

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 96-9767
Exam Date: 05/25/2021

1. Current Owner:
STEVEN L O CONNELL SR 154 PONDEROSA RD SAGLE ID 83860-8007
2. Accompanied by: Steven L O'Connell SR
Phone No: 208-263-1872
Address: Same as above
Relationship to permit Holder: Permit holder

3. **SOURCE:**
SPRING

Tributary
MIRROR CREEK

Method of Determination: Arcmap, DRG, and Field Exam

B. OVERLAP REVIEW

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

Water Right No.	Source	Purpose of Use	Basis
96-2098	FISH CREEK	INDUSTRIAL, DOMESTIC	LICENSE
96-7503	MIRROR CREEK	IRRIGATION, STOCKWATER, DOMESTIC	LICENSE
96-8146	MIRROR CREEK	IRRIGATION	LICENSE
96-8536	GROUND WATER	INDUSTRIAL, DOMESTIC	LICENSE

Comments: Right 96-2098 uses water from Fish Creek with POU's that overlap this permit's POU, but are not associated with the applicant's property and not a concern for overlap. Rights 96-7503 & 96-8146 use water from Mirror Creek and have overlapping POU's with this permit, but are not associated with the applicant's property. Right 96-8536 used groundwater for industrial and domestic uses, but is not a concern for overlap with this right. All four overlapping water rights were assigned 40 acre tract POU shape boundaries using Arcmap, and need to be refined during the adjudication process for Basin 96.

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

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

SPRING NW¼ SE¼ SE¼, Sec. 6, Twp 55N, Rge 01W, B.M. BONNER County

Method of Determination: GPS. POD is a buried spring box with 4 inch PVC pipe located at approximately -116°29.045, 48°08.376.

PLACE OF USE: 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	
55N	01W	6													X L5				

Method of Determination: Field exam 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
SPRING BOX W/PIPE					

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
5 GAL BUCKET						

2. Measurements: a flow measurement at the POD was not able to be captured, as the spring box and supply pipe to pond were buried for their entirety, daylighting about 15 feet into the pond where pressure head pushed water up a vertical 4" stand pipe. A 5 gallon bucket measurement was taken at the overflow discharge pipe, as the only place a measurement could be taken. The follow measurement equals 26.39 gpm or **0.06 cfs** considering department rounding standards.

E. FLOW CALCULATIONS

Measured Method: 5 gallon bucket test from the overflow discharge pipe resulted in (5 gallon bucket / 11.37 seconds) x 60 sec/min = 26.39 gpm = 0.06 cfs considering department rounding standards.

F. VOLUME CALCULATIONS

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

G. NARRATIVE/REMARKS/COMMENTS

Field exam conducted on 5/25/2021 with the applicant, Steven L O'Connell SR, showed spring water being diverted to a pond for Aesthetic Storage use. At the POD, the applicant has buried a spring box at the spring location, and routed 1,400 feet of 4 inch PVC pipe across a small meadow on his property to the pond. There is a section of 4 inch PVC pipe that daylight in the pond, and gravity flow from the spring box generates sufficient pressure head to fill the pond from the riser pipe. A flow measurement at the POD was not able to be captured, as the spring box and supply pipe to pond were buried for their entirety. A 5 gallon bucket measurement was taken at the overflow discharge pipe, as the only place a measurement could be taken. The flow measurement equals 26.39 gpm or **0.06 cfs** considering department rounding standards, which is recommended for licensing purposes.

During the exam, the pond developed for aesthetic storage use was drawn out on field exam mapping products. During licensing review Arcmap aerial imagery was used to accurately trace out the pond's surface area, equaling 0.4 acres in circumference. Following the field exam, a current pond analysis worksheet was developed to identify current pond volume factors. The pond has a maximum depth of 18 ft, an average depth of 7.2 ft, a pond capacity of 2.9 af, and a seepage & evaporation loss value of 0.4 af. Review of the pond analysis worksheet concludes the total volume required for a pond of this size equaling 3.3 af. The maximum diversion volume recommended for licensing purposes equals **3.0 af**, limited to the permit approved value. The difference between the application pond analysis sheet and current pond analysis sheet comes from the evaporation loss factor, with potential in geographic location variance between the two resulting in slight change in values.

The applicant stated the pond was developed to dry up the meadow area on the property, which prior to re-directing spring water flow was a wetland area and unusable. The applicant stated the entire area around the pond was wet year around, indicating some groundwater influence that resulted in zero seepage factor being applied to the pond analysis worksheet. An oversized overflow 12 inch corrugated poly-pipe was used to allow water to discharge from the pond to the east, where it falls into Mirror Creek. Due to the overflow routing of water, the tributary for the spring source was corrected during licensing review to reflect: Spring – tributary to – Mirror Creek.

