

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

RECEIVED

OCT 10 2014

DEPT OF WATER RESOURCES
SOUTHERN REGION

A Beneficial Use Field Report is prepared by a water right examiner as the result of an examination to clearly confirm and establish the extent of the beneficial use of water established in connection with a permit during the development period authorized by the permit and any extensions of time previously approved.

A. GENERAL INFORMATIONPermit No. 34-71531. Owner Ronald Rish Phone No. 208-520-1053Current address 2576 N 3300 W, Arco, ID 832132. Examiner's name Zach Latham EXAM DATE 9/11/143. Accompanied by Mr. Ronald Rish Email _____Address 2576 N 3300 W, Arco, ID 83213Relationship to permit holder Permit Holder Phone No. 208-520-10534. Source Groundwater tributary to N/A**B. OVERLAP REVIEW**1. Other water rights with the same place of use None.2. Other water rights with the same source and point of diversion None.**C. DIVERSION AND DELIVERY SYSTEM**

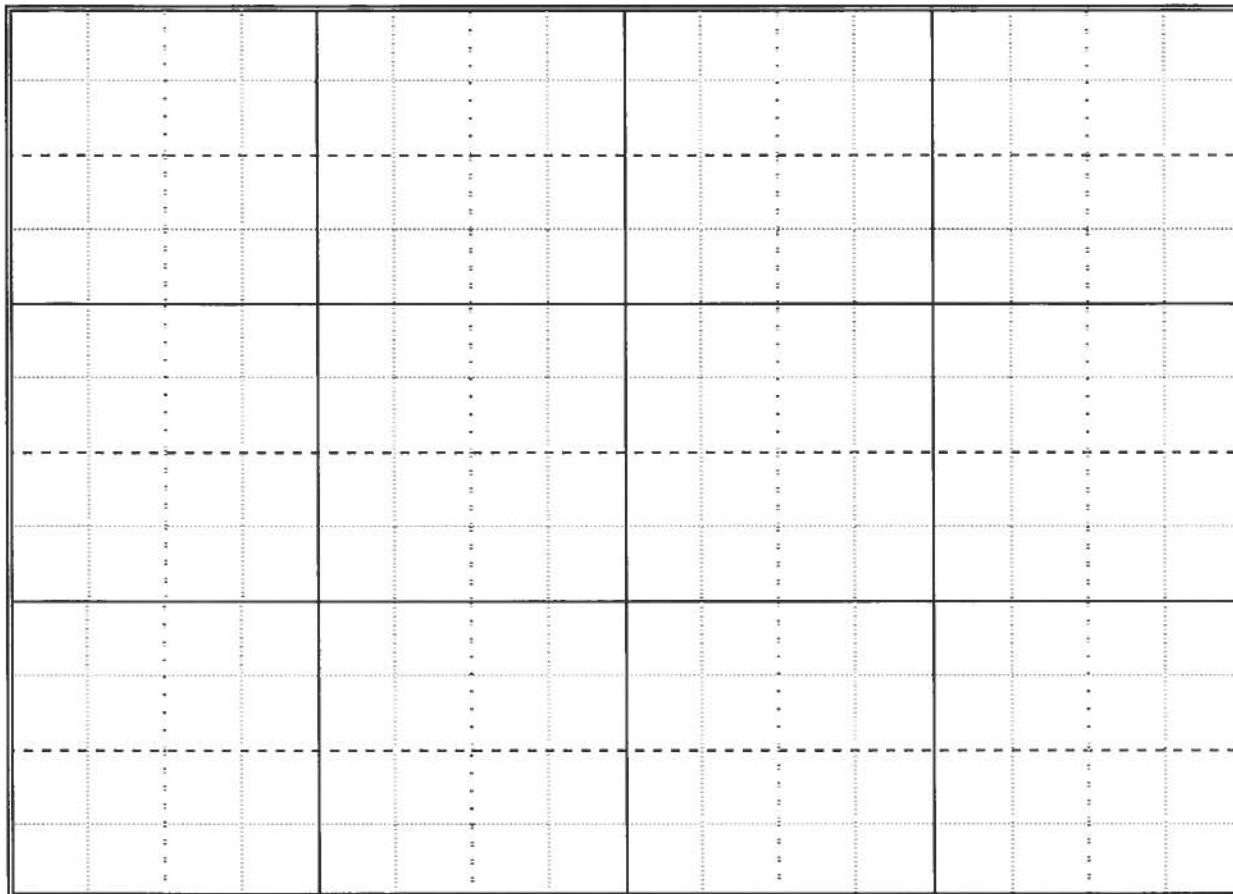
1. Point(s) of Diversion:

Ident. No.	Gov't Lot	¼	¼	¼	Sec	Twp	Rge	County	Method of Determination/Remarks
		NE	SW	NE	27	4N	26E	BUTTE	AERIAL PHOTO, SITE VISIT

2. Place(s) of Use: Method of determination Aerial Photography, GIS Mapping and Applicant Testimony

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
4N	26E	27		5.1	9.8														14.9

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" = _____

- ☒ 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

4.

