

A. GENERAL INFORMATION

Exam Date: 8/1/2008

- | 3. <u>SOURCE</u> | <u>TRIBUTARY</u> |
|------------------|------------------|
| GROUND WATER | |

1. Other water rights with the same place of use: NONE
2. Other water rights with the same point of diversion: NONE

1. LOCATION OF POINT(S) OF DIVERSION:

Method of Determination: GPS

PLACE OF USE: FIRE PROTECTION

[illegible]

Method of Determination:

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>
See	Attached				

*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:

See Attached

E. FLOW CALCULATIONS

Measured Method:

☒ Additional Computation Sheets Attached

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:

N/A

G. NARRATIVE/REMARKS/COMMENTS

THIS SYSTEM USES GROUNDWATER FOR FIRE PROTECTION. THERE IS THREE WELLS FOR DIVERTING THE WATER. FOR FIRE PROTECTION THEY HAVE HYDRANTS SCATTERED ACCROSS THE PROPERTY AROUND THE STORAGE BUILDINGS.

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>
FIRE PROTECTION	01/01 to 12/31	5.010 CFS
<u>Totals:</u>		5.010 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

Date

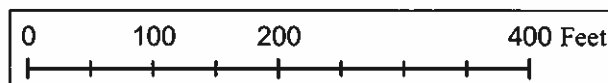
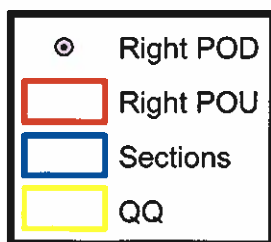
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Reviewer

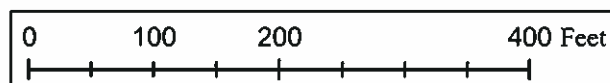
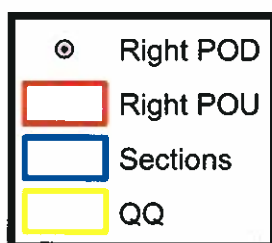
Date

9/22/8

95-9306



95-9306



PUMP EQUATIONS					
WATER RIGHT No.			95-9306 WELL #1		
	HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
$Q = \frac{HP \times 8.8 \times \text{Eff}}{H}$	5	219.3878	0.8	150	30
$Q =$ 0.161 cfs 72.1 gpm					

PUMP EQUATIONS					
WATER RIGHT No.			95-9306 WELL #2		
	HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
$Q = \frac{HP * 8.8 * Eff}{H + PL}$	75	219.3878	0.8	150	30
Q = 2.411 cfs 1081.9 gpm					

PUMP EQUATIONS					
WATER RIGHT No.			95-9306 WELL #3		
	HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
$Q = \frac{HP * 8.8 * Eff}{H}$	75	219.3878	0.8	150	30
$Q = $ 2.411 cfs 1081.9 gpm					

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

95-9306

Office Use Only			
Inspected by			
Twp	Rge	Sec	
1/4	1/4	1/4	
Lat	:	:	Long
:	:	:	:

1. WELL TAG NO. D00041110

DRILLING PERMIT N

837151

Other IDWR No

2. OWNER:

Name **JRB Properties**

Address Attn: John Barlow / PO Box 6200

City Coeur d'Alene

State ID

Zip 83814

3. LOCATION OF WELL by legal description:

N		Twp	50N	North	☒ or	South	☐
Rge		06W	East	☐ or	West	☒	
Sec		01	1/4	NE	1/4	SW	1/4
			10 Ac	40 Ac	160 Ac		
Gov't Lot			County Kootenai				
Lat			Long				

581 N Beck Road 6 inch well

City Post Falls

Lot Blk Sub. Name (see next line)

4. USE:

- ☐ Domestic ☐ Municipal ☐ Monitor ☒ Irrigation
☐ Thermal ☐ Injection ☐ Other

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

- ☒ New Well ☐ Modify ☐ Abandonment ☐ Other

6. DRILL METHOD

- ☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other

7. SEALING PROCEDURES

SEAL/FILTER PACK			Amount	Method
Material	From	To	Sacks/Lbs	
Bentonite Gran.	0	63	48 sacks	Dry pour

Drive Shoe Used? ☒ Y ☐ N Shoe Depth(s) Ring bit 182

Drive Shoe Seal Tested? ☐ Y ☒ N How?

8. CASING/LINER

Diam	From	To	Gauge	Material	Casng	Liner	Weld	Thrded
6	2	182	0.280	Steel	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length Headpipe Length Tailpipe

9. PERFORATIONS/SCREENS

☒ Perforations? Method Air perforator

☐ Screens? Screen Type

From	To	Slot	Nmbr	Diam	Material	Casng	Liner
160	180	1x1/4	200	6"	Steel	☒	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL or ARTESIAN PRESSURE

101 ft. below ground. Artesian pressure lb.

