Groundwater Transfer Review Summary Form

Transfer/PA # T- _13430_

GW Reviewer _Travis Brown_ Date Review Completed: _8/28/2020_

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-13430 Applicant Name: City of St. Paul

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

Reviewer(s): Travis Brown Date of Review: 8/28/2020

Date Reviewed by GW Mgr. and Returned to WRSD: JTI 8/28/2020

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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1. Basic description of the changes proposed in this transfer: The applicant proposes to add 1 APOA ("Rodeo Well"/MARI 65671) to Permit G-17743, which authorizes up to 1.25 cfs for Municipal Use from September through June annually. Permit G-17743 allows for use of water year-round from authorized POA which exclude the upper water-bearing zone between 60 and 87 ft below land surface (bls). The proposed APOA (MARI 65671) is sealed to a depth of 198 ft bls.

   The application identifies authorized POA 2, "New Well", as MARI 68037, which is an abandonment log for a 25-ft deep "8[-inch] Clay cased waterwell" ~500 ft northwest of the authorized POA 2 location under Permit G-17743. A letter from Owen McMurtrey of GSI Water Solutions dated March 9, 2020 (which accompanied Limited License Application LL-1822) stated that the "New Well" was never completed. This review assumes that authorized POA 2 ("New Well") was never completed and would be located as indicated in Permit G-17743 and on the application map for T-13430.

   Permit G-17743 indicates that authorized POA 2, "New Well", is in the NW ¼ of the SE ¼ of Section 9, Township 4 South, Range 2 West. However, the "Measured Distances" for POA 2 on the permit correspond to a location in the SE ¼ of the NE ¼ of Section 9 Township 4 South, Range 2 West.

2. Will the proposed POA develop the same aquifer (source) as the existing authorized POA? ☒ Yes ☐ No Comments: Both the authorized POA and proposed APOA produce water from the alluvial aquifer system.

3. 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

4. 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 nearest neighboring groundwater use is MARI 17253, an authorized Irrigation POA under **Certificate 89257***. MARI 17253 is ~1,950 ft southwest of the proposed APOA (MARI 65671), which is ~1,100 ft closer than the nearest authorized POA, "New Well" (not constructed). The reduced intervening distance will likely result in an increase in interference with MARI 17253.

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: The Theis (1935) equation for drawdown in a confined aquifer was used to estimate the potential interference with MARI 17253 due to the proposed change. To be conservative, the analysis assumed that the proposed POA would pump continuously at the maximum rate (1.25 cfs) up to the maximum annual volume (450 af), which would take ~181 days. Results indicate that the proposed change is unlikely to deprive **Certificate 89257*** or similarly located rights of their customary use of groundwater (see attached Well Interference Analysis).

5. 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 APOA is further away from the nearest surface water source, Mission Creek, compared to the authorized POA. Furthermore, the deeper seal depth of the proposed APOA should reduce surface water interference compared to the authorized POA.

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: _____ ☐ Minimal ☐ Significant

