

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 11-07641
Exam Date: 4/13/2017

1. Current Owner:
CANYON ESTATES PROPERTY OWNERS ASSN 975 CANYON ESTATES DR FISH HAVEN ID 83287
(801) 940-0045

2. Accompanied by: Theresa Crockett
Phone No: 801 643 2494, tpcrockett@comcast.net
Relationship to Permit Holder: Member of Canyon Estates Water Board

3. **SOURCE:**
GROUND WATER

TRIBUTARY:

B. OVERLAP REVIEW

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

License 11-7413 is a domestic license from groundwater for 200 homes owned by Fish Haven Pipeline Co Inc. which lists places of use in the SENW, SWNE, and SENE of Section 15. 11-7413 does not explicitly state which lots it serves. However, the wells serving 11-7641 are not tied in with Fish Haven Pipeline Company's system. This indicates that the lots 11-7413 serves in the SENW, SWNE, and SENE of Section 15 are likely the lots south of Fish Haven Canyon Rd, which are not part of The Point or Canyon Estates.

Claim 11-7532 serves domestic and stock water uses for a garden and 10 cattle somewhere in the SWNE of Section 15.

2. Other water rights with the same point-of-diversion: 11-7435, 11-7719.

C. DIVERSION AND DELIVERY SYSTEM

1. LOCATION OF POINT(S) OF DIVERSION:

GROUND WATER NW¼NW¼ Sec. 15, Twp 16S, Rge 43E, B.M. BEAR LAKE County

GROUND WATER NW¼NW¼ Sec. 15, Twp 16S, Rge 43E, B.M. BEAR LAKE County

Method of Determination: GPS and ArcMap.

2.

PLACE OF USE: DOMESTIC

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
16S	43E	15	X	X	X	X	X			X									

Method of Determination: Conversation with appropriator and tax lot data.

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
X 1:24,000 or greater.

X Aerial Photo Attached (required for irrigation of 10+ acres).

X Photo of Diversion and System Attached

E. FLOW CALCULATIONS

At the time of examination, demand was too low to cause the system to run. As a result, theoretical calculations were used to estimate the diversion rate.

There are two wells that serve the system, "well #1" located in the **SENWNW** of Section 15, and "well #2," located in the **NWNWNW** of Section 15.

In 2011, IDWR issued a license for water right 11-7435. At that time, IDWR theorized that well #1 could produce 0.16 cfs. That calculation was based on a 15 hp pump and a pumping level of 540 ft., the level reported by the well driller after four hours of pumping at 80 gpm.

Based on the theoretical calculations attached to this exam, well #2 can produce 0.44 cfs. The attached theoretical exam used a pumping level of 210', which was the level reported by the well driller after pumping the well for eight hours at 120 gpm. Well #2 is also a 15 hp pump.

The total rate that the system can theoretically produce is $0.16 \text{ cfs} + 0.44 \text{ cfs} = 0.60 \text{ cfs}$.

This license will be limited to the 0.28 cfs authorized by the permit.

F. VOLUME CALCULATIONS

The volume calculations for this right are based on 0.12 AF/lot for irrigation and the standard 0.6 AF/lot for in-home use.

As specified in the covenants, each lot is limited to 0.1 acres of irrigation. The standard volume for domestic irrigation of 0.5 acres is 0.6 AF.

0.1 acre lots as developed / 0.5 acre lot standard * 0.6 AF standard = **0.12 AF/lot**

0.6 AF/lot in-home use + 0.12 AF/lot domestic irrigation = 0.72 AF/lot

0.72 AF/lot * 14 lots/license = **10.1 af/license**

As requested by Rocky Mountain Environmental Associates, acting as a representative for Canyon Estates Property Owners Association, it is noted that the *consumptive* volume for this license is 2.4 AF. The consumptive volume calculation is based on "Procedures for Estimating Depletion in the Lower Bear River Basin in Idaho," by Dr. Robert W. Hill, January 27, 2003.

Dr. Hill's methods are referenced several times in the Settlement Agreement dated 10/7/2003 between Sam's Hollow Water Company and Pacificorp, as well as the original and amended water management and operation plans for mitigation for Sam's Hollow Water Company.

A spreadsheet is attached detailing the calculations.

