

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 77-14234

Exam Date: 08/01/2019

1. Current Owner:
PATRICIA J KNOWLTON 352 W AMARANTH DR WICKENBURG AZ 85390-4311

2. Accompanied by: (no one, Patricia lives out of state)

3. **SOURCE:**
UNNAMED STREAM

Tributary
JOHNSON CREEK

Method of Determination: site visit

B. OVERLAP REVIEW

1. Other water rights with the same place of use: No Overlap

Water Right No.	Source	Purpose of Use	Basis

Comments: This water right is held by the Richard and Mary Anne Miller and irrigates a parcel of land they own to the north of Knowlton's property.

2. Other water rights with the same point-of-diversion: NO Overlap

Water Right No.	Source	Purpose of Use	Basis

Comments: While the original permit sought to include a diversion point on Umpqua Creek, the beneficial use field exam and conversations with Patricia indicated the Knowlton's never developed a diversion point on Umpqua Creek.

C. DIVERSION AND DELIVERY SYSTEM

1. **LOCATION OF POINT(S) OF DIVERSION:**

UNNAMED STREAM L3 (SE¼ NW¼), Sec. 32, Twp 18N, Rge 08E, B.M. VALLEY County

Method of Determination: (GPS diversion point)

PLACE OF USE: IRRIGATION

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
18N	08E	32					5.0 L1												5.0

Total Acres: 5.0

Method of Determination:

3. ☒ Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.

- ☒ Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.
- ☐ Aerial Photo Attached (required for irrigation of 10+ acres).
- ☒ Photo of Diversion and System Attached

4. Diversion is a surface water diversion created by a diversion structure that feeds into a pipe.

D. FLOW MEASUREMENTS

1. Flow measurements are based on calculated flows. At the time of the beneficial use exam the diversion works were no longer in working order and the creek was dry. Since the proof of beneficial use was filed in 2013 and the diversions works are shown to be functioning through photos sent to John Westra on July 6, 2010, a calculated value was used to determine diversion capacity.

The system was broken and the unnamed stream was dry at the time of the field exam. I used IDWR's Manning's Flow Calculator v3.xlsm calculator to estimate the maximum flow through the pipe given a length of 215 feet and a drop of 24 feet for the diversion from the unnamed stream to the storage tank. From the storage tank the water was distributed through an irrigation system with even lower elevation. I assumed that the entrance of the pipe at the point of diversion would have been fully submerged, based on the observed design.

Manning's Equation Calculator for Flow Rate in a Circular Conduit Flowing Full

S = 0.1116 ft/ft
n = 0.009 manning's coefficient
d = 2.0 pipe diameter (inches)
D = 0.17 pipe diameter (feet)
r = 0.08 pipe radius (feet)
A = 0.02 area (ft²)
WP = 0.52 wetted perimeter (ft)
R = 0.04 hydraulic radius (ft)

Q = 0.14 flow rate (CFS)

Channel Slope Slope Options:
☐ Manual Entry ☒ Slope Calculator

Slope Calculator

Rise = 24 feet
Run = 215 feet
Slope, S = 0.1116 ft/ft

Pipe Material, (n):

Pipe Diameter (inches)

E. FLOW CALCULATIONS

Additional Computation Sheets Attached

Measured Method:

Since the estimated flow capacity of the diversion system on the unnamed stream on Forest Service Land is 0.14 cfs and the maximum diversion rate on the permit is $0.03 \text{ cfs} / \text{acre} \times 5 \text{ acres} = 0.15 \text{ cfs}$, it is estimated that the diversion capacity is the same as the permit 0.14 cfs. I recommend licensing this water right for the capacity of the system which is estimated as 0.14 cfs.

F. VOLUME CALCULATIONS**1. Volume Calculations for irrigation:**

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 3 \text{ ac-ft} / \text{acre} \times 5 \text{ acres} = 15 \text{ ac-ft}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.11 \text{ cfs} \times 187 \text{ days} \times 1.9835 \text{ ac-ft} / \text{day} = 40.8 \text{ ac-ft}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 15 \text{ ac-ft}$$

No volume limit is recommended per IDAPA 37.03.02.035.j.viii. Which states that volume limits are not required for diversions of natural flow from streams or springs.

