

# Groundwater Application Review Summary Form

Application # G- 19456

GW Reviewer Gabriela Ferreira Date Review Completed: December 13, 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 13, 2024

TO: Application G- 19456

FROM: GW: Gabriela Ferreira  
(Reviewer's Name)

SUBJECT: Scenic Waterway Interference Evaluation

☐ YES The source of appropriation is hydraulically connected to a State Scenic  
☒ NO Waterway or its tributaries

☐ YES  
☒ NO Use the Scenic Waterway Condition (Condition 7J)

☐ 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 December 13, 2023  
 FROM: Groundwater Section Gabriela Ferreira  
 Reviewer's Name  
 SUBJECT: Application G- 19456 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: Vasile Cristian and Mioara Strava County: Clackamas

A1. Applicant(s) seek(s) 0.4 cfs from 3 well(s) in the Willamette Basin,  
 \_\_\_\_\_ subbasin

A2. Proposed use Irrigation (32.3 acres) Seasonality: March 1 – October 31

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

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	CLAC 59747	Well 1	Alluvial	0.40	3S/1E – 25	1710' S 2390' W fr NE cor S 25
2	PROPOSED	Well 2	Alluvial	0.40	3S/1E – 25	1540' S 2280' W fr NE cor S 25
3	PROPOSED	Well 3	Alluvial	0.40	3S/1E – 25	1775' S 2245' W fr NE cor S 25

\* 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	258	0 – 34 235 – 240	+1.5 – 240	N/A	N/A <sup>a</sup>	25	N/A	Air
2	300	0 – 30	0 – 300	TBD	TBD	TBD	TBD	TBD
3	300	0 – 30	0 – 300	TBD	TBD	TBD	TBD	TBD

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	215 <sup>b</sup>	56	78	11/24/2003	TBD	TBD
2	220 <sup>b</sup>	TBD	TBD	TBD	TBD	TBD
3	210 <sup>b</sup>	TBD	TBD	TBD	TBD	TBD

Use data from application for proposed wells.

A4. **Comments:** The proposed POA/POU is approximately 3 miles northwest of Molalla. Applicant proposes irrigation use on 41.8 acres by one well already constructed (CLAC 12433) and one well to be constructed.

<sup>a</sup> The well construction indicates that the well is open hole from 240 to 241 feet bls, with gravel backfill placed from 241 to 258 feet bls. The well is effectively open from 240 to 258 feet bls.

<sup>b</sup> Land surface elevation from LIDAR at the proposed well location (OLC, 2016)

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 is greater than 1/4-mile from the nearest perennial surface water source and will develop a confined aquifer; therefore, per OAR 690-502-0160 the relevant Willamette Basin rules (OAR 690-502-0050) do not apply.

A6. ☐ **Well(s) #** \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, tap(s) an aquifer limited by an administrative restriction.

Name of administrative area: N/A

Comments: N/A

**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, Static Water Level Condition;
  - 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 \_\_\_\_\_ 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 proposed POAs are located in the central Willamette Valley and will produce from water-bearing sand and gravel layers within the Willamette Confining Unit, estimated to be approximately 600 feet thick (Gannett and Caldwell, 1998). Bedrock (Columbia River Basalt group) is encountered approximately 600 feet below land surface (bls). The majority of wells in the immediate vicinity draw water from the upper Willamette Confining Unit (see attached well statistics).

Within approximately one mile of the proposed POA locations, there are 10 water rights, for irrigation and nursery use wells completed in the alluvial aquifer system, with several more exempt (domestic) wells also in the area. Reported maximum yields in the nearby alluvial wells (mostly domestic) typically range up to 70 gpm. Well deepenings are not prevalent. The pump test for proposed POA CLAC 59747 reported a yield of 25 gpm, which is substantially less than the requested rate (180 gpm).

