

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 65-23618
Exam Date: 02/02/2021

1. Current Owner:
SHAWN MOSS PO BOX 434 MC CALL ID 83638 AND
TRINA MOSS PO BOX 434 MC CALL ID 83638

2. Accompanied by: Same
Phone No:
Address:
Relationship to permit Holder:

3. **SOURCE:**
GROUND WATER

Method of Determination: Aerial imagery, photos

B. OVERLAP REVIEW

1. Other water rights with the same place of use: NO Overlap

Water Right No.	Source	Purpose of Use	Basis

Comments: No overlap present

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

Water Right No.	Source	Purpose of Use	Basis

Comments: No overlap present

C. DIVERSION AND DELIVERY SYSTEM

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

GROUND WATER SW¼ SW¼, Sec. 14, Twp 17N, Rge 03E, B.M. VALLEY County

Method of Determination: Aerial imagery, digital PLSS system, photos

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	
17N	03E	14											X						

Method of Determination: Aerial imagery, digital PLSS system, photos

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
n/a	n/a	n/a	n/a	n/a	n/a

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
n/a	n/a	n/a	n/a	n/a	n/a	n/a

2. Measurements: No measurements were taken during this exam

E. FLOW CALCULATIONS

☒ Additional Computation Sheets Attached

Measured Method: See attached pond spreadsheet

Permit 12.0 AF
 B.U. Fee Paid \$50 → 0 to 20 AF
 B.U. Standard n/a
 Pond Spreadsheet 5.5 AF

License Recommendation 5.5 AF

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation: n/a

2. Volume Calculations for Other Uses: See attached pond spreadsheet

Pond spreadsheet: 4.8 AF pond capacity + 0.7 AF evaporation losses = **5.5 AF total**

G. NARRATIVE/REMARKS/COMMENTS

This permit authorizes 12.0 AF of groundwater for aesthetic storage use within Valley County. Proof of beneficial use was submitted by the permit holders on January 25, 2021 and a field exam was conducted by WRA Tyler Smith on February 2, 2021.

The aesthetic storage use is an excavated pond that naturally fills with groundwater. Therefore, the point of diversion is a centroid for the pond, no diversion rate is needed and seepage losses need not be considered in the total volume required.

In the application for permit, the pond was proposed to have a surface area of 1 acre and a maximum depth of 20 feet. Aerial imagery and GIS technology measured the pond surface area at 0.6 acres, and the maximum depth of the pond was confirmed to be 20 feet by the permit holder. When this data was input into the attached pond analysis spreadsheet, it determined the pond capacity to be 4.8 AF. The evaporative losses associated with the pond were calculated to be 0.7 AF, making the total volume required for the pond to be 5.5 AF. This is the volume recommended for licensing.

Since the aesthetic pond intercepts shallow groundwater, it is considered to be in direct hydraulic connection to Lake Fork Creek. Mitigation for impacts to Lake Fork Creek are accomplished through the non-use of 12 AF of water right 65-2932B as was submitted with the original application for permit.

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>
AESTHETIC STORAGE	01/01 to 12/31	5.5 AF

Totals: 5.5 AF

2. Recommended Amendments

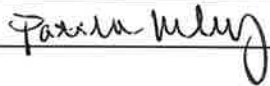
☐ Change P.D. as reflected above ☐ Add P.D. as reflected above ☒ None

☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☒ None

I. AUTHENTICATION

Tyler Smith - Water Resource Agent

Field Examiner's Name  Date 2/24/21

Reviewer  Date 3-1-2021

65-23618 Delivery System Diagram



Seepage Loss Calculations

This spreadsheet has been designed by Idaho Department of Water Resources to estimate the total annual seepage losses from a pond.

FILE NUMBER	65-23618
REVIEWER	Tyler Smith
DATE	2/18/2021

User Input
Calculated value
Formula Explanations

INPUTS

Pond Surface Area (AC.)	0.6	AC.
-------------------------	-----	-----

Pond Surface Area (SQ. FT.)	26136	SQ. FT.
-----------------------------	-------	---------

I used the following method to obtain my Soil Classification information:	NRCS Web Soil Survey	
My Soil Classification is	ML	
Suggested Seepage Rate (FT./DAY)	0.0000	FT./DAY

Formula: (Surface Area X Seepage Rate) X 7.48 = Gallons Per Day Loss
--

Convert to GPD	0	GPD
----------------	---	-----

Total Seepage Loss (AFA)	0.0	AFA
--------------------------	-----	-----

Though sand and gravel seepage rates may actually be higher, the maximum allowable rate is 0.2 ft/day, pursuant to Administrative Memo "Seepage Loss Standards for Ponds and Reservoirs."

