

Groundwater Application Review Summary Form

Application # G- 18610

GW Reviewer Joseph Kempf Date Review Completed: 2/20/2019

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.

SI 3/8/19

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).

MEMO

2 | 20 | 20 | 19

FROM: GW: Joseph Kemper
(Reviewer's Name)

☒ YES☐ NO☒ YES☐ NO[illegible]

OK
HYQ

MEMO

To: Kristopher Byrd, Well Construction and Compliance Section Manager
From: Joel Jeffery, Well Construction Program Coordinator,
Subject: Review of Water Right Application G-18610
Date: March 22, 2019

The attached application was forwarded to the Well Construction and Compliance Section by Water Rights. Joe Kemper reviewed the application. Please see Joe's Groundwater Review.

Applicant's Well # L-121387 (JOSE 59780): Based on a review of the Well Report, Applicant's Well # L-121387 appears to protect the groundwater resource.

The construction of Applicants Well # L-121387 may not satisfy hydraulic connection issues.

amended
6/22/16
wp

5/28/2016

Page 1 of 1

Owner Well I.D. _____
Last Name **BRUMFIELD**

(2) TYPE OF WORK ☒ New Well ☐ Deepening ☐ Conversion
☐ Alteration (complete 2a & 10) ☐ Abandonment (complete 5a)

Casing:

Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd

Seal:

Material	From	To	Amt	sacks/lbs

☒ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger ☐ Cable Mud
☐ Reverse Rotary ☐ Other _____

PROPOSED USE ☒ Domestic ☐ Irrigation ☐ Community
☐ Industrial/ Commercial ☐ Livestock ☐ Dewatering
☐ Thermal ☐ Injection ☐ Other _____

Special Standard	(Attach copy)
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BORE HOLE

SEAL

sacks

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E

☒ Other POURED BENTONITE

Backfill placed from _____ ft. to _____ ft. Material _____

Filter pack from _____ ft. to _____ ft. Material _____ Size _____

Explosives used:	☐ Yes	Type	Amount
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Proposed Amount	Actual Amount
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Casing	Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
		6	☒	2	118	250			☒	
			☐						☐	
			☐						☐	
			☐						☐	
			☐						☐	

Shoe ☐ Inside ☒ Outside ☐ Other Location of shoe(s) 118

Temp casing ☐ Yes Dia _____ From _____ To _____

Perforations	Method
1	1
2	2
3	3
4	4
5	5
6	6
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98	98
99	99
100	100

[illegible]

Yield gal/min	Draw-down	Drill stem/Pump depth	Duration (hr)
50		120	1

Temperature 51 °F Lab analysis ☐ Yes By

Water quality concerns? ☐ Yes (describe below) TDS amount 133 ppm
From _____ To _____ Description Amount Units

Item	IC	Description	Amount	Unit

County JOSEPHINE Twp 40.00 S N/S Range 8.00 W E/W WM
Sec 14 NE 1/4 of the NE 1/4 Tax Lot 110
Tax Map Number Lot

Lat ° ' " or DMS or DD
Long ° ' " or DMS or DD

☒ Street address of well ☐ Nearest address

3827 DICK GEORGE RD CAVE JUNCTION OR 97523

	Date	SWL(psi)	+	SWL(ft)
Existing Well / Pre-Alteration				
Completed Well	5/19/2016			50
Flowing Artesian?	☐	Dry Hole?	☐	

WATER BEARING ZONES	Depth water was first found 140.00
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SWL Date	From	To	Est Flow	SWL(psi)	+ SWL(ft)
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5/19/2016	140	160	50		50

Ground Elevation

[illegible]

Date Started 5/19/2016 Completed 5/19/2016

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	Date
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Signed

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 1648 Date 5/28/2016

Signed BARRY PELKÉY (E-filed)

Contact Info (optional) BARRY PELKEY

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date 2/20/2019
 FROM: Groundwater Section Joe Kemper
 Reviewer's Name
 SUBJECT: Application G- 18610 Supersedes review of na
 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: Cole W. Brumfield, Golden Road Farms LLC
 County: Josephine

A1. Applicant(s) seek(s) 0.1114 cfs from 1 well(s) in the Rogue Basin,
Illinois subbasin

A2. Proposed use Irrigation Seasonality: Jan 1st – Dec 31st

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	JOSE 59780	L-121387	Alluvium	0.1114	40S/8W-14 NENE	65'N, 350'E fr SW cor NENE S 14

* 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	1,460	140	50	5/19/2016	160	0-40	-2-118	-	-	50	-	A

Use data from application for proposed wells.

