

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 86-11909

Exam Date: 8/16/2012

1. Current Owner: CEDAR RIDGE RANCH
1275 HIGHLAND AVE
CLARKSTON WA 99403
(509)758-5533
2. Accompanied by: Mike Auer
Phone No: 509-758-5533
Address: 1275 Highland Ave. Clarkston, WA 99403
Relationship to Permit Holder: Owner

3. SOURCE
SPRINGS

TRIBUTARY
SINKS

B. OVERLAP REVIEW

1. Other water rights with the same place of use: 86-11896
2. Other water rights with the same point of diversion: none

C. DIVERSION AND DELIVERY SYSTEM1. LOCATION OF POINT(S) OF DIVERSION:

SPRINGS SE1/4SE1/4NW1/4 Sec. 12, Twp 38N, Rge 02W, B.M.

LATAH County

SPRINGS NW1/4NE1/4SW1/4 Sec. 12, Twp 38N, Rge 02W, B.M.

LATAH County

Method of Determination: Field verification with Garmin GPS unit

2.

PLACE OF USE: IRRIGATION STORAGE

Twp Rge Sec	NE				NW				SW				SE				Totals
38N 02W 12	<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>	
									X								

PLACE OF USE: IRRIGATION FROM STORAGE

Twp Rge Sec	NE				NW				SW				SE				Totals
38N 02W 12	<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>	
							5.4	6.6	5.5	0.5							18

Total Acres: 18

PLACE OF USE: RECREATION STORAGE

Twp	Rge	Sec	NE				NW				SW				SE				Totals
38N	02W	12	<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>	
											X								

PLACE OF USE: POWER STORAGE

Twp	Rge	Sec	NE				NW				SW				SE				Totals
38N	02W	12	<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>	
											X								

PLACE OF USE: POWER FROM STORAGE

Twp	Rge	Sec	NE				NW				SW				SE				Totals
38N	02W	12	<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>	
											X								

Method of Determination: Field verification with GPS unit and 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</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>
<u>ID No.*</u>					

Information regarding the installed pump was unable to be documented. The pump was installed at the bottom of the storage reservoir used for irrigation storage and was not able to be inspected due to it being inaccessible during the field exam. The owner indicated the pump was a 10Hp pump.

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 measurements of diversion rates were available to be made during the field exam. The pump was non-operational during the field exam and could not be operated to measure a discharge rate.

E. FLOW CALCULATIONS

_____Additional Computation Sheets Attached

Measured Method:

None flow calculations were made for this field exam.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 18 \text{ acres} \times 2 \text{ AF} = 36 \text{ AF}$$

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

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

2. Volume Calculations for Other Uses: Pond dimensions –

Power Storage : 3' of available headspace X 0.5 acres = 1.5 acre-feet

Irrigation Storage: 12' deep X 0.65 acres = 7 acre-feet

Total depth of the ponds are unknown. The berms containing the ponds have been constructed to increase the pond depths to at least 12 feet.

G. NARRATIVE/REMARKS/COMMENTS

This field exam for permit 86-11909 was conducted on 8/16/2012 by Dennis Owsley. Mike Auer, the owner, accompanied me on the exam. This permit authorized the volume of 11 AF to be stored and beneficially used for irrigation, recreation, and power purposes. The sources of water for this permit are springs, with local ponds used as storage reservoirs. There are three beneficial uses for this permit and each use will be discussed individually.

Irrigation Storage and Irrigation from Storage

The source of the water for the irrigation storage is a spring. The spring has formed a natural pond and the inflow from the spring cannot be measured. The storage reservoir was a natural pond that has been excavated deeper and enlarged around the perimeter. A 12-foot high berm was built around the perimeter for containment. The surface area of the pond covers approximately 0.65 acres.

Irrigation from storage occurs through a 10 Hp submersible pump installed in the reservoir. At the time of the exam, the pump was installed but not functional. Therefore an inspection of the pump could not be done, nor could a flow measurement be made. Water is diverted through the pump into a sprinkler line that irrigates a nearby field. Eleven sprinklers fed from hoses off of the main irrigation line are spaced approximately 200' apart are used to irrigate.

Although the physical storage capacity of the pond is only approximately 7 AF, the natural spring flow into the pond refills the pond as water is diverted from it. Based on the amount of acres historically irrigated and the 10 Hp pump installed in the pond, it appears the 11 AF permitted for this right have been beneficially used. I recommend a volume of 11 AF for the irrigation storage and irrigation from storage components.

Power Storage and Power from Storage

Power storage and power usage occurs through this permit. Water stored for power uses is contained in a spring fed pond. There was no way to measure the inflow to the pond as water naturally seeps into the bottom of the pond. The pond was a natural feature that has been bermed (12-feet high), enlarged, and deepened with an excavator. The surface area of the pond covers approximately 0.5 acres. Based on the field exam observations, only approximately 3 feet of head is available to flow into the overflow pipe. Therefore, only the top three feet of the water stored in the pond is available for power generation.

Power is generated through a home-made water wheel. Water is gravity fed to the water wheel after it is diverted from the storage pond through an overflow pipe. At the time of the exam the water wheel was not functional, but has operated in the previous years. Power generated is used to charge batteries and for other minor farm power uses. I recommend the storage capacity of 1.5 AF for the reservoir be permitted for power storage and power from storage components.

Recreation Storage

Recreation within the storage ponds occurs in the form of fishing and swimming. The ponds have been stocked with fish for recreational fishing. The total storage of both of the ponds used for recreation exceeds the 11 AF permitted. Therefore, I recommend permitting the recreation storage component to 11 AF.

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

H. RECOMMENDATIONS

1. Recommended Amounts

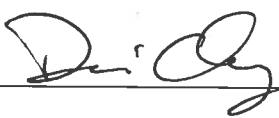
<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
IRRIGATION STORAGE	01/01 to 12/31		11.00 AF
IRRIGATION FROM STORAGE	03/15 to 11/15		11.00 AF
RECREATION STORAGE	01/01 to 12/31		11.00 AF
POWER STORAGE	01/01 to 12/31		1.5 AF
POWER FROM STORAGE	03/01 to 11/01		1.5 AF
<u>Totals:</u>			11.00 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 Dennis Owsley  Date 1/17/2013

Reviewer _____ Date _____

Field exam photos for 86-11909. Photos taken by D. Owsley on 8/16/2012



Photo #1



Photo #2

Photos #1 and #2. Photos of irrigation pressure heads for irrigations system



Photo #3



Photo #4

Photos #3 and #4. Photos of power storage pond.



Photo #5

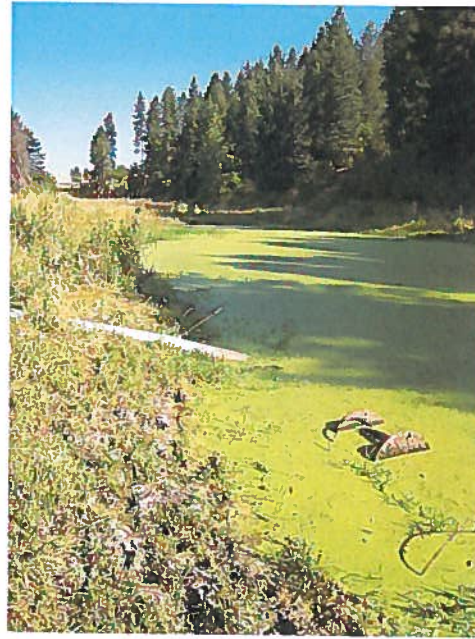


Photo #6

Photos #5 and #6. Photos of the irrigation storage pond. White pipe is main distrubtion line.



Photo #7



Photo #8

Photos #7 and #8. Power components to the irrigation pump system.



Photo #9



Photo #10

Photos #9 and #10. Pictures of the power operations.

Aerial Photo for WR 86-11909



Irrigation POU

Irrigation POD

Power POD

110 55 0 110 Meters

SWSW

SESW

NENE

NWNW

NENW

SENE

SWNW

SESW

RWSW

NESW

Delivery System Diagram for WR 86-11909



POU

Pressure heads for sprinklers
11 heads that feed lines out into field

Main Irrigation Line

Irrigation Storage Pond

Pump

Power Storage Pond

Buried line from pump to irrigation line

Power Operation

Gravity line from pond to power generation

0

500

1,000

2,000 Feet

