

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 63-33995

Exam Date: 8/19/20

1. Current Owner:
VALLIVUE SCHOOL DISTRICT #139 5207 S MONTANA AVE CALDWELL ID 83607-1583
2. Accompanied by: Chad Coles
Phone No: (208) 830-3345
Address: 5207 S Montana Ave Caldwell ID
Relationship to permit Holder: Director of Maintenance

3. SOURCE:
GROUND WATER

Method of Determination: Determined groundwater source by field exam, well on site, and well log.

B. OVERLAP REVIEW

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

Water Right No.	Source	Purpose of Use	Basis
63-10160	Groundwater	Irrigation	License
Wilder Irrigation District	Snake River	Irrigation	Decree

Comments: Ground water right 63-10160 for 0.10 acre landscape irrigation in front of school, surface water from Wilder Irrigation District.

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

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

Comments: No POD overlap.

C. DIVERSION AND DELIVERY SYSTEM

1. LOCATION OF POINT(S) OF DIVERSION:

GROUND WATER SE¼ SW¼, Sec. 35, Twp 04N, Rge 04W, B.M. CANYON County

Method of Determination: Field examination, Garmin Handheld GPS, and ArcMap tools with aerial imagery

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	
04N	04W	35												14.0					14.0

Total Acres: 14.0

Method of Determination: Field examination, Garmin Handheld GPS, and ArcMap tools with 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
N/A	Berkley	60	6T450	N/A	10 inches
N/A	N/A	25	N/A	N/A	8 inches

D. FLOW MEASUREMENTS

Unable to take flow measurement.

E. FLOW CALCULATIONS

 X Additional Computation Sheets Attached

Theoretical Flow calculation:

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

Pump Horsepower	60
Pumping Level	150
Discharge Pressure	50
Rate of Flow (cfs)	1.40

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = (14.0 \text{ acres}) \times (4.5 \text{ af}) = 63 \text{ af}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = (0.28 \text{ cfs}) \times 260 \text{ days} \times 1.9835 = 144.4 \text{ af}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 63 \text{ af}$$

*Volume not reported when groundwater is supplemental.

G. NARRATIVE/REMARKS/COMMENTS

The field exam was conducted August 19, 2020 by Kate Huelse.

The permit was assigned to the Vallivue School District #139 on October 9, 2014. The proof of beneficial use was submitted January 15, 2020 by the Director of maintenance Chad Coles. Current Canyon county taxlot data represent Vallivue School District as the owner of the land pertinent to the place of use and point of diversion. Overlap review found that the school receives surface water from Wilder Irrigation and plans on using water right 63-33995 to supplement irrigation when surface water is unavailable. Mr. Cole claims that they will only be utilizing the ground water one month in spring and one month in fall. The school also has water right 63-10160 for 0.10 acres of landscape irrigation for the front of the school.

The original permit allowed for 0.84 CFS for 14 acres of irrigation. A review of satellite photos of the property from 2009 to 2017 show evidence of irrigation. Water Resource Agent Kate Huelse met Director of Maintenance Chad Coles to conduct a field exam August 19th, 2020. It was verified that the West Canyon Elementary School developed

14 acres of land for the fields adjacent to the school. The elementary school applied for 3 points of diversion from 2 existing wells and 1 new, however it was verified during the field exam and clarified with Mr. Coles that they are only diverting water from one of the existing wells for irrigation, the other well is being used for domestic purposes and the third well was never developed.

Ground water comes from an existing well to provide supplemental irrigation to West Canyon Elementary grounds during times when surface water is unavailable or insufficient. UTM coordinates collected during the field exam place the well at 43.633764, -116783080. A 0.06 cfs/acre diversion rate is used to allow irrigation within an 8 hour period to avoid inference with student athletic activities during school sessions. The system diverts water using a 60 horsepower Berkely 6T450 pump to a 10 inch mainline pipe that T's off to the sprinkler system. Mr. Coles relayed that the sprinklers throughout the property are mostly 12s and that he is unsure how many there are.

The rate at which the irrigation pump is required to divert water to irrigate the 14 acres within an 8- hour period is 0.06 cfs. Based on the volume calculation the property would require 0.84 cfs for 14 acres of irrigation, which seems reasonable as the system is capable of producing 1.40 cfs.

As a result I am recommending 0.84 cfs to be used when surface water supply is not reasonably sufficient to irrigate the place of use authorized under this right.

Have conditions of permit approval been met? X 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	03/01 to 11/15	0.84 CFS	

Totals: 0.84 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

Kate Huelse - Water Resource Agent

Field Examiner's Name Kate Huelse Date 9/4/20

Reviewer Patricia Huelse Date 9-8-2020

THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 63-33995
 Reviewer: Kate Huelse
 Date of Review: 8/19/2020

P/D No.:	Scenario 1	Scenario 2	Scenario 3
PUMP HORSEPOWER	60	60	60
BOOSTER HORSEPOWER	0	0	0
PUMPING LEVEL	150	150	150
DISCHARGE PRESSURE	40	50	60
RATE OF FLOW (cfs)	1.52	1.39	1.28 1.40

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:

A range of discharge pressures (40-60 psi) and a horsepower of 60 were used to calculate a theoretical flow rate. Theoretical average flow rate is 1.40 cfs.

System Diagram





Point of Diversion- Well House and Well
(43.633764, -116783080)

Motor Make	Hp	Motor Serial No.	Pump Make	Mainline Diameter
Berkley	60	6T450	N/A	10 inches





POU: 14 Acres of irrigation





Surface Water Irrigation

