Groundwater Transfer Review Summary Form

Transfer/PA # T- **14344**

GW Reviewer **Stacey Garrison/Travis Brown** **Date Review Completed:** **7/22/2024**

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.

OREGON WATER RESOURCES DEPARTMENT

Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem, Oregon 97301-1271
(503) 986-0900
www.wrd.state.or.us

Ground Water Review Form:

☐ **Water Right Transfer**
☐ **Permit Amendment**
☒ **GR Modification**
☐ **Other**

Application: T-14344 Applicant Name: Weyerhaeuser NR Co.

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

Reviewer(s): Stacey Garrison/Travis Brown Date of Review: 7/22/2024

Date Reviewed by GW Mgr. and Returned to WRSD: JTI 6/4/25

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: Applicant proposes to add two POAs: to-POA 3/ New Greenhouse Well (**PROP 482**) and to-POA 4/ Well 4 (**PROP 483**) to **Claim GR- 411. Claim GR- 411** authorizes from-POA 1/Pump Well 1/**MARI** 16005 to irrigate 33.3 ac at 750 gpm and a maximum annual duty of 83.25 AF/year; Pump Well 2/**MARI 16006** is also authorized under Claim GR-411 but is not impacted by this transfer. The to-POAs will be used to irrigate less than the total POU acres authorized under **Claim GR-411** and will be pro-rated according to this reduced acreage. Transfer application **T-14343** on **Claim GR-170** was submitted simultaneously with application **T-14344**, and effects to-POA 3/New Greenhouse Well (**PROP 482**) and to-POA 4/Well 4 (**PROP 483**). **Claim GR-170** authorizes irrigation of 64.93 ac from the POAs subject to T-14343, but T-14343 is applicable to 9.12 ac for both to-POAs, resulting in a prorating of the rate and duty. The prorated rates and duties applicable under both **T-14343** and **T-14344** will be used and are summarized in the table below.

Rates and Duties		POA	
		New Greenhouse Well/POA 3 (PROP 482)	Well 4/POA 4 (PROP 483)
POU (ac)	This transfer, T-14344/Claim GR-411	14.54	14.54
	T-14343/Claim GR-170	4.56	4.56
	Total	19.1	19.1
Authorized duty (AF/year)	This transfer, T-14344/Claim GR-411*	36.35	36.35
	T-14343/Claim GR-170	36.7	36.7
	Total	73.05	73.05
Flow rate CFS (gpm)	This transfer, T-14344/Claim GR-411	0.73 cfs (327.48 gpm)	0.73 cfs (327.48 gpm)
	T-14343/Claim GR-170	0.14 cfs (64.37 gpm)	0.14 cfs (64.37 gpm)
	Total	0.873 cfs (391.85 gpm)	0.873 cfs (391.85 gpm)

*A maximum volume duty in AF/year was not included in Claim GR-411; the standard maximum duty of 2.5 AF/ac/year for the Willamette Basin has been applied.

2. Will the proposed POA develop the same aquifer (source) as the existing authorized POA?
☒ Yes ☐ No Comments: The from-POA 1/Pump Well 1/(**MARI 16005**) develops the unconfined and highly permeable coarse-grained Holocene floodplain deposits associated with the North Santiam River, with shallow groundwater levels that approximate the stage of adjacent reaches of the river. The proposed to-POAs POA 3/New Greenhouse Well (**PROP 482**) and POA 4/Well 4 (**PROP 483**) are anticipated to develop the same source.

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: From-POA 1/Pump Well 1/**MARI 16005**) is 2,247 ft from the closest groundwater user, **MARI 16000** authorized under **Certificate 31090** with priority date 2/5/1959. To-POAs POA 3/New Greenhouse Well (**PROP 482**) and POA 4/Well 4 (**PROP 483**) are 4,681 ft and 4,874 ft from the nearest groundwater user, MARI 16034. The to-POAs are anticipated to result in a decrease in interference with other groundwater users.