2. Volume Calculations for Other Uses:**G. NARRATIVE/REMARKS/COMMENTS**

Patricia Knowlton and her late husband Stephen received a permit to appropriate 0.02 cfs of the water of the State of Idaho for stockwater purposes and 0.14 cfs for irrigation purposes on March 2, 2010. The Idaho Department of Water Resources received proof of beneficial use on January 29, 2013. At the time of the submittal of proof of beneficial use, I would assume the system was functional based on photographs sent in a letter sent to John Westra, Western Regional Manager, dated July 6, 2010. Since that time period, Stephen Knowlton passed away and Patricia is trying to sell the house and living in Arizona. When the field exam was performed the irrigation system and stockwater diversion were still in place but no longer functioning.

Although the surface water diversion system was not functioning the stockwater pond had water in it. Indicating that the Knowlton's unintentionally developed a spring. Thus there are now two points of diversion associated with the property, one of the two original proposed points of diversion and a spring source at the location of the pond.

The first diversion point from an unnamed stream (referred to locally as Umpqua Creek) was never developed.

The second diversion point from an unnamed stream located on Forest Service land approximately 250 feet south of the house and just a little east. An amendment is needed to correct the location of the point of diversion. The original permit indicates that the point of diversion is located in the NE1/4NW1/4 of Section 32, Township 18N, Range 08E, B.M. Valley County, however the actual location was found to be SE1/4NW1/4 L3 of Section 32, Township 18N, Range 08E, B.M. Valley County. The location was determined using a handheld GPS device. The diversion consists of a small dam and a PVC pipe which diverts water from the dam into a 550 gallon storage tank next to the garage. From the storage tank, the water can either be sent downhill to the stockwater pond or be used to irrigate an area surrounding the home and shop. At the time of the site visit (on August 1, 2019), the diversion system was no longer functional and the unnamed stream had dried up. The pond is roughly 100 feet long and 20 feet wide.

Despite the unnamed stream being dry and the irrigation system not being functional the pond was partly full of water. That the pond contains water without being filled by the diversion indicates that the Knowlton's developed a spring, thus developing a second point of diversion (POD). The outflow structure from the pond which conveyed water under the driveway was above the water level of the pond. The depth of the pond was approximately 1.5 feet. However the high water mark appeared to allow a depth of four feet. Pictures submitted by the landowner on July 6, 2010 [see letter to John Westra] show that they use to fill the pond from the diversion on the unnamed stream on Forest Service land. Analysis using the Pond Seepage Spreadsheet developed at IDWR indicates that the pond could fill up in five days at the rate of 0.02 cfs the pond is larger than what is allowed for stockwater use. As such, I recommend

that this pond not be included in water right 77-14234 and that Patricia either fills in the pond or applies for a new permit to use the pond for aesthetic purposes.

An email from Patricia Knowlton, dated August 14, 2019, indicates that they did not raise animals. Therefore I recommend removing the stockwater portion from the permit.

A discussion of the conditions as they were met or not met by the Knowlton's. Some conditions refer to future actions that were not required at the time and will be carried on to the water right. These conditions are not addressed. All conditions that required action prior to the submittal of proof of beneficial use are included below.

- 1) Condition #1 required that proof of beneficial use be submitted on or before March 01, 2013. The proof of beneficial use was received by IDWR on January 29, 2013.
- 2) Condition #4 states that the water right holder will comply with requirements by Fish and Game to install fish screens. Scott Reinecker sent a letter dated April 18, 2007 stating that "we do not see impacts to fish populations from this request."
- 3) Condition #5 requires that the water right holder install a lockable headgate. There are several ways the headgate could be locked, the pipe could be removed from the small dam and locked to a nearby tree trunk, or one of the ball valves in the 2" pvc pipe used for diversion could be shut and locked if necessary. There are multiple ball valves located in the system. Probably the ideal place to control the headgate would be at the ball valve located just below the storage tank, where the system splits to deliver water to the pond and the sprinkler system (see pictures at the end of the field exam). The location is near the house and is easy to access.
- 4) Condition # 6 is met, because the entire diversion system is constructed above ground. There are plenty of long stretches of pipe on which a measuring device could be installed if required by the department per condition #7.
- 5) Condition #9 was not met. The storage pond cannot be filled within 24 hours for use of stockwater. The permit did not have a storage right for irrigation purposes associated with it. I'm recommending that this permit be converted to a water right without authorization for the pond.
- 6) Condition #11. An email from Patricia dated August 14, 2019 indicates that they never utilized the property for raising stock.
- 7) Condition #12. A diversion was only made on the unnamed stream and not from Umpqua Creek.