A4. **Comments:** _____

A5. ☒ **Provisions of the** Rogue (OAR 690-515) 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); 7J (Scenic); 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:** There are limited water level data in the aquifer and vicinity of the applicant's proposed POA so Capacity of the Resource cannot be determined and water-level reporting conditions in B1(d) are recommended. The applicant's well is located approximately 500 feet from JOSE 13055, a POA under permit G-17795. As such, standard interference conditions should be applied.

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 of Illinois River Valey	☒	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐

Basis for aquifer confinement evaluation: The applicant's well log indicates fine grained sediments overlying water bearing sands and gravels at depth (140 ft to 160 ft BLS) with a final SWL of 50 feet BLS, indicating confined conditions.

C2. 690-09-040 (2) (3): Evaluation of distance to, and hydraulic connection with, surface water sources. All wells located a horizontal distance less than ¼ mile from a surface water source that produce water from an unconfined aquifer shall be assumed to be hydraulically connected to the surface water source. Include in this table any streams located beyond one mile that are evaluated for PSI.

Well	SW #	Surface Water Name	GW Elev ft msl	SW Elev ft msl	Distance (ft)	Hydraulically Connected?			Potential for Subst. Interfer. Assumed?	
						YES	NO	ASSUMED	YES	NO
1	1	East Fork Illinois River	1409	1410	4550	☒	☐	☐	☐	☒
1	2	Althouse Slough	1409	1410	5100	☒	☐	☐	☐	☒
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐

Basis for aquifer hydraulic connection evaluation: Observed groundwater elevations are above or coincident with adjacent stream elevations in an unconsolidated alluvial aquifer, indicating that water can move between the aquifer and surface water sources.

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

E FK ILLINOIS R > ILLINOIS R - AT MOUTH & ALTHOUSE CR > E FK ILLINOIS R - AT MOUTH

C3a. 690-09-040 (4): Evaluation of stream impacts for each well that has been determined or assumed to be **hydraulically connected and less than 1 mile** from a surface water source. Limit evaluation to instream rights and minimum stream flows that are pertinent to that surface water source, and 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	☐	☐	MF253A	40	☐	41.5	☐	<25%	☐
1	2	☐	☐	na	na	☐	6.22	☒	<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 #		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: Interference at 30 days was estimated using the Hunt (2003) stream-depletion model with parameter values in the range reasonably expected for the local geology.

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													
(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: No wells beyond 1 mile were evaluated for PSI.

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 applicant's proposed POA would be producing from an aquifer that has been found to be hydraulically connected to adjacent surface water sources, specifically Althouse Slough and the East Fork Illinois River. The proposed maximum rate of appropriation is greater than 1% of the pertinent adopted perennial streamflow for the Althouse Creek Water Availability Basin. Per OAR 690-009-0040(4) the proposed use/rate is assumed to have the Potential for Substantial Interference. The applicant could reduce their total rate to less than 0.0622 cfs (27.9 gpm) to avoid this assumption of PSI.

References Used:

Contreras, T. A. 2005. *Using Magnetotellurics to Characterize Aquifers in the Illinois Valley, Southwest Oregon*. MS Thesis, University of Oregon.

Hunt, B. 2003. Unsteady Stream Depletion when Pumping from a Semiconfined Aquifer. *Journal of Hydrologic Engineering*. Vol 8(1), pp 12-19

OWRD Groundwater Site Information System Database – Accessed 2/20/2019.

