

Groundwater Application Review Summary Form

Application # G- 19453

GW Reviewer James Hootsmans Date Review Completed: 12/4/2024

Summary of GW Availability and Injury Review:

☐ Groundwater for the proposed use is either over appropriated, will not likely be available in the amounts requested without injury to prior water rights, OR will not likely be available within the capacity of the groundwater resource per Section B of the attached review form.

Summary of Potential for Substantial Interference Review:

☐ There is the potential for substantial interference per Section C of the attached review form.

Summary of Well Construction Assessment:

☐ The well does not appear to meet current well construction standards per Section D of the attached review form. Route through Well Construction and Compliance Section.

This is only a summary. Documentation is attached and should be read thoroughly to understand the basis for determinations and for conditions that may be necessary for a permit (if one is issued).

WATER RESOURCES DEPARTMENT

MEMO

December 4, 2024

TO: Application G- 19453

FROM: GW: James Hootsmans
(Reviewer's Name)

SUBJECT: Scenic Waterway Interference Evaluation

- ☐ YES The source of appropriation is hydraulically connected to a State Scenic Waterway or its tributaries
- ☐ NO
-
- ☐ YES Use the Scenic Waterway Condition (Condition 7J)
- ☐ NO
-
- ☐ Per ORS 390.835, the Groundwater Section is **able** to calculate ground water interference with surface water that contributes to a Scenic Waterway. The calculated interference is distributed below
-
- ☐ Per ORS 390.835, the Groundwater Section is **unable** to calculate ground water interference with surface water that contributes to a scenic waterway; **therefore, the Department is unable to find that there is a preponderance of evidence that the proposed use will measurably reduce the surface water flows necessary to maintain the free-flowing character of a scenic waterway**

DISTRIBUTION OF INTERFERENCE

Calculate the percentage of consumptive use by month and fill in the table below. If interference cannot be calculated, per criteria in 390.835, do not fill in the table but check the "unable" option above, thus informing Water Rights that the Department is unable to make a Preponderance of Evidence finding.

Exercise of this permit is calculated to reduce monthly flows in [Enter] Scenic Waterway by the following amounts expressed as a proportion of the consumptive use by which surface water flow is reduced.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date 12/4/2024
 FROM: Groundwater Section James Hootsmans
 Reviewer's Name
 SUBJECT: Application G- 19453 Supersedes review of _____
 Date of Review(s) _____

PUBLIC INTEREST PRESUMPTION; GROUNDWATER

OAR 690-310-130 (1) *The Department shall presume that a proposed groundwater use will ensure the preservation of the public welfare, safety and health as described in ORS 537.525. Department staff review groundwater applications under OAR 690-310-140 to determine whether the presumption is established. OAR 690-310-140 allows the proposed use be modified or conditioned to meet the presumption criteria. This review is based upon available information and agency policies in place at the time of evaluation.*

A. GENERAL INFORMATION: Applicant's Name: Highland Meadow Properties LLC County: Clackamas

A1. Applicant(s) seek(s) 0.66 cfs from 1 well(s) in the Willamette Basin,
 _____ subbasin

A2. Proposed use Nursery Seasonality: Year Round

A3. Well and aquifer data (attach and number logs for existing wells; mark proposed wells as such under logid):

POA Well	Logid	Applicant's Well #	Proposed Aquifer*	Proposed Rate(cfs)	Location (T/R-S QQ-Q)	Location, metes and bounds, e.g. 2250' N, 1200' E fr NW cor S 36
1	PROP 571	1	Alluvial	0.66*	5S/1E-2 NENW	
2						
3						
4						

* Alluvium, CRB, Bedrock

POA Well	Well Depth (ft)	Seal Interval (ft)	Casing Intervals (ft)	Liner Intervals (ft)	Perforations Or Screens (ft)	Well Yield (gpm)	Drawdown (ft)	Test Type
1	300	0 - 120	0 - 300		TBD			
2								
3								
4								

POA Well	Land Surface Elevation at Well (ft amsl)	Depth of First Water (ft bls)	SWL (ft bls)	SWL Date	Reference Level (ft bls)	Reference Level Date
1		NA	NA	NA		
2						
3						
4						

Use data from application for proposed wells.

