

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

RECEIVED

JUN 01 2010

DEPARTMENT OF
WATER RESOURCES

A. GENERAL INFORMATION

Permit No. 63-31957

1. Owner City of Meridian Phone No. 208-898-5500

Current address 33 East Broadway Avenue, Meridian, ID 83642

2. Examiner's name Terry Scanlan, P.E. (Examiner No. 11-129) EXAM DATE May 24, 2010

3. Accompanied by Shawn Pehrson Email

Address 33 East Broadway Avenue, Meridian, ID 83642

Relationship to permit holder City of Meridian Water Department Phone No. 208-888-5242

4. Source Ground Water tributary to

B. OVERLAP REVIEW

1. Other water rights with the same place of use Nampa and Meridian Irrigation District shares

2. Other water rights with the same point of diversion None

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
			NW	NE	34	3N	1W	Ada	Exam, 2009 Photo, Plat Map

2. Place(s) of Use: Method of determination Exam, 2009 Photo, Plat Map

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
3N	1W	34		M															

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
Pump 1		15		Berkeley-Model 7T-175	6" discharge; 4" submersible column pipe
Pump 2		100		Berkeley-Model 8T-900	6" discharge; 6" submersible column pipe

*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
#1 Flow Meter (15-hp Pump)	Ultra-Mag	McCrometer	UM06	UM2DD60504	4"	
#2 Flow Meter (100-hp Pump)	EA402	McCrometer	DP124-200	E06-01783	8"	

2. Measurements:

System capacity per pump curves = 1300 gpm

E. NARRATIVE/REMARKS/COMMENTS

An 18-inch well equipped with two submersible pumps (15-hp and 100-hp) supplies domestic and fire protection water to twenty-four (24) residential lots consisting of Lots 1-6, 8-14 and 16-26, Block 1 within Bittercreek Meadows Subdivision. The well, located on Lot 7, Block 1, has a completed depth of 503 feet with the 15-hp pump set with 4-inch column pipe and the 100-hp pump set with 6-inch column pipe. Since pump set depths are unknown, a conservative depth of 200' for both pumps was assumed for calculations.

The system is designed so that the 100-hp pump kicks on when demand exceeds the limits of the 15-hp pump or when fire protection is needed.

A separate surface water system has been installed to supply irrigation water to the residential lots from Nampa and Meridian Irrigation District. The ground water system can provide water for external domestic uses when surface water is not available.

The permit was originally filed by JLJ Enterprises, Inc. for domestic and fire protection uses. Because the City of Meridian now owns and operates the system through a recent purchase, municipal use has been recommended within the limits of the permit for the developed domestic and fire protection uses.

Attachment A is a copy of the permit, proof of beneficial use and assignment of permit.

Attachment B is a copy of the well driller's report, well test and pump performance curves.

Attachment C is the system capacity flow calculations.

Attachment D is a topographical map, aerial photo and plat map.

Attachment E is photos of the place of use and well.

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:

See Attachment C

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 Volume:

Potential volume = $0.47 \text{ cfs} \times 365 \text{ days} \times 1.9835 = 340.3 \text{ afa}$

Required volume = $24 \text{ residential lots} \times 1.2 \text{ afa/lot} = 28.8 \text{ afa}$

Fire Protection Volume: N/A

H. RECOMMENDATIONS

1. Recommended Amounts

Beneficial Use	Period of Use		Rate of Diversion Q (cfs)	Annual Volume V (afa)
	From	To		
Municipal	1/1	12/31	0.47 cfs	28.8 afa
Municipal Fire Protection	1/1	12/31	2.23 cfs	
Totals:			2.70 cfs	28.8 afa

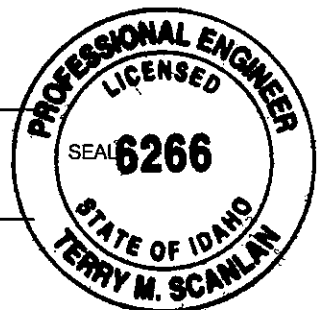
2. Recommended Amendments

- ☐ 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 Change Nature of Use

I. AUTHENTICATION

Field Examiner's Signature Terry M. Scanlan Date 5/24/10

Reviewer _____ Date _____



ATTACHMENT A

**PERMIT RECORD, PROOF OF BENEFICIAL USE
AND ASSIGNMENT OF PERMIT**

State of Idaho
Department of Water Resources
Permit to Appropriate Water

NO. 63-31957

Priority: May 26, 2004

Maximum Diversion Rate: 2.70 CFS

This is to certify, that J L J ENTERPRISES INC
408 S EAGLE RD STE 103
EAGLE ID 83616

has applied for a permit to appropriate water from:

Source: GROUND WATER

and a permit is APPROVED for development of water as follows:

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>RATE OF DIVERSION</u>
DOMESTIC	01/01 to 12/31	0.47 CFS
FIRE PROTECTION	01/01 to 12/31	2.23 CFS

LOCATION OF POINTS OF DIVERSION:

GROUND WATER	NW¼NE¼	Sec. 34, Twp 03N, Rge 01W, B.M., ADA County
GROUND WATER	NW¼NE¼	Sec. 34, Twp 03N, Rge 01W, B.M., ADA County

PLACE OF USE: DOMESTIC & FIRE PROTECTION

Twp Rge Sec	NE				NW				SW				SE				
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	Totals
03N 01W 34		X															

CONDITIONS OF APPROVAL

1. Proof of application of water to beneficial use shall be submitted on or before **May 01, 2007**.
2. Subject to all prior water rights.
3. 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.
4. Right holder shall comply with the drilling permit requirements of Section 42-235, Idaho Code and applicable Well Construction Rules of the Department.
5. The diversion and use of water described in this right may be subject to additional conditions and limitations agreed to by the protestant(s) and the right holder under separate agreement to which the Department is not a party and which may be enforceable by a court of law.
6. Domestic use is for 24 homes within Bittercreek Meadows Subdivision.
7. Water shall not be diverted for fire protection use under this right except to fight or repel an existing fire.
8. 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.

State of Idaho
Department of Water Resources

Permit to Appropriate Water

NO. 63-31957

9. The right holder shall make full beneficial use of all surface water rights available to the right holder for irrigation of the subdivision lots authorized to be irrigated under this right. The right holder shall limit the diversion of ground water under this right to those times when the surface water supply is not available or the surface water supply is not reasonably sufficient to irrigate the place of use authorized under this right.
10. If the surface water right(s) appurtenant to the place of use is sold, transferred, leased or used on any other place of use, this right to divert groundwater shall not be used for irrigation purposes without an approved transfer pursuant to Section 42-222, Idaho Code, or approval of the Department if a transfer is not required.
11. This right does not grant any right-of-way or easement across the land of another.
12. 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.
13. 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.

This permit is issued pursuant to the provisions of Section 42-204, Idaho Code. Witness the signature of the Director, affixed at Boise, this 26th day of May, 2005.


FOR KARL J DREHER, Director

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
STATEMENT OF COMPLETION
FOR SUBMITTING PROOF OF BENEFICIAL USE

FOR OFFICE USE ONLY

Amt. of Fee \$: _____
Receipt No. _____
Receipt By: _____
Date Received: _____

The Idaho Department of Water Resources considers this form a statement by the permit holder(s) that development of a water right has been completed and that water has been applied to beneficial use to the extent described below. This form must be accompanied by an examination fee, when necessary, or by a completed Beneficial Use Field Report prepared by a certified water right examiner. Please refer to the instructions and fee schedule for this form. If ownership of the permit has changed, please contact any Department office or visit the Department's website at: www.idwr.idaho.gov for an Assignment of Permit form. If you wish to relinquish your permit because you have not established the authorized use of the water and are not applying for an extension, please notify the Department in writing.

1. Permit No.: 63-31957 Telephone No.: 208-898-5500

2. Name of Permit Holder(s): City of Meridian

3. Mailing Address: 33 E. Broadway Ave. City: Meridian

State: ID Zip: 83642 Email: _____

4. Source of Water: Ground Water If **GROUND WATER** (well), Date Drilled: mo. 12 / yr. 2005

Well Driller: Riverside, Inc. Drilling Permit Number: 891279-836283

5. Extent of use(s) completed (as authorized by the water right permit):

Domestic (No. of households): 24 Stockwater (No. and type of stock): _____

Irrigation (No. of acres): _____ Other: Fire Protection

6. Total rate of diversion or storage volume for which proof is submitted: 2.70 cfs OR _____ acre-feet.

7. Compliance with a measuring device requirement, lockable controlling device requirement, and/or other conditions of permit: **Refer to the approval conditions on your permit and respond accordingly. The Department will not issue a license if permit conditions are not met.**

Measuring Device: Is a measuring device required?