OWRD unpublished aquifer test data from JOSE 13046, JOSE 53718, & JOSE 13049.

Ramp, L. and Peterson, N. 2004. *Geologic Map of Josephine County, Oregon*. Oregon Dept. of Geol. and Mineral Industries, OFR O-04-13.

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

Water Availability Analysis

Detailed Reports

ALTHOUSE CR > E FK ILLINOIS R - AT MOUTH
ROGUE BASIN

Water Availability as of 1/29/2019

Watershed ID #: 69810 ([Map](#))
Date: 1/29/2019

Exceedance Level: 80% ▼
Time: 2:54 PM

Water Availability Calculation**Consumptive Uses and Storages****Instream Flow Requirements****Reservations****Water Rights****Watershed Characteristics****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	43.50	0.31	43.20	0.00	85.00	-41.80
FEB	73.60	0.39	73.20	0.00	85.00	-11.80
MAR	95.90	0.40	95.50	0.00	85.00	10.50
APR	87.70	0.44	87.30	0.00	85.00	2.26
MAY	46.20	0.43	45.80	0.00	85.00	-39.20
JUN	21.90	0.51	21.40	0.00	50.00	-28.60
JUL	11.70	0.61	11.10	0.00	34.00	-22.90
AUG	7.51	0.54	6.97	0.00	34.00	-27.00
SEP	6.22	0.43	5.79	0.00	50.00	-44.20
OCT	6.83	0.29	6.54	0.00	50.00	-43.50
NOV	11.00	0.23	10.80	0.00	85.00	-74.20
DEC	31.90	0.23	31.70	0.00	85.00	-53.30
ANN	47,500.00	291.00	47,200.00	0.00	49,000.00	10,900.00

Water Availability Analysis Detailed Reports

E FK ILLINOIS R > ILLINOIS R - AT MOUTH
ROGUE BASIN

Water Availability as of 2/19/2019

Watershed ID #: 70980 ([Map](#))

