

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 96-9605
Exam Date: 08/31/2021

1. Current Owner:
S & N OF SARASOTA LLC 1945 LINCOLN DR SARASOTA FL 34236
2. Accompanied by: Chuy
Phone No: 530-526-5997
Address: Unknown
Relationship to permit Holder: Farm Manager for Applicant

3. **SOURCE:**
HOODOO CREEK

Tributary
PEND OREILLE RIVER

Method of Determination: Arcmap and DRG

B. OVERLAP REVIEW

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

Water Right No.	Source	Purpose of Use	Basis
96-2190	HOODOO CREEK	IRRIGATION	LICENSE

Comments: 96-2190 is a licensed irrigation right that has a shape of approximately 12 acres of overlap in POU with this Permit in the SE¼SW¼ but is only licensed for 6 acres within the SE¼SW¼. There does not appear to be any actual overlap, and it is recommended that near future Adjudication of Basin 96 serve as the mechanism to derive any actual overlap between rights. At this time, there is no concern for overlap, as right 96-2190 uses a different POD and the applicants parcel is only irrigated by the irrigation system associated with this Permit.

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

Water Right No.	Source	Purpose of Use	Basis
96-9402	HOODOO CREEK, SPRINGS	IRRIGATION	LICENSE
96-9403	HOODOO CREEK, SPRINGS	IRRIGATION	LICENSE

Comments: 96-9402 & 96-9403 are licensed rights that both have the same POD and water system infrastructure as this Permit. Current aerial imagery shows the licensed POD for these two rights being just NW of the GPS located point found during field exam, but the system is the same. Condition F06 was added to this Permit to describe the shared POD between the three rights. Condition X35 was added describing combined use limitations between 96-9402, 96-9403, & 96-9605.

C. DIVERSION AND DELIVERY SYSTEM

1. **LOCATION OF POINT(S) OF DIVERSION:**
HOODOO CREEK SW¼ SE¼, Sec. 14, Twp 55N, Rge 04W, B.M. BONNER County

Method of Determination: GPS. POD is large, screened culvert with intake pipe within located at -116°47.710, 48°6.651.

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	
55N	04W	14											23.0	12.0					35.0

Total Acres: 35.0

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.

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.

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
CENTRIFICAL PUMP	GENERAL ELECTRIC	60			

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
GE PANEMETRIC	ULTRASONIC		PT878	PCC1316134		4/6/2021

2. Measurements: Two sets of flow measurements were taken using GE Panemetric Ultrasonic Flowmeter during the field exam. The flow measurement resulting in the largest derived GPM flow rate equaling 709.36 gpm or 1.58 cfs.

E. FLOW CALCULATIONS

X Additional Computation Sheets Attached

Measured Method: flow rate determined by GE Panemetric Ultrasonic Flowmeter = 1.58 cfs

Starting gallons on meter = 13,609.600

Ending gallons on meter = 20,703.188

20,703.188 – 13,609.600 = 7,093.588 gallons / 10 minutes = 709.36 gpm or 1.58 cfs, considering Department rounding standards.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 35.0 \text{ ac} \times 3.0 \text{ afa} = 105.0 \text{ af}$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.70 \text{ cfs} \times 214\text{-day} \times 1.9835 = 297.2 \text{ af}$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = 105.0$$

2. Volume Calculations for Other Uses:

This water right uses a surface source, and no volume metrics will be applied to this irrigation beneficial use WR for licensing purposes.

G. NARRATIVE/REMARKS/COMMENTS

Field exam performed on 8/31/2021 with the applicant's farm manager, Chuy, showed Hoodoo Creek water being used for irrigation uses. At the POD, a large culvert with screened cutout houses a 60 HP GE pump motor to divert water to the irrigation POU. Two sets of flow measurements were taken using GE Panemetric Ultrasonic Flowmeter during the field exam. The flow measurement larger of the two resulted in a flow rate equal to 709.36 gpm or 1.58 cfs. The approved Permit had a maximum diversion rate of 0.80 cfs based on 40 acres of proposed irrigation use. While the observed diversion rate is larger than the Permit authorized to develop, two other water rights, 96-9402 & 96-9403, use the same pump works and pipeline infrastructure. WRs 96-9402 & 96-9403 are licensed with diversion rates of 1.22 cfs & 0.38 cfs respectively; these two WRs mitigate any enlargement concerns for the over diversion associate with this Permit's use. Based on the 35.0 acres of irrigation observed during the field exam, a maximum diversion rate equal to $35.0 \text{ ac} \times 0.02 \text{ cfs per acre} = 0.70 \text{ cfs}$ is recommended for licensing Permit 96-9605.

