

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 95-17853
Exam Date: 03/28/2025

1. Current Owner:
COEUR D ALENE SCHOOL DISTRICT #271 1400 N NORTHWOOD CENTER CT COEUR D ALENE ID
83814-2657

2. Accompanied by: Jasper Kohoutek
Phone No: 208-929-1031
Address: Same as above
Relationship to permit Holder: Maintenance Foreman; Permit Holder's representative.

3. **SOURCE:**
GROUND WATER

Method of Determination: Arcmap 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
NUMEROUS	GROUND WATER	MUNICIPAL	DECREE

Comments: Hayden Lake Irrigation District (HLID) is the Right Holder for several decreed & licensed water rights which use ground water source(s) for municipal water services and the service area overlaps this Permit's heating/cooling system POU. HLID serves the school associated with this Permit for drinking/restroom/kitchen/irrigation uses but is a separate water system service than this Permit's closed loop heating/cooling system. There is no concern for overlapping between water rights.

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 NE¼ NE¼, Sec. 27, Twp 51N, Rge 04W, B.M. KOOTENAI County
GROUND WATER NE¼ NE¼, Sec. 27, Twp 51N, Rge 04W, B.M. KOOTENAI County (Injection)

Method of Determination: GPS located; the diverting well D0084808 coordinates = -116°48.750, 47°44.636 and
The injection well D0084809 coordinates = -116°48.774, 47°44.5887

PLACE OF USE: HEATING and COOLING

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
51N	04W	27	X																

Method of Determination: Beneficial use field examination and ArcMap aerial imagery.

- 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 model No. or Discharge Size
D0084808	YASKAWA Z1000	40	121993187170002	GOULDS	VIS-BATM 6CHC
D0084808	N/A	N/A	N/A	N/A	INJECTION WELL

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
NONE						

2. Measurements: I was unable to perform flow measurements due to inadequate pipe requirements. I evaluated pump curves submitted by the Applicant's representative during licensing review to derive a maximum diversion rate of 238 gpm or 0.53 cfs.

E. FLOW CALCULATIONS

☒ Additional Computation Sheets Attached

Measured Method: Manufacturer pump curve documentation received from the Applicant by email on 3/5/2025.

- Permit authorized diversion rate = 1.0 cfs.
- Pump Curve documentation derived diversion rate = 238 gpm or 0.53 cfs considering Department rounding standards.
- License recommended diversion rates for Heating & Cooling beneficial uses (BUs) = 0.53 cfs respectively; each BU is not additive, and the maximum diversion rate recommended equals **0.53 cfs**.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation: N/A

2. Volume Calculations for Other Uses:

- **Heating / Cooling Annual Volume** calculations: well pump operates continuously EXCEPT when the Boiler component of the system is ON, then the well pump is OFF. Heating/Cooling system became operational on 7/1/2020 and Boiler pump(s) totalizer hours recorded through 3/27/2025.
- Days between 7/1/2020 to 3/27/2025 = 1,730 days which are equal to 41,520 total hours in period.
- Boiler pump(s) total hours to 3/27/2025 = 15,358.9 + 24,182.5 = 39,541.4 hours.
- 41,520 total hours in period – 39,541.4 boiler pump(s) hours = 1,979 well pump operation hours in total.
- 1,730 days in period / 365 days per year = 4.74 years and 1,979 well pump hours / 4.74 years = 417.5 avg annual well pump hours.
- 417.5 well pump hours / 24 hrs. per day = 17.4 days.
- Diversion Rate equation: 0.53 cfs (pump rate 238 gpm) x 17.4 days (total avg annual run time) x 1.9835 (factor) = **18.3 af** considering Department rounding standards.

G. NARRATIVE/REMARKS/COMMENTS

I conducted the beneficial use field examination on 3/28/2025 with the Permit Holders representative, Jasper Kohoutek – Maintenance Foreman, which showed a ground water well diverting water for a heating and cooling system. The water system is a closed loop system that cycles water back to ground using an injection well. At the POD, 8-inch cased well D0084808 has a 40-hp Goulds model VIS-BATM6CHC well pump installed with main diverting pipeline conveying water directly to the heat exchanger – Armstrong brand model No. A22H-150-70-1000 (S/N: 405450-01). As water is transitioned through the heating/cooling system it is returned to ground via pipeline and cased 8-inch injection well D0084809.

I was unable to perform flow measurements due to inadequate pipe requirements. Mr. Kohoutek provided pump schedule schematics and the manufacturer Goulds pump performance curve date demonstrating the diverting VFD pump configured with a set-point of 238-gpm, or **0.53 cfs** considering department rounding standards. I have recommended 0.53 cfs as the maximum diversion rate for licensing purposes, which reduces the Permit authorized diversion rate that is limited by pump performance determined at time of field exam.

The heating and cooling POU consists of Northwest Expedition Academy operated by the Right Holder. The school's loop heating/cooling operating system was built out with heating design temperature set-points of 0°F Db (70°F) at 50% humidity and a cooling design temperature set-points of 96°F Db (75°F) at 50% humidity. The total area associated with the heating/cooling system is 25,000 SQ FT; the total area of the school is much larger than 25k SQ FT, but the gymnasium and kitchen spaces are heated by a separate gas driven climate system. Normal 'occupied' school hours fluctuate between 10-12-hrs each day with reduced hours during summer break periods, but Mr. Kohoutek asserts even during summer break staff are present and normally the cooling system is activated up to 5 days per week throughout that period.

The heating/cooling system incorporates an in-line Taco manufacturer model No. KV2006 boiler component that operates lead/lag to the ground water well diverting pump; if the well pump is actively diverting the boiler is off, and when facility temperatures are below 50°F, the well pump turns off and the boiler component is cycled on. The boiler heats water and distributes to common heat ducting using two (2) 10-hp Bell & Gossett loop booster pumps. Based on the region of the state the school is located in, annual temperatures of total operating times lean to cooler than 50°F, resulting in a larger portion of boiler operations than direct well pumping operations for the total heating/cooling system.

The Permit's conditions of approval included language that the Right Holder would provide annual volumetric run-time data for the heating cooling system to facilitate maximum diversion volume determination by the Department at time of licensing. The Permit didn't specifically require a flowmeter be installed as part of development rather specified that "when notified by the Department" a meter would be required, and the well pump diverting works does not have a flowmeter installed at time of exam.

The heating/cooling system was developed with a digital monitoring system accessible by computer that enables the Right Holder's contracting company to capture boiler component totalizer operating hours. These are correlated to both boiler loop booster pump's run times designated as PWP1-RUNTIME & PWP2-RUNTIME on the database. Utilizing information provided by Mr. Kohoutek, and in the absence of dedicated flowmeter data, I only had two options toward evaluating annual well pumping volume:

- 1) Consider 24/7-hr – 365-days a year well pumping to determine annual volume – this method isn't reasonable based on the large period of boiler component operations where the well pump is turned OFF (reference volume calculation PG 2 of report).
- 2) Interrogate digital monitoring system, evaluate total hours within the heating/cooling system operations since inception-to-field exam, remove the boiler component hours, determine remaining hours eligible to well pump operations and factor in annual hours per year to create a ground water well pumping average annual hours of operation (reference volume calculations PG 2 of report). Out of the average annual hours determined by calculations I'm recommending a maximum diversion volume of **18.3 acre-feet** per year.

