

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No. 65-23112

1. Owner: Gary M. Williams

Phone No: (208)440-1473

Current Address: 9303 E Gatfield Rd

City, State, Zip: Montour, ID 83617

2. Accompanied by: Gary M. Williams

Exam Date: 10/20/2010

Address: Same as Above

Phone No: Same as Above

Relationship to Permit Holder: Permit Holder

3. Source: Ground Water

Tributary to: N/A

B. OVERLAP REVIEW

1. Other water rights with the same place of use: None
2. Other water rights with the same point of diversion: None

C. DIVERSION AND DELIVERY SYSTEM

1. Point(s) of Diversion

[illegible]

2. Place(s) of Use

[illegible]

Indicate weir size/ditch size/ pipe i.d..as applicable.

SEE ATTACHED "65-23312 DIVERSION SYSTEM DIAGRAM"
"NOTES"

Scale 1"=_____

- ☒ Copy of USGS Quadrangle attached showing location(s) of diversion and place(s) of use (required).
- ☒ Aerial photo attached (required for irrigation of 10+ acres).
- ☒ Photo of diversion and system attached.

Well or Diversion Identification No.*	Motor Make	HP	Motor Serial Number	Pump Make	Pump Serial No. or Discharge Size
D0009423	Franklin Electric	2	Model # 2823018110 recorded (Control Box # per Franklin's website)	Jacuzzi	Model # S445-8 (? difficult to read) 2" dia pipe

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

D. FLOW MEASUREMENTS

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

Measurements: System shut off for winter, not operating/irrigating during exam. Information from pump company (dated 2006) collected from inside the pump house: 2 hp pump, 40 psi operating pressure for irrigating, pump set at 89 ft, and static water level at 58 ft.

E. NARRATIVE/REMARKS/COMMENTS

Diversion system consists of 101 ft deep well (per log) with 2 hp submersible pump, piped to a pump house with two 50 gal storage tanks connected to the main line (2" dia) with 5 risers. A single sprinkler line (2" pipe) with 6 Weather Tec model 10-30 sprinklers (5/32" nozzle size per permit holder comment via phone conversation 10/27/2010) is connected to a riser for irrigation at any given moment of time. See 65-23112 Diversion System Diagram attached. The sprinkler line is moved from riser to riser to irrigate the entire POU. When the irrigation system is turned on, the 50 gallon tanks empty quickly and the well pump runs and maintains a pressure of 40 psi while irrigating (per well owner). There is a single well on this property with one pump. This well is used for irrigation of pasture grass, domestic, and stockwater (5 horses) purposes.

Permit authorizes flow of 0.10 cfs. Theoretical flow calculation based on information collected during the exam indicates a system capacity of 0.07 cfs (see Flow Calculations below). Exam fee (Receipt # C088113) paid by the permit holder was \$50 for up to 0.20 cfs. Calculated diversion rate of 0.06 cfs based on model specifications and number of sprinklers (see Flow Calculations below). 0.07 cfs recommended based on theoretical system capacity calculation, which is supported (almost the same) as the sprinkler calculation.

The POU established via 2009 aerial photography and confirmation at the site with the permit holder. The permit is for 5 acres of irrigation. The applicant is irrigating 4 ac with a 1 ac horse arena on the property that is not irrigated. This arena area has been excluded from the POU proposed for licensing.

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

F. FLOW CALCULATIONS

Measured Method:

☒ Additional Computation Sheets Attached

Theoretical flow calculation based on HP Equation and estimation of diversion rate based on sprinkler type are attached (See "Notes" and Weather Tec Model 10-30 printout).

