

Approved:



# MEMO

**To:** Kristopher Byrd, Well Construction Manager  
**From:** Tommy Laird, Well Construction Program Coordinator  
**Subject:** Review of Water Right Application G-19187  
**Date:** February 27, 2024

The attached application was forwarded to the Well Construction Section by the Groundwater Section. Gabriela Ferreira and Dennis Orłowski reviewed the application. Please see Gabriela's and Dennis' Groundwater Review and the Well Reports.

Applicant's Well #1 (CLAC 9601): Based on a review of the Well Report, Well #1 does not appear to comply with current minimum well construction standards (See OAR 690 Division 210). The problem is that the Well Report indicates that the well seal was placed with an unapproved seal method and the well head is flush with land surface. In order to meet minimum construction standards, the well must be recased and resealed with an approved grout to a minimum depth of 18 feet bgs and the well head must be extended so that it is at least one-foot above land surface.

My recommendation is that the Department **not issue** a permit for Well #1 unless it is brought into compliance with current minimum well construction standards or information is provided showing that it is constructed to meet current minimum well construction standards.

The construction of Well #1 may not satisfy hydraulic connection issues.

Applicant's Well #2 (Proposed): Well #2 is a proposed well, therefore it cannot be reviewed for construction. Construction of this proposed well shall be completed in a manner that protects ground water resources as required under Oregon Administrative Rules 690-200 through 690-240. During construction of this well, specific attention should be paid to ensure sealing requirements are met and that the well does not commingle aquifers.

The construction of proposed Well #2 may not satisfy hydraulic connection issues.

Applicant's Well #3 (CLAC 69332): Based on a review of the Well Report, Applicant's Well #3 seems to protect the groundwater resource.

The construction of Well #3 may not satisfy hydraulic connection issues.

Applicant's Well #4 (Proposed): Well #4 is a proposed well, therefore it cannot be reviewed for construction. Construction of this proposed well shall be completed in a manner that protects ground water resources as required under Oregon Administrative Rules 690-200 through 690-240. During construction of this well, specific attention should be paid to ensure sealing requirements are met and that the well does not commingle aquifers.

The construction of proposed Well #4 may not satisfy hydraulic connection issues.



State Well No. 35/1E-2566  
State Permit No. \_\_\_\_\_

**(1) OWNER:**

Name John Emery  
Address 113 Foothills Rd.  
Lake Oswego, Oregon 97034

**(2) TYPE OF WORK (check):**

New Well  Deepening  Reconditioning  Abandon   
If abandonment, describe material and procedure in Item 12.

**(3) TYPE OF WELL:**

Rotary  Driven   
Cable  Jetted   
Dug  Bored

**(4) PROPOSED USE (check):**

Domestic  Industrial  Municipal   
Irrigation  Test Well  Other

**CASING INSTALLED:**

Threaded  Welded   
6" Diam. from 0 ft. to 75 ft. Gage .250  
" Diam. from ft. to ft. Gage  
" Diam. from ft. to ft. Gage

**PERFORATIONS:**

Perforated?  Yes  No.

Type of perforator used \_\_\_\_\_  
Size of perforations in. by in.  
perforations from ft. to ft.  
perforations from ft. to ft.  
perforations from ft. to ft.

**(7) SCREENS:**

Well screen installed?  Yes  No

Manufacturer's Name \_\_\_\_\_  
Type \_\_\_\_\_ Model No. \_\_\_\_\_  
Diam. Slot size Set from ft. to ft.  
Diam. Slot size Set from ft. to ft.

**(8) WELL TESTS:**

Drawdown is amount water level is lowered below static level

Was a pump test made?  Yes  No If yes, by whom?  
Yield: 40 gal./min. with total ft. drawdown after 1 hrs.  
" " " " "  
" " " " "  
Bailer test gal./min. with ft. drawdown after hrs.  
Artesian flow g.p.m.

Temperature of water \_\_\_\_\_ Depth artesian flow encountered \_\_\_\_\_ ft.

**(9) CONSTRUCTION:**

Well seal—Material used cement  
Well sealed from land surface to 18 ft.  
Diameter of well bore to bottom of seal 10 in.  
Diameter of well bore below seal 6 in.  
Number of sacks of cement used in well seal 6 sacks  
How was cement grout placed? poured

Was a drive shoe used?  Yes  No Plugs \_\_\_\_\_ Size: location \_\_\_\_\_ ft.

