

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 57-11595

Exam Date: 8/4/2012

1. Current Owner: ROHL HIPWELL
18125 OREANA LOOP RD
OREANA ID 83650
(208)834-2431
2. Accompanied by: Rohl Hipwell
Phone No: 208-834-2431
Address: 18125 Oreana Loop Road Oreana, ID 83650
Relationship to Permit Holder: Owner

3. SOURCE TRIBUTARY
GROUND WATER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: 57-53
2. Other water rights with the same point of diversion: 57-7060

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

GROUND WATER SW1/4SE1/4SW1/4 Sec. 25, Twp 04S, Rge 01W, B.M.

OWYHEE County

Method of Determination: Field Verification with handheld Garmin GPS unit

2.

PLACE OF USE: IRRIGATION

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
04S	01W	25	34.0	12.0		9.0													55.0

Total Acres: 55

Method of Determination: Aerial photography and field verification

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>Motor Make</u>	<u>Hp</u>	<u>Motor Serial No.</u>	<u>Pump Make</u>	<u>Pump Serial No. or Discharge Size</u>
Irrigation Well	High Thrust – US Electric Motors	100Hp	ID# R-9981-00-799	R2096739	

*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>
Tyme Flight Magnetic Flow Meter						

2. Measurements:

Flows ranged from 251 to 609 gpm. It is assumed that the wide variation in measured flows is due to leaks in the distribution system causing pressure fluctuations during the measurement. Therefore, theoretical calculations were also conducted to help verify the flow measurements and determine an accurate flow rate to assign at licensing.

E. FLOW CALCULATIONS

☒ Additional Computation Sheets Attached

Measured Method:

Theoretical Horsepower Calculations.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 55 \times 4.5 = 247.5 = 248 \text{ AF}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 1.1 \times 280 \times 1.9835 = 611 \text{ AF}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 248 \text{ AF}$$

2. Volume Calculations for Other Uses: None

G. NARRATIVE/REMARKS/COMMENTS

The field exam for permit 57-11595 was conducted on 10/4/2012 by myself (Dennis Owsley) and Craig Tesch. Rohl Hipwell, the permit holder and land owner, accompanied us on the exam. The permit authorized the diversion of 1.10 cubic feet per second (cfs) of groundwater for irrigation purposes. The source of water for this permit is groundwater, diverted from a single well located on the property.

The point of diversion for this permit is a 243 foot deep well. The rate of diversion was determined by measuring the capacity of the well discharge using a Tyme Flight magnetic flow meter. During the field examination the flow from the well was measured between 251 and 609 gallons per minute. There were numerous leaks in the distribution line, causing the pressure to fluctuate during the time of the measurement. It is assumed that pressure variations are what attributed to the wide range in flows measured during the exam. To help verify the flows measured during the exam were representative of the system, a theoretical calculation was performed. Based on the pressure observed during the exam and measurement, the flow rate should have been much higher than what was measured (see attached worksheet) given the horsepower of the pump. Therefore, it appears this well is capable of producing the maximum diversion rate permitted, which is within the range of flows measured during the exam.

Water is pumped from the well into the distribution lines that operate pivots that irrigate the place of use. The place of use is an agricultural field that based on aerial photography, has had approximately 55 acres irrigated. During the field exam, it was observed that a portion of the irrigated land was on BLM property. This section of the irrigated place of use has been eliminated from the legal description of the place of use. The owner was notified during the exam that he was not authorized to irrigate the adjoining BLM ground. Twelve acres irrigated in the NW NE corner of T04S R01W Section 25 were not identified on the permit and will require an amendment to be included in the license.

The volume of water diverted on an annual was estimated based on the standard methods used during the field exam process. The calculated annual volume limit using 55 acres irrigated resulted in a volume limit of 248 acre-feet. This volume was based on the irrigation requirement of 4.5 feet to the acre.

Based on the field exam, a review of aerial photographs and the interview with the current owner, it appears the water authorized through this permit is being put to beneficial use. I recommend a maximum diversion rate of 1.10 cfs and an annual volume of 248 AF be licensed for irrigation uses.

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

H. RECOMMENDATIONS

1. Recommended Amounts

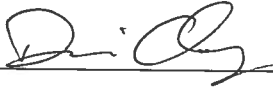
<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
IRRIGATION	03/01 to 11/15	1.100 CFS	248.00 AF
<u>Totals:</u>		1.100 CFS	248.00 AF

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 Dennis Owsley  Date 1/28/13

Reviewer _____ Date _____

Field exam photos for 57-11595. Photos taken by D. Owsley and C. Tesch on 10/4/2012



Photo 1. View of POD.

