"Solutions to water quality, quantity, permitting & planning issues"

November 30th, 2019

Water Rights Section
Idaho Department of Water Resources
322 East Front Street
PO Box 83720
Boise, ID 83720-0098

Re: Certified Water Right Examination Proof Report
Water Right Permit No. 97-07546
Daniel Shepard, Priest River Idaho

INTRODUCTION

The Water & Natural Resource (WNR) Group, Inc. is pleased to present this Certified Water Right Examination (CWRE) for water right permit 97-07546. The WNR Group was retained by the Mr. Dan Shepard to provide professional services related to the above referenced water right permit issued for a parcel of land No. RPR00000135277A, located north of Priest River, Idaho along the Priest River in Bonner County, Idaho. This letter report summarizes the data required to conduct the Proof of Beneficial Use of water authorized under permit 97-07546. The CWRE conducted for this analysis was completed by Mr. Eugene St.Godard, P.G., L.Hg. who is an approved Certified Water Right Examiner (#19-134) by the Idaho Department of Water Resources (IDWR) in accordance with Idaho Code 42-217A and a state licensed geologist (P.G. #862) that specializes in hydrogeology. Verification of the water use at the site was completed by reviewing site records and a site visit conducted on September 18th, 2019. During this site visit, inspection of infrastructure, and the physical beneficial use of water was documented. Photographs taken during this site visit are attached to this letter report.

WATER RIGHT PERMIT DESRIPTION

The IDWR issued Permit No. 97-07546 to Mr. Dan Shepard Jr. for irrigation of two acres at diversion of surface water rate of 0.04 cfs from April 1 through October 31 of each year. The site is located north of the Town of Priest River (Figure 1) within Section 13, Township 56 North, Range 05 W.B.M., Bonner County, Idaho (Figure 2). The site consists of a rural piece of property with a picnic Gazebo structure, gravel drive and park areas, and irrigated lawns and shrubbery within parcel No. RPR00000135277A on Cemetery Road. The following describes the permit issued under this evaluation.

Permit to Appropriate Water No. 97-07546

In August 2017, Mr. Daniel Shepard Jr. submitted an application for permit to appropriate the public waters of the State of Idaho. The application requested 0.04 cfs to be diverted from the Priest River and used for irrigation of two acres at the Shepard property. Parcel No. RPR00000135277A is listed as 6. On October 26th, 2017, IDWR issued permit No. 97-07546. A copy of the permit is included in Attachment A. A summary of water right permit conditions is as follows:

- Permit to Appropriate Public Waters No. 97-07546.
- Right to divert surface water from Priest River within Basin 97 in Bonner County, State of Idaho.
- Permit issued to Daniel Shepard JR of Bonner County, contact address at 437 Sailors Lane, Priest River, ID.
- Point of diversion located within SE¼NE¼SW¼ Section 13 within T56N, R05W.
- Purpose (beneficial use) of diversion is for irrigation of 2 acres.
- Permit has a confirmed priority date of August 07, 2017.
- Permit is granted to not exceed 0.04 cfs. No annual acre-footage is identified.
- The place of use (POU) of this permit is described as: NE ¼ SW ¼, SE ¼ SW ¼ and NW ¼ SE ¼ Section 13, T 56 N, R 05 W, Bonner County.

PROPERTY DESRIPTION & SITE INSPECTION

The existing property consists of a rural lot with irrigated lawn and treed areas. Facilities at the site consist of a large Gazebo structure with barbeque structures, planter box areas, gravel access roads, three camping areas, parking areas, and an irrigation system with additional above ground water spigots. At the time of the site visit, the diversion intake had just been remove and winterized. However, the intake structure was still present and the required screen could be documented on the intake (see Attachment B site photos).

The site is located along the Priest River with a general topographic slope to the northeast. Approximately 100- feet of elevation is present across the site, with the eastern half along the river generally flat (Figure 3). Most irrigation is occurring in this area of the property, on the coarser alluvial gravels and flood plain deposits of the Priest River valley (see Figure 4). Coarse river/alluvial deposits are visible along the river cut bank on the property. Due to the coarse nature of the sediments at the site, it would tend to require a higher water duty (up to 3 ft/acre) to keep the landscaped area fully irrigated.

A site inspection of the facility was scheduled on September 18, 2019. During the site visit, Mr. St.Godard (CWRE #134) interviewed Mr. Shepard about the facility, and toured the facility with Mr. Greg Snow, representative for Mr. Shepard. During the site inspection, Mr. St.Godard visually inspected the diversion structure, the diversion pumps, pipes and intake screen, and the irrigation infrastructure. Attachment B contains site photos of the facility. A GPS measurement of the diversion within the Priest River was recorded at:

N48.20020, W-116.90495

The irrigation water is directly diverted from the Priest River via a 2-inch PVC pipe, which has a screen at the intake (see site photos in Attachment B). The water is diverted from the river using a 2-HP CentriPro self priming pump and motor, with a 1-1/2 inch intake. Lift and dynamic head (TDH) from the river to the irrigation system is estimated at 20 to 40 feet. The flow of the pump was estimated at approximately 18-20 gpm, per the design specifications of the engineered sprinkler system, and rating of the sprinklers.

