

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 98-8016

Exam Date: 07/19/2018

1. Current Owner:
TIM L HARLAN PO BOX B BONNERS FERRY ID 83805 AND/OR
REBECCA M HARLAN PO BOX B BONNERS FERRY ID 83805
2. Accompanied by: Tim Harlan
Phone No: (206) 321-1111
Address: Same as above
Relationship to permit Holder: Permit holder

3. **SOURCE:**
GROUND WATER

Method of Determination: Arcmap and GPS.

B. OVERLAP REVIEW

1. Other water rights with the same place of use: YES Overlap

Water Right No.	Source	Purpose of Use	Basis
98-2037	MISSION CREEK	IRRIGATION	LICENSE

Comments: WR 98-2037 references Mission Creek Water Association for irrigation near the applicant's property, but is not an overlap concern.

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

Water Right No.	Source	Purpose of Use	Basis

Comments: _____

C. DIVERSION AND DELIVERY SYSTEM

1. **LOCATION OF POINT(S) OF DIVERSION:**

GROUND WATER NE¼ SW¼, Sec. 32, Twp 64N, Rge 01E, B.M. BOUNDARY County

Method of Determination: Arcmap and GPS. POD located at -116°22.119, 48°51.072, D0072109

PLACE OF USE: STOCKWATER and COMMERCIAL

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
64N	01E	32										X	X						

Method of Determination: Arcmap and Field Exam.

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.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
D0072109	FRANKLIN ELECTRIC	1.5			

D. FLOW MEASUREMENTS

1.

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

2. Measurements: Unable to perform flow measurement due to piping from POD to POU being a sub-surface installation.

E. FLOW CALCULATIONS

☒ Additional Computation Sheets Attached

Measured Method: See attached Theoretic Pumping Equation worksheet. Theoretic pumping equation calculated 9.5 gpm, with a pump depth of 405 feet operating at 40 psi. Resulting diversion rate = 0.02 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:

$$\text{STOCKWATER component} = 200 \text{ head goats} \times 2 \text{ gal per day} \times 365 \text{ day per year} = 146,000 \text{ gal} / 325,850 \text{ gal/af} = 0.5 \text{ af}$$

$$\text{COMMERCIAL component} = 1,000 \text{ gal per day} \times 365 \text{ day per year} = 365,000 \text{ gal} / 325,850 \text{ gal/af} = 1.1 \text{ af}$$

$$\text{Total Annual Volume} = 0.5 \text{ af (Stockwater)} + 1.1 \text{ af (Commercial)} = 1.6 \text{ af}$$

G. NARRATIVE/REMARKS/COMMENTS

At time of permitting, applicant had applied for a water right that incorporated two separate PODs (wells), which were not connected. Water right 98-7975 was split into two water rights.

Field exam with applicant, Tim Harlan, showed a well providing water for stockwater and commercial uses. Water was diverted from the well for use at a goat farm where applicant made goat milk, cheese, ice-cream, and other products. Water was piped underground to facility, resulting in no access for flow measurements. Theoretic pumping equation derived 0.02 cfs from the applicant's 1.5 hp pump, as such theoretical pump equation values will be used to license this water right for a diversion rate of 0.02 cfs.

At time of exam, stockwater was being used for 200 head of goats, and commercial use was observed for the cleaning of processing equipment. Water was used every day of the year, supporting a 365 day season of use. The applicant stated 1,000 gallons a day was being used to clean production equipment and sterilize work area prior to next day's use. During licensing, POU was traced out to include 3 structures that housed goats, and main commercial operation building. The stockwater component annual volume was calculated as:

$(200 \text{ head stock} \times 2 \text{ gal per day} \times 365 \text{ gal per year}) / 325,850 \text{ gal/af} = 0.45 \text{ af}$, which was rounded up to 0.5 af to comply with department significant figures (application process No.6 admin memo).

Commercial annual volume was calculated as:

$(1,000 \text{ gal per day} \times 365 \text{ day per year}) / 325,850 \text{ gal/af} = 1.1 \text{ af}$.

A maximum diversion volume was derived by adding total annual volume of stockwater and commercial components (SW 0.5 af + COM 1.1 af = 1.6 af, see volume calculations above). As a result, 1.6 af Maximum Volume will be applied to license.

