

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 63-11984
Exam Date: 04-24-17

1. Current Owner:
MARK JOHNSON 4690 N BURT PL EAGLE ID 83616 (208)914-1772 AND
NANCY STONE 4690 N BURT PL EAGLE ID 83616 (208)914-1772
2. Accompanied by: MARK JOHNSON
Phone No: ABOVE
Address: ABOVE
Relationship to Permit Holder:

3. **SOURCE:**
GROUND WATER
- TRIBUTARY:**
N/A

B. OVERLAP REVIEW

1. Other water rights with the same place of use: No overlap for POU. Surface water not available at this location.
2. Other water rights with the same point-of-diversion: The well is also used to provide water for domestic use in the home. There is no water right license associated with the domestic use.

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

GROUND WATER SE¼SE¼ Sec. 30, Twp 05N, Rge 01E, B.M. ADA County

Method of Determination:

2. GPS: N 43° 44.266 W 116° 22.508

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	01E	30																3.4	3.4

Total Acres: 3.4

Method of Determination: The irrigated acreage was measured from 2015 aerial imagery. Confirmed during the site visit. All acres included in the total are irrigated from the system in question. 36 separate zones of sprinkler irrigation, watered 1 zone at a time. 210 pop-up sprinkler heads total with 3 gallon per minute heads.

3.

X Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.

X 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).

X 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
Mark Siporia Well	—	5	—	—	—

*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
NA						
NA						

2. Measurements: No physical measurements were made. Only theoretical calculations based on parameters of system described by the permit holder during the site visit.

E. FLOW CALCULATIONS

Measured Method:

 Additional Computation Sheets Attached

System Capacity

- Horsepower Equation:

$$Q = \frac{88 \times HP \times E}{H} \quad \text{Where , HP (horsepower) = 5} \quad E \text{ (pump efficiency) } \Rightarrow 0.7 \text{ (70\% AP MEMO 51)}$$

$$H \text{ (Total Head) } = 135 \text{ (Elevation) } + (2.31 \times 45) \text{ (Pressure)}$$

$$Q = 0.13 \text{ cfs}$$

Permit

- 5.6 acres x 0.02 cfs/acre = 0.11 cfs

Field Exam

- Each zone is watered individually. The largest zone has 10 pop-up sprinkler heads. The output at each head is restricted to 3 gallons per minute. So, the maximum diversion rate is $10 \times 3 \times 0.00222 = 0.07 \text{ cfs}$

BU Standard

- The *actual* irrigated acreage is 3.4 acres based on aerial imagery and confirmation in the field. The BU Standard rate is $3.4 \text{ acres} \times 0.03 \text{ cfs/acre} = 0.10 \text{ cfs}$.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 15.3 \text{ afa}$

$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 36.1 \text{ afa}$

$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 15.3 \text{ afa}$

2. Volume Calculations for Other Uses: There are no other uses authorized by this permit.

G. NARRATIVE/REMARKS/COMMENTS

The original application for this permit was submitted on December 24, 1992. Application processing was put on hold due to the moratorium that was approved earlier the same year. The Department resumed processing of this file in 2008. At that time, the Department considered groundwater less than 200 feet below ground surface tributary to the fully-appropriated reach of the Boise River, so the applicant was required to construct a well that draws water from a greater depth or provide an acceptable mitigation plan. The applicant provided a well log for an existing well that was to be used as the POD for this permit. The Department considered the well to be acceptable and permit no. 63-11984 was approved on 9-16-08 which authorized the diversion of 0.11 cfs from groundwater for irrigation of 5.6 acres. Proof of beneficial use was submitted by the current owner on April 29, 2014. On April 24, 2017 WRAs Cody Parker and Aaron Skinner completed this field exam.

