

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
IN-OFFICE REVIEW/BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATIONPermit No: 95-11378Exam Date: 7/7/2015

1. Does this qualify for an in-office field exam (IDAPA 035.02.r)? X Y N
- a. Irrigation of 5 acres or less
 - b. Storage of up to 14.6 AF for stockwater purposes only
 - c. Any use other than irrigation or storage, if the combined diversion rate is 0.24 cfs or less
 - d. Other < >

2. Current Owner: Name: McAllister Family Trust
Owner of Record Correct? X Y N
Address of Record Correct? Y X N
If No: Address:

McAllister Family Trust
12763 Pebble Creek Dr.
Hayden ID 83835
Telephone: (208) 772-9124
Email: robert@cherryflats.org

3. Beneficial Use Fees have been paid: X Y N Receipt No: C0

4. **SOURCE** **TRIBUTARY**

Unnamed Stream

Sinks

Method of Determination: GIS and Taxlot DataChange in Source: Y X N**B. OVERLAP REVIEW**

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

Water Right No.	Source	Purpose of Use	Basis

Comments: There are two water rights, 95-4467 and 95-9389, that appear to overlap the place of use. However, these two water rights are owned by the neighbor to the east. They are not on the actual property associated with this permit.

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

Water Right No.	Source	Purpose of Use	Basis
NONE			

Comments: There are two water rights, 95-4467 and 95-9389, that appear to overlap the point of diversion. However, these two water rights are owned by the neighbor to the east. They are not on the actual property associated with this permit, and from different sources.

C. DIVERSION AND DELIVERY SYSTEM**1. LOCATION OF POINT(S) OF DIVERSION:**

Source	Govt. Lot	1/4	1/4	1/4	Sec.	Twp.	Rge.		County
A0015409	4		SW	SW	31	52N	3W	B.M.	Kootenai
								B.M.	
								B.M.	

Method of Determination: GPS and Taxlot data.Change in POD? X N Amendment Required? X N**2. PLACE OF USE:** Use: Irrigation

TW P	RG E	Sec	NE				NW				SW				SE				Total s
			NE	N W	S W	SE	NE	N W	SW	SE	NE	N W	S W	SE	NE	N W	S W	SE	
52N	3W	31											0.7 S						0.7
		Lot #											4						
Total Acres =																			0.7

Please Note: Stockwater is in the same location as the irrigation use.Method of Determination: GIS and visual inspection.Change in POU? X N Amendment Required? X N Delivery System Diagram Attached (required). Indicate all major components and distances between components.

Indicate weir size/pipe as applicable.

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

4. Well or Diversion Identification No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
A0015409 PUMP	Homelite	3	Unkown	Homelite	4 cycle gas pump

*Code to correspond with No. on map and aerial photo

D. FLOW MEASUREMENTS

1.Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
NONE						

2. Measurements: No measurement is required for an in-house exam, but a theoretical calculation was used to determine if the diversion rate is reasonable.

E. FLOW CALCULATIONS X Additional Computation Sheets Attached

Measured Method:

A theoretical analysis shows that a diversion rate of 0.15 cfs is possible with a 3 Hp pump. I am concerned about the efficiency of the gas powered pump. I used the standard of 70% efficiency, but gas powered pumps are generally less efficient. The pump should be able to 0.075 0.15 cfs.

Theoretical Calculation = 0.15 cfs

Rate at 0.03 cfs/acre X 0.7 acres = 0.02 cfs

Permit allowed = 0.15 cfs for irrigation and 0.02 cfs for stockwater.

From the pictures supplied by northern staff, the system is comprised of garden hoses used to sprinkle the grass field. A 5/32 sprinkler would normally run at 5 gpm, so the 0.02 cfs (9 gpm) should be adequate to sprinkle this small pasture with everyday garden sprinklers. Therefore, I am recommending a diversion rate of 0.02 cfs.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 0.07 \times 3.0 = 2.1 \text{ af}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.02 \times 246 \times 1.9835 = 9.8 \text{ af}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 2.1$$

2. Volume Calculations for Other Uses:

$$12 \text{ gpd for mixed stock} \times 10 \text{ head} \times 365 \text{ days} / 325850 = 0.1 \text{ af.}$$

When calculating the volume for stockwater, the maximum volume allowable for 10 head of stock for this system meets the absolute minimum that we can allow of 0.1 af. Therefore, I recommending 0.1 af, even though the actual volume of water consumed by the stock would be less than the 0.1 af recommended.