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: N/A

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 North Santiam River is south of all the from-POAs and to-POAs: 1,940 ft from-POA 1/Pump Well 1/**MARI 16005**); 1,350 ft to-POA POA 3/New Greenhouse Well (**PROP 482**); 1,270 ft to-POA 4/Well 4 (**PROP 483**). The to-POAs are closer and anticipated to cause an increase in interference with the North Santiam River.

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: North Santiam River ☐ Minimal ☒ Significant

Provide context for minimal/significant impact: The reduced intervening distance between the North Santiam River and both proposed to-POAs POA 3/New Greenhouse Well (**PROP 482**) and POA 4/Well 4 (**PROP 483**) will likely cause an overall increase in interference with the North Santiam River. It will also cause surface water depletions due to groundwater pumping under **Claim GR-411** to accrue quicker in relation to the onset of pumping. Because Claim GR-170 allows for Irrigation use from March 1 to October 31, the proposed change is anticipated to increase interference with the North Santiam River within this time period. The North Santiam River is an over-appropriated surface water source, with no water typically available for additional appropriations between August and October, and very little water available for additional appropriations in July (see attached Water Availability Analysis). Because the proposed change would likely increase interference with a surface water source during a period in which that source is typically over-appropriated, the expected change in degree of interference is significant.

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: N/A

8. Any additional comments: To avoid a Significant Change in Degree of Interference with the North Santiam River, the pumping rate can be reduced for POA 3/New Greenhouse Well (**PROP 482**) and POA 4/Well 4 (**PROP 483**) such that the degree of interference for the months the North Santiam is over-appropriated (August, September, October) is the same as produced by pumping at the maximum rate at the authorized POA closest to the North Santiam River, POA 1/Pump Well 1/**MARI 16005**). **The reduced rate to achieve the same degree of interference as POA 1/Pump Well 1/MARI 16005) is 0.607 cfs (272.6 gpm) for POA 3/New Greenhouse Well (PROP 482), and 0.592 cfs (265.8 gpm) for POA 4/Well 4 (PROP 483).**

The combined pumping rate for all POAs under this transfer for the subject acreage should not exceed the proportional rate of 0.73 cfs. For example, if POA 4 is pumped at the maximum reduced rate of 0.592 cfs, then POA 1 or 3 should not be simultaneously pumped at more than 0.138 cfs.

References

Application File: T-14343/Claim GR-170, T-14344/Claim GR-411

Pumping Test Files: MARI 16029, MARI 14656, MARI 50649, MARI 50190

Well Reports: MARI 16029, MARI 14656, MARI 50649, MARI 50190, MARI 16000, MARI 16005, MARI 16006, MARI 16007, MARI 16008, MARI 16088, MARI 16019, MARI 16034

Conlon, T.D., Wozniak, K.C., Woodcock, D., Herrera, N.B., Fisher, B.J., Morgan, D.S., Lee, K.K., and Hinkle, S.R., 2005, *Ground-water hydrology of the Willamette Basin, Oregon*, Scientific Investigations Report 2005-5168: U. S. Geological Survey, Reston, VA.

Freeze, R.A. and J.A. Cherry, 1979. Groundwater, Prentice Hall, Englewood Cliffs, New Jersey, 604p

Gannett, M.W. and Caldwell, R., 1998, *Geologic framework of the Willamette Lowland aquifer system, Oregon and Washington*, Professional Paper 1424-A, 32 p: U. S. Geological Survey, Reston, VA.

