

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 96-9543
Exam Date: 08/06/2020

1. Current Owner:
CITY OF DOVER PO BOX 115 DOVER ID 83825
2. Accompanied by: Robert Hansen
Phone No: 208-265-4270
Address: 67 Wild Horse Trail, Sandpoint ID 83864
Relationship to permit Holder: Representative and system Water Operator

3. **SOURCE:**
PEND OREILLE RIVER

Tributary
COLUMBIA 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
96-8592	PEND OREILLE RIVER	MUNICIPAL	LICENSE
96-9247	PEND OREILLE RIVER	IRRIGATION	LICENSE

Comments: 96-8592 is an existing municipal right owned by the City of Dover that uses water from the same source and for the same municipal water system as this permit. Condition X35 was added to 96-9543's license in order to mitigate overlap concerns between rights 96-8592 and 96-9543.

Right 96-9274 is owned by Dover Bay Development INC, and uses water from the Pend Oreille River at its POU for irrigation that overlaps this right's POU. 96-9274 uses a separate water system and irrigation use that is not associated with the City of Dover's municipal water system, and is not a concern for overlap.

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

Water Right No.	Source	Purpose of Use	Basis
96-8592	PEND OREILLE RIVER	MUNICIPAL	LICENSE

Comments: 96-8592 has a single POD that pumps water from the river that is also used as one of two PODs associated with this permit. The license designated location of 96-8592's POD is not accurate to current field examine verified locations for the POD. Condition F06 was added to 96-9543's license to describe a shared (single pump) POD between the two rights.

C. DIVERSION AND DELIVERY SYSTEM1. **LOCATION OF POINT(S) OF DIVERSION:**

PEND OREILLE RIVER SE¼ NW¼, Sec. 31, Twp 57N, Rge 02W, B.M. BONNER County
PEND OREILLE RIVER SE¼ NW¼, Sec. 31, Twp 57N, Rge 02W, B.M. BONNER County

Method of Determination: Field exam, Arcmap, and GPS. Two intake pipe POD(s) were verified during a field exam, and position determined using Arcmap aerial imagery, along with GPS, where the two pipes daylight on shore at a vaulted manifold to common pipeline. From shore the two pipes route out into a deep pool in the Pend Oreille River where they serve as a single location duplex (2) POD estimated to be at -116°36.012, 48°14.788 using 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
DUPLEX INTAKE SYSTEM	GRUNDFOS	2EA 15HP	15B700E2		

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
N/A						

2. Measurements: System intake pipes daylight from river into a vaulted manifold-to-common pipeline, and routed to a slow sand filtration system without providing the minimum pipe requirements necessary to perform a flow measurement.

E. FLOW CALCULATIONSX Additional Computation Sheets Attached

Measured Method: Applicant's contracted engineer, Mr. Scott McNee, provided pump curves for the 15 hp pumps showing each pump has the flow capacity of 184 gpm, or 0.41 cfs per pump. The pumps are cycled during normal water system with only one pump operating at a time.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation: N/A

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) =$$

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

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

2. Volume Calculations for Other Uses:

Municipal use is for the City of Dover. There is no diversion volume applied to this water right.

G. NARRATIVE/REMARKS/COMMENTS

Field exam performed on 8/6/2020 with the applicant's representative, Robert Hansen, showed water from the Pend Oreille River being used for municipal purposes by the City of Dover (City). The water system infrastructure includes a two-intake pipe "duplex" designed diversion at the POD, located in a deep pooling region of the river, which daylight along the shore at a vaulted manifold. From the manifold, a single common line routes to a slow sand filtration system and 360,000 gallon storage facility prior to distribution to the City's water system service area. Two 15 hp Grundfos pumps were installed at time of field exam. For clarification purposes, the permit is being licensed assigning two PODs based on the two intake pipes in the river, but for illustrative purposes there is a single POD shown on maps as the pipes are located at the same location in the river.