Have conditions of permit approval been met? Yes No
 X

G. NARRATIVE/REMARKS/COMMENTS

The system consists of two wells serving the subdivisions known as Upper Canyon Estates and The Point. It consists of hookups for 49 total lots. 33 of the lots in Upper Canyon Estates are covered by license 11-7435. This license covers the 14 lots in The Point. License 11-7719 covers the two remaining lots.

The two wells each have a 15 hp pump and are hooked directly to a 130,000 gallon storage tank that discharges into the system. A third well has been drilled, however no pump has been installed and it is not connected to the system. The system is pressurized as it serves the homes above the tank in elevation, and is gravity fed for the homes below the tank.

Each lot is limited to 1/10th of an acre of irrigation by covenants. The irrigation is mostly for turf grass,

although some trees and gardens are also present.

All of the homes have their own septic tanks.

There are several specific conditions of approval listed on the permit regarding mitigation that are worth examining. These conditions were satisfied as part of this project's development.

A brief overview of the main entities involved in the mitigation analysis will be helpful.

Sams Hollow Water Company owned the original permit, 11-7481. At the time of licensing, Fish Haven Water Users Company ("FHWUC") supplied water for mitigation. Sams Hollow Water Company owned the shares in FHWUC that were used to provide mitigation. Canyon Estates Property Owners Association owned this split portion of 11-7481.

In sum, permit condition number one required the development of a water management and operations plan. That plan can be amended without amending the permit, but changes have to be approved by IDWR. Condition #4 sets specific parameters for the water management and operations plan required by condition #1.

A letter dated June 8, 2006 from IDWR to Randall Budge, the attorney representing Sams Hollow Water Company, stated that IDWR approved a water management and operations plan for permit 11-7481. Two revised Water Management and Operations plans were submitted, one in 2014, the other in 2016.

The amended 2016 plan ("the Plan"), dated 2/10/2015 and archived by IDWR on 2/10/2016, details how water from Fish Haven Creek will be turned into irrigation ditches, measured, and returned to Fish Haven Creek's channel. At the point of return to the channel, it will be measured once more to ensure all of the originally diverted flow is returning to the creek.

The updates are related to subsections "e" and "f" of permit condition #4. All of the other language pertaining to the remaining subsections of condition #4 were identical to the original mitigation plan's language.

The amended 2016 plan again meets the requirements set forth in permit condition #4.

Permit condition #2, in short, identifies right 11-4022 to be used for mitigation purposes. Condition #2 was satisfied by the approval of Transfers 72318 and 79903, which changed a portion of 11-4022's nature of use from Irrigation to Mitigation.

Post-Transfer 79903, condition #1 on right 11-4022 limited the number of acres to be used for mitigation to 184.7. According to the Plan, each acre irrigated by 11-4022 used 1.18 AF annually. $184.7 \text{ acres} \times 1.18 \text{ AF/acre} = 218.0 \text{ AF}$ available for mitigation.

Condition #1 also specified that mitigation was for permits 11-7481, 11-7491 (Sams Hollow), and 11-7796 (Sams Hollow). 11-7481 was split after approval of Transfer 79903 into 11-7641 (Canyon Estates), 11-7718 (Sams Hollow), and 11-7719 (Canyon Estates).

This license has a *consumptive* volume of 2.4 AF. License 11-7491 has a diversion volume of 124.8 AF. Right 11-7719 has a *consumptive* volume of 0.4 AF. License 11-7718 has a diversion volume of 49.2 AF. The Proof of Beneficial Use for permit 11-7796 is due 02/01/2020.

Condition #1 on right 11-4022 states that the right's beneficial use rate and acres used for mitigation will be updated upon the licensing of rights 11-7481, 11-7491, and 11-7796. Right 11-4022 was not updated upon approval of this license because 11-7796 was still in the permit stage.

It is noted that licenses 11-7491, 11-7641, 11-7718, and 11-7719 have used a total of 2.25 cfs (1.22 cfs, 0.28 cfs, 0.71 cfs, and 0.04 cfs, respectively) out of a maximum of 4.51 cfs as specified by condition #1.

The priority date was corrected from November 08, 2001 to November 11, 2001 based on the Extension of Time approval dated May 29, 2009.