At time of field exam and split of water right 98-7975, the domestic component was removed as there was no domestic water usage for water right 98-8016's POD and POU.

Conditions 046, 082, X01, and 187 were removed from license. Condition X35 was added stating that water rights 98-7975 and 98-8016 when combined shall not exceed a total diversion rate of 0.02 cfs for stockwater purposes. All other conditions remain on license. WR 98-2037 overlaps this water right, but is for irrigation use by Mission Creek Water Association not in the area of this water right and is not a concern.

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

H. RECOMMENDATIONS**1. Recommended Amounts**

Beneficial Use	Period of Use	Rate of Diversion	Annual Volume
STOCKWATER	01/01 to 12/31	0.02 CFS	0.5 AF
COMMERCIAL	01/01 to 12/31	0.02 CFS	1.1 AF

Totals: 0.02 CFS 1.6 AF

2. Recommended Amendments

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

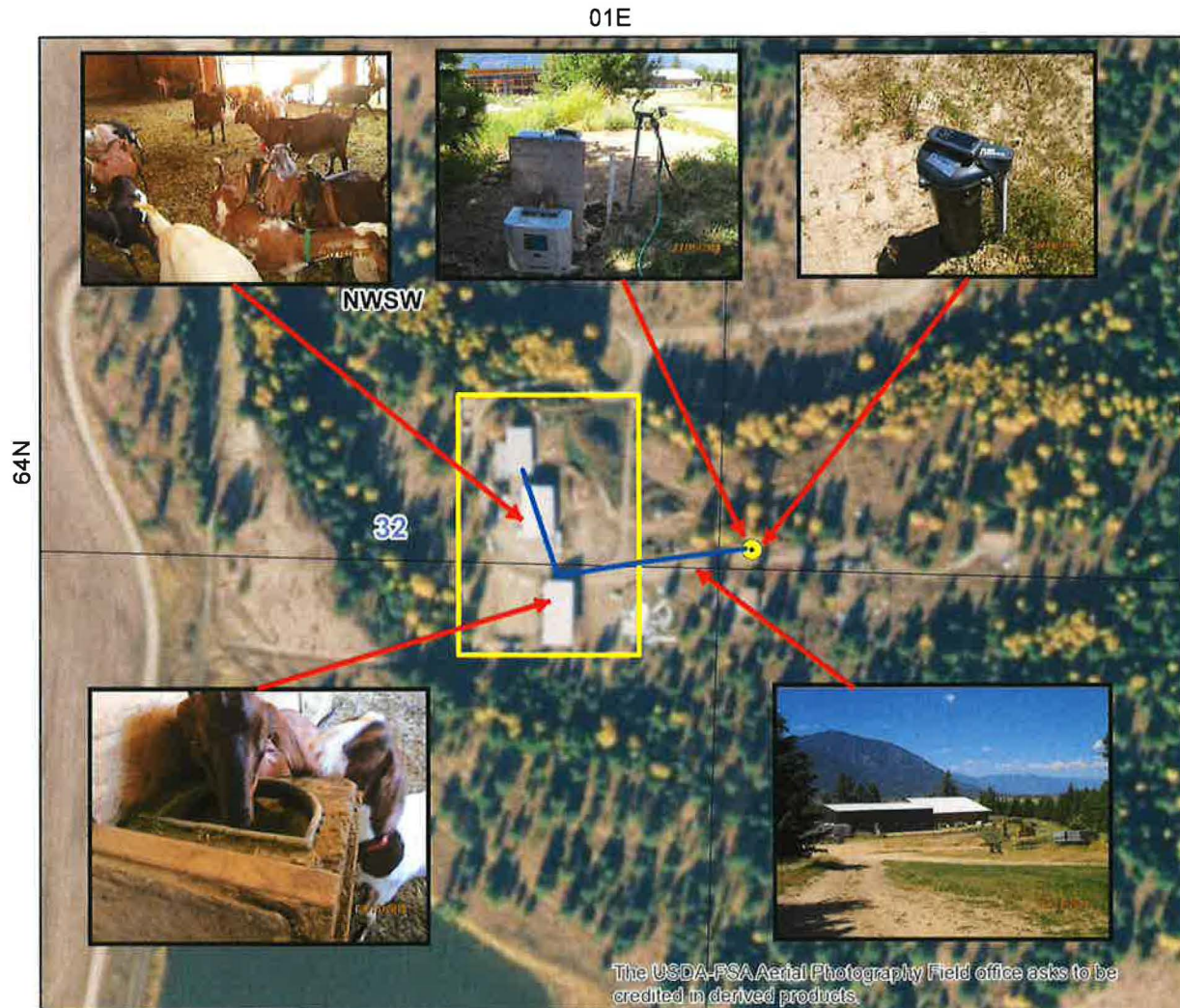
☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☒ None

