

Groundwater Application Review Summary Form

Application # G- 19465

GW Reviewer James Hootsmans Date Review Completed: 2/21/2025

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

[Month Day, Year]

TO: Application G- 19465

FROM: GW: James Hootsmans
(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 2/21/2025
 FROM: Groundwater Section James Hootsmans
 Reviewer's Name
 SUBJECT: Application G- 19465 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: Kristin and Gautam Paul County: Benton

A1. Applicant(s) seek(s) 0.061 cfs from 2 well(s) in the Willamette Basin,
Marys River subbasin

A2. Proposed use Nursery Seasonality: Year Round (1/1 – 12/31)

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 617	1	Tertiary Marine Volcanic and Sed Rock	0.061	12S/6W-26 SESE	490' N, 1290' W fr SE cor S 26
2	PROP 618	1	Tertiary Marine Volcanic and Sed Rock	0.061	12S/6W-26 SWSE	490' N, 1655' W fr SE cor S 26

* 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	150	0-25	0-150		TBD			
2	150	0-25	0-150		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	459.5					
2	450.5					

Use data from application for proposed wells.

A4. **Comments:** The proposed POA are ~3 miles southwest of the City of Philomath, Oregon. The maximum annual volume of appropriation for the proposed irrigated acreage is 25 acre-feet (af) based on the applicable duty of 2.5 af/acre for 5 acres. The applicant is requesting a rate of 0.061 cubic feet per second(cfs), which is about 27.4 gallons per minute (gpm).

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 ¼ mile from the nearest perennial surface water source and would produce water from a confined aquifer; therefore, per OAR 690-502-0240, the relevant Willamette Basin rules (690-502-0120) 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, 7t (measuring tube), 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 Marine Volcanic and Sedimentary Rock 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 proposes to complete two POA to a depth of 150 feet in an area of complex geological structures. The POA would be drilled into the sandstones of the Spencer Formation of Turner (Yeats 1996), Eocene age marine sedimentary rocks. Within the vicinity of the proposed POA locations, there are a number of faults and folds including a regional plunging anticline. The region includes Early Western Cascade Volcanics that are calc-alkaline intrusive, volcanic, and volcanoclastic rocks that make up the base of the Cascade Arc volcanics and overlie and interfinger with the Eocene marine sedimentary sequence of the Cascadia Forearc Basin. Quaternary surficial deposits are found along the nearby Bull Run Creek and Evergreen Creeks. Heading west towards the Coastal Range, rocks of the Tyee Formation and Siletz Terrane of the Siletz River Volcanics are encountered.

The subject wells will both be completed in the low-yield bedrock aquifer system, which is composed of Tertiary marine sedimentary and volcanic rocks. This system generally has low porosity, low permeability, and low well yield. Most of the available pore space in this unit is likely to occur in fractures where groundwater is confined by the low-permeability matrix (Conlon, 2005; Woodward et al., 1998). Fractured rock aquifers generally have large seasonal water level fluctuations, and the cone of depression from a pumping well is expected to be narrow and steep (large drawdown at the pumping well, limited horizontal extent). Hydraulic connection to nearby streams is likely but anticipated to be inefficient due to the low vertical permeability of the overlying fine-grained sediments and intermittent fracturing that facilitates hydraulic connectivity. The proposed POA will be completed at surface elevations greater than 100 feet higher than where local streams are incised to.

The Spencer formation is yield limited, with median irrigation well yield of less than 38 gpm. In the location of the proposed POA there are limited irrigation wells and mostly shallow domestic wells. BENT 6158 on Cert 37060 OR is only the irrigation POA within a mile (approximately 5000 feet away) and it has a well test of 22 gpm. The closest observation well with multiple water level data points is BENT 5252, which is 3.2 miles to the northeast. BENT 5252 has remained stable with seasonal fluctuations. The closest domestic well, BENT 56745, is owned by the applicant. **Therefore, the groundwater resource that the proposed POA would develop from is likely not over appropriated.**

At the time of this review, there is no appropriate model for this fracture dominated area with complex folding features to quantify drawdown so well-to-well interference for injury was not assessed. However, given the low requested rate, the proposed use is not likely to cause well-to-well interference with nearby irrigation and domestic wells.

Reported yields from regional wells (TRS 12S 6W 26 and surrounding sections) range from less than 1 to ~90 gpm, with a median of 20 gpm (see attached Well Statistics). The proposed rate of ~27.4 gpm (~0.061 cfs) is slightly more than the median yield reported for water wells in this area, and about a quarter of the maximum reported yield.