HP Equation (theoretical system capacity) = 0.07 cfs

Diversion rate based on sprinkler type @ 40 psi = 0.06 cfs

Permit approval = 0.10 cfs

Proof of Beneficial Use fee paid = up to 0.20 cfs

Recommended rate based on theoretical calculation (supported by sprinkler calc) = 0.07 cfs

G. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$VI.R. = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = (4.0 \text{ ac})(4.5 \text{ afa/ac}) = 18.0 \text{ afa}$$

$$VD.R. = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation Season}) \times 1.9835 = (0.07 \text{ cfs})(260 \text{ Days})(1.9835) =$$

36.1 afa

$$V = \text{Smaller of VI.R. and VD.R.} = 18.0 \text{ afa}$$

2. Volume Calculations for Other Uses: N/A

H. RECOMMENDATIONS

1. Recommended Amount

BENEFICIAL USE	PERIOD OF USE		RATE OF DIVERSION ANNUAL	
	From	To	Q(cfs)	V(afa)
Irrigation	3/1	11/15	0.07	18.0

TOTALS 0.07 18.0

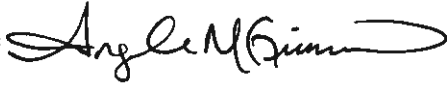
2. Recommended Amendments

- ☐ Change P.D. as reflected above
☐ Change P.U. as reflected above

- ☐ Add P.D. as reflected above
☐ Add P.U. as reflected above

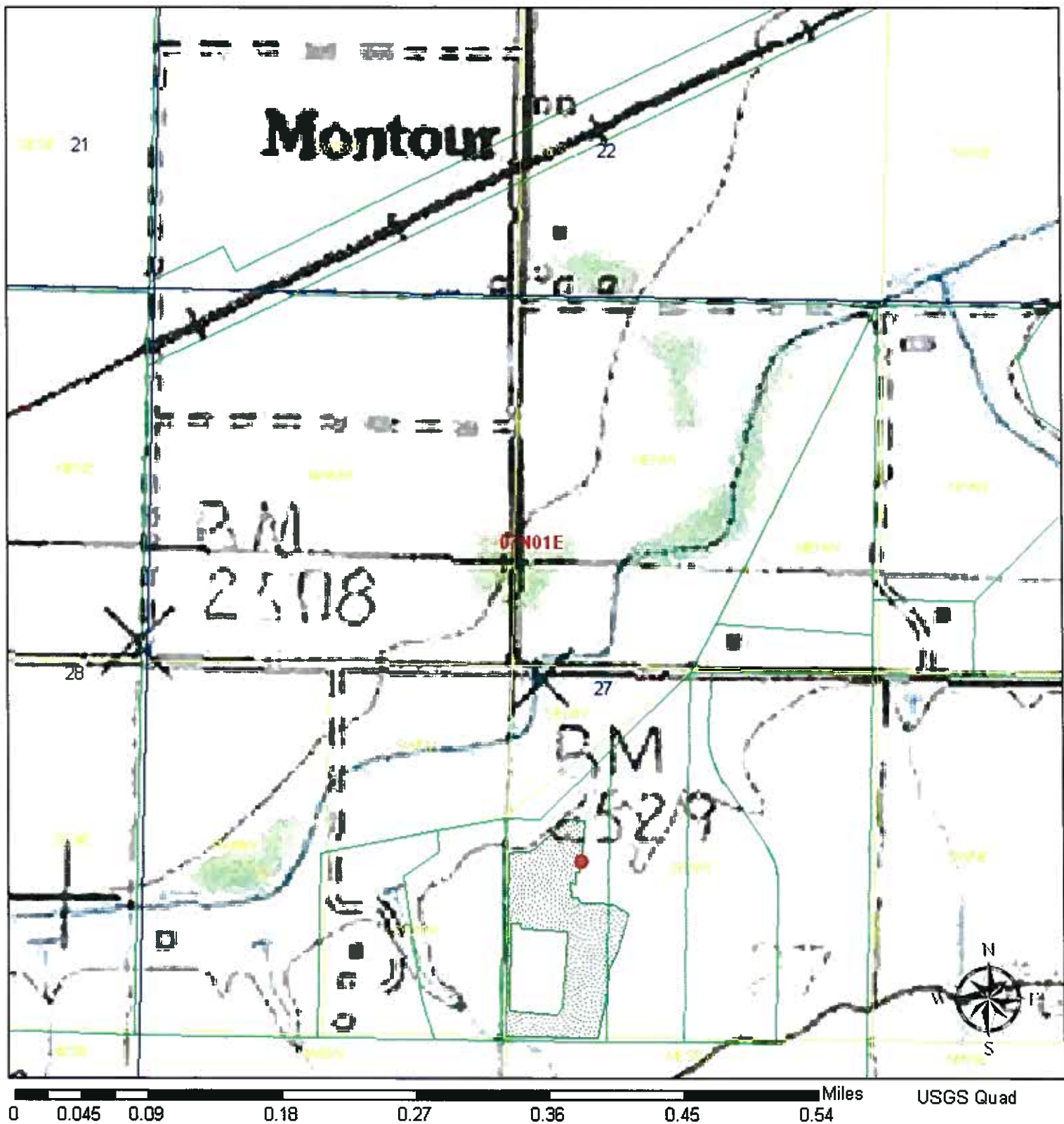
- ☒ None
☐ Other

I. AUTHENTICATION

Field Examiner's Name 
Reviewer

Date 11/08/2010
Date

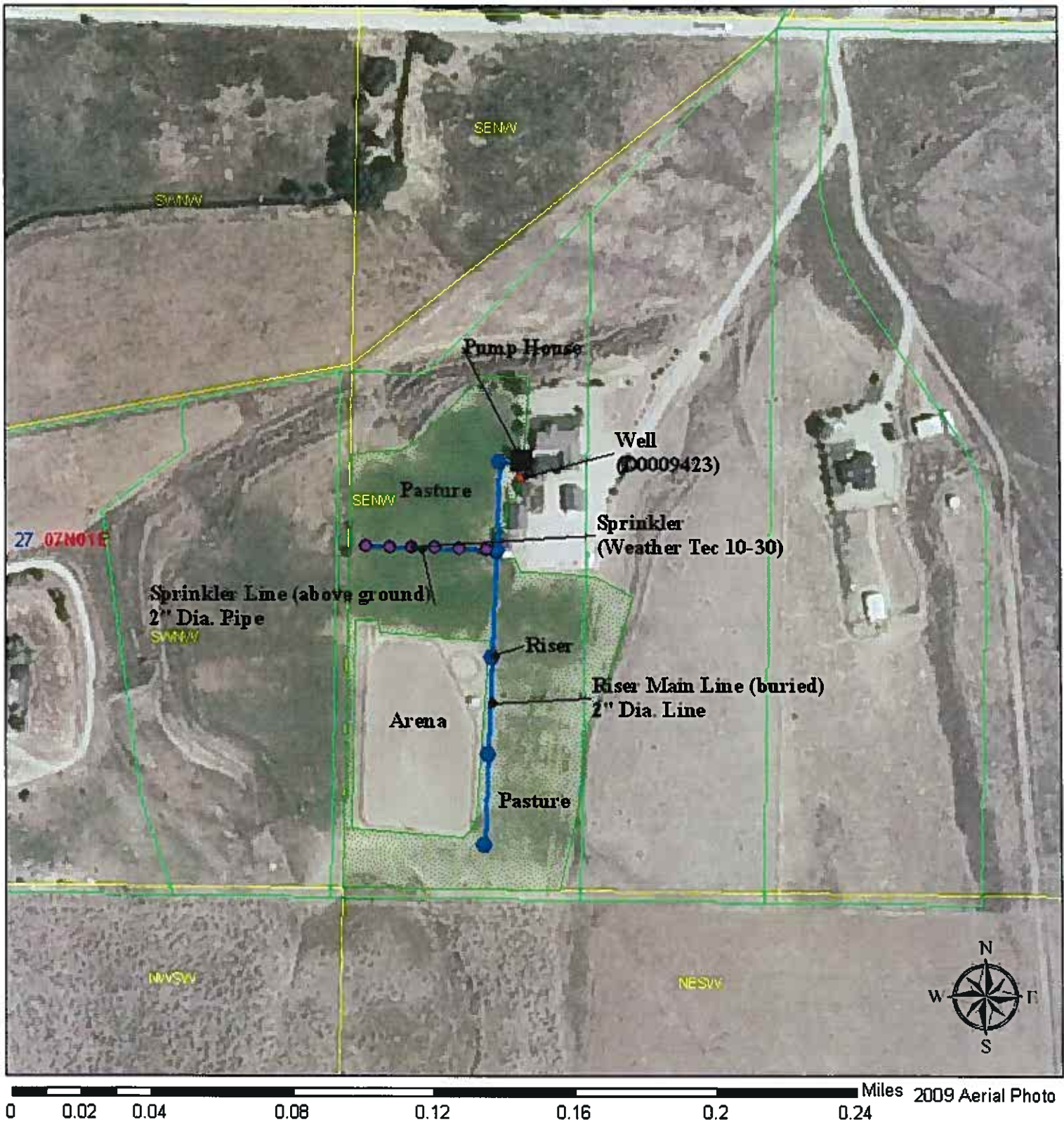
65-23312 POD & POU



Legend

- 65-23312 POD
- 65-23312 POU
- Taxlots
- Township/Range
- Sections
- QQ

65-23312 Diversion System Diagram



Legend

- 65-23312 POD
- ▨ 65-23312 POU
- Taxlots
- ▭ Township/Range
- ▭ Sections
- ▭ QQ



65-23312 License Exam 10/20/2010 Photo #1: Well (POD) with welded Well Tag #D0009432 facing northeast.



65-23312 License Exam 10/20/2010 Photo #2: Well (POD) facing south west with pasture being irrigated in the background. Pump house not pictured, but is to the right (north) of the well.



65-23312 License Exam 10/20/2010 Photo #3: Pasture (POU) irrigated north of arena facing southwest.



65-23312 License Exam 10/20/2010 Photo #4: Pasture (POU) irrigated south and east of the arena facing southeast.

NOTES

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No. 65-233121. Owner GARY WILLIAMS Phone No. (208) 440-1473Current address 9303 E GATFIELD RD MONTGOMERY, ID 836172. Examiner's name ANGIE GRAY EXAM DATE 10/20/20103. Accompanied by GARY WILLIAMS Email _____Address SAME AS ABOVERelationship to permit holder PERMIT HOLDER Phone No. (208) 440-14734. Source GROUND WATER tributary to _____

