

Groundwater Transfer Review Summary Form

Transfer/PA # T- 14408

GW Reviewer Grayson Fish Date Review Completed: 11/5/2024

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 Water Level Decline Condition Review:

Water levels at the original point(s) of appropriation have exceeded the allowed decline threshold defined by conditions in the originating water right.

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 (checked)
Permit Amendment
GR Modification
Other

Application: T-14408

Applicant Name: Michael & Heidi Hanson

- Proposed Changes: POA (checked), APOA, SW->GW, RA, USE, POU (checked), OTHER

Reviewer(s): Grayson Fish

Date of Review: 11/5/2024

Date Returned to WRSD: 11/5/2024

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: The Applicant proposes to transfer POU totaling 62.9 acres and the POA ("Well" [LAKE 853]) associated with Certificates 88622, 88673, and 88736 to new POU's and a POA ("Well #1" [LAKE 570]) located ~2 miles to the north-northwest within the Fort Rock Classified Area.

The proposed POA "Well #1" (LAKE 570) is currently authorized as a POA under Certificate 53538 with a max rate of 1.6 cfs.

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

Yes (checked) 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.

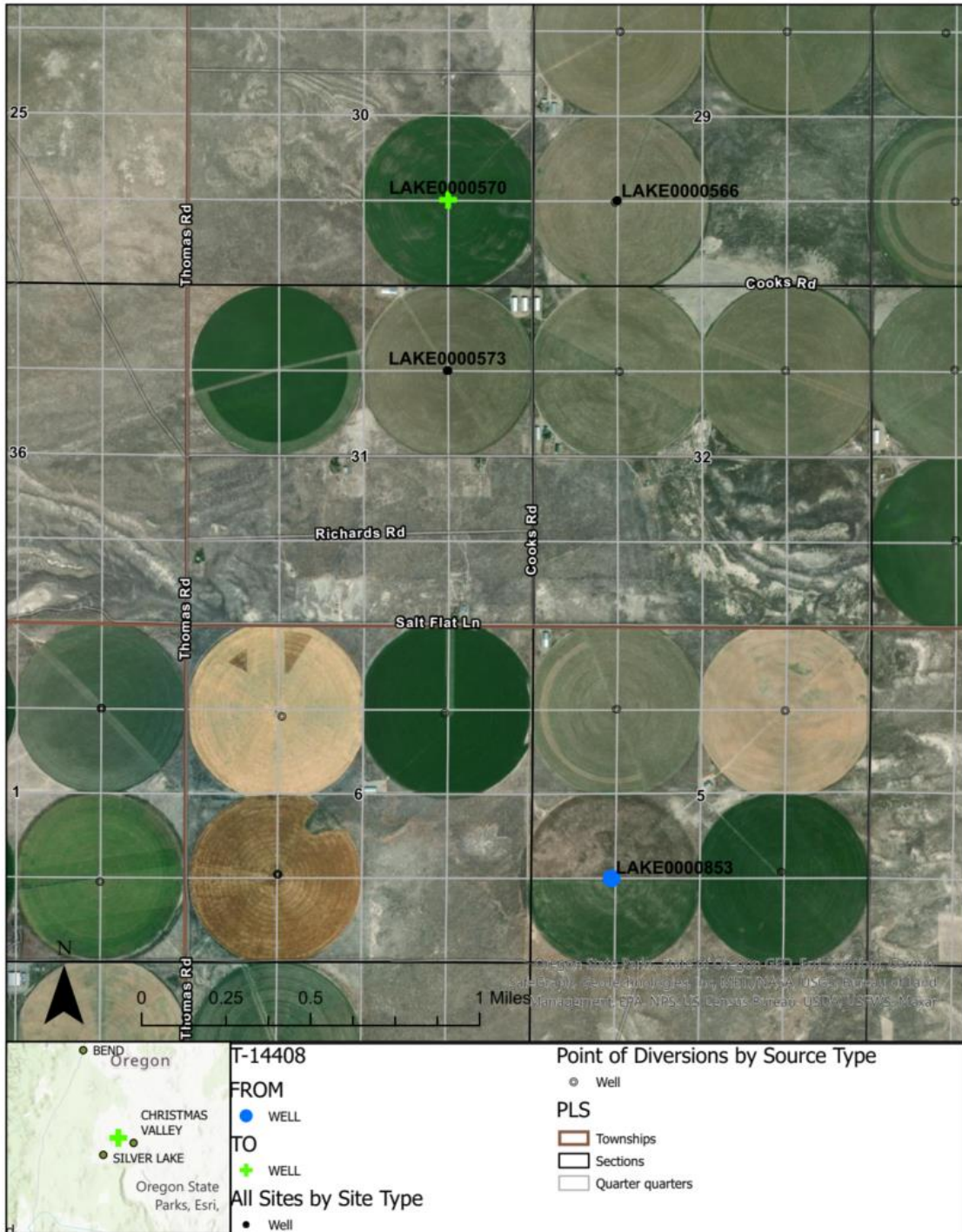
The authorized wells produce groundwater from water bearing zones within the predominantly basin-fill sediment and/or the underlying predominantly volcanic rocks and sediment unit of the main groundwater reservoir. The proposed wells will also produce groundwater from water bearing zones within the main groundwater reservoir.

2. a) Is the existing authorized POA subject to a water level decline condition?
 Yes No Comments: There are no water level decline conditions included in Certificates 88622, 88673 or 88736.
- b) If yes, for each POA identify the reference level, most recent spring-high water level, and whether an applicable permit decline condition has been exceeded: N/A
3. a) Is there more than one source developed under the right (e.g., basalt and alluvium)?
 Yes No Comments: One source developed.
- 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: Proposed POA LAKE 570 will move pumping closer to existing wells LAKE 566 under Certificate 51903 and LAKE 573 under Certificate 56228. The reduced distance between these wells and the proposed POA LAKE 570 is likely to result in an increase in interference when compared to what would be occurring due to pumping at the original POA “Well”.
- 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 POA to Proposed POA LAKE 570 is LAKE 566 under Certificate 51903 which is located ~2,600 feet to the east. 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 maximum allowed pumping rate (2.39 cfs), the results indicate a drawdown of ~8 feet, which would not meet the standard of “substantial or undue interference”.

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.

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 POA LAKE 570 is further away from both Paulina Marsh to the southwest and Sliver Lake to the South than the currently authorized POA LAKE 853. Interference with surface water under this transfer is expected to be the same or less than what is currently occurring due to pumping from 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.

T-14408



Theis Drawdown

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		2600		ft	Q conversions
Pumping rate	Q		2.39		cfs	1,072.63 gpm
Hydraulic conductivity	K	150	150	150	ft/day	2.39 cfs
Aquifer thickness	b		100		ft	143.40 cfm
Storativity	S_1		0.001			206,496.00 cfd
	S_2		0.001			4.74 af/d
Transmissivity Conversions	T_ft2pd	15000	15000	15000	ft ² /day	<input type="button" value="Recalculate"/>
	T_ft2pm	10.4166667	10.4166667	10.4166667	ft ² /min	
	T_gpdft	112200	112200	112200	gpd/ft	

Use the Recalculate button if recalculation is set to manual

