

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

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MAR 22 2012

DEPARTMENT OF WATER RESOURCES

A Beneficial Use Field Report is prepared by a water right examiner as the result of an examination to clearly confirm and establish the extent of the beneficial use of water established in connection with a permit during the development period authorized by the permit and any extensions of time previously approved.

A. GENERAL INFORMATIONPermit No. 65-22889

1. Owner North Lake Recreational Sewer & Water Dist. Phone No. 208-325-8958
 Current address PO Box 729
2. Examiner's name Terry Scanlan, P.E. (Examiner No. 11-129) EXAM DATE 2/6/2012
3. Accompanied by Bob Gridley Email _____
 Address Same as above
- Relationship to permit holder Employee Phone No. 208-325-8958
4. Source Ground Water tributary to _____

B. OVERLAP REVIEW

1. Other water rights with the same place of use None
2. Other water rights with the same source and point of diversion 65-22888, 65-22971

C. DIVERSION AND DELIVERY SYSTEM**1. Point(s) of Diversion:**

Ident. No.	Gov't Lot	1/4	1/4	1/4	Sec	Twp	Rge	County	Method of Determination/Remarks
1			SE	SW	17	16N	3E	Valley	Field Exam, Aerial Photo
2			SE	SW	17	16N	3E	Valley	Field Exam, Aerial Photo

2. Place(s) of Use: Method of determination Field Exam, Aerial Photo

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
16N	3E	17									M		M	M					
								MF	MF	MF	MF		MF	MF					

MF = Municipal Fire Protection

3. **Delivery System Diagram:** Indicate all major components and distances between components. Indicate weir size/ditch size/pipe diameter (inside), as applicable. Use the space provided or ☒ see attached.

Scale: 1" = _____

- ☒ Copy of USGS Quadrangle attached showing location(s) of point(s) of diversion and place(s) of use (**required**)
☒ Aerial photo attached (required for irrigation of 10+ acres)
☒ Photo of diversion and system attached

4.

Well or Diversion Identification No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
Well 1 - 12"	Submersible	30		Robbco - 5 stage	4-inch
Well 2 - 16" (lrg pump)	Submersible	100		Robbco - 3 stage	8-inch
Well 1 - 12" (sm pump)	Submersible	1		Grundfos	3-inch

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

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
Pump curves						

2. Measurements: _____
 None. _____

E. NARRATIVE/REMARKS/COMMENTS

The two wells developed under this permit are shared with Crane Shores Subdivision (Permit 65-22971) and are listed as back-up wells for Timberline Development (Permit 65-22888, formerly Buckskin Properties), for which an extension has been granted to file proof in 2014.

The permit lists domestic use (internal only) for 66 lots and irrigation totaling 34.8 acres within a place of use known as Hawks Bay Subdivision. The permit also lists fire protection use. Fire protection is provided to both Hawks Bay Subdivision and Crane Shores Subdivision. The application was originally filed by W & S Investments, developer of Hawks Bay Subdivision, then assigned to North Lake Water and Sewer District (the District). Because the District is a registered municipality and the recommended place of use has been annexed into their registered service area, municipal use has been recommended for licensing rather than domestic and irrigation uses. This proposed amendment describes a use consistent with the District's other municipal water rights and does not exceed the permit parameters and/or intent of the original application.

Well drillers reports and pump curves are included in Attachment B, along with pump capacity calculations. Also include in Attachment B is page 1 of the Demonstration of Financial, Technical, and Managerial Capacity for the Combined Hawks Bay Estates and Crane Shores Water System (10/25/06 DEQ-approval date). This document provides a brief description of water system components.

All 66 lots are stubbed into the system. Annual volumes are based on Department policy for stubbed in domestic lots of 1.2 afa per lot (0.6 afa internal domestic and 0.6 afa external domestic/irrigation).

The place of use for the municipal fire protection component should be amended to include the Crane Shores Subdivision area.

Has the permit holder met all conditions of permit approval, including any mitigation requirements and/or measuring device installation requirements? ☒ Yes ☐ No If no, what must be done to meet the permit requirements?

F. FLOW CALCULATIONS☒ Additional computation sheets attached

Measured Method:

Well 1 pump capacity: 550 gpm or 1.22 cfs at 40 psi

Well 2 large pump capacity: 1450 gpm or 3.23 cfs at 40 psi

Well 2 small pump capacity: 25 gpm or 0.06 cfs at 40 psi

Total system capacity = 4.51 cfs at 40 psi discharge pressure

Limited to 3.28 cfs per permit

G. 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:

Domestic Use - indoor @ 0.6 afa /home x 66 lots = 39.6 afa

Irrigation Use - outdoor domestic @ 0.6 afa/home x 66 lots = 39.6 afa

Fire Protection - no annual volume

Total for Domestic/Irrigation portion of municipal use = 79.2 afa

H. RECOMMENDATIONS

1. Recommended Amounts

Beneficial Use	Period of Use		Rate of Diversion	Annual Volume
	From	To	Q (cfs)	V (afa)
Municipal	4/15	10/31	1.05 cfs	
Municipal	1/1	12/31	0.35 cfs	
Municipal Fire Protection	1/1	12.31	2.23 cfs	
Totals:			3.28 cfs	79.2 afa

2. Recommended Amendments

☐ Change P.D. as reflected on page 1☐ Add P.D. as reflected on page 1☐ None☐ Change P.U. as reflected on page 1☒ Add P.U. as reflected on page 1☒ Other

Add PU for fire protection component; change nature of use to municipal

I. AUTHENTICATION

Field Examiner's Signature

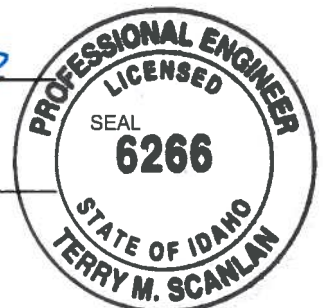


Date

3/15/12

Reviewer _____

Date _____



ATTACHMENT A

PERMIT RECORD AND PROOF OF BENEFICIAL USE

[Close](#)IDAHO DEPARTMENT OF WATER RESOURCES
Water Permit Report

3/8/2012

WATER RIGHT NO. 65-22889

<u>Owner Type</u>	<u>Name and Address</u>
Current Owner	NORTH LAKE RECREATIONAL SEWER & WATER DIST PO BOX 729 DONNELLY, ID 83615 (208)325-8958
Original Owner	W & S INVESTMENTS INC 3652 S MCCORMICK AVE BOISE, ID 83709 (208) 362-1319

Priority Date: 05/18/2004
Status: Active

<u>Source</u>	<u>Tributary</u>
GROUND WATER	

<u>Beneficial Use</u>	<u>From</u>	<u>To</u>	<u>Diversion Rate</u>	<u>Volume</u>
IRRIGATION	04/15	10/31	0.7 CFS	
DOMESTIC	01/01	12/31	0.35 CFS	
FIRE PROTECTION	01/01	12/31	2.23 CFS	
Total Diversion			3.28 CFS	

Location of Point(s) of Diversion:

GROUND WATER	NWNE	Sec. 17	Township 16N	Range 03E	VALLEY County
GROUND WATER	SENE	Sec. 17	Township 16N	Range 03E	VALLEY County
GROUND WATER	SENE	Sec. 17	Township 16N	Range 03E	VALLEY County
GROUND WATER	SESW	Sec. 17	Township 16N	Range 03E	VALLEY County
GROUND WATER	SESW	Sec. 17	Township 16N	Range 03E	VALLEY County

DOMESTIC Use:
Number of homes: 66

Place(s) of use:

Place of Use Legal Description: IRRIGATION VALLEY County

<u>Township</u>	<u>Range</u>	<u>Section</u>	<u>Lot</u>	<u>Tract</u>	<u>Acres</u>	<u>Lot</u>	<u>Tract</u>	<u>Acres</u>	<u>Lot</u>	<u>Tract</u>	<u>Acres</u>	<u>Lot</u>	<u>Tract</u>	<u>Acres</u>
16N	03E	17		NESW	13.6		SWSW	13.2		SESW	8			

Place of Use Legal Description: DOMESTIC VALLEY County

Township	Range	Section	Lot	Tract	Acres	Lot	Tract	Acres	Lot	Tract	Acres	Lot	Tract	Acres
16N	03E	17		NESW			SWSW			SESW				

Place of Use Legal Description: FIRE PROTECTION VALLEY County

Township	Range	Section	Lot	Tract	Acres	Lot	Tract	Acres	Lot	Tract	Acres	Lot	Tract	Acres
16N	03E	17		NESW			SWSW			SESW				

Total Acres: 34.8

Conditions of Approval:

1. 26A Project construction shall commence within one year from the date of permit issuance and shall proceed diligently to completion unless it can be shown to the satisfaction of the Director of the Department of Water Resources that delays were due to circumstances over which the permit holder had no control.
2. 046 Right holder shall comply with the drilling permit requirements of Section 42-235, Idaho Code and applicable Well Construction Rules of the Department.
3. WB5 Domestic use is for 66 homes and does not include lawn, garden, landscape, or other types of irrigation.
4. 071 The domestic use authorized under this right shall not exceed 13,000 gallons per day per home.
5. Place of use is also known as Hawks Bay Estates.
6. 106 Prior to the diversion and use of water under this approval, the right holder shall comply with applicable water quality standards of the Department of Environmental Quality.
7. 004 This right does not grant any right-of-way or easement across the land of another.
8. R62 This right when combined with all other rights shall provide no more than 0.02 cfs per acre nor more than 3.0 afa per acre at the field headgate for irrigation of the lands above.
9. 077 Water shall not be diverted for fire protection use under this right except to fight or repel an existing fire.
10. 01M After specific notification by the Department, the right holder shall install a suitable measuring device or shall enter into an agreement with the Department to determine the amount of water diverted from power records and shall annually report the information to the Department.
11. 121 The Director retains jurisdiction to require the right holder to provide purchased or leased natural flow or stored water to offset depletion of Lower Snake River flows if needed for salmon migration purposes. The amount of water required to be released into the Snake River or a tributary, if needed for this purpose, will be determined by the Director based upon the reduction in flow caused by the use of water pursuant to this permit.