Did any strata contain unusable water?  Yes  No

Type of water? \_\_\_\_\_ depth of strata \_\_\_\_\_

Method of sealing strata off \_\_\_\_\_

Was well gravel packed?  Yes  No Size of gravel: \_\_\_\_\_

Gravel placed from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

**(10) LOCATION OF WELL:**

County Clackamas Driller's well number D-161-78  
NW  $\frac{1}{4}$  NW  $\frac{1}{4}$  Section 25 T. 3S R. 1E W.M.  
Bearing and distance from section or subdivision corner  
Tay Lot 500

**(11) WATER LEVEL: Completed well.**

Depth at which water was first found 74 ft.  
Static level 30 ft. below land surface. Date 9/13/78  
Artesian pressure \_\_\_\_\_ lbs. per square inch. Date \_\_\_\_\_

**(12) WELL LOG:**

Diameter of well below casing 6"  
Depth drilled 75 ft. Depth of completed well 75 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Topsoil	0	2	
Clay Brown	2	15	
Clay Gray Sandy	15	57	
Clay Blue	57	74	
Sand Black Water Bearing	74	75	30

Work started 9/12 1978 Completed 9/12 1978  
Date well drilling machine moved off of well 9/12 1978

**Drilling Machine Operator's Certification:**

This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.

[Signed] Brian Blocker Date 9/12/78  
(Drilling Machine Operator)  
Drilling Machine Operator's License No. 1169

**Water Well Contractor's Certification:**

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

Name S7M Drilling & Supply Inc.  
(Person, firm or corporation) (Type or print)  
Address 399 SE Walnut St Canby, Oregon 97013  
[Signed] Walt Mac  
(Water Well Contractor)

Contractor's License No. 497 Date 9/12/ 1978

STATE OF OREGON  
 WATER SUPPLY WELL REPORT  
 (as required by ORS 537.765 & OAR 690-205-0210)

WELL LABEL # L 105640

START CARD # 208961

(1) LAND OWNER Owner Well I.D. \_\_\_\_\_

First Name Jerry Last Name Lasselle  
 Company HLH Farms INC  
 Address 5120 SW Borland Rd.  
 City Tualatin State OR Zip 97062

(2) TYPE OF WORK  New Well  Deepening  Conversion  
 Alteration (repair/recondition)  Abandonment

(3) DRILL METHOD  
 Rotary Air  Rotary Mud  Cable  Auger  Cable Mud  
 Reverse Rotary  Other \_\_\_\_\_

(4) PROPOSED USE  Domestic  Irrigation  Community  
 Industrial/ Commercial  Livestock  Dewatering  
 Thermal  Injection  Other \_\_\_\_\_

(5) BORE HOLE CONSTRUCTION Special Standard  Attach copy  
 Depth of Completed Well 205 ft.

BORE HOLE			SEAL			Amt	sacks/ lbs
Dia	From	To	Material	From	To		
12	0	37	Bentonite	0	37	35	S
8	37	250					

How was seal placed: Method  A  B  C  D  E  
 Other OAR 690-210-0340  
 Backfill placed from 205 ft. to 250 ft. Material cement  
 Filter pack from \_\_\_\_\_ ft. to \_\_\_\_\_ ft. Material \_\_\_\_\_ Size \_\_\_\_\_  
 Explosives used:  Yes Type \_\_\_\_\_ Amount \_\_\_\_\_

(6) CASING/LINER

Casing	Liner	Dia	+	From	To	Gauge	Stl	Platc	Wld	Thrd
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	8		2	137.83	.250	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	6		116.66	138.37	.250	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	6		148.75	181.56	.250	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	6		186.89	205	.250	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Shoe  Inside  Outside  Other Location of shoe(s) 137.83  
 Temp casing  Yes Dia \_\_\_\_\_ From \_\_\_\_\_ To \_\_\_\_\_

(7) PERFORATIONS/SCREENS

Perforations Method \_\_\_\_\_  
 Screens Type v-wire Material stainless

Perf/ Screen	Casing/ Liner	Screen Dia	From	To	Scr/slot width	Slot length	# of slots	Tele/ pipe size
Screen		6	138.37	148.75	.085			6
Screen		6	181.56	186.89	.085			6

(8) WELL TESTS: Minimum testing time is 1 hour

Pump  Bailer  Air  Flowing Artesian  
 Yield gal/min 38 Drawdown 55 Drill stem/Pump depth 3 Duration (hr) 3

Temperature 53 °F Lab analysis  Yes By \_\_\_\_\_  
 Water quality concerns?  Yes (describe below)

From	To	Description	Amount	Units

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(9) LOCATION OF WELL (legal description)

County CLACKAMAS Twp 3 S N/S Range 1 E E/W WM  
 Sec 25 NE 1/4 of the NW 1/4 Tax Lot 00503  
 Tax Map Number \_\_\_\_\_ Lot \_\_\_\_\_  
 Lat \_\_\_\_\_ " or \_\_\_\_\_ DMS or DD  
 Long \_\_\_\_\_ " or \_\_\_\_\_ DMS or DD  
 Street address of well \_\_\_\_\_ Nearest address \_\_\_\_\_  
 22025 S. Central Point Rd. Oregon City, OR 97045

(10) STATIC WATER LEVEL

Existing Well / Predeepening	Date	SWL(psi)	+ SWL(ft)
Completed Well	11-12-2012		68

Flowing Artesian?  Dry Hole?