Have conditions of permit approval been met? X Yes No

H. RECOMMENDATIONS

1. Recommended Amounts

<u>Beneficial Use</u>	<u>Period of Use</u>	<u>Rate of Diversion</u>	
IRRIGATION	04/15 to 10/31	0.14 CFS	
<u>Totals:</u>		0.14 CFS	

2. Recommended Amendments

x Change P.D. as reflected above Add P.D. as reflected above None
 Change P.U. as reflected above Add P.U. as reflected above None

The point of diversion needs to be moved into the correct quarter quarter.

I. **AUTHENTICATION** David Hoekema - Hydrologist, Technical

Field Examiner's Name David Kuehn Date 6/8/2020
Reviewer Angela M. Gunn Date 9/15/2020

Photographs from field visit

Diversion from an unnamed stream that was dry on August 1st, 2019. This diversion leads to the storage tank (below). Just below the storage tank where the system splits to deliver water to the irrigation system and the pond that could control the system. The irrigation system irrigates approximately the 5.0 acres surrounding the house, and supplies water to the pond. This system was no longer functioning, several joints in the pipe had come apart.



The overflow, or culvert that allows water to drain under the driveway and eventually to Johnson Creek is shown below.

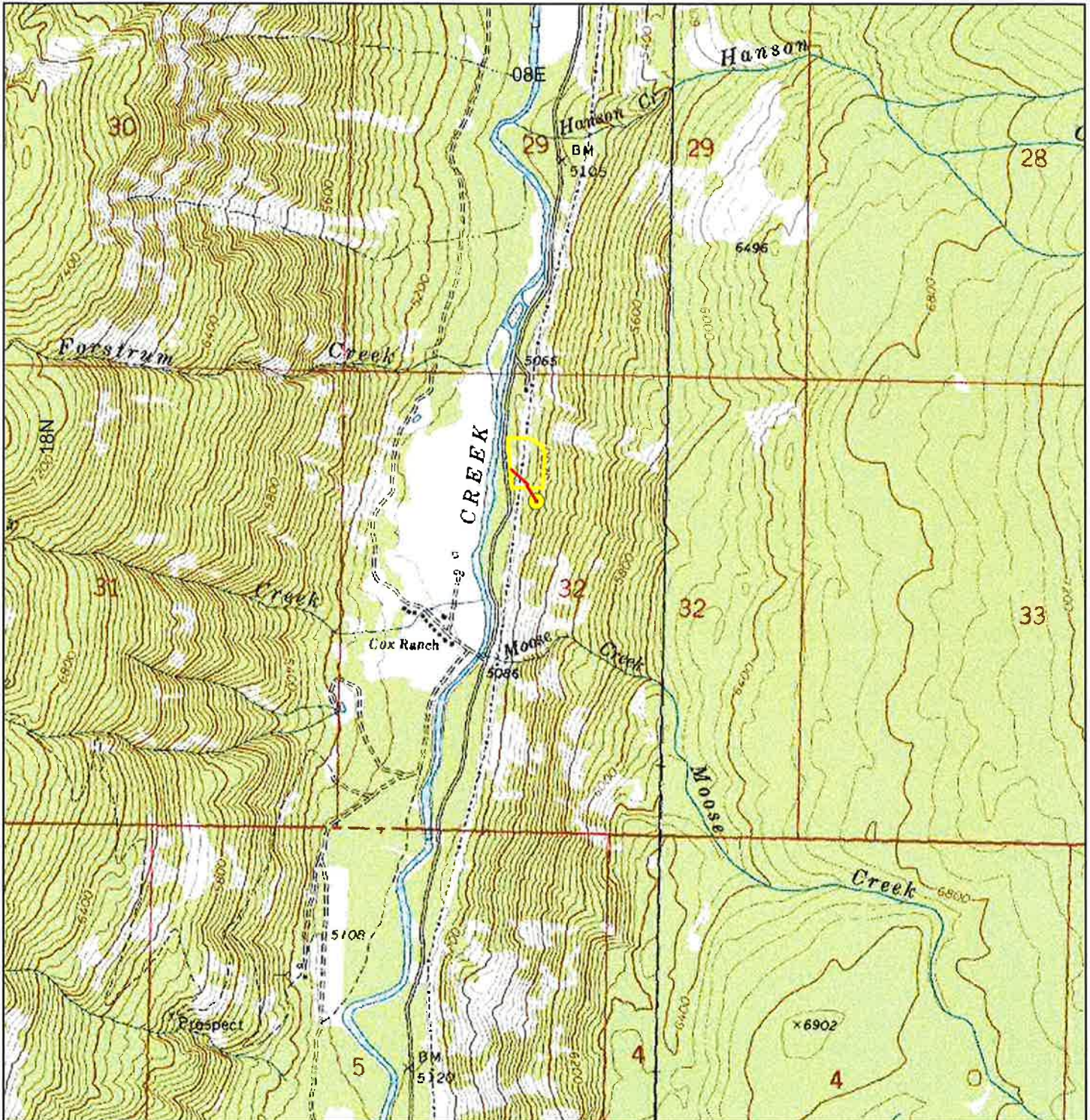


State of Idaho
Department of Water Resources

Location Map

77-14234

The property is located along east side of Johnson Creek opposite the Cox Ranch, about 8.5 miles south of Yellow Pine.



● Point of Diversion

□ Place Of Use Boundary

0 0.2 0.4 0.8 Miles



State of Idaho
Department of Water Resources
Delivery System Diagram
77-14234

The place of use is roughly defined by the yellow polygon. The diversion is located on Forest Service property to the southeast of the house. A 2 inch pvc pipe transports water from the point of diversion to a storage tank located near a garage. From there the water is either distributed to an irrigation system on the hill surrounding the house or is sent downstream to a pond. In a letter dated July 6, 2010 the Knowlton's mentioned irrigating several acres of pasture with a pump from the pond.