A4. **Comments:** The applicant is proposing one new POA (PROP 571) for nursery use year-round with total annual use of 132.5 acre-feet across 26.5 acres. The POA is proposed to be located 2 miles northwest of the City of Molalla.

***Please note the applicant puts 0.66 cfs under max but 296.2 gpm as well specific rate in Section 3 table. For the purposes of this review, 0.66 cfs was used.**

A5. ☐ **Provisions of the** Willamette Basin rules relative to the development, classification and/or management of groundwater hydraulically connected to surface water ☐ **are**, or ☒ **are not**, activated by this application. (Not all basin rules contain such provisions.)
 Comments: The proposed POA wells are not located within ¼ mile of a perennial surface water source, therefore the pertinent basin rules do not apply.

A6. ☐ **Well(s) #** _____, _____, _____, _____, _____, tap(s) an aquifer limited by an administrative restriction.
 Name of administrative area: _____
 Comments: NA

B. GROUNDWATER AVAILABILITY CONSIDERATIONS, OAR 690-310-130, 400-010, 410-0070

B1. **Based upon available data**, I have determined that groundwater* for the proposed use:

- a. ☐ is over appropriated, ☒ is not over appropriated, or ☐ cannot be determined to be over appropriated during any period of the proposed use. * This finding is limited to the groundwater portion of the over-appropriation determination as prescribed in OAR 690-310-130;
- b. ☐ will not or ☐ will likely be available in the amounts requested without injury to prior water rights. * This finding is limited to the groundwater portion of the injury determination as prescribed in OAR 690-310-130;
- c. ☐ will not or ☐ will likely to be available within the capacity of the groundwater resource; or
- d. ☒ will, if properly conditioned, avoid injury to existing groundwater rights or to the groundwater resource:
- i. ☒ The permit should contain condition #(s) 7RLN, medium water use reporting;
- ii. ☒ The permit should be conditioned as indicated in item 2 below.
- iii. ☐ The permit should contain special condition(s) as indicated in item 3 below;

- B2. a. ☐ **Condition** to allow groundwater production from no deeper than _____ ft. below land surface;
- b. ☒ **Condition** to allow groundwater production from no shallower than 120 ft. below land surface;
- c. ☐ **Condition** to allow groundwater production only from the alluvial groundwater reservoir ~~between approximately~~ _____ ft. and _____ ft. below land surface;
- d. ☐ **Well reconstruction** is necessary to accomplish one or more of the above conditions. The problems that are likely to occur with this use and without reconstructing are cited below. Without reconstruction, I recommend withholding issuance of the permit until evidence of well reconstruction is filed with the Department and approved by the Groundwater Section.

Describe injury –as related to water availability– that is likely to occur without well reconstruction (interference w/ senior water rights, not within the capacity of the resource, etc): _____

- B3. **Groundwater availability remarks:** The applicant's wells are located in an area that contains fine grained alluvial sediments from land surface to a depth of approximately 20-40 feet. A 100 feet thick package of sand and gravel underlies the fine-grained sediments. Underlying the sand and gravel is a >800 feet thick sequence of mostly fine-grained alluvial sediments. Thin beds of sands and gravels are found withing this sequence, but their aerial extent is limited (Gannett and Caldwell, 1998).

The closest other groundwater rights are owned by the applicant, Wells 1 through 4 (CLAC 2229, CLAC 17695, CLAC 60032, CLAC 66672) in the adjacent properties. This proposed use would potentially primarily injure themselves.

Other nearby groundwater rights include domestic wells and proposed wells in currently pending applications (such as G-19395 – PROP 469 and 470). Therefore, a radial distance of a quarter mile was used to assess injury. Potential injury to other nearby groundwater rights was analyzed using the Theis equation for drawdown in a confined aquifer (Theis, 1935). Hydraulic parameters used for the analysis were derived from regional data and studies (Pumping Test Reports, Conlon et al., 2003, 2005; Iverson, 2002; McFarland and Morgan, 1996; Woodward et al., 1998) or are within a typical range of values for the parameter within the hydrogeologic regime (Freeze and Cherry, 1979). Assuming a continuous pumping rate of 0.66 cfs (~247 gpm) year-round under the most likely hydraulic parameters, results using the Theis equation indicate that pumping of PROP 571 is not anticipated to affect another groundwater right such that said right would not be able to divert water to which it is legally entitled (see Theis Drawdown Analysis, attached).

