

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 87-10573
Exam Date: 03/23/2021

1. Current Owner:
COPE R GALE JR 3930 MOSCOW MOUNTAIN RD MOSCOW ID 83843-8114
2. Accompanied by: Cope Gale JR
Phone No: 208-669-0995
Address: Same as above
Relationship to permit Holder: Permit holder

3. **SOURCE:**
SPRING

Tributary
GNAT 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
87-10575	GNAT CREEK	DOMESTIC, STOCKWATER	PERMIT – IN PROCESS LICENSING REVIEW

Comments: 87-10575 is a permit currently being licensed in conjunction with this permit, is for the same applicant and beneficial uses as this permit, but uses Gnat Creek as the water source. Condition X35 was incorporated in the permit approval process, and will be carried forward to licensing in order to mitigate overlap concerns between rights 87-10573 & 87-10575.

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

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

SPRING SW¼ NE¼ NW¼, Sec. 24, Twp 40N, Rge 05W, B.M. LATAH County

Method of Determination: GPS located spring enclosed in wooden shed; located at -116°54.642, 46°47.996.

PLACE OF USE: DOMESTIC and 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	
40N	05W	24					X												

Method of Determination: Field exam and Arcmap aerial imagery.

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
☒ 1:24,000 or greater.

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

☒ 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
SPRING – CULVERT BASIN					

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
4-CUP FLOW MEASUREMENT						

2. Measurements: A 4-CUP flow measurement was completed at a 1" overflow pipe from the full 2 ft x 4 ft deep culvert catch basin, with the resulting diversion flow rate of 4 cups in 18.38 seconds; factoring to GPMs, the flow rate equates to 1 gal per 1 min 13 sec, or **0.01 cfs** considering department rounding standards.

E. FLOW CALCULATIONS

Measured Method: 4 CUP measurement = 4 cups per 18.38 seconds = 16 cups per 73.52 seconds = 1 gal per 1 min 13 seconds = less than 1 gal per minute. < 1 gpm is below the minimum value for 0.01 cfs, resulting in the defaulted diversion rate equaling **0.01 cfs**.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation: N/A

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) =$$

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

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

2. Volume Calculations for Other Uses:

$$\text{Domestic annual volume} = 1 \text{ home} \times 1.2 \text{ af} = \mathbf{1.2 \text{ af}}$$

$$\text{Stockwater annual volume} = 12 \text{ chickens} \times 0.1 \text{ gpd} \times 365 \text{ days} = 438 \text{ gal per year} / 325,850 \text{ gal per af} = 0.0013 \text{ af} = \mathbf{0.1 \text{ af}},$$

considering department rounding standards.

G. NARRATIVE/REMARKS/COMMENTS

Field exam conducted on 3/23/2021 with the applicant, Cope R Gale Jr., showed diversion from a spring for domestic and stockwater beneficial uses. At the POD, the applicant has installed a 2 ft x 4 ft long culvert buried vertically in the ground to capture water from a spring. The culvert has a 1 inch poly pipe overflow, which allows water to discharge into a small hole in the ground, which slowly fills and then routes down grade to Gnat Creek. As a 5 gallon bucket test was not feasible, a 4-CUP flow measurement was completed at the 1" overflow pipe from the full culvert catch basin, with the resulting flow rate of 4 cups in 18.38 seconds; factoring to GPMs, the flow rate equates to 1 gal per 1 min 13 sec, or **0.01 cfs** considering department rounding standards. The applicant's permit was approved for a diversion rate of 0.06 cfs, but is limited to the demonstrated spring flow capacity derived at time of the field exam, which equals 0.01 cfs. This diversion rate is applied to both domestic and stockwater, but is not additive in nature.

A small shed/pump station was constructed over the culvert storage basin, incorporating a pressure tank and 1 inch service line that routes to the home for domestic and stockwater use(s). The applicant stated the spring runs constant all winter and into mid-summer, where it starts to slow down and not keep up with demands. The applicant has a separate permit, 87-10575, that was developed with a 1" poly hose from Gnat Creek that is plumbed into this permit's water conveyance system at the 2ft x 4ft culvert storage cistern. The applicant has the capability to open a hose bib allowing Gnat Creek water to supplement the spring source for both domestic and stockwater use(s). Condition X35 was incorporated when licensing this permit, to mitigate overlap concerns between rights 87-10573 & 87-10575.

During the field exam, the Domestic and Stockwater POU was observed and photographed to show proof of beneficial use. Due to a thick tree canopy in the area, Arcmap aerial imagery does not clearly illustrate the applicant's beneficial uses. A two story home is situated between the roadway and Gnat Creek. Approximately 25 yards from the home is a small chicken coop with 12 chickens. The applicant stated gallon buckets of water are collected from the house and walked down to water the chickens daily throughout the year. There is a small area of landscaping and lawn that was snow covered at time of exam, which the applicant's keeps green throughout summer months via frost free hydrant and hose to sprinkler. The domestic annual volume recommended for licensing equals **1.2 af**. The annual volume for stockwater recommended equals $12 \text{ chickens} \times 0.1 \text{ gpd} \times 365 \text{ days} = 438 \text{ gal per year} / 325,850 \text{ gal per af} = 0.0013 \text{ af} = \mathbf{0.1 \text{ af}}$, considering department rounding standards. The maximum diversion volume for licensing purposes equals **1.3 af**.

