Groundwater Transfer Review Summary Form

Transfer/PA # T- _13037 (re-review)_

GW Reviewer _Travis Brown_ Date Review Completed: _4/9/2021_

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-13037 (re-review) Applicant Name: Weyerhaeuser NR Company

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

Reviewer(s): Dennis Orlowski (original) / Travis Brown (re-review)

Date of Re-Review: 4/9/2021 Supersedes Review Of: 5/29/2019

Date Reviewed by GW Mgr. and Returned to WRSD: JTI 4/9/21

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: This proposed transfer pertains to **Certificates 24690, 49070, and 49071**. The respective proposed changes are as follows:

   Certificate 24690: supplemental irrigation 102.96 acres; Qmax = 1.29 cfs

   - ~~**Change**~~ **Additional POA**:
     - Authorized POA: MARI 16089 ("Well 3")
     - Proposed APOA: MARI 16019 ("Well 2")
     - Proposed APOA: Not Yet Constructed ("Well 4")

   Certificate 49070: primary irrigation 3.0 acres, temperature control 3.0 acres; Qmax = 0.03 cfs

   - **Additional POA**:
     - Authorized POA: MARI 16018 ("Greenhouse Well")
     - Proposed APOA: MARI 16020 ("Shop Well")

   Certificate 49071: primary irrigation 49.0 acres, temperature control 4.4 acres; Qmax = 0.66 cfs

   - **Additional POA**:
     - Authorized POA: MARI 16010 ("Well 1")
     - Authorized POA: MARI 16018 ("Greenhouse Well")
     - Proposed APOA: MARI 16020 ("Shop Well")

NOTE: from a groundwater review perspective, this single application arguably should have been two, or even three, separate applications. There are different authorized POAs for the three certificates, different proposed POAs and APOAs, and different uses with correspondingly different rates and duties. This lack of commonality required separate analyses for each of the three scenarios, i.e., effectively three separate groundwater reviews.

NOTE: compared to the PLSS data and georeferenced aerial imagery used by OWRD, the "metes and bounds" well location descriptions provided on the application map appear to be uniformly offset by about 180 ft to the SSE. This discrepancy is evident by noting the described well locations relative to buildings and other structures as plotted on the application map: the "metes and bounds" descriptions uniformly place the wells about 180 ft SSE from the same locations shown on the application map. **Therefore, for this review the well locations as plotted on the application map were evaluated, and NOT the "metes and bounds" location descriptions provided on the application map labels.**

2. Will the proposed POA develop the same aquifer (source) as the existing authorized POA?
☒ Yes ☐ No Comments: The authorized and proposed POAs are similarly constructed and obtain groundwater from the same shallow 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.): _____

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: Groundwater exploitation in the area is relatively low, with almost all nearby large-scale pumping by Weyerhauser. There are several irrigation rights and likely domestic wells to the north and west of the Weyerhauser facility/parcels.

Due to the various scenarios presented by this application, this evaluation is correspondingly summarized in three different parts; **this is also why both "Yes" and "No" were concluded for this section:**

Certificate 24690, change in POA: compared to the location of authorized POA MARI 16089 ("Well 3"), the proposed APOA MARI 16019 ("Well 2") and "Well 4" ~~is~~ are actually farther away from any existing groundwater uses, and thus no increases in interference ~~is~~ are likely: **NO.**

Certificate 49070, additional POA: compared to the location of authorized POA MARI 16018 ("Greenhouse Well"), the location of proposed APOA MARI 16020 ("Shop Well") is perhaps ~850 feet nearer to a likely domestic well at a residence to the west. However, given the very small maximum allowed rate of use (0.03 cfs, ~13.5 gpm), it is unlikely that this proposed use will cause adverse interference in that or other domestic wells in the area: **NO**.

Certificate 49071, additional POA: compared to the locations of authorized POAs MARI 16010 ("Well 1") and MARI 16018 ("Greenhouse Well"), the location of proposed APOA MARI 16020 ("Shop Well") is perhaps ~800 feet nearer to a likely domestic well at a residence to the west. Given the maximum authorized rate of use (0.66 cfs, ~296 gpm), this proposed use will likely result in increased interference at that presumed domestic well location: **YES**.