The POD is a 263 ft. deep well that was constructed in 1991 (as indicated by the well log). Water is pumped using a 5 hp pump and pressure in the system is maintained at 45 psi. The location of the well was determined during the field exam and GPS coordinates were taken. The well log lists the wrong QQ description. This is the same well log that was submitted by the owner in 2008. My conversation with the current owner about the dimensions of the well supports the conclusion that this is the correct well log even though the description is incorrect. Conditions on the permit state that the water bearing zone is 250-275 feet and that the well should be constructed so that it is sealed to the first confining layer past 200 feet. My interpretation of the well log is that the actual water bearing zone is 150 to 263 ft and that there is no seal at a confining layer deeper than 200 ft. However, the applicant indicated that this was the intended POD *before* the permit was approved. The Department concluded that the well was acceptable at the time. It is unlikely that the Department would include conditions on the permit that would automatically put the applicant out of compliance. Therefore, it must be that the Department considered this well in compliance with the conditions on the permit at the time of the permit approval. However, even if I am mistaken, and the Department intended that the applicant should modify their well, the well is now outside of the Bs 63 Groundwater area, so the condition no longer applies. I have suggested removing the well construction condition and ~~retaining~~ the water bearing zone information on the license.

The POU was identified and measured using aerial imagery. The irrigated acreage totals approximately 3.4 acres, less than the 5.6 acres on the permit. I confirmed that the entire 3.4 acres were irrigated from the POD during the site visit. The 3.4 acres are irrigated by 210 individual pop-up sprinkler heads split into 32 separate zones, with 4 additional zones that have drip-irrigation. Each of the pop-up sprinklers are regulated by a 3 gpm sprinkler head. The system waters 1 zone at a time. During its peak use, the system was run 24 hrs per day to keep the ground wet and to allow the grass seed to take.

I determined a maximum diversion rate of 0.07 cfs for this system. If the system waters 1 zone at a time, then the system reaches its peak diversion rate when it is watering zone 10, which has 10 sprinkler heads (per conversation with permit holder). At 3 gpm per head, the total diversion rate during that time is 30 gpm, or 0.07 cfs. I also calculated a total system capacity using the system parameters in the horsepower equation (per Permit Processing Memo No. 16). The maximum diversion rate for the system is 0.13 cfs. The annual volume recommended on the license was determined using the headgate requirement.

There is no POU overlap for this right. There are no existing water rights that can be used to irrigate the POU nor is there any surface water delivered to this property. The POD is also used to provide water for use in the home.

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	0.07 CFS	15.3 AFA
	<u>Totals:</u>	0.070 CFS	15.3 AFA

