

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 65-23582
Exam Date: 05/21/2021

1. Current Owner:
RONALD APPLEBY 10239 ESTATE DR BOISE ID 83709
2. Accompanied by:
Phone No: (208) 695-5001
Address: 10239 Estate Dr. Boise, ID 83709
Relationship to permit Holder: same as above

3. SOURCE: GROUND WATER SPRING WASTE WATER	<u>Tributary</u> SQUAW CREEK SQUAW CREEK
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Method of Determination: Permit application, IDWR records, and field examination.

B. OVERLAP REVIEW

1. Other water rights with the same place of use: YES Overlap

Water Right No.	Source	Purpose of Use	Basis
65-23586	Squaw Creek	Irrigation	Decreed

Comments: 65-23586 is the irrigation right from Squaw Creek for the property parcel

2. Other water rights with the same point-of-diversion: NO Overlap

Water Right No.	Source	Purpose of Use	Basis

Comments: none

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

GROUND WATER NE¼ SE¼, Sec. 15, Twp 11N, Rge 01E, B.M. GEM County
 SPRING SW¼ NE¼ SE¼, Sec. 15, Twp 11N, Rge 01E, B.M. GEM County
 WASTE WATER NE¼ SE¼, Sec. 15, Twp 11N, Rge 01E, B.M. GEM County

Method of Determination: Permit application, IDWR records, and observation during field examination.

PLACE OF USE: RECREATION STORAGE

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
11N	01E	15													X				

Method of Determination: Aerial Imagery, ArcMap Tools, and observation during field exam.

3. Delivery System Diagram Attached (required). Indicate all major components and distances between components.

Y Indicate weir size/pipe as applicable.

N Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.

Y Aerial Photo Attached (required for irrigation of 10+ acres).

Y Photo of Diversion and System Attached

4. N/A

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size

D. FLOW MEASUREMENTS

1. N/A

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date

2. Measurements: No measurements collected during the exam. No rate on permit only volume.

E. FLOW CALCULATIONS

Yes Additional Computation Sheets Attached

Measured Method:

Permit 4.0 AF
 B.U. Standard Rate 0.0 – 20.0 AF → \$50
 B.U. Fee Paid 4.0 AF → \$50 → 0 to 20 AF
 Theoretical

License Recommendation 3.5 AF

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) =$$

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

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} =$$

2. Volume Calculations for Other Uses:

Recreation Storage:

$$\text{Storage capacity: } \frac{0.5 \text{ acres}}{\text{(storage surface area)}} \times \frac{5 \text{ feet}}{\text{(average depth)}} = 2.5 \text{ AF}$$

Estimated Seepage Loss: 0.5 AF

Estimated Evaporation Loss: 1.0 AF

Seepage & Evaporation Losses Total: 1.5 AF

Total Volume: 1.5 AF + 2.5 AF = 4.0 AF

G. NARRATIVE/REMARKS/COMMENTS

Ronald Appleby is the owner of water permit 65-23582 for recreation storage, 9 miles north of Ola, ID. The proof of beneficial use was submitted on April 9, 2018 with an examination fee of \$50.00. An exam was conducted on May 21, 2021 by water resource agent Allen Bradbury. Ron Appleby accompanied the agent on the field exam. Current Gem County tax parcel data lists Appleby Ronald D, Appleby Patricia, Appleby Martin E Living Trust as the current owners of the property pertinent to the place of use (POU). No ownership change is required.

The permit list three separate sources for water to fill the pond for recreational use. The first source is wastewater which is collected along the length of a collection ditch which extends 300 feet parallel to the access road and property fence line on the north side of the property. The second source is from a spring located approximately 200 feet west of the pond. A ditch conveys the spring water to the pond. The third source is from direct groundwater seepage into the pond. The surrounding area is composed of hydric vegetation including blue camas, sedges, and willows, indicating hydric soils. During the field exam, waste water was visibly flowing into the pond, however flow through the ditch conveying water from the spring was equalized with the pond level, so flow could not be discerned. Water collected into the pond flows through to the screened outlet structure and flows into a wetland area which is full of cattails. The wetland ultimately flows back to Squaw Creek. Water from all three sources flows through the pond and is non-consumptive. The points of diversion were verified during the field exam with only the spring location being slightly moved to match the on-the-ground location within the same QQQ. I am recommending the points of diversion from the permit be carried over to licensing.

