

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 22-7512

Exam Date: 1/14/2015

1. Current Owner: BROWN INC
C/O GEORGE BROWN
1439 CAMBRIDGE DR
IDAHO FALLS ID 83401
(208)522-9552
2. Accompanied by: Gordon Smith
Phone No: 356-3089
Address: 154 N 4 E, Rexburg, ID 83440
Relationship to Permit Holder: Lessee

3. SOURCE TRIBUTARY
GROUND WATER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: 22-2254, 22-13453
2. Other water rights with the same point of diversion: 22-2254, 22-13453 (POD for 22-7067 is in the same QQ, but is likely from a different well. A well construction search showed more than one well in the QQ).

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

GROUND WATER SE1/4SW1/4 Sec. 35, Twp 06N, Rge 41E, B.M.
MADISON County

Method of Determination: GPS point collected during SRBA field exam in 2005.

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	
05N	41E	1			2.5			10.0	28.0	8.3	38.0	38.0	38.0	38.0		8.0	10.3		219.1
								L 4											
05N	41E	2	13.0	13.0	31.0	33.0	13.0	11.0	15.0	25.0	38.0	37.0	39.0	37.0	38.0	38.0	35.0	38.0	454.0
			L 1	L 2			L 3	L 4											
05N	41E	3				4.0									36.0				40.0
05N	41E	12		5.3			17.0												22.3
06N	41E	34			10.0	38.0									29.0			39.0	116.0
06N	41E	35	39.0		39.0	39.0		38.0	38.0	36.0	39.0	40.0	37.0	40.0	38.0	38.0	36.0		497.0

Total Acres: 1348.4

Method of Determination: Most of the place of use (1297 acres) was previously confirmed during the SRBA review of right nos. 22-2254 and 22-13453. Review of 1991 Landsat imagery revealed an additional 51.4 acres irrigated under this permit during the development period.

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>
A0015907	US Electrical	700	643051	Layne/Bowler	D19037
Booster	Marathon Elec	150		Aurora	90-15328

*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>
Theoretical						

2. Measurements:

A partial exam was conducted by Steve Mueller in 2000. On the field report he wrote, "This system doesn't lend itself to using the polysonic." During SRBA claims review in 2005 Harold Jones conducted a field exam for related right nos. 22-2254 and 22-13453. Harold did not conduct a flow measurement, but it was clear from his exam that the system had changed since proof was made in 1991. Therefore, calculating the theoretical capacity of the system as it existed in 1991 is the best way to determine rate and volume for 22-7512. The proof of beneficial use form, in combination with the two partial exams, contain all the information needed to compute the flow rate.

E. FLOW CALCULATIONS

____ Additional Computation Sheets Attached

Measured Method: Theoretical capacity of the system

$$Q = (HP * EFF * 8.814) / ((PSI * 2.308) + \text{Lift})$$

$$Q = (850 * 0.7 * 8.814) / ((80 * 2.308) + 720)$$

$$Q = 5.80 \text{ cfs}$$

Of the 5.80 cfs capacity, 5.32 cfs was decreed under right nos. 22-2254 and 22-13453. Therefore, the additional 0.48 cfs can be licensed under 22-7512.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 1348.4 \times 3.5 \text{ af} = 4719.4 \text{ af}$$

4719.4 af less the 2429.7 af decreed to right nos. 22-2254 and 22-13453 leaves 2289.7 af for this permit.

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.48 \text{ cfs} \times 214 \text{ days} \times 1.9835 = 204 \text{ af}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 204 \text{ af}$$

2. Volume Calculations for Other Uses:

G. NARRATIVE/REMARKS/COMMENTS

Data gleaned from the partial field exams conducted by Steve Mueller and Harold Jones were combined with theoretical calculations and imagery analysis in order to complete this field exam. Permit 22-7512 required the installation of a flow measurement port in order to facilitate flow measurement by IDWR. Installation of the measurement port could not be confirmed by either of the partial field exams. However, with the advent of portable flow meters, measurement ports are no longer necessary for measurement. The point of diversion is not currently located within a water district. In order to address the need for measurement if required in the future, I propose including condition 01M on the license.

