

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 63-34414
Exam Date: 02/20/2024

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

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
63-11617	Boise River	Wildlife	License
63-174	Boise River	Irrigation	Decreed
63-175	Boise River	Irrigation	Decreed
63-5181	Boise River	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
63-11617	Boise River	Wildlife	License
63-174	Boise River	Irrigation	Decreed
63-175	Boise River	Irrigation	Decreed
63-5181	Boise River	Irrigation	Decreed
63-33910	Boise River	Wildlife; Wildlife Storage; Recreation & Recreation Storage	Permit

Comments: Water Right 63-11617 is not diverted from this POD. It is diverted in its entirety from a POD located in Government Lot 2 (SWSE), Sec. 25, Twp 05N, Rge 05W into what is referred to as Andrew's ditch.

C. DIVERSION AND DELIVERY SYSTEM

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

BOISE RIVER L3 (NE¼ NW¼), Sec. 36, Twp 05N, Rge 05W, B.M. CANYON County

Method of Determination: On-site inspection

PLACE OF USE: WILDLIFE

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	25						X	X			X							
05N	05W	25							X L7			X L8							
05N	05W	26	X		X	X				X	X L7				X	X	X	X	
05N	05W	26			X L2	X L9				X L3									
05N	05W	26			X L8					X L7									

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	25						X	X			X							
05N	05W	25							X L7			X L8							
05N	05W	26	X		X	X				X	X L7				X	X	X	X	
05N	05W	26			X L2	X L9				X L3									
05N	05W	26			X L8					X L7									

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	25						X	X			X							
05N	05W	25							X L7			X L8							
05N	05W	26	X		X	X				X	X L7				X	X	X	X	
05N	05W	26			X L2	X L9				X L3									
05N	05W	26			X L8					X L7									

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	25						X	X			X							
05N	05W	25							X L7			X L8							
05N	05W	26	X		X	X				X	X L7				X	X	X	X	
05N	05W	26			X L2	X L9				X L3									
05N	05W	26			X L8					X L7									

Method of Determination: On-site inspection

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 1:24,000 or greater.

 X X Aerial Photo Attached (required for irrigation of 10+ acres). X X Photo of Diversion and System Attached X

4.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
PODID 1068091					

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 1.43' on an 8' 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 the head in feet; $3.33 \times 8' \times 1.43^{1.5} = 45.55$ 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 the head in feet; $3.33 \times 8' \times 1.43^{1.5} = 45.55$ cfs**F. VOLUME CALCULATIONS**

1. Volume Calculations for irrigation: N/A

 $V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) =$ $V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 =$ $V = \text{Smaller of } V_{IR} \text{ and } V_{DR} =$

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

According to both Doug Bates and Josh Kling, the headgate is fully opened at the beginning of the season and left alone until the end of the season.

Therefore, $24.3 \text{ cfs} \times 1.9835 \text{ afd} \times 181 \text{ days} = 8724 \text{ af}$

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 flow rates at the diversions. The issue with the weir for this exam was the inlet at the headgate was clogged with debris (large logs) and it appeared a backhoe and/or tractor was needed to clear the obstructions. I agreed to give them additional time to correct those issues in order to obtain measurements at the weirs for the permits. So, 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 with two diversions, 36-11617 for 3.00 cfs and 559 af, that shares one of it's two points of diversion with this right and the place of use also overlaps with this right. However, Terry and Josh both indicated that water right 36-11617 is only diverted from the other diversion on the water right which is located in Government Lot 2 (SWSE), Sec. 25, Twp 05N, Rge 05W and is diverted into what is referred to as Andrew's ditch. That water right flows through ditches on the east side of the shared POU but does not comingle with the ditches for this water right, which happen to be on the west side of the POU. The irrigation rights 63-174, 63-175 and 63-5181 are all diverted from the diversion for this right, are used on the same pou and the season of use overlaps. 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. The corn fields are flooded and the waterfowl move in. Both ducks and other wildlife were abundant. Numerous hunters were also out hunting ducks.

This permit was approved with a volume of 2,500 af for wildlife storage and recreation storage. That volume provides 91.0 af for the initial flooding (182 acres, 6" deep) and an additional 2409 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 182 acre 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.

When I returned on 2/20/2024 and met with Doug Bates and Josh Kling, the debris had been removed using both a backhoe and a bulldozer. I measured 45.55 cfs at the weir. There are three wildlife rights associated with this POD: 63-11617 (3.00 cfs); 63-33910 (4.5 cfs) and this right for 24.3 cfs. That's a total of 31.8 cfs that would be required to satisfy all three water rights simultaneously. As I mentioned before, 63-11617 isn't diverted from this POD, so the actual water balance required to satisfy the water requirements for the wildlife rights diverted from this POD is actually 28.8 cfs.

I recommend licensing 24.3 cfs and a volume of 8724 af for wildlife and recreation, the permitted volume of 2500 af for wildlife and recreation storage, with a total diversion of 24.3 cfs and a total volume of 8724 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	24.30 CFS	8,724.0 AF
WILDLIFE STORAGE	09/01 to 02/28		2,500.0 AF
RECREATION	09/01 to 02/28	24.30 CFS	8,724.0 AF
RECREATION STORAGE	09/01 to 02/28		2,500.0 AF
DIVERSION TO STORAGE	09/01 to 02/28	24.30 CFS	

Totals: 24.30 CFS 8,724.0 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

Bill Mills -

Field Examiner's Name Bill Mills Date 3-12-24

Reviewer [Signature] Date 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 182 acres of flow-through field flooding minus 3.0 cfs currently authorized for wildlife from the same source under permit 63-11617. 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 Notus soils (No), Falk fine sandy loam (FaA) and Moulton fine sandy loam (MtA) as the predominate soils. The USDA Soil Survey of Canyon County Idaho (1972 issue) lists a permeability range of 0.63 to 6.3 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 182 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)
182	0.2	1-Sep	28-Feb	65	2366
Total					2366
Evaporation					
Area (acres)	Rate (mm/day)	End Date	Start Date	Days	Volume (AF)
182	2.67	1-Sep	30-Sep	11	17.54
182	1.13	1-Oct	31-Oct	11	7.42
182	0.1	1-Nov	30-Nov	11	0.66
182	-0.54	1-Dec	31-Dec	11	0.00
182	-0.43	1-Jan	30-Jan	11	0.00
182	0.38	1-Feb	28-Feb	10	2.27
Total				65	27.9
Storage Volume					
Area (acres)	Average Depth (ft)				Volume (AF)
182	0.5				91
Total Volume					2484.9



Figure 1: Staff Gauge Measurement at weir of 1.43'



Figure 2: Weir on Mannon Ditch (has telemetry, but sensor had been removed by Watermaster)



Figure 3: Flooded Corn Field

System Diagram