During the field exam, the water conveyance system was observed as a main irrigation trunk line routing uphill & west from the POD approximately 1,050 feet to the POU, with sprinkler riser pipes set at intervals along the initial trunk line. Once in the large fields, the common irrigation system for the 3ea water rights discussed above hits a tee line, with 96-9402 & 96-9403 routing North to a 40-acre center pivot and hand line irrigation field, and 96-9605 routing South to supply water for 35.0 acres of strawberry field irrigation. The irrigation POU was observed during the field exam and sketched out on field maps. During licensing review, the POU was accurately traced out using Arcmap year 2020 aerial imagery and found to equal 35.0 acres. The annual volume associated with irrigation of 35.0 acres = $35 \text{ ac} \times 3.0 \text{ afa} = 105 \text{ af}$, but as this Permit uses a surface water source, no volume metrics will be incorporated when recommending for licensing.

The irrigation system uses a strait run of buried sprinkler pipe off the main trunk tee line, with irrigation riser pipes at intervals supplying water to above ground 4-inch rubber pipes. The 4-inch rubber is then plugged with soaker hoses that run North/South to irrigation rows of strawberry plants that are grown for sale. Photographs were taken demonstrating the irrigation system and crop growing during this season.

Condition F06 was added to the Permit during licensing review; WRs 96-9402 & 96-9403 are licensed rights that both have the same POD and water system infrastructure as this Permit. Current aerial imagery shows the licensed POD for these two rights being just NW of the GPS located point found during field exam, but the water system infrastructure is the same for all three rights. Condition X35 was added describing combined use diversion rate limitations between 96-9402, 96-9403, & 96-9605 mitigating any enlargement concerns related to diversion rates. All other conditions on the Permit shall be carried forward to licensing. Overlap concerns: 96-2190 is a licensed irrigation right that has a shape of approximately 12 acres of overlap in POU with this Permit in the SE $\frac{1}{4}$ SW $\frac{1}{4}$ but is only licensed for 6 acres within the SE $\frac{1}{4}$ SW $\frac{1}{4}$. There does not appear to be any actual overlap, and it is recommended that near future Adjudication of Basin 96 serve as the mechanism to derive any actual overlap between rights. At this time, there is no concern for overlap, as right 96-2190 uses a different POD and the applicants parcel is only irrigated by the irrigation system associated with this Permit. There are no additional overlap concerns for this water 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>
IRRIGATION	04/01 to 10/31	0.70 CFS

