

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 96-9634
Exam Date: 07/09/2020

1. Current Owner:
BARBARA COLLINS 324 SUNCHASER LN SAGLE ID 83860-5054
2. Accompanied by: Barbara Collins
Phone No: 916-717-8228
Address: Same as above
Relationship to permit Holder: Permit holder

3. **SOURCE:**
GROUND WATER

Tributary
CARR CREEK

Method of Determination: Arcmap and DRG

B. OVERLAP REVIEW

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

Water Right No.	Source	Purpose of Use	Basis

Comments: _____

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

Water Right No.	Source	Purpose of Use	Basis

Comments: _____

C. DIVERSION AND DELIVERY SYSTEM

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

GROUND WATER NE¼ SW¼, Sec. 23, Twp 57N, Rge 03W, B.M. BONNER County

Method of Determination: GPS, POD located at -116°39.967, 48°16.218

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	
57N	03W	23									0.7			0.3					1.0

Total Acres: 1.0

PLACE OF USE: STOCKWATER

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
57N	03W	23									X			X					

PLACE OF USE: DOMESTIC

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
57N	03W	23									X								

Method of Determination: Drive by field exam, photographs, and Arcmap aerial imagery.

3.

Delivery System Diagram Attached (required). Indicate all major components and distances between components.

X 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.

X

X Aerial Photo Attached (required for irrigation of 10+ acres).

X Photo of Diversion and System Attached

4.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
CONCRETE CISTERN	FRANKLIN	1/2			

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
NONE						

2. Measurements: Unable to perform flow measurement because system pumped directly into storage tank and pressure tanks.

E. FLOW CALCULATIONS

X Additional Computation Sheets Attached

Measured Method: Theoretical pumping equation derives a flow rate of 11.8 gpm or **0.03 cfs** considering department rounding standards, with pump installed at depth of approximately 30 ft and operating at 45 PSI.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 1.0 \text{ acres} \times 3.0 \text{ afa} = 3.0 \text{ af}$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.03 \text{ cfs} \times 214 \text{ days} \times 1.9835 = 12.7 \text{ af}$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = \mathbf{3.0 \text{ af}}$$

2. Volume Calculations for Other Uses:

Domestic component annual volume = 1 home without irrigation = **0.6 af**

Stock Water volume = 10 head of mixed stock x 12 GPD x 365 days = 43,800 gal / 325,850 gallons = **0.1 af** considering department rounding standards.

Maximum annual diversion volume = 0.6 af (domestic) + 3.0 af (irrigation) + 0.1 af (stockwater) = **3.7 af**

G. NARRATIVE/REMARKS/COMMENTS

Field exam performed on 7/9/2020 with the permit holder, Barbara Collins showed a concrete cistern that was co-located with Carr Creek and intercepted groundwater prior to it flowing into the creek. The groundwater source was used by the applicant for domestic, irrigation, and stockwater uses. I was unable to perform a flow measurement as water was pumped from within the concrete cistern, underground and uphill approximately 30 feet, where it tied into a home water system and pressure tank resulting in inadequate pipe requirements for flow measurements. Looking inside the concrete cistern showed small 1 inch piping, and a small pump that I was unable to collect make/model information off of. The current owner stated the pump had been replaced in June of 2020 with the same HP size pump as removed, and the new pump was a Franklin ½ HP submersible pump. Theoretical pumping equation derives a flow rate of 11.8 gpm or 0.03 cfs considering department rounding standards, with pump installed at depth of approximately 30 ft and operating at 45 PSI.

Due to the pump performance limitations, the domestic use diversion rate is limited to 0.03 versus the department standard of 0.04 cfs for licensing purposes. The irrigation component maintains a diversion rate of 0.03 cfs for 1.0 acre of irrigation, and the stockwater diversion rate maintains a 0.02 cfs for 10 head of mixed stock. Due to pump performance limitations, the three beneficial uses diversion rates are not additive, and the maximum diversion rate is capped at **0.03 cfs** for licensing purposes.