Condition X15 was removed, as there is no water flow capture involving water flow related to fish passage with regard to the 2ft x 4ft culvert, nor overflow pipe installed in the system. Condition X02 was removed from the permit during licensing review. Condition 187 was added to describe irrigation occurring under domestic use shall not exceed $\frac{1}{2}$ acre. Condition X35 was updated to reflect accurate diversion rate and diversion volume following the field exam. All other conditions on the permit will be carried forward to the license. Overlap concerns: 87-10575 is a permit currently being licensed in conjunction with this permit, is for the same applicant and beneficial uses as this permit, but uses Gnat Creek as the water source. Condition X35 was incorporated in the permit approval process, and will be carried forward to licensing in order to mitigate overlap concerns between rights 87-10573 & 87-10575.

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>
STOCKWATER	01/01 to 12/31	0.01 CFS	0.1 AF
DOMESTIC	01/01 to 12/31	0.01 CFS	1.2 AF
<u>Totals:</u>		0.01 CFS	1.3 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

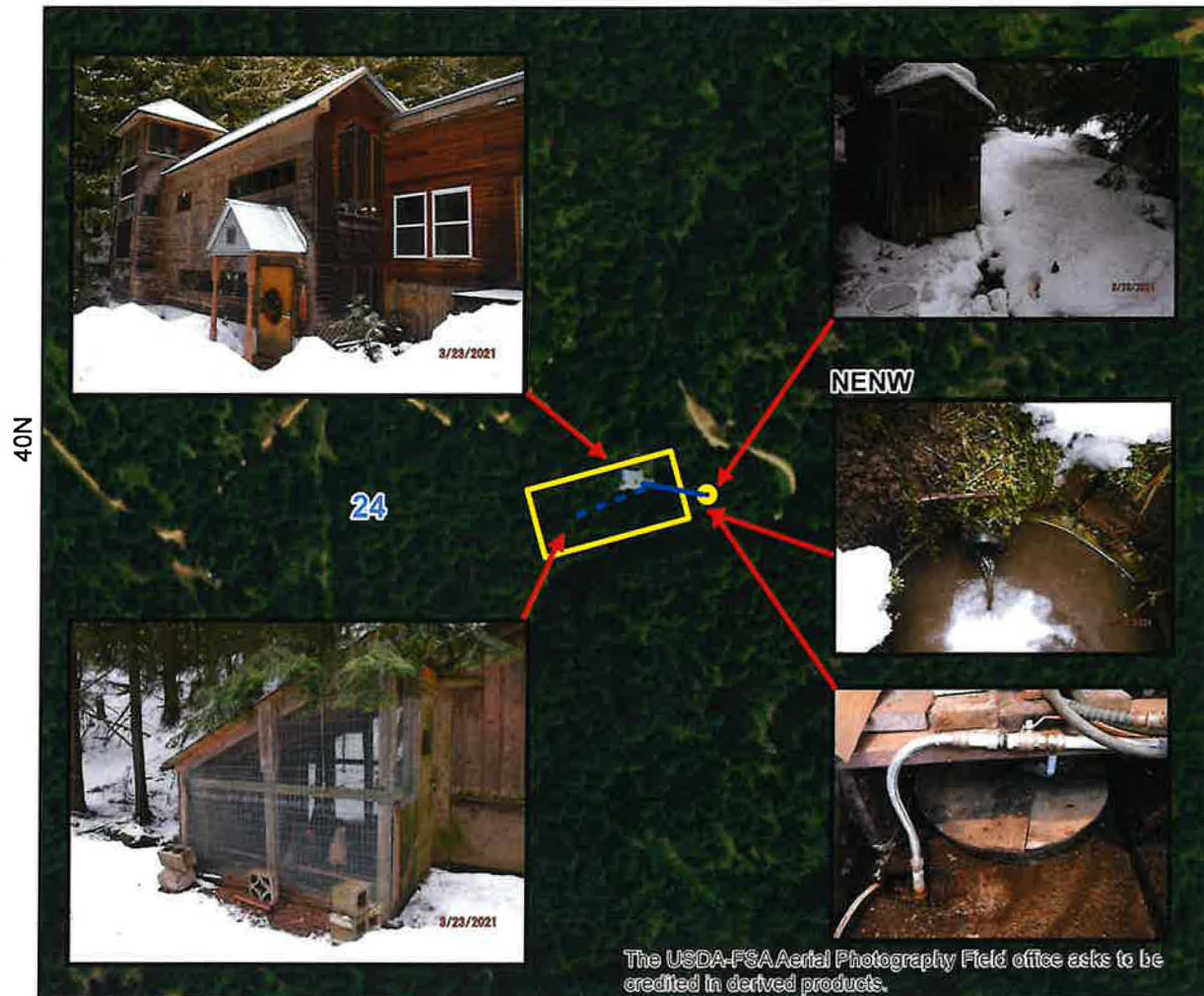
I. AUTHENTICATION Luke Bates - Water Resource Agent

Field Examiner's Name ABD Date 3/31/2021
Reviewer Adl F... Date 5/21/2021

State of Idaho
Department of Water Resources
Attachment to Field Exam
87-10573

DOMESTIC and STOCKWATER system diagram.