WATER BEARING ZONES Depth water was first found 128

SWL Date	From	To	Est Flow	SWL(psi)	+ SWL(ft)
09-26-2012	128	131	2		68
09-27-2012	140	150	4		68
09-28-2012	183	187	7		68

(11) WELL LOG

Material	From	To
Clay brown, hard	0	2
Clay brown	2	8
Clay light gray, sticky	8	24
Clay light gray & brown, sticky	24	29
Clay brown, sandy	29	31
Clay brown & gray, sticky	31	36
Clay light gray, sticky	36	54
Clay dark gray	54	67
Clay brown & red	67	72
Clay dark gray	72	86
Clay brown, sandy	86	99
Clay dark gray, sticky	99	102
Clay dark gray w/blue sand streaks	102	104
Clay dark gray & blue	104	119
Clay gray, soft	119	128
Sand black & clay gray	128	131
Clay blue, hard	131	140
Clay gray & blue, hard w/seams of brown&blue sand	140	150
Clay blue, soft	150	152

Date Started 09-19-2012 Completed 11-12-2012

(unbonded) Water Well Constructor Certification  
 I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.  
 License Number 1704 Date \_\_\_\_\_  
 Password : (if filing electronically) \_\_\_\_\_  
 Signed \_\_\_\_\_

(bonded) Water Well Constructor Certification  
 I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.  
 License Number 783 Date \_\_\_\_\_  
 Password : (if filing electronically) \_\_\_\_\_  
 Signed \_\_\_\_\_  
 Contact Info (optional) Grosvenor Well Drilling (503)982-2060

(5) BORE HOLE CONSTRUCTION

BORE HOLE			SEAL				sacks/
Dia	From	To	Material	From	To	Amt	lbs

FILTER PACK

From	To	Material	Size

(6) CASING/LINER

Casing Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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(7) PERFORATIONS/SCREENS

Perf/	Casing/	Screen		Scrn/slot	Slot	# of	Tele/	
Screen	Liner	Dia	From	To	width	length	slots	pipe size

(8) WELL TESTS: Minimum testing time is 1 hour

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)

Water Quality Concerns

From	To	Description	Amount	Units

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DEC 04 2012

(10) STATIC WATER LEVEL

Water Bearing Zones

SWL Date	From	To	Est Flow	SWL(psi)	+ SWL(ft)

(11) WELL LOG

Material	From	To
Clay blue & gray, hard	152	156
Clay green, hard	156	168
Clay gray & blue	168	183
Sand black, coarse & clay dark brown	183	187
Clay gray & green, hard	187	194
Clay blue & brown, hard	194	196
Clay light blue, hard	196	214
Clay dark blue, soft w/pieces of clay stone	214	222
Clay, dark gray & dark blue, soft	222	228
Clay dark gray	228	234
Basalt layer 3-4" then clay gray	234	250

Comments/Remarks

(7) Perforations/Screens  
205' Bottom plate & lift bail

# Groundwater Application Review Summary Form

Application # G- 19187

GW Reviewer Gabriela Ferreira / Dennis Orłowski Date Review Completed: October 24, 2023

## 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**

**October 24, 2023**

**TO:**            **Application G- 19187**

**FROM:**        **GW: Gabriela Ferreira / Dennis Orłowski**  
                    (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 October 24, 2023  
 FROM: Groundwater Section Gabriela Ferreira / Dennis Orlowski  
 Reviewer's Name  
 SUBJECT: Application G- 19187 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: Sean and Molly Collins County: Clackamas

A1. Applicant(s) seek(s) 0.75 cfs from 4 well(s) in the Willamette Basin,  
 \_\_\_\_\_ subbasin

A2. Proposed use Nursery (30 acres) Seasonality: Year-round

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 9601	Well 1	Alluvial	0.75	3S/1E-25 NWNE	775' S, 1460' E fr NW Cor S 25 <sup>a</sup>
2	PROPOSED	Well 2	Alluvial	0.75	3S/1E-25 NWNE	775' S, 1480' E fr NW Cor S 25
3	CLAC 69332	Well 3	Alluvial	0.75 <sup>b</sup>	3S/1E-25 NWNE	190' S, 2550' E fr NW Cor S 25
4	PROPOSED	Well 4	Alluvial	0.75	3S/1E-25 NWNE	675' S, 1690' E fr NW Cor S 25

