

# Groundwater Application Review Summary Form

Application # G- 18912

GW Reviewer Phil Marcy Date Review Completed: 04/03/2020

## 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**

April 3, 2020

**TO:** Application G- 18912

**FROM:** GW: Phil Marcy  
(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 \_\_\_\_\_ 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



**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) **7C (7 years of measurements); "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 \_\_\_\_\_ ft. below land surface;
- c.  **Condition** to allow groundwater production only from the \_\_\_\_\_ 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:** Based upon available data, there is not sufficient evidence that groundwater is over-appropriated. The nearest observation wells are located more than one mile from proposed POA locations, and do not display significant declines. There is little development within one mile of the proposed POAs, and given this distance and the relatively low pumping rate, interference with nearby senior rights is unlikely.

Based on nearby water well reports, the proposed POA are anticipated to produce water from thin beds of water-bearing sand and possibly some gravel between 200 to 250 ft below land surface (bls). Most nearby water well reports indicate fine-grained sediments overlying observed water-bearing zones. Trimble (1963) and Hampton (1972) have mapped the Tertiary (Neogene) sediments in this area as part of the Troutdale Formation (Fmn); however, Leonard and Collins (1983) mapped the area of interest as part of the undifferentiated Troutdale Fmn and Sandy River Mudstone, the latter of which they describe as "500 to 700 ft of mostly dark, thin-bedded siltstone and claystone" that locally "contains thin beds of sandstone or conglomerate that yield a few to about 50 gal/min to wells that are a few hundred feet deep[.]" Hydrostratigraphically, the predominantly fine-grained sediments in this area have been assigned to the Willamette confining unit of Woodward et al. (1998), estimated at greater than 800 ft thick in the area of interest. Although Leonard and Collins (1983) mapped a narrow lobe of Boring Lava at land surface in this area, based on nearby well logs, it appears that any lava near this location is thin and has been very deeply weathered.

**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	Troutdale Fmn./Sandy River Mudstone	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Troutdale Fmn./Sandy River Mudstone	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>

**Basis for aquifer confinement evaluation:** Reported static water levels from completed wells typically rise above the elevations of productive zones within the local aquifer system, indicating confined conditions.

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	Parrott Creek	~160*	125-410	1430	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	1	Parrott Creek	~160*	125-410	1420	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	2	Unnamed Trib to South	~160*	125-383	1330	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	2	Unnamed trib to South	~160*	125-383	1380	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Basis for aquifer hydraulic connection evaluation:**

\* Water level elevations for proposed wells based upon similarly constructed wells nearby.

Groundwater elevations from wells producing from the target aquifer fall easily within the range of surface water elevations within one mile of the proposed POA locations. According to our conceptual model, hydraulic connection is facilitated by stream incision of productive horizons within the Troutdale Formation, such as sands and gravels, which contribute to local surface water flow.

**Water Availability Basin the well(s) are located within:** WILLAMETTE R> COLUMBIA R- AT MOUTH

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	<input type="checkbox"/>	<input type="checkbox"/>	NA	NA	<input type="checkbox"/>	4890	<input type="checkbox"/>	<25%	<input type="checkbox"/>
2	1	<input type="checkbox"/>	<input type="checkbox"/>	NA	NA	<input type="checkbox"/>	4890	<input type="checkbox"/>	<25%	<input type="checkbox"/>
1	2	<input type="checkbox"/>	<input type="checkbox"/>	NA	NA	<input type="checkbox"/>	4890	<input type="checkbox"/>	<25%	<input type="checkbox"/>
2	2	<input type="checkbox"/>	<input type="checkbox"/>	NA	NA	<input type="checkbox"/>	4890	<input type="checkbox"/>	<25%	<input type="checkbox"/>