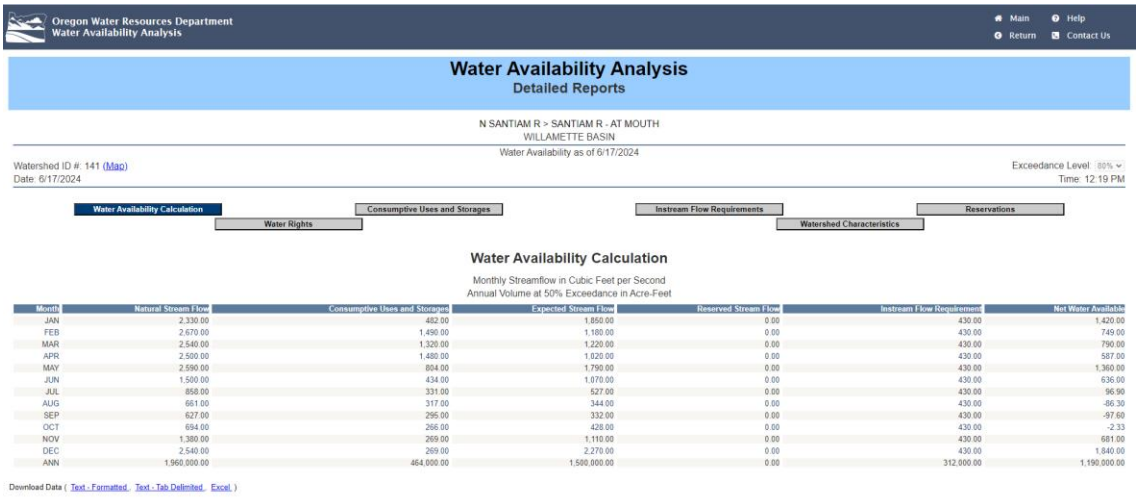
Hunt, B., 1999, Unsteady stream depletion from ground water pumping: Ground Water, v. 37, no. 1, p. 98-102.

Iverson, J., 2002, Investigation of the hydraulic, physical, and chemical buffering capacity of Missoula flood deposits for water quality and supply in the Willamette Valley of Oregon: Unpublished M.S. thesis, Oregon State University, 147 p

Theis, C.V., 1935, The relation between the lowering of the piezometric surface and the rate and duration of discharge of a well using ground-water storage: American Geophysical Union transactions, v. 16, p. 519-524.

Watershed Sciences, 2009, LIDAR remote sensing data collection, Department of Geology and Mineral Industries, Willamette Valley Phase I, Oregon: Portland, OR, December 21.

Water Availability Analysis



Oregon Water Resources Department
Water Availability Analysis

Main Help
Return Contact Us

Water Availability Analysis
Detailed Reports

N SANTIAM R > SANTIAM R - AT MOUTH
WILLAMETTE BASIN
Water Availability as of 6/17/2024

Watershed ID #: 141 (Map)
Date: 6/17/2024

Exceedance Level: 80%
Time: 12:19 PM

Water Availability Calculation | Consumptive Uses and Storages | Instream Flow Requirements | Reservations
Water Rights | Watershed Characteristics

