STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 95-17278
Exam Date: 09/30/2020

1. Current Owner:
MSHS LLC PO BOX 371 ATHOL ID 83801-0371

2. Accompanied by: Brian Bunker
Phone No: 509-869-9494
Address: Same as above
Relationship to permit Holder: Representative, 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

Water Right No.	Source	Purpose of Use	Basis

Comments: _____

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

Water Right No.	Source	Purpose of Use	Basis

Comments: _____

C. DIVERSION AND DELIVERY SYSTEM

1. **LOCATION OF POINT(S) OF DIVERSION:**
SPRING NE¼ NE¼ SE¼, Sec. 17, Twp 54N, Rge 02W, B.M. BONNER County

Method of Determination: GPS; POD is a buried concrete cistern co-located with pond at -116°35.475, 48°01.555.

PLACE OF USE: IRRIGATION STORAGE, 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	
54N	02W	17													X				

PLACE OF USE: IRRIGATION FROM 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	
54N	02W	17													0.5				0.5

Total Acres: 0.5

Method of Determination: Field exam and Arcmap aerial imagery.

3.

Delivery System Diagram Attached (required). Indicate all major components and distances between components.
__X__ 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
__X__ 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:

$V_{I.R.}$ = (Acres Irrigated) x (Irrigation Requirement) = 0.5 acres x 3.0 afa = 1.5 af
$V_{D.R.}$ = [Diversion Rate (cfs)] x (Days in Irrigation season) x 1.9835 = N/A, there is no diversion rate applied.
V = Smaller of $V_{I.R.}$ and $V_{D.R.}$ = **1.5 af**

2. Volume Calculations for Other Uses:

See attached pond analysis worksheet.

G. NARRATIVE/REMARKS/COMMENTS

The field exam performed on 9/30/2020 with the applicant's representative, Brian Bunker, showed a buried concrete cistern receiving water from a spring. The applicant had excavated a small pond that was co-located (within 6 feet) with the cistern, and spring water fed into each simultaneously without diverting works being required. As a result, the diversion to storage beneficial use was removed from permit during licensing review. The applicant stated the cistern was existing when the property was purchased. During the irrigation season, Mr. Bunker found that he could take water from the pond or the

cistern via a water transfer pump and poly line system, and that the water level in the pond directly correlated with the water level of the cistern. From this it is concluded that the spring influences the cistern and pond equitably.

At time of field exam, a small pond was found that the applicant used for irrigation storage, wildlife storage, and fire protection storage. The pond has a surface area of 0.017 acres and pond capacity of 0.8 af. The pond has a maximum depth of 20 feet, an average depth of 8 feet, and seepage and evaporation loss of 0.2 af. The pond has a multi fill component equaling irrigation from storage volume of 1.5 af annually. The total volume required for the pond equals 2.5 af, the sum of afore mentioned pond components. The Maximum diversion volume for this water right will be licensed at **2.5 af**, and the is no diversion rate applied to license. The permit's wildlife storage and fire protection storage beneficial use annual volumes equal 0.8 af (pond capacity) + 0.2 af (seepage and evaporation loss) = 1.0 af. The wildlife and fire protection components are not additive.

During the field exam at the end of September, the applicant asserted he had previously put the property on which the irrigation system resides up for sale. As part of the preparation for sale, the applicant had removed the water transfer pump and was not actively irrigating during the summer of 2020. Mr. Bunker stated he did irrigate during years 2017 – 2019, which are in the permit development period. The applicant pulled water from the pond and cistern using two methods. A portable pump was used to draw down the pond water level, with poly pipe routed to the irrigation POU for irrigation using rain bird pressurized sprinklers set at intervals above ground. The second method was a buried poly pipe that ran from the cistern to a small short term holding tank near the irrigation POU, from which water could be pumped using the water transfer pump to the same irrigation POU. The applicant irrigated to keep the grass green to reduce fire hazard, as well as watering for a small fenced in garden area. Applicant stated he alternated between using pond water and using cistern water, allowing the spring to recharge each in turn. The irrigated area was sketched out on during the field exam, and during licensing review Arcmap aerial imagery was used to trace out the irrigated acreage equaling 0.5 acres. The annual volume for the irrigation storage and irrigation from storage beneficial uses equals 0.5 ac x 3.0 afa = 1.5 af, which was applied as the multiple fill pond component for licensing purposes.

Conditions 26A and X15 were removed from the permit during licensing review. Condition 259 was updated to reflect accurate pond components identified during the field exam. Condition R66 was replaced with condition X31, describing irrigated acreage less than 1 acre at the irrigation from storage POU. There are no concerns for overlap regarding this water right.

