

MEMORANDUM

TO: File

FROM: Rick Collingwood

DATE: 12-26-13

RE: Water Right Permit No. 67-7996 (Domestic Use)

67-15102

The beneficial uses for Water Right Permit No. 67-7996 are domestic, irrigation, irrigation storage, irrigation from storage, fire protection storage, diversion to storage, and aesthetic storage. The sources of water for the beneficial uses are ground water, springs, and an Unnamed Stream. However, the permit is comprised of two separate water supply systems.

One water supply system is a ground water well, which provides water for domestic use for one home. The second water supply system is the springs and Unnamed Stream, which provides water for irrigation, irrigation storage, fire protection storage, and aesthetic storage.

Since the two water supply systems are not connected and provide water for separate beneficial uses, the domestic use was removed from Water Right Permit No. 67-7996. The domestic use will be licensed under a new water right at time of licensure for Water Right Permit No. 67-7996.

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATIONPermit No: ~~67-7996~~ **67-15102**

Exam Date: 7/15/2013

1. Current Owner: DANIEL G GIBSON JR
19500 HWY 20-26
CALDWELL ID 83607
(208)453-2649

CAROLYN A GIBSON
19500 HWY 20-26
CALDWELL ID 83607
(208)453-2649

2. Accompanied by: Dan Gibson
Phone No: Same
Address: Same
Relationship to Permit Holder:

3. SOURCE
SPRING
UNNAMED STREAM

TRIBUTARY
WEST FORK WEISER RIVER
WEST FORK WEISER RIVER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: None
2. Other water rights with the same point of diversion: None

C. DIVERSION AND DELIVERY SYSTEM**1. LOCATION OF POINT(S) OF DIVERSION:**

SPRING	NW1/4NW1/4	Sec. ~~1~~ ¹² Twp 19N, Rge 01W, B.M.
ADAMS County		
UNNAMED STREAM	NW1/4NW1/4	Sec. 12, Twp 19N, Rge 01W, B.M.
ADAMS County		

Method of Determination: Arc Map (Aerial Photo); GPS (Well) – Latitude N.45°00.216', Longitude W. 116°24.584'; Datum – NVD83.

2. PLACE OF USE: IRRIGATION

Twp Rge Sec	NE				NW				SW				SE				Totals
19N 01W 1	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	2.0
19N 01W 12							13.0										13.0
Total Acres:	15																

IRRIGATION FROM STORAGE same as IRRIGATION
DIVERSION TO STORAGE same as IRRIGATION
FIRE PROTECTION STORAGE same as IRRIGATION
IRRIGATION STORAGE same as IRRIGATION
AESTHETIC STORAGE same as IRRIGATION
AESTHETIC same as IRRIGATION

Method of Determination: Arc Map (Aerial Photo); Tax Lots.

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.

<u>Well or Diversion ID No.*</u>	<u>Motor Make</u>	<u>Hp</u>	<u>Motor Serial No.</u>	<u>Pump Make</u>	<u>Pump Serial No. or Discharge Size</u>
N/A	Franklin	10	Unknown	Unknown	4"

*Code to correspond with No. on map and aerial photo

D. FLOW MEASUREMENTS

1.

<u>Measurement Equipment</u>	<u>Type</u>	<u>Make</u>	<u>Model No.</u>	<u>Serial No.</u>	<u>Size</u>	<u>Calib. Date</u>
N/A						

2.

Measurements: No field measurements. Sprinkler nozzles were too large to obtain an operating pressure measurement for the irrigation system. Four (4) Rainbird impact sprinklers with 13/32" nozzles operating at 62 psi (gauge pressure). $Q = 4 \times 38.72 \text{ gpm} = 154.9 \text{ gpm} \sim 0.34 \text{ cfs}$.

