

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

A. GENERAL INFORMATIONPermit No: 51-13108

Exam Date: 7/11/2019

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

2. Current Owner: Name: USDI Bureau of Land Management

Owner of Record Correct? X Y N

Address of Record Correct? X Y N

If No: Address

3. Fees have been paid: X Y N Receipt No: W044157

4. SOURCE**TRIBUTARY**

Ground Water

N/A

Method of Determination: Site visit

Change in Source:

Y X N

B. OVERLAP REVIEW

1. Other water rights with the same place of use: NONE

Water Right No.	Source	Purpose of Use	Basis
51-12950	Ground Water	Stockwater	Decreed
51-7375	Ground Water	Fire Protection	License

Comments: Water right 51-12950 is for Stockwater use at the same POU as 51-13108. Upon further review, the portion of the POU on the permit that overlapped 51-12950 was removed because no activities associated with the right actually took place at the POD site. Water right 51-7375 is for Fire Protection at the guard station/base center. There is a 70,500 gallon tank at the station filled with water from this well that supplies water for the fire sprinkler system in the main building as well as used for filling the BLM fire engine. Other trucks are also filled from this tank if there is an active fire in the area

2. Other water rights with the same point of diversion: NONE

Water Right No.	Source	Purpose of Use	Basis
51-2356	Ground Water	Stockwater	Decreed
51-7375	Ground Water	Fire Protection	License
51-12950	Ground Water	Stockwater	Decreed

Comments: Water rights 51-2356 and 51-12950 are for Stockwater use and are sourced from this same well. Water right 51-7375 is for Fire Protection sourced from this same well. There is a 70,500 gallon tank at the station filled with water from this well, that supplies water for the fire sprinkler system in the main building as well as used for filling the BLM fire engine. Other trucks are also filled from this tank if there is an active fire in the area. All three rights are sourced from the same well as 51-13108. Our measurements showed a flow rate of 32 gpm or 0.07 cfs, therefore the right, when combined with these other three rights, should be restricted to a flow rate of 0.07 cfs.

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

Source	Govt. Lot	¼	¼	¼	Sec.	Twp.	Rge.		County
Ground Water			SE	SW	35	13S	09E	B.M.	Owyhee
								B.M.	
								B.M.	

Method of Determination: Visual Inspection

Change in POD? Y X N Amendment Required? Y X N**2. PLACE OF USE:** Use: Domestic, Industrial

TWP	RGE	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
12S	09E	35															X		
		Lot #																	
Total Acres =																			N/A

Method of Determination: Visual inspection.

Change in POU? X Y N Amendment Required? Y X N

Southern portion of the POU, in SESW of Sec. 35, T13S, R09E was removed because no activities associated with the right actually take place at this site. The POD is located here but the site is simply used to fill tanker trucks, which then haul the water to the base site, where all activities take place.

3. X 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
A0019119	Jacuzzi	10			25 GPM

*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
Panametric						April 2019

2. Measurements: 32 GPM or 0.07 cfs (See Attachment)

E. FLOW CALCULATIONS

____ Additional Computation Sheets Attached

Measured Method:

Measurement = 0.07 cfs**Permit allowed = 0.10 cfs****License recommend for 0.07 cfs.****F. VOLUME CALCULATIONS**

1. Volume Calculations for Irrigation: N/A

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = \underline{\hspace{2cm}}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = \underline{\hspace{2cm}}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = \underline{\hspace{2cm}}$$

2. Volume Calculations for Other Uses: Per the attached calculation sheet, I am recommending 0.3 af for Domestic and 0.6 af for Industrial for a total of 0.9 af.

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

Other: Domestic and Industrial for military/BLM Fire base general use and vehicle washing.

Change in Purpose of Use? ☐ Y ☒ X ☐ N

Method of Determination: Visual Inspection

If Yes: From Use _____ To Use _____ Amount _____ CFS _____ AFA _____

H. NARRATIVE/REMARKS/COMMENTS

The Bureau of Land Management (BLM) submitted application for permit on June 10, 2014. The permit application proposed to pump water into a truck from a well located in the SESW of Sec. 35, T13S, R09E, and truck the water to holding tanks located at a field station in the SWSE of Sec. 35, T12S, R09E. The water would then be used at the field station for domestic and industrial uses.

