STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 95-17095
Exam Date: 06/22/2021

1. Current Owner:
   KAREN VERKIST 1830 E VERKIST TRL HARRISON ID 83833-7852 AND/OR
   JONATHON VERKIST 1830 E VERKIST TRL HARRISON ID 83833-7852

2. Accompanied by: Jonathon Verkist
   Phone No: 208-699-1875
   Address: Same as above
   Relationship to permit Holder: Permit holder

3. **SOURCE:** SPRING

Tributary SINKS

Method of Determination: Arcmap and DRG.

B. OVERLAP REVIEW

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

C. DIVERSION AND DELIVERY SYSTEM

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

SPRING SW¼ SW¼ NW¼, Sec. 29, Twp 49N, Rge 03W, B.M. KOOTENAI County (**No.1**)
SPRING SW¼ SW¼ NW¼, Sec. 29, Twp 49N, Rge 03W, B.M. KOOTENAI County (**No.2**)
SPRING SW¼ SW¼ NW¼, Sec. 29, Twp 49N, Rge 03W, B.M. KOOTENAI County (**No.3**)

Method of Determination: Three each spring fields with perforated pipes in gravel fields located at:

- Spring No.1, -116°45.779, 47°33.714.
- Spring No.2, -116°45.775, 47°33.749.
- Spring No.3, -116°45.807, 47°33.756.

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	
49N	03W	29							1.3										1.3

Total Acres: 1.3

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	
49N	03W	29							X										

Method of Determination: Field exam and Arcmap aerial imagery.

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
__X__ 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
Common 2 inch PVC Service Pipe		Gravity Flow			

D. FLOW MEASUREMENTS

1.

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

2. Measurements: A 4 CUP flow measurement was taken from a discharge pipe off the 10,000-gal storage tank after isolating the tank from delivery pipe (red manual shutoff valve). The resulting flow rate equaled 4 cups in 33.10 seconds or 16 cups per 132.4 seconds = approximately 1/2 gal per minute or **0.01 cfs** considering department rounding standards.

E. FLOW CALCULATIONS

Measured Method: 4 CUP measurement = 4 cups per 33.10 seconds = 16 cups per 132.4 seconds = 1/2 gal per minute or 0.01 cfs considering department rounding standards

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$V_{I.R}$ = (Acres Irrigated) x (Irrigation Requirement) = 1.3 ac x 3.0 afa = 3.9 af

$V_{D.R}$ = [Diversion Rate (cfs)] x (Days in Irrigation season) x 1.9835 = 0.01 cfs x 246-day x 1.9835 = 4.9 af

V = Smaller of $V_{I.R}$ and $V_{D.R}$ = 3.9 af

2. Volume Calculations for Other Uses:

- Stockwater annual volume =
  - 5 cows x 12 gpd x 365 day = 21,900 gal a year
  - 4 hogs x 4 gpd x 365 day = 5,840 gal per year
  - 20 chickens = 1 gal x 365 day = 365 gal per year
  - Sum of all = 28,105 gal per year / 325,850 gal per af = 0.08 af or **0.1 af** considering department rounding standards.
- Due to the spring source(s) and irrigation component, no irrigation annual volume nor maximum diversion volume will be applied to the face of the license.

G. NARRATIVE/REMARKS/COMMENTS

Field exam performed on 6/22/2021 with the applicant, Jonathon Verkist, showed three separate springs being used for irrigation and stockwater purposes. At the three PODs, the applicant developed spring fields by installing buried perforated pipe in gravel beds to collect spring water. The three springs with collection pipes gravity flow into a single common service pipe that discharges into a 10,000-gal storage tank before distribution for beneficial uses. A single 2 inch PVC main water line exits the storage tank and runs to a nearby vaulted pump station where the applicant uses a 16 gpm inline pump to draft water to the irrigation and stockwater system(s).