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	04/01 to 10/31	0.480 CFS	204.00 AF
<u>Totals:</u>		0.480 CFS	204.00 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

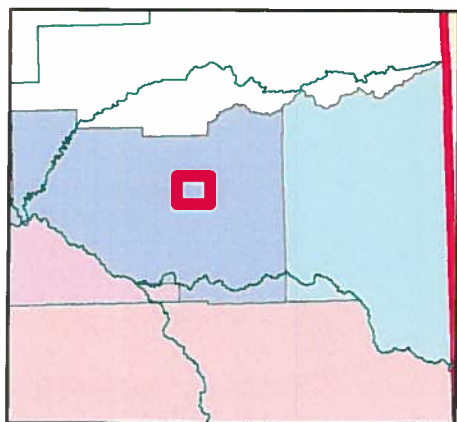
Field Examiner's Name MICHAEL HOLLIDAY Date 1/15/2015
 Reviewer _____ Date _____



Idaho Department of Water Resources

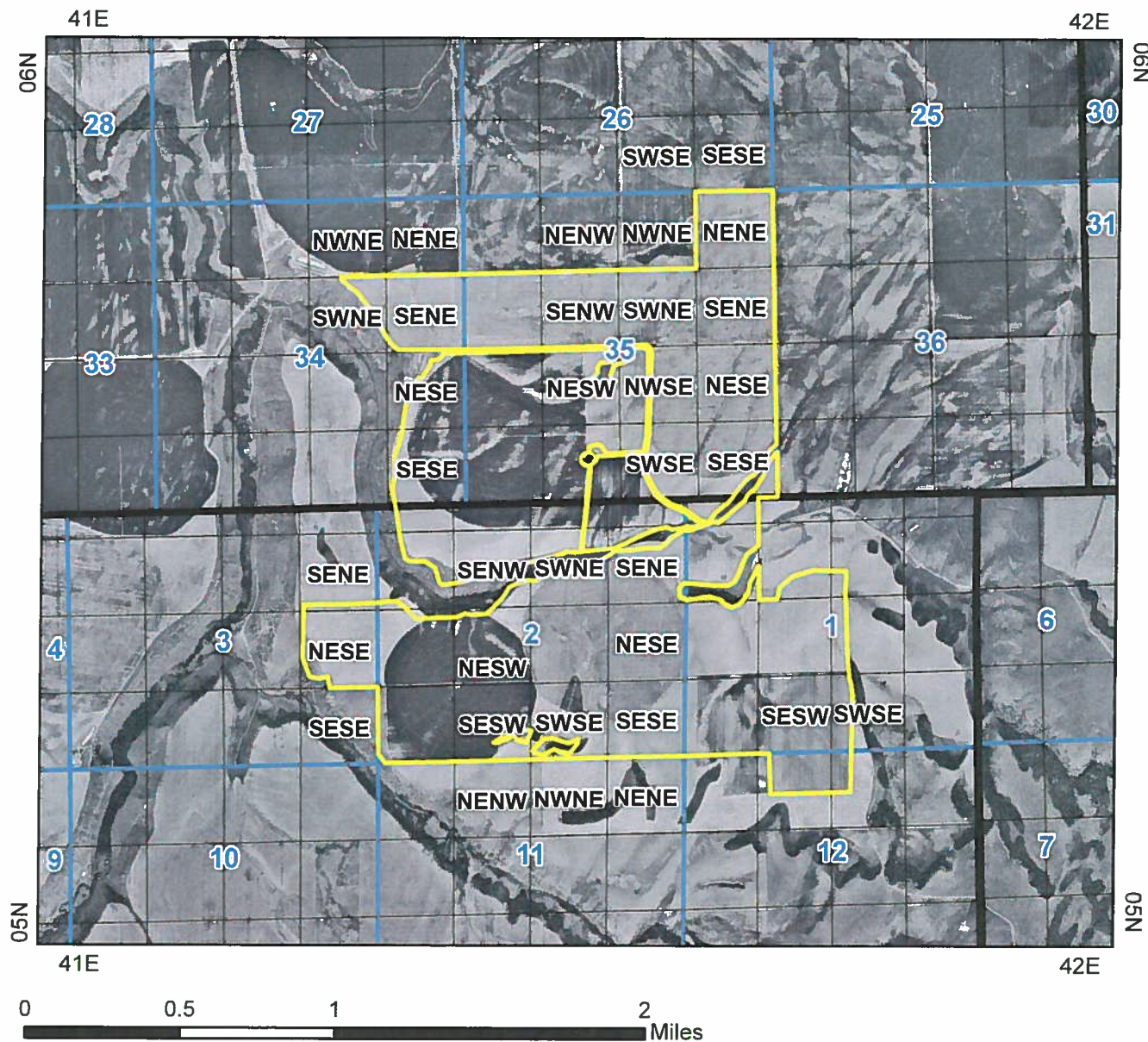
**Water Right
22-7512
(IRRIGATION)**

- Point of Diversion
- Place of Use
- State Outline
- Townships
- PLS Sections
- Quarter Quarters

