

MEMORANDUM

TO: Water Right Permit File 63-34120

FROM: Daniel A. Nelson

DATE: November 5, 2019

SUBJECT: Combined Condition Limits

This permit was field examined by Paula Dillon. In review of this permit by administration, it was determined that an additional combined permit limitation would be needed for water rights 63-34120 and 63-34121. The lower well capacity is limited to a diversion rate of 0.29 cfs, so we need to ensure that when these two rights when diverted together do not exceed that capacity.

This was done to ensure the capacity of the lower well is not exceed. At first I did not think this was needed, and I instructed Ms. Dillon not to include this condition. After we discussed the system in detail, I am convinced now that a combined diversion rate is needed on these rights.

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 63-34120

Exam Date: 8/29/2019

1. **Current Owner:** DAVE LACKEY2. **Accompanied by:** DAVE LACKEY, Owner DAN NELSON, IDWR3. **Source:** Groundwater**Method of Determination:** Field Exam, Well Driller's report**B. OVERLAP REVIEW**1. **Other water rights with the same place of use:** YES Overlap

Water Right No.	Source	Purpose of Use	Basis
63-31288	Groundwater	Irrigation	Decreed

Comments: This water right POU covers the same 10 acre parcel as this permit and has a separate groundwater POD.

2. **Other water rights with the same point-of-diversion:** YES Overlap

Water Right No.	Source	Purpose of Use	Basis
63-34121	Groundwater	Irrigation	License

Comments: This is the well that is shared with this permit.

C. DIVERSION AND DELIVERY SYSTEM1. **Point(s) of Diversion Location:**

GROUND WATER SW¼ SE¼, Sec. 10, Twp 02N, Rge 03W CANYON County

Method of Determination: Field Exam, Well Driller's Report2. **Place(s) of Use:** IRRIGATION

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
02N	03W	10															9.0		9.0

Total Acres: 9.0

Method of Determination: Field Exam, 2017 NAIP Imagery3. **Supporting Documents:**

☒ 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. **Diversion Pumps:**

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
D0071704		40 VS			

D. FLOW MEASUREMENTS**1. Equipment:**

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
Nozzle flow pressure	Handheld					

- 2. Measurements:** A measurement using the Panametric ultrasonic flow meter was attempted on the irrigation pipe, but we were unable to obtain appropriate readings. Nozzle flow pressure was measured at each end of the lines and several places in between.

E. FLOW CALCULATIONS

 X Additional Computation Sheets Attached

Measured Method: Nozzle Flowrate Calculator

The point of diversion is a well shared by two land owners. Both systems were running during the flow measurements. Nozzle flow rates were 36 psi closest to the pump and 30 psi at the end of the line for this permit.

Field 1 (63-34120 - permit holder):

Average pressure at nozzle: 33 psi (beginning of line = 36; end of line = 30 psi)

Nozzle diameter: 9/64"

Number of nozzles: 24

Flowrate Calculator total: 0.181 cfs

Field 2 (63-34121 - neighbor):

Average pressure at nozzle: 27 psi (beginning of line = 30; end of line = 24 psi)

Nozzle diameter: 9/64"

Number of nozzles: 16

Flowrate Calculator total: 0.109 cfs

0.02 cfs/acre for irrigation of more than 5 acres is indicated (Idaho Code §42-202(3)).

9 acres x 0.02 cfs = .18 cfs

Shared well capacity: 0.181 cfs + 0.109 cfs = 0.29 cfs when both fields are irrigated at the same time.

The permit owner has two wells tied into the same system: the House Well and the Shared Well. The Shared Well can supply 0.29 cfs and the House Well can supply 0.07 cfs (see theoretical sheet) for a total of 0.36 cfs system capacity. This system irrigates 10 acres under water rights 63-31288 and 63-34120 with a combined diversion rate limit of 0.20 cfs. Water right 63-34121 for the neighbor's property, diverted out of the shared well, authorizes a diversion rate of 0.15 cfs. A system capacity of 0.36 cfs can supply the authorized amount for both rights, so no combined limitation is needed with water right 63-34121. However, a combined limit is needed for water rights 63-31288 and 63-34120.

