

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 67-14891

Exam Date: 5/3/2017

1. Current Owner:
BATES FAMILY TRUST H G BATES LINDA J BATES
1525 S CRANE CREEK RD MIDVALE ID 83645 (208)355-0190

2. Accompanied by: GEORGE BATES
Phone No:
Address:
Relationship to Permit Holder:

3. SOURCE:
GROUND WATER

TRIBUTARY:

B. OVERLAP REVIEW

1. Other water rights with the same place of use: 67-2380 & CRANE CREEK RESERVOIR ADMIN
2. Other water rights with the same point-of-diversion: NONE.

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

GROUND WATER NE¼SW¼ Sec. 14, Twp 12N, Rge 02W, B.M. WASHINGTON County

Method of Determination: GPS OF WELL COLLECTED ON SITE: 44d 22.469, -116d 32.745

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	
12N	02W	13										8.0	10.0	1.0					19.0
12N	02W	14									10.0			31.0	18.0	20.0	7.0	4.0	90.0

Total Acres: 109

Method of Determination: ARCMAP TOOLS USED TO MEASURE IRRIGATED LAND USING 2015 AERIAL IMAGERY.

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.**

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
D0053493	FRANKLIN ELECTRIC	50	550 STS 8-50		8" SUB TURBINE

*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: RISERS UNDER REPAIR. SYSTEM WAS NOT FUNCTIONAL AT TIME OF EXAM.

E. FLOW X Additional Computation Sheets Attached**CALCULATIONS**

Measured Method:

Measured Method: Theoretical

$$Q = \frac{8.8 * (\text{Efficiency}) * \text{hp}}{\text{depth to water} + 2.31 * (\text{psi}) + \text{friction}}$$

Efficiency = 0.70

Depth to water = 189 ft.

psi = 40-60

hp = 50

See attached theoretical sheet.

Theoretical = 1.02 cfs

Sprinkler Calculation:

115 sprinklers * 4.50 gpm = 517.5 gpm = 1.15 cfs

Permit	2.36 cfs
B.U. Standard Allowance	2.18 cfs
B. U. Proof Fee	\$150 → 2.01 to 3.00 cfs
Sprinkler Calculation	1.15 cfs
Theoretical Rate	1.02 cfs
License Recommendation	1.15 cfs

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 109 * 4.0 = 436 \text{ af}$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 1.15 * 231 * 1.9835 = 526.9 \text{ af}$$

V = Smaller of V_{IR} and V_{DR} = **436 af**

2. Volume Calculations for Other Uses: NONE.

G. NARRATIVE/REMARKS/COMMENTS

The field exam was conducted by WRA Patrick Kelly and was accompanied by George Bates on 5/3/2017. Bates Family Trust are permit holders and owners of the ranch according to current Washington County taxlot data.

67-14891 was issued with a maximum diversion rate of 2.36 cfs. This would allow the maximum inch/acre rate on 118 acres. The system was under repair at the time of the exam due to broken risers in the field. The users were able to produce enough information from pump records to make an adequate theoretical calculation. See the attached theoretical sheet

which estimates a flow of 1.02 cfs.

During the exam, Mr. Bates suggested that he was able to fully irrigate one field at one time. The ranch uses wheel lines with 9/64" sprinkler nozzles. A total of 115 wheel line sections with sprinkler heads were counted across the north (larger) field. At 60 psi, these nozzles are rated at 4.50 gpm. Based on this, 115 sprinklers suggests a rate of 1.15 cfs. This is slightly higher than the theoretical, however together they suggest similar rates. Benefit of the higher rate between the two is being recommended for licensing. The 1.15 cfs recommendation closely matches the existing surface water right of 1.08 cfs. This further suggests a system that is built at the recommended rate.

Overlap review finds no other groundwater rights exist on the property. Surface water irrigation rights exist under Milk Creek right 67-2380 and Crane Creek Reservoir Admin rights. A combined use limit between 67-2380 and 67-14891 will be created limiting the rights to the same 118 acres.

