Groundwater Transfer Review Summary Form

Transfer/PA # T- _14432 (temp)_

GW Reviewer _Steve Ahlquist/Travis Brown_ Date Review Completed: _6/17/2024_

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
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(503) 986-0900
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Ground Water Review Form:

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

Application: T-14432 Applicant Name: D&G Rhodys Nursery, LLC

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

Reviewer(s): **Steve Ahlquist/Travis Brown** Date of Review: June 17, 2024

Date Returned to WRSD: June 18, 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: Applicant proposes to temporarily change the POU and POA ("Well A"/POLK 54845 in place of "Well 1"/POLK 1108) for 2.0 acres under Certificate 59002, which currently authorizes irrigation of 18.2 acres at a maximum rate of 0.23 cfs from one POA ("Well 1"/POLK 1108). The proportional maximum rate for Well A/POLK 54845 under the proposed transfer would be 0.025 cfs. NOTE: Page 6 of the application lists the system capacity as 0.44 cfs; the pumping from Well A/POLK 54845 must be limited to no more than 0.025 cfs under this temporary transfer to prevent enlargement.

2. Will the proposed POA develop the same aquifer (source) as the existing authorized POA?
☒ Yes ☐ No Comments: The authorized FROM-POA and proposed TO-POA access the Willamette alluvial aquifer system.

3. a) Is there more than one source developed under the right (e.g., basalt and alluvium)?
☐ Yes ☒ No The authorized and proposed TO-POA produce groundwater from the Willamette alluvial aquifer system.

   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.): NA

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: Compared to the authorized FROM-POA (POLK 1108), the proposed TO-POA (POLK 54845) is approximately 300 feet closer to POLK 1109, which is an authorized POA under certificate G-17909, and approximately 700 feet closer to the closest residence (Tax lot 2500) which is likely supplied by an exempt domestic well completed in the alluvial aquifer. The shorter distance between the TO-POA and nearby alluvial wells will likely result in an increase in interference.

   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?

5. ☐ Yes ☒ No If yes, explain: To assess potential injury at nearby wells due to the proposed use, drawdown from pumping at the authorized FROM-POA (POLK 1108) and proposed TO-POA (POLK 54845) were estimated using the Theis (1935) equation. Assuming pumping rates of 0.205 cfs and 0.025 cfs for the FROM-POA and TO-POA, respectively (based on POU acreage), the results of the analysis indicate nearby wells will likely experience less than 13 feet of drawdown from the combined effects of pumping POLK 1108 and POLK 54845 during a 244-day pumping period (see attached Theis Interference Analyses), which is unlikely to result in injury to groundwater rights.

6. 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 authorized FROM-POA and proposed TO-POA are approximately 2,900 and 2,500 feet from the Willamette River, respectively. The reduced intervening distance will likely result in increased interference with the Willamette 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: Willamette River ☒ Minimal ☐ Significant

   Stream: _____ ☐ Minimal ☐ Significant

   Provide context for minimal/significant impact: The potential increase in interference with the Willamette River due to the proposed transfer was estimated using a streamflow depletion analytical model (Hunt 1999). Results indicate that streamflow depletion would likely increase by less than 7% of the 0.025 cfs of Certificate 59002 that would be authorized to pump at the proposed TO-POA (POLK 54845). Based on the OWRD Water Availability Reporting System, the Willamette River (Watershed ID# 182) has approximately 681 cfs of net water available in August, which is the month with the lowest expected stream flow (see attached Water Availability Table). Therefore, the change in degree of interference with the Willamette River resulting from the proposed change is expected to be minimal.

7. 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: NA

8. What conditions or other changes in the application are necessary to address any potential issues identified above: NA

9. Any additional comments: NA

References:

Application File: T-14432

Certificate: 59002

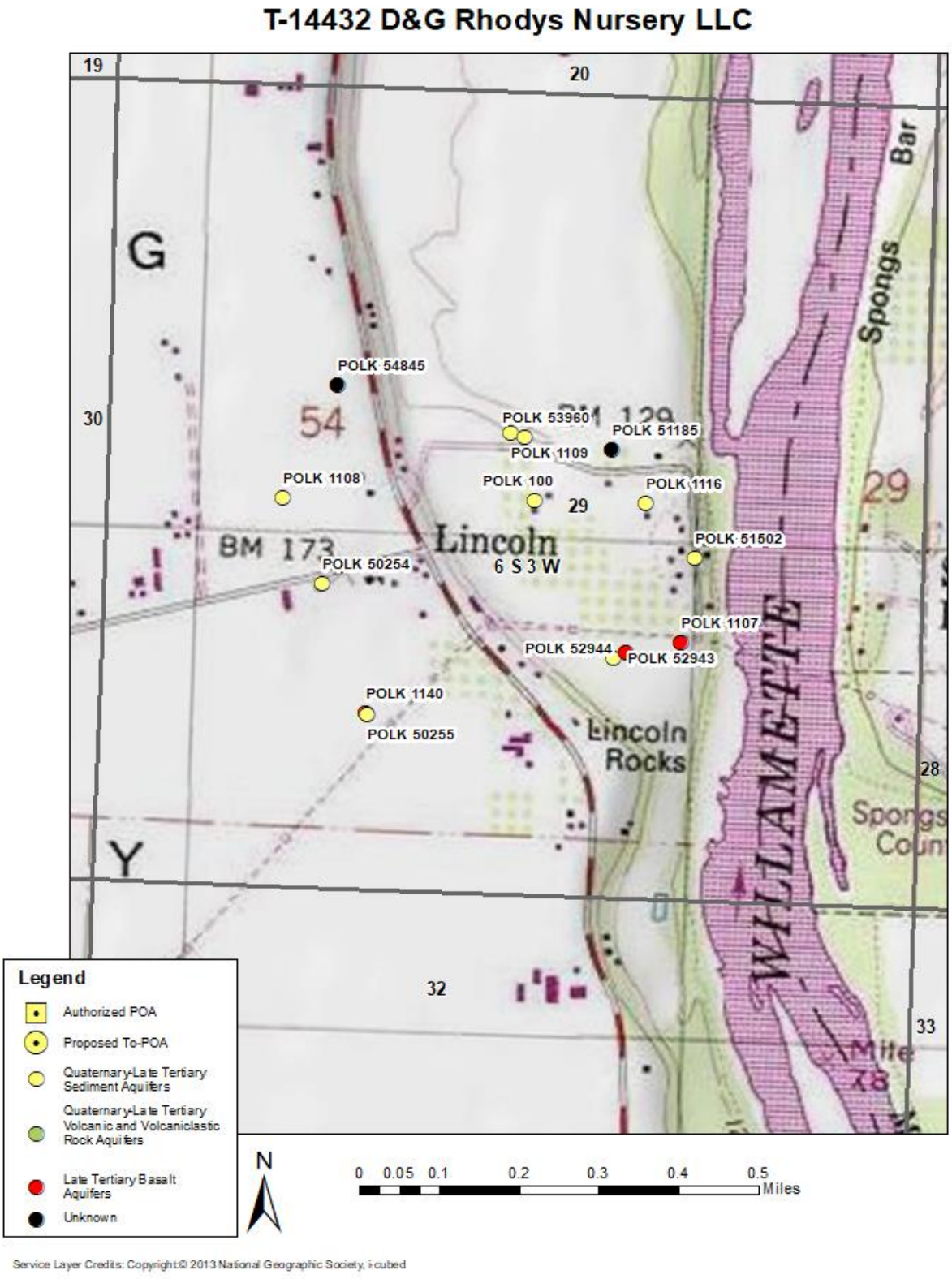
Pumping Test Reports: POLK 100, POLK 1127, POLK 1134, POLK 1079

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.

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

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.

