

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 93-7265

Exam Date: 05/19/2022

1. Current Owner:
LON B REYNOLDS 5862 MINALOOSA RD PLUMMER ID 83851
2. Accompanied by: Lon B Reynolds
Phone No: 775-721-4079
Address: Same as above
Relationship to permit Holder: Permit Holder.

3. **SOURCE:**
SPRING
UNNAMED STREAM
GROUND WATER

Tributary

LITTLE PLUMMER CREEK
LITTLE PLUMMER CREEK

Method of Determination: Beneficial Use field examination, ArcMap, & DRG.

B. OVERLAP REVIEW

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

Water Right No.	Source	Purpose of Use	Basis
93-7704	Spring (#2)	Stockwater	Permit in process for licensing

Comments: Active Permit 93-7265 is the parent Right to this split permit and is currently in process for licensing. Overlap between parent and child right 93-7704 is related to stockwater with the POU located at the Unnamed Stream POD (clarified source) for this permit. Condition X35 was added to both permits during licensing review describing that Rights 93-7265 and 93-7704 when combined shall not exceed a total diversion rate of 0.02 cfs, and a total annual maximum diversion volume of 0.7 acre-feet for stockwater uses.

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

C. DIVERSION AND DELIVERY SYSTEM

1. LOCATION OF POINT(S) OF DIVERSION:

GROUND WATER L2 (NW¼ NE¼), Sec. 6, Twp 45N, Rge 04W, B.M. BENEWAH County
 SPRING SW¼ SW¼ SE¼, Sec. 31, Twp 46N, Rge 04W, B.M. BENEWAH County (**SPRING #1**)
 UNNAMED STREAM L2 (SW¼ NW¼ NE¼), Sec. 6, Twp 45N, Rge 04W, B.M. BENEWAH County
 SPRING L2 (NE¼ NW¼ NE¼), Sec. 6, Twp 45N, Rge 04W, B.M. BENEWAH County (**SPRING #3**)

Method of Determination:

- **GROUND WATER:** GPS. POD is located at -116°53.051, 47°16.711, French Drain located under Shop structure.
- **Spring #1:** GPS. POD is located at -116°53.0173, 47°16.7998, excavated spring pooling & poly pipe diversion to storage.
- **Unnamed Stream:** GPS. POD is located at -116°53.0601, 47°16.5659, downstream flow from Spring #2.
- **Spring #3:** GPS. POD is located at -116°52.896, 47°16.720, spring box & PVC pipe diversion to storage.

PLACE OF USE: STOCKWATER

[illegible]

PLACE OF USE: STOCKWATER STORAGE, WILDLIFE STORAGE, RECREATION STORAGE, & 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	
45N	04W	6		X L2															

Method of Determination: Beneficial use field examination & 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
GROUNDWATER	N/A	N/A	GRAVITY FLOW 4 INCH PVC PIPE FROM FRENCH DRAIN	N/A	N/A
SPRING #1	N/A	N/A	GRAVITY FLOW 3/4 INCH POLY PIPE	N/A	N/A
SPRING #3	N/A	N/A	GRAVITY FLOW 4 INCH PVC PIPE FROM SPRING BOX	N/A	N/A

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
4-CUP (GW SOURCE)						
5-GAL BUCKET (SPRING #3)						

2. Measurements: I was able to take flow measurements from the groundwater source diversion to storage outflow pipe and from the spring #3 source diversion to storage outflow pipe, but the spring #1 diversion to storage pipe was not drafting water at time of exam. I've recommended the diversion to storage diversion rate = to the sum of three sources as measured = 0.05 cfs in total, and the stockwater direct flow diversion rate = 0.02 cfs. The maximum diversion rate recommended for licensing = 0.07 cfs.

