

Groundwater Application Review Summary Form

Application # G- 18579

GW Reviewer M. Thoma Date Review Completed: 02-01-19

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.

at 2/1/19

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).

OK.
KHW

MEMO

To: Kristopher Byrd, Well Construction and Compliance Section Manager
From: Joel Jeffery, Well Construction Program Coordinator
Subject: Review of Water Right Application G-18579
Date: March 14, 2019

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

Applicant's Well #1 (JOSE 60132): Based on a review of the Well Report, Applicant's Well #1 appears to protect the groundwater resource.

The construction of Applicants 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)

JOSE 60132

6/26/2017

WELL I.D. LABEL# L 125894
START CARD # 1034974
ORIGINAL LOG #

(1) LAND OWNER Owner Well I.D.
First Name JON Last Name ROBINSON
Company
Address 166 TAHOE CIRCLE
City GRANTS PASS State OR Zip 97527

(2) TYPE OF WORK 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
 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 300.00 ft

BORE HOLE SEAL
Dia From To Material From To Amt lbs
10 0 79 Bentonite Chips 0 79 49 S
6 79 300 Calculated 36.06
Calculated

How was seal placed: Method A B C D E
 Other DRY POURED

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 3 137 .250
 4 3 300 Sch 40
Shoe Inside Outside Other Location of shoe(s) 137
Temp casing Yes Dia 8 From + 2 To 4

(7) PERFORATIONS/SCREENS
Perforations Method SAW CUT
Screens Type Material
Perf/ Casing/ Screen Dia From To Scrn/slot Slot # of Tel/
Screen Liner Dia From To width length slots pipe size
Perf Liner 4 260 280 .188 4 60

(8) WELL TESTS: Minimum testing time is 1 hour
 Pump Bailer Air Flowing Artesian
Yield gal/min Drawdown Drill stem/Pump depth Duration (hr)
25 300 1

Temperature 53 °F Lab analysis Yes By
Water quality concerns? Yes (describe below) TDS amount 141 ppm
From To Description Amount Units

(9) LOCATION OF WELL (legal description)
County JOSEPHINE Twp 36.00 S N/S Range 6.00 W E/W WM
Sec 36 SE 1/4 of the SE 1/4 Tax Lot 2405
Tax Map Number Lot
Lat " or " DMS or DD
Long " or " DMS or DD
 Street address of well Nearest address
166 TAHOE CIRCLE GRANTS PASS, OR 97526

(10) STATIC WATER LEVEL
Date SWL(psi) + SWL(ft)
Existing Well / Pre-Alteration
Completed Well 6/21/2017 44
Flowing Artesian? Dry Hole?

WATER BEARING ZONES Depth water was first found 218.00
SWL Date From To Est Flow SWL(psi) + SWL(ft)
6/21/2017 218 291 25 44

(11) WELL LOG Ground Elevation
Material From To
GREY/BROWN CLAY TIGHT 0 22
BROWN CLAY & DECOMP GRANITE 22 71
BROWN & WHITE GRANITE MED HARD 71 132
GREY GRANITE MEDIUM 132 300

Date Started 6/21/2017 Completed 6/21/2017

(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 Date
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 1835 Date 6/23/2017
Signed KEVIN D GILL (E-filed)
Contact Info (optional) CLOUSER DRILLING INC.

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date 02/01/2019
 FROM: Groundwater Section Michael Thoma
 Reviewer's Name
 SUBJECT: Application G- 18579 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: Jon N. & Kelly A. Robinson County: Josephine

A1. Applicant(s) seek(s) 0.06 cfs from 1 well(s) in the Rogue Basin,
Middle Rogue subbasin

A2. Proposed use Irrigation; Pond Maintenance; Storage Seasonality: Mar 1 – Nov 1; Year-round; 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	JOSE 60132	1	Bedrock	0.06	36S/6W-36SESE	605'N, 1055'W fr SE cor S 36

* 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	1,072	218	44	6/21/2017	300	0-79	+3-137	3-300	260-280	25	-	A

Use data from application for proposed wells.

