

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 98-7985
Exam Date: 09/26/2023

1. Current Owner:
CITY OF BONNERS FERRY PO BOX 149 BONNERS FERRY ID 83805
2. Accompanied by: Mike Klaus – City Engineer and John Delaney – City Public Works Department
Phone No: 208-267-0357 (Mr. Klaus)
Address: Same as above
Relationship to permit Holder: Permit Holder's representative(s).

3. **SOURCE:**
GROUND WATER

Method of Determination: ArcMap and DRG layer.

B. OVERLAP REVIEW

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

Water Right No.	Source	Purpose of Use	Basis
98-2033	MYRTLE CREEK	MUNICIPAL	LICENSE
98-2103	KOOTENAI RIVER	MUNICIPAL	LICENSE
98-7825	MYRTLE CREEK	MUNICIPAL	LICENSE

Comments: The City of Bonners Ferry (City) hold three recorded surface water licensed rights 98-2033, 98-2103, and 98-7825 which draw water from Myrtle Creek and the Kootenai River which are the historic primary water sources for the City's municipal system. Each license has the same municipal service area and overlapping POU as this current Groundwater source Permit 98-7985. The Groundwater system developed under this permit was established to serve as a back-up to the existing water systems and did not request to add additional diversion rate in excess of 11.2 cumulative diversion rates authorized from surface water(s) pumping.

Condition X35 was added to the Permit approval designating combined use diversion rate not to exceed 11.2 af between all 4 respective water rights; this condition shall be carried forward to licensing for Permit 98-7985. **As conditioned, one of the City's surface water PODs will have to reduce/turn-off in the amount of 1.0 cfs prior to the City actively pumping from the groundwater source for 98-7985 (with exception to suppress an active fire).**

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

C. DIVERSION AND DELIVERY SYSTEM**1. LOCATION OF POINT(S) OF DIVERSION:**

GROUND WATER NW¼ SW¼, Sec. 26, Twp 62N, Rge 01E, B.M. BOUNDARY County

Method of Determination: GPS located well D0079335 at -116°18.2411, 48°41.3069 +/- 14 ft.

2. LOCATION OF PLACE OF USE:

The Place of Use (POU) for this municipal system has been designated as a Large POU using ESRI ArcMap GIS software and department AdHoc database processing software; there isn't a POU table legally describing the POU, rather conditions of approval designate the POU is within the service area of the City of Bonners Ferry municipal water supply system as provided for under Idaho Law.

Method of Determination: beneficial use field examination, ArcMap aerial imagery, and collaboration with the City's representative to designate the City's municipal service area.

- 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.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
D0079335	Unknown	60	Unknown	Unknown	6-inch

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
Flow Meter	Velocity	SeaMetrics	MH61231	10190243	6-inch	

2. Measurements: I worked with the applicant's representatives to operate the system and allow it to stabilize prior to reviewing diversion rates on both the system SCADA monitoring panel and the SeaMetrics flowmeter installed with the diverting works. The system has a manual restrictor valve installed which enables manual adjustment of flow rates. When pumping up-grade to the City's water treatment plant/storage facility I observed a flow rate of 392 gpm, but when pumping direct to the river front portion of the water mains infrastructure I observed a flow rate of 480 gpm. The water system is capable of diverting **1.0 cfs** as Permitted and recommended for licensing purposes.

E. FLOW CALCULATIONS

Measured Method: SeaMetric flanged velocity style flow meter installed on diverting works water main. Maximum flow with a fire hydrant co-located with the pump station opened demonstrates 480 gpm or 1.07 cfs. Photographs included illustrating flow measurements observed at time of exam.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation: N/A
2. Volume Calculations for Other Uses: the City of Bonners Ferry's municipal system serves water users in an incorporated city and is exempt from volumetric reporting requirements IAW IDAPA 37.03.02 – Beneficial Use Examination Rules (Rule 35).