B. OVERLAP REVIEW

1. Other water rights with the same place of use NONE2. Other water rights with the same point of diversion NONE

C. DIVERSION AND DELIVERY SYSTEM

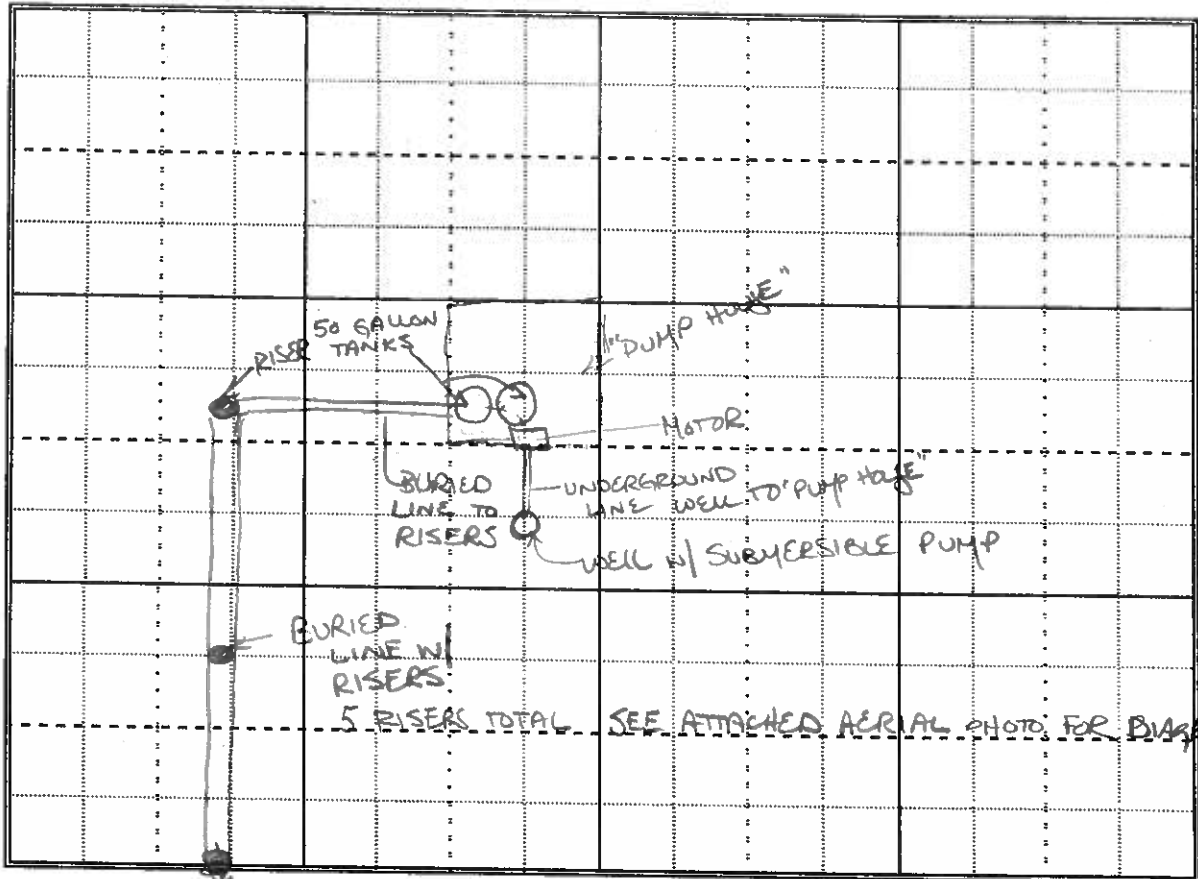
1. Point(s) of Diversion:

Ident. No.	Gov't Lot	1/4	1/4	1/4	Sec	Twp	Rge	County	Method of Determination/Remarks
			SE	NW	27	7N	1E	GEM	GPS IDTM: 1415517N 2313140E

2. Place(s) of Use: Method of determination AERIAL PHOTO CONFIRMATION @ EXAM

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
7N	1E	27								4									4.0

3. **Delivery System Diagram:** Indicate all major components and distances between components. Indicate weir size/ditch size/pipe diameter (inside), as applicable. Use the space provided or ☐ see attached.



Scale: 1" = NOT TO SCALE

- ☐ 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 Serial No.	Pump Make	Pump Serial No. or Discharge Size
D0009423	FRANKLIN ELEC	2	MODEL # 2823018110	JACUZZI	MODEL # 5445-B?? (DIFFICULT TO READ) PUMP 2" DIA PIPE

*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:

SYSTEM SHUT OFF FOR WINTER, NOT OPERATING/IRRIGATING DURING EXAM.
 INFO FROM PUMP COMPANY (2006) COLLECTED: 2 HP PUMP
 (PUMP HOUSE) 40 PSI - 60 PSI RANGE
 PUMP SET @ 89 FT
 STATIC WL @ 58 FT
 WELL DEPTH @ 100 FT

E. NARRATIVE/REMARKS/COMMENTS

5 RISERS ON MAIN LINE FROM PUMP HORSE/WELL *Called owner and he told me over phone on 10/27/10*
6 SPRINKLERS (WEATHER TEC MODEL 10-30 NOZZLE SIZE $5/32"$) RUNNING @ 1 TME.
↳ SPRINKLERS ON 2" DIA PIPE. RISER LINE ALSO 2" DIA.

TURN IRRIGATION SYSTEM ON, 2 50 GALLON TANKS EMPTY (WATER IMMEDIATELY), THEN PUMP RISES ON IN WELL EARTH TIME IRRIGATE. PUMP RUNS ESSENTIALLY ENTIRE TIME IRRIGATING (PER OWNER).