Well Location Map



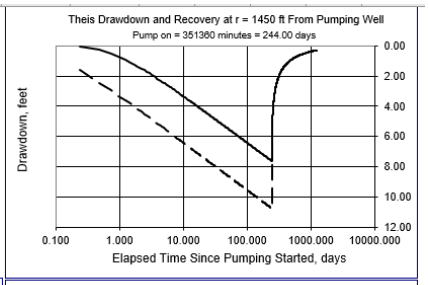
Theis Interference Analyses

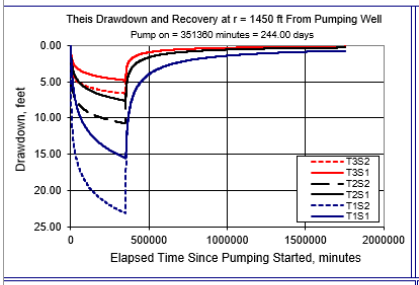
Theis Time-Drawdown Worksheet v.5.00

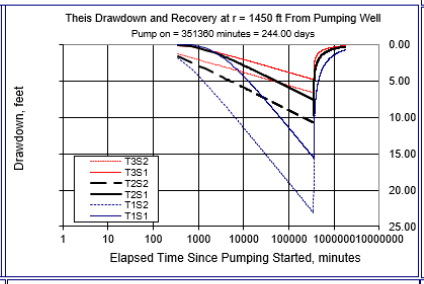
Calculates Theis nonequilibrium drawdown and recovery at any arbitrary radial distance, r, from a pumping well for 3 different T values and radial distance, r, from a pumping well for 3 different T values and 2 different S values.
Written by Karl C. Wozniak September 1992. Last modified December 17, 2019

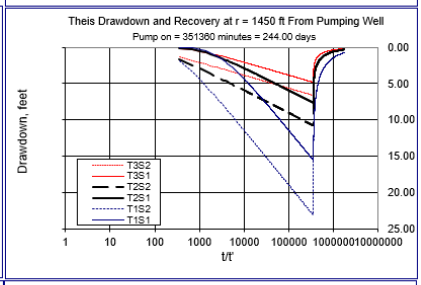
Input Data:	Var Name	Scenario 1	Scenario 2	Scenario 3	Units	
Total pumping time	t		244		d	
Radial distance from pumped well:	r		1450		ft	Q conversions
Pumping rate	Q		0.205		cfs	92.00 gpm
Hydraulic conductivity	K	9.5	23	40	ft/day	0.21 cfs
Aquifer thickness	b		45		ft	12.30 cfm
Storativity	S_1		0.001			17,712.00 cfd
	S_2		0.0001			0.41 af/d
Transmissivity Conversions	T_ft2pd	427.5	1035	1800	ft2/day	
	T_ft2pm	0.296875	0.71875	1.25	ft2/min	Recalculate
	T_gpdpft	3197.7	7741.8	13464	gpd/ft	

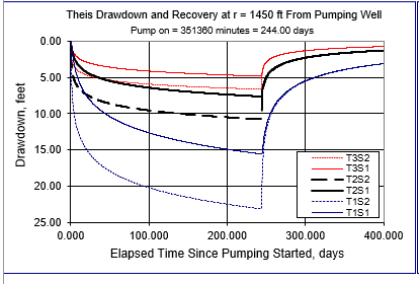
Use the Recalculate button if recalculation is set to manual