E. FLOW CALCULATIONS

Measured Method:

- Groundwater flow rate = 4 cups filled in 1.78 sec x factor of 4 = 1 gal per 7.12 seconds = 8.4 gpm = 0.02 cfs.
- Spring #1 = no flow at time of exam, recommending nominal diversion rate of 0.01 cfs, equivalent to spring low flow observed feeding shallow excavated pooling (water into system = water out of system).
- Spring #3 = 5 gal / 28.5 sec x 60 sec/min = 10.53 gpm = 0.02 cfs
- Diversion to Storage flow rate = 0.02 cfs + 0.01 cfs + 0.02 cfs = **0.05 cfs.**
- Stockwater direct flow diversion rate = **0.02 cfs** based on 50 head of cattle drinking directly from spring # 1 & unnamed stream (clarified from spring #2).
- Maximum diversion rate = 0.05 cfs (diversion to storage) + 0.02 cfs (stockwater direct flow) = **0.07 cfs.**

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation: N/A
2. Volume Calculations for Other Uses: See attached pond analysis worksheet.
 - 50 head cattle x 12 gpd x 365 day = 219,000 gals / 325,850 gal per acre-foot = **0.7 af** considering department rounding standards.

G. NARRATIVE/REMARKS/COMMENTS

Beneficial use field exam performed on 5/18/2022 with the applicant, Lon B Reynolds, showed multiple water sources being diverted for diversion to storage purposes, in-stream stock drinking, and an in-stream storage pond. This permit is somewhat convoluted in how the sources interact with each other as observed during the exam, and I have broken each Source, POD, & POU down by bullet comments below to keep my findings organized working through the field report. It's important to note that this permit 93-7265 has been split into two rights, with child right 93-7704 accounting for Spring #2 water source used for stockwater instream watering only; this was a separate source that didn't co-mingle as a spring with the other sources on this right.

- Groundwater source: The POD is a buried French drain co-located with Mr. Reynold's shop; during excavation to construct the shop groundwater was intercepted and resulted in diversion to storage use from drain tiles and a 4-inch PVC pipe, which daylight to the east and down grade from the shop. I was able to take flow measurements using a 4-cup vessel that once converted results in a 0.02 cfs diversion rate for diversion to storage purposes. From the pipe exit groundwater flows in a ditched channel downgrade inflowing to an excavated storage pond. The POD was GPS located and photographs were taken to illustrate the outflow in late spring/early summer from the French drain. Diversion of groundwater is additive with two separate spring sources for the diversion to storage rate recommended for licensing.
- Spring #1 source: The POD is a spring with small pooling excavated to allow stock animals to drink from the source. I've assigned a stockwater diversion rate of **0.02 cfs** for the stockwater use of up to 50 head of cattle that are rotated on the applicant's property in summer & fall months. Additionally, a ¾ inch poly pipe has been installed for diversion to storage down slope to the excavated storage pond on the property. At the time of exam, the pipe was suspended above the pooling and not receiving spring water. Mr. Reynolds asserts the pipe was used to divert water during the 10-year permit development period.

I've assessed a nominal flow rate based on the trickle of spring water flowing into the small pooling and considering water budget concepts flow in = flow out, or in this case 0.01 cfs designated as the diversion to storage component diversion rate. The stockwater POU consists of a small circular area around the Spring #1 POD in addition to the same circular area around the unnamed stream POD detailed below. Both sources and stockwater POU were traced out using ArcMap aerial imagery during licensing review.

- Unnamed stream source: This source has been clarified during licensing review from the original Spring #2 source. The spring source is the product of split child right 93-7704 and accounts for stockwater drinking directly from the spring's pooling. For this permit, the unnamed stream POD was assigned where the small pooling of spring water routes downstream in a naturally flowing unnamed stream observed on the DRG layer in ArcMap during licensing review. I've assigned the stockwater beneficial use a diversion rate of 0.02 cfs as up to 50 head of cattle drink directly from the spring and subsequent unnamed stream source as found at time of exam.

The POU was traced using ArcMap like Spring #1 above, and jointly the two circular areas result in the stockwater POU.

The annual volume associated with stockwater use equals 50 head of cattle = **0.7 af** annually as computed above. The 0.02 cfs from the unnamed stream and spring #1 source are not additive for licensing purposes, as the same stock can drink from either source like an in-stream water use. Unnamed stream water inflows to the excavated pond lower in the system located on the applicant's property.