Provide context for minimal/significant impact: N/A

6. 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

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

8. Any additional comments: None

References

Application File: T-13430, LL-1822

Permit File: G-17743

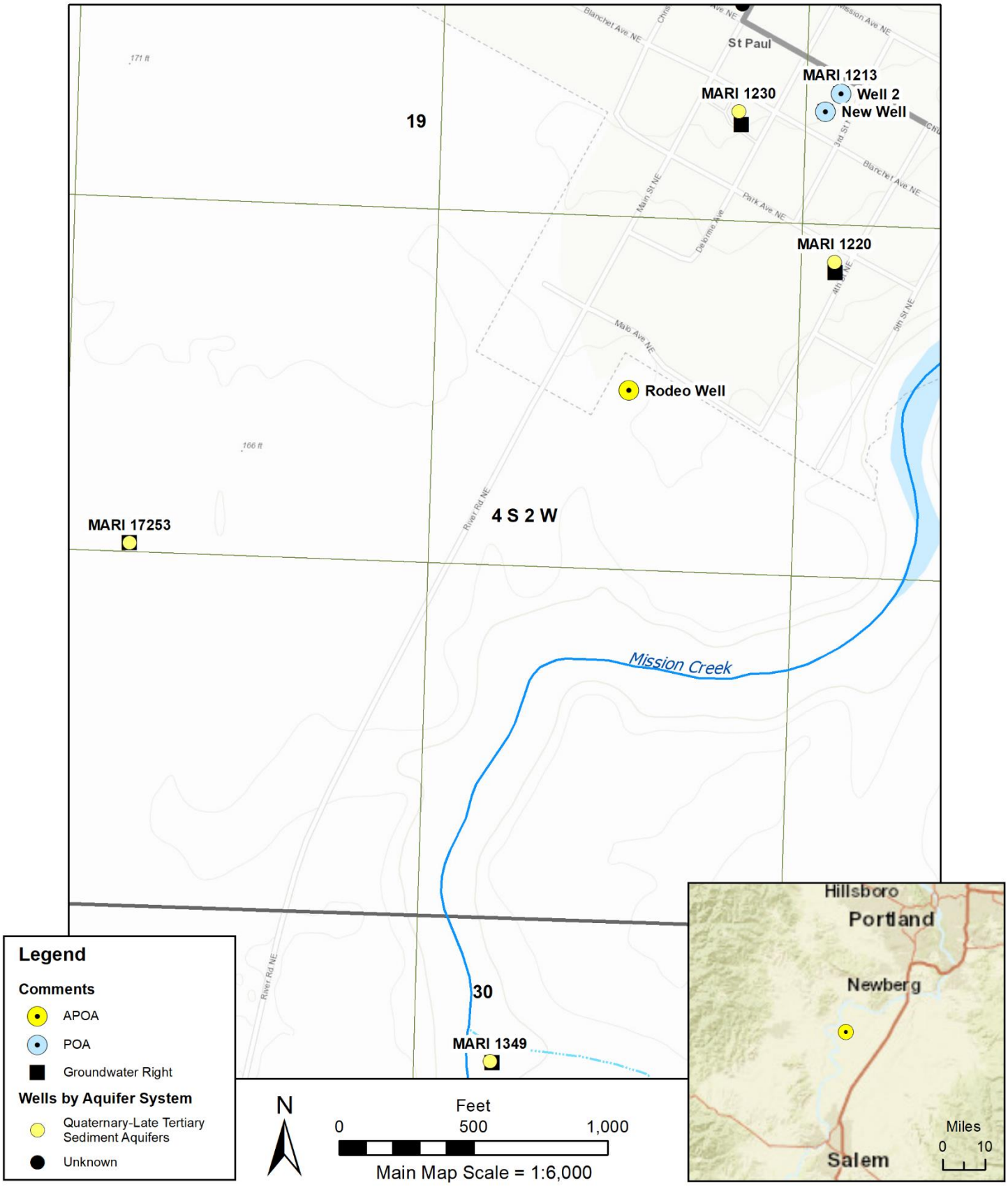
Certificate: 89257*

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.

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-13430 City of St. Paul



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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

