Approved:

MEMO

To: Kristopher Byrd, Well Construction Manager

From: Tommy Laird, Well Construction Program Coordinator

Subject: Review of Water Right Application G-19174

Date: February 23, 2024

The attached application was forwarded to the Well Construction Section by the Groundwater Section. Travis Brown reviewed the application. Please see Travis' Groundwater Review and the Well Report.

Applicant's Well #1 (LANE 77893): Based on a review of the Well Report, Applicant's Well #1 seems to protect the groundwater resource.

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

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

LANE 77893

2/24/2021

WELL I.D. LABEL# L 141417
START CARD # 1050871
ORIGINAL LOG #

(1) LAND OWNER

Owner Well I.D. WELL # 2

First Name JONATHAN Last Name SIMS

Company

Address 3473 RIVERPLACE

City EUGENE State OR Zip 97401

(2) TYPE OF WORK

[X] New Well [ ] Deepening [ ] Conversion [ ] Alteration (complete 2a & 10) [ ] Abandonment(complete 5a)

(2a) PRE-ALTERATION

	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
Casing:									

	Material	From	To	Amt	sacks/lbs
Seal:					

(3) DRILL METHOD

[X] Rotary Air [ ] Rotary Mud [ ] Cable [ ] Auger [ ] Cable Mud
[ ] Reverse Rotary [ ] Other

(4) PROPOSED USE

[ ] Domestic [X] Irrigation [ ] Community
[ ] Industrial/ Commericial [ ] Livestock [ ] Dewatering
[ ] Thermal [ ] Injection [ ] Other

(5) BORE HOLE CONSTRUCTION

Special Standard [ ] (Attach copy)

Depth of Completed Well 99.00 ft.

BORE HOLE Dia	From	To	SEAL Material	From	To	Amt	sacks/lbs
10	0	20	Bentonite	0	5	3	S
6	20	99			Calculated	2.28	
			Cement	5	20	12	S
					Calculated	4.03	

How was seal placed: Method [ ] A [ ] B [X] C [ ] D [ ] E

[X] Other POURED AND TAMPED

Backfill placed from ft. to ft. Material

Filter pack from ft. to ft. Material Size

Explosives used: [ ] Yes Type Amount

(5a) ABANDONMENT USING UNHYDRATED BENTONITE

Proposed Amount Actual Amount

(6) CASING/LINER

Casing	Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
(•)	( )	6	[X]	2.5	97.5	.250	(•)	( )	[X]	[ ]
( )	( )		[ ]				( )	( )	[ ]	[ ]
( )	( )		[ ]				( )	( )	[ ]	[ ]
( )	( )		[ ]				( )	( )	[ ]	[ ]
( )	( )		[ ]				( )	( )	[ ]	[ ]

Shoe [X] Inside [ ] Outside [ ] Other Location of shoe(s) 97.5

Temp casing [X] Yes Dia From + [X] 1 To 20

(7) PERFORATIONS/SCREENS

Perforations Method

Screens Type Material

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

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

( ) Pump ( ) Bailer (•) Air ( ) Flowing Artesian

Yield gal/min	Drawdown	Drill stem/Pump depth	Duration (hr)
35		97	1

Temperature 57 °F Lab analysis [ ] Yes By

Water quality concerns? [ ] Yes (describe below) TDS amount 195 ppm

From	To	Description	Amount	Units

(9) LOCATION OF WELL (legal description)

County LANE Twp 17.00 S N/S Range 2.00 W E/W WM

Sec 19 NW 1/4 of the SE 1/4 Tax Lot 300 WELL #2

Tax Map Number Lot

Lat ° ' " or DMS or DD

Long ° ' " or DMS or DD

(•) Street address of well ( ) Nearest address

3620 HAYDEN BRIDGE RD SPRINGFIELD

(10) STATIC WATER LEVEL

	Date	SWL(psi)	+	SWL(ft)
Existing Well / Pre-Alteration			[ ]	
Completed Well	2/23/2021		[ ]	8

Flowing Artesian? [ ] Dry Hole? [ ]

WATER BEARING ZONES Depth water was first found

SWL Date	From	To	Est Flow	SWL(psi)	+	SWL(ft)
2/23/2021	8	15	20		[ ]	8
2/23/2021	29	97.5	35		[ ]	8
					[ ]	
					[ ]	
					[ ]	

(11) WELL LOG

Ground Elevation

Material	From	To
Loam	0	8
Sand and Gravel	8	15
Blue Clay	15	23
Sand and Gravel	23	41
Brown Clay	41	62
Sand	62	71
Blue Clay	71	83
Sand and Gravel	83	99