Normally I would evaluate historical climate data coupled with historic well pump operating hours to determine if additional volume may need to be added based on climate trends (in the event the last four years were not abnormally cold or hot). I couldn't incorporate this technique based on there not being a flowmeter installed to report annual volume. During the exam process I spoke with Mr. Kohoutek about tracking annual volume, and he planned to query the system contractors who manage the heating/cooling system to add that capability for future review; this may establish the need to add additional water rights for this non-consumptive heating/cooling system.

During licensing review, I removed condition 26A and 046 based on compliance by the Right Holder. I removed condition R07 based on compliance of well construction rules related to the injection well construction. I removed a text condition describing the heating/cooling use is for a school; this condition is description based and not required for licensing purposes. I removed the text condition requiring volumetric reporting requirements based on how the Right Holder complied toward obtaining data sufficient to make licensing recommendations. All other conditions on the Permit are being carried forward to licensing. The school's potable water is supplied by a municipal provider, HLID, which is a separate water system than this Permit's closed loop heating/cooling system. There are no overlapping water right concerns toward licensing 95-17853.

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>	<u>Annual Volume</u>
HEATING	01/01 to 12/31	0.53 CFS	18.3 AF
COOLING	01/01 to 12/31	0.53 CFS	18.3 AF

Totals: 0.53 CFS 18.3 AF

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

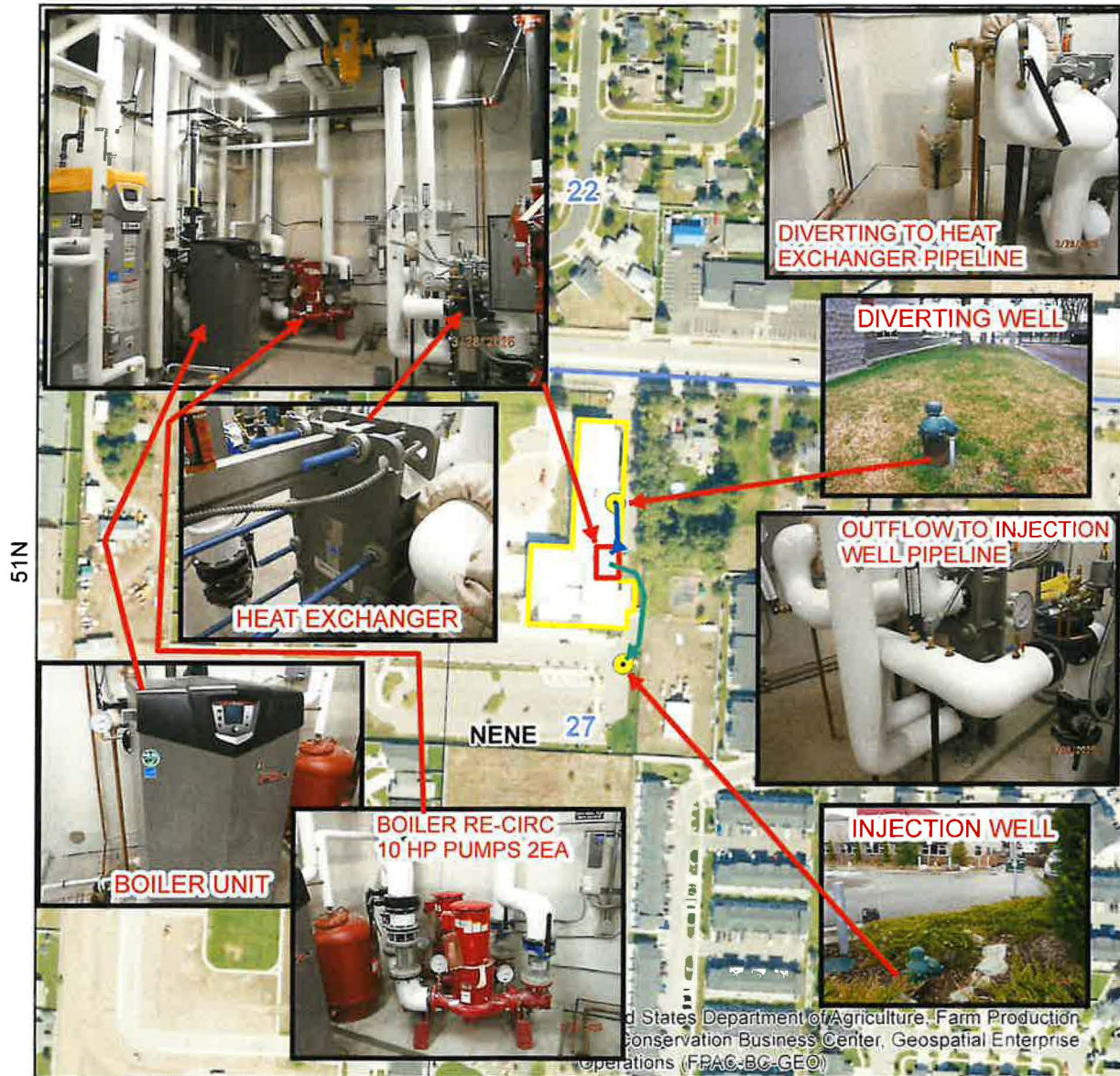
I. AUTHENTICATION Luke Bates – Sr Water Resource Agent

Field Examiner's Name  Date 5/12/2025
 Reviewer Michelle Richman Date 8/7/2026

State of Idaho
Department of Water Resources
Attachment to Field Exam
95-17853

This map depicts the HEATING and COOLING system diagram.

04W



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

0 0.035 0.07 0.14 Miles



95-17853

Heating & Cooling water system information

Re: IDWR Permit 95-17853 beneficial use examination



Jasper Kohoutek <jasper.kohoutek@cdaschools.org>

To: Bates, Luke



Wed 3/5/2025 1:19 PM

If there are problems with how this message is displayed, click here to view it in a web browser.



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.

Luke,

I hope this at least covers some of the information you need. I attached the mechanical drawings; specifically M1.03 and M1.04 are applicable. Also the form that you requested to be filled out.