Reported yields for nearby wells range from approximately 20 to 520 gpm, with a median yield of 50 gpm. Although the requested rate under this application is approximately 5x the median yield in this area, it would not be outside the range of reported yields. Therefore, it cannot be stated that the proposed use would exceed available capacity of the groundwater resource in this area, if properly conditioned.

Recent water levels for nearby observation wells do not indicate persistent or widespread declines in the Willamette Aquifer in this area (see Observation Well Data, attached). One of the POAs owned by this applicant, CLAC 60032, has been reporting annual water level measurements since 2005 and water levels appear to be stable. Therefore, the aquifer systems should be capable of supporting the rate requested on this application.

C. GROUNDWATER/SURFACE WATER CONSIDERATIONS, OAR 690-09-040**C1. 690-09-040 (1):** Evaluation of aquifer confinement:

Well	Aquifer or Proposed Aquifer	Confined	Unconfined
1	Alluvial	☒	☐
		☐	☐
		☐	☐
		☐	☐

Basis for aquifer confinement evaluation: Nearby well logs indicate that static water levels are typically somewhat higher than the elevation of respective water-bearing zones. The confining fine-grained sediment is, in places, incised by local drainages, producing local confinement that likely varies by location and well construction. Considering the proposed well depth, the POA wells are likely to produce from confined zones at depth within the alluvial aquifer system.

C2. 690-09-040 (2) (3): Evaluation of distance to, and hydraulic connection with, surface water sources. All wells located a horizontal distance less than ¼ mile from a surface water source that produce water from an unconfined aquifer shall be assumed to be hydraulically connected to the surface water source. Include in this table any streams located beyond one mile that are evaluated for PSI.

Well	SW #	Surface Water Name	GW Elev ft msl	SW Elev ft msl	Distance (ft)	Hydraulically Connected?			Potential for Subst. Interfer. Assumed?	
						YES	NO	ASSUMED	YES	NO
1	1	Bear Creek	200 - 220	160 - 230	2650	☒	☐	☐	☐	☒
1	2	Wheeler Creek	200 - 220	200 - 240	1750	☒	☐	☐	☐	☒
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐

Basis for aquifer hydraulic connection evaluation: Water levels in nearby wells are similar with local stream reaches. Regional water table maps indicate that ground water discharges to nearby streams, suggesting a hydraulic connection between groundwater and local surface water bodies. However, the presence of fine-grained sediment overlying the aquifer results in an inefficient hydraulic connection.

Water Availability Basin the well(s) are located within: PUDDING R>MOLALLA R-AB MILL CREEK (151)

C3a. 690-09-040 (4): Evaluation of stream impacts for each well that has been determined or assumed to be **hydraulically connected and less than 1 mile** from a surface water (SW) source. Limit evaluation to instream rights and minimum stream flows that are pertinent to that SW source, not lower SW sources to which the stream under evaluation is tributary. Compare the requested rate against the 1% of 80% *natural* flow for the pertinent Water Availability Basin (WAB). If Q is not distributed by well, use full rate for each well. Any checked ☒ box indicates the well is assumed to have the potential to cause PSI.

Well	SW #	Well < ¼ mile?	Qw > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Qw > 1% ISWR?	80% Natural Flow (cfs)	Qw > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
1	1	☐	☐	NA		☐	67.30	☐	<<25%	☐
1	2	☐	☐	NA		☐	67.30	☐	<<25%	☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐

	SW #		Qw > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Qw > 1% ISWR?	80% Natural Flow (cfs)	Qw > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
			☐			☐		☐		☐
			☐			☐		☐		☐

[illegible]

Basis for impact evaluation:

C4b. **690-09-040 (5) (b) The potential to impair or detrimentally affect the public interest is to be determined by the Water Rights Section.**

- C5. ☐ **If properly conditioned**, the surface water source(s) can be adequately protected from interference, and/or groundwater use under this permit can be regulated if it is found to substantially interfere with surface water:
- ☐ The permit should contain condition #(s) _____;
 - ☐ The permit should contain special condition(s) as indicated in "Remarks" below;

C6. **SW / GW Remarks and Conditions:** _____

References Used: Application Files: G17099, G19453

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., 2003, *Unsteady stream depletion when pumping from semiconfined aquifer*: Journal of Hydrologic Engineering, January/February, 2003.