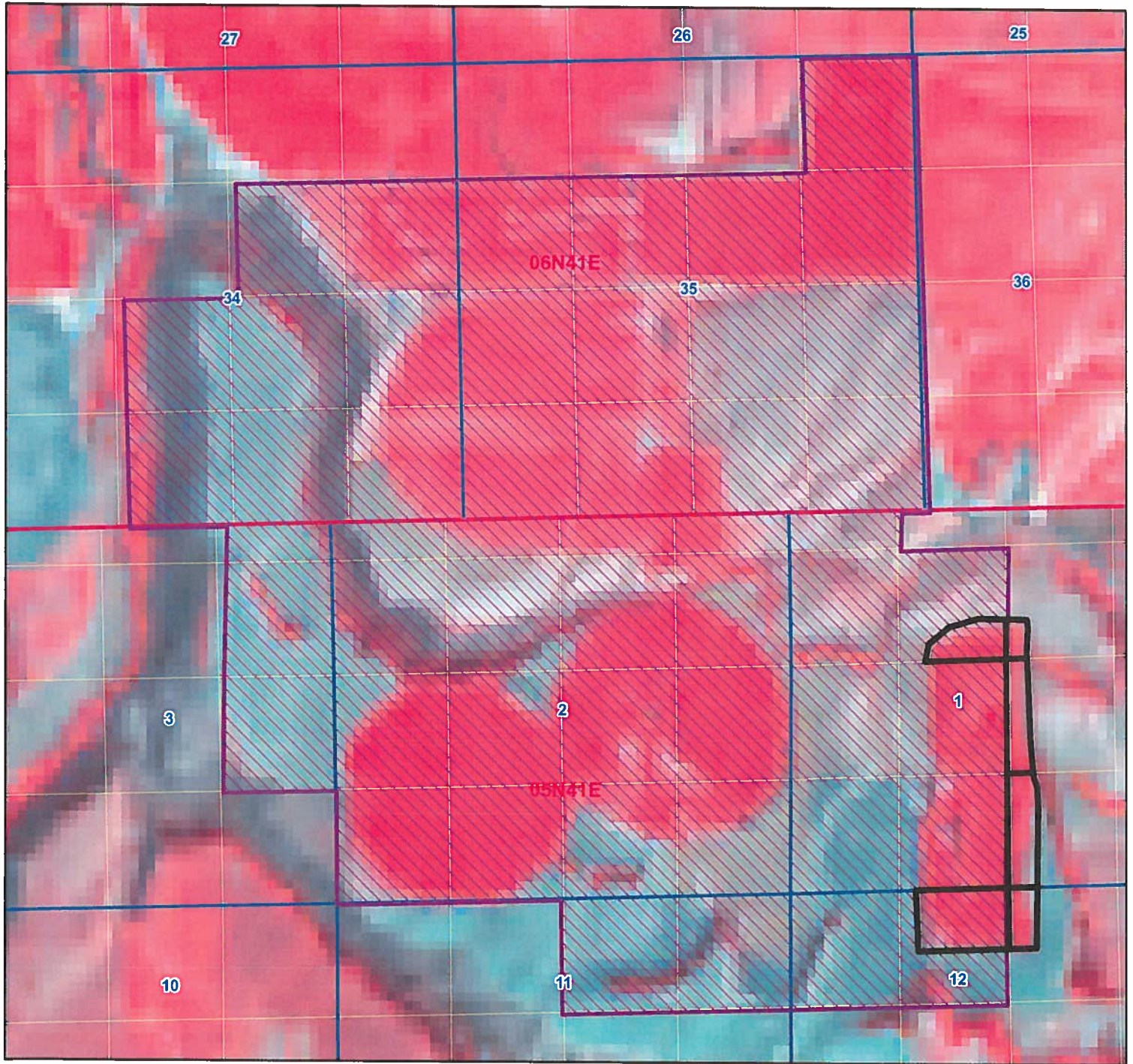


**Madison County
IDWR Basin 22**

Prepared by Holliday, Michael
On January 15, 2015
1992 Aerial Photography



State of Idaho
Department of Water Resources
Permit No. 22-7512
Date: 1/13/2015



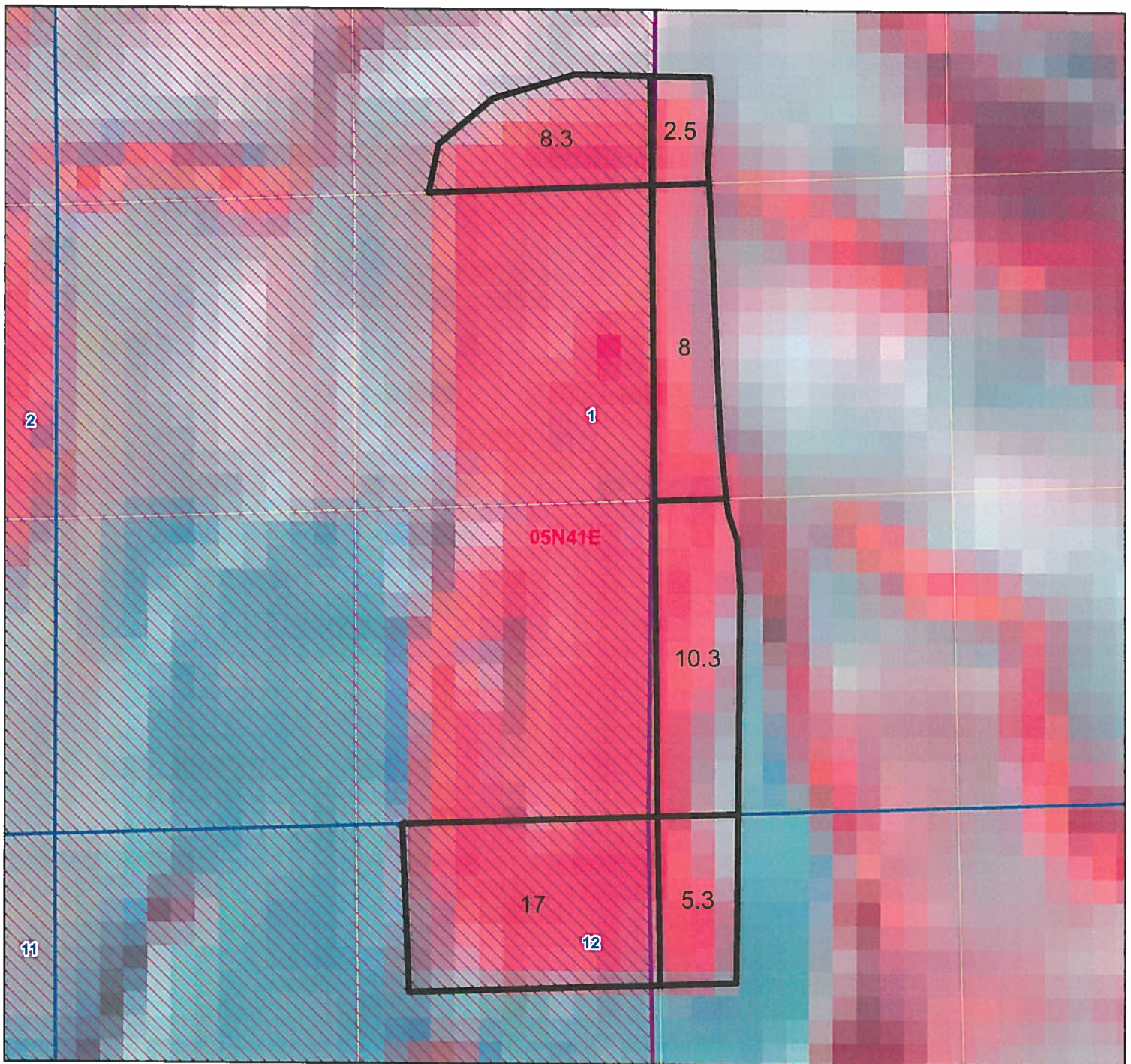
