

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 96-11751
Exam Date: 08/14/2023

1. Current Owner:
GEOFFREY C HALSTEAD 4132 RAPID LIGHTNING RD SANDPOINT ID 83864
2. Accompanied by: Geoffrey Halstead
Phone No: 208-263-5624
Address: Same as above
Relationship to permit Holder: Permit holder

3. **SOURCE:**
UNNAMED STREAM

Tributary
RAPID LIGHTNING CREEK

Method of Determination: ArcMap, DRG, and beneficial use field examination.

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 SYSTEM1. **LOCATION OF POINT(S) OF DIVERSION:**

UNNAMED STREAM SW¼ NE¼, Sec. 17, Twp 58N, Rge 01E, B.M. BONNER County
UNNAMED STREAM SW¼ NE¼, Sec. 17, Twp 58N, Rge 01E, B.M. BONNER County

Method of Determination: GPS. Upper pond POD is an earthen dam located at -116° 21.679, 48° 22.746; lower pond POD is an earthen dam with concrete overflow device located at -116° 21.662, 48° 22.756.

PLACE OF USE: WILDLIFE STORAGE, RECREATION STORAGE, & AESTHETIC 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	
58N	01E	17			X														

Method of Determination: Beneficial use field examination and Arcmap aerial 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.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
EARTHEN POND DAM(S)					

D. FLOW MEASUREMENTS

1.

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

2. Measurements: None

E. FLOW CALCULATIONS

Measured Method: N/A

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation: N/A
2. Volume Calculations for Other Uses: See attached pond analysis worksheets.

G. NARRATIVE/REMARKS/COMMENTS

A beneficial use field exam was performed on 8/14/2023 with the applicant, Geoffrey C. Halstead, which showed two interconnected ponds impounding unnamed stream(s) water for multiple storage beneficial uses. The PODs were GPS located as earthen dams; the upper (Western) pond dam has a rock overflow channel that allows water to flow approx. 15 feet down to the lower (Eastern) pond, that allows water to overflow via a concrete channel built into the dam & down a rocked waterfall that mimics natural creek channel down the steep embankment. Unnamed stream water merges with another unnamed stream & crosses Rapid Lightning Creek Rd through a large culvert to its confluence with Rapid Lightning Creek.

The upper pond receives water from an intermittent stream which inflows from the South. By August the stream was not flowing, but a stream channel was verified. The lower pond receives overflow from the upper pond & from two separate intermittent stream channels. As in-stream ponds, there is no diversion rate applied to the water right for licensing purposes.

The applicant had applied for Aesthetic as a direct flow beneficial use based on the concrete overflow channel installed at the POD for the lower pond. The field exam validated there is a concrete channel as the primary overflow device, but Mr. Halstead asserts by mid-July the lower pond is no longer discharged and the channel remains dry except for spring runoff season. Based on this information and the short distance of flow through the concrete channel, there is minimal to no evaporation & zero seepage factors to associate with the concrete channel. As water leaves the overflow device it falls downhill in a steep rocked channel that mimics a small waterfall and rocked streambed. I'm not recommending Aesthetic as a direct flow for licensing, as the concrete channel built into the earthen dam serves simply as an overflow device which only receives seasonal high flow discharge before remaining dry the remainder of the year. I have removed the Aesthetic direct flow beneficial use from the Permit during licensing review.

Photographs were taken that illustrate the two ponds that impound unnamed stream(s) water. The storage pond(s) serves as the POU for wildlife storage (birds, fish, frogs, & ungulates), aesthetic storage, & recreation storage. The applicant asserts he doesn't pump water from the ponds, but the lower pond has a secondary overflow culvert constructed lower in grade that the applicant can use to evacuate all the water from the lower pond to conduct maintenance as required. The culvert is blocked by stone during regular pond use to prevent discharge through the culvert.

During licensing review, ArcMap aerial imagery coupled with field exam notes were used to trace out the POU shape for each pond's surface area, with size & volume factors detailed below:

- Upper Pond – has a maximum depth of 15 feet, an average depth of 6 ft, a pond capacity of 1.2 af, and an estimated seepage & evaporation loss of 0.4 af. Based on pond development and current pond analysis worksheet calculations, each beneficial use annual volume equals 1.6 af respectively from this pond.
- Pond #2 – has a maximum depth of 12 feet, an average depth of 4.8 ft, a pond capacity of 1.0 af, and an estimated seepage & evaporation loss of 0.4 af. Based on pond development and current pond analysis worksheet calculations, each beneficial use annual volume equals 1.4 af respectively from this pond.

The annual diversion volume for each beneficial use equals 3.0 af, which is the sum of both ponds volume factors. The three beneficial uses are not additive toward the maximum diversion volume of **3.0 af** that is recommended to license this right.