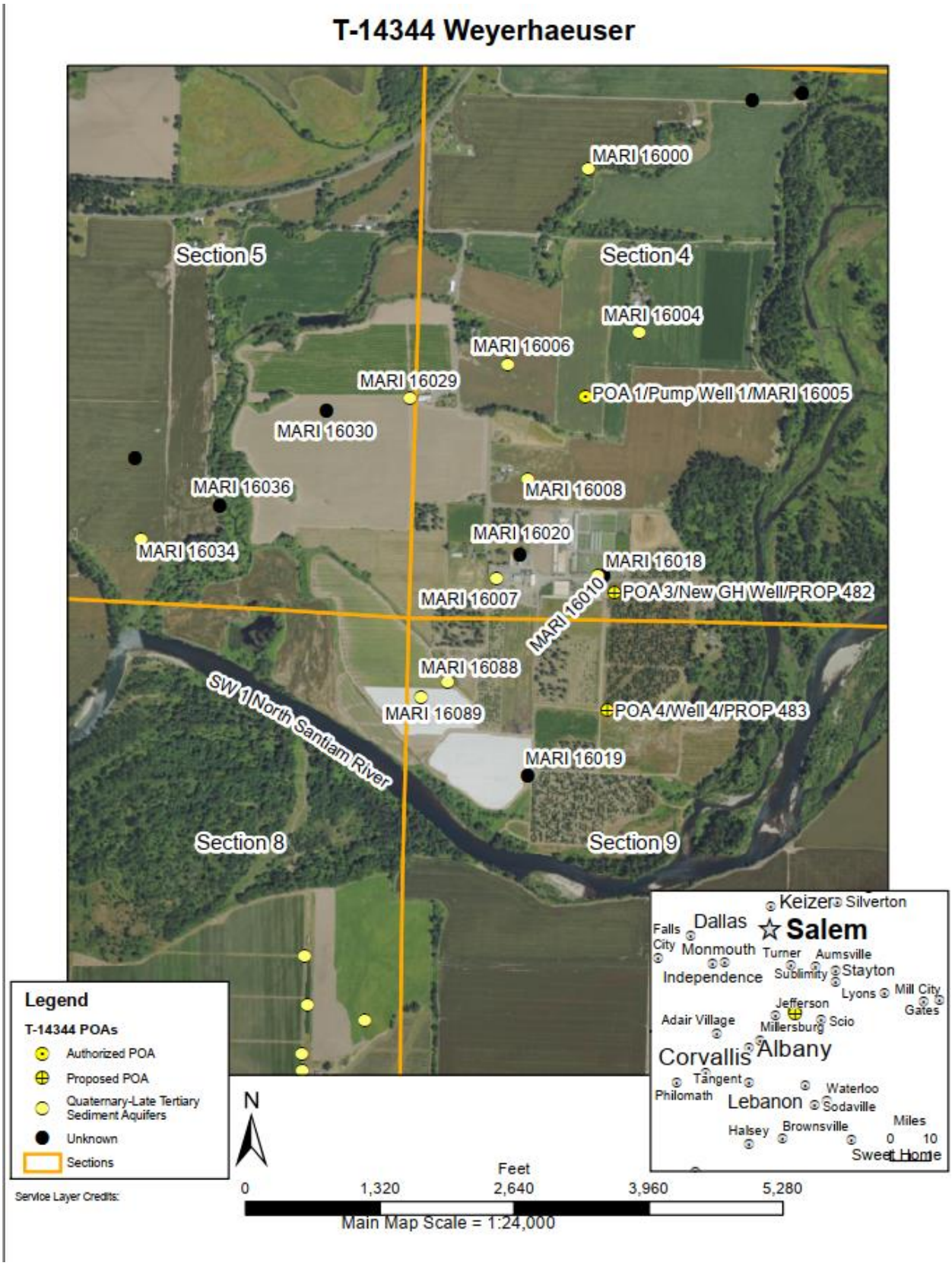
Water Availability Calculation

Monthly Streamflow in Cubic Feet per Second
Annual Volume at 50% Exceedance in Acre-Feet

Month	Natural Stream Flow	Consumptive Uses and Storages	Expected Stream Flow	Reserved Stream Flow	Instream Flow Requirement	Net Water Available
JAN	2,330.00	482.00	1,850.00	0.00	430.00	1,420.00
FEB	2,670.00	1,490.00	1,180.00	0.00	430.00	749.00
MAR	2,540.00	1,320.00	1,220.00	0.00	430.00	790.00
APR	2,500.00	1,480.00	1,020.00	0.00	430.00	587.00
MAY	2,590.00	804.00	1,790.00	0.00	430.00	1,360.00
JUN	1,500.00	434.00	1,070.00	0.00	430.00	636.00
JUL	858.00	331.00	527.00	0.00	430.00	96.90
AUG	661.00	317.00	344.00	0.00	430.00	-86.30
SEP	627.00	295.00	332.00	0.00	430.00	-97.60
OCT	694.00	266.00	428.00	0.00	430.00	-2.33
NOV	1,380.00	269.00	1,110.00	0.00	430.00	681.00
DEC	2,540.00	269.00	2,270.00	0.00	430.00	1,840.00
ANN	1,960,000.00	464,000.00	1,500,000.00	0.00	312,000.00	1,190,000.00