H. RECOMMENDATIONS

1. Recommended Amounts

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
DOMESTIC	01/01 to 12/31	0.28 CFS	10.1 AF
	<u>Totals:</u>	0.280 CFS	10.1 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 _____ Cooper Fritz _____ Date _____ 8/18/2017 _____

Reviewer _____ Date _____

11-7641 Depletion Analysis

In-home Use

No. of lots	14	
Average occupancy	4 persons	
Average daily diversion demand - potable	100 gpcd	
Average daily demand - potable/connection	400 gpd	Utah avg day vol.
Daily Home Site Volume	5,600 gpd	
Average annual percent occupancy	40.2%	
Annual volume used	820,960 gal =	2.52 ac-ft
Percent depletion of culinary water - in house	5%	
Annual volume of culinary water in-house depletion	41,048.0 gal =	0.13 ac-ft
Wastewater from culinary in-house water use (to drainfield)	779,912 gal =	2.39 ac-ft
Est. percent depletion from drain field treatment	10%	
Volume of depletion from wastewater disposal (drainfield)	82,096.0 gal =	0.25 ac-ft
Annual vol. depletion of culinary water - home sites	123,144.00 gal =	0.38 ac-ft

Irrigation Use

Irrigated Area per lot	5000 ft^2
Total irrigated area for 14 lots	70000 ft^2
Total irrigated area for 14 lots	1.606979 acres
Depletion (sprinkler-turf grass)	1.25 ac-ft/ac

Annual vol. Depletion from Irrigation **2.008724 ac-ft**

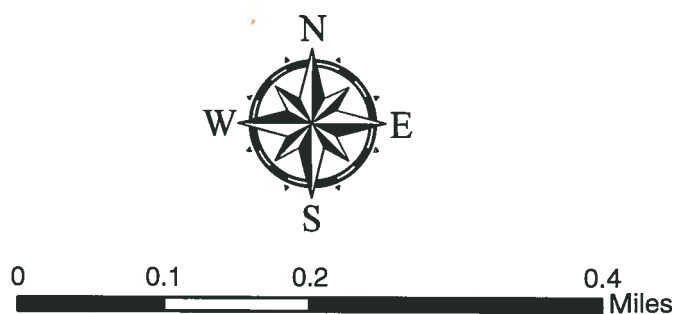
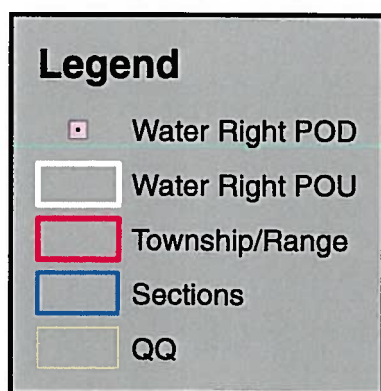
Total Volume for License

