

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 96-16888
Exam Date: 6/22/2023

1. Current Owner:
TONY L LIVINGSTON PO BOX 1291 ATHOL ID 83801-1291 AND
RACHEL D LIVINGSTON PO BOX 1291 ATHOL ID 83801-1291
2. Accompanied by: Tony Livingston
Phone No: 208-659-2891
Address: Same as above
Relationship to permit Holder: Permit Holder.

3. **SOURCE:**
UNNAMED STREAM

Tributary
COCOLALLA CREEK

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
96-9509	Groundwater	Domestic, Stockwater	Permit in process licensing review
96-16889	Unnamed Stream	Irrigation	Permit in process licensing review

Comments:

- WR 96-16888 is a Child right resulting from Parent WR 96-9509 being split into 96-16888 and 96-16889. The split was initiated during licensing review based on separate water sources & water systems that don't co-mingle in a common water system as developed by the permit holder. As recommended for licensing, 96-16888 has the same Stockwater POU as 96-9509 for use with the same stock animals on the property. I've added condition X35 to both WRs in recommendation for licensing that describe that when combined 96-9509 & 96-16888 shall not exceed a total diversion rate of 0.02 cfs and total annual maximum diversion volume of 0.1 af for stockwater use.
- WR 96-16888 & 96-16889 use separate unnamed streams for irrigation with an overlap in POU of 0.8 acres in total. I have added condition X35 to both WRs in recommendation for licensing to describe that when combined 96-16888 & 96-16889 shall not exceed a total diversion rate of 0.03 cfs, a total annual diversion volume of 3.0 af at the field headgate, and the irrigation of 1.0 acres.

2. Other water rights with the same point-of-diversion: NO Overlap

C. DIVERSION AND DELIVERY SYSTEM1. **LOCATION OF POINT(S) OF DIVERSION:**

UNNAMED STREAM SE¼ NE¼, Sec. 35, Twp 55N, Rge 03W, B.M. BONNER County

Method of Determination: GPS. 24-hr impoundment pool with diversion intake pipe in stream located at -116°39.4941, 48°4.4486.

PLACE 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	
55N	03W	35				1.0													1.0

Total Acres: 1.0

PLACE OF USE: STOCKWATER

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
55N	03W	35				X													

Method of Determination: Beneficial use field examination, Bonner County tax parcel map GIS software, & ArcMap.

3.

X Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.

X 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 Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
24 Hr impoundment, in-stream	N/A	N/A	Gravity flow 1 ½ inch poly pipeline to POU	N/A	N/A

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
5-Gal bucket measurement						

2. Measurements: Three 5-gal bucket measurements were taken from the first hose bib connection off the gravity fed main pipeline, with an average of three measurements resulting in a diversion rate of 11.3 gpm = 0.03 cfs, considering department rounding standards.

E. FLOW CALCULATIONS

Measured Method: 5-GAL Bucket Test = (5 gal / 26.85 sec) x 60 sec/min = 11.17 gpm
 = (5 gal / 26.33 sec) x 60 sec/min = 11.39 gpm
 = (5 gal / 26.47 sec) x 60 sec/min = 11.33 gpm

Average of 3ea 5-GAL Bucket Tests = (11.17 gpm + 11.39 gpm + 11.33 gpm) / 3 = 11.3 gpm = **0.03 cfs** considering department rounding standards.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 1.0 \text{ ac} \times 3.0 \text{ afa} = 3.0 \text{ af}$

$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.02 \text{ cfs} \times 214 \text{ days} \times 1.9835 = 8.5 \text{ af}$

$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = 3.0 \text{ af}$

2. Volume Calculations for Other Uses: the water system uses a surface water stream for irrigation and is exempt from volume reporting for the irrigation annual volume & maximum diversion volume. Conditions of approval shall describe the annual volume limits for this water right license.

- Stockwater annual volume = 8 head mixed stock x 12 gpd x 365 days = 35,040 gal annually / 325,850 gal per af = **0.1 af.**

PARENT RIGHT 96-9509 & SPLIT RIGHT(S) RECOMMENDED DIVERSION RATE/VOLUME DATA					
Permit 96-9509 approved value(s)		WR 96-9509 License Recommended Value	WR 96-16888 License Recommended Value	WR 96-16889 License Recommended Value	Enlarged (Y/N)
Domestic	0.04 CFS	0.04 CFS	N/A	N/A	N
Stockwater	0.02 CFS	0.01 CFS	0.01 CFS	N/A	N
Irrigation	0.03 CFS	N/A	0.02 CFS	0.01 CFS	N
Maximum Diversion Rate (CFS)	0.09 CFS	0.05 CFS	0.03 CFS	0.01 CFS	N
		Total Diversion Rates for 3ea split WRs =		0.09 CFS	N
Annual Diversion Volume (AF)	N/A	1.3 AF	0.1 AF (stockwater)	N/A (surface source)	N/A
Maximum Diversion Volume (AF)	N/A	1.3 AF	N/A (surface source)	N/A (surface source)	N/A