The City's engineer representative, Scott McNee (P.E.), provided pump curve documentation that designates a flow rate of 184 gpm (per pump). The system is configured to operate with only one pump on at a time, resulting in a diversion rate of 0.41 cfs from the single pump during normal operations. The permit is recommended to be licensed with a maximum diversion rate of **0.20 cfs**, which is less than the pumping capacity of the system. The City submitted their statement of completion annotating the total diversion rate equal to 0.20 cfs, along with the corresponding fee of \$50.00 associated with that diversion rate. A letter from Mr. McNee accompanied the statement of completion, asserting the City's election to file proof for 0.20 cfs, which when combined with existing right 96-8592's 0.23 cfs provides an adequate diversion rate to cover the pumping capacity of a single pump used in normal operations.

In conversation with Mr. McNee, it was discussed that the water system has the capability to operate both pumps simultaneously, with the slow sand filter being the limiting factor on maximum flow rate, which is designed to accept 0.46 cfs of inflow to the filtration system. When combined rights 96-8592 (0.23 cfs) and 06-9543 (0.20 cfs) shall authorize a maximum diversion rate of 0.43 cfs or 193 gpm. If the City were to pursue operating both pumps simultaneously they will be required to comply with one of the following actions: 1) throttle back the pump(s) efficiency to achieve the authorized combined maximum diversion rate of 0.43 cfs established by 96-8592 and 96-9543, or 2) obtain a new water permit for the 0.03 cfs, which is the difference between the authorized diversion rate and the slow sand filtration designed rate.

The City's municipal water system is a large area POU, and includes multiple sections located within Township 57 North, Range 02 West, Section(s) 19-21, and 28-32. A request was submitted to the applicant to update the City's water service area during licensing review. Arcmap aerial imagery was used to trace out the municipal POU for licensing purposes. As a municipal use license, the City of Dover can request a service area POU update if/when their water system service area expands. Municipal use is for the City of Dover, and there is no diversion volume applied to this water right.

At time of licensing, the permit approved POD(s) for this right were found to be different than field exam identified locations, see below:

POD(s): authorized on permit = Twp 57N, Rge 02W, Sec 32, NWSW and NESW; Twp 57N, Rge 02W, Sec 31, NESE
POD(s): verified at time of licensing = Twp 57N, Rge 02W, Sec 32, **SENE** (two each pipes in Pend Oreille River)

An Application for Amendment was initiated, and mailed with cover letter to applicant on 16 December 2020.

Condition 26A was removed from the permit during licensing review. F06 was added to describe that rights 96-8592 and 96-9543 use the same POD(s). Condition 180 was added to describe a map depicting the service area is included for illustrative purposes. Condition X35 was updated to reflect the combined diversion rate limitations between rights 96-8592 and 96-9543. All other conditions on the permit will remain on the license.

Overlap concerns: 96-8592 is an existing municipal right owned by the City of Dover that uses water from the same source and for the same municipal water system as this permit. Condition X35 was added to 96-9543's license mitigating overlap

concerns between rights 96-8592 and 96-9543. Right 96-9274 is owned by Dover Bay Development INC, and uses water from the Pend Oreille River at its POU for irrigation that overlaps this right's POU. 96-9274 uses a separate water system and irrigation use that is not associated with the City of Dover's municipal water system, and is not a concern for overlap. There are no additional overlap concerns for this water right.

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

H. RECOMMENDATIONS

1. Recommended Amounts

<u>Beneficial Use</u>	<u>Period of Use</u>	<u>Rate of Diversion</u>
MUNICIPAL	01/01 to 12/31	0.20 CFS

Totals: 0.20 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 ☒ None

I. AUTHENTICATION Luke Bates - Water Resource Agent

Field Examiner's Name [Signature] Date 1/21/2021
Reviewer [Signature] Date 5/21/2021

PROJECT:	Dover Intake Pump	UNIT TAG:		QUANTITY:	1
REPRESENTATIVE:		TYPE OF SERVICE:	Raw Water Intake	DATE:	12/18/18
ENGINEER:	Scott McNee	SUBMITTED BY:	R.C. Worst & Co.	DATE:	
CONTRACTOR:	R.C. Worst & Company	APPROVED BY:		DATE:	
		ORDER NO.:		DATE:	

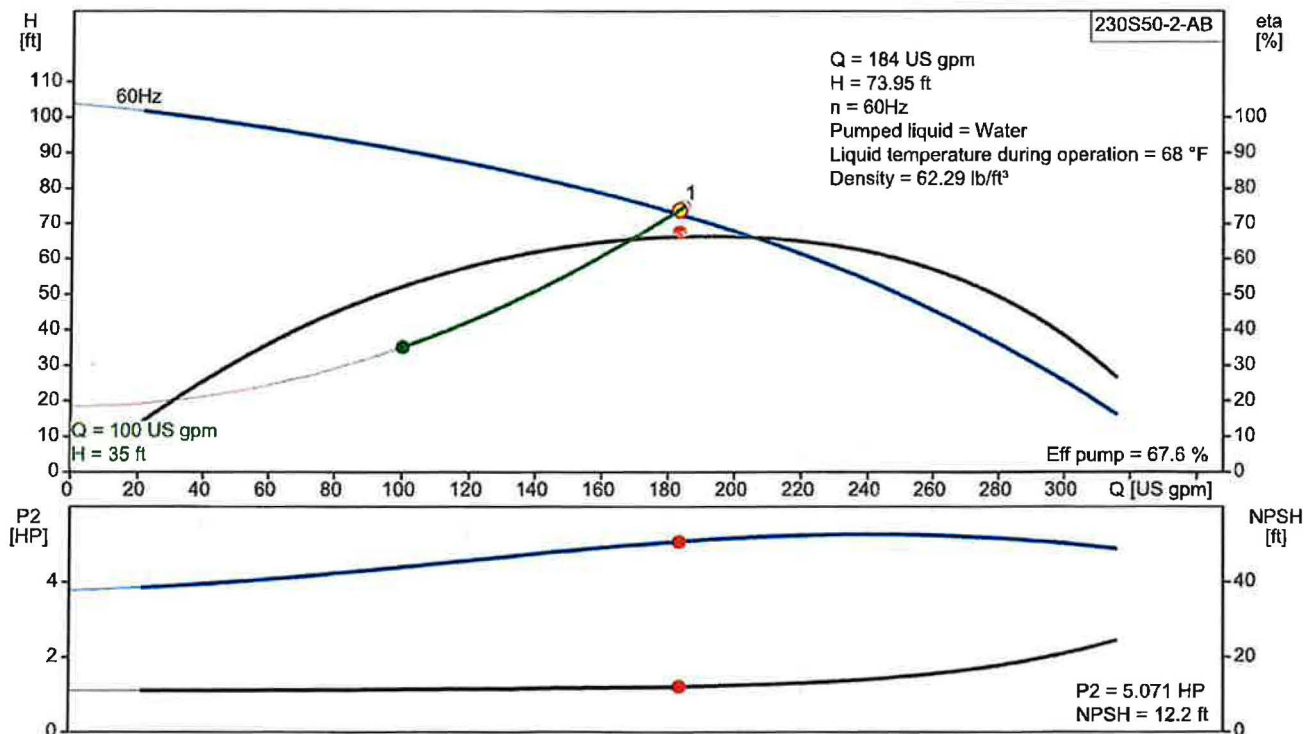


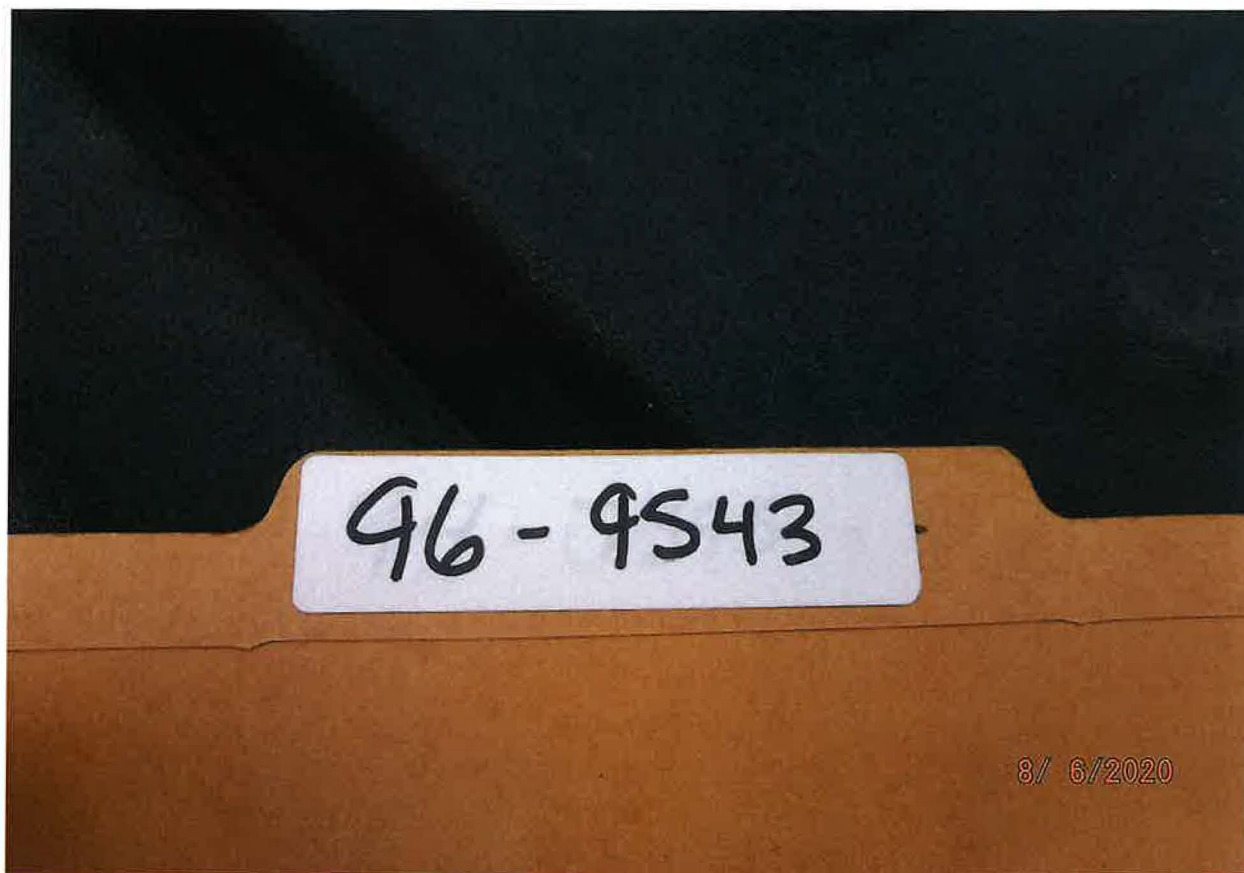
230S50-2-AB

Submersible pumps in stainless steel. EN 1.4301 (AISI 304). EN 1.4401 (AISI 316). EN 1.4539 (AISI 904L). Typical application: Ground water, Irrigation, Mining, Fountain, Off-shore etc.

Product photo could vary from the actual product

Conditions of Service	Pump Data	Motor Data
Flow: 184 US gpm	Product number: 15B700E2	Main frequency: 60 Hz
Head: 73.95 ft		
Efficiency:		
Liquid: Water		
Temperature: 68 °F		
NPSH required: 12.2 ft		
Viscosity:		
Specific Gravity: 1.000		





FIELD EXAM DATE 8/6/2020



POD – DUPLEX PUMP SYSTEM IN RIVER, IDENTIFIED BY ORANGE BUOY(S)



POD – INTAKE PIPES AT SHORELINE



2EA INTAKE PIPES ENTER VAULTED MANIFOLD AND COMMON PIPE LINE TO SLOW SAND FILTRATION
PLANT OPERATION



POD LAKE INTAKE PUMP CONTROL ELECTRIC CONTROL PANEL(S)





WATER SYSTEM OPERATION BUILDING / SLOW SAND FILTRATION SYSTEM



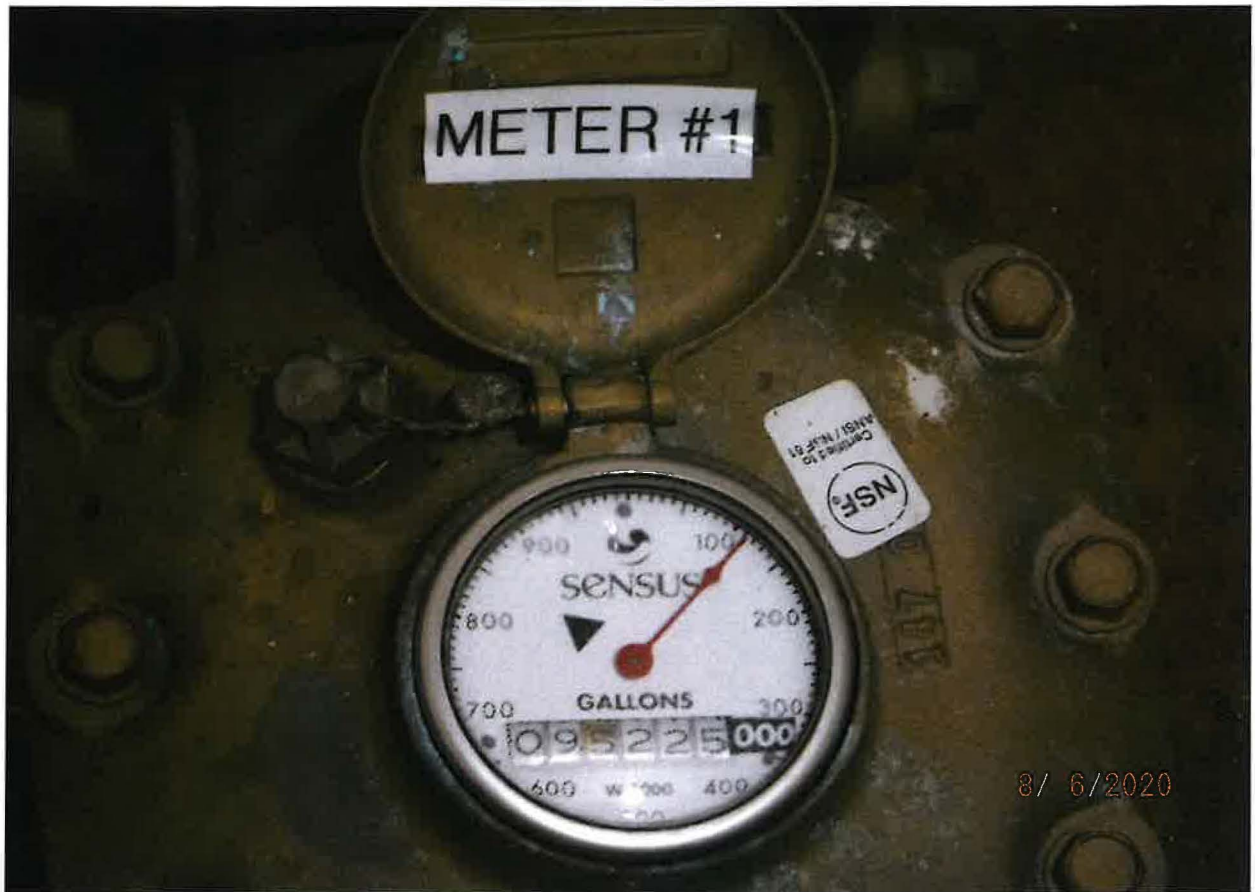
WATER CONVEYANCE SYSTEM



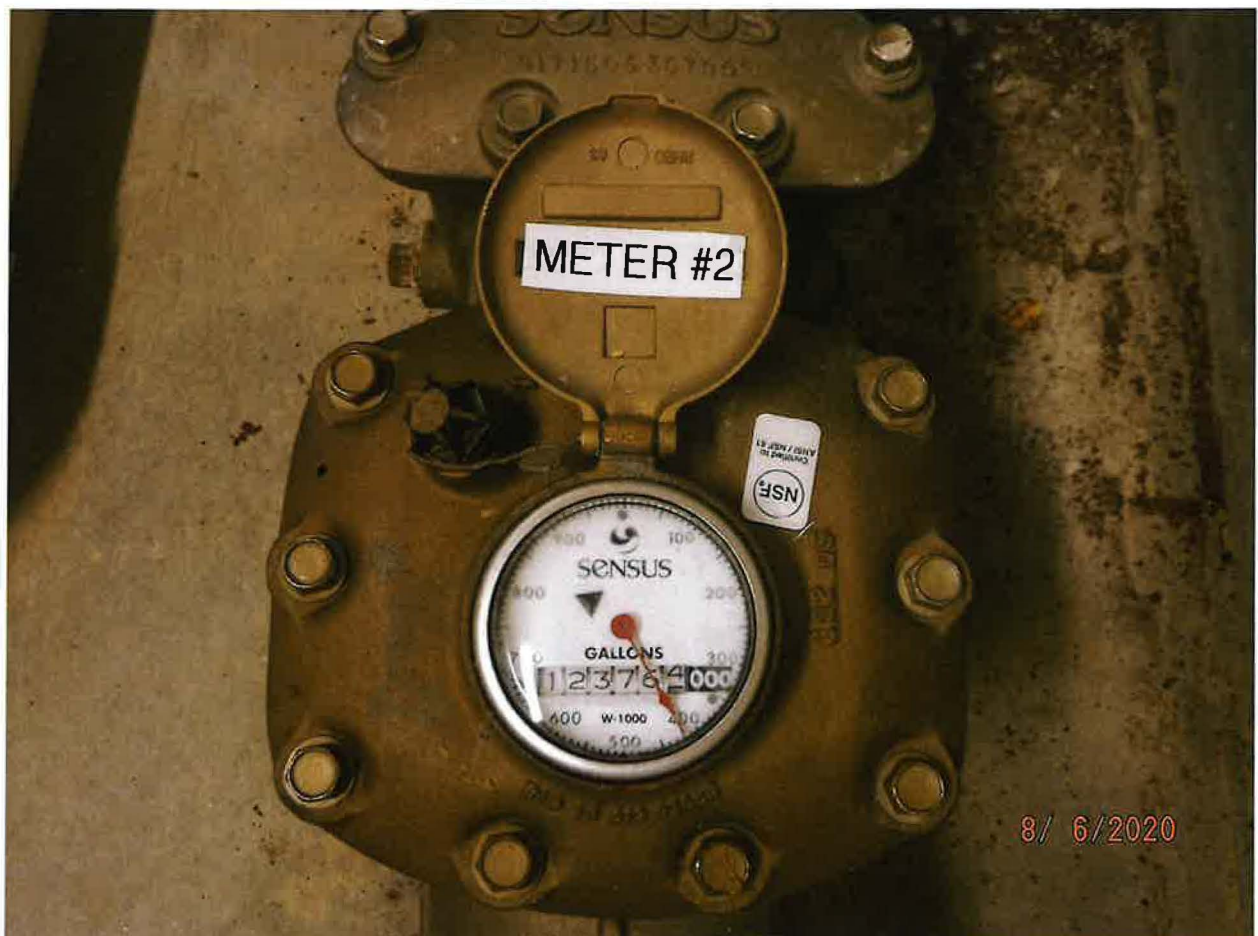
SLOW SAND FILTER SYSTEM



PUMP CONTROL PANELS



SENSUS FLOW METERS





15 HP GRUNDFOS PUMP





MUNICIPAL POU





MUNICIPAL POU





MUNICIPAL POU