Download Data (Text - Formatted , Text - Tab Delimited , Excel)

Map


T-14344 Weyerhaeuser
MARI 16000
Section 5
Section 4
MARI 16004
MARI 16006
MARI 16029
POA 1/Pump Well 1/MARI 16005
MARI 16030
MARI 16036
MARI 16008
MARI 16020
MARI 16034
MARI 16018
MARI 16007
MARI 16010
POA 3/New GH Well/PROP 482
MARI 16088
SW 1 North Santiam River
MARI 16089
POA 4/Well 4/PROP 483
MARI 16019
Section 8
Section 9
Legend
T-14344 POAs
Authorized POA
Proposed POA
Quaternary-Late Tertiary Sediment Aquifers
Unknown
Sections
Service Layer Credits:
N
Feet
0
1,320
2,640
3,960
5,280
Main Map Scale = 1:24,000
Keizer
Silverton
Dallas
Salem
Falls City
Monmouth
Turner
Aumsville
Independence
Sublimity
Stayton
Lyons
Mill City
Gates
Jefferson
Adair Village
Millersburg
Scio
Corvallis
Albany
Tangent
Philomath
Lebanon
Waterloo
Sodaville
Halsey
Brownsville
Miles
0
10
Sweet Home

Stream Depletion Analysis

T-14344	Depletion @ Day 180 (August)		Pumping rate	
	cfs	%	cfs	gpm
POA 1/Pump Well 1 (MARI 16005)	0.212	29.1	0.73	327.6
POA 3/New Greenhouse Well (PROP 482)	0.212	34.9	0.607	272.6
POA 4/Well 4 (PROP 483)	0.212	35.8	0.592	265.8