Groundwater supplemental to surface water conditions are included on the permit. The users have developed a system where the groundwater can enter the existing surface water line. Pumping from the well is limited to times when surface water is not available.

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	03/15 to 10/31	1.15 CFS	436.0 AF
	<u>Totals:</u>	1.15 CFS	436.0 AF

2. Recommended Amendments

 Change P.D. as reflected above Add P.D. as reflected above X None

 Change P.U. as reflected above Add P.U. as reflected above X None

I. AUTHENTICATION

Field Examiner's Name Patrick Kelly Date 5-3-2017

Reviewer _____ Date _____



67-14891 System Diagram

Water user maintained records from the well driller that indicates a 50 hp Franklin Electric pump installed in the well. Lift was written on the pump docs reading 189'. A range of discharge pressures were used under what we would expect to see from common sprinkler pressures (40-60 psi). Theoretical average flow rate is 1.02 cfs.

The ranch uses wheel lines with 9/64" sprinkler nozzles. A total of 115 wheel line sections with sprinkler heads were counted across the north (larger) field. At 60 psi, these nozzles are rated at 4.50 gpm. Based on this, 115 sprinklers suggests a rate of 1.15 cfs. This is slightly higher than the theoretical, however together they suggest similar rates. Benefit of the higher rate between the two is being recommended for licensing. The 1.15 cfs recommendation closely matches the existing surface water right of 1.08 cfs.

THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 67-14891
 Reviewer: Patrick Kelly
 Date of Review: 5/8/2017

P/D No.:	Scenario 1	Scenario 2	Scenario 3
PUMP HORSEPOWER	50	50	50
BOOSTER HORSEPOWER	0	0	0
PUMPING LEVEL	189	189	189
DISCHARGE PRESSURE	40	50	60
RATE OF FLOW (cfs)	1.09	1.01	0.94 1.02

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.
 No Friction

Examiners Notes:

Water user maintained records from the well driller that indicates a 50 hp Franklin Electric pump installed in the well. Lift was written on the pump docs reading 189'. A range of discharge pressures were used under what we would expect to see from common sprinkler pressures (40-60 psi). Theoretical average flow rate is 1.02 cfs.

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

855800

1. WELL TAG NO. D 0053493

Drilling Permit No. 907760-855800
Water right or injection well # 67-14891

2. OWNER

Name George Bates
Address 1525 South Crane Rd
City Midvale State ID Zip 83645

3. WELL LOCATION:

Twp. 12 North ☒ or South ☐ Rge. 2 East ☐ or West ☒
Sec. 14 1/4 NE 1/4 SW 1/4

Gov't Lot _____ County Washington

Lat. 44 22' 28.1" (Deg. and Decimal minutes)

Long. 116 32' 44.6" (Deg. and Decimal minutes)

Address of Well Site same

City _____

Lot _____ Blk. _____ Sub. Name _____

4. USE:

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

5. TYPE OF WORK check all that apply

(Replacement etc.)

☒ New Well ☐ Replacement well ☐ Modify existing well
☐ Abandonment ☐ Other

6. DRILL METHOD:

☒ Air Rotary ☐ Mud Rotary ☐ Cable ☐ Other

7. SEALING PROCEDURES

Seal material	From (ft)	To (ft)	Quantity (lbs or ft ³)	Placement method/procedure
bentonite	0'	103'	6750 lbs	poured
bent grout	103'	218'	578	tremie

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing	Uner	Threaded	Welded
10"	+2'	221'	.250	steel	☒	☐	☐	☒
8"	210'	425'	.250	steel	☒	☐	☐	☒

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 221' & 425'

9. PERFORATIONS/SCREENS:

Perforations ☐ Y ☒ N Method

Manufactured screen ☐ Y ☒ N Type

Method of installation

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule

Length of Headpipe _____ Length of Tailpipe _____

Packer ☐ Y ☒ N Type

10. FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft ³)	Placement method

11. FLOWING ARTESIAN:

Flowing Artesian? ☐ Y ☒ N Artesian Pressure (PSIG)