Conditions 027, 029, & 220 were removed from the permit during licensing review. 220 was removed based on licensing guidance from Shelley Keen – IDWR Deputy Director. A text condition describing Recreation Storage water use was removed from the permit as the description is not required for licensing purposes. Condition 219 was revised to reflect pond analysis worksheets developed during licensing review. Condition 004 shall be carried forward to licensing. 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	3.0 AF
RECREATION STORAGE	01/01 to 12/31	3.0 AF
AESTHETIC STORAGE	01/01 to 12/31	3.0 AF

Totals: 3.0 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

Luke Bates -

Field Examiner's Name  Date 11/28/2023

Reviewer _____ Date _____

State of Idaho
Department of Water Resources
Attachment to Field Exam
96-11751

This map depicts the WILDLIFE STORAGE, RECREATION STORAGE,
& AESTHETIC STORAGE system diagram.



0 0.035 0.07 0.14 Miles

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



Total Storage Calculations

FILE NUMBER	96-11751
REVIEWER	Luke Bates
DATE	11/28/2023

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

UPPER POND VOLUME

Surface Area (AC.)	0.2	"Surface Area" is automatically carried over from the "Seepage Loss" sheet.
Average Pond Depth (FT.)	6	"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)	1.2	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)	0.2	The "Estimated Seepage Loss" is automatically carried over from the "Seepage Loss" sheet.
Estimated Evaporation Loss (AF)	0.2	The "Estimated Evaporation Loss" is automatically carried over from the "Evaporation Loss" sheet.
Total Volume Required (AF)	1.6	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.

Total Storage Calculations

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Calculated value
Formula Explanations

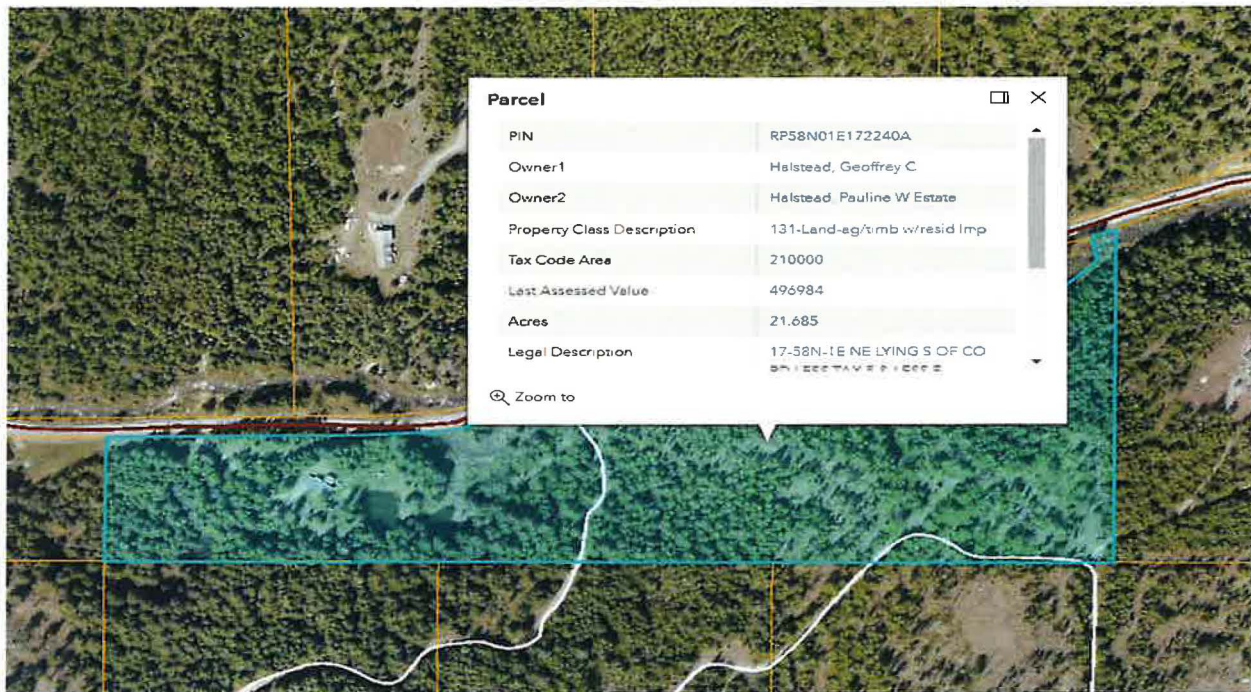
LOWER POND VOLUME

Surface Area (AC.)	0.2	"Surface Area" is automatically carried over from the "Seepage Loss" sheet.
Average Pond Depth (FT.)	4.8	"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)	1.0	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 " <u>From Storage</u> " component exceeding the initial fill on the permit to include a volume in this space.
Estimated Seepage Loss (AF)	0.2	The "Estimated Seepage Loss" is automatically carried over from the "Seepage Loss" sheet.
Estimated Evaporation Loss (AF)	0.2	The "Estimated Evaporation Loss" is automatically carried over from the "Evaporation Loss" sheet.
Total Volume Required (AF)	1.4	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.