**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: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

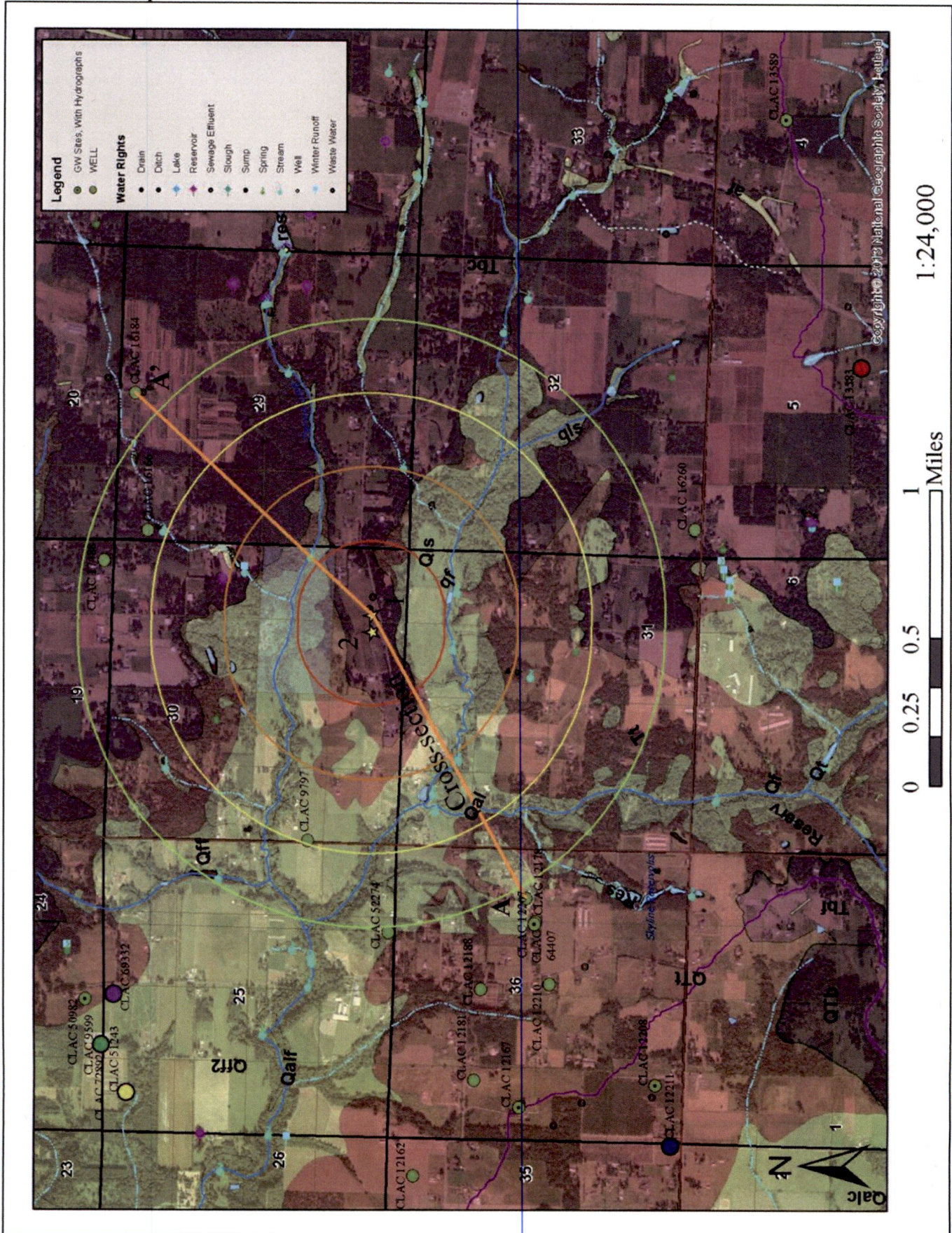
D4.  Route to the Well Construction and Compliance Section for a review of existing well construction.