The well site consists of a well, generator/pump house, and a large holding tank. The staff said the holding tank is no longer used but can be filled up if needed for fighting fire. The generator in the pump house no longer functions and staff haul out another large generator on a trailer to power the pump. At the time of the exam the crew was running a Detroit Diesel Spectrum 73 KW generator to power the pump. Documents submitted with the proof of beneficial use state that the well is a 6" casing well drilled to 682 feet and the pump is a Jacuzzi brand 10 hp, 3 phase pump sitting at a depth of 637 feet. Crews have been using a 5,000 gallon truck to haul water and stated it take 2 hours and 36 minutes to fill. Flow measurements from the Panametric flow meter (attached) averaged 32 gpm or 0.07 cfs. At 32 gpm, it should take 156 minutes or 2 hours, 36 minutes, to pump 5,000 gallons. This measurement coincides exactly with what the crew expressed.

Water trucked to the field station is then used to fill two holding tanks. One is a 70,500 gallon tank and is primarily in place for fire protection use. The tank feeds a fire sprinkler system throughout the compound and additionally, BLM staff use water from this tank and system to fill the fire engine. This use is covered under WR 51-7375.

A smaller, 6,000 gallon tank is filled for domestic and industrial uses around the station. Water from this tank is

pipled into a pump house which also contains several pumps and valves for the fire protection system (the large red valves and pumps in attached the pictures). The domestic/industrial use system is powered by a 2hp Grundfos pump that feeds into an 81 gallon preasure tank, then out of the tank and underground to the field station and BLM trailer houses.

The primary domestic use is by 5 BLM staff stationed in the trailer houses from June 1 to October 31. These personnel also have access to and use the facilities inside the field station. Field station facilities that utilize water include a full kitchen with sink and dishwasher, bathroom with three toilets, a shower, a mopping station, and a vehicle bay with washing facilities. BLM personnel have access to all these facilities while stationed at the base. To calculated volume for domestic use, I used the Non-Irrigation Requirements sheet in the Field Examiners handbook and chose the Institutions Other Than Hospitals suggestion of 125 gallons per day per person. This description seemed to most closely represent the BLM use at the station

The industrial use primarily covers the military operations use at the station. Military personnel drive in and out daily and do not spend the night nor regularly use full kitchen or shower facilities. Most of their use is based around bathroom use and equipment washing. Although there are only a few personnel working at the station on a regular basis, the base manager stated there are several off and on operations that take place throughout the year, bringing in larger groups of personnel. He stated that average personnel numbers across the year, including visiting operations, would equal about 11 to 12 people. Because his estimate included the BLM personnel for the moths they are there, I went with an average of 11 military personnel year round for industrial use. To calculate a volume for this use, I used the Construction Camp guidelines of 50 gallons per person per day from the Field Examiners handbook. It was also stated that about one vehicle a week is washed in the vehicle bay. I added an extra 100 gallons per week to the industrial use to account for this.

In total, volume calculations came to 0.3 afa for domestic use and 0.6 afa for industrial for an overall total of 0.9 afa. Diversion rate should be 0.07 cfs for each use and total will also be 0.07 cfs because that is the limitations of the pump.

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>
Domestic	1/1 to 12/31	0.07 CFS	0.3 AF
Industrial	1/1 to 12/31	0.07 CFS	0.6 AF
<u>Totals:</u>		0.07 CFS	0.9 AF