96-11751

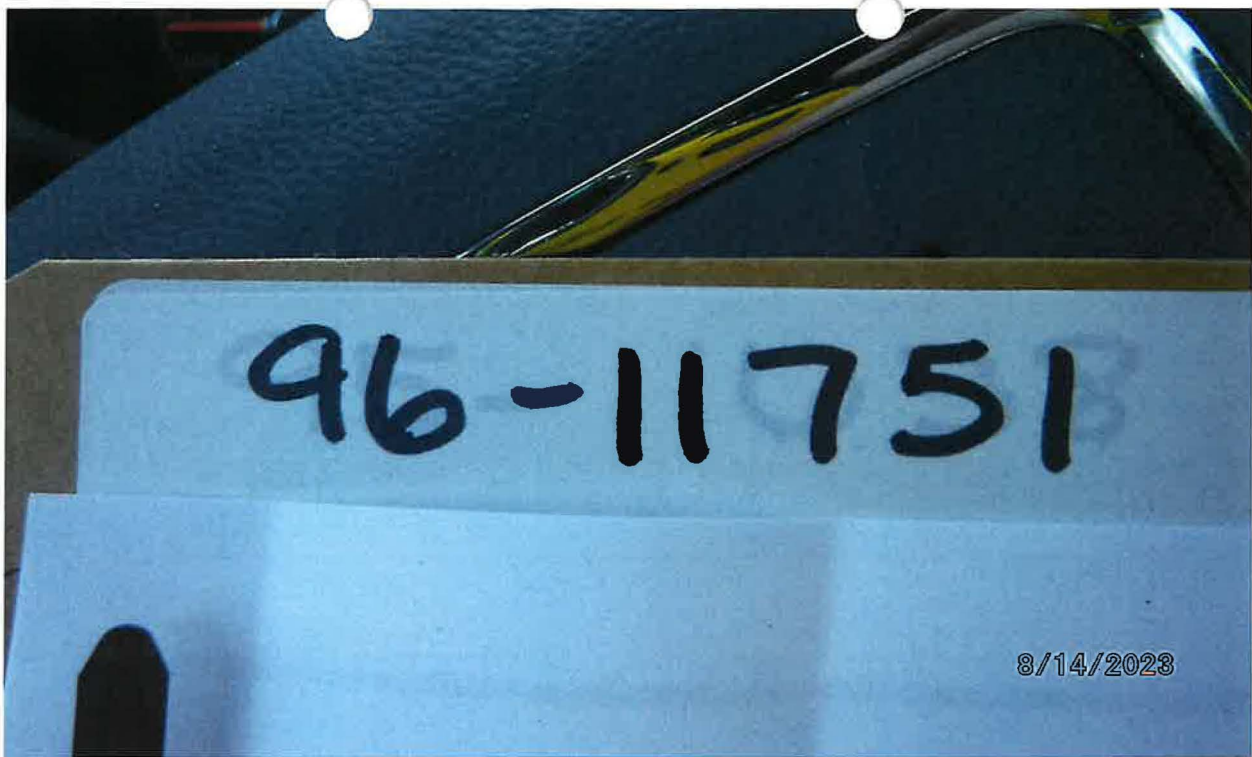
LICENSING REVIEW AERIAL IMAGERY



Tax Parcel Data retrieved from Bonner County GIS Tax Parcel Map at:
<https://cloudgisapps.bonnercountyid.gov/public/> on 11/28/2023



TWO PONDS LOCATED ON PARCEL RP58N01E172240A



BENEFICIAL USE FIELD EXAM DATE 8/14/2023



WESTERN STORAGE POND POU; POD EARTHEN DAM WITH OVERFLOW CHANNEL TO LOWER POND



WESTERN POND – WILDLIFE STORAGE, RECREATION STORAGE, AESTHETIC STORAGE POU



WESTERN STORAGE POND POD – EARTHEN DAM WITH ROCK OVERFLOW CHANNEL



EASTERN STORAGE POND POU; ROCK CHANNEL FROM UPPER POND TO LOWER POND L/H CORNER OF POND



EASTERN STORAGE POND POU – WILDLIFE STORAGE, RECREATION STORAGE, AESTHETIC STORAGE



UNNAMED STREAM ROUTES INTO POND BOTTOM OF PICTURE



1 OF 2 OVERFLOW DEVICES – EASTERN POND, SECONDARY OVERFLOW CHANNEL



SECONDARY OVERFLOW CHANNEL FOR EMERGENCY PURPOSES – NE CORNER OF LOWER EASTERN POND



LOWER EASTERN STORAGE POND POU



EASTERN STORAGE POND OVERFLOW DEVICE – CONCRETE RACEWAY TO SMALL WATERFALL





PRIMARY OVERFLOW DISCHARGES DOWNSTREAM USING NATURAL CHANNEL ADAPTED TO CREATE A SMALL WATER FEATURE