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.

United States Geological Survey, 2013, National Elevation Dataset (NED) [DEM geospatial data]. 1/9th arc-second, updated 2013.

Woodward, D.G., Gannett, M.W., and Vaccaro, J.J., 1998, Hydrogeologic framework of the Willamette Lowland aquifer system, Oregon and Washington: U.S. Geological Survey Professional Paper 1424-B, 82 p.

D. WELL CONSTRUCTION, OAR 690-200

D1. **Well #:** _____ **Logid:** _____

D2. **THE WELL does not appear to meet current well construction standards based upon:**

- a. ☐ review of the well log;
- b. ☐ field inspection by _____;
- c. ☐ report of CWRE _____;
- d. ☐ other: (specify) _____

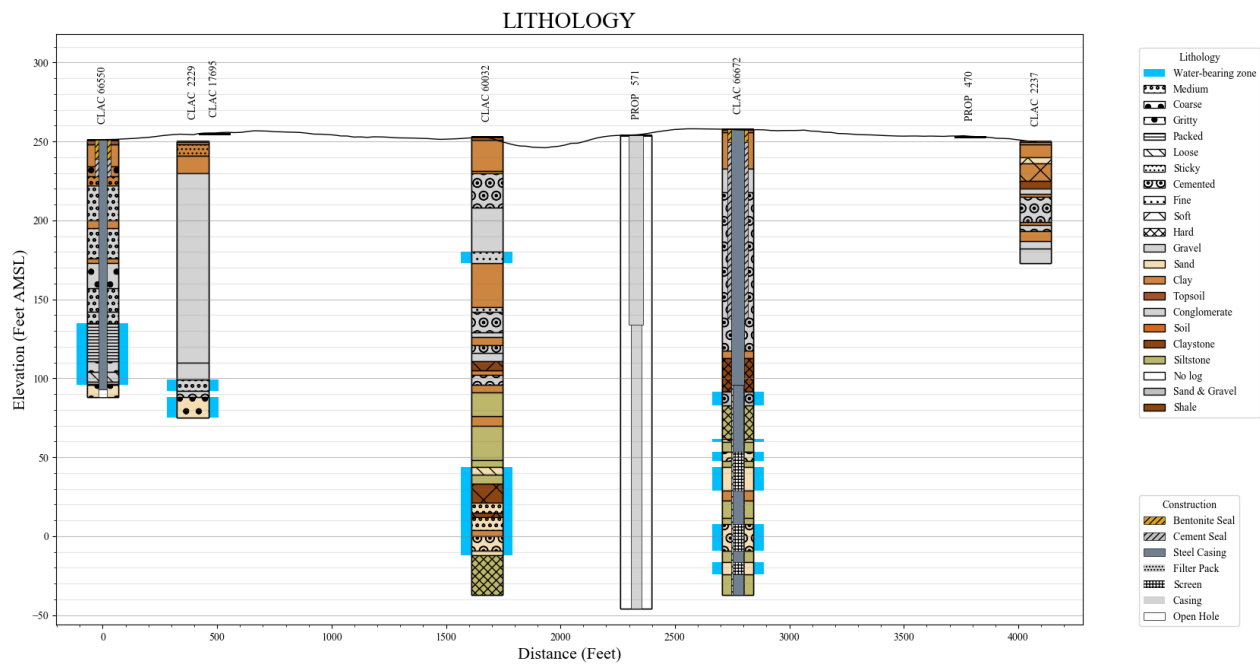
D3. **THE WELL construction deficiency or other comment is described as follows:** _____

D4. ☐ **Route to the Well Construction and Compliance Section for a review of existing well construction.**

