

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 63-31479

Exam Date: 5/14/2012

1. Current Owner: TED BOHLMAN And/Or
PHYLLIS BOHLMAN
8820 STEWART RD
MERIDIAN ID 83642
(208)888-6136
2. Accompanied by: TED BOHLMAN
Phone No: (208) 888-6136
Address: Same as above
Relationship to Permit Holder: Permit Holder

3. SOURCE TRIBUTARY
GROUND WATER N/A

B. OVERLAP REVIEW

1. Other water rights with the same place of use: None during development period. SW shares from New York Irrigation District now used on POU (since ~ 2005).
2. Other water rights with the same point of diversion: 63-31470, 63-31472, and 63-31591

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

GROUND WATER SW1/4NE1/4 Sec. 9, Twp 02N, Rge 01E, B.M.
ADA County
Method of Determination: GPS Location N43.52633° W116.34415° Garmin model GPSmap 76 Datum NAD 83

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	
02N	01E	9															15.0		15.0

Total Acres: 15

Method of Determination: Bing (2011) Aerial Photography w/ 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>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</u> <u>Size</u>
Irrigation Well-					
No Metal Tag	Westing House	100	7802	Unknown	6" Discharge Pipe

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

D. FLOW MEASUREMENTS1. **Measurement Equipment**

<u>Type</u>	<u>Make/Model No.</u>	<u>Serial No.</u>	<u>Size</u>	<u>Calib. Date</u>
No physical measurement @ exam	N/A	N/A	N/A	N/A

See Flow Calculations Section below for Theoretical HP Equation & Sprinkler System Estimation.

2. Measurements: None taken

E. FLOW CALCULATIONS

_____ Additional Computation Sheets Attached

Well not operating at time of exam. Theoretical HP Equation based on irrigation from well during development period. Sprinkler System Estimation based on irrigation system in use during exam diverting surface water. Same sprinkler lines and heads used with ground water now used to irrigate with surface water.

Measured Method: Theoretical HP Equation:

$$HP = 100$$

$$PSI = 60 \text{ (measured w/ gauge-pitot tube @ exam)}$$

$$Z = 205 \text{ ft (Bohlman says total well depth ~300 ft, pump set at ~ 225 ft, est. pumping level 20 ft above pump set depth)}$$

$$Q = (8.8 \times 0.7 \times HP) / [Z + (2.31 \times PSI)] = (8.8 \times 0.7 \times 100) / [205 + (2.31 \times 60)] = \mathbf{1.79 \text{ cfs}} \text{ est. capacity of well}$$

Measured Method: Sprinkler System Estimation:

of wheel lines = 3 (2 big lines for main field and 1 small line in pasture)

of sprinkler heads = 49 (21 on each big line and 7 on small line)

Type of sprinklers = Weather Tec 10-30

Nozzle size = 1/8" rated for 3.48 gpm @ 60 psi (see attached sprinkler spec sheet)

$$Q = \# \text{ heads} \times \text{gpm} = 49 \times 3.48 \text{ gpm} = 107.52 \text{ gpm} = \mathbf{0.38 \text{ cfs}} \text{ est. discharge from sprinklers}$$

Theoretical HP Equation capacity of well = 1.79 cfs (well irrigated 9.5 ac assoc. w/ WR #63-31470 @ same time)

Diversion rate based on sprinkler type @ 60 psi = 0.38 cfs (sprinklers for just this permit's POU)

Permitted Rate = 0.30 cfs

Beneficial Use Limit = 15 ac x 0.02 cfs/ac = 0.30 cfs

Proof of Beneficial Use fee paid = \$100.00 = up to 1.00 cfs

Recommend Permitted Rate (system capable of producing max allowable rate of 0.02 cfs/ac) = 0.30 cfs

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 15 \text{ ac} \times 4.5 \text{ afa/ac} = 67.5 \text{ afa}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.30 \text{ cfs} \times 260 \text{ days} \times 1.9835 = 154.71 \text{ afa}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 67.5 \text{ afa} < 154.71 \text{ afa} = \mathbf{\text{Recommend } 67.5 \text{ afa}}$$

2. Volume Calculations for Other Uses: No other uses permitted

G. NARRATIVE/REMARKS/COMMENTS**SYSTEM DESCRIPTION:**

Permit developed as a primary ground water irrigation right. System consists of a 10" dia irrigation well (ID Power meter # 36-451-297 – irrigation well only use of power on this meter) with 6" discharge piped to mainline with a "T" taking line north to other users and west then south to owner's property. Mainline has several risers from which a total of five 3" wheel lines are used to irrigate two different pieces of property. Three wheel lines used to irrigate this permit's POU are equip with a total of 49 sprinklers heads (Weather Tec Model 10-30 w/ 1/8" nozzles) operating simultaneously at 60 psi. Pressure measurement taken with gauge-pitot tube during exam, at which time the owner (Bohlman) was diverting surface water through the same irrigation system. "T" connecting irrigation well to Bohlman's irrigation system was not in place