G. NARRATIVE/REMARKS/COMMENTS

Field exam performed on 9/26/2023 with the City of Bonners Ferry (City) Engineer, Mike Klaus, showed a groundwater well serving the municipal water system PWS# ID1110003. The POD is described below:

- Well D0079335 – located in the City's well lot, is a 12-inch cased well using a 60 hp pump/motor as part of the diverting works. Diverting works are located in a pump station which includes a SCADA system monitoring system, main service pipeline with flow meter & restrictor plate installed prior to distribution to either a) system storage facilities or b) in part City's main service distribution pipelines.
- Flowmeter measurements illustrated the pump capacity can exceed 1.0 cfs, as I observed 480 gpm with Mr. Klaus manually operating the restrictor valve but normal operations which send water to the storage reservoirs was observed pumping at 392 gpm or 0.87 cfs. I've recommended 1.0 cfs for licensing purposes, as the pump has been used in conjunction with fire hydrant operations at rates in excess of 1.0 cfs during the development period.

During the exam photographs were taken which show the major water system infrastructure, including diverting works, examples of the six storage reservoirs that hold up to 1.7 million gallons, and the Public Works Department water treatment facility. Mr. Klaus asserts 6-inch main lines route along major roadways throughout the City's municipal service area. Mr. Klaus asserted that while the City is only authorized to service connect within the incorporated City limits, there are a few service connections outside city limits which were granted grandfather clauses to remain on the system.

During my overlap analysis, I noted that past Department staff drawn Municipal POU shapes illustrate very minor overlap between the City and Cabinet Mountains Water District municipal water system. This illustration of overlap between to Large POU(s) is likely due to generic polygon shape generation developed during one of the City's prior surface water source License approval processes. Municipal providers are authorized to update their service area map(s) annually, and I've requested Mr. Klaus to work toward developing a current year service area map to provide to IDWR. Regardless of not having the updated map product in hand, there is no reason not to finalize 98-7985 for licensing.

Pending State of Idaho Courts, commencement of the Kootenai River Basin Adjudication (KRBA) process is ramping up in the next few years. During adjudication of Boundary County, the City shall be required to file Notice of Claims based on each licensed right described in this report and greater scrutiny of the municipal service area shall be analyzed prior to Department staff making recommendations.

Overlapping water rights have been discussed in detail above on PG 1 of this report. I've recommended licensing 98-7985 maintaining condition X35 which describes the combined diversion rate between this groundwater right and the three respective surface water rights owned by the City. I removed conditions 26A and 046 during licensing review. All other conditions on the Permit are being carried forward to the license. Aside from the overlap concerns discussed above which have been mitigated using condition X35, there are no additional overlapping concerns toward licensing this 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	1.00 CFS

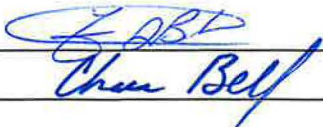
Totals: 1.00 CFS

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 – Sr Water Resource Agent

Field Examiner's Name  Date 6/7/2024
 Reviewer Chen Bell Date 4/21/2025

State of Idaho
Department of Water Resources
Attachment to Field Exam
98-7985

This map depicts the MUNICIPAL ground water well pump station and storage facility system diagram.



- Water Service Area Boundary
- Townships
- PLS Sections
- Quarter Quarters
- Point of Diversion

0 0.45 0.9 1.8 Miles



IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

1. WELL TAG NO. D 1000 77535
 Drilling Permit No 888402
 Water right or injection well # 98-1985
 2. OWNER: City of Bonanza Ferry
 Name City of Bonanza Ferry
 Address PO Box 147
 City Bonanza Ferry State Id Zip 83305

3. WELL LOCATION:
 Twp. 6-2 North ☒ or South ☐ Rge. 01 East ☒ or West ☐
 Sec. 24 NE 1/4 NW 1/4 SW 1/4

Gov't lot _____ County Boundary
 Lat. 48° 41.706 (Deg. and Decimal minutes)
 Long. -116° 18.265 (Deg. and Decimal minutes)
 Address of Well Site Dakota Street
 City Bonanza Ferry
 Lot _____ Blk. _____ Sub. Name _____

4. USE:
☐ Domestic ☒ Municipal ☐ Monitor ☐ Irrigation ☐ Thermal ☐ Injection
☐ Other _____

5. TYPE OF WORK:
☒ New well ☐ Replacement well ☐ Modify existing well
☐ Abandonment ☐ Other _____

6. DRILL METHOD:
☐ Air Rotary ☐ Mud Rotary ☐ Cable ☐ Other Drill

Seal material	From (ft)	To (ft)	Quantity (lbs or ft)	Placement method/procedure
<u>Bentonite</u>	<u>0</u>	<u>58</u>	<u>89 bags</u>	<u>pour</u>