Exceedance Level: 80% ▼

Date: 2/19/2019

Time: 3:06 PM

Water Availability Calculation

Consumptive Uses and Storages

Instream Flow Requirements

Reservations

Water Rights

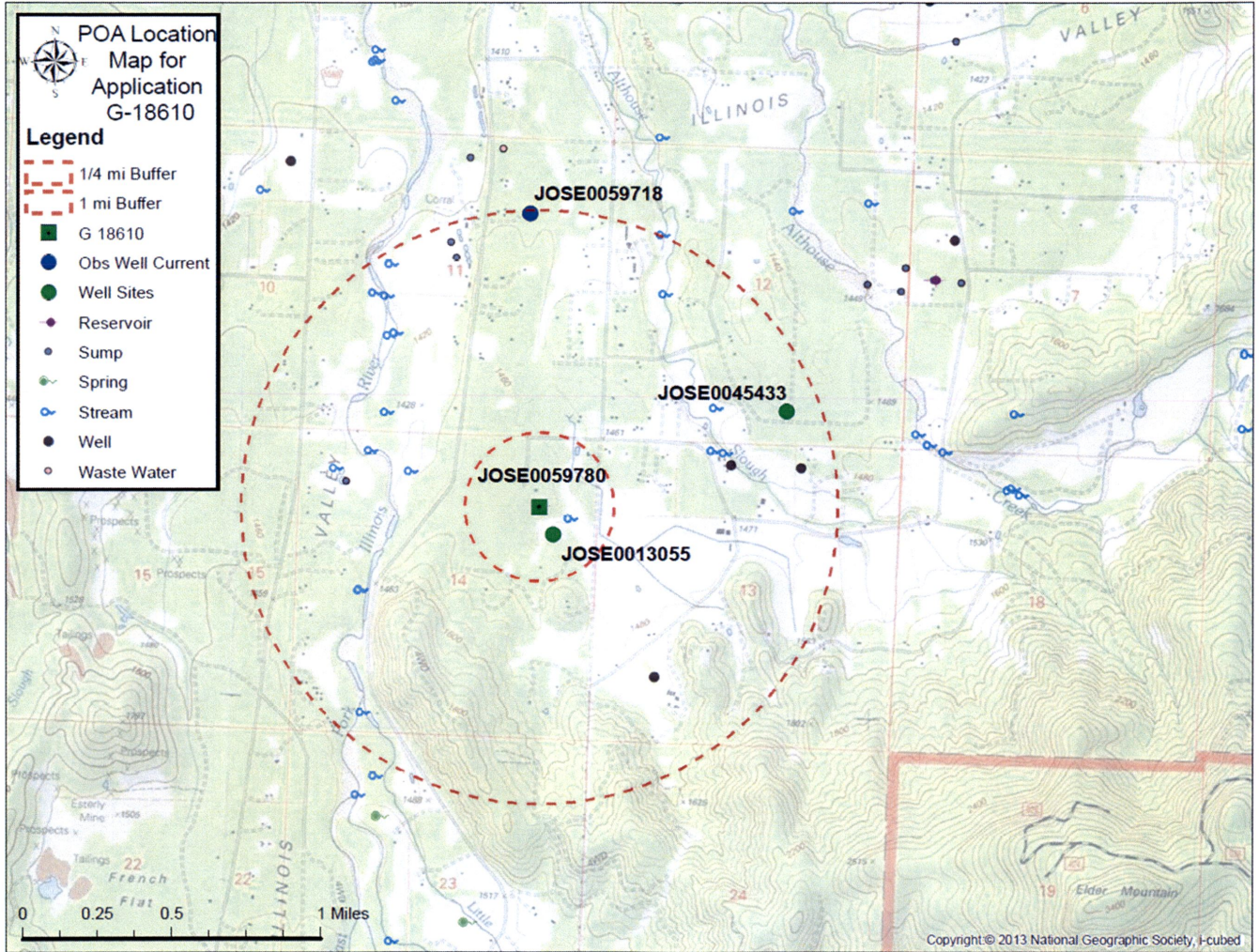
Watershed Characteristics

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	342.00	4.09	338.00	0.00	135.00	203.00
FEB	535.00	4.24	531.00	0.00	135.00	396.00
MAR	556.00	4.27	552.00	0.00	135.00	417.00
APR	498.00	8.84	489.00	0.00	135.00	354.00
MAY	317.00	11.70	305.00	0.00	135.00	170.00
JUN	139.00	14.90	124.00	0.00	80.00	44.10
JUL	66.30	18.80	47.50	0.00	60.00	-12.50
AUG	46.10	16.10	30.00	0.00	54.00	-24.00
SEP	41.50	11.80	29.70	0.00	70.00	-40.30
OCT	47.70	6.19	41.50	0.00	100.00	-58.50
NOV	102.00	3.70	98.30	0.00	135.00	-36.70
DEC	290.00	3.95	286.00	0.00	135.00	151.00
ANN	330,000.00	6,570.00	323,000.00	0.00	78,900.00	249,000.00

Well Location Map



Stream Depletion Model (Hunt, 2003)

Application type:	G
Application number:	18610
Well number:	1
Stream Number:	1
Pumping rate (cfs):	0.11
Pumping duration (days):	365

Parameter	Symbol	Scenario 1	Scenario 2	Scenario 3	Units
Distance from well to stream	a	4550	4550	4550	ft
Aquifer transmissivity	T	1000	5000	10000	ft ² /day
Aquifer storativity	S	0.001	0.005	0.0001	-
Aquitard vertical hydraulic conductivity	Kva	0.01	0.05	0.1	ft/day
Aquitard saturated thickness	ba	50	25	10	ft
Aquitard thickness below stream	babs	20	10	5	ft
Aquitard specific yield	Sya	0.2	0.2	0.2	-
Stream width	ws	50	50	50	ft

Stream depletion for Scenario 2:

Days	10	30	60	90	120	150	180	210	240	270	300	330	360
Depletion (%)	0	0	0	1	1	1	1	1	1	2	2	2	2
Depletion (cfs)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

