

# Groundwater Transfer Review Summary Form

Transfer/PA # T- 14260

GW Reviewer Dennis Orlowski Date Review Completed: October 21, 2024

## 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-14260

Applicant Name: T and K Sester Family LLC

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

Reviewer(s): Dennis Orlowski

Date of Review: October 21, 2024

Date Reviewed by GW Mgr. and Returned to WRSD: \_\_\_\_\_

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 application pertains to certificates 28123 and 32336, both of which are for primary irrigation (9.3 acres and 41.9 acres, respectively) using groundwater pumped from a single **authorized POA, MULT 2531** ("Sherwood Well 1"). For both certificates the combined maximum instantaneous pumping rate for MULT 2531 is 0.46 cfs (~207 gpm).

**This transfer proposes to add the following APOA to both certificates 28123 and 32336:**

- **MULT 3476 ("Sester Farms Well 1")**
- **MULT 67819 ("Sester Farms Well 3")**
- **Proposed well not-yet-drilled ("Sherwood Well 2")**

MULT 3476 ("Well 1") is also an authorized POA for three additional groundwater rights:

- Certificate 84946: nursery use 80.0 acres, maximum rate 0.67 cfs, year-round
- Permit G-15196: nursery use 300.35 acres, maximum rate 0.67 cfs, year-round
- Permit G-16568: primary irrigation 54.6 acres, maximum rate 0.68 cfs, 3/1 to 10/31

MULT 67819 ("Well 3") is also an authorized POA for two additional groundwater rights:

- Permit G-15196: nursery use 300.35 acres, maximum rate 0.67 cfs, year-round
- Permit G-16568: primary irrigation 54.6 acres, maximum rate 0.68 cfs, 3/1 to 10/31

2. Will the proposed POA develop the same aquifer (source) as the existing authorized POA?  
☒ Yes   ☐ No   Comments: The From-POA and To-APOA develop (or will develop) the Deep Troutdale aquifer (equivalent to the "Troutdale Sandstone Aquifer" as designated by the USGS and others). The Deep Troutdale aquifer in this area consists of ~200-250 ft of gravel, sand, conglomerate, and coarse-grained sandstone with beds of fine to medium sand and silt. The aquifer is overlain by a confining unit ("Confining Unit 1") consisting of ~50-100 ft of primarily fine to medium sand, silt, and clay (Swanson and others, 1993).

**NOTE:** the planned location for proposed "Sherwood Well 2" is very near existing well MULT 2198 (i.e., within approximately 25 ft). MULT 2198, also reportedly owned by this applicant, at 1031 feet deep is more than twice the depth of the wells being evaluated for this application. MULT 2198 commingles both the Shallow and Deep Troutdale aquifers, and also the Deep aquifer with the underlying Columbia River Basalt Group (CRBG) aquifer system. As such, MULT 2198 is not compliant with current minimum well construction standards, and thus would also not be acceptable as an authorized POA for a groundwater right.

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 groundwater right potentially affected by the proposed use is CLAC 57578, which is an authorized POA for permit G-15211 (Surface Nursery, nursery use on 104.0 acres) (the aforementioned MULT 2198 is nearer, but is owned by this applicant). Relative to authorized POA MULT 2531, proposed APOA MULT 67819 is approximately 2450 feet nearer to CLAC 57578; consequently, the proposed use is likely to result in an increase in interference in CLAC 57578.
- 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: To evaluate the potential additional interference with CLAC 57578, a Theis (1935) drawdown analysis was completed. Aquifer parameters used for the analysis were derived from regional data and studies (Pumping Test Reports; McFarland and Morgan, 1996; Swanson et al., 1993).

To provide a conservative analysis, it was assumed that authorized From-POA MULT 2531 would be pumped non-stop at the maximum authorized rate under both certificates (0.46 cfs, ~207 gpm) up to the associated duty, which would be reached within approximately 140 days of pumping. Pumping at proposed To-APOA MULT 67819 was also simulated at 0.46 cfs (~207 gpm).