Condition 259 was replaced with 219 during licensing review. Condition 220 was added to describe pond size and capacity metrics. All other conditions on the permit will be carried forward to the license. Overlap concerns: Right 96-2098 uses water from Fish Creek with POU's that overlap this permit's POU, but are not associated with the applicant's property and not a concern for overlap. Rights 96-7503 & 96-8146 use water from Mirror Creek and have overlapping POU's with this permit, but are not associated with the applicant's property. Right 96-8536 used groundwater for industrial and domestic uses, but is not a concern for overlap with this right. All four overlapping water rights were assigned 40 acre tract POU shape boundaries using Arcmap, and need to be refined during the adjudication process for Basin 96. There are no additional 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>Rate of Diversion</u>	<u>Annual Volume</u>
AESTHETIC STORAGE	01/01 to 12/31		3.0 AF
DIVERSION TO STORAGE	01/01 to 12/31	0.06 CFS	

Totals: 0.06 CFS 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 - Water Resource Agent

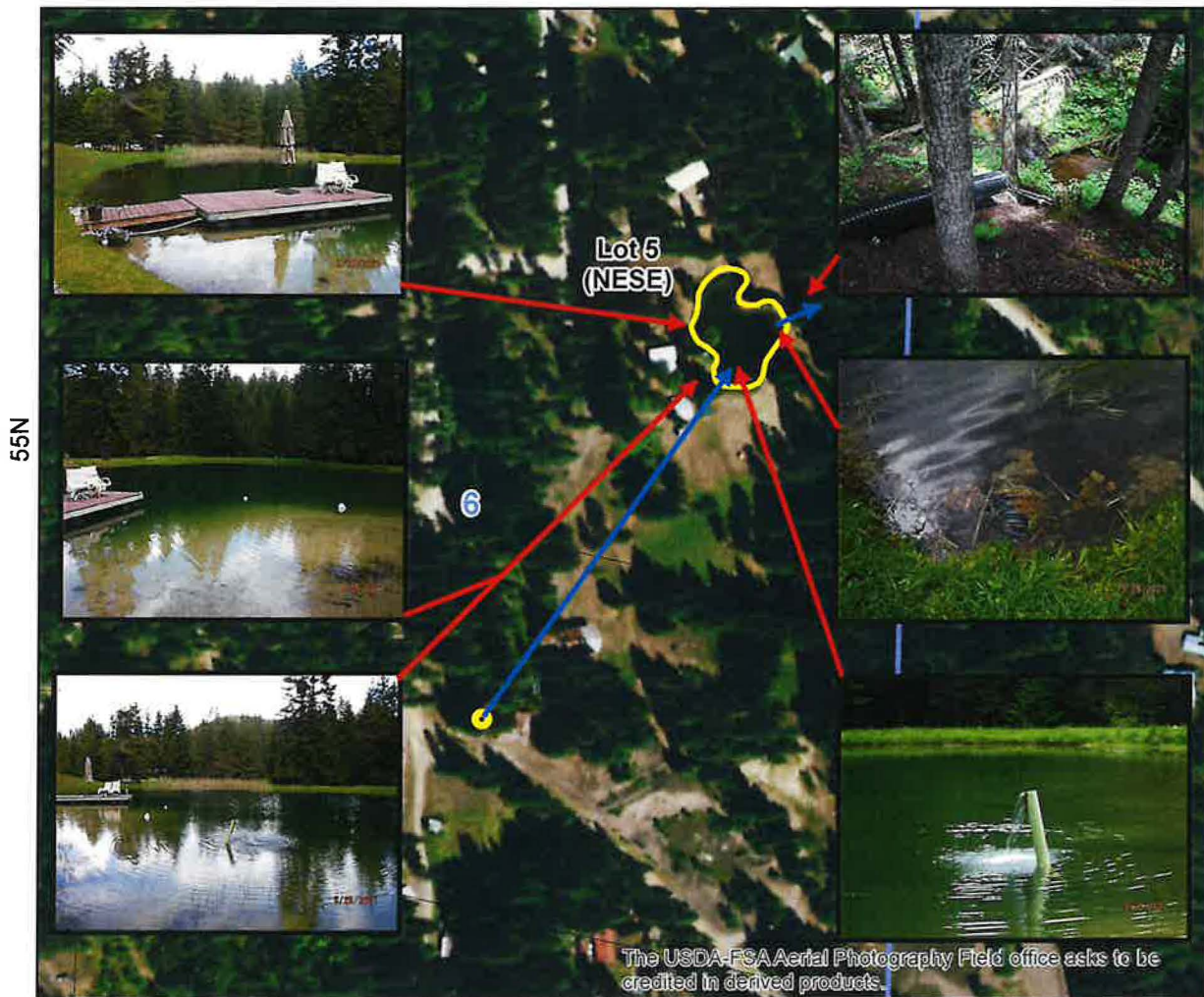
Field Examiner's Name LS QB Date 6/3/2021

Reviewer Ad F Date 6/30/2021

State of Idaho
Department of Water Resources
Attachment to Field Exam
96-9767

AESTHETIC STORAGE system diagram.