-  Place Of Use Boundary
-  Townships
-  PLS Sections
-  Quarter Quarters

0 0.015 0.03 0.06 Miles



Photographs from field visit

Diversion from an unnamed stream that was dry on August 1st, 2019. This diversion leads to the storage tank (below), irrigates the 5.0 acres surrounding the house, and supplies water to the stockpond. This system was no longer functioning, several joints in the pipe had come apart.



The overflow, or culvert that allows water to drain under the driveway and eventually to Johnson Creek is shown below.



Hoekema, David

From: Hoekema, David
Sent: Thursday, August 15, 2019 10:13 AM
To: 'Patricia Knowlton'
Subject: RE: Site visit for Beneficial Use Analysis at your property 1700 S. Johnson Creek Road, Yellow Pine, ID

Patti,

Thank you so much for your quick response. I don't need pictures if they are not readily available.

Your explanation of the system was very helpful.

When I was on the property I saw a diversion on what I understood to be Umpqua Creek. The diversion was located about 400 feet north and a little east of the garage (e.g. the garage north of your house located where the driveway turns sharply south and heads for the uphill side of your home). I saw a black 2 inch pipe running down the south side of the creek. Was that diversion works for the Miller's? From what you wrote in the first short paragraph below and the final paragraph, it sounds like you did not divert any water from Umpqua Creek. Is that correct?

The reason I'm double checking on the diversion of Umpqua Creek, is that your permit allowed you to divert from Umpqua Creek. We will take Umpqua Creek off the water right license if it was not used for irrigation. We want to license the water right exactly as the permit was developed.

