# STATE OF IDAHO DEPARTMENT OF WATER RESOURCES **BENEFICIAL USE FIELD REPORT**

#### **GENERAL INFORMATION** Α.

- 1. Current Owner: CARA DICKSON PO BOX 1898 POST FALLS ID 83877-1898 KEELAN DICKSON 763 S MANOR HEIGHTS DR POST FALLS ID 83854-6242
- 2. Accompanied by: Cara Kickson Phone No: 208-262-1544 Address: Same as above Relationship to permit Holder: Permit Holder.

#### 3. SOURCE: **GROUND WATER**

# Method of Determination: Arcmap and DRG.

### **B. OVERLAP REVIEW**

1. Other water rights with the same place of use:

YES Overlap Water Right No. Source Purpose of Use Basis GROUNDWATER DOMESTIC / IRRIGATION 95-7897A LICENSE / STOCKWATER

Comments: Right 95-7897A uses Groundwater from a shared community well that has multiple uses that overlap this right's irrigation POU. The applicants for this right use the community well for Domestic use, but once the well associated with this right was put to production ALL irrigation occurring on the applicant's parcel was from the applicant's well during the development period of the permit, and not the community well. As a result, there is no overlap concerns regarding irrigation between rights 95-7897A and this right.

2. Other water rights v	with the same point-of-diversion:	NO Overlap			
Water Right No.	Source	Purpose of Use	Basis		

Comments:

# C. DIVERSION AND DELIVERY SYSTEM

#### 1. LOCATION OF POINT(S) OF DIVERSION:

GROUND WATER SE¼ SE¼, Sec. 8, Twp 50N, Rge 05W, B.M. KOOTENAI County

Method of Determination: GPS. POD located at -116º58.991, 47º41.351. Well permit No. 95-87-N-1-1.

#### PLACE OF USE: IRRIGATION

	See		N	IE			N١	N			SV	V			S	E		Totals	
Twp	wp Rng Sec	Sec	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
50N	05W	8																1.7	1.7
T			4 7																

Total Acres: 1.7

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Permit No: 95-16565 Exam Date: 07/30/2020

### Permit No 95-16565

Method of Determination: Field exam and Arcmap aerial imagery.

Delivery System Diagram Attached (required). Indicate all major components and distances between components.

X 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.

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

X Photo of Diversion and System Attached

4.

Well or Diversion ID No.*	Motor Hp Make		Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size		
95-87-N-1-1	UNKOWN	1					

# D. FLOW MEASUREMENTS

 
1.

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

NONE
Image: Comparison of the series of the s

2. Measurements: Well was located in the subfloor of a small well house at the applicant's property. Piping routed direct from the well to storage tanks and pressure tank with inadequate piping required to complete a flow measurement.

# E. FLOW CALCULATIONS

X Additional Computation Sheets Attached

Measured Method: Theoretical pumping equation estimates flow at 0.02 cfs, considering Department rounding standards. Pump was estimated to be 335 feet deep, with a 40 psi operating pressure. The diversion rate of **0.02 cfs** will be applied as the maximum diversion rate for licensing purposes.

# F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

- V<sub>I.R.</sub> = (Acres Irrigated) x (Irrigation Requirement) = 1.7 acres x 3.0 afa = 5.1 af
- V D.R. = [Diversion Rate (cfs)] x (Days in Irrigation season) x 1.9835 = 0.02 cfs x 246 days x 1.9835 = 9.8
- V = Smaller of  $V_{LR}$  and  $V_{DR}$  = 5.1 af

2. Volume Calculations for Other Uses: N/A

# G. NARRATIVE/REMARKS/COMMENTS

Field exam performed on 7/30/2020 with the applicant, Cara Dickson, showed a groundwater well being used for irrigation purposes. The well, 95-87-N-1-1, has a 1 HP pump which diverted water into two 250 gallon storage tanks and an 80 gallon pressure tank. A second 1 hp pump was used to distribute water from storage tanks to service the irrigation system. I was unable to perform a flow measurement because water was diverted directly into the pressure tank without adequate piping to perform measurement. Theoretical pumping equation was used to estimate a flow rate of 0.02 cfs, considering department rounding standards. The pump was estimated to be 335 feet down and the system running at 40 psi. The applicant's irrigated 1.7 acres, which authorizes a standard diversion rate of 0.05 cfs, but the applicant is limited to pump

#### Permit No 95-16565

performance at the time of field exam that equals 0.02 cfs. 0.02 cfs is recommended as the maximum diversion rate for licensing purposes.