Mr. Verkist unearthed the main water line from the storage tank to the pump station and added a manual shutoff valve and a blow-out line to the system prior to the field exam to facilitate a flow measurement. Mr. Verkist did not use the water system for a couple of days prior to the field exam to ensure the 10k storage tank was filled, with overflow discharging out the now isolated blow out pipe. With the storage tank full, all spring water flowing into the tank equals overflow discharge out of the tank. A 4 CUP flow measurement was taken from the isolated blow out pipe with resulting flow rate equal to 4 cups in 33.10 seconds or 16 cups per 132.4 seconds = approximately 1/2 gal per minute or **0.01 cfs** considering department rounding standards. 0.01 cfs is less than either beneficial use permit approved diversion rate, but the applicant is limited to the 0.01 cfs flow capacity from the three springs found during the exam, which is recommended for licensing this water right.

The irrigation POU was sketched out on field maps during the exam and traced out using Arcmap aerial imagery during licensing review. The POU consists of a fenced in orchard & fruit tree area and a fenced in large lawn space around the primary residence. The irrigation acreage equals 1.3 acres which is authorized 1.3 ac x 3.0 afa = 3.9 af annually. Due to this right using spring source(s), no annual volume nor maximum diversion volume is applied to the face of the water right license. Conditions for approval will annotate the diversion volume limitations for the irrigation component.

The applicant has 5 cows, 4 pigs, and 20 chickens that he uses water for stockwater purposes on the property. During the exam several portable stock tanks were observed, but the cattle were pasturing in the woods and the pigs had been slaughtered for the year. Photographs were taken of the stock tanks and chicken coup, and the stockwater POU was designated using Arcmap aerial imagery to reflect the area in which stock received water on the property. The annual volume for stockwater use equals 28,105 gal per year (combined use for all stock) / 325,850 gal per af = 0.08 af or **0.1 af** considering department rounding standards.

Condition X02 was removed from the permit during licensing review, and all other conditions shall be carried to licensing. 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	03/15 to 11/15	0.01 CFS	
STOCKWATER	01/01 to 12/31	0.01 CFS	0.1 AF
	Totals:	0.01 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 -

Field Examiner's Name _____ Date 11/16/2021

Reviewer _____ Date 11/18/2021

State of Idaho
Department of Water Resources

Attachment to Field Exam

95-17095

IRRIGATION system diagram.