Dates:

Proof Due Date: 08/01/2006

Proof Made Date: 07/27/2006

Approved Date: 08/24/2004

Moratorium Expiration Date:

Enlargement Use Priority Date:

Enlargement Statute Priority Date:

Application Received Date: 05/18/2004

Protest Deadline Date: 07/19/2004

Number of Protests: 0

Field Exam Date::

Date Sent to State Off:

Date Received at State Off:

Other Information:

State or Federal:

Owner Name Connector:

Water District Number:

Generic Max Rate per Acre: 0.02

Generic Max Volume per Acre: 3

Swan Falls Trust or Nontrust:

Swan Falls Dismissed:

ATTACHMENT B

WELL DRILLERS' REPORTS AND PUMP CURVES

Form 238-7
6/02IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D 0038592
 DRILLING PERMIT NO. 886648-827460
 Water Right or Injection Well No. 65-22889

2. OWNER:

Name W + S INVESTMENTS INC
 Address 4225 S. RIVA RIDGE WAY
 City BOISE State ID Zip 83709

3. LOCATION OF WELL by legal description: WELL #2

You must provide address or Lot, Blk, Sub. or Directions to well.

Twp. 16 North ☒ or South ☐
 Rge. 3 East ☒ or West ☐
 Sec. 17 1/4 SE 1/4 SW 1/4
 Gov't Lot _____
 Lat: _____ Long: _____
 Address of Well Site HAWKS BAY ROAD
 City DONNELLY
 Lt. 20 Blk. 1 Sub. Name HAWKS BAY

4. USE:

☐ Domestic ☐ Municipal ☐ Monitor ☒ Irrigation
☐ Thermal ☐ Injection ☒ Other FIRE PROTECTION

5. TYPE OF WORK check all that apply

(Replacement etc.)

☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD:

☐ Air Rotary ☐ Cable ☐ Mud Rotary ☒ Other REVERSE

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
BENTONITE 3/4"	0	215	25,000	DRY POUR

Was drive shoe used? ☐ Y ☒ N Shoe Depth(s) _____Was drive shoe seal tested? ☐ Y ☒ N How? _____8. CASING/LINER: REDUCER 16" X 10" @ 254' TO 255'

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
16"	+2	254	3/8	STEEL	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe N/A Length of Tailpipe N/APacker ☐ Y ☒ N Type _____

9. PERFORATIONS/SCREENS PACKER TYPE

Perforation Method _____

Screen Type & Method of Installation JOHNSON WIRE WRAP

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
255	335	.030		10"	S.S.	☒	☐
						☐	☐
						☐	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method
#6-9 SAND	215	340	18,000	DRY POUR

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

6 ft. below ground Artesian pressure _____ lb.

Depth flow encountered _____ ft. Describe access port or control devices: _____

1 1/2" PIPE

12. WELL TESTS:

☒ Pump ☐ Bailor ☐ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
2000 gpm	55'	63'	8 hrs

Water Temp. _____ Bottom hole temp. _____

Water Quality test or comments: _____

13. LITHOLOGIC LOG: (Describe repairs or abandonment) _____

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
24"	0	3	TOP SOIL		
	3	27	BAN SAND		
	27	30	BAN CLAY		
	30	58	FINE-COARSE SAND		
	58	90	COARSE SAND, PEA GRAVEL		
	90	98	BLUE CLAY		
	98	130	FINE-COARSE SAND		
	130	132	GRAY CLAY		
	132	145	FINE-COARSE SAND		
	145	154	GRAY CLAY		
	154	164	SAND, CLAY MIX		
	164	201	FINE-COARSE SAND, PEA GRAVEL		
	201	206	GRAY CLAY		
	206	260	FINE-MED SAND		
	260	303	FINE-MED SAND, SM GRAVEL		
	303	305	GRAY CLAY		
	305	340	FINE-MED SAND		

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WATER RESOURCES
WESTERN REGIONCompleted Depth 335' (Measurable)Date: Started 6-21-05 Completed 7-7-05

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 RIVERSIDE INC Firm No. 333

Principal Driller _____ Date _____

Driller or Operator II _____ Date 7/17-05

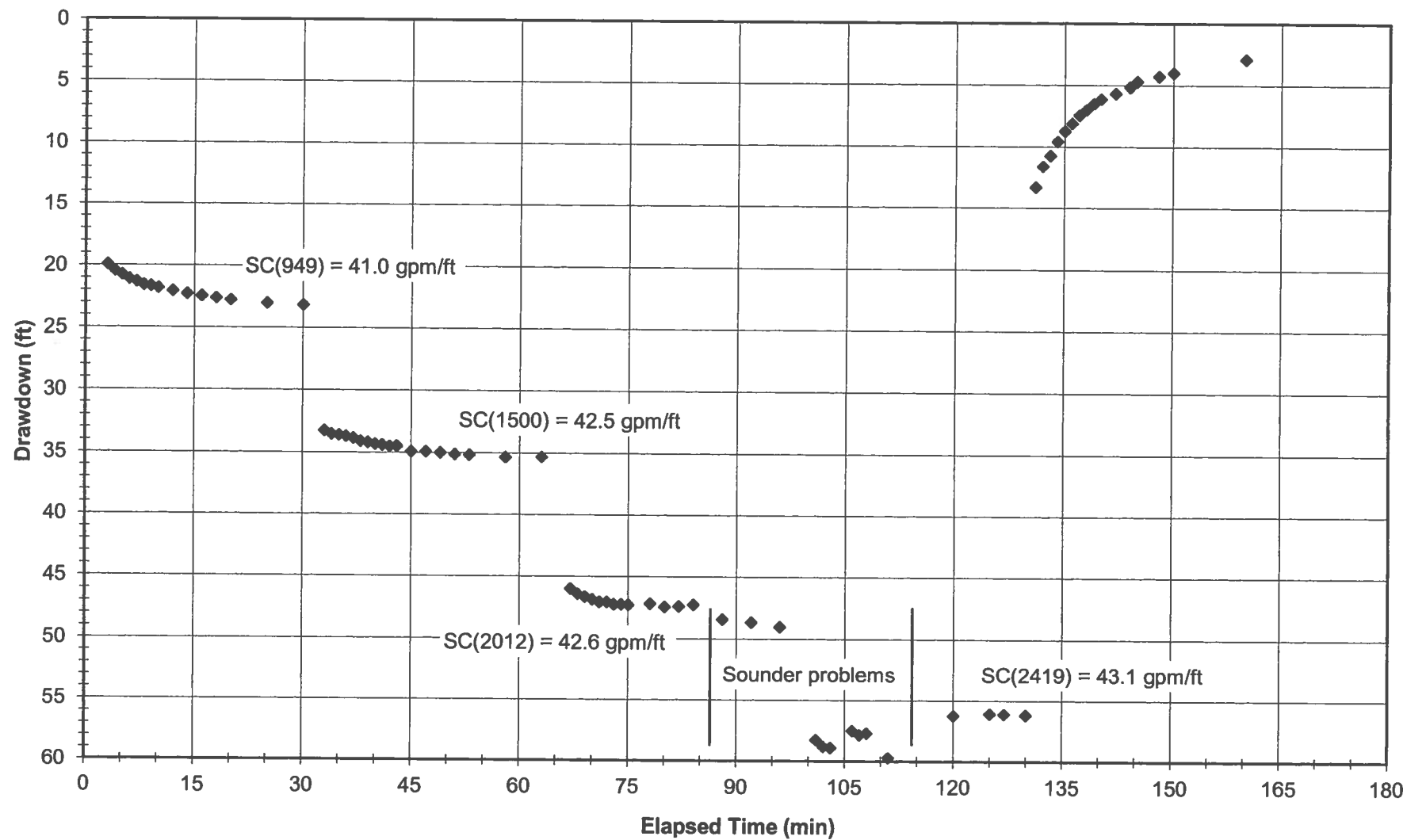
Operator I _____ Date _____

Principal Driller and Rig Operator Required.
 Operator I must have signature of Driller/Operator II.