Recommend 0.18 cfs with a combined rate limit of 0.2 cfs with 63-31288.

F. VOLUME CALCULATIONS**1. Volume Calculations for irrigation:**

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 9.0 \times 4.5 = 40.5 \text{ AF}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.18 \times 260 \times 1.9835 = 92.83 \text{ AFA}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 40.5 \text{ AFA}$$

2. Volume Calculations for Other Uses: N/A**G. NARRATIVE/REMARKS/COMMENTS**

This permit shares a well located on an adjacent parcel next to Lewis Lane. The irrigation of the 10-acre parcel at 14370 Lewis Lane associated with this permit consists of 7.8 acres of field and 1.2 acres of landscaping around a home just south of Lake Lowell in Nampa. There is an uphill gradient of about 20 feet from the well to the north end of the parcel where the home and landscape

are located. Measurement was done with the both systems running (the permit owner's field and the adjacent field where the well is located). Both agricultural fields can be irrigated at the same time, but there is not sufficient pressure to irrigate additional areas, such as landscape, at the same time. The well has a 40 hp variable speed submersible pump with a pressure tank set to maintain 80 psi. The pressure at the well was 45 psi during measurement.

A second well is located on the opposite end of the permit property (north). This well is associated with overlapping water right 63-31288 which was a transfer from 63-3597P. The licensed use for this well is irrigation, but it is also used for domestic. The two well systems on this property are interconnected, but this well was not running during the field exam. Since it is connected to the system a theoretical flow calculation was done and it was determined that a combined rate limit was necessary for this right and this permit.

However, the shared well associated with this permit provides more than enough water to irrigate the entire 10 acres authorized under both the existing water right and this permit. Nine acres were found to be irrigated at the time of this exam, but we cannot reduce the existing water right using conditions on this right. Therefore, we will need to add a combined limitation condition that limits the existing right and this permit on the place of use described above to 0.20 cfs, 45 af, and 10 acres of irrigation.

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

Condition 930 states "Water bearing zone to be appropriated is 300 to 500 feet". The well drillers' report indicates the water-bearing zone is between 500 and 700 feet.

We were able to remove the water bearing zone condition on this permit, because the place of use sits outside of the Boise Ground Water Restricted Area. Currently, the Department requires that all wells must be cased to 200 feet to protect shallow ground water. The well for this permit is cased 490 feet (Shared Well) and to 418 feet for the House Well. This amount is well below the 200 feet now required, and is below the lower limit of the water bearing zone. Both wells appear to be diverting water deeper than the maximum depth authorized by the permit, but it is really the shallow water that Department is trying to protect in this area. Therefore, the water bearing zone condition can be removed.

H. RECOMMENDATIONS

1. Recommended Amounts

Beneficial Use	Period of Use	Rate of Diversion	Volume
IRRIGATION	3/01 to 11/15	0.18 CFS	40.5 AF

Totals: 0.18 CFS 40.5 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 ☒ None