E. FLOW CALCULATIONS

____ Additional Computation Sheets Attached

Measured Method: (Theoretical Horsepower Equation)

$$Q = 8.8 \times 0.7 \times 10/60 + (2.31 \times 62) = 61.6/203.22 = 0.30 \text{ cfs}$$

$$HP = 10$$

$$Z = 60' \text{ (Estimated)}$$

$$Q(\text{sprinklers}) = 4 \times 38.72 \text{ gpm} = 154.9 \text{ gpm} \sim 0.34 \text{ cfs}$$

$$P = 62 \text{ psi (Gauge)}$$

$$Q(\text{theoretical}) = 0.30 \text{ cfs} < 0.34 \text{ cfs } Q(\text{sprinklers}) > 0.28 \text{ cfs } Q(\text{permit})$$

Appears that the current irrigation pumping system can attain the permit diversion rate of 0.28 cfs.

Recommend the irrigation permit diversion rate of 0.28 cfs.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 15 \times 4.0 = 60.0 \text{ AFA}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.28 \times 214 \times 1.9835 = 118.9 \text{ AFA}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 60.0 \text{ AFA}$$

2. Volume Calculations for Other Uses: (Irrigation, Fire Protection, & Aesthetic Storage Pond)

Storage Pond Surface Area = 1.7 ac.

Maximum Pond Depth = 8'

$$V_d = 8' \times 1.7 \text{ ac.} = 13.6 \text{ AF}$$

$$V_d = 13.6 \text{ AF} > 5.0 \text{ AF } V(\text{Permit Limit})$$

Total Permit Volume = 5.0 AF

Recommended Storage Volume of 5.0 AF

G. NARRATIVE/REMARKS/COMMENTS**WATER SUPPLY SYSTEM:**

A storage pond constructed on an Unnamed Stream, stores water from the Unnamed Stream and three (3) springs located north of Price Valley Road. Except for the spring channel located near the easterly property line, spring water is conveyed by natural channels through the right holder's property to the storage pond. A small excavated ditch conveys water from the spring channel near the easterly property line to the storage pond. However, since two of the springs located in the SW1/4SW1/4 were never developed, they cannot be designated as points of diversion.

The only developed diversion to storage is the excavated ditch channel from the natural spring channel. Since no measuring device exists, and no flow was being diverted during the field exam, a diversion rate of 0.04 cfs is recommended. The storage pond is constructed on the Unnamed Stream. Therefore, no diversion to storage can be appropriated for the Unnamed Stream.

IRRIGATION SYSTEM:

A 10-hp submersible pump located in a perforated 15" CMP stand pipe, diverts water for irrigation of 15 acres of fields and pasture. A deep channel excavated from the easterly bank of the storage pond is filled with a mixture of rip-rap and miscellaneous rock to convey water from the storage pond to the perforated 15" CMP stand pipe. The rock filled channel allows conveyance of water to the 15" CMP perforated stand pipe, but also operates as a filter to prevent debris and sediments from reaching the 15" CMP stand pipe and plugging the pipe perforations.

The 10-hp submersible pump discharges water through 4" PVC irrigation main line. The pressurized irrigation system is comprised of six (6) stations. Each station contains four (4) Rainbird impact sprinklers with 13/32" nozzles. Each sprinkler is approximately 2' – 3' above ground on 1" steel riser pipes.

FIRE PROTECTION:

The same 10-hp submersible pump is used to divert water to a fire hydrant for fire suppression. A 3" PVC supply line is connected to the 4" irrigation discharge line for conveying water to the fire hydrant. The fire hydrant contains two sizes of nozzles, 3" and 1 1/2", for attaching fire hoses.

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

CONDITION NO.4 – The right holder shall install and maintain a measuring device and lockable controlling works. Lockable controlling works have been installed at the irrigation and fire protection pump control panel. Submitted a request to Brandi Horton, District 67 Watermaster, on November 21, 2013, to waive the requirement for the right holder to install a measuring device. On December 5, 2013, the Department received a response from the District 67 Watermaster, agreeing to waive the measuring device requirement at this time.

RATE &/OR STORAGE RECOMMENDED FOR LICENSING

Description	Rate of Flow (cfs)		Storage (af)
Permit Amount	1.00	&/or	5.00
Beneficial Use Limit	0.34	&/or	N/A
System Measurement	0.34(theoretical)	&/or	N/A
Proof Fee Amount	1.00	&/or	N/A
Recommended Amount	0.32	&/or	5.00

H.