Date Started 2/23/2021 Completed 2/23/2021

(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 1839 Date 2/24/2021

Signed MICHAEL HOLLEY (E-filed)

(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 1541 Date 2/24/2021

Signed CASEY JONES JR (E-filed)

Contact Info (optional) Casey Jones Well Drilling 541-747-2806

Groundwater Application Review Summary Form

Application # G- _19174 re-review_

GW Reviewer _Travis Brown_ Date Review Completed: _6/30/2023_

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 **_6/30/2023_**

TO: **Application** G-**_19174 re-review_**

FROM: **GW: _Travis Brown_**
(Reviewer's Name)

SUBJECT: Scenic Waterway Interference Evaluation

☐ **YES**
☒ **NO**

The source of appropriation is hydraulically connected to a State Scenic 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 **6/30/2023**

FROM: Groundwater Section **Travis Brown**
Reviewer's Name

SUBJECT: Application G- **19174 re-review** 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: **Jonathan Sims** County: **Lane**

A1. Applicant(s) seek(s) 0.628 cfs from 1 well(s) in the Willamette Basin, McKenzie subbasin

A2. Proposed use Irrigation (50.32 ac) Seasonality: March – October (244 d)

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	LANE0077893	1	Alluvium	0.628	17.00S-2.00W-19-SW NE	1280 FEET SOUTH AND 480 FEET EAST FROM NW CORNER OF SWSE OF SECTION 18
2						

* 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	460	8	8	2/23/21	99	0-20	+2-97	-	-	35		A

Use data from application for proposed wells.

A4. **Comments:** _____

A5. ☐ **Provisions of the** Willamette (OAR 690-502) 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: _____

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) **7C (7-yr SWL); Large 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:** Groundwater levels are stable and the alluvial aquifer has an efficient hydraulic connection to the McKenzie River. Available evidence indicates the groundwater resource is not over-appropriated.

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	**Alluvium**	☐	☒
		☐	☐

Basis for aquifer confinement evaluation: most wells in the area of similar depth report similar SWL depths implying a single, unconfined 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**	**McKenzie R**	**450**	**440-450**	**1350**	☒	☐	☐	☐	☒
						☐	☐	☐	☐	☐

Basis for aquifer hydraulic connection evaluation: similar GW and SW elevations; unconfined nature of the aquifer

Water Availability Basin the well(s) are located within: MCKENZIE R > WILLAMETTE R - AB MOUTH (ID# 528)

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**	☐	☐	**MF528**	**1025**	☐	**1730**	☐	**< 25**	☐
		☐	☐			☐		☐		☐

Comments: Stream-depletion was estimated using the Hunt-1999 stream-depletion model with parameter values set to a range of expected values given the geology

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?
			☐			☐		☐		☐
			☐			☐		☐		☐

Comments:

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: _____

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:** The proposed POA would be producing from an aquifer that has been found to be hydraulically-connected to surface water – specifically the McKenzie River – at a distance of less than 1 mile. The proposed rate of 0.628 cfs is less than 1% of both the instream right and the 80%-exceedance natural flows and the estimated stream-depletion is less than 25% @ 30 d so the proposed use is not assumed to have the potential for substantial interference.

REFERENCES USED:

Gannett, M. W. and R. R. Caldwell. 1998. Geologic Framework of the Willamette Lowland Aquifer System, Oregon and Washington. USGS Professional Paper 1424-A.

Herrera, N. B., Burns, E. R., and T. D. Conlon. 2014. Simulation of Groundwater Flow and the Interaction of Groundwater and Surface Water in the Willamette Basin and Central Willamette Subbasin, Oregon. USGS Scientific Investigations Report 2014-5136.

Hunt, B. 1999. Unsteady Stream Depletion from Ground Water Pumping. Journal of Hydrologic Engineering, Vol 8(1), pp 12-19

McClaughry, J. D., T. J. Wiley, M. L. Ferns, and I. P Madin. 2010. Digital Geologic Map of the Southern Willamette Valley, Benton, Lane, Linn, Marion, and Polk Counties, Oregon. Oregon Dept. of Geology and Mineral Industries. Open File Report O-10-13.

O'Conner, J. E., A. Sarna-Wojcicki, K. C. Wozniak, D. J. Polette, and R. J. Fleck. Origin, Extent, and Thickness of Quaternary Geologic Units in the Willamette Valley, Oregon. USGS Professional Paper 1620

Woodward, D. G., M. W. Gannett, and J. J. Vaccaro. 1998. Hydrogeologic Framework of the Willamette Lowland Aquifer System, Oregon and Washington. USGS Professional Paper 1424-B.