Have conditions of permit approval been met? _X_ Yes ____ No

H. RECOMMENDATIONS

1. Recommended Amounts

Beneficial Use	Period of Use	Annual Volume
IRRIGATION STORAGE	01/01 to 12/31	1.5 AF
IRRIGATION FROM STORAGE	04/01 to 10/31	1.5 AF
WILDLIFE STORAGE	01/01 to 12/31	1.0 AF
FIRE PROTECTION STORAGE	01/01 to 12/31	1.0 AF
	Totals:	2.5 AF

2. Recommended Amendments

____ 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 - Water Resource Agent

Field Examiner's Name _____ Date 10/19/2020

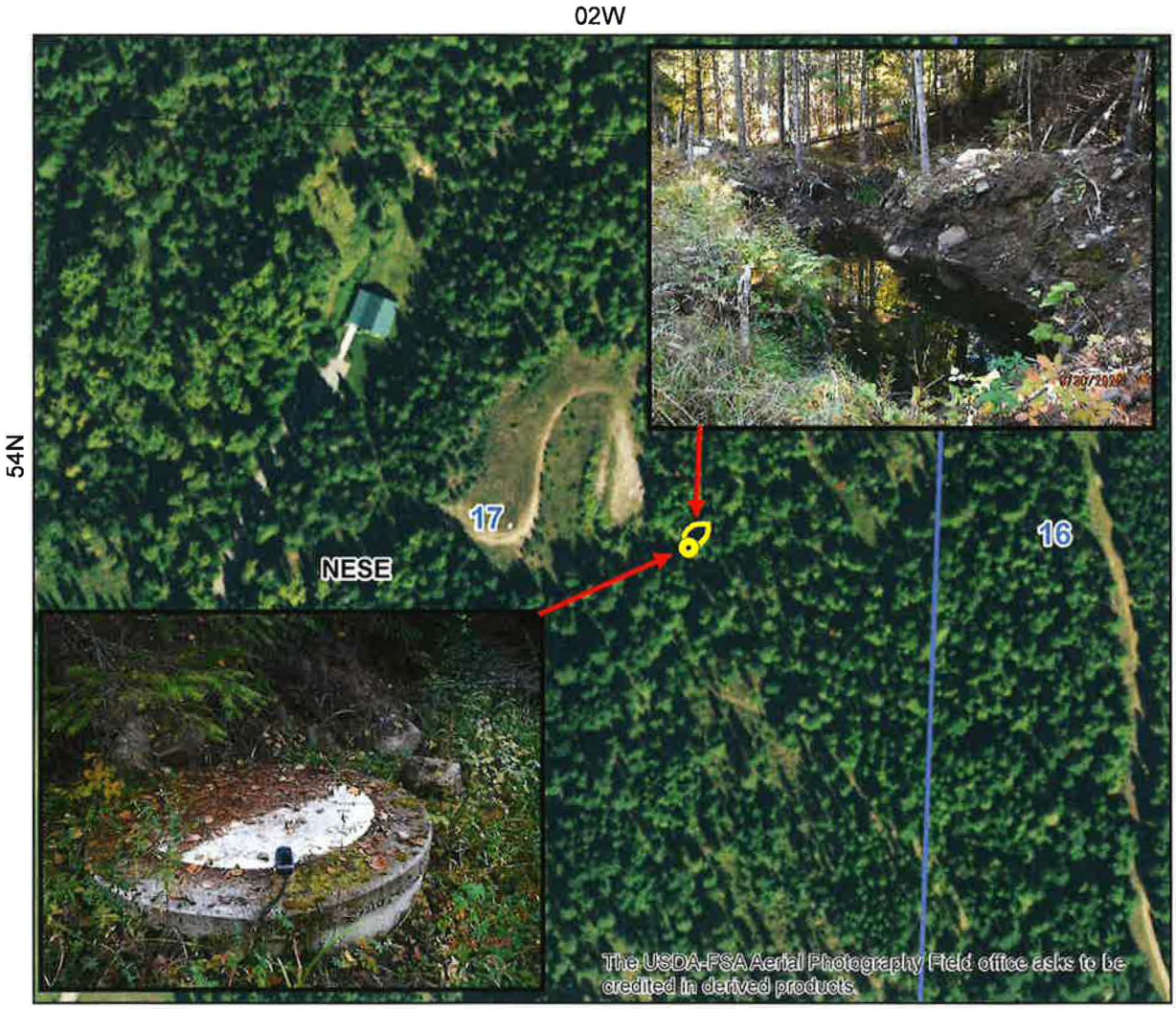
Reviewer _____ Date 10/30/2020

State of Idaho
Department of Water Resources

Attachment to Field Exam

95-17278

IRRIGATION STORAGE, WILD LIFE STORAGE, and FIRE PROTECTION STORAGE system diagram.



