

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 45-13852

Exam Date: 4/25/2011

1. Current Owner: SIX S RANCH LLC
1354 E SIX S RANCH RD
DECLO ID 83323
(208)654-2564
2. Accompanied by: Pat McCammon (Six S Ranch Manager) and Bill Mills(IDWR)
Phone No: (208) 654-2564
Address: 1354 E Six S Ranch Road, Declo, ID 83323
Relationship to Permit Holder: Six S Ranch Manager

3. SOURCE TRIBUTARY
MARSH CREEK SNAKE RIVER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: None
2. Other water rights with the same point of diversion: See Remarks

C. DIVERSION AND DELIVERY SYSTEM1. LOCATION OF POINT(S) OF DIVERSION:

MARSH CREEK SE1/4SE1/4NW1/4 Sec. 22, Twp 11S, Rge 25E, B.M.
CASSIA County

Method of Determination: Aerial photography and existing spatial data point in IDWR GIS system

2.

PLACE OF USE: WATER QUALITY IMPROVEMENT

Twp	Rge	Sec	NE				NW				SW				SE				
			<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>	<u>Totals</u>
11S	25E	22			X				X										

PLACE OF USE: WILDLIFE

Twp	Rge	Sec	NE				NW				SW				SE				
			<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>	<u>Totals</u>
11S	25E	22			X				X										

Method of Determination: Aerial photography and IDWR GIS system

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 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 Size</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

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

D. FLOW MEASUREMENTS

1.

<u>Measurement Equipment</u>	<u>Type</u>	<u>Make</u>	<u>Model No.</u>	<u>Serial No.</u>	<u>Size</u>	<u>Calib. Date</u>
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

2. Measurements:

1.35 feet of head through 6 foot suppressed rectangular weir = 31.33 cfs

From $Q = 3.33Lh^{1.5}$ where $L = 6.0$ feet, and $h = 1.35$ feet

$$Q = 3.33(6.0 \text{ feet})(1.35 \text{ feet})^{1.5}$$

$$Q = 31.33 \text{ cfs} \quad (\text{permitted rate} = 30.0 \text{ cfs})$$

E. FLOW CALCULATIONS

_____ Additional Computation Sheets Attached

Measured Method:

1.35 feet of head through 6 foot suppressed rectangular weir = 31.33 cfs

From $Q = 3.33Lh^{1.5}$ where $L = 6.0$ feet, and $h = 1.35$ feet

$$Q = 3.33(6.0 \text{ feet})(1.35 \text{ feet})^{1.5}$$

$$Q = 31.33 \text{ cfs} \quad (\text{permitted rate} = 30.0 \text{ cfs})$$

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:

Estimated average flow from Feb 1 – June 30 = 30 cfs

Estimated average flow from July 1 – January 31 = 10 cfs

Feb 1 – June 30 = 151 days

July 1 – January 31 = 215 days

$$30 \text{ cfs } (1.9835 \text{ ac-ft/cfs per day})(151 \text{ days}) = 8,985.255 \text{ acre-feet}$$

$$10 \text{ cfs } (1.9835 \text{ ac-ft/cfs per day})(215 \text{ days}) = 4,264.525 \text{ acre-feet}$$

Total annual volume = 8,985.255 acre-feet + 4,264.525 acre-feet = 13,249.78 acre feet per year

G. NARRATIVE/REMARKS/COMMENTS

Permit 45-13852, in the name of Six S Ranch LLC, was approved on February 20, 2006 and authorizes the diversion of 30 cfs from Marsh Creek for year round water quality improvement and wildlife uses. Proof of beneficial use was filed by Six S Ranch LLC on February 3, 2009 for 30 cfs for water quality improvement and wildlife uses. On April 25, 2011 Bill Mills and I met Pat McCammon (ranch manager for Six S Ranch) and conducted the licensing exam for permit 45-13852.