A rate was not included on the permit. I recommend adding condition 123, which states that "water stored under this right is subject to fluctuations of the water table caused by changes in the flow of local streams and by diversions under prior ground water rights. This right does not guarantee the maintenance of any particular ground water level."

The permit was approved on 3/15/2018 authorizing 4.0 AF for Recreation Storage. The total surface area of the pond is 0.5 acres with an average depth of 5 feet equating to 2.5 AF of storage volume. Pond calculations for evaporation and seepage loss were 1.5 AF. I am recommending the place of use for Recreation Storage remain at 0.5 acres surface area with 4.0 AF of total storage volume as evidenced during the field exam.

Condition 121 was updated to 103 as per department licensing standards. Added condition 123 pertaining to shallow groundwater.

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

H. RECOMMENDATIONS**1. Recommended Amounts**

<u>Beneficial Use</u>	<u>Period of Use</u>	<u>Rate of Diversion</u>	<u>Annual Volume</u>
RECREATION STORAGE	01/01 to 12/31		4.0 AF

Totals:

4.0 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 ☒ None

I. AUTHENTICATION Allen Bradbury - Water Resource Agent, Senior

Field Examiner's Name Allen Bradbury Date 7/22/2021
 Reviewer _____ Date _____

65-23582 APPLEBY Field Exam Map

Recreation Storage. This right authorizes a total annual storage volume of 4.0 acre-feet; 2.5 acre-feet to be used for the initial filling or carryover storage of the pond and 1.5 acre-feet for the replacement of losses caused by evaporation.



● 65-23582 POD's

■ 65-23582 Pond

0 0.025 0.05 Miles

[illegible]

→ service area out laps

65-23582 Aplebey Overlay Analysis - POD																						Total Acres
Process	Basin Seq	Draft	Owner	Source	POD/POU	Use	NENE	NWNE	SWNE	SENE	NENW	NWNW	SWNW	SENW	NESW	NWSW	SWSW	SESW	NESE	NWSE	SWSE	SESE
Water Permit	65-23582	N	APPLEBY, RONALD	GROUND WATER	POD														X			
Water Permit	65-23582	N	APPLEBY, RONALD	SPRING	POD														X			
Water Permit	65-23582	N	APPLEBY, RONALD	WASTE WATER	POD														X			
Water Right	65-23586	N	APPLEBY, MARTIN E; APPLEBY, PATRICIA; APPLEBY, RONALD; CC	SQUAW CREEK	POD				X								X					
Water Right	65-209	N	DAVIS, ALFRED G; DAVIS, NELLIE L; MERRITT, DAVID B	BACK FORTY SPRINGS	POD																	
Water Right	65-2925	N	SQUAW CREEK IRRIGATION DISTRICT	SAGE HEN RESERVOIR	POD				X													
Water Right	65-2974	N	SQUAW CREEK IRRIGATION DISTRICT	SAGE HEN RESERVOIR	POD				X													
Water Right	65-12787	N	MMARTIN, BEVERLY J; SHULTZ, CAROL A; STEELE, GEORGE H	SPRING	POD		X															
Water Right	65-13313	N	ROGERS, BRUCE V; ROGERS, LINDA A; WATSON, DARRELL L; WATSON, DARRELL L	SPRING	POD															X		
Water Right	65-214	N	DOLPHIN RANCH, MARTIN, BEVERLY J	SPRINGS	POD		X															
Water Right	65-215	N	DOLPHIN RANCH, MARTIN, BEVERLY J	SQUAW CREEK	POD			X														
Water Right	65-23224	N	COCHERN, JENNIFER; DAVIES, ROBERT J; HOAGLAND, CLYDE M; HOAGLAND, CLYDE M	SQUAW CREEK	POD				X													
Water Right	65-23225	N	BRINGHURST, DENNIS; BRINGHURST, JONI; COCHERN, JENNIFER	SQUAW CREEK	POD				X													
Water Right	65-216	N	DOLPHIN RANCH; MARTIN, BEVERLY J	UNNAMED STREAM	POD					X												
Water Right	65-3088A	N	CARLOCK, CARROLL C; CARLOCK, JANET; HOAGLAND, CLYDE M; HOAGLAND, CLYDE M	UNNAMED STREAM	POD									X								
Water Right	65-3088X	N	CARLOCK, CARROLL C; CARLOCK, JANET; HOAGLAND, CLYDE M; HOAGLAND, CLYDE M	UNNAMED STREAM	POD				X						X							

