

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 79-14263
Exam Date: 07/27/2020

1. Current Owner:

PATRICK J KELLER PO BOX 367 LUCILE ID 83542 AND/OR
SANDRA E KELLER PO BOX 367 LUCILE ID 83542

2. Accompanied by: Sandra Keller

Phone No: 208-628-3304

Address: 197 Cow Creek Rd, Lucille, ID

Relationship to permit Holder: Same

3. SOURCE:

SALMON RIVER

Tributary

SNAKE RIVER

Method of Determination: Field Observation**B. OVERLAP REVIEW**

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

NO Overlap

Water Right No.	Source	Purpose of Use	Basis
N/A	N/A	N/A	N/A

Comments: No other rights overlap POU.

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

NO Overlap

Water Right No.	Source	Purpose of Use	Basis
N/A	N/A	N/A	N/A

Comments: No other rights overlap POD.

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

SALMON RIVER L7 (SE¼ SW¼), Sec. 11, Twp 25N, Rge 01E, B.M. IDAHO County

Method of Determination: Field Observation, Handheld GPS (45 34.844; -116 18.198 Degrees Minutes), ArcMap GIS tools.

PLACE OF USE: MINING

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
25N	01E	11												X L7					

Method of Determination: Field Observation, Aerial Imagery, ArcMap GIS tools.

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.

 N/A 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
N/A	DuroMax	9	XP9.OHP	DuroMax	4"

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
N/A	N/A	N/A	N/A	N/A	N/A	N/A

2. Measurements: Portable pump system did not provide suitable circumstances to measure diversion rate of flow.

E. FLOW CALCULATIONS

 x Additional Computation Sheets Attached

Measured Method: A theoretical calculation was used on this permit.

Theoretical Flow: 0.90 cfs

Permitted Flow: 0.67 cfs

B.U. Limit: 1.0 cfs

Recommended Flow: 0.67 cfs

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation: N/A

2. Volume Calculations for Other Uses: Mining

0.67 cfs x 50 days x 1.9835 = 66.4 af

G. NARRATIVE/REMARKS/COMMENTS

Field exam was completed by agent Justin Shearer on July 27, 2020 and was accompanied by permit holder Sandra Keller. Sandra and Patrick Keller are the active owner and original applicants. The application for permit was submitted on October 14, 2015 and proof of beneficial use was submitted on June 24, 2016.

The Point of Diversion (POD) was confirmed to be in TWP 25N, Rge 01E, Sec. 11 L7 (SESW). The water is diverted using a DuroMax 9hp, 4-inch gasoline engine portable water pump. The pump diverts water using a 4" hose and discharges water uphill to a high-banking sluice mining system Place of Use (POU) using a 4" hose. Water right overlap did not discover any

other water rights associated with the POD on the Salmon River. No amendment required to correct legal description of the POD.

The Permit authorizes 0.67 cfs for mining purposes within the SE ¼ SW ¼, Lot 7 of TWP 25N, Rge 01E, Sec 11. ArcMap tools and aerial imagery were used to verify the area of mining use based on where the permit holder demonstrated as the POU during the field exam. No amendment required to correct the legal description of the POU.

The POD is located on the banks of the Salmon River just downhill of the high-banker sluice system mining POU. As a result, there is approximately 22 ft of head between where the water is diverted and where it is put to use for mining purposes. Pump and motor specs were obtained from the pumping apparatus; a DuroMax XP904WP 9-Hp 427-Gpm 3,600-Rpm 4-Inch Gasoline Engine Portable Water Pump. A measurement was unable to be obtained because the permit holder was having difficulties getting the motor to start. A range of discharge pressures were used based on expected system pressures (10-20 psi). Theoretical average flow rate is 0.9 cfs. The pump is rated at sea level to provide 9 hp, and a maximum diversion rate of 427 gpm. Because pumping elevation is at 1631 ft (ASL) it is likely that horsepower is slightly less than the rated 9 hp, thus 8 hp was assumed for this calculation. Because this calculation exceeds the permitted rate of 0.67 cfs, it is plausible that the permit holders are maximizing their extent of beneficial use against their permit. Thus, I am recommending a licensed rate of 0.67 cfs for mining purposes. Furthermore, the permit holders explained during the exam that when the price of gold is right they operate up to 50 days a year. Based upon this information I am recommending an annual volume of 66.4 af.

Condition 106 was removed because no evidence during the field exam indicated the condition had not been met. Condition 029 was dropped because the permit holder has complied with all fish screening requirements of the IDFG. Condition 121 was changed to 103 as per licensing standards. Condition 54 was removed because there is no tailings impoundment requiring a bond.

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>
MINING	01/01 to 12/31	0.67 CFS	66.4 AF

Totals: 0.67 CFS 66.4 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 Justin Shearer - Water Resource Agent, Senior

Field Examiner's Name Justin Shearer Date 8/18/20

Reviewer Paul Wiley Date 9-8-2020

THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 79-14263

Reviewer: Justin Shearer

Date of Review: 7/30/2020

P/D No.:	Senerio 1	Senerio 2	Senerio 3
PUMP HORSEPOWER	8	8	8
BOOSTER HORSEPOWER	0	0	0
PUMPING LEVEL	22	22	22
DISCHARGE PRESSURE	10	15	20
RATE OF FLOW (cfs)	1.09	0.87	0.72 0.90

The above calculates the formula =

$$Q = \frac{8.8 * (\text{Efficiency}) * \text{hp}}{\text{depth to water} + 2.31 * (\text{psi}) + \text{friction}}$$

Assumptions: %70 efficiency.
No Friction

Examiners Notes:

Field exam reports a 9 hp pump. Lift is recorded at 22 ft. A range of discharge pressures were used based on expected system pressures (10-20 psi). Theoretical average flow rate is 0.9 cfs. The pump is rated at sea level to provide 9 hp, and a maximum diversion rate of 427 gpm. Because pumping elevation is at 1631 ft (ASL) it is likely that horsepower is slightly less than the rate 9 hp, thus the assumed 8 hp for this calculation.

System Diagram: Attachment to B.U. Field Exam

Water Right: 79-14263



The USDA-FSA Aerial Photography Field office asks to be credited in derived products.

● Keller Mining POD

— 4" Discharge Hose

High-Banking Sluice

Township/Range

Sections

QQ

0 0.015 0.03 0.06 Miles





Pic of DuroMax
XP904WP 9-Hp
427-Gpm 3,600-
Rpm 4-Inch
Gasoline Engine
Portable Water
Pump.



Pic showing 4-Inch
Discharge on
Pump.



Pic of Pump Specs.



Pic looking N
downstream from
POD.



Pic of POD on
Salmon River.



Pic looking S
upstream from
POD.



Pic looking uphill
at highbanking and
sluice system.



Pic looking out
across mining
tailings to the north
of sluice.