

Groundwater Application Review Summary Form

Application # G- 19429

GW Reviewer Steve Ahlquist Date Review Completed: 11/18/2024

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

November 18, 2024

TO: Application G- 19429

FROM: GW: Steve Ahlquist
(Reviewer's Name)

SUBJECT: Scenic Waterway Interference Evaluation

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

DISTRIBUTION OF INTERFERENCE

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

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

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

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date 11/18/2024
 FROM: Groundwater Section Steve Ahlquist
 Reviewer's Name
 SUBJECT: Application G- 19429 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: Oregon Dreams LLC County: Benton

A1. Applicant(s) seek(s) 0.0125 cfs from 1 well(s) in the Willamette Basin,
Upper Willamette subbasin

A2. Proposed use Irrigation Seasonality: March 1st – October 31st

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	BENT 55389	1	Bedrock	0.0125	14S/5W-18 NE-NW	620.8' S, 2133.3' E fr NW cor S 18*
2						
3						
4						

* Alluvium, CRB, Bedrock

POA Well	Well Depth (ft)	Seal Interval (ft)	Casing Intervals (ft)	Liner Intervals (ft)	Perforations Or Screens (ft)	Well Yield (gpm)	Drawdown (ft)	Test Type
1	140	0-19	0-19	NA	NA	30	NA	Air
2								
3								
4								

POA Well	Land Surface Elevation at Well (ft amsl)	Depth of First Water (ft bls)	SWL (ft bls)	SWL Date	Reference Level (ft bls)	Reference Level Date
1	379	110	20.5	3/15/2024	22.50	3/30/2020
2						
3						
4						

Use data from application for proposed wells.

A4. **Comments:** The applicant proposes to irrigate 16.2 acres from one POA (BENT 55389) at a maximum rate of 0.0125 cfs for a total annual volume of 2.5 acre-feet. BENT 55389 is an authorized POA on Permit 18250 for year-round nursery use with a maximum rate of 0.0125 cfs and maximum annual volume of 5.0 acre-feet.

*There are discrepancies between the metes-and-bounds location description and the location depicted on the application map. For the purpose of this review, Well 1/BENT 55389 is assumed to be at the location depicted on the application map which is approximately 350 feet west of the metes-and-bounds location description.

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 application proposes use of a confined aquifer; therefore the pertinent rules (OAR 690-502-240) do not apply.

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

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) 7RLA (annual 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:** The proposed POA produces water from Tertiary marine sedimentary bedrock of the Spencer Formation (McClaghry et al., 2010). The marine sedimentary bedrock aquifer is characterized by low permeability, low porosity, and low well yields. Water in this aquifer is transmitted primarily through interconnected fractures (Conlon et al., 2005).

Groundwater level data is limited in the area, but water levels measured at BENT 55389 since March 2020 indicate groundwater levels are relatively stable (see attached Water-Level Measurements).

The OWRD well report database contains records for 30 water wells near the proposed POAs (Secs.7&18, T14S R5W), most of which are completed in the fractured bedrock aquifer of the Spencer Formation. According to the well reports, the median and maximum yields are 11 and 149 gpm, respectively, and most wells exhibit confined aquifer conditions (See attached Well Statistics).

The OWRD well report database indicates there are several exempt domestic water wells that are potentially within ¼-mile of the proposed POAs, all without precise locations. The nearest residence that is likely supplied by an exempt domestic well is located on Tax Lot 400, approximately 640 ft northwest of the proposed POA (BENT 55389). Potential interference with nearby domestic wells was quantitatively estimated using a Theis (1935) distance-drawdown model. Hydraulic parameters used for the analysis were derived from regional data and studies (Conlon et al., 2005; Frank, 1976). It was assumed that BENT 55389 will be pumped continuously at the combined maximum rate of 0.0250 cfs until reaching the full combined duty under the proposed use and Permit 18250 which would take approximately 151 days. Results of the Theis analysis indicate that the proposed use would likely result in less than 10 feet of drawdown at adjacent residential properties after 151 days of pumping.

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	Sandstone of the Spencer Formation	☒	☐
		☐	☐
		☐	☐
		☐	☐

Basis for aquifer confinement evaluation: Static water levels measured in the applicant's well and nearby wells completed in the bedrock aquifer of the Spencer Formation are well above the water-bearing zones listed on well logs, indicating confined conditions in the aquifer.

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	Reese Creek	358.5^a	289-311^b	3070	☒	☐	☐	☐	☒
1	2	Oliver Creek	358.5^a	288-305^b	3700	☒	☐	☐	☐	☒
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐

Basis for aquifer hydraulic connection evaluation: Groundwater elevations in the applicant's wells and nearby wells are above the surface water elevations of Reese Creek, indicating groundwater flow is towards the stream. The hydraulic connection is likely very weak due to the low permeability of the fine sediments underlying the streams.