ONE WELL ON PROPERTY FOR IRRIGATION (THIS WR), DOMESTIC & STOCKWATER (5 HORSES) USES. SINGLE PUMP IN WELL.

IRRIGATION OF PASTURE FOR HORSES.

PERMIT HOLDER WANTS TO HAVE HIS WIFE'S NAME ON WR. HE REQUESTED I SEND AN ASSIGNMENT OF PERMIT FOR HIM TO SUBMIT PRIOR TO LICENSING OF THIS PERMIT.

PERMIT RATE = 0.10 CFS

EXAM FEE PAID = \$50.00 = 0 - 0.20 CFS

SYSTEM CAPACITY (BASED ON THEORETICAL CAP) = 0.07 CFS

DIV. RATE BASED ON SPRINKLER CALC = 0.06 CFS

Has the permit holder met all conditions of permit approval, including any mitigation requirements and/or measuring device installation requirements? ☒ Yes ☐ No If no, what must be done to meet the permit requirements?

F. FLOW CALCULATIONS

Additional computation sheets attached

Measured Method:

THEORETICAL HP EQUATION:

$$Q = \frac{(8.8)(0.7)(HP)}{Z + (2.31)(PSI)}$$

$$Q = \frac{(8.8)(0.7)(2)}{79 + (2.31)(40)} = \frac{12.32}{171.4}$$

$Q = \text{FLOW IN CFS}$

$HP = \text{PUMP HORSEPOWER} = 2 \text{ HP}$

$$Z_1 = \text{DYNAMIC PUMPING LEVEL FT (EST. 10' ABOVE PUMP LEVEL)} = 79'$$
$$Z_2 = \text{WELL LOG (1999)} = 32 \text{ FT STATIC} + 18 \text{ FT DRAWDOWN} = 50'$$

PSI = PRESSURE OF SYSTEM = 40 PSI

$$Q = \frac{(8.8)(0.7)(2)}{50 + (2.31)(40)} = \frac{12.32}{142.4} = 0.09 \text{ cfs}$$

0.0765 LIKELY
MORE REPRESENTATIVE
OF CURRENT SITUATION

G. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 4 \text{ AC} \times 4.5 \text{ AF/AC} = 18.0 \text{ AF}$$

$$V_{D,R} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation Season}) \times 1.9835 = (0.057 \text{ cfs}) (240 \text{ days}) (1.9835) = 36.1 \text{ AF}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = \underline{18.0 \text{ V}}$$

2. Volume Calculations for Other Uses:

OTHER USES (DOM + STOCK) NOT INCLUDED IN THE WR.

H. RECOMMENDATIONS

1. Recommended Amounts

Beneficial Use	Period of Use From To		Rate of Diversion Q(cfs)	Annual Volume V (afa)
IRRIGATION	3/1	11/15	0.0 cfs	18.0 AF
Totals:				

2. Recommended Amendments

- ☐ Change P.D. as reflected on page 1 ☐ Add P.D. as reflected on page 1 ☒ None
☐ Change P.U. as reflected on page 1 ☐ Add P.U. as reflected on page 1 ☐ Other

I. AUTHENTICATION

Field Examiner's Signature _____

Date 10/20/2010

SEAL

Reviewer

Date _____


WEATHER TEC
Environmental Control Through Irrigation
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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



Product applications:

- Row crop irrigation
- Wheel line irrigation

MODEL 10-30 Standard Nozzle Performance

Nominal stream height 7' above nozzle @ *normal pressure

	Nozzle	**Nozzle	Nozzle	Nozzle	Nozzle	Nozzle	Nozzle	Nozzle	Nozzle									
PSI	1/8"	9/64"	5/32"	11/64"	3/16"	13/64"	7/32"	15/64"	1/4"									
	Dia.	GPM	Dia.	GPM	Dia.	GPM	Dia.	GPM	Dia.	GPM								
35	80	2.86	82	3.35	87	4.13	90	4.98	94	5.92	98	6.93	101	8.02	103	9.19	105	10.44
40	81	2.84	83	3.59	88	4.41	92	5.33	96	6.33	101	7.41	104	8.57	106	9.83	109	11.16
45	82	3.02	84	3.80	89	4.68	93	5.65	98	6.71	103	7.86	106	9.09	109	10.42	112	11.83
50	83	3.18	85	4.01	90	4.94	94	5.96	100	7.07	105	8.28	108	9.58	112	10.98	115	12.47
55	84	3.34	86	4.21	91	5.18	95	6.25	101	7.42	107	8.68	110	10.05	114	11.51	118	13.08
60	85	3.48	87	4.39	92	5.41	96	6.52	102	7.75	108	9.07	111	10.50	116	12.03	120	13.66
65	86	3.63	88	4.57	93	5.63	97	6.79	103	8.06	109	9.44	112	10.92	117	12.51	121	14.21
70	87	3.76	89	4.75	94	5.84	98	7.05	104	8.37	110	9.79	113	11.33	118	12.99	122	14.75
75	88	3.90	90	4.91	95	6.05	99	7.29	105	8.66	111	10.14	114	11.73	119	13.44	123	15.26
80	89	4.02	91	5.07	96	6.24	100	7.53	106	8.94	112	10.47	115	12.12	120	13.88	124	15.76

* Standard nozzle at mid-point of pressure range

 **Indicates standard nozzle size furnished unless otherwise specified
 Optimum performance at mid-point of pressure range

NOZZLE SIZE $5/32"$ = 4.41 GPM @ 40 PSI : 6 SPRINKLERS $\times$ 4.41 GPM = 26.46 GPM

$$26.46 \text{ GPM} \times \frac{1 \text{ CFS}}{448.8 \text{ GPM}} = 0.06 \text{ CFS}$$

NOZZLE SIZE $5/32"$ = 5.41 GPM @ 60 PSI : 6 SPRINKLERS $\times$ 5.41 GPM = 32.46 GPM

$$32.46 \text{ GPM} \times \frac{1 \text{ CFS}}{448.8 \text{ GPM}} = 0.07 \text{ CFS}$$

SYSTEM OPERATES @ 40 PSI PER WATER RIGHT PERMIT HOLDER. INFO ON PUMP HOUSE WRITTEN BY PUMP INSTALLER STATES PRESSURE OF SYSTEM RANGES FROM 40-60 PSI.

IDAHO DEPARTMENT OF WATER RESOURCES

WELL INSPECTION FORM

1. DRILLING PERMIT NO: 738314 OTHER APPLICABLE NO: WELL TAG 00009423
2. OWNER: GARY M AND KELLY WILLIAMS Phone: (208) 584-3272
Address: 9303 E. GATFIELD RD MONTGOMERY, ID 83617
3. WELL LOCATION: Twp 7N, Rge. 1E, Sec. 27, SE 1/4 NW 1/4
County GEM (Provide sketch map and photo on reverse.)
4. DRILLER: DRISCOLL WELL DRILLING Lic. No. 524
When Drilled? 5/12/1999
5. WELL CONSTRUCTION:
Casing Diameter 6 inches Water tight cap? ☒ Yes ☐ No Access Port: ☐ Yes ☒ No
Casing $\geq$ 12 inches above ground? ☒ Yes ☐ No - Describe _____
Depth of Casing 96 ft. Method Drilled CABLE
Condition of Well Casing: ☒ Good ☐ Fair ☐ Poor Describe _____
Control Valve? ☐ Yes ☒ No Pressure Gauge: ☐ Yes ☒ No
Condition of Piping and Valving GOOD
Auger to a depth of _____ ft. Evidence of Annular Seal ☐ Yes ☐ No
Are there obvious construction problems that may be a source for contamination or waste of water?
☐ Yes ☒ No (Describe in Remarks and Attach Photo - On Reverse)
6. HYDROLOGIC INFORMATION:
Depth to Static Water 58 ft. ^(GOOD PER PUMP INFO SITE) Water Temperature 60 °F ^(PER LOG 1999)
Flowing Artesian ☐ Yes ☒ No Pressure: N/A (psi)
Water Sample Taken? ☐ Yes ☒ No If yes, describe purpose _____
Water Quality Measurements/Observations (Describe) _____
7. WELL USE:
☒ Domestic ☒ Irrigation ☐ Stock
☐ Test ☐ Municipal ☐ Industrial
☐ Abandoned ☐ Waste Disposal/Injection ☐ Not Used
☐ Other: _____