If yes, has the measuring device been installed?

Yes ☐	No ☒
Yes ☐	No ☐

Lockable Controlling Device: Is a lockable device required to control the diversion?

If yes, has the lockable device been installed?

Yes ☐	No ☒
Yes ☐	No ☐

Other Conditions of Permit: Do the approval conditions on your permit require you to submit additional information in connection with your proof of beneficial use? If yes, list the conditions below and attach documents with the required information.

_____ Completed?

Yes ☐	No ☐
------------------------------	-----------------------------

8. Fee Enclosed: \$ n/a See fee schedule on back of the instructions for filing proof of beneficial use.
Proofs filed without an appropriate fee, will be considered incomplete.

9. Person to contact to accompany the Department representative during field examination of the water system.

Name: _____ Telephone Number: _____

Mailing Address: _____ City: _____

State: _____ Zip: _____ Email: _____

The information given on this form is my true statement of the extent to which the above numbered permit has been developed and water has been diverted and applied to a beneficial use. I understand that any undeveloped portion of the permit is relinquished to the State of Idaho.

Signature of permit holder: [Signature] ENGINEERING MANAGER Date: 5/25/10
(Include your title, if on behalf of company or organization)

Mail to: Idaho Department of Water Resources, PO Box 83720, Boise, ID 83720-0098

11/99

For Office Use Only
\$25 filing fee _____
Receipt # _____
Date _____

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

ASSIGNMENT OF PERMIT

To change the ownership of a permit

I, JLJ Enterprises, Inc. hereby assign to City of Meridian
of, 33 E. Broadway Ave., Meridian, ID 83642 208-898-5500
(Full Address) (phone)

All my right, title, and interest in and to Permit No. 63-31957
to appropriate the public waters of the State of Idaho.

OR (for partial assignments)

The following described portion of my right, title, and interest in and to for
Permit No. _____ to appropriate the public waters of the State of Idaho.
(Describe portion of the application for permit assigned, listing the number of acres in each 40 acre
subdivision, point of diversion location, and amount of the water in cubic feet per second.)

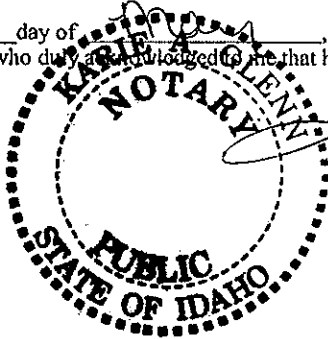
Made this day of MAY 7, 20 10

Permit Holder(s)

State of Idaho

County of ada

On this 7 day of May, 20 10, personally appeared before me the signer(s) of the
above instrument, who duly acknowledged to me that he (she) (they) executed the same.



Notary Public residing at Meridian Idaho

SEAL

My commission expires: 10-2-15

ATTACHMENT B
WELL LOG, WELL TEST DATA
AND PUMP CURVES

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT1. WELL TAG NO. D 0042022
DRILLING PERMIT NO. 891279-836283
Water Right or Injection Well No. 63-31957

2. OWNER:

Name JIM JEWITT / JLS ENTERPRISES INC
Address 516 S. CAPITOL BLVD
City BOISE State ID Zip 83702

3. LOCATION OF WELL by legal description:

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

Twp. 3 North ☒ or South ☐
Rge. 1 East ☐ or West ☒
Sec. 34 1/4 NW 1/4 NE 1/4
Gov't Lot _____
Lat: _____ Long: _____
Address of Well Site AMITY ROAD EAST OF TEN MILE
City KUNA

Lt. _____ Blk. _____ Sub. Name _____

BITTERCREEK MEADOWS SUBDIVISION

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
3/4" BENTONITE	0	422	45,000	DRY POUR
3/4" BENTONITE	565	615	3,000	DRY POUR
3/4" BENTONITE	678	700	3,000	DRY POUR

TE Was drive shoe seal tested? ☐ Y ☒ N How?ACK FILL: 3/4" GRAVEL 615' - 678'8. CASING/LINER: 3/4" GRAVEL 700' - 755'
15X10 REDUCER @ 302'

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
18"	13	302	.375	STEEL	☒	☐	☐	☐
10"	302	445	.365	STEEL	☐	☐	☐	☐
10"	445	498	.365	STEEL	☐	☐	☐	☐

Length of 541 - 365 Length of TailpipePacker ☐ 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
445	485	.030		10"	S.S.	☒	☐
498	528	.030		10"	S.S.	☐	☐
541	561	.030		10"	S.S.	☒	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method
#8-12 SAND	422	565	27,000	DRY POUR

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

97 ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or control devices:
1 1/2 PIPE ON SIDE

Office Use Only

Well ID No. _____
Inspected by _____
Twp _____ Rge _____ Sec _____
1/4 1/4 1/4
Lat: _____ Long: _____

12. WELL TESTS:

☒ Pump ☐ Baller ☐ Air ☐ Flowing Artesian

Yield gal/min.	Drawdown	Pumping Level	Time
1300 gpm	32'	129'	13 hrs

Water Temp. 67°

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
26"	0	2	TOP SOIL		
	2	7	CALICHE, LAVA BOULDERS		
	7	42	BASALT		
	42	45	RED CINDERS		
	45	48	CALICHE, BURNT CLAY		
	48	83	SAND, GRAVEL, RIVER ROCK CEMENTED		
	83	149	FINE - COARSE SAND		
	149	152	LE BRN CLAY		
	152	254	FINE - COARSE SAND SOME SM GRAVEL		
	254	285	LE BRN CLAY		
	285	310	FINE - COARSE BRN SAND		
	310	323	BRN CLAY SOME SAND		
	323	337	FINE SAND, SOME COARSE		
	337	342	BRN CLAY SOME FINE SAND		
	342	351	FINE SAND		
	351	379	LE BRN CLAY w/STREAKS OF SAND		
	379	396	FINE - MED SAND		
	396	402	BRN CLAY		
	402	416	FINE - MED SAND		
	416	426	BRN + BLUE CLAY		
	426	429	FINE BLUE SAND		
	429	442	BLUE + GREENISH GREY CLAY		
	442	509	FINE - COARSE SAND SOME CLAY MIXED		
	509	540	BLUE CLAY w/SM LAYER SAND		
	540	586	FINE - MED SAND SOME CLAY		
	586	593	BLUE GREEN CLAY		
	593	667	FINE - COARSE SAND w/SM CLAY LAYERS		
	667	674	BLUE GREENISH CLAY		
	674	676	FINE - MED SAND		
	676	706	GREENISH BLUE CLAY		
	706	716	MED SAND		
	716	755	GREENISH CLAY w/GREY 2" @		
			BOTTOM		

Completed Depth 561' (Measurable)Date: Started 10-17-05 Completed 12-5-05

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 DIVERSIDE, INC Firm No. 333Principal Driller Ralph [Signature] Date 12-5-05and Driller or Operator [Signature] Date 12-5-05Operator [Signature] Date _____Principal Driller and Rig Operator Required.
Operator must have clearance of Pullman

Bittercreek Well Step Q = 500, 900, 1200, 1500 gpm, Constant Q = 1300 gpm
 Test conducted by: SPF Water and Riverside
 Flow measured by: Flowmeter
 Water Levels Measured by: well sounder Water Level MP: top of tubing
 MP elevation: 1.2 ft above top of well casing
 Pump on: 12/2/2005 12:07 Pump off: 12/2/2005 14:12
 Pump on: 12/5/2005 8:38 Pump off: 12/5/2005 21:41
 water level pre-test (ft) on 12/2: 97.4 (note: pump off for only ~1 hr 20 min preceding test)
 static water level (ft) on 12/5: 92.25 (note: pump off for 2+ days preceding test)

Date	Time	Depth to water (ft)	Elapsed Time (min)	Drawdown (ft)	Remarks	Qtot (gal)	Qave (gpm)	Cumulative Qave (gpm)
12/2	12:07		0	0.00	Pump On (Qtot=4,992,400 gal)	4,992,400	555	555
12/2	12:08	108.15	1	15.90	Q~500 gpm			
12/2	12:09	105.02	2	12.77	Sulfur smell noticeable			
12/2	12:10	106.30	3	14.05				
12/2	12:11	106.20	4	13.95				
12/2	12:12	106.65	5	14.40				
12/2	12:17	107.07	10	14.82				
12/2	12:22	107.58	15	15.33				
12/2	12:27		20		pH=8.21, T=24.0C, EC/SC=322.3/323.3			
12/2	12:29	107.61	22	15.36				
12/2	12:34	107.92	27	15.67				
12/2	12:37	107.92	30	15.67				
12/2	12:38		31		Flow increase (Qtot=5,009,600 gal)	5,009,600	994	994
12/2	12:41	116.90	34	24.65	Q~900 gpm			
12/2	12:46	117.33	39	25.08				
12/2	12:51	117.74	44	25.49				
12/2	12:52		45		pH=8.13, T=23.7C, EC/SC=321.7/322.2			
12/2	12:57	117.97	50	25.72				
12/2	13:03	118.28	56	26.03				
12/2	13:08	118.37	61	26.12				
12/2	13:09		62		Flow increase (Qtot=5,040,400 gal)	5,040,400		