A4. **Comments:** _____

A5. **Provisions of the** Rogue (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:** Water level data from an OWRD Obs Well (JOSE 1479) in the vicinity of the proposed POA show long-term stable trends implying that the additional proposed groundwater use is within the capacity of the resource. There are four permitted groundwater rights within 1 mile of the proposed POA with the nearest one (GR 2521) being less than ¼ mile away. Interference in fractured-rock aquifers is difficult to predict given the inherent complexity with respect to the connectedness of the fractures but it is reasonable to assume that interference by the new use will not exceed 10-20 ft at the nearest existing permitted POA. In this region, well depths are typically 100-300 ft with water levels within 50 ft of land surface so interference would be < 10% of the aquifer thickness which will not likely lead to injury to existing water rights

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	Fractured Bedrock of Grants Pass Pluton	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>

Basis for aquifer confinement evaluation: In fractured-bedrock aquifer systems the primary movement of water is through discrete but connected fracture sets. These fractures generally extend to near the surface and so water within these fractures is likely under atmospheric pressure (unconfined) despite an overall low storage coefficient for the aquifer system as a whole.

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	Allen Creek	1028	960-980	>6700*	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>	<input type="checkbox"/>

Basis for aquifer hydraulic connection evaluation: Groundwater elevations are above surface water elevations implying that groundwater is flowing towards and discharging to surface water

* Allen Creek is intermittent at its upper reaches and not likely perennially hydraulically connected until farther downstream. Therefore the nearest point of evaluation for PSI is measured to the nearest surface POD below the upper reaches of the creek.

Water Availability Basin the well(s) are located within:
 ROGUE R > PACIFIC OCEAN – AB APPLGATE R (ID# 31530801)

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?
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<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"/>

Comments: no surface water sources were evaluated within 1 mile

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
1	1	%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS		0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06	0.06
Interference CFS		see comments below*											
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		2590	3220	3220	3150	2920	1810	1350	1170	1140	1170	1460	2080
(C) = 1 % Nat. Q		25.9	32.2	32.2	31.5	29.2	18.1	13.5	11.7	11.4	11.7	14.6	20.8
(D) = (A) > (C)													
(E) = (A / B) x 100		< 1 %	< 1 %	< 1 %	< 1 %	< 1 %	< 1 %	< 1 %	< 1 %	< 1 %	< 1 %	< 1 %	< 1 %

(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: _____

* interference was not estimated because the maximum permitted rate is less than 1% of the 80% Natural Flows for all months in the given WAB.

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 surface water – specifically Allen Cr. – at a distance greater than 1 mile. The maximum rate and maximum interference with surface water is less than 1% of the 80% Natural Flows for all months so the use is assumed to not have the Potential for Substantial Interference per OAR 690-009.

References Used:

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

Oregon Department of Geology and Mineral Industries, *Geologic Map of Oregon*. <http://www.oregongeology.org/geologicmap/>

OWRD Well Log Database – Accessed 2/1/2019.