Hawk Bay West Well Drawdown and Recovery

Step Test: Q = 949, 1500, 2012, 2419 gpm

Test Date: July 5, 2005



PUMP DATA SHEET - Robbco Pumps

Company: Dale's Pump Works
 Name: Hawk's Bay Subdivision
 Date: 02/09/06

Well No. 2 - Pump Curve



PUMP:

Size: 9TLE (3 stages)
 Type: SUBMERSIBLE
 Synch speed: 3600 rpm
 Curve no.:
 Specific Speeds:

Dimensions:

Vertical Turbine:

Pump Limits:

Temperature: 120 °F
 Pressure: 530 psi g
 Sphere size: 1 in

Speed: 3450 rpm
 Dia: 5.81 in

Impeller:
 Ns: 3740
 Nss: —

Suction: 6 in
 Discharge: — in

Bowl size: 9.75 in
 Max lateral: 0.75 in
 Thrust K factor: 9 lb/ft

Power: — hp
 Eye area: — in²

Search Criteria:

Flow: 1000 US gpm

Head: 260 ft

Fluid:

Water
 SG: 1
 Viscosity: 1.105 cP
 NPSHr: — ft

Temperature: 80 °F
 Vapor pressure: 0.2663 psi a
 Atm pressure: 14.7 psi a

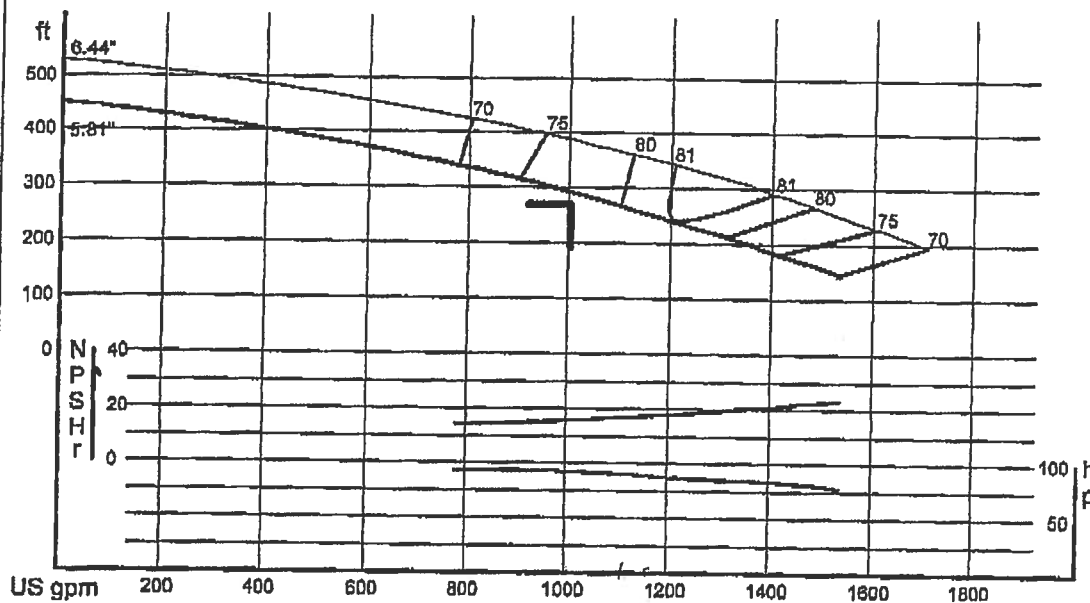
Motor:

Standard: NEMA
 Enclosure: SUB

Size: 100 hp
 Speed: 3600
 Frame: 8 inch

Sizing criteria: Max Power on Design Curve

--- Data Point ---
Flow: 1000 US gpm
Head: 282 ft
Eff: 77.6%
Power: 90.9 hp
NPSHr: 16.3 ft
--- Design Curve ---
Shutoff Head: 441 ft
Shutoff dP: 191 psi
Min Flow: — US gpm
BEP: 81% eff
@ 1208 US gpm
NOL Pwr: 92.4 hp
@ 899 US gpm
--- Max Curve ---
Max Pwr: 125 hp
@ 1202 US gpm



Available Discharge 5, 6, 8"

Performance Evaluation:

Flow	Speed	Head	Pump	Power	NPSHr
US gpm	rpm	ft	%eff	hp	ft
1200	3450	232	80.9	88.5	17.6
1000	3450	282	77.6	90.9	16.3
800	3450	325	71	92.3	13.7
600	3450	—	—	—	—
400	3450	—	—	—	—

Form 238-7
6/02IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT1. WELL TAG NO. D 0038344
DRILLING PERMIT NO. 886547-827459
Water Right or Injection Well No. 65-22889

2. OWNER:

Name W+S INVESTMENTS INC
Address 4225 S. RIVA RIDGE WAY
City BOISE State ID Zip 837093. LOCATION OF WELL by legal description: WELL #1

You must provide address or Lot, Blk, Sub. or Directions to well.

Twp. 16 North ☒ or South ☐
Rge. 3 East ☒ or West ☐
Sec. 17 1/4 SE 1/4 SW 1/4
Gov't Lot _____
County VALLEYLat: _____ Long: _____
Address of Well Site HAWKS BAY ROAD
City DONNELLY(Give at least name of road + Distance to Road or Landmark)
Lt. 20 Blk. 1 Sub. Name HAWKS BAY

4. USE:

☐ Domestic ☐ Municipal ☐ Monitor ☒ Irrigation
☐ Thermal ☐ Injection ☒ Other FIRE PROTECTION

5. TYPE OF WORK check all that apply (Replacement etc.)

☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD:

☐ Air Rotary ☐ Cable ☐ Mud Rotary ☒ Other REVERSE

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
BENTONITE	0	330	30,000	DRY POUR
BENTONITE	410	635	15,000	" "

Was drive shoe used? ☐ Y ☒ N Shoe Depth(s) _____Was drive shoe seal tested? ☐ Y ☒ N How? _____8. CASING/LINER: REDUCER 12" X 8" @ 330' TO 331'

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
12"	0	330	315	STEEL	☒	☐	☒	☐
8"	331	371	322	STEEL	☒	☐	☒	☐

Length of Headpipe N/A Length of Tailpipe N/APacker ☐ Y ☒ N Type _____

9. PERFORATIONS/SCREENS PACKER TYPE

Perforation Method _____

Screen Type & Method of Installation JOHNSON WIRE WRAP

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
371	401	.030		8"	S.S.	☒	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method
#6-9 SAND	330	410	10,500	DRY POUR

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

4' 11" ft. below ground Artesian pressure _____ lb.

Depth flow encountered _____ ft. Describe access port or control devices: _____

1 1/2" PIPE

12. WELL TESTS:

☒ Pump ☐ Bailor ☐ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
1210 gpm	52'	57	8 hrs

Water Temp. _____ Bottom hole temp. _____

Water Quality test or comments: _____

Depth first Water Encounter _____

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Water

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
20"	0	3	TOP SOIL		
	3	90	FINE-COARSE SAND, PEA GRAVEL		
	90	98	BLUE CLAY		
	98	145	FINE-COARSE SAND, PEA GRAVEL		
	145	154	GRAY CLAY		
	154	201	FINE SAND, SM GRAVEL		
	201	206	GRAY CLAY		
	206	303	FINE-MED SAND		
	303	305	GRAY CLAY		
	305	342	FINE-MED SAND		
	342	366	GRAY CLAY, SAND MIX		
	366	402	FINE-COARSE SAND		
	402	410	FINE-COARSE SAND		
12"	410	438	FINE-COARSE SAND, SM GRAVEL		
	438	451	SANDY CLAY, FINE SAND		
	451	464	FINE SAND		
	464	472	GRAY CLAY		
	472	517	FINE TO COARSE SAND		
	517	524	BRN + GRAY CLAY, SAND		
	524	530	FINE-COARSE SAND		
	530	542	GRAY CLAY		
	542	553	FINE-COARSE SAND, SM GRAVEL		
	553	564	BRN. GRAY CLAY, SAND MIX		
	564	630	FINE-COARSE SAND		
	630	635	GRAY CLAY		

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JUL 18 2005

WATER RESOURCES
WESTERN REGIONCompleted Depth 401' (Measurable)Date: Started 6-6-05 Completed 6-23-05