On Mon, Mar 3, 2025 at 9:35 AM Bates, Luke <Luke.Bates@idwr.idaho.gov> wrote:

RE: Scheduling Field Exam for Water Right Permit No. 95-17853

New Coeur D'Alene Elementary Northwest Expedition Academy
Schedules – Mechanical (applicable part) M1.02

PUMP SCHEDULE			
DESIGNATION	CP-1	CP-2	CP-3
MANUFACTURER	TACO	TACO	TACO
MODEL NUMBER	KS3011	KS3011	KV2006
LOCATION	MECHANICAL 126	MECHANICAL 126	MECHANICAL 126
SERVICE	HEAT PUMP WATER LOOP	HEAT PUMP WATER LOOP	BOILER
TYPE	VERTICAL INLINE SPLIT COUPLED	VERTICAL INLINE SPLIT COUPLED	IN-LINE
GPM	238	238	64
DESIGN HEAD (FT)	85	85	20
DISCHARGE / SUCTION SIZE (IN)	3/3	3/3	2/2
MIN EFFICIENCY (%)	63	63	59
SHUT-OFF HEAD (FT)	98	98	24
MOTOR SIZE (HP)	10	10	1.0
MOTOR SPEED (RPM)	1760	1760	1750
VOLTS/PHASE	480/3	480/3	208/1
NOTES	1,2,3,4	1,2,3,4	2,5

NOTES:

1. PREMIUM EFFICIENCY MOTOR SUITABLE FOR USE WITH VFD.
2. PUMP CURVE MEETING SHUT-OFF HEAD.
3. PROVIDE PUMP WITH SUCTION DIFFUSER. SEE HYDRONIC FLOOR PLANS FOR SYSTEM PIPE SIZE.
4. CONTROLS CONTRACTOR TO FURNISH VFD'S FOR PUMP MOTOR. VFD'S SHALL BE REMOTE MOUNTED AS INDICATED ON SHEET M9.01. VFD TO BE ABB, MODEL ACH550 SUITABLE FOR MOTOR HORSEPOWER. DIV.26 CONTRACTOR SHALL PROVIDE HIGH VOLTAGE POWER TO VFD AND BETWEEN VFD AND PUMP.
5. DIV. 26 TO FURNISH MOTOR STARTER AND DISCONNECT FOR PUMP MOTOR SUITABLE FOR HORSEPOWER LISTED. MOTOR STARTER SHALL BE CONTROLLED BY DDCS TO OPERATE PUMP WHILE HYDRONIC LOOP IS CIRCULATING. CONTROLS SHALL ALSO HAVE PROGRAMMING TO ALLOW THE PUMPS TO BE SCHEDULED ON DURING SPECIFIED TIME PERIODS. DIV.26 CONTRACTOR SHALL MOUNT AND PROVIDE HIGH VOLTAGE POWER TO STARTER AND HIGH VOLTAGE POWER BETWEEN STARTER AND PUMP.

New Coeur D'Alene Elementary Northwest Expedition Academy
Schedules – Mechanical (applicable part) M1.03

BOILER SCHEDULE		NOTES: 1. PROVIDE SCHEDULE 80 CPVC VENT AND COMBUSTION AIR PER MFG RECOMMENDATIONS PER EXACT ROUTING IN FIELD. TERMINATE UP THRU ROOF W/ CONCENTRIC VENT. RECOMMENDED 6"Ø FLUE AND 4"Ø COMBUSTION AIR SIZES. 2. FACTORY SUPPLIED NATURAL GAS PRESSURE REGULATOR SIZED FOR EACH BOILER. LOCATE REGULATOR IN MECHANICAL ROOM ABOVE BOILER AND PIPE FULL SIZE VENT TO OUTSIDE THRU ROOF. 5 PSIG INLET GAS PRESSURE 3. 60 PSIG ASME PRESSURE RELIEF VALVE. PIPE DIRECTLY TO 55 GAL OVERFLOW TANK. 4. PRESSURE AND TEMPERATURE GAUGES, LOW WATER CUT-OFF SWITCH AND AQUASTAT, ALL FOR FIELD INSTALLATION. 5. FACTORY PACKED CONTROLS W/START-STOP AND SETPOINT BY DDCS. 6. IW PIPING FROM BOILER FLUE CONDENSATE PORTS DIRECTLY TO CONDENSATE NEUTRALIZER. LOCATE AS REQ'D AND PIPE IW DIRECTLY TO FLOOR DRAIN. COORDINATE W/ CONCRETE FLOOR AND HOUSEKEEPING PAD. SUBMERGE NEUTRALIZER KIT INTO FLOOR RECESS AS REQUIRED TO ENSURE ALL SLOPE TO DRAIN. 7. MOUNTING WITH 6" CONCRETE HOUSEKEEPING PAD TO RAISE ELEVATION AND ASSIST IN DRAINING. 8. SEE HYDRONIC LOOP PIPING DIAGRAM. 9. DISCONNECT AND CSD-1 EMERGENCY SHUT OFF BY DIV. 26 AND LOCATED NEAR EXIT DOOR IN MECH ROOM.
DESIGNATION	B-1	
MANUFACTURER	LOCHINVAR	
MODEL NUMBER	FTX725	
LOCATION	MECHANICAL 126	
TYPE	CONDENSING	
MBH INPUT	725	
MBH OUTPUT	705	
FULL LOAD EFF. (%)	97.2	
WORKING PRESS (PSI)	160	
FUEL	NATURAL GAS	
FUEL PRESSURE (MIN-MAX)	4"-14" W.C.	
FLUE SIZE	6"Ø	
CAPACITY CONTROL	MODULATING W/ 7:1 TURN DOWN	
NOTES	ALL	

New Coeur D'Alene Elementary Northwest Expedition Academy
Schedules – Mechanical (applicable part) M1.04

HEAT EXCHANGER SCHEDULE		
RATING BASIS: PURE WATER		
DESIGNATION	HX-1	
MANUFACTURER	ARMSTRONG	
MODEL NUMBER	A22H-150-70-1000	
TYPE	PLATE & FRAME	
COLD SIDE (WELL) COOLING	GPM	238
	W.P.D. (PSI)	4.88
	E.W.T. (°F)	50
	L.W.T. (°F)	69.4
HOT SIDE (BLDG) COOLING	GPM	238
	W.P.D. (FT.)	4.95
	E.W.T. (°F)	75
	L.W.T. (°F)	65
COLD SIDE (BLDG) HEATING	GPM	238
	E.W.T. (°F)	34
	L.W.T. (°F)	40
HOT SIDE (WELL) HEATING	GPM	238
	E.W.T. (°F)	45
	L.W.T. (°F)	39
NOTES	1, 2, 3, 4	

1. 4 FLANGED CONNECTION.
2. PROVIDE WITH MIN. 50% SPARE PLATE CAPACITY.
3. SEE HEAT EXCHANGER PIPING DIAGRAM
4. 304 STAINLESS STEEL PLATES W/ NBR GASKETS.

