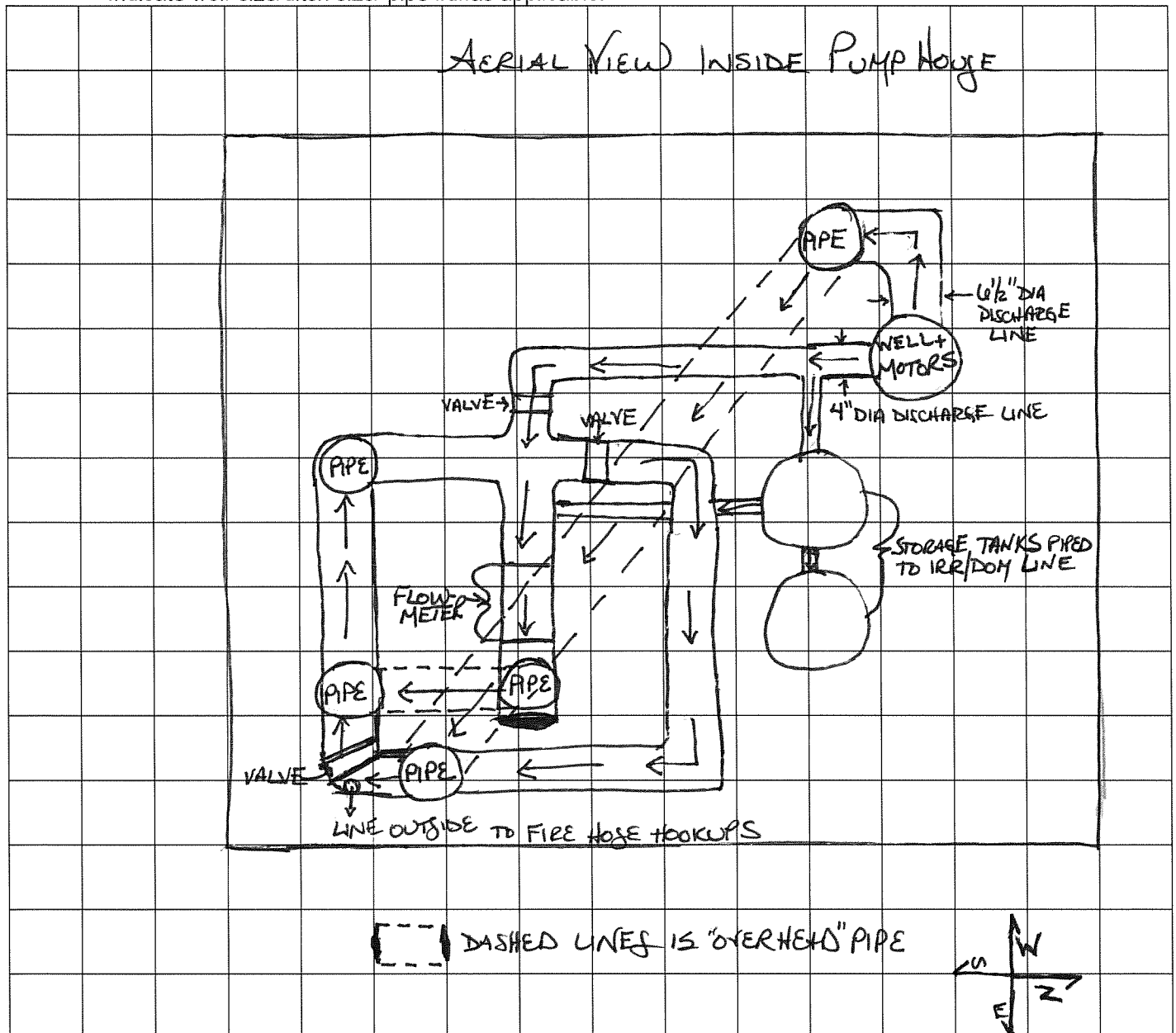


3. Delivery System Diagram. Indicate all major components and distances between components.
Indicate weir size/ditch size/ pipe i.d..as applicable.



Scale 1"= NOT TO SCALE

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

Well or Diversion Identification No.*	Motor Make	HP	Motor Serial Number	Pump Make	Pump Serial No. or Discharge Size
D0018532 (Tag not visible @ exam)	US Electric	60	H060V2LG	Goulds	Discharge 6.5" dia (2 lines from well)
	Franklin Electric (Submersible)	25		Goulds	Discharge 4" dia

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

D. FLOW MEASUREMENTS

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calibration Date

Measurements: No measurements taken. Well not turned on during exam. Pump curve and flow test information from previous tests performed by driller, consultant and manufacturer provided by the permit holder's representative at the time of the field exam.

E. NARRATIVE/REMARKS/COMMENTS

Well is a multi-completion (3 zones) well: 16 in dia "outer zone" to depth of 86 ft no pump, 10 in dia "middle zone" to depth of 150 ft has 60 hp fire pump and motor, and 8 in dia "inner zone" to depth of 435 ft has 25 hp submersible domestic and irrigation pump and motor. The 10" middle zone only used for fire protection purposes. The 8" dia inner zone used daily for domestic and irrigation uses, but would also be used in combination with the 10 in middle zone for fire protection purposes per permit owner rep. The older well originally used as the p/d for domestic and irrigation uses licensed under right 63-10160 is currently a back up well (not used). The well has 2 discharge pipes, one 6.5 in dia and the other 4 in dia. The 4 in dia line is piped to 2 lines one for irrigation the other for domestic. There is a flow meter (McCrometer) on the irrigation line, but no other line of the system. The distribution system allows for all water diverted from the inner zone to be combined with water diverted from the middle zone to be piped to the fire hydrant, hose hookups, and sprinkler system inside school building(s).

POD GPS recorded just outside of the pump house adjacent to well location. There were 2 well tags found at this site, both IDEQ (likely Public Water Supply) tags, E008324 & E008325.

Permit holder's representative provided manufacturer's pump curve data for both pumps installed. Data from a pump test performed by a consultant on the 10" middle zone and the well driller's log including pump test data from all three zones of the well is available in the water right permit file. The following summarizes the data available for each test (See attached documents for further details):

Well Driller Report:

10 in dia middle zone: Pumped at 500 gpm (1.11 cfs) for 2 hours with a resulting pumping level of 180 ft.
8 in dia inner zone: Pumped at 365 gpm (0.81 cfs) with a resulting pumping level of 127 ft.

Consultant Report:

10 in dia middle zone (9/17/01): Pumped at 300 gpm for 6.7 hours with a resulting pumping level of 85.17 ft (Static WL 24.4 ft total drawdown ~60 ft).

10 in dia middle zone (9/18/01): Pumped at 500 gpm (1.11 cfs) for 2 hours with a resulting pumping level of 112.86 ft (Static WL 25.21 ft total drawdown 87.65 ft).

Pump Curve Data:

10 in dia middle zone (3/12/02): Max system capacity 500 gpm (1.11 cfs).
8 in dia inner zone (6/28/02): Max system capacity 250 gpm (0.56 cfs).

Summary of maximum diversion rates to determine recommendation for this water right:

Driller's pump test = 1.11 cfs (10" dia middle zone) + 0.81 cfs (8 in dia inner zone) = 1.92 cfs

Consultant's pump test = 1.11 cfs (10 in dia middle zone only maximum rate tested)

Pump Curve data = 1.11 cfs (10" dia middle zone) + 0.81 cfs (8 in dia inner zone) = 1.92 cfs

Permit diversion rate = 0.89 cfs

Field Exam Fee paid = \$100 (Receipt # C067598) = Up to 1.00 cfs

Recommended diversion rate limited by permit = 0.89 cfs (10 in dia middle zone alone capable of diverting at this rate)

The only permit condition not met is the water bearing zone to be appropriated. The water bearing zone is limited to 100 to 250 ft per the permit. The 10 in dia middle zone pulls water from within this zone (screened intervals 102-117 ft & 135-150 ft), but the 8 in dia inner zone, also to be used for fire protection per the permit owner's representative, pulls water from below this zone (screened intervals 215-225 ft, 260-330 ft, 325-335 ft, & 425-435 ft). The 10 in dia middle zone

alone can produce the recommended 0.89 cfs (max capacity of this zone is 1.11 cfs) without pumping anything from the 8 in dia inner zone. If this water right is limited to diversion from only the 10 in dia middle zone, all conditions of the permit will be met.

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

F. FLOW CALCULATIONS

Measured Method: ☐ Additional Computation Sheets Attached

Verified reasonable (within maximum limits per system limitations) pressure based on given pump curve/test data. See attached Flow Calculations section in "Notes". System diversion capacity based on pump test/curve data provided by the permit holder's representative.

G. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation: N/A

VI.R. = (Acres Irrigated)x (Irrigation Requirement) = N/A

VD.R. = [Diversion Rate (cfs)] x (Days in Irrigation Season) x 1.9835 = N/A

V = Smaller of VI.R. and VD.R. = N/A

2. Volume Calculations for Other Uses: N/A

H. RECOMMENDATIONS

1. Recommended Amount

BENEFICIAL USE	PERIOD OF USE		RATE OF DIVERSION ANNUAL	
	From	To	Q(cfs)	V(afa)
Fire Protection	01/01	12/31	0.89	

TOTALS 0.89

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



Reviewer

Date 11/15/2010
Date

NOTES

STATE OF IDAHO DEPARTMENT OF WATER RESOURCES BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No. 63-31132

1. Owner VALLIUE SCHOOL DISTRICT #139 Phone No. (208)454-0445

Current address 5207 S. MONTANA CALDWELL, ID 83607

2. Examiner's name ANGIE GRIMM EXAM DATE 10/22/2010

3. Accompanied by DAVE HAYES Email _____

Address SAVE AS ABOVE

Relationship to permit holder MAINTENANCE SUPERVISOR Phone No. 208-880-1644

4. Source GROUND WATER tributary to N/A

B. OVERLAP REVIEW

1. Other water rights with the same place of use 63-10160 (IRR + DOM USES)

2. Other water rights with the same point of diversion 63-10160 (LICENSED FROM OLDER WELL IN 1991)
CURRENTLY SAME WELL

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
			SE	SW	35	4N	4W	CANYON	GPS IDTM: 1385175N 2275498E

2. Place(s) of Use: Method of determination GPS

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
4N	4W	35												FP					N/A

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
D0018532 (TAG NOT VISIBLE)	U.S. ELECTRIC	60	H060VZ LG	GOULDS	DISCHARGE 2 LINES < 6 1/2" DIA FIRE
"	FRANKLIN ELEC	25		GOULDS	" " < 4" DIA FIRE

*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

2. Measurements:

NONE TAKEN @ TIME OF INSPECTION. WR PERMIT HOLDER REP PROVIDED PUMP TEST DATA + CURVES.

E. NARRATIVE/REMARKS/COMMENTS

WELL IS A MULTI-COMPLETION (3 ZONES) WELL: 16" DIA TO 86' NO PUMP, 10" DIA TO 150' HAS FIRE PUMP + MOTOR (60 HP), AND 8" DIA TO 435' HAS DOMESTIC + IRRIGATION PUMP + MOTOR (25 HP). 8" DIA W/ 25 HP PUMP USED ALL THE TIME FOR IRR + DOM USES AUTHORIZED UNDER WR 63-10160. OLD WELL NO LONGER USED (ORIGINAL WELL LICENSED FOR 63-10160). FIRE PROTECTION USE BOTH 10" DIA W/ 60 HP + 8" DIA W/ 25 HP FOR MAXIMUM DIVERGION RATE REQUIRED BY FIRE DEPT./COUNTY. ^{PER PERMIT OWNER REP.} PERMIT HOLDER PROVIDED PUMP CURVE + TEST DATA FOR BOTH 60 HP + 25 HP SET-UPS. FLOWMETER (McCrometer) INSTALLED ON IRRIGATION LINE OF SYSTEM IN PUMP HOUSE. NO FLOW METER INSTALLED ON FIRE PRO LINE OF SYSTEM. 2 IDEO TAGS FOUND NEAR MOTOR: E008324 & E008325, ASSUME THESE ARE PWS TAGS. OPERATING PRESSURE OF 8" DIA PORTION (25 HP) WAS 69.6 PSI.

FEE SUBMITTED W/ PROOF $\Rightarrow$ \$100.00 (C067025) = UP TO 1.0 CFS

DRILLER PUMP TESTS:

8" DIA PORTION $\Rightarrow$ 365 GPM (0.81 CFS) W/ PUMPING LEVEL 127 FT

10" DIA PORTION $\Rightarrow$ 500 GPM (1.11 CFS) W/ " " 180 FT TEST 2 HRS

CONSULTANT REPORT:

9/17/01 TEST 10" DIA ZONE $\Rightarrow$ 300 GPM (0.67 CFS) FOR 6.7 HRS STATIC WL = 24.4 FT
PUMPING WL = 85.17 FT TOTAL DRAWDOWN ~ 60 FT

9/18/01 TEST 10" DIA ZONE = 500 GPM (1.11 CFS) FOR 2 HRS STATIC WL = 25.21 FT
PUMPING WL = 112.86 FT TOTAL DRAWDOWN = 87.65 FT

PUMP CURVE DATA:

3/12/02 10" DIA ZONE = MAX SYSTEM CAPACITY 500 GPM (1.11 CFS)

6/28/02 8" DIA ZONE = MAX " " 250 GPM (0.56 CFS)

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?

CONDITION #7 OF PERMIT STATES THE WATER BEARING ZONE TO BE APPROPRIATED IS FROM 100 TO 250 FT. THE 10" DIA PORTION OF THE WELL IS COMPLETED TO A DEPTH OF 150' (SCREENED/WATER BEARING ZONES 102'-117' & 135'-150'), WHICH IS W/IN PERMITTED ZONE. HOWEVER, 8" DIA PORTION OF THE WELL IS COMPLETED TO A DEPTH OF 435' (SCREENED/WATER BEARING ZONES 215'-225', 260'-300', 325'-335', & 425'-435'), WHICH IS NOT W/IN PERMITTED ZONE.

F. FLOW CALCULATIONS

Additional computation sheets attached

Measured Method:

NO PRESSURE DATA NOTED IN TESTS PERFORMED. USE THEORETICAL CAPACITY EQ. TO SOLVE
FOR PRESSURE USING PUMP CURVE DATA VERIFY PRESSURE W/IN SYSTEM LIMITS:
 $Q = \frac{8.8 \times \text{EFF} \times \text{HP}}{Z + 2.31 (\text{PSI})}$ $\text{EFF} = 83.1\% (0.831)$ $\text{HP} = 40$ $Q = 500 \text{ GPM} = 1.11 \text{ cfs}$
 $Z = 500 \text{ FT (HEAD ABOVE PUMP @ 0 GPM)} - 355 \text{ FT (HEAD ABOVE PUMP @ 500 GPM)} = 145 \text{ FT}$
 $\text{PSI} = \left[\frac{(8.8 \times \text{EFF} \times \text{HP})}{Q} - Z \right] \times 2.31$ $\text{PSI} = \left[\frac{(8.8 \times 0.831 \times 40)}{1.11} - 145 \right] \times 2.31 = 108 \text{ PSI W/IN LIMIT OF 400 PSI NOTED ON PUMP CURVE DATA SHEET}$

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:

H. RECOMMENDATIONS

1. Recommended Amounts

Beneficial Use	Period of Use		Rate of Diversion	Annual Volume
	From	To	Q (cfs)	V (afa)
FIRE PROTECTION	1/01	12/31	0.89 cfs	N/A
Totals:			0.89 cfs	-

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

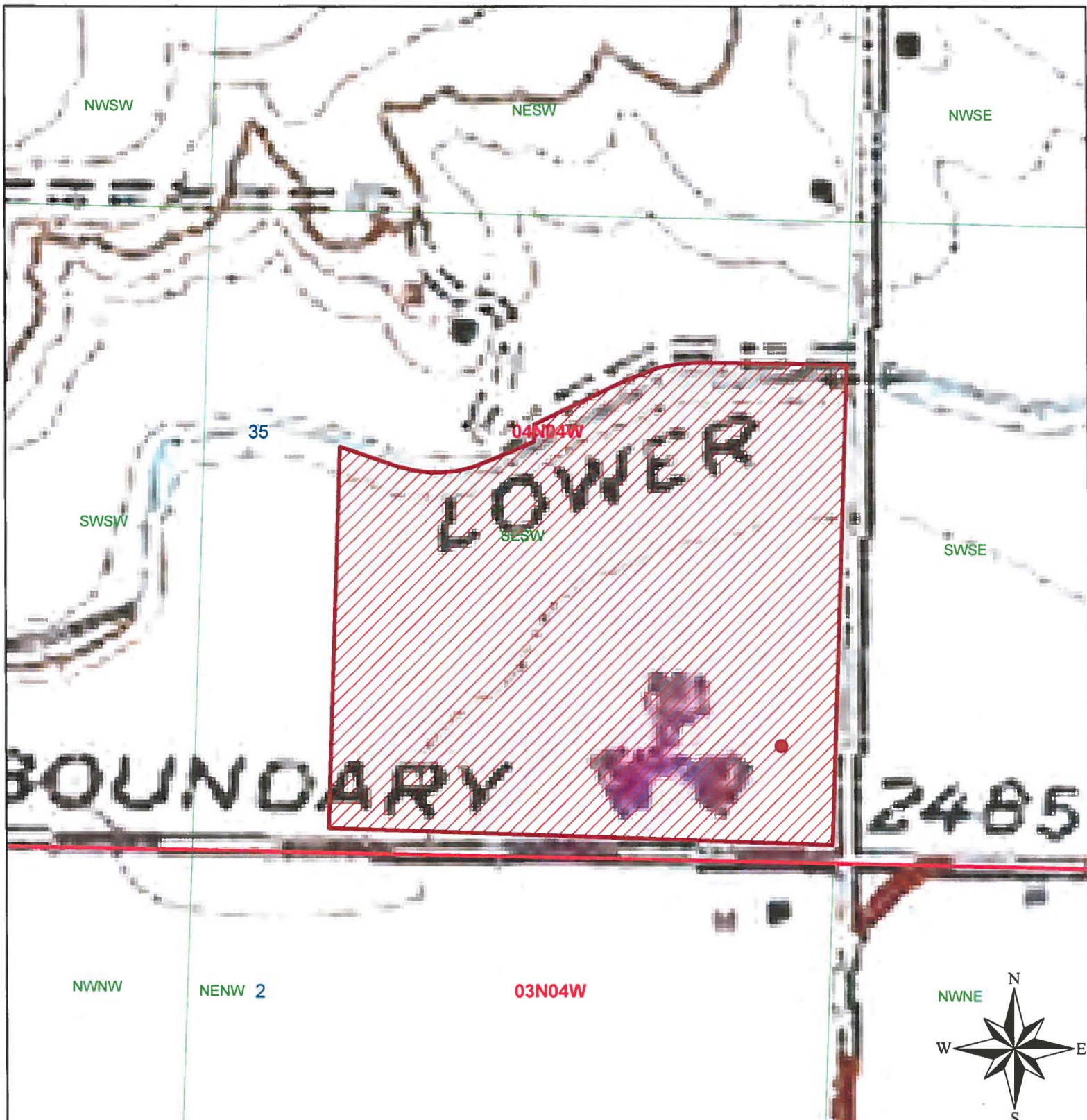
I. AUTHENTICATION

Field Examiner's Signature _____ Date _____

SEAL

Reviewer _____ Date _____

63-31132 POD & POU



0 125 250 500 750 1,000 1,250 Feet

USGS Quad

Legend

- POD
- ▨ POU
- ▭ Township/Range
- ▭ Sections
- ▭ QQ

63-31132 POD & POU



2009 Aerial Photo

0 125 250 500 750 1,000 1,250 Feet

Legend

- POD
- ▨ POU
- ▭ Township/Range
- ▭ Sections
- ▭ QQ

By Angela Grimm 11/15/2010



63-31132 License Exam 10/22/2010 Photo #1: US Electric motor (Serial # H060V2LG) mounted on well head. Note pressure gage in foreground.



63-31132 License Exam 10/22/2010 Photo #2: Motor and well head on right. Lower discharge pipe 4 in dia. Discharge pipe out back of well underneath motor is 6 in dia pipe.



63-31132 License Exam 10/22/2010 Photo #3: Diversion system pipe lines. 4 in dia discharge pipe comes into this series of pipes from right hand side of photo. 6 in dia discharge pipe connects from above down pipe on far left hand side of photo. Individual lines for fire protection, irrigation, and domestic uses operated separately, but can be run together.



63-31132 License Exam 10/22/2010 Photo #4: Diversion system from doorway facing into pump house. Note flow meter in lower middle of photo on irrigation line.



63-31132 License Exam 10/22/2010 Photo #5: Outside pump house main door facing west.
Note two fire hose hookups in foreground of photo.

IDAHO DEPARTMENT OF WATER RESOURCES

WELL INSPECTION FORM

1. DRILLING PERMIT NO: 7169287 OTHER APPLICABLE NO: D0018532
(NOT VISIBLE UPON INSPECTION)
2. OWNER: VALLEYVIEW SCHOOL DISTRICT No. 139 Phone: 208-454-0445
Address: 5207 S MONTANA CAIDWELL, ID 83607 (OWNER ADDRESS)
3. WELL LOCATION: Twp 4N, Rge. 4W, Sec. 35, SE 1/4 SW 1/4
County CANYON (Provide sketch map and photo on reverse.)
WEST CANYON ELEMENTARY SCHOOL @ 19548 USTICK RD CAIDWELL, ID 83607
4. DRILLER: RIVERSIDE, INC Lic. No. 333
When Drilled? 7/15/01 STARTED - 2/15/02 COMPLETED
5. WELL CONSTRUCTION:
Casing Diameter 16 inches (OUTSIDE DIA) Water tight cap? ☒ Yes ☐ No Access Port: ☒ Yes ☐ No
Casing $\geq$ 12 inches above ground? ☐ Yes ☒ No - Describe CASING W/IN CEMENT PAD MOTOR MOUNTED ON
Depth of Casing 425 ft. (8" ANN) Method Drilled REVERSE
Condition of Well Casing: ☐ Good ☐ Fair ☐ Poor Describe COULD NOT SEE CASING
Control Valve? ☒ Yes ☐ No Pressure Gauge: ☒ Yes ☐ No
Condition of Piping and Valving GOOD
Auger to a depth of N/A ft. Evidence of Annular Seal ☐ Yes ☐ No NOT SEEN @ EXAM
Are there obvious constuction problems that may be a source for contamination or waste of water?
☐ Yes ☒ No (Describe in Remarks and Attach Photo - On Reverse)
6. HYDROLOGIC INFORMATION:
Depth to Static Water ~25 ft. (CONSULTANT) Water Temperature 60 °F (PUMP CURVE DATA SHEET)
Flowing Artesian ☐ Yes ☒ No (WR FILE) Pressure: N/A (psi)
Water Sample Taken? ☐ Yes ☒ No If yes, describe purpose N/A
Water Quality Measurements/Observations (Describe) N/A
7. WELL USE:
☒ Domestic ☒ Irrigation ☐ Stock
☐ Test ☐ Municipal ☐ Industrial
☐ Abandoned ☐ Waste Disposal/Injection ☐ Not Used
☒ Other: FIRE PROTECTION

N/A

☒ No

N/A

N/A

9. REMARKS.

1. What is the main purpose of the study?
 The main purpose of the study is to investigate the effect of the independent variable on the dependent variable.

2. What are the independent and dependent variables?
 The independent variable is the variable that is manipulated or changed by the researcher. The dependent variable is the variable that is measured or observed.

3. What are the hypotheses of the study?
 The study has two hypotheses: H1: There is a positive relationship between the independent variable and the dependent variable. H2: There is a negative relationship between the independent variable and the dependent variable.

4. What are the research methods used in the study?
 The study used a quantitative research method, specifically a survey design, to collect data from a sample of participants.

5. What are the results of the study?
 The results of the study show that there is a significant positive relationship between the independent variable and the dependent variable, supporting H1.

6. What are the conclusions and implications of the study?
 The study concludes that the independent variable has a positive effect on the dependent variable. This finding has implications for future research and practice.

Signature of Dept. Representative & Title

Inspection Date

PHOTOS, DRAWINGS, OTHER ATTACHMENTS:

Well ID 341272

Pg 1 of 4

769287

DE 11-19.

Form 238-7
11/97

RPP 866537

IDAHO DEPARTMENT OF WATER RESOURCES

Basin 63

WELL DRILLER'S REPORT

MAR 27 2002

1. WELL TAG NO. D 18532

DRILLING PERMIT NO. _____

Other IDWR No. _____

Department of Water Resources

11. WELL TESTS:

☐ Pump ☐ Bailer

Office Use Only

Inspected by _____

Twp _____ Rge _____ Sec _____

1/4 1/4 1/4

Lat: _____ Long: _____

☐ Air ☐ Flowing Artesian

2. OWNER:

Name School District #139

Address 5207 South Montana

City Caldwell State ID Zip 83607

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

N		Twp. 4		North ☒ or South ☐	
E		Rge. 4		East ☐ or West ☒	
S		Sec. 35		SE 1/4 SE 1/4 SW 1/4	
W		Gov't Lot _____		County Canyon	
		Lat: _____		Long: _____	
		Address of Well Site 19548 Ustick Rd		City Caldwell	

(Give at least name of road + Distance to Road or Landmark)

Lt. _____ Blk. _____ Sub. Name _____
West Canyon Elementary

4. USE:

☐ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☒ Other fire suppression

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/FILTER PACK			AMOUNT		METHOD
Material	From	To	Sacks or Pounds		
34 Bentonite	0	100	12 yds		Overbore
34 Bentonite	80	92	2 yds		S
34 Bentonite	155	165	3 1/2 yds		

Was drive shoe used? ☐ Y ☐ N Shoe Depth(s) _____Was drive shoe seal tested? ☐ Y ☐ N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
8"	12	215		Steel	☒	☐	☒	☐
8"	225	240		Steel	☒	☐	☒	☐
8"	310	325		Steel	☒	☐	☒	☐
8"	335	425		Steel	☒	☐	☒	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

Perforations

Method

Screen Type Johnson 1/2" Perfor. Pipe 1/2"

Screens

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
215	225	.025		8"	SS	☒	☐
240	310	1/8		8"	SS	☒	☐
325	335	.025		8"	SS	☒	☐
425	435	.025		8"		☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

_____ ft. below ground Artesian pressure _____ lb.

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

Yield gal./min.	Drawdown	Pumping Level	Time
365		127'	

Water Temp. _____

Bottom hole temp. _____

Water Quality test or comments: _____

Depth first Water Encounter _____

12. LITHOLOGIC LOG: (Describe repairs or abandonment) w

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y
28"	0	4	top soil	
1	4	17	Burnt Clay w/ clayey mix	
	17	20	Brown Sandstone	
	20	27	Yellow Clay	
	27	30	Fine to Med tan Sand	
	30	44	Med to Coarse tan Sand	
	44	50	Reddish Brown Clay	
	50	58	tan Clay	
	58	60	Burnt Brown clay w/sand	
	60	73	tan Clay	
	73	86	Sand & gravel	
	86	105	tan Clay	
	105	123	med tan Sand	
	123	124	tan Clay	
	124	144	Blue Clay	
	144	152	Fine Gravel Sand	
	152	219	Blue Clay	
	219	225	Fine Black Sand	
	225	240	Blue Clay	
	240	246	Fine Black Sand	
	246	270	Blue Clay	
	270	274	Black Sandstone	
	274	284	Blue Clay	
	284	287	Fine to Coarse Black Sand	
	287	294	Blue Clay	
	294	300	Fine Black Sand	
	300	333	Blue Clay	
	333	336	Fine Black Sand	
	336	420	Blue Clay	
	420	433	Fine Black Sand	
	433	451	Blue Clay	
	451	459	Blue Brown Clay mix	
	459	500	Blue Clay	

Completed Depth 435', 150', 85' (Measure)

Date: Started 7-15-01 Completed 2-15-02

13. DRILLER'S CERTIFICATION

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

Company Name Riverside Inc. Firm No. 33

Firm Official _____ Date _____

and _____

Driller or Operator _____ Date 3-20-02

(Sign only if Firm Official & Operator)

(Sign once if Firm Official & Operator)

(Sign once if Firm Official & Operator)

PUMP DATA SHEET

Turbine 60 Hz

Selection file: (untitled)

Catalog: TURB60.MPC v 1.6.5

Curve: E0409CFPCO

Design Point: Flow: 500 US gpm
Head: 340 ft

Fluid: Water Temperature: 60 °F
SG: 1

Pump: TURBINE - 1800 Size: 9RCLC; (10 stages)
Speed: 1770 rpm Dia: 6.88 in

Viscosity: 1.122 cP
Vapor pressure: 0.2568 psi_a
Atm pressure: 14.7 psi_a

Limits: Temperature: --- °F Sphere size: 0.56 in
Pressure: 400 psi_g Power: --- bhp

NPSHa: --- ft

Specific Speed: Ns: 2290 Nss: ---

Piping: System: ---
Suction: --- in
Discharge: --- in

Vertical Turbine: Bowl Size: 9.25 in Max Lateral: 0.88 in
Thrust K Factor: 4.9

Motor: 60 hp Speed: 1800 Frame: 364
NEMA Standard WPI Enclosure
sized for Max Power on Design Curve

Suction Size-6" Discharge Sizes-5",6",8"

--- Data Point ---

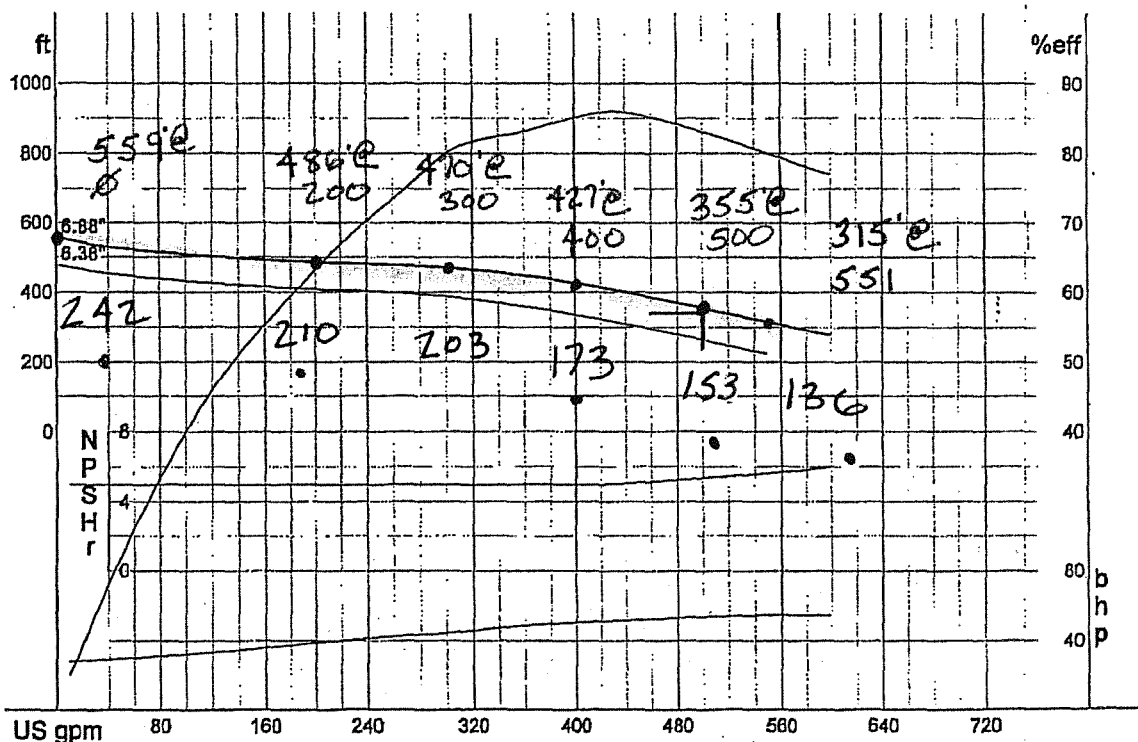
Flow: 500 US gpm
Head: 355 ft
Eff: 83.1%
Power: 53.9 bhp
NPSHr: 5.37 ft

--- Design Curve ---

Shutoff Head: 559 ft
Shutoff dP: 242 psi
Min Flow: - US gpm
BEP: 86% eff
@ 433 US gpm
NOL Pwr: 54.9 bhp
@ 551 US gpm

--- Max Curve ---

Max Pwr: 54.9 bhp
@ 551 US gpm

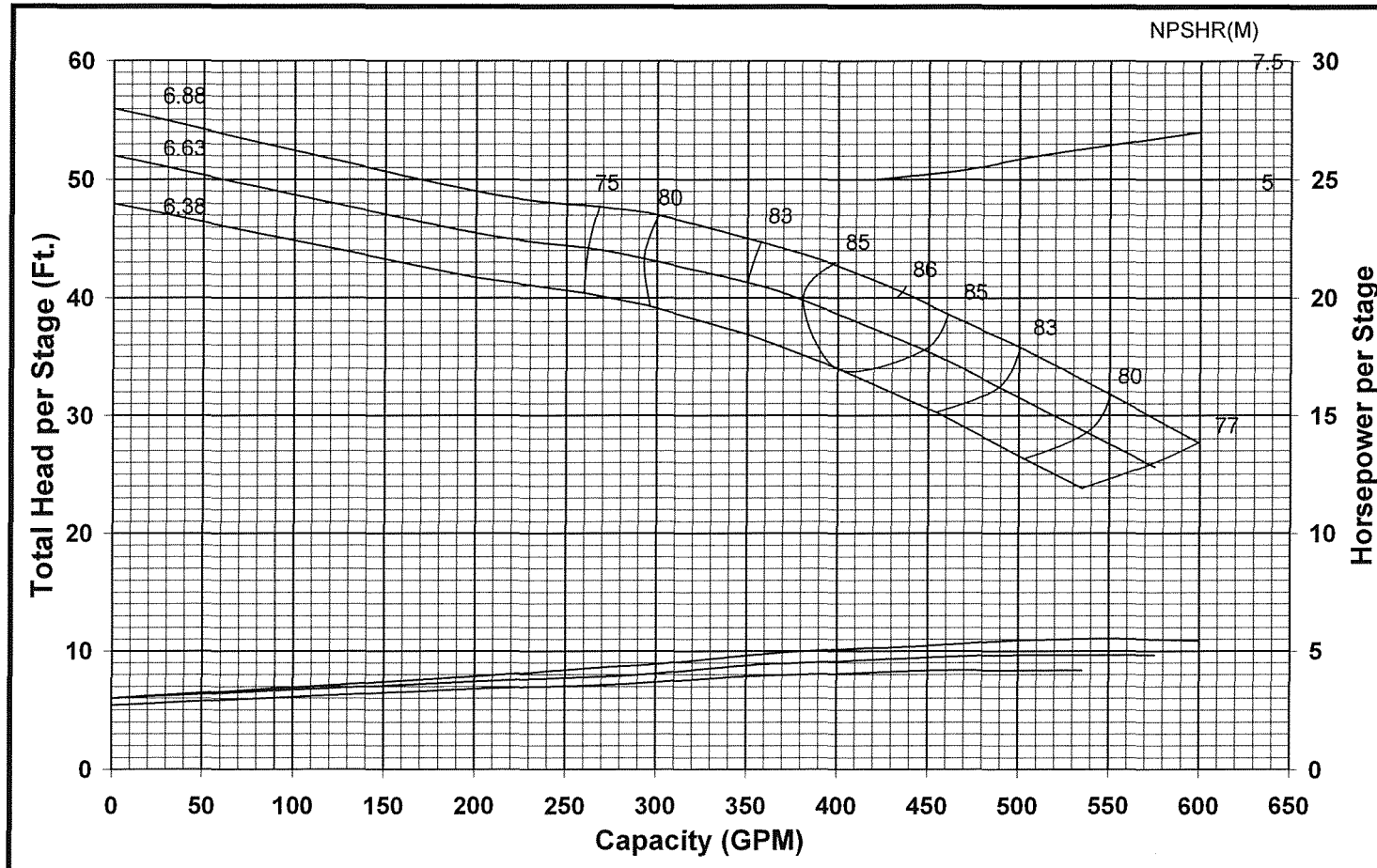


--- PERFORMANCE EVALUATION ---

Flow	Speed	Head	Pump	Power	NPSHr	Motor	Motor	Hrs/yr	Cost
US gpm	rpm	ft	%eff	bhp	ft	%eff	kW		/kWh
600	Flow Rate is Out of Range for this Pump								
500	1770	355	83.1	53.9	5.37				
400	1770	427	85	50.7	5				
300	1770	470	80	44.5	5				
200	1770	486	62.8	38.8	5				

Attn: Bob Knight

GOULDS PROPOSAL NO.	GOULDS S.O. NO.	INQUIRY NO.	CUSTOMER P.O. NO.	P.O. DATE	ITEM NO.	CUSTOMER
PROJECT		SERVICE		GPM CAPACITY		FT. TDH
						% EFFICIENCY
						RPM



Curve No.		E6409CFPC0
Model		9RCLC
RPM		1770
EFFICIENCY CORRECTION		
1-STAGE		-2.0
2-STAGE		-1.0
3-STAGE		-0.5
4-STAGE		0.0
Impeller		ENCLOSED
Ns =		2290
K =		4.90 LBS/FT
K(Bal.)=		N/A
Bowl O.D.		9.25"
Bowl Lateral		0.88"
Max. PSI		400
Disch size		5", 6", 8"
GOULDS PUMPS		
TURBINE OPERATIONS		
Lubbock, Texas		
BOWL PERFORMANCE CURVE		
BASED ON PUMPING CLEAR,		
NON-AERATED WATER.		
RATED POINT ONLY IS		
GUARANTEED. CURVES		
REPRESENT SINGLE STAGE		
PERFORMANCE BASED ON		
TEST OF MULTI-STAGE BOWL		
ASSEMBLY. EFFICIENCY		
CORRECTION IS REQUIRED		
FOR LESSER STAGES.		

~~document~~
Dave Elmer

PUMP DATA SHEET

Goulds Turbine 60 Hz

Selection file: (untitled)

Catalog: TURB60.MPC v 1.6.1

Curve: 3016

Design Point: Flow: --- US gpm
Head: --- ft

Fluid: Water

Temperature: 60 °F

SG: 1

Viscosity: 1.122 cP

Vapor pressure: 0.2568 psi_aAtm pressure: 14.7 psi_a

Pump: TURBINE - 3600

Speed: 3450 rpm

Size: 6CHC; (5 stages)

Dia: 4 in

Limits: Temperature: --- °F

Pressure: 420 psi_g

Sphere size: 0.22 in

Power: --- bhp

NPSHa: --- ft

Specific Speed: Ns: 2160

Nss: ---

Piping:

System: ---

Suction: --- in

Discharge: --- in

Vertical Turbine: Bowl Size: 5.88 in Max Lateral: 0.38 in
Thrust K Factor: 2.1

Motor: 30 hp

Speed: 3600

Frame: 286TS

NEMA Standard TEFC Enclosure

sized for Max Power on Design Curve

Suction Size-4" Discharge Sizes-3",4"

--- Data Point ---

Flow: 250 US gpm

Head: 288 ft

Eff: 76.1%

Power: 23.9 bhp

NPSHr: 15.3 ft

-- Design Curve --

Shutoff Head: 396 ft

Shutoff dP: 171 psi

Min Flow: - US gpm

BEP: 77.2% eff

@ 224 US gpm

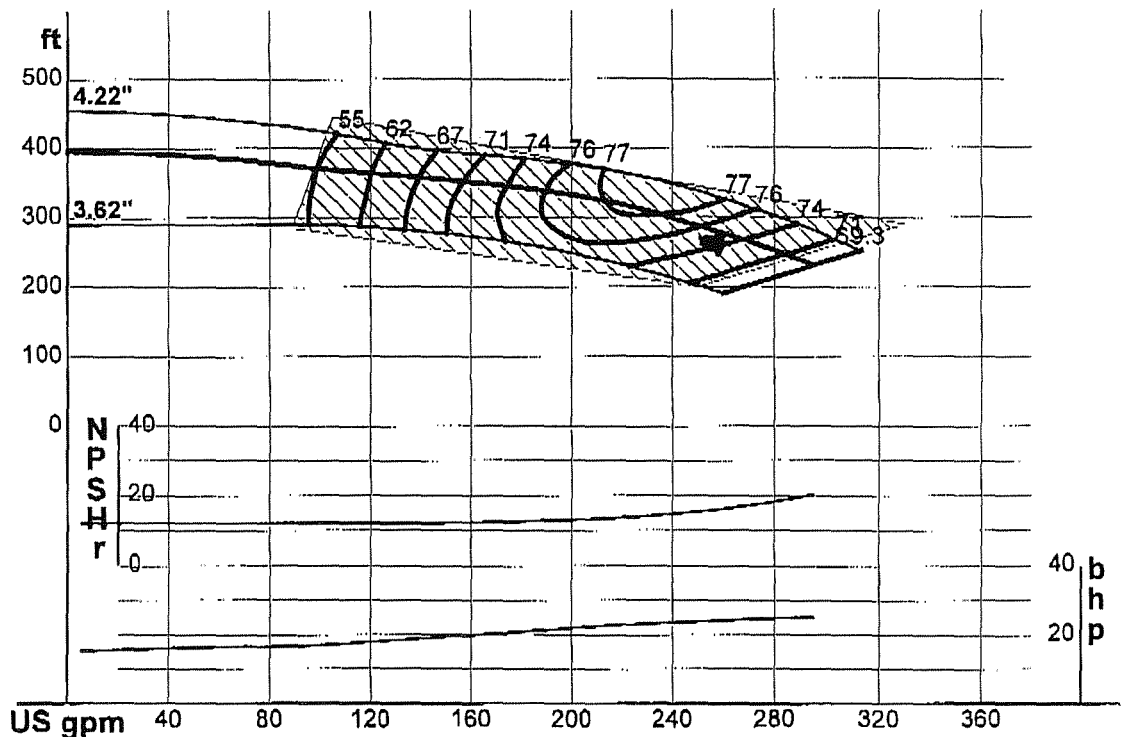
NOL Pwr: 25.2 bhp

@ 295 US gpm

-- Max Curve --

Max Pwr: 29 bhp

@ 304 US gpm

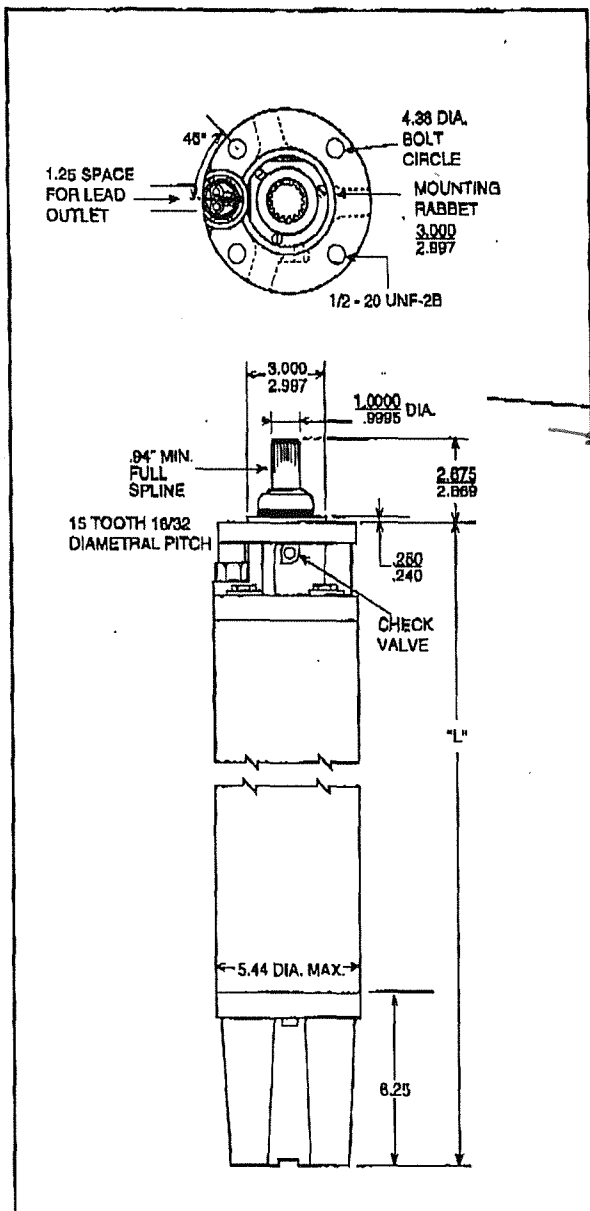


--- PERFORMANCE EVALUATION ---

Flow	Speed	Head	Pump	Power	NPSHr	Motor	Motor	Hrs/yr	Cost
US gpm	rpm	ft	%eff	bhp	ft	%eff	kW		/kWh
283	3450	248	71.2	24.9	18.6				
236	3450	303	77	23.5	14.4				
189	3450	338	75.9	21.2	12.7				
142	3450	357	67.5	18.9	12				
94.4	3450	372	52.8	16.7	12				

Submersible Motors

6" • Water Well • Three Lead DOL



SINGLE-PHASE MOTORS					
SHIPPING WEIGHT			MOTOR CATION		
HP	KW	L"	LBS.	KGS.	SIZE
5	3.7	25.4"	110	50	7.5" x 10.75" x 34.5"
7 1/2	5.5	28.0"	123	56	7.5" x 10.75" x 34.5"
10	7.5	30.6"	141	64	7.5" x 10.75" x 37"
15	11	33.1"	154	70	7.5" x 10.75" x 42.25"

THREE-PHASE MOTORS					
SHIPPING WEIGHT			MOTOR CATION		
HP	KW	L"	LBS.	KGS.	SIZE
5	3.7	22.9"	101	46	7.5" x 10.75" x 34.5"
7 1/2	5.5	24.2"	108	49	7.5" x 10.75" x 34.5"
10	7.5	25.4"	116	53	7.5" x 10.75" x 34.5"
15	11	28.0"	129	59	7.5" x 10.75" x 34.5"
20	15	30.6"	145	66	7.5" x 10.75" x 37"
25	18.5	33.1"	158	71	7.5" x 10.75" x 42.25"
30	22	35.7"	174	79	7.5" x 10.75" x 42.25"
40	30	40.8"	202	92	7.5" x 10.75" x 47.25"
50	37	55.3"	300	136	8 3/4" x 10 1/2" x 71 3/4"
60	45	61.9"	390	150	8 3/4" x 10 1/2" x 71 3/4"

For "Accessories" section for control box weights and dimensions.

CONSTRUCTION MATERIALS

Component	Standard Water Well
Castings	Gray Iron
Stator Shell	301 SS
Stator Ends	Low Carbon Steel
Shaft Extension	303 SS, except 17-4 SS on 40-60 Hp
Fasteners	300 & 400 Series SS
Seal Cover	304 SS & Sintered Bronze
Seal	Carbon/Ceramic Face Seal [®]
Diaphragm	Nitrile Rubber
Diaphragm Plate	304 SS
Diaphragm Spring	302 SS
Slinger	Nitrile Rubber
Lead Wire	Hypalon 75°C [®]
Lead Potting	Epoxy
Filter	Delrin & Polyester
Insulation	Class F

[®] Sand Fighter™ motors available for sandy well applications.

[®] Removable type, factory installed. See "Six-Inch Motor Leads" page for additional leads.

NOTE: All dimensions shown in inches.

Specifications subject to change without notice. Contact Franklin Electric if current material types are required for bid specifications.



Franklin Electric

400 East Spring Street
Bluffton, Indiana 46714
Tel: 219.824.2900 Fax: 219.824.2909
www.franklin-electric.com

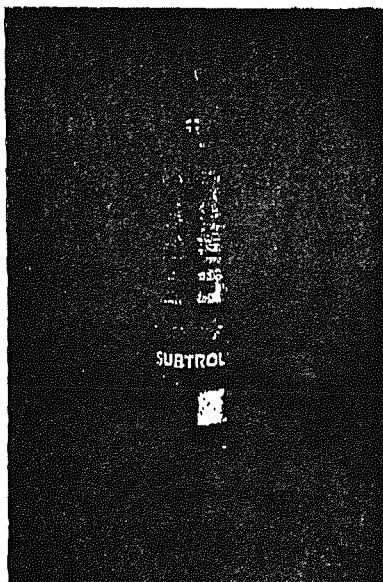
Submersible Motors

PAGE: 6-1

DATE: December 1, 2000

SUPERSEDES: 8-31-99

6" • Water Well • Three Lead DOL



APPLICATIONS

These motors are built for dependable operation in 6" diameter or larger water wells. Do not use motor in swimming areas.

SPECIFICATIONS

Temperature and Time Rating: Continuous in 88°F (30°C) max. water at 1/2 ft/sec. flow past motor.

Enclosure: Hermetically sealed stator and stainless steel outer shell.

Shaft: Splined, stainless steel.

Bearings: Water lubricated radial and thrust bearings. Thrust bearings Kingsbury type.

Control Box: Single-phase controls available from Franklin Electric.® Three-phase controls—see footnote.® SUBTROL-PLUS available for three-phase units.®

Leads: Removable type, 13 ft. (4m) length installed. See page "Six-Inch Leads" page for additional leads.®

Rotation: Single-phase, CCW facing shaft end. Three-phase, electrically reversible.

FOOTNOTES:

® Refer to page "Accessories" section for single-phase control box.

® Franklin does not manufacture three-phase controls. Franklin's Subtrol-Plus or three-phase ambient-temperature-rated quick-trip overload protection in all three legs is required for motor protection. WARRANTY IS VOID where this protection is not employed.

® Subtrol-Plus (heat) sensor standard in three-phase 6" 40-60 Hp ratings, optional in 5-30 Hp.

® WARRANTY IS VOID if Franklin supplied leads or cables are not used.

SINGLE-PHASE, CAPACITOR START, CAPACITOR RUN, 60Hz-3450 RPM Control Box Required®

HP	KW	DOWNWARD THRUST	VOLTS	HZ	SERVICE FACTOR	MODEL NUMBER	CONTROL BOX MODEL NUMBER
5	3.7	1500 LBS.	230	60	1.15	226 110 90	282 113 81
7½	5.5	1500 LBS.	230	60	1.15	226 111 90	282 201 92
10	7.5	3500 LBS.	230	60	1.15	226 112 90	282 202 92
15	11	3500 LBS.	230	60	1.15	226 113 90	282 203 93

THREE-PHASE, 60Hz-3450 RPM, 50Hz-2875 RPM Special Controls Required®

HP	KW	DOWNWARD THRUST	VOLTS	HZ	SERVICE FACTOR	MODEL NUMBER	WIRE SIZE (AWG)
5	3.7	1500 LBS. 6500 N	200	60	1.15	236 650 90	10 W/GND
			230	60	1.15	236 600 90	
			380	60	1.15	236 660 90	
			460/380	60/50	1.15/1.0	236 610 90	
			575	60	1.15	236 620 90	
7½	5.5	1500 LBS. 6500 N	200	60	1.15	236 651 90	10 W/GND
			230	60	1.15	236 601 90	
			380	60	1.15	236 661 90	
			460/380	60/50	1.15/1.0	236 611 90	
			575	60	1.15	236 621 90	
10	7.5	3500 LBS. 15500 N	200	60	1.15	236 652 90	10 W/GND
			230	60	1.15	236 602 90	
			380	60	1.15	236 662 90	
			460/380	60/50	1.15/1.0	236 612 90	
			575	60	1.15	236 622 90	
15	11	3500 LBS. 15500 N	200	60	1.15	236 653 90	10 W/GND
			230	60	1.15	236 603 90	
			380	60	1.15	236 663 90	
			460/380	60/50	1.15/1.0	236 613 90	
			575	60	1.15	236 623 90	
20	15	3500 LBS. 15500 N	200	60	1.15	236 654 90	8 W/GND
			230	60	1.15	236 604 90	
			380	60	1.15	236 664 90	
			460/380	60/50	1.15/1.0	236 614 90	
			575	60	1.15	236 624 90	
25	18.5	3500 LBS. 15500 N	200	60	1.15	236 655 90	8 W/GND
			230	60	1.15	236 605 90	
			380	60	1.15	236 665 90	
			460/380	60/50	1.15/1.0	236 615 90	
			575	60	1.15	236 625 90	
30	22	3500 LBS. 15500 N	200	60	1.15	236 656 90	8 W/GND
			230	60	1.15	236 606 90	
			380	60	1.15	236 666 90	
			460/380	60	1.15/1.0	236 616 90	
			575	60	1.15	236 626 90	
40	30	6000 LBS. 27500 N	380	60	1.15	236 667 60	8 W/GND
			460/380	60/50	1.15/1.0	236 617 60	
			575	60	1.15	236 627 60	
50	37	6000 LBS. 27500 N	380	60	1.15	236 668 60	8 W/GND
			460/380	60/50	1.15/1.0	236 618 60	
			575	60	1.15	236 628 60	
60	45	6000 LBS. 27500 N	380	60	1.15	236 669 60	8 W/GND
			460/380	60/50	1.15/1.0	236 619 60	
			575	60	1.15	236 629 60	

MODIFICATIONS:

Voltage, Hertz and HP ratings not listed here are available with a price adder. Consult factory for price and delivery.

For Wye-Delta configuration, see "Six-Inch, Water Well, Six-Lead Wye-Delta" page.

For corrosion-resistant construction, see "Six-Inch, Corrosion Resistant" page.

WARNING: Serious or fatal electrical shock or fire hazard may result from failure to follow the instructions for proper installation and use which accompany this equipment.

FOR MOUNTING DIMENSIONS SEE OPPOSITE SIDE.


Franklin Electric