Utility Intersect	From (ft)	To (ft)	Gauge Schedule	Material	Casing	Upper	Thermost	Water
<u>12</u>	<u>2</u>	<u>92</u>	<u>.375</u>	<u>Steel</u>	☒	☐	☐	☐

Was drive shaft used? ☒ Y ☐ N Shoe Depth(s) 92

9. PERFORATIONS/SCREENS:
 Perforations ☐ Y ☐ N Method _____
 Manufactured screen ☒ Y ☐ N Type 11/32
 Method of installation Set

From (ft)	To (ft)	Slot size	Number of screens	Material	Grade or Schedule
<u>92</u>	<u>97</u>	<u>30</u>	<u>1</u>	<u>Steel</u>	<u>10</u>

Length of Headpipe 15.07 Length of Tailpipe _____
 Packer ☒ Y ☐ N Type K

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft)	Placement method
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11. FLOWING ARTESIAN:
 Flowing Artesian? ☐ Y ☒ N Artesian Pressure (PSIG) _____
 Describe control device Well cap

12. STATIC WATER LEVEL and WELL TESTS:
 Depth first water encountered (ft) 60 Static water level (ft) 20
 Water temp (°F) 45 Bottom hole temp. (°F) 45
 Describe access point well cap
 Well test:

Drawdown (ft)	Discharge or yield (gpm)	Test duration (minutes)
<u>60 ft</u>	<u>60 gpm</u>	<u>27 hours</u>

 Test method:

Pump	Gate	Air	Flowing
☒	☐	☐	☐

 Water quality test or comments: clean

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water level	Water	
				Y	N
<u>16</u>	<u>0</u>	<u>58</u>	<u>Over bore - Seal</u>	☒	☐
<u>12</u>	<u>0</u>	<u>25</u>	<u>Over clay</u>	☐	☒
<u>12</u>	<u>25</u>	<u>60</u>	<u>Gravel, cobbles, sand</u>	☒	☐
<u>12</u>	<u>60</u>	<u>75</u>	<u>Brown sand - fine with some gravel</u>	☒	☐
<u>12</u>	<u>75</u>	<u>90</u>	<u>Gravel, cobbles, sand</u>	☒	☐
<u>12</u>	<u>90</u>	<u>97</u>	<u>Gravel, cobbles, coarse sand water</u>	☒	☐

Completed Depth (Measurement): 97
 Date Started: Nov-29-18 Date Completed: Feb-1-19

14. DRILLER'S CERTIFICATION:
 I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name Universal Drilling Co. No. 650
 *Principal Driller Scott H. H. H. Date Feb. 14, 19
 *Driller Scott H. H. H. Date Feb. 14, 19
 *Operator II Scott H. H. H. Date Feb. 14, 19
 Operator I _____ Date _____

* Signature of Principal Driller and rig operator are required.



