

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

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Department of Water Resources
Eastern Region

A Beneficial Use Field Report is prepared by a water right examiner as the result of an examination to clearly confirm and establish the extent of the beneficial use of water established in connection with a permit during the development period authorized by the permit and any extensions of time previously approved.

A. GENERAL INFORMATIONPermit No. 75-144901. Owner James A. "Jim" &/or Kathy Sue SmithPhone No. 208-303-7518 / 756-4590Current address P.O. Box 33, Carmen, ID 834622. Examiner's name Keith C. WilsonEXAM DATE 04/20/20153. Accompanied by Jim SmithEmail countryspsych@yahoo.comAddress SAMERelationship to permit holder SELFPhone No. SAME4. Source Freeman Creektributary to Carmen Creek**B. OVERLAP REVIEW**1. Other water rights with the same place of use None2. Other water rights with the same source and point of diversion Water Rights on "Bills Ditch"**C. DIVERSION AND DELIVERY SYSTEM**

1. Point(s) of Diversion:

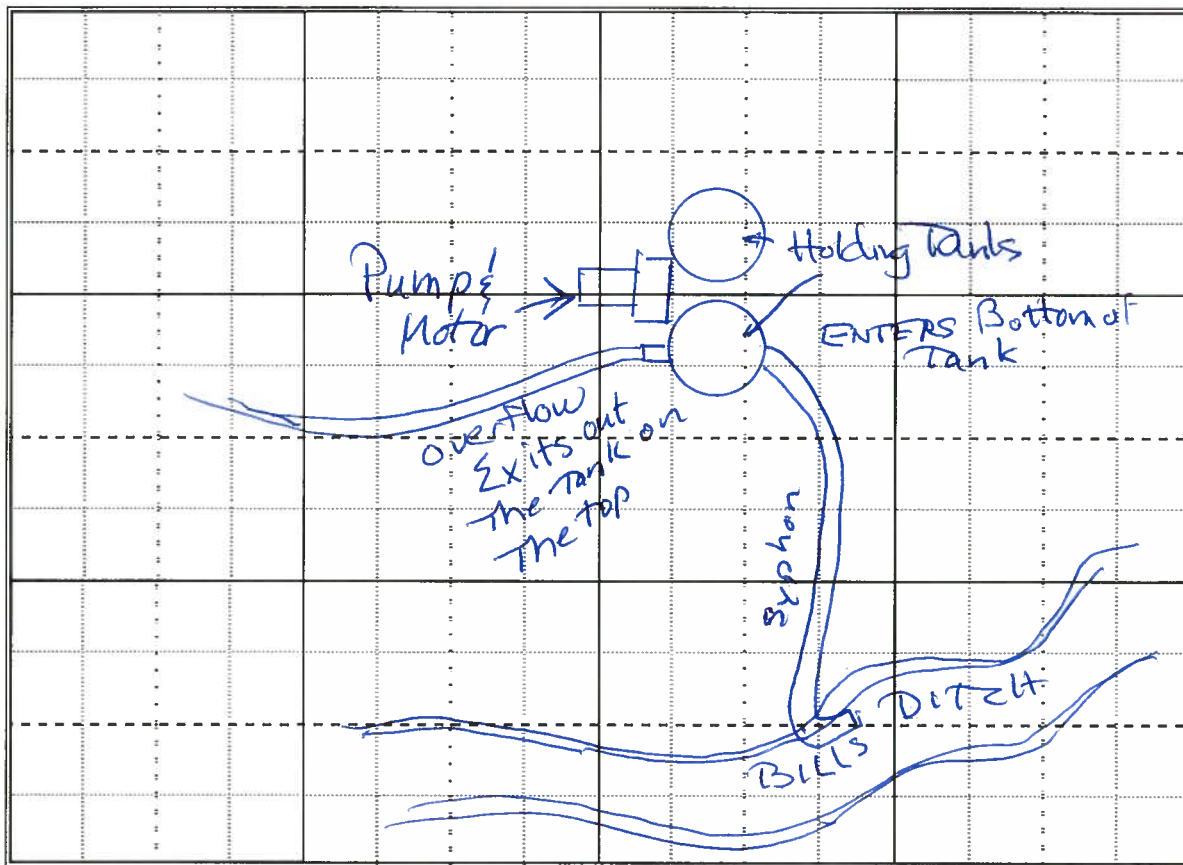
Ident. No.	Gov't Lot	¼	¼	¼	Sec	Twp	Rge	County	Method of Determination/Remarks
			NW	SW	36	23N	22E	Lemhi	On site inspection & Aerial Photo
Re-Div*		SW	SW	SW	2	22N	22E	Lemhi	On Site inspection & Aerial photo