Depth flow encountered 101 ft. Describe access port or

control devices: Steel cap, welded

11. WELL TESTS

- ☐ Pum ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pump Level	Time
20+	100	180	1hr

Water Temp. Cold Bottom hole temp. Cold

Water Quality test or comments: (below) Depth first Water Encountered 101

Clear, cold, no smell

12. LITHOLOGIC LOG (Describe repairs or abandonment)

Bore Diam	From	To	Remarks: Lithology, Water Quality and Temperature	Water	
				Y	N
12	0	1	Top soil	☐	☒
12	1	18	Sand and gravel 3/4"	☐	☒
12	18	63	Sand and gravel 3" minus	☐	☒
8	63	101	Sand and gravel 3/4" minus	☐	☒
8	101	124	Sand and gravel 3/4" minus	☒	☐
8	124	150	Sand and gravel 1/4" minus	☒	☐
8	150	182	Sand and gravel 2" minus	☒	☐

RECEIVED
NOV 22 2005
IDWR/North

Completed Dept 182 (Measurable)

Date: Started 11/5/2005 Complete 11/7/2005

13. DRILLERS CERTIFICATION

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

Firm Name United Drilling Inc. Firm N 414

Firm Official and Date 11/8/2005

Supervisor or Operator Jason C. Beckham Date 11/7/2005

50N 6W 1

IDAHO DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

95-9306

Office Use Only		
Inspected by _____		
Twp _____	Rge _____	Sec _____
1/4	1/4	1/4
Lat : : _____	Long: : : _____	

1. WELL TAG NO. D00041108

DRILLING PERMIT N 837149

Other IDWR No _____

2. OWNER:

Name JRB Properties

Address Attn: John Barlow / PO Box 6200

City Coeur d' Alene

State ID

Zip 83814

3. LOCATION OF WELL by legal description:

N		Twp	50N	North	☒ or	South	☐
		Rge	06W	East	☐ or	West	☒
		Sec	01	1/4	NE	1/4	SW
				10 Ac	40 Ac	160 Ac	
		Gov't Lot		County	Kootenai		
		Lat		Long			

581 N Beck Road 12 inch well #1

City Post Falls

Lot _____ Blk _____

Sub. Name (see next line) _____

4. USE:

- ☐ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☒ Other Fire Protection Well # 1

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

- ☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD

- ☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK			Amount	Method
Material	From	To	Sacks/Lbs	
Bentonite	0	60	60 Sacks	Dry Pour

Drive Shoe Used? ☒ Y ☐ N Shoe Depth(s) _____ Ring Bit 185

Drive Shoe Seal Tested? ☐ Y ☒ N How? _____

8. CASING/LINER

Diam	From	To	Gauge	Material	Casng	Liner	Weld	Thrded
12	+2	-185	0.375	Steel	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length Headpipe _____ Length Tailpipe _____

9. PERFORATIONS/SCREENS

- ☐ Perforations? Method _____
☒ Screens? Screen Type Johnson Stainless S

From	To	Slot	Nmbr	Diam	Material	Casng	Liner
-162	-187	.9		11	S.S.	☒	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL or ARTESIAN PRESSURE

100 ft. below ground. Artesian pressure _____ lb.

Depth flow encountered 100 ft. Describe access port or

control devices: Steel Cap Welded

11. WELL TESTS:

- ☐ Pump ☐ Bailor ☒ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pump Level	Time
1000+	100%	180	1 HR

Water Temp. _____ Cold _____ Bottom hole temp. _____ Cold _____

Water Quality test or comments: (below) Depth first Water Encountered 100

Clear, Cold, No Smell

12. LITHOLOGIC LOG (Describe repairs or abandonment)

Bore Diam	From	To	Remarks: Lithology, Water Quality and Temperature	Water	
				Y	N
18	0	1	Top Soil	☐	☒
18	1	60	Sand & Gravel Coarse with Cobbles & Boulders	☐	☒
14	60	127	Sand & Gravel Coarse	☒	☐
14	127	152	Sand & Gravel Medium	☒	☐
14	152	185	Sand & Gravel Coarse with Cobbles	☒	☐

RECEIVED
NOV 22 2005
IDWR/North

Completed Depth 185 (Measurable)

Date: Started 11/8/05 Completed 11/14/05

13. DRILLERS CERTIFICATION

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

Firm United Drilling Inc. Firm No 414

Name _____

Firm Official Tim M. Valles Date 11/17/05

and _____

Supervisor or Operator Jason C. Beckham Date 11/17/05

53N 6W 1

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

95-9306

Office Use Only		
Inspected by _____		
Twp _____	Rge _____	Sec _____
1/4 _____	1/4 _____	1/4 _____
Lat: _____	Long: _____	

1. WELL TAG NO. D0041109

DRILLING PERMIT N WELL # 2

Other IDWR No 837150

2. OWNER:

Name JRB Properties

Address Attn: John Barlow / PO Box 6200

City Coeur d'Alene State ID Zip 83814

3. LOCATION OF WELL by legal description:

N		Twp 50N	North ☒ or South ☐
W		Rge 06W	East ☐ or West ☒
E		Sec 01	1/4 NE 1/4 SW 1/4
S		10 Ac 40 Ac 160 Ac	
		Gov't Lot _____	County Kootenai
		Lat _____	Long _____

Address of Well Site: (see next line)

581 N Beck Road

City Post Falls

Lot _____ Blk _____ Sub. Name (see next line)

4. USE:

- ☐ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☒ Other Fire protection Well # 1

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

- ☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD

- ☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK			Amount	Method
Material	From	To	Sacks/Lbs	
Bentonite	0	60	60 Sacks	Dry Pour

Drive Shoe Used? ☒ Y ☐ N Shoe Depth(s) _____ Ring Bit 185Drive Shoe Seal Tested? ☐ Y ☒ N How? _____**8. CASING/LINER**

Diam	From	To	Gauge	Material	Casing	Liner	Weld Thrded
12	+2	-185	0.375	Steel	☒	☐	☒
					☐	☐	☐
					☐	☐	☐

Length Headpipe _____ Length Tailpipe _____

9. PERFORATIONS/SCREENS☐ Perforations? Method _____☒ Screens? Screen Type Johnson Stainless S

From	To	Slot	Nmbr	Diam	Material	Casing	Liner
-162	-187	.9		11	S.S.	☒	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL or ARTESIAN PRESSURE

100 ft. below ground. Artesian pressure _____ lb.

Depth flow encountered 100 ft. Describe access port or

control devices: Steel Cap Welded

50N 6W 1

11. WELL TESTS:

- ☐ Pump ☐ Bailor ☒ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pump Level	Time
1000+	100%	180	1 HR

Water Temp. _____ Cold Bottom hole temp. _____ Cold

Water Quality test or comments: (below) Depth first Water Encountered 100

Clear, cold, no smell

12. LITHOLOGIC LOG (Describe repairs or abandonment)

Bore Diam	From	To	Lithology, Water Quality and Temperature	Water
18	0	1	Top soil	☐ Y ☒ N
18	1	60	Sand & gravel coarse w/ cobbles & Boulders	☐ Y ☒ N
14	60	127	Sand & gravel coarse	☐ Y ☒ N
14	127	152	Sand & gravel medium	☐ Y ☒ N
14	152	185	Sand & gravel coarse w/ cobbles	☐ Y ☒ N

RECEIVED

MAR - 6 2006

IDWR/North

Completed Depth 185 (Measurable)
Date: Started 11/8/05 Completed 11/14/05**13. DRILLERS CERTIFICATION**

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

Firm Name United Drilling Inc. Firm No 414
Firm Official *Jason C. Beckham* Date 11/22/05
Supervisor or Operator Jason C. Beckham Date 11/22/05



95-9306

INLAND NORTHWEST CONSULTANTS
ENGINEERS • SURVEYORS • PLANNERS

May 3, 2006

John Barlow
JRB Properties
PO Box 6200
Coeur d'Alene, ID 83816

Attn: John Barlow

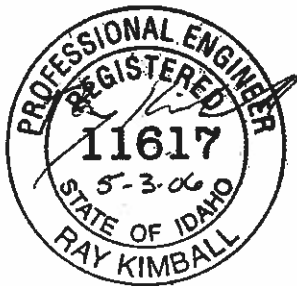
RE: Fire Suppression System Testing
Project: Resort Boat Storage

Dear John,

We flow tested the fire system on April 12, 2006 and certify that the system is capable of producing 2250 gpm at 30 psi residual at the hydrants. Attached is a copy of the field notes and test procedures for your records. If you have any questions, please feel free to call us at 773-8370.

Best Regards,

Raymond D. Kimball, PE



05-017



JRB FLOW TEST - 4-12-06 1:00 PM

95-9306

RDK - SE HYDRANT OF SYSTEM

$$Q_F = \text{OBSERVED FLOW} = 29.83 \text{ c d}^2 \sqrt{P}$$

d = OUTLET DIAMETER

P = PITOT PRESSURE

C = OUTLET COEFFICIENT

$$C = 0.95$$

$$d = 4.5''$$

$$P = 129.14 \text{ PSI}$$

$$\Rightarrow Q_F = 2147 \text{ GPM @ 41 PSI}$$

$$Q_R = Q_F \times \frac{h_r^{(0.54)}}{h_p^{(0.54)}}$$

$$h_r = h_{\text{STATIC}} - h_{\text{DESIRED RESIDUAL}} \Rightarrow h_r = 60$$

$$h_p = h_{\text{STATIC}} - h_{\text{ACTUAL RESIDUAL}} \Rightarrow h_p = 39$$

$$\Rightarrow Q_R = 2147 \times \frac{60^{.54}}{39^{.54}} =$$

$$\Rightarrow Q_R = 2709 \text{ @ } 20 \text{ PSI}$$

$$h_{\text{STATIC}} = 80 \text{ PSI}$$

$$h_{\text{DESIRED RESIDUAL}} = 20 \text{ PSI}$$

$$h_{\text{ACTUAL RESIDUAL}} = 41 \text{ PSI}$$

RESULTS.

MEASURED FLOW = 2147 GPM @ 41 PSI

RESIDUAL FLOW = 2709 GPM @ 20 PSI
2455 GPM @ 30 PSI

NOTE: SW HYDRANT BLOCKED OR GATED DOWN AND WAS NOT TESTED. MAT HANEKE WAS CONTACTED TO RESOLVE THE ISSUE.

* 4-25-06 - ISSUE RESOLVED - GATE VALVE WAS PROPERLY CLOSED

Procedures for Flow Testing Hydrants**FireHydrant.org**

95-9306

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Part Four

VARIATIONS FOR LOW PRESSURE ZONES

As a general rule available flows are calculated based on what the hydrant can provide when pulled down to a residual pressure of 20 p.s.i. Typically this flow is greater than the observed flow. On weaker zones it is possible that the calculated available flow will actually be less than the observed flow when the residual falls below 20 p.s.i. with one outlet flowing.

In pressure zones where the static pressure is less than 40 p.s.i., the NFPA standard allows available flows to be based on residual pressures which are half the static pressure. Thus a hydrant which has a 30 p.s.i. static pressure can be calculated for flows generated when pulled down to a 15 p.s.i. residual rather than the standard benchmark of 20 p.s.i., thereby improving its accredited performance.

FORMULAS

We use the "Q" formula and Hazen-Williams formula to determine single outlet hydrant flow. The Q formula produces the actual volume of water in GPM that we are getting from the outlet we are flowing. The Hazen-Williams formula takes this information and calculates what the hydrant would flow if all outlets were being used simultaneously without having to actually open all outlets and max-flow the hydrant.

In order for these formulas to make sense, one needs to understand specific meaning of the following terms. (Most are pretty basic but a couple are generally misunderstood.)

STATIC PRESSURE

- Pressure reading before water flows.

RESIDUAL PRESSURE

- Pressure reading while water is flowing (from an outlet other than the flow outlet.)

PITOT PRESSURE

- Reading taken by a pitot gauge inserted into the center of the flowing outlet, at a distance away from the lip of the outlet of about half the nozzle's diameter.

COEFFICIENT

95-9306

- Since hydrant nozzles typically don't produce perfect discharge columns, this is a correction factor which is often used to compensate for errant pitot readings. Hydrant manufacturers should be able to provide coefficients for their products. For hydrants where the coefficient is unknown, we use .95 or .9 depending upon how uniform the discharge stream looks when the hydrant is opened. If a flow tube or "stream straightener" is used on the hydrant, the coefficient would be 1.

RESIDUAL BASELINE

- A pressure which you determine is the lowest that the hydrant would be pulled down during actual use. NFPA states that the basis for fire flow calculations will be 20 psi residual, however in low pressure areas they allow calculations based on one-half the static pressure. Ergo, flow from a hydrant that has only a 30 psi static pressure can be calculated on a basis of drawing it down to 15 psi rather than 20.

OBSERVED FLOW

- This is a calculation in GPM of the actual flow from one outlet flowing fully opened.

AVAILABLE FLOW

- This is the calculated maximum capacity of the hydrant if it is pumped down to the basis residual pressure (usually 20 psi).

Q FORMULA

- The Q formula produces a value in GPM based on the nozzle diameter and pitot pressure (solving for "Q".)

$$Q = 29.83 cd^2 \sqrt{p}$$

Where Q=observed flow, c=coefficient, d=outlet diameter, p=pitot pressure.

HAZEN-WILLIAMS FORMULA

- This formula calculates available flow based on the readings taken before and during the single outlet flow test (solving for "QR".)

$$Q_R = Q_F \times \frac{h_r^{0.54}}{h_f^{0.54}}$$

Where Q_F=observed flow, h_r is the drop in pressure from the static pressure to the desired residual baseline and h_f is the drop in psi from static pressure to the actual residual pressure that was measured during the test. Please note that we are calculating to the .54 power (a fractional number.)

We loaded these formulas into a computer program to make them practical to work, however a programmable scientific calculator can also provide efficient results.

Note:

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In most instances the Hazen-Williams formula will calculate available flows that are greater than observed flows. However on extremely weak water mains hydrants may fall below the baseline residual when an outlet is opened up. If there is sufficient residual pressure to take an accurate reading, the formula will still calculate what the hydrant produces at 20 psi (or half the static pressure) which in these cases will be slightly less than the observed flow. According to NFPA, these hydrants are to be rated at their available flows at the appropriate residual pressure so the lower GPM reading is the one to be used for rating the hydrant. If the residual pressure is too low to take accurate readings discharging an "open butt" outlet, a small smooth bore tip can be attached to the outlet, the calculations based on the size of the tip, and the formula will still work.

Continue to Part Five

Return to Part Three

Return to Water Supply Index

Back to Information Section

FireHydrant.org

<< Back

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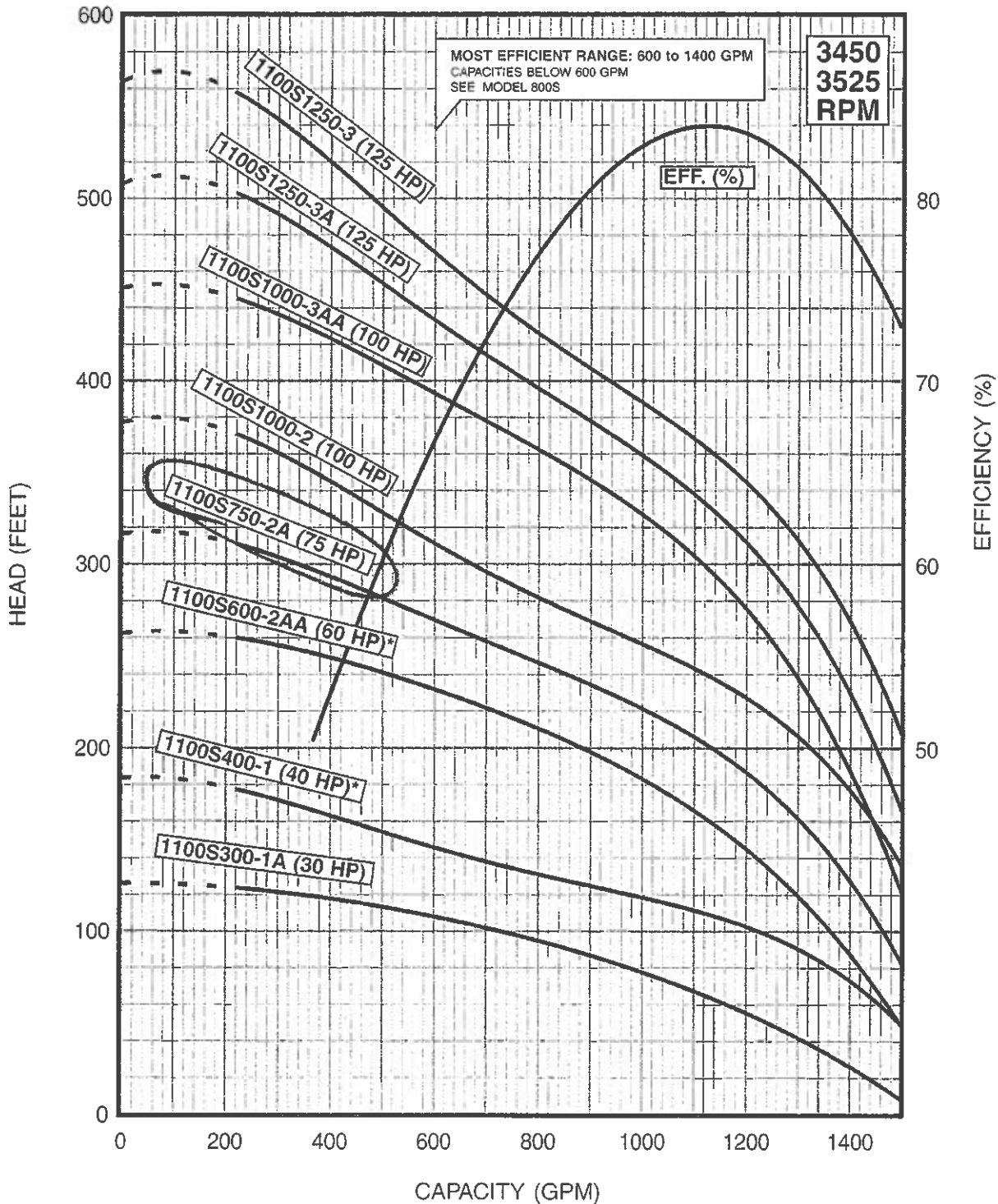
Hagadone Corp. – Boat Storage Facility Equipment List

1. #1 well (6") irrigation for on site landscaping. Use Grundfos #40S50-15 pump end w/ 5hp motor. 2" galv. drop pipe, check valve & pitless adapter.
2. #2 & #3 well (12") fire flows only. Use Grundfos #1100S750-2A pump end w/ 75hp motor. 8" drop pipe, check valve & 6" pitless adapter.
3. 4ea. – 119 gallon pressure tanks on pressure system w/ (1½") isolation valve & union for each tank. Pressure tank manifold will be 4" galvanized.
4. #2 & #3 big pumps will switch on line via soft start motor starters. #1 pump will be lead pump at all times with bigger pumps coming on line lead/lag as the demand rises. We will use a pressure transducer and PLC controls for the entire system.

FLOW RANGE: 220 -1400 GPM

OUTLET SIZE: 6 " NPT

NOMINAL DIA. 10" FLOW



SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

6" MOTOR STANDARD, 30-60 HP/3450 RPM.

8" MOTOR STANDARD, 75-200 HP/3525 RPM.

10" MOTOR STANDARD, 250 HP/3500 RPM.

* Alternate motor sizes available.

Performance conforms to ISO 9906 Annex A
@ 10 ft. min. submergence.

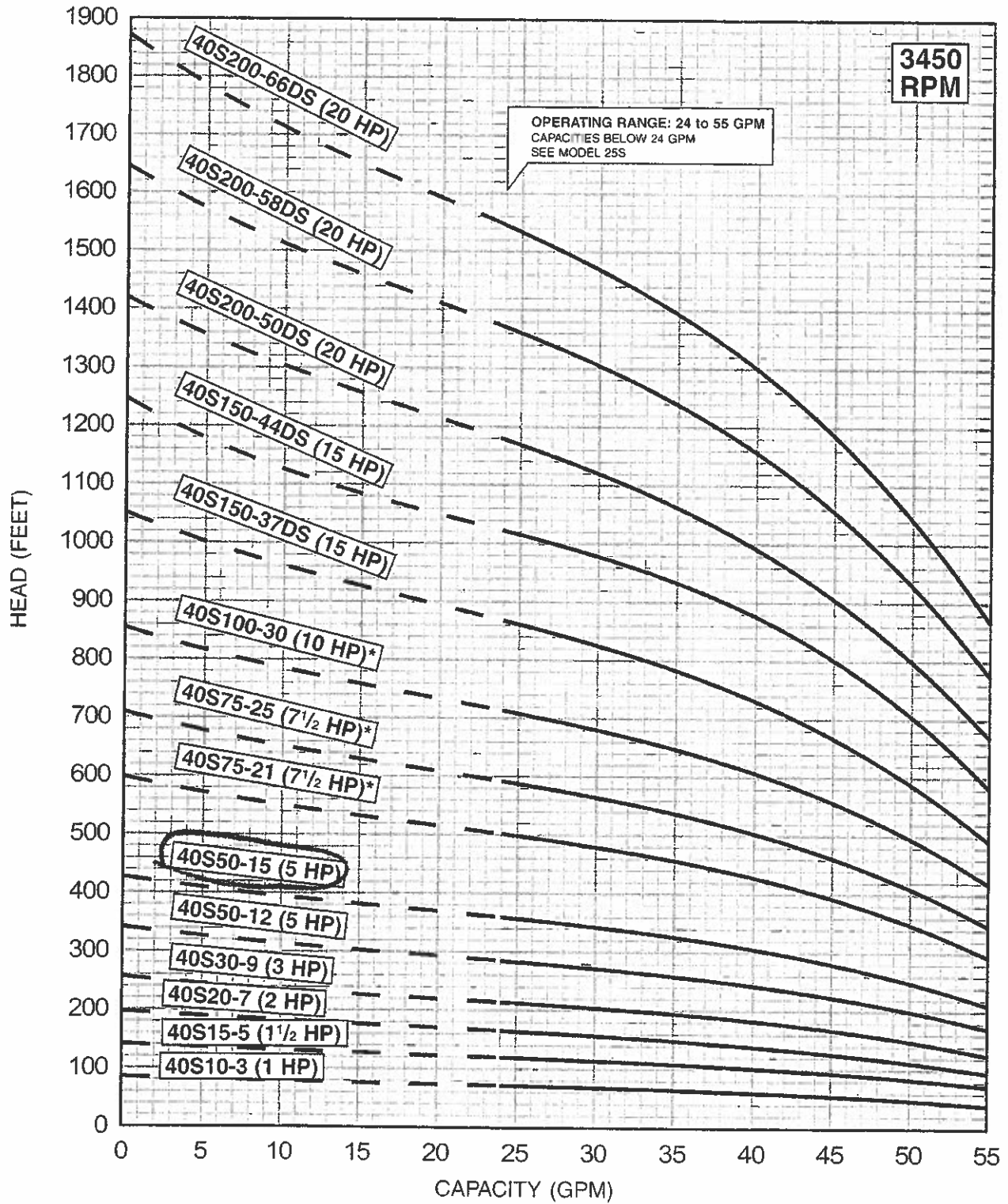
SPE
6" M
8" M
10" I
* Alt

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FLOW RANGE: 24 - 55 GPM

OUTLET SIZE: 2 " NPT

NOMINAL DIA. 4"



SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.

4" MOTOR STANDARD, 1-10 HP/3450 RPM.

6" MOTOR STANDARD, 15-20 HP/3450 RPM.

* Also available with 6" motor.

Performance conforms to ISO 9906, 1999 (E) Annex A
Minimum submergence is 5 feet.



FIRE HYDRANT.JPG



PLACE OF USE 1.JPG



PLACE OF USE 2.JPG



POINT OF DIVERSION AND
PLACE OF USE.JPG



WEL TAG FOR WELL #1
#D00041110.JPG



WELL #1.JPG



WELL #2.JPG



WELL #3.JPG



WELL HOUSE.JPG



WELL TAG FOR WELL #2
#D00041108.JPG



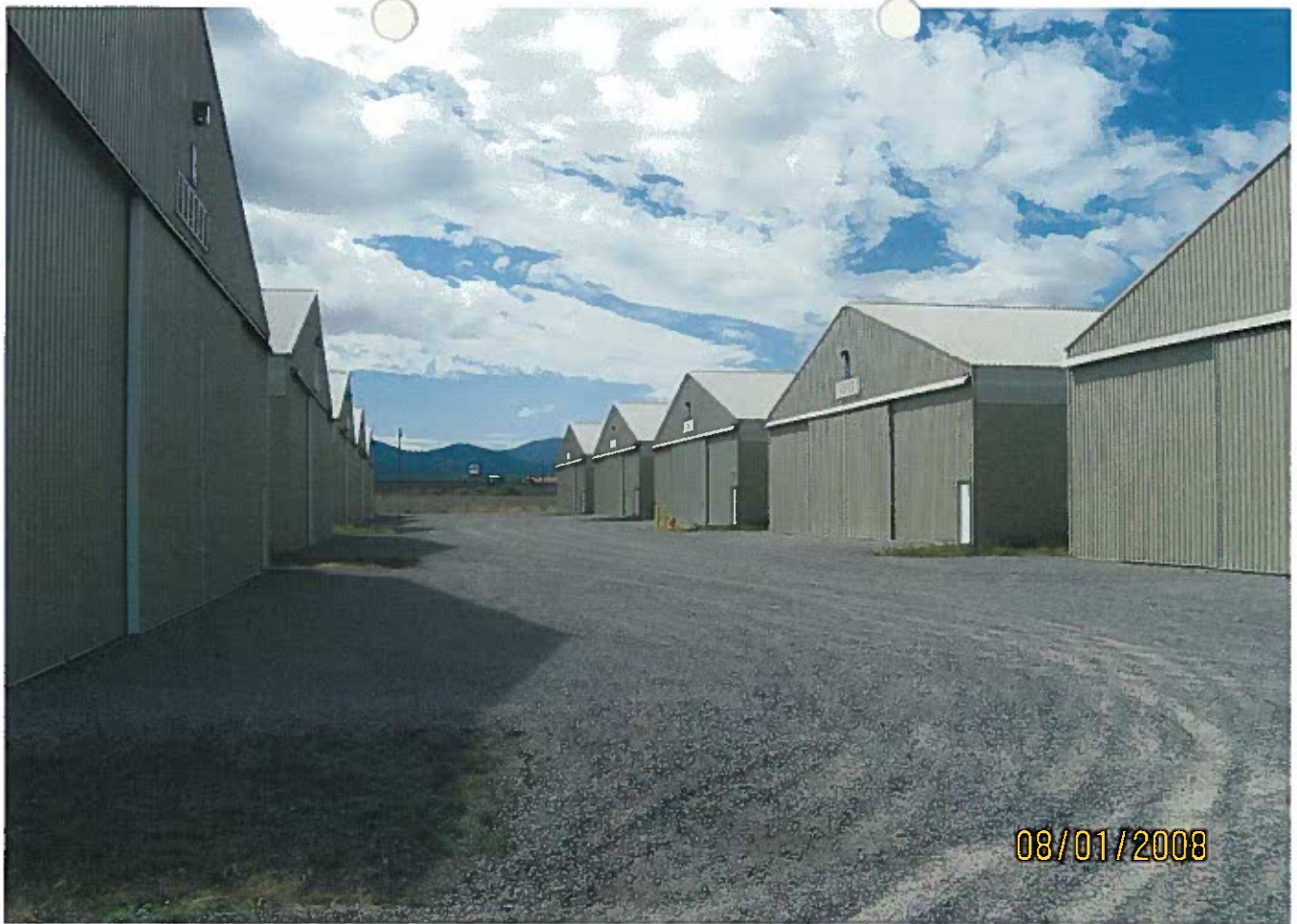
WELL TAG FOR WELL #3
#D0041109.JPG

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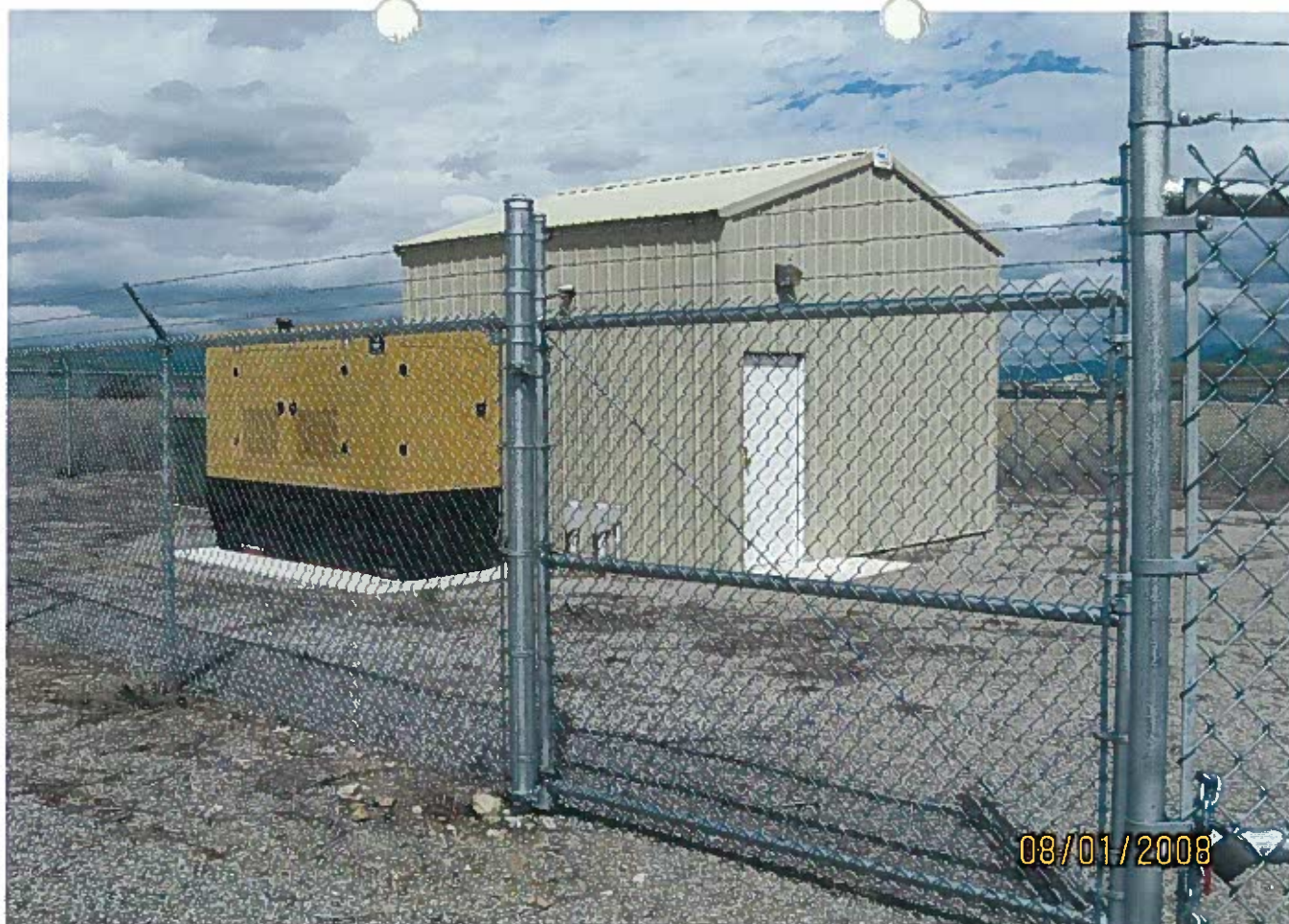


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