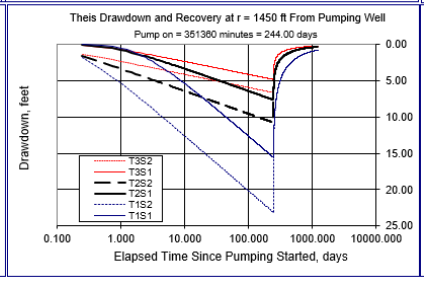


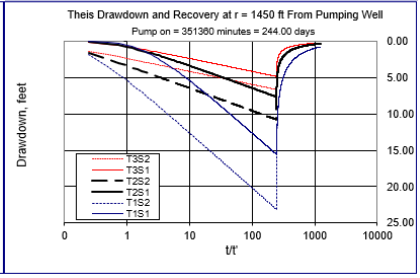










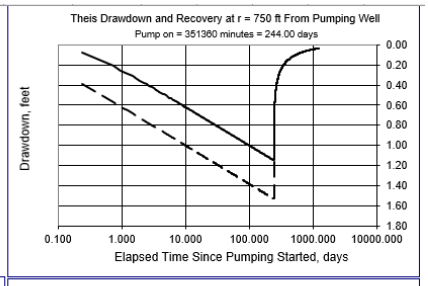


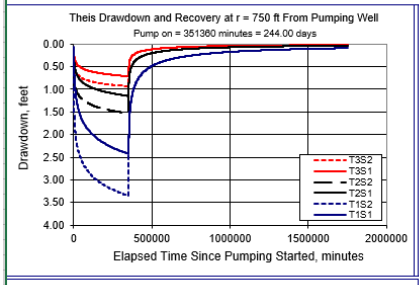
Theis Time-Drawdown Worksheet v.5.00

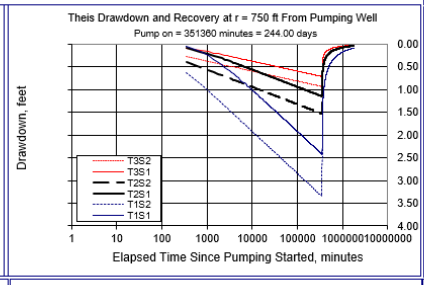
Calculates Theis nonequilibrium drawdown and recovery at any arbitrary radial distance, r, from a pumping well for 3 different T values and radial distance, r, from a pumping well for 3 different T values and 2 different S values.
Written by Karl C. Wozniak September 1992. Last modified December 17, 2019

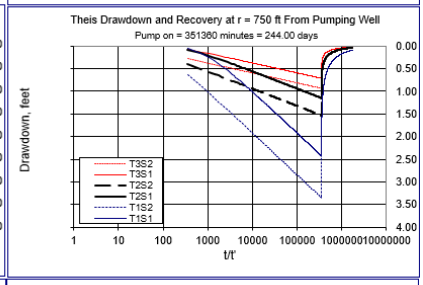
Input Data:	Var Name	Scenario 1	Scenario 2	Scenario 3	Units	
Total pumping time	t		244		d	
Radial distance from pumped well:	r		750		ft	Q conversions
Pumping rate	Q		0.025		cfs	11.22 gpm
Hydraulic conductivity	K	9.5	23	40	ft/day	0.03 cfs
Aquifer thickness	b		45		ft	1.50 cfm
Storativity	S_1		0.001			2,160.00 cfd
	S_2		0.0001			0.05 af/d
Transmissivity Conversions	T_ft2pd	427.5	1035	1800	ft2/day	
	T_ft2pm	0.296875	0.71875	1.25	ft2/min	Recalculate
	T_gpdpft	3197.7	7741.8	13464	gpd/ft	

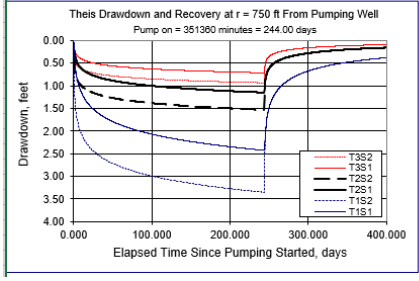
Use the Recalculate button if recalculation is set to manual