The nearest groundwater user was identified as proposed Well 2 under Application G-19229, located approximately 460 feet northwest of the proposed POA 2. Despite not being complete or approved as a POA, nor fully penetrating the alluvial aquifer system, potential impacts on the proposed well were modeled using the attached Theis drawdown analysis and assuming the full duty and rate of the proposed POA. Transmissivity values are based on pump tests from nearby alluvial wells. It appears unlikely that interference would produce drawdown at the proposed well in excess of the typical permit condition limits

Seven wells with sufficient water level data for evaluation were identified within approximately 2 miles of the proposed POAs, ranging in total depth from 110 to 270 feet bls. Reported water level elevations for these wells range from about 110 feet above mean sea level (amsl) to 180 feet amsl. Variable water level behavior is observed, particularly in CLAC 12211 which also has the longest data record available ~30 feet of variability following an initial reported decline). Nearly 20 feet of decline is observed in water levels from CLAC 51243 from 2013 to 2024. There is not a preponderance of evidence to support that the water levels in the alluvial groundwater reservoir are declined excessively or excessively declining; therefore, the groundwater reservoir is not over-appropriated.

**Permit condition 7RLN is recommended to assess potential future injury concerns, and as a means to monitor long-term groundwater conditions in this area.**

**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	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Alluvial	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Alluvial	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Basis for aquifer confinement evaluation:** Nearby wells completed in the Willamette Confining Unit report SWLs above the water-bearing zone(s), indicating a confined aquifer or series of aquifers. The reported water-bearing zone for the completed construction of Well 1 (CLAC 59747) is from 247 to 257 with a reported static water level of 78 feet bls. Several fine-grained sediment layers are reported overlying water-bearing zones.

**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 <sup>1</sup>	SW Elev ft msl <sup>2</sup>	Distance (ft)	Hydraulically Connected?			Potential for Subst. Interfer. Assumed?	
						YES	NO	ASSUMED	YES	NO
1	1	Unnamed Tributary to Parrott Creek	140 - 160	325 - 100	1,610	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	1	Unnamed Tributary to Parrott Creek	140 - 160	325 - 100	1,400	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	1	Unnamed Tributary to Parrott Creek	140 - 160	325 - 100	1,530	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Basis for aquifer hydraulic connection evaluation:** <sup>1</sup> Estimated groundwater elevation is based on Gannett and Caldwell (1998) and reported static water level in Well 1 (CLAC 59747).

<sup>2</sup> Estimated surface water elevation and distance is provided for the nearest perennial reach for the Unnamed Tributary to Parrott Creek and elevation of the downstream reach of Parrott Creek within one mile (OLC, 2016; USGS 2014).

Because the reported groundwater elevation and water-bearing zones for CLAC 59747 are coincident with or slightly above the estimated elevation ranges for the listed surface water sources, the aquifer system proposed to be accessed by the POA is efficiently hydraulically connected to those stream reaches.

**Water Availability Basin the well(s) are located within:**

**SW 1: Molalla River > Willamette River – at mouth (WID # 69796)**

**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?
2	1	<input type="checkbox"/>	<input type="checkbox"/>	N/A	N/A	<input type="checkbox"/>	134.00	<input type="checkbox"/>	<< 25%	<input type="checkbox"/>

**C3b. 690-09-040 (4):** Evaluation of stream impacts by total appropriation for all wells determined or assumed to be **hydraulically connected and less than 1 mile** from a surface water source. **Complete only if Q is distributed among wells.** Otherwise same evaluation and limitations apply as in C3a above.

	SW #		Q <sub>w</sub> > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Q <sub>w</sub> > 1% ISWR?	80% Natural Flow (cfs)	Q <sub>w</sub> > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
			<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
			<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>

**Comments:** C3a: The Hunt 2003 analytical stream depletion model was used to estimate 30-day interference at SW 1 (Unnamed Tributary to Parrott Creek) caused by pumping Well 2 to estimate the maximum anticipated interference, based on proximity and similar hydrologic conditions. Model parameters are derived from nearby pumping tests and published values (Freeze and Cherry, 1979). Model results indicate that interference is expected to be much less than 25% of the maximum allocated pumping rate at 30 days. The model was not applied to the other scenarios because they are farther from respective streams or have a reduced pumping rate, and thus, given a similar hydrogeologic setting, the estimated 30-day stream depletion percentages would be even less than that estimated for the Well 2/SW 1 scenario.

C3b: Not applicable.

- C4a. **690-09-040 (5):** Estimated impacts on **hydraulically connected surface water sources greater than one mile** as a percentage of the proposed pumping rate. Limit evaluation to the effects that will occur up to one year after pumping begins. This table encompasses the considerations required by 09-040 (5)(a), (b), (c) and (d), which are not included on this form. Use additional sheets if calculated flows from more than one WAB are required.