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

0 0.035 0.07 0.14 Miles

N

State of Idaho
Department of Water Resources

Attachment to Field Exam

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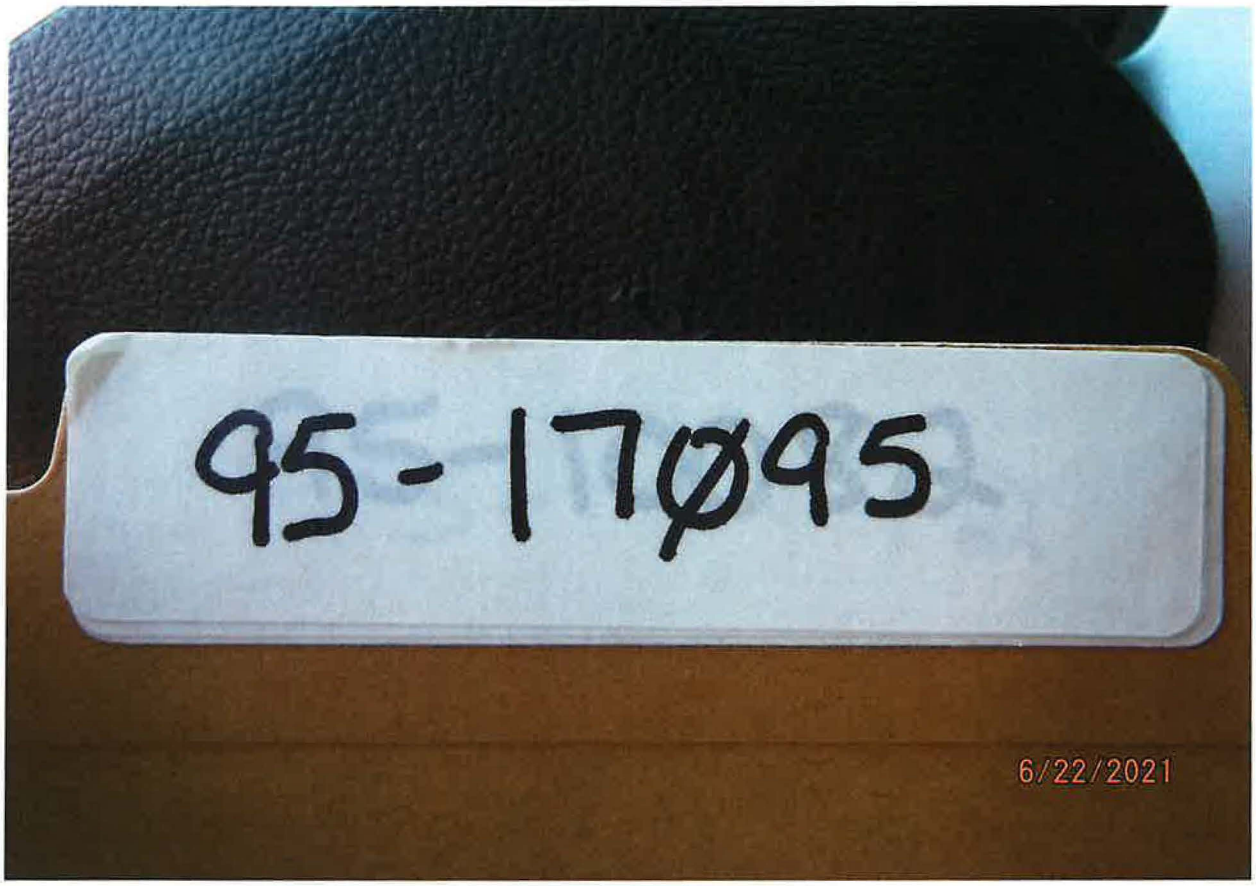
STOCKWATER system diagram.



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

0 0.035 0.07 0.14 Miles

N



FIELD EXAM DATE 6/22/2021



1ST SPRING SOURCE POD – BURIED PERFORATED PIPE IN ROCK DRAIN FIELD ROUTED DOWNGRADE



2ND SPRING SOURCE – APPLICANT BURIED PERFORATED PIPE AND ROCKED DRAIN FIELD TO CAPTURE FLOW



3RD SPRING SOURCE – BURIED PERFORATED PIPE AND SPRING BOX CAPTURES SPRING FLOW



10,000 GALLON STORAGE TANK – CAPTURES 3EA SPRING FLOW FROM SEPARATE PIPES LOCATED UPGRADE FROM BURIED STORAGE TANK



COMMON SINGLE SERVICE LINE FROM STORAGE TANK TO PUMP STATION – RED SHUT-OFF VALVE CLOSED TO ISOLATE STORAGE TANK ALLOWING OVERFLOW TO DISCHARGE FROM FULL TANK FOR FLOW MEASUREMENT



SMALL PUMP STATION WITH 16 GPM PUMP INSTALLED IN SYSTEM, WHICH ROUTES WATER FROM TANK TO IRRIGATION / STOCKWATER SYSTEM. FROST FREE HYDRANTS INSTALLED AT INTERVALS FOR USE