OWRD Well Log Database, Accessed 12/06/2021 [https://apps.wrd.state.or.us/apps/gw/well_log/Default.aspx]

OWRD Groundwater Information System Database, Accessed 12/06/2021 [https://apps.wrd.state.or.us/apps/gw/gw_info/gw_info_report/gw_search.aspx]

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

MCKENZIE R > WILLAMETTE R - AB MOUTH

Watershed ID #: 528 Basin: WILLAMETTE Exceedance Level: 80

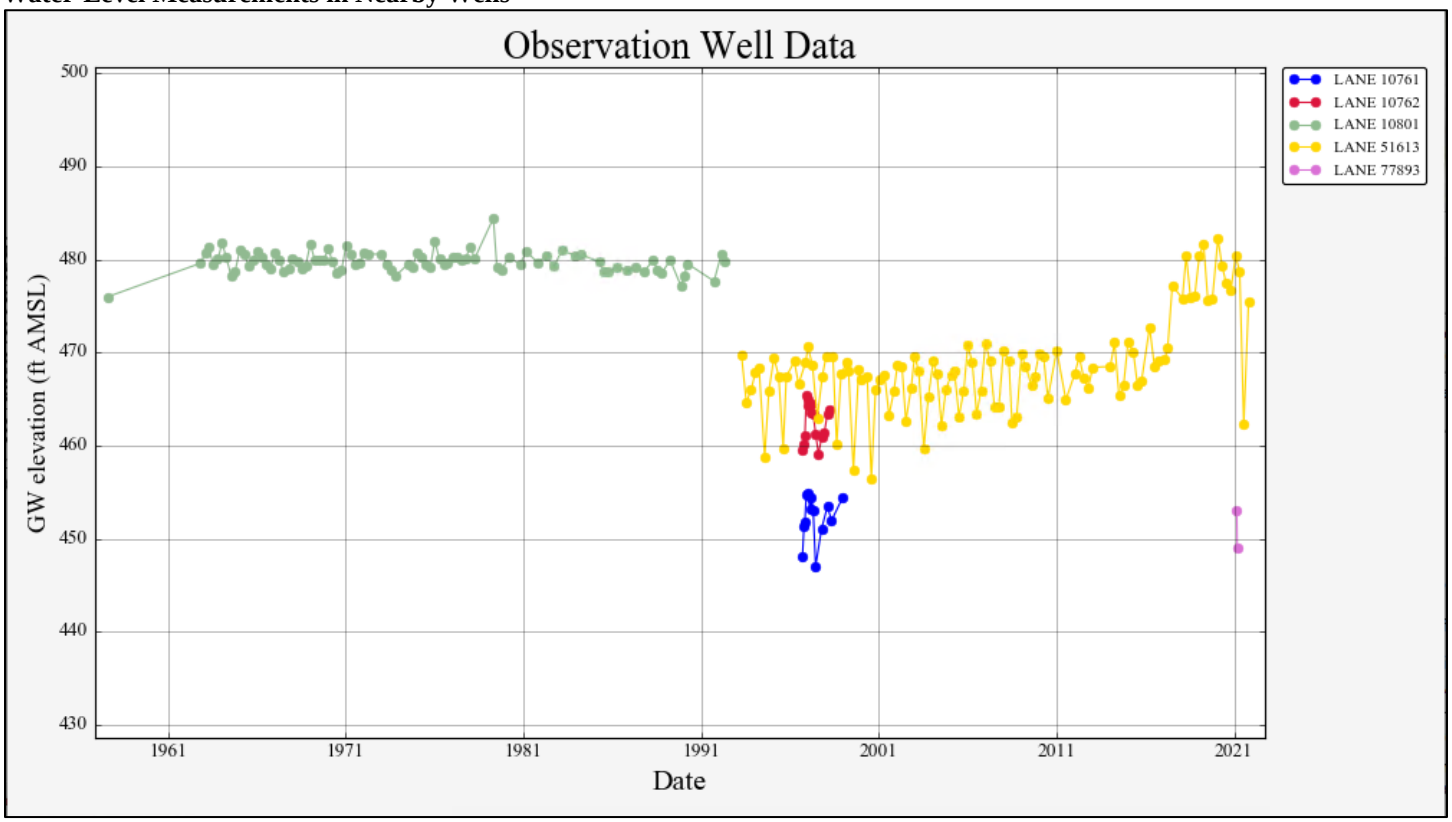
Time: 4:32 PM Date: 12/06/2021

Monthly values are in cfs.