Suggested Seepage Rates for Different Soil Types:

GW, GP, GM, GC, SW, SP and SM (silty sand, sand silt mixtures and gravel mixtures) = **0.2 ft per day**

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

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

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

MH, OH, PT and CH (high plasticity clays) = **0.0003 ft per day**

LINED PONDS (liners can be chemical, fabric, or bentonite) = **0 ft per day**

Ponds Intercepting Groundwater (excavated ponds filled by ground water) = **0 ft per day**

PLEASE NOTE: The initial basis for the Suggested Seepage Rates in the table above is found on Page 16 of Seepage from Fish Ponds, Bulletin 599, August 1989 Alabama Agricultural experiment Station, Auburn University, Auburn University Alabama. If you don't know the soil type, please refer to the map provided at the NRCS Web Soil Survey (Tab #1), an ArcMap Soil Classification Map (Tab #1.1), or published NRCS Soil Survey (Tab #1.2). Use "0" if the pond fill relies on the water table.

Evaporation Loss Calculations

This spreadsheet has been designed by Idaho Department of Water Resources to estimate the annual evaporation losses from a pond.

FILE NUMBER	65-23618
REVIEWER	Tyler Smith
DATE	2/18/2021

User Input
Calculated value
Formula Explanations

The acronyms used on the Kimberly Research Center website are defined below:

P = Precipitation
ET= Evapotranspiration
P _d = Precipitation deficit
P _d =ET-P

USING THIS SPREADSHEET

Use the link below to access the Kimberly Research Center website. This website provides the Precipitation Deficit for a station most representative of the pond under examination. The Precipitation Deficit is the total amount of free water surface evaporation minus the precipitation for a given area, which gives the total amount of evaporative losses incurred by the pond. There are several weather sites that are used throughout the state. IDWR staff can find the nearest site using Arc Map. The shape file containing the sites can be found at <X:/Spatial/Climate/ETIdahostations.shp>.

Instructions:

1. Use the link below to navigate to ET Idaho 2012.
2. Select the station which is most representative to your pond location.
3. Click Submit Query.
4. Under "Land Covers with Evapotranspiration Estimates," select "Open Water - Shallow Systems (ponds, streams)" or "Open Water - small stock ponds" depending on the pond size.
5. Click the link to "Precipitation Deficit."
6. Reference and copy (ctrl + C) the first subheading "Mean" values.
7. Click the "Paste Values from ET Idaho" button. The table will automatically enter a zero (0) for any negative precipitation deficit values.

Found at: <http://data.kimberly.uidaho.edu/ETIdaho/>

Precipitation Deficit

Station: McCall (NWS -- USC00105708)

Month	mm/day ¹	Days per month	mm/Month
Jan	-1.98	31	0.00
Feb	-1.22	28	0.00
March	-1.12	31	0.00
April	0.41	30	12.30
May	0.97	31	30.07
June	1.79	30	53.70
July	3.57	31	110.67
August	3.07	31	95.17
September	1.73	30	51.90
October	0.13	31	4.03
November	-2.00	30	0.00
December	-2.20	31	0.00

Total mm/year = 357.84

PLEASE NOTE: The seasonal average for precipitation deficit should not be used for calculations because precipitation often exceeds evaporation during wetter months of the year. If the pond is kept full, excess precipitation during wetter months does not serve to refill the pond during drier months.

For example, see Sandpoint KSPT (NWS -- 108137), the annual precipitation deficit is -106 mm. However, April through September have positive precipitation deficit values. To properly estimate the annual volume of water necessary to refill a pond due to evaporation losses, the table will automatically enter a zero (0) for each month that the precipitation value is reported as a negative value.

As described above, precipitation offsets evaporation in winter months, so the net effect is that wintertime precipitation deficit is usually zero.

