

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 86-12090
Exam Date: 03/05/2021

1. Current Owner:
MICHAEL T BARROWS 1035 DEER RD DEARY ID 83823-8612 AND/OR
SANDI J BARROWS 1035 DEER RD DEARY ID 83823-8612
2. Accompanied by: Michael Barrows
Phone No: 208-877-1990
Address: Same as above
Relationship to permit Holder: Permit Holder

3. **SOURCE:**
SPRING

Tributary
SINKS

Method of Determination: Arcmap and DRG.

B. OVERLAP REVIEW

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

C. DIVERSION AND DELIVERY SYSTEM

1. **LOCATION OF POINT(S) OF DIVERSION:**
SPRING NW¼ NE¼ NE¼, Sec. 7, Twp 40N, Rge 02W, B.M. LATAH County

Method of Determination: GPS. POD is a pond earthen dam located at -116° 37.685, 46° 49.746.

PLACE OF USE: WILDLIFE STORAGE and FIRE PROTECTION 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	
40N	02W	7	X																

Method of Determination: Field exam and Arcmap aerial imagery.

3.
 - X Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.
 - X Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.
 - X Aerial Photo Attached (required for irrigation of 10+ acres).
 - X Photo of Diversion and System Attached

4.

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

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
NONE						

2. Measurements: N/A

E. FLOW CALCULATIONS

Measured Method: N/A

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation: N/A

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

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

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

2. Volume Calculations for Other Uses:

See attached pond analysis worksheet

G. NARRATIVE/REMARKS/COMMENTS

Field exam performed on 5/5/2021 with the applicant, Michael Barrows, showed a pond that impounds spring water used by the applicant for wildlife storage and fire protection storage purposes. Due to the early spring season, the pond was still frozen; aerial imagery and photographs from the applicant were used in addition to the field exam to license this permit. There is no diversion rate applied to this water right. An earthen dam was excavated and serves as the POD. The pond has an overflow channel built into the northeastern side of the pond to allow seasonal overflow to discharge down grade where it sinks back to ground.

The pond has a surface area of 0.6 acres, has a maximum depth of 13 feet, an average depth of 5.2 feet, an estimated seepage rate of 0.7 af, and an estimated evaporation rate of 1.0 af. The pond has an island which was excluded during licensing review as I traced out the surface area for the pond POU using year 2019 aerial imagery in Arcmap. The total annual volume required equals 4.8 af, which is assigned to both the wildlife storage and fire protection storage beneficial uses, but is not additive in volume calculations. The annual volume of **4.8 af** is recommended for licensing, and is applied to the maximum diversion volume at time of licensing.

The pond's storage volume is less than what was applied for due to the surface acreage reduced from 0.7 acres permit approved to 0.6 acres validated during licensing review. Additionally, the maximum depth at time of permit approval equaled

15 feet, and during field exam with Mr. Barrows, the pond depth was discussed and evaluated at 13 feet. The pond is shallow around the western side of the pond near the small island, and deep on the eastern portion of the pond. The applicant provided summer time photos showing waterfowl using the pond, and stated that deer regularly use the pond.

Conditions 219 and 220 were updated to reflect pond volume factors during licensing review, which resulted in a reduction in both pond size (acres) and depth (feet). All conditions on the permit are carried forward to the license. There are no overlap concerns for this water right.

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

H. RECOMMENDATIONS

1. Recommended Amounts

<u>Beneficial Use</u>	<u>Period of Use</u>	<u>Annual Volume</u>
WILDLIFE STORAGE	01/01 to 12/31	4.8 AF
FIRE PROTECTION STORAGE	01/01 to 12/31	4.8 AF

Totals: 4.8 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

Luke Bates - Water Resource Agent

Field Examiner's Name  Date 3/12/2021

Reviewer  Date 3/15/2021

State of Idaho
Department of Water Resources
Attachment to Field Exam
86-12090

WILDLIFE STORAGE and FIRE PROTECTION STORAGE system diagram.



- Point of Diversion
- Place Of Use Boundary
- Townships
- PLS Sections
- Quarter Quarters