Describe control device

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) 12 Static water level (ft) 89

Water temp. (°F) _____ Bottom hole temp. (°F) _____

Describe access port

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)
No Test		

Test method:

Pump ☐ Bailor ☐ Air ☐ Flowing artesian ☐

Water Quality test or comments:

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water	
				Y	N
14"	0'	3'	top soil		X
14"	3'	14'	brown clay		X
14"	14'	26'	brown/black rock		X
14"	26'	41'	brown clay		X
14"	41'	90'	brown clay with boulders		X
14"	90'	94'	brown rock		X
14"	94'	105'	broken rock		X
14"	105'	110'	grey clay		X
14"	110'	115'	grey sand		X
14"	115'	130'	grey sandstone		X
14"	130'	151'	grey sandstone with cracks	X	
14"	151'	155'	grey clay		X
14"	155'	191'	grey sandstone with cracks	X	
14"	191'	218'	green clay		X
10"	218'	243'	green clay		X
10"	243'	286'	green clay with cracks	X	
10"	286'	288'	sand	X	
10"	288'	291'	green clay		X
10"	291'	325'	grey clay with cracks	X	
10"	325'	385'	grey clay		X
8"	385'	419'	grey shale		X
8"	419'	425'	broken black rock	X	
8"	425'	480'	black lava with cracks	X	

Additional seal

bentonite chips 211' to 385' 1100#s

RECEIVED

AUG 03 2009

WATER RESOURCES

WESTERN REGION

Completed Depth (Measurable) _____ 481

Date: Started 5-06-09 Completed 7-09-09

14. DRILLER'S CERTIFICATION

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

Company Name Down Right Drilling & Pump, Inc. Co. No. 637

*Principal Driller [Signature] Date 7-31-09

*Driller [Signature] Date 7-31-09

*Operator II _____ Date _____

Operator I _____ Date _____

* Signature of Principal Driller and rig operator are required



Well tag
D0053493



10" well
discharges to
pipe shown on
right.

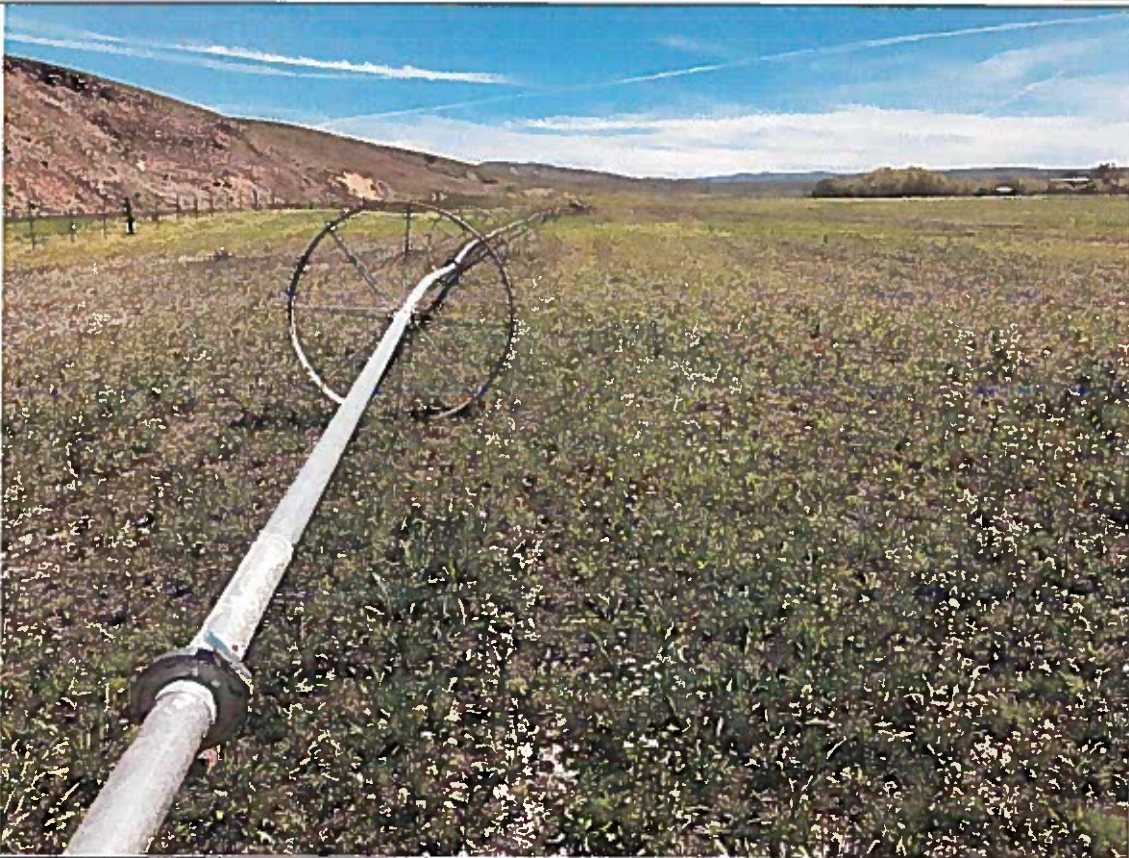
Pressure gauge
and valve shown.