The applicant will likely be able to achieve the requested maximum rate with the proposed POA, if properly conditioned.

A review of the currently available water level data in the vicinity of the POA indicates that data is very limited and short duration in the area. As discussed above, the closest observation well is 3.2 miles away. Given the requested maximum rate is similar to well yields in the area, and the low amount of use in the area, the proposed use is most likely within the capacity of the resource (See Observation Well Data).

In order to protect senior users and the groundwater resource, the conditions specified in B1(d)(i) and B2(c) are recommended for any permit issued pursuant to this application. In addition, the following Special Conditions are recommended for any permit issued pursuant to this application.

Special Conditions:

1. A dedicated water-level measuring tube shall be installed in the production well. The measuring tube shall meet the standards described in OAR 690-215-0060. When requested, access to the well shall be provided to Department staff in order to make water-level measurements.
 2. Drill cuttings shall be collected at 10-foot intervals and at changes in formation in the well and a split of each sampled interval shall be provided to the Department.
 3. Copies of all geologic and hydrogeologic reports completed for the permittee during the development of the well, including geophysical well logs and borehole video logs, shall be provided to the Department. Except for borehole video logs, two paper copies, or a single electronic copy, shall be provided of each report. Digital tables of any data shall be provided upon request.
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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	Marine Bedrock	☒	☐
2	Marine Bedrock	☒	☐
		☐	☐
		☐	☐

Basis for aquifer confinement evaluation: Reported water levels in nearby well logs report most static water levels rise above the water-bearing zone, indicating aquifer confinement.

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	Bull Run Creek	400-440	300-400	2630	☒	☐	☐	☐	☒
2	1	Bull Run Creek	400-440	300-400	2400	☒	☐	☐	☐	☒
1	2	Evergreen Creek	400-440	270 - 350	5050	☒	☐	☐	☐	☒
2	2	Evergreen Creek	400-440	270 - 350	5030	☒	☐	☐	☐	☒

Basis for aquifer hydraulic connection evaluation: The groundwater elevation and water-bearing zones are higher than the nearby streams, indicating local groundwater is likely discharging to surface water, consistent with Woodward et al (1998) findings that groundwater discharges to surface water. Well 1 and Well 2 are limited to production from fractures in the Spencer Formation, and water levels differ greatly from SW1, SW2 and other nearby surface water bodies. Hydraulic connection to nearby streams is likely but anticipated to be inefficient due to the low vertical permeability of the overlying fine-grained sediments and intermittent fracturing that facilitates hydraulic connectivity.

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

Well 1, Well 2 and SW2: Marys R > Willamette R – AB Muddy Creek

SW1: Muddy CR > Marys R – AB Evergreen Creek

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	☐	☐	MF122A	10	☐	11.80	☐	*	☐
1	2	☐	☐	MF122A	10	☐	11.80	☐	*	☐
2	1	☐	☐	NA		☐	6.10 ^a	☐	*	☐
2	2	☐	☐	NA		☐	6.10 ^a	☐	*	☐

	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?
			☐			☐		☐		☐
			☐			☐		☐		☐

^aThe requested rate is equal to 1% of 80% Natural Flow, therefore it does not exceed. PSI is not assumed.

[illegible]

Basis for impact evaluation:

D. WELL CONSTRUCTION, OAR 690-200

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

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

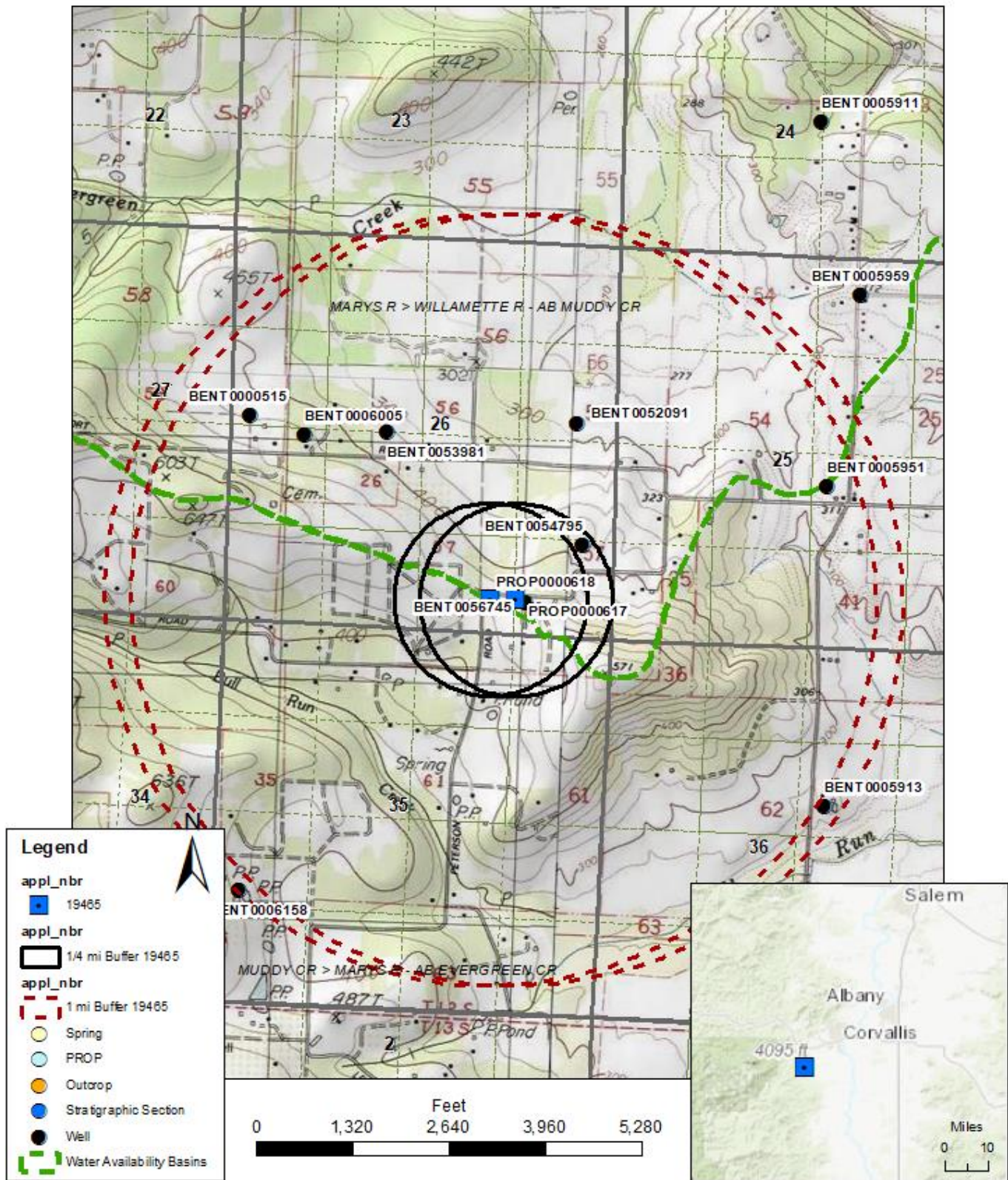
- a. ☐ review of the well log;
- b. ☐ field inspection by _____;
- c. ☐ report of CWRE _____;
- d. ☐ other: (specify) _____

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.**

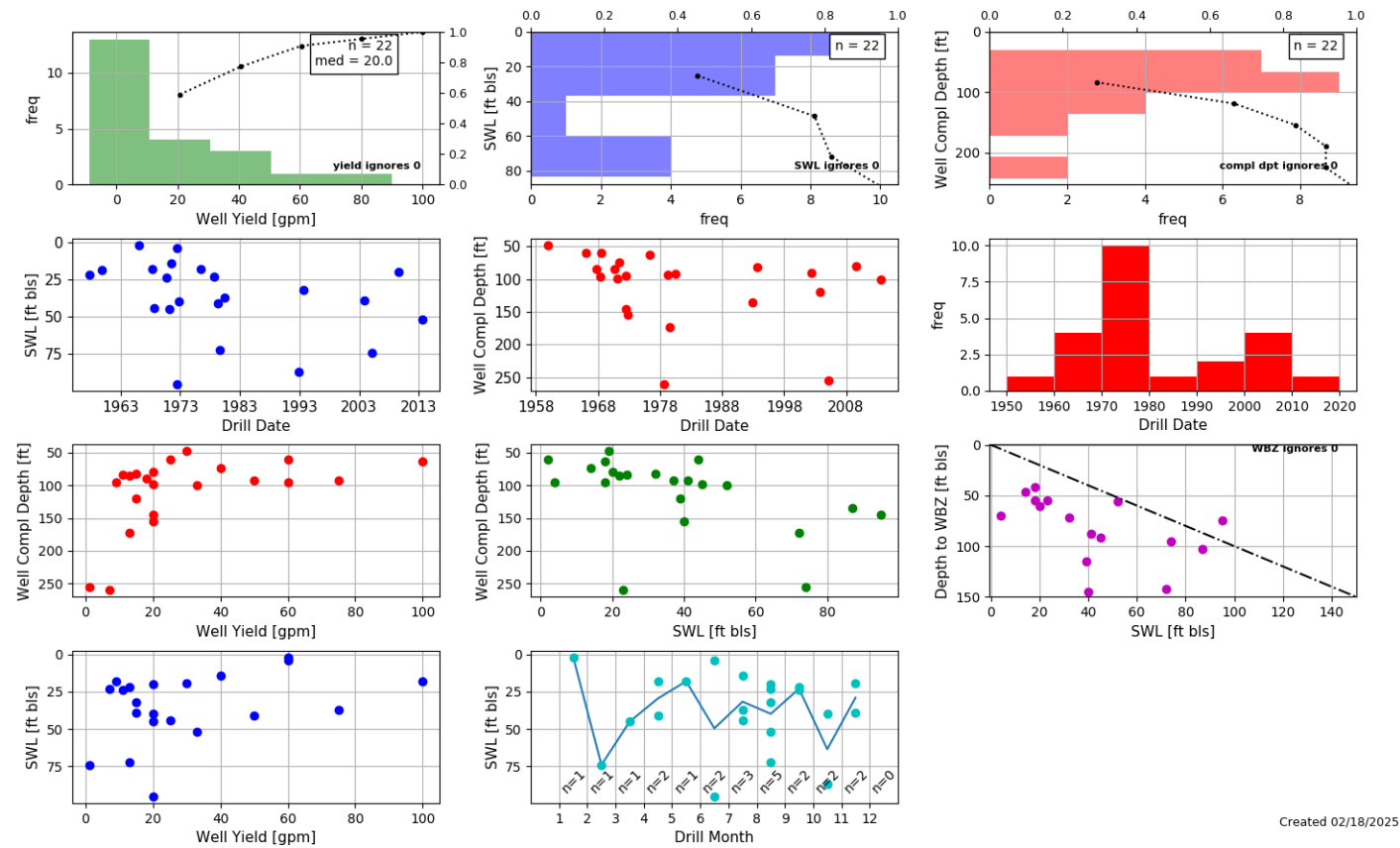
Well Location Map

G19465 Kaul



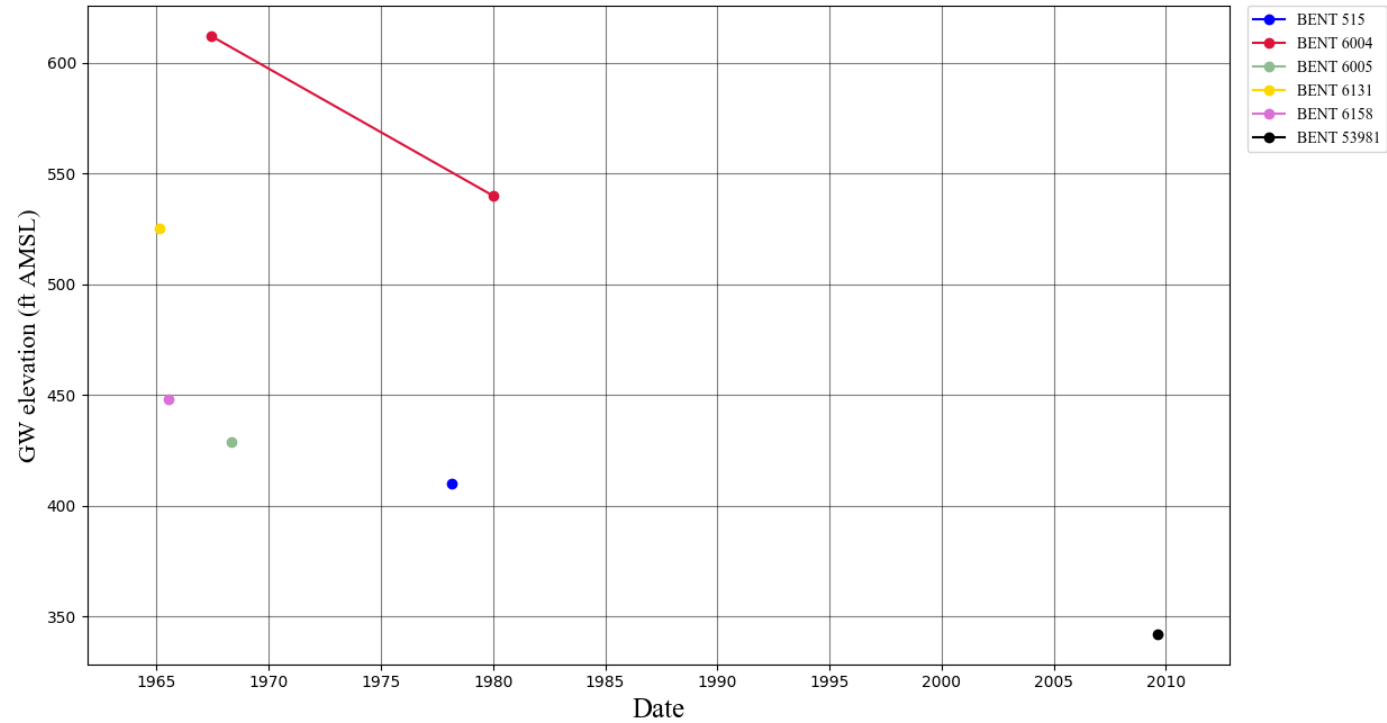
Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community
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Well Statistics