The irrigation system consisted of eleven stations that contained seven to ten, 1-2 gpm Hunter PGP sprinkler heads. Some stations also contained drip lines, specifically in areas around the Gazebo. A total of 85 Hunter PGP sprinklers, and 50 two-gallon/hour drippers were located within the infrastructure of the irrigated lawns (Figure 6). Above ground freeze protection spigots with portable sprinkler heads connected to a hose were also used in the more treed areas of the property in the western area and along the access road. Approximately 1.5 acres are covered with the pop-up sprinkler system, and approximately 0.5 acres within the treed area that is covered with portable sprinklers.

PERMIT PROVISIONS

Permit 97-07546 contained eight (8) provisions. The following table presents the provisions listed on the permit, if the provision was met, and which provisions should be listed on the license.

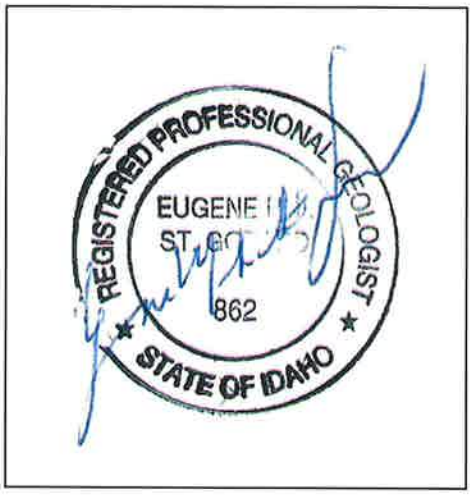
TABLE 2: Permit Provisions

PROVISION	Permit Condition Met	Remain/Remove from License
Proof of application of water to beneficial use shall be submitted on or before November 1. 2019	On-going	Remove
Subject to all prior rights	Yes	Remain
Project construction shall commence within one year from the date of permit issuance and shall proceed diligently to completion unless it can be shown to the satisfaction of the Director of the Department of Water Resources that delays were due to circumstances over which the permit holder had no control.	Yes	Remove
A fish screen of ¼-inch of smaller mesh shall be installed and maintained at the point of diversion.	Yes	Remain
The approach velocity at the point of diversion shall not exceed 0.5 cfs.	Yes	Remain
This right when combined with all other rights shall provide no more than 3.0 afa per acre at the field headgate for irrigation of the place of use.	Yes	Remain
Water shall not be diverted under this right when flows in the Priest River are below minimum flow amounts as defined by Right 97-7380. The right holder shall be responsible for monitoring the daily flow of the Priest River using real-time data and shall cease diverting water when flows in the Priest River are below established minimum flow amounts. Unless otherwise specified by the Director of the Department of Water Resources, data from the U.S. Geological Survey Priest River gauging station No. 12395000, may be used for purposes of determining the daily flow amounts.	Yes	Remain
This right does not grant any right-of-way or easement across land of another.	Yes	Remain

CONCLUSION

The WNR Group, Inc. respectfully submits this CWRE report to IDWR on behalf of the Mr. Dan Shepard. It is the conclusion of Mr. St.Godard (CWRE No. 134), based on this investigation, that the Mr. Dan Shepard has met the conditions and provisions set forth in permit 97-07546 and it should be certificated for 0.04 cfs and 5.7 acre-feet per year with the provisions identified within the permit. A copy of the CWRE Beneficial Use Field Report is included in Attachment C. Should you have any questions regarding the data reviewed, or the findings of this review, please call me at your convenience.

Respectfully submitted,



Eugene N.J. St.Godard, R.G., L.Hg., CWRE #134
Principal Hydrogeologist/Owner
Water & Natural Resource Group, Inc.

Signed: November 30th, 2019

Attachments:

Figures
Photo Log

Attachment A:	97-07546 Permit
Attachment B:	Site Photos
Attachment C:	CWRE Beneficial Use Field Report