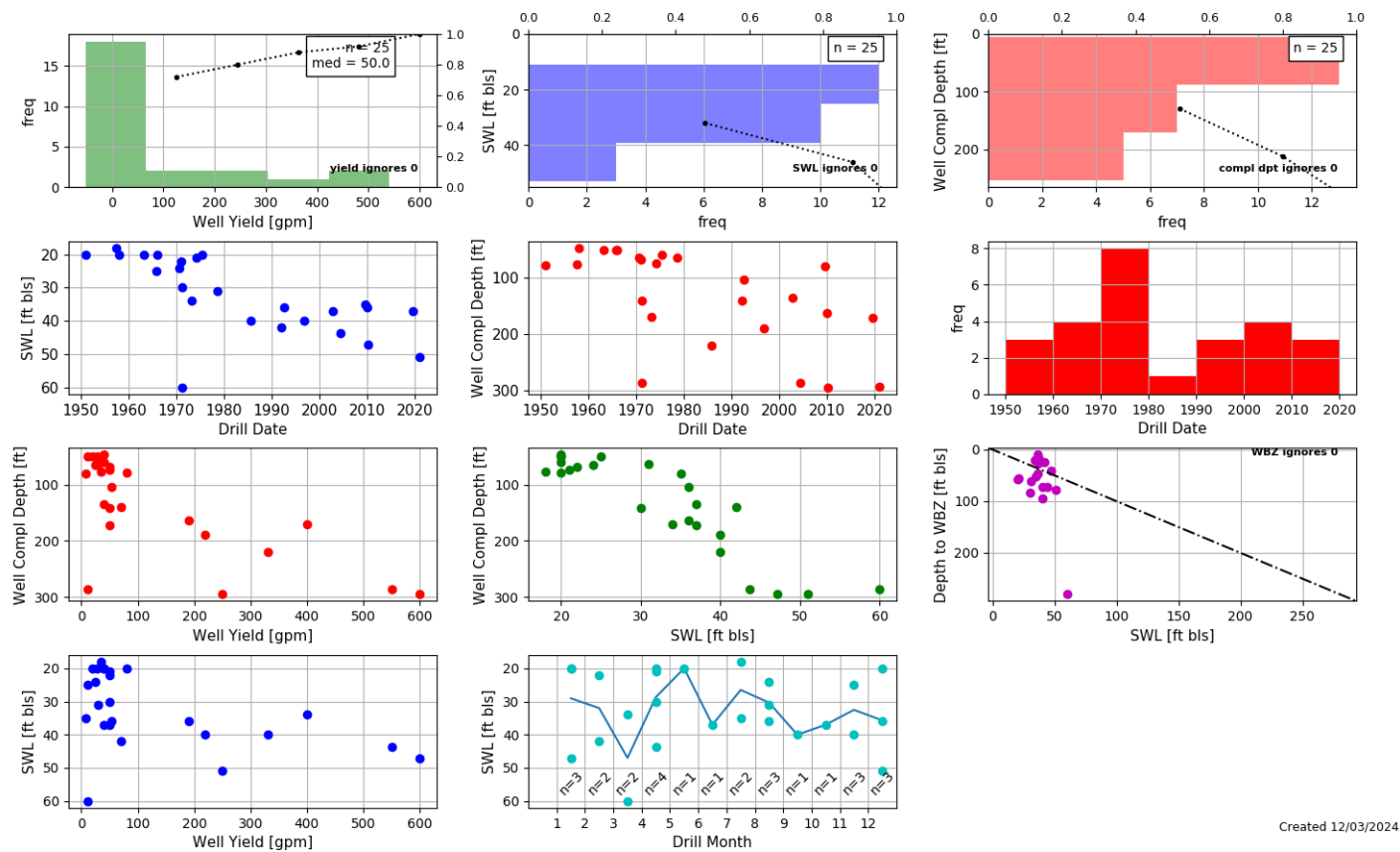
G19453 Highland Meadow Properties LLC



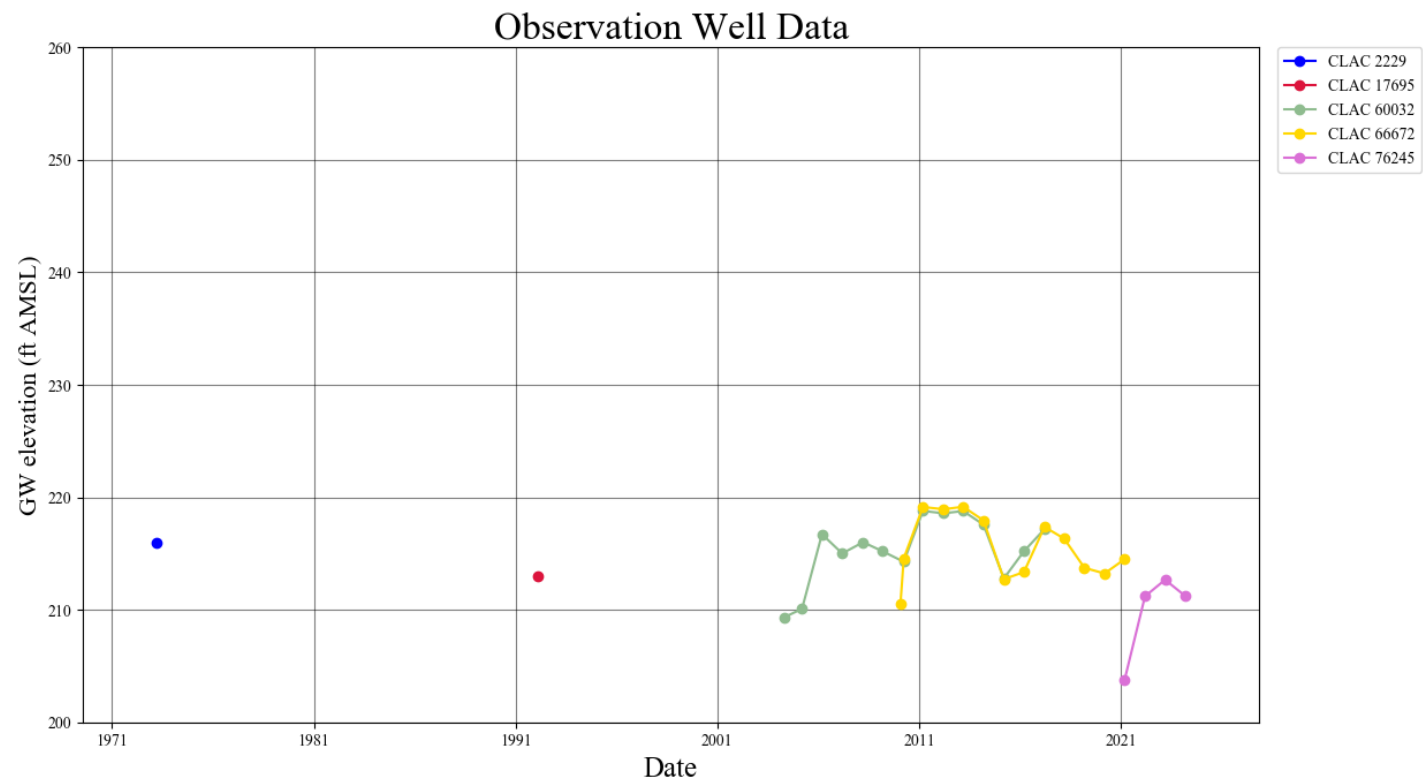
Cross-Section



Well Statistics



Water-Level Measurements in Nearby Wells

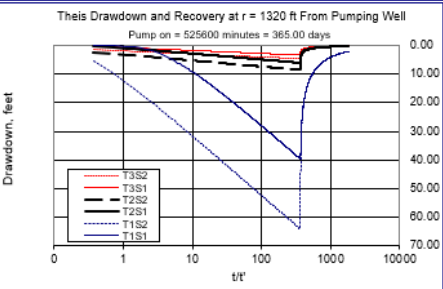
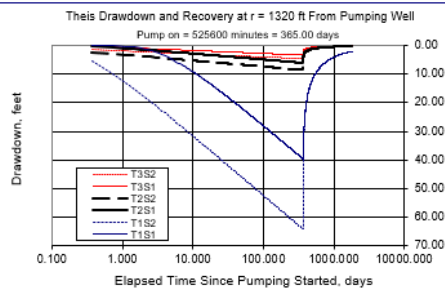
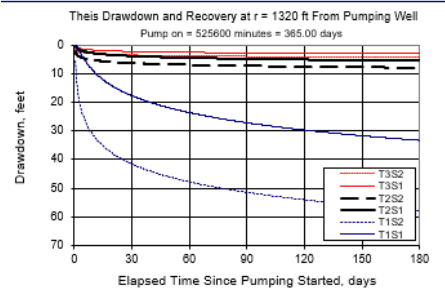
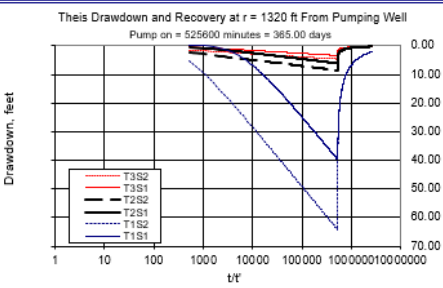
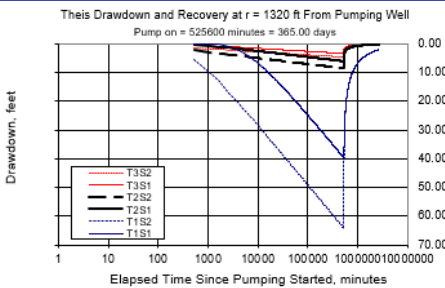
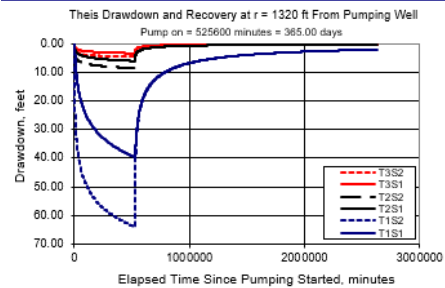
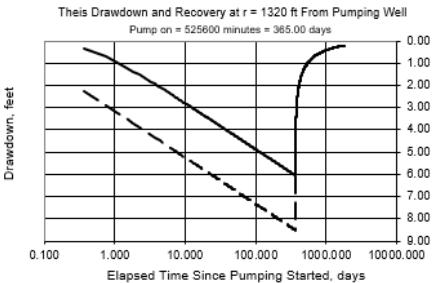


Theis Interference Analysis

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 17, 2019

Input Data:	VarName	Scenario 1	Scenario 2	Scenario 3	Units
Total pumping time	t		365		d