- Spring #3 source: The POD is a buried spring box with 4-inch PVC pipe diverting water to the excavated storage pond located near the spring. I completed a 5-gal bucket flow measurement from the pipe draining into the pond, which resulted in a diversion rate of 0.02 cfs as computed above. The combined total diversion to storage rate for licensing purposes equals 0.02 cfs (groundwater) + 0.01 cfs (spring #1) + 0.02 cfs (spring #2) = **0.05 cfs**. The maximum diversion rate recommended for licensing equals the sum of the stockwater beneficial use flow rate and the diversion to storage component flow rate = 0.02 cfs + 0.05 cfs = **0.07 cfs**. Mr. Reynolds asserts the spring flow is consistent year-round into the pond.
- Stockwater from Storage, Recreation, & Wildlife beneficial uses: These three beneficial uses were removed from the permit during licensing review, as they were not developed in the combined water source system. Stock animals drink directly from spring #1, the unnamed stream, or the storage pond and water is not pumped to stock tanks. The storage pond was excavated as an in-stream pond that benefits from diversion to storage water, but unnamed stream water flows naturally through the pond and downstream from the shallow excavated dam negating flow through component uses. Mr. Reynolds asserts water doesn't outflow from the pond year-round, which implies seepage and evaporation rates exceed the three water sources input to the pond.
- Stockwater Storage, Wildlife Storage, & Fire Protection Storage, & Recreation Storage beneficial uses: The storage pond POU was excavated further east than the permit map illustrates, but still within the same legally described QQ. I used field maps during the exam to sketch out flow paths from POD(s) and the storage pond POU. During licensing review, I used Arcmap aerial imagery to trace out the pond's surface area and evaluated a pond analysis sheet to derive pond size and volume metrics as detailed below:
 - Pond surface area = 0.3 acres, maximum depth = 10 ft, average depth = 4 ft, seepage, and evaporation rate(s) loss = 0.6 af, and stockwater storage volume for 50 head of stock = **0.7 af**. The total storage volume = **2.5 af**, which is designated as the maximum diversion volume for licensing purposes.
 - The wildlife, fire protection, & recreation storage volume(s) equals pond capacity + seepage + evaporation or **1.8 af** annually, which is not additive between the three beneficial uses. Waterfowl was observed using the pond during the exam, as a flock of ducks took flight as I walked down to the pond. A small boat is positioned near the pond for family use during summer months linked to recreational use at the storage pond.
 - The stockwater storage volume is equivalent to the stockwater direct flow beneficial use, as the same herd uses the entire property at any given time. The two stockwater uses are not additive for volume purposes.
 - The unnamed stream channel inflowing to the pond from the SW corner is the primary reason I'm recommending a source clarification associated with Spring #2 on the Permit. With regard to the POD for the unnamed stream, I could have placed it at the pond's dam or where the spring pooling forms the unnamed stream channel; regardless, the legal description would remain the same and I've kept the POD associated more with the headwater, as the DRG layer shows the unnamed stream starting lower in

elevation than the spring as GPS located but there is an evident unnamed stream channel flowing all the way down to the pond from the spring.

Mr. Reynolds uses a separate groundwater well source for his residence and garden area, well D0040652 associated with Decreed Right 95-15134. This right doesn't interact with the groundwater source linked to the French drain in this permit nor surface water sources and there is no concern for overlap between these two rights. Once Split, 93-7265 & 93-7704 have the only direct overlap between stockwater uses for licensing purposes as discussed above. Condition X35 was added to mitigate overlap concerns between the two rights.

I've removed conditions 26A, X02, 082, and a text condition describing recreation storage water use which isn't required for licensing. 220 was removed based on licensing guidance from Shelley Keen – IDWR Deputy Director. Condition 219 was revised to reflect accurate pond size & volume data derived during licensing review. All other conditions on the permit shall be carried to licensing.