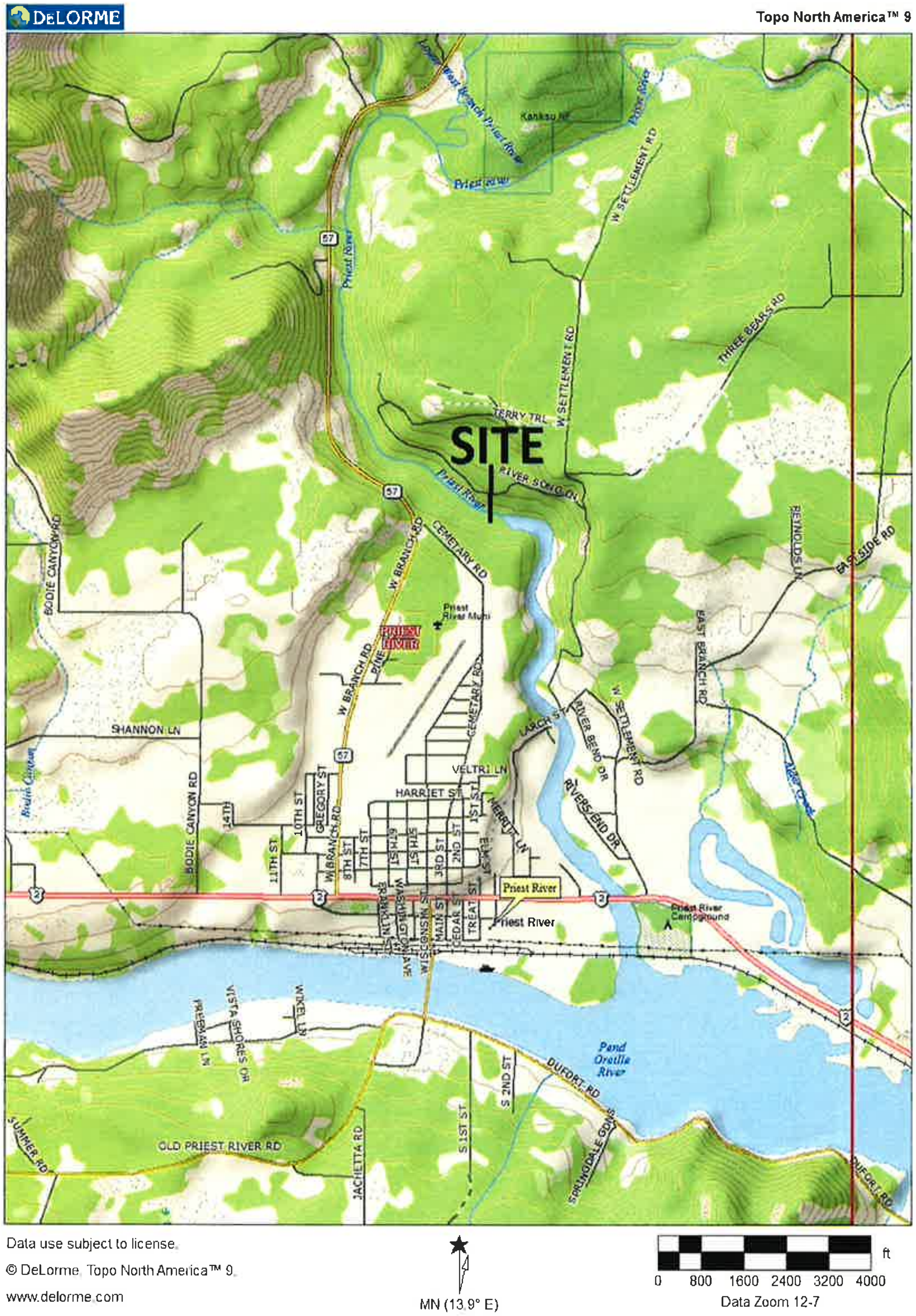


FIGURE 1: VICINITY MAP SHOWING LOCATION OF PERMIT #97-07546 PLACE OF USE ALONG PRIEST RIVER, IDAHO.

FIGURE 2: PARCEL MAP SECTION 13 SHOWING LOCATION OF SHEPARD PROPERTY – PARCEL No. RPR00000135277A.

