.1 cfs (~494 gpm). The proposed transfer would be in effect from 2021 through 2025.

1. Will the proposed POA develop the same aquifer (source) as the existing authorized POA?
   ☒ Yes ☐ No Comments: The proposed To-POA (**MARI 4399**) is ~4,200 ft east of the authorized From-POA (**MARI 4345**). Both wells are constructed to similar depths (MARI 4399, total depth ~175 ft bls; MARI 4345, total depth ~140) in the alluvial aquifer system.

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

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.): N/A

3. 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 authorized From-POA (**MARI 4345**) is ~3,500 ft west of **MARI 4454**, an authorized POA under **Certificate 44868***. The proposed To-POA (**MARI 4399**) is ~750 ft east of **MARI 4454**, making it ~2,750 ft closer. The reduced intervening distance will likely cause increased interference with **MARI 4454**.

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: Because the proposed To-POA (**MARI 4399**) has overlapping water rights, the combined pumping under all applicable rights, authorized and proposed, must be considered. The combined pumping rate would total 1.1 cfs (~494 gpm). A Theis (1935) drawdown analysis was used to assess the amount of increased interference with **MARI 4454** due to the proposed transfer (see attached Theis Drawdown Analysis). Results of the analysis indicate that the proposed transfer is unlikely to deprive **MARI 4454** or similarly-located wells of water to which they are legally entitled.

4. 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 To-POA (**MARI 4399**) is ~1,750 ft east of the Little Pudding River and ~1,900 ft to west of Woods Creek, whereas the authorized From-POA (**MARI 4345**) is ~300 ft west of the Little Pudding River and ~5,800 ft west of Woods Creek. The closer proximity of the proposed To-POA (MARI 4399) to Woods Creek could cause an increase in interference with that surface water source.

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: Woods Creek ☒ Minimal ☐ Significant

Stream: Little Pudding River ☒ Minimal ☐ Significant

Provide context for minimal/significant impact: The thick sequence of fine-grained sediments between the stream bed of Woods Creek and the top of the water-bearing zone in the proposed To-POA (**MARI 4399**) and the significant distance between **MARI 4399** and Woods Creek should limit any potential increase in interference with this surface water source. Additionally, the greater intervening distance between **MARI 4399** and the Little Pudding River should reduce interference with this surface water source relative to the authorized POA, although most of the resulting stream depletions would still be anticipated to accrue to the Little Pudding River.

5. 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: N/A

6. What conditions or other changes in the application are necessary to address any potential issues identified above: None

7. Any additional comments: None

References Used

Domenico, P.A. and Mifflin, 1965, Water from low-permeability sediments and land subsidence: Water Resource Research, v. 1, no. 4, p. 563-576.

Freeze, R.A. and Cherry, J.A., 1979, Groundwater, Prentice Hall, Englewood Cliffs, New Jersey, 604 p.

Gannett, M.W. and Caldwell, R., 1998, *Geologic framework of the Willamette Lowland aquifer system*, *Oregon and Washington*, Professional Paper 1424-A, 32 p: U. S. Geological Survey, Reston, VA.

Halford, K.J., and Kuniansky, E.L., 2002, Documentation of Spreadsheets for the Analysis of Aquifer-Test and Slug-Test Data, Open File Report 02-197, 51 p: U. S. Geological Survey, Reston, VA.

Hampton, E. R., 1972, *Geology and Ground Water of the Molalla-Salem Slope Area*, *Northern Willamette Valley*, *Oregon*, Water-Supply Paper 1997: U. S. Geological Survey, Reston, VA.