WELL PUMP SCHEDULE	
RATING BASIS: 45°F WATER	
DESIGNATION	WP-1
MANUFACTURER	GOULDS
MODEL NUMBER	VIS-BATM 6CHC
LOCATION	ON SITE
SERVICE	WELL WATER
TYPE	SUBMERSIBLE WELL
GPM	238
DESIGN HEAD (FT)	364
WELL CASING SIZE (IN)	8
STAGES	6 STAGES
MIN EFFICIENCY (%)	77.23
SHUT-OFF HEAD (FT)	467
OPERATING BHP	28.2
MOTOR SIZE (HP)	40
MOTOR SPEED (RPM)	3450
VOLTS/PHASE	460 / 3
NOTES	1,2

1. SELECTION BASED ON 45° F WATER.
2. PROVIDE MOTOR SUITABLE FOR VFD OPERATION. VFD WITH COMBINATION FUSED DISCONNECT AND NEMA 3R ENCLOSURE BY 230900.



WP-1

SUBMITTAL

Quote ID: 9001-190627-006:0:2 QTY: 1
VIS-BATM 6CHC, 6 Stages
EW Quote

PERFORMANCE ON DESIGN CURVE AT 3450 RPM

	Shut Off	Design [2]	Run Out [5]		
Flow (USGPM)	0.0	238.0	0.0	Best Efficiency	78.50 % at 222.0 USgpm
TDH-Bowl (ft)	467.0	364.0	0.0	Design Flow % BEP	107.21 %
TDH-Disch Flange (ft)	467.0	338.9	0.0	Pump Efficiency	71.98 %
Bowl Efficiency (%)		77.90		Overall Efficiency	0.00 %
Guaranteed Bowl Efficiency (%)		74.00		NOL Power	31.0 Hp at 360.0 USgpm
Power (Hp)		28.2		Guaranteed NOL Power	33.5 Hp at 360.0 USgpm
Guaranteed Power (Hp)		30.5		Max Power (NOL) at Max Trim	34.8 Hp at 360.0 USgpm
NPSHr (ft) [1]		13.4		Guaranteed Max Power (NOL) at Max Trim	37.6 Hp at 360.0 USgpm
NPSH Margin (ft) [1]		224.0		Specified NPSH Ratio	1.1
Hydraulic Thrust (lb)	982.4	765.7	0.0	Thrust Load Power Loss	0.21304 Hp
Thrust (lb)	1538.5	1324.8	0.0	Total Flow Derate Factor	1.00
Pressure-Bowl (psi)	202.5	157.8	0.0	Total Head Derate Factor	1.00
Pressure-Disch Flange (psi)	202.5	147.0	0.0	Total Efficiency Derate Factor	1.00
Min Submergence (Inch) [3]		16.09		Actual Submergence	2448.97 in
Friction Loss (ft) [4]		25.11	0.00	Shaft Friction Power Loss	0.04 Hp
Lineshaft Elongation (Inch)	0.00000	0.00000		Min Flow (MCSF)	55.6 USgpm
Column Elongation (Inch)	0.16000	0.01200		kWh per 1000 gal	0.00000
Lateral (Inch)	-0.03000	0.11800		Impeller Running Clearance	0.13 in

[1] at 1st impeller eye [2] rated values [3] from bottom of pump [4] from bowl to disch flange [5] based on user entered TDH

OPERATING CONDITIONS

Specified Flow	238.00 USgpm
Design TDH (Bowl)	364.0 ft
Rated Speed	3450 RPM
Atmospheric Pressure	14.70 psi
TPL	207.53 ft
NPSHa at 1st Impeller	237.4 ft
Well Diameter	8 inch [203mm]
Casing	

FLUID CHARACTERISTICS

Fluid	Water
Fluid Temperature	45.0 °F
Specific Gravity	1.0017
Viscosity	1.4176 cP
Vapor Pressure	0.1476 psi
Density	62 lbs/ft³

MATERIALS & DIMENSIONS

Bowl Data	
Bowl Material	Cast Iron with Glass Enamel
Bowl Material Derate Factor	1.00
Impeller Material	316SS
Impeller Matl Derate Factor	1.00
Bowl Shaft Material	416SS
Impeller Attachment	Taper Lock
Taper Lock Material	Carbon Steel
Discharge Bowl Material	Cast Iron
Suction Type	Bowl
Bowl Bolting Material	Carbon Steel
Motor Adapter	6" [152.4 mm]
Motor Adapter Bearing	Bronze
Discharge Bowl Bearing	Bronze
Intermediate Bowl Bearing	Bronze
Impeller Trim	4.00 in
Max Impeller Trim	4.22 in

Bowl Data	
Thrust K-Factor	2.10 Lb/Ft
Bowl Pressure Limit	400 psi
Shut Off Lateral	-0.03000 in
Design Lateral	0.11800 in
Bowl Assembly Length (BL)	45.09 in
Bowl Shaft Diameter	1" [25.4 mm]
Impeller Balance	Manufacturer's Standard
Bowl Wear Ring	Not Included
Impeller Wear Ring	Not Included
Bowl Diameter (D)	5.88 in
Min Column Diameter	3 in
Max Column Diameter	4 in
Bowl Shaft Length	81.78 in
Bowl Shaft Power Limit	143.50 Hp

Bowl Specials

DO NOT USE FOR CONSTRUCTION UNLESS CERTIFIED

Certified By	
Project	New Coeur d'Alene Elementary School
Tag	
PO Number	
Serial Number	