Date	Time	Depth to water (ft)	Elapsed Time (min)	Drawdown (ft)	Remarks	Qtot (gal)	Qave (gpm)	Cumulative Qave (gpm)
12/2	13:10	122.58	63	30.33	Q~1200 gpm		1,236	1,236
12/2	13:15	123.37	68	31.12				
12/2	13:20	123.60	73	31.35				
12/2	13:21		74		pH=8.28, T=23.0C, EC/SC=318.2/322.1			
12/2	13:25	123.71	78	31.46				
12/2	13:30	123.97	83	31.72				
12/2	13:40	124.21	93	31.96				
12/2	13:42		95		Flow increase (Qtot=5,081,200 gal)	5,081,200	1,587	1,587
12/2	13:45	132.38	98	40.13	Q~1500 gpm			
12/2	13:50	133.43	103	41.18				
12/2	13:55	133.85	108	41.60				
12/2	14:00	134.05	113	41.80				
12/2	14:11	134.56	124	42.31				
12/2	14:12		125		Pump Off - flooding irrigation box, Qtot=5,128,800 gal	5,128,800		
12/5	8:05	92.25		0.00	Static water level		1,168	1,168
12/5	8:38		0		Pump On (Qtot=5,128,800 gal)	5,128,800		
12/5	8:39		1		Q~1300			
12/5	8:41	110.60	3	18.35	Sulfur smell again noticeable			
12/5	8:42	113.42	4	21.17				
12/5	8:43	113.97	5	21.72				
12/5	8:44	114.44	6	22.19				
12/5	8:45	114.78	7	22.53				
12/5	8:46	114.98	8	22.73				
12/5	8:47	115.27	9	23.02				
12/5	8:48	115.47	10	23.22				
12/5	8:49	115.67	11	23.42				
12/5	8:51	115.85	13	23.60				
12/5	8:53	116.23	15	23.98				
12/5	8:55	116.23	17	23.98				
12/5	8:57	116.44	19	24.19				
12/5	8:59	116.57	21	24.32				
12/5	9:00		22		Qtot=5,154,500 gal, Q readjusted slightly to 1300 gpm	5,154,500		

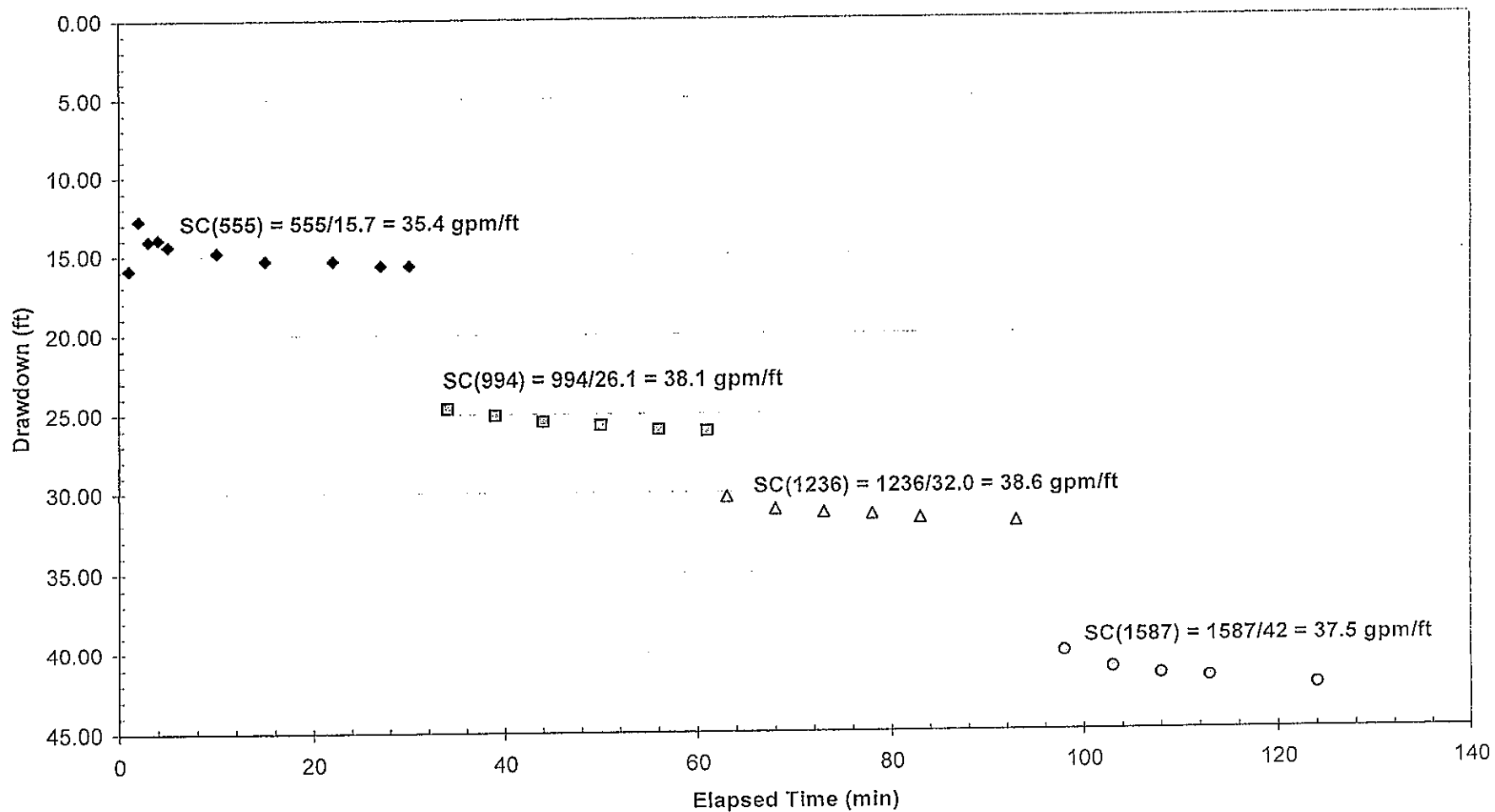
Date	Time	Depth to water (ft)	Elapsed Time (min)	Drawdown (ft)	Remarks	Qtot (gal)	Qave (gpm)	Cumulative Qave (gpm)
12/5	9:04	119.80	26	27.55			1,323	1,268
12/5	9:08		30		pH=8.05, T=23.5C, SC/EC=314.9/317.5			
12/5	9:12	120.38	34	28.13				
12/5	9:16	120.71	38	28.46				
12/5	9:20	120.89	42	28.64				
12/5	9:24	121.05	46	28.80				
12/5	9:29	121.31	51	29.06				
12/5	9:39	121.61	61	29.36				
12/5	9:40		62		Qcheck: Q~1300, Qtot=5,207,400 gal	5,207,400	1,304	1,284
12/5	9:48	121.94	70	29.69				
12/5	9:51		73		pH=8.02, T=24.1C, SC/EC=319.5/317.7			
12/5	9:58	122.00	80	29.75				
12/5	10:08	122.24	90	29.99				
12/5	10:23	122.64	105	30.39				
12/5	10:33		115		Qtot=5,276,500 gal, Q readjusted slightly to 1300 gpm	5,276,500	1,401	1,335
12/5	10:38	124.95	120	32.70				
12/5	10:43		125		pH=8.02, T=23.9C, SC/EC=317.2/317.2			
12/5	10:52	125.21	134	32.96				
12/5	11:08	125.64	150	33.39				
12/5	11:23	125.83	165	33.58				
12/5	11:38	126.12	180	33.87				
12/5	11:43		185		From sample tap (rather than discharge): pH=8.15, T=22.2C, SC/EC=309.1/321.0			
12/5	12:02		204		Qcheck~1300, Qtot=5,401,200 gal	5,401,200	1,399	1,366
12/5	12:04	126.32	206	34.07				
12/5	12:37	126.09	239	33.84	Data from Riverside			
12/5	13:08	127.00	270	34.75	Data from Riverside			
12/5	13:32	127.01	294	34.76	Data from Riverside			
12/5	14:03	127.00	325	34.75	Data from Riverside			
12/5	14:08	127.03	330	34.78	Data from Riverside			
12/5	14:43	127.02	365	34.77	Data from Riverside			
12/5	15:05	127.00	387	34.75	Data from Riverside (Qtot=5,657,300)	5,657,300		