I. AUTHENTICATION Luke Bates - Water Resource Agent

Field Examiner's Name Adam Fink Date 4/21/2020
 Reviewer Joel Bates Date 4/15/2020

State of Idaho
Department of Water Resources
Attachment to Field Exam
98-8016

STOCKWATER system diagram.



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

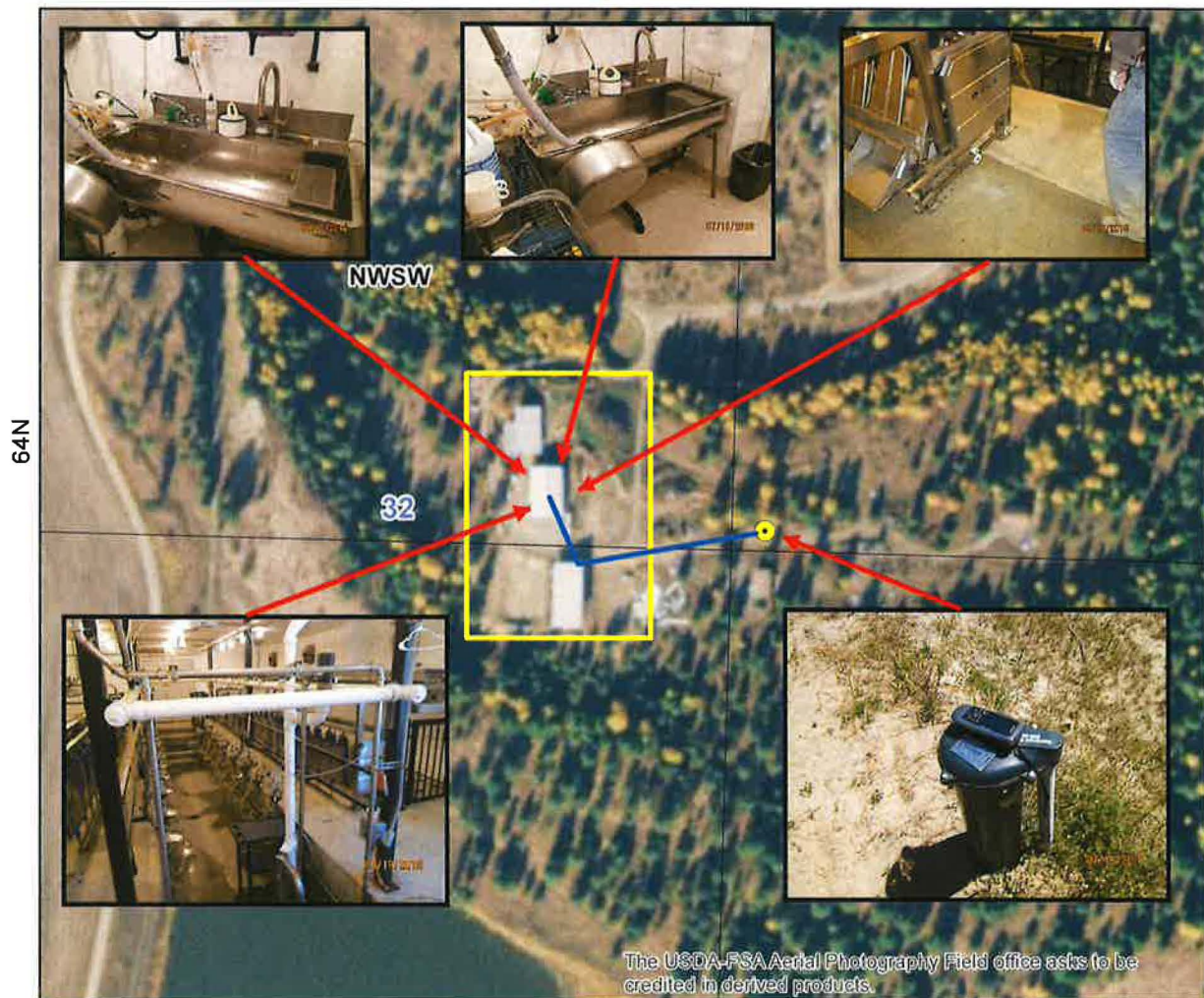
0 0.035 0.07 0.14 Miles



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COMMERCIAL system diagram.