**Water Availability Tables**

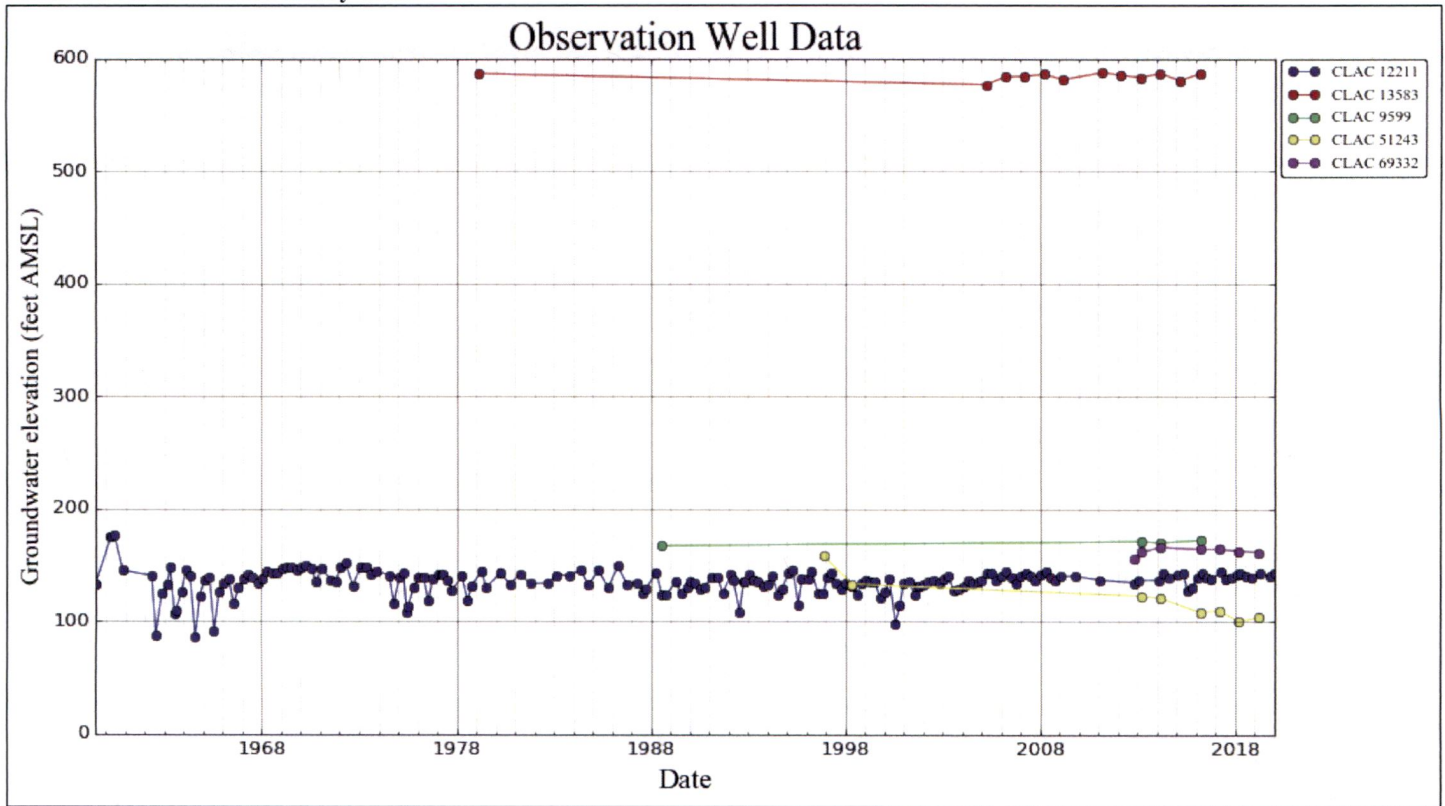
DETAILED REPORT ON THE WATER AVAILABILITY CALCULATION						
Watershed ID #: 181		WILLAMETTE R > COLUMBIA R - AT MOUTH			Exceedance Level: 80	
Time: 10:39 AM		Basin: WILLAMETTE			Date: 04/03/2020	
Month	Natural Stream Flow	Consumptive Use and Storage	Expected Stream Flow	Reserved Stream Flow	Instream Requirements	Net water Available
Monthly values are in cfs. Storage is the annual amount at 50% exceedance in ac-ft.						
JAN	27,500.00	2,700.00	24,800.00	0.00	1,500.00	23,300.00
FEB	30,000.00	7,970.00	22,000.00	0.00	1,500.00	20,500.00
MAR	28,500.00	7,550.00	21,000.00	0.00	1,500.00	19,500.00
APR	25,400.00	7,190.00	18,200.00	0.00	1,500.00	16,700.00
MAY	20,700.00	4,430.00	16,300.00	0.00	1,500.00	14,800.00
JUN	11,000.00	2,360.00	8,640.00	0.00	1,500.00	7,140.00
JUL	6,280.00	2,310.00	3,970.00	0.00	1,500.00	2,470.00
AUG	4,890.00	2,070.00	2,820.00	0.00	1,500.00	1,320.00
SEP	4,930.00	1,690.00	3,240.00	0.00	1,500.00	1,740.00
OCT	5,990.00	733.00	5,260.00	0.00	1,500.00	3,760.00
NOV	12,700.00	1,040.00	11,700.00	0.00	1,500.00	10,200.00
DEC	24,800.00	1,360.00	23,400.00	0.00	1,500.00	21,900.00
ANN	19,700,000	2,480,000	17,300,000	0	1,090,000	16,200,000