The system developed under permit 45-13852 consists of two off stream ponds fed by a ditch that diverts water from Marsh Creek. Water is diverted from Marsh Creek via a head gate, passes through a measuring device, and enters the two parallel ponds. Each of these ponds have a surface area of approximately 0.3 acre, with the water velocity decreasing enough to drop sediments in the ponds, before the water is discharged back to Marsh Creek via a buried pipeline from the ponds. Diverted water typically runs through both of the ponds, but can be diverted into only one of the two ponds if needed. This allows for sediment to be removed from a pond while the diverted flow runs through the other pond if needed. The measuring device consists of a 6 foot rectangular suppressed weir. During the exam, 1.6 feet of head was measured flowing over the weir, which equates to a flow of 31.33 cfs. Pat McCammon indicates that the flow through the system can vary with maximum flows (approximately the permitted rate of 30 cfs) being diverted into the pond from about the first of February through the end of June, depending on weather and runoff flows in Marsh Creek. Pat estimated that the rest of the year (beginning of July through the end of January) approximately 10 cfs on average would be diverted through the system. The 30 cfs amount for part of the year, and the 10 cfs amount for the other part of the year was utilized to calculate the allowable annual volume that can be diverted (13,249.8 acre-feet). Pat indicated that a couple of years ago 60 dump truck loads of sediment were hauled from the two ponds so there are obviously water quality improvement use(s) associated with the system. In addition, he indicated that he has observed ducks, geese, and otters in the two ponds so it appears that there is also wildlife use associated with the system. Pat also indicated that the two ponds are approximately 10 feet deep when the deposited sediment is removed. Assuming a 10 foot depth and 0.6 acre in surface area (two ponds at 0.3 acre each), the maximum volume would be 6.0 acre feet. The permitted rate, of 30 cfs will easily provide this volume within a 24 hour period so the use of water in the two ponds does not need to be described as "storage" on the right.

The Department's water right records indicate that several Marsh Creek irrigation rights are also diverted through the diversion utilized by 45-13852. This particular diversion is an old irrigation diversion, but the irrigation ditch, downstream of the 45-13852 system, has been obliterated due to the construction of Point of Rock Dam and Reservoir (construction completed December of 2004) and is no longer used to convey irrigation water to the farmland below. In reality, there is no actual point of diversion or place of use overlaps with 45-13852.

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>
WATER QUALITY IMPROVEMENT	01/01 to 12/31	30.000 CFS	13,249.8 AF
WILDLIFE	01/01 to 12/31	30.000 CFS	13,249.8 AF
	<u>Totals:</u>	30.000 CFS	13249.8 AF

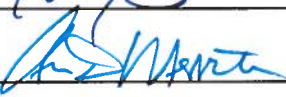
2. Recommended Amendments

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

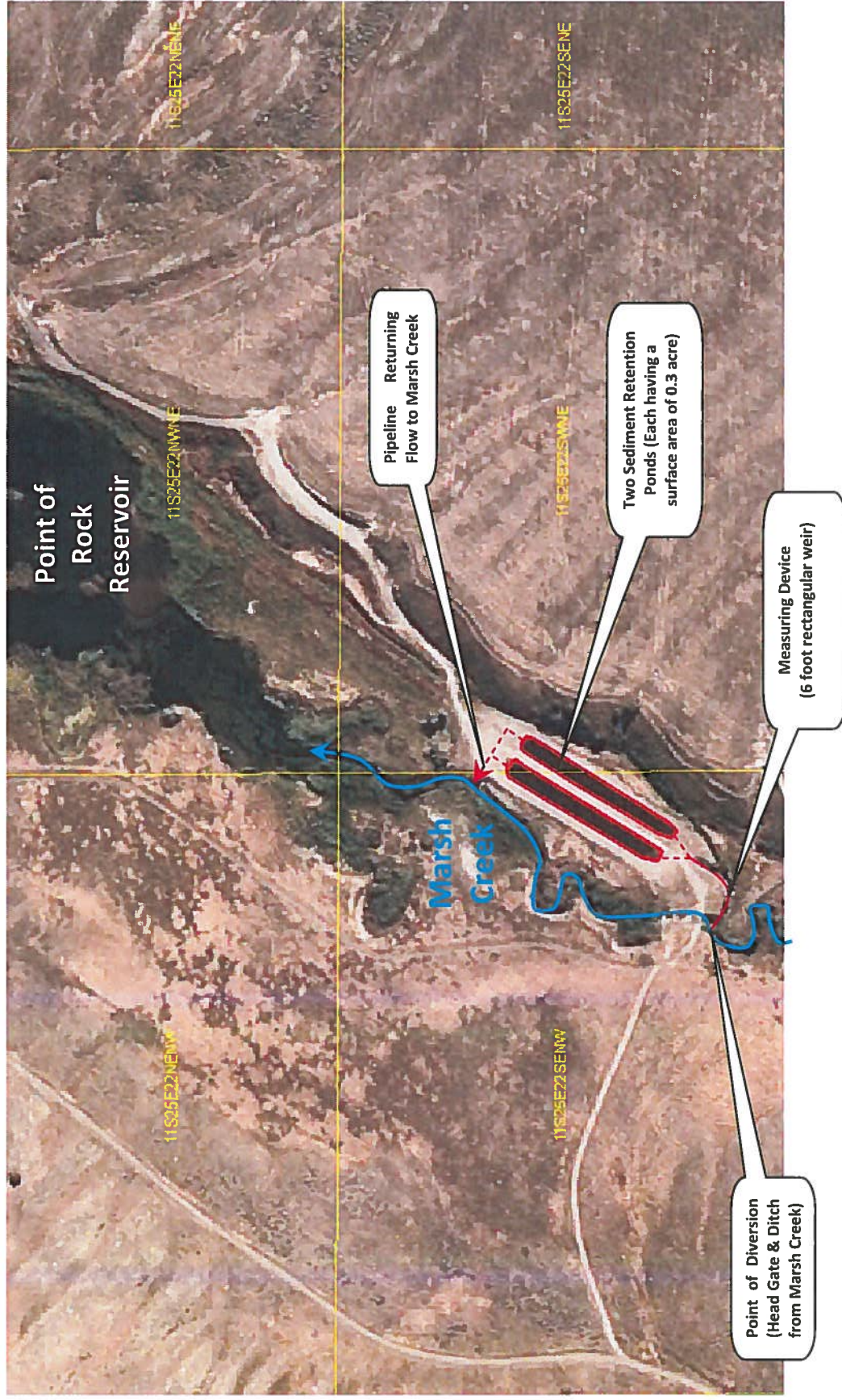
☒ Change P.U. as reflected above ☐ Add P.U. as reflected above ☐ Other