Photographs taken during the field exam show beneficial use of water at the applicant's POU. One home was identified during the field exam, which had an earthen sod roof, making the home difficult to see using Arcmap aerial imagery. The annual volume associated with the domestic beneficial use equals **0.6 af**, which will be applied to the license.

The irrigation POU observed during the exam was annotated on field maps, and during licensing review Arcmap aerial imagery was used to trace out the irrigation POU equal to 1.0 acres. The annual volume for licensing purposes equals 1.0 acres x 3.0 afa = **3.0 af**, which will be carried to licensing. The applicant used hoses and sprinklers from hose bibs piped from the home for irrigation at the POU.

The applicant applied for stock water use for up to 10 head of mixed stock. During the exam, salt blocks and cattle usage were observed on the applicant's property. The applicant had a few chickens that consumed minimal water, and the stockwater annual volume for licensing purposes was derived using the mixed stock equation 10 head of mixed stock x 12 GPD x 365 days = 43,800 gal / 325,850 gallons = **0.1 af** considering department rounding standards. The maximum diversion volume for licensing purposes equals 0.6 af (domestic use) + 3.0 af (irrigation use) + 0.1 af (stockwater use) = **3.7 af**.

The permit was approved for a second groundwater source POD, as well as a storage pond for multiple uses. During the drive by exam it was observed that the applicant used a portable water transfer pump with intake pipe in Carr Creek to pump to the storage pond. As this was not a permit approved source of diversion, a groundwater POD was removed from the permit during licensing review along with the following beneficial uses: diversion to storage, irrigation storage, irrigation from storage, stockwater storage, stockwater from storage, and fire protection storage. The permit holder was notified a separate

application for permit would be required for the diversion of Carr Creek water, and at time of licensing review Barbara Collins had applied for the new application for permit No. 96-9833. Right 96-9833 includes the previously mentioned storage/from storage beneficial uses and diversion from Carr Creek. Any overlap between rights 96-9634 and 96-9833 will be identified and accounted for on right 96-9833.

Conditions 26A, 046, 218, 219, 220, and a stockwater text condition were removed from the permit during licensing review. X59 and X60 were added describing that the POD and POU are located within Lot 19, Carr Creek Subdivision. All other conditions from permit will be carried forward to the license. There are no overlap concerns for this water right.

Have conditions of permit approval been met? ☒ Yes ☐ No

H. RECOMMENDATIONS

1. Recommended Amounts

<u>Beneficial Use</u>	<u>Period of Use</u>	<u>Rate of Diversion</u>	<u>Annual Volume</u>
IRRIGATION	04/01 to 10/31	0.03 CFS	3.0 AF
STOCKWATER	01/01 to 12/31	0.02 CFS	0.1 AF
DOMESTIC	01/01 to 12/31	0.03 CFS	0.6 AF

Totals: 0.03 CFS 3.7 AF

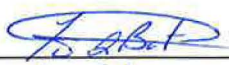
2. Recommended Amendments

☐ 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

I. AUTHENTICATION

Luke Bates - Water Resource Agent

Field Examiner's Name  Date 17 December 2020

Reviewer  Date 1/14/2021

State of Idaho
Department of Water Resources
Attachment to Field Exam
96-9634

DOMESTIC system diagram.