Non-Distributed Wells													
Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
Distributed Wells													
Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
(A) = Total Interf.													
(B) = 80 % Nat. Q													
(C) = 1 % Nat. Q													
(D) = (A) > (C)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
(E) = (A / B) x 100		%	%	%	%	%	%	%	%	%	%	%	%

(A) = total interference as CFS; (B) = WAB calculated natural flow at 80% exceed. as CFS; (C) = 1% of calculated natural flow at 80% exceed. as CFS; (D) = highlight the checkmark for each month where (A) is greater than (C); (E) = total interference divided by 80% flow as percentage.

**Basis for impact evaluation:**

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- 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:
- i. ☐ The permit should contain condition #(s)\_\_\_\_\_;
  - ii. ☐ The permit should contain special condition(s) as indicated in "Remarks" below;

**C6. SW / GW Remarks and Conditions:** \_\_\_\_\_

### References Used:

Application File G-19456

Water well reports and data: CLAC 12208, CLAC 12211, CLAC 50982, CLAC 50982, CLAC 51243, CLAC 59747, CLAC 69332, CKAC 72055, CLAC 72892

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

Hunt, B., 2003, Unsteady stream depletion when pumping from semiconfined aquifer: Journal of Hydrologic Engineering, January/February, Vol 8, p. 12-19.

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.

Oregon Lidar Consortium (OLC), 2016, OLC metro 2014 lidar project, Oregon Department of Geology & Mineral Industries, Portland, OR, November 30.

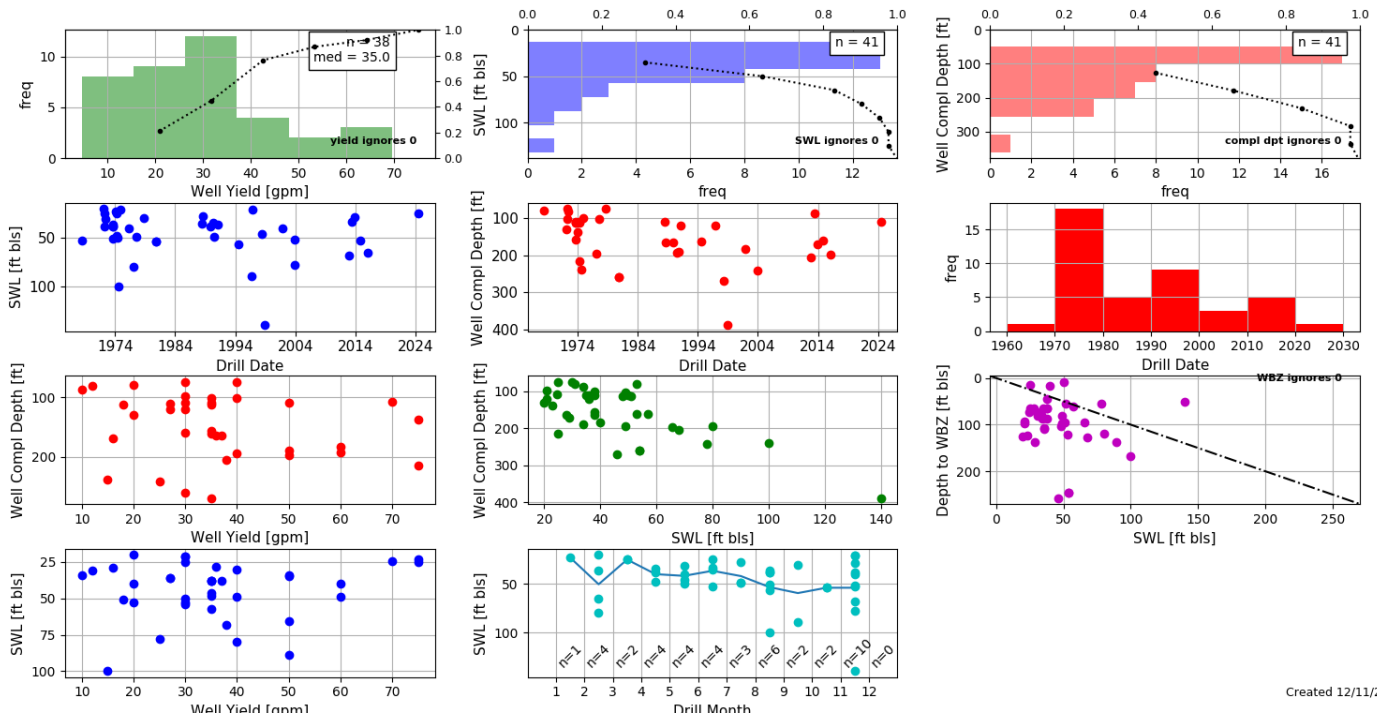
United States Geological Survey, 2014, National Hydrography Dataset (NHD), 1:24,000, U. S. Department of the Interior, Reston, VA.