BENEFICIAL USE FIELD EXAM DATE 9/26/2023



POD – GROUND WATER WELL D0079335



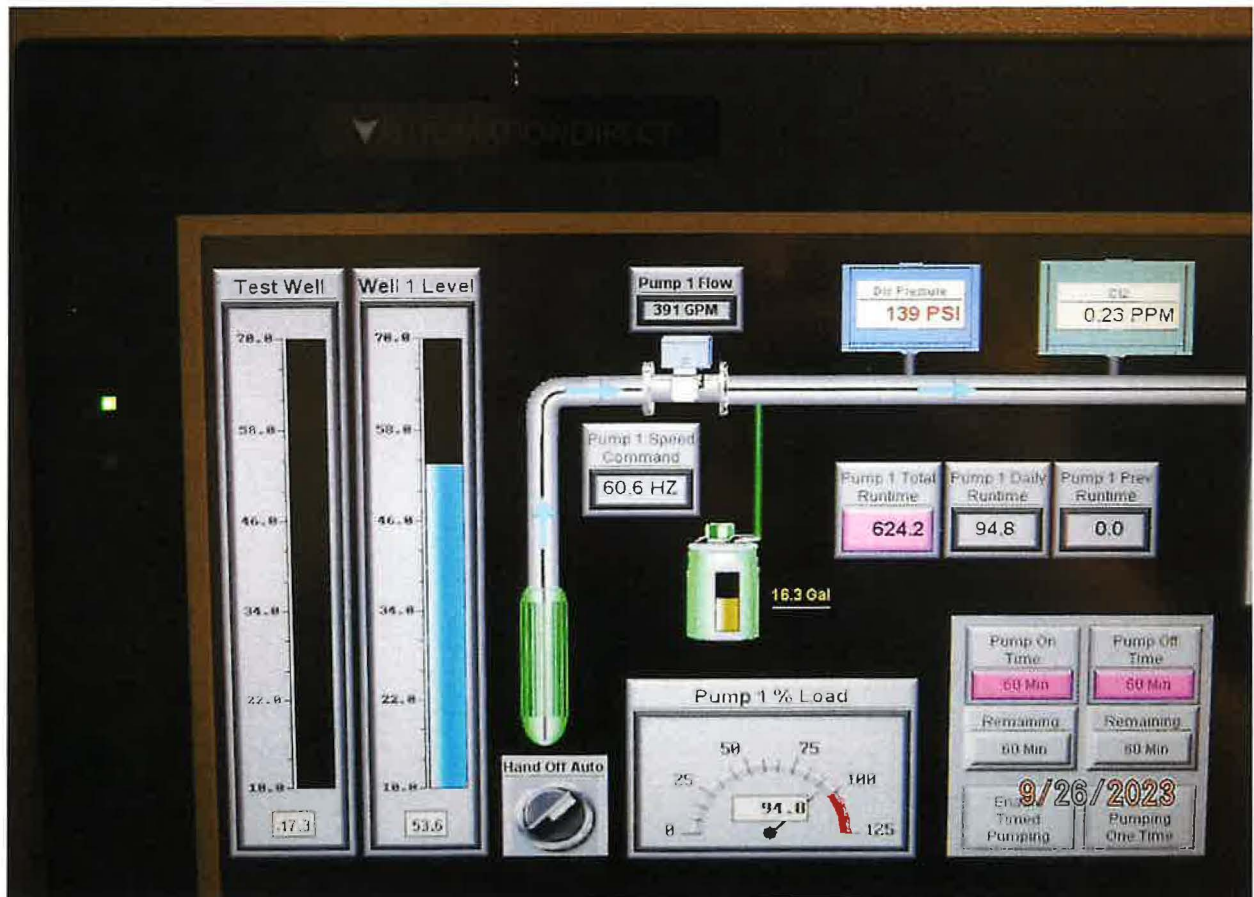
IDEQ WELL DATA PLATE E0019058



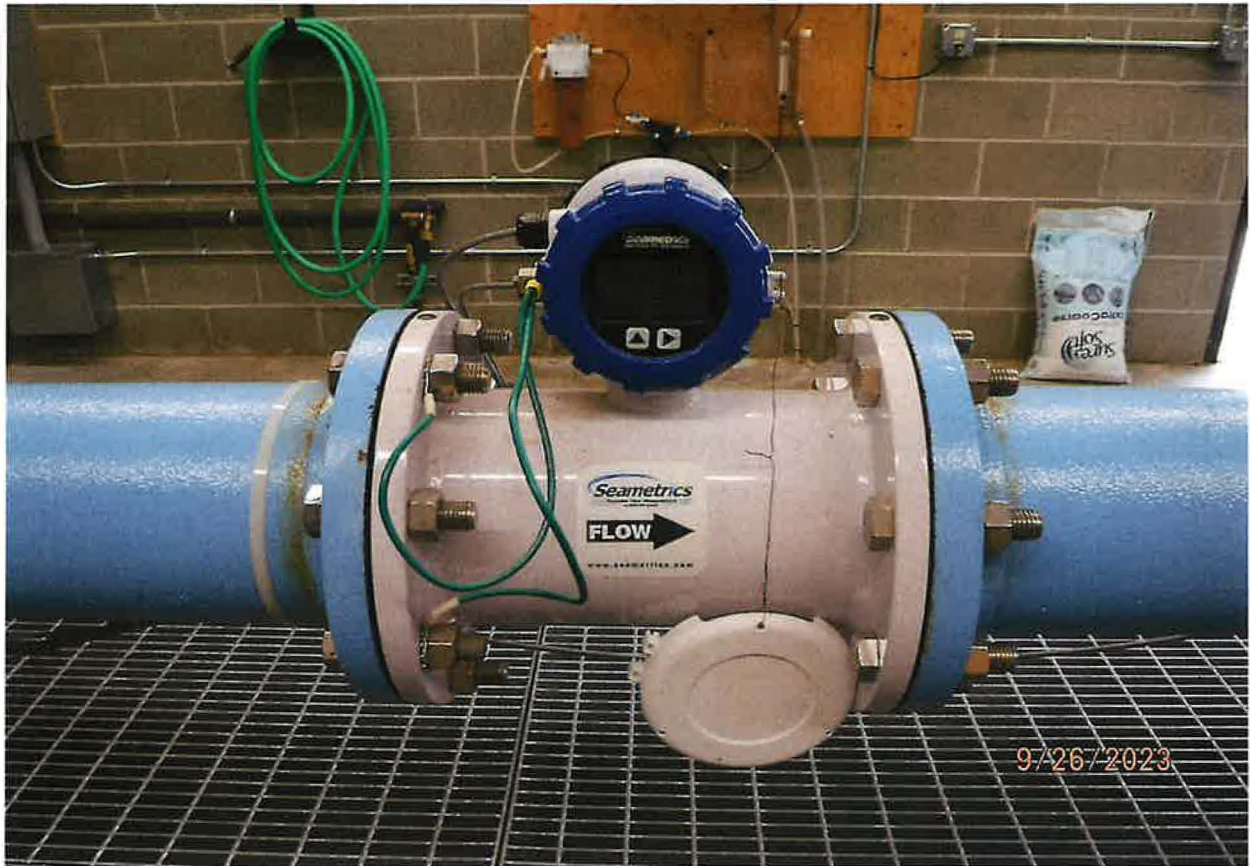
DIVERTING WORKS – INTERIOR PUMP STATION CO-LOCATED WITH WELL



SCADA SYSTEM CONTROL PANEL



CURRENT PUMP MOTOR SET AT 60 HZ



SEAMETRICKS FLOWMETER INSTALLED ON DIVERTING WORKS



FLOWMETER S/N 10190243



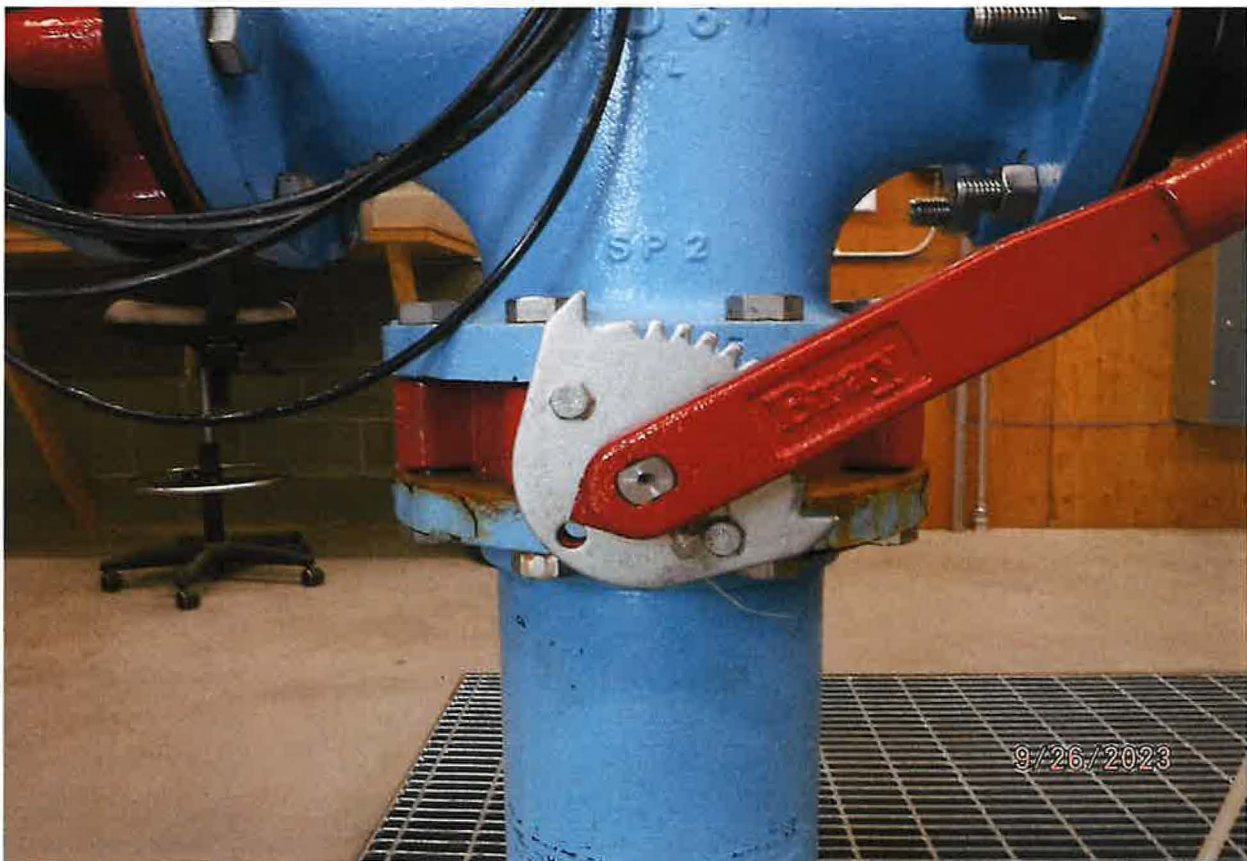
PUMP MOTOR OFF ILLUSTRATING ZERO FLOW



FLOWMETER READING 392 GPM AT CURRENT OPERATING SPECIFICATIONS – PUMPING TO STORAGE RESERVOIR LOCATED “UP-TOWN”



PUMP MOTOR ON WITH FIRE HYDRANT AT PUMP STATION FULL OPEN RESULTED IN 480 GPM – SETTING THAT CAN BE USED TO DISTRIBUTE WATER DIRECTLY TO THE “DOWN-TOWN” PORTION OF WATER SYSTEM



RESTRICTOR PLATE SETTING MANUALLY POSITIONED AT 480 GPM