2. Recommended Amendments

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

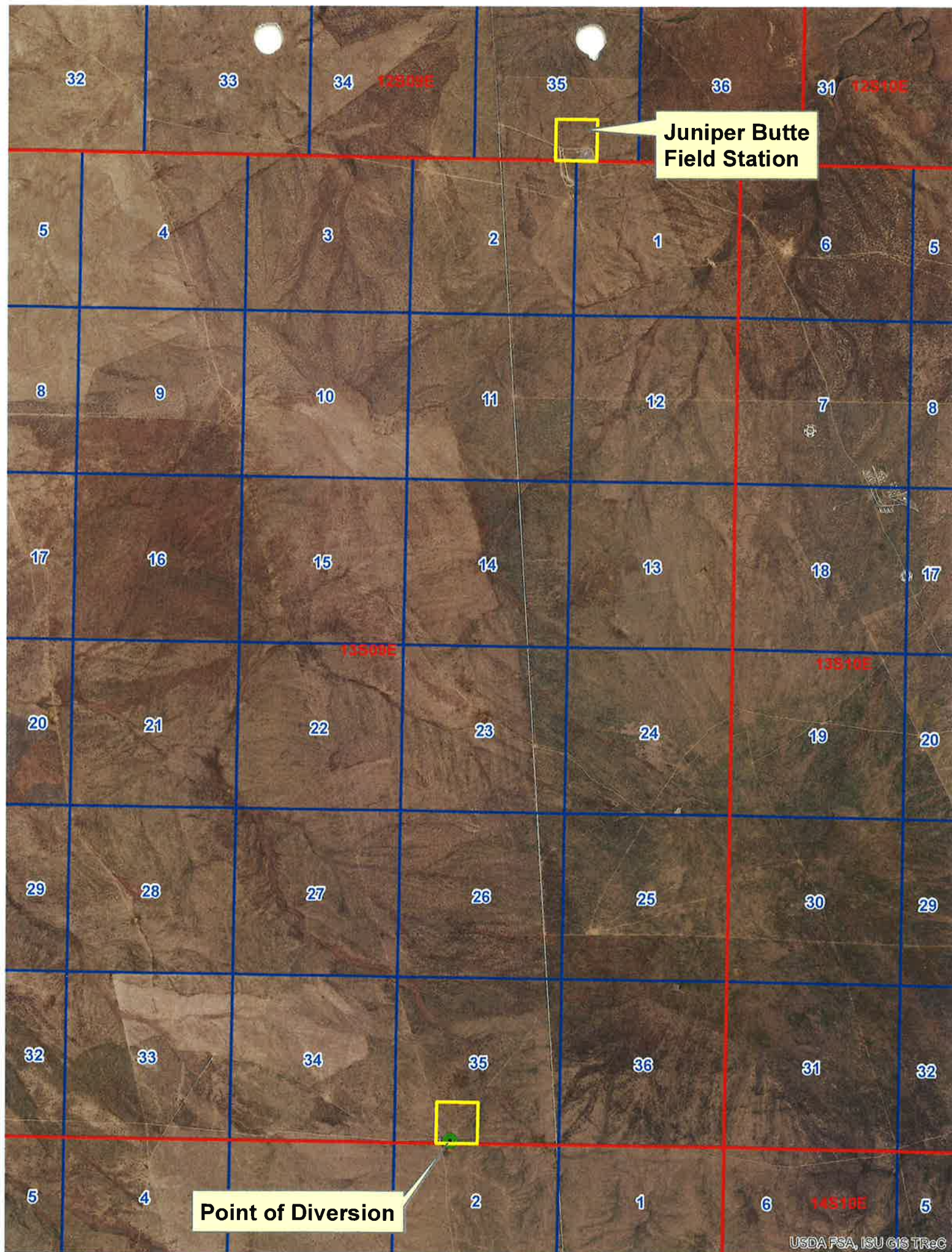
☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☒ None