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

(357.84 ÷ 304.8) X 0.60 = 0.7 AFA

Total Storage Calculations

FILE NUMBER	65-23618
REVIEWER	Tyler Smith
DATE	2/18/2021

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.)	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)	4.8	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)	0.7	The "Estimated Evaporation Loss" is automatically carried over from the "Evaporation Loss" sheet.
Total Volume Required (AF)	5.5	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.

Basin Sequence	Owner	Source	Use	NENE	NWNE	SWNE	SENE	NENW	SWNW	SESW	NESW	SWSW	NESW	SESW	SESE	Total Acres
65-10336	CARR, RICHARD H; MORIS, DONALD; MORIS, SYLVIA; STOCKTON, H P	SPRINGS	IRRIGATION												14 25	39
65-10336	CARR, RICHARD H; MORIS, DONALD; MORIS, SYLVIA; STOCKTON, H P	SPRINGS	STOCKWATER											X	X	
65-13058	KK WATER ASSN	JUG CREEK	IRRIGATION FROM STORAGE				20									20
65-17883	DORR, JOHN W; DORR, PAULINE Z	GROUND WATER	DOMESTIC	X												
65-18029	LA FORTUNE, MICHAEL	GROUND WATER	DOMESTIC		X											
65-22857	JONES, G ALEXANDER; JONES, JAMES R; KURPIEWSKI, BARBARA S; PAULSON, RICHARD A	LAKE FORK	IRRIGATION						6.2							6.2
65-22863	PAULSON, RICHARD A; WRIGHT JR, LEE C	LAKE FORK	IRRIGATION					0.5	3.6			9.7				13.8
65-22864	JONES, G ALEXANDER; JONES, JAMES R; KURPIEWSKI, BARBARA S; PAULSON, RICHARD A	LAKE FORK	IRRIGATION						2.1			10.3				12.4
65-22967	CHILDRESS, JACK E; MOSS FARMS LLC; MOSS, SHAWN; WHITE, STEPHAN A	LAKE FORK	IRRIGATION									20	19			39
65-2308	BOULDER IRRIGATION CO	BOULDER CREEK	IRRIGATION	X	X	X	X						X	X	X	
65-23618	MOSS, SHAWN; MOSS, TRINA; SPF WATER ENGINEERING LLC	GROUND WATER	AESTHETIC STORAGE									X				
65-23929	LINDSAY, JULIE ; LINDSAY, KASEY J; PAULSON, RICHARD A; WRIGHT JR, LEE C	LAKE FORK	IRRIGATION					11	13							24
65-23930	LUTZ FAMILY REVOCABLE TRUST; PAULSON, RICHARD A; WRIGHT JR, LEE C	LAKE FORK	IRRIGATION					3.2	5.1							8.3
65-23931	BOBERG, CHERYL; PAULSON, RICHARD A; REZABEK, RICHARD; WRIGHT JR, LEE C	LAKE FORK	IRRIGATION					4.3								4.3
65-2916	BOULDER IRRIGATION CO	LOUIE LAKE	IRRIGATION FROM STORAGE	X	X	X	X						X	X	X	
65-3194C	ASH MERRILL, COLLEEN; ASH, TERENCE W; PAULSON, RICHARD A; VALUE, BEAU	LAKE FORK	IRRIGATION						7							7
65-3609	WRIGHT JR, LEE C	GROUND WATER	DOMESTIC									X				
65-9622	JAMES B HOOPER REVOCABLE LIVING TRUST; KITCHENS MARGUERITE L TRUST;	GROUND WATER	DOMESTIC											X		

* this right
= overlap

Department of Water Resources

Beneficial Use Field Exam

BasinSequence	Owner	Source	NEVE	NWNE	SWNE	SENE	NENW	NWNW	SWNW	SENW	NESW	NWSW	SWSW	SESW	NESE	NWSE	SWSE	SESE
65-10336	CARR, RICHARD H; MORIS, DONALD; MORIS, SYLVIA; STOCKTON, H P	SPRINGS																X
65-17883	DORR, JOHN W; DORR, PAULINE Z	GROUND WATER	X															
65-18029	LA FORTUNE, MICHAEL	GROUND WATER		X														
65-23618	MOSS, SHAWN; MOSS, TRINA; SPF WATER ENGINEERING LLC	GROUND WATER											X					
65-3609	WRIGHT JR, LEE C	GROUND WATER											X					
65-9622	JAMES B HOOVER REVOCABLE LIVING TRUST; KITCHENS MARGUERITE L TRUST; SPJAN, DAVID	GROUND WATER													X			



