

Groundwater Transfer Review Summary Form

Transfer/PA # T- 13795

GW Reviewer D. Boschmann Date Review Completed: 12/10/2021

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-13795

Applicant Name: Borror

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

Reviewer(s): Derrick E. Boschmann

Date of Review: 12/10/2021

Date Reviewed by GW Mgr. and Returned to WRSD: JTI 2/1/22

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 is related to certificate 54425 which authorizes groundwater pumping from one well (POD 1 = LAKE 190) for primary irrigation of 160.0 acres in the Goose and Summer Lakes Basin (Summer Lake subbasin). The authorized and proposed wells are within the Fort Rock Classified Area.

The following changes are proposed:

1. Add one APOA (LAKE 497) located 2.7 miles to the southeast.
2. Move 28.0 acres of the POU to 26S/16E-6.

*This application is essentially identical to temporary transfer T-12310.

2. Will the proposed POA develop the same aquifer (source) as the existing authorized POA?

Yes No Comments: _____

Groundwater in the Fort Rock Valley-Christmas Valley area (Fort Rock Classified Area) is identified as a single groundwater system. Groundwater is found in both a shallower predominantly basin-fill sediment unit and a deeper predominantly volcanic rocks and sediments unit below. The predominantly basin fill sediment unit and the predominantly volcanic rocks and sediment unit both readily yield groundwater and the two units are hydraulically connected.

Miller (1986) describes the groundwater source as the main groundwater reservoir. That reservoir includes groundwater in different geologic units. The reservoir has three characteristics. First, the "natural" groundwater level changes less than 1.5 feet annually, indicating the system is highly modulated. Second, the 1980s potentiometric surface was approximately 4292 feet elevation amsl basin-wide with Silver Lake an exception. Third, the reservoir consists of numerous water producing zones in several formations, all having an essentially common potentiometric level, and all being very transmissive in general.

The authorized and proposed well are both drilled through the predominantly basin-fill sediment unit into the underlying predominantly volcanic rocks and sediment unit.

3. a) Is there more than one source developed under the right (e.g., basalt and alluvium)?
 Yes No see above.

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: The proposed APOA is located approximately 2.7 miles southeast of the currently authorized well. This will result in an incremental increase in interference with existing authorized wells to the southeast.

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 nearest authorized well under different ownership to the proposed APOA is POD 1 under certificate 63611 (LAKE 504) which is located ~3700 feet to the southeast. The potential increase in drawdown was calculated using the Theis equation (see attachments). The values used for the calculation are conservative and appropriate until better values become available. The calculation used an intermediate storage coefficient (0.001). The transmissivity used in the calculation (15,000 ft²/day) is from Morgan (1988) and McFarland and Ryals (1991). At the pro-rated pumping rate of the full duty over the full irrigation season (0.17 cfs), the results indicate a drawdown of <1 foot, which should be within the capacity of the nearby well.

The long term impact on the groundwater system should be the same. That impact is to continue contributing to the ongoing annual Fort Rock Classified area groundwater level decline. See attached hydrograph.

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 up to ~1.5 miles closer to Paulina Marsh and Summer Lake than the currently authorized well. This will result in an incremental increase in interference with these surface water sources.

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: Paulina Marsh Minimal Significant

Stream: Silver Lake Minimal Significant

Provide context for minimal/significant impact: The proposed APOA is still over 10 miles north of these surface water sources. Any increase in interference should be minimal.

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.

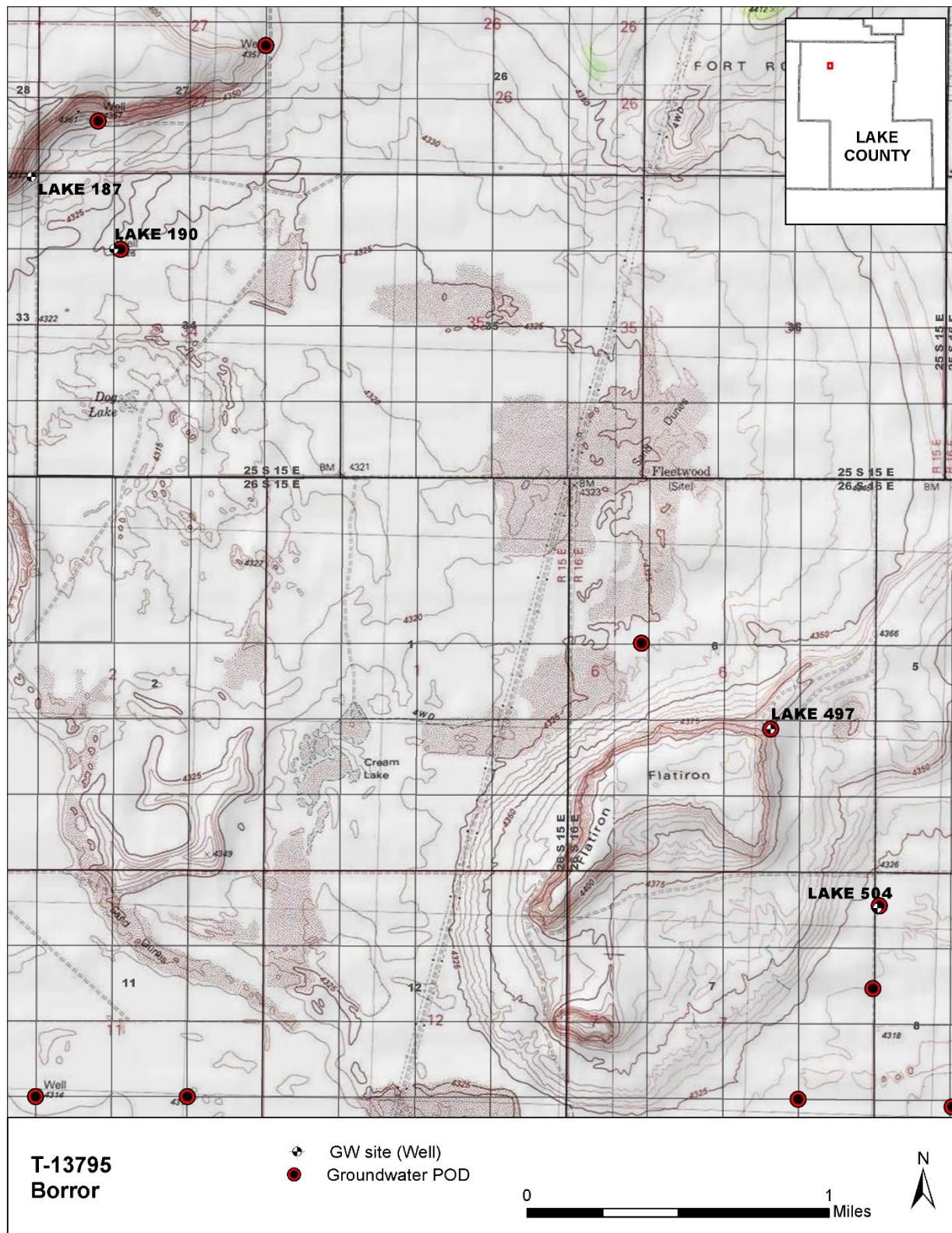
8. Any additional comments: none.