Thanks for helping me understand your water system, I will finish preparing the beneficial use report this week. Then I will spend the next week in Utah where we are working on a three-state agreement for the management on the Bear River. I'll submit the beneficial use report to the Water Rights Section of the Idaho Department of Water Resources (IDWR) on August 27th. You should hear back from IDWR regarding your water right license in September. Thank you for your patience in this matter.

Sincerely,
David Hoekema
*Hydrologist
Hydrology Section
Idaho Department of Water Resources
322 E. Front Street
Boise, ID 83702*

*office: (208) 287-4830
mobile: (714) 697-3203*

From: Patricia Knowlton [mailto:pattiknowlton501@gmail.com]
Sent: Wednesday, August 14, 2019 7:28 PM
To: Hoekema, David <David.Hoekema@idwr.idaho.gov>
Subject: Re: Site visit for Beneficial Use Analysis at your property 1700 S. Johnson Creek Road, Yellow Pine, ID

David,

We use a gravity water system that was off of the small creek that was south of our property. A no name creek, not Umpqua Creek, that is on our property, north of the house.

We used the water to fill a 500 gallon water tank, east, above, of the south garage to use with sprinklers around the house for fire protection. We used the sprinklers in the summer to also water the lawn, the bank down to the pond. The pond was used to run the water into, when we were not watering. The pond stays at the level of Johnson Creek. We did not use it to fill the pond. The excess water to the little creek that came out at the mail box, ran through a flume into the south end of the pond. It then ran out of the north end of the pond through the willow area where water stood in that corral. Then it ran through the smaller corral and into an existing ditch on the east side of the north meadow, into Umpqua Creek, below Dick and Mary Anne Miller's home, back into Johnson Creek.

(Please forgive me, this paragraph should be before the one above.)

We put head gate to raise the water to run on top of the ground through a hose, approximately 50 feet across the side of the mountain, to then run down the hill, making another smaller creek. Made another head gate type of dam in it closer to our house, to run through another hose to cross another lower section of the mountain. It ran from there through another blue hose filling the water tank. The water watered around the house, the excess ran down into the pond and back into Johnson Creek when we were not using it. The excess water from the little creek also ran into pond coming out at the mail box. It ran into the pond's south end, ran out the north end of the pond, into the ditch, into Umpqua Creek. All water we did not use returned to Johnson Creek. It was all gravity pressure, no pumps.

We did use a pump at the pond, but not to irrigated, we used the gravity system to irrigate everything. We had a pump to use if we needed it to water around the pond. It would not have been of value above the house. We could wet down 50 feet above the house with the gravity system.

We did not have animals, the man we purchased it from did. They lead them to Johnson Creek I think.

The water system gave us a piece of mind, we were there in 2007, then we came up with the system. We got permission, they told us all had to be above ground.. Steve, my husband, took care of getting permission. This is what I recall.

I helped him build it, and get it running in the spring every year. The deer and elk caused a need during the winters.

I know I have photos, I have no idea where. We did not use Umpqua Creek because Dick and Mary Anne Miller used it at that time as their house water.

I hope this answers your questions.

Thank you,
Patti Knowlton

Sent from my iPhone

On Aug 14, 2019, at 2:53 PM, Hoekema, David <David.Hoekema@idwr.idaho.gov> wrote:

Patti,

Could you please answer a few questions. Because the irrigation system and stock were not on the land during my site visit, I need some help from you in describing how your water system worked:

- 1) Was the diversion on Umpqua Creek used primarily for irrigation, or did you also use that point of diversion for stockwater purposes or to fill the pond?
- 2) Did the irrigation around the house utilize gravity pressure from the diversion on Forest Service Land or did you have a pump to help with pressurizing the irrigation system?

- 3) Did you ever use a pump at the pond for irrigation or fire suppression purposes?
- 4) How much stock (horses, cattle, or other animals) did you have on the property?

If you have any pictures of the water system in operation that would also be helpful to writing up the beneficial use report. I have a picture in the backfiles on the water right showing the pond being filled from the diversion on forest service land. However I do not have any pictures of the Umpqua Creek diversion or pond being used for irrigation or other purposes.