1991 Landsat Photo

Legend

-  Acres recommended
-  Permit POU
-  Township/Range
-  Sections
- QQ



Date: 1/13/2015



1991 Landsat Photo

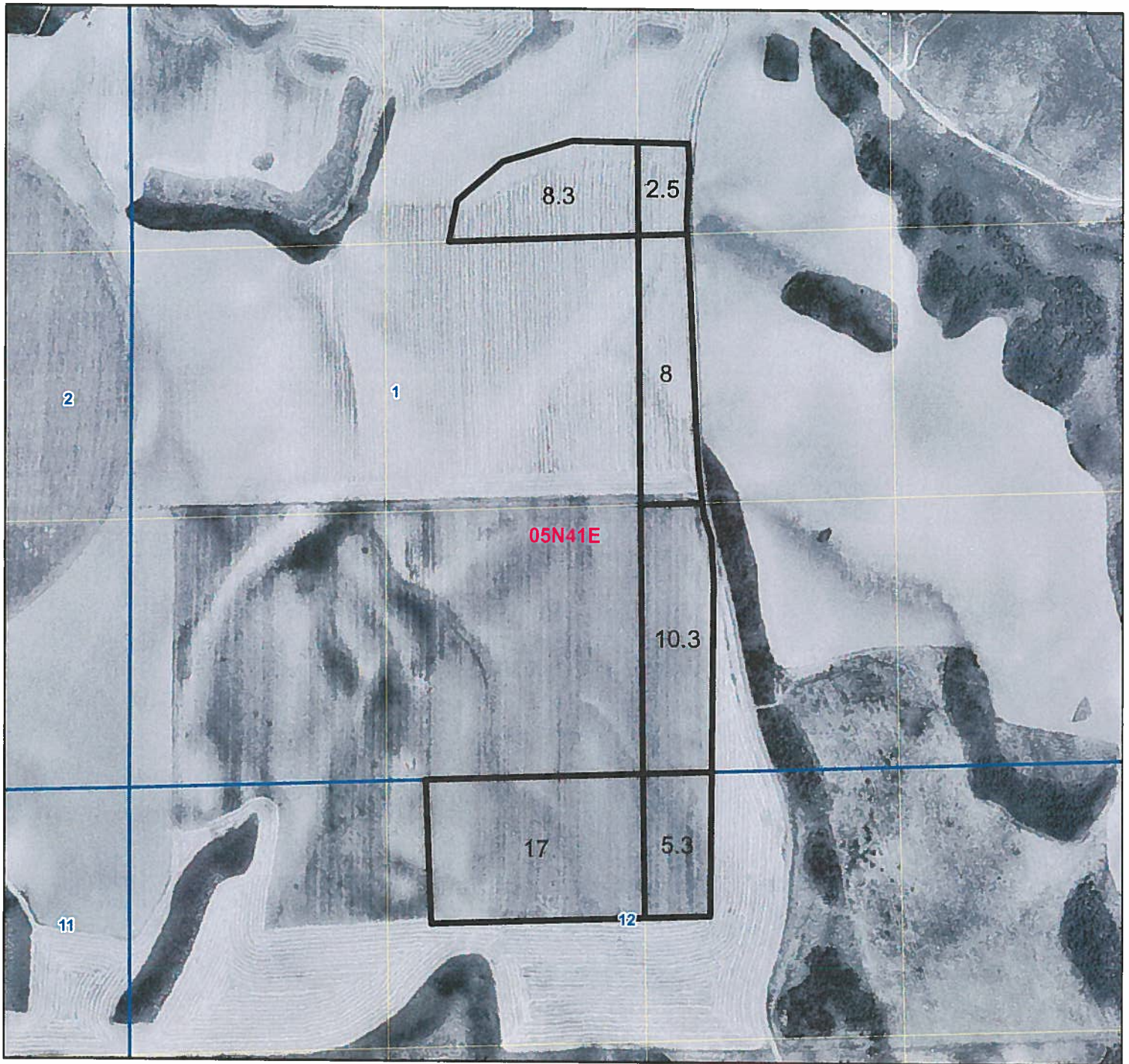
Legend

-  Acres recommended
 Permit POU
 Township/Range
 Sections
 QQ