NARRATIVE/REMARKS/COMMENTS CONTINUED

during exam, but was in place during development of the permit. Initially, Bohlman attempted to use his domestic well as a second POD for the ground water irrigation system. Domestic well production not enough for both domestic and irrigation uses. The POD in NWSE Section 9 T2N R1E should be removed from the right during licensing accordingly.

IRRIGATION PRACTICES:

The POU consists of two fields, in the larger field Bohlman grows alfalfa hay and the smaller field is irrigated as pasture for a few horses. Typically, Bohlman will start irrigation in mid May/June and end in September. System run for approximately four days to irrigate then it's off for approximately 10 days. Process repeated duration of irrigation season.

OVERLAP:

Irrigation well historically served as the POD for parent right 63-9655. This right has been split numerous times via ownership changes and transfer filed for certain portions changed PODs. Currently, this well serves as a POD for this permit (63-31479), 63-31470, 63-31472, and 63-31591. Bohlman's land under this permit and right 63-31470 were irrigated simultaneously, while the line to the other users' land was closed. Overlapping rights associated with this well authorize diversion of 0.36 cfs [0.19 cfs (63-31470) + 0.085 cfs (63-31472) + 0.085 cfs (63-31591)]. 0.36 cfs together with 0.30 cfs recommended for this permit totals 0.66 cfs, which is well below the Theoretical HP Equation system capacity estimation of 1.79 cfs. No combined diversion rate limit conditions exist on any of the rights and no such conditions are recommended for this permit based on the fact that the system appears capable of producing more water than currently authorized for diversion.

No overlapping rights associated with the permit POU during the development period (irrigation started around 1987, permit approved 2002, and beneficial use filed 2003) of this permit. As such, this permit is being recommended as a primary ground water irrigation right. Currently, the permit POU is irrigated with surface water shares from New York Irrigation District, which Bohlman acquired in 2005.

WATER SUPPLY BANK (WSB):

Upon acquiring surface water shares, Bohlman applied to have this permit placed in the WSB to protect the beneficial use from forfeiture. Permit was accepted into the WSB for an indefinite lease term. Permit should be licensed as a primary ground water right (based on development). It shall remain in the WSB with an indefinite lease term after licensing, without further action on the part of the owner, per discussions with current WSB staff.

COMPLIANCE WITH PERMIT CONDITIONS:

No new well was constructed and no new land was irrigated during development of this permit. Irrigation of the POU from the existing well(s) began in 1987 and this permit was filed in 2002 to comply with water right requirements for the existing use. No request issued by the Department requiring the owner install a measuring device, so no device has been installed. The application was protested during permit processing. Protest resolution resulted in conditions (#8 thru #10 on permit approval document) that should be included on license. The water bearing zone shall be 100 to 250 ft. No well log is available. This water bearing zone assigned based on research of surrounding well logs during the permit process. Since this diversion is outside the Bs 63 GW Restricted Area and there is no information available to the contrary, assume the owner is in compliance with this condition and recommend maintaining same water bearing zone for licensing. To the best of my knowledge, all conditions of permit approval have been met.

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	0.30 CFS	67.5
<u>Totals:</u>		0.30 CFS	67.5 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 Angeli M. Quinn Date 4/14/2012