Results of the Theis comparative analysis indicate that interference with CLAC 57578 could range from about 10 to 30 feet based on these conservative pumping scenarios. Using the 2024 static water level measurement reported for CLAC 57578 of approximately 245 ft bls, there is approximately 250 feet of available drawdown in CLAC 57578. This amount should support both the current authorized use of CLAC 57578 (i.e., its current drawdown or pumping water level) and the range of interference drawdown predicted for this proposed use; thus, it is not likely that the proposed use will result in CLAC 57578 or another similar groundwater right from receiving the water to which it is legally entitled.

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: Groundwater levels in the Deep Troutdale aquifer at and near the authorized POA and proposed APOAs are more than 150 ft below the estimated surface water elevations for several stream reaches within approximately 3,000 feet of the POAs; therefore, these POAs are not hydraulically connected to those streams.

Farther away, the Troutdale Formation (which includes the Deep Troutdale aquifer) crops out along the walls of the Sandy River valley located east and north of the POA sites. Numerous small creeks and springs originate from or flow over the Troutdale Formation where it outcrops in this area (USGS, 2014; McFarland and Morgan, 1996). These hydraulically-connected perennial reaches are located on the order of 3,000 feet or more from the current authorized From-POA, MULT 2531 (Well 1). Two of the three proposed To-POAs (MULT 3476 and MULT 67819) are located from about 2,200 to 2,500 feet generally south and west from the authorized POA, relatively *farther away from the Sandy River*. The planned location for the third proposed To-POA ("Sherwood Well 2") is about 450 feet nearer to the connected tributaries; despite this slightly nearer location, it is unlikely that any of the three proposed To-POA will result in an increase in interference with these stream reaches as a result of this proposed change.

- 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: 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

Any additional comments: **NOTE:** both of the proposed APOA on this application (MULT 3476 and MULT 67819) are also authorized POA for multiple other groundwater rights. As part of a recent technical review for transfer application T-13852 (permit G-15758), reference levels were set for both MULT 3476 (199.00 ft bls) and MULT 67819 (317.00 ft bls); these levels are intended to apply to all water rights for which those two wells are the authorized POA. However, for this application T-14260, both certificates 28123 and 32336

do not contain provisions for setting a reference level, nor are decline conditions stipulated for either water right. **Therefore, it is uncertain if the reference levels previously established for proposed APOA MULT 3476 and MULT 67819 can be considered applicable for use under certificates 28123 and 32336.**

## References

Water rights documents: application T-14260; certificates 28123 and 32336; groundwater technical review for application T-13852.

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.

