

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 71-10920

Exam Date: 8/23/2011

1. Current Owner: STATE OF IDAHO
DEPT OF FISH & GAME
600 S WALNUT
BOISE ID 83707
(208)334-3700
2. Accompanied by: Corey Skinner
Phone No:
Address:
Relationship to Permit Holder:

3. **SOURCE**
IRON CREEK

TRIBUTARY
VALLEY CREEK

B. OVERLAP REVIEW

1. Other water rights with the same place of use: None
2. Other water rights with the same point of diversion: 71-26B, 71-27B, and 71-10726

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

IRON CREEK NE1/4SE1/4NE1/4 Sec. 7, Twp 10N, Rge 13E, B.M.
CUSTER County

Method of Determination: Field observation and IDWR spatial datapoint

2.

PLACE OF USE: FISH PROPAGATION

Twp	Rge	Sec	NE				NW				SW				SE				Totals
10N	13E	7	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	
						X													

Method of Determination: Field observation, GPS and IDWR GIS

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.

<u>Well or Diversion</u> <u>ID No.*</u>	<u>Motor Make</u>	<u>Hp</u>	<u>Motor Serial No.</u>	<u>Pump Make</u>	<u>Pump Serial No. or Discharge</u> <u>Size</u>
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N/A

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

D. FLOW MEASUREMENTS

1.

<u>Measurement</u> <u>Equipment</u>	<u>Type</u>	<u>Make</u>	<u>Model No.</u>	<u>Serial No.</u>	<u>Size</u>	<u>Calib. Date</u>
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None taken

2. Measurements: Diameter of the orifice was measured at 4 inches and the amount of head above the center of the orifice was measured at 24 inches. However a high water mark on the fish screen structure was measured from the center of the orifice at 48 inches

E. FLOW CALCULATIONS

_____Additional Computation Sheets Attached

Measured Method:

Discharge from a tank through an orifice (see attached 8/24/11 memo for formula and orifice coefficient)

$$Q = C_d A_o (2gh)^{1/2} \quad \text{where } C_d = 0.67 \text{ coefficient of discharge}$$

$$A_o = \text{Area of orifice opening}$$

$$g = 32.2 \text{ ft per second}^2$$

$$h = \text{measured head above center of orifice opening (in feet)}$$

Orifice is a 4 inch diameter hole so $A_o = \pi r^2 = \pi (2 \text{ inch})^2 = 12.566 \text{ inch}^2 = .087 \text{ ft}^2$

h was measured at 48 inches (to high water mark) = 4 feet

$$Q = (0.67)(0.087)[2(32.2)(4.0)]^{1/2}$$

$$Q = 0.94 \text{ cfs}$$

Permitted at 0.80 cfs, so recommend a flow of 0.80 cfs

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

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

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

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

2. Volume Calculations for Other Uses:

$$V = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = (0.80 \text{ cfs})(184 \text{ days})(1.9835) = 291.97 \text{ afa (292.0 afa)}$$

G. NARRATIVE/REMARKS/COMMENTS

Permit 71-10920 was permitted for the diversion of up to 0.80 cfs from Iron Creek for use in a fish screen to flush fish back to the creek that would otherwise be trapped between the point of diversion and the fish screen. During the exam it was observed that water was being diverted through the fish screen and water was flowing back to Iron Creek through a 4 inch orifice, with 24 inches of head above the center of the orifice. However, 48 inches of head above the center of the 4 inch diameter orifice to the high water mark on the fish screen structure was measured indicating that additional water had been utilized by the fish screen bypass in the past. Note that permit 71-10920 was permitted with the wrong irrigation season (04/01 to 11/01), when the standard for the area is actually 05/01 to 10/31. It is recommended that the standard irrigation season be licensed for the period of use (05/01 to 10/31). The standard irrigation season of 184 days was utilized in the annual volume calculations.