Water Right Recommendation Table – evaluating post-SPLIT parent & children diversion rate(s) & diversion volume(s)

G. NARRATIVE/REMARKS/COMMENTS

I split Permit 96-9509 (parent right) into three (3) water rights including 96-16888 and 96-16889 due to water source(s) being independent with water system development from each not co-mingling in common system infrastructure. This right accounts for the Unnamed Stream water source located near the two groundwater shallow wells and uses water for irrigation & stockwater purposes.

I completed the beneficial use field exam on 6/22/2023 with the applicant, Tony Livingston, which showed a small lined 24-hr impoundment pool located in-stream in a small basin that has manual valve controls leading to a poly pipeline system. I GPS located the headgate with valve and collected photographs of the diverting works and pipeline routing above ground following the natural stream channel downgrade to the east of the applicant's residence. The 1 ½ inch poly pipe ends with a tee- hose bib fitting, and sprinkler timer attachments located up slope of a skid trail. Three 5-gal bucket measurements were taken from the first frost free hydrant inline from the well(s) resulting in a flow rate of 0.03 cfs. The system was developed using gravity flow techniques and there isn't a pressure tank installed on the system.

Based on the elevation change and distance from POD to endpoint of the poly pipe run, a 1 ½ inch pipe gravity flowing will exceed 0.03 cfs but during the exam that is the results obtained from a length of hose attached to the tee fitting. Normal operating configuration likely has the gate valve associated with the 24-hr impoundment partially closed to extend the run time on the system before depleting the source on a daily basis. I've recommended a maximum diversion rate of **0.03 cfs** based on my 5-gal bucket measurement results with each beneficial use diversion rate following the split(s) shown in the recommendation table above. Although this system flow capacity is 0.03 cfs and I'm recommending 1 acre irrigation I've limited the irrigation diversion rate to **0.02 cfs**, which is required not to enlarge the irrigation component following the split between children WRs 96-16888 & 96-16889. The same concept applies to the stockwater component's diversion rate; the Department standard rate & Parent Permit 96-9509 authorized 0.02 cfs but based on the splitting of WRs I've limited 96-16888 to a stockwater diversion rate of **0.01 cfs** for licensing purposes.

The irrigation POU includes approximately 0.2 acres of lawn and landscape around the residence and 0.8 acres of sloped open pastureland. The applicant uses hoses to sprinklers to water around the residence and hose to flood irrigation to water along the sloped pastureland for stock feed. I used field maps to sketch out the irrigation POU during the exam and ArcMap aerial imagery to accurately trace out the irrigation POU during licensing review. The annual volume associated with 1.0 acres irrigation equals 3.0 af. IDAPA 37.03.02 Beneficial Use Examination Rules designate irrigation using this surface water stream source is exempt from volume reporting requirements. There is no maximum diversion volume or annual diversion volume for the irrigation component recommended for licensing. Condition R66 provides annual volume requirements for the recommended irrigation beneficial use.

The Stockwater POU consists of three central locations where portable stock tanks are used around the property to water up to 8 head of mixed stock and a couple of chickens. The applicant uses both this system and the groundwater system covered by 96-9509 to water stock throughout the year. I collected photographs during the field exam representing the stockwater uses and am recommending a licensing with an annual diversion volume equal to **0.1 af** for this permit. ArcMap software was used during licensing review to assign the stockwater POU, which is the same as 96-9509's stockwater POU.

Based on the three-way splitting of Parent WR 96-9509, several conditions from the permit are not applicable toward my licensing recommendations for the Children WR 96-16888; condition recommendations are detailed below:

- I removed condition 132 as there is no domestic use developed under this unnamed stream water system.
- Condition 046 was removed as they associate with the groundwater wells covered by 96-9509.
- Condition 26A was removed as the applicant complied with the condition requirements.
- Condition X02 was removed; the annual volume has been determined and the stock animal descriptions are not carried forward to licensing.
- I've added condition X35 to this permit that describes the combined use limitations between 96-9509 & 96-16888 for stockwater by diversion rate and diversion volume.
- I've added a 2nd condition X35 to this permit that describes the combined use limitations between 96-16888 & 96-16889 for irrigation by diversion rate and diversion volume.
- All other conditions on the permit shall be carried forward to licensing.