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

0 0.03 0.06 0.12 Miles

N

State of Idaho
Department of Water Resources

Attachment to Field Exam

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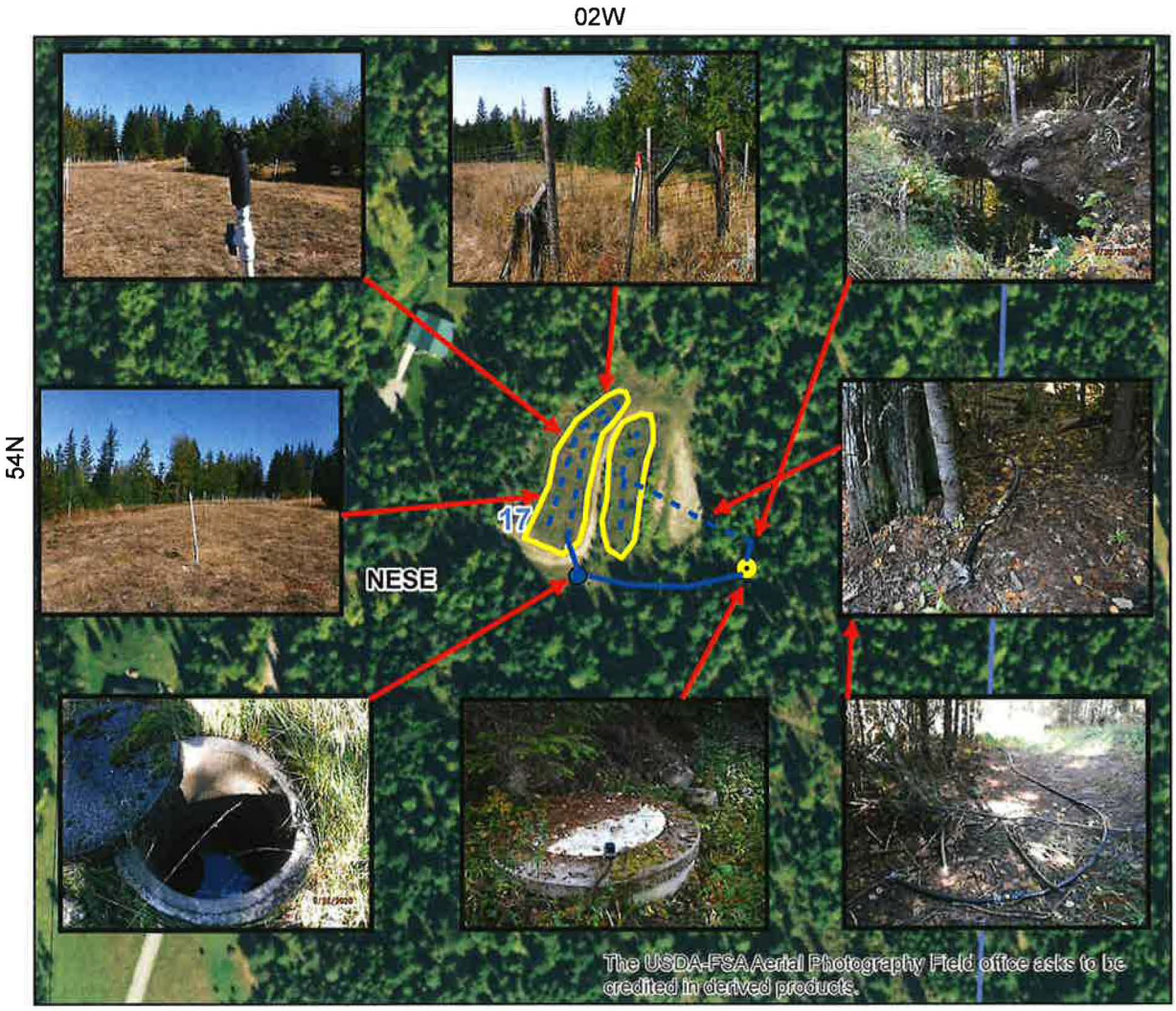
IRRIGATION FROM STORAGE system diagram.