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

H. RECOMMENDATIONS**1. Recommended Amounts**

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
FISH PROPAGATION	05/01 to 10/31	0.800 CFS	292.0 AF
<u>Totals:</u>		0.800 CFS	292.0 AF

2. Recommended Amendments

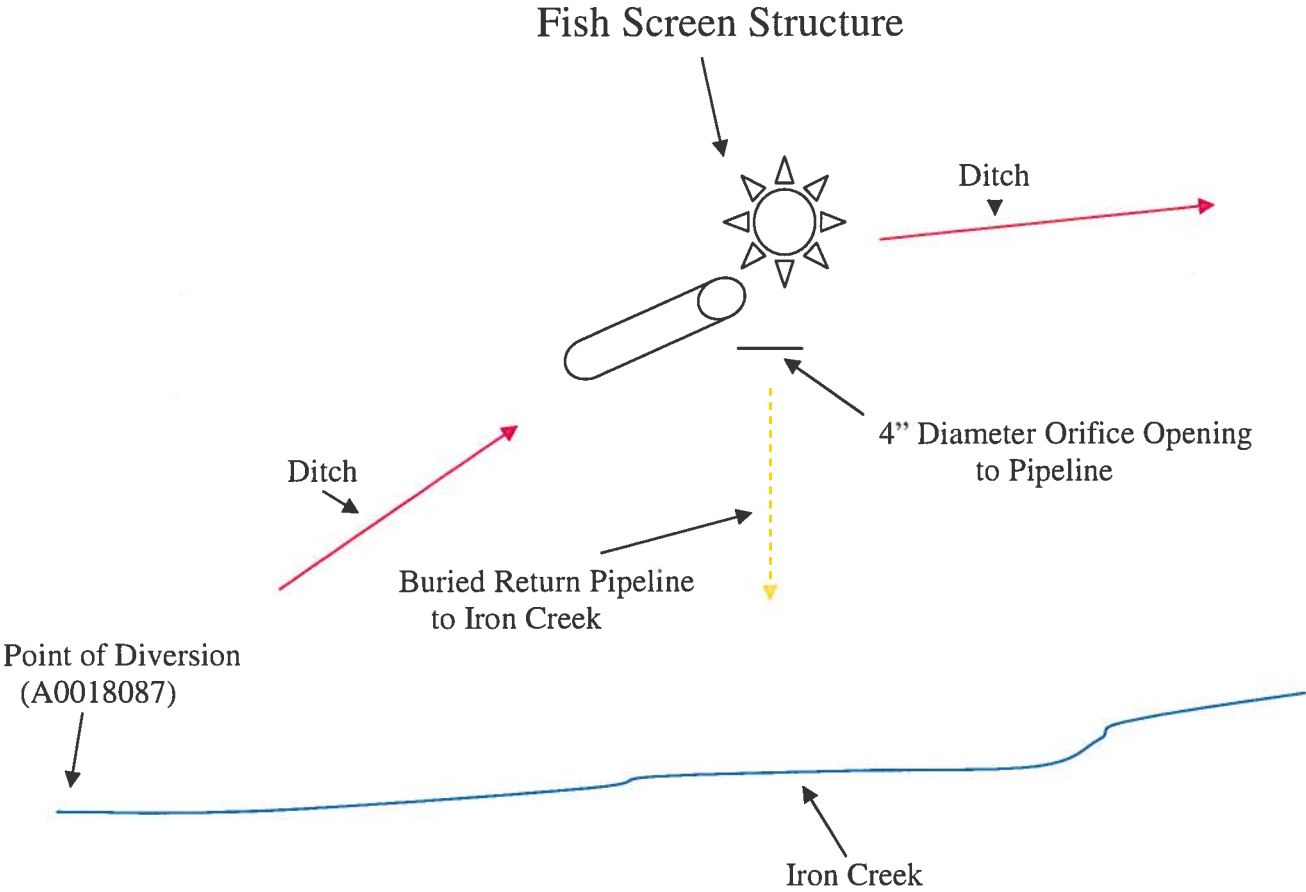
☐ Change P.D. as reflected above ☐ Add P.D. as reflected above ☒ None

☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☐ Other

I. AUTHENTICATION

Field Examiner's Name Benny Walker Date 1/30/12
 Reviewer [Signature] Date 2/15/2012