I. AUTHENTICATION

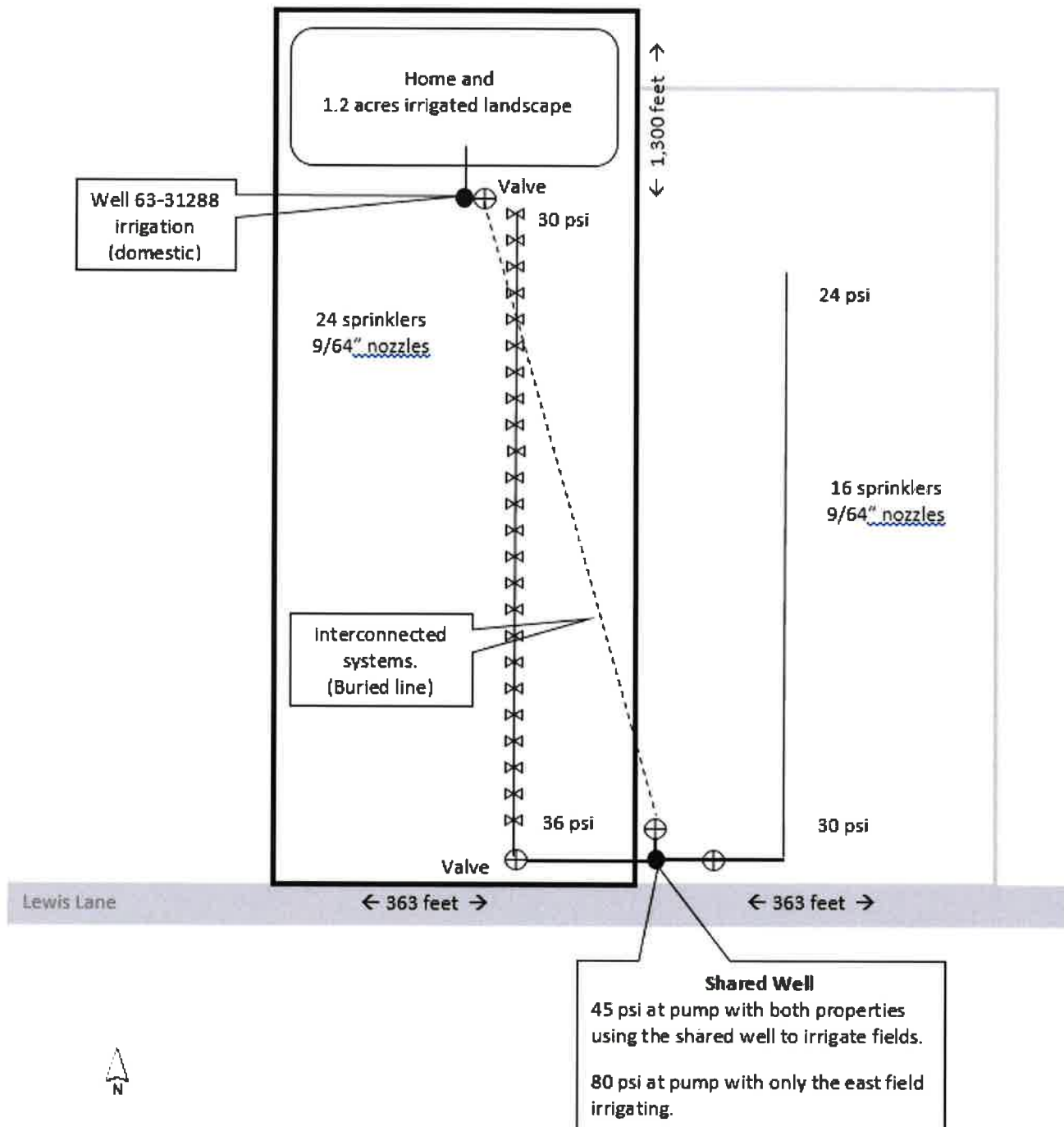
Field Examiner's Name Paula J. Dillon Date 11/1/2019

Paula Dillon - GIS Analyst II

Reviewer Dominic A. Nels Date 11-1-19



Delivery System Diagram



Flow Rate Calculator Summary
Sprinkler Nozzle Flow Rate Calculator

Summary of Methodology

This spreadsheet tool supports the estimation of the flow rate from a sprinkler nozzle or series of sprinkler nozzles. The user can specify up to three different sprinkler nozzle types, and the total number of each of the three types of nozzles. The equation used to calculate the flow rate(s) is a simplified form of the Bernoulli Equation, which along with several supporting relationships, were developed from Hagan et. al. 1987, Jensen 1983, and Lindeburg 1999.

Summary of User Input

	Nozzle Type 1	Nozzle Type 2	Nozzle Type 3
C Value:	1	1	1
Nozzle Press.:	33	27	0
Nozzle Diam.:	0.140625	0.140625	0
No. of Nozzles:	24	16	0

Summary of Results and Output

Type 1 Nozzle(s):	0.18	cfs
Type 2 Nozzle(s):	0.11	cfs
Type 3 Nozzle(s):	0.00	cfs
Combined:	0.29	cfs

References

Hagan, R.M., Haise, H.R., & Edminster, T.W., Irrigation of Agricultural Lands, Agronomy No. 11, 5th Printing. American Society of Agronomy, Madison, WI, USA, 1987.
Jensen, M.E., Design and Operation of Farm Irrigation Systems, Revised Printing. American Society of Agricultural Engineers, 1983.
Lindeburg, Michael R., Civil Engineering Reference Manual. Professional Publications, Belmont, CA, 1999.