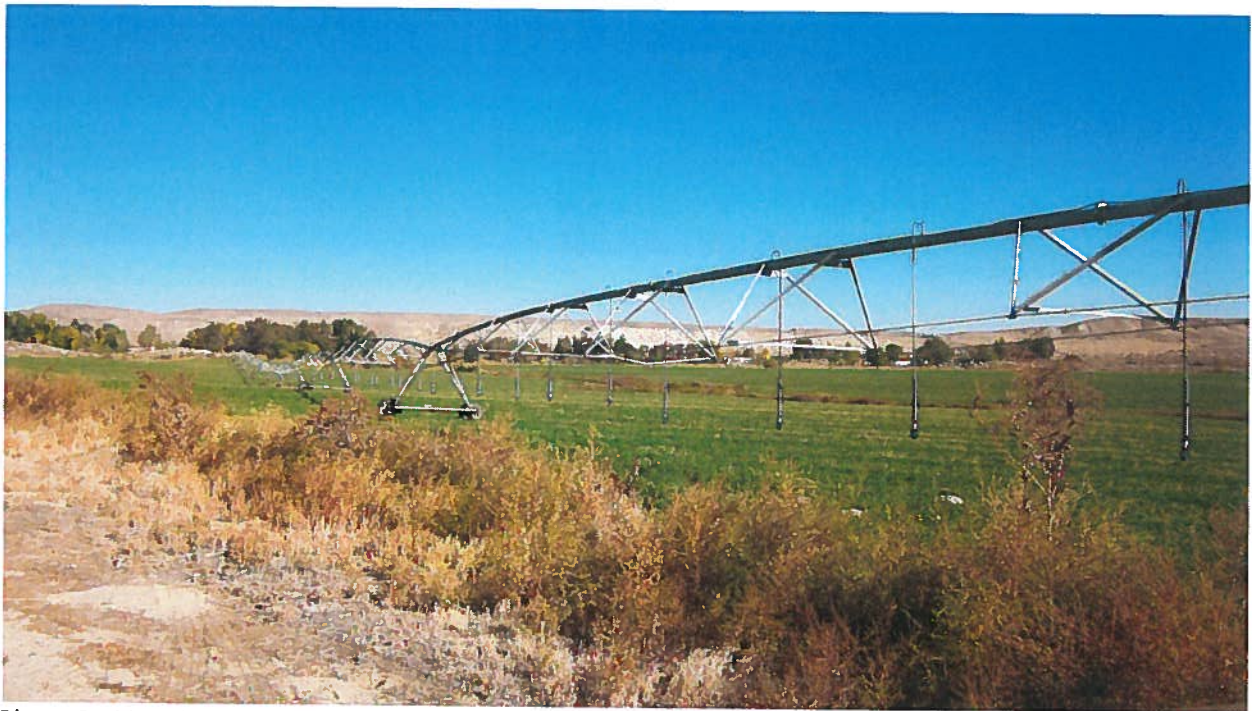


Photo 2. Pivot in operation.