No measuring
device installed.



Well shown in the background. Groundwater able to enter surface water system shown in the foreground.

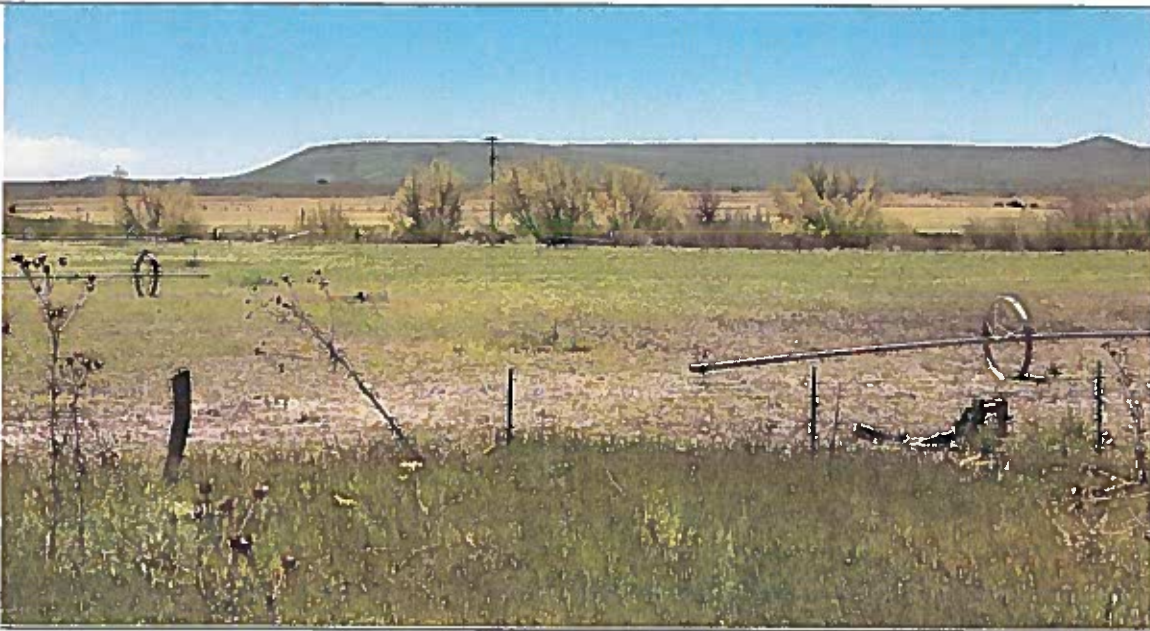
This is pump site to 67-2380 and Crane Creek shares.



Wheel line on POU for sprinkler irrigation practices.



9/64" nozzles

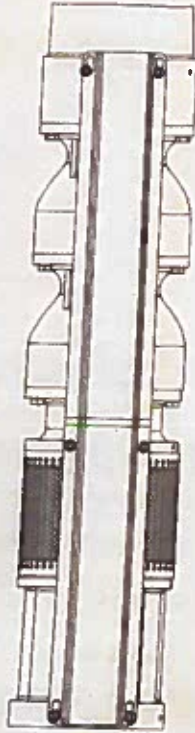


POU shown with
risers in field.



Franklin Electric

SUBMERSIBLE TURBINE PUMPS OWNER'S MANUAL



BEFORE INSTALLING PUMP, BE SURE TO READ THIS OWNER'S MANUAL CAREFULLY.

INSPECT THE SHIPMENT

Examine the pump when it is received to be sure there has been no damage in shipping. Should any be evident, report it immediately to the transportation company and ask to have it inspected. Check the pump nameplate to ensure you have received the correct pump unit.

Installed 3-12-14

READ AND FOLLOW SAFETY INSTRUCTIONS

⚠ This is the safety alert symbol. When you see this symbol on your pump or in this manual, look for one of the following signal words and be alert to the potential for personal injury:

⚠ DANGER warns about hazards that will cause serious personal injury, death or major property damage if ignored.

⚠ WARNING warns about hazards that can cause serious personal injury, death or major property damage if ignored.

⚠ CAUTION warns about hazards that will or can cause minor personal injury or major property damage if ignored.

The label **NOTICE** indicates special instructions, which are important but not related to hazards.

⚠ WARNING



Hazardous voltage. Can shock, burn, or cause death.

Ground motor before connecting to power supply. Disconnect power before working on pump, motor or tank.

Carefully read and follow all safety instructions in this manual and on pump.

Keep safety labels in good condition.

Replace missing or damaged safety labels.

Pump records indicate a 50 hp pump set 189'.

Installed 3/12/14

Franklin Electric

550 STS 8-50 50 H.P.

8" Sub-Turbine, 8" motor

- Approx 650 gpm at 55-60 psi
- Pump set 189' 5" Black Pipe
- #4 WIRE
- Water level 90'



State of Idaho

DEPARTMENT OF WATER RESOURCES

Western Region • 2735 Airport Way • Boise, Idaho 83705-5082

Phone: (208) 334-2190 • Fax: (208) 334-2348 • Website: www.idwr.idaho.gov

C.L. "BUTCH" OTTER
Governor

GARY SPACKMAN
Director

April 19, 2017

COPY

BATES FAMILY TRUST
H G BATES AND LINDA BATES
1525 S CRANE CREEK RD
MIDVALE ID 83645

RE: Scheduling Field Exam for Water Right Permit No. 67-14891

Dear Permit Holder:

We are planning to conduct water right examinations in the vicinity of the above-referenced permit **this season**. An examination is needed to verify the water use in order to issue a water right license.

The above-referenced permit authorizes **2.36 cfs of GROUND WATER** for **IRRIGATION** use. **If you have developed a beneficial use and still own the place of use property, please contact me at your earliest convenience to schedule an examination.**

If you did not develop a beneficial use of water under the permit during the beneficial use period, a license cannot be issued and the permit should be relinquished. If that use was developed, but have ceased using the water and you currently carry no interest in it, please relinquish the permit by submitting the enclosed Relinquishment of Permit form (no fee required).

If you did develop a beneficial use of water under the permit, but you no longer own the place of use property identified in the permit, please submit the enclosed Assignment of Permit form with the applicable \$25 processing fee.

Please contact me within the next thirty (30) days at (208) 334-2190 to either schedule an examination or submit a relinquishment or assignment form. If you no longer own the place of use property and/or do not respond to this letter, the department will work with the current property owner to issue a license or void the permit.

Sincerely,

Patrick Kelly
Water Resource Agent, Sr.

Enclosures: Relinquishment of Permit form
Assignment of Permit form
Water Permit Report and Map