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Method of Determination: Garmin GPS

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.

<u>Well or Diversion ID No.*</u>	<u>Motor Make</u>	<u>Hp</u>	<u>Motor Serial No.</u>	<u>Pump Make</u>	<u>Pump Serial No. or Discharge Size</u>
709001					

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

D. FLOW MEASUREMENTS

1.

<u>Measurement Equipment</u>	<u>Type</u>	<u>Make</u>	<u>Model No.</u>	<u>Serial No.</u>	<u>Size</u>	<u>Calib. Date</u>

2. Measurements:

E. FLOW CALCULATIONS☒ Additional Computation Sheets Attached

Measured Method:

Used Manning Equation to determine the carrying capacity of the channel, used Hazen Williams to determine carrying capacity of pipe, used fluid dynamics to determine approximate head loss across 12 to 6 inch necking. Result is system can carry 7.02 cfs, but limited to 3.8 cfs by Permit.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) =$$

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

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

2. Volume Calculations for Other Uses: none, non consumptive surface water use

G. NARRATIVE/REMARKS/COMMENTS

Stream diverted into dredged channel (stream bed itself was not dredged). The length of the channel is 12 feet. At the end of the channel is a fish screen in front of a headgate which is 24 inches wide. The headgate allows water into a pooling shack where it is diverted into 12" pipe plastic pipe which delivers to the pump house. The generator is a turbine model 281-SL1513 Part No. 533-1513 Serial no. 1M-376972-1002 Frame. 281 INS class H Encl. Open Rise by res 80 PF. 0.8 Field Amps 2.0 RPM 1800 Field Volts 50 Hz 60 Kw 5 Phase 1 KVA 6.3 Amb 40 degrees celcius Volts 120/240 Amps 26.0 Magnathon Synchronos AC generator from marathon electric

Unable to run by end of Nov. due to freezing, starts again typically early May

Have conditions of permit approval been met? ☒ Yes ☐ No

H. RECOMMENDATIONS

1. Recommended Amounts

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
POWER	01/01 to 12/31	3.800 CFS	
<u>Totals:</u>		3.800 CFS	

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 ☐ Other

I. AUTHENTICATION

Field Examiner's Name Nate Arave Date 9/14/07

Reviewer Nate Arave Date 9/21/07

Hazen-Williams Equation Calculator	
Permit No. 31-7526	
Enter These Parameters From the Worksheet	
Pipe Diameter (ft)	1
Pipe Length (ft)	1226.2
Elevation Drop (ft)	39
Values for Type of Pipe (Ch)	150
Discharge (cfs)	10.55

Pipe Values
 150 -plastic PVC
 140 -very Smooth
 130 -cast iron
 120 -wood, concrete
 110 -riveted steel
 100 -old cast iron
 80 -badly corroded cast iron

approximately 1/3 of discharge will be
 lost due to necking, carrying capacity
 Q = 7.02 cfs

Manning Equation for open channel

$$Q = \frac{1.486}{n} \times A \times R^{2/3} \times S^{1/2}$$

$$Q = \frac{1.486}{0.041} \times 3 \times 0.6^{(2/3)} \times 0.01^{1/2}$$

$n = 0.041$ For Alluvial stream straight

$$Q = 7.93 \text{ cfs}$$

Limited to 3.8 cfs by permit

Comment Report

31-7654

1. narave 9/24/2007 Field Report Narrative

Comment: Stream diverted into dredged channel (stream bed itself was not dredged).

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celcius Volts 120/240 Amps 26.0 Magnathon Synchronos AC generator from marathon electric