14. DRILLER'S CERTIFICATION

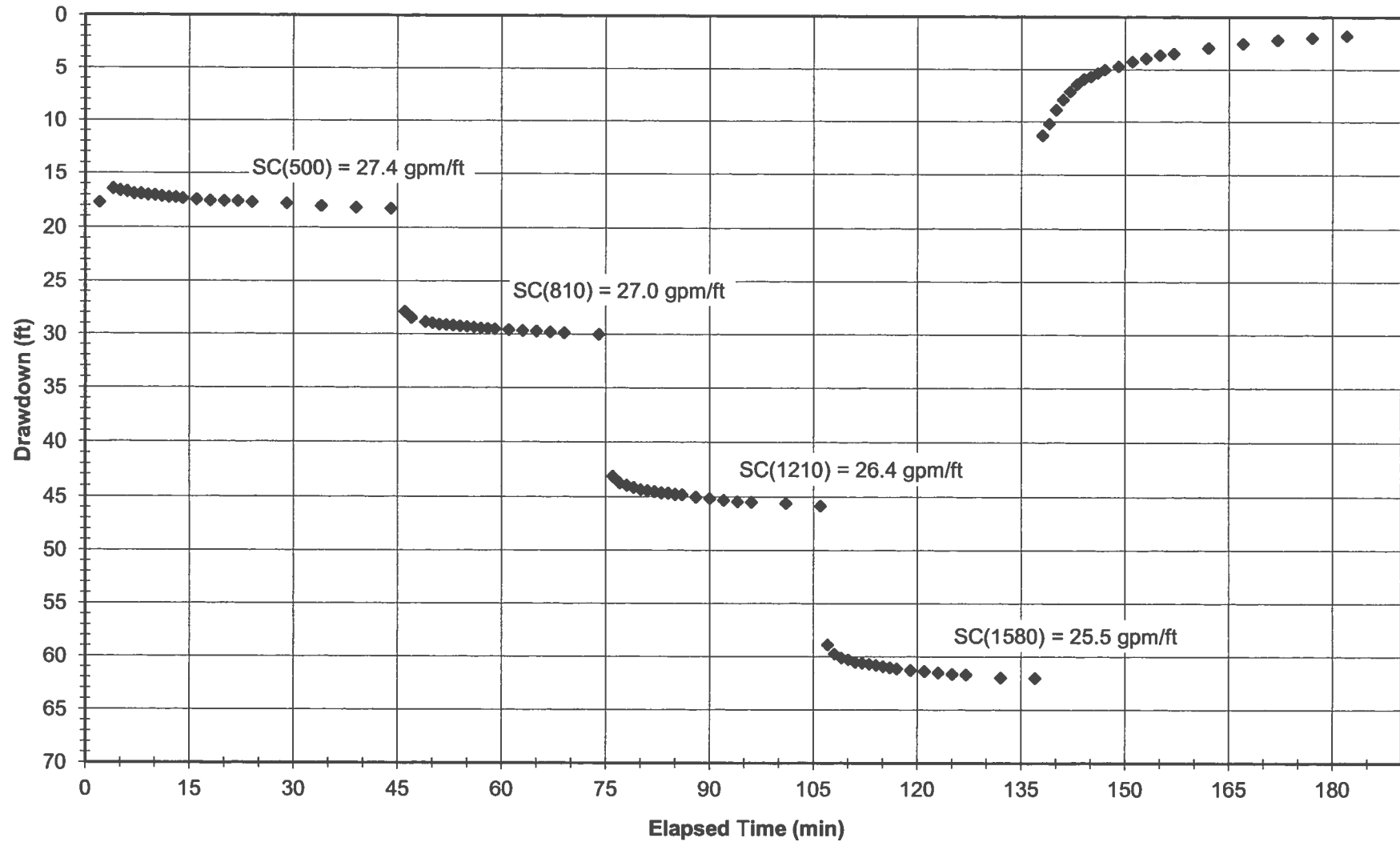
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name RIVERSIDE INC Firm No. 333Principal Driller _____ Date _____
and _____
Driller or Operator II _____ Date 7-17-05Operator I _____ Date _____
Principal Driller and Rig Operator Required.
Operator I must have signature of Driller/Operator II.

Hawks Bay East Well Drawdown and Recovery

Step Test: Q = 500, 810, 1210, 1580 gpm

Test Date: June 22, 2005



PUMP DATA SHEET Robbco Pumps

Company: Dale's Pump Works
 Name: Hawks Bay Subdivision
 Date: 02/09/06

WELL No 1 - Pump Curve



Pump:

Size: 9CLE (5 stages)
 Type: SUBMERSIBLE
 Synch speed: 1800 rpm
 Curve no.:

Specific Speeds:

Vertical Turbine:

Speed: 1770 rpm
 Dia: 6.8125 in

Impeller:
 Ns: 2290
 Nss: —

Suction: 6 in
 Discharge: — in

Bowl size: 9.25 in
 Max lateral: 0.88 in
 Thrust K factor: 4.9 lb/ft

Search Criteria:

Flow: 400 US gpm

Head: 200 ft

Fluid:

Water
 SG: 1
 Viscosity: 1.105 cP
 NPSHa: — ft

Temperature: 60 °F
 Vapor pressure: 0.2563 psi a
 Atm pressure: 14.7 psi a

Motor:

Standard: NEMA
 Enclosure: SUB

Size: 30 hp
 Speed: 1800
 Frame: 8 inch

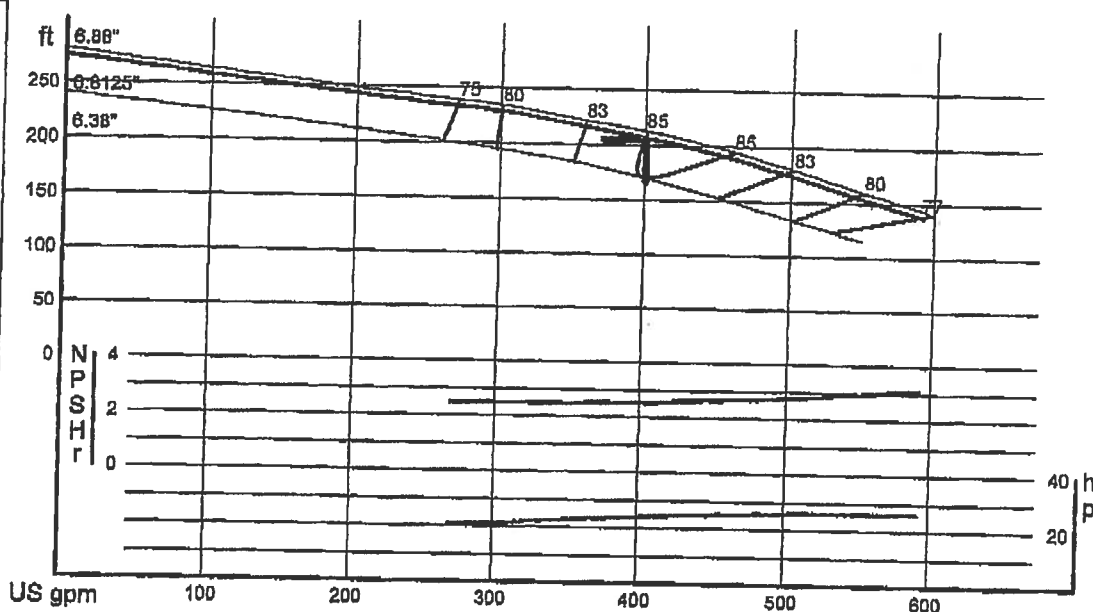
Sizing criteria: Max Power on Design Curve

Pump Limits:

Temperature: 120 °F
 Pressure: 400 psi g
 Sphere size: 0.56 in

Power: — hp
 Eye area: — in²

Data Point
Flow: 400 US gpm
Head: 202 ft
Eff: 85%
Power: 23.9 hp
NPSHr: 2.46 ft
Design Curve
Shutoff Head: 269 ft
Shutoff dP: 116 psi
Min Flow: — US gpm
BEP: 85.1% eff
@ 426 US gpm
NOL Pwr: 26 hp
@ 543 US gpm
Max Curve
Max Pwr: 26.9 hp
@ 549 US gpm



Available Discharge 5, 6, 8"

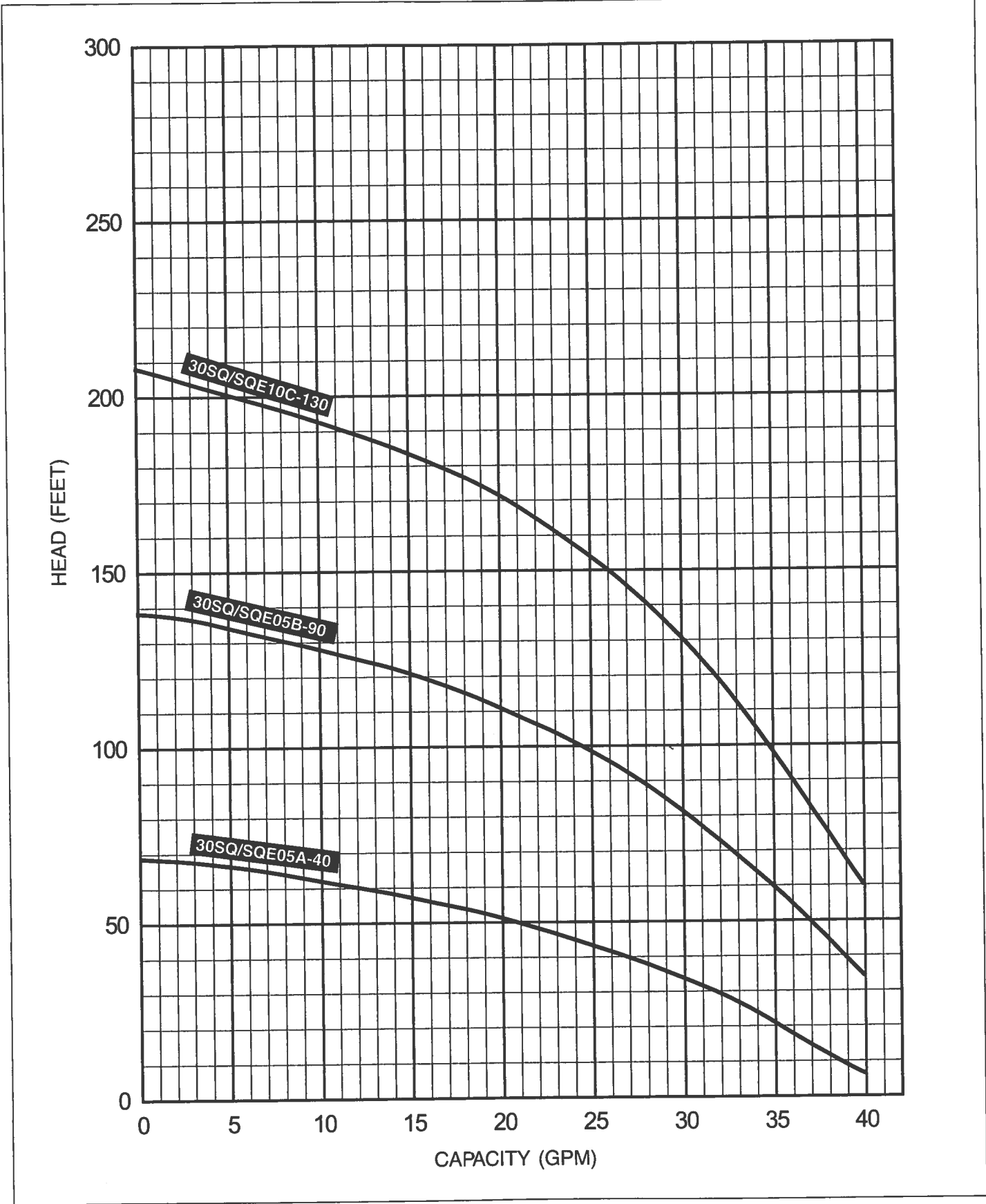
Performance Evaluation:

Flow	Speed	Head	Pump	Power	NPSHr
US gpm	rpm	ft	%eff	hp	ft
480	1770	176	83.6	25.5	2.65
400	1770	202	85	23.9	2.45
320	1770	219	81.1	21.8	2.41
240	1770	232	70.4	20.1	2.41
160	1770	—	—	—	—

FLOW RANGE: 8 - 42 GPM

OUTLET SIZE: 1 1/2" NPT

NOMINAL DIA. 3"



The Hawks Bay wells are equipped with three pumps.