Wildlife/Recreation Pond Calculations

WR #: 65-23582 Appleby

Max. Depth: 5 feet

Soil Type: Cm—Catherine loam, moderately deep

Seepage					
Soil Classification: Cm—Catherine loam, moderately deep					
Area (acres)	Rate (ft/day)	Start Date	End Date	Days	Volume (AF)
0.5	0.003	1-Jan	31-Dec	365	0.5
Total Estimated Seepage Losses					0.5

CL

AFA

Evaporation						
Station:	Ola (NWS -- USC00106586) Open water - small stock ponds					
Month	mm/day ¹	Start Date	End Date	Days	mm/Month	Volume (AF)
Jan	-1.98	1-Jan	31-Jan	31	0.00	0.00
Feb	-1.28	1-Feb	29-Feb	28	0.00	0.00
Mar	-0.36	1-Mar	31-Mar	31	0.00	0.00
Apr	1.2	1-Apr	30-Apr	30	36.00	0.06
May	2.09	1-May	31-May	31	64.79	0.11
Jun	3.6	1-Jun	30-Jun	30	108.00	0.18
Jul	5.06	1-Jul	31-Jul	31	156.86	0.26
Aug	4.46	1-Aug	31-Aug	31	138.26	0.23
Sep	2.66	1-Sep	30-Sep	30	79.80	0.13
Oct	0.57	1-Oct	31-Oct	31	17.67	0.03
Nov	-1.71	1-Nov	30-Nov	30	0.00	0.00
Dec	-2.74	1-Dec	31-Dec	31	0.00	0.00
				365		
Total Estimated Evaporation Losses (mm/year) =					601.38	1.0

AFA

$[(\text{mm/yr}) \div (\text{convert to feet})] \times (\text{Surface area of pond, in acres}) = \text{Evaporation Loss in Acre Feet}$

$$(\text{601.38} \div \text{304.8}) \times \text{0.50} =$$

1.0 AFA

Evaporation loss is calculated by dividing the Evaporation Rate (mm/day) by the 304.8 conversion factor and multiplying this number by the pond surface area to attain a combined daily acre feet.

Seepage plus evaporation losses:	1.5
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AFA

Pond Capacity/Storage Volume		
Area (Acres)	Average Depth (ft)	Volume (AF)
0.5	5	2.5
Total Annual Storage Volume Required		4.0

Soil Type: <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>

Evaporation: <http://data.kimberly.uidaho.edu/ETIdaho/>

MEMO 76 Seepage Loss Standards for Ponds and Reservoirs

0.2 SM (silty sand, sand silt mixtures) = 0.2 ft per day

0.007 SC (clayey sands, sand clay mixtures) = 0.007 ft per day

0.02 ML (inorganic silts - very fine sands, silty, or clayey fine sands) = 0.02 ft per day

0.003 CL (low to medium plasticity clays) = 0.003 ft per day

0.0003 CH (high plasticity clays) = 0.0003 ft per day.

0.0 Groundwater



Figure 1. Waste water is collected in a ditch along the property line of northern neighbors property (5/21/2021).



Figure 2. Collected waster enters the Appleby property through an 8 inch culvert under the access road.



Figure 3. Water entering the pond from wastewater.



Figure 4. A ditch parallels the south side of the access road to collect spring water. At the time of the field exam spring flow matched the pond level.



Figure 5.
Screened outflow
at the south end of
the pond.



Figure 6. Outflow
matched inflow.
Outflow flowed
into cattail area
before returning to
Squaw Creek.



Figure 7.
Recreational pond
looking south
from the inlet
along the east
bank.



Figure 8.
Recreational pond
looking north
from the outlet
along the west
bank.