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: **Certificate 49071, additional POA:** drawdown estimates made using the Theis distance-drawdown relationship indicate that up to about 2 ft of additional interference drawdown might be expected at a domestic well presumably located at a rural residence to the west. It is unlikely that this amount of additional drawdown will prevent this and other nearby groundwater rights from receiving water to which they are legally entitled.

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: **Certificate 24690, change in POA:** compared to the location of authorized POA MARI 16089 ("Well 3"), the proposed APOA MARI 16019 ("Well 2") and "Well 4" ~~is~~ are perhaps only about 30 feet nearer to the North Santiam River, and thus no increases in stream interference ~~is~~ are likely.

Certificate 49070, additional POA and Certificate 49071, additional POA: compared to the locations of authorized POA MARI 16010 and MARI 16018, the proposed APOA MARI 16020 is about 800 ft farther from the North Santiam River, and thus no additional interference is likely.

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: _____

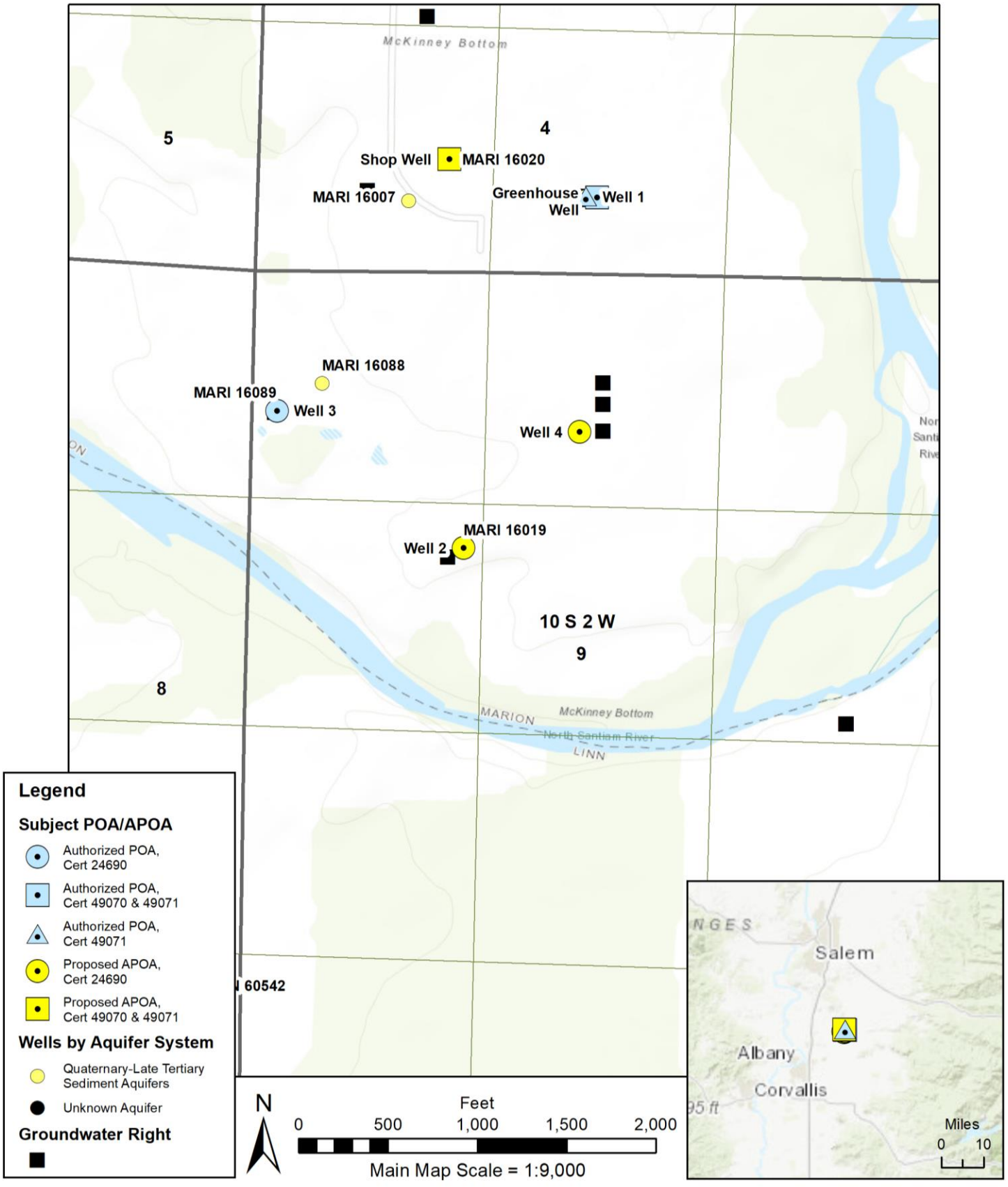
5. For SW-GW transfers, will the proposed change in point of diversion affect the surface water source similarly (as per OAR 690-380-2130) to the authorized point of diversion specified in the water use subject to transfer?