01W



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

0 0.035 0.07 0.14 Miles



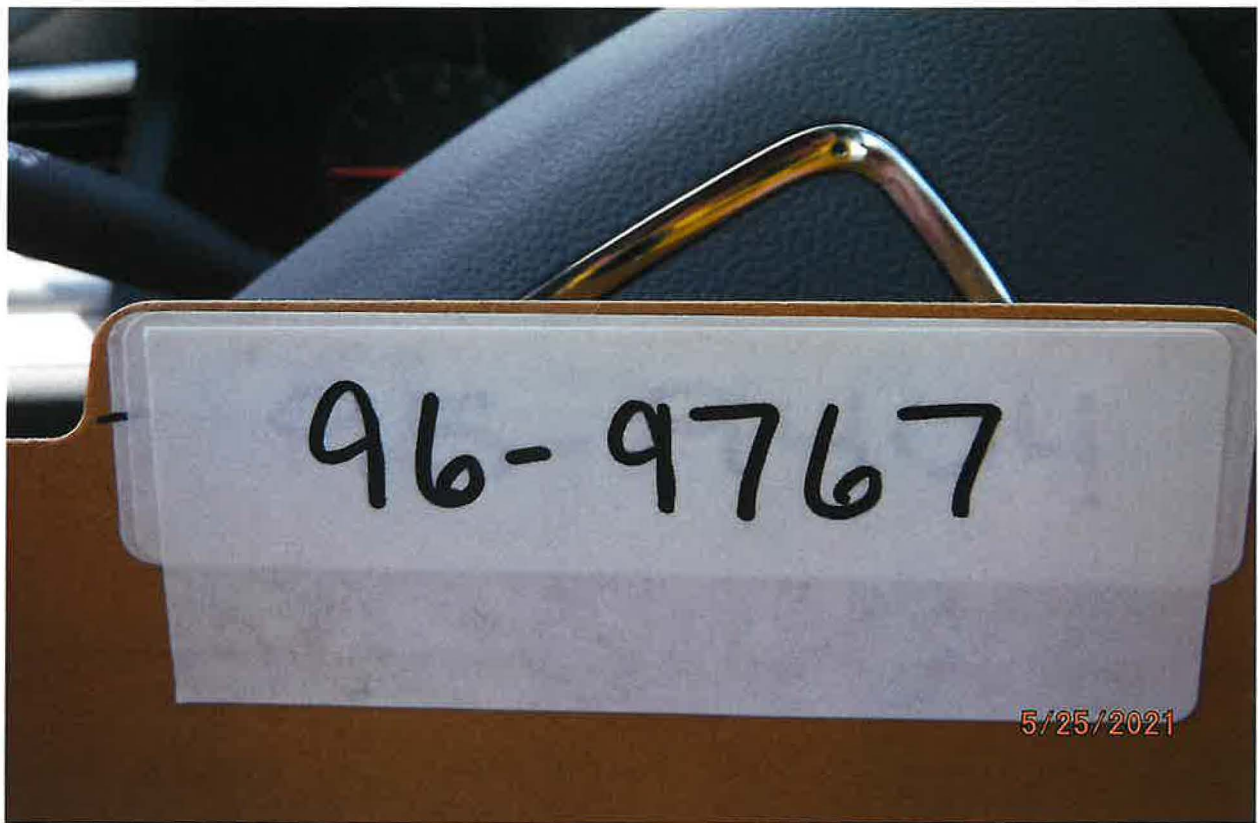
Total Storage Calculations

FILE NUMBER	96-9767
REVIEWER	LUKE BATES
DATE	6/3/2021

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.)	0.4	"Surface Area" is automatically carried over from the "Seepage Loss" sheet.
Average Pond Depth (FT.)	7.2	"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)	2.9	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)	0.0	The "Estimated Seepage Loss" is automatically carried over from the "Seepage Loss" sheet.
Estimated Evaporation Loss (AF)	0.4	The "Estimated Evaporation Loss" is automatically carried over from the "Evaporation Loss" sheet.
Total Volume Required (AF)	3.3	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.



FIELD EXAM DATE 5/25/2021

POD = BURIED SPRING BOX WITH 4" PVC PIPE TO POND, NO IMAGE AVAILABLE



AESTHETIC STORAGE POU – POND



INFLOW FROM SPRING SOURCE – 1400 FT RUN OF 4" PVC PIPE TO VERTICAL RISER IN POND





AESTHETIC STORAGE POU





SCREENED OVERFLOW DISCHARGE CORRUGATED PIPE



OVERFLOW WATER FROM POND FLOWS INTO MIRROR CREEK