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.

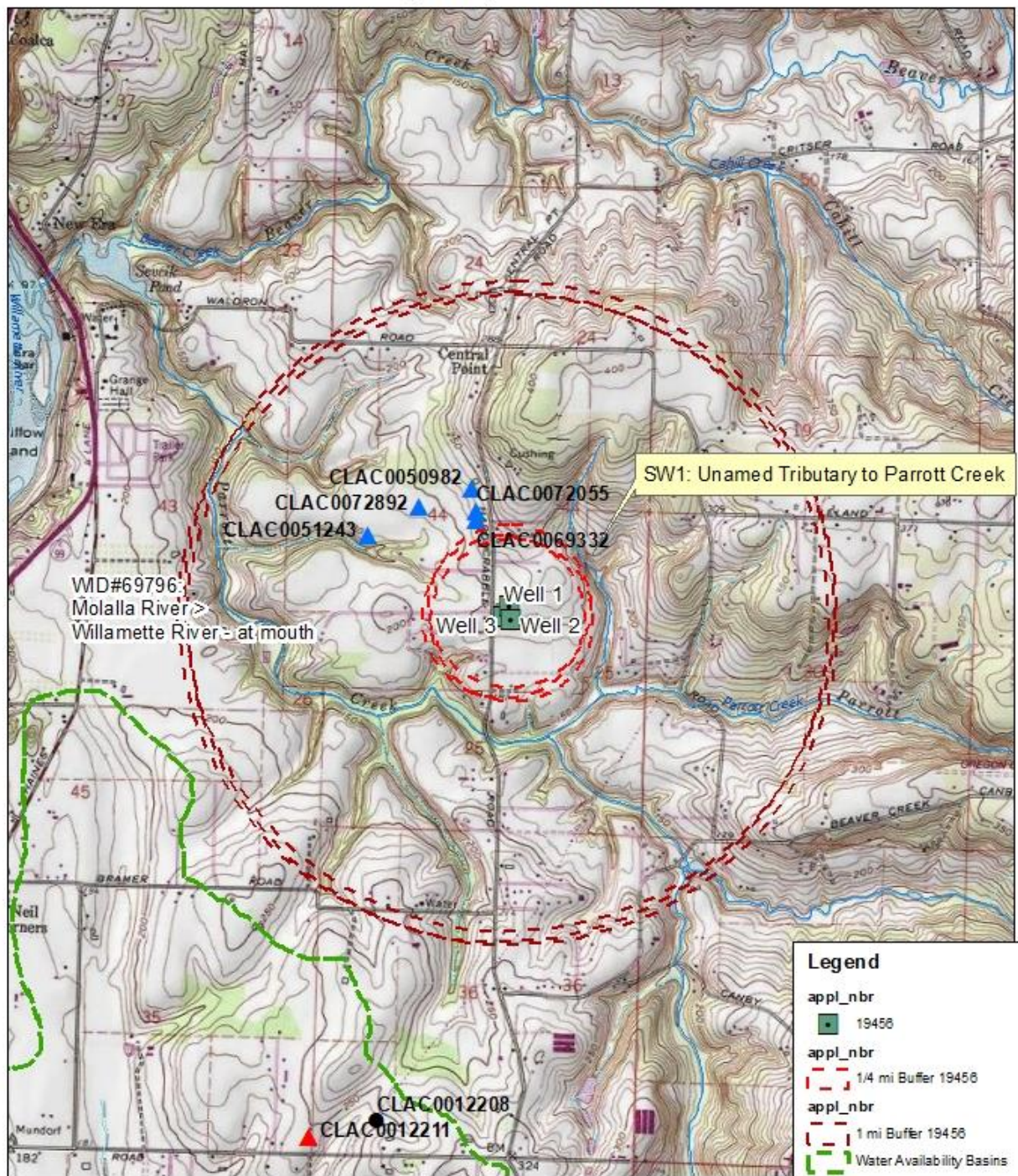


**D. WELL CONSTRUCTION, OAR 690-200**

- D1. Well #: 1 Logid: CLAC 12344
- D2. **THE WELL does not appear to meet current well construction standards based upon:**
- ☐ review of the well log;