Totals: 0.70 CFS

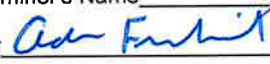
2. Recommended Amendments

____ 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

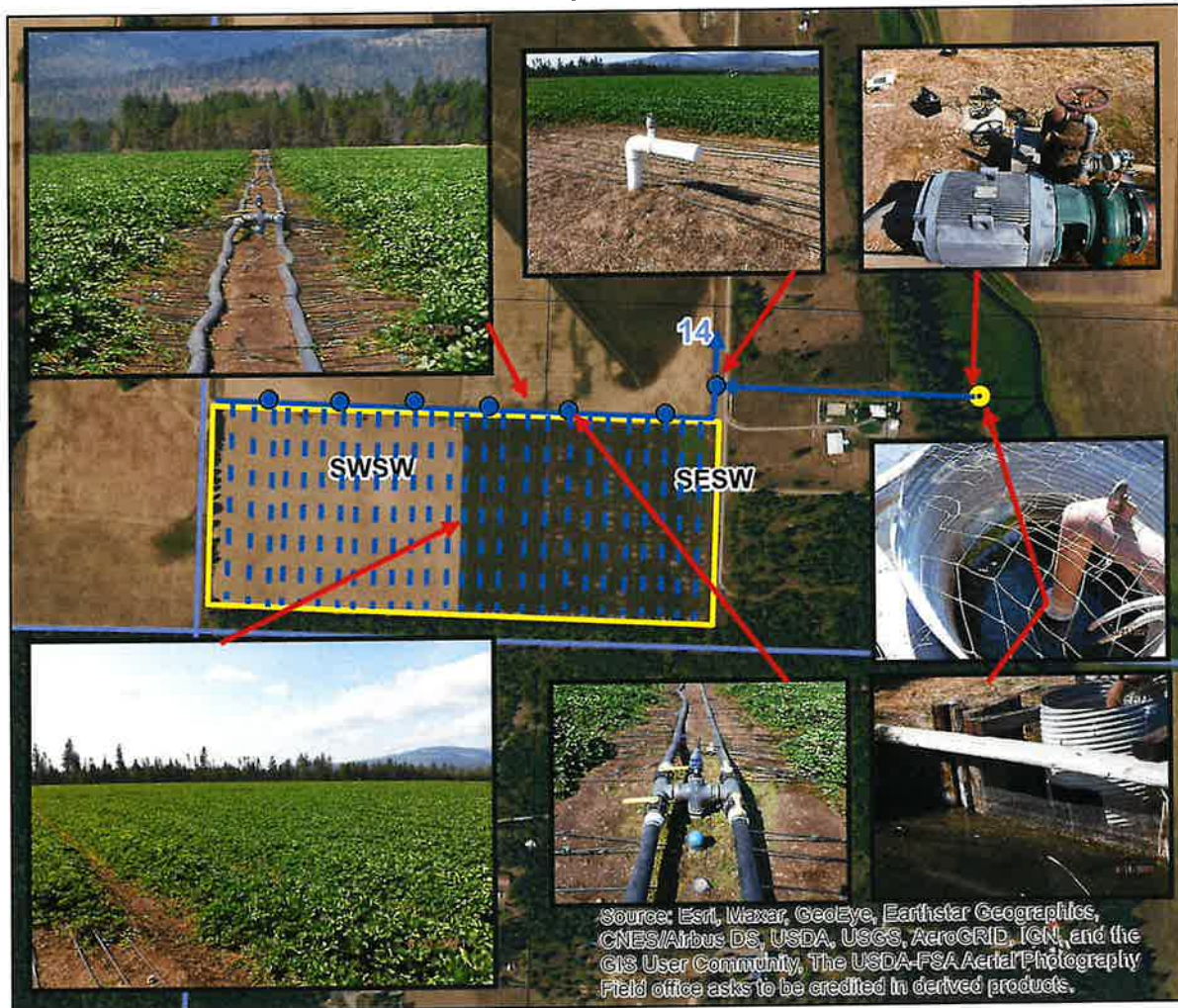
I. AUTHENTICATION Luke Bates - Water Resource Agent

Field Examiner's Name  Date 9/14/2021

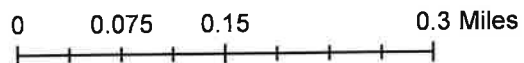
Reviewer  Date 11/18/2021

IRRIGATION system diagram.