EXAMPLE 1 OF 6 STORAGE RESERVOIRS LOCATED UP HILL FROM WELL PUMP STATION



EXAMPLE STORAGE RESERVOIR FOR CITY OF BONNERS FERRY



EXAMPLE STORAGE RESERVOIR – 6 TOTAL WITH COMBINED CAPACITY OF 1.7 MIL GALLONS; LOCATED AT PUBLIC WORKS FACILITY

Bates, Luke

From: Mike Klaus <mklaus@bonnersferry.id.gov>
Sent: Tuesday, June 4, 2024 9:01 AM
To: Bates, Luke
Cc: John Delaney
Subject: RE: Pump Curve
Attachments: filename-1.pdf

CAUTION: This email originated outside the State of Idaho network. Verify links and attachments BEFORE you click or open, even if you recognize and/or trust the sender. Contact your agency service desk with any concerns.

Hi Luke,

I have attached the slip for the motor we purchased for the well pump. I will get you the pump model as soon as I locate it. I ordered the pump and motor, but I'm having trouble finding the make and model of the pump.

But, I will find it, since I can go to the supplier who will have that information.

Thank you,
Mike

From: Bates, Luke <Luke.Bates@idwr.idaho.gov>
Sent: Wednesday, May 22, 2024 8:02 AM
To: Mike Klaus <mklaus@bonnersferry.id.gov>
Cc: John Delaney <JDelaney@bonnersferry.id.gov>
Subject: RE: Pump Curve

Mike,

I appreciate you sending the pump curve over, but I really need know the HP of the well pump/motor and the make/model. As I recall City Public Works Dept folks may have done a lot of the work on the project which may have included installation of the pump/motor, but for IDWR records I need to be able to identify what pump was in the municipal well at time of licensing.

Hopefully there is an invoice that speaks to the components purchased by the City which will define the HP/make/model.