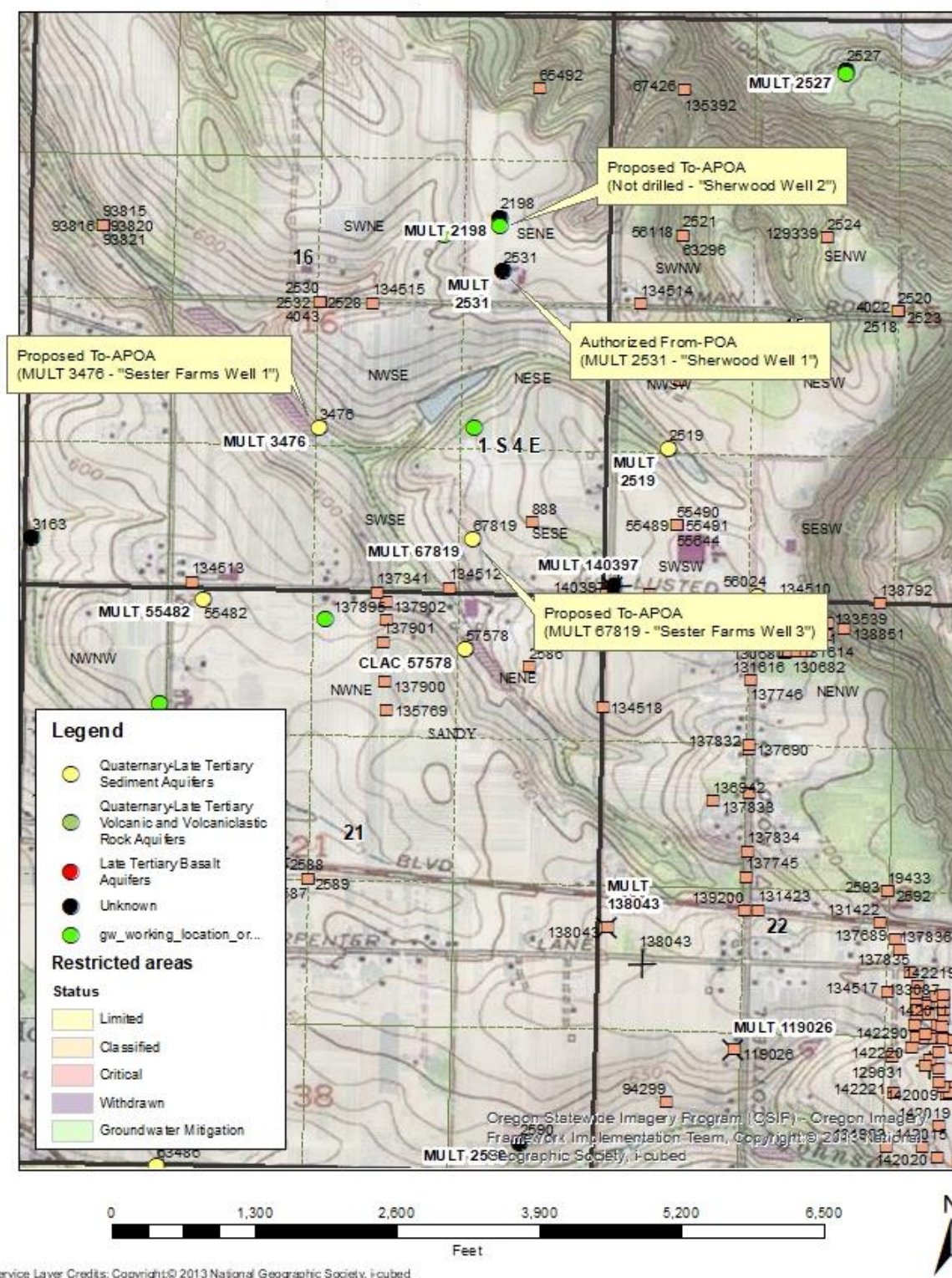
Swanson, R. D., McFarland, W. D., Gonthier, J. B., and Wilkinson, J. M., 1993, A description of hydrogeologic units in the Portland Basin, Oregon and Washington, Water-Resources Investigations Report 90-4196, 56 p.: U. S. Geological Survey, Reston, VA.

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.

United States Geological Survey, 2014, National Hydrography Dataset (NHD), 1:24,000, U. S. Department of the Interior, Reston, VA.

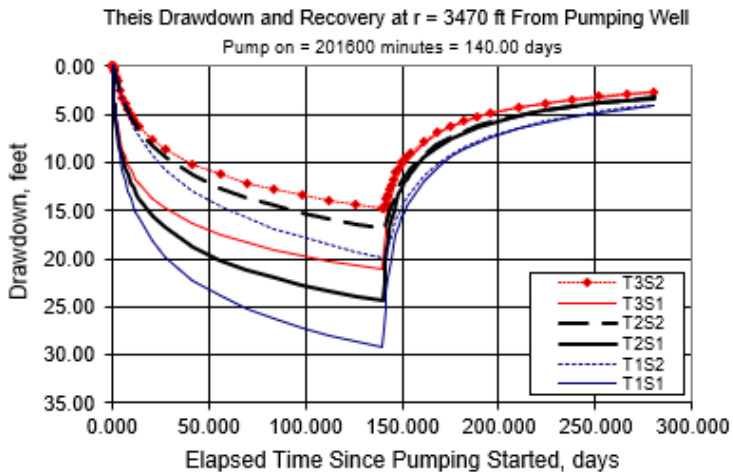
United States Geological Survey, 2017, *Sandy quadrangle*, Oregon [map], 1:24,000, 7.5 minute topographic series, U.S. Department of the Interior, Reston, VA.

