

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 63-34415

Exam Date:

1. Current Owner:
BID LLC C/O DOUGLAS K BATES
777 W MAIN ST STE 900 BOISE ID 83702
2. Accompanied by: Doug Bates, Permit Holder; Josh Kling, Ranch Manager; Terry Scanlon, HDR Representative
Phone No: (208) 489-7488
Address: 777 W Main St Ste 900, Boise ID 83702
Relationship to permit Holder: Permit Holder, Ranch Manager & Hired Consultant

3. **SOURCE:**
BOISE RIVER

Tributary
SNAKE RIVER

Method of Determination: on-site inspection

B. OVERLAP REVIEW

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

Water Right No.	Source	Purpose of Use	Basis
63-201	Boise River	Irrigation	Decreed
63-5179	Dixie Slough	Irrigation	Decreed
63-11618	Boise River	Wildlife	License
63-34448	Dixie Slough	Irrigation	Decreed
63-34449	Dixie Slough	Irrigation	Decreed
63-34450	Mammon Gulch Creek	Irrigation	Decreed

Comments: While irrigation season overlaps with this license's season of use on paper, in actual use they do not.

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

Water Right No.	Source	Purpose of Use	Basis
63-201	Boise River	Irrigation	Decreed
63-34448	Boise River	Irrigation	Decreed

Comments:

C. DIVERSION AND DELIVERY SYSTEM

1. LOCATION OF POINT(S) OF DIVERSION:

BOISE RIVER SW¼ SE¼, Sec. 26, Twp 05N, Rge 05W, B.M. CANYON County

Method of Determination: On-site inspection

PLACE OF USE: WILDLIFE

[illegible]

PLACE OF USE: WILDLIFE 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	
05N	05W	26							X L5		X L7	X L6	X	X			X		
05N	05W	27	X L1	X L2		X L1													

PLACE OF USE: RECREATION

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
05N	05W	26							X L5		X L7	X L6	X	X			X		
05N	05W	27	X L1	X L2		X L1													

PLACE OF USE: RECREATION 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	
05N	05W	26							X L5		X L7	X L6	X	X			X		
05N	05W	27	X L1	X L2		X L1													

Method of Determination:

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
PODID 1069976	2 – Fisher Pumps	50 Hp per pump			

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
Staff Gauge						

2. Measurements: The staff gauge reading was approximately 1.04' on an 6' suppressed weir (see Figure 1).
The equation for a suppressed weir is: $Q = 3.33Lh_1^{1.5}$, where L is the length of the weir and h_1 is the head in feet; $3.33 \times 6' \times 1.04^{1.5} = 21.19$ cfs; rounded to 21.20 cfs

E. FLOW CALCULATIONS

Additional Computation Sheets Attached

Measured Method: Suppressed weir equation:

The equation for a suppressed weir is: $Q = 3.33Lh_1^{1.5}$, where L is the length of the weir and h_1 is the head in feet; $3.33 \times 6' \times 1.04^{1.5} = 21.19$ cfs; rounded to 21.20 cfs

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation: N/A

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) =$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 =$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} =$$

2. Volume Calculations for Other Uses: Wildlife & Recreation:

According to both Doug Bates and Josh Kling, the two pumps in the river are kept running and produce a steady flow throughout the entire season of use.

Therefore, $21.20 \text{ cfs} \times 1.9835 \text{ afd} \times 181 \text{ days} = 7611.1 \text{ af}$

G. NARRATIVE/REMARKS/COMMENTS

I originally met with Josh Kling and Terry Scanlon (HDR Consultant) on 1/23/2024 to conduct the field exams for this and two other potential licenses. However, after viewing the diversions, it was clear that there were multiple issues that would prevent obtaining accurate flow rates at the diversions that day. The issue with this diversion was the pumps had sucked in decoys and other debris limiting the flow through the pump intakes. Additionally, the bearings were damaged in one of the pumps. I agreed to give them additional time to repair the pumps and get them back to their standard pumping rates before recording a measurement at the weir. They then drove me around the place of use for all three permits. Terry had researched overlapping water rights, and he gave me the break down on issues regarding overlap. There is another wildlife right, 63-11618 for wildlife (2.0 cfs; 1,340 af; 1/1 – 12/31) that is diverted from the Dixie Slough. The Slough waters enter into the same ditch system just downstream of the weir for this permit and are carried through the same ditch and slough system as this right.