Date	Time	Depth to water (ft)	Elapsed Time (min)	Drawdown (ft)	Remarks	Qtot (gal)	Qave (gpm)	Cumulative Qave (gpm)
12/5	15:44	127.02	426	34.77	Data from Riverside		1,526	1,388
12/5	16:06	127.10	448	34.85	Data from Riverside (Qtot=5,750,400)	5,750,400		
12/5	16:27	127.07	469	34.82	Data from Riverside		1,247	1,371
12/5	17:06	127.09	508	34.84	Data from Riverside (Qtot=5,825,200)	5,825,200		
12/5	17:30	127.11	532	34.86	Data from Riverside		1,336	1,367
12/5	18:05	128.01	567	35.76	Data from Riverside (Qtot=5,904,000)	5,904,000		
12/5	18:31	128.00	593	35.75	Data from Riverside		1,402	1,370
12/5	19:02	128.00	624	35.75	Data from Riverside (Qtot=5,983,900)	5,983,900		
12/5	19:36	128.02	658	35.77	Data from Riverside		1,358	1,369
12/5	19:57	128.04	679	35.79	Data from Riverside (Qtot=6,058,600)	6,058,600		
12/5	20:31	128.08	713	35.83	Data from Riverside		1,373	1,370
12/5	21:01	128.11	743	35.86	Data from Riverside (Qtot=6,146,500)	6,146,500		
12/5	21:15	128.70	757	36.45			1,275	1,365
12/5	21:40	129.05	782	36.80				
12/5	21:41		783		Pump Off (Qtot=6,197,500)	6,197,500		

Bittercreek Well Step Q = 500, 900, 1200, 1500 gpm, Constant Q = 1300 gpm							
Test conducted by: SPF Water and Riverside							
Flow measured by: Flowmeter							
Water Levels Measured by: well sounder Water Level MP: top of tubing							
MP elevation: 1.2 ft above top of well casing							
Pump on: 12/2/2005 12:07 Pump off: 12/2/2005 14:12							
Pump on: 12/5/2005 8:38 Pump off: 12/5/2005 21:41							
static water level (ft) on 12/2: 97.4 (note: pump off for approx 1 hr 20 min preceding test)							
static water level (ft) on 12/5: 92.25							
Date	Time	Depth to water (ft)	Elapsed Time, t (min)	Recovery Time, t' (min)	t/t'	Drawdown (ft)	Remarks
12/5	8:05	92.25					Static water level
12/5	8:38		0			0.00	Pump On (Qtot=5,128,800 gal)
12/5	21:41		783				Pump Off (Qtot=6,197,500)
12/5	21:43	104.85	785	2	392.5	12.60	
12/5	21:44	103.20	786	3	262.0	10.95	
12/5	21:45	102.00	787	4	196.8	9.75	
12/5	21:46	101.41	788	5	157.6	9.16	
12/5	21:47	100.71	789	6	131.5	8.46	
12/5	21:48	100.95	790	7	112.9	8.70	
12/5	21:49	101.08	791	8	98.9	8.83	
12/5	21:50	100.95	792	9	88.0	8.70	
12/5	21:51	100.74	793	10	79.3	8.49	
12/5	21:53	100.42	795	12	66.3	8.17	
12/5	21:55	100.24	797	14	56.9	7.99	
12/5	21:57	99.94	799	16	49.9	7.69	
12/5	21:59	99.71	801	18	44.5	7.46	
12/5	22:01	99.55	803	20	40.2	7.30	
12/5	22:06	99.31	808	25	32.3	7.06	
12/5	22:11	98.77	813	30	27.1	6.52	
12/5	22:21	98.14	823	40	20.6	5.89	
12/5	22:31	97.74	833	50	16.7	5.49	
12/5	22:47	97.17	849	66	12.9	4.92	

Bricker Well (Observation)				
Test conducted by: SPF Water and Riverside				
Water Levels Measured by: well sounder Water Level MP: top of well casing				
Pumping only in Bittercreek Well				
static water level (ft) on 12/2: 72.17				
static water level (ft) on 12/5: 72.13				
Date	Time	Depth to water (ft)	Elapsed Time (min)	Remarks
12/2	11:45	72.17		Static water level on 12/2/2005
12/2	12:07			Pump on in Bittercreek Well, Q~500 gpm
12/2	12:38		31	Q increased to ~900 gpm
12/2	13:09		62	Q increased to ~1200 gpm
12/2	13:35	72.13	88	
12/2	13:42		95	Q increased to ~1500 gpm
12/2	14:04	72.13	117	
12/2	14:12		125	Pump off in Bittercreek Well
12/2	14:21	72.13	134	
12/5	7:50	72.13		Static water level on 12/5/2005
12/5	8:38			Pump at Bittercreek well on
12/5	8:39		1	Q stabilized at approx 1300 gpm
12/5	9:34	72.15	56	
12/5	10:29	72.15	111	
12/5	11:56	72.14	198	
12/5	21:10	72.13	752	
12/5	21:41		783	Pump at Bittercreek well off
12/5	22:36	72.16	838	

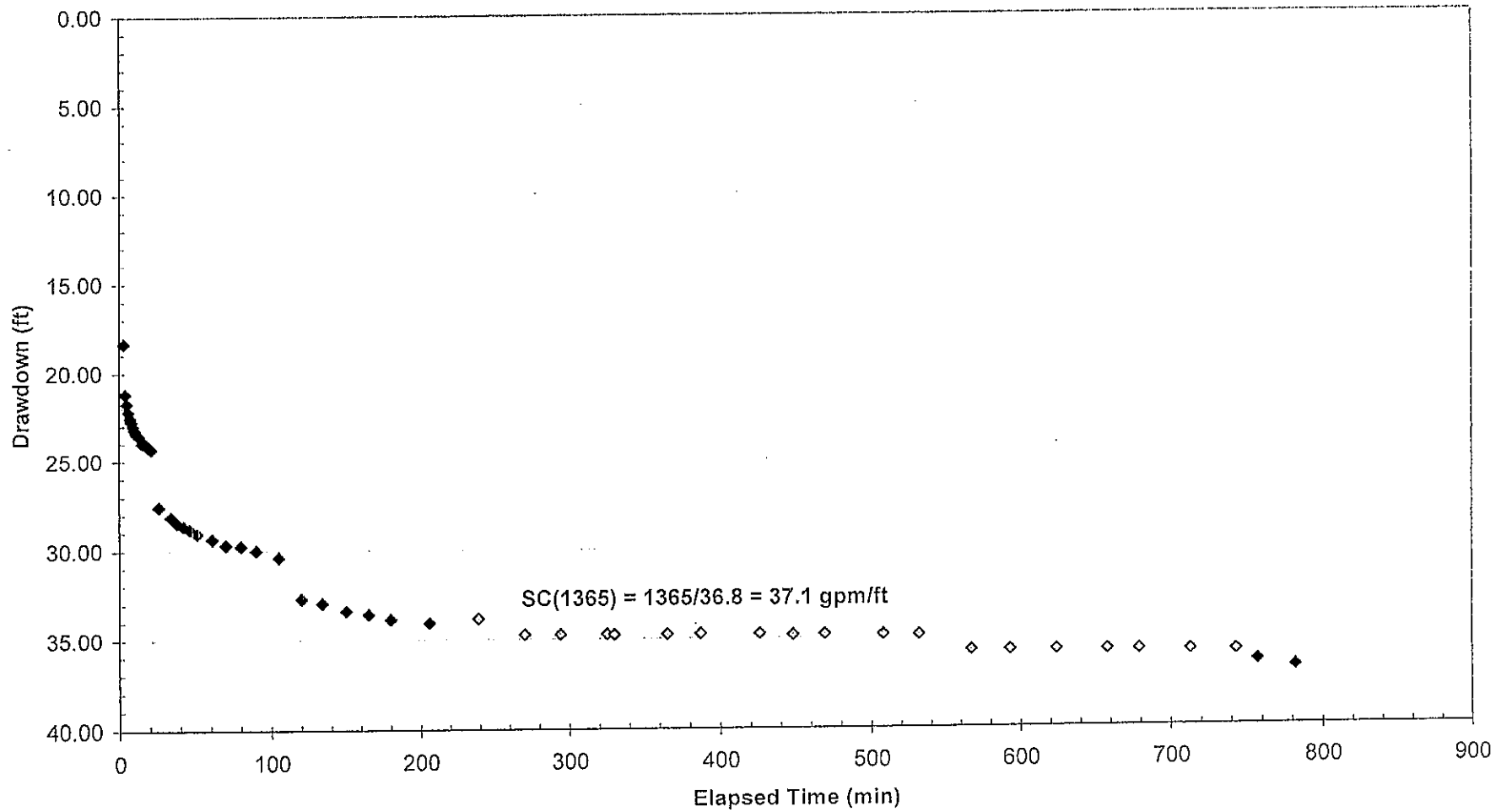
Bittercreek Step Rate Test
Test Date: 12/2/05
Q = 555, 994, 1236, 1587 gpm



