Groundwater Transfer Review Summary Form

Transfer/PA # T- __13556__

GW Reviewer _Andrew Wentworth/Travis Brown_ **Date Review Completed:** _4/10/2023_

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.

OREGON
WATER RESOURCES
DEPARTMENT

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Ground Water Review Form:

☐ **Water Right Transfer**

☐ **Permit Amendment**

☒ **GR Modification**

☐ **Other**

Application: T-<u>13556</u>   Applicant Name: <u>Will E. McGill Living Trust</u>

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

Reviewer(s):   <u>Andrew Wentworth/Travis Brown</u>   Date of Review: <u>4/10/2023</u>

Date Reviewed by GW Mgr. and Returned to WRSD: <u>JTI 2/15/24</u>

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: This proposed transfer pertains to **Claim GR-1055.** The proposed changes are as follows:

    Claim GR-1055: primary irrigation 52.2 ac; Q_{max} = 0.7798 cfs

    - **Additional POA:**

        o   Authorized POA: MARI 16030 ("Well No. 2").

        o   Proposed APOA: MARI 16029 ("Well No. 1"); an existing well which also has an overlapping water right (Claim GR 1054) for 1.114 cfs, for which it is the only authorized POA.

2. Will the proposed POA develop the same aquifer (source) as the existing authorized POA?
    ☒ Yes   ☐ No   Comments: <u>The authorized POA and proposed APOA are similarly</u>
    <u>constructed and obtain groundwater from the same shallow alluvial aquifer system.</u>

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.): _____

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: Compared to the location of authorized POA MARI 16030 ("Well No. 2"), the location of the proposed APOA MARI 16029 ("Well No. 1") is approximately 750 feet nearer to another groundwater right (Claim GR-411, MARI 16006). Given the maximum authorized rate of use (Q_{max} = 0.7798 cfs + 1.114 cfs = 1.8938 cfs, 850 gpm), this proposed use will likely result in increased interference at the authorized POA for Claim GR-411 (MARI 16006). Interference with MARI 16006 is estimated to be between 2–20 feet, assuming the hydraulic conductivity of the shallow alluvial aquifer is in the range of 50–500 ft/day (Woodward et al. 1998 and Conlon et al. 2005).

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: While GR-1055 has a more junior priority date (5/1/1947) compared to Claim GR-411 (12/31/1939), the authorized POA for Claim GR-411 (MARI 16006) does not fully penetrate the shallow alluvial aquifer. If MARI 16006 fully penetrated the shallow alluvial aquifer, the proposed change would be unlikely to deprive MARI 16006 of the water to which it is legally entitled under Claim GR-411.

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 located farther from the nearest surface water sources than the authorized POA. The distance from the proposed APOA to Edgar Slough is 930 feet compared to 825 feet for the authorized POA, and the distance from the proposed APOA to the North Santiam River is 3,150 feet compared to 2,720 feet for 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