55N



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



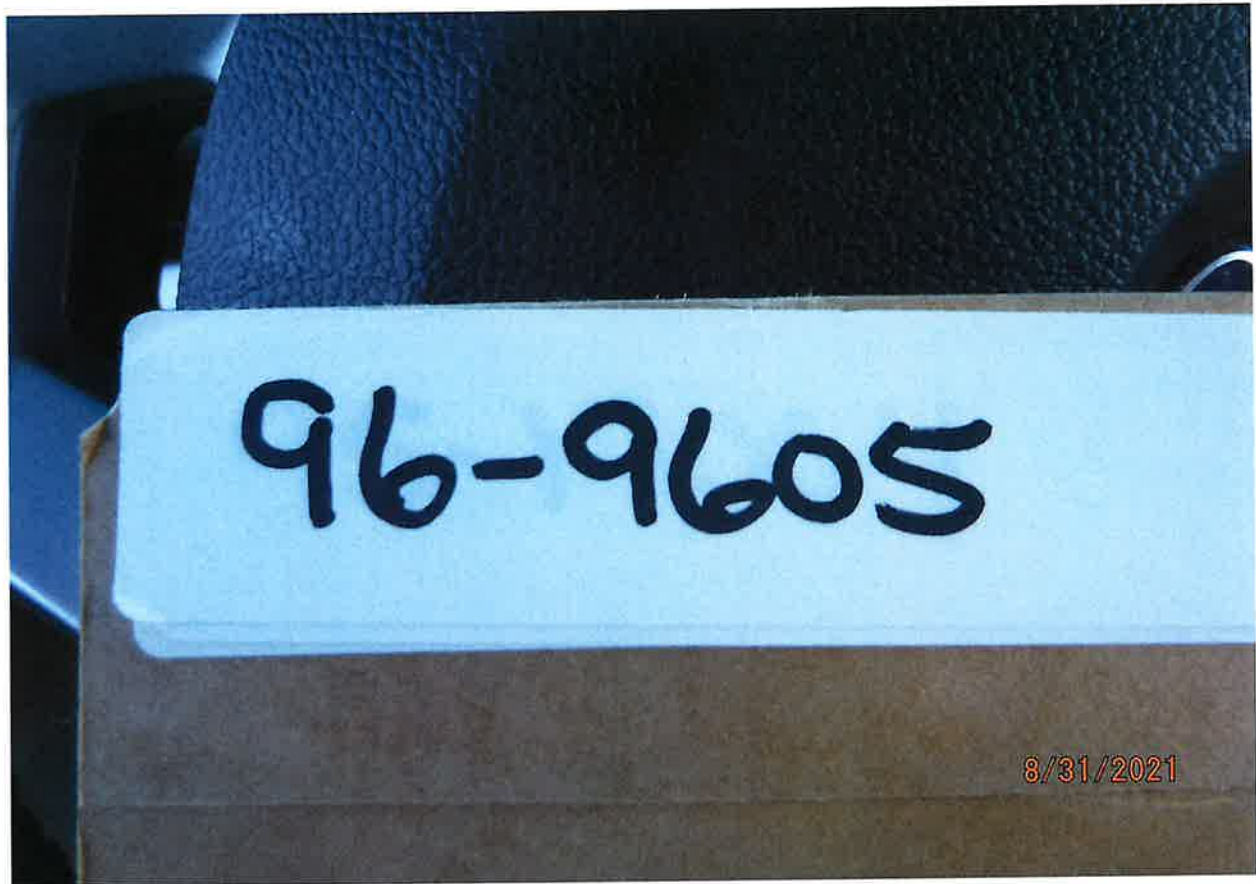
Flow Measurement for permit 96-9605

Date/Time 21/08/31	Velocity ft/s	Volume Gallons/min	Fwd Totalizer Fwd Gallons	Error
10:16:31	4.72	704.4	13609.600	Error:0
10:17:34	4.73	706.7	14331.735	Error:0
10:18:34	4.76	710.8	15039.652	Error:0
10:19:33	4.73	707.0	15735.620	Error:0
10:20:33	4.74	708.3	16433.217	Error:0
10:21:34	4.74	708.3	17167.403	Error:0
10:22:33	4.74	705.9	17862.230	Error:0
10:23:33	4.78	713.8	18573.644	Error:0
10:24:33	4.73	706.3	19270.595	Error:0
10:25:34	4.71	703.9	20004.962	Error:0
10:26:34	4.78	713.0	20703.188	Error:0

Average Velocity	4.74
Max Velocity	4.78
Min Velocity	4.71

Average GPM	708.0
Max GPM	713.8
Min GPM	703.9

Beginning Reading	13609.600	
Ending Reading	20703.188	
Difference in Readings	7093.588	
Difference / 10 readings	709.359	GPM
Conversion from GPM to CFS (/448.83)	1.580	CFS