\* Alluvium, CRB, Bedrock

Well	Well Elev ft msl	First Water ft bls	SWL ft bls	SWL Date	Well Depth (ft)	Seal Interval (ft)	Casing Intervals (ft)	Liner Intervals (ft)	Perforations Or Screens (ft)	Well Yield (gpm)	Draw Down (ft)	Test Type
1	192	N/A	30	9/13/1978	75	0-18	0-75	N/A	None	40	N/A	
2	192	TBD	TBD	TBD	200	0-50	0-200	TBD	TBD	TBD	TBD	TBD
3	235	128	63.33	3/9/2020	205	0-37	2 - 137; 117 - 205	N/A	138 -149; 182 - 187	38	55	pump
4	190	TBD	TBD	TBD	200	0-50	0-200	TBD	TBD	TBD	TBD	TBD

Use data from application for proposed wells.

A4. **Comments:** The proposed POAs are approximately 2 miles northeast of the Canby, Oregon. The applicant proposes nursery use on 30 acres by 4 wells with a maximum instantaneous rate of 0.75 cfs and annual total of 150 af.

<sup>a</sup>The application lists Well 1 (CLAC 9601) in tax lot 500, 3S/1E-25 NWNE. The well report for CLAC 9601 indicates that the well is in tax lot 500, 3S/1E-25 NWNW. This review evaluates the well based on the location indicated on the application.

<sup>b</sup> Well 3 (CLAC 69332) is a currently authorized POA under Certificate 96332 for 0.16 cfs. The combined authorized rate for CLAC 69332 would be 0.91 cfs total.

A5.  Provisions of the \_\_\_\_\_ 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 POAs will produce from a confined aquifer; therefore, the relevant Willamette Basin rules (OAR 690-502-0240) do not apply.

A6.  Well(s) # \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, tap(s) an aquifer limited by an administrative restriction. Name of administrative area: \_\_\_\_\_  
 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) 7N, 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 500 feet thick (Gannett and Caldwell, 1998). Bedrock (Columbia River Basalt group) is encountered approximately 500 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 about seven groundwater PODs, for irrigation and nursery use, completed in the alluvial aquifer system, with several more exempt (domestic) wells also likely in the area. Reported maximum yields at time of drilling from nearby alluvial wells (mostly domestic) typically range up to 100 gpm. Well deepenings are not prevalent. Pump test from nearby groundwater PODs reported yields of less than 50 gpm (CLAC 12188, CLAC 12181, CLAC 69332, CLAC 52274) with only one reporting a yield of 120 gpm (CLAC 12088). The reported yields for CLAC 9601 (Well 1) and CLAC 69332 (Well 3) are 40 and 38 gpm, respectively. The requested rate (0.75 cfs / 336 gpm) is notably higher than reported yields for water wells in this area, even distributed among four wells.

Water level data from five nearby wells and CLAC 69332 (Well 3) were selected for evaluation based on proximity and similar construction. Water levels in CLAC 69332 (Well 3) declined a maximum of 10 feet from the reference level set in 2017 (59.75 ft bls) to 2022 (69.75 ft bls), but have since recovered approximately 3 feet in the most recent water level measurement (66.25 ft bls in 2023). Similarly, water levels in nearby CLAC 51243 declined a total of 24 feet from the reference level set in 2017 (69.25 ft bls) to 2022 (93.60 ft bls), but then recovered nearly 22 feet by 2023 (71.46).



Groundwater level trends generally appear to follow precipitation, with decreases following years of low precipitation (~2018 through 2021) and starting to recover following higher precipitation levels in 2022.

To summarize, available and applicable groundwater level data suggests that groundwater for the proposed use is not over appropriated.

No nearby wells fully penetrate the approximately 500 ft deep Willamette Confining Unit Aquifer system in this area, and thus potential injury to nearby groundwater users was not assessed for this review. However, permit condition 7N is recommended to assess potential future injury concerns, and as a means to monitor long-term groundwater conditions in this area.

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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	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"/>
4	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 proposed POAs and nearby wells typically produce water from sand and gravel layers within the Confining Unit, which is mostly fine-grained clay and silt. The well report for CLAC 9601 (Well 1) reports a static water level of 30 feet bls from a water bearing zone between 74 and 75 feet bls. The well report for CLAC 69332 (Well 3) reports a static water level of 68 feet bls from water bearing zones at depths greater than 128 feet bls.

