Α.

1.

STATE OF IDAHO DEPARTMENT OF WATER RESOURCES **BENEFICIAL USE FIELD REPORT**

GENERAL INFORMATIO	N				P	ermit No: xam Date:
Current Owner: TOM MC GARRAGH	217 CEDAR ST #331	SANDPOINT	ID	83864		

2. Accompanied by: Tom McGarragh Phone No: (208) 265-0801 Address: Same as above Relationship to permit Holder: Permit Holder

3. SOURCE:

PEND OREILLE RIVER

Tributary LAKE PEND OREILLE

Method of Determination: Arcmap and DRG.

B. OVERLAP REVIEW

1. Other water rights with the same place of use: <u>NO</u> Overlap

Water Right No.	Source	Purpose of Use	Basis	

Comments: _____

2. Other water rights v	vith the same point-of-diversion:	<u>NO</u> Overlap		
Water Right No.	Source	Purpose of Use	Basis	

Comments: ____

C. DIVERSION AND DELIVERY SYSTEM

1. LOCATION OF POINT(S) OF DIVERSION:

PEND OREILLE RIVER NW1/4 SE1/4, Sec. 20, Twp 56N, Rge 03W, B.M. BONNER County

Method of Determination: Arcmap and GPS. POD is a pump in river located at -116º43.461, 48º11.044.

PLACE OF USE: IRRIGATION

	See		N	E			N\	N			SV	N			S			Totals	
Twp	Ring	Sec	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
56N	03W	20														0.8			0.8
T	tol A		0 0	100															

Total Acres: 0.8

Method of Determination: Arcmap and Field Exam.

Page 1

Permit No:	96-9514
Exam Date:	09/14/2018

Permit No 96-9514

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 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	Нр	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
RIVER PUMP	GOULDS	1.5			

D. FLOW MEASUREMENTS

Measurement Equipment	Туре	Make	Model No.	Serial No.	Size	Calib. Date
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2. Measurements: unable to perform flow measurement, as intake pipe from river at POD was to small in diameter.

E. FLOW CALCULATIONS

X Additional Computation Sheets Attached

Measured Method: Using irrigation system pressure gage, the system operated at 55-57 psi. Referencing research of Gould 1.5 HP pump on the internet provided a pump performance data worksheet (see attached Shallow Well Performance Rating Worksheet) from which 13.9 gpm at 60 psi was identified gpm was identified (highlighted yellow). 13.9 gpm equates to a diversion rate of 0.03 cfs.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

V_{1.R} = (Acres Irrigated) x (Irrigation Requirement) = 0.8 acres x 3 af = 2.4 af

V_{DR} = [Diversion Rate (cfs)] x (Days in Irrigation season) x 1.9835 = 0.03 cfs x 214 days x 1.9835 = 12.7 af

V = Smaller of V_{LR} and $V_{D,R}$ = 2.4 af

This is a surface water right, so no volume will be included on the water right license.

2. Volume Calculations for Other Uses:

Permit No 96-9514

G. NARRATIVE/REMARKS/COMMENTS

The field exam conducted with the applicant, Tom McGarragh, showed water pumped from the Pend Orielle River being used for irrigation purposes. At POD, applicant used a 1.5 HP pump to serve a pressurized in ground sprinkler system irrigating at POU. Flow measurements were not obtainable due to size of intake pipe. A shallow well performance rating for this series of pump (see attached) derived the diversion flow at 60 psi to be 13.9 gpm or a diversion rate of 0.03 cfs. Pressure gage installed on applicant's irrigation system read 55 psi at time of field exam, and psi was rounded up to match the closest chart variable on worksheet. As such, a diversion rate of 0.03 cfs will be carried forward to licensing.

Irrigation acreage was traced out using arcmap and equals 0.8 acres. At POU, applicant had installed a pressurized sprinkler system composed of 10 zones, with 19 pop-up sprinklers per zone. Applicant was permitted for 16 acres, but at time of project completion and field exam that area was reduced to 0.8 acres. As the applicant uses the Pend Orielle River as his water source, this is a surface water right, and no volume diversion will be included on the water right license.

The permit requires a fish screen, and applicant stated on Statement of Completion for submitting proof of beneficial use that it had been installed.

Condition 26A was removed from license. Condition R62 was replaced by condition R66 to account for increase in diversion rate from 0.02 cfs/acre to 0.03 cfs/acre, conforming to department standards established by administrative memorandum: Application Processing Memorandum No.17 - Acceptable Rates of Irrigation Flow for Small Acreages. 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	
IRRIGATION	04/01 to 10/31	0.03 CFS	
	<u>Totals:</u>	0.03 CFS	_
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2. Recommended Amendments			
Change P.D. as reflected above	ve Add P.D.	as reflected above	None
Change P.U. as reflected abov	ve Add P.U.	as reflected above	None
I. AUTHENTICATION Luke	Bates - Water Resour	ce Agent	
Field Examiner's Name_Od-	mhil	Date	116/2020
Reviewer	\$	Date	115/2020



SHALLOW WELL PERFORMANCE RATINGS

HP/Model		14 HP - J55 14 HP - J55H							44 HP - J75					1 HP - J105						112 HP - J155						
Nozzle			NO1	7				AN	019			AN018				AN018					AN022					
Venturi	1	A	D33	32			AD3328				AD3336				AD3339					AD3342						
	Disc	Discharge Pressure - PSI				Discharge Pressure - PSI				Discharge Pressure - PSI				Discharge Pressure - PSI				Discharge Pressure - F				- PSI				
Total	20	30	40	50	Max.	20	30	40	50	60	Max.	30	40	50	60	Max.	30	40	50	60	Max.	30	40	50	60	Max
Suction Lift (feet)	G	allo min	ns pe iute	Hr.	off (PSI)		Gal	ions inut	per		off (PSI)	Gallons per		off (PSI)	Gallons per minute			off (PSI)	Gallons per o minute (p		off (PSI					
5	17.5	16.5	10.2	5.0	63	115	81.3	11.0	7.7	4.8	83	21.3	18.3	125	66	70	24.8	24.4	16.6	9.9	74	26.6	263	25.0	15.6	80
10	15.7	14.4	92	4.3	61	10.3	10.0	9.6	7.0	42	81	18.8	17.3	11.3	5.0	68	22.9	222	15.8	8.6	72	24.7	24.3	22.6	139	77
15	13.7	12.5	80	3.6	59	8.8	8.6	83	6.3	37	79	16.4	15.5	9.6	3.7	66	198	19.5	138	6.9	70	21.6	215	20.4	12.9	75
20	11.5	10,4	7.1	2.3	57	7.0	7.0	6.8	5.8	32	76	13.6	13.2	8.3	20	63	16.6	16.6	122	5.6	67	18.1	18.0	17.6	120	73
25	8.7	8.6	62	1.3	54	5.3	52	52	5.0	2.8	73	10.0	9.9	64	1.0	59	125	12.4	10.4	3.6	65	14.0	14.0	14.0	10.1	71

Page 1 of 1





POD PIPE AND PUMP

SYSTEM PSI GAUGE





GOULDS 1.5 HP PUMP



POU – PRESSURIZED SPRINKLER SYSTEM





AUTOMATIC SPRIKLER HEAD





POU IRRIGATION





POU IRRIGATION





POU