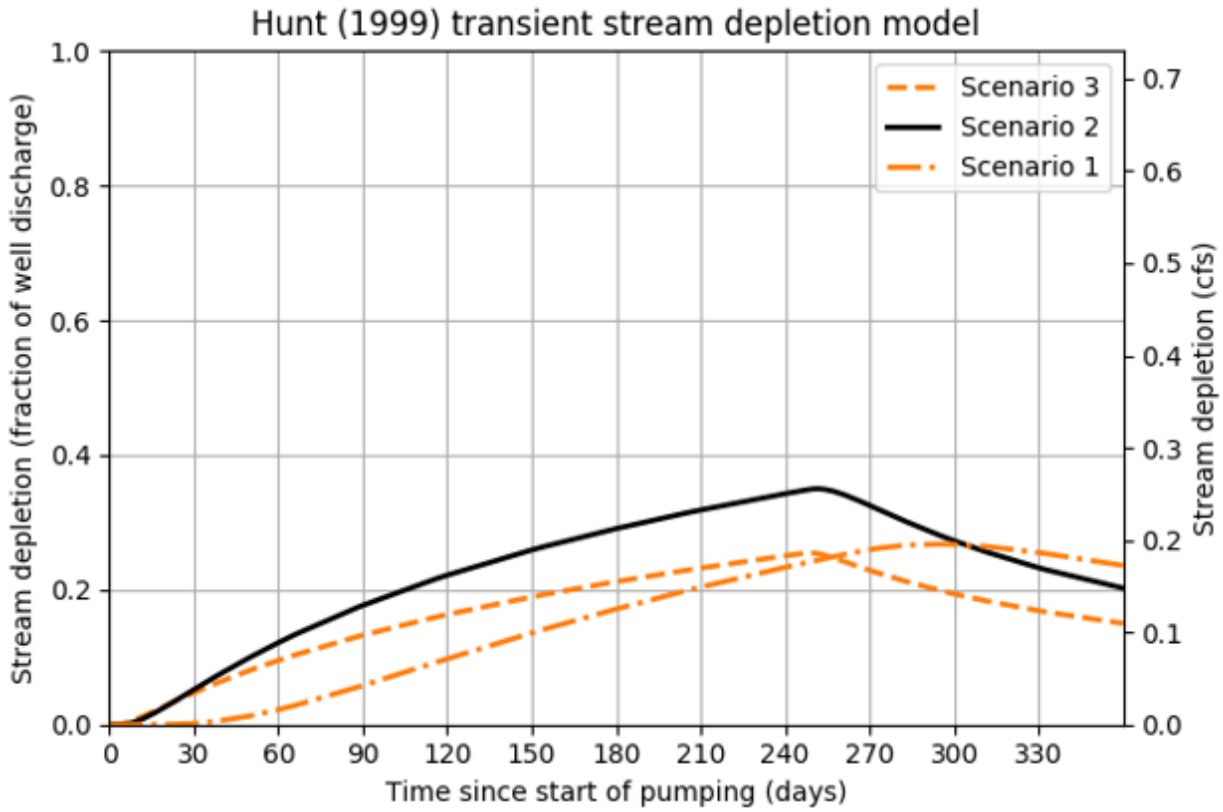
Hunt 1999-POA 1/Pump Well 1/MARI 16005

Application type:	T
Application number:	14344
Well number:	1
Stream Number:	1
Pumping rate (cfs):	0.73
Pumping duration (days):	245.0
Pumping start month number (3=March)	3.0

Parameter	Symbol	Scenario 1	Scenario 2	Scenario 3	Units
Distance from well to stream	a	1940	1940	1940	ft
Aquifer transmissivity	T	1200.0	10375.0	28000.0	ft2/day
Aquifer storativity	S	0.15	0.2	0.3	-
Aquitard vertical hydraulic conductivity	Kva	0.1	0.1	0.1	ft/day
Not used		50.0	50.0	50.0	
Aquitard thickness below stream	babs	3.0	3.0	3.0	ft
Not used		0.2	0.2	0.2	
Stream width	ws	160.0	160.0	160.0	ft

Stream depletion for Scenario 2:

Days	10	330	360	30	60	90	120	150	180	210	240	270	300
Depletion (%)	1	23	20	5	12	18	22	26	29	32	34	33	27
Depletion (cfs)	0.00	0.17	0.15	0.04	0.09	0.13	0.16	0.19	0.21	0.23	0.25	0.24	0.20



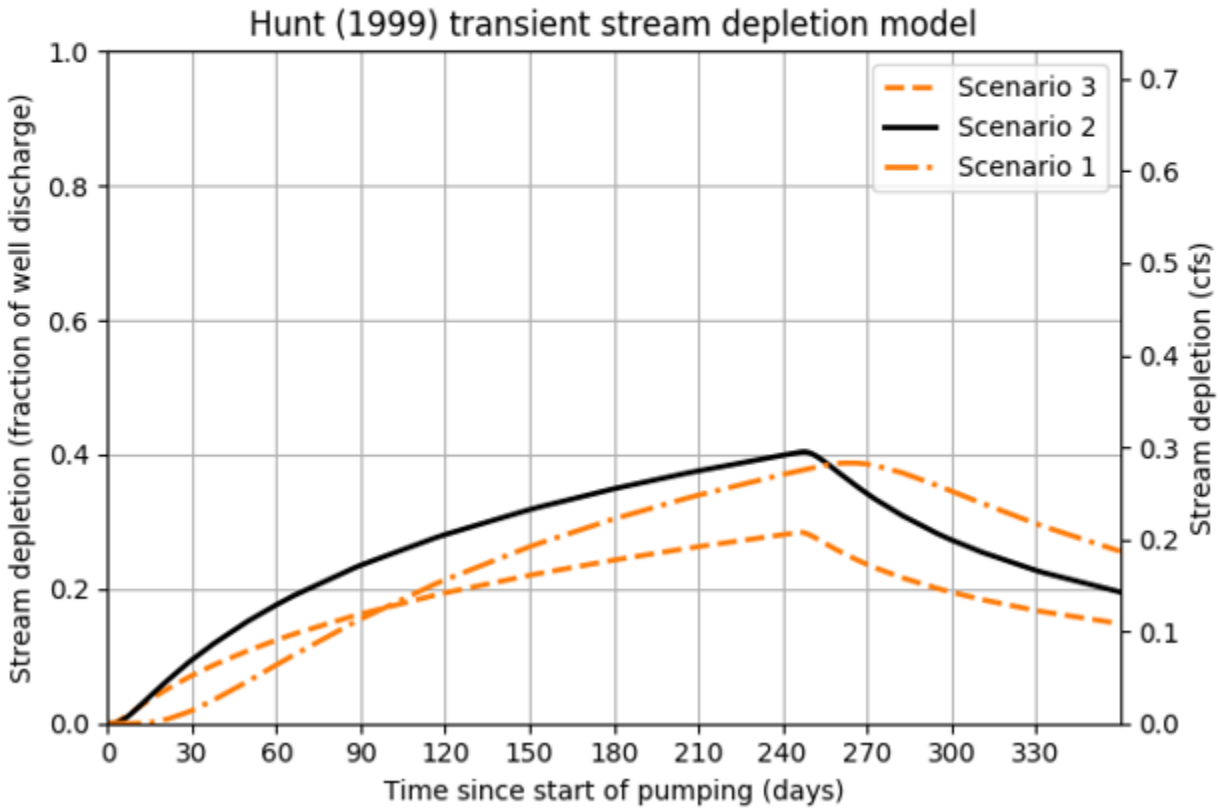
Hunt 1999 POA 3/New Greenhouse Well/PROP 482 (at full non-reduced rate)