RECOMMENDATIONS**1. Recommended Amounts**

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
IRRIGATION FROM STORAGE	4/01 to 10/31		5.00 AF
IRRIGATION	4/01 to 10/31	0.280 CFS	60.00 AF
DIVERSION TO STORAGE	1/01 to 12/31	0.040 CFS	
FIRE PROTECTION STORAGE	1/01 to 12/31		1.00 AF
IRRIGATION STORAGE	1/01 to 12/31		5.00 AF
AESTHETIC STORAGE	1/01 to 12/31		1.00 AF
<u>Totals:</u>		0.320 CFS	65.00 AFA

2. Recommended Amendments

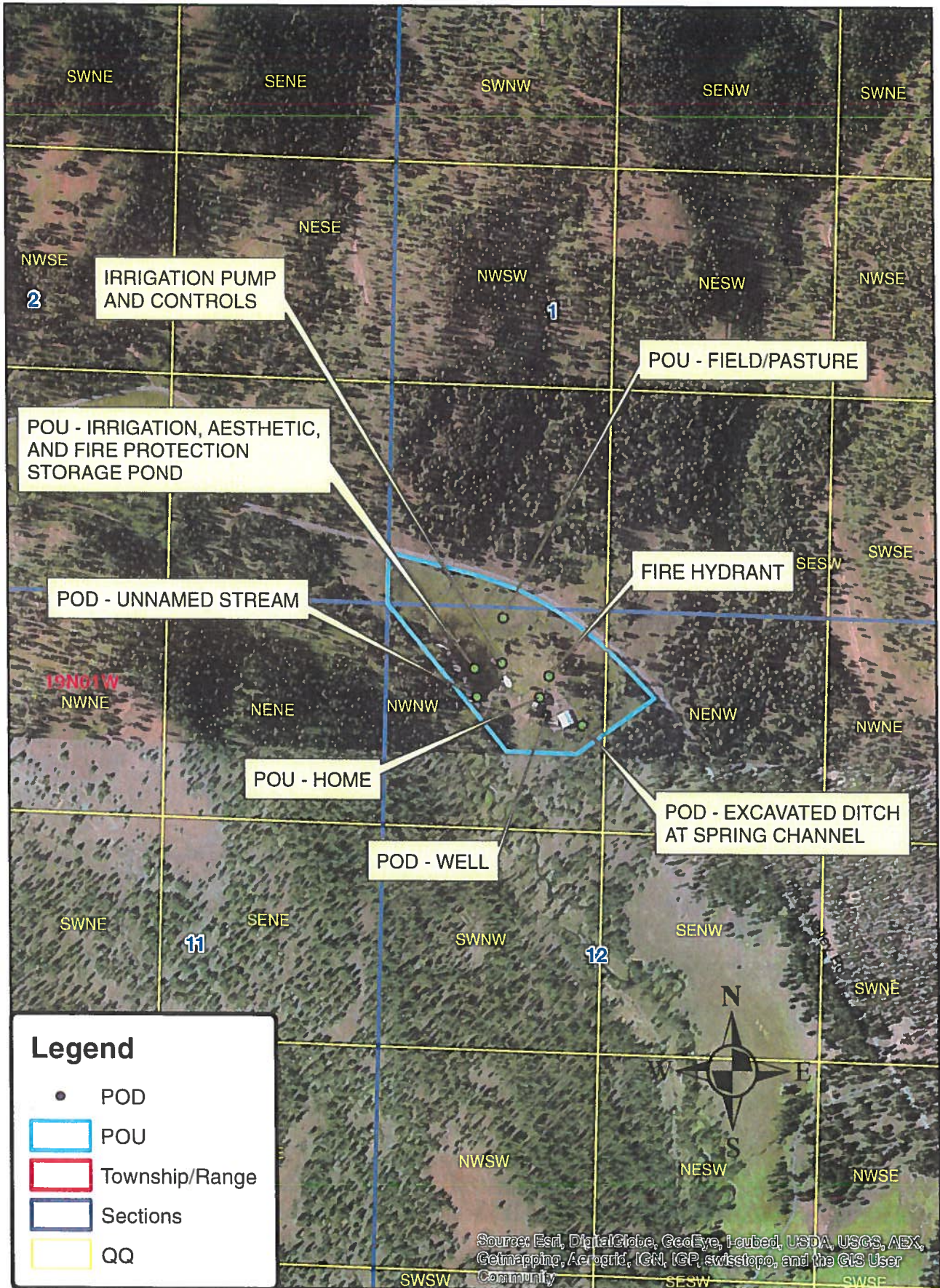
___Change P.D. as reflected above ___Add P.D. as reflected above ☒None

