

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 63-31660

Exam Date: 3/7/2012

1. Current Owner: CORP OF THE PRESIDING BISHOP
CHURCH OF JESUS CHRIST OF LATTER DAY SAINTS
REAL ESTATE SERVICES DIV
50 E NORTH TEMPLE ST
SALT LAKE CITY UT 84150-6320
(801) 240-4657
2. Accompanied by: **STEVE OLDHAM**
Phone No: **208-453-2057**
Address: **2808 S MONTANA AVE, CALDWELL ID 83605-5725**
Relationship to Permit Holder: **FACILITIES MANAGER, CALDWELL FM GROUP**

3. **SOURCE** **TRIBUTARY**
GROUND WATER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: **63-31785 FOR FIRE PROTECTION**
2. Other water rights with the same point of diversion: **NONE**

C. DIVERSION AND DELIVERY SYSTEM1. **LOCATION OF POINT(S) OF DIVERSION:**

GROUND WATER NE1/4SE1/4 Sec. 33, Twp 04N, Rge 02W, B.M.
CANYON County

Method of Determination: **GPS [E 2292304, N 138539]**2. **PLACE OF USE:** FIRE PROTECTION

TwpRge Sec	NE				NW				SW				SE				Totals
04N02W 33	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	
													X				

PLACE OF USE: DOMESTIC

TwpRge Sec	NE				NW				SW				SE				Totals
04N02W 33	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	
													X				

Method of Determination:

3. X Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.

 X Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.

 X Aerial Photo Attached (required for irrigation of 10+ acres).

 X Photo of Diversion and System Attached

4.

<u>Well or Diversion</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>
<u>WELL</u>	<u>UNKNOWN</u>	<u>5 ?</u>	<u>UNKNOWN</u>	<u>BERKELEY</u>	<u>60 GPM - MODEL NO? 6T5-115</u>

*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: **NO MEASUREMENTS TAKEN**

E. FLOW CALCULATIONS

Attached

_____ Additional Computation Sheets

Measured Method:

METHOD 1: Theoretical flow calculation using pump company information of 5 hp motor, 157.4' pumping level and IDWR standard assumptions of 70% efficiency and 30 psi for domestic.

$$\frac{[8.8] [5 \text{ hp}] [0.7]}{157.4 + [30] [2.31]} = \frac{30.8}{226.7} = 0.14 \text{ cfs}$$

METHOD 2: Pump curve shows discharge of 60 gpm at 70% efficiency and 157' pumping level. 60 gpm/448.4 = 0.13 cfs.

F. VOLUME CALCULATIONS1. Volume Calculations for Irrigation: **NOT APPLICABLE**

$$V = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = \text{I.R.}$$

$$V = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = \text{D.R.}$$

$$V = \text{Smaller of } V_{\text{I.R.}} \text{ and } V_{\text{D.R.}} =$$

2. Volume Calculations for Other Uses:

NOT REQUIRED FOR FIRE PROTECTION

INTERNAL DOMESTIC LIMITED TO 2500 GPD – maximum number of people in the church is 287 on Sundays for 3 hours – only information provided regarding daily use.

METHOD 1: Assuming maximum 2 days per week = 104 days per year:

$$[0.04][104][1.9835] = 8.3 \text{ afa}$$

METHOD 2: Assuming 12 gpd per person 2 days per week:

$$[287][12 \text{ gpd}][104] = 358176 = 1.1 \text{ afa}$$

325850

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METHOD 3: Permit limits domestic use to 2500 gpd.

$$[2500 \text{ gpd}][365 \text{ days}] = 2.8 \text{ afa}$$

325850

G. NARRATIVE/REMARKS/COMMENTS

The permittee requested an extension of the proof due before the due date. The extension was granted, proof was timely filed and the correct fee was paid. I was accompanied by Steve Oldham, Facilities Manager [FM]. Steve was new to the position and although he brought binders for the church site, they did not contain information about this well or system.

There was an IDWR well tag on the domestic well but no information on the well about the submersible pump or motor. Mr. Oldham made calls to the prior FM during the exam but no additional information about the well specifications, pump, motor or piping was located then. He later provided a pump curve and other specifications obtained from the pump company.

USES: The domestic use was permitted for 0.04 cfs for internal use in the church, limited to 2500 gpd and the fire protection use, permitted for 0.33 cfs, is only to pressurize the fire protection system permitted as 63-31785.

DIVERSION AND DELIVERY SYSTEM: The 8-inch well has a Berkeley submersible pump no. 6T5-115. The well is located north of the pump house and is piped to the south side of the pump house via a buried 4-inch pipe. Inside the pump house, the domestic system is plumbed to two 85-gallon pressure tanks, then out the east side of the pump house to the pump room on the south side of the church. The well is also connected to the fire protection system via piping up the east well house wall, then north on the ceiling to pressurize the large fire protection system. There is also a discharge port on the south side of the building for the well if needed for testing, etc.

The well is plumbed but not used for irrigation. Water for irrigation is supplied by Pioneer and the lateral is along the south property line.

The application states that water will be pumped to a 180,000 gallon storage tank for fire suppression and permit condition 077 was modified to include language about the tank. However, the plan changed and there is no storage tank on the site so the permit condition should be standard condition 077.

INTERNAL USE - CHURCH: The pump room on the south side of the church was viewed and it is evident that the domestic system is separate from the fire protection system. The domestic use is for two [a mens and womens] lavatories plus an individual lavatory, two water fountains, a janitorial mop faucet, three sinks: in the mothers room, in the serving area and for sacrament preparation.

QUANTITY: The well log does not provide any well yield data. Information obtained from the pump company provide the following information used in a theoretical flow calculation: motor rated at 5 hp, pump rated for 60 gpm, actual head assumed to mean dynamic pumping level of 157.4 feet. A pressure of 30 psi was used.

I calculated the flow using the theoretical flow equation and 0.14 cfs was the result. The pump curve indicated a

discharge of 60 gpm at 70% efficiency and 157 foot pumping level. 60 gpm = 0.13 cfs. I recommend 0.14 cfs be the licensed diversion rate.

Volume is not required for fire protection. I calculated volume for the internal domestic use 3 ways because I did not have good information about the daily water use. The Vdr was calculated to be 8.3 afa. The church provided information that a maximum of 287 people were in the church at any given time and this maximum was the number who attended church on Sunday for a maximum of three hours. I did not ask the applicant detailed information about other times or events held in the church. I calculated 12 gpd for 287 people for 2 days / week throughout the year, or 104 days which was totally arbitrary. The result was 1.1 afa. Last, the domestic use is limited by a permit condition to 2500 gpd and 2500 gpd all year is 2.8 afa. Because it is a relatively small volume and there is really no good data regarding the number of people in the church, I recommend the 2.8 afa, which was the result between the two extreme results.

American Geotechnics is listed in the database as the applicants representative. Mr. Oldham said that American Geotechnics should be deleted as the representative.

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

CONDITION 3 is 077 - should be replaced by the standard 077 because a storage tank was not installed.

H. RECOMMENDATIONS

1. Recommended Amounts

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
FIRE PROTECTION	01/01 to 12/31	0.140 CFS	
DOMESTIC	01/01 to 12/31	0.040 CFS	2.8 afa
<u>Totals:</u>		0.140 CFS	

2. Recommended Amendments

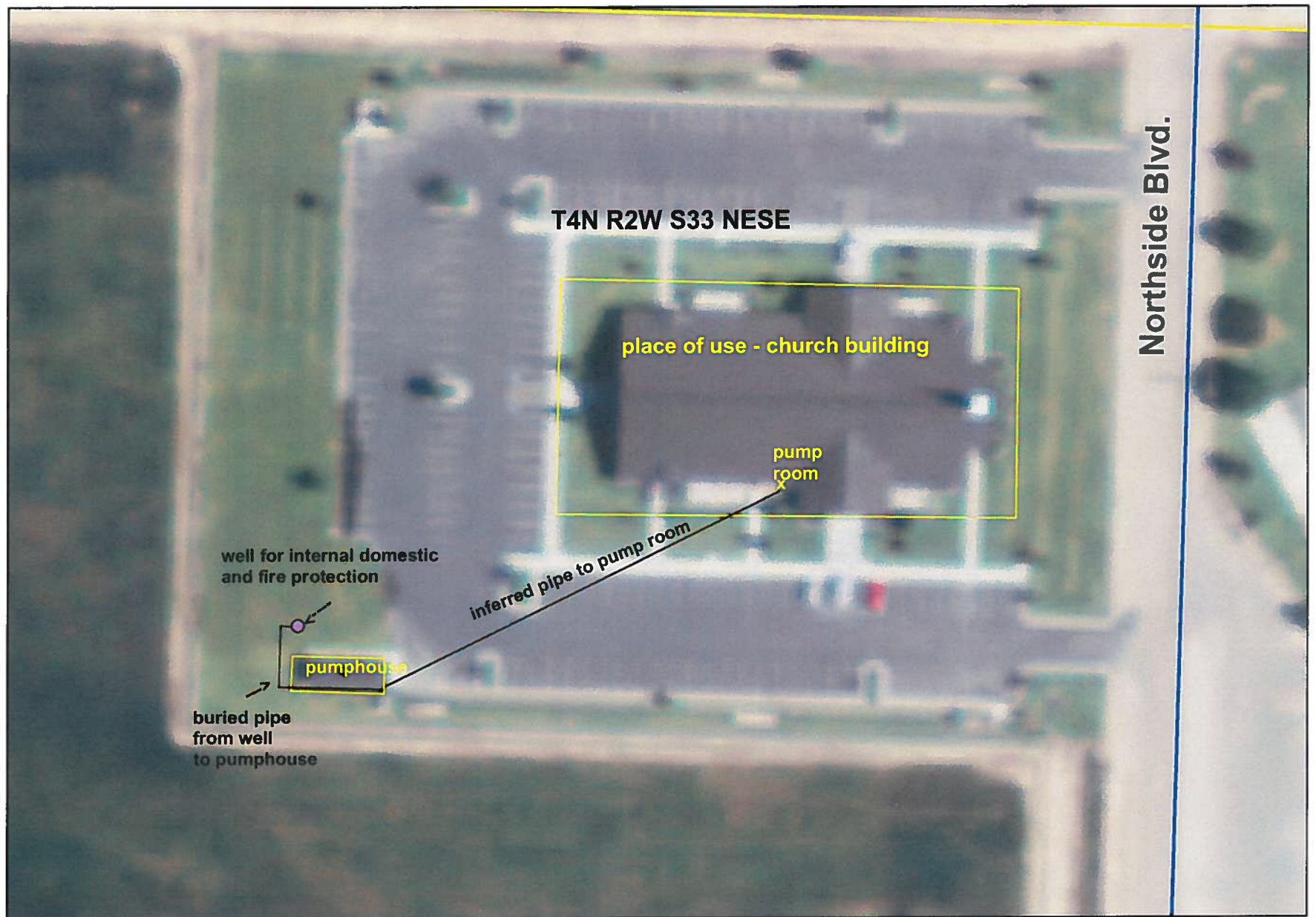
☐ Change P.D. as reflected above ☐ Add P.D. as reflected above ☒ None

☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☐ Other

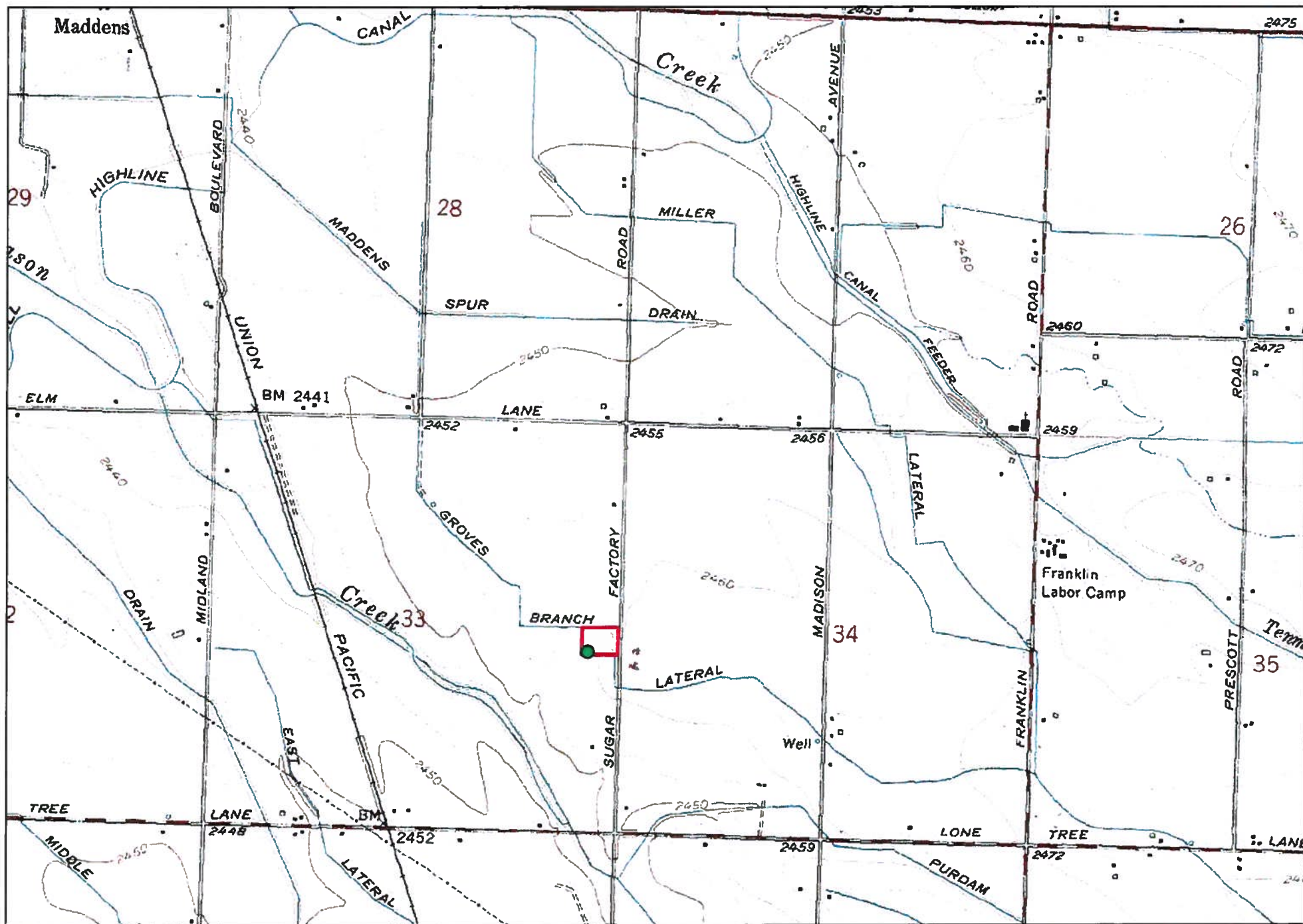
I. AUTHENTICATION

Field Examiner's Name Wesley W. McC Date 4-27-12

Reviewer _____ Date _____



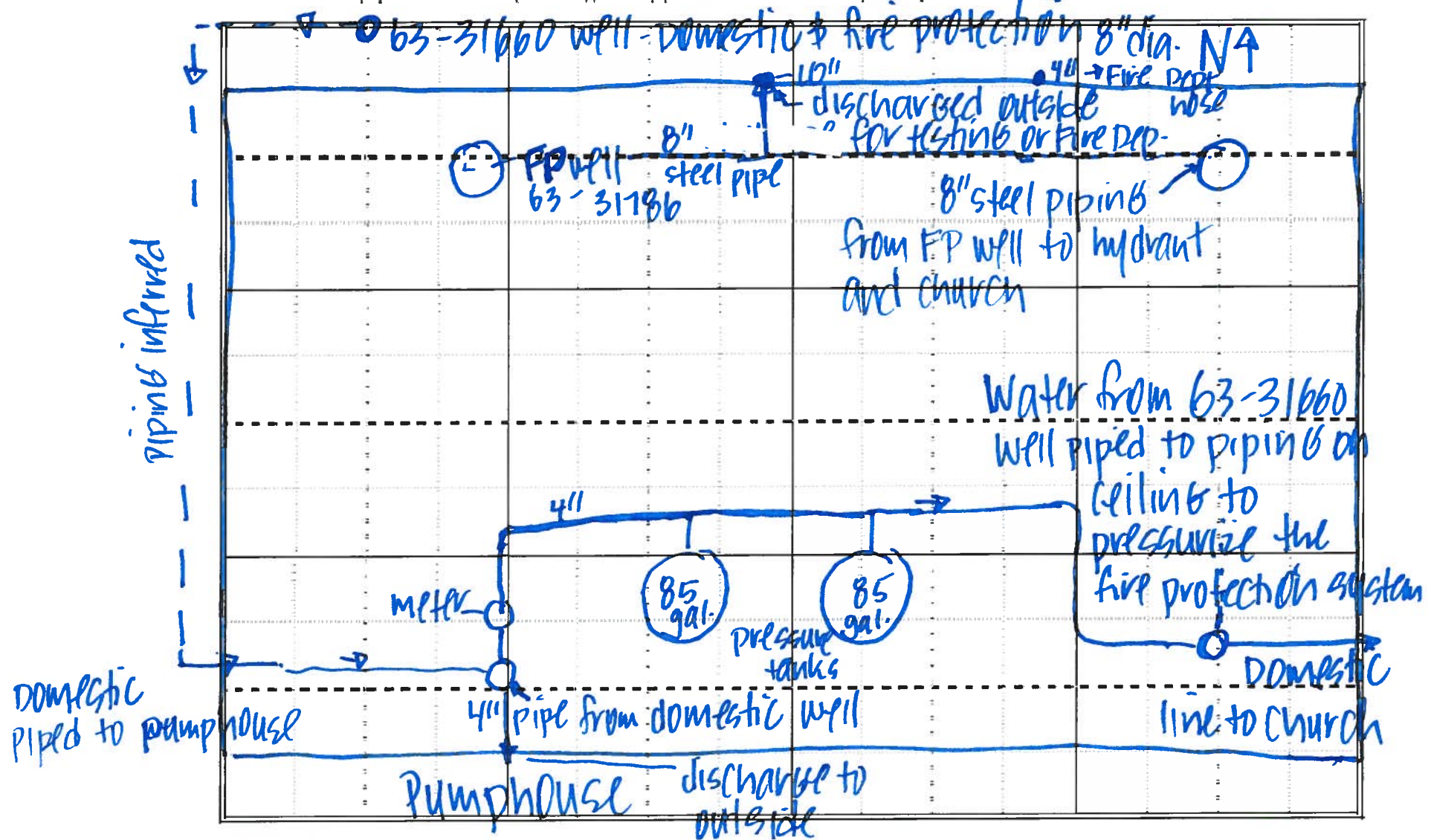
63-31660



63-31660 and 63-31785

Fire protection 63-31786 and internal domestic & fire protection (to pressurize FP) 63-31660

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

4/2011

IDAHO DEPARTMENT OF WATER RESOURCES
FIELD EXAMINERS
WELL INSPECTION FORM

1. IDENTIFICATION # 0031154 (Tag #, etc.)

OTHER APPLICABLE # 63-31660 (Water right #, etc.)

2. OWNER LDS CHURCH Phone _____

Address 50 E N. Temple St. City SALT LAKE CITY

State UT Zip 84150 Email _____

3. WELL LOCATION (GPS required in Degrees Decimal Minutes – use PLS if GPS not available)

Lat. 43.38.429 Long. -116.34.5

Twp 4N Rge 2W Sec 33 $\frac{1}{4}$ NE $\frac{1}{4}$ NE

4. WELL CONSTRUCTION ☒ Well log attached ☐ Well log not found

Any obvious construction problems that may be a source for contamination or waste? ☐ Yes ☒ No

If yes, describe below &/or see attached (list any that apply): ☐ Photos ☐ Diagram ☐ Other

5. HYDROLOGIC INFORMATION

Static water if measured _____ ft. Water temperature if measured _____ °F

Flowing artesian ☐ Yes ☐ No Pressure if measured _____ psi

NOTES no measurement taken

INSPECTED BY Wicki Umic DATE 3/1/12

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

Office Use Only			
Well ID No.	812216		
Inspected by			
Twp	Rge	Sec	
1/4	1/4	1/4	
Lat:	:	Long:	:

1. WELL TAG NO. D 0031154
 DRILLING PERMIT NO. 881652-812216
 Water Right or Injection Well No. 63-31660

2. OWNER:
 Name Church of Jesus Christ of L.D.S.
 Address Real Estate Division, 50 E. N. Temple
 City Salt Lake City State UT Zip 84150

3. LOCATION OF WELL by legal description:
 You must provide address or Lot, Blk, Sub. or Directions to well.
 Twp. 4 North ☒ or South ☐
 Rge. 2 East ☐ or West ☒
 Sec. 33 NE 1/4 NE 1/4 SE 1/4
 Gov't Lot _____
 Lat: _____ Long: _____
 Address of Well Site 18401 Northside Rd.
 City Nampa
 (Give at least name of road & Distance to Road or Landmark)
 Lt. _____ Blk. _____ Sub. Name _____

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 Reverse

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
Bentonite Chips	0	174'	35,000#	overburden flow

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"	+2	182'	.032	Steel	☒	☐	☒	☐

Length of Headpipe _____ Length of Tailpipe 5'
 Packer ☐ Y ☒ N Type _____

9. PERFORATIONS/SCREENS PACKER TYPE

Perforation Method Wire Wrap
 Screen Type & Method of Installation Johnson

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
182'	202'	.030		8"	SS	☒	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method
CSL #8 #12	174	201	6000#	Dry Pour

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

11' ft. below ground Artesian pressure _____ lb.
 Depth flow encountered _____ ft. Describe access port or control devices:
Baker Well Cap

12. WELL TESTS:

☒ Pump	☐ Bailer	☐ Air	☐ Flowing Artesian
Yield gal./min	Drawdown	Pumping Level	Time

Water Temp. _____ Bottom hole temp. _____

Water Quality test or comments: _____

Depth first Water Encounter _____

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water	Y	N
21"	0	5'	Topsoil			
	5'	10'	Clayey Clay			
	10'	50'	River Rock			
	50'	139'	Tan Clay silted Sands			
	139'	162'	Tan Clay			
	162'	205'	Med Sand.			
	205'	207'	Tan Clay			

RECEIVED

MAY 06 2004

WATER RESOURCES
WESTERN REGION

Completed Depth 202' (Measurable)
 Date: Started 4-6-04 Completed 4-20-04

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 _____
 and
 Driller or Operator [Signature] Date 5-3-04

Operator I _____ Date _____

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

Dec. 5, 2008 1:33PM

Mitchell Lewis & Staver Co.

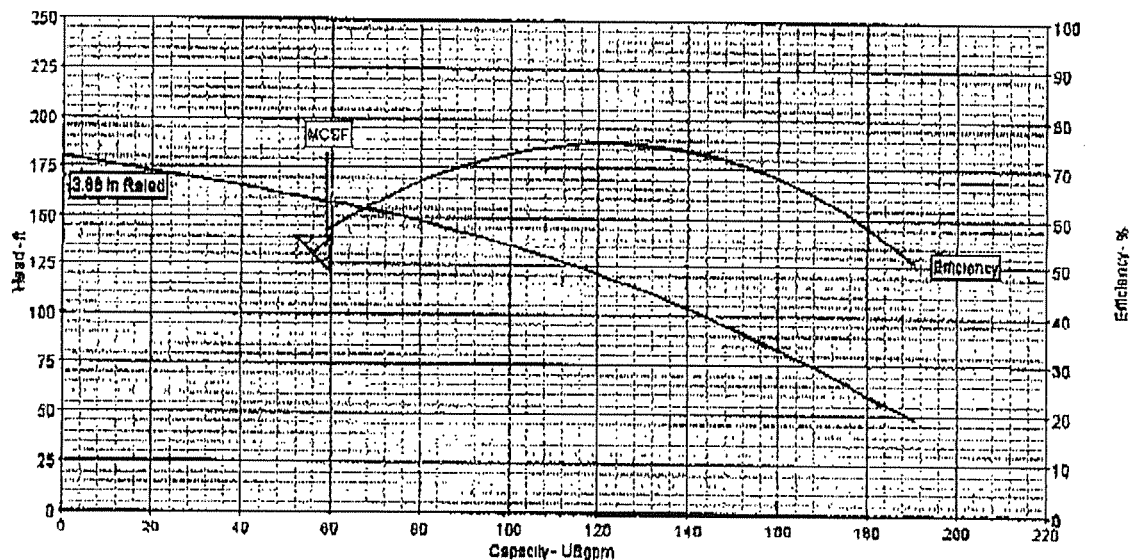
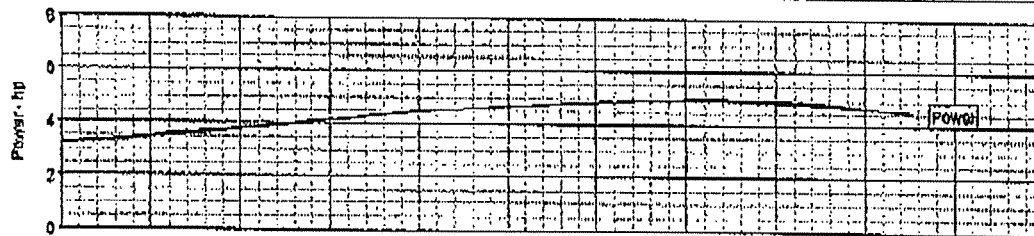
No. 1143 P. 3

North Side

Berkeley Electronic Catalog

Pump Performance Datasheet

Customer	: BURGESS PUMP	Quote number	:
Customer reference	: LDS	Pump size	: 6T5-118
Item number	:	Stages	: 3
Service	:	Based on curve number	: 6T5-115(3@4.04x3.71)
Quantity of pumps	: 1	Date last saved	: 06 Dec 2008 1:16 PM
Operating Conditions		Liquid	
Flow, rated	: 60.00 USgpm	Liquid type	: -Water
Head, rated (requested)	: 140.0 ft	Additional liquid description	:
Head, rated (actual)	: 157.4 ft	Solids diameter, max	: 0.00 in
Suction pressure, rated / max	: 0.00 / 0.00 psi.g	Temperature, max	: 68.00 deg F
NPSH available, rated	: Ample	Fluid density, rated / max	: 0.998 / 0.998 sg
Frequency	: 60 Hz	Viscosity, rated	: 1.00 cP
Performance		Material	
Pump speed, rated	: 3,450 rpm	Material requested	: Auto
Impeller diameter, rated	: 3.88 in	Material selected	: Not specified
Impeller diameter, maximum	: 3.88 in	Pressure Data	
Impeller diameter, minimum	: 3.88 in	Maximum working pressure	: 77.74 psi.g
Efficiency	: 57.72 %	Maximum allowable working pressure	: 806.0 psi.g
NPSH required / margin required	: N/A / 0.00	Maximum allowable suction pressure	: N/A
Ns (imp. eye flow) / Nas (imp. eye flow)	: N/A US Units	Hydrostatic test pressure	: N/A
MCSF	: 69.00 USgpm	Driver & Power Data	
Head, maximum, rated diameter	: 179.6 ft	Driver sizing specification	: Rated power
Head rise to shutoff	: N/A %	Margin over specification	: 0.00 %
Flow, best eff. point (BEP)	: 122.3 USgpm	Service factor	: 1.15 (used)
Flow ratio (rated / BEP)	: 49.07 %	Power, hydraulic	: 2.38 hp
Diameter ratio (rated / max)	: 100.00 %	Power, rated	: 4.13 hp
Head ratio (rated dia / max dia)	: 88.92 %	Power, maximum, rated diameter	: 4.95 hp
Cq/Cv/Cs (ANSI/HI 9.6.7-2004)	: 1.00 / 1.00 / 1.00	Minimum recommended motor rating	: 5.00 hp / 3.73 kW (Fixed)
Selection status	: Acceptable		



63-31660 Field Exam Photographs

Looking northeast. The domestic / fire protection well is seen in the left. The domestic use is for internal use in the church and to pressurize the fire protection system for the church in the background.



Interior of the well house. Photo left - the large fire protection well. The fire protection use under 63-31660 is only to pressurize this system and is not plumbed to sprinklers.



Looking southeast at the domestic system inside the well house.



Below - the middle photo shows the two 85 gallon pressure tanks associated with the domestic system. The photo on the right shows the incoming pipeline from the well with the flow going through the meter on the right and then to the two tanks.

The left photo shows the plumbing for the domestic plumbed to the church. The line going up is tied into the fire protection system to maintain a positive pressure on that delivery system. Same tank same tank incoming line flow meter

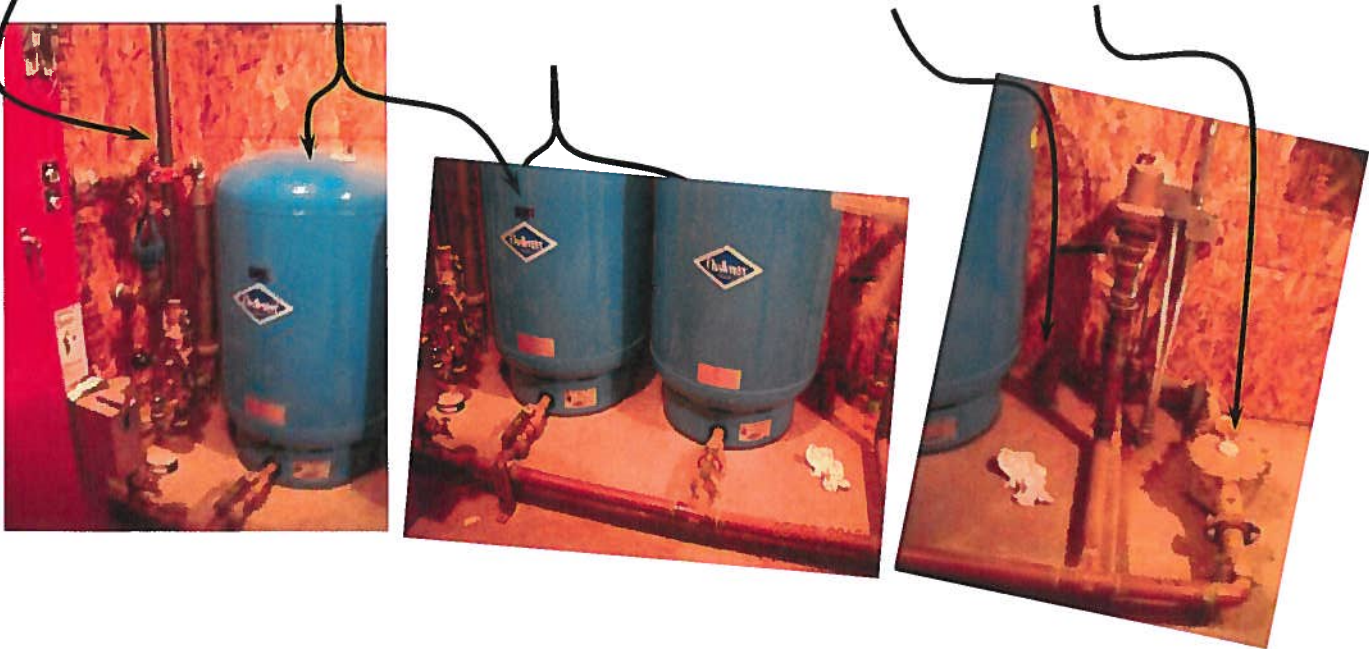


Photo below shows the domestic and fire protection system located in the pump room inside the church. Looking south.



The domestic system is the white covered line system shown on the right side of the photo.

Photo shows that the well for the internal domestic use is plumbed separately from the large fire protection well seen plumbed into the building in the left of the photo.