Well or Diversion Identification No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
Well	Franklin Electric	7.5	336653914MF89	Grundfos 8928	SP16-80875-8

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

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
Portable Ultrasonic Meter type	Ultrasonic	Fuji	Portaflow X	N5L3138	1" +	3-20-14 per IDWR

2. **Measurements:** _____

Maximum operational discharge measured from well was 100 gpm or 0.22 cfs, please see attached narrative.

F. FLOW CALCULATIONS☐ Additional computation sheets attached

Measured Method:

Fuji Ultrasonic Meter used for maximum discharge measurement. Maximum discharge measured at 100 gpm or 0.22 cfs, please see attached narrative

G. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = (14.9 \text{ acres}) \times (3.5 \text{ acre-feet per acre}) = 52.2 \text{ AFA}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation Season}) \times 1.9835 = (0.22 \text{ cfs}) \times (214 \text{ days}) \times (1.9835) = 93.4 \text{ AFA}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 52.2 \text{ AFA}$$

2. Volume Calculations for Other Uses:

N/A.

H. RECOMMENDATIONS**1. Recommended Amounts**

Beneficial Use	Period of Use From	To	Rate of Diversion Q (cfs)	Annual Volume V (afa)
Irrigation	4/1	10/31	0.22	52.2
Totals:			0.22 cfs	52.2 afa

2. Recommended Amendments☐ Change P.D. as reflected on page 1☐ Add P.D. as reflected on page 1☐ None☐ Change P.U. as reflected on page 1☐ Add P.U. as reflected on page 1☐ Other**I. AUTHENTICATION**

Field Examiner's Signature

Anthony B. Jath

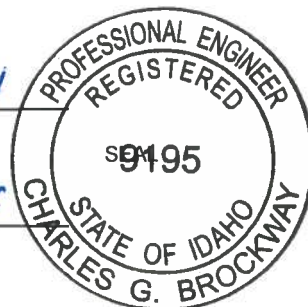
Date

10/7/2014

Reviewer

Charles G. Brockway

Date

10/2/2014

OCT 10 2014

DEPT OF WATER RESOURCES
SOUTHERN REGION**Narrative for Beneficial Use Examination
Permit 34-7153 in the name of Ronald Rish**

Brockway Engineering, PLLC
Zach Latham, M.S.
C. G. Brockway, P.E.
October 2, 2014

Overview and Justification for Permit Reinstatement

This permit allows usage of groundwater for irrigation purposes, the place of use is located 2.5 miles northwest of Arco. Mr. Rish purchased the property in 1989 from Linda and Philip Rankin, who purchased the property from the original permit applicant, Mr. Leonard Price. Multiple extensions of time for development were granted, leading up to Mr. Rish filing proof of beneficial use on January 12th 1990, ahead of the March 1st 1990 deadline for filing. According to information in the file, IDWR mailed back the filing in a letter dated February 14th 1990 requesting the filing fee as no receipt was on file for the payment. On March 14th 1990, IDWR mailed a lapse notice to Mr. Rish. Mr. Rish has indicated that he in fact mailed the filing fee of \$100.00 along with the completed proof form, thus completing the proof filing process. Additionally, he has no record of receiving the subsequent letters mailed by IDWR in February and March of that year. Mr. Rish acted in good faith by proving up on the water right permit, filing the proof and the associated fee and he continued to perfect 34-7153 since 1990. He has only recently been made aware of the lack of receipt for the proof filing fee and the need for a beneficial use field exam and subsequent licensing of 34-7153 through correspondence with Cindy Yenter of the IDWR Southern Region Office.

Wells

The original well, (well #1) associated with 34-7153 was drilled by Guthrie in 1982 and is located in the NWSWNE of Section 27 T.4N R.26E. After purchase of the property in 1989, Mr. Rish drilled a new irrigation well (well #2) in the NESWNE of Section 27 T.4N R.26E and the original 1982 well sat idle. Well #2 (IDWR tag # A0018926) is used to supply irrigation water under 34-7153. In 2003, Mr. Rish had well #1 (IDWR tag# D0027218) deepened and it currently supplies domestic use only to the existing Rish residence. The well log for well #2 could not be located; the well log associated with the deepening of the well #1 is attached.