* Re-diversion from Bills Ditch

2. Place(s) of Use: Method of determination Aerial Photo - GIS

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
22N	22E	2											1.0						1.0

3. **Delivery System Diagram:** Indicate all major components and distances between components. Indicate weir size/ditch size/pipe diameter (inside), as applicable. Use the space provided or ☐ see attached.



Scale: 1" = _____

- ☒ Copy of USGS Quadrangle attached showing location(s) of point(s) of diversion and place(s) of use (**required**)
☒ Aerial photo attached (required for irrigation of 10+ acres)
☒ 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
Bills Ditch					
Re-diverion	Syphon				
Diversion from Tanks	FloTec	1.5	C48L2EC1103	FloTec	No S/N

*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
Theoretical						

2. **Measurements:** _____

No measurements taken as Bills Ditch was not flowing full and syphon tube was just above the flow in the ditch.

Client did not want to be digging in the ditch to lower the syphon tube.

E. NARRATIVE/REMARKS/COMMENTS

Diversion head-gate for Bills Ditch (Bills Ditch has a fish screen See Attached Photos). Ditch flows in a westerly direction to applicants re-diversion. Re-diversion consist of a 2.0 inch syphon tube in Bills Ditch with a 20 ft drop to two holding tanks with an overflow pipe. Tank #1 is 20" x 51" for an approximate volume of 9.3 cubic feet. Tank #2 is 16" x 41" for an approximate volume of 4.8 cubic feet. Water into the two (2) holding tanks is controlled by a valve. Water is diverted from the holding tanks by a 1.5 hp FloTec Pump an motor to three (3) Rain-Bird sprinklers with 11/64 nozzles, and overflow from tanks helps to irrigate lower portion of applicants property.

Has the permit holder met all conditions of permit approval, including any mitigation requirements and/or measuring device installation requirements? ☒ Yes ☐ No If no, what must be done to meet the permit requirements?

F. FLOW CALCULATIONS☒ Additional computation sheets attached

Measured Method:

Re-diversion Pump Theoretical Capacity = $[(hp)(8.814)(\text{efficiency})] / [\text{Lift} + (\text{Psi} \times 2.038)] = Q_{\text{cfs}}$

$$[(1.5)(8.814)(70\%)] / [0 + (40 \times 2.308)] = 0.10 \text{ cfs}$$

Designed Velocity of pipe = 7.0 ft/sec

Hazen-Williams Calculated Pipe flow = 2.02 cfs (Attachment 3.F)

$$Q = AV \quad A=0.02 \text{ sqft} \quad V = 7.0 \text{ ft/sec}$$

$$Q = (0.02)(7) = 0.14 \text{ cfs}$$

Permit Allows for up to 0.03 cfs/acre. Recommend amount = 0.03 cfs

G. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I,R} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = (1.0 \text{ acres})(3.5 \text{ ac-ft/ac}) = 3.5 \text{ AFA}$$

$$V_{D,R} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation Season}) \times 1.9835 = (0.03)(214)(1.9835) = 12.73 = 12.7 \text{ AFA}$$

$$V = \text{Smaller of } V_{I,R} \text{ and } V_{D,R} = 3.5 \text{ AFA}$$

2. Volume Calculations for Other Uses:

H. RECOMMENDATIONS

1. Recommended Amounts

Beneficial Use	Period of Use		Rate of Diversion Q (cfs)	Annual Volume V (afa)
	From	To		
Irrigation	4/01	10/31	0.03 cfs	3.5 AFA
Totals:			0.03 cfs	3.5 AFA

2. Recommended Amendments

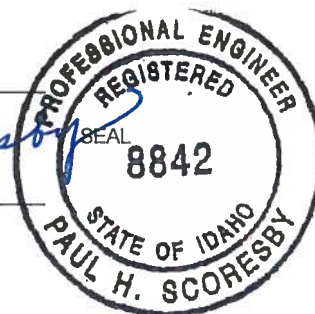
☒ Change P.D. as reflected on page 1☐ Add P.D. as reflected on page 1☐ None☐ Change P.U. as reflected on page 1☐ Add P.U. as reflected on page 1☐ Other**I. AUTHENTICATION**

Field Examiner's Signature

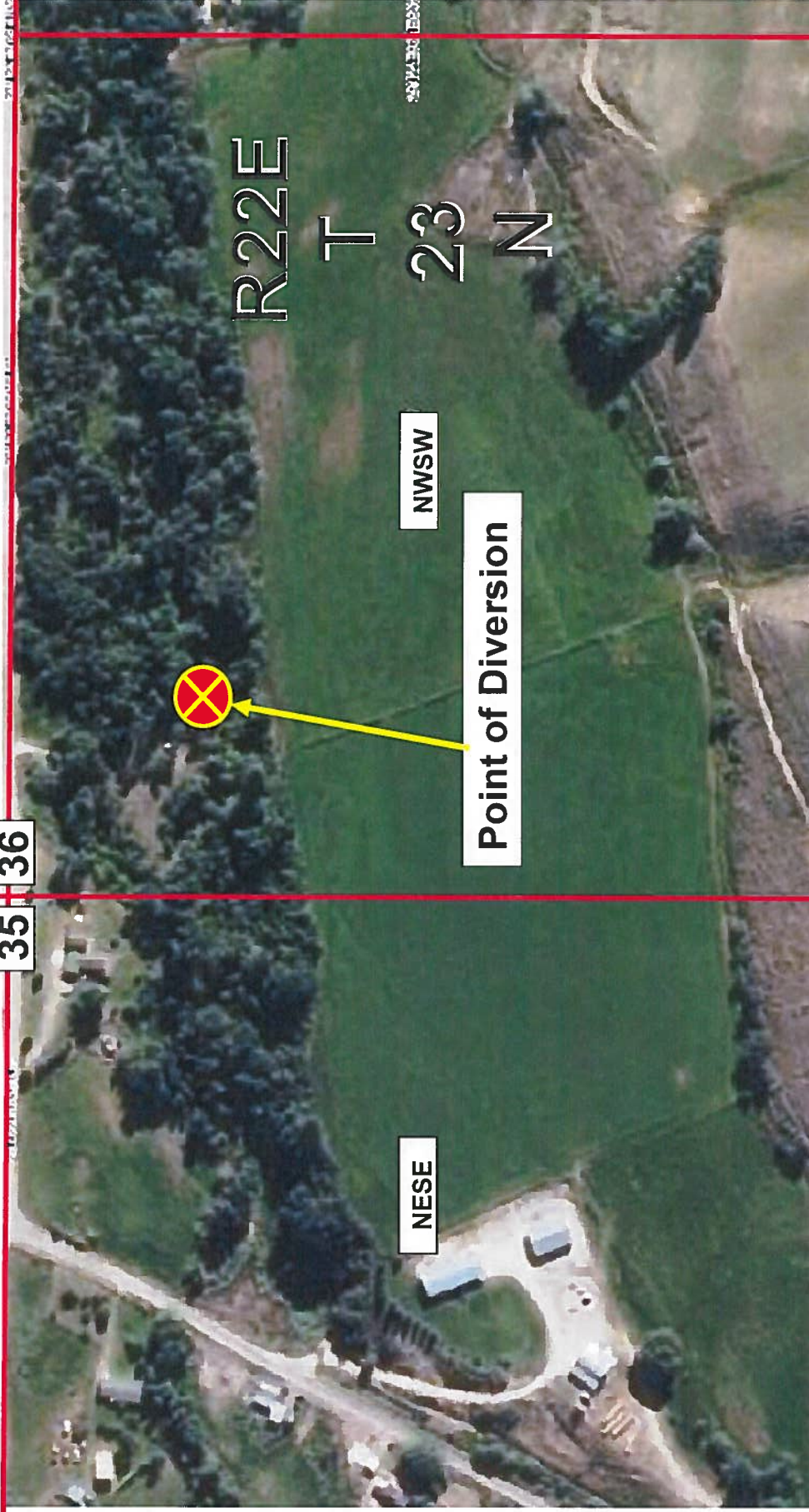
Keith C. Wilson

Date 04/21/2015

Reviewer

Paul H. Scoresby
Date 5-21-15

35 36

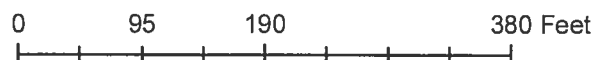




Permit # 75-14490

2013 Aerial Photography

-  pou
-  Township and Range
-  Section
-  QQ



Item 3.F: FLOW CALCULATIONS (Cont.)

Hazen-Williams Equation for closed pipe: $Q_{cfs} = 2.02 \text{ cfs}$ Maximum Flow 2" Pipe

Maximum flow:

$$Q_{cfs} = C_h \times (\pi D^2 \div 4) \times (D \div 4)^{0.063} \times (H/L)^{0.54}$$

C_h = Hazen-Williams Coefficient (PVC) = 150

π = 3.1416

D = I.D. Diameter (PVC) = 1.939" = 0.1616 ft

L = Pipe Length = 30'

H = elevation drop = 20'

$$Q_{cfs} = (150) \times (0.08 \div 4) \times (0.1616 \div 4)^{0.063} \times (20/30)^{0.54} = 2.018 \text{ cfs} = 2.02 \text{ cfs} \quad \text{Max. Flow 2" Pipe}$$

RAIN-BIRD SPRINKLERS: $Q_{cfs} = 0.04 \text{ cfs}^1$

Assumptions: PSI = 35 - 50 psi = 36 psi

11/64 nozzles @ 36 psi flow

$$Q = (5.25 \text{ gpm/each}) \times (3) = 15.75 \text{ gpm} \div 448.8 \text{ gpm/cfs} = 0.035 \text{ cfs} = 0.04 \text{ cfs}$$

Permit is conditioned not to exceed 0.03 cfs/acre.

Recommend $Q = 0.03 \text{ cfs}$

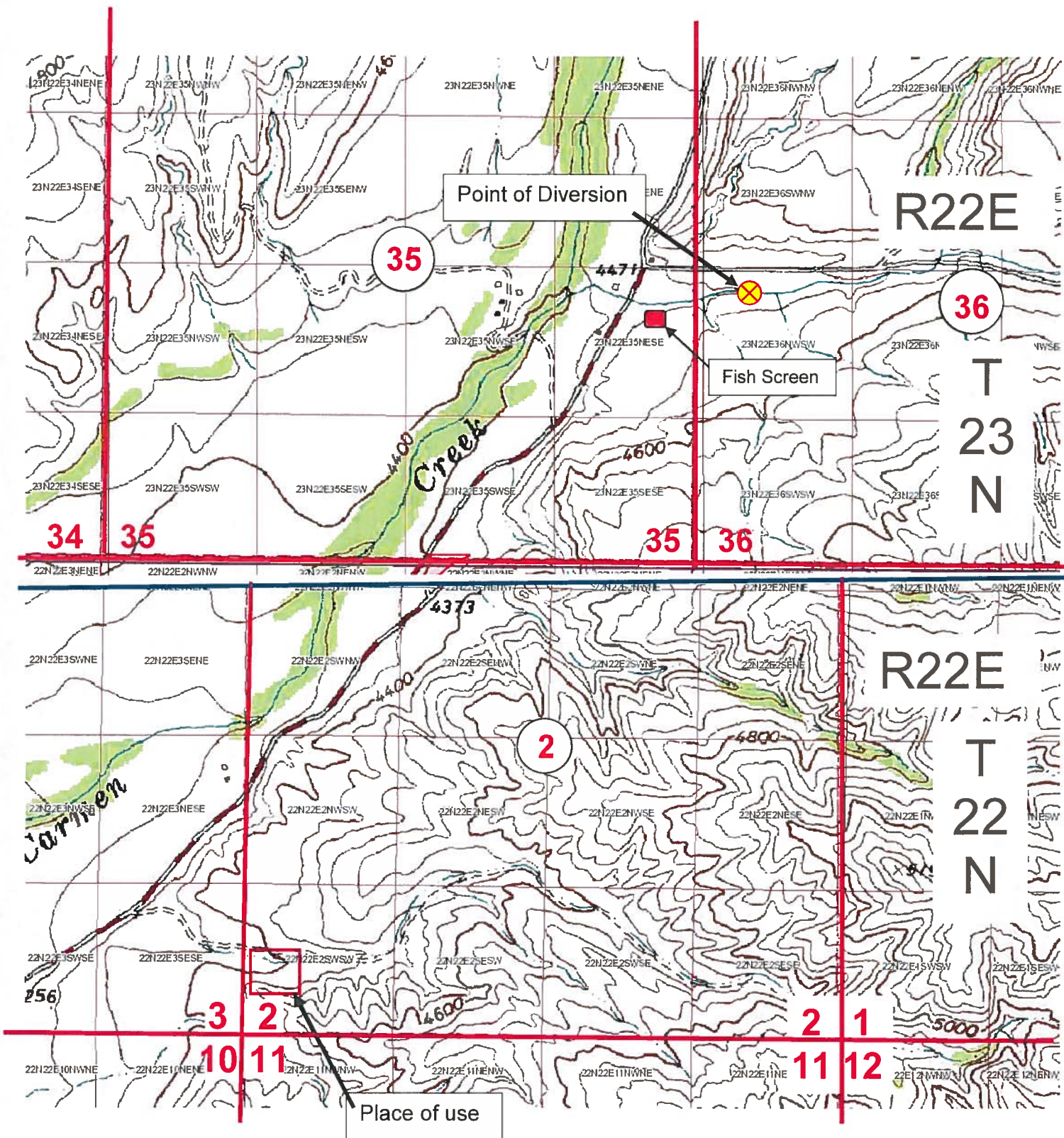
From: Brian Keller <waterboy75d@gmail.com>
Sent: Thursday, May 07, 2015 3:56 PM
To: Kristin Moore
Subject: Re: jim smith

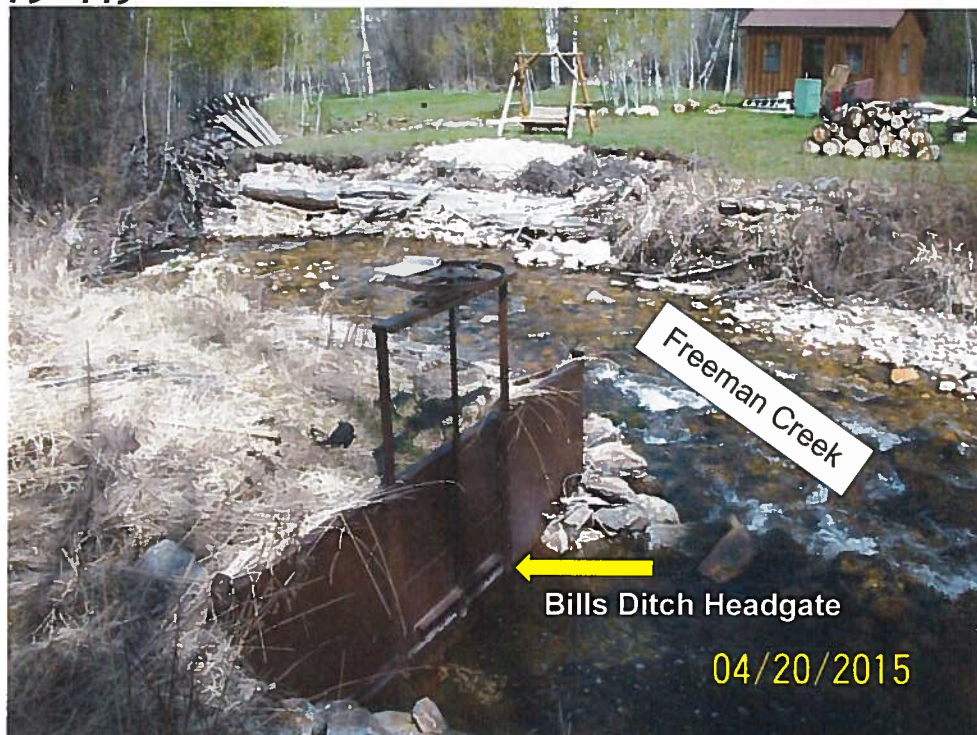
To Whom it May Concern

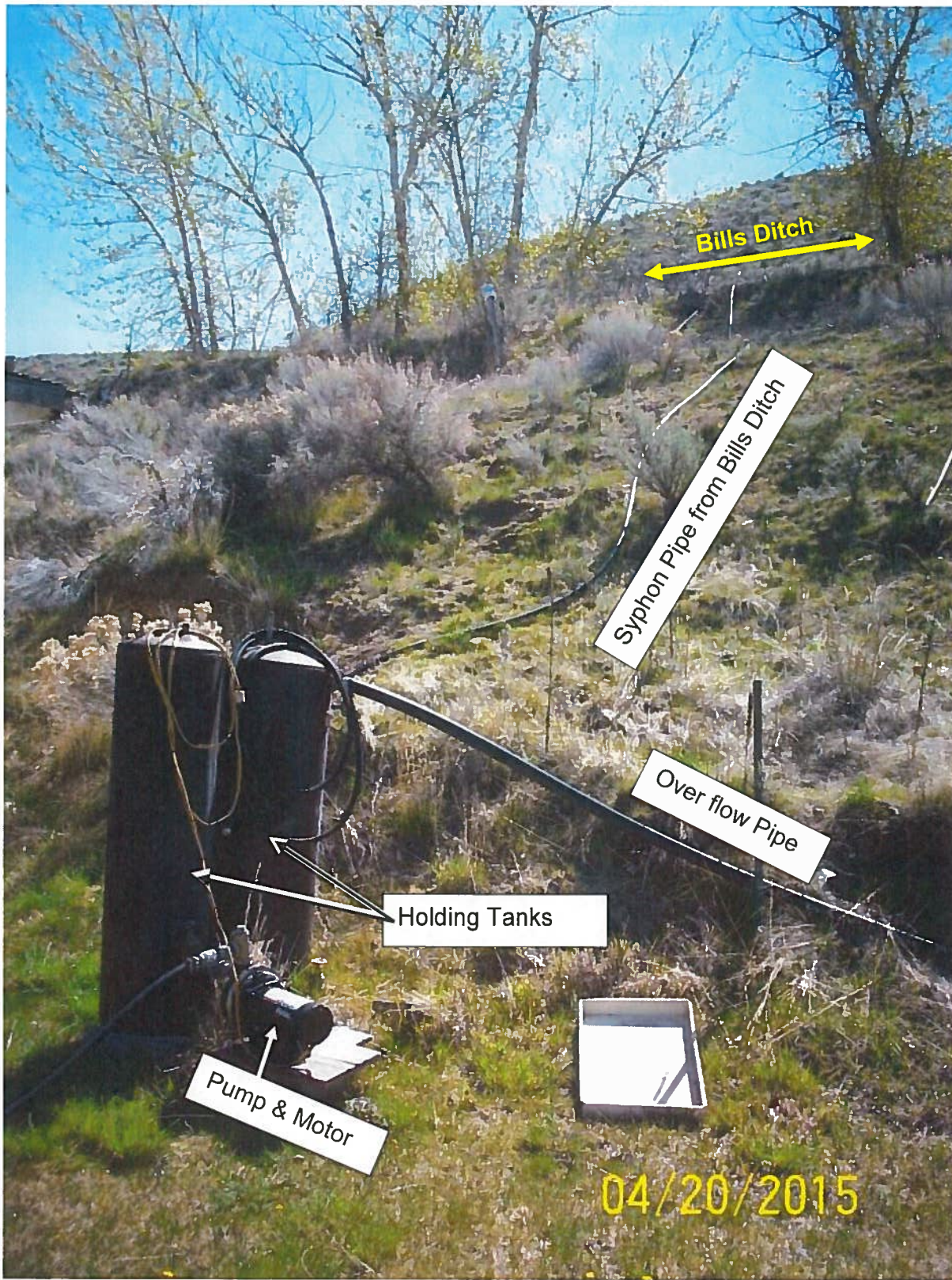
I was elected Water Master in 2011. I can confirm that water was delivered to the bills ditch every season from 2011, for a brief period during 2012 before the ditch failed, and 2013 after ditch was repaired and for 2014. the Bills ditch is the convenience system for water right #75-14490 in question. I can also confirm that the assessments for water right #75-14490 have been billed and payed annually on time during the time frame mentioned earlier. The 2015 assessment has also already been billed and paid by the Smith's.

Hope this gives you the answers needed. Let me know if there is anything else I can do.

Brian Keller
Watermaster 75D









Fish Screen on Bills Ditch