Have conditions of permit approval been met? X 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>
STOCKWATER	01/01 to 12/31	0.02 CFS	0.7 AF
STOCKWATER STORAGE	01/01 to 12/31		0.7 AF
WILDLIFE STORAGE	01/01 to 12/31		1.8 AF
RECREATION STORAGE	01/01 to 12/31		1.8 AF
FIRE PROTECTION STORAGE	01/01 to 12/31		1.8 AF
DIVERSION TO STORAGE	01/01 to 12/31	0.05 CFS	

Totals: 0.07 CFS 2.5 AF

2. Recommended Amendments: WR SPLIT forming two Rights, 93-7265 (Parent) & 93-7704 (Child).

Change P.D. as reflected above Add P.D. as reflected above X None

Change P.U. as reflected above Add P.U. as reflected above X None

I. AUTHENTICATION

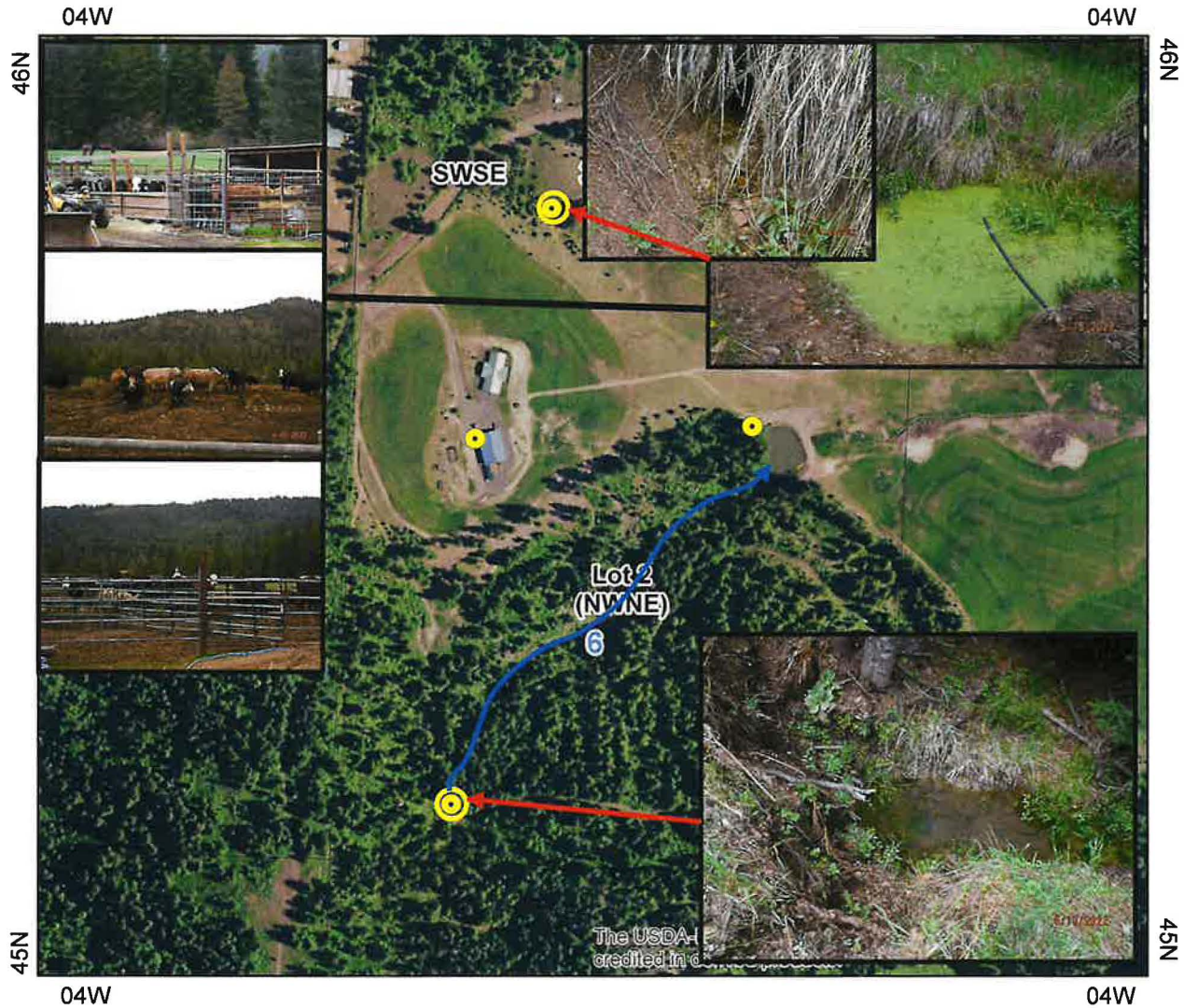
Luke Bates -

Field Examiner's Name [Signature] Date 1/2/2024

Reviewer [Signature] Date 6/6/2024

State of Idaho
Department of Water Resources
Attachment to Field Exam
93-7265

This map depicts the STOCKWATER system diagram

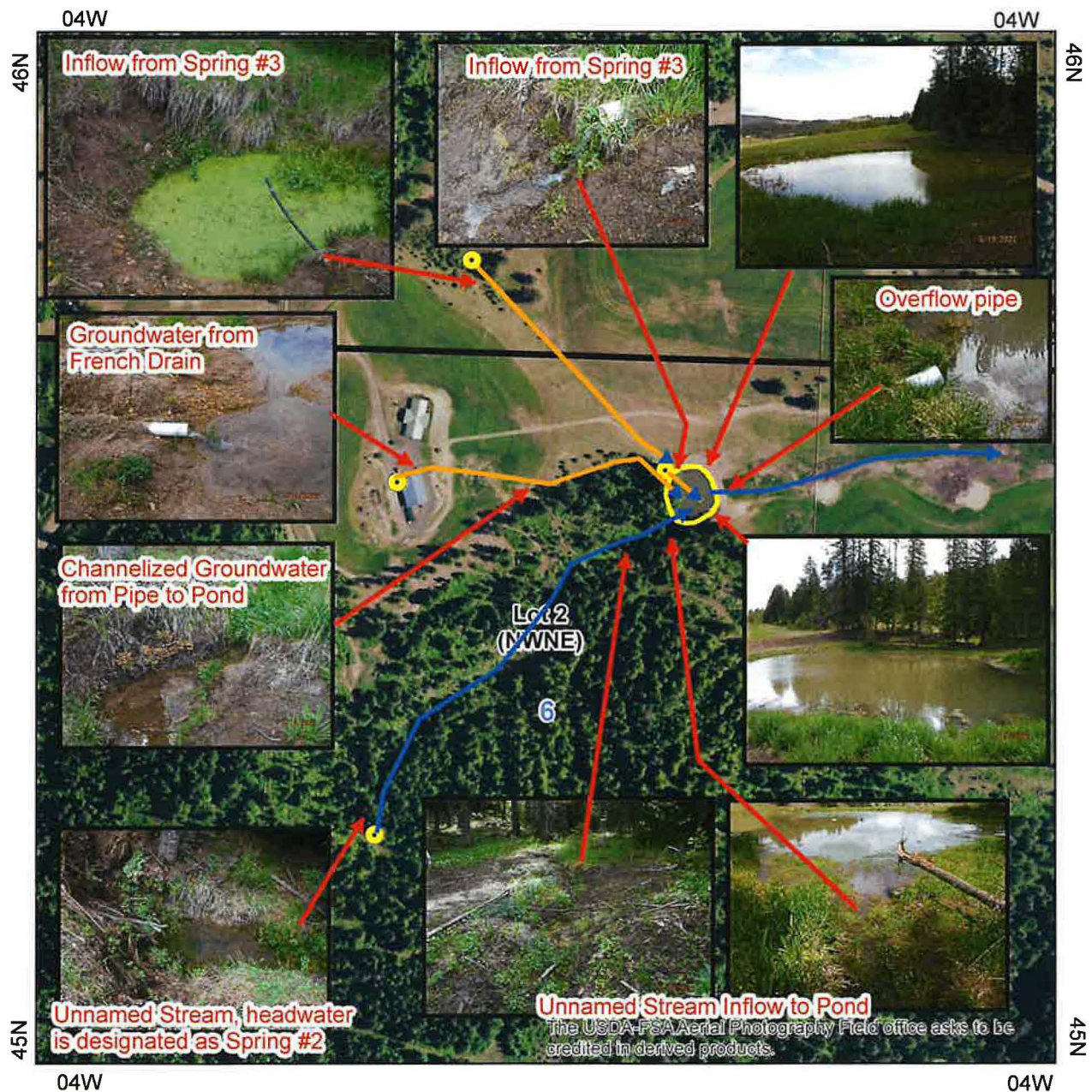


- Unnamed Stream Channel
- Place Of Use Boundary
- Townships
- PLS Sections
- Quarter Quarters
- Point of Diversion



State of Idaho
Department of Water Resources
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This map depicts the STOCKWATER STORAGE, FIRE PROTECTION STORAGE, WILDLIFE STORAGE, & RECREATION STORAGE system diagram.