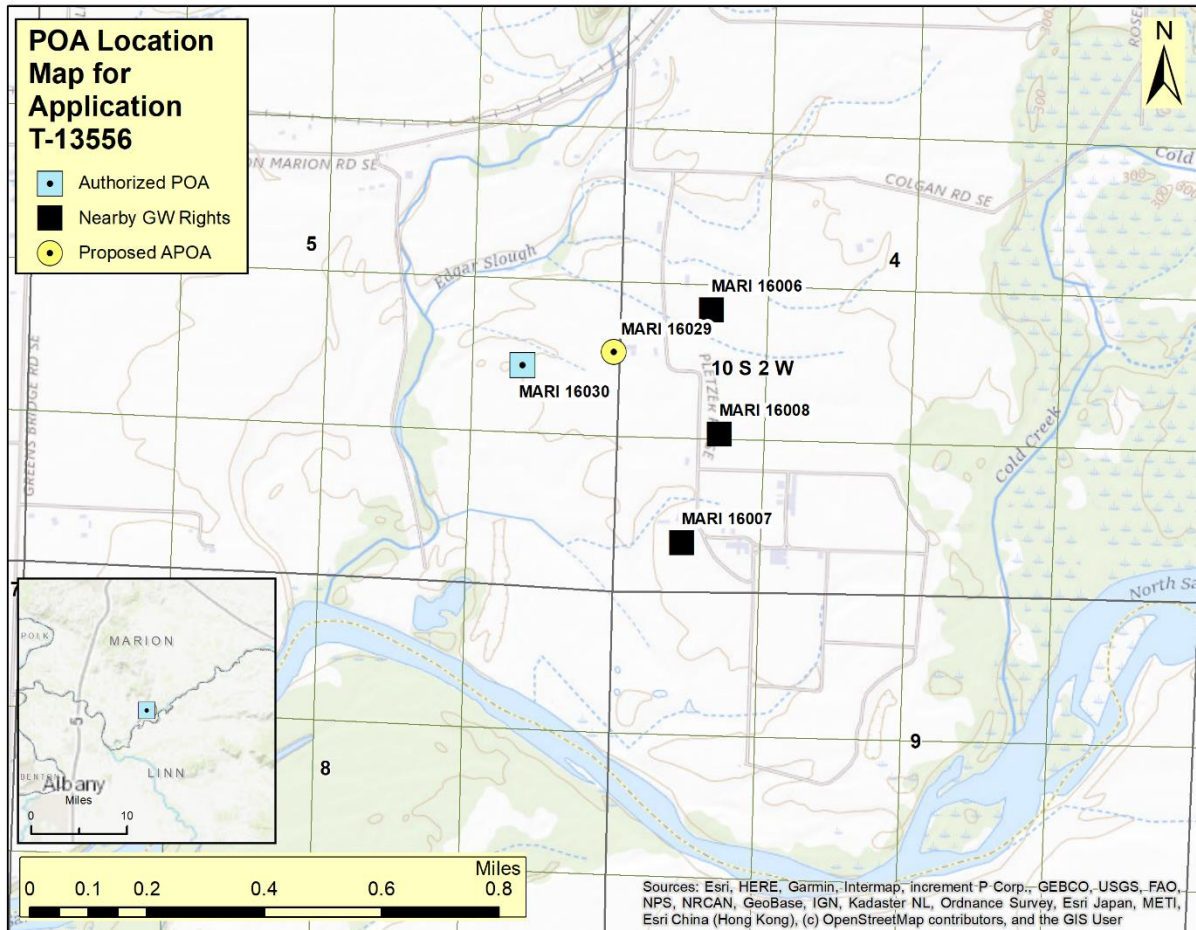Stream: _____   ☐ Minimal ☐ Significant

Provide context for minimal/significant impact: _____

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?
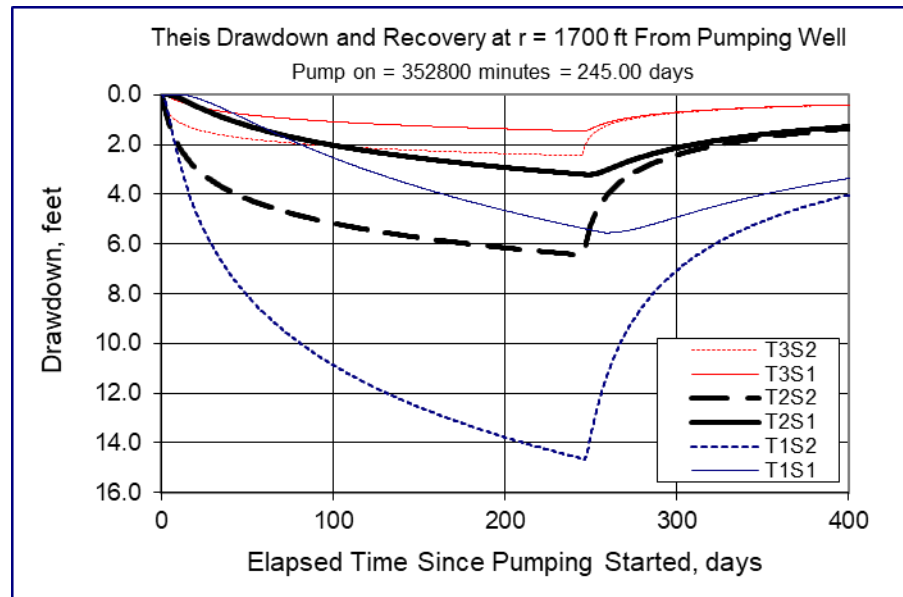
☐ Yes   ☐ No   Comments: _____

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

8. Any additional comments: None

POA Location Map for Application T-13556

- Authorized POA
- Nearby GW Rights
- Proposed APOA

MARI 16006
MARI 16029
MARI 16030
MARI 16008
MARI 16007

10 S 2 W

Theis drawdown analysis: authorized POA (MARI 16030) to nearest groundwater right (MARI 16006, ~1,700 ft)

Theis Time-Drawdown Worksheet v.5.00 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 17, 2019							
Input Data:	Var Name	**Scenario 1**	**Scenario 2**	**Scenario 3**	**Units**		
Total pumping time	t		**245**		d		
Radial distance from pumped well:	r		**1700**		ft	**Q conversions**	
Pumping rate	Q		**1.8938**		cfs	849.94	pm
Hydraulic conductivity	K	**50**	**150**	**500**	ft/day	1.89	cfs
Aquifer thickness	b		**60**		ft	113.63	cfm
Storativity	S_1		**0.2**			163,624.32	cfd
	S_2		**0.02**			3.76	af/d
Transmissivity Conversions	T_f2pd	3000	9000	30000	ft2/day		
	T_ft2pm	2.0833	6.25	20.833	ft2/min		
	T_gpdpft	22440	67320	224400	gpd/ft		

Theis drawdown analysis: proposed APOA (MARI 16029) to nearest groundwater right (MARI 16006, ~950 ft)

Theis Time-Drawdown Worksheet v.5.00 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 17, 2019							
Input Data:	Var Name	**Scenario 1**	**Scenario 2**	**Scenario 3**	**Units**		
Total pumping time	t		**245**		d		
Radial distance from pumped well:	r		**950**		ft	**Q conversions**	
Pumping rate	Q		**1.8938**		cfs	849.94	pm
Hydraulic conductivity	K	**50**	**150**	**500**	ft/day	1.89	cfs
Aquifer thickness	b		**60**		ft	113.63	cfm
Storativity	S_1		**0.2**			163,624.32	cfd
	S_2		**0.02**			3.76	af/d
Transmissivity Conversions	T_f2pd	3000	9000	30000	ft2/day		
	T_ft2pm	2.0833	6.25	20.833	ft2/min		
	T_gpdpft	22440	67320	224400	gpd/ft		

Theis Drawdown and Recovery at r = 950 ft From Pumping Well
Pump on = 352800 minutes = 245.00 days