**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	Unnamed Tributary to Parrott Creek (West)	160 - 180	105 - 165	820	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	1	Unnamed Tributary to Parrott Creek (West)	160 - 180	105 - 165	780	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	1	Unnamed Tributary to Parrott Creek (West)	160 - 180	105 - 165	1,930	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	1	Unnamed Tributary to Parrott Creek (West)	160 - 180	105 - 165	1,020	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	2	Unnamed Tributary to Parrott Creek (East)	160 - 180	130 - 340	2,600	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	2	Unnamed Tributary to Parrott Creek (East)	160 - 180	130 - 340	2,650	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	2	Unnamed Tributary to Parrott Creek (East)	160 - 180	130 - 340	1,400	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	2	Unnamed Tributary to Parrott Creek (East)	160 - 180	130 - 340	2,350	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Basis for aquifer hydraulic connection evaluation:** Several unnamed tributaries to Parrott Creek are near the proposed POAs. SW1 (Unnamed Tributary to Parrott Creek – West) is marked as ephemeral in the National Hydro Database; however, it is considered perennial based on the permanent channel shown in topographic maps and aerial photographs.

<sup>a</sup> The groundwater elevation was estimated based on information provided in the well reports and nearby observation well data.

<sup>b</sup> Estimated ranges of stream surface elevations are based on LIDAR data for respective perennial reaches within approximately 1 mile of the proposed POA (OLC, 2016)

Published groundwater maps indicate that groundwater in this area flows towards, and discharges into, Parrott Creek (Gannett and Caldwell, 1998). Because the estimated groundwater elevation for the POAs are within the estimated elevation range for SW 1 and SW 2 (Unnamed Tributaries to Parrott Creek), the aquifer system proposed to be accessed by the POAs is hydraulically connected to SW 1 and SW 2.

**Water Availability Basin the well(s) are located within: SW 1, SW 2: WID # 181, Willamette River > Columbia River, 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"/>	4890.0	<input type="checkbox"/>	<25%	<input type="checkbox"/>
2	1	<input type="checkbox"/>	<input type="checkbox"/>	NA	NA	<input type="checkbox"/>	4890.0	<input type="checkbox"/>	<25%	<input type="checkbox"/>
3	1	<input type="checkbox"/>	<input type="checkbox"/>	NA	NA	<input type="checkbox"/>	4890.0	<input type="checkbox"/>	<25%	<input type="checkbox"/>
4	1	<input type="checkbox"/>	<input type="checkbox"/>	NA	NA	<input type="checkbox"/>	4890.0	<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 #		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?
			<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 – West ) caused by pumping Well 2, the nearest of the proposed POAs, 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 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, 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:** \_\_\_\_\_

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**References Used:** Application File: G-19187

Pump Test Reports: CLAC 12088, CLAC 12188, CLAC 12181, CLAC 69332, CLAC 52274

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.

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, Vol 8, p. 12-19.

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

Watershed Sciences, 2009, LIDAR remote sensing data collection, Department of Geology and Mineral Industries: Portland, OR, May 27.

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**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**