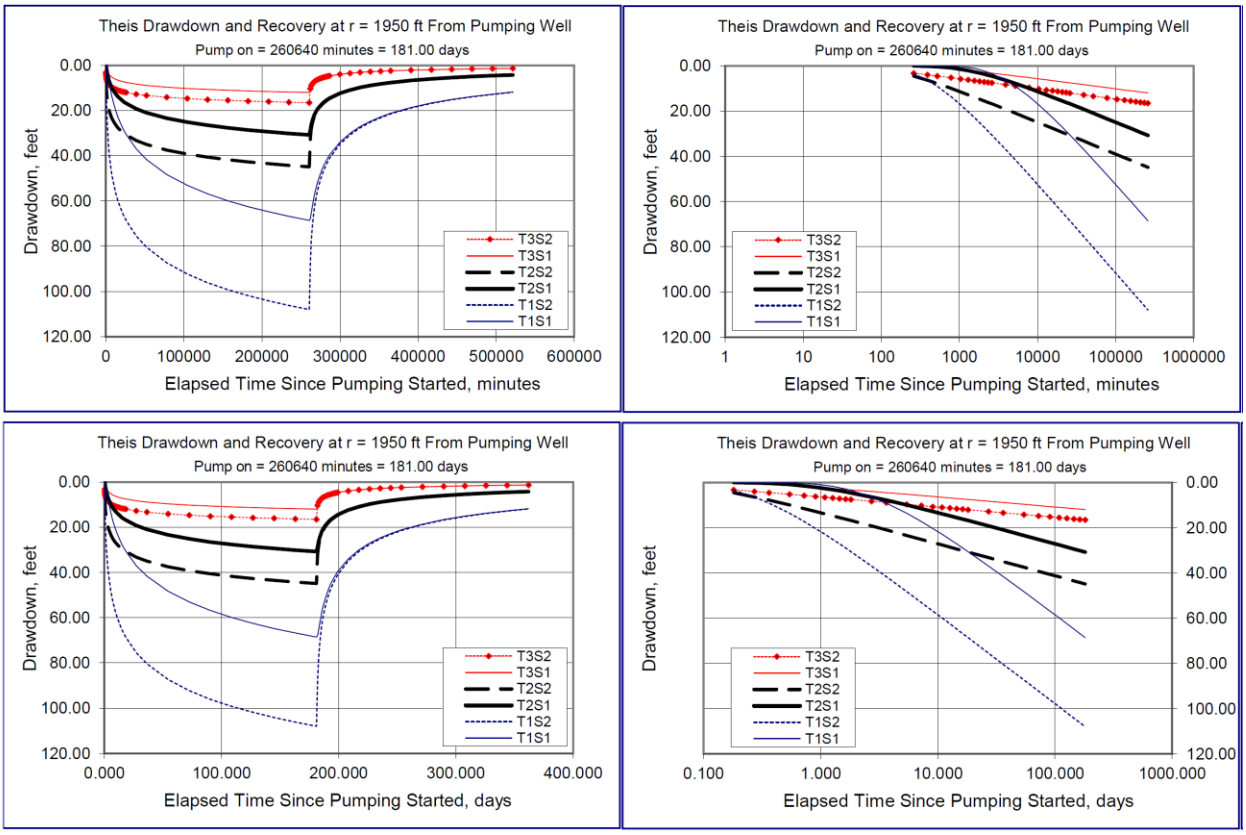
Well Interference Analysis

Theis Time-Drawdown Worksheet v.3.00

Calculates Theis nonequilibrium drawdown and recovery at any arbitrary radial distance, r, from a pumping well for 3 different T values and radial distance, r, from a pumping well for 3 different T values and 2 different S values.
Written by Karl C. Wozniak September 1992. Last modified December 30, 2014

Input Data:	Var Name	Scenario 1	Scenario 2	Scenario 3	Units	
Total pumping time	t		181		d	
Radial distance from pumped well:	r		1950.00		ft	Q conversions
Pumping rate	Q		1.250		cfs	561.00 gpm
Hydraulic conductivity	K	10.000	28.000	88.000	ft/day	1.25 cfs
Aquifer thickness	b		50		ft	75.00 cfm
Storativity	S_1		0.00100			108,000.00 cfd
	S_2		0.00010			2.48 af/d
Transmissivity Conversions	T_f2pd	500	1,400	4,400	ft2/day	
	T_ft2pm	0.3472	0.9722	3.0556	ft2/min	
	T_gpdpft	3,740	10,472	32,912	gpd/ft	

Use the Recalculate button if recalculation is set to manual



Transmissivity from Pumping Test Reports: MARI 1279, 1341, 1352, 1448, 18828, 52911, 58967

Storativity from McFarland and Morgan (1996)