Water-Level Measurements in Surrounding Wells

Observation Well Data



Water Availability Tables

Water Availability Analysis
Detailed Reports

MARYS R > WILLAMETTE R - AB MUDDY CR
WILLAMETTE BASIN
Water Availability as of 2/21/2025

Watershed ID #: 122 (Map)
Date: 2/21/2025

Exceedance Level: 80%
Time: 1:05 PM

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	393.00	5.47	348.00	0.00	135.00	213.00
FEB	410.00	5.44	405.00	0.00	135.00	270.00
MAR	350.00	5.43	345.00	0.00	135.00	210.00
APR	229.00	5.55	223.00	0.00	135.00	88.40
MAY	119.00	5.60	112.00	0.00	135.00	-22.60
JUN	57.40	11.10	46.30	0.00	70.00	-23.70
JUL	23.30	13.50	9.81	0.00	20.00	-10.20
AUG	13.30	12.30	1.47	0.00	15.00	-13.50
SEP	11.80	10.00	1.77	0.00	15.00	-13.20
OCT	15.00	5.40	9.60	0.00	38.70	-29.10
NOV	49.70	5.30	44.40	0.00	135.00	-90.60
DEC	271.00	5.43	266.00	0.00	135.00	131.00
ANN	222,000.00	5,550.00	217,000.00	0.00	95,400.00	152,000.00

Download Data ([Text - Formatted](#), [Text - Tab Delimited](#), [Excel](#))

Water Availability Analysis
Detailed Reports

MUDDY CR > MARYS R - AB EVERGREEN CR
WILLAMETTE BASIN
Water Availability as of 2/21/2025

Watershed ID #: 30200320 (Map)
Date: 2/21/2025

Exceedance Level: 80%
Time: 1:07 PM

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	188.00	3.53	184.00	0.00	0.00	184.00
FEB	191.00	3.18	188.00	0.00	0.00	188.00
MAR	185.00	2.82	183.00	0.00	0.00	183.00
APR	85.50	1.99	86.50	0.00	0.00	86.50
MAY	51.00	4.73	46.30	0.00	0.00	46.30
JUN	27.00	8.27	18.70	0.00	0.00	18.70
JUL	13.90	13.80	0.13	0.00	0.00	0.13
AUG	8.30	11.10	-2.77	0.00	0.00	-2.77
SEP	6.10	5.76	0.34	0.00	0.00	0.34
OCT	7.10	0.84	6.16	0.00	0.00	6.16
NOV	19.20	1.11	18.10	0.00	0.00	18.10
DEC	118.00	3.27	115.00	0.00	0.00	115.00
ANN	105,000.00	3,670.00	102,000.00	0.00	0.00	102,000.00

Download Data ([Text - Formatted](#), [Text - Tab Delimited](#), [Excel](#))