System Diagram for 71-10920

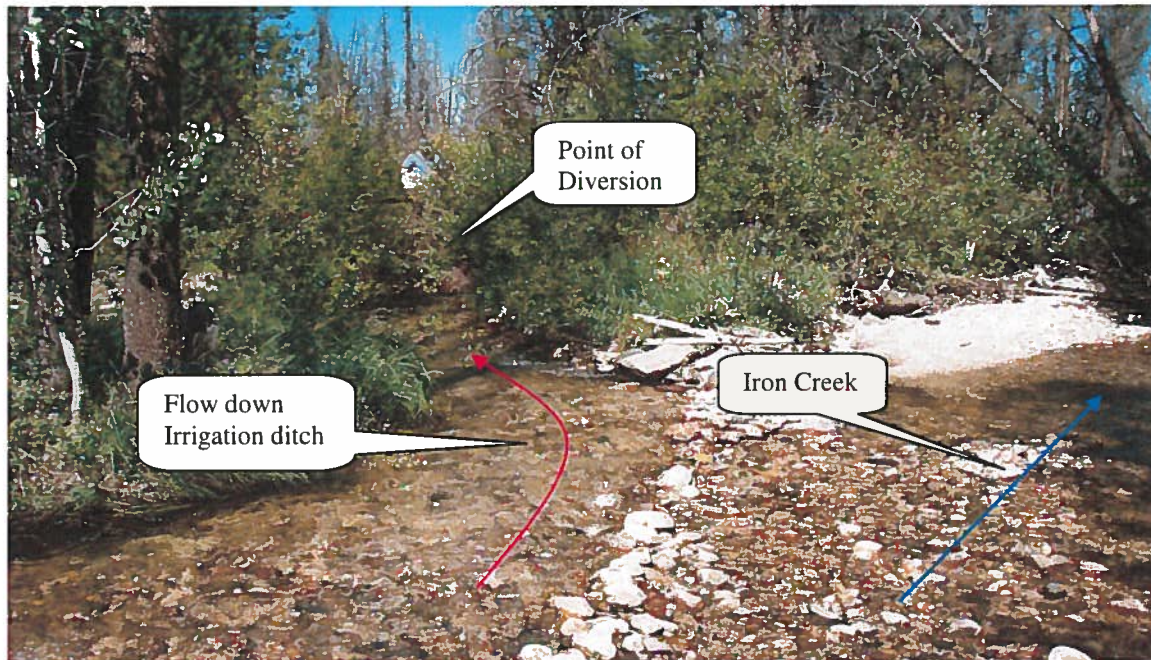


(Diagram Not to Scale)