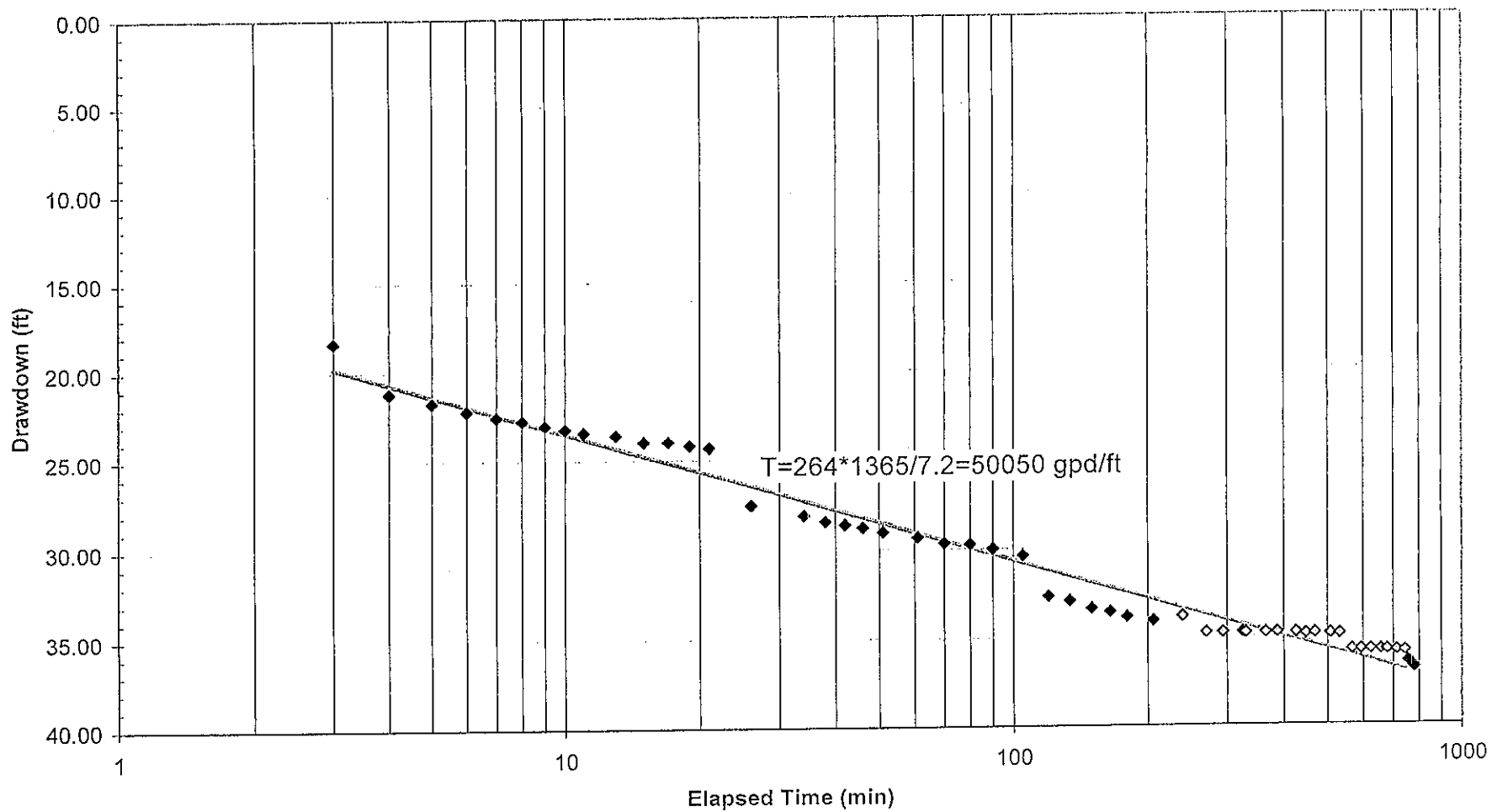
Bittercreek Constant Rate Test

Test Date = 12/5/05

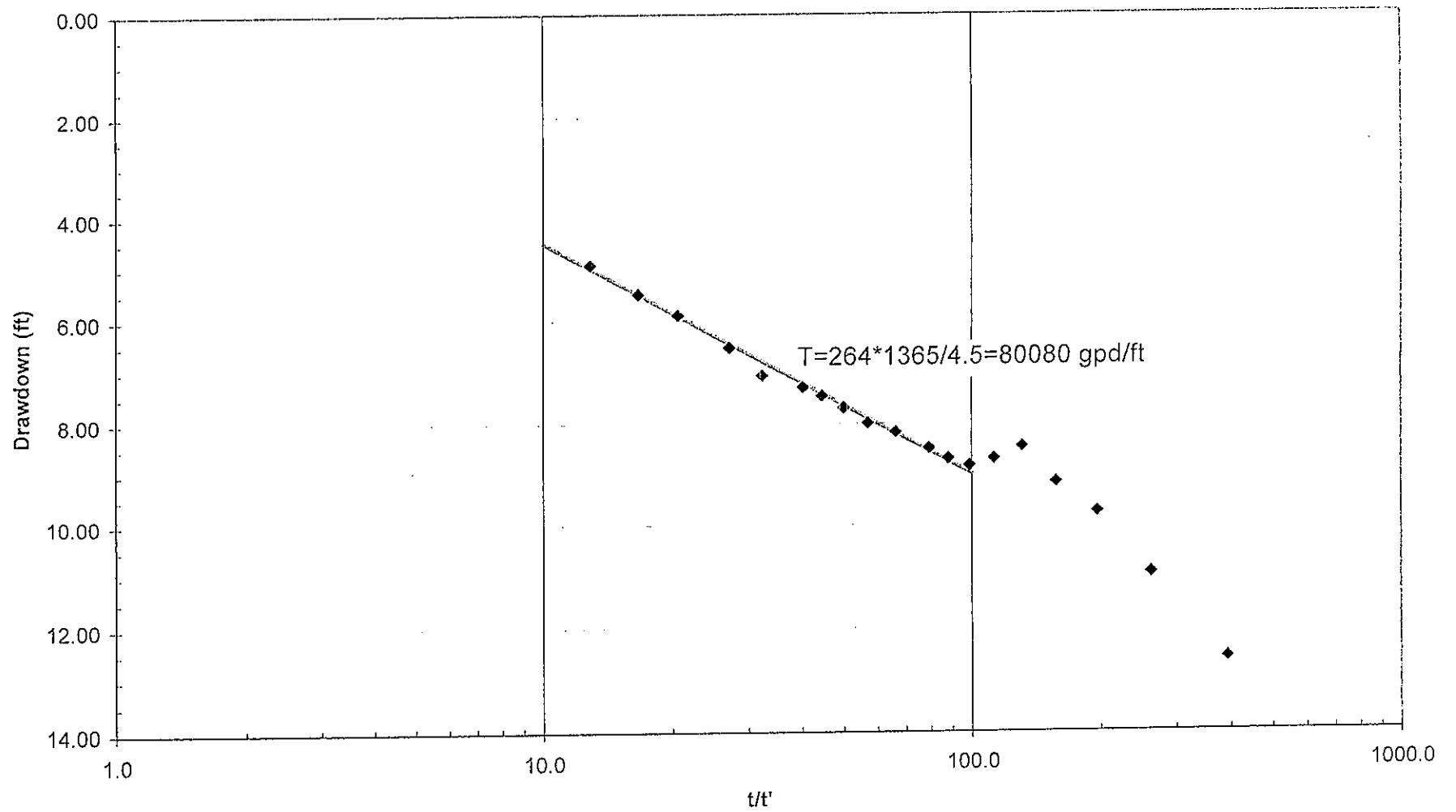
Q=1365 gpm



Bittercreek Constant Rate Test
Semi-Log Plot
Test Date: 12/5/05, Q=1300 gpm



Bittercreek Well Recovery
Test Date: 12/5/05

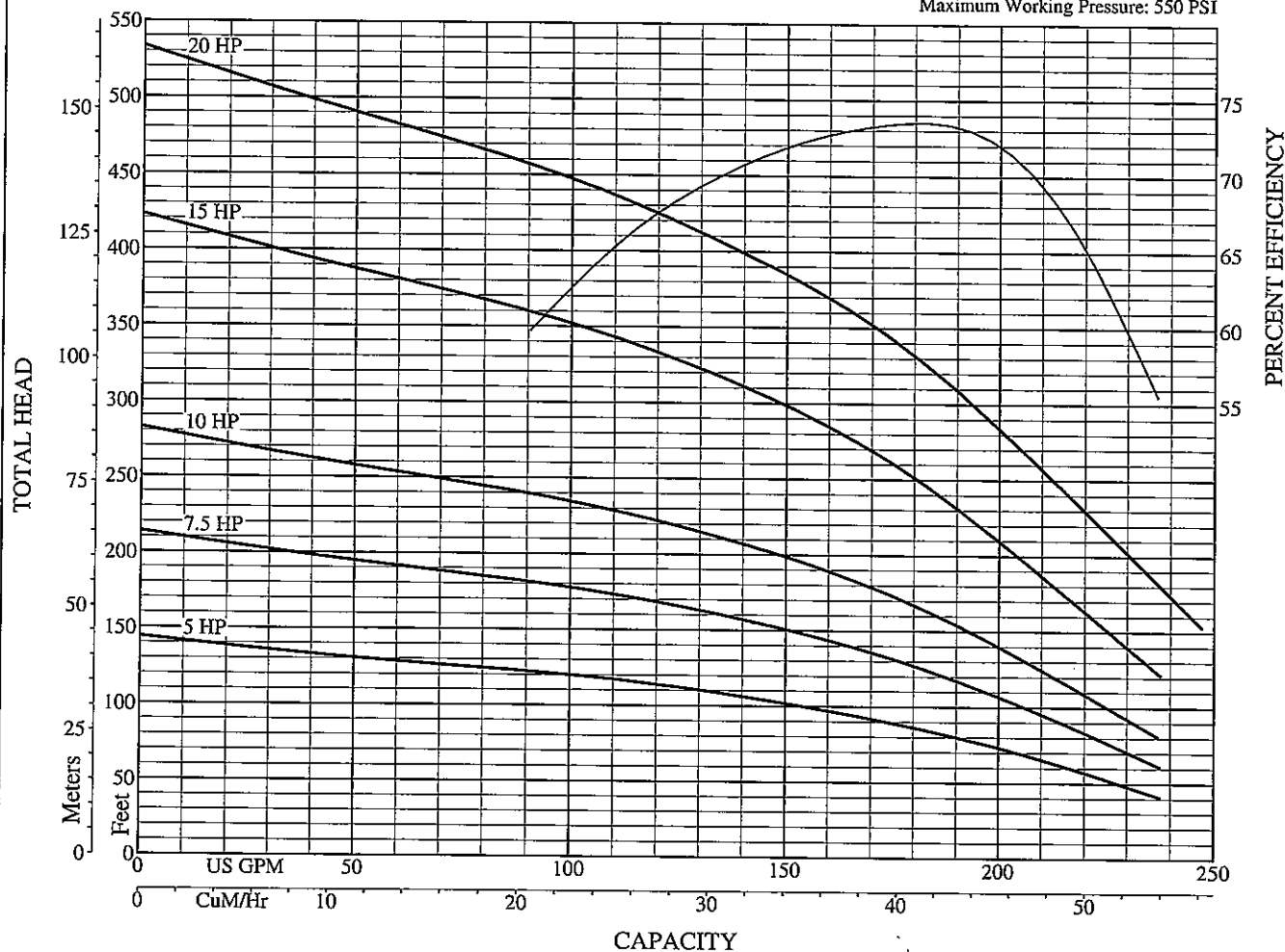




SUBMERSIBLE TURBINE

7T-175

Nominal RPM: 3450
Based on Fresh Water @ 68° F.
Maximum Working Pressure: 550 PSI



OUTLINE DIMENSIONS / WEIGHTS

HP	stages	Motor size	P length	M* length	MD* dia.	Mtr. wt.	Pump wt.
5	2	6"	26.50	25.44	5.38	105	93
7.5	3	6"	33.00	28.00	5.38	120	117
10	4	6"	39.50	30.56	5.38	135	141
15	6	6"	52.50	33.13	5.38	146	189
20	7	6"	59.00	30.56	5.38	135	213

Note: dimensions = inches; weight = U.S. lbs.

M* Maximum length (Franklin Electric Motor)

MD* Motor diameter (Franklin Electric Motor)

SPECIFICATIONS

Minimum Well I.D.	8.0 Inches
Minimum Submergence @ BEP (above inlet)	10.0 Feet
Capacity Range	87 - 248 GPM
Discharge	4" F NPT
See manufacturer's data for motor cooling requirements	

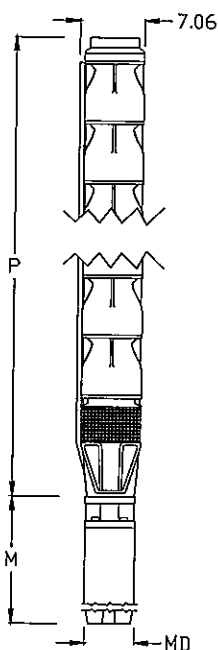
SUPERSEDES

New

Date 04/15/96

Section **ST**

Page 17.01



Units Curve Preferences Print Show Flow #2 Multi-Speed Curves

Performance Datasheet