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

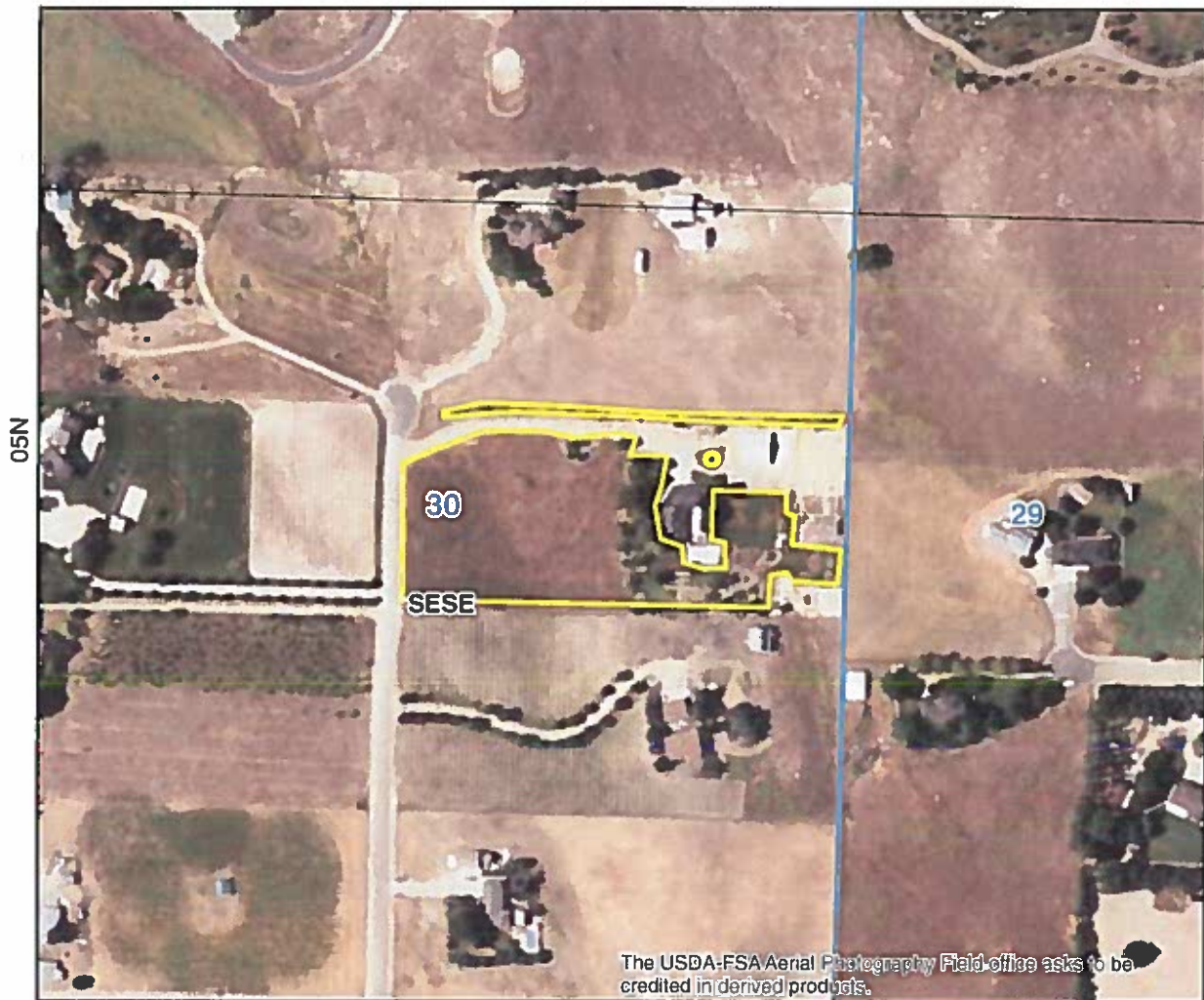
Field Examiner's Name Cody Parker Date 4-24-17

Reviewer Patrick Kelly Date 5-10-2017

State of Idaho
Department of Water Resources
Attachment to Water Right License
63-11984

This map depicts the IRRIGATION place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.

01E



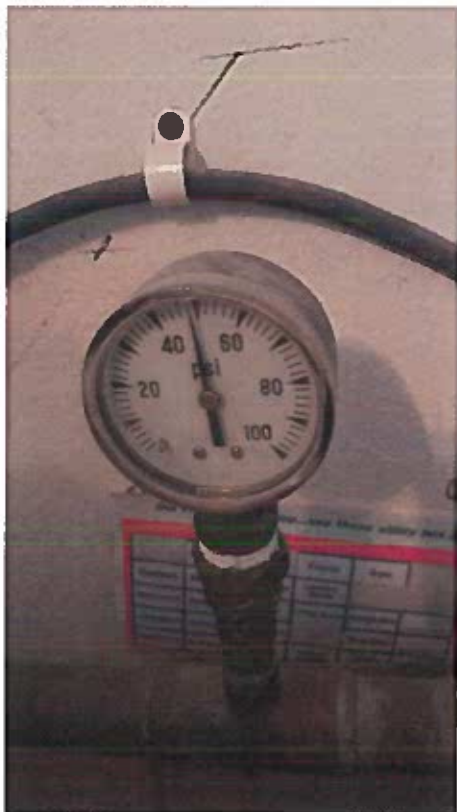
-  Point of Diversion
-  Place Of Use Boundary
-  Townships
-  PLS Sections