  - ☐ field inspection by \_\_\_\_\_;
  - ☐ report of CWRE \_\_\_\_\_;
  - ☐ 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.**

**Well Statistics**

## Well Location Map

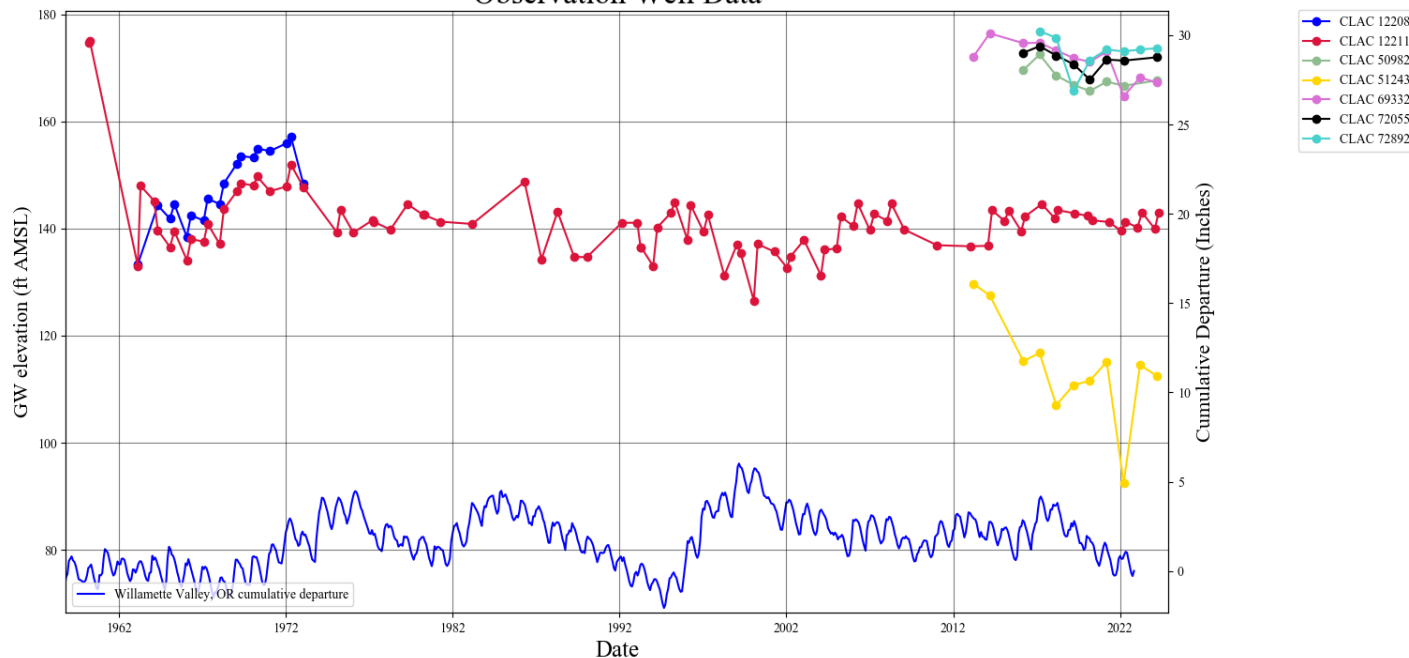
**Application G-19456 Cristian Strava**  
**T3S, R1E, Section 25**

