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

Α. **GENERAL INFORMATION**

- 1. Current Owner: MIKE NUCKOLS 417 LOST CREEK LN PRIEST RIVER ID 83856 AND/OR CAROLYN NUCKOLS 417 LOST CREEK LN PRIEST RIVER ID 83856
- 2. Accompanied by: Mike Nuckols Phone No: 208-265-2496 Address: Same as above Relationship to permit Holder: Permit Holder

3. SOURCE:

GROUND WATER

Method of Determination: Arcmap and DRG, Well Driller Report.

B. OVERLAP REVIEW

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

Water Right No.	Source	Purpose of Use	Basis	

NO Overlap

Comments:

2.	Other wate	r rights with	the same	point-of-diversion:	
----	------------	---------------	----------	---------------------	--

2. Other water rights v	vith the same point-of-diversion	on: <u>NO</u> Overlap		
Water Right No.	Source	Purpose of Use	Basis	

Comments:

C. DIVERSION AND DELIVERY SYSTEM

1. LOCATION OF POINT(S) OF DIVERSION:

GROUND WATER SW1/4 SE1/4, Sec. 16, Twp 55N, Rge 04W, B.M. BONNER County

Method of Determination: POD well permit No. 96-82-N-40 is located at -116º50.301, 48º06.524.

PLACE OF USE: IRRIGATION

Tun Dna S	200		N	E			N۷	N			SV	V			SE	Ξ		Totals
Twp King S	Sec	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
55N 04W 1	16		(=),													3.4		3.4

Total Acres: 3.4

Method of Determination: Field exam and Arcmap

Permit No: 96-9548 Exam Date: 06/04/2020

Page 1

Permit No 96-9548

Page 2

3. 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	Motor Make	Нр	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
96-82-N-40	UNKOWN	1.5			

D. FLOW MEASUREMENTS

Measurement Equipment	Туре	Make	Model No.	Serial No.	Size	Calib. Date
NONE						

2. Measurements: Unable to perform flow measurement due to water being pumped from well directly to pressure tank, with no proper place to perform flow measurements.

E. FLOW CALCULATIONS

X Additional Computation Sheets Attached Measured Method: Theoretic pumping equation calculated 10.4 gpm, with a pump depth of 362 feet operating at 40 psi. Resulting diversion rate = **0.02 cfs**.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

 V_{LR} = (Acres Irrigated) x (Irrigation Requirement) = 3.4 acres x 3.0 afa = 10.2 af V_{DR} = [Diversion Rate (cfs)] x (Days in Irrigation season) x 1.9835 = 0.02 cfs x 214 days x 1.9835 = 8.48 V = Smaller of V_{LR} and V_{DR} = **8.5 af** – rounded up from 8.48 af complying with department admin mem, application processing memo No. 6, Significant Figures for Numeric Values.

2. Volume Calculations for Other Uses:

G. NARRATIVE/REMARKS/COMMENTS

Field exam conducted on 6/04/2020 with applicant, Mike Nuckols, showed groundwater being used from a well for irrigation purposes. The well is located in a well house, with a 1.5 HP pump which diverts water directly to a pressure tank with no proper place to perform flow measurements. A Theorectical Pumping Equation was used, determining a flow rate of 10.4 gpm, with a pump depth of 362 feet operating at 40 psi. Resulting diversion rate = 0.02 cfs, which is less than the department standard for the irrigation of 3.4 acres, but applicant is limited by pump performance, and **0.02 cfs** is recommended as the Maximum Diversion Rate applied to license.

Permit No 96-9548

Applicant irrigated using multiple frost free hydrants, using garden hoses and portable sprinklers to irrigate. Photographs taken during field exam show multiple frost free hydrants, and the irrigation area was sketched out on map with applicant at time of exam. During licensing review, Arcmap aerial imagery was used to trace out irrigation acreage equaling 3.4 acres. Annual volume for irrigation was computed as 3.4 acres x 3.0 afa = 10.2 af, but applicant is limited to the V_{D.R} value, the smaller of the two volume calculations, which equals 0.02 cfs x 214 day irrigation season x 1.9835 = **8.5 af** that shall be applied to license as annual volume and maximum diversion volume.

Conditions 046, 26A, and 01M were removed from permit at time of licensing. Condition R62 was replaced with R66 due to change in irrigation from over 5 acres to 3.4 acres, and identifies no more than 0.03 cfs per acre nor more than 3.0 afa per acre for irrigation at the POU. All other conditions remain on license. There are no overlap concerns for this water right.

Have conditions of permit approval been met? X Yes No

H. RECOMMENDATIONS

1. Recommended Amounts

Beneficial Use	Period of Use	Rate of Diversion	Annual Volume
IRRIGATION	04/01 to 10/31	0.02 CFS	8.5 AF
	<u>Totals:</u>	0.02 CFS	8.5 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	х	None

I.	AUTHENTICATION	Luke Bates - Water Resource Agent			
	Field Examiner's Name	(FBB)	Date_	6/24/2020	
	Reviewer Ad La	N	Date	6/20/2020	



THEORETICAL PUMPING EQUATION FOR WR# 96-9548

Theoretical Pumping Equation is required because system did not allow for a proper measurement. Pump is estimated to be at 362 ft, and running at 40 psi.

	PUMP EQUATIONS								
WATER RIGHT No. 96-9548									
	HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI				
Q = HP*8.8*Eff/H	1.5	454.517	0.8	362	40				
Q = 0.023	cfs	10.4	gpm						







1.5 HP PUMP



SYSTEM PRESSURE TANK



PUMP HOUSE AND FROST FREE HYDRANT



IRRIGATION POU



IRRIGATION POU





IRRIGATION POU





IRRIGATION POU AND FROST FREE HYDRANT