0 0.035 0.07 0.14 Miles

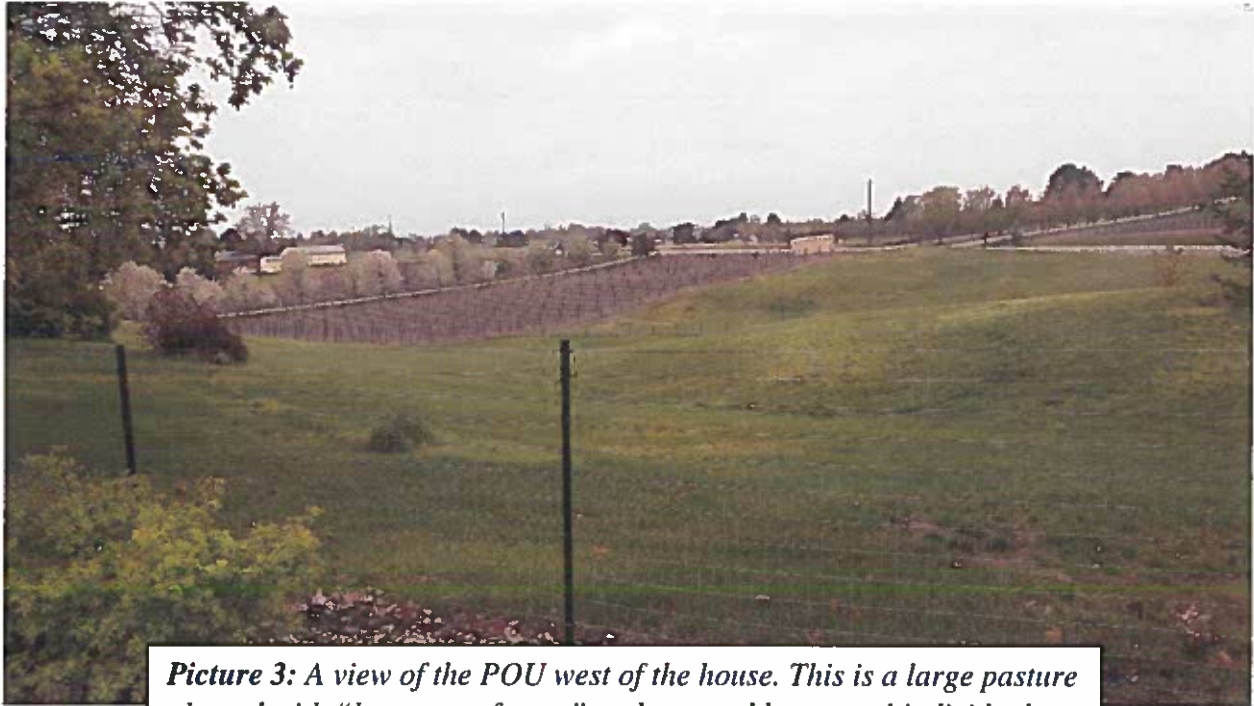




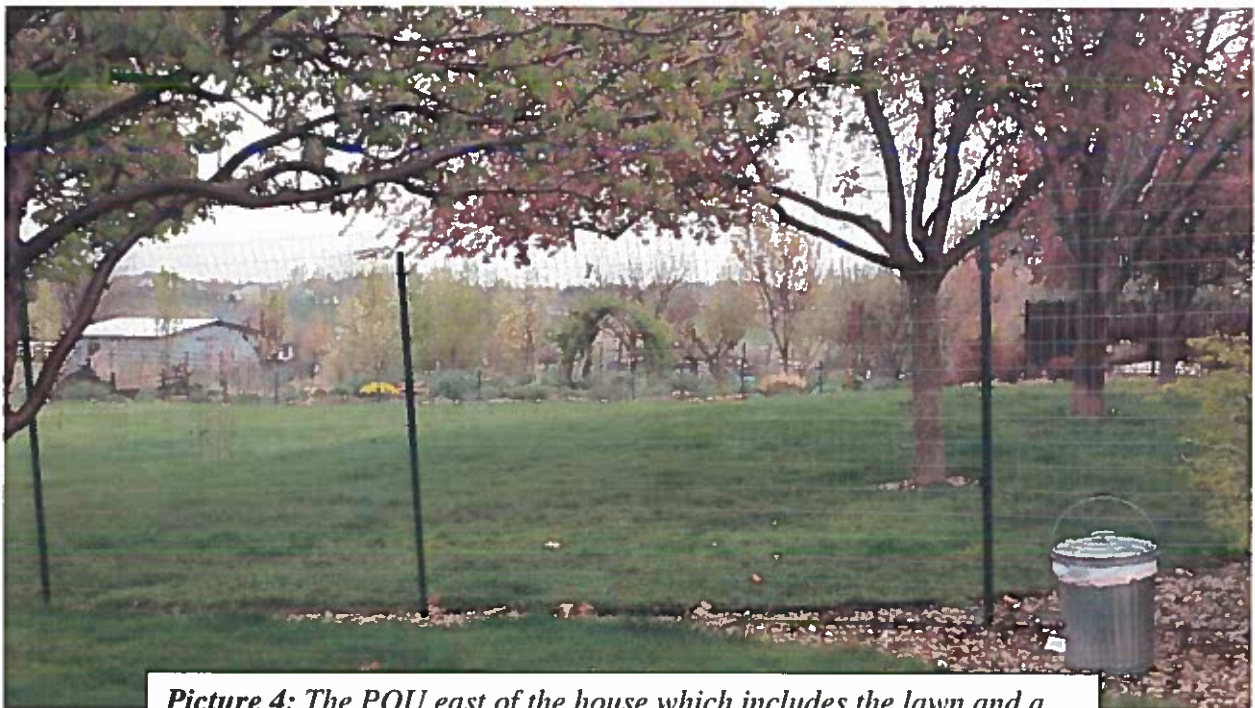
Picture 1: The well head located just north of the house on the Johnson property. The well is 6 inches in diameter. A 5-horsepower pump moves water from the well into a two inch mainline that leads into the sprinkler system