Flow Meter, Distribution System and Usage

Currently, the irrigation water delivery and distribution system is comprised of the following; well #2 provides water to above ground 6" aluminum mainline, allowing hand lines to be placed where necessary for irrigation of the place of use (Figures 1 and 2). This distribution system has not changed since proof was filed in 1990 according to Mr.

Rish and the well location and mainline can be seen in Figure 1. Water exiting the well above ground travels through a 4" Seametrics AG2000-400 (serial no. 122013000757) in-line magnetic meter and into the aluminum mainline where it travels up to the place of use for distribution (Figure 3). The meter appears to be installed properly as there are 2 pipe diameters upstream (8"+) and one pipe diameter downstream (4"+) free and clear of any valving, thus meeting the manufacturer's installation requirements. While performing a flow test on the well, the in-line Seametrics meter read 1.4% high when compared to the test meter at a flow rate of approximately 72 gpm, and the in-line Seametrics meter read 1.2% high when compared to the test meter at operating flow rates with pressure in the line (approximately 100 gpm). While performing an open discharge test on the well, the in-line Seametrics meter was steady near 100 gpm and at times fluxuated approximately between 50 and 130 gpm. These fluctuations were presumably due to the pump sucking air as it could be heard sloshing in the 6" discharge line downstream of the meter.

The irrigated area associated with 34-7153 has been determined through use of historical aerial photographs the beneficial use exam site visit and testimony from Mr. Rish. Mr. Rish noted that current the location of the mainline and hand lines used to irrigate the property has not changed since 1989. These locations are shown on Figure 1. Using a 1992 aerial image and knowledge of the distribution based on the September 2012 site visit, it appears that 5.1 acres were irrigated in the NWNE of Section 27, T.4N R.26E, and 9.8 acres were irrigated in the SWNE of Section 27 T.4N R.26E at the time of the proof filing in early 1990, for a total of 14.9 acres.

Pump

The well #2 pump that was in use from 1989 through approximately 2000 was a Grundfos no. 8928 type SP16-80875-8 submersible unit. This motor was a Franklin Electric 7.5HP unit, model 2261119010. The motor is not operated via a variable frequency drive. Because the irrigation system configuration, mainline size, elevation, and type of sprinklers have not changed since filing of proof in early 1990 and the pump and motor combination that were being used at the time are of similar horsepower to what is presently in well #2, the measured flow rate during the field exam is presumed to be representative of the maximum operating flow rate at the time of the proof filing.

Capacity measurement

A site visit was made on September 11, 2014 for the purpose of measuring the maximum capacity of the system. During the examination, approximately 20 rainbird heads on hand lines were being used and well #2 was running. Isolation of 10 rainbird heads was done and a discharge rate of approximately 73 gpm and pumping depth of 79.25' were observed as measured with a portable Fuji Ultrasonic Flow Meter (test meter) and an electrical sounding tape. The second valve on the 6" aluminum mainline was then opened to provide free discharge conditions. Well #2 was then allowed to run continuously for forty-five minutes with a maximum open discharge rate of 102.4 gpm or 0.23 cfs observed at a pumping level of 86.57' below the top of the well casing. After a

maximum discharge measurement was made, the open discharge was closed and Mr. Rish turned on a total of 20 rainbird heads on his hand lines, representing his normal operational number of hand lines. At this configuration, well #2 pumped 100 gpm or 0.22 cfs. This condition was operated for 30 minutes and the discharge rate was stable.

Well #1 was not measured as it was not in use at the time of the proof filing in 1990 and has not been used for irrigation under 34-7153 since that time. Well #2 operates in either an on or off position, a variable frequency drive is not installed.

Annual volume determination

Annual volume for irrigation purposes was calculated using IDWR guidelines for volume pumped per acre in the Arco area.

For irrigation purposes, the maximum acreage irrigated of 14.9 acres on the property is based on testimony from Mr. Rish and aerial photography taken in 1992. The property is within the IDWR-defined zone having an allowable irrigation field headgate per-acre volume of 3.5 ac-ft. The total annual volume for irrigation would therefore be $3.5 \times 14.9 = 52.2$ ac-ft. Season of use per IDWR for the Arco area is April 1st through October 31st annual for irrigation use.