___Change P.U. as reflected above ___Add P.U. as reflected above ___Other

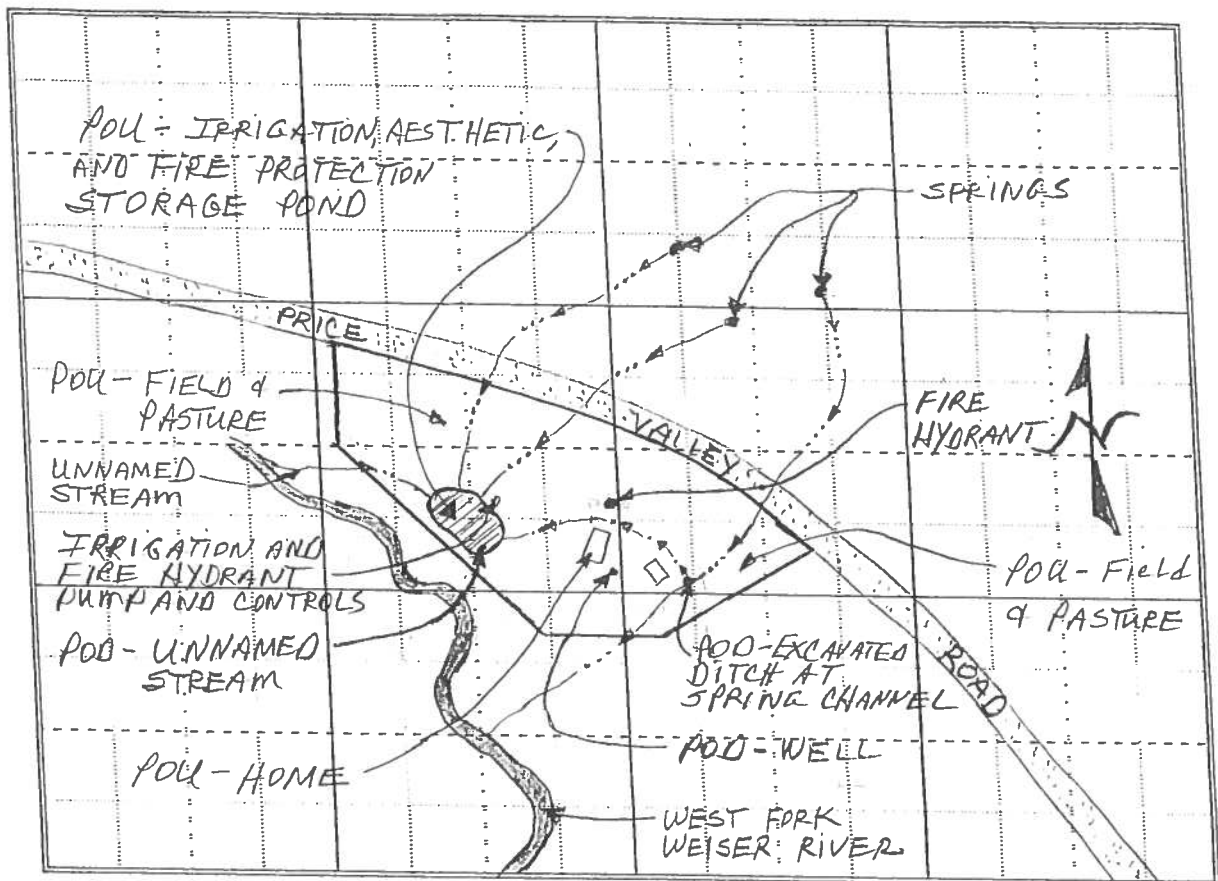
I. AUTHENTICATION

Field Examiner's Name Rick Collingwood Date 12/11/13

Reviewer _____ Date _____



3. **Delivery System Diagram:** Indicate all major components and distances between components. Indicate weir size/ditch size/pipe diameter (inside), as applicable. Use the space provided or ☐ see attached.