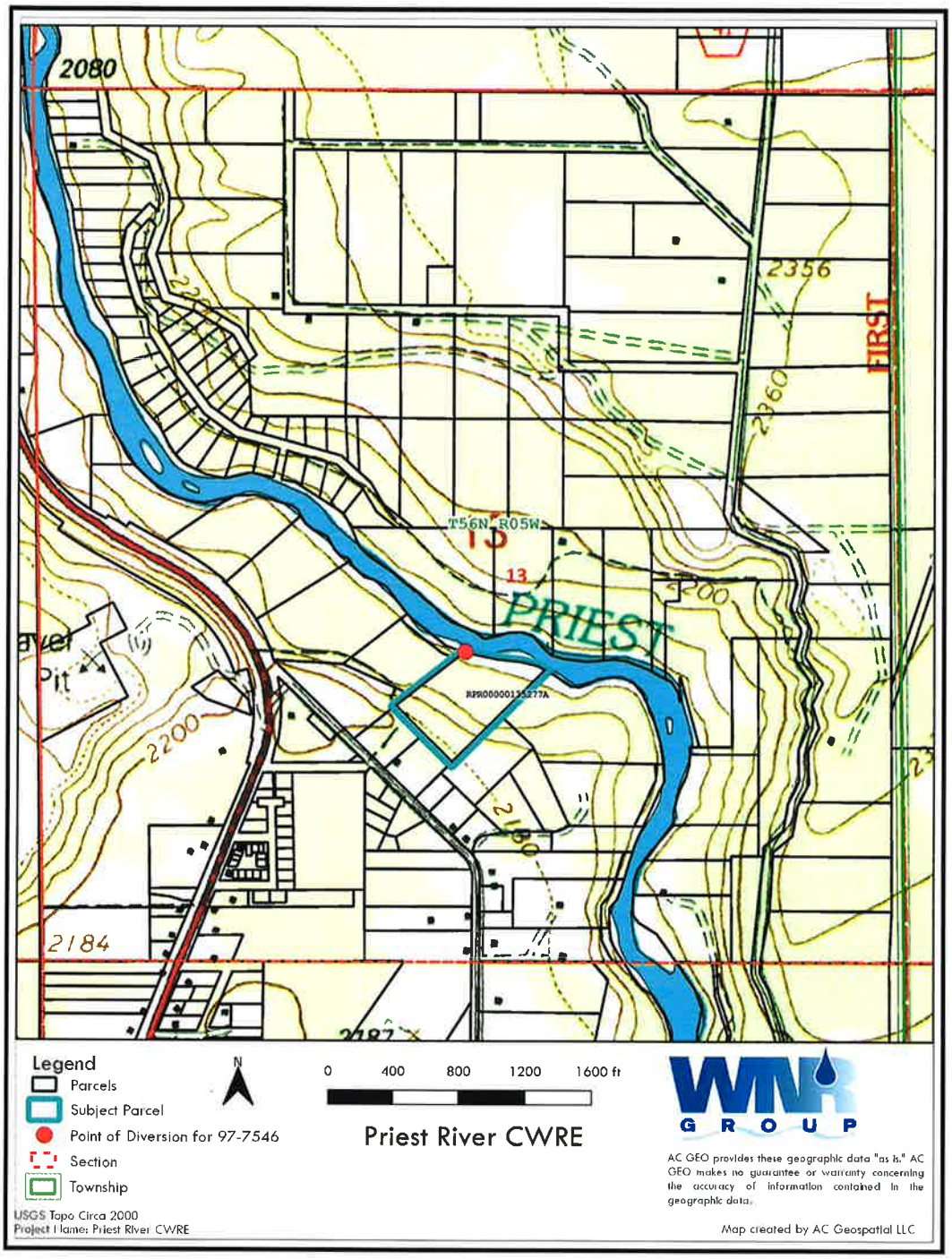


FIGURE 3: TOPOGRAPHIC MAP OF SECTION 13 SHOWING LOCATION OF PARCEL No. RPR00000135277A AND POINT OF DIVERSION.