WILLAMETTE R > COLUMBIA R - AT MOUTH  
 WILLAMETTE BASIN

Water Availability as of 10/16/2023

Watershed ID #: 181 [\(Map\)](#)  
 Date: 10/16/2023

Exceedance Level: 80%  
 Time: 4:19 PM

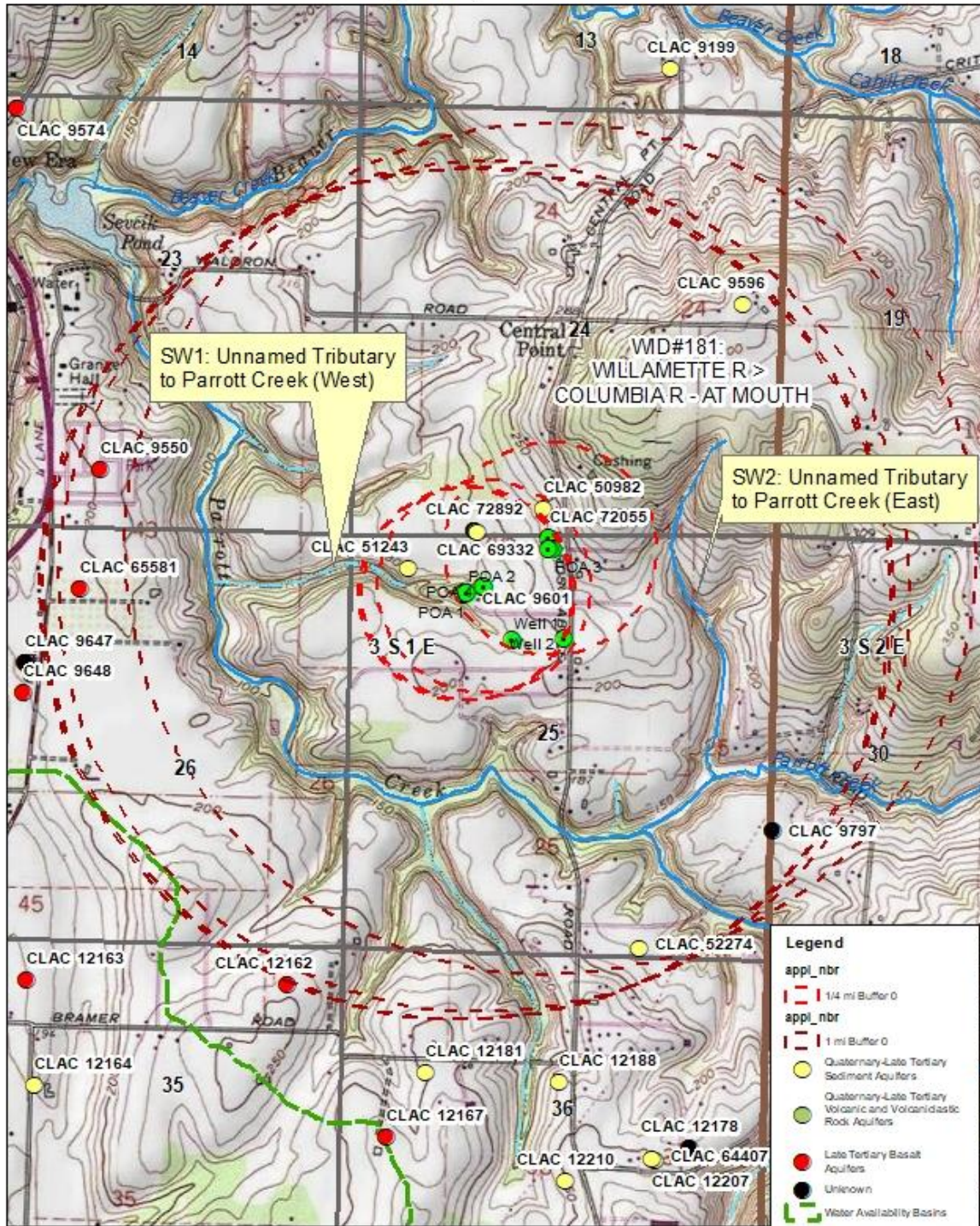
**Water Availability Calculation**

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	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	20,900.00	0.00	1,500.00	19,400.00
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	730.00	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	19,700,000.00	2,480,000.00	17,300,000.00	0.00	1,090,000.00	16,200,000.00

Well Location Map

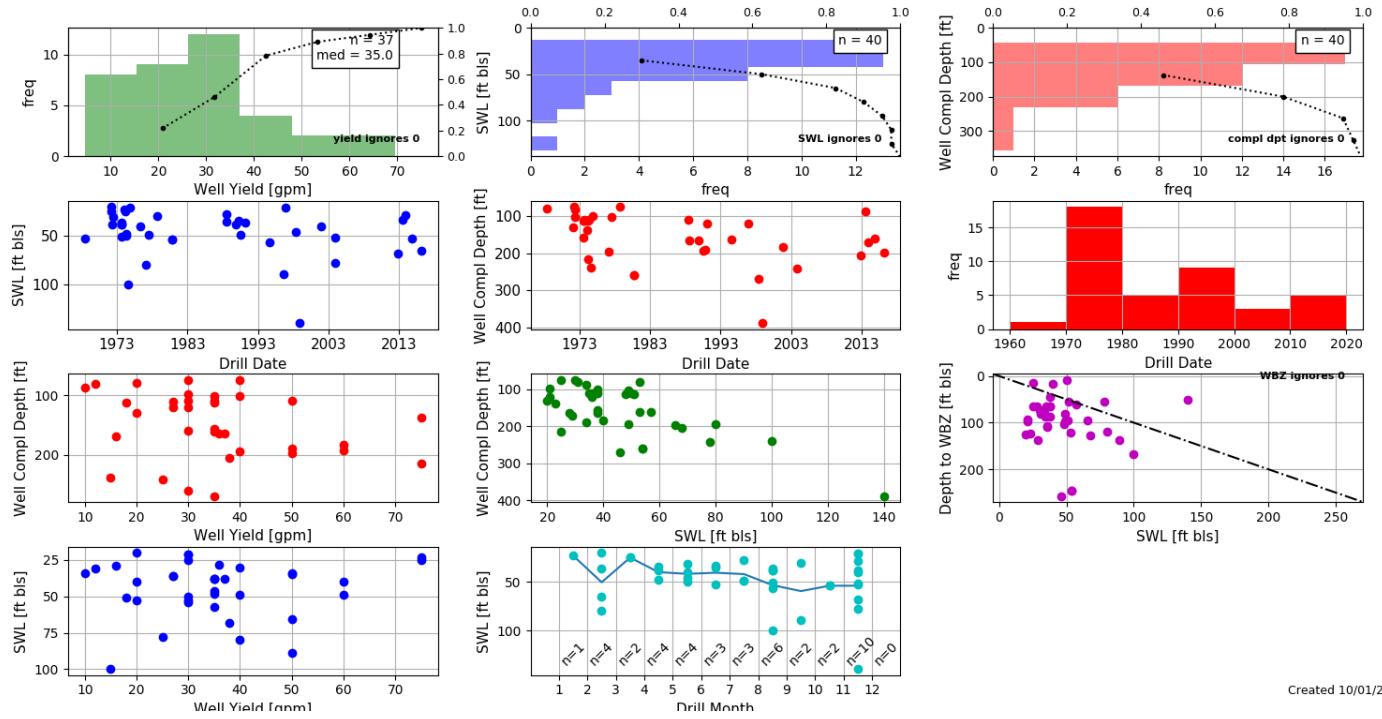
### Application G-19187 Collins T3S, R1E, Section 25