Map prepared by Michael Holliday

State of Idaho
Department of Water Resources
Permit No. 22-7512
Date: 1/13/2015



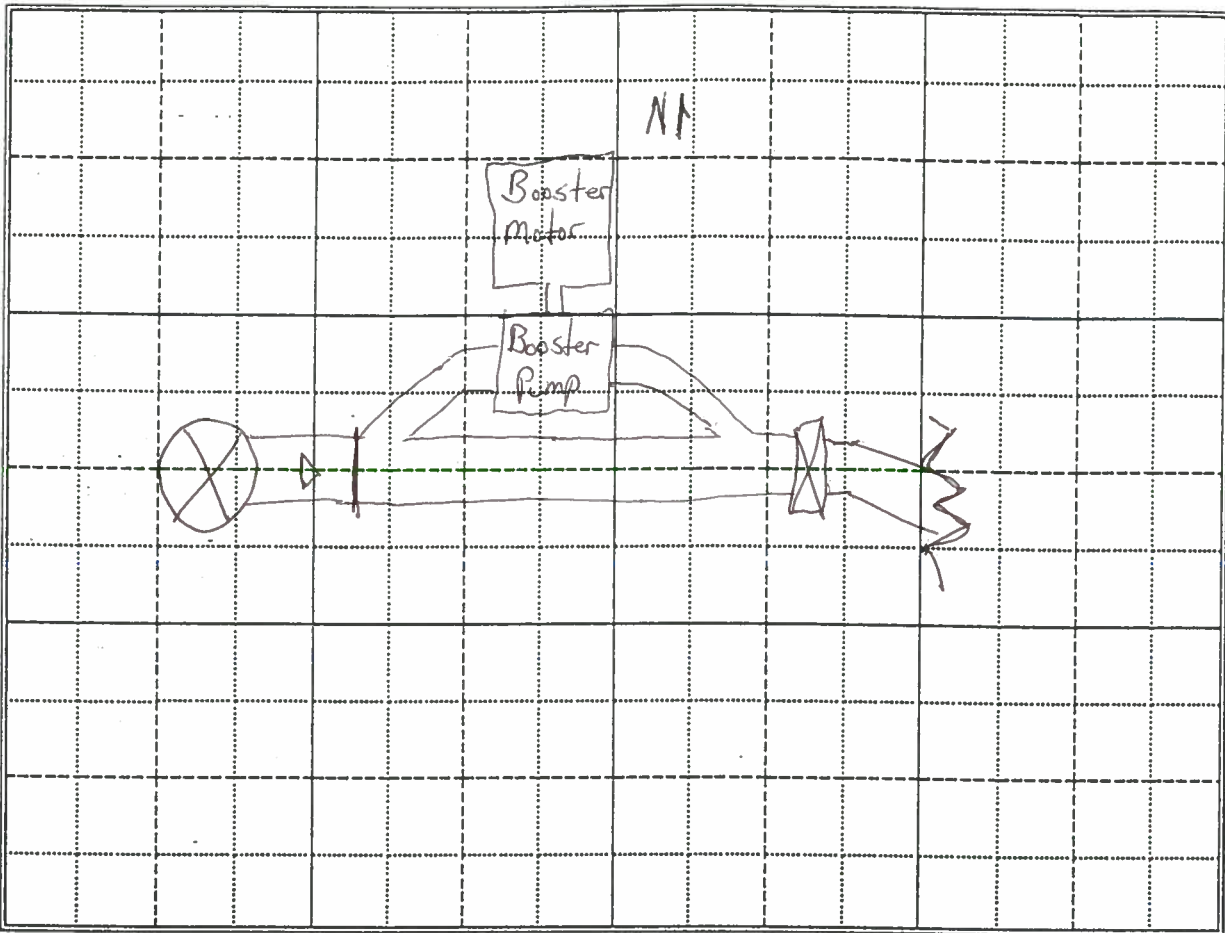
1992 DOQQ Photo

Legend

-  Acres recommended
-  Township/Range
-  Sections
- QQ