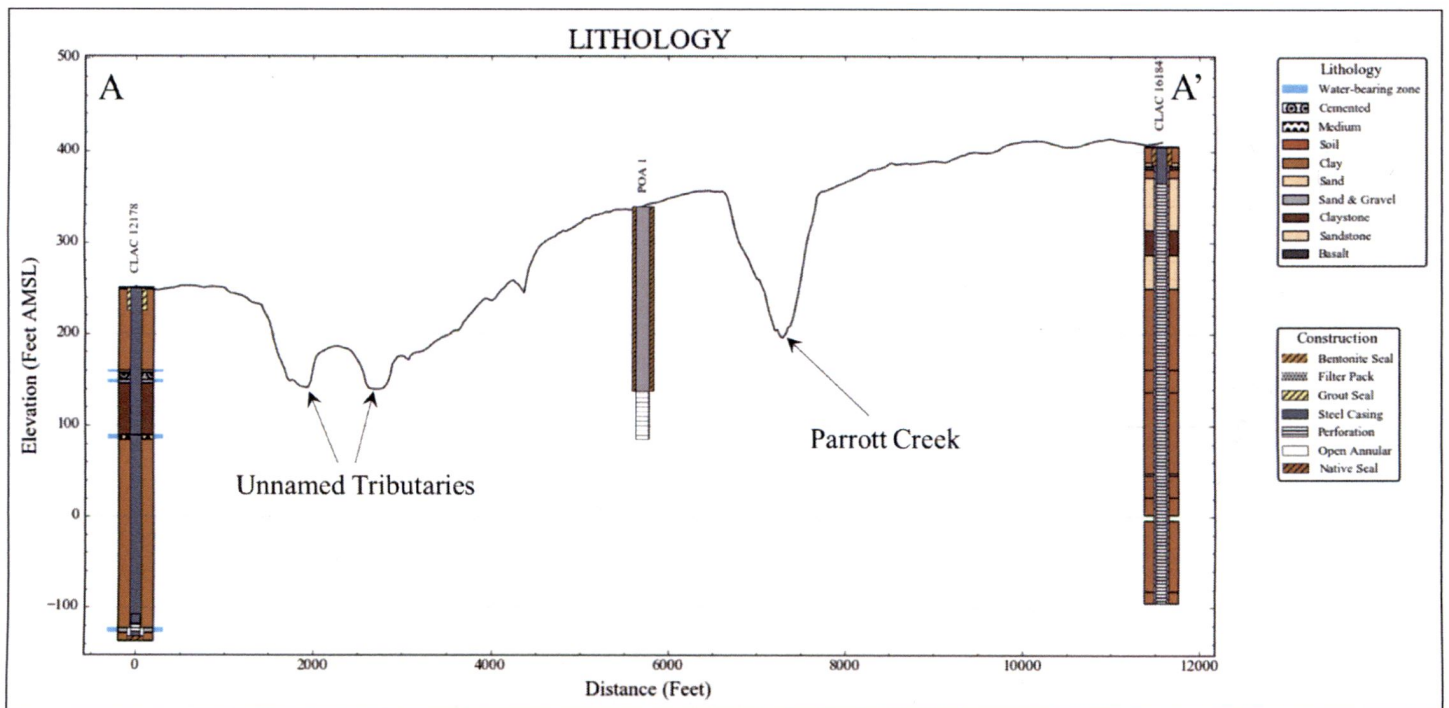
### Well Location Map



Water-Level Trends in Nearby Wells



Water level data from nearby wells display reasonably stable water levels. Color symbols are shown on location map.



Water-bearing zones accessed by most nearby wells, and the proposed POA wells, are at elevations coincident with the range of elevations of nearby incised drainages. Production from these wells in the Lower Troutdale/Sandy River Mudstone sequence is limited to fairly thin horizons of sands and gravels within thick sequences of mudstone.