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

0 0.0475 0.095 0.19 Miles

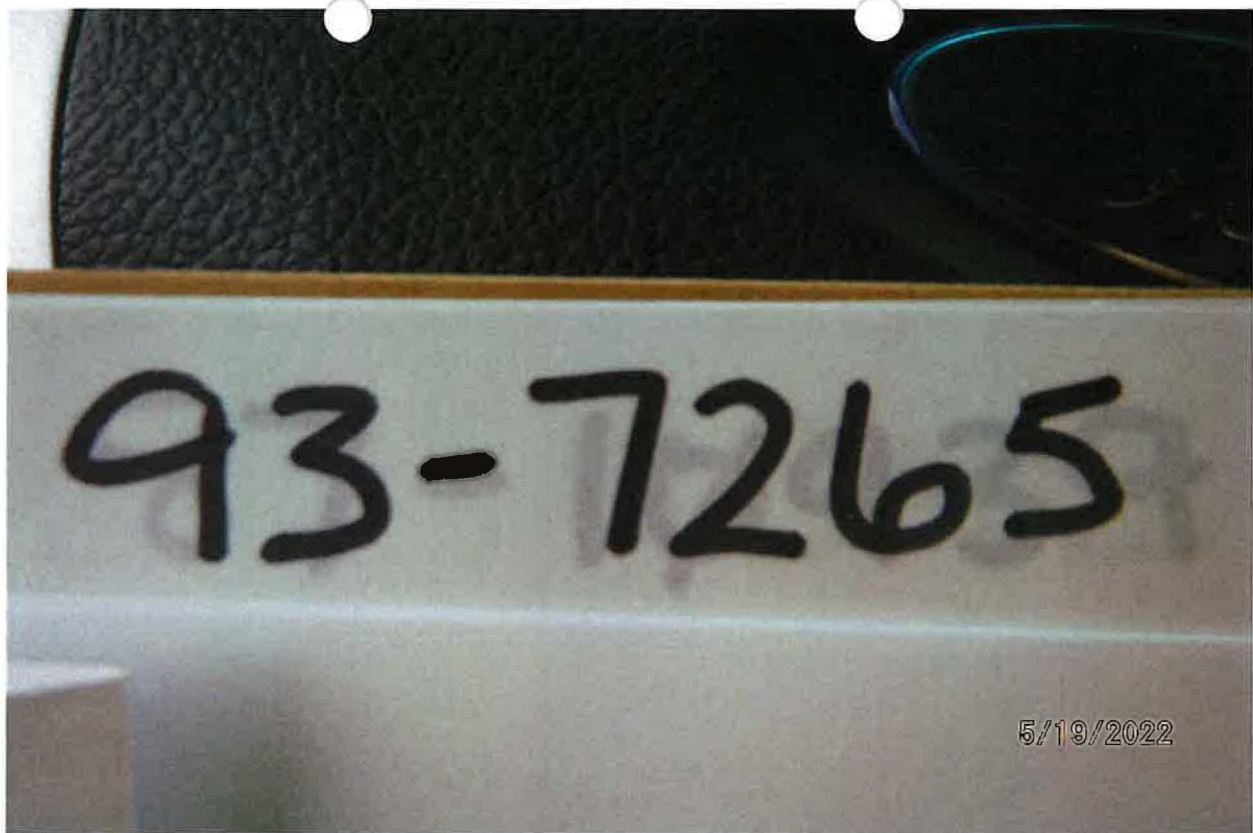


93-7265 LICENSING REVIEW

POND ANALYSIS WORKSHEET

Total Storage Calculations		
FILE NUMBER	93-7265	This spreadsheet has been designed by Idaho Department of Water Resources to estimate the total seepage, evaporation and fill capacity required for a pond.
REVIEWER	Luke Bates	
DATE	12/29/2023	
		Print Page to PDF User Input Calculated value Formula Explanations
Surface Area (AC.)	0.3	"Surface Area" is automatically carried over from the "Seepage Loss" sheet.
Average Pond Depth (FT.)	4	"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)	0.7	The "Multiple Fill Volume Above Initial Fill" is the acre-feet of water required to meet a from storage component if the from storage 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)	0.3	The "Estimated Seepage Loss" is automatically carried over from the "Seepage Loss" sheet.
Estimated Evaporation Loss (AF)	0.3	The "Estimated Evaporation Loss" is automatically carried over from the "Evaporation Loss" sheet.
Total Volume Required (AF)	2.5	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.

- WILDLIFE STORAGE, FIRE PROTECTION STORAGE, RECREATION STORAGE ANNUAL VOLUME = 1.2 af (capacity) + 0.6 af (seepage & evaporation) = 1.8 af respectively (not additive between the three)
- STOCKWATER STORAGE ANNUAL VOLUME = 50 head cattle x 12 gpd x 365 days = 219,000 gal annually divided by 325,850 gal per acre-foot = 0.7 af considering department rounding standards.