Picture 2: The pressure gage near the reservoir tank. Pressure is maintained between 45 and 50 psi. When pressure drops below 40 psi the pump kicks on.



Picture 3: A view of the POU west of the house. This is a large pasture planted with "low-water fescue" and watered by several individual zones of pop-up sprinkler heads.



Picture 4: The POU east of the house which includes the lawn and a ~1/4-acre garden.

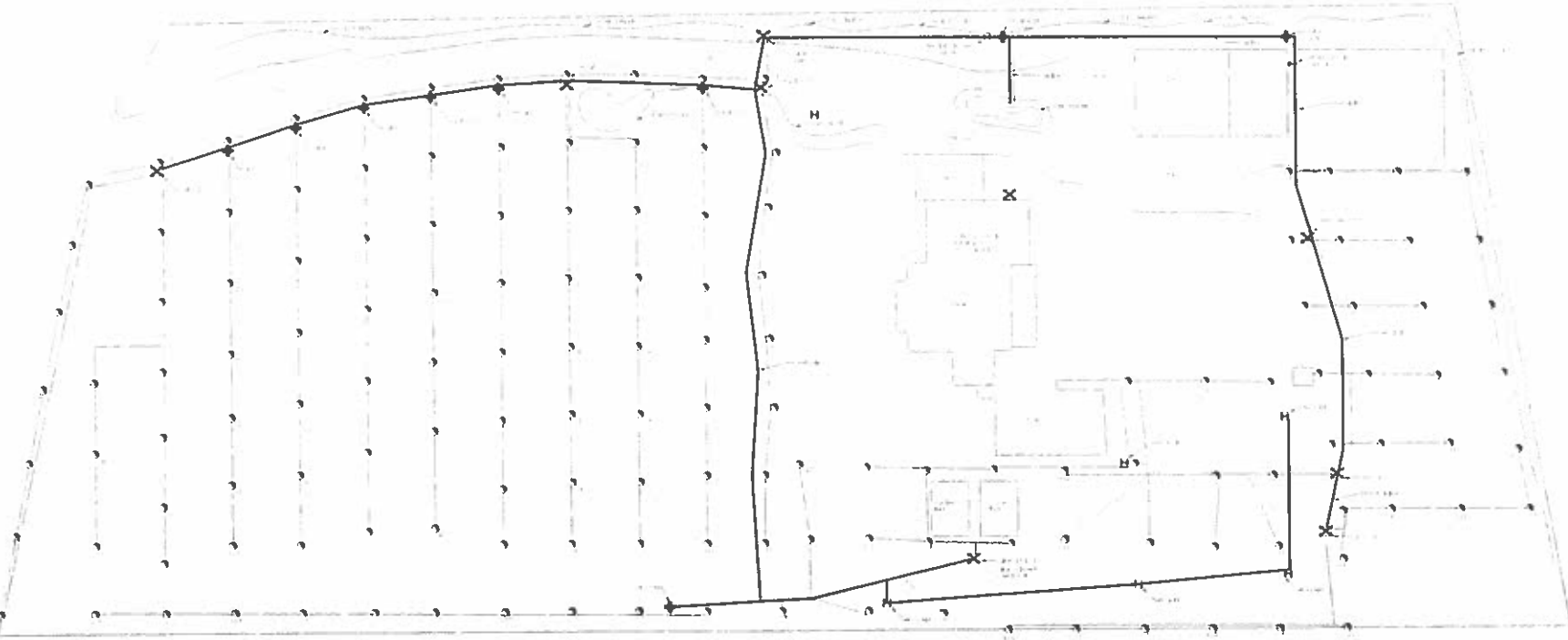


Picture 5: Drip irrigation is set up along the northern boundary of the property to water a row of ornamental pine trees.

/ Specifications:

- new valves installed are Hunter brand valves.
- Heads installed are Hunter I-20 or Hunter PGP Ultra Rotary heads.
- Drip Zones installed equipped with water emitters to all plants in drip beds.
- Irrigation Control Wire ran with the main line and installed to valves using gel-tight wire
- Hose bibs installed on main line for constant pressure.

07/11/14



Check all notes
1. All valves are
Hunter brand
2. All heads are
Hunter I-20 or
Hunter PGP Ultra
3. All drip zones
are equipped with
water emitters
4. All irrigation
control wire is
run with the main
line and installed
to valves using
gel-tight wire
5. Hose bibs are
installed on the
main line for
constant pressure

Project Name
**Mark Johnson
& Nancy Stone**

Drawn By: [Signature]
Date: 11-6-2013
Stark La
Client



Project Address
**4690 Burt Ln.
Eagle, Idaho
83316**

Scale: 1"=30'
Irrigation
As-Built

USE TYPEWRITER OR