During the field exam, two wells were identified on the applicant's property. The well that was associated with this right's application for permit is a community shared well (95-75-N-50) that provides service to 7 homes for domestic, irrigation, and stockwater use under right 95-9897A&B. The applicants have developed their irrigation system using only the well permit No. 95-87-N-1-1, not associated with the community well. The applicant stated they use the community well for domestic water service, but as they were developing a small acreage vineyard, they didn't want to burden the community well with the added water requirements. Both wells are located in the same 1/1/4 of section 8, and no amendment is required to adjust the location of the well that services the applicant's irrigation system.

The applicant permitted for 9.0 acres of irrigation; during the field exam, the irrigated area was walked and sketched out on field maps. During licensing review, Arcmap aerial imagery was used to accurately trace out the irrigation POU which equaled 1.7 acres. The annual volume associated with the applicant's irrigation POU equals 1.7 acres x 3.0 afa = 5.1 af, which will be assigned as the annual and maximum diversion volume for licensing purposes. The applicants incorporated two types of irrigation systems from the groundwater well; 1) a two inch poly pipe that reduced down to 1 inch lines and then to individual drip lines were used to irrigate the grape vines in the small acreage vineyard, and 2) a pressurized irrigation system with pop up sprinklers that was used to irrigate the lawn around the home, multiple small garden areas, and several fruit trees located on the applicant's property. The applicant had disconnected the irrigation system that was originally serviced by the community shared well on their property, and all irrigation occurring at time of field exam was from well No. 95-87-N-1-1. This was done in order to be a good neighbor and alleviate added consumption from the community well source.

Conditions 26A, 046, and R62 were removed from the permit during licensing review. Condition R66 was added in place of R62, to describe small acreage irrigation of 1.7 acres. Condition X35 was added to mitigate overlap concerns from overlapping water rights (see below). All other conditions on permit will remain on license. Right 95-7897A uses Groundwater from a shared community well that has multiple uses that overlap this right's irrigation POU. The applicants for this right use the community well for Domestic use, but once the well associated with this right was put into production ALL irrigation occurring on the applicant's parcel was from the applicant's well during the development period of the permit, and not the community well. As a result, there is no overlap concerns regarding irrigation between rights 95-7897A and this right. The portion of right 95-7897A that allows irrigation on the applicants property can be shifted to the other 5 parcels in the 40 acre track designated for irrigation under right 95-7897A. There are no other overlap concerns for this water right.

Have conditions of permit approval been met? X Yes No

#### RECOMMENDATIONS н.

# 1. Recommended Amounts

Beneficial Use	Period of Use	Rate of Diversion	Annual Volume
IRRIGATION	03/15 to 11/15	0.02 CFS	5.1 AF
	<u>Totals:</u>	0.02 CFS	5.1 AF
2. Recommended Amendments			
Change P.D. as reflected abov	e Add P.D.	as reflected above X	None
Change P.U. as reflected abov	e Add P.U.	as reflected above X	None
I. AUTHENTICATION Luke	Bates - Water Resour	ce Agent	1 1
Field Examiner's Name	2D	Date//	27/2020
Reviewer ad Fut		Date	30/2020



# THEORETICAL PUMPING EQUATION FOR WR# 95-16565

Theoretical Pumping Equation is required because system did not allow for a proper measurement. Pump is estimated to be at 330 ft, and running at 40 psi.

PUMP EQUATIONS										
WATER RIGHT No. 95-16565										
	HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI					
Q = HP*8.8*Eff/H	1	427.517	0.8	335	40					
Q = 0.016	cfs	7.4	gpm							









POD – WELL (95-87-N-1-1) BENEATH FLOOR OF PUMP HOUSE



**81 GAL PRESSURE TANK** 



2EA 250 GAL STORAGE TANKS



1 HP WELL PUMP



ORBIT AUTOMATIC SPRINKLER SYSTEM



WATER CONVEYANCE SYSTEM – 2 INCH PVC PIPE TO POU



2 INCH PVC PIPE TO POU





















IRRIGATION PRESSURIZED SPRINKLER AND TRADITIONAL HOSE BIB