Radial distance from pumped well:	r		1320		ft
Pumping rate	Q		0.66		cfs
Hydraulic conductivity	K	5	50	100	ft/day
Aquifer thickness	b		100		ft
Storativity	S ₁		0.003		
	S ₂		0.0002		
Transmissivity Conversions	T _{f2pd}	500	5000	10000	ft ² /day
	T _{ft2pm}	0.34722222	3.4722222	6.9444444	ft ² /min
	T _{gpdft}	3740	37400	74800	gpd/ft

Use the Recalculate button if recalculation is set to manual



Water Availability Tables

Water Availability Analysis
Detailed Reports

PUDDING R > MOLALLA R - AB MILL CR
WILLAMETTE BASIN

Watershed ID #: 151 [\(Map\)](#)
Date: 12/4/2024

Water Availability as of 12/4/2024

Exceedance Level: 80%
Time: 12:17 PM

Water Availability Calculation

Consumptive Uses and Storages

Water Rights

Instream Flow Requirements

Reservations

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	1,040.00	125.00	915.00	0.00	80.00	835.00
FEB	1,180.00	114.00	1,070.00	0.00	80.00	986.00
MAR	1,010.00	76.50	934.00	0.00	80.00	854.00
APR	787.00	52.40	735.00	0.00	80.00	655.00
MAY	425.00	51.00	374.00	0.00	80.00	294.00
JUN	224.00	73.10	151.00	0.00	50.00	101.00
JUL	109.00	115.00	-6.14	0.00	40.00	-46.10
AUG	71.00	94.30	-23.30	0.00	36.00	-59.30
SEP	67.30	53.50	13.80	0.00	36.00	-22.20
OCT	91.60	11.50	80.10	0.00	50.00	30.10
NOV	363.00	48.50	314.00	0.00	80.00	234.00
DEC	957.00	118.00	839.00	0.00	80.00	759.00
ANN	706,000.00	56,300.00	650,000.00	0.00	46,500.00	606,000.00