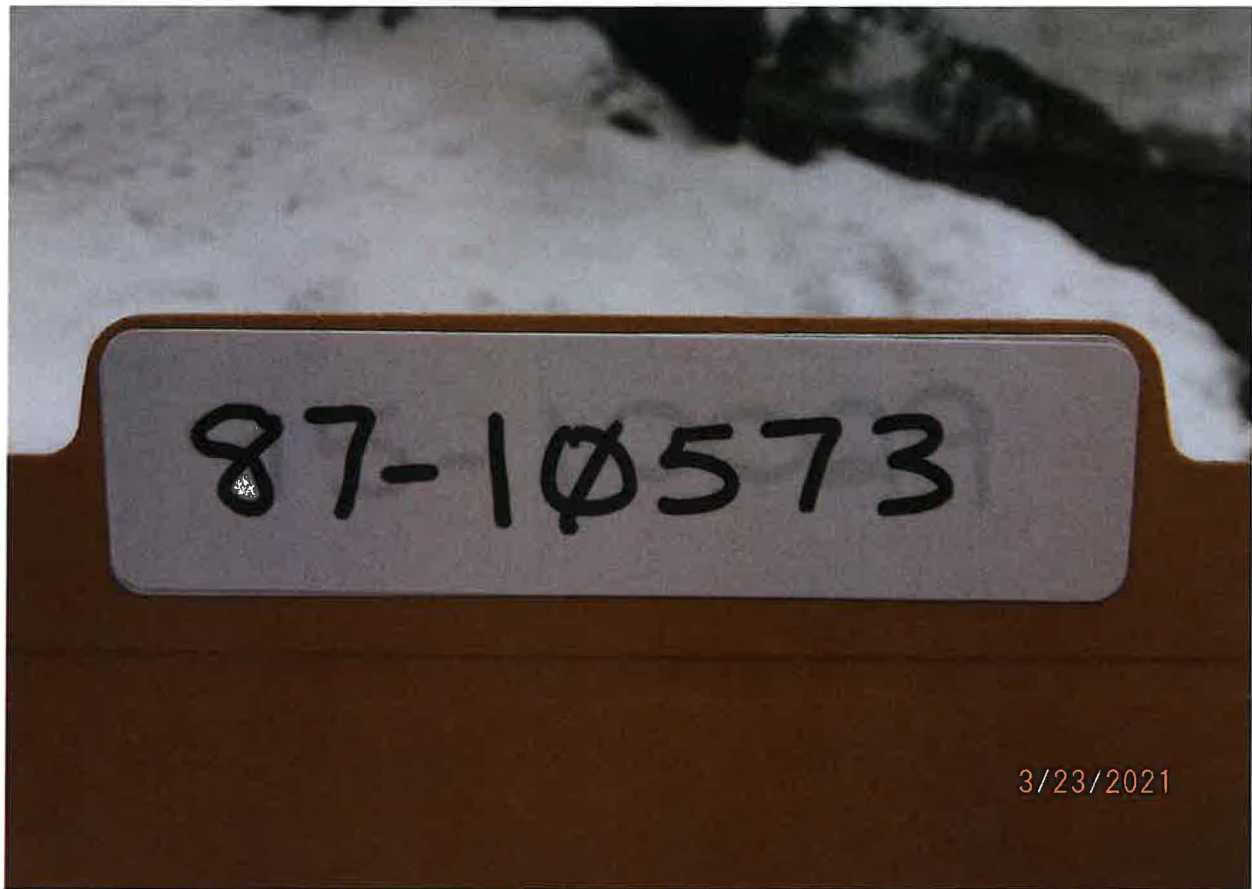
05W



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

0 0.035 0.07 0.14 Miles





FIELD EXAM DATE – 3/23/2021



POD – SPRING LOCATED WITHIN SHED



POD – 2 FT CULVERT PLACED 4 FT DEEP IN GROUND TO CAPTURE SPRING WATER



2 FT BY 4 FT CULVERT SERVES AS 24HR IMPOUNDMENT CISTERN



OVERFLOW DISCHARGE FROM POD CULVERT, FLOWS DOWNGRADE INTO CREEK



DIVERTING WORKS – 1 INCH POL PIPE FROM PRESSURE TANK TO POU(S)



DOMESTIC POU



STOCKWATER POU