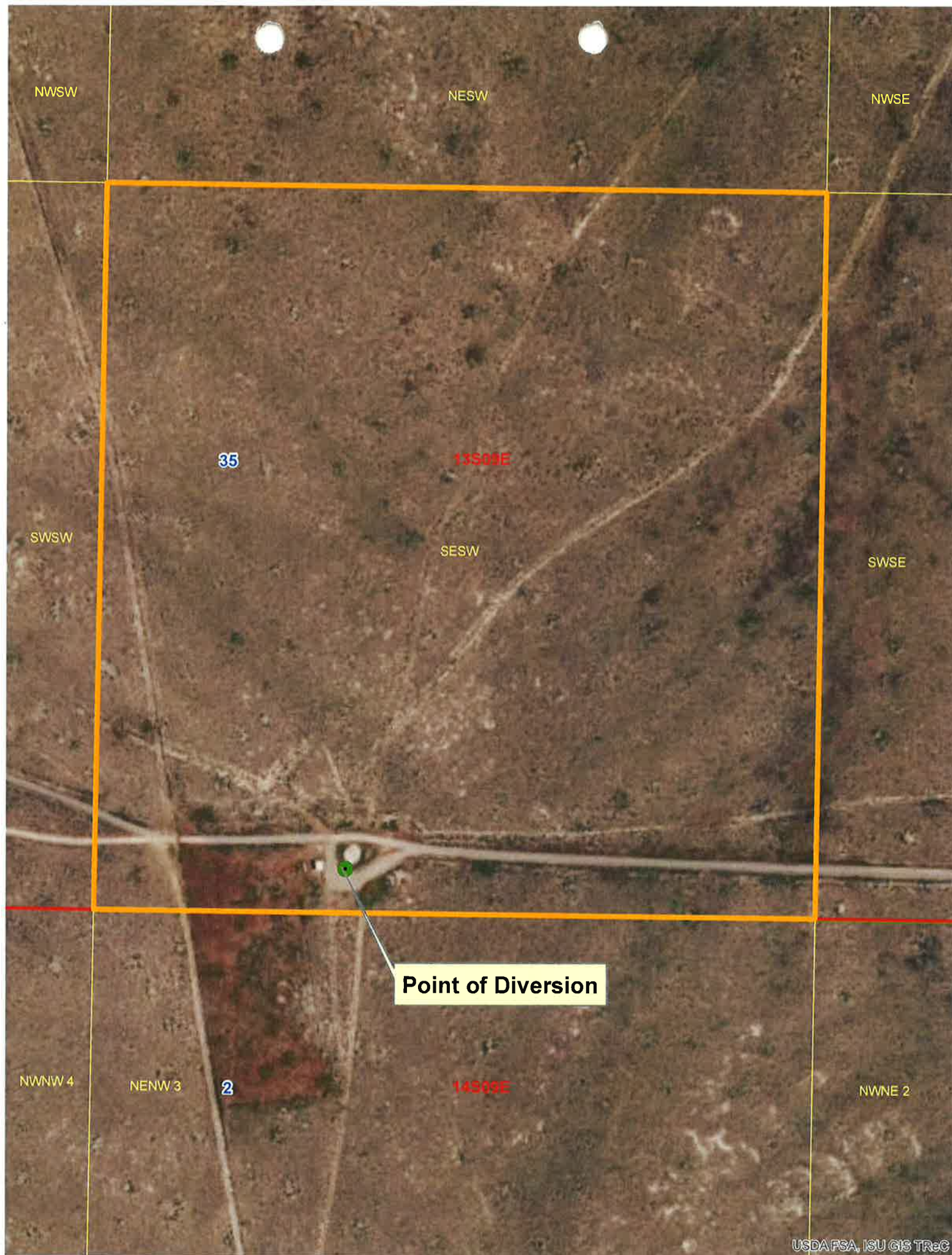
Other: < >

J. AUTHENTICATION Scott Storms – Water Resource Agent, Senior