This permit was approved with a volume of 2,500 af for wildlife storage and recreation storage. That volume provides 80.5 af for the initial flooding (161 acres, 6" deep) and an additional 2419.5 af for replacement of losses caused by seepage and evaporation (see attachment #1 taken from the application for permit to see how that volume was calculated).

Josh indicated that, typically, they flood about 1/3rd of the farm approximately 6" deep, and then they rotate that to a different third of the place of use and then again, for a total of three times during the season of use eventually storing water over the entire place of use throughout the season of use. He indicated they do this to prevent oversaturating the soils and removing all the nutrients. Access to the fields was limited as to not disturb the ducks and hunters that were there. What I was able to see of the flooded fields was at least 6" deep and it is clear that they are using the entirety of the permitted volume. Josh also indicated that a maximum and constant flow rate is maintained throughout the season in the ditches and sloughs to

prevent icing when the temperatures drop. The wildlife and recreation water passes through the system and back out to the Boise River.

The irrigation rights that are used on the same place of use as this right, have some overlap in the season of use for this right. However, this ground is managed for wildlife habitat and mostly duck hunting. The irrigation rights are used to grow corn that is left on the fields. Once they start to divert water for this right, all irrigation is ended. One-third of the corn fields are initially flooded, and the waterfowl move in. Both ducks and other wildlife were abundant when I visited. Numerous hunters were also out hunting ducks.

When I returned on 2/20/2024 and met with Doug Bates and Josh Kling, the debris had been removed from the two pump intakes and the bearings had been replaced in one of the pumps. I measured 21.20 cfs at the weir. There are no other rights diverted from this point of diversion when this right is being diverted.

I recommend licensing a diversion rate of 21.20 cfs and a volume of 7611.1 af for wildlife and recreation, the permitted volume of 2500 af for wildlife storage and recreation storage, with a total diversion of 21.20 cfs and a total volume of 7611.1 af.

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>
WILDLIFE	09/01 to 02/28	21.20 CFS	7,611.1 AF
WILDLIFE STORAGE	09/01 to 02/28		2,500.0 AF
RECREATION	09/01 to 02/28	21.20 CFS	7,611.1 AF
RECREATION STORAGE	09/01 to 02/28		2,500.0 AF
DIVERSION TO STORAGE	09/01 to 02/28	21.20 CFS	
<u>Totals:</u>		21.20 CFS	7,611.1 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

Bill Mills -

Field Examiner's Name

Date

Reviewer

Date

Bill Mills
CS

3-12-2024
3/12/2024

Attachment #1

Application Remarks:

Proposed flow rate for wildlife/recreation uses is based on diversion of 0.15 cfs per acre for 161 acres of flow-through field flooding. Field flooding depth will range from less than 1 inch up to approximately 12 inches with an average depth of 6 inches. Flooding will occur intermittently from September through February. Proposed volumes were calculated using the IDWR storage memo 76 spreadsheet and account for associated storage, seepage and evaporation amounts. Regarding seepage, the USDA's Web Soils Survey results show Baldock loam (BdA), Bram Silt loam (BrA, BsA, BsB), Letha fine sandy loams (LtA, LsA) and Moulton loams (MuA, MWA) as the predominate soils. The USDA Soil Survey of Canyon County Idaho (1972 issue) lists a permeability range of 0.06 to 0.20 inches/hour or greater for these predominate soils. As a result, the rate used for seepage loss was calculated using the spreadsheet's maximum 0.2 ft/day for 161 acres. Regarding evaporation, positive precipitation deficits from the Parma AgriMet Station for open water-shallow systems from September through February were used to calculate evaporation losses.

Volume Calculation					
Seepage					
Area (acres)	Rate (ft/day)	Start Date	End Date	Days	Volume (AF)
161	0.2	1-Sep	28-Feb	74	2382.8
Total					2382.8
Evaporation					
Area (acres)	Rate (mm/day)	End Date	Start Date	Days	Volume (AF)
161	2.67	1-Sep	30-Sep	12	16.92
161	1.13	1-Oct	31-Oct	13	7.76
161	0.1	1-Nov	30-Nov	13	0.69
161	-0.54	1-Dec	31-Dec	12	0.00
161	-0.43	1-Jan	30-Jan	12	0.00
161	0.38	1-Feb	28-Feb	12	2.41
Total				74	27.8
Storage Volume					
Area (acres)	Average Depth (ft)				Volume (AF)
161	0.5				80.5
Total Volume					2491.1



Figure 1: Measurement at weir



Figure 2: Pumps adjacent to river



Figure 3: Flooding into fields on the southeast side near point of diversion

System Diagram



Field Exam 63-34415