Main Map Scale = 1:24,000

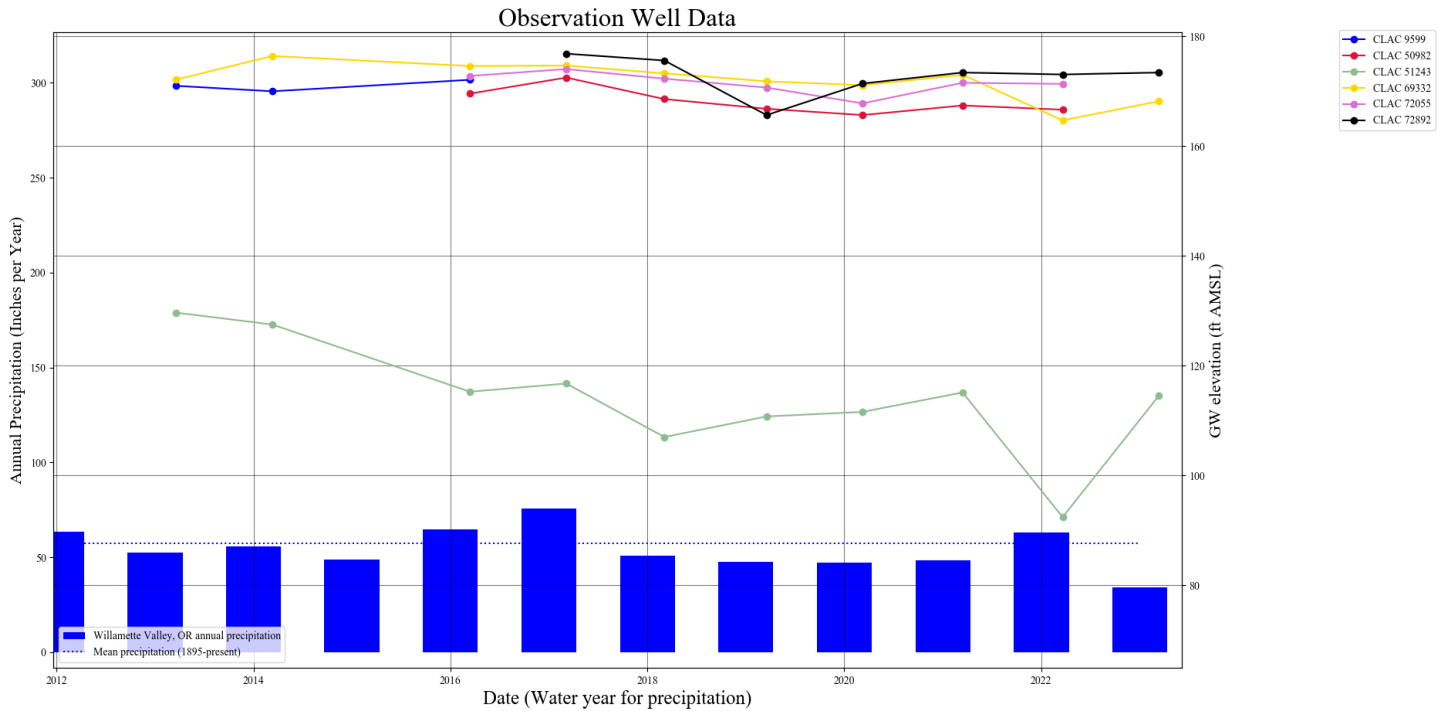
Service Layer Credits: Copyright© 2013 National Geographic Society, i-cubed