3. **Delivery System Diagram:** Indicate all major components and distances between components. Indicate weir size/ditch size/pipe i.d. as applicable.



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 ^{ID} Serial No.	Pump Make	Pump Serial No. or Discharge Size
well	US Electrical	700	643051	Layne/Bowler	D 19037
Booster	Marathon Elec.			Aurora	90-15328

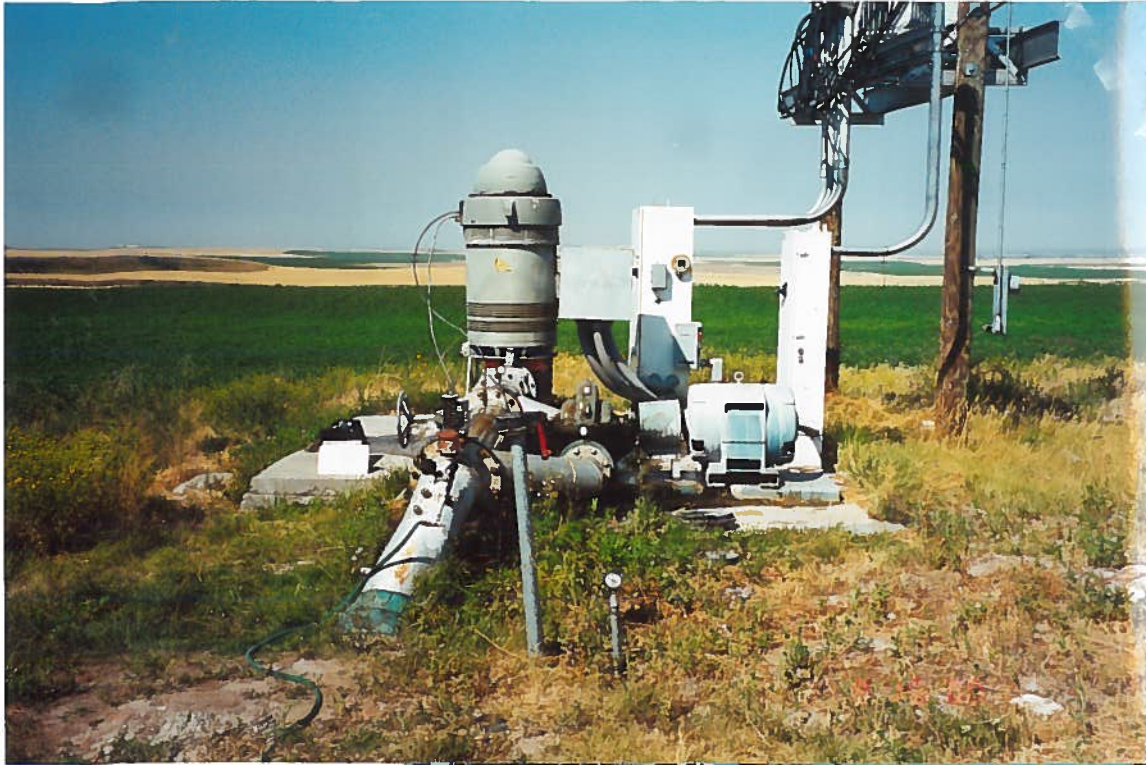
*Code to correspond with No. on map and aerial photo

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date

2. Measurements: _____



22-7512