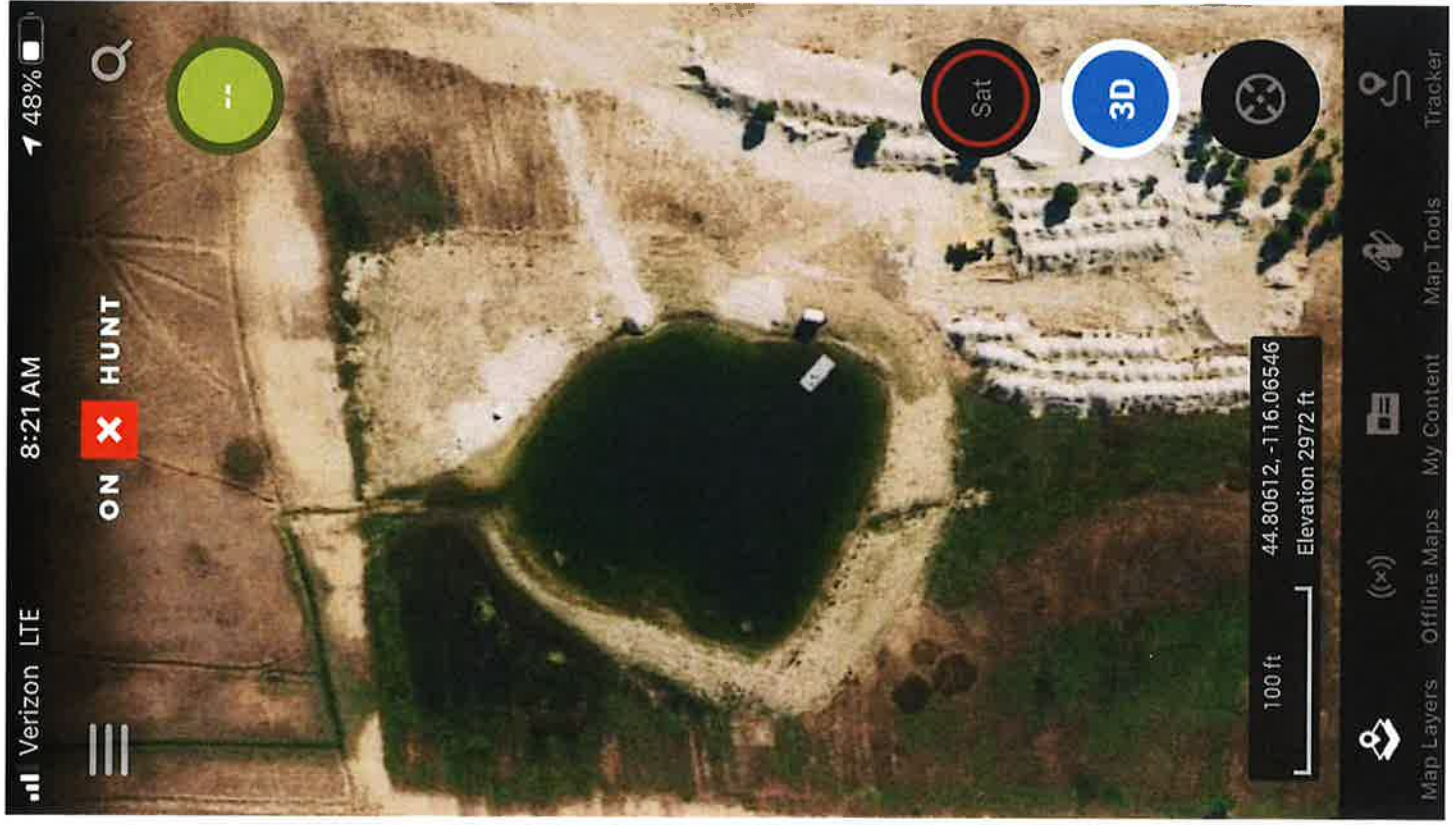


Photo provided by permit holder