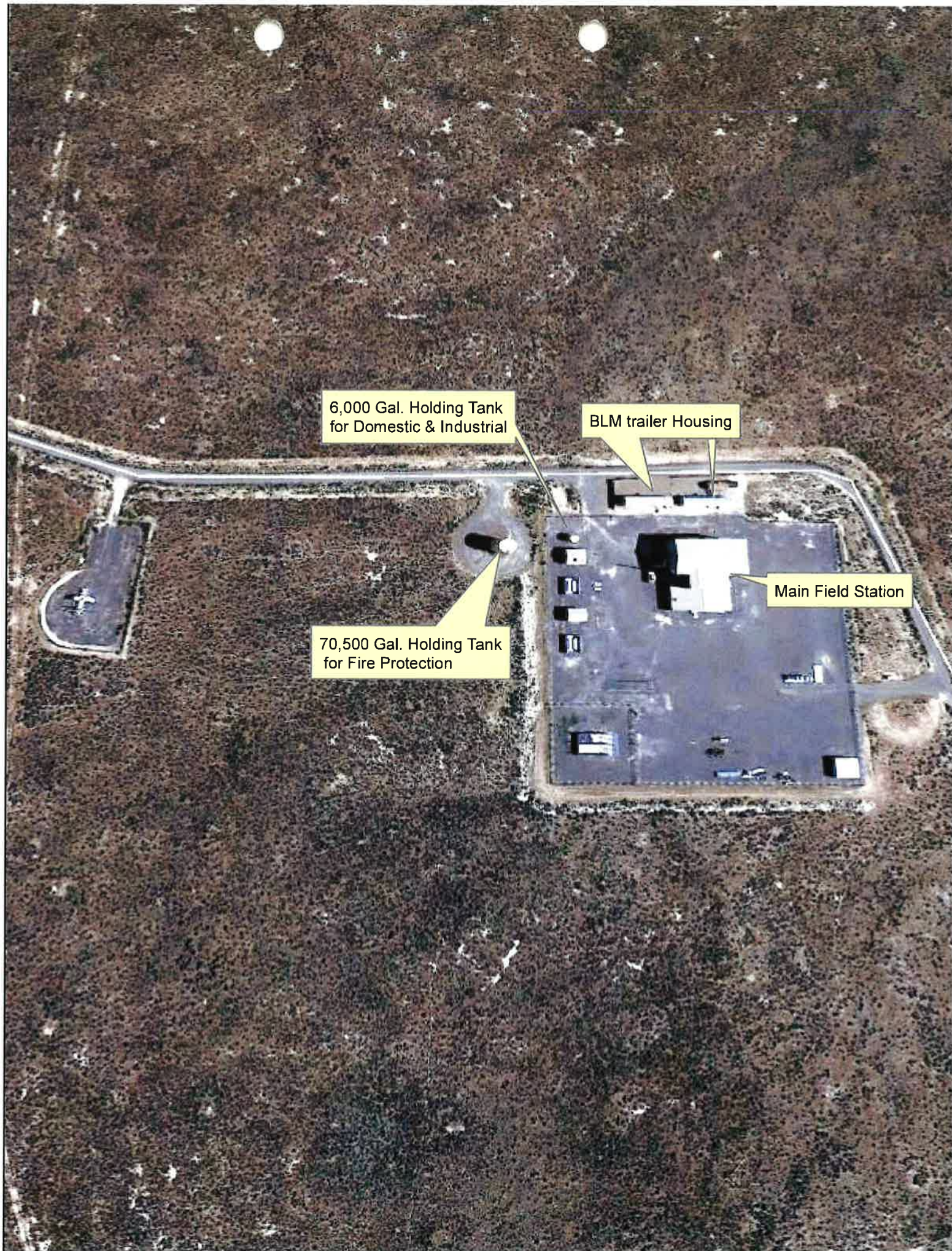
Field Examiner's Name [Signature] Date 7/22/19