Additional Data

Header Information

Performance Details

Pump size : 7T15-175
Stages : 6

Based on curve number : 7T15-175(6@4.

Operating Conditions

Flow, rated : 150.0 USgpm
Head, rated : 280.0 ft
Suction pressure, rated / max : 0.00 / 0.00 psi.g
NPSH available (system) : Ample ft
Frequency : 60 Hz

Liquid

Liquid type : --Water
Additional liquid description :
Solids diameter, max : 0.00 in
Temperature, max : 68.00 deg
Fluid density, rated / max : 0.998 / 1.0
Viscosity, rated : 1.00 cP
Vapor pressure, rated : 0.00 psi.g

Performance

Speed criteria : ☒ Synchronous ☐ Variable
Speed : ☒ set @ 3,450 rpm
Impeller diameter, rated : ☐ set @ 4.58 in
Impeller diameter, maximum : 4.58 in
Impeller diameter, minimum : 4.58 in
Efficiency : 71.53 %
NPSH required / margin required : N/A / 0.00
Specific speed / Suction specific speed : N/A
MCSF : 87.00 USgpm
Head, maximum, rated diameter : 423.3 ft
Head rise to shutoff : N/A %
Flow, best eff. point (BEP) : 175.2 USgpm
Flow ratio (rated / BEP) : 85.62 %
Diameter ratio (rated / max) : 100.00 %
Cutwater ratio (rated / cutwater) : N/A
Head ratio (rated dia / max dia) : 93.96 %
Viscous coefficients (CQ / CH / CE) : 1.00 / 1.00 / 1.00
Selection status : Acceptable