Well Statistics



Created 10/01/2023

Water-Level Measurements in Nearby Wells





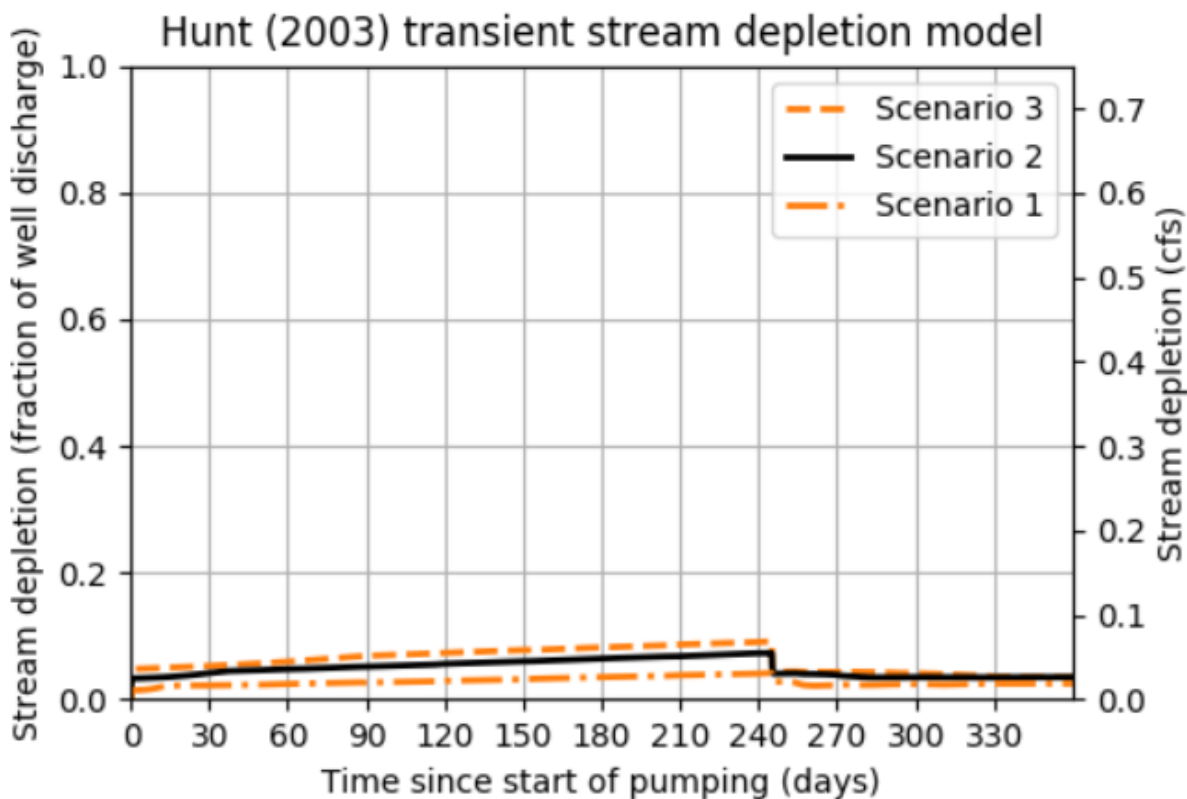
**Stream Depletion (Hunt) Model Analysis**

Application type:	G
Application number:	19187
Well number:	2
Stream Number:	1
Pumping rate (cfs):	0.75
Pumping duration (days):	245.0

Parameter	Symbol	Scenario 1	Scenario 2	Scenario 3	Units
Distance from well to stream	a	780.0	780.0	780.0	ft
Aquifer transmissivity	T	40	100	250	ft <sup>2</sup> /day
Aquifer storativity	S	0.0001	0.0001	0.0001	-
Aquitard vertical hydraulic conductivity	Kva	0.05	0.05	0.05	ft/day
Aquitard saturated thickness	ba	75.0	75.0	75.0	ft
Aquitard thickness below stream	babs	3.0	3.0	3.0	ft
Aquitard specific yield	Sya	0.2	0.2	0.2	-

Stream depletion for Scenario 2:

Days	10	30	60	90	120	150	180	210	240
Depletion (%)	3	3	4	5	5	6	6	7	7



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