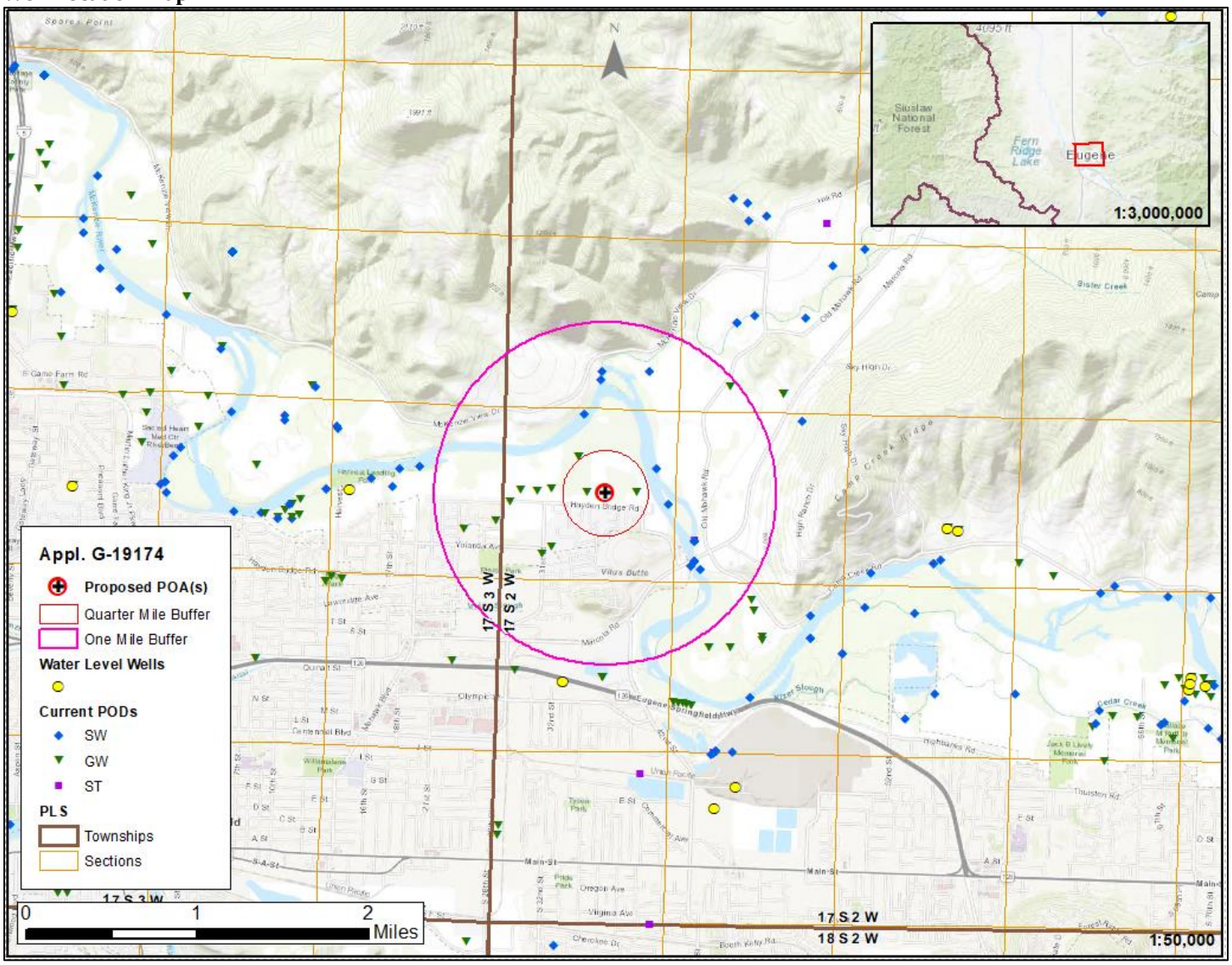
Storage is the annual amount at 50% exceedance in ac-ft.