Material

Material requested : Cast iron - Bronze
Material selected : Cast Iron - Bronze

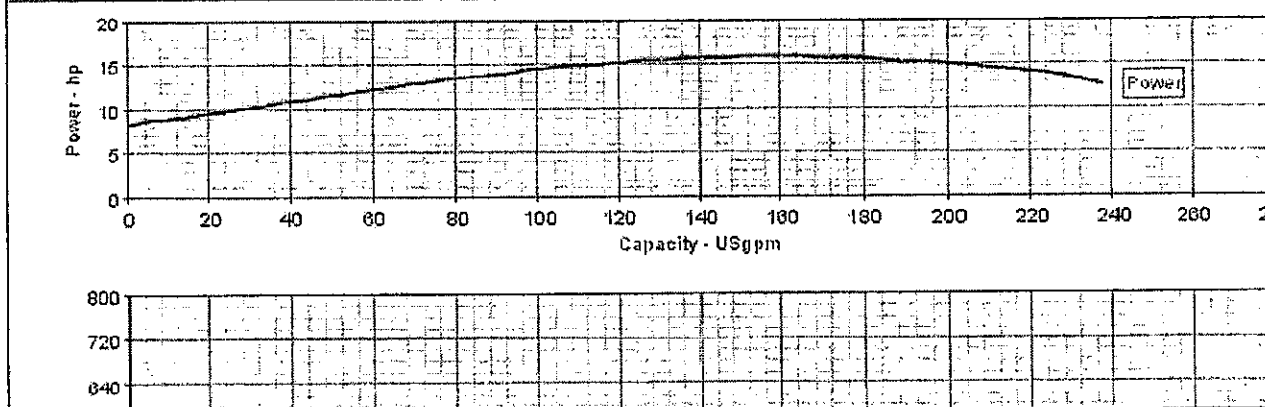
Pressure Data

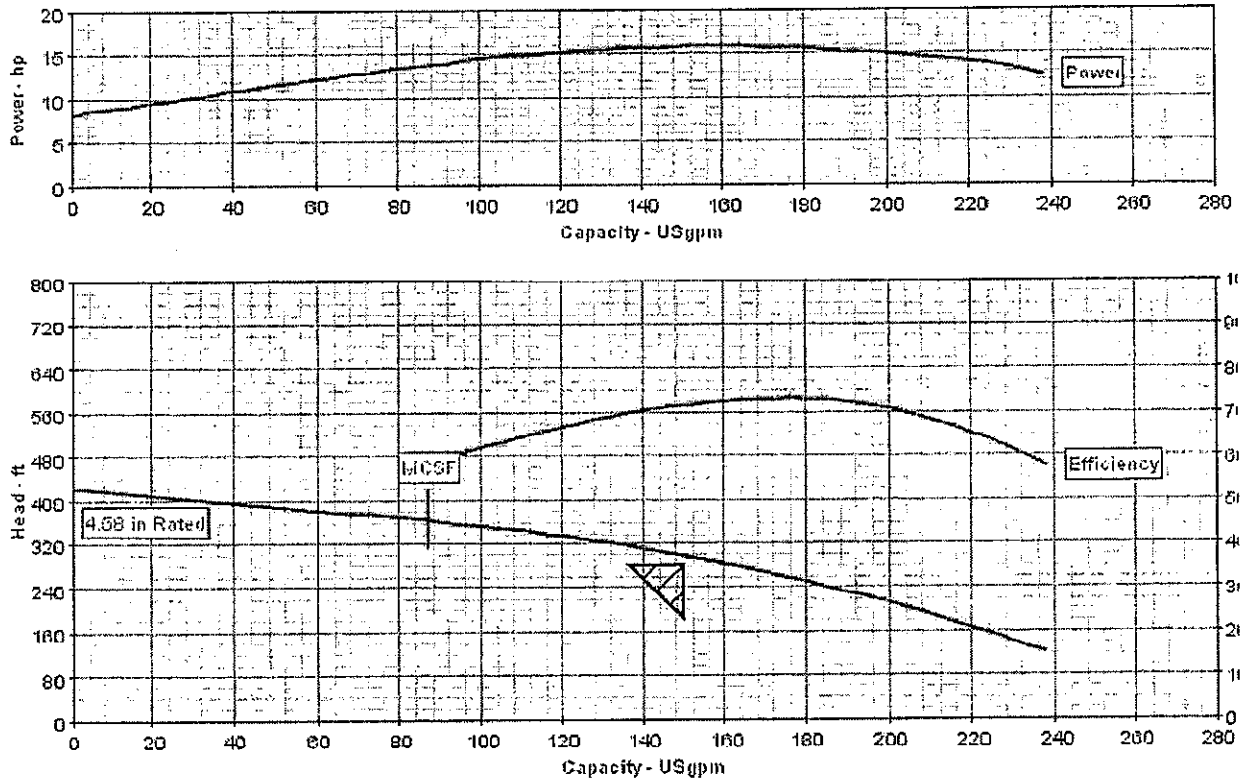
Maximum working pressure : 183.2 psi.g
Working pressure limit : 550.0 psi.g
Suction pressure limit : N/A
Hydrostatic test pressure : N/A

Driver & Power Data

Driver sizing specification : Rated power
Margin over specification : 0.00 %
Service factor : ☒ Use service factor 1.15
Power, hydraulic : 11.27 hp
Power, rated : 15.75 hp
Power, maximum, rated diameter : 15.79 hp
Power reserve (rated / max / sizing spec) : 9.50 / 9.28 / 9.5
Minimum recommended motor rating : 15.00 hp / 11.15

Performance Curve



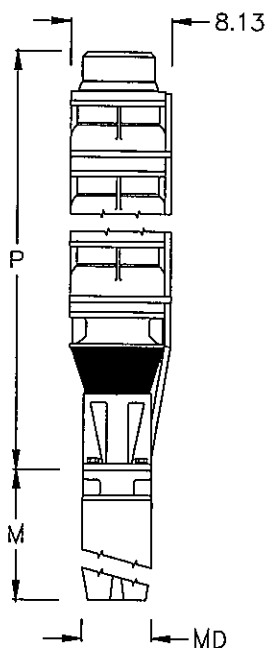
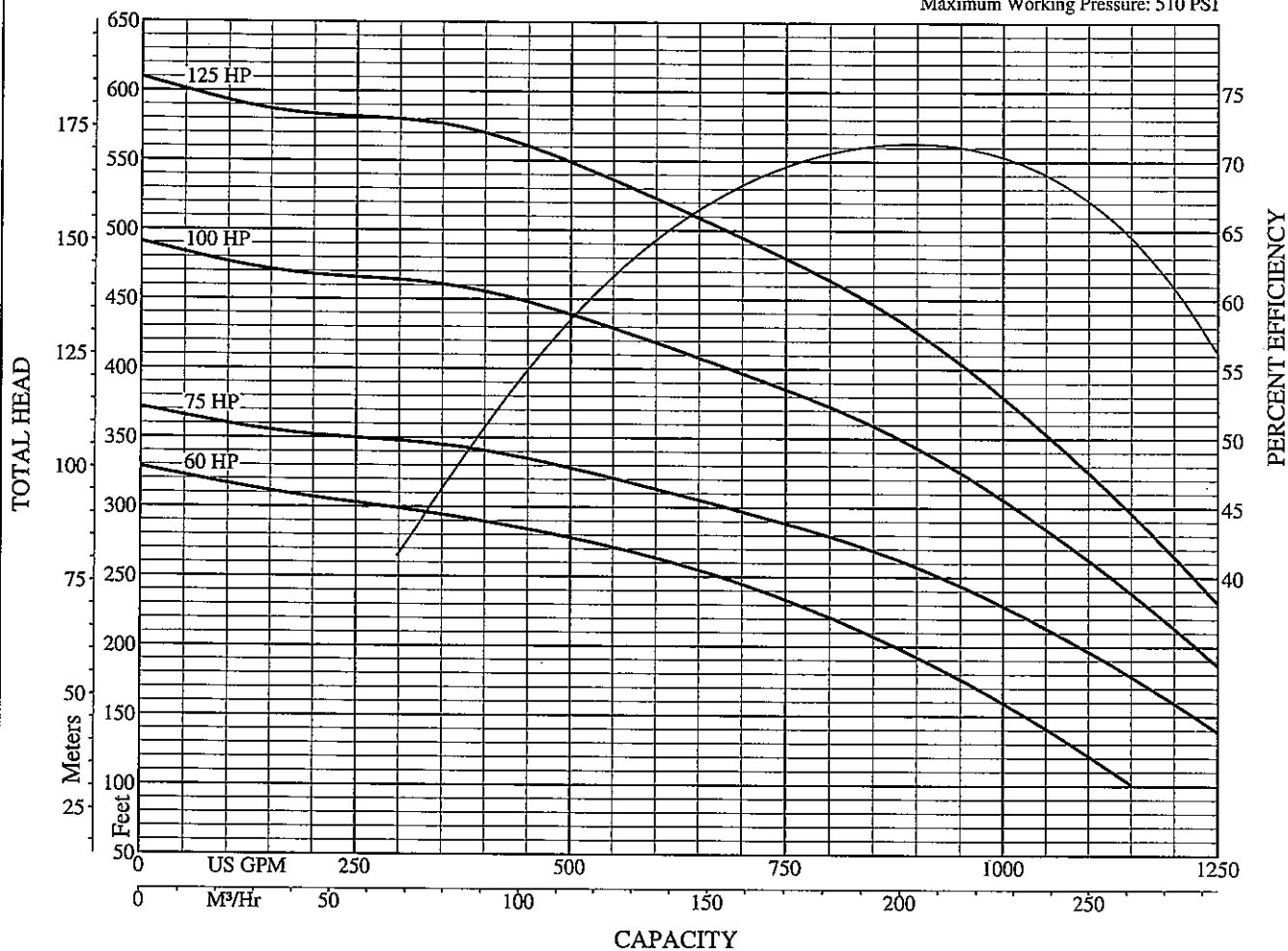




SUBMERSIBLE TURBINE

8T-900

Nominal RPM: 3450
Based on Fresh Water @ 68° F.
Maximum Working Pressure: 510 PSI



OUTLINE DIMENSIONS / WEIGHTS

HP	stages	Motor size	P length	M* length	MD* dia.	Mtr. wt.	Pump wt.
60	3	6"	43.00	61.30	5.44	335	145
75	3	8"	43.75	54.90	7.50	433	148
100	4	8"	50.50	58.90	7.50	478	177
125	5	8"	57.25	68.80	7.70	709	206

Note: dimensions = inches; weight = U.S. lbs.