PERFORMANCE CURVE

Quote ID: 9001-190627-006:0:2 QTY: 1
VIS-BATM 6CHC, 6 Stages
EW Quote



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

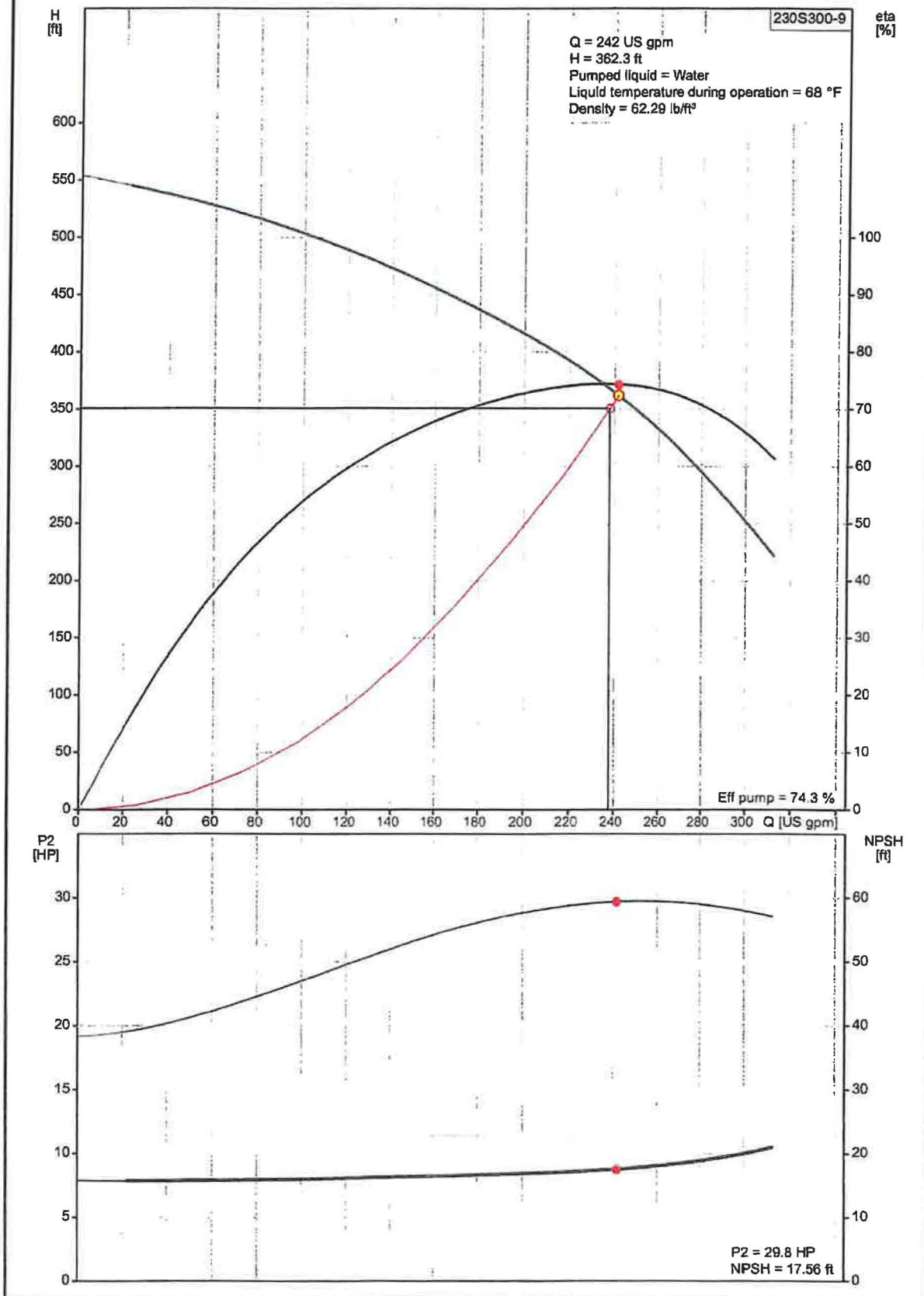
Specified Flow	238.00 USgpm	Shut Off TDH (Bowl)	467.0 ft	Trim	
Specified TDH	351.00 ft	Shut Off TDH (Disch Flange)	467.0 ft	Recommended Power	40.00 Hp
Rated Speed	3450 RPM	Shut Off Pressure (Bowl)	202.5 psi	Allow Service Factor	No
Atmospheric Pressure	14.70 psi	Shut Off Pressure (Disch Flange)	202.5 psi	kWh per 1000 gal	0.00000
NPSHa at Grade	33.9 ft	Bowl Efficiency at Design	77.90 %	NPSHr at Design	13.4 ft
NPSHa at 1st Impeller	237.4 ft	Guaranteed Bowl Efficiency	74.01 %	NPSH Margin at Design	224.0 ft
Well Diameter	8 inch [203mm]	Best Efficiency	78.50 %	Min Submergence at Design	16.09 in
Casing		BEP Flow	222.0 USgpm	Actual Submergence	2448.97 in
Fluid	Water	Design Flow % BEP	107.21 %	Thrust at Design	1321.8 lb
Fluid Temperature	45.0 °F	Pump Efficiency	71.98 %	Thrust at Shut Off	1538.5 lb
Specific Gravity	1.0017	Friction Loss at Design	25.11 ft	Bowl Material	Cast Iron with Glass Enamel
Viscosity	1.4176 cP	Power at Design	28.2 Hp	Bowl Material Derate Factor	1.00
Vapor Pressure	0.1476 psi	Guaranteed Power	30.5 Hp	Impeller Material	316SS
Density	62 lbs/ft³	NOL Power	31.0 Hp	Impeller Mat Derate Factor	1.00
Design Flow	238.0 USgpm	Guaranteed NOL Power	33.5 Hp	Total Flow Derate Factor	1.00
Min Flow (MCSF)	55.6 USgpm	Max Power (NOL) Flow	360.0 USgpm	Total Head Derate Factor	1.00
Design TDH (Bowl)	364.0 ft	Max Power (NOL) at Max Trim	34.8 Hp	Total Efficiency Derate Factor	1.00
Design TDH (Disch Flange)	338.9 ft	Guaranteed Max Power (NOL) at Max Trim	37.6 Hp	Curve ID	E6206CCPC2
Design Pressure (Bowl)	157.8 psi	Max Trim			
Design Pressure (Disch Flange)	147.0 psi	Max Power (NOL) Flow at Max	360.0 USgpm		

DO NOT USE FOR CONSTRUCTION UNLESS CERTIFIED

Certified By	
Project	New Coeur d'Alene Elementary School
Tag	
PO Number	
Serial Number	

15B70009 230S300-9 60 Hz

OE m Data





BENEFICIAL USE FIELD EXAM DATE 3/28/2025



POD – DIVERTING WELL FOR HEATING/COOLING CLOSED LOOP SYSTEM



POD – DIVERTING WELL D-TAG D0084808



POD – INJECTION WELL (SE OF SCHOOL ALONG PARKING LOT)