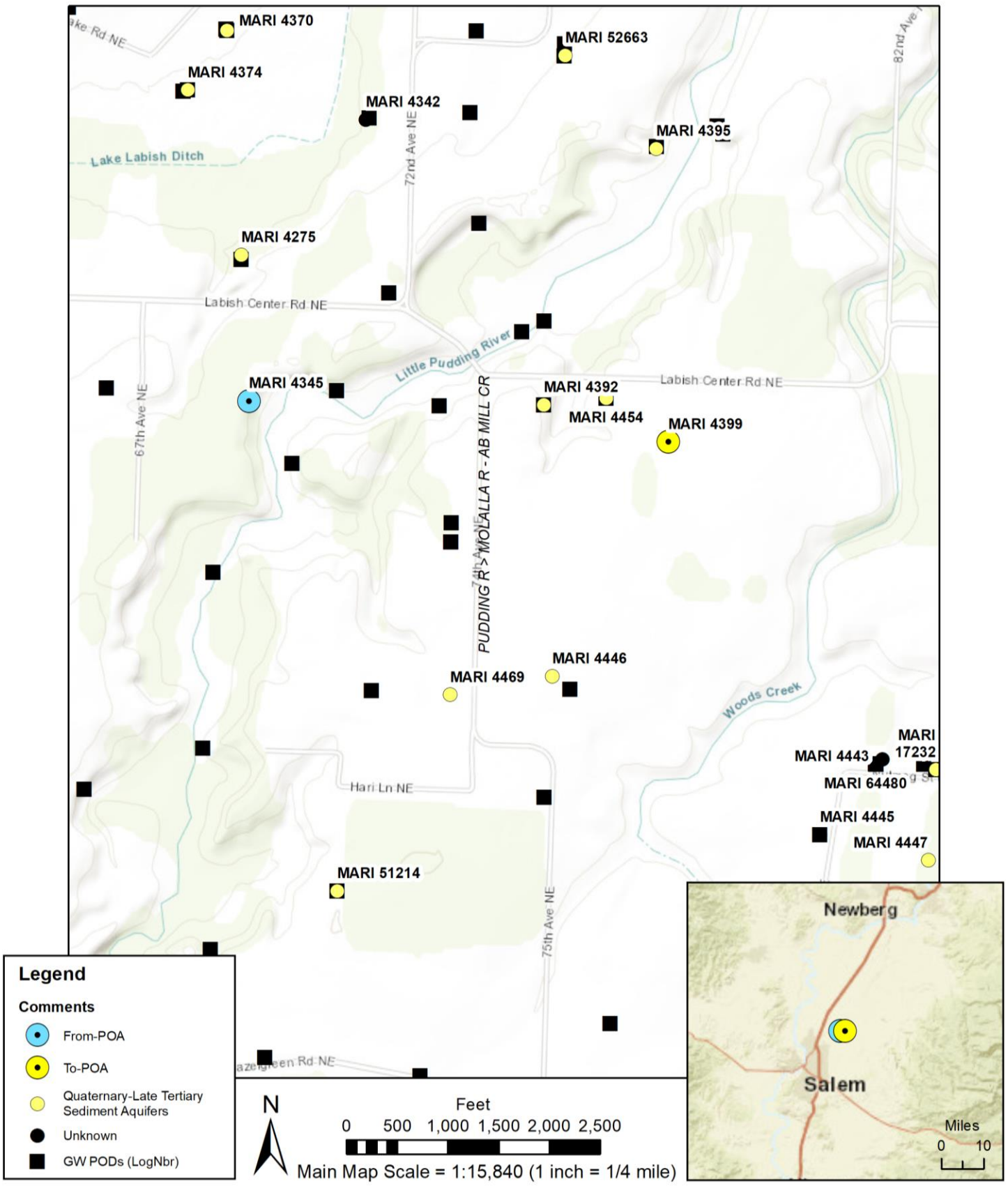
McFarland, W.D., and Morgan, D.S., 1996, *Description of the Ground-Water Flow System in the Portland Basin*, *Oregon and Washington*, Water Supply Paper 2470-A, 58 p: U. S. Geological Survey, Reston, VA.

Theis, C.V., 1935, The relation between the lowering of the piezometric surface and the rate and duration of discharge of a well using groundwater storage, American Geophysical Union Transactions, vol. 16, p. 519-524.

Woodward, D.G., Gannett, M.W., and Vaccaro, J.J., 1998, Hydrogeologic framework of the Willamette Lowland aquifer system, Oregon and Washington: U.S. Geological Survey Professional Paper 1424-B, 82 p.