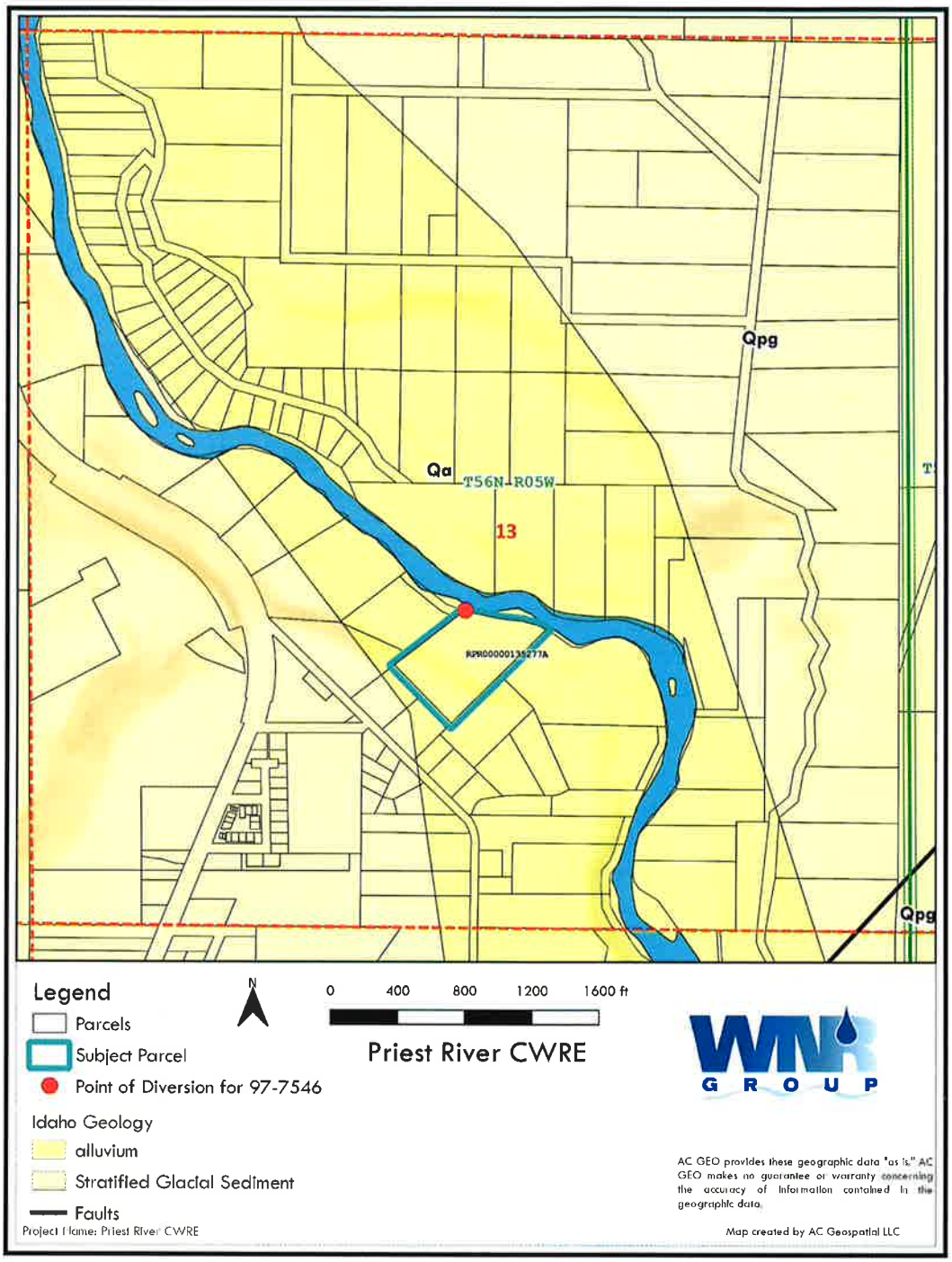


FIGURE 4: GEOLOGIC MAP OF SECTION 13 SHOWING LOCATION OF PARCEL No. RPR00000135277A AND POINT OF DIVERSION

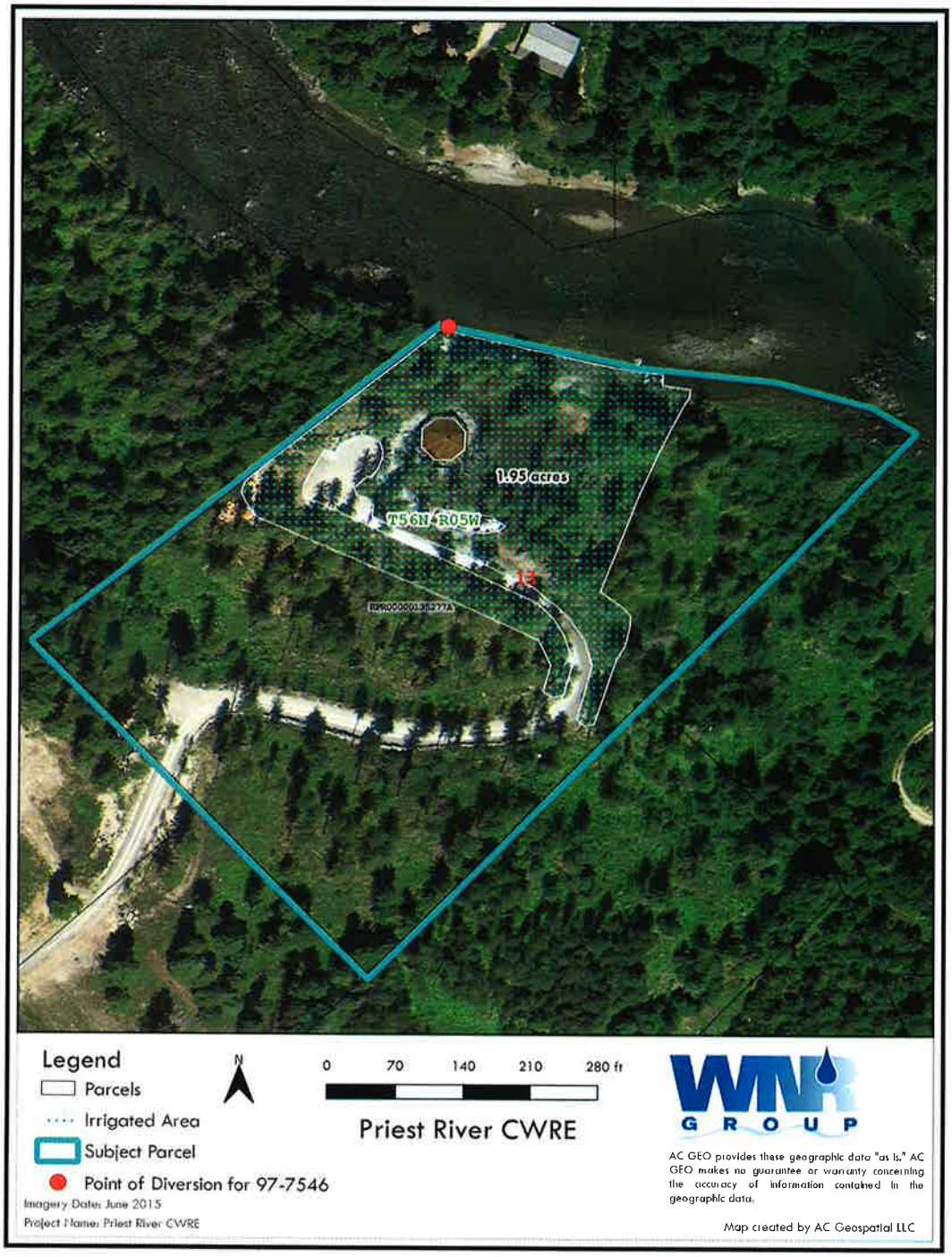


FIGURE 5: PARCEL MAP OF No. RPR00000135277A SHOWING AREA OF IRRIGATION OCCURING UNDER PERMIT NO. 97-07546.

