

MEMORANDUM

Date: July 17, 2013
To: Water Right File 87-7144
From: Shelley Keen *SKK*
Re: Irrigation Use

Proof of beneficial use for this right was submitted in 1991. The field examination for this right was conducted in-office in 2013. A field inspection for Right 87-10029, which serves the same property, was conducted in 2006. The field examiner from 2006 reported that the irrigation system "was in a state of disrepair and not operational." If IDWR had conducted a field inspection soon after proof was submitted in the early 1990s, would we have found irrigation occurring? Aerial photography from that period is inconclusive at best. Since the 2006 field examiner reported the existence of a system, even though it was not functional, and since the new rule allowing for in-office exams suggests that IDWR can give users of small water rights the benefit of the doubt, I concur with the notion that irrigation should be included in the license for this right.

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 87-7144
Exam Date: 7/8/2013

1. Current Owner: STEPHEN BERRY
280 BERRY LN
SANDPOINT ID 83864-8926

GLORIA BERRY
280 BERRY LN
SANDPOINT ID 83864-8926

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

3. SOURCE TRIBUTARY
GROUND WATER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: 87-10029 and 87-7069
2. Other water rights with the same point of diversion: 87-10029

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

GROUND WATER NW1/4NE1/4SW1/4 Sec. 5, Twp 39N, Rge 05W, B.M. LATAH County

Method of Determination: Digitized

2.

PLACE OF USE: IRRIGATION

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
39N	05W	5							.1		.8	.8							1.7

Total Acres: 1.7

PLACE OF USE: DOMESTIC

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
39N	05W	5							X	X	X	X							

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.

<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>
	Unknown	2			

*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>

2. Measurements:

Mrs. Rich, the previous owner, reported on the permit application that the well was monitored for 3-4 years at a rate of 15-18 gpm (0.03-0.04 cfs).

E. FLOW CALCULATIONS

_____Additional Computation Sheets Attached

Measured Method:

Theoretical pump flow rate (using 2 HP, 70% efficiency, 110 feet of lift, and 30 psi):
 $Q = (8.8 \times 2 \times 0.7) / (110 + (30 \times 2.31)) = 0.07 \text{ cfs}$

The diversion rate to be licensed under this right will be limited to 0.04 cfs

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 1.7 \text{ acres} \times 2.0 \text{ AF/acre} = 3.4 \text{ AF}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.02 \text{ cfs} \times 245 \text{ days} \times 1.9835 = 9.7 \text{ AF}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 3.4 \text{ AF}$$

2. Volume Calculations for Other Uses:

Domestic: 0.6 AF per home (standard for internal use)

Total: 0.6 AF per home x 31 homes = 18.6 AF

G. NARRATIVE/REMARKS/COMMENTS

This permit was in-office field examined on 07/08/13 by myself, Craig Tesch. This permit authorizes the diversion of ground water to be used for domestic and irrigation purposes at a trailer park in Moscow, Idaho. Ground water is supplied by a 172-foot deep, 6-inch well (permitted POD, IDWR permit #87-69-N-7) cased from land surface to 102-feet below ground level and finished open hole in scoria the remaining seventy feet; static water level is 110-feet below ground surface.

Water is used for domestic purposes including standard indoor use at 31 trailer units. Additionally, water is used to irrigate 30x80-foot yards at each unit (0.055 acres per unit) for a total of 1.7 acres over the entire place of use. The trailer park exists entirely west of North Polk Extension Road and three unnamed roads are used to enter the park; the well is located southwest of the most southerly entrance, west of North Polk Extension Road behind the blue garage and mailboxes.

The pump in the well has a 2 HP motor per the proof of beneficial use. Theoretical pump flow rate was calculated using 2 HP, 70% efficiency, 110 feet of lift, and 30 psi (average of standard domestic and irrigation) resulting in a discharge rate of 0.07 cfs. It is also reported in the permit application that Mrs. Rich, the previous owner, stated that the well was monitored for 3-4 years at a rate of 15-18 gpm (0.03-0.04 cfs). Both theoretical and actual pump discharge rates meet the requested diversion rate of 0.04 cfs.

Multiple overlapping water rights (87-10029 and 87-7069) exist on the place of use. Water right 87-10029 provides the trailer park with 0.2 cfs of groundwater for domestic and irrigation purposes expanding water use to 58 trailer units and 3 framed houses. Also, water right 87-10029 and this right share a POD. Water right 87-7069 is a large POU for the City of Moscow.

Three other water rights (87-10070, 87-7101, and 87-7186) are in the same 40-acre tract, but are each for a different owner on a different tax lot. On average, owners irrigate lawns when needed during the irrigation season from March 15th through November 15th. Water that is released onto the property is consumptively used by vegetation or seeps into the subsurface. Beneficial use of this water right includes irrigation of 1.7 acres.

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

H. RECOMMENDATIONS

1. Recommended Amounts

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
IRRIGATION	3/15 to 11/15	0.020 CFS	3.4 AF
DOMESTIC	1/01 to 12/31	0.040 CFS	18.6 AF
<u>Totals:</u>		0.040 CFS	22 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 ☐ Other

I. AUTHENTICATION

Field Examiner's Name Craig Tesh Date 7/9/2013

Reviewer _____ Date _____

Process	Basin Sequence	Owner	Source	POD/P OU	NENE	NWNE	SWNE	SENE	NENW	NWNW	SWNW	SENW	NESW	NWSW	SWSW	SESW	NESE	NWSE	SWSE	SESE	Total Acres
Water Right	87-10029	HE & EF SMITH REVOCABLE TRUST	GROUND WATER	POU									X	X							0
Water Permit	87-10070	GERMER, DOLLY; GERMER, GEORGE	GROUND WATER	POU								X									0
Water Right	87-4017	EGLAND, JOHN H	GROUND WATER	POU												X					0
Water Right	87-4170	HUNGERFORD, PETRONILLA M	GROUND WATER	POU			X														0
Water Right	87-4171	YOCKEY, VERA FAE	GROUND WATER	POU			X														0
Water Right	87-4172	YOCKEY, VERA FAE	GROUND WATER	POU			X														0
Transfer Right	87-7069	CITY OF MOSCOW	GROUND WATER	POU	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0
Water Right	87-7069	CITY OF MOSCOW	GROUND WATER	POU	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0
Transfer Right	87-7069		GROUND WATER	POU	X	X	X	X	X	X	X			X	X	X		X	X		0
Water Right	87-7085	LONEY, WILLIAM R	GROUND WATER	POU						X											0
Water Right	87-7097	HULT, BARBARA; HULT, KAY	GROUND WATER	POU						1.0											1
Water Right	87-7101	SCHUTZ, GERALD D	GROUND WATER	POU									3.0								3
Water Right	87-7129	HUNGERFORD, PETRONILLA M	GROUND WATER	POU			1.0														1
Water Permit	87-7144	BERRY, GLORIA; BERRY, STEPHEN	GROUND WATER	POU									1.0	1.0							2
Water Right	87-7144	BERRY, GLORIA; BERRY, STEPHEN	GROUND WATER	POU							0.4	0.1	1.4	2.5							4.4
Water Right	87-7186	LARGENT, WAYNE A	GROUND WATER	POU									1.2								1.2
Water Right	87-7186	LARGENT, WAYNE A	GROUND WATER	POU									X								0

SWNW

SENW

5

39N05W

NWSW

NESW

1992 photo

original 31 units



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community



Address **North Polk Extension**

Address is approximate

Looking southwest towards point of diversion behind the house