0 0.035 0.07 0.14 Miles



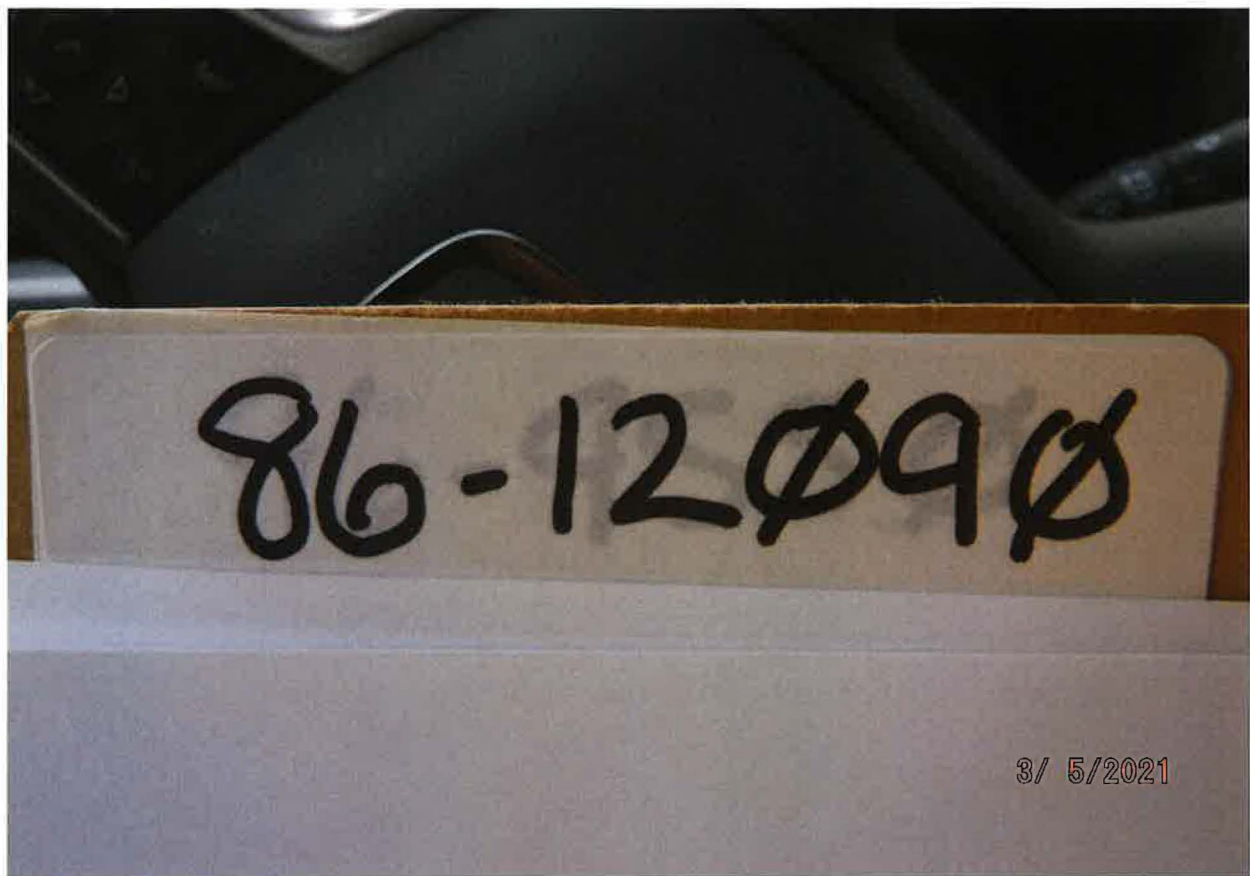
Total Storage Calculations

FILE NUMBER	86-12090
REVIEWER	Luke Bates
DATE	3/12/2021

This spreadsheet has been designed by Idaho Department of Water Resources to estimate the total seepage, evaporation and fill capacity required for a pond.

User Input
Calculated value
Formula Explanations

Surface Area (AC.)	0.6	"Surface Area" is automatically carried over from the "Seepage Loss" sheet.
Average Pond Depth (FT.)	5.2	"Average Pond Depth" depicts the actual depth of the pond either measured or estimated. Note: If you know the maximum depth and not the average depth, the Field Examiner's Handbook suggests multiplying the maximum depth by 0.4 to get the average depth, or you can use any method that seems reasonable to attain average depth.
Pond Capacity (AF)	3.1	Pond Capacity is calculated by multiplying the Pond Surface Area by the Average Pond Depth. If you know the capacity, divide the capacity by surface area and enter the average pond depth in the space above. Note: If pond capacity is determined using a method shown on the "Pond Capacity" sheet, the user may need to modify the value of "Pond Capacity" (cell B9) manually. Note that if the value is modified manually, the formula will be altered for future use.
Multiple Fill Volume Above Initial Fill to Fulfill From Storage Needs- "Multiple Fills" (AF)	0	The "Multiple Fill Volume Above Initial Fill" is the acre-feet of water required to meet a <i>from storage</i> component if the <i>from storage</i> component exceeds a one time fill. This section should not include the amount of water needed to fill the pond initially or the amount of water needed to maintain the pond level due to evaporation or seepage. For example: if a pond has a capacity of 5 acre feet and 2.5 acre feet of seepage and evaporation, but the pond is used for irrigation that requires 10 acre feet of from storage for the irrigation use, then you would insert 5 acre feet into this location (10 acre feet needed - 5 acre feet from the initial fill = 5 acre feet of additional storage needed). Note: You must have a "From Storage" component exceeding the initial fill on the permit to include a volume in this space.
Estimated Seepage Loss (AF)	0.7	The "Estimated Seepage Loss" is automatically carried over from the "Seepage Loss" sheet.
Estimated Evaporation Loss (AF)	1.0	The "Estimated Evaporation Loss" is automatically carried over from the "Evaporation Loss" sheet.
Total Volume Required (AF)	4.8	The "Total Volume Required" is calculated by adding the Pond Capacity, Multiple Fills, Seepage Loss, and Evaporation Loss amounts to determine the total amount of storage required.



F.E DATE 3/5/2021



POD – EARTHEN DAM CAPTURES SPRING WATER IN POND
OVERFLOW CHANNEL BUILT INTO SIDE OF POND DAM



SPRING INFLOW LOCATION



SPRING WATER STILL FLOWING IN ICING CONDITIONS



POU – WILDLIFE STORAGE & FIRE PROTECTION STORAGE





POU – WILDLIFE STORAGE & FIRE PROTECTION STORAGE





SUMMER PHOTO(S) OF STORAGE POND FROM APPLICANT