Scale: 1" = NTS

- ☐ Copy of USGS Quadrangle attached showing location(s) of point(s) of diversion and place(s) of use (required)
- ☒ Aerial photo attached (required for irrigation of 10+ acres)
- ☒ Photo of diversion and system attached

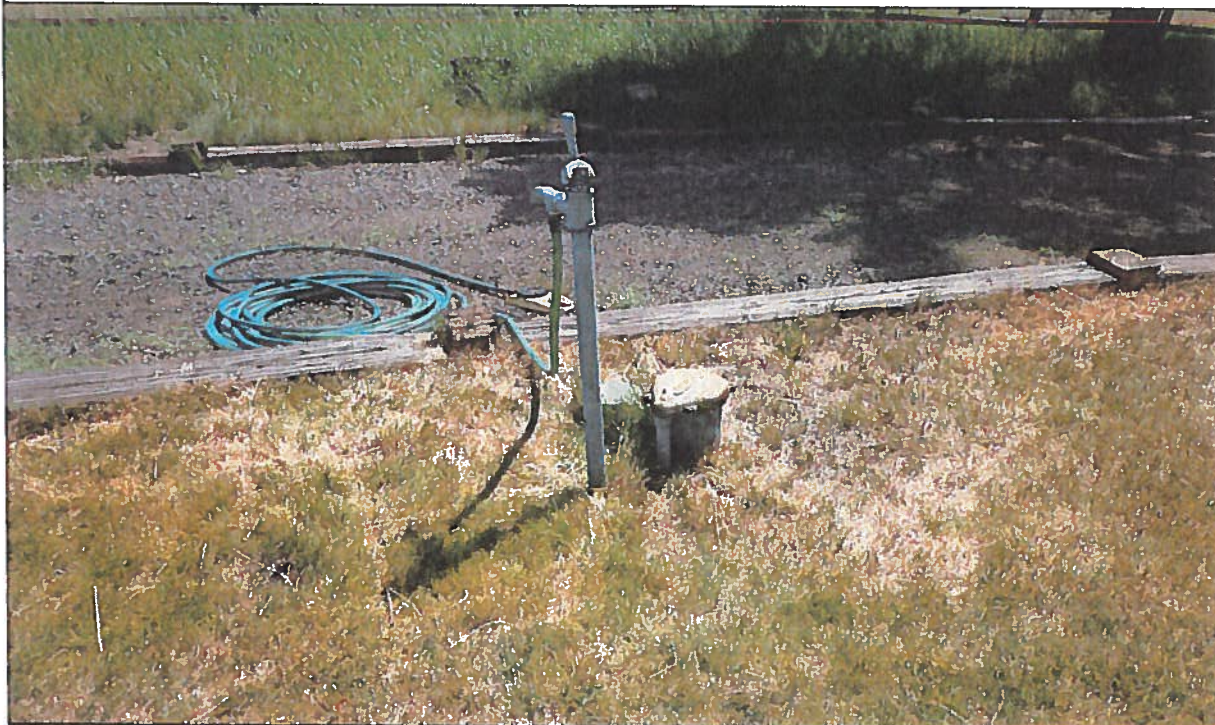
FIELD EXAM PHOTOS

Water Right Permit: 67-7996

Field Exam Date: 7-15-13

PLS: NW1/4, NW1/4 Section 27, T.19N, R.01W.

Field Examiner: RC



Point of Diversion: View southerly of the ground water well serving the home for domestic use.



Place of Use: View northwesterly from near the ground water well of the home served by the ground water well.