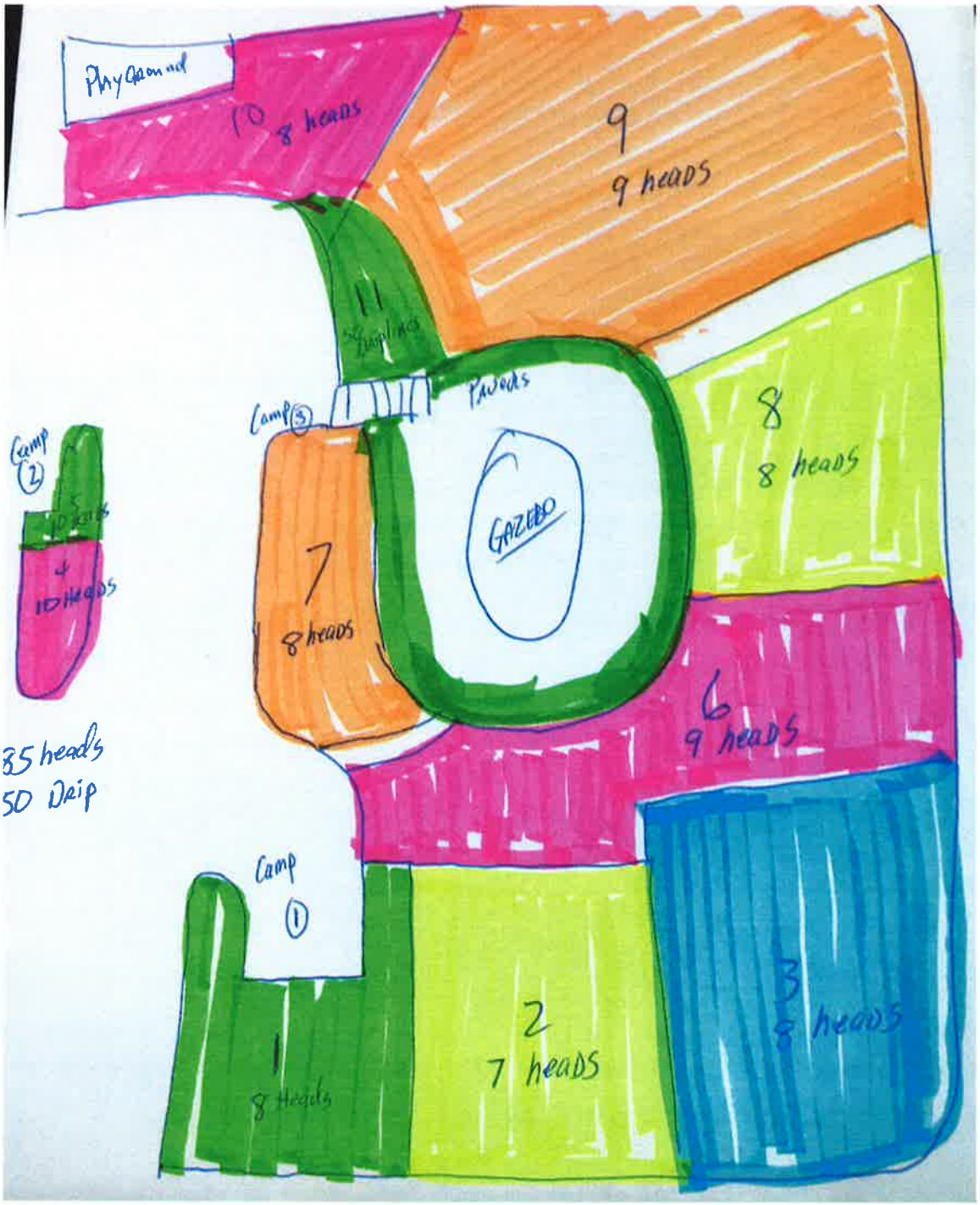


FIGURE 6: GENERALIZED SCHEMATIC OF THE POP-UP SPRINKLER IRRIGATION SYSTEM AT THE SHEPARD GAZEBO PROPERTY (97-07546).

ATTACHMENT A

PERMIT No. 97-07546

State of Idaho
Department of Water Resources

Permit to Appropriate Water

NO. 97-07546

Priority: August 07, 2017

Maximum Diversion Rate: 0.04 CFS

This is to certify, that DANIEL SHEPARD JR
437 SAILORS LN
PRIEST RIVER ID 83856

has applied for a permit to appropriate water from:

Source: PRIEST RIVER **Tributary:** PEND OREILLE RIVER

and a permit is APPROVED for development of water as follows:

BENEFICIAL USE	PERIOD OF USE	RATE OF DIVERSION
IRRIGATION	04/01 to 10/31	0.04 CFS

LOCATION OF POINT(S) OF DIVERSION:
PRIEST RIVER SE1/4NE1/4SW1/4 Sec. 13, Twp 56N, Rge 05W, B.M. BONNER County

PLACE OF USE: IRRIGATION

Twp Rge Sec	NE				NW				SW				SE				Totals
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
56N 05W 13									.5			.5		1.0			2.0

Total Acres: 2

CONDITIONS OF APPROVAL

1. Proof of application of water to beneficial use shall be submitted on or before **November 01, 2019.**
2. Subject to all prior water rights.
3. Project construction shall commence within one year from the date of permit issuance and shall proceed diligently to completion unless it can be shown to the satisfaction of the Director of the Department of Water Resources that delays were due to circumstances over which the permit holder had no control.
4. A fish screen of 1/4 inch or smaller mesh shall be installed and maintained at the point of diversion.
5. The approach velocity at the point of diversion shall not exceed 0.5 feet per second.
6. This right when combined with all other rights shall provide no more than 3.0 afa per acre at the field headgate for irrigation of the place of use.
7. Water shall not be diverted under this right when flows in the Priest River are below minimum flow amounts as defined by Right 97-7380. The right holder shall be responsible for monitoring the daily flow of the Priest River using real-time data and shall cease diverting water when flows in the Priest River are below established minimum flow amounts. Unless otherwise specified by the Director of the Department of Water Resources, data from the U.S. Geological Survey Priest River gauging station, No. 12395000, may be used for purposes of determining the daily flow amounts.

State of Idaho
Department of Water Resources

Permit to Appropriate Water

NO. 97-07546

8. This right does not grant any right-of-way or easement across the land of another.

This permit is issued pursuant to the provisions of Section 42-204, Idaho Code.

Signed this 26th day of October, 2017.

DOUGLAS JONES, Northern Regional Manager

State of Idaho
Department of Water Resources

Attachment to Permit to Appropriate Water

97-7546

This map depicts the IRRIGATION place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.

0 0.035 0.07 0.14 Miles

Point of Diversion
Place Of Use Boundary
Townships
PLS Sections

N

ATTACHMENT B

SITE PHOTOS

Photo of Priest River. Diversion location is in center bottom of photo.

Photo looking upstream of Priest River showing located where diversion occurs, in area behind small point where flow is the lowest.

Screen intake on end of diversion pipe.

Location of vault for pump and motor.