Overlapping water right concerns between 96-9509, 96-16888 and 96-16889 have been described on PG1 of this report and the two condition X35 which mitigate overlap concerns. There are no additional overlapping water right concerns toward licensing this water right.

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

H. RECOMMENDATIONS

1. Recommended Amounts

<u>Beneficial Use</u>	<u>Period of Use</u>	<u>Rate of Diversion</u>	<u>Annual Volume</u>
IRRIGATION	04/01 to 10/31	0.02 CFS	
STOCKWATER	01/01 to 12/31	0.01 CFS	0.1 AF

Totals: 0.03 CFS

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

Luke Bates – Sr. Water Resource Agent

Field Examiner's Name [Signature] Date 9/11/2029

Reviewer Chae Bell Date 2/5/2015

State of Idaho
Department of Water Resources
Attachment to Field Exam
96-16888

This map depicts the STOCKWATER system diagram.



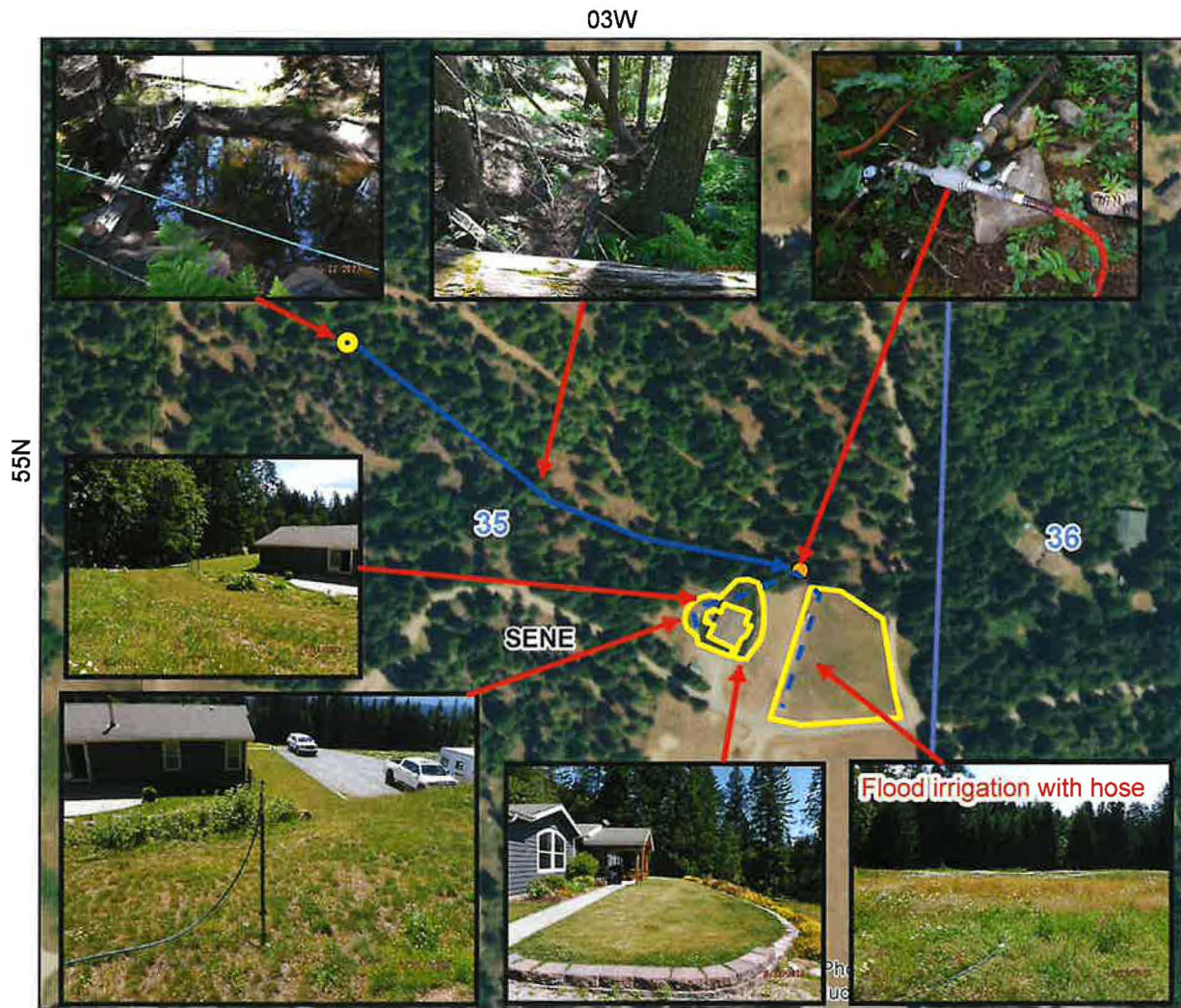
0 0.035 0.07 0.14 Miles

- Place Of Use Boundary
- Townships
- PLS Sections
- Quarter Quarters
- Point of Diversion



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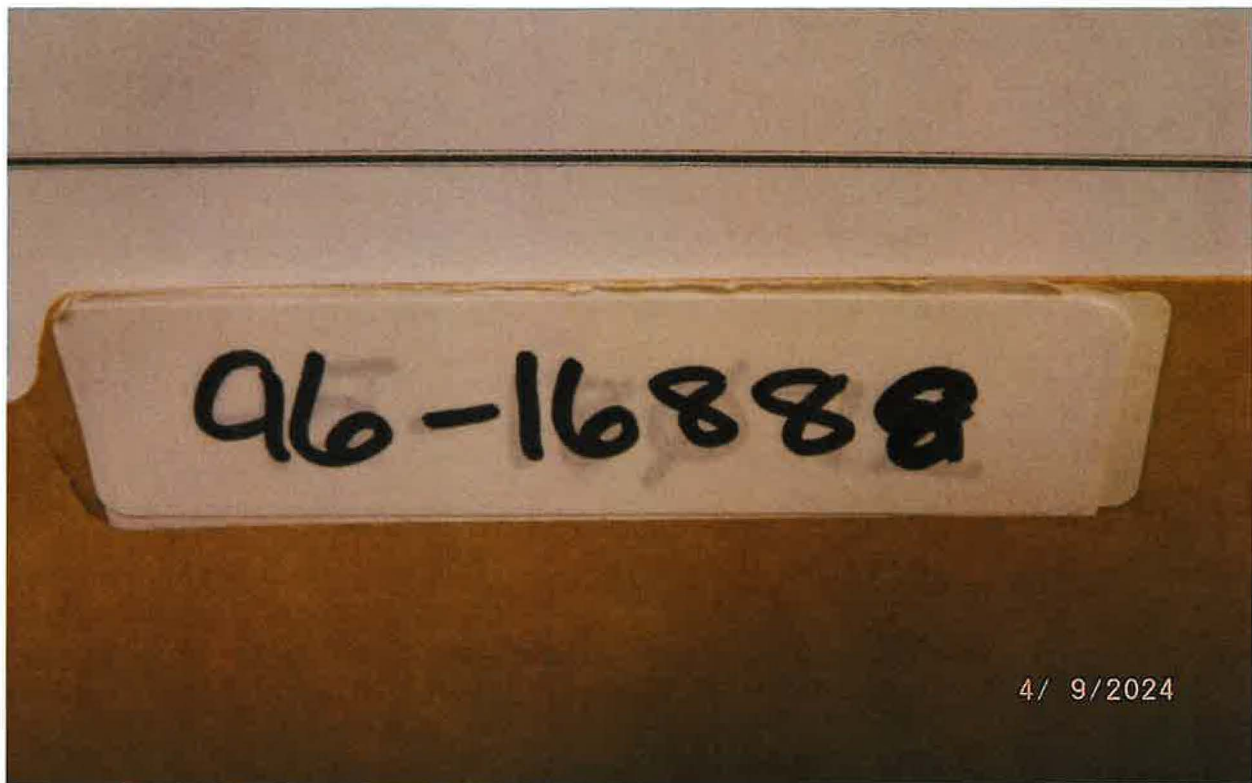
This map depicts the IRRIGATION system diagram.



0 0.035 0.07 0.14 Miles

- Place Of Use Boundary
- Townships
- PLS Sections
- Quarter Quarters
- Point of Diversion





SPLIT # 1: WR 96-16888 split from parent Right 96-9509. BENEFICIAL USE FIELD EXAM DATE 6/22/2023



POD – 24HR IMPOUNDMENT VESSEL COLLECTS UNNAMED STREAM WATER WHICH IS DISTRIBUTED TO IRRIGATION SYSTEM



MANUAL SHUTOFF VALVE AT POD - UNNAMED STREAM WATER CONVEYED BY POLY-PIPE RUN TO IRRIGATION SYSTEM



VIEW LOOKING WEST DOWNGRADE FROM 24 HR IMPOUNDMENT DAM - POLY-PIPE RUN



24 HR IMPOUNDMENT DIVERTING WORKS



END RUN OF POLY-PIPE TO TWO GARDEN HOSE ATTACHEMENTS



IRRIGATION POU



IRRIGATION POU



FIELD WATERED BY FLOOD IRRIGATION PRACTICES



LAWN AND GARDEN AROUND HOME IRRIGATED BY BOTH THIS UNNAMED STREAM SOURCE &
GROUNDWATER SOURCE



STOCKWATER POU