   ☐ Yes ☐ No Comments: _____

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

7. Any additional comments: None

T-13037 Weyerhaeuser (re-review)



Service Layer Credits: 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

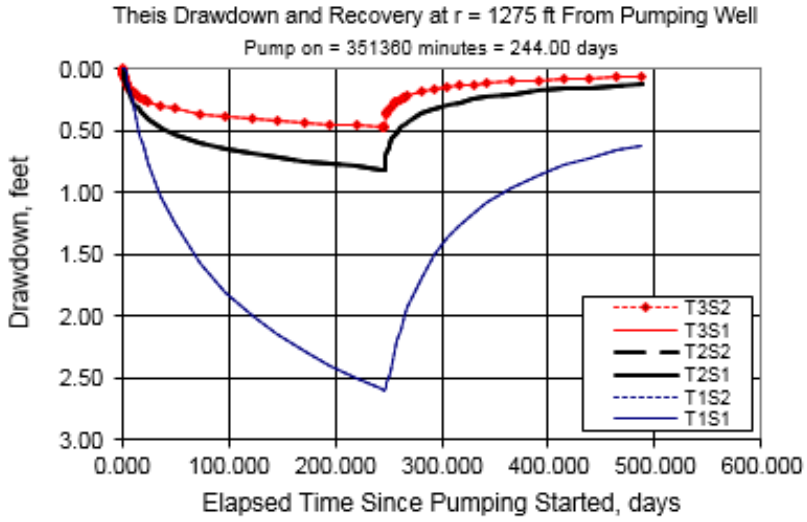
Theis drawdown analysis: authorized POA (MARI 16010) to nearest likely domestic well (~1275 ft)

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 differen 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		244		d	
Radial distance from pumped well:	r		1275.00		ft	Q conversions
Pumping rate	Q		296.0		gpm	296.00 gpm
Hydraulic conductivity	K	50	250	500	ft/day	0.66 cfs
Aquifer thickness	b		100		ft	39.57 cfm
Storativity	S_1		0.10000			56,983.96 cfd
	S_2		0.10000			1.31 af/d
Transmissivity Conversions	T_f2pd	5,000	25,000	50,000	ft2/day	
	T_ft2pm	3.4722	17.3611	34.7222	ft2/min	
	T_gpdpft	37,400	187,000	374,000	gpd/ft	

Recalculate Use the Recalculate button if recalculation is set to manual



Theis drawdown analysis: proposed APOA (MARI 16020) to nearest likely domestic well (~475 ft)

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 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		244		d	
Radial distance from pumped well:	r		475.00		ft	Q conversions
Pumping rate	Q		296.0		gpm	296.00 gpm
Hydraulic conductivity	K	50	250	500	ft/day	0.66 cfs
Aquifer thickness	b		100		ft	39.57 cfm
Storativity	S_1		0.10000			56,983.96 cfd
	S_2		0.10000			1.31 af/d
Transmissivity Conversions	T_f2pd	5,000	25,000	50,000	ft2/day	
	T_ft2pm	3.4722	17.3611	34.7222	ft2/min	
	T_gpdpft	37,400	187,000	374,000	gpd/ft	

Recalculate Use the Recalculate button if recalculation is set to manual