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) _____

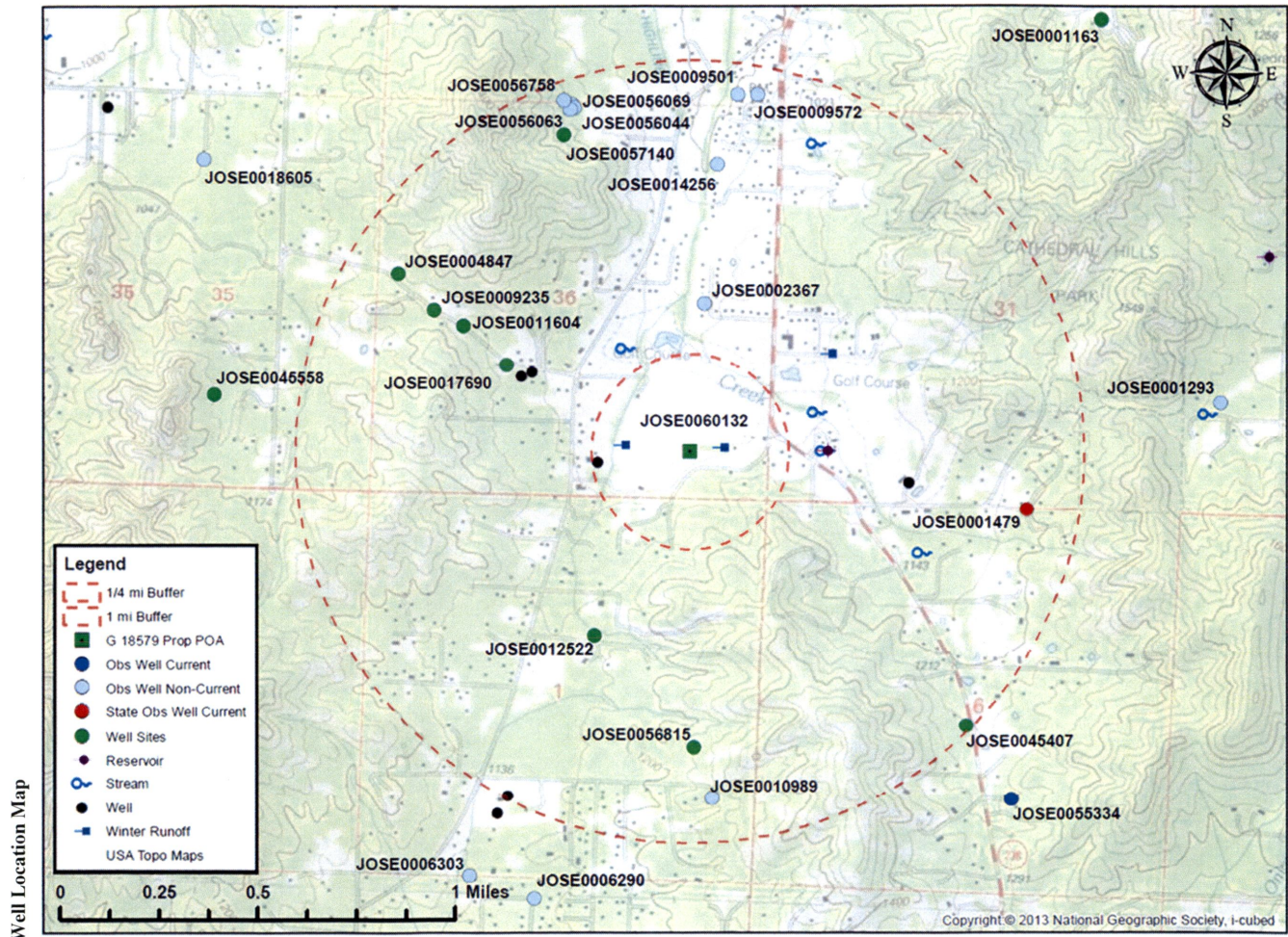
D3. **THE WELL construction deficiency or other comment is described as follows:** _____

D4. **Route to the Well Construction and Compliance Section for a review of existing well construction.**