^a Calculated from static water level measured in BENT 55389 on March 15, 2024 and estimated land surface elevation (LIDAR)

^b Surface water elevations estimated from land surface elevations (LIDAR) along stream reaches within 1 mile of POA

Water Availability Basin the well(s) are located within: MUDDY CR > MARYS R – AB EVERGREEN CR

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?	Q _w > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Q _w > 1% ISWR?	80% Natural Flow (cfs)	Q _w > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
1	1	☐	☐	NA	NA	☐	6.10	☐	<25%	☐
1	2	☐	☐	NA	NA	☐	6.10	☐	<25%	☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐

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

Comments: There is no model readily available for accurately estimating stream interference in the fractured bedrock aquifer system. Stream interference at 30 days was not calculated but is expected to be very low (<<25%) due to the low permeability and porosity of the marine sedimentary bedrock aquifer system, the distance of surface waters from the proposed POA location, and the low permeability of fine grained sediments underlying the streams.

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: Impacts to surface water sources greater than one mile from the POA were not evaluated.

Version: 10/24/2023

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****MUDDY CR > MARYS R - AB EVERGREEN CR
WILLAMETTE BASIN**

Water Availability as of 9/18/2024

Watershed ID #: 30200320 ([Map](#))

Exceedance Level: 80% ▾

Date: 9/18/2024

Time: 3:51 PM

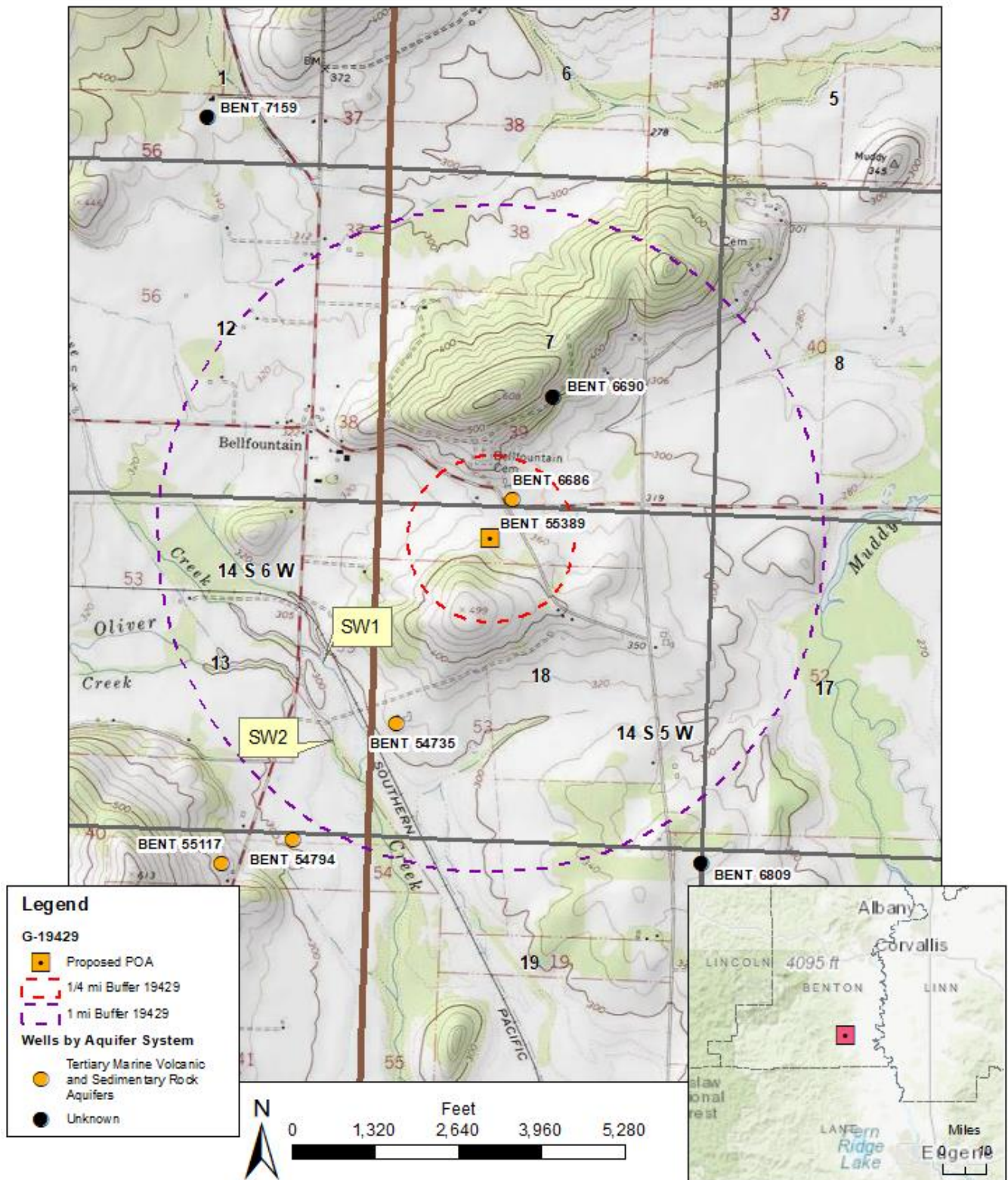
Water Availability Calculation

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	168.00	3.53	164.00	0.00	0.00	164.00
FEB	191.00	3.18	188.00	0.00	0.00	188.00
MAR	166.00	2.82	163.00	0.00	0.00	163.00
APR	88.50	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	0.94	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