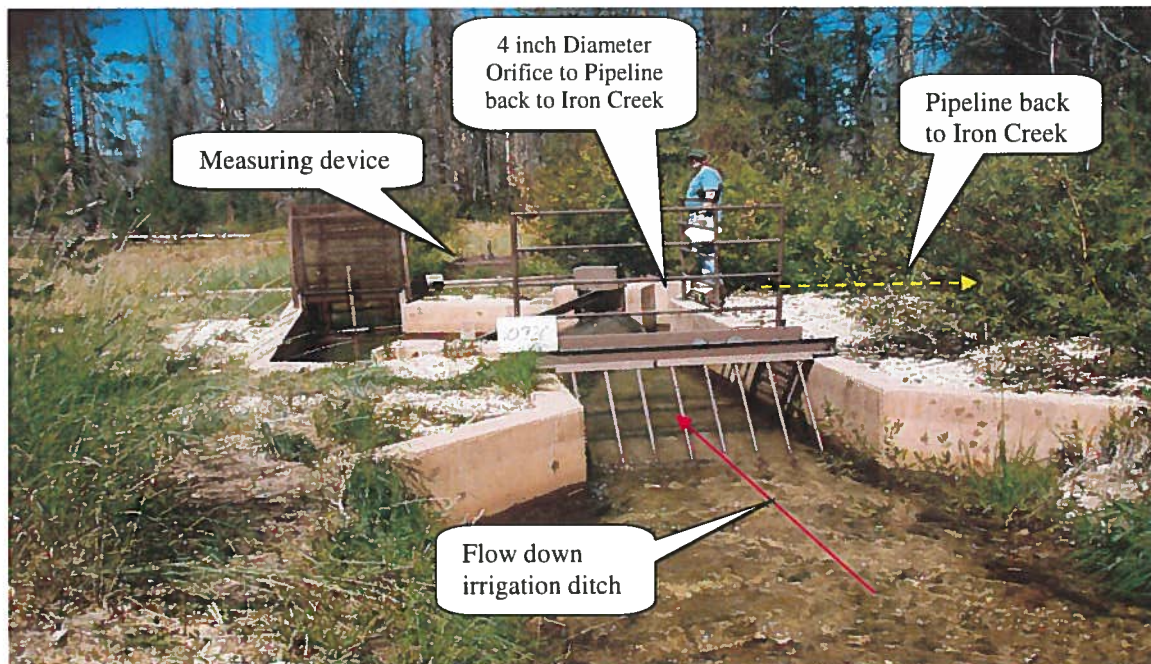
Photos for 71-10916 Field Exam

August 23, 2011

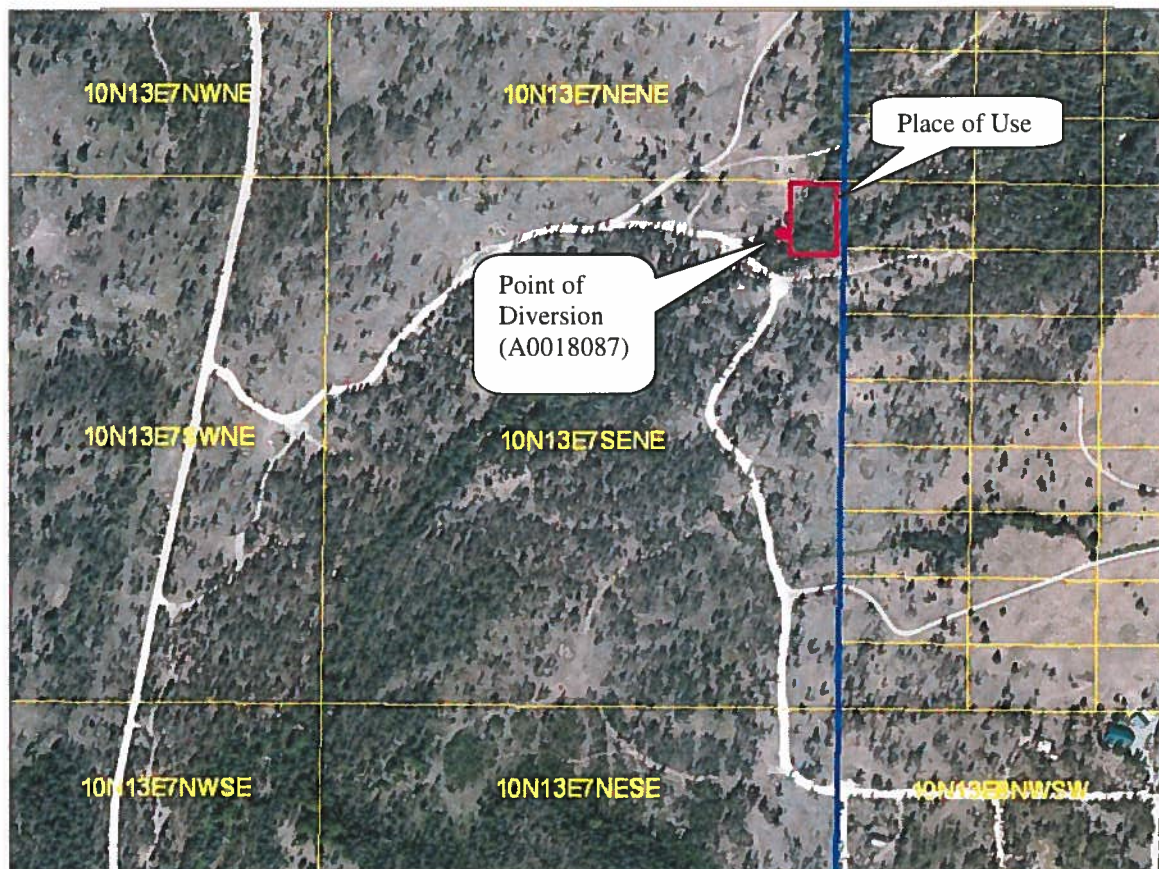


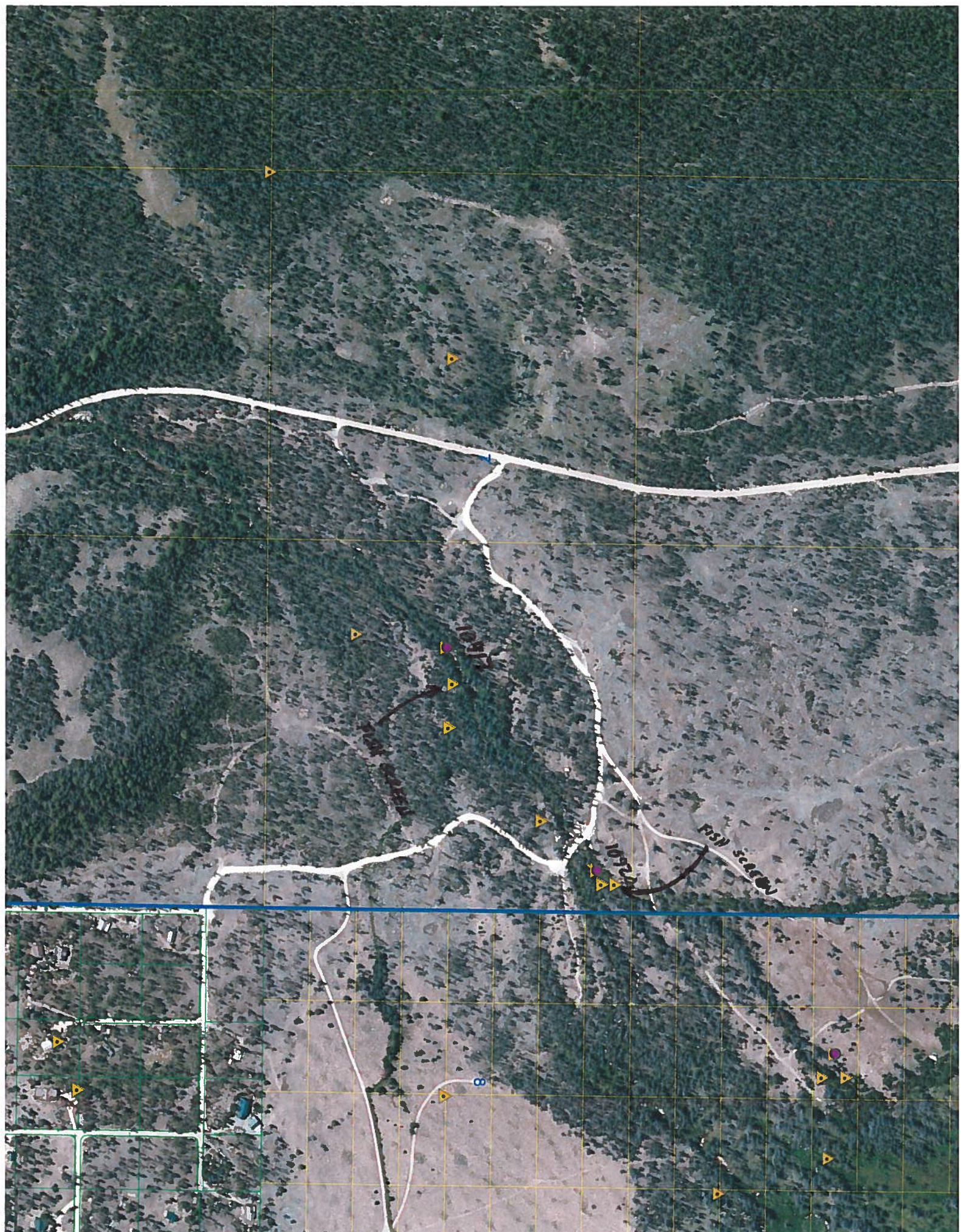
Above: View of Point of Diversion for 71-10920(site tag #A0018087)

Below: View of Place of Use for 71-10920



71-10920 Field Exam Map