- The east well is equipped with two pumps. The large pump is a 30-hp submersible (5-stage Robbco CLE, 6.8125-inch trim) rated to produce 550 gpm at 150 feet TDH. This pump was out of the well for service at the time of the beneficial use field examination. The small pump is a 1-hp submersible (Grundfos 30 SQ) rated to produce 25 gpm at 150 feet TDH.
- The west well is equipped with a 100-hp submersible (3-stage Robbco 9TLE, 5.81-inch trim) rated to produce 1450 gpm at 175 feet TDH.

In combination, the three pumps can produce approximately 2025 gpm (4.51 cfs) at 40 psi discharge pressure. The 40 psi discharge pressure is adequate to provide fire flow at distant hydrants with more than 20 psi residual pressure.

East Well (Well 1)		
Static Water Level	ft	10
Pumping Rate	gpm	500
Specific Capacity	gpm/ft	27
Pumping Water Level	ft	28.5
<u>Friction Loss</u>		
Check Valve	ft	4
Column Pipe	ft	3
Mechanical Piping	ft	20
Discharge Pressure	psi	40
Discharge Pressure	ft	92.4
Required Pump TDH	ft	148

West Well (Well 2)		
Static Water Level	ft	10
Pumping Rate	gpm	1450
Specific Capacity	gpm/ft	43
Pumping Water Level	ft	43.7
<u>Friction Loss</u>		
Check Valve	ft	4
Column Pipe	ft	3
Pitless unit, pipe to well house	ft	10
Mechanical Piping	ft	20
Discharge Pressure	psi	40
Discharge Pressure	ft	92.4
Required Pump TDH	ft	173.1

ELEMENT #1 – System Ownership & Management

The Hawks Bay Estates water system will ultimately supply domestic and irrigation water and fire protection to 150 residential homes including 66 homes within Hawks Bay Estates and 84 homes within the neighboring Crane Shores Subdivision. Hawks Bay Estates and Crane Shores subdivisions are generally located between Roseberry Road and Tamarack Falls Road, 2.4 miles southwest of Donnelly in Valley County. Both properties are located in Section 17, Township 16 North, Range 3 East.

The water system is composed of two water supply wells. Well No. 1 was constructed with 12-inch casing and 8-inch stainless steel well screens and is located in a well house. The 8-inch well screen is set from 371 to 401 feet below ground level ("bgl"). Well No. 2 was constructed with 16-inch casing and 10-inch stainless steel well screens. The 10-inch well screen is set from 255 to 335 feet bgl. Well No. 1 is equipped with a 550 gpm pump (at 40 psi) to supply domestic demands (less than 200 gpm). The other well is equipped with a 1,500 gpm pump (at 40 psi) to provide a backup supply and fire protection. As the water system builds out, the well(s) may be re-equipped with larger pumps, or a storage tank may be constructed for fire flow purposes.

The distribution system is supplied from the common well facility through approximately 3,537 LF of 12-inch, 3,500 LF of 10-inch, 2,600 LF of 8-inch, and 320 LF of 6-inch C-900 polyvinyl chloride (PVC) water main. All homes will be metered to enforce water conservation measures. All homes will be provided with a minimum pressure of 40 psi at the meter box at peak hour flow with a static compensation to the well lot.

1. Legal Owner

The legal owners of the domestic water system to serve Hawks Bay Estates and Crane Shores Subdivision (which Domestic Water System includes applicable water rights) are W&S Investments, Inc. and Crane Shores, LLC.

The principal address for W&S Investments, Inc. is 4225 S. Riva Ridge Way, and the telephone number is (208) 861-8884. The Articles of Incorporation for W&S Investments, Inc., attached as **Exhibit 1-1**, were filed with the Idaho Secretary of State on February 5, 1999, as document number C127499.

The principal address for Crane Shores, LLC is 2927 NE 89th Avenue, Portland, OR 97220, and the telephone number is (503) 701-7978. The Articles of Incorporation for Crane Shores, LLC, attached as **Exhibit 1-1**, were filed with the Idaho Secretary of State on June 4, 2004, as document number W31062.

2. Deeds, Plats, Easements

As described in the Warranty Deed attached as **Exhibit 1-2**, the property that is planned for development as Hawks Bay Estates is presently owned by W&S Investments, Inc. and

ATTACHMENT C

**TOPO MAP, 2009 AERIAL PHOTO &
WATER SYSTEM DIAGRAM**

HAWKS BAY WATER SYSTEM

Fire Hydrant

Roseberry Road

Shores

Highland Woods

The Meads

Hawks Bay

HAWKS BAY RD.

West Roseberry Rd.

Hill House Loop

Highland View

TAMARACK FALLS ROAD

LAKE FOREST DR.

CROSS COUNTRY CT.

8" typ. DRIVE

GRANITE SHIPES

SHORECREST CT.

8" typ.

WELL HOUSE

10" line

8" line

10" line

10" line

12" line

12" line

12" line

12" line

6" line

ATTACHMENT D
PHOTOS



Place of use – 65-22889



Place of use – 65-22889



Place of use – 65-22889



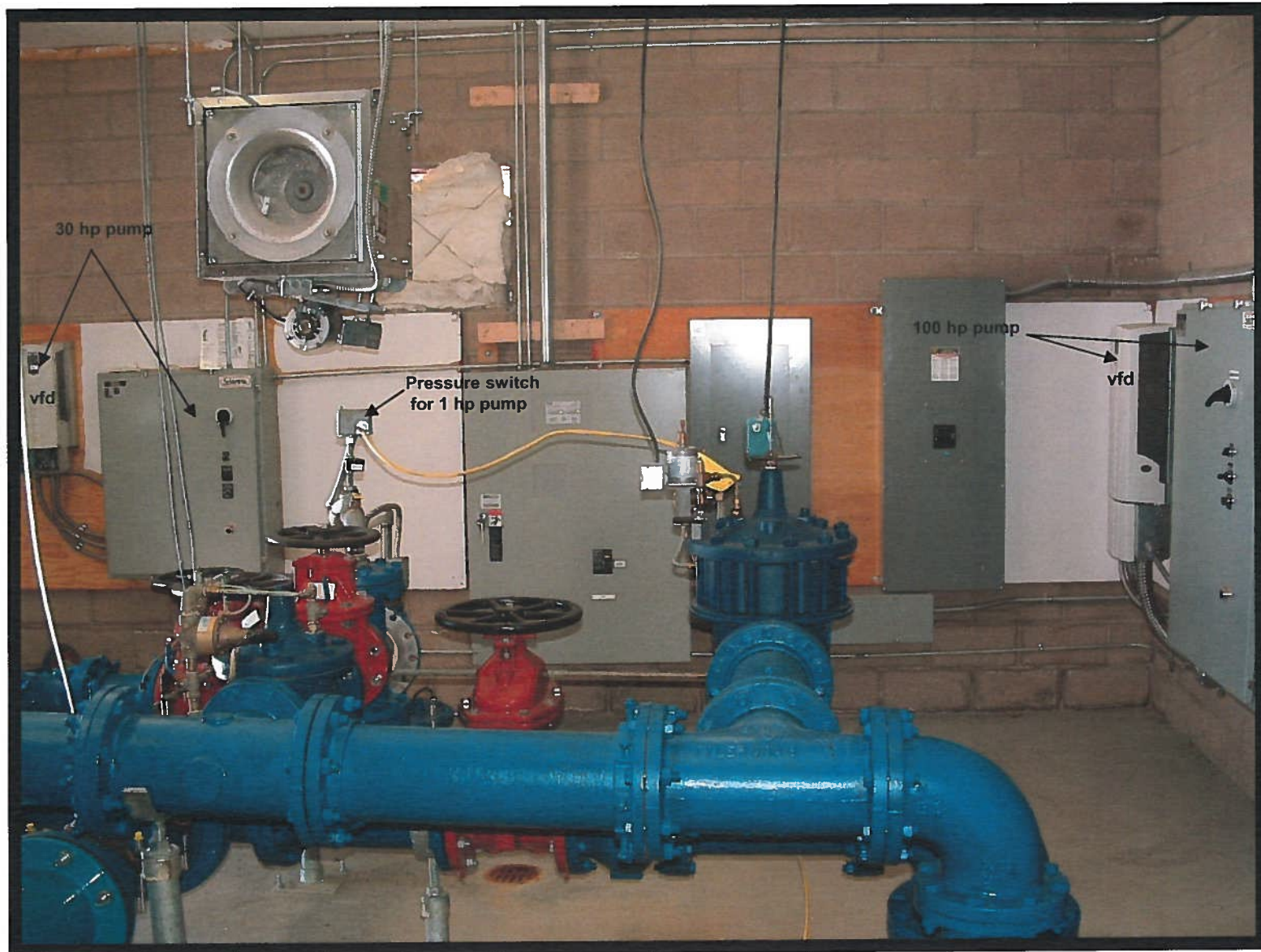
Well house – view from street



16-inch well (pitless unit in foreground; well house in background)