Application type:	T
Application number:	14344
Well number:	3
Stream Number:	1
Pumping rate (cfs):	0.73
Pumping duration (days):	245.0
Pumping start month number (3=March)	3.0

Parameter	Symbol	Scenario 1	Scenario 2	Scenario 3	Units
Distance from well to stream	a	1350	1350	1350	ft
Aquifer transmissivity	T	1200.0	10375.0	28000.0	ft2/day
Aquifer storativity	S	0.15	0.2	0.3	-
Aquitard vertical hydraulic conductivity	Kva	0.1	0.1	0.1	ft/day
Not used		50.0	50.0	50.0	
Aquitard thickness below stream	babs	3.0	3.0	3.0	ft
Not used		0.2	0.2	0.2	
Stream width	ws	160.0	160.0	160.0	ft

Stream depletion for Scenario 2:

Days	10	330	360	30	60	90	120	150	180	210	240	270	300
Depletion (%)	2	23	20	9	18	24	28	32	35	38	40	34	27
Depletion (cfs)	0.01	0.17	0.14	0.07	0.13	0.17	0.21	0.23	0.25	0.27	0.29	0.25	0.20



Hunt 1999 POA 4/Well 4/PROP 483 (at full non-reduced rate)

Application type:	T
Application number:	14344
Well number:	4
Stream Number:	1
Pumping rate (cfs):	0.73
Pumping duration (days):	245.0
Pumping start month number (3=March)	3.0

Parameter	Symbol	Scenario 1	Scenario 2	Scenario 3	Units
Distance from well to stream	a	1270	1270	1270	ft
Aquifer transmissivity	T	1200.0	10375.0	28000.0	ft2/day
Aquifer storativity	S	0.15	0.2	0.3	-
Aquitard vertical hydraulic conductivity	Kva	0.1	0.1	0.1	ft/day
Not used		50.0	50.0	50.0	
Aquitard thickness below stream	babs	3.0	3.0	3.0	ft
Not used		0.2	0.2	0.2	
Stream width	ws	160.0	160.0	160.0	ft

Stream depletion for Scenario 2:

Days	10	330	360	30	60	90	120	150	180	210	240	270	300
Depletion (%)	2	23	19	10	19	24	29	33	36	38	41	34	27
Depletion (cfs)	0.02	0.17	0.14	0.07	0.14	0.18	0.21	0.24	0.26	0.28	0.30	0.25	0.20