**Application T-14260, T and K Sester Family LLC  
T1S, R4E, Sections 16 and 21**

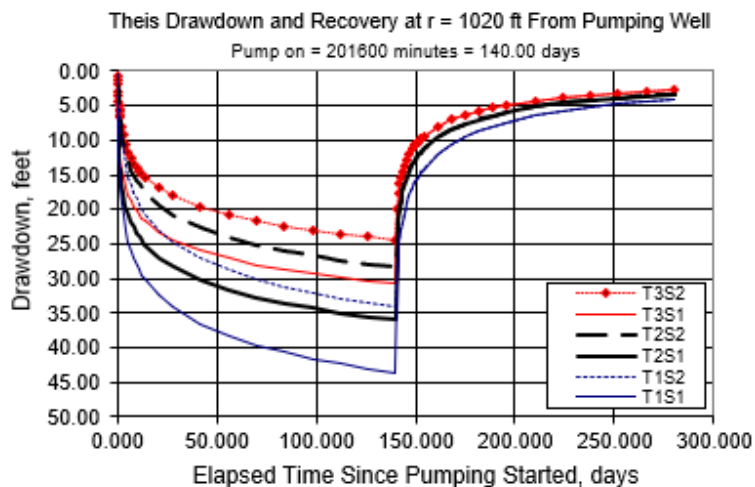


**Theis Drawdown Analysis – Authorized From-POA MULT 2531 to CLAC 57578**

| 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.<br>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        |            | 140        |            | d       |
| Radial distance from pumped well:                                                                                                                                                                                                                                                                                    | r        |            | 3470.00    |            | ft      |
| Pumping rate                                                                                                                                                                                                                                                                                                         | Q        |            | 0.460      |            | cfs     |
| Hydraulic conductivity                                                                                                                                                                                                                                                                                               | K        | 10.700     | 13.380     | 16.050     | ft/day  |
| Aquifer thickness                                                                                                                                                                                                                                                                                                    | b        |            | 50         |            | ft      |
| Storativity                                                                                                                                                                                                                                                                                                          | S_1      |            | 0.00010    |            |         |
|                                                                                                                                                                                                                                                                                                                      | S_2      |            | 0.00050    |            |         |
| Transmissivity Conversions                                                                                                                                                                                                                                                                                           | T_ft2pd  | 535        | 669        | 803        | ft2/day |
|                                                                                                                                                                                                                                                                                                                      | T_ft2pm  | 0.3715     | 0.4646     | 0.5573     | ft2/min |
|                                                                                                                                                                                                                                                                                                                      | T_gpdft  | 4,002      | 5,004      | 6,003      | gpd/ft  |
|                                                                                                                                                                                                                                                                                                                      |          |            |            |            |         |
| Recalculate Use the Recalculate button if recalculation is set to manual                                                                                                                                                                                                                                             |          |            |            |            |         |

**Theis Drawdown Analysis – Proposed To-APOA MULT 67819 to CLAC 57578**

| 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.<br>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        |            | 140        |            | d       |
| Radial distance from pumped well:                                                                                                                                                                                                                                                                                    | r        |            | 1020.00    |            | ft      |
| Pumping rate                                                                                                                                                                                                                                                                                                         | Q        |            | 0.460      |            | cfs     |
| Hydraulic conductivity                                                                                                                                                                                                                                                                                               | K        | 10.700     | 13.380     | 16.050     | ft/day  |
| Aquifer thickness                                                                                                                                                                                                                                                                                                    | b        |            | 50         |            | ft      |
| Storativity                                                                                                                                                                                                                                                                                                          | S_1      |            | 0.00010    |            |         |
|                                                                                                                                                                                                                                                                                                                      | S_2      |            | 0.00050    |            |         |
| Transmissivity Conversions                                                                                                                                                                                                                                                                                           | T_ft2pd  | 535        | 669        | 803        | ft2/day |
|                                                                                                                                                                                                                                                                                                                      | T_ft2pm  | 0.3715     | 0.4646     | 0.5573     | ft2/min |
|                                                                                                                                                                                                                                                                                                                      | T_gpdft  | 4,002      | 5,004      | 6,003      | gpd/ft  |
|                                                                                                                                                                                                                                                                                                                      |          |            |            |            |         |
| Recalculate Use the Recalculate button if recalculation is set to manual                                                                                                                                                                                                                                             |          |            |            |            |         |



# Hydrograph, Area Wells