Reviewer [Signature] Date 7-23-19





Point of Diversion

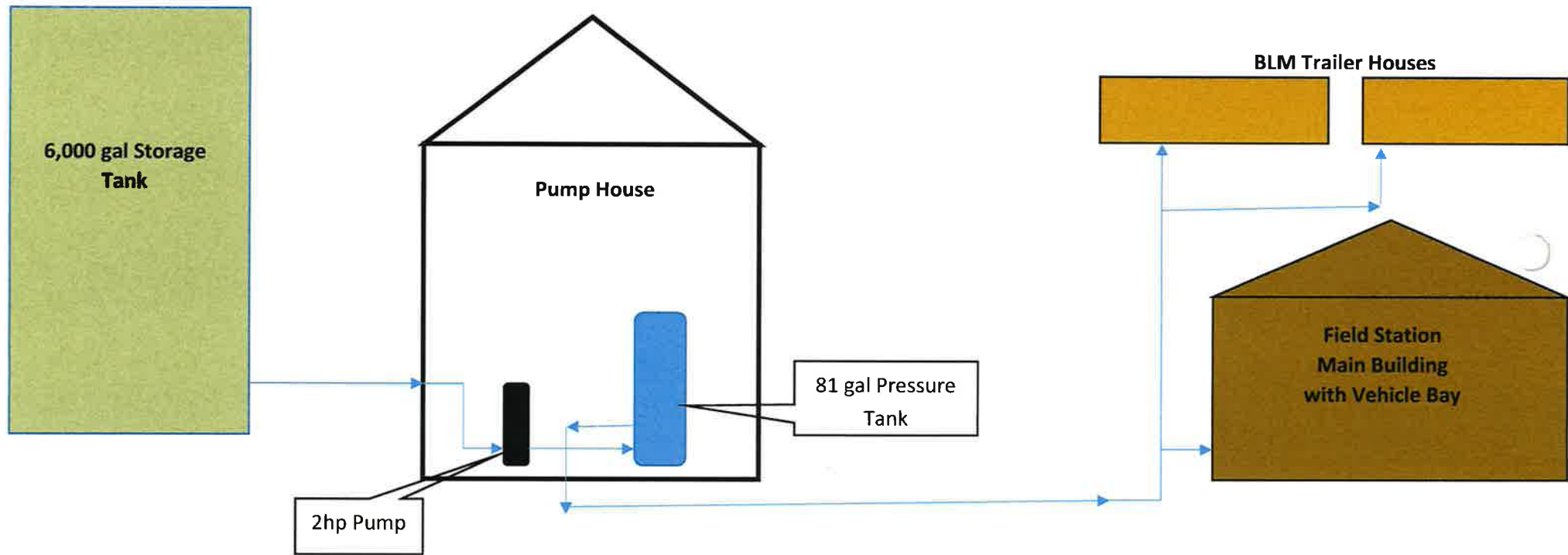


6,000 Gal. Holding Tank
for Domestic & Industrial

BLM trailer Housing

Main Field Station

70,500 Gal. Holding Tank
for Fire Protection



Pump house also contains pumps and valves for the fire protection system. This is a separate system supplied by a separate 70,500 gallon storage tank and covered under right No. 51-7375, however the 6,000 gallon tank can be tapped into the fire system if needed. All red pumps and valves (see photos) are for the fire protection system.

Panametric Measurment Log

File Title: C:\Users\dnelson\Desktop\LOG01.LOG
File Name: C:\Users\dnelson\Desktop\LOG01.LOG
Start Time: 7/11/2019 9:56
End Time: 7/11/2019 10:07
Interval: 60
Records: 11
Cyclic Flags: 2
Error Flags: 8208

Date/Time	Velocity (ft/s)	Volume (gal/m)	(+)Total (gal)	Error #
7/11/2019 9:56	2.975458461	32.18323732	83283.37388	0
7/11/2019 9:57	2.974488339	32.17274426	83315.24142	0
7/11/2019 9:58	2.96334902	32.05225884	83347.38047	0
7/11/2019 9:59	2.974530234	32.1731974	83380.44566	0
7/11/2019 10:00	2.955379201	31.96605547	83412.59508	0
7/11/2019 10:01	2.97258245	32.15212973	83443.89528	0
7/11/2019 10:02	2.975480819	32.18347915	83477.77981	0
7/11/2019 10:03	2.97125551	32.13777725	83508.17405	0
7/11/2019 10:04	2.970423581	32.12877891	83541.24136	0
7/11/2019 10:05	2.956019911	31.97298554	83572.0035	0
7/11/2019 10:06	2.940859348	31.80900542	83604.72945	0
		32	32	

Average gpm = 32
Totalizer gpm = 32

Water Volume Usage Calculations for Domestic and Industrial Use							
	People	Usage/Person	Days of Usage	Total annual Usage	Truck Washing		
Military	11	50	365	200750	2000	0.6	Acre Feet for Industrial
BLM	5	125	150	93750		0.3	Acre Feet for Domestic
				294500	2000	0.9	Total Acre Feet