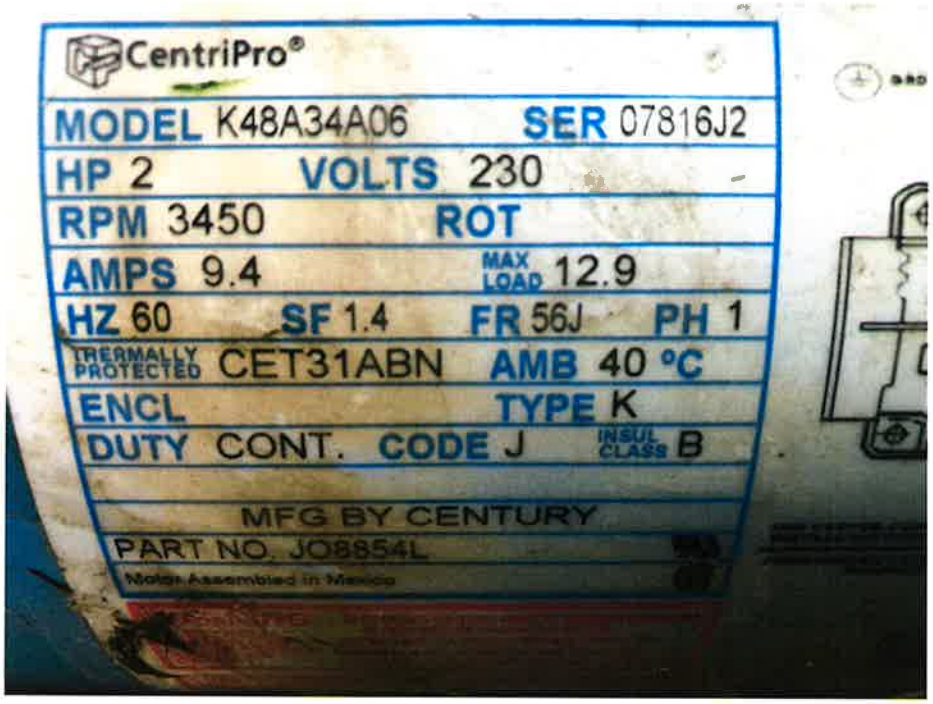


Photo of tag on motor.

Photo of Gazebo and irrigated lawn in the east and south areas of site.

Photo looking east showing irrigated lawn, and areas of drip irrigation along Gazebo.

Photo of irrigated lawn in southeastern area of site

Photo of irrigated lawn in western area of site, and the area of irrigation occurring in the treed area. Spigot with house and sprinkler can be seen next to tree on right.

Photo of landscaped area where drip irrigation occurs, and view of access road in background where irrigation occurs with portable sprinklers.

Irrigated lawns and treed area in northern area of site.

Irrigated lawn in eastern area of site

Photo of irrigation system pop-up sprinkler.

Photo of 1-2 gph drippers on drip lines

Irrigated landscaped areas in western part of property.

Irrigated areas around parking area and playground.

Gazebo area.

Photo of one of the irrigation control boxes.

ATTACHMENT C

BENEFICIAL USE FIELD REPORT

Form 219 07/11

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

BENEFICIAL USE FIELD REPORT

A Beneficial Use Field Report is prepared by a water right examiner as the result of an examination to clearly confirm and establish the extent of the beneficial use of water established in connection with a permit during the development period authorized by the permit and any extensions of time previously approved.

A. GENERAL INFORMATION

Permit No. 97-07546

1. Owner Daniel Shepard, Jr Phone No. 208-290-3476
   Current address 437 Sailors Lane, Priest River, ID 83856
2. Examiner's name Gene St.Godard, P.G., L.Hg., CWRE EXAM DATE Sept. 18, 2019
3. Accompanied by Greg Snow Email snowman0110@gmail.com
   Address 3402 Hoodoo Loop, Oldtown, ID 83822
   Relationship to permit holder engineer Phone No. 208 290 3476
4. Source Priest River tributary to Pend Oreille River

B. OVERLAP REVIEW

1. Other water rights with the same place of use none
2. Other water rights with the same source and point of diversion none