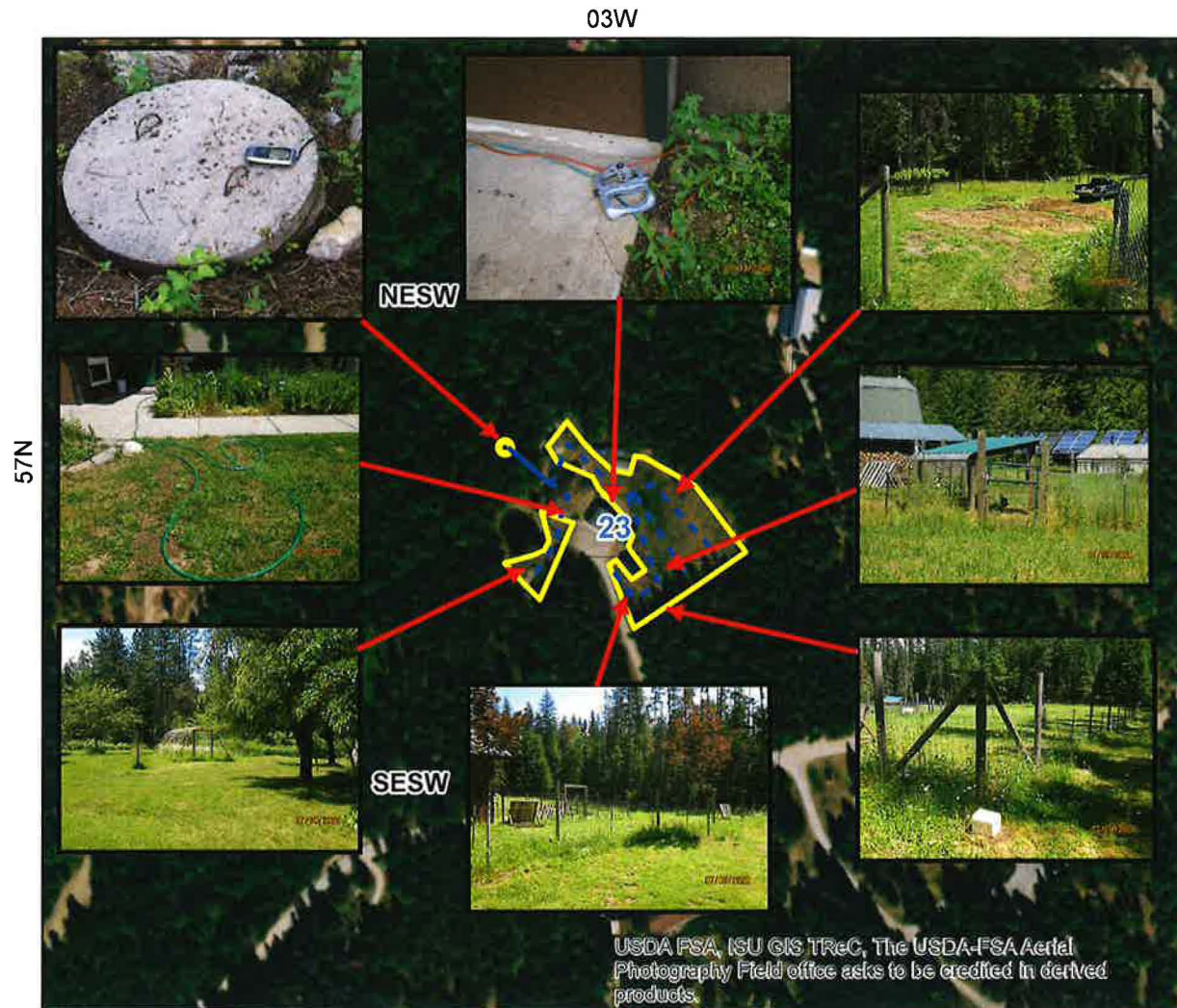
-  Point of Diversion
-  Place Of Use Boundary
-  Townships
-  PLS Sections
-  Quarter Quarters

0 0.035 0.07 0.14 Miles



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IRRIGATION and STOCKWATER system diagram.



- Point of Diversion
- Place Of Use Boundary
- Townships
- PLS Sections
- Quarter Quarters