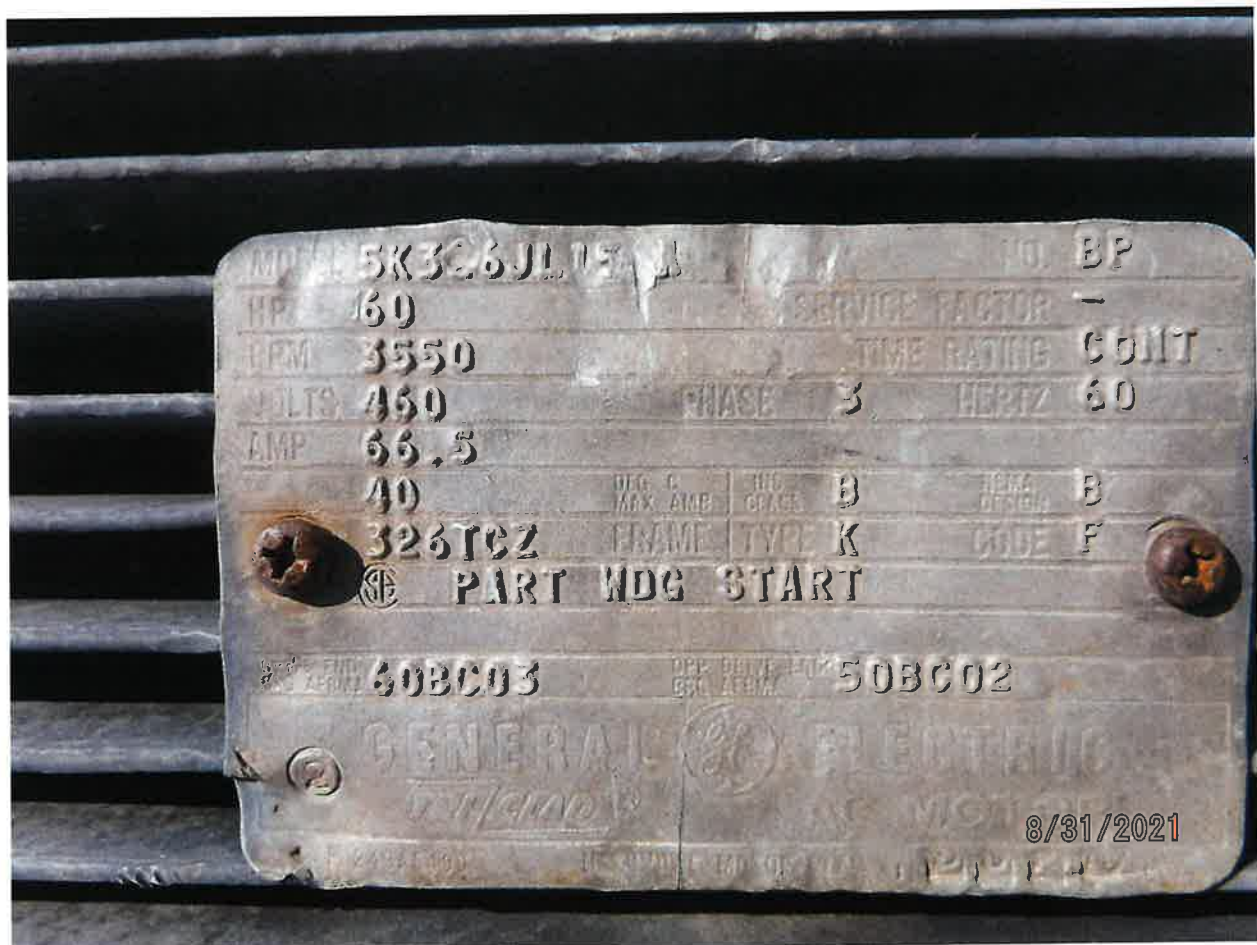
FIELD EXAM DATE 8/31/2021



POD – SCREENED INTAKE PIPE IN HOODOO CREEK



POD – 60 HP PUMP





90 PSI OPERATING PRESSURE



DIVERTING WORKS



BURIED IRRIGATION MAIN LINE WITH RISERS





IRRIGATION POU – LARGE SCALE STRAWBERRY CROP WITH SOOKER HOSE IRRIGATION SYSTEM





IRRIGATION RISER PIPE TO SOAKER HOSE SYSTEM AT INTERVAL ALONG NORTHERN EXTENT OF POU





IRRIGATION POU