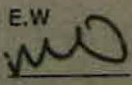
POD – INJECTION WELL D-TAG D0084809



POU – CLOSED LOOP HEATING/COOLING WATER SYSTEM FOR NORTHWEST EXPEDITION ACADEMY SCHOOL

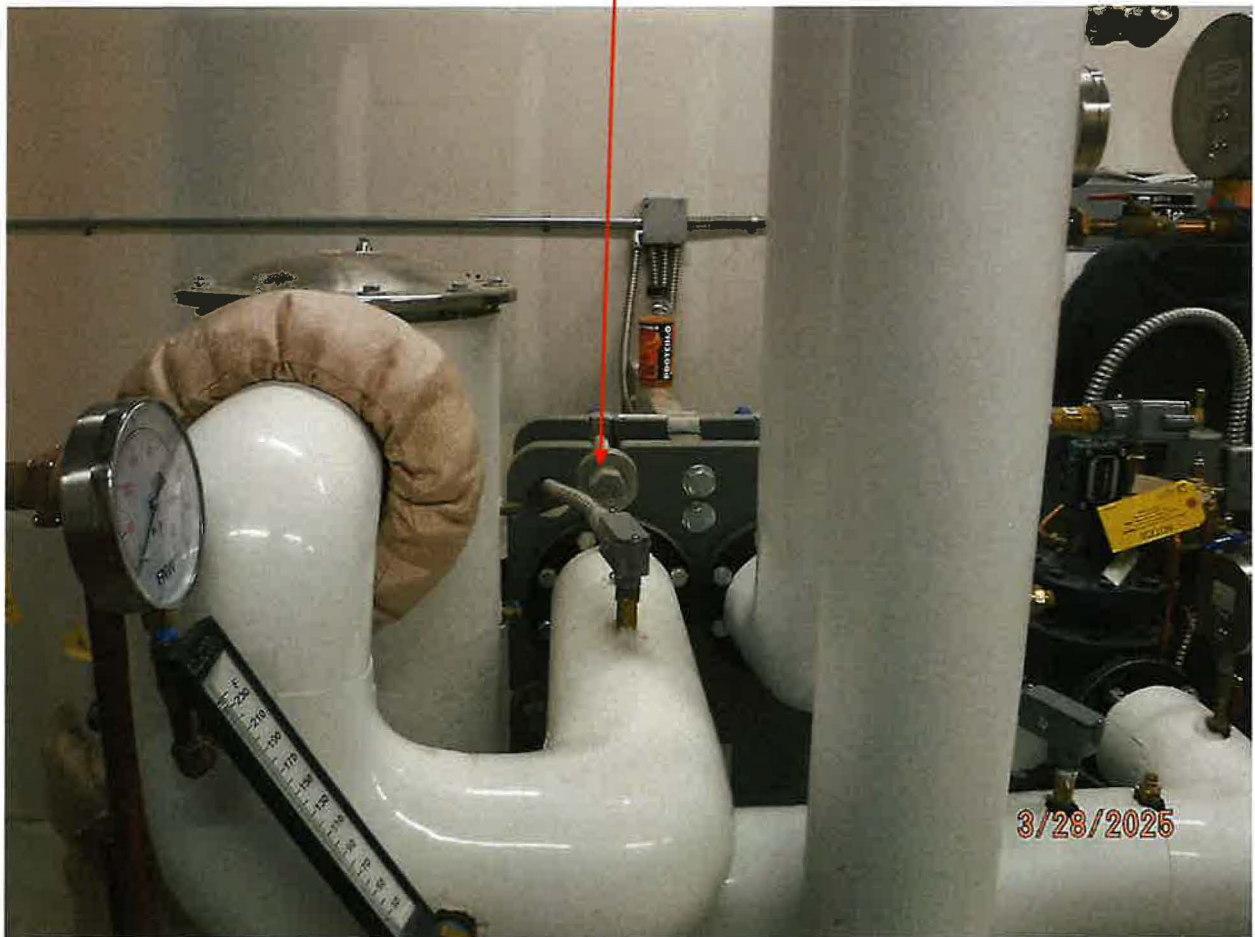


GW WELL 40 HP GOULDS MODEL VIS-BATM6CHC (VERTIC INDUSTRIAL SUBMERSIBLE PUMP)

 TOTAL CONTROL CONTROL SYSTEMS DISTRIBUTION a division of RSD	
MANUFACTURED FOR:	
ETCO CONTROLS (208) 818-5424	
JOB NAME:	NEW COEUR D' ALENE ELEMENTARY SCHOOL HVAC BLD. A
JOB NUMBER:	81043797 PLANT NUMBER: 2
DESCRIPTION:	WATER PUMP 40HP. VFD
INPUT VOLTAGE:	460VAC 60HZ, 3 PHASE
MAXIMUM VOLTAGE:	460VAC
LARGEST MOTOR FLA:	52A TOTAL FLA: 75A
SHORT CIRCUIT CURRENT RATING:	10KA RMS SYMMETRICAL, 460V MAXIMUM
ENCLOSURE TYPE:	NEMA 4 DATE BUILT: Apr-16-2020
ENGINEERED BY:	E.W. BUILT BY: J.M....
TESTED BY:	 RELEASED BY:  3/28/2025