Thanks for your time,

David Hoekema
Hydrologist
Hydrology Section
Idaho Department of Water Resources
322 E. Front Street
Boise, ID 83702

office: (208) 287-4830
mobile: (714) 697-3203

David Hoekema

From: Patricia Knowlton [<mailto:pattiknowlton501@gmail.com>]
Sent: Tuesday, August 13, 2019 7:42 PM
To: Hoekema, David <David.Hoekema@idwr.idaho.gov>
Subject: Re: Site visit for Beneficial Use Analysis at your property 1700 S. Johnson Creek Road, Yellow Pine, ID

I saw where you asked for my address. It is Patti Knowlton, 352 West Amaranth Drive, Wickenburg, Az. 85390. Please email if I can be of further help.

Thank you,
Patti Knowlton

Sent from my iPhone

On Jul 31, 2019, at 10:50 AM, Hoekema, David <David.Hoekema@idwr.idaho.gov> wrote:

Dear Patricia,

I am planning to visit your property (1700 S. Johnson Creek Road near Yellow Pine, ID) for a water right beneficial use analysis tomorrow (August 1, 2019) as we discussed on July 12th. If for some reason that does not work for you, please call me back or email me using the contact information below.

After the water right exam I will submit my findings to the Water Right Section of the Idaho Department of Water Resources and hopefully provide you with a water right by the end of August. Thank you for your patience in this matter.

Sincerely,
David Hoekema
Hydrologist

*Hydrology Section
Idaho Department of Water Resources
322 E. Front Street
Boise, ID 83702*

*office: (208) 287-4830
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Hoekema, David

From: Patricia Knowlton <pattiknowlton501@gmail.com>
Sent: Tuesday, August 13, 2019 7:42 PM
To: Hoekema, David
Subject: Re: Site visit for Beneficial Use Analysis at your property 1700 S. Johnson Creek Road, Yellow Pine, ID

Follow Up Flag: Follow up
Flag Status: Flagged

I saw where you asked for my address. It is Patti Knowlton, 352 West Amaranth Drive, Wickenburg, Az. 85390. Please email if I can be of further help.

Thank you,
Patti Knowlton

Sent from my iPhone

On Jul 31, 2019, at 10:50 AM, Hoekema, David <David.Hoekema@idwr.idaho.gov> wrote:

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Boise, ID 83702

office: (208) 287-4830
mobile: (714) 697-3203

Hoekema, David

From: Patricia Knowlton <pattiknowlton501@gmail.com>
Sent: Wednesday, July 31, 2019 3:29 PM
To: Hoekema, David
Subject: Re: Site visit for Beneficial Use Analysis at your property 1700 S. Johnson Creek Road, Yellow Pine, ID

You may certainly visit the property, as we discussed I am in Az. If you need any information please call me.
Thank you,
Patti Knowlton

am in

Sent from my iPhone

On Jul 31, 2019, at 10:50 AM, Hoekema, David <David.Hoekema@idwr.idaho.gov> wrote:

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Sincerely,
David Hoekema
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Idaho Department of Water Resources
322 E. Front Street
Boise, ID 83702

office: (208) 287-4830
mobile: (714) 697-3203

Hoekema, David

From: Hoekema, David
Sent: Thursday, July 11, 2019 2:46 PM
To: 'pattiknowlton501@gmail.com'
Subject: Beneficial Use Field Exam

Dear Patricia Knowlton,

I am writing to follow up on the telephone conversation we had this afternoon. I left a message with your realtor, Michelle Basey, to see if she would like to provide me access to your land on Johnson Creek in Idaho. With your permission I am planning to visit the property and complete the beneficial use field exam so that the Idaho Department of Water Resources can convert your water permit into a water right. At this point I am planning to visit your property on either July 31st or August 1st, unless a better time works out for your realtor. Please feel free to contact me if you have any questions.

Sincerely,

David Hoekema

Hydrologist

Hydrology Section

Idaho Department of Water Resources

322 E. Front Street

Boise, ID 83702

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mobile: (714) 697-3203