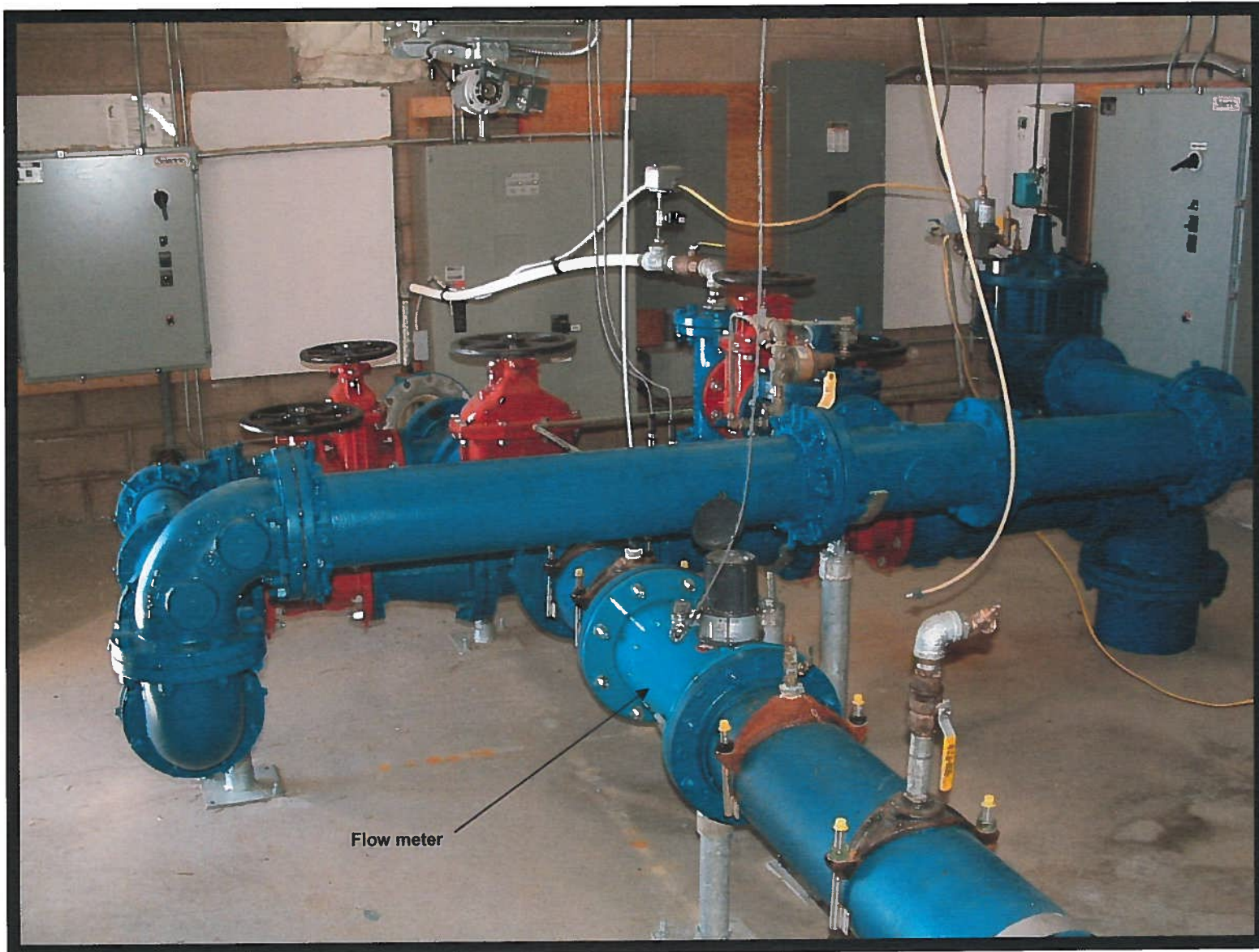
12-inch well (30-hp pump disconnected for service; 1 hp pump active)



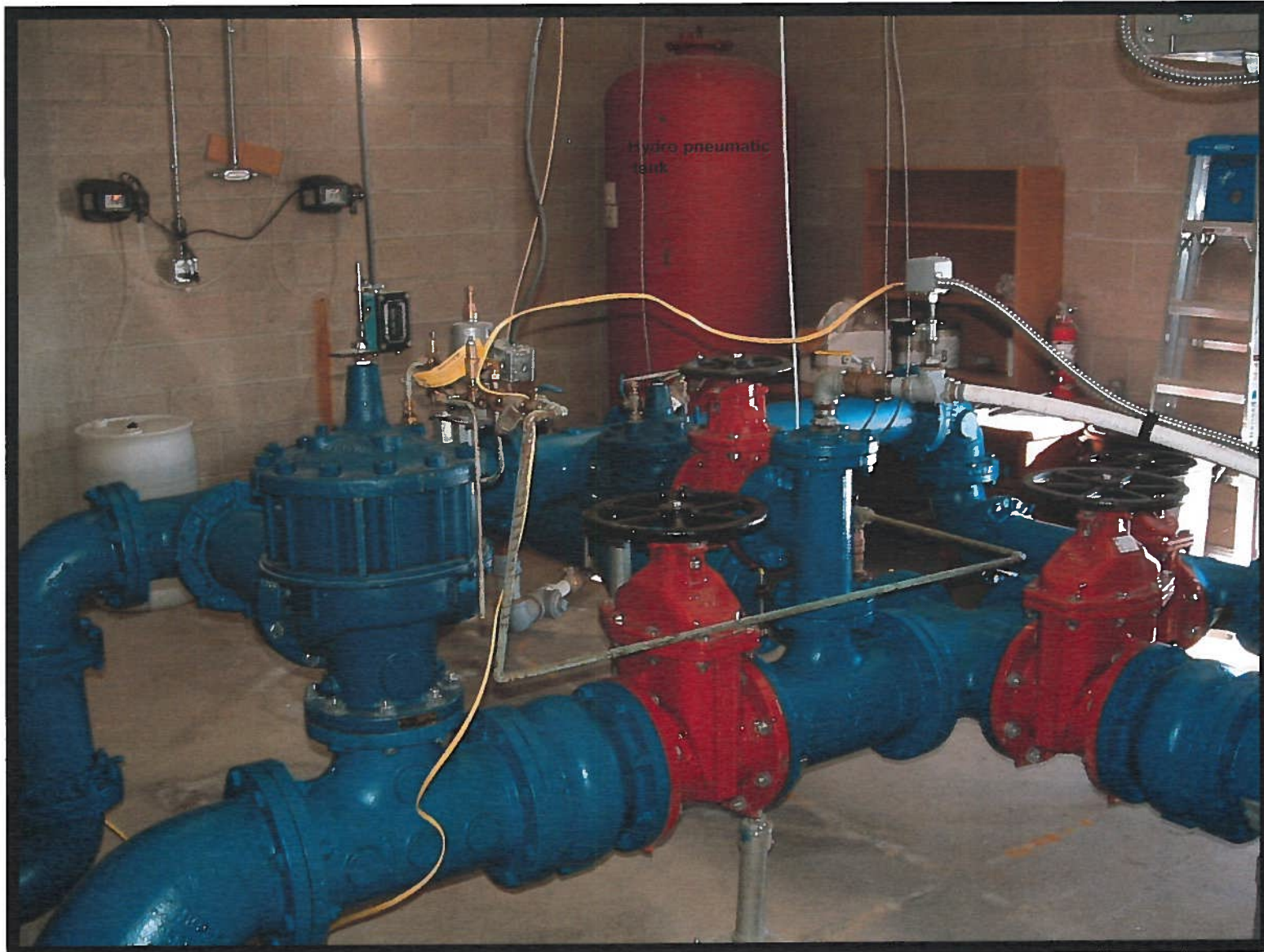
Pump motor controls and well house piping