BALLPOINT PEN

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

Well location:

4690 N. Burt F
EAGLE ID

RECEIVED
AUG 29 1984

USE ADDITIONAL SHEETS IF NECESSARY — FORWARD THE WHITE COPY TO THE DEPARTMENT

05N01E30

BasinSeq	Owner	Source	Use
63-10110	COOPER, BOBBIE JO; COOPER, V	GROUND WATER	IRRIGATION
63-10159	MEYER JR, WALTER H	GROUND WATER	IRRIGATION
63-10312	CLARK, LYNWOOD E	GROUND WATER	IRRIGATION
63-10815	CLEAVER, DEBBIE; CLEAVER, OLI	GROUND WATER	IRRIGATION
63-10861	LYNN, M JOY; LYNN, MARK	GROUND WATER	IRRIGATION
63-11287	MITCHELL, JAMES E	GROUND WATER	IRRIGATION
63-11344	STRUTHERS, CARL; TAMPKE, PA'	GROUND WATER	IRRIGATION
63-12240	SUN VALLEY AAA SERVICES INC;	GROUND WATER	IRRIGATION
63-31847	CLARK, JOHN; POST, CARLES MC	GROUND WATER	IRRIGATION
63-33109	SPF WATER ENGINEERING LLC; I	GROUND WATER	IRRIGATION
63-34235	SUN VALLEY AAA SERVICES INC,	GROUND WATER	IRRIGATION
63-8674	LOVE, DONALD B; LOVE, JANE L	GROUND WATER	IRRIGATION
63-9410	MC KIM, CYNTHIA; MC KIM, THC	GROUND WATER	IRRIGATION
63-9998	ANDERSON, JOHN M; NORTHRU	GROUND WATER	IRRIGATION

NENE	NWNE	SWNE	SENE	NENW	NWNW	SWNW	SESW	NESW	NWSW	SWSW	SESW	NESE	NWSE	SWSE	SESE	Total Acres
														1	4	5
														2		2
															4	4
														3		3
												0.1	0.1			0.2
												2			3	5
									4.3							4.3
													0.6			0.6
									5							5
								4	4							8
												1.3	1.7			3
															5	5
															5	5
															4	4

No Pon overlap