Main Map Scale = 1:24,000

Service Layer Credits: Copyright© 2013 National Geographic Society, i-couted

## Water-Level Measurements in Nearby Wells

## Observation Well Data



## Modeled Interference with proposed Well 2 (App G-19229) from pumping proposed Well 2 (App G-19456)

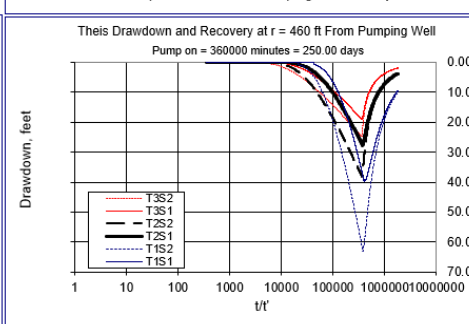
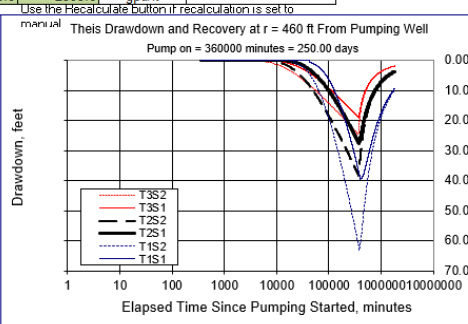
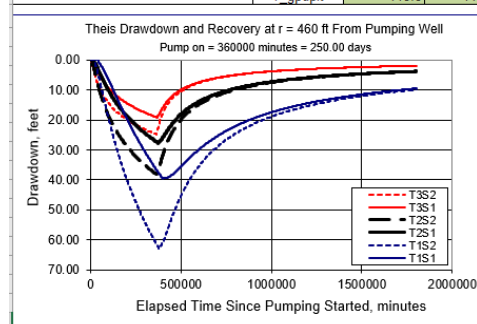
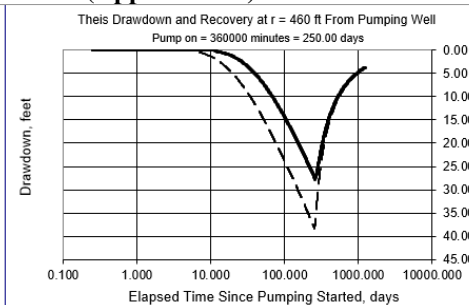
## Theis Time-Drawdown Worksheet v.5.00

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	$t$		250		d
Radial distance from pumped well:	$r$		460		ft
Pumping rate	$Q$		0.4		cfs
Hydraulic conductivity	$K$	1.5	4	8	ft/day
Aquifer thickness	$b$		40		ft
Storativity	$S_1$		0.1		
	$S_2$		0.05		
Transmissivity Conversions	$T_{ft2pd}$	60	160	320	ft <sup>2</sup> /day
	$T_{ft2pm}$	0.04166667	0.11111111	0.22222222	ft <sup>2</sup> /min
	$T_{gpdft}$	448.8	1196.8	2393.6	gpd/ft

Recalculate





Water Availability Tables

Water Availability Analysis  
Detailed Reports

MOLALLA R > WILLAMETTE R - AT MOUTH  
WILLAMETTE BASIN

Watershed ID #: 69796 [\(Map\)](#)  
Date: 12/13/2024

Water Availability as of 12/13/2024

Exceedance Level: 80%  
Time: 10:25 AM

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

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	1,870.00	155.00	1,720.00	0.00	500.00	1,220.00
FEB	2,010.00	145.00	1,870.00	0.00	500.00	1,370.00
MAR	1,830.00	113.00	1,720.00	0.00	500.00	1,220.00
APR	1,530.00	86.80	1,440.00	0.00	500.00	943.00
MAY	927.00	98.40	829.00	0.00	500.00	329.00
JUN	431.00	120.00	311.00	0.00	500.00	-189.00
JUL	204.00	187.00	17.40	0.00	200.00	-183.00
AUG	139.00	157.00	-17.60	0.00	100.00	-118.00
SEP	134.00	83.20	50.80	0.00	150.00	-99.20
OCT	188.00	39.90	148.00	0.00	450.00	-302.00
NOV	637.00	79.80	557.00	0.00	500.00	57.20
DEC	1,700.00	150.00	1,550.00	0.00	500.00	1,050.00
ANN	1,320,000.00	85,400.00	1,240,000.00	0.00	295,000.00	966,000.00

Stream Depletion (Hunt) Model Analysis