Reviewer _____ Date _____

6" Mainline

T02N R01E
Section 9

SENW

SWNE

SENE

NWSE

Wheel Lines 21 Sprinkler Heads Each Line

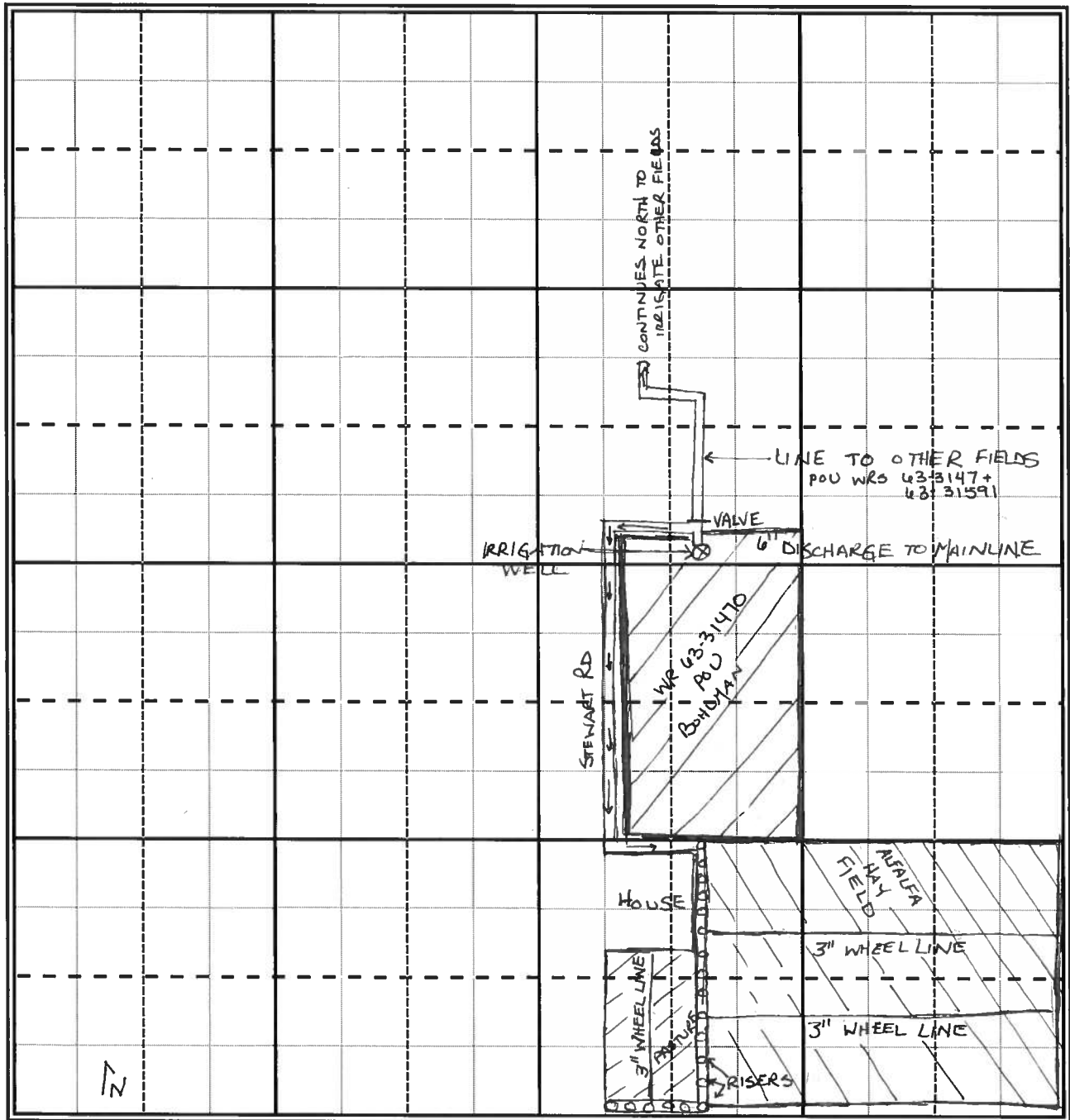
Wheel Line 7 Sprinkler Heads

NESE

Response	Percentage
U.S. should take action to reduce global warming	100%
U.S. should take action to reduce global warming	100%

 POD Irrigation Well
 Township/Range
 Domestic Well
 Sections
 SW Diversion Box
 QQ
 POU
 Bohlman POU WR 63-31470

63-31479 Beneficial Use Field Report Diversion System Diagram



Not to Scale

3/4" Impact Sprinklers – Full Circle



Model

10-30

- Full circle impact – 23° trajectory
- 3/4" Male N.P.T.-Single nozzle
- Cast-bronze head with cored water passage and double-bridge construction
- Cast-bronze lever with I-Beam construction for added strength
- Wide impact area increases lever life
- Stainless steel spindle, fulcrum pin, lever spring, and bearing spring for long-wearing durability
- T-Ring style bearing for proven dependability
- Designed as an all-purpose single-nozzle intermediate sprinkler
- Suitable for pasture, row-crop, overhead-orchard, and a wide variety of other applications

Model 10-30 Standard Nozzle Performance (Nominal stream height 7' above @ normal pressure)

Nozzle	1/8"		9/64"		5/32"		11/64"	
PSI	Dia.	GPM	Dia.	GPM	Dia.	GPM	Dia.	GPM
35	80	2.66	82	3.35	87	4.13	90	4.98
40	81	2.84	83	3.59	88	4.41	92	5.33
45	82	3.02	84	3.80	89	4.68	93	5.65
50	83	3.18	85	4.01	90	4.94	94	5.96
55	84	3.34	86	4.21	91	5.18	95	6.25
60	85	3.48	87	4.39	92	5.41	96	6.52
65	86	3.63	88	4.57	93	5.63	97	6.79
70	87	3.76	89	4.75	94	5.84	98	7.05
75	88	3.90	90	4.91	95	6.05	99	7.29
80	89	4.02	91	5.07	96	6.24	100	7.53

