

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 47-8102

Exam Date: 5/28/2013

1. Current Owner: SHOROCK HYDRO INC
JOHN J STRAUBHAR
PO BOX 1787
TWIN FALLS ID 83301-1787
(208)734-8633
2. Accompanied by: Bret van Wagoner
Phone No: 208-736-7363
Address: NA
Relationship to Permit Holder: Manager of hydro project
3. SOURCE TRIBUTARY
GROUND WATER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: 47-7676
2. Other water rights with the same point of diversion: None

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

GROUND WATER L12 SE1/4NE1/4 Sec. 23, Twp 09S, Rge 16E, B.M.
TWIN FALLS County

Method of Determination: ArcMap aerial photography

2.

PLACE OF USE: INDUSTRIAL

Twp	Rge	Sec	NE				NW				SW				SE				
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	Totals
09S	16E	23				X													
						L 12													

Method of Determination: ArcMap aerial photography

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>
		0.75			

*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>
Bucket and stopwatch						

2. Measurements: Measured flow from hose at facility. Made 5 measurements using a 5 gallon bucket and a stopwatch. Average flow was 0.02 cfs.

E. FLOW CALCULATIONS

_____ Additional Computation Sheets Attached

Measured Method:

Time to fill 5 gal. bucket =

1.	35.3
2.	35.4
3.	35.0
4.	35.0
5.	34.7
Average 35.1	

$$5 \times 60/35.1 = 8.6 \text{ gpm or } 0.02 \text{ cfs}$$

Operator estimates flow to turbines is about 1 gpm/turbine. He also estimates that 2 turbines are operating 24 hours a day on average.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation: NA

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

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

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

2. Volume Calculations for Other Uses:

For turbines (assume 2 units operating 24 hours/day at 1 gpm/unit):

$$2 \text{ gpm} \times 60 \text{ min/hour} \times 24 \text{ hours/day} = 2880 \text{ gal/day} \times 365 \text{ days/year} = 1051200 \text{ gal} / 325850 = \mathbf{3.2 \text{ AFA}}$$

For washing floor (assume one washing/week for 1 hour)

$$8.9 \text{ gpm} \times 60 \text{ min/hour} = 534 \text{ gal/week} \times 52 \text{ weeks/year} = 27768 \text{ gal} / 325850 = \mathbf{0.1 \text{ AFA}}$$

Total volume = 3.3 AFA

G. NARRATIVE/REMARKS/COMMENTS

The field exam for this permit was done on May 28, 2013, accompanied by Bret van Wagoner, who is the manager for the hydro project. The water from the well is used for two purposes. The primary use is to pump clean water under pressure into the area between the inner seal and the packing on each turbine to keep dirty creek water away from the bearings, in order to prolong bearing life. Mr. van Wagoner believes this uses about 1 gpm per unit, 24 hours per day. He said that, on average, 2 units run 24 hours per day throughout the year. The water then drains into the outflow stream from the hydro units and flows into the Snake River. The facility houses 4 hydropower turbines.

In addition, the water is used to wash the floor of the facility once a week for approximately 1 hour. The flow measurement was made at this point using a bucket and stopwatch. Five tests were run, which yielded an average flow of 0.02 cfs. Recommend a rate of 0.02 cfs, and a volume of 3.3 AF.

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>
INDUSTRIAL	01/01 to 12/31	0.020 CFS	3.30 AF
<u>Totals:</u>		0.020 CFS	3.30 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

Date 5/28/2013

Reviewer

Date

6/21/2013



View of turbine and interior of powerhouse

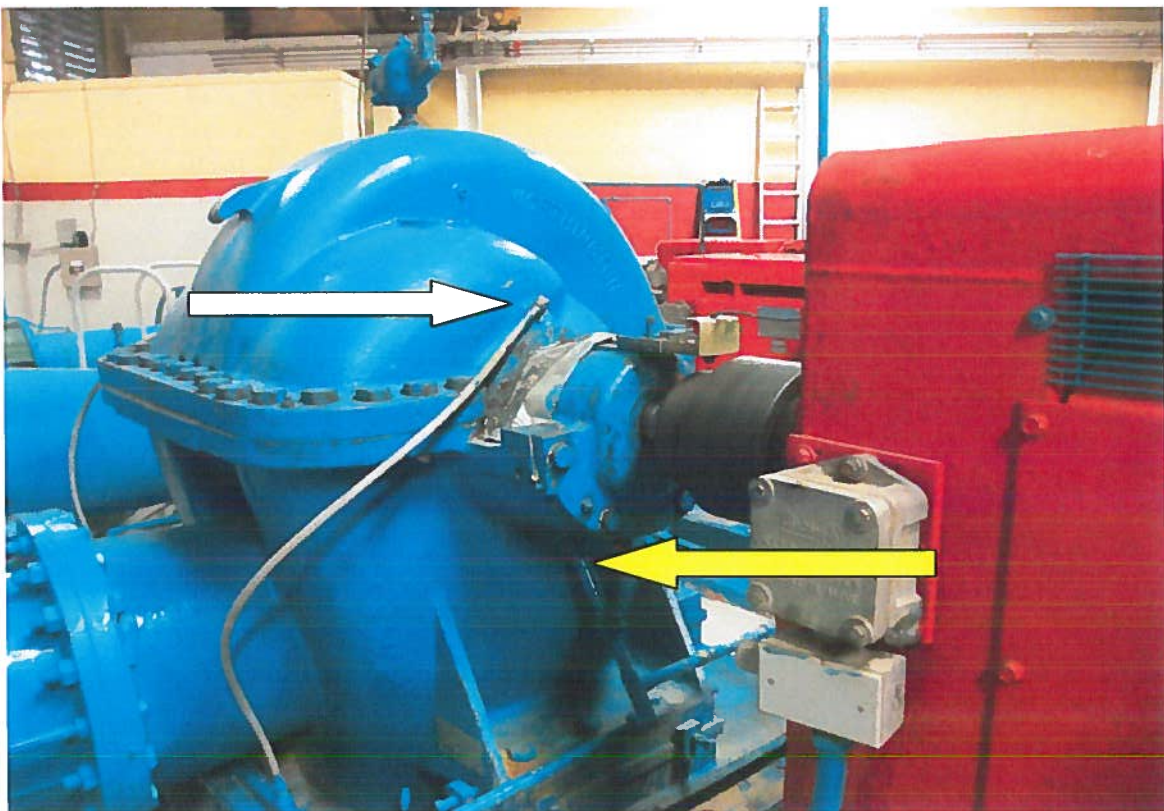
Faucet and hose used for washing interior of powerhouse





Close-up views of turbine. Well water is injected under pressure into area between inner seal and the packing to keep dirty creek water away from bearing.

White arrow indicates incoming waterline, yellow arrow indicates outgoing waterline.





Building housing the hydropower turbines

POD – Obscured by vegetation