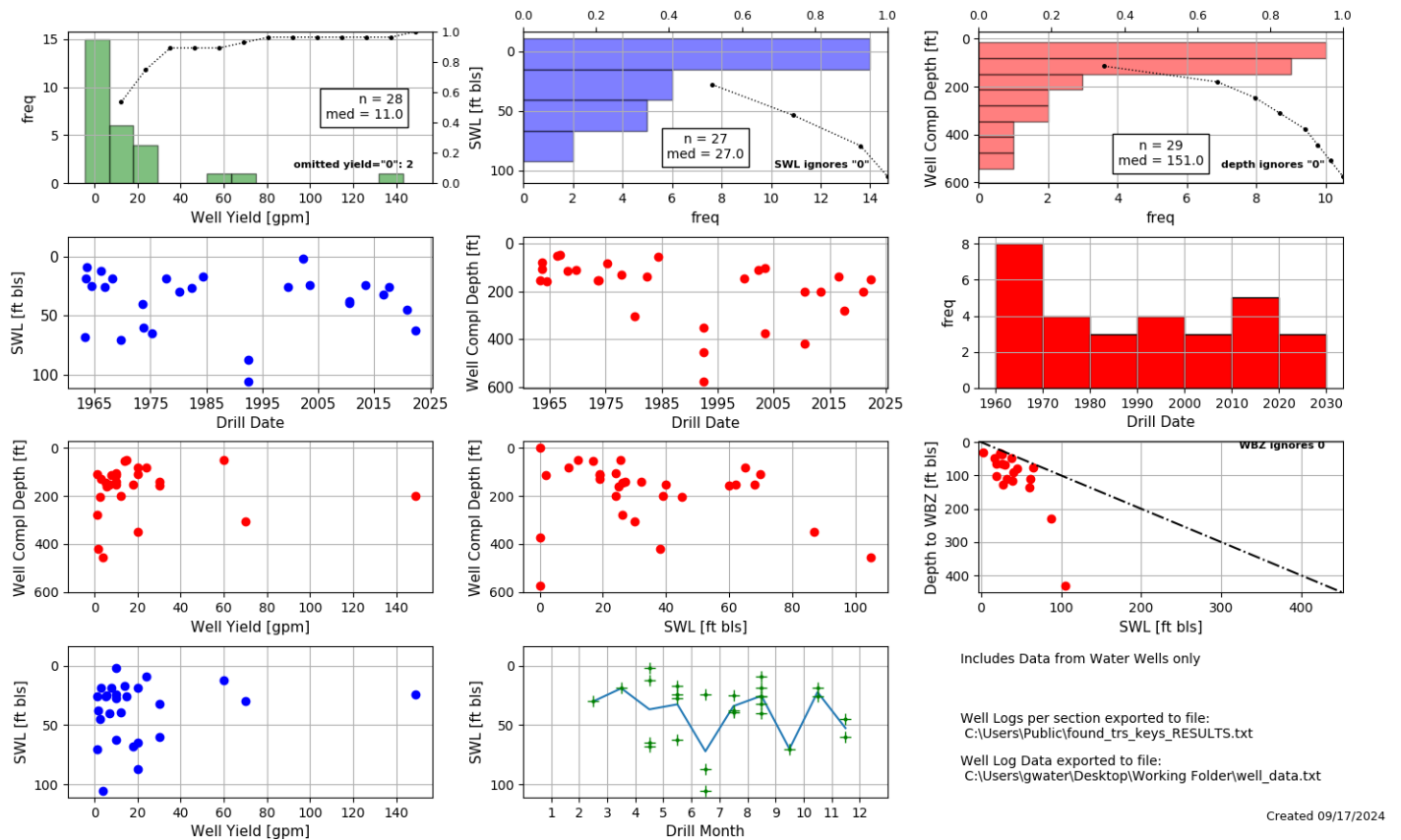
Well Location Map

G-19429 Oregon Dreams LLC

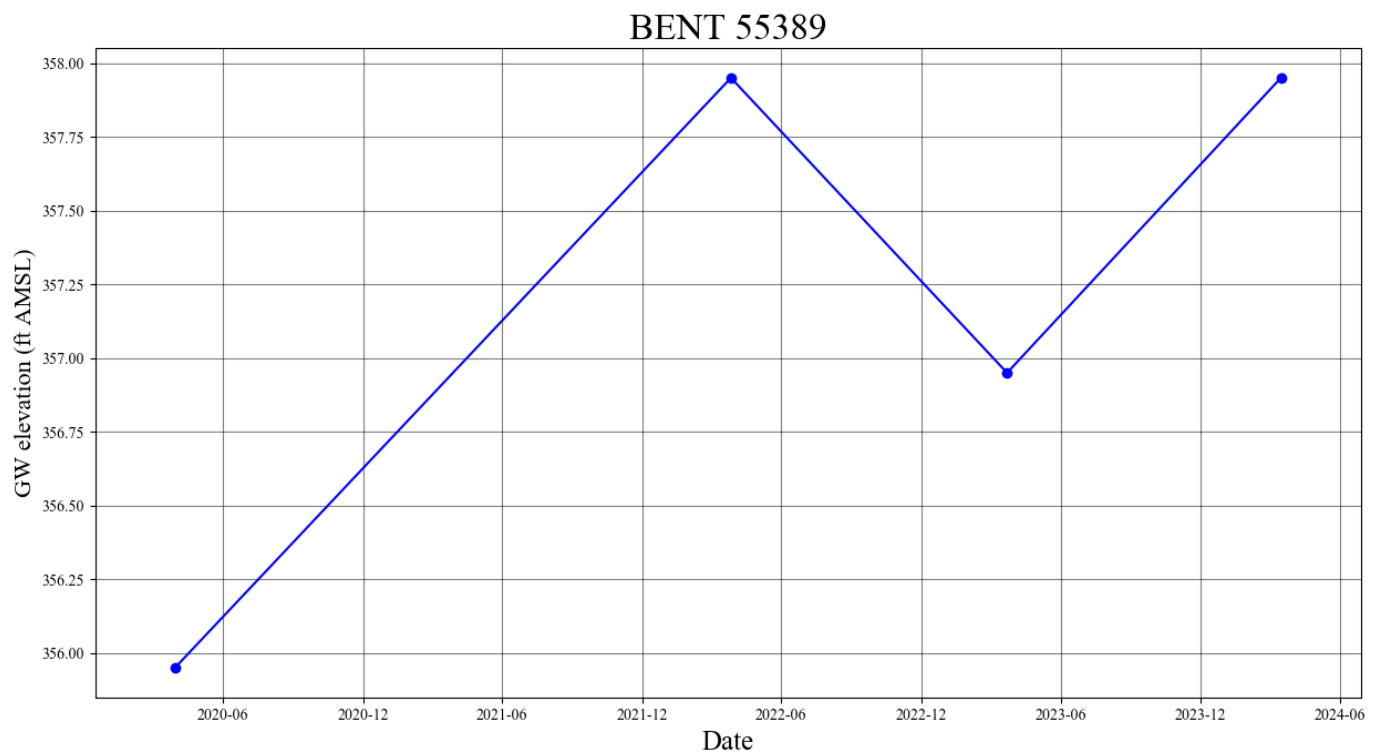


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Well Statistics



Water-Level Measurements in BENT 55389



Theis Interference Analysis

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		151		d	
Radial distance from pumped well:	r		640		ft	
Pumping rate	Q		0.025		cfs	11.22 gpm
Hydraulic conductivity	K	0.666667	6.666667	25.33333	ft/day	0.03 cfs
Aquifer thickness	b		30		ft	1.50 cfm
Storativity	S_1		0.00005			2,160.00 cfd
	S_2		0.003			0.05 af/d
Transmissivity Conversions						
	T_ft2pd	20	200	760	ft2/day	
	T_ft2pm	0.013889	0.138889	0.527778	ft2/min	
	T_gpdft	149.6	1496	5684.8	gpd/ft	
Use the Recalculate button if recalculation is set to manual						