01E



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

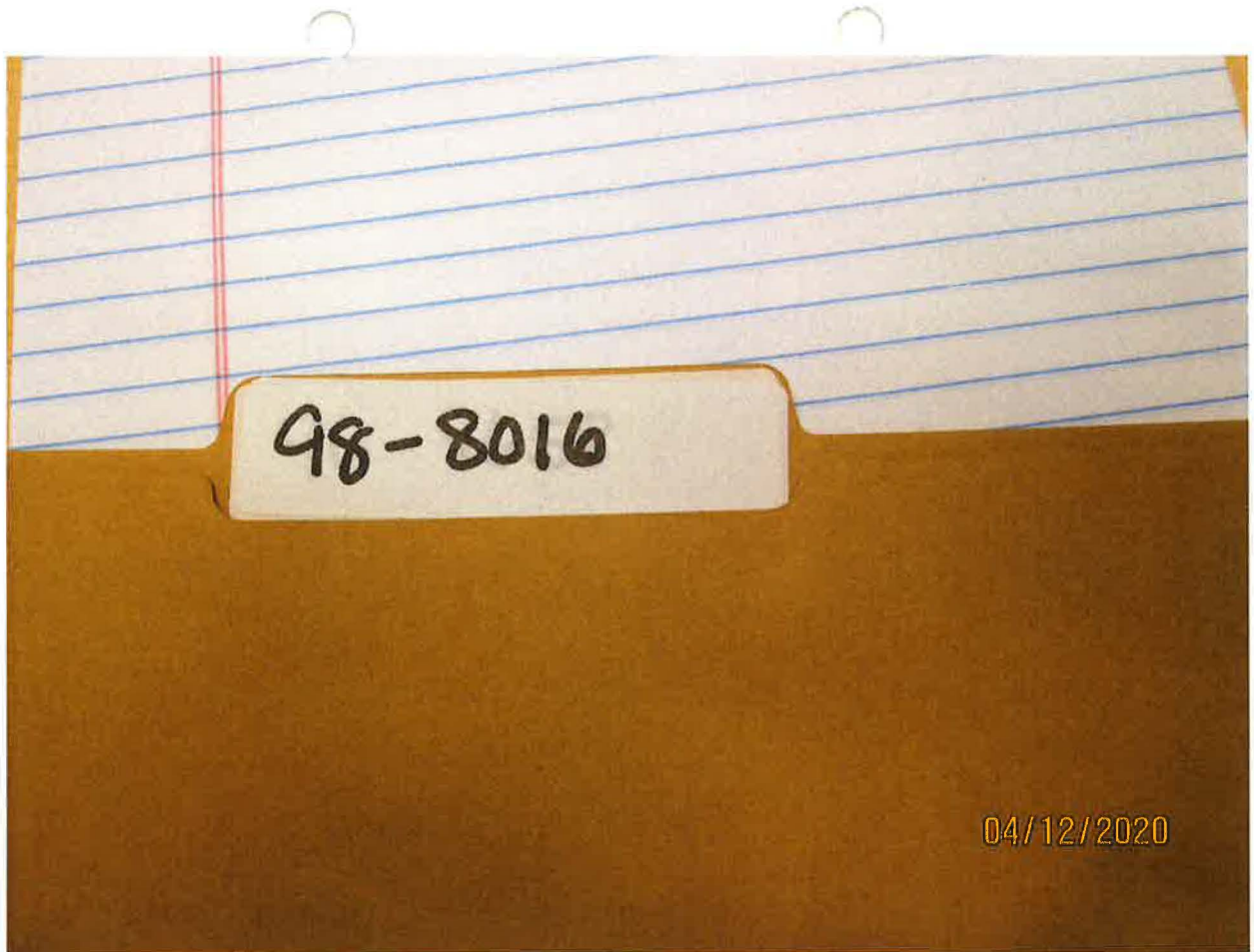
0 0.035 0.07 0.14 Miles



THEORETICAL PUMPING EQUATION FOR WR# 98-8016

Theoretical Pumping Equation is required because system did not allow for a proper measurement. Pump is estimated to be at 405 ft, and running at 40 psi.

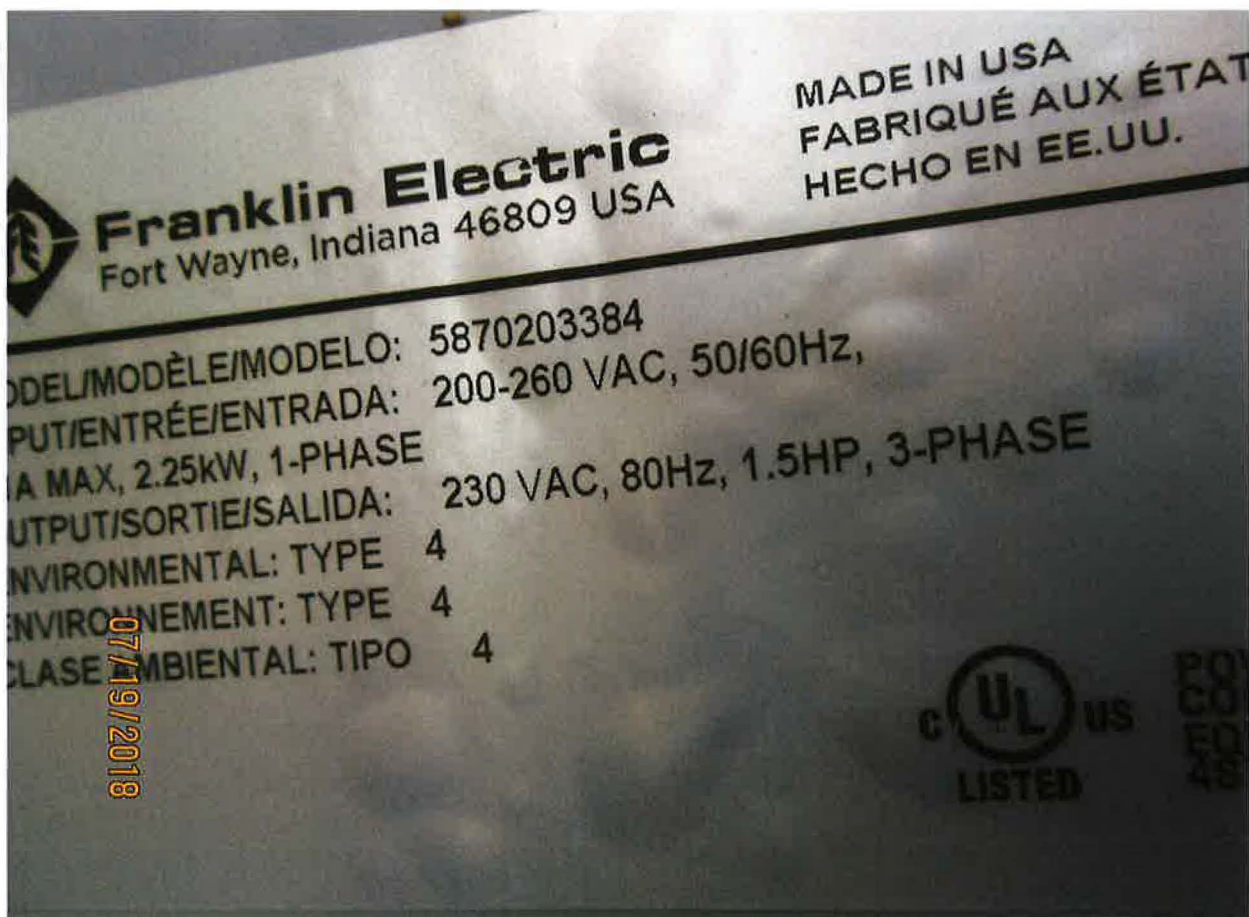
<u>PUMP EQUATIONS</u>						
WATER RIGHT No.			98-8016			
		HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
Q =	HP*8.8*Eff/H	1.5	497.517	0.8	405	40
Q =		0.021 cfs		9.5 gpm		



POD D0072109



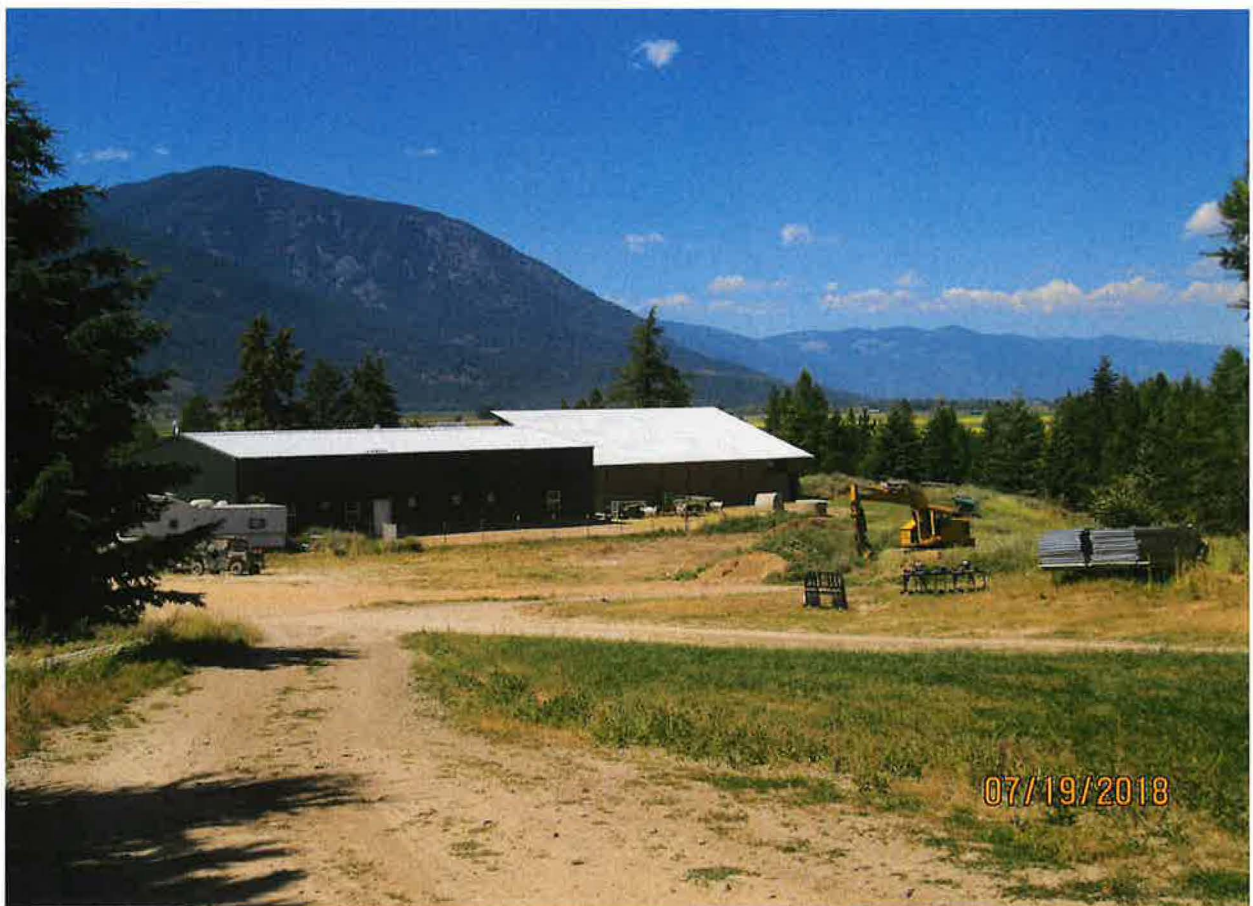
POD D0072109



1.5 HP PUMP



WELL AND ELECTRICAL SYSTEM



COMMERCIAL AND STOCKWATER POU



COMMERCIAL AND STOCKWATER POU

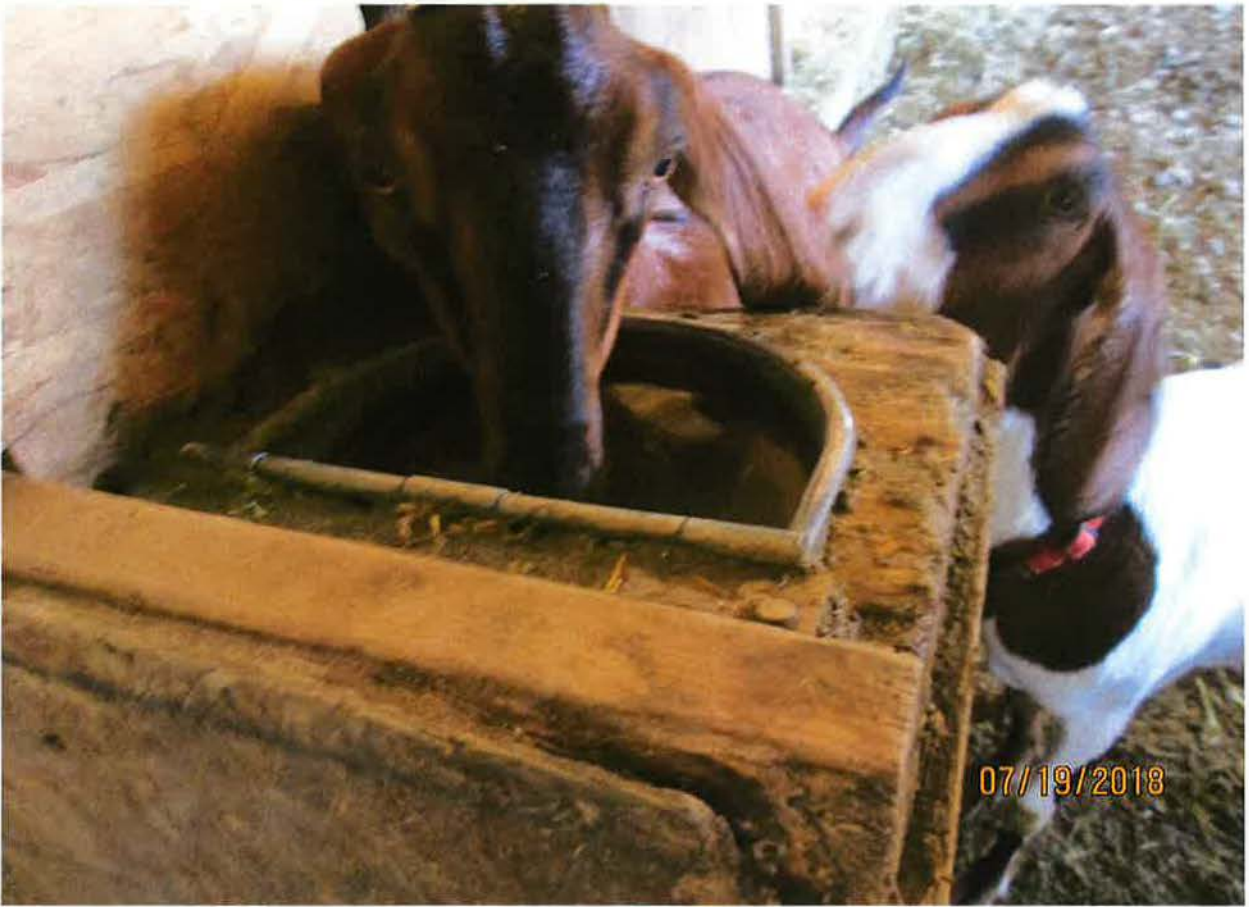


COMMERCIAL POU



COMMERCIAL POU





STOCKWATER POU