Month	Natural Stream Flow	Consumptive Use and Storage	Expected Stream Flow	Reserved Stream Flow	Instream Requirements	Net Water Available
JAN	5,040.00	553.00	4,490.00	0.00	1,025.00	3,460.00
FEB	5,850.00	1,250.00	4,600.00	0.00	1,025.00	3,580.00
MAR	5,630.00	1,250.00	4,380.00	0.00	1,025.00	3,350.00
APR	5,020.00	1,310.00	3,710.00	0.00	1,025.00	2,690.00
MAY	4,000.00	809.00	3,190.00	0.00	1,025.00	2,170.00
JUN	2,990.00	408.00	2,580.00	0.00	1,025.00	1,560.00
JUL	2,160.00	389.00	1,770.00	0.00	1,025.00	746.00
AUG	1,790.00	378.00	1,410.00	0.00	1,025.00	387.00
SEP	1,730.00	359.00	1,370.00	0.00	1,025.00	346.00
OCT	1,830.00	328.00	1,500.00	0.00	1,025.00	477.00
NOV	2,850.00	327.00	2,520.00	0.00	1,025.00	1,500.00
DEC	4,450.00	327.00	4,120.00	0.00	1,025.00	3,100.00
ANN	3,560,000	461,000	3,090,000	0	743,000	2,350,000

Water-Level Measurements in Nearby Wells



Well Location Map



Stream-Depletion Model Results

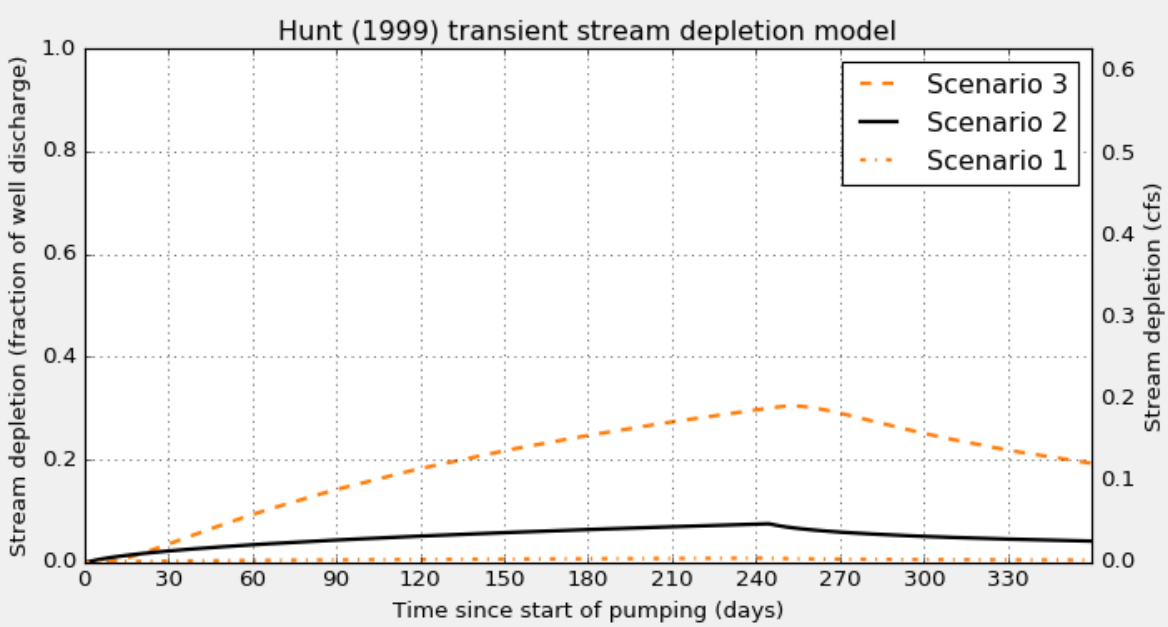
PyHunt stream depletion analysis tool

Application type:	G
Application number:	19174
Well number:	1
Stream Number:	1
Pumping rate (cfs):	0.628
Pumping duration (days):	244.0
Pumping start month number (3=March)	3.0

Parameter	Symbol	Scenario 1	Scenario 2	Scenario 3	Units
Distance from well to stream	a	1350	1350	1350	ft
Aquifer transmissivity	T	10000	5000.0	1000	ft2/day
Aquifer storativity	S	0.005	0.01	0.05	-
Aquitard vertical hydraulic conductivity	Kva	0.0001	0.001	0.01	ft/day
Not used		20.0	20.0	20.0	
Aquitard thickness below stream	babs	5	5	5	ft
Not used		0.2	0.2	0.2	
Stream width	ws	360	360	360	ft

Stream depletion for Scenario 2:

Days	10	330	360	30	60	90	120	150	180	210	240	270	300
Depletion (%)	1	5	4	2	3	4	5	6	6	7	7	6	5
Depletion (cfs)	0.01	0.03	0.03	0.01	0.02	0.03	0.03	0.04	0.04	0.04	0.05	0.04	0.03



Well Log Statistics from Area Wells