

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 78-7311

Exam Date: 8/12/2013

1. Current Owner: JOHN W FORGY
2740 HILLMAN BASIN RD
NEW MEADOWS ID 83654
(208)325-8011
2. Accompanied by: John Forgy
Phone No: Same
Address: Same
Relationship to Permit Holder:

3. **SOURCE**

UNNAMED STREAM

TRIBUTARY

HILLMAN CREEK

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 SYSTEM1. **LOCATION OF POINT(S) OF DIVERSION:**

UNNAMED STREAM

NE1/4SE1/4

Sec. 32, Twp 22N, Rge 01E, B.M.

ADAMS County

Method of Determination: Arc Map (Aerial Photo)

2.

PLACE OF USE: POWER

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	
22N	01E	33										X							

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</u> <u>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</u> <u>Size</u>
N/A	N/A		N/A	N/A	1 1/4"

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

D. FLOW MEASUREMENTS

1.

<u>Measurement</u> <u>Equipment</u>	<u>Type</u>	<u>Make</u>	<u>Model No.</u>	<u>Serial No.</u>	<u>Size</u>	<u>Calib. Date</u>
5-Gallon Bucket						

2. Measurements: 5-Gallon Bucket measurement of 1gallon/4 sec = 15 gpm ~ 0.04 cfs.

E. FLOW CALCULATIONS

____ Additional Computation Sheets Attached

Measured Method: (Manning's Equation & Continuity Equation)

$$Q = 1.49/nAR^{2/3}S^{1/2} = (1.49/0.013)(0.009)(0.026)^{2/3}(0.20)^{1/2}$$

$$Q = (114.62)(0.009)(0.087)(0.447) = 0.04 \text{ cfs}$$

$$V = 1.49/nR^{2/3}S^{1/2} = (1.49/0.013)(0.026)^{2/3}(0.20)^{1/2}$$

$$V = (114.62)(0.087)(0.447) = 4.5 \text{ ft/sec}$$

$$Q = VA = 4.5 \text{ ft/sec} \times 0.009 \text{ ft}^2 = 0.04 \text{ cfs}$$

$$Q(\text{calculated}) = 0.04 \text{ cfs} = 0.04 \text{ cfs } Q(\text{theoretical}) = 0.04 \text{ cfs } Q(\text{permit})$$

$$S = 0.20 \text{ ft/ft (Estimated)}$$

$$R = D/4 = 0.026'$$

$$A = 0.009 \text{ ft}^2$$

$$n = 0.013$$

Appears that the current water diversion and conveyance system can attain the permit diversion rate of 0.04 cfs.

Recommend the permit diversion rate of 0.04 cfs.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation: N/A

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

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

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

2. Volume Calculations for Other Uses: N/A

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

Water from an Unnamed Stream is diverted through a screened, short section of 4" PVC pipe to a concrete diversion structure. Water is conveyed through an additional screen in the concrete diversion structure prior to discharging to a 1 ¼" PVC penstock. A valve located outside the concrete diversion structure controls the flow in the 1 ¼" PVC penstock. The concrete diversion structure has a valved controlled 4" overflow for discharging water back to the Unnamed Stream.

HYDROELECTRIC SYSTEM:

According to the right holder, there is more than 400 feet of static head between the concrete diversion structure and the hydroelectric system located near the right holder's home. The 400 plus feet of static head produces approximately 197.5 psi of static pressure, and 187.5 psi of dynamic pressure. Water is discharged through three (3) nozzles to the pelton type runner in the Harris Hydroelectric System. The Harris Hydroelectric System is mounted to a washing machine tub. The Harris Hydroelectric System is located in a wooden structure adjacent to a pond. Water that is discharged to the pelton type runner by the three (3) nozzles is discharged to the pond.

The flows from the three (3) nozzles range between 5 gpm and 15 gpm, and producing approximately 39.9 amps of power. The power is conveyed to a Trace Model U2512 2.5KW Phase Converter located in a small room in the home. Power is stored in six (6) Bellcell KS20472 2000 amp/hr batteries. The power system provides electricity to the home and out buildings.