G. PURPOSE OF USEIrrigation X Y N # Stock Domestic # of Homes

Other: < >

Change in Purpose of Use? Y NMethod of Determination: Taxlot data and Northern Staff Investigation.If Yes: From Use To Use Amount CFS AFA **H. NARRATIVE/REMARKS/COMMENTS**

This permit is qualifies for an in-house exam. The proof of beneficial use for this permit was submitted late. A review of the aerial photography didn't provide adequate information to determine if this permit had actually been used. I asked Adam Frederick from our Northern Region to perform a field visit to verify that irrigation had occurred. Mr. Frederick found that the system was in operation, and that 0.7 acres was irrigated with garden hoses. Mr. Frederick also GPS'ed the point of diversion. The system is in place. The system appears to consist of a small gas powered pump diverting water from a small unnamed stream. Following the unnamed stream on the maps, it appears as though the stream isn't really tributary to any known water source, therefore, the tributary of sinks appears to be appropriate. This system catches runoff water, so it generally only used in the early part of the year. From the photos, it appears the grass is irrigated to get a single cutting of grass hay and then livestock are let into the small pasture.

Conditions 1 (X02) and 4 (004) were removed at licensing. Condition 2 (X15) was carried over to licensing per standard. Condition 3 (R66) was changed to condition X31, since this permit irrigated less than 1 acre of ground.

Have conditions of permit approval been met? ☒ Yes ☐ No

I. RECOMMENDATIONS

1. Recommended Amounts

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
Irrigation	3/15 to 11/15	0.02 CFS	2.1 AF
Stockwater	01/01 to 12/31	0.02 CFS	0.1 AF
	<u>Totals:</u>	0.04 CFS	2.2 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

Other: < >

J. AUTHENTICATION DANIEL NELSO – STAFF HYDOROLIGIST

Field Examiner's Name



Date

7-7-15

Reviewer

Date

THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 95-11378
 Reviewer: Dan Nelson
 Date of Review: 7/1/2015

P/D No.:

	Scenario 1	Scenario 2	Scenario 3	
PUMP HORSEPOWER	3	3	3	
BOOSTER HORSEPOWER	0	0	0	
PUMPING LEVEL	10	10	10	
DISCHARGE PRESSURE	40	50	60	
RATE OF FLOW (cfs)	0.18	0.15	0.12	0.15
	81	66	56	67.63

The above calculates the formula =

$$Q = \frac{0.8 \cdot (\text{Efficiency}) \cdot \text{hp}}{\text{depth to water} + 2.31 \cdot (\text{psi}) + \text{friction}}$$

Assumptions: 70 efficiency.
 No Friction

Examiners Notes:

Adam Frederick from our northern region visited the place of use and determined that this system uses a 3 hp gas powered pump to divert the water from the unnamed stream. Mr. Frederick didn't give me any pressure for the system, so I assumed the standard pressures of between 40 and 60 psi. Mr. Frederick also did not give me a lift, but I assumed it would not be more than 10 feet. With these assumptions, the pump would divert approximately 0.15 cfs. I checked for 3 Hp Homelite water pumps on the internet, but Homelite was recently bought out by Riverside Pumps, and all of the pumps that I could find were 3.5 Hp or greater. I could only find one 3 Hp pump on the internet, but it was a different brand, and was a dewatering pump.

Nelson, Dan

From: Frederick, Adam
Sent: Tuesday, June 23, 2015 5:06 PM
To: Nelson, Dan
Subject: Permit 95-11378 field exam
Attachments: DOC001.pdf

Hey Dan,

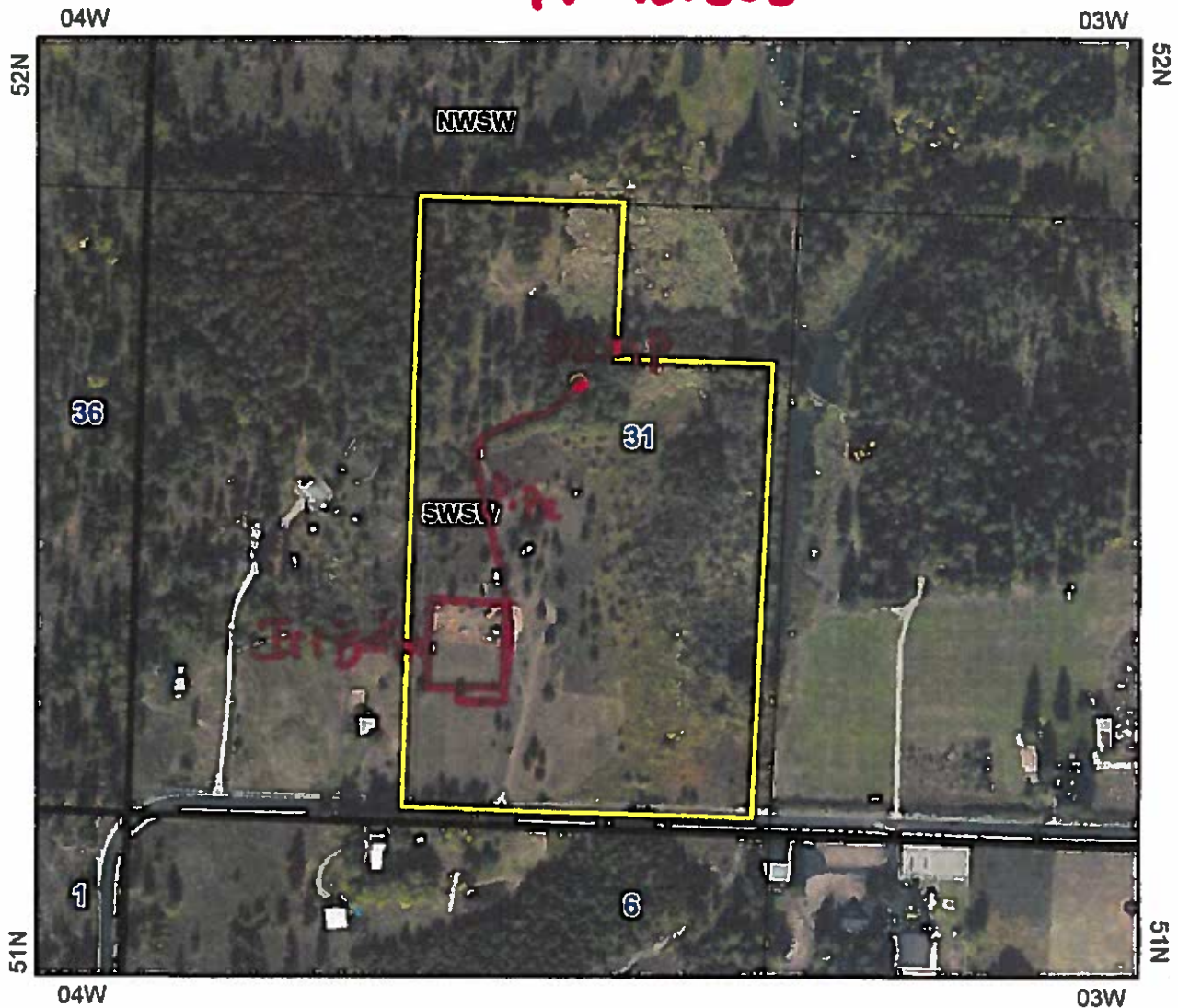
Could you make me a folder in your P drive so I could add the exam photos. Maybe make a folder with the permit number or something and let me know when you do that. I'll put in all the photos in then. Here is a map and diagram of everything with pump size and irrigation area.

Adam Frederick
Water Resource Agent
Idaho Department of Water Resources
Northern Regional Office
Phone 208-762-2800

State of Idaho
Department of Water Resources
Permit to Appropriate Water
95-11378

A0015401

116°45.663
47°48.305



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

.7
Irrigation

0 0.045 0.09 0.18 Miles

4 cycle
3 HP
Homelite Pump



PHOTOGRAPHER AND DATE OF PHOTOS Adam Frederick 6/23/2015

FILE NUMBER 95-11378



PHOTOGRAPHER AND DATE OF PHOTOS Adam Frederick 6/23/2015

FILE NUMBER 95-11378