8. POSSIBLE CONTAMINATION SOURCES:

Is there evidence of Chemigation? ☐ Yes ☒ No

If yes, is there a check-valve present? ☐ Yes ☐ No N/A

Is there a possible source of contamination nearby? ☐ Yes ☒ No

If yes, what Type? N/A

How far away from the well is this source? N/A

9. REMARKS: WELL TAG D0009423 VERIFIED. IN 2006, 2 HP PUMP INSTALLED AT 89 FT. STATIC WL @ THAT TIME WAS 58 FT. IDTM COORDINATES COLLECTED @ INSPECTION: EASTING = 2313140 NORTHING = 1415517 LAT = 43.917649°N LONG = 116.327412°W.

 WATER RESOURCE AGENT, SR.
Signature of Dept. Representative & Title

10/20/2010
Inspection Date

PHOTOS, DRAWINGS, OTHER ATTACHMENTS:

SEE ATTACHED WELL LOG, PHOTOS, AND MAP W/ GPS COORDINATES OF WELL

IDAHO DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT 054377

Office Use Only			
Inspected by			
Twp	Rge	Sec	
1/4	1/4	1/4	
Lat	:	Long	:

1. WELL TAG NO. D 0009423
DRILLING PERMIT NO. 65-99-W-0073-000
Other IDWR No.

2. OWNER:
Name Clayton Coulter
Address 583 Indian Valley Rd
City Indian Valley State ID Zip 83632

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

	Twp. 7	North ☒ or South ☐
	Rge. 1	East ☒ or West ☐
	Sec. 27	NW 1/4 SW 1/4 NW 1/4
	Gov't Lot	County Gen
Lat:		Long:
Address of Well Site 9303 Gatfield Rd		
City Montour		

(Give at least name of road + Distance to Road or Landmark)

Lt. Bk. Sub. Name

4. USE:

☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other

5. TYPE OF WORK check all that apply (Replacement etc.)

☒ New Well ☐ Modify ☐ Abandonment ☐ Other

6. DRILL METHOD

☐ Air Rotary ☒ Cable ☐ Mud Rotary ☐ Other

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT		METHOD
Material	From	To	Sacks or Pounds		
bentonite	0	18	250lb	overbore	

Was drive shoe used? ☒ N Shoe Depth(s) 96'

Was drive shoe seal tested? ☐ Y ☒ N How?

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	+4	96	.25	steel	☒	☐	☒	☐

Length of Headpipe Length of Tailpipe

9. PERFORATIONS/SCREENS

Perforations Method

Screens Screen Type

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

32 ft. below ground Artesian pressure lb.
Depth flow encountered ft. Describe access port or control devices: removeable cap

11. WELL TESTS:

☒ Pump ☐ Bailor ☐ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
40gpm	18'	65'	2hr

Water Temp. 60deg Bottom hole temp. 60

Water Quality test or comments:

Depth first Water Encounter 47'

12. LITHOLOGIC LOG: (Describe repairs or abandonment) Water

Bore Dia	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
8	0	4	soil		n
	4	18	gravel		n
6	18	47	gravel		n
	47	56	sand & clay	y	
	56	78	clay		n
	78	80	gravel	y	
	80	87	clay & sand	y	
	87	101	clay		n
	101		sand	y	

MICROFILMED

JUL 13 1999

RECEIVED

RECEIVED

AUG 12 1999

AUG 10 1999

Department of Water Resources

WATER RESOURCES
WESTERN REGION

Completed Depth 101' (Measurable)

Date: Started 4/29/99 Completed 5/12/99

13. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name Driscoll Well Drilling Firm No. 524

Firm Official Date 5/12/99

Driller or Operator Date

(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES