

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 45-14194

Exam Date: 6/28/2012

1. Current Owner: EARL LAVELL WARTHEN
1047 SO HWY 77
ALBION ID 83311
(208) 673-5385

2. Accompanied by: Earl Warthen
Phone No: (208) 673-5385
Address: (same as above)
Relationship to Permit Holder: current owner

3. SOURCE

HOWELL CREEK

TRIBUTARY

MARSH CREEK

B. OVERLAP REVIEW

1. Other water rights with the same place of use: None. All of the following are for irrigation of the pasture located directly north of the storage pond: 45-327E irrigation from Howell Creek, 45-7538 irrigation from groundwater, and 45-13991 irrigation from Spring Creek.

2. Other water rights with the same point of diversion: 45-327E, 45-7642 and 45-14194 are all diverted from the same headgate (per a 1/10/2014 phone conversation with Earl Warthen).

C. DIVERSION AND DELIVERY SYSTEM

1. LOCATION OF POINT(S) OF DIVERSION:

HOWELL CREEK SE1/4SW1/4 Sec. 16, Twp 12S, Rge 25E, B.M. CASSIA County

Method of Determination: Garmin GPS Map 76S, Arc Map 2009, 2011 and esri Imagery.

2.

PLACE OF USE: GROUND WATER RECHARGE (the storage pond, and area south of the pond)

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
12S	25E	16																	

PLACE OF USE: GROUND WATER RECHARGE STORAGE and GROUND WATER RECHARGE FROM STORAGE (the pond)

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
12S	25E	16																	

DIVERSION TO STORAGE same as GROUND WATER RECHARGE FROM STORAGE

Method of Determination: Garmin GPS Map 76S, Arc Map 2009, 2011 and esri Imagery.

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>
--	-------------------	-----------	-------------------------	------------------	--

A0018535 concrete headgate with weir, gravity flow to concrete filter, with a by-pass for fish, that discharges to buried 18 inch, reducing to 15 inch, reducing to 10 inch solid, that splits into 2 lines of 10 inch perforated ABS pipe (buried 10-12 ft deep with 3 ft drain rock); one line is south of the storage pond running west to east the full length of the pond, and the second line runs under the pond)

*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>
--	-------------	-------------	------------------	-------------------	-------------	--------------------

On 3/31/1995, a field examination was conducted by J. Stanton on water right 45-7642, where he used a McCrometer In-Line 10 inch flow meter, and calculated $550 \text{ gpm} \times 0.00223 = 1.23 \text{ cfs}$ for the capacity of the system (no model no./serial no. or calib. Date).

At the time of the 6/28/2012 field examination, a measurement was collected from the 9 inch rectangular weir. Historical evidence showed that the flow has been higher. For this reason, the system capacity was put into AdHoc as 1.23 cfs, as measured by Jim Stanton on 3/31/1995. Below is the measurement from the 6/28/2012 field examination:

$$\begin{array}{l} \leftarrow \frac{9''}{.75} \rightarrow \quad \uparrow 5.5'' (.46) \quad L = 0.75 \quad H = 0.46 \\ Q = 3.247 L H \left[\frac{1.48}{.75} \right]^{1.48} = 0.77 \text{ cfs} \end{array}$$

RECOMMEND:

Ground water recharge 0.20 cfs (as permitted)

Diversion to Storage 0.20 cfs (as permitted)

Total Diversion Rate 0.20 cfs (as permitted)

*No combined limit with other water rights, since none of the Season of Use overlapped.

E. FLOW CALCULATIONS

Measured Method:

NONE.

F. VOLUME CALCULATIONS

1. Volume Calculations:

Storage Pond: 2.5 ft average depth X 0.4 acre pond = 1.0 af

Ground Water Recharge 11/1 – 3/31 (151 days)

0.2 cfs X 151 days X 1.9835 = 59.9 af

Ground Water Recharge Storage (size of pond) = 1.0 af

Ground Water Recharge from Storage (size of pond) = 1.0 af

RECOMMEND:

Ground Water Recharge 1.0 af

Ground Water Recharge Storage 1.0 af (as permitted)

Ground Water Recharge from Storage 1.0 af (as permitted)

Total Annual Volume: 1.0 af (as permitted)

G. NARRATIVE/REMARKS/COMMENTS

The POD (A0018535) is located at a concrete head gate (control device), thru a weir (measuring device), located on the Howell Creek. Water is then diverted to a concrete filtering system with a by-pass for fish to go back to the creek. From the filtering tank, it is diverted through 18 inch buried pipe, reducing to 15 inch, reducing to 10 inch, splitting into 2, then converting to 10 inch perforated pipe which is buried 10 - 12 ft deep, within 3 ft of washed drain rock. The 2 splits of 10 inch perforated pipe run west to east; one line 1/2 way under the entire pond, and the other running west to east the entire length of the pond, only located south of the pond. Ground water recharge occurs by water running through the perforated section of pipeline and from water seeping from the pond. During recharge, the pond is full. Mr. Warthen stated that since this project was completed, that it has helped increase the level in his well. It was determined during the IDWR group question forum, that the POU for Ground Water Recharge Storage is only the Pond itself. The POU for the Ground Water Recharge is only the Pond and the buried gallery (perforated pipe) running west to east, located on the south side of the pond running its entire length; it does not include the ground located to the north of the pond. Ground Water Recharge From Storage (POU is the Pond) is obtained by irrigation from the pond using the 10 inch control valve in the small building (45-327E, irrigation; Howell Creek), and also maintains the static level for the well that is located north of the control building (45-7538 irrigation; groundwater).

Ground water recharge and Diversion to Storage take place in months when 'No Irrigation' is taking place with water right 45- 327E, so there is no combined limit conditions. Water right 45-7642 involves flow from the 10 inch line to a pelton wheel, for Power for the shop and house located in the SENW.

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>
GROUND WATER RECHARGE	11/01 to 03/31	0.200 CFS	1.00 AF
GROUND WATER RECHARGE STORAGE	01/01 to 12/31		1.00 AF
GROUND WATER RECHARGE FROM STORGE	01/01 to 12/31		1.00 AF
DIVERSION TO STORAGE	11/01 to 03/31	0.200 CFS	
	<u>Totals:</u>	0.200 CFS	1.00 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 Judy Hemmenway Date 1/13/2014

16

12S25E

NESW

NWSE

Howell Creek

overflow ditch, in the event there is any overflow

(sinks)

housing for 10" pipe control valve

POU/Pond

2.5' average depth
max 7' deep
full during recharge

overflow

45-1538
well
6"

POU

improvement for fish

10 inch perforated pipe, buried 10-12 feet within 3 ft of washed drain rock

18 inch buried pipe, reducing to 15 inch, reducing to 10 inch

the concrete filtering system w/by-pass for fish to go back to the creek

A0018535
POD: head gate

45-327E, 45-7642 + 45-4194

SESW

SWSE



POD
Howell
Creek

head
gate
with
control
+
measuri
device

9" across
with
historice
high
water
flow
being
55



45-14194

S. Herrerway



filtering
system
for
water
from
Howell
Creek
prior
to
being
discharged
to
10"
perforated
pipe.
Fish are
flushed
back to
the
creek

45-14194

S. Hemerway



POU:
 running west to east,
 10" ABS Perforated pipe with silk screen buried 10-12' within 3' of washed drain rock, running to the 7' deep pond (max. depth) + 2.5' average depth (0.4 acre size pond)



POU:
 during recharge process, the pond is full



Overflow that runs to ditch located east of pond, running south to north (sinks)



Inside building NE of pond as Control for the 10" perforated pipe



45-14194 Property directly north of pond S. Hernerway