Well Location Map

T-13597 (temp) Kuenzi



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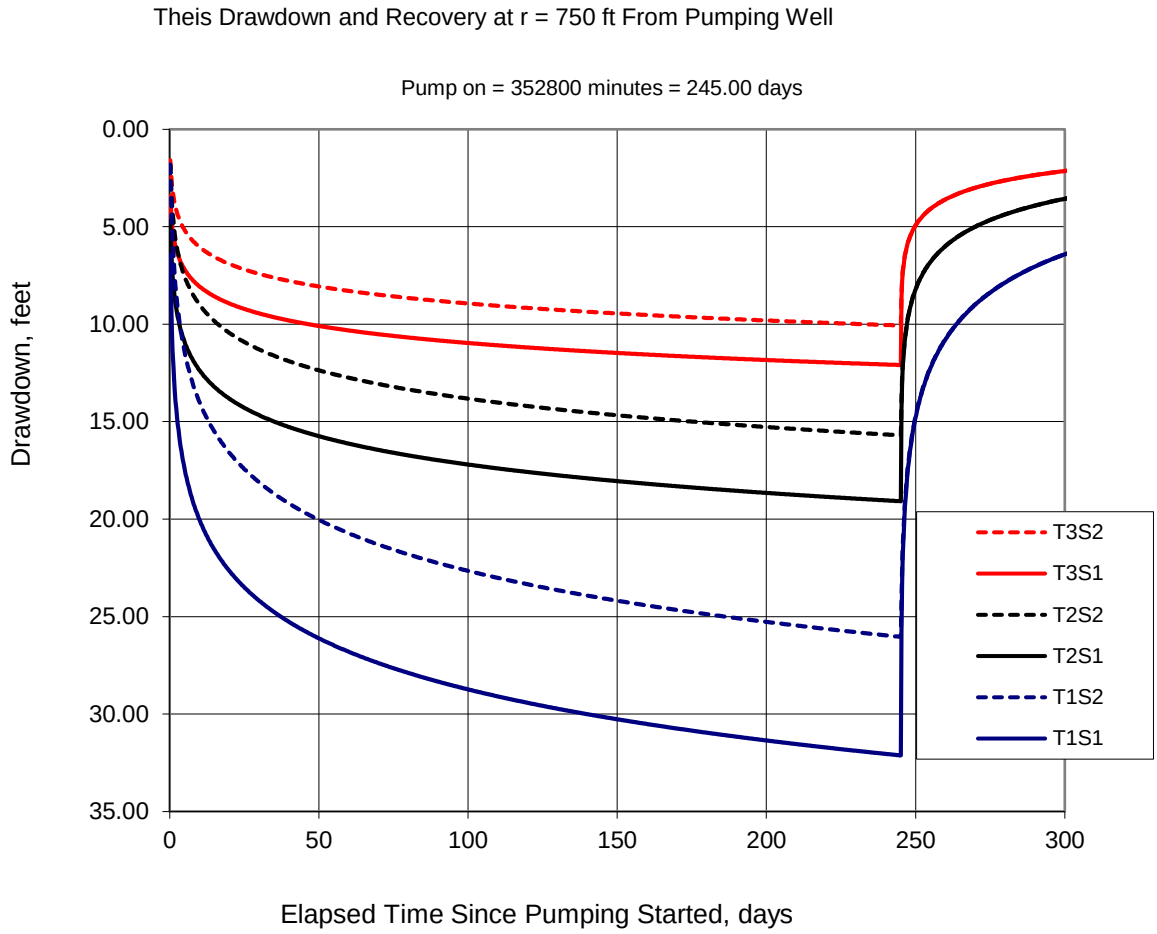
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Theis (1935) Drawdown Analysis



Pumping Rate (Q) = 1.1 cfs ≈ 494 gpm [Combined Maximum Rate for MARI 4399]
T1 = 2000 ft^2/day | T2 = 3600 ft^2/day | T3 = 6000 ft^2/day [OWRD Pumping Test Data]
S1 = 0.0004 | S2 = 0.002 [Domenico and Mifflin, 1965; Freeze & Cherry, 1979; Halford and Kuniansky, 2002; McFarland and Morgan, 1996]