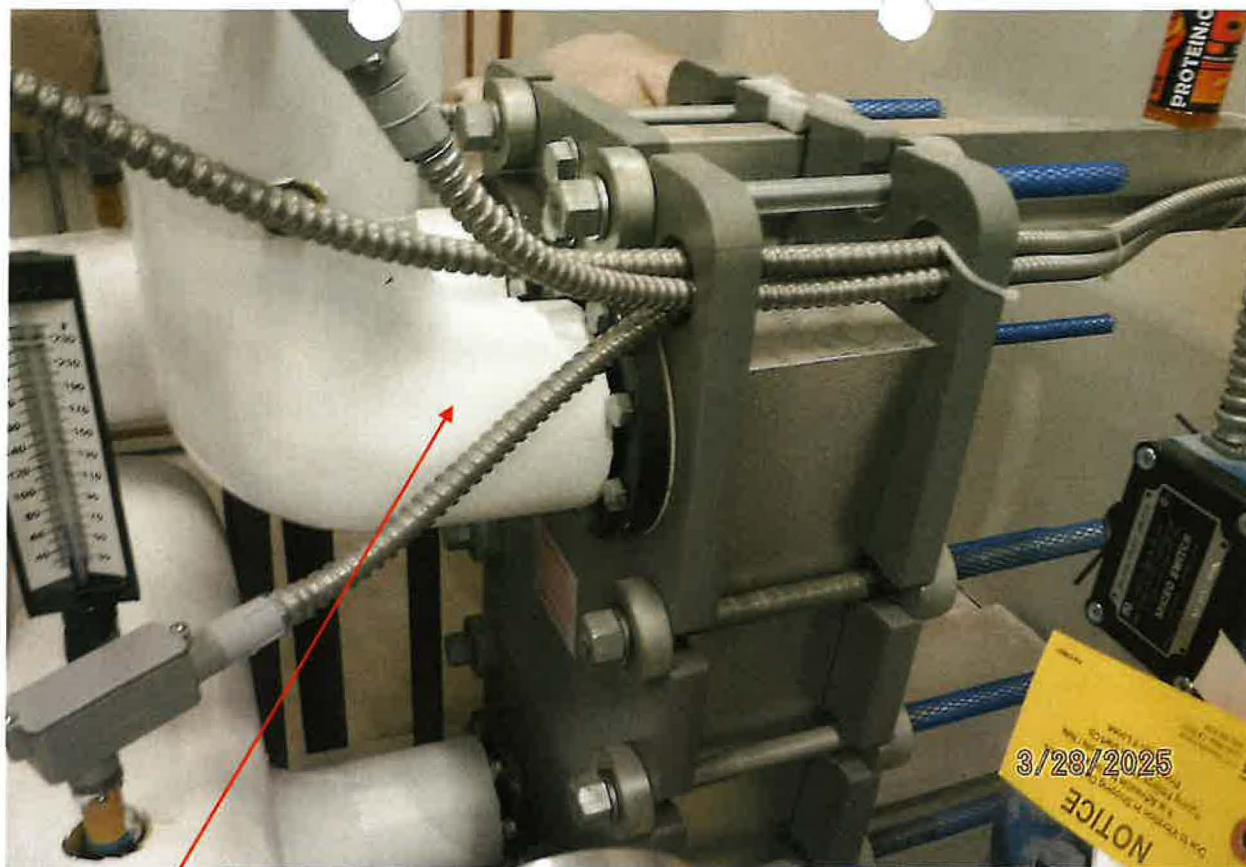
WATER CONVEYANCE SYSTEM – INFLOW FROM DIVERTING WELL TO HEAT EXCHANGER





HEAT EXCHANGER – ARMSTRONG BRAND, MODEL NO. A22H-150-70-1000,
S/N 405450-01





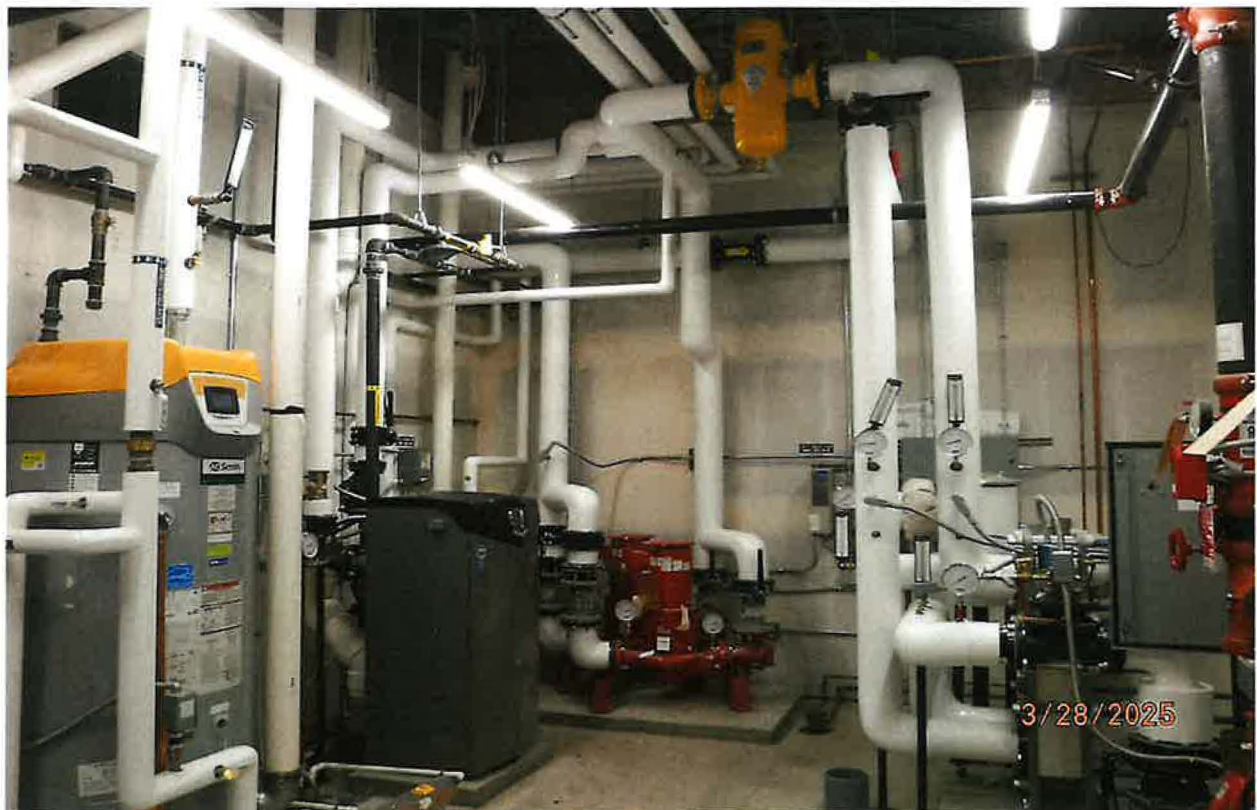
OUT FLOW FROM HEAT EXCHANGER TO HEATING/COOLING SYSTEM



RETURN PIPELINE TO INJECTION WELL



TEMPERATURE PRESSURE SENSORS – HEATING/COOLING SYSTEM OPERATED ON TEMPERATURE DIFFERENTIALS MAINTAINING 70 - 75°F SYSTEM TEMPERATURES



HEATING AND COOLING SYSTEM COMPONENTS IN BOILER ROOM



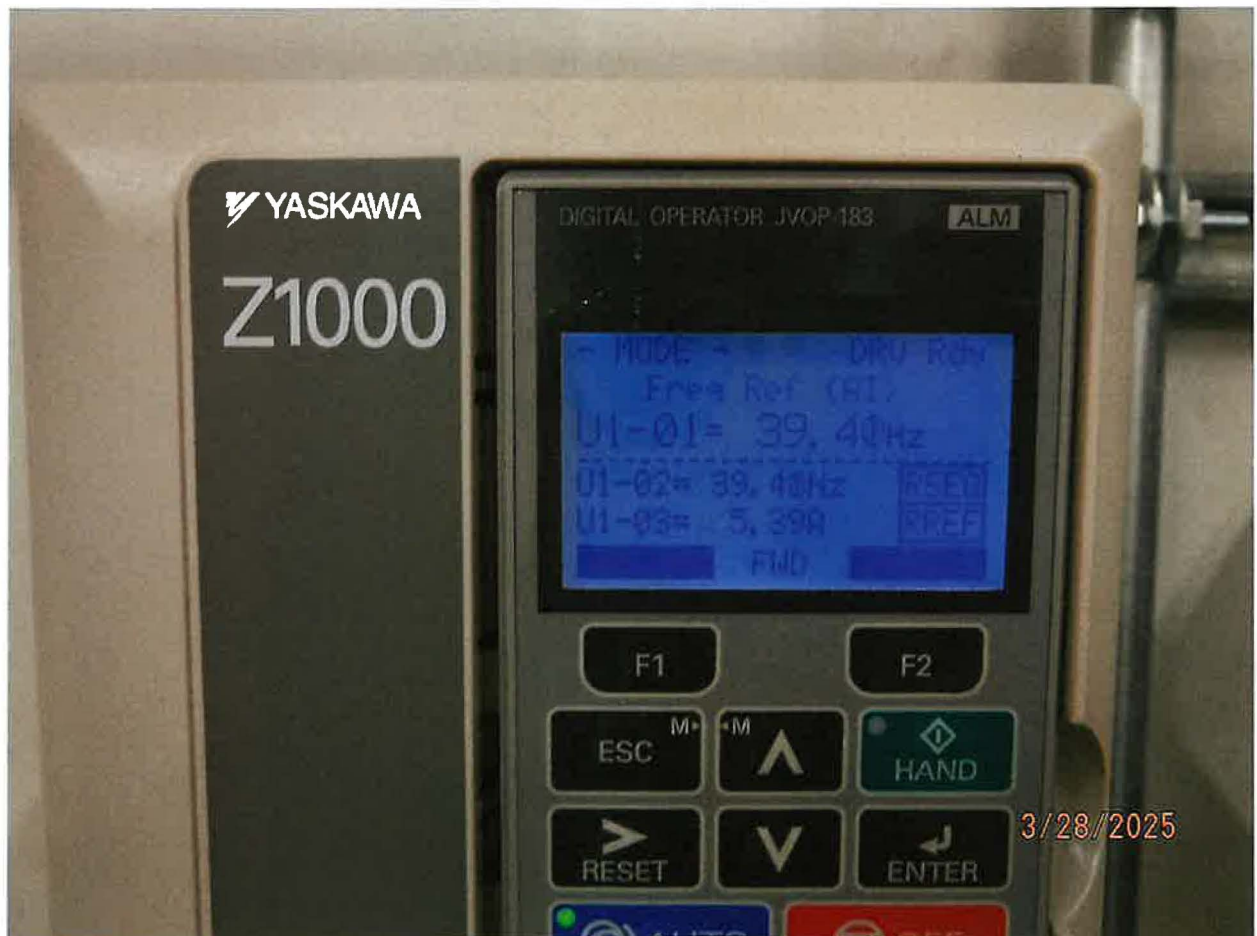
2EA – 10 HP BELL & GROSSETT BRAND LOOP PUMPS UTILIZED WITH BOILER OPERATIONS FOR CLOSED LOOP HEATING/COOLING SYSTEM OPERATION