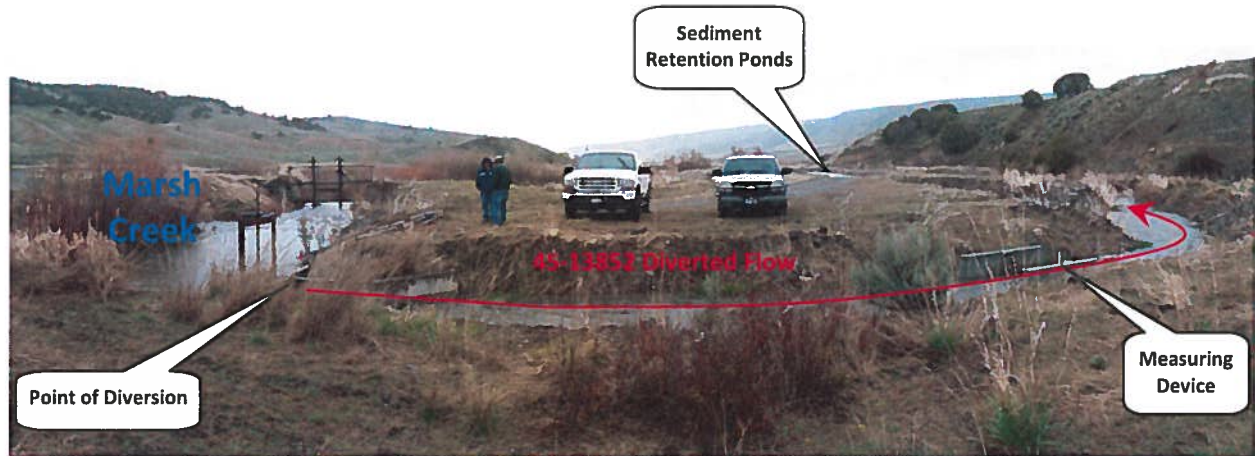
I. AUTHENTICATION

Field Examiner's Name  Date 6/6/2011

Reviewer  Date 6/28/2011

45-13852 Licensing Exam Map and System Diagram





ABOVE: View of point of diversion (head gate from Marsh Creek) and location of measuring device (6 foot suppressed rectangular weir).

BELOW: View downstream of view above, showing the two sediment retention ponds (each having a surface area of approximately 0.3 acre)