Model 10-30 Standard Nozzle Performance (Nominal stream height 7' above @ normal pressure)

Nozzle	3/16"		13/64"		7/32"		15/64"		1/4"	
PSI	Dia.	GPM	Dia.	GPM	Dia.	GPM	Dia.	GPM	Dia.	GPM
35	94	5.92	98	6.93	101	8.02	103	9.19	105	10.44
40	96	6.33	101	7.41	104	8.57	106	9.83	109	11.16
45	98	6.71	103	7.86	106	9.09	109	10.42	112	11.83
50	100	7.07	105	8.28	108	9.58	112	10.98	115	12.47
55	101	7.42	107	8.68	110	10.05	114	11.51	118	13.08
60	102	7.75	108	9.07	111	10.50	116	12.03	120	13.66
65	103	8.06	109	9.44	112	10.92	117	12.51	121	14.21
70	104	8.37	110	9.79	113	11.33	118	12.99	122	14.75
75	105	8.66	111	10.14	114	11.73	119	13.44	123	15.26
80	106	8.94	112	10.47	115	12.12	120	13.88	124	15.76

63-31479 Beneficial Use Field Report Photos



63-31479 Exam 5/14/2012: POD facing south with POU 63-31470 being irrigated in the background.



63-31479 Exam 5/14/2012: POU facing east large wheel line in alfalfa field with pasture in foreground.

4/2011

IDAHO DEPARTMENT OF WATER RESOURCES
FIELD EXAMINERS
WELL INSPECTION FORM

1. IDENTIFICATION # NO METAL TAG (Tag #, etc.)

OTHER APPLICABLE # 63-31479 (PERMITTED POD - NO LONGER USED FOR IRRIGATION - ONLY DOMESTIC USE NOW) (Water right #, etc.)

2. OWNER TED BOHLMAN Phone (208) 888-6136

Address 8820 STEWART RD City MERIDIAN

State ID Zip 83642 Email _____

3. WELL LOCATION (GPS required in Degrees Decimal Minutes – use PLS if GPS not available)

Lat. 43.524409 Long. -116.343099

Twp 2N Rge 1E Sec 9 $\frac{1}{4}$ NW $\frac{1}{4}$ SE

4. WELL CONSTRUCTION ☐ Well log attached ☒ Well log not found

Any obvious construction problems that may be a source for contamination or waste? ☐ Yes ☒ No

If yes, describe below &/or see attached (list any that apply): ☐ Photos ☐ Diagram ☐ Other

5. HYDROLOGIC INFORMATION

Static water if measured _____ ft. Water temperature if measured _____ °F

Flowing artesian ☐ Yes ☐ No Pressure if measured _____ psi

NOTES INSPECTED AS PROPOSED/PERMITTED POD FOR 63-31479. THIS WELL NOT
USED AS POD FOR 63-31479. ONLY USE IS DOMESTIC.

INSPECTED BY Angela M. Quinn DATE 5/14/2012

4/2011

IDAHO DEPARTMENT OF WATER RESOURCES
FIELD EXAMINERS
WELL INSPECTION FORM

1. IDENTIFICATION # NO METAL TAG (Tag #, etc.)

OTHER APPLICABLE # 63-31479 + 63-31470, 63-31472 & 63-31591 (Water right #, etc.)

2. OWNER BARBARA + GARY GREEN/WEIL Phone _____

Address 8580 S. STEWART RD City MERIDIAN

State ID Zip 83642 Email _____

3. WELL LOCATION (GPS required in Degrees Decimal Minutes – use PLS if GPS not available)

Lat. 43.526326 Long. -116.344152

Twp 2N Rge 1E Sec 9 $\frac{1}{4}$ SW1 $\frac{1}{4}$ NE

4. WELL CONSTRUCTION ☐ Well log attached ☒ Well log not found

Any obvious construction problems that may be a source for contamination or waste? ☐ Yes ☒ No

If yes, describe below &/or see attached (list any that apply): ☐ Photos ☐ Diagram ☐ Other

5. HYDROLOGIC INFORMATION

Static water if measured _____ ft. Water temperature if measured _____ °F

Flowing artesian ☐ Yes ☐ No Pressure if measured _____ psi

NOTES _____

INSPECTED BY Angela McGinnis DATE 5/14/2012