References:

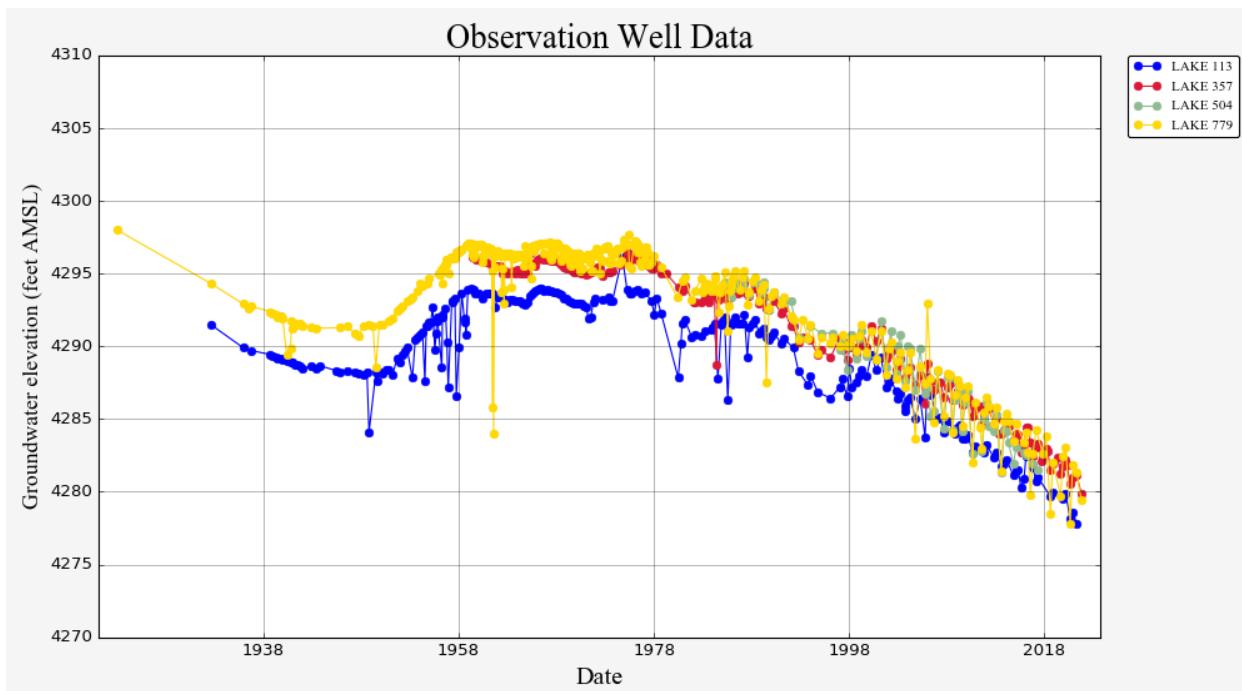
Morgan, D.S., 1988. Geohydrology and numerical model analysis of ground-water flow in the Goose Lake Basin, Oregon and California. U.S. Geological Survey Water-Resources Investigations Report 87-4058.

McFarland, W.D., Ryals, G.N., 1991. Adequacy of available hydrogeologic data for evaluation of declining ground-water levels in the Fort Rock Basin, South-Central Oregon. U.S. Geological Survey Water-Resources Investigations Report 89-4057.

Miller, D.W., 1986. Ground water conditions in the Fort Rock Basin, Northern Lake County, Oregon. Oregon Water Resources Department Ground Water Report No. 31.



T-13795
Borror



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		245		d	
Radial distance from pumped well:	r		3700.00		ft	Q conversions
Pumping rate	Q		0.2		cfs	76.30 gpm
Hydraulic conductivity	K	150	150	150	ft/day	0.17 cfs
Aquifer thickness	b		100		ft	10.20 cfm
Storativity	S_1	0.00100				14,688.00 cfd
	S_2	0.00100				0.34 afd
Transmissivity Conversions	T ft ² pd	15,000	15,000	15,000	ft ² /day	
	T ft ² pm	10,4167	10,4167	10,4167	ft ² /min	
	T gpd/ft	112,200	112,200	112,200	gpd/ft	

Recalculate Use the Recalculate button if recalculation is set to manual