Condition compliance analysis

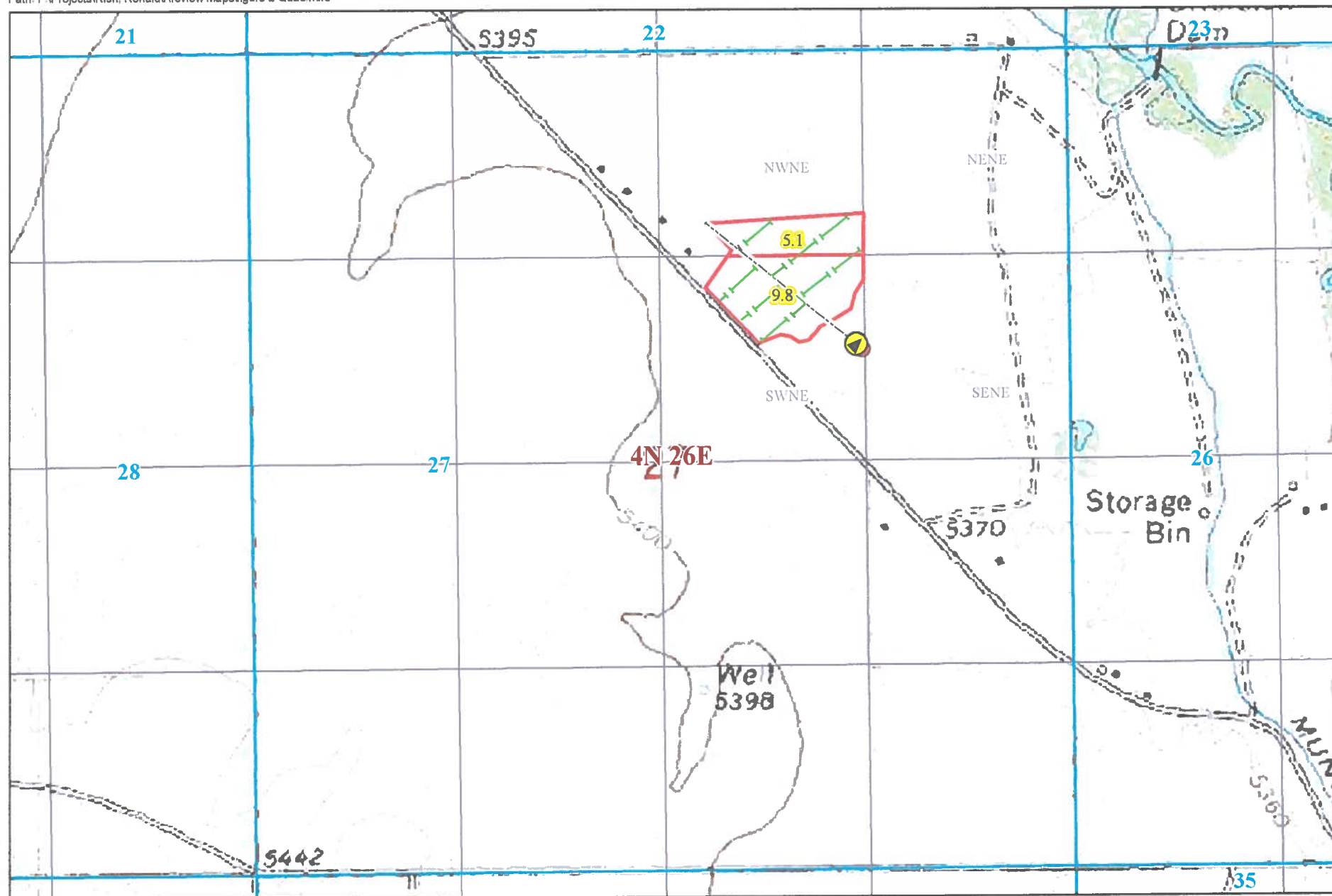
The permit holder appears to have adequately complied with all pertinent conditions as conditions associated with 34-7153 are very limited.



FIGURE 1
RONALD RISH
 BENEFICIAL USE EXAM - 34-7153
 1992 AERIAL

Legend

-  Flow Meter
-  Well
-  Hand Lines
-  6" Mainline
-  Irr.=14.9 Acres
-  twnshp
-  Sections
-  ladesc



0 400 800 1,600 Feet

FIGURE 2
RONALD RISK
BENEFICIAL USE EXAM - 34-7153
USGS QUAD 7.5'

Legend

- Flow Meter
- Well
- Hand Lines
- 6" Mainline
- Irr.=14.9 Acres
- Sections
- ladesc
- twnshp





Well and flow meter



Seametrics meter installed on well



Irrigated area



Verification of flow using ultrasonic meter