Let me know if you're not able to gain this information.

Thank you,
Luke Bates
Sr. Water Resource Agent
Northern Region
P: 208-762-2817

 IDAHO DEPARTMENT OF
WATER RESOURCES
7600 N. Mineral Dr., Suite 100
Coeur D'Alene, ID 83815-7763

RECEIVED
JUN 04 2024
IDWR / NORTH



SPECIALTY PUMP SERVICE

"The Turbine Pump Specialist"

JIM SOCCI
OWNER

509-534-3382
5223 E. Union
Spokane, WA 99212

CELL: 509-220-5700
FAX: 509-443-1761
jsocci@comcast.net

Proposal

PROPOSAL NO.

SHEET NO.

DATE

5/15/19

PROPOSAL SUBMITTED TO:

Mike

NAME Bonners Ferry ID

ADDRESS Well Test

ADDRESS

DATE OF PLANS

PHONE NO.

ARCHITECT

We hereby propose to furnish the materials and perform the labor necessary for the completion of

Furnish. 60 HP Pump & Motor, Wire &
4" Pipe \$3800.00
Install Pump in Well \$4200.00
Pull Pump Back out 3800.00

All material is guaranteed to be as specified, and the above work to be performed in accordance with the drawings and specifications submitted for above work and completed in a substantial workmanlike manner for the sum of

Dollars (\$) with payments to be made as follows.

Any alteration or deviation from above specifications involving extra costs will be executed only upon written order, and will become an extra charge over and above the estimate. All agreements contingent upon strikes, accidents, or delays beyond our control.

Respectfully
submitted

Per

Note — this proposal may be withdrawn by us if not accepted within days.

ACCEPTANCE OF PROPOSAL

The above prices, specifications, and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payments will be made as outlined above.

Signature

Date

Signature

From: Mike Klaus <mklaus@bonnersferry.id.gov>
Sent: Tuesday, May 21, 2024 5:08 PM
To: Bates, Luke <Luke.Bates@idwr.idaho.gov>
Cc: John Delaney <JDelaney@bonnersferry.id.gov>
Subject: Pump Curve

CAUTION: This email originated outside the State of Idaho network. Verify links and attachments **BEFORE** you click or open, even if you recognize and/or trust the sender. Contact your agency service desk with any concerns.

Hi Luke,

I had a little trouble locating some info that I know we have, but I thought I would pass along the pump curve that is attached.

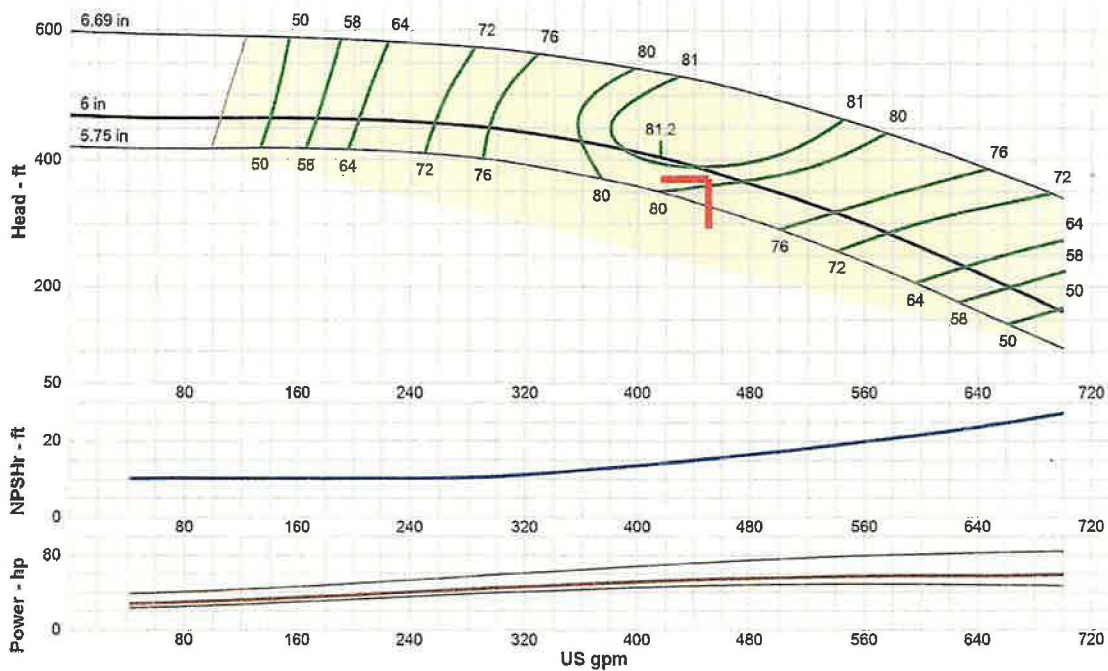
Let me know if that helps with the question you had for John.