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2. narave 9/24/2007 POD

Comment: Updated shape

3. narave 9/24/2007 POU

Comment: Updated Shape

4. narave 9/24/2007 overlap review

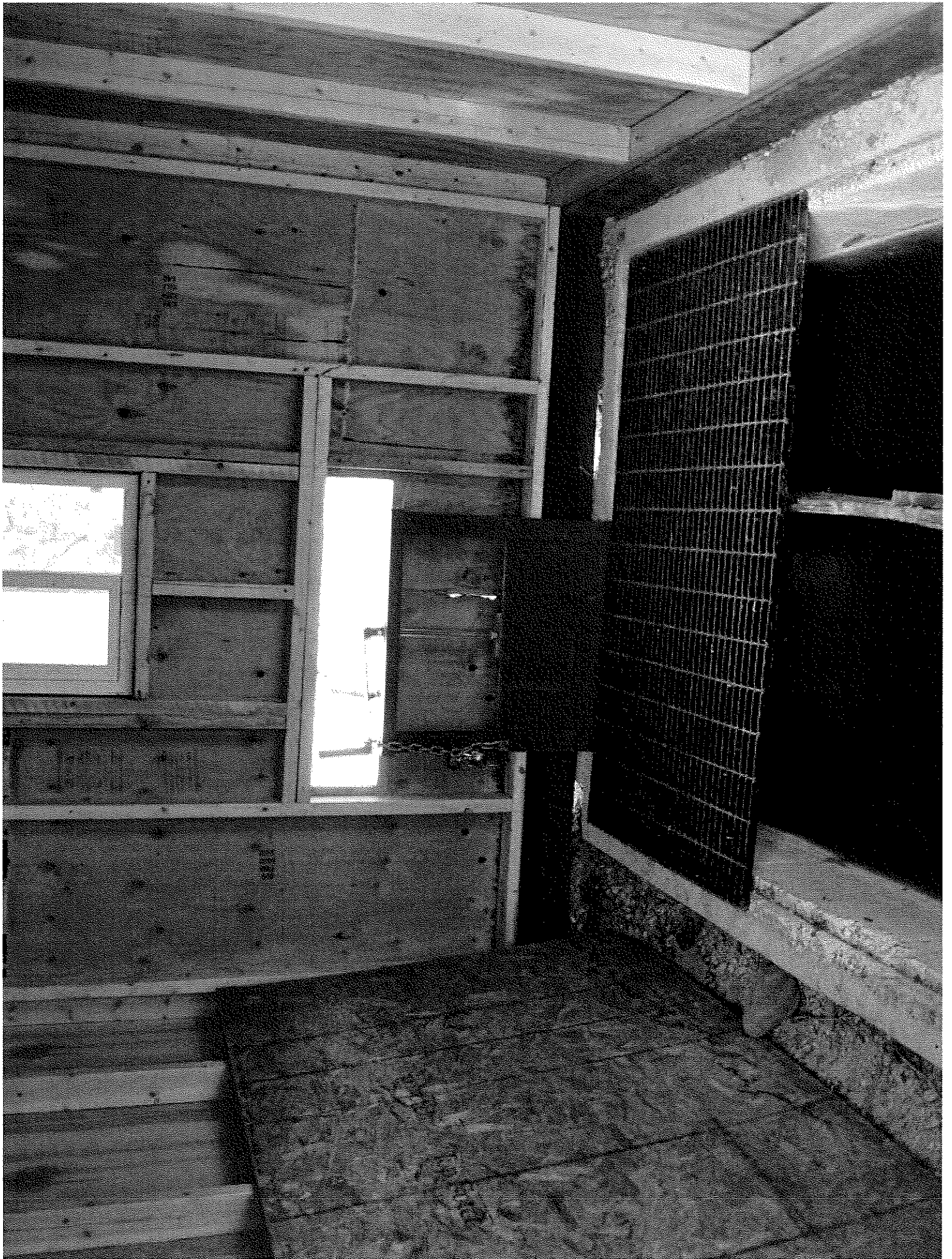
Comment: Place of Use overlaps with wr 31-10789

5. CZIMMERM 4/21/1999 Diversion Description

Comment: 16 inch diameter pipe reduced to 10 inch diameter pipe. 35 ft head, 6 KW.

Diverion is only for the purpose of power generation. All water will be returned to the stream at a point about 1/4 mile to the south of the point of diversion. Measures will be taken to prevent fish from entering penstock pipe. The power is to be used for private dwelling. Water use for power but not sold to interstate grid.

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CE

MAGNAPLUS®

SYNCHRONOUS AC GENERATOR

MODEL		PART NO.		ADAPTION		PF		°C	
						AMB			
SERIAL		EMPL		PHASE					
VOLTAGE		RISE BY RES.		FIELD VOLTS					
VOLTAGE		CONTINUOUS DUTY							
VOLTAGE		VOLTS							
		AMPS							
VOLTAGE		STANDBY SERVICE							
VOLTAGE		VOLTS							
		AMPS							
VOLTAGE		TYPE SER							

MARATHON

SR