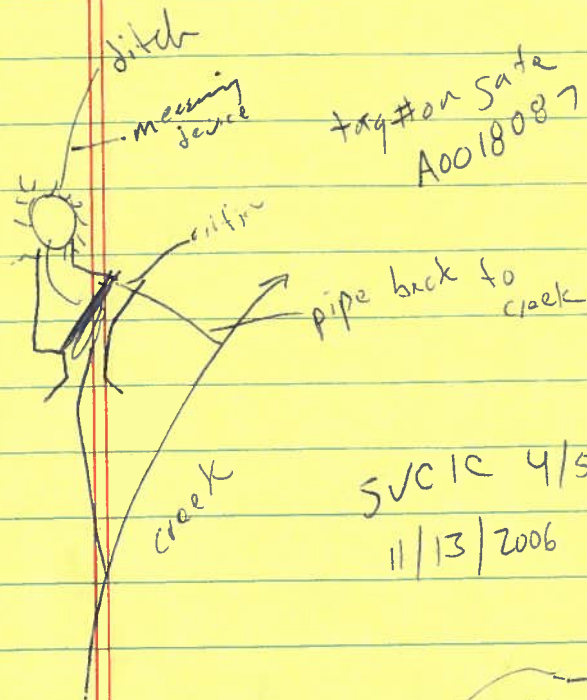


POD
picture

71-10920 POD

no tag found

Benny
standing in
gate



tag # on Sate
A0018087

plastic plate

orifice 4" diameter

9" to water
from top of plate

24" ^{head}
from E orifice
to water level

+ 24" to high water mark

48" of head e
high water
mark

GPS
POV

2421990

1446319