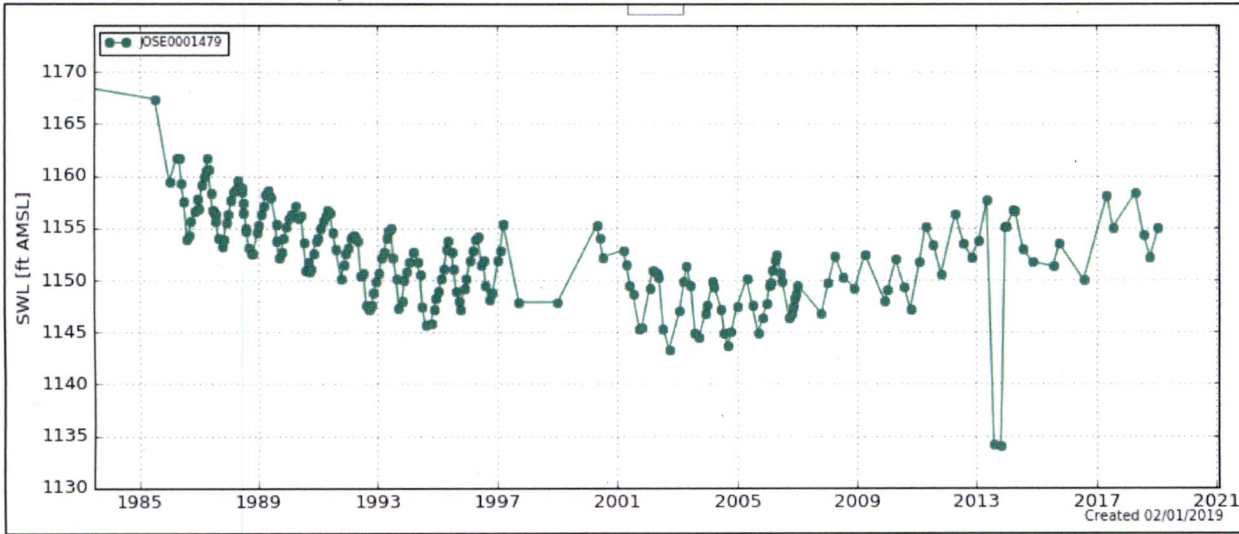
Water Availability Tables

<h2 style="margin: 0;">Water Availability Analysis</h2> <h3 style="margin: 0;">Detailed Reports</h3>																																																																																																									
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Water Availability as of 1/28/2019																																																																																																									
Watershed ID #: 31530801 (Map)							Exceedance Level: 80% ▾																																																																																																		
Date: 1/28/2019							Time: 12:55 PM																																																																																																		
Water Availability Calculation	Consumptive Uses and Storages	Instream Flow Requirements	Reservations																																																																																																						
Water Rights	Watershed Characteristics																																																																																																								
<h3 style="margin: 0;">Water Availability Calculation</h3> <p style="margin: 0;">Monthly Streamflow in Cubic Feet per Second</p> <p style="margin: 0;">Annual Volume at 50% Exceedance in Acre-Feet</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr style="background-color: #D9E1F2;"> <th style="text-align: left; padding: 5px;">Month</th> <th style="text-align: right; padding: 5px;">Natural Stream Flow</th> <th style="text-align: right; padding: 5px;">Consumptive Uses and Storages</th> <th style="text-align: right; padding: 5px;">Expected Stream Flow</th> <th style="text-align: right; padding: 5px;">Reserved Stream Flow</th> <th style="text-align: right; padding: 5px;">Instream Flow Requirement</th> <th style="text-align: right; padding: 5px;">Net Water Available</th> </tr> </thead> <tbody> <tr><td>JAN</td><td style="text-align: right;">2,590.00</td><td style="text-align: right;">1,090.00</td><td style="text-align: right;">1,500.00</td><td style="text-align: right;">0.00</td><td style="text-align: right;">0.00</td><td style="text-align: right;">1,500.00</td></tr> <tr><td>FEB</td><td style="text-align: right;">3,220.00</td><td style="text-align: right;">2,010.00</td><td style="text-align: right;">1,210.00</td><td style="text-align: right;">0.00</td><td style="text-align: right;">0.00</td><td style="text-align: right;">1,210.00</td></tr> <tr><td>MAR</td><td style="text-align: right;">3,220.00</td><td style="text-align: right;">1,780.00</td><td style="text-align: right;">1,440.00</td><td style="text-align: right;">0.00</td><td style="text-align: right;">0.00</td><td style="text-align: right;">1,440.00</td></tr> <tr><td>APR</td><td style="text-align: right;">3,150.00</td><td style="text-align: right;">1,030.00</td><td style="text-align: right;">2,120.00</td><td style="text-align: right;">0.00</td><td style="text-align: right;">0.00</td><td style="text-align: right;">2,120.00</td></tr> <tr><td>MAY</td><td style="text-align: right;">2,920.00</td><td style="text-align: right;">375.00</td><td style="text-align: right;">2,550.00</td><td style="text-align: right;">0.00</td><td style="text-align: right;">0.00</td><td style="text-align: right;">2,550.00</td></tr> <tr><td>JUN</td><td style="text-align: right;">1,810.00</td><td style="text-align: right;">419.00</td><td style="text-align: right;">1,390.00</td><td style="text-align: right;">0.00</td><td style="text-align: right;">0.00</td><td style="text-align: right;">1,390.00</td></tr> <tr><td>JUL</td><td style="text-align: right;">1,350.00</td><td style="text-align: right;">456.00</td><td