FROST FREE HYDRANT ABOVE ROAD FROM STORAGE TANK – MAIN TRUNK LINE ROUTES UPHILL TO IRRIGATION SYSTEM AROUND HOME



IRRIGATION POU – HOSE AND SPRINKLER FROM FENCE TO IRRIGATE LAWN SPACE





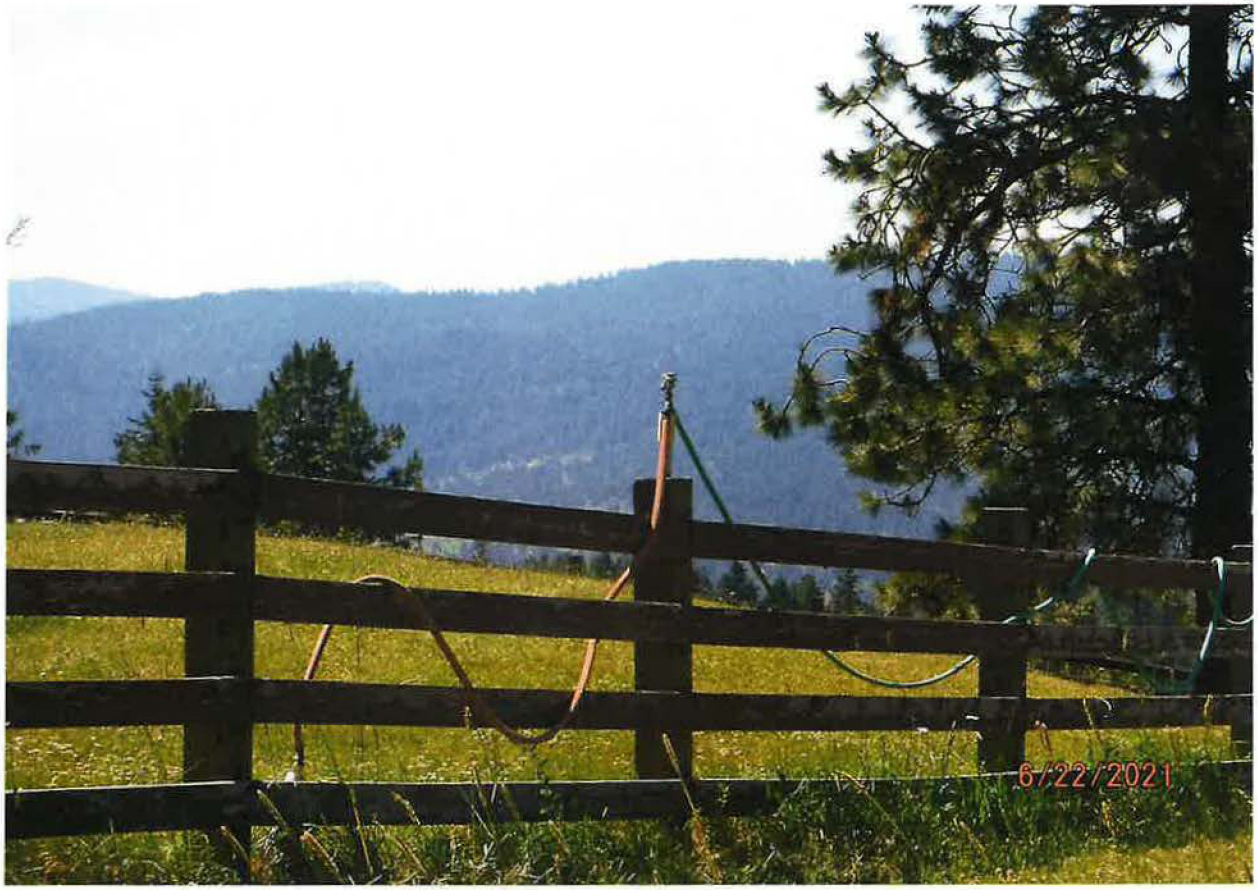
IRRIGATION POU





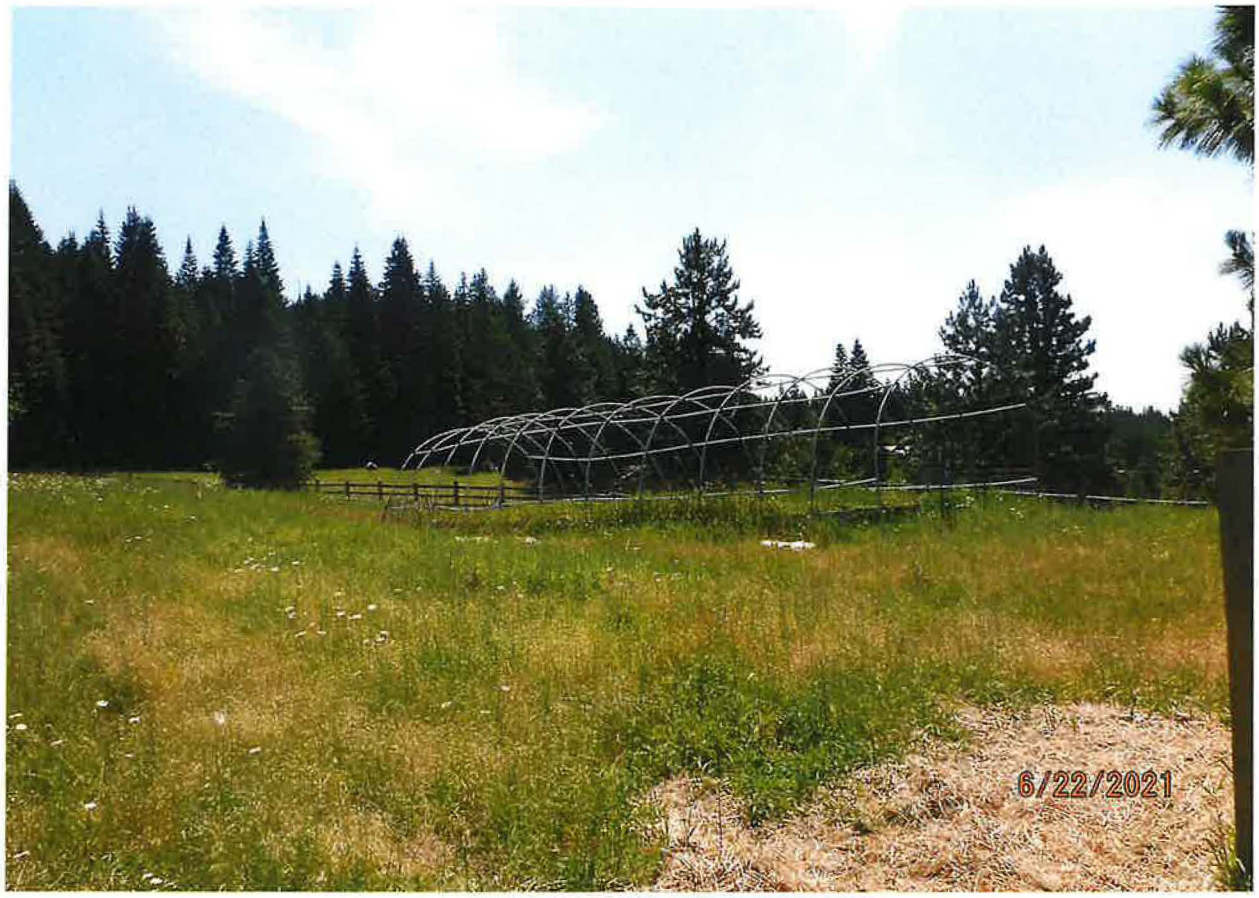
IRRIGATION POU





IRRIGATION POU





IRRIGATION POU – FENCED IN GARDEN / ORCHARD



IRRIGATION POU & STOCKWATER POU – PORTABLE STOCK WATER TANKS POSITIONED ON PROPERTY



STOCKWATER POU – PORTABLE STOCK TANK



STOCKWATER POU – CHICKEN COUPE AREA WITH FROST FREE HYDRANT