1 OF 2 DATA PLATE FOR 10 HP BOOSTER PUMPS; MODEL NO. KS3011



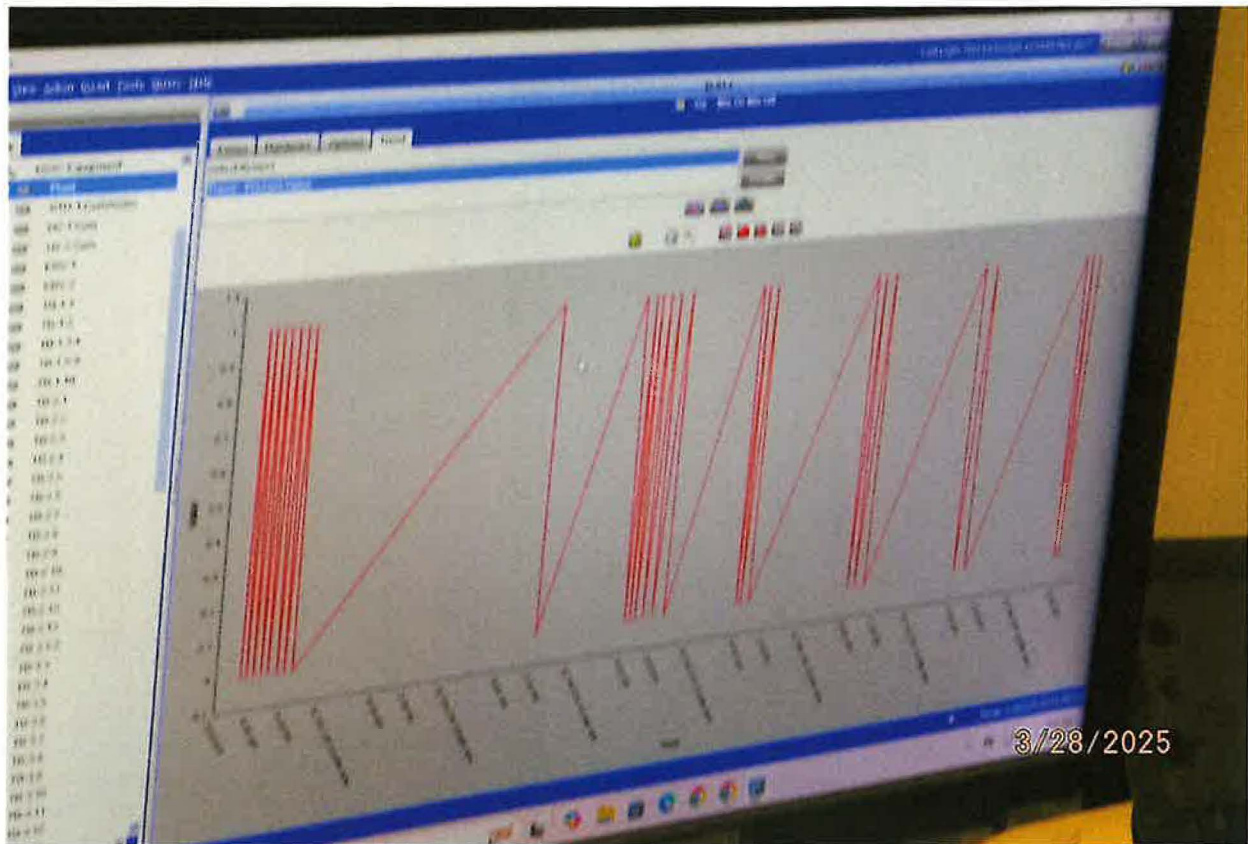
2EA 10 HP LOOP PUMP (CP-1 & CP-2) CONTROL PANELS





TACO MANUFACTURER / MODEL NO. KV2006 / IN-LINE BOILER (OPERATES
LEAD/LAG WITH WELL PUMP, NEVER BOTH SIMULTANEOUSLY)





HEATING/COOLING SYSTEM DIGITAL MONITORING PROGRAM

DHWP Schedule Input	Off
Well Pump Setpoint Diff	5.0 deg F
Boiler Setpoint	70.0 deg F
WSHP Low Flow Shutdown Alarm	False
WSHP Shutdown Delay	120.0 seconds
TUNING-RESET	False
BLR-SP	60.0 deg F
PLANTOATLOCKOUT-SP	120.0 deg F
PLANT-EN	True
PWP1-RUNTIME	15,358.9
PWP2-RUNTIME	24,182.5
PWP-RUNNING	1
PWP-ROT	False
SYS-RESET	Off
HWSYS-AVAILABLE	True
Well Pump Available	False
EF 1.0 Temp-SP	80.0 deg F
EF 2.0 Temp-SP	80.0 deg F

DATE OF EXAM 3/28/2025 – TOTALIZER PWP1-RUNTIME & PWP2-RUNTIME HOURS.
TOTAL HOURS ACCOUNT FOR TWO (2) 10 HP LOOP PUMP OPERATING HOURS
WHEN BOILER IS OPERATING SINCE THE SYSTEM COMMENCEMENT DATE
7/1/2020. LIFETIME TOTAL BOILER OPERATION HOURS = 39541.4 BETWEEN DATES.
WELL PUMP IS OFF WHEN THE BOILER IS ON.