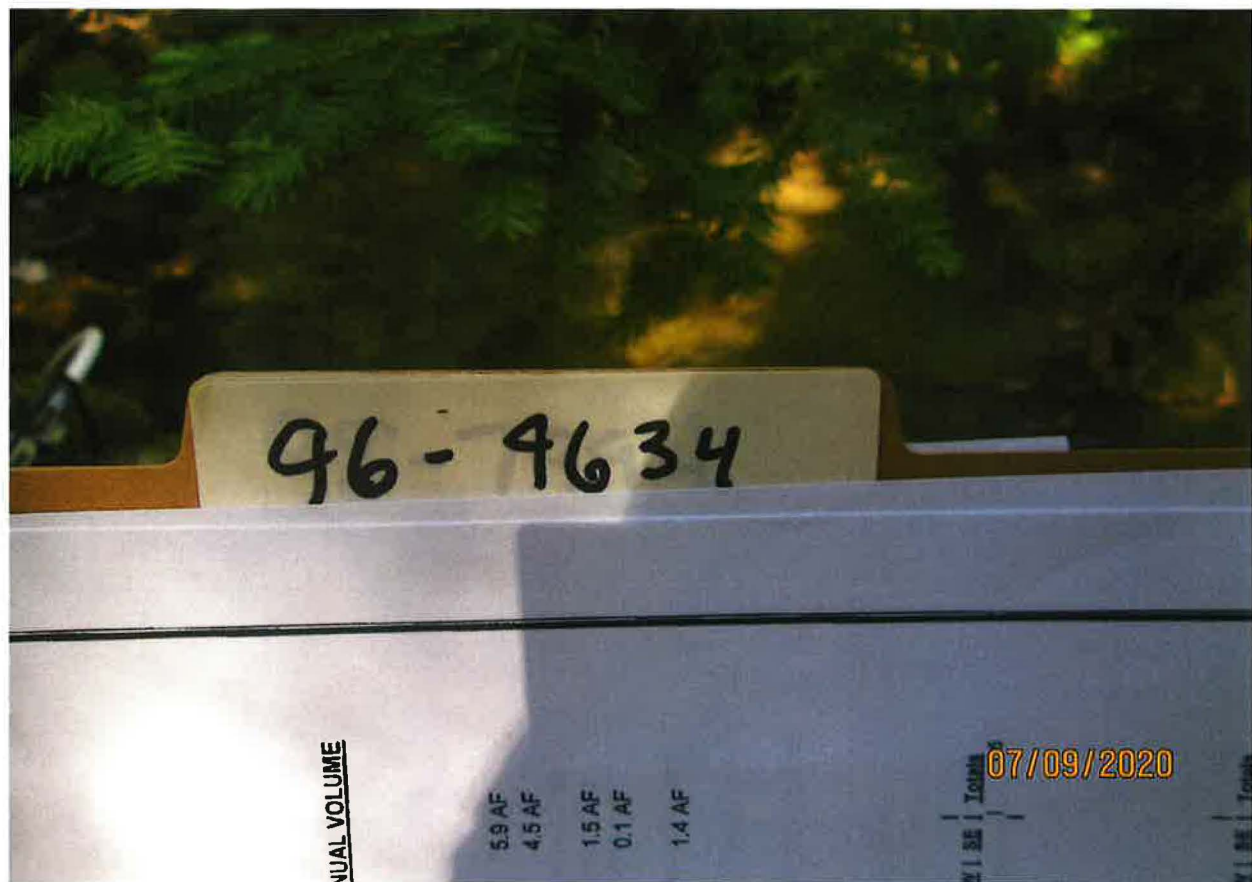
0 0.035 0.07 0.14 Miles



THEORETICAL PUMPING EQUATION FOR WR# 96-9634

Theoretical Pumping Equation is required because system did not allow for a proper measurement. Pump is estimated to be at 30 ft, and running at 45 psi.

<u>PUMP EQUATIONS</u>						
WATER RIGHT No. 96-9634						
		HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
Q =	HP*8.8*Eff/H	0.5	134.0816	0.8	30	45
Q = 0.026 cfs		11.8 gpm				



POD – CONCRETE CISTERN THAT INTERCEPTS GROUNDWATER AS IT FLOWS TOWARD CARR CREEK



POD - CONCRETE CISTERN COLLECTING GROUNDWATER



DOMESTIC POU



IRRIGATION POU





IRRIGATION AND STOCKWATER POU





IRRIGATION POU





IRRIGATION POU





EXAMPLE OF SPRINKLER USED FOR IRRIGATION



IRRIGATION AND STOCKWATER POU



IRRIGATION AND STOCKWATER POU