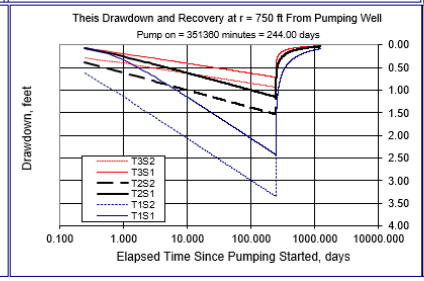


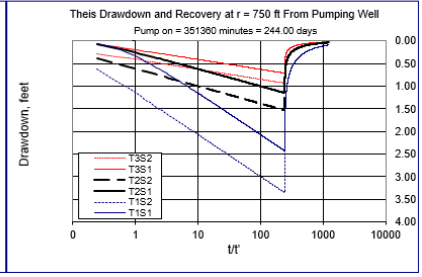












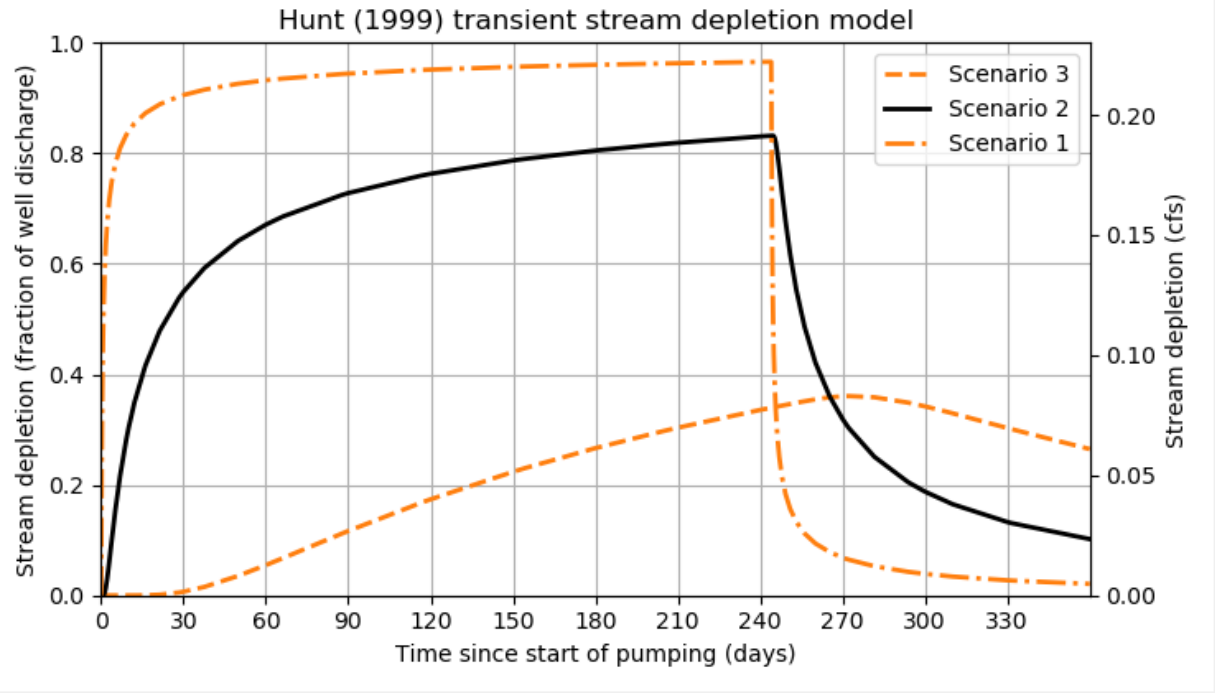
Hunt (1999) Stream Depletion Analysis: FROM-POA/POLK 1108 -Willamette River

Application type:	T
Application number:	14432
Well number:	POLK 1108
Stream Number:	1
Pumping rate (cfs):	0.23
Pumping duration (days):	244
Pumping start month number (3=March)	3.0

Parameter	Symbol	Scenario 1	Scenario 2	Scenario 3	Units
Distance from well to stream	a	2900	2900	2900	ft
Aquifer transmissivity	T	60000	14000	4000	ft2/day
Aquifer storativity	S	0.003	.03	0.2	-
Aquitard vertical hydraulic conductivity	Kva	0.5	0.5	0.5	ft/day
Not used		10.0	20.0	30.0	
Aquitard thickness below stream	babs	3	3	3	ft
Not used		0	0	0	
Stream width	ws	680	680	680	ft

Stream depletion for Scenario 2:

Days	10	330	360	30	60	90	120	150	180	210	240	270	300
Depletion (%)	30	13	10	55	67	73	76	79	81	82	83	32	19
Depletion (cfs)	0.07	0.03	0.02	0.13	0.15	0.17	0.18	0.18	0.19	0.19	0.19	0.07	0.04