Thank you,

Mike Klaus, PE
City Engineer/Administrator
Direct Line 208-267-0357
City Hall: 208-267-3105
7232 Main Street #149
Bonners Ferry, Idaho 83805
www.bonnersferry.id.gov



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Curve & hydraulic data presented is nominal performance based on ANSI/HI 14.6 acceptance grade 2B.
Design values are guaranteed within the following tolerances: Flow $\pm 8\%$, Head $\pm 5\%$, and optionally either Power $+ 8\%$ or Efficiency $- 5\%$ at manufacturer's discretion.

CURVE DATA

Specified Flow	450.00 USgpm
Specified TDH	370.00 ft
Motor Speed	3450 RPM
Atmospheric Pressure	15 psi
NPSHa at Grade	33.9 ft
NPSHa at 1st Impeller	36.5 ft
Well Diameter	Over 20 Inch [508mm] Casing
Fluid	Water
Fluid Temperature	68.0 °F
Specific Gravity	1.0000
Viscosity	1.0017 cP
Vapor Pressure	0.3393 psi
Density	62 lbs/ft ³
Design Flow	450.0 USgpm
Min Flow (MCSF)	104.0 USgpm
Design TDH (Bowl)	383.0 ft
Design TDH (Disch Flange)	383.0 ft
Design Pressure (Bowl)	165.8 psi
Design Pressure (Disch Flange)	165.8 psi
Shut Off TDH (Bowl)	470.0 ft
Shut Off TDH (Disch Flange)	470.0 ft
Shut Off Pressure (Bowl)	203.5 psi
Shut Off Pressure (Disch Flange)	203.5 psi
Bowl Efficiency at Design	80.60 %
Guaranteed Bowl Efficiency	76.57 %
Best Efficiency	81.20 %
BEP Flow	416.0 USgpm
Design Flow % BEP	108.17 %
Pump Efficiency	80.00 %
Power at Design	54.1 Hp
Guaranteed Power	58.4 Hp
NOL Power	58.9 Hp
Guaranteed NOL Power	53.6 Hp
Max Power (NOL) Flow	700.0 USgpm
Max Power (NOL) at Max Trim	64.3 Hp
Guaranteed Max Power (NOL) at Max Trim	91.0 Hp
Max Power (NOL) Flow at Max Trim	700.0 USgpm

Permit 98-7985

Bates, Luke <Luke.Bates@idwr.idaho.gov>

Thu 10/19/2023 3:55 PM

To: Mike Klaus <mklaus@bonnersferry.id.gov>

Cc: Alleman, Tammy <Tammy.Alleman@idwr.idaho.gov>; Richman, Michelle <Michelle.Richman@idwr.idaho.gov>

 4 attachments (2 MB)

98-7985 OVERLAP WR REVIEW.xlsx; 98-7985 Overlap WR review.docx; 98-7985 Overlap WR review.pdf; 98-7985 overlap WR overview map.pdf;

Good afternoon Mike,

I'm catching up my field exam notes and support documents for permit 98-7985, and was hoping to discuss the City's current service area.

I've completed an overlapping water right review for the permit POU area and note a few parcels that may conflict between the City and Cabinet Mtn Water District's service area & want to see if you could validate service connections for a two specific areas.

I've attached a few document to reference, and perhaps tomorrow or next week at your convenience we can link up via phone to discuss.

Thank you,

Luke Bates

Sr. Water Resource Agent

Northern Region

P: 208-762-2817



IDAHO DEPARTMENT OF
WATER RESOURCES

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Coeur D'Alene, ID 83815-7763