Applicant: Dave Lackey

Date: 9/4/2019

WR Number: 63-34120

Notes: This permit diverts from a well shared with the adjacent property. In order to calculate the combined limit of the two systems both were measured while operating simultaneously.

Nozzle Type 1 represents the permit holder:

24 sprinklers with an average pressure of 33 psi and 9/64" nozzles.

Nozzle Type 2 represents the field adjacent to the permit holder: 16 sprinklers with an average pressure of 27 psi and 9/64" nozzles.

Form 238-7
6/07IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

3 pages

1. WELL TAG NO. D 0071704 **Shared Well**
 Drilling Permit No 972047-878104
 Water right or injection well # 63-34121

2. OWNER:
 Name Jim Fay Valentine Page 1 of 3
 Address 14284 W. Lewis Lane
 City Nampa State ID Zip 83686

3. WELL LOCATION:
 Twp. 2 North ☒ or South ☐ Rgd. 3 East ☐ or West ☒
 Sec. 10 1/4 SW 1/4 SE 1/4
 Gov't Lot _____ County Canyon
 Lat. 43 31.063 (Deg. and Decimal minutes)
 Long. 116 40.757 (Deg. and Decimal minutes)
 Address of Well Site 14284 W Lewis Lane
 City Nampa

4. USE:
☐ Domestic ☐ Municipal ☐ Monitor ☒ Irrigation ☐ Thermal ☐ Injection
☐ Other _____

5. TYPE OF WORK:
☒ New well ☐ Replacement well ☐ Modify existing well
☐ Abandonment ☐ Other _____

6. DRILL METHOD:
☐ Air Rotary ☒ Mud Rotary ☐ Cable ☐ Other _____

Seal material	From (ft)	To (ft)	Quantity (lbs or ft ³)	Placement method/procedure
Bentonite	0	15'	1,250 lbs	Poured
Cement/Grout	15'	260'	4.5 yds	Poured

Drill bit (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing liner	Threaded	Welded
12"	+2'	264'	250	Steel	☒	☐	☒
8"	10'	490'	Sdr17	PVC	☐	☒	☐

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 264 ft.

9. PERFORATIONS/SCREENS:
 Perforations ☐ Y ☒ N Method _____
 Manufactured screen ☒ Y ☐ N Type PVC
 Method of installation _____

From (ft)	To (ft)	Slot size	Number	Diameter (nominal)	Material	Gauge or Schedule
490'	710'	.030	-	8"	PVC	SDR 17

Length of Headpipe _____ Length of Tailpipe _____
 Packer ☐ Y ☒ N Type _____

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft ³)	Placement method
Silica 8/16	-	-	5 yds	Poured

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) 375 ft. Static water level (ft) 375 ft.
 Water temp (°F) 76° Bottom hole temp. (°F) 76°
 Describe access point Well Cap

Well test:	Test method:
Drawdown (feet)	Pump
Discharge or yield (gpm)	Boiler
Test duration (min. hrs.)	Air
70 ft.	Flowing Artesian
250 gpm	
7 Hrs.	

Water quality test or comments: _____

13. LITHOLOGIC LOG and/or repairs or abandonment:				Water	
Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Y	N
24"	0	7'	Top Soil		X
24"	7'	10'	Lava Gravel		X
24"	10'	15'	Brown Sandy Clay		X
16"	15'	16'	Brown Sandy Clay		X
16"	16'	35'	Black Lava Sand		X
16"	35'	52'	Tan Clay		X
16"	52'	58'	Sandstone & Pea Gravel		X
16"	58'	77'	Tan Clay		X
16"	77'	81'	Lava		X
16"	81'	87'	Brown Clay with Lava Gravel		X
16"	87'	124'	Sandstone		X
16"	124'	131'	Brown Clay with Lava Gravel		X
16"	131'	141'	Sandstone		X
16"	141'	146'	Brown Clay with Lava Gravel		X
16"	146'	162'	Sandstone		X
16"	162'	210'	Tan Clay		X
16"	210'	221'	Tan Sand		X
16"	221'	242'	Tan Clay		X
16"	242'	256'	Tan Sand		X
16"	256'	264'	Tan Clay		X
13"	264'	274'	Tan Clay		X
13"	274'	276'	Tan Sand		X
13"	276'	281'	Tan Clay		X
13"	281'	283'	Brown Clay		X
13"	283'	297'	Tan Clay		X
13"	297'	308'	Tan Sandy Clay		X
13"	308'	348'	Tan Clay		X
13"	348'	356'	Tan Sandstone		X
13"	356'	374'	Tan Clay		X
13"	374'	397'	Tan Sandstone	X	
13"	397'	408'	Tan Clay		X

RECEIVED
JUL 11 2016
WATER RESOURCES
WESTERN REGION

(Continued on Page 2)

Completed Depth (Measurable): 710 ft.
 Date Started: 4/8/2016 Date Completed: 5/17/2016

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 Post Drilling Inc. Co No. 670
 Principal Driller _____ Date 5/24/2016
 Driller _____ Date 5/24/2016
 Operator II _____ Date _____
 Operator I _____ Date 5/24/2016
 * Signature of Principal Driller and rig operator are required.

Form 238-7
6/07

IDAHO DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

1. WELL TAG NO. D 0071704
 Drilling Permit No. 972047-878104
 Water right or injection well # 63-34121

2. OWNER:
 Name Jim Fay Valentine Page 2 of 3
 Address 14284 W. Lewis Lane
 City Nampa State ID Zip 83686

3. WELL LOCATION:
 Twp. 2 North ☒ or South ☐ Rge. 3 East ☐ or West ☒
 Sec. 10 1/4 SW 1/4 SE 1/4

Gov't Lot _____ County Canyon
 Lat. 43 31.063 (Deg and Decimal minutes)
 Long. 116 40.757 (Deg and Decimal minutes)
 Address of Well Site 14284 W Lewis Lane
 City Nampa

4. USE:
☐ Domestic ☐ Municipal ☐ Monitor ☒ Irrigation ☐ Thermal ☐ Injection
☐ Other

5. TYPE OF WORK:
☒ 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)	Placement method/procedure

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Schedule	Material	Casing Liner Threaded Welded
					☐ ☐
					☐ ☐
					☐ ☐
					☐ ☐

Was drive shoe used? ☐ Y ☐ N Shoe Depth(s) _____

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)	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) _____ Static water level (ft) _____
 Water temp. (°F) _____ Bottom hole temp. (°F) _____

Describe access port _____

Well test:	Test method:	Pump	Boiler	Air	Flowing artesian
Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)	☐	☐	☐
			☐	☐	☐

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
13"	408'	413'	Tan Sandstone	X	
13"	413'	415'	Tan Clay		X
13"	415'	417'	Tan Sandstone	X	
13"	417'	437'	Tan Sandy Clay		X
13"	437'	444'	Sandstone	X	
13"	444'	455'	Blue Clay		X
13"	455'	457'	Blue & Black Sandstone	X	
13"	457'	492'	Blue Clay		X
13"	492'	503'	Baked Blue Clay		X
13"	503'	510'	Blue Sandstone	X	
13"	510'	514'	Blue Sandy Clay		X
13"	514'	535'	Blue Clay		X
13"	535'	538'	Blue Sandstone	X	
13"	538'	551'	Blue Clay		X
13"	551'	564'	Light Blue & White Clay		X
13"	564'	571'	Green & Black Sandstone	X	
13"	571'	573'	Blue Sandy Clay		X
13"	573'	577'	Sandstone	X	
13"	577'	579'	Blue Sandy Clay		X
13"	579'	580'	Sandstone	X	
13"	580'	584'	Blue Sandy Clay		X
13"	584'	587'	Sandstone	X	
13"	587'	592'	Blue Sandy Clay		X
13"	592'	596'	Sandstone		X
13"	596'	597'	Blue Sandy Clay		X
13"	597'	599'	Sandstone	X	
13"	599'	601'	Blue Sandy Clay		X
13"	601'	603'	Sandstone	X	
13"	603'	605'	Blue Clay		X
13"	605'	610'	Sand	X	
13"	610'	613'	Blue Clay		X

(Continued on Page 3)
 Completed Depth (Measurable): 710 ft.
 Date Started: 4/8/2016 Date Completed: 5/17/2016

14. DRILLER'S CERTIFICATION:
 We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name Post Drilling Inc. Co. No 670
 Principal Driller _____ Date 5/24/2016
 Driller _____ Date 5/24/2016
 Operator _____ Date _____
 Operator _____ Date 5/24/2016
 * Signature of Principal Driller and rig operator are required.

Form 238-7
6/07IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D 0071704
 Drilling Permit No. 972047-878104
 Water right or injection well # 63-34121

2. OWNER:
 Name Jim Fay Valentine Page 3 of 3
 Address 14284 W. Lewis Lane
 City Nampa State ID Zip 83686

3. WELL LOCATION:
 Twp. 2 North ☒ or South ☐ Rge. 3 East ☐ or West ☒
 Sec. 10 1/4 SW 1/4 SE 1/4
 Gov't Lot _____ County Canyon
 Lat. 43° 31.063 (Deg. and Decimal minutes)
 Long. 116° 40.757 (Deg. and Decimal minutes)
 Address of Well Site 14284 W Lewis Lane
 City Nampa

Lot _____ Blk. _____ Sub. Name _____

4. USE:
☐ Domestic ☐ Municipal ☐ Monitor ☒ Irrigation ☐ Thermal ☐ Injection
☐ Other _____

5. TYPE OF WORK:
☒ New well ☐ Replacement well ☐ Modify existing well
☐ Abandonment ☐ Other _____

6. DRILL METHOD:
☐ Air Rotary ☒ Mud Rotary ☐ Cable ☐ Other _____

Seal material	From (ft)	To (ft)	Quantity (lbs or ft)	Placement method/procedure

Diameter (nominal)	From (ft)	To (ft)	Gauge Schedule	Material	Casing liner threaded welded
					☐ ☐ ☐ ☐
					☐ ☐ ☐ ☐
					☐ ☐ ☐ ☐
					☐ ☐ ☐ ☐

Was drive shoe used? ☐ Y ☐ N Shoe Depth(s) _____

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 _____

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft)	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) _____ Static water level (ft) _____
 Water temp (°F) _____ Bottom hole temp. (°F) _____

Describe access point _____

Well test:	Test method:	Pump	Ball	Air	Flowing
Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)	☐	☐	☐
			☐	☐	☐

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
13"	613'	616'	Sandstone	X	
13"	616'	624'	Blue Clay		X
13"	624'	631'	Sandstone	X	
13"	631'	654'	Blue Sandy Clay		X
13"	654'	658'	Sandstone	X	
13"	658'	662'	Blue Sandy Clay		X
13"	662'	687'	Sandstone	X	
13"	687'	670'	Blue Clay		X
13"	670'	672'	Sandstone	X	
13"	672'	683'	Blue Clay		X
13"	683'	694'	Sandstone	X	
13"	694'	695'	Baked Blue Clay		X
13"	695'	698'	Blue Sandy Clay		X
13"	698'	705'	Sandstone	X	
13"	705'	710'	Blue Clay		X

RECEIVED

JUL 11 2016

WATER RESOURCES
WESTERN REGION

Completed Depth (Measurable) 710 ft.

Date Started: 4/8/2016 Date Completed: _____

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 Post Drilling Inc Co No 670
 *Principal Driller [Signature] Date 5/24/2016
 *Driller [Signature] Date 5/24/2016
 *Operator II _____ Date _____
 Operator I [Signature] Date 5/24/2016
 * Signature of Principal Driller and rig operator are required.

THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 63-34120
 Reviewer: Dan Nelson and Paula Dillon
 Date of Review: 8/29/2019

P/D No.: D0029984

PUMP HORSEPOWER
 BOOSTER HORSEPOWER

PUMPING LEVEL

DISCHARGE PRESSURE

RATE OF FLOW (cfs)

House Well
5
0
350
30
0.07
33

The above calculates the formula =

$$Q = \frac{\text{Efficiency) * hp}}{\text{ter} + 2.31*(\text{psi})+\text{friction}}$$

Assumptions: %70 efficiency.
 No Friction

Examiners Notes:

The permit holder sent information that indicates the house well (63-31288) has a 5 Hp motor. This well is connected into the same system as the shared well associated with this permit. During the field exam the house well was not in operation. If the house well is used at the same time as the shared well is being operated, it would allow an additional 0.07 cfs to the entire system, totaling .36 cfs (0.29 cfs from the shared well + .07cfs from the house well = .36 cfs).

Water right 63-31288 which overlaps this permit is licensed for 10 acres of irrigation at a rate of 0.080 cfs. When added to the recommend rate for this permit (0.18 cfs) the total is 0.26 which exceeds the acceptable rate 0.02 cfs/acre (10 acres x 0.02 = 0.20). Therefore, a combined diversion rate limit of 0.20 cfs for this permit and right 63-31288 is necessary.

This combined rate limit added to the licensed rate of 0.15 cfs on the adjacent property (63-34121) = 0.35 cfs. Since this total is less than 0.36 cfs (from above), it is not necessary to have a combined diversion rate for all three rights.

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

806754

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

1. WELL TAG NO. D0029984
DRILLING PERMIT NO. _____
Other IDWR No. _____

House Well

2. OWNER:

Name JEFF DANIELSON
Address 14370 LEWIS LANE
City NAMPA State ID Zip 83686

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

North ☒ or South ☐
East ☐ or West ☒
Twp. 2 Rge. 3 Sec. 10
Gov't Lot _____ 1/4 SE 1/4 SE 1/4
County CANYON 10 acres 40 acres 160 acres
Lat _____ Long _____
Address of Well Site SAME City _____
(Give at least name of road + Distance to Road or Landmark)
Lt. _____ Blk. _____ 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	800#	POUR

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 418

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	+2	418	250	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:

342 ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or control devices: _____

11. WELL TESTS:

Yield gal./min.	Drawdown	Pumping Level	Time
50	10	350	2 HR

Water Temp. _____ Bottom hole temp. _____

Water Quality test or comments: _____

Depth first Water Encounter _____

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water
10	0	3	TOPSOIL	
	3	18	SAND/ GRAVEL	
8	18	19	SAND/ GRAVEL	
	19	31	YELLOW CLAY	
	31	210	SANDY CLAY LAYERS	
6	210	230	SAND	
	230	280	SAND/ CLAY	
	280	395	SAND	X
	395	400	CLAY	
	400	415	SAND	X
	415	422	YELLOW/ BROWN CLAY	
	422	440	BLUE CLAY	
	440	450	BLUE SAND/ SHALE	X
	450	460	BROWN SHALE/ GRAY SAND	X

RECEIVED

OCT 03 2003
WATER RESOURCES
WESTERN REGION

RECEIVED

OCT 03 2003

WATER RESOURCES
WESTERN REGION

Completed Depth 460 (Measurable)
Date: Started 9/14/2003 Completed 9/24/2003

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 DAVIS WELL & PUMP Firm No. 101

Firm Official Chuck Blain Date 9/25/2003

and Driller or Operator Chris Wain Date 9/25/2003
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES



Well, well house and valves to each property irrigation system. South end facing south next to Lewis Lane.



Arrow points to valve for adjacent property field.



Arrow points to valve for permit property.



At the well facing north. Left side is the permit field; right side is the adjacent property on which the well is located.



At the well looking northwest across the permit field.



Top of permit field facing south. Well in foreground is the point of diversion for water right 63-31288.