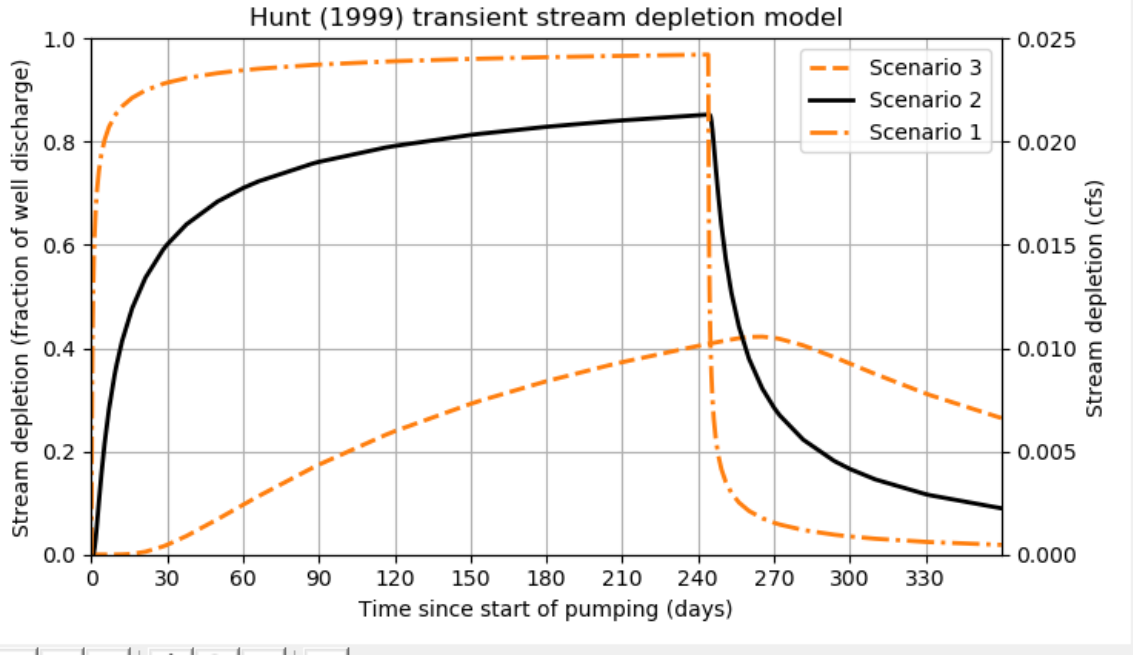
Hunt (1999) Stream Depletion Analysis: TO-POA/POLK 54845 - Willamette River

Application type:	T
Application number:	14432
Well number:	POLK 54845
Stream Number:	1
Pumping rate (cfs):	.025
Pumping duration (days):	244
Pumping start month number (3=March)	3.0

Parameter	Symbol	Scenario 1	Scenario 2	Scenario 3	Units
Distance from well to stream	a	2500	2500	2500	ft
Aquifer transmissivity	T	60000	14000	4000	ft2/day
Aquifer storativity	S	0.003	.03	0.2	-
Aquitard vertical hydraulic conductivity	Kva	0.5	0.5	0.5	ft/day
Not used		10.0	20.0	30.0	
Aquitard thickness below stream	babs	3	3	3	ft
Not used		0	0	0	
Stream width	ws	680	680	680	ft

Stream depletion for Scenario 2:

Days	10	330	360	30	60	90	120	150	180	210	240	270	300
Depletion (%)	37	12	9	60	71	76	79	81	83	84	85	29	17
Depletion (cfs)	0.01	0.00	0.00	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.00



Water Availability Table

WILLAMETTE R > COLUMBIA R - AB MOLALLA R
WILLAMETTE BASIN

Water Availability as of 6/11/2024

Watershed ID #: 182 (Map) Exceedance Level: 80%
Date: 6/11/2024 Time: 11:07 AM

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	21,400.00	2,300.00	19,100.00	0.00	1,500.00	17,600.00
FEB	23,200.00	7,490.00	15,700.00	0.00	1,500.00	14,200.00
MAR	22,400.00	7,260.00	15,100.00	0.00	1,500.00	13,600.00
APR	19,900.00	6,910.00	13,000.00	0.00	1,500.00	11,500.00
MAY	16,600.00	4,250.00	12,300.00	0.00	1,500.00	10,800.00
JUN	8,740.00	1,980.00	6,760.00	0.00	1,500.00	5,260.00
JUL	4,980.00	1,810.00	3,170.00	0.00	1,500.00	1,670.00
AUG	3,830.00	1,650.00	2,180.00	0.00	1,500.00	681.00
SEP	3,890.00	1,390.00	2,500.00	0.00	1,500.00	997.00
OCT	4,850.00	754.00	4,100.00	0.00	1,500.00	2,600.00
NOV	10,200.00	888.00	9,310.00	0.00	1,500.00	7,810.00
DEC	19,300.00	975.00	18,300.00	0.00	1,500.00	16,800.00
ANN	15,200,000.00	2,250,000.00	13,000,000.00	0.00	1,090,000.00	11,900,000.00