 - Note: 0.7 af stockwater storage is the same volume as assigned to the stockwater direct flow beneficial use associated with spring(s) source(s).



BENEFICIAL USE FIELD EXAM DATE 5/19/2022



POD – GROUNDWATER FROM FRENCH DRAIN NEAR SHOP & DIVERSION TO STORAGE FOR
GROUNDWATER SOURCE



POD – SPRING #1 & DIVERSION TO STORAGE FROM SPRING #1





POD – UNNAMED STREAM (CLARIFIED FROM PERMIT APPROVED SPRING SOURCE FOLLOWING SPLIT OF WATER RIGHT); FLOWS IN DESIGNATED STREAM CHANNEL TO STORAGE POND



UNNAMED STREAM CHANNEL WHERE IT FLOWS INTO SW CORNER OF POND



POD – SPRING #2 SPRING BOX AND DIVERSION TO STORAGE COMPONENT. SPRING CO-LOCATED WITH POND



UNNAMED STREAM FLOWING INTO POND; POU – STOCKWATER STORAGE, WILDLIFE STORAGE, FIRE PROTECTION STORAGE, & RECREATION STORAGE



POU – STOCKWATER STORAGE, WILDLIFE STORAGE, FIRE PROTECTION STORAGE, & RECREATION STORAGE



POND IS BOTH IN-STREAM AND RECEIVES DIVERSION TO STORAGE WATER FROM SPRING(S) AND A GROUNDWATER SOURCE



OVERFLOW DEVICE – 6 INCH PVC PIPE ON EAST SIDE OF POND ALLOWS WATER TO CONTINUE
DOWNSTREAM



STANDING ON POND DAM WITH VIEW DOWNSTREAM TO THE EAST OF THE STORAGE POND



POU – STOCKWATER (DIRECT FLOW) FROM SPRING #1 (ABOVE) & UNNAMED STREAM (BELOW); DIRECT FLOW 0.02 CFS FOR STOCK USE FROM EACH SOURCE (NON-ADDITIVE)



UNNAMED STREAM STOCKWATER USE ALSO COVERED BY SPLIT RIGHT 93-7704 FOR SPRING #2 SOURCE



STOCKWATER USE ON THE PROPERTY OCCURS AS A RELATIVE'S CATTLE ARE PASTURED TO GRAZE ANNUALLY