For Truck Washing	100	20	2000
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Military personnel were calculated on year round use. The water use of 50 gallons per day for the military personnel was determined by using the construction camp guidelines from the Non-Irrigation Requirements sheet in the field examiners handbook. Construction camp seemed most pertinent to this particular use. This total, along with another 100 gallons per week for truck washing, will be used for the Industrial Use on the license. The 110 days for BLM staff was determined by typical season of June 1 to Oct 31. The use of 125 gallons per day for BLM personnel is based on the Institution Other Than Hospitals from the Non-Irrigation Requirements sheet in the field examiners handbook. This seemed to most closely represent the BLM's use of the site.

THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 57-13108
 Reviewer: Scott Storms
 Date of Review: 7/12/2019

P/D No.:

PUMP HORSEPOWER
 BOOSTER HORSEPOWER

PUMPING LEVEL

DISCHARGE PRESSURE

RATE OF FLOW (cfs)

Well #1
10
0
637
15
0.09
41

The above calculates the formula =

$$Q = \frac{8.8 * (\text{Efficiency}) * \text{hp}}{\text{depth to water} + 2.31 * (\text{psi}) + \text{friction}}$$

Assumptions: %70 efficiency.
 No Friction

Examiners Notes:

Actual measurement with panametric flow meter was 32 gpm. This measurement is 21% less than the theoretical value of 42 gpm calculated above and well within the 35% error bounds expected with a theoretical calculation



Figure 1. Well Head.



Figure 4. Pipe from the well to the hose that fills the truck.



Figure 2. Newly placed well tag.



Figure 5. 5,000 gallon truck filled for transport to holding tanks at station.



Figure 3. New well tag location.



Figure 6. Portable generator used to power the pump.



Figure 7. Tanks at the Juniper Butte Range Station that are filled with water transported from the well. The smaller tank in front is the 6,000 gal. tank used for domestic and industrial associated with this right.



Figure 9. Panorama 2 of pump house. Large red valves and pumps are for Fire Protection under WR 51-7375.



Figure 8. Panorama 1 of pump house. Large red valves and pumps are for Fire Protection under WR 51-7375.



Figure 10. Panorama 3 of pump house. Large red valves and pumps are for Fire Protection under WR 51-7375.



Figure 11. Panorama 4 of pump house. Large red valves and pumps are for Fire Protection under WR 51-7375. Black pump in right side of the picture is the 2 hp pump that services the domestic/industrial for this permit.



Figure 12. 2hp Grundfos pump that supplies water from the 6,000 gallon tank to the facilities for domestic and industrial use.



Figure 13. Pictures to show water use.



Figure 14. Pictures to show water use.

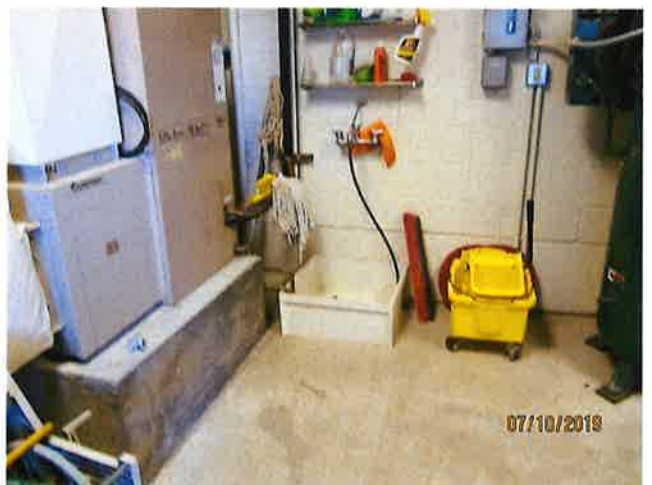


Figure 15. Pictures to show water use.



Figure 16. Pictures to show water use.



Figure 17. Pictures to show water use.