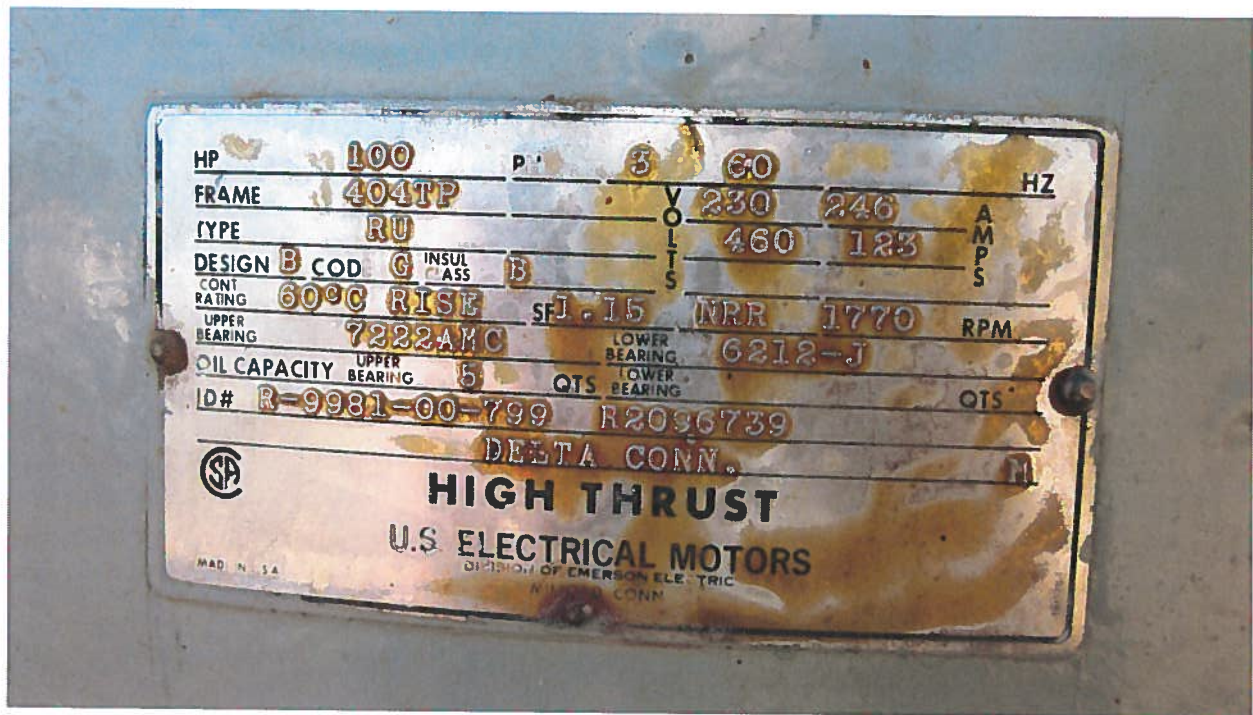
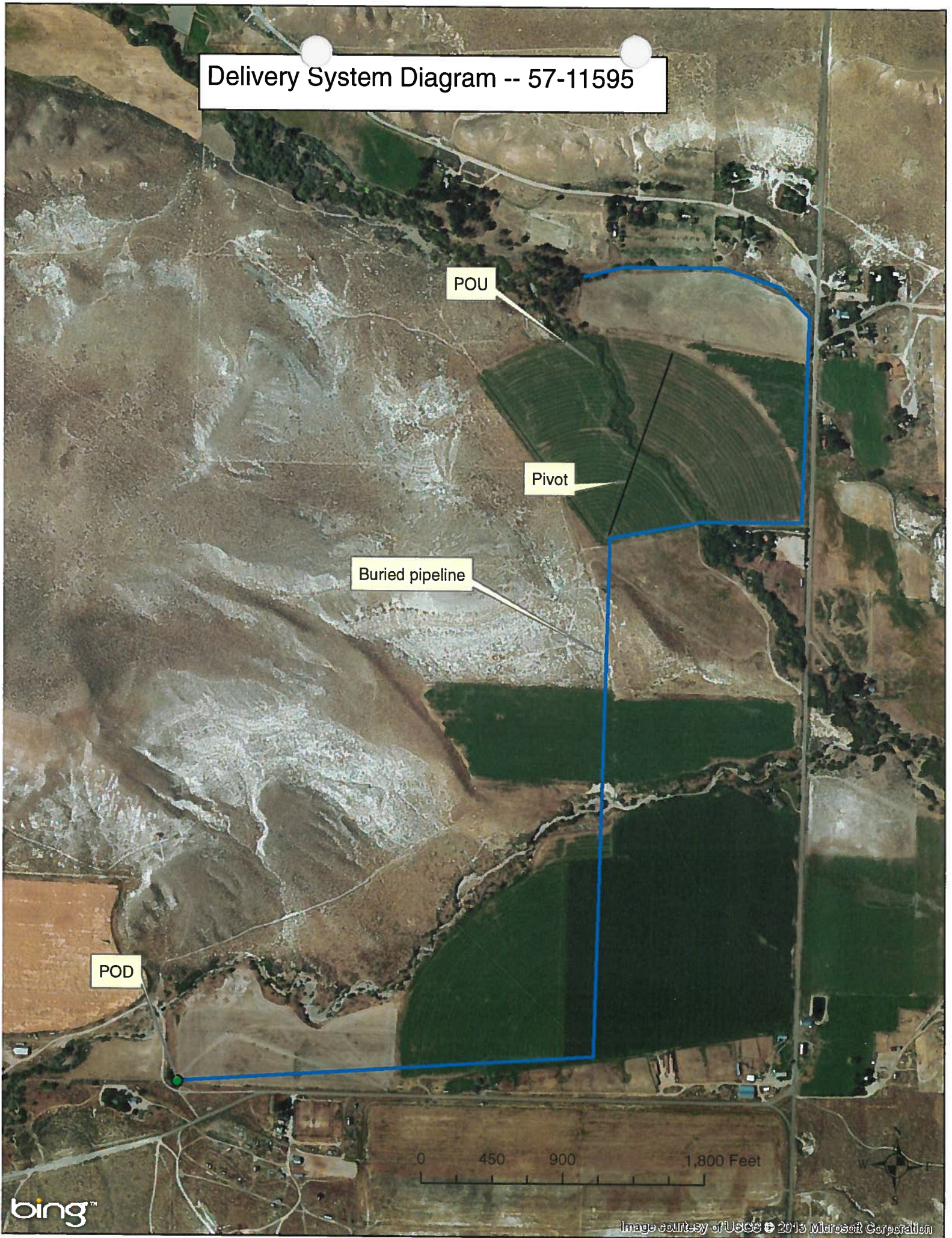
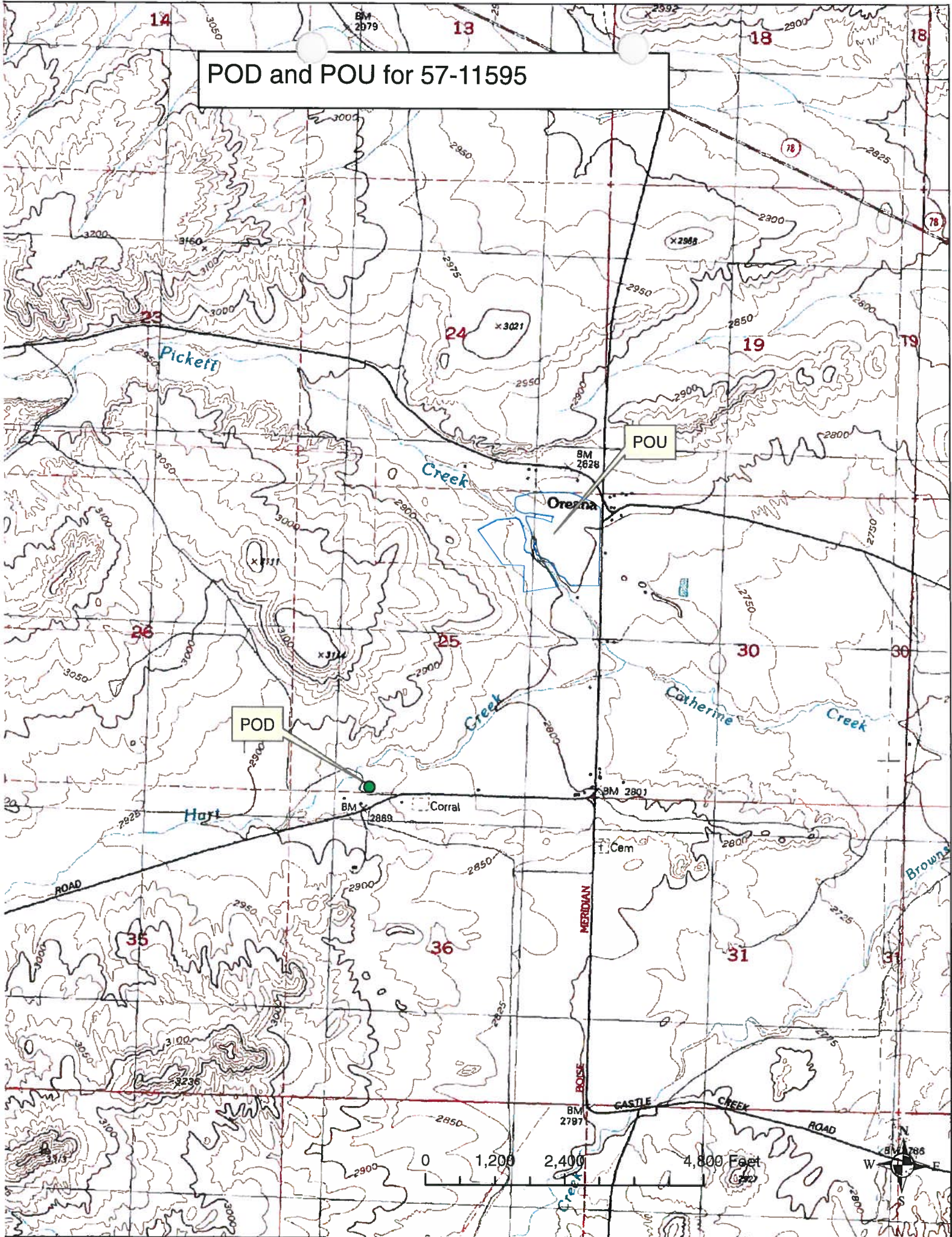


Photo 3. Pump Tag

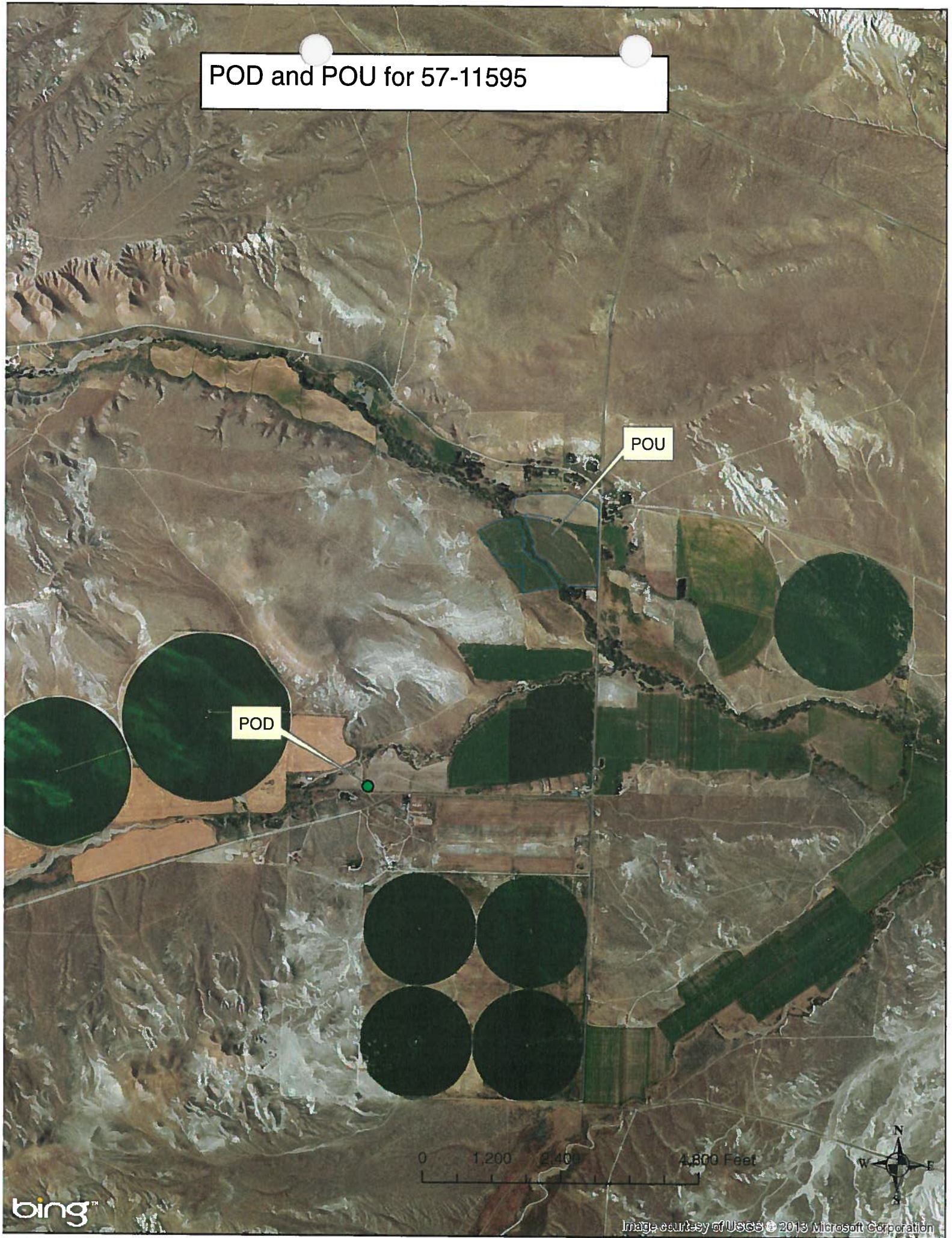
Delivery System Diagram -- 57-11595



POD and POU for 57-11595



POD and POU for 57-11595



POD and POU for 57-11595

POU

POD

0 450 900 1,800 Feet



THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 57-11595
 Examiner: D. Owsley
 Date of Field Exam: 10/4/2012

P/D No.:	Option 1	OPTION 2	OPTION 3	
PUMP HORSEPOWER	100	100	100	
BOOSTER HORSEPOWER	0	0	0	
PUMPING LEVEL	180	180	180	
DISCHARGE PRESSURE	29	50	80	
FRICTION	0	0	0	
RATE OF FLOW (cfs)	2.49	2.08	1.69	AVE
(gpm)	1119.4	935.6	757.9	2.09

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.

Examiners Notes:

Lift was estimated as it was unknown how deep the pumping level was. The flow rates determined through this calculator are significantly higher than what was measured during the exam. It is assumed that the difference in measured flows versus the theoretical flows are due to pressure fluctuations that occurred during the measurement.