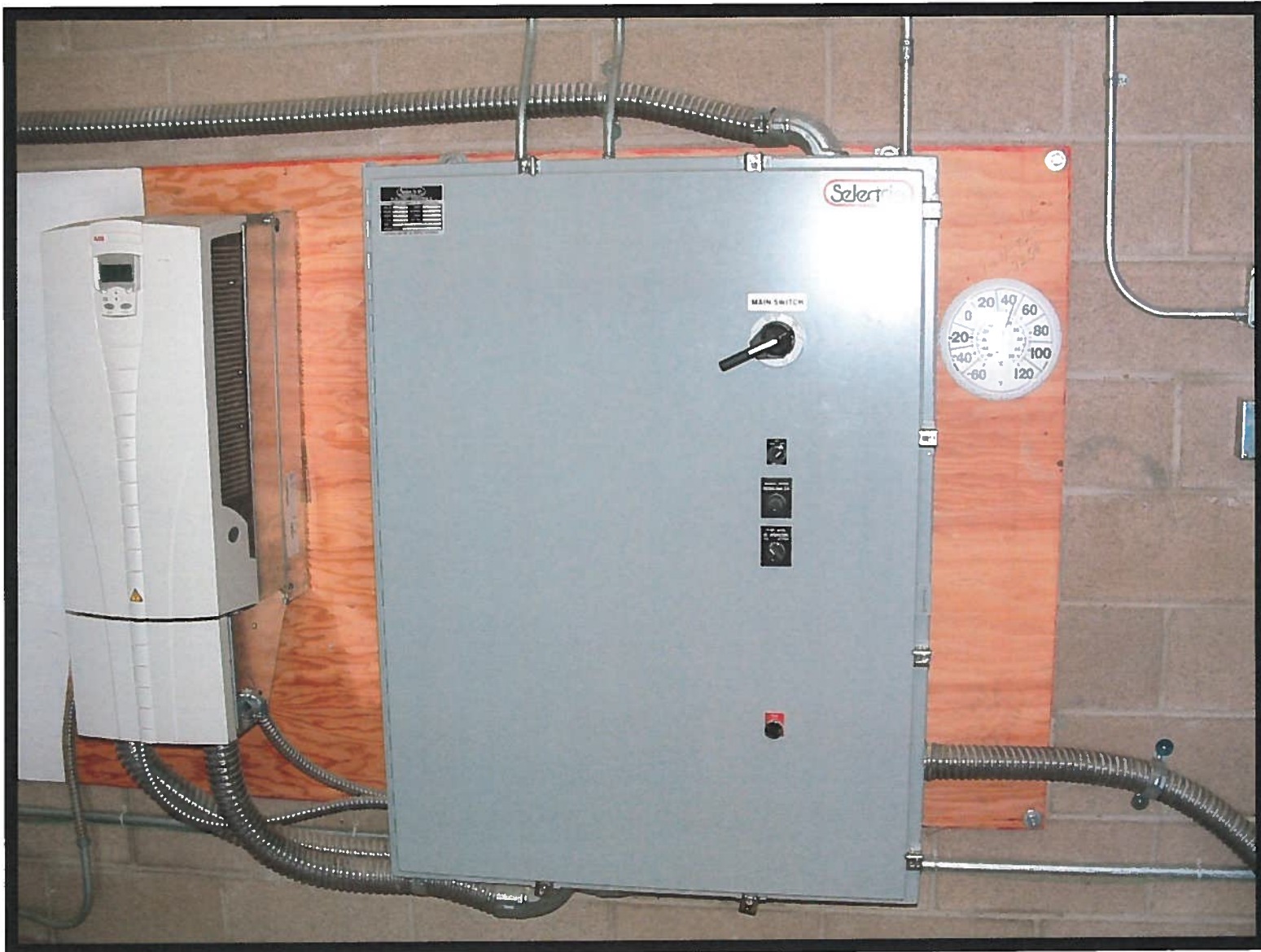
Well house piping



Well house piping



Well house piping



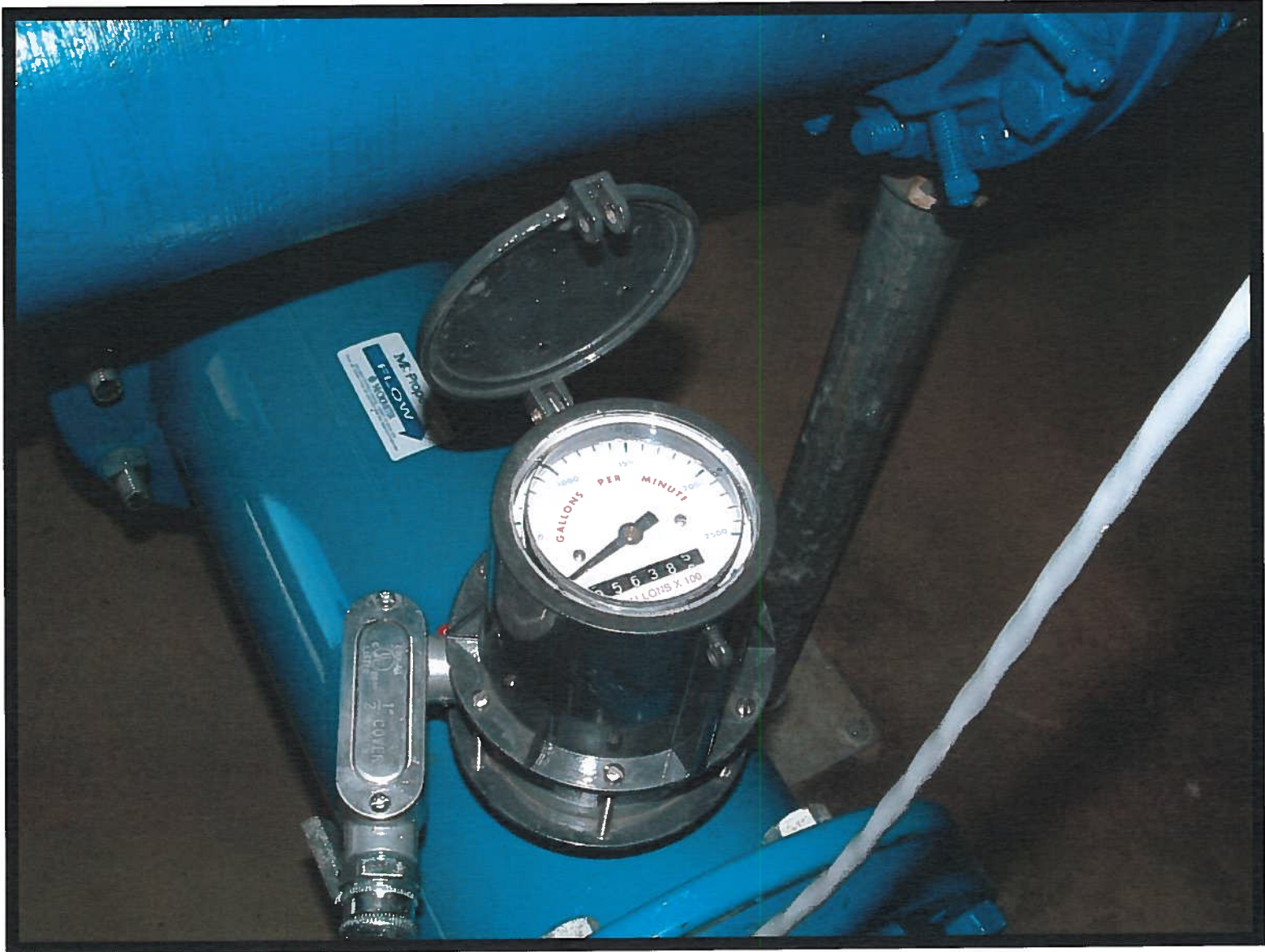
100-hp pump panel and vfd



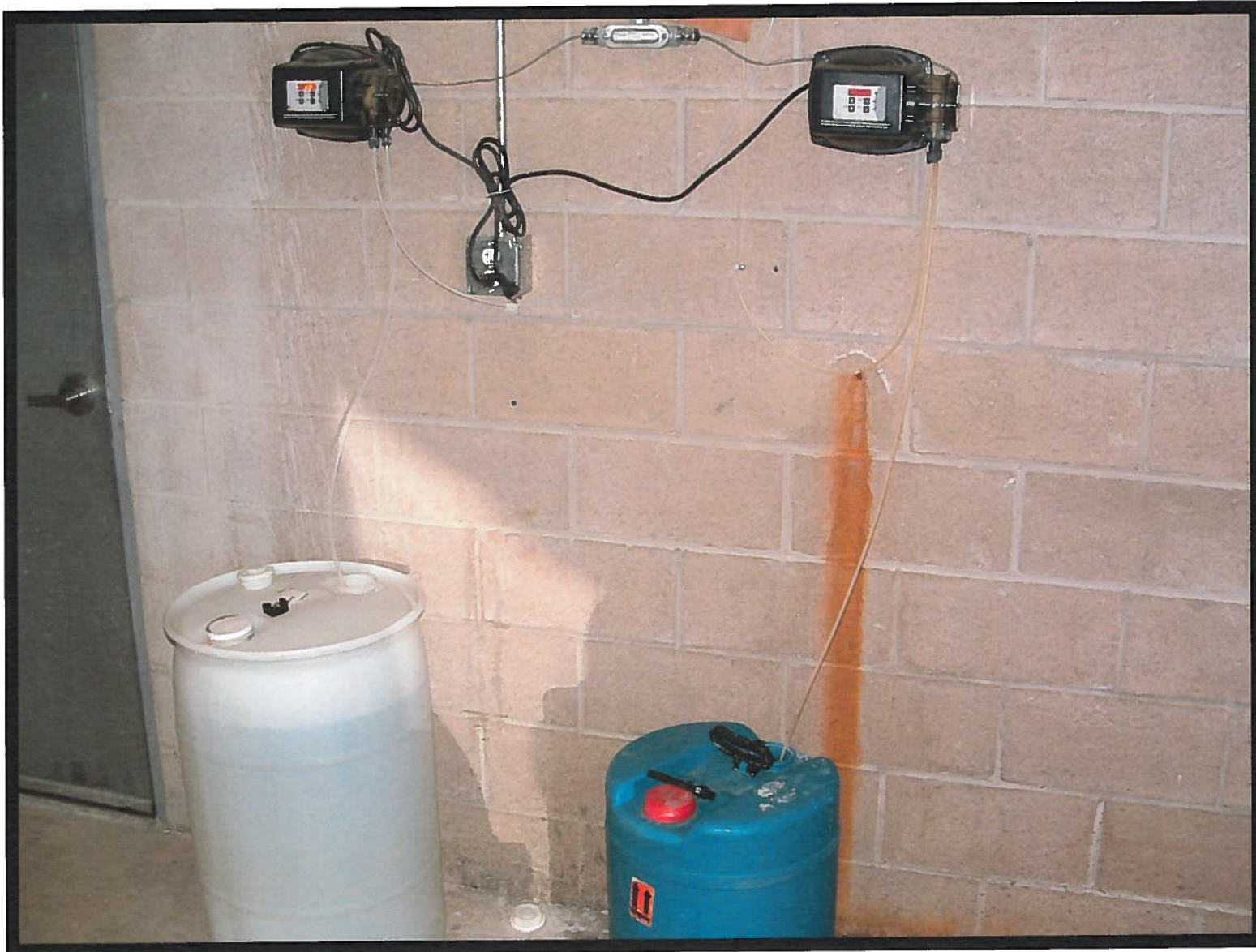
30-hp pump panel and vfd



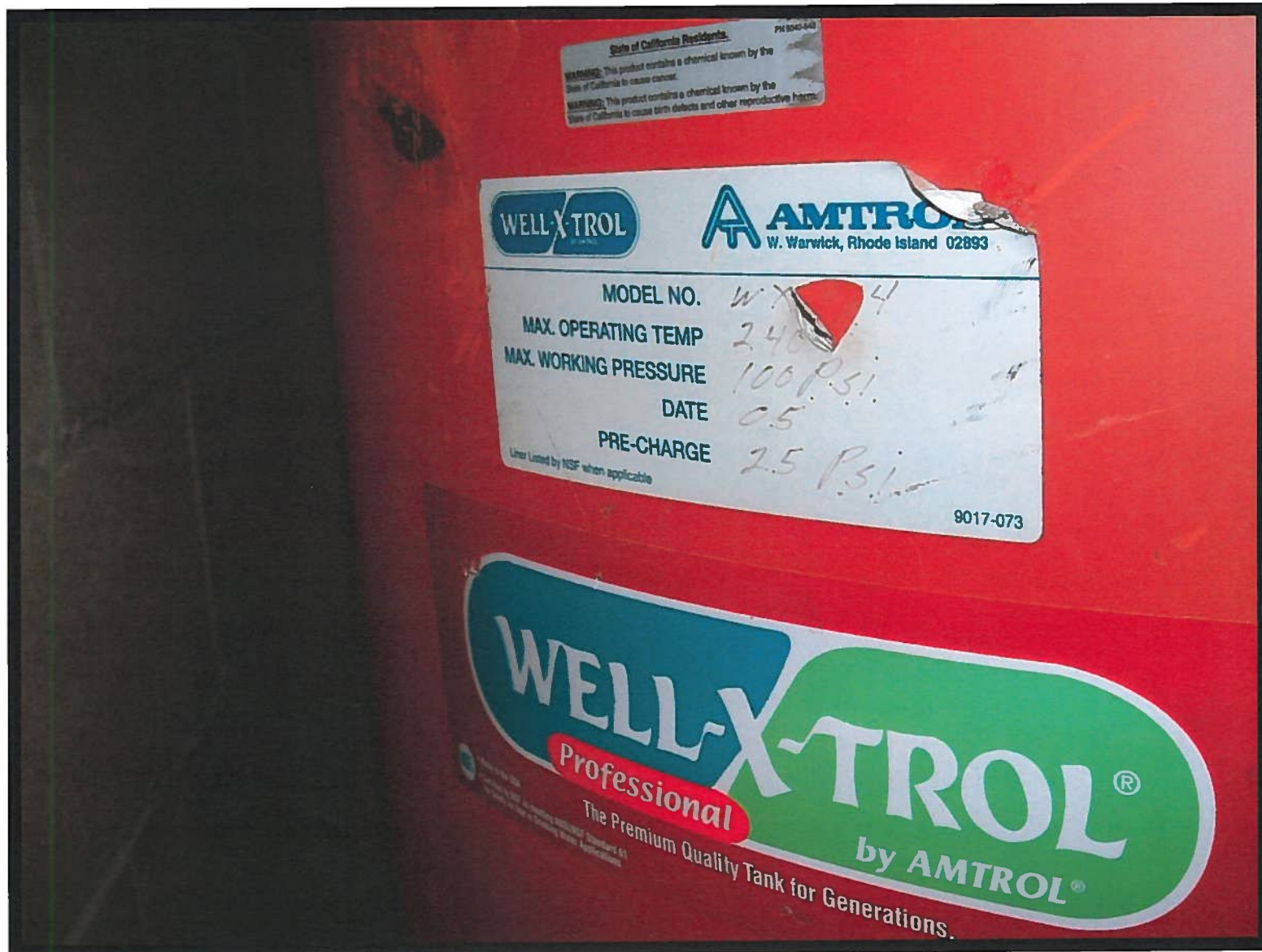
1-hp pump breaker



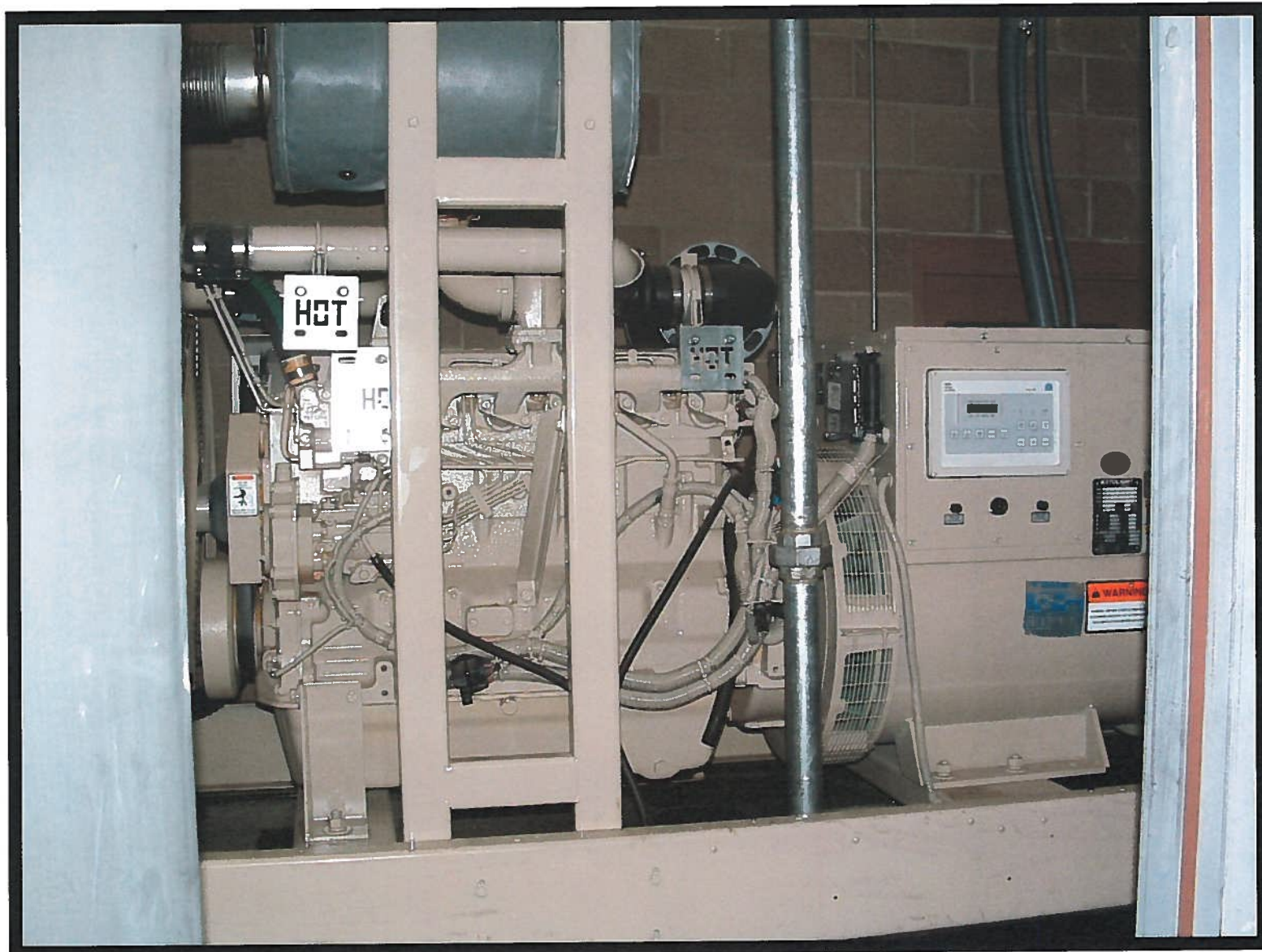
Flow meter



Treatment – chlorine and polyphosphate



Hydro pneumatic tank



Back-up generator



Back-up power generator