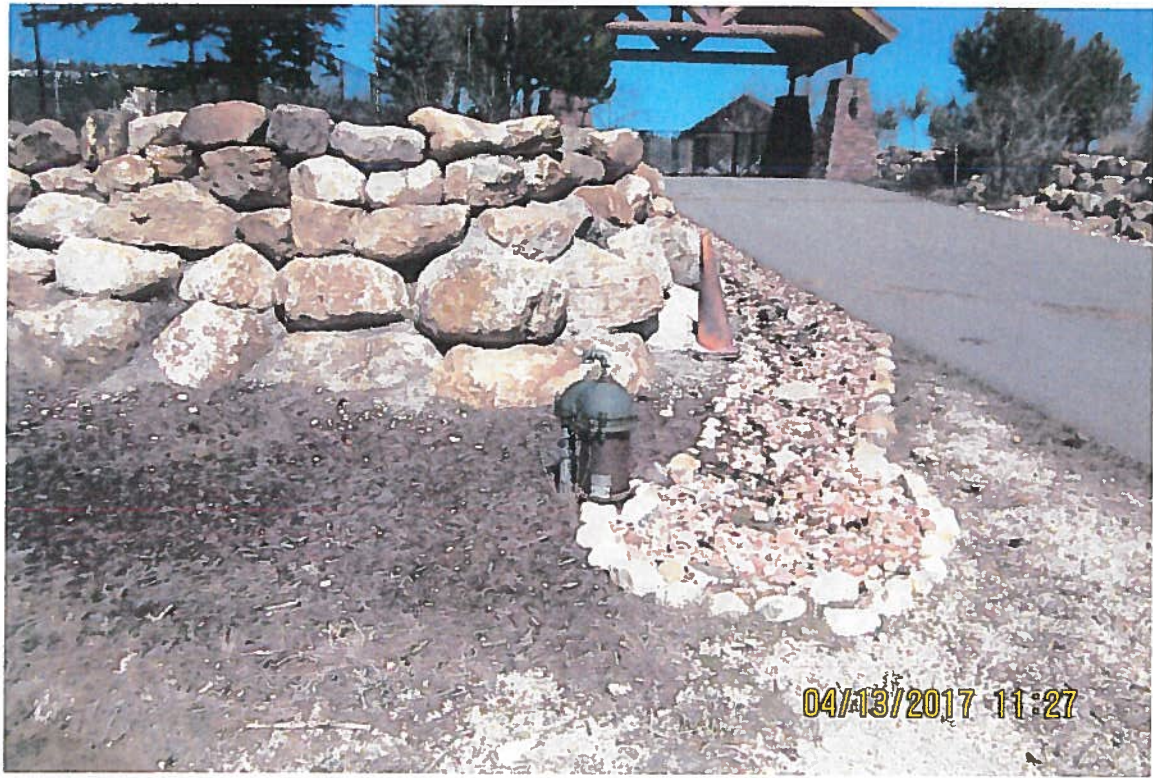
2.39 ac-ft

11-7641 Place of Use and Point of Diversion at Licensing



2015 Imagery





"Well One" SENW NW



"Well Two" NW NW NW

IDAHO DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

1. WELL TAG NO. D 0045663

DRILLING PERMIT NO. 11-07435

Other IDWR No.

2. OWNER:

Name Doug Johnson

Address Bear Lake Realty 208 N. Bear Lake Blvd

City Garden City State UT Zip 84028

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

N W E S	Twp. 16	North	or	South	X
	Rge. 43	East	X	or	West
	Sec. 15	NW 1/4	10 acres	NW 1/4	40 acres
	Gov't Lot	County Bear Lake	NW 1/4	160 acres	
Lat: 42 02'33.87"		Long: 111 25'21.44"			
Address of Well Site Mona Ct. off Canyon					

Estates Dr. off Fish Haven Canyon City Fish Haven
(Give at least name of road + Distance to Road or Landmark)

Lt 4 Blk. Sub. Name Canyon Estates #1

4. USE:

Domestic	X Municipal	Monitor	Irrigation
Thermal	Injection	Other	

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

X New Well	Modify	Abandonment	Other
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6. DRILL METHOD:

Air Rotary	Cable	X Mud Rotary	Other
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7. SEALING PROCEDURES:

Seal/Filter Pack		AMOUNT		METHOD
Material	From To	From To	Sacks or Pounds	
Bent. 3/4 Plug	0 333'	3 Yds		Poured

Was drive shoe used? Y X N Shoe Depth(s) N/A

Was drive shoe seal tested? Y X N How? N/A

8. CASING/LINER:

Diameter	From To	Gauge	Material	Casing	Liner	Welded	Threaded
8"	+2' 333'	.322	Steel	X		X	

Length of Headpipe 0

Length of Tailpipe 0

9. PERFORATIONS/SCREENS:

Perforations	Method
Screens	Screen Type

From	To	Slot Size	Number	Diameter	Material	Casing	Liner

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

121.5 ft. below ground Artesian pressure lb.

Depth flow encountered 340-370 ft. Describe access port or control devices Cap

Office Use Only

Inspected by

Twp	Rge	Sec
1/4	1/4	1/4
Lat: : :	Long: :	

11. WELL TESTS:

X Pump	Bailer	Air	Flowing Artesian
Yield gal./min.	Drawdown	Pumping Level	Time
300 gpm	370'	370'	6 Hrs.
120 g m		210'	8 Hrs.