style="text-align: right;">894.00</td><td style="text-align: right;">0.00</td><td style="text-align: right;">0.00</td><td style="text-align: right;">894.00</td></tr> <tr><td>AUG</td><td style="text-align: right;">1,170.00</td><td style="text-align: right;">410.00</td><td style="text-align: right;">760.00</td><td style="text-align: right;">0.00</td><td style="text-align: right;">0.00</td><td style="text-align: right;">760.00</td></tr> <tr><td>SEP</td><td style="text-align: right;">1,140.00</td><td style="text-align: right;">340.00</td><td style="text-align: right;">800.00</td><td style="text-align: right;">0.00</td><td style="text-align: right;">0.00</td><td style="text-align: right;">800.00</td></tr> <tr><td>OCT</td><td style="text-align: right;">1,170.00</td><td style="text-align: right;">226.00</td><td style="text-align: right;">944.00</td><td style="text-align: right;">0.00</td><td style="text-align: right;">0.00</td><td style="text-align: right;">944.00</td></tr> <tr><td>NOV</td><td style="text-align: right;">1,460.00</td><td style="text-align: right;">316.00</td><td style="text-align: right;">1,140.00</td><td style="text-align: right;">0.00</td><td style="text-align: right;">0.00</td><td style="text-align: right;">1,140.00</td></tr> <tr><td>DEC</td><td style="text-align: right;">2,080.00</td><td style="text-align: right;">533.00</td><td style="text-align: right;">1,550.00</td><td style="text-align: right;">0.00</td><td style="text-align: right;">0.00</td><td style="text-align: right;">1,550.00</td></tr> <tr><td>ANN</td><td style="text-align: right;">2,140,000.00</td><td style="text-align: right;">537,000.00</td><td style="text-align: right;">1,600,000.00</td><td style="text-align: right;">0.00</td><td style="text-align: right;">0.00</td><td style="text-align: right;">1,600,000.00</td></tr> </tbody> </table>								Month	Natural Stream Flow	Consumptive Uses and Storages	Expected Stream Flow	Reserved Stream Flow	Instream Flow Requirement	Net Water Available	JAN	2,590.00	1,090.00	1,500.00	0.00	0.00	1,500.00	FEB	3,220.00	2,010.00	1,210.00	0.00	0.00	1,210.00	MAR	3,220.00	1,780.00	1,440.00	0.00	0.00	1,440.00	APR	3,150.00	1,030.00	2,120.00	0.00	0.00	2,120.00	MAY	2,920.00	375.00	2,550.00	0.00	0.00	2,550.00	JUN	1,810.00	419.00	1,390.00	0.00	0.00	1,390.00	JUL	1,350.00	456.00	894.00	0.00	0.00	894.00	AUG	1,170.00	410.00	760.00	0.00	0.00	760.00	SEP	1,140.00	340.00	800.00	0.00	0.00	800.00	OCT	1,170.00	226.00	944.00	0.00	0.00	944.00	NOV	1,460.00	316.00	1,140.00	0.00	0.00	1,140.00	DEC	2,080.00	533.00	1,550.00	0.00	0.00	1,550.00	ANN	2,140,000.00	537,000.00	1,600,000.00	0.00	0.00	1,600,000.00
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AUG	1,170.00	410.00	760.00	0.00	0.00	760.00																																																																																																			
SEP	1,140.00	340.00	800.00	0.00	0.00	800.00																																																																																																			
OCT	1,170.00	226.00	944.00	0.00	0.00	944.00																																																																																																			
NOV	1,460.00	316.00	1,140.00	0.00	0.00	1,140.00																																																																																																			
DEC	2,080.00	533.00	1,550.00	0.00	0.00	1,550.00																																																																																																			
ANN	2,140,000.00	537,000.00	1,600,000.00	0.00	0.00	1,600,000.00																																																																																																			

POA Location Map for Application G-18579



Water-Level Trends in Nearby Wells



Well Log Data from Nearby Wells

