

Permit No: 63-31595

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

RECEIVED
SEP 14 2004
DEPARTMENT OF WATER RESOURCES
Page 1

A. GENERAL INFORMATION

Permit No: 63-31595

Exam Date: 5/3/2004

1. Current Owner: PAR ESTATES HOMEOWNERS ASSN
15381 GRIFFIN LN
CALDWELL ID 83605
(208)459-9655
2. Accompanied by: JERRY CONGER
Phone No: 459-9655
Address: 15381 GRIFFIN LN, CALDWELL, ID 83605
Relationship to Permit Holder: PRESIDENT OF ASSOCIATION

3. SOURCE TRIBUTARY
GROUND WATER N/A

B. OVERLAP REVIEW

1. Other water rights with the same place of use: 63-11184
2. Other water rights with the same point of diversion: 63-11184

C. DIVERSION AND DELIVERY SYSTEM

1. LOCATION OF POINT(S) OF DIVERSION:

GROUND WATER	SW1/4NE1/4	Sec. 28,	Twp 05N,	Rge 03W, B.M.
CANYON County				
GROUND WATER	SE1/4NE1/4	Sec. 28,	Twp 05N,	Rge 03W, B.M.
CANYON County				

Method of Determination: VISUAL INSPECTION AND GIS MAPPING

2.

PLACE OF USE: DOMESTIC

Twp	Rge	Sec	NE				NW				SW				SE				
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	Totals
05N	03W	28			X	X													

Method of Determination: VISUAL INSPECTION AND GIS MAPPING

3. YES Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.
YES Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.
YES Aerial Photo Attached (required for irrigation of 10+ acres).
YES Photo of Diversion and System Attached

4.
4.

Well or Diversion Identification No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
WELL # 2	BERKLEY	30 Hp	24008123	BERKLEY	MODEL # 7T-350-30Hp SERIAL # M27350
WELL #3 PUMP 1	GOULDS	10 Hp	MODEL 150L	GOULDS	MODEL 150L
WELL #3 PUMP 2	GOULDS	10 Hp	MODEL 6CJLC	GOULDS	MODEL 6CJLC

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

D. FLOW MEASUREMENTS

Theoretical calculations and pump curves were used to calculate flows in this system. It was not possible to attain a measurement of each individual well or a total of all three wells at the time of the exam.

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>
N/A						

2. Measurements:

E. FLOW CALCULATIONSYES Additional Computation Sheets Attached

Measured Method:

PERMIT ALLOWS → 0.13 CFS FOR DOMESTIC IRRIGATION USE

8.4 ACRES ARE IRRIGATED, BUT NOT COVERED BY 63-11184

8.4 ACRES @ 0.02 CFS/ACRE → 0.17 CFS NEEDED FOR DOMESTIC IRRIGATION USE

WELL CAPACITY →

WELL #2 → 0.82 CFS

WELL #3 PUMP 1 → 0.27 CFS

WELL #3 PUMP 2 → 0.27 CFS

WELL CAPACITY → 1.36 CFS

WELL CAPACITY USED BY WATER RIGHT 63-11184 → 0.57 CFS

AVAILABLE WELL CAPACITY FOR LICENSING → 0.79 CFS**PLEASE NOTE:** The licensing of this permit should be limited by the amount applied for or 0.13 cfs.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 8.4 \text{ acres} \times 4.5 \text{ afa} = 37.8 \text{ afa}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.13 \text{ cfs} \times 260 \text{ days} \times 1.9835 = 67 \text{ afa}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 37.8 \text{ afa}$$

2. Volume Calculations for Other Uses:

G. NARRATIVE/REMARKS/COMMENTS

The water for this permit is diverted from two wells. The main well is well #3. Well #3 has 2 – 10 Hp pumps in the well. The water is diverted from the well to a small pump house on the west side of the subdivision. The water from the pump house travels in a westwardly direction through a series of under ground mainlines to a 57 lot subdivision. At the eastern side of the subdivision the mainline goes into the second well house. The well house has a 3,800-gallon storage tank. A single 30 Hp pump in well #2 is connected to the storage tank. The wells are set up to operate depending on pressure. The two pumps in well #3 are used first, and when there is not enough pressure to operate the system, the pump in well #2 kicks on. During the non-irrigation months, well #2 is rarely used.

Water right 63-11184 overlaps the points of diversion and place of use. This water right covers the in-house use for the 57 homes in the subdivision and 11.1 acres of irrigation, including the 1.2 acres of common area. This water right was filed prior to the completion of the subdivision and the irrigation was based on an estimated lawn size per home under ½ acre per home. All but 4 of the lots have been sold and built on at this time. The 2000 aerial photo shows that 47 of the 57 lots had been constructed. Using this aerial photo it was determined that approximately 19.5 acres were actually being irrigated in the subdivision including the common areas. This left 8.4 acres of ground without an irrigation right (19.5 – 11.1 = 8.4 acres). The applicant came in to correct the situation after the license had been issued for 63-11184. Therefore, this application was filed to cover the remaining 8.4 acres of lawn irrigation associated with the subdivision. The 57 lots average 0.32 acres per lot and none of the lots irrigate over ½ acre, so this procedure is acceptable at this time.

The amount of land needing to be covered under this domestic water right is 8.4 acres. The system capacity is sufficient to cover the 0.13 cfs requested in the permit. This domestic use in this permit should adequately cover the remaining domestic irrigation use needed. However, this licensed should be condition that when this right is combined with 63-11184 it is limited to a combined diversion rate of 0.70 cfs, and not more than 0.39 cfs can be used for irrigation of the subdivision. This license should also have a remark stating that domestic use for this permit is for irrigation of 57 lots in the Par Estates Subdivision and is not to exceed ½ acre per lot.

Have conditions of permit approval been met? X Yes No

H. RECOMMENDATIONS**1. Recommended Amounts**

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
DOMESTIC	03/01 to 11/15	0.130 CFS	37.8 AFA
	<u>Totals:</u>	0.130 CFS	37.8 AFA

2. Recommended Amendments

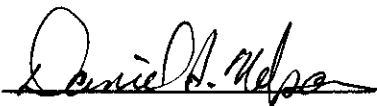
☐ Change P.D. as reflected above ☐ Add P.D. as reflected above ☐ None

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

I. AUTHENTICATION

DANIEL A. NELSON – SENIOR AGENT

Field Examiner's Name



Date

9-3-04

Reviewer _____ Date _____

SEAL

T05N R03W S28

SWNE

SENE

NWSE

NESE

GOLF COURSE

This is the recommended place of use. Not all of the lots have been developed yet, so it only the common areas were excluded from the place of use shape. Total irrigation should not exceed 19.5 acres or 1/2 acre per lot.

33

2 LANE
2 LANE

Hart...

T05N R03W S28

SWNE

SENE

This is the recommended place of use. Not all of the lots have been developed yet, so it only the common areas were excluded from the place of use shape. Total irrigation should not exceed 19.5 acres or 1/2 acre per lot.

NWSE

NESE



Currently all but four of the 57 lots have been built on in this subdivision. This 2000 aerial photo only shows 47 of the 57 lots being constructed. All of the lots have been stubbed into the system, so an average lawn size was needed to calculate the lawn irrigation.

In 2000 47 lots developed with an average of 0.32 acres of lawn.

Therefore 57 lots with an average of 0.32 acres equal 18.3 total acres of lawn irrigation.

There is 1.2 acres of common area irrigation.

Total irrigation equals 19.5 acres. Licensed right 63-11184 allowed a total of 11.1 acres of irrigation including the common areas. Therefore, 8.4 acre can be allowed for lawn irrigation under this right with the limitation of not to exceed 1/2 acre per lot.

T05N R03W S28

SWNE

SENE

WELL #2

WELL HOUSE

MAINLINE

NESE

WELL #3

NWSE

WELL HOUSE

2 wells on either side of the subdivision are tied into a common mainline. The mainline supplies all 57 lots and the common areas. The actual location of the mainline may vary from this diagram, but the diagram is representative of the system. The mainline was buried, and I could not determine from a visual inspection the actual location of the line.

GROUNDWATER THEORETICAL ANALYSIS

FILE: 63- 31595

DATE: 5-3-2004

BY: Daniel A. Nelson

THEORETICAL RATE OF FLOW: $Q = \frac{(8.8 \times \text{HP}) \times (\text{EFF.})}{\text{TDH}}$ Well #2
1 pump

Q = CFS

HP = Total Brake Horsepower of pumping plant (including booster)

Eff. = Pumping plant efficiency (assume 70% or 0.70)

TDH = Total dynamic head = [(LIFT) + (PSI X 2.31)]

LIFT = Depth to water in FEET from land surface to pumping water level

PSI = Pumping pressure measured in PSI near pump (if open discharge assume [0])

$$Q = \frac{(8.8) \times (\underline{30}) \times (0.70)}{[(\underline{132}) + (\underline{40} \times 2.31)]} = \frac{184.8}{224.4} = \underline{0.82 \text{ cfs}}$$

369.6 gpm

LIFT FROM:

Measurement ()

Owner (X)

Area estimate ()

Well Logs ()

PSI FROM:

Measurement ()

Owner (X)

Estimate ()

Owner Gage ()

Booster (Y) (N)

NOTES ON PUMP:

Motor Make, Serial or ID

Pump Make, Serial or ID, rating

REMARKS: See ATTACHED SHEETS FOR PUMP
LIFT AND PSI: TURN ON - USED SAME LIFT
ON all 3 pumps.

Pump CURVE shows 370 gpm FOR
5 stage pump.

0.82 CFS is ACCEPTABLE.

See below.

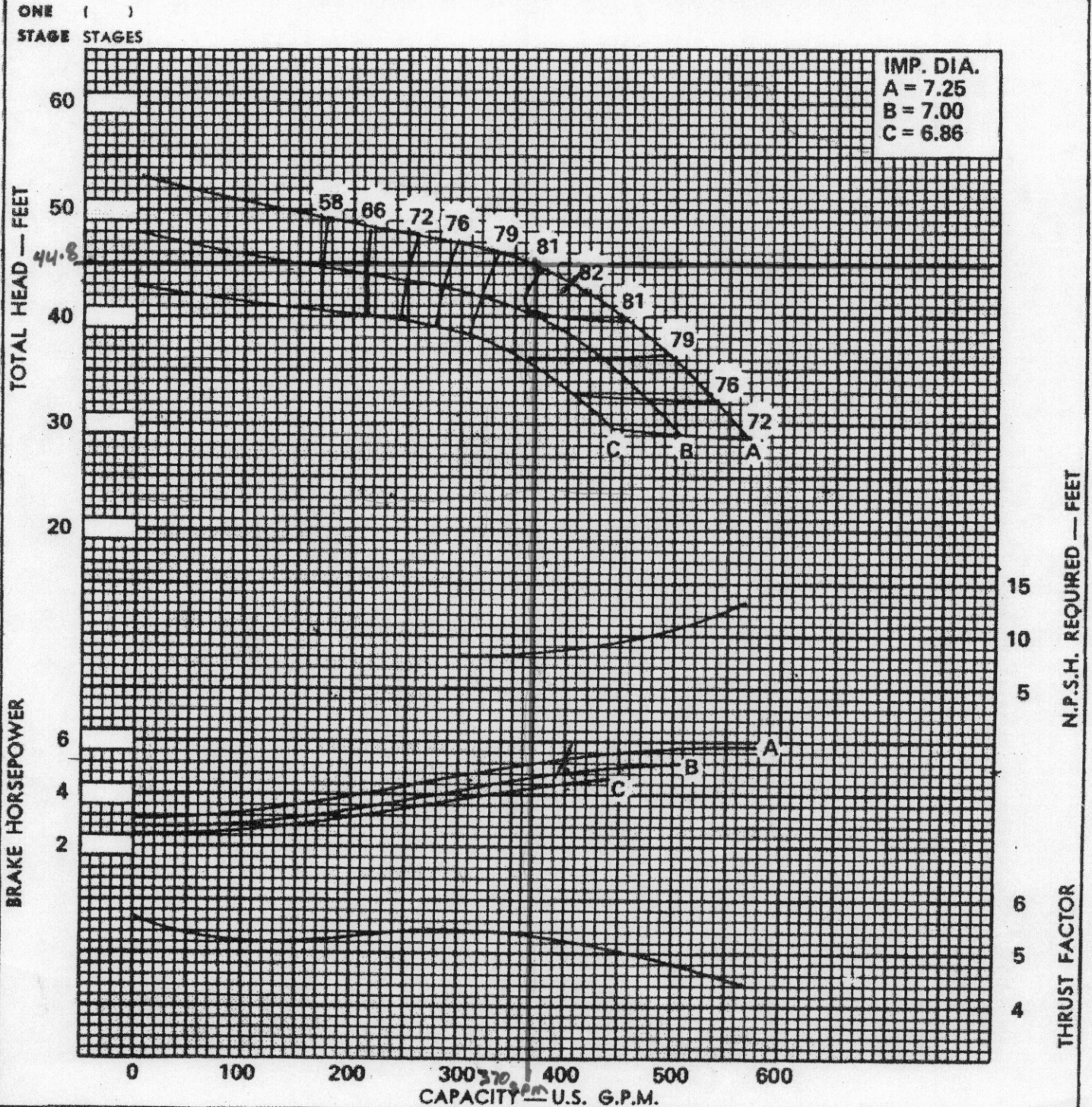
CURVE NO.
18-069
3-15-84

No. Stages	Eff. Change	MATERIAL	Eff. Change
1	-4	IMP.—C.I.	-2
2	-3	IMP.—NI-RI	-1
3	-2	BOWL—BRZ.	-2
4	0	BOWL—NI-R.	-1

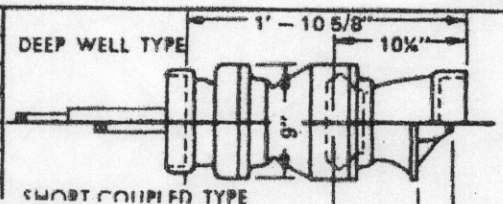
9BM

1760 R.P.M.

SINGLE STAGE LAB PERFORMANCE WITH STANDARD MATERIALS. EFFICIENCY SHOWN FOR 4 OR MORE STAGES. HORSE POWER SHOWN FOR ONE STAGE BASED ON 4 STAGE EFFICIENCY. CORRECTIONS SHOULD BE MADE FOR STAGES AND MATERIAL.



EYE AREA — SQ. IN. = 9.57	IMPELLER WT.-LBS. = 9
WR ² PER IMPELLER = 0.30 LB.-FT. ²	ONE STAGE WT.-LBS. = 135
MAX. SPHERE SIZE = 0.50 in.	ADD'L STAGE WT.-LBS. = 53
MAX. NO. STD. STAGES = 18	IMPELLER NUMBER = 45B15
MAX. OPERATING P.S.I. = 370	DISCH. SIZES = 6
STD. LATERAL = 0.50 in.	SUCTION SIZES = 8



71 30 350 Has 5-stages per company.

PAR ESTATES HOMEOWNER'S ASSOCIATION

Well #2 at East End

Activates when water pressure is < 40#

Drilled date: June 16, 1976
Depth: 170 feet
Diameter Hole: Casing 12" Steel
Diameter of Pipe: Well Pipe 4" + 4 sections of 20' pipe in the hole.
Screen: No
Gravel Pack: Yes from 113' to 170'
Surface Seal: 25'
Storage Tank: 3,800 gallons
Pump Out Put: 360 to 370 gallons per minute.
Pressure settings: 45# to 56#
Drilled by: Bill Doty Co.
Water Right License: Water Right Number 63-11184 Priority: Jan. 23, 1990
Maximum diversion rate = 0.57 CFS

Static Water History:

June 76 >> 40 feet
June 92 >> 34 feet
Aug. 92 >> 35 feet
Mar 93 >> 45 feet
June 93 >> 45 feet
Feb. 94 >> 54 feet
Sept. 95 >> 33 feet
Sept. 96 >> 33 feet
May 02 >> 39.5 feet
Oct. 02 >> 36 feet draw down 10 minutes to 46 feet.

This well and pump was in use from 1984 to 1998.

It was replaced with Well #3 at the West End.

This well was producing too much sand due to the fact that it had no screen.

This well has an advancing Nitrate level due to contamination in the aquifer.

The pump is controlled by a soft start device.

The pump is set to come on when the two City Hall Pumps can not maintain 40# of water pressure measured at the El Paso Pump House.

GROUNDWATER THEORETICAL ANNALYSIS

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DATE: 5-3-2004

BY: Daniel A. Nelson

THEORETICAL RATE OF FLOW: $Q = \frac{(8.8 \times (\text{HP}) \times (\text{EFF.}))}{\text{TDH}}$ Well #3
pump #1

Q = CFS

HP = Total Brake Horsepower of pumping plant (including booster)

Eff. = Pumping plant efficiency (assume 70% or 0.70)

TDH = Total dynamic head = [(LIFT) + (PSI X 2.31)]

LIFT = Depth to water in FEET from land surface to puijing water level

PSI = Pumping pressure measured in PSI near pump (if open discharge assume [0])

$$Q = \frac{(8.8) \times (10) \times (0.70)}{[(132) + (40 \times 2.31)]} = \frac{61.6}{224.4} = 0.27 \text{ CFS}$$

123.2 gpm

LIFT FROM:

Measurement ()

Owner (X)

Area estimate ()

Well Logs ()

PSI FROM:

Measurement ()

Owner (X)

Estimate ()

Owner Gage ()

Booster (Y) (N)

NOTES ON PUMP:

Motor Make, Serial or ID

Pump Make, Serial or ID, rating

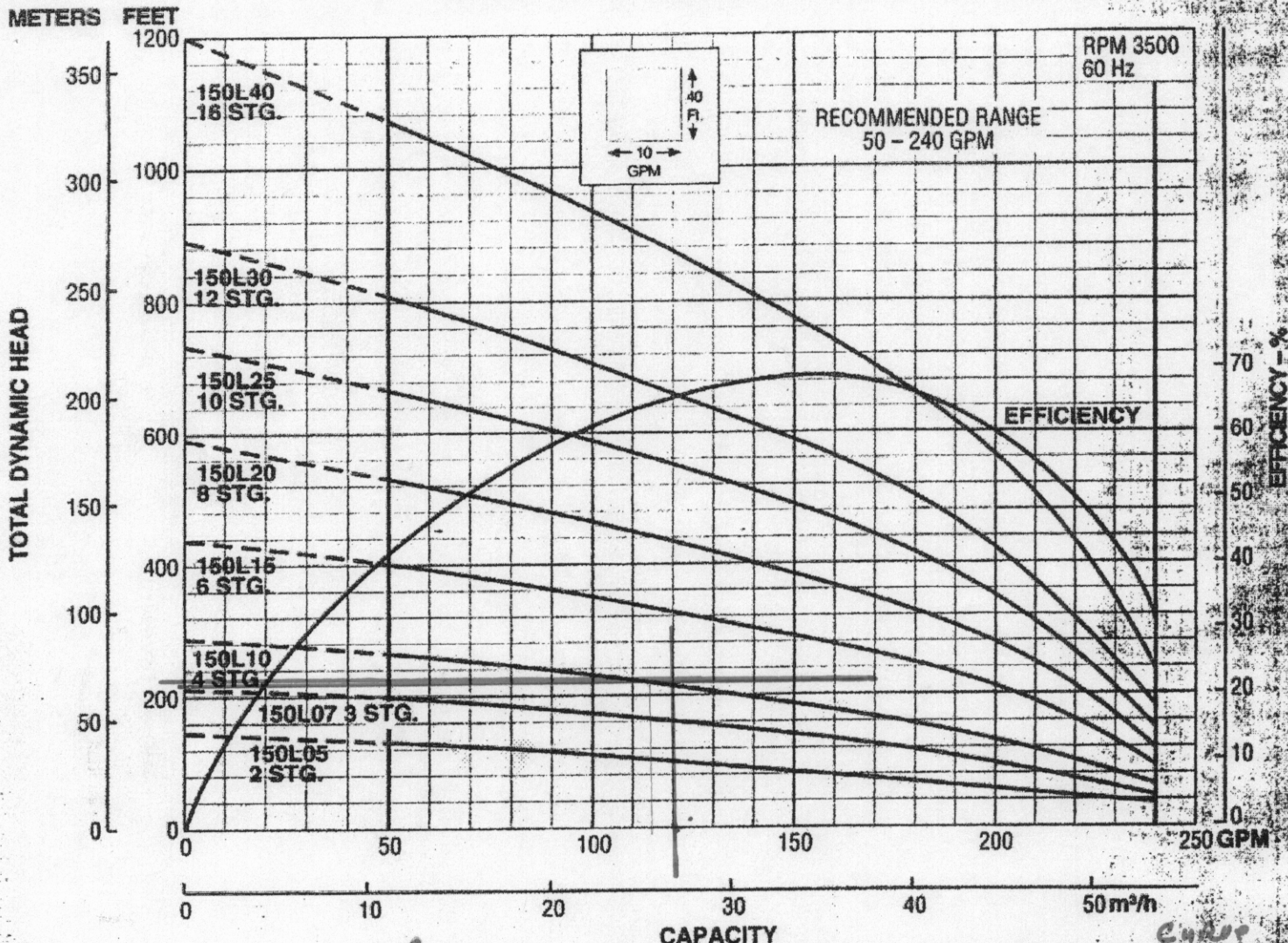
REMARKS: See attached sheets for pump
LIFT and PSI TURN ON. There are
2 pumps in well #3, this is the
FIRST pump, IT produces approximately
120 gpm per pump curve.

0.27 CFS is acceptable
for this pump

0.54 CFS Diverted FROM well #3
242 gpm.

Model 150L

GOULDS PUMPS INC.



Pump #1

224.4 FT LIPS 1202 RPM PER

DIMENSIONS AND WEIGHTS

HP Stages	W.E. Order No.	Motor Order No.	PH	Motor Volts	Motor Length	W.E. Length	L.O.A.	Wt. (lbs.)
5	2	150L05	1	230	29.5	28.0	57.5	92
		S10940	1	230	29.5	28.0	57.5	92
		S10978	200					
		S10970	3	230	23.5	28.0	51.5	92
		S10975	460					
		S10979	575					
7.5	3	150L07	1	230	28.0	32.5	60.5	179
		S11970	1	230	28.0	32.5	60.5	179
		S11978	200					
		S11971	3	230	24.2	32.5	56.7	154
		S11972	460					
		S11979	575					
10	4	150L10	1	230	30.6	36.9	67.5	197
		S12970	1	230	30.6	36.9	67.5	197
		S12978	200					
		S12971	3	230	25.5	36.9	62.4	167
		S12972	460					
		S12979	575					

HP Stages	W.E. Order No.	Motor Order No.	PH	Motor Volts	Motor Length	W.E. Length	L.O.A.	Wt. (lbs.)
15	6	150L15	1	230	33.1	45.8	78.9	216
		S13970	1	230	33.1	45.8	78.9	216
		S13978	200					
		S13971	3	230	28.0	45.8	73.8	190
		S13972	460					
		S13979	575					
20	8	150L20	1	230	30.6	54.5	85.1	216
		S14978	200					
		S14971	3	230	30.6	54.5	85.1	216
		S14972	460					
		S14979	575					
25	10	150L25	1	230	33.2	63.4	96.6	233
		S15978	200					
		S15971	3	230	33.2	63.4	96.6	233
		S15972	460					
		S15979	575					
30	12	150L30	1	230	35.7	72.1	107.8	297
		S16978	200					
		S16971	3	230	35.7	72.1	107.8	297
		S16972	460					
		S16979	575					
40	16	150L40	1	230	40.8	89.8	130.6	340
		S17972	3	460	40.8	89.8	130.6	340
		S17979	575					

(All dimensions are in inches and weights in lbs. Do not use for construction purposes.)

*Non-stock motors have a six (6) week lead time.

WELL #3 STATS.

May 2, 2002

Drilled by: Riverside, Inc., Parma, Idaho using a Reverse Rotary Drill.
Jan. 12, to Feb. 4, 1998.

Depth: 321 feet, water is drawn from a confined aquifer of water bearing sand located between a clay layer at (200 ft level) above and a clay layer at (320 ft level) below.

Diameter Hole: 28" down 197 feet. 16" from 197 ft. down to 321 feet.

Diameter Pipe Casing: 16" from +2 to 198 ft. 375 gage steel
Pipe Casing: 10" from 200 to 265 ft. 365 gage steel
S.S. Screen: 10" from 265 to 315 ft, stainless steel
Pipe Casing: 10" from 315 to 320 ft, 365 gage steel (tail pipe)

Stainless Steel Screen: 50', Johnson Wire S.S., Diameter 10", slot size .035.
Colorado Sand Pack surrounding the Stainless Steel Screen.

Pump #1 (on north side) 130' of 3" pipe plus the distance down to the pitless adapter. It has two check valves, one 40' feet down and one on top of the pump.

Pump #2 (on south side) 120' of 3" pipe plus the distance down to the pitless adapter. It has two check valves, one 40' feet down and one on top of the pump.

Surface Seal: Bentonite from 0 to 200 feet. using the overbore method
Fills cavity between hole 28" and casing 16". (27,500 pounds).

Storage Tanks: Main Pump House has a 3,800 gallon tank.
City Hall, has one 80 gallon tank with bladder.

Pumps: Two, 10 HP, Single Phase pumps. They work alone until the demand causes the 2nd pump to come on. They alternate coming on line 1st.
Each pump will produce up to 150 gallons per minute for a maximum of 300 gallons per minute.

Pressure settings: 1st pump on = 40 psi on and 58 psi off, Black Box on right.
2nd pump on = 36 psi on and 56psi off, Purple Box on left.

Water Flow Meter indicates: gallons per minute and total gallons pumped.
Static Water Level 88 feet. Maximum Draw Down water level 132 feet.
Nitrate = 0.48 mg/L, Testing performed annually.
Hardness: 167mg/L = 10 grains/L
Temperature: 61 degrees Fahrenheit
A test for Coliform organisms is performed monthly.
Pressure settings at the east end are 10 # higher than the west end.

GROUNDWATER THEORETICAL ANNALYSIS

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THEORETICAL RATE OF FLOW: $Q = \frac{(8.8 \times (HP) \times (EFF.))}{TDH}$ Well #3
Pump #2.

Q = CFS

HP = Total Brake Horsepower of pumping plant (including booster)

Eff. = Pumping plant efficiency (assume 70% or 0.70)

TDH = Total dynamic head = [(LIFT) + (PSI X 2.31)]

LIFT = Depth to water in FEET from land surface to puijing water level

PSI = Pumping pressure measured in PSI near pump (if open discharge assume [0])

$$Q = \frac{(8.8) \times (10) \times (0.70) \quad 61.6}{[(132) + (40 \times 2.31)] \quad 224.4} = \frac{0.27 \text{ CFS}}{123.2 \text{ gpm}}$$

LIFT FROM:

Measurement ()

Owner (X)

Area estimate ()

Well Logs ()

PSI FROM:

Measurement ()

Owner (X)

Estimate ()

Owner Gage ()

Booster (Y) (N)

NOTES ON PUMP:

Motor Make, Serial or ID

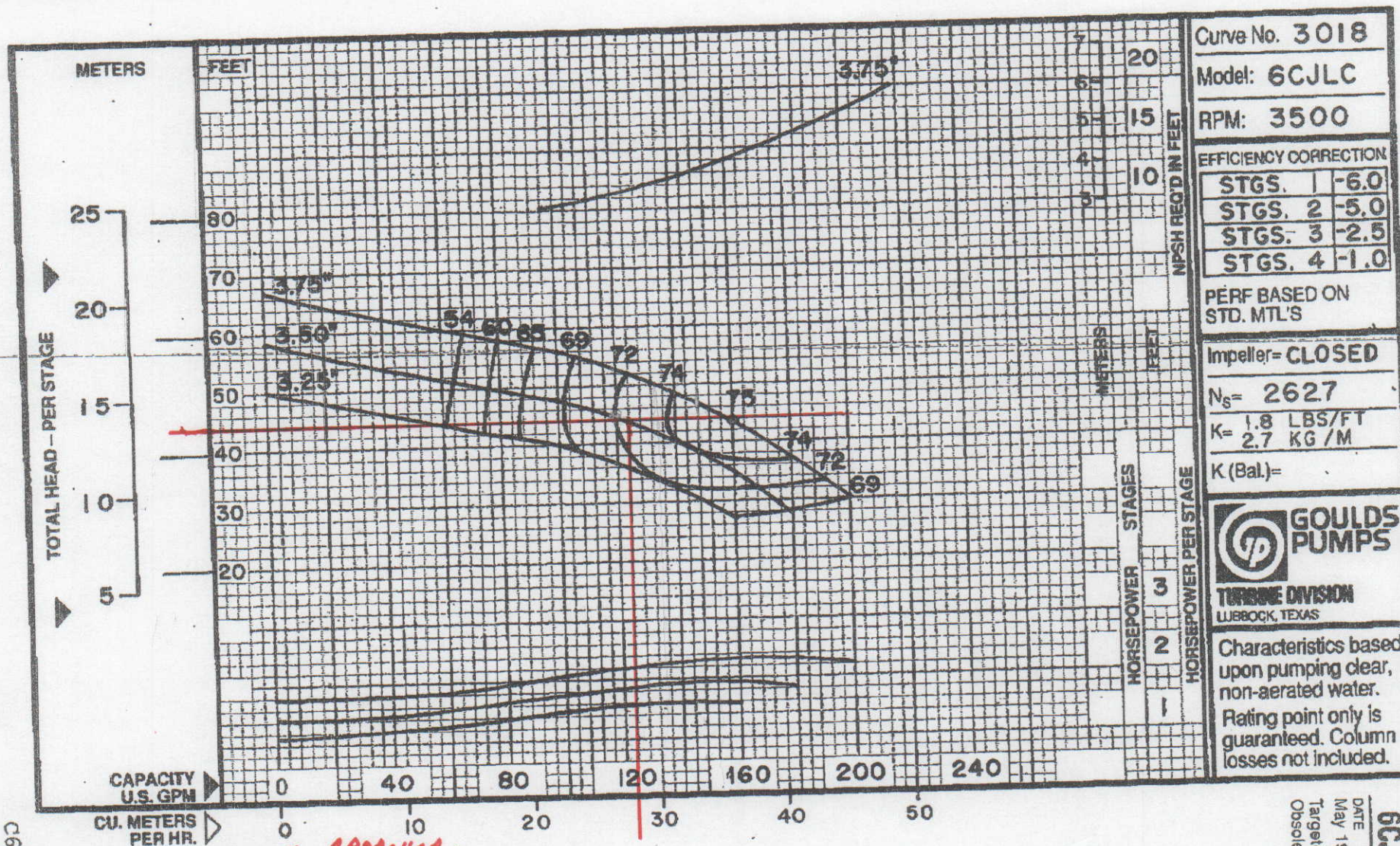
Pump Make, Serial or ID, rating

REMARKS: See attached sheets for pump
LIFT AND PSI TURN ON. There are
2 pumps in well #3. This is the
second pump. it produces 124 gpm per
pump curve.

0.27 CFS is acceptable for this
pump

0.54 CFS is diverted from well #3
242 gpm

GOULDS PROPOSAL NO.	GOULDS S.O. NO.	INQUIRY NO.	CUSTOMER P.O. NO.	P.O. DATE	ITEM NO.	CUSTOMER
						Per Estates
PROJECT			SERVICE	GPM CAPACITY	F.T. TDH	% EFFICIENCY
				120	240	
						RPM
						3600



3.50" PROPELLER.
 5 STAGE PUMP.
 224.4 FT Head / 5 Stages = 44.8 FT PER STAGE
 CURVE SHOWS 124 GPM.

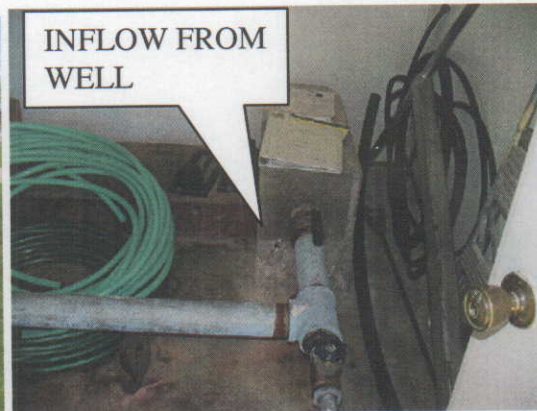
MODEL
6CJLC
 DATE
 May 1990
 Targeted for
 Obsolescence

PHOTOGRAPHER AND DATE OF PHOTOS DANIEL A NELSON 5/3/2004

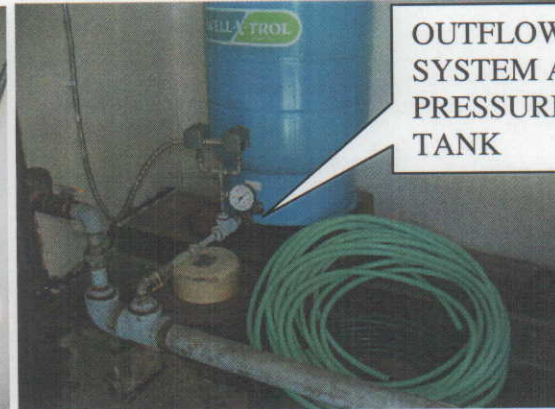
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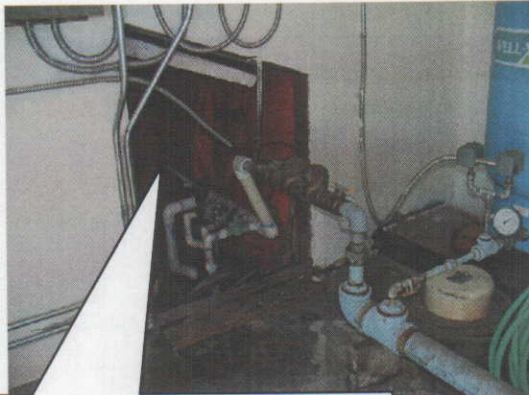
WELL #3



INFLOW FROM WELL



OUTFLOW TO SYSTEM AND PRESSURE TANK



LOCATION OF ABANDONED WELL #2 AND OUTFLOW PIPE TO SYSTEM



McCROMETER FLOW METER ON SYSTEM

Well #3 is the main well used for this system. It is located at the west entrance to the subdivision. It diverts into the main line and fills the 3800 tank at the Well #2 site. A McCrometer flow meter measures the water from this well. The original well #1 has been abandoned is located in an alcove of the pump house. It is not connected to the system.

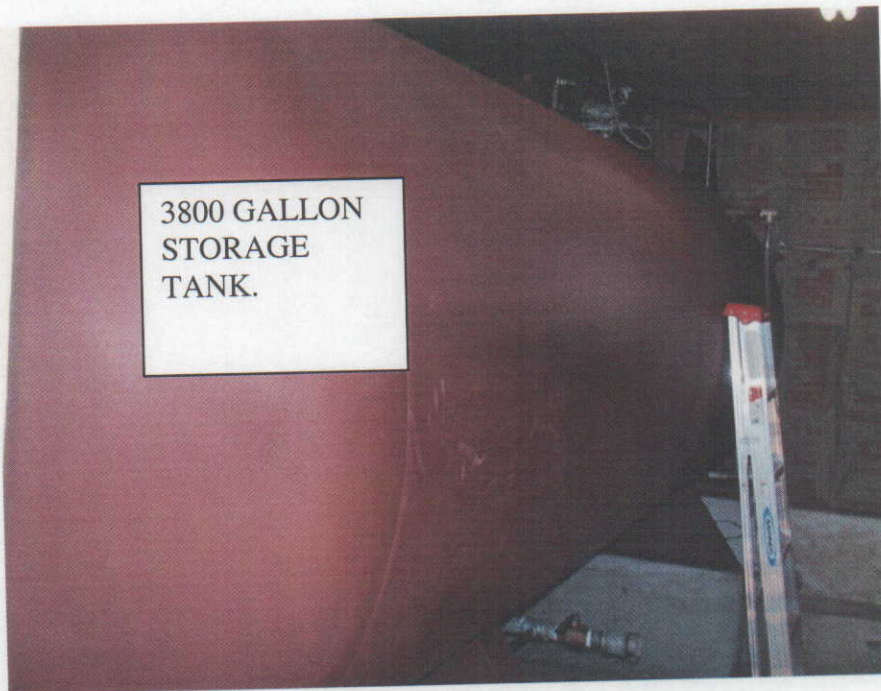
PHOTOGRAPHER AND DATE OF PHOTOS DANIEL A NELSON 5/3/2004
FILE NUMBER 63-31595



WELL
HOUSE

WELL #2
LOCATED
UNDER
ROCK

This is a photo of well # 2 and its well house. The water is diverted from the well to the 3800 gallon storage tank and then diverted into the system. The pressure on the system operates 40 to 54 psi.



3800 GALLON
STORAGE
TANK.