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

0 0.03 0.06 0.12 Miles

N

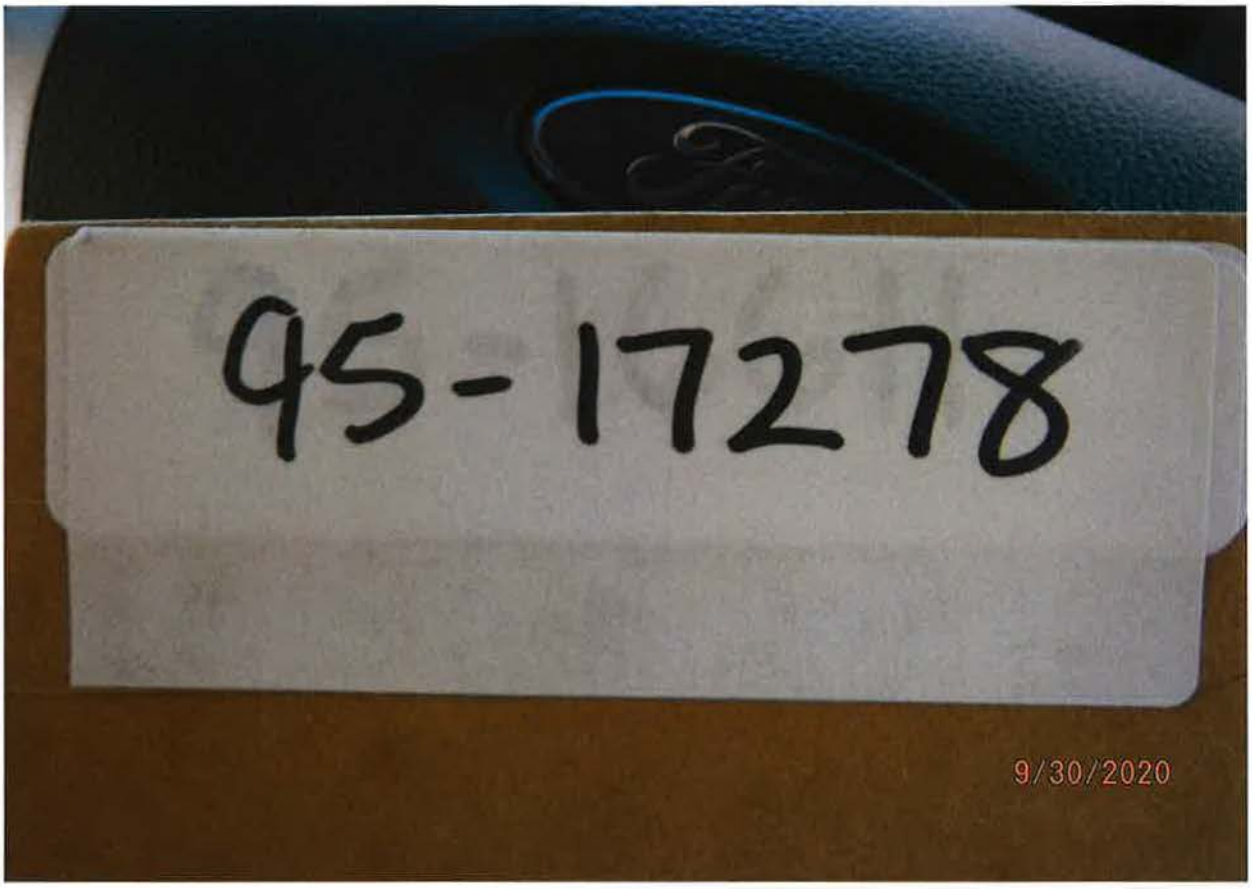
Total Storage Calculations

FILE NUMBER	95-17278
REVIEWER	Luke Bates
DATE	10/19/2020

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.)	0.1	"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)	0.8	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)	1.5	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)	0.1	The "Estimated Seepage Loss" is automatically carried over from the "Seepage Loss" sheet.
Estimated Evaporation Loss (AF)	0.1	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.



SPRING POD – CONCRETE CISTERN

WILDLIFE STORAGE, FIRE PROTECTION STORAGE, AND IRRIGATION STORAGE POU – POND

POWER CORD FOR WATER TRANSFER PUMP LOCATED AT POND

IRRIGATION FROM STORAGE WATER CONVEYANCE SYSTEM – POLY PIPE

POND AND CISTERN CO-LOCATED WITHIN 6 FEET OF EACH OTHER

SMALL STORAGE CISTERN NEAR IRRIGATION FROM STORAGE POU

POLY PIPE WATER CONVEYANCE FROM SMALL STORAGE CISTERN TO IRRIGATION FROM STORAGE POU

IRRIGATION FROM STORAGE POU – PRESSURIZED SPRINKLERS AT INTERVAL ON PVC RISER PIPES

IRRIGATION SYSTEM AT POU

IRRIGATION FROM STORAGE POU

IRRIGATION FROM STORAGE POU

STORAGE LOCATION FOR PORTABLE WATER PUMP AND ELECTRICAL STUB