Water Temp. 50

Bottom hole temp. 50

Water Quality test or comments:

Depth first Water Encounter 270'

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia	From	To	Remarks: Lithology, Water Quality & Temperature	Water	
				Y	N
12"	0	15'	Tan Clay		
12"	15'	270'	Clays, Red & Tan Mix		
12"	270'	320'	Soft Fractured Quartz	X	
12"	320'	333'	Hard Quartz		
8"	333'	340'	Hard Quartz	X	
8"	340'	370'	Hard Fractured Quartz	X	

RECEIVED

APR 09 2008

WATER RESOURCES
WESTERN REGION

Completed Depth 370'

(Measurable)

Date: Started 2/15/2007

Completed 4/4/2007 ✓

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 Treasure Valley Drilling

Firm No. 560

Firm Official

Date 7/6/2007

and

Driller or Operator

Date 7/6/2007

(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 11-7641 & 11-7719
Examiner: Cooper
Date of Field Exam: 4/13/2017

Well Two

P/D No.:

PUMP HORSEPOWER	15
BOOSTER HORSEPOWER	0
PUMPING LEVEL	210
DISCHARGE PRESSURE	0
FRICTION	0
RATE OF FLOW (cfs)	0.44
(gpm)	197.5

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

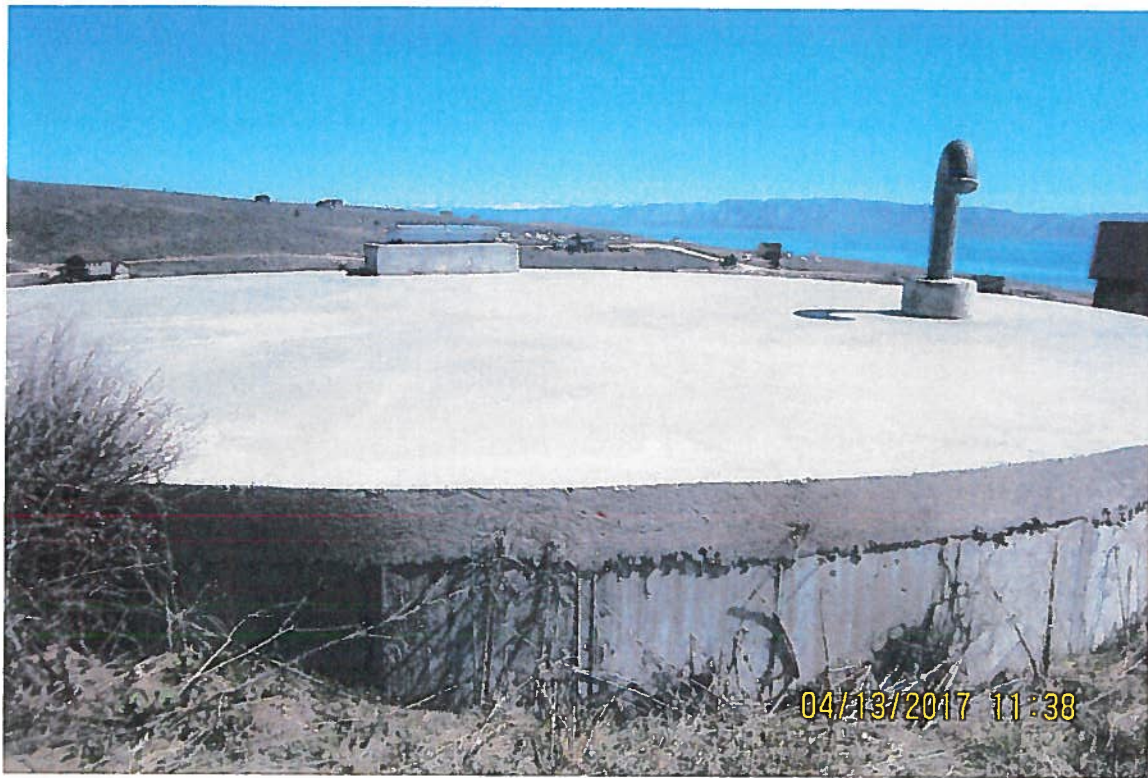
Assumptions: %70 efficiency.

Examiners Notes:

Lift is discussed in field exam. Hp was found during site visit. A standard open discharge psi of 0 was used to estimate the pressure against the pump as it discharges into storage tank.



Meter, located below the convergence of the discharge pipes from the two wells, before discharge into storage tank.



Storage Tank



Standard hook up for undeveloped lots