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

RATE &/OR STORAGE RECOMMENDED FOR LICENSING

Description	Rate of Flow (cfs)		Storage (af)
Permit Amount	0.04	&/or	N/A
Beneficial Use Limit	0.04	&/or	N/A
System Measurement	0.04	&/or	N/A
Proof Fee Amount	0.20	&/or	N/A
Recommended Amount	0.04	&/or	N/A

H. RECOMMENDATIONS

1. Recommended Amounts

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
POWER	1/01 to 12/31	0.040 CFS	N/A
<u>Totals:</u>		0.040 CFS	N/A

2. Recommended Amendments

___ Change P.D. as reflected above ___ Add P.D. as reflected above X None

___ Change P.U. as reflected above ___ Add P.U. as reflected above ___ Other

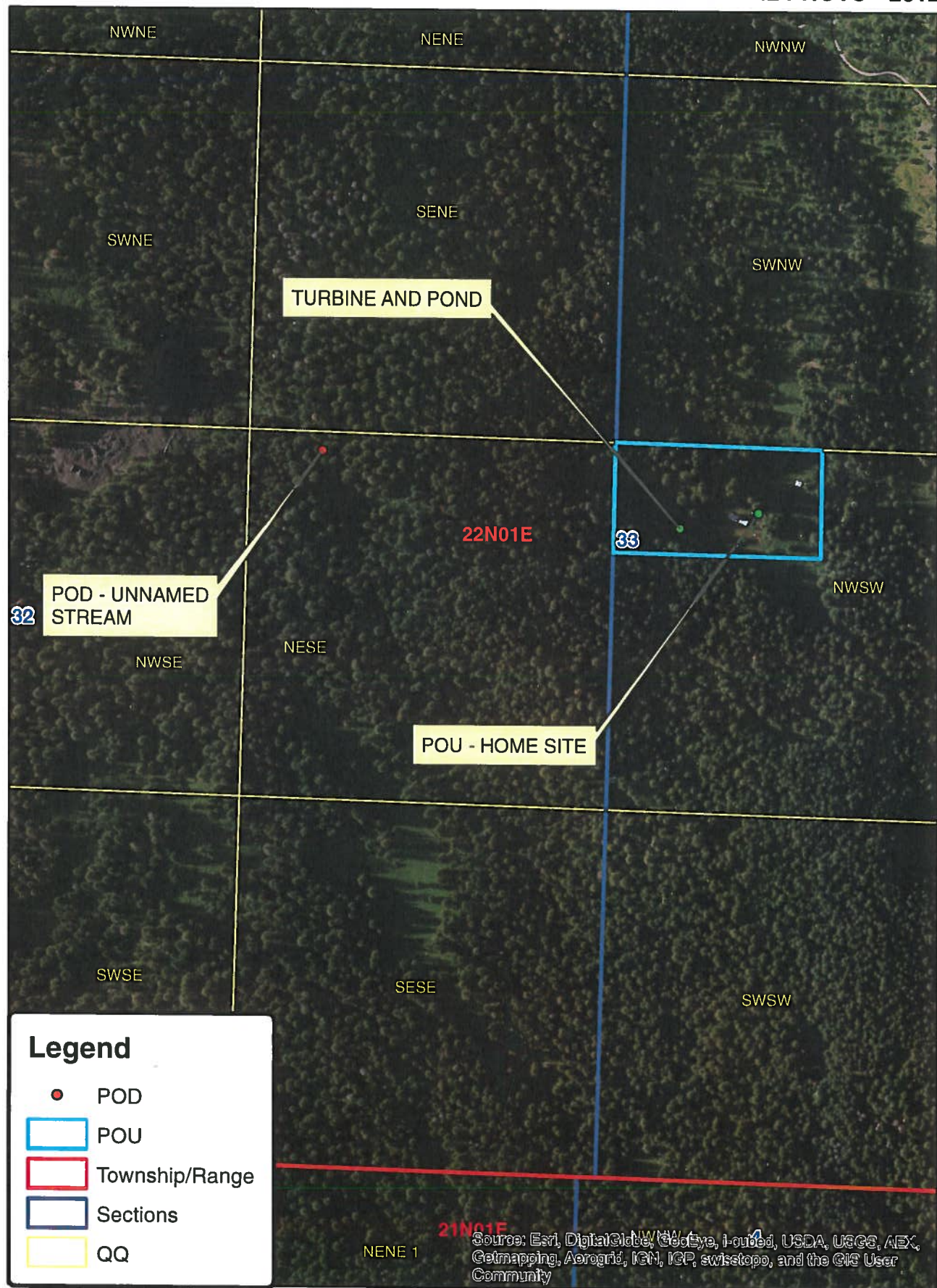
I. AUTHENTICATION

Field Examiner's Name Bick Collingwood Date 12/23/13

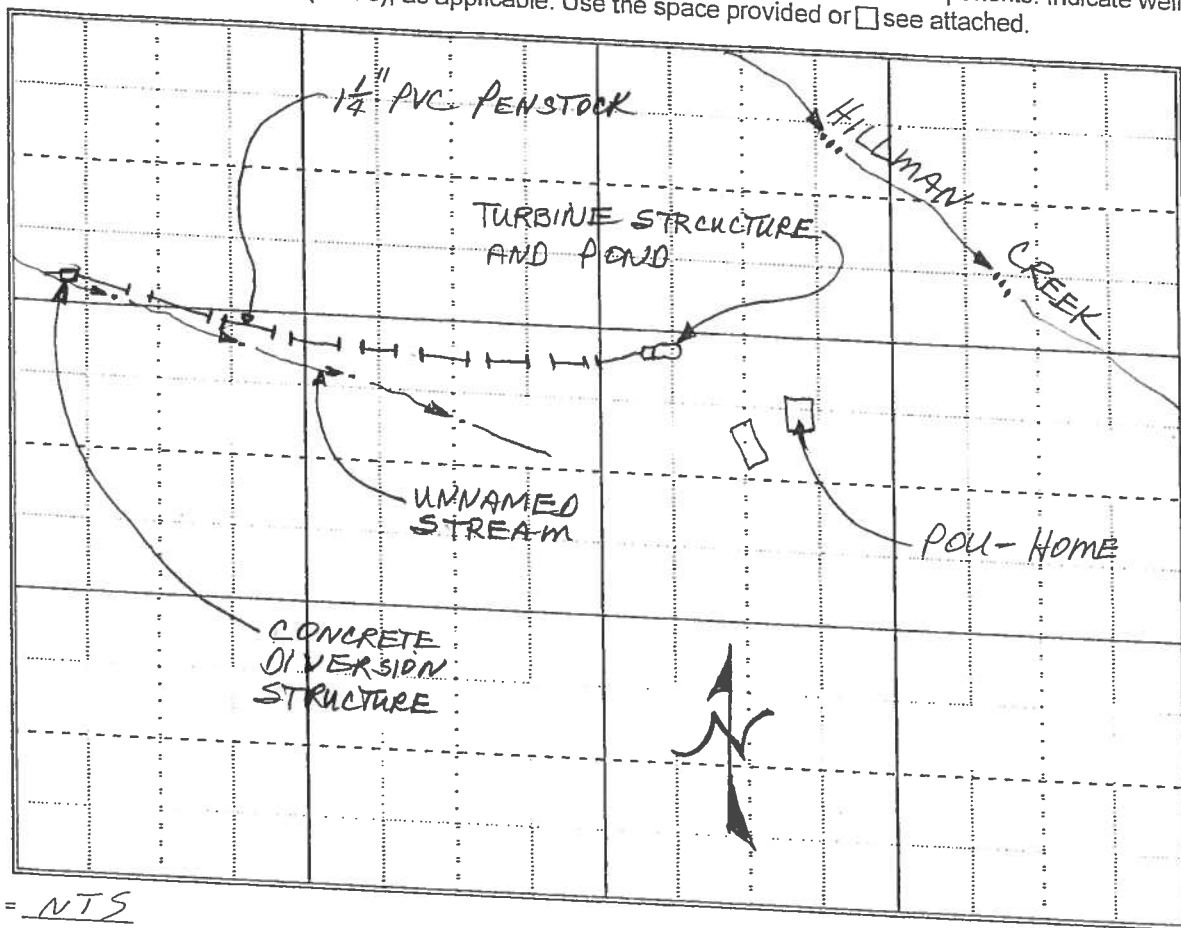
Reviewer _____ Date _____

78-7311

ESRI AERIAL PHOTO - 2012



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



State of Idaho

DEPARTMENT OF WATER RESOURCES

Western Region, 2735 Airport Way • Boise, Idaho 83705-5082

Phone: (208) 334-2190 • Fax: (208) 334-2348 • Web Site: www.idwr.idaho.gov

C. L. "BUTCH" OTTER
Governor

GARY SPACKMAN
Interim Director

July 25, 2013

John W. Forgy
2740 Hillman Basin Road
New Meadows, ID 83654

RE: Scheduling Field Exam for Water Right Permit No. 78-7311

We are planning to **conduct water right field examinations** in the vicinity of the above-referenced permit **during the week of August 12, 2013**. An examination is needed to verify your water use in order to issue a water right license.

Please be advised that you will need to operate your system under normal operating conditions during the examination. The permit authorizes the diversion of 0.04 cfs from an unnamed stream for hydroelectric power.

In order to conduct your exam as efficiently as possible, we ask that you call this office to schedule a day and time convenient for you. **Please call me at 208-334-2190 by August 2, 2013, to conduct the exam during the week of August 12, 2013.** If there is a problem with scheduling or conducting the examination at this time, please let me know so we can reschedule or make other arrangements.

I appreciate your attention to this matter and I look forward to hearing from you.

Sincerely,

Rick Collingwood, P.E.
Water Resource Agent, Sr.