C. DIVERSION AND DELIVERY SYSTEM

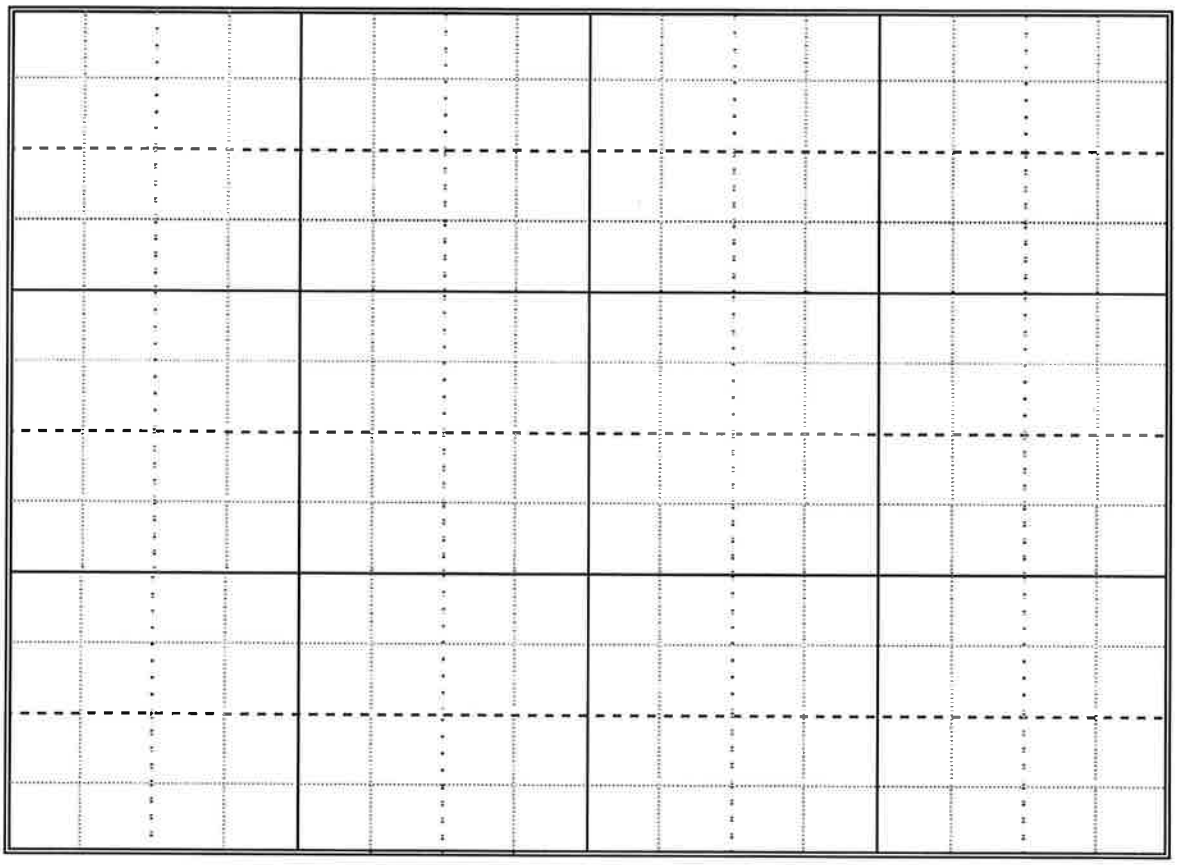
1. **Point(s) of Diversion:**

Ident. No.	Gov't Lot	¼	¼	¼	Sec	Twp	Rge	County	Method of Determination/Remarks
		SE	NE	SW	13	56N	05W	Bonner	GPS measurements

2. **Place(s) of Use:** Method of determination GIS Analysis

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
56N	05W	13									1.75					0.25			2.0

3. **Delivery System Diagram**: Indicate all major components and distances between components. Indicate weir size/ditch size/pipe diameter (inside), as applicable. Use the space provided or ☒ see attached.



Scale: 1" = _____

☒ Copy of USGS Quadrangle attached showing location(s) of point(s) of diversion and place(s) of use (**required**)
☒ Aerial photo attached (required for irrigation of 10+ acres)
☒ Photo of diversion and system attached

4.

Well or Diversion Identification No.*	**Motor Make**	**Hp**	**Motor Serial No.**	**Pump Make**	**Pump Serial No. or Discharge Size**
River - Div#1	CentriPro	2	07816J2	CentriPro	1-1/2-inch

****Code to correspond with no. on map and aerial photo***

D. FLOW MEASUREMENTS

1.

Measurement Equipment	**Type**	**Make**	**Model No.**	**Serial No.**	**Size**	**Calib. Date**
equipment specifications						

2. **Measurements:** _____

E. NARRATIVE/REMARKS/COMMENTS

During the site inspection, the irrigation system had recently been dismantled for the winter season. Review of the system revealed that the irrigation system contain nine (9) irrigation stations, which contained an average of 7 to 9 heads, which are rated at 2 gpm. Discussions with the site engineer informed us that the site irrigations are set to operate at approximately 15 to 20 gpm per station. Therefore, the diversion rate appears to be at the allocated rate of diversion of 0.04 cfs.

Has the permit holder met all conditions of permit approval, including any mitigation requirements and/or measuring device installation requirements? ☒ Yes ☐ No If no, what must be done to meet the permit requirements?

Yes. Visual inspection of the screen was completed. See WNR Group report for permit conditions.

F. FLOW CALCULATIONS ☐ Additional computation sheets attached

Measured Method:
Flow of the system was determined from the rating of the sprinkler system infrastructure. Each sprinkler station is designed to deliver approximately 18 gpm.

G. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$V_{I.R}$ = (Acres Irrigated) x (Irrigation Requirement) = 2.0 acres x 0.02 cfs/acre = 0.04 cfs

$V_{D.R}$ = [Diversion Rate (cfs)] x (Days in Irrigation Season) x 1.9835 = _____

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

2. Volume Calculations for Other Uses:
2 acres x 3 Acre-feet/acre = 6 acre feet.

The system operated at 18 gpm for a minimum of 8 hours/day. Assuming a 214 days of irrigation season, would result in 5.7 acre-feet of water.

18 gpm x 60 min x 8 hrs x 214 days = 1,848,960 gallons. Divide by 325,851 gallons per acre-foot = 5.7 acre-feet.

H. RECOMMENDATIONS

1. Recommended Amounts

Beneficial Use	Period of Use From	Period of Use To	Rate of Diversion Q (cfs)	Annual Volume V (afa)
irrigation	04/01	10/31	0.04 cfs	5.7 AF
		Totals:	0.04 cfs	5.7 AF

2. Recommended Amendments

☐ Change P.D. as reflected on page 1 ☐ Add P.D. as reflected on page 1 ☐ None
☒ Change P.U. as reflected on page 1 ☐ Add P.U. as reflected on page 1 ☐ Other

I. AUTHENTICATION

Field Examiner's Signature _____ Date November 30, 2019

SEAL

Reviewer _____ Date _____