M* Maximum length (Franklin Electric Motor)

MD* Motor diameter (Franklin Electric Motor)

SPECIFICATIONS

Minimum Well I.D.	10.0 Inches
Minimum Submergence @ BEP (above inlet)	15.0 Feet
Capacity Range	227 - 1300 GPM
Discharge	6" F NPT
See manufacturer's data for motor cooling requirements	

SUPERSEDES

All Previous

Date 04/15/98

Section **ST**

Page 27.05

Units Curve Preferences Print Show Flow #2 Multi-Speed Curves

Performance Datasheet

Additional Data

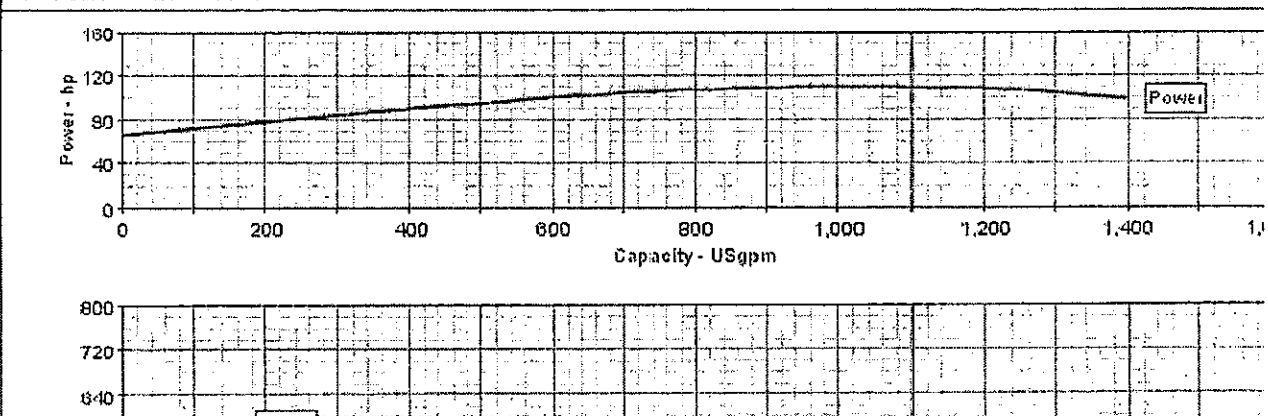
Header Information

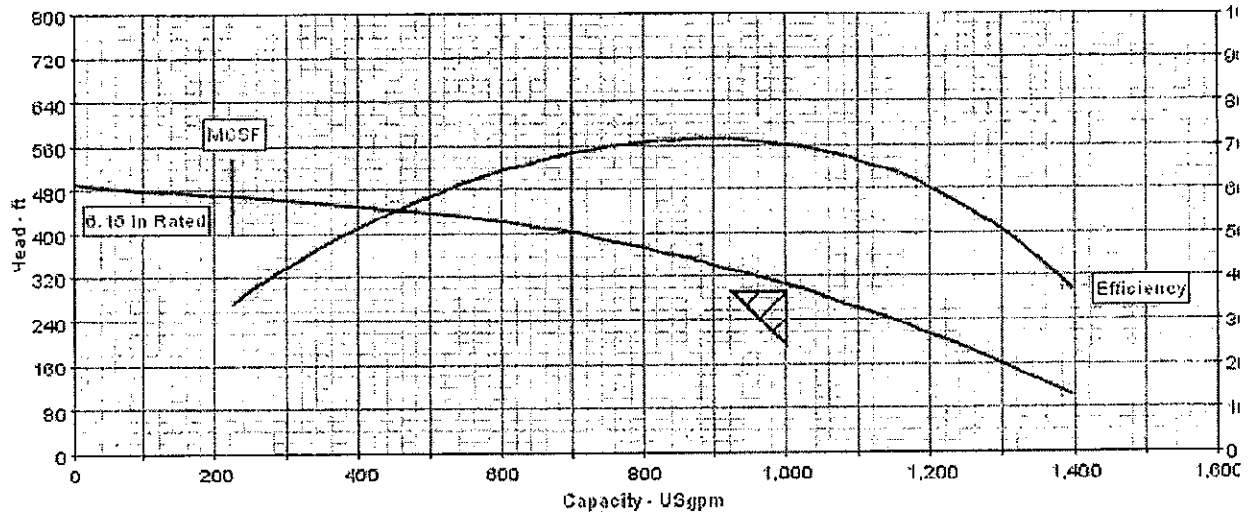
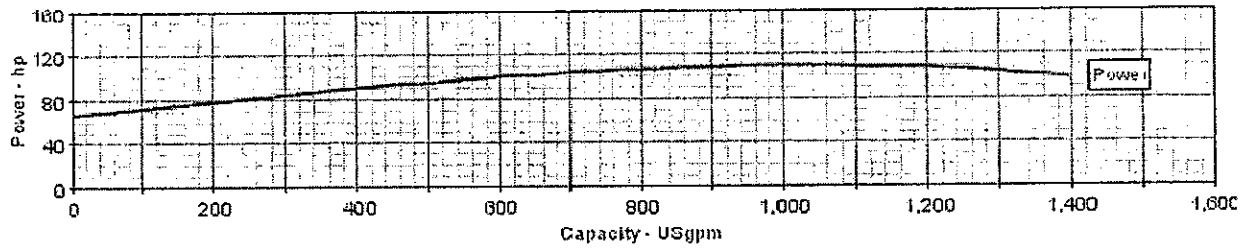
Performance Details

Pump size	: 8T100-900	Based on curve number	: 8T100-900(4@6
Stages	: 4		
Operating Conditions		Liquid	
Flow, rated	1,000.0 USgpm	Liquid type	: --Water
Head, rated	290.0 ft	Additional liquid description	
Suction pressure, rated / max	0.00 / 0.00 psi.g	Solids diameter, max	0.00 in
NPSH available (system)	Ample ft	Temperature, max	68.00 deg
Frequency	60 Hz	Fluid density, rated / max	0.998 / 0.998
Performance		Viscosity, rated	1.00 cP
Speed criteria	☒ Synchronous ☐ Variable	Vapor pressure, rated	0.00 psi.g
Speed	☒ set @ 3,525 rpm	Material	
Impeller diameter, rated	☐ set @ 6.15 in	Material requested	Cast iron - Bronze
Impeller diameter, maximum	: 6.15 in	Material selected	: Cast iron - Bronze
Impeller diameter, minimum	: 6.15 in	Pressure Data	
Efficiency	: 70.28 %	Maximum working pressure	: 212.0 psi.g
NPSH required / margin required	: N/A / 0.00	Working pressure limit	: 510.0 psi.g
Specific speed / Suction specific speed	: N/A	Suction pressure limit	: N/A
MCSF	: 227.0 USgpm	Hydrostatic test pressure	: N/A
Head, maximum, rated diameter	: 490.0 ft	Driver & Power Data	
Head rise to shutoff	: N/A	Driver sizing specification	Rated power
Flow, best eff. point (BEP)	: 891.3 USgpm	Margin over specification	0.00 %
Flow ratio (rated / BEP)	: 112.19 %	Service factor	☒ Use service factor 1.15
Diameter ratio (rated / max)	: 100.00 %	Power, hydraulic	: 76.89 hp
Cutwater ratio (rated / cutwater)	: N/A	Power, rated	: 109 hp
Head ratio (rated dia / max dia)	: 95.09 %	Power, maximum, rated diameter	: 109 hp
Viscous coefficients (CQ / CH / CE)	: 1.00 / 1.00 / 1.00	Power reserve (rated / max / sizing spec)	: 5.12 / 5.10 / 5.1
Selection status	: Acceptable	Minimum recommended motor rating	: 100 hp / 74.57 kW

1,000 gpm

Performance Curve





ATTACHMENT C
FLOW CALCULATIONS

REPORT PAGE 4, ITEM F: FLOW CALCULATIONS

Per Well Test 12/1/2005

Static Water level = 97'

Specific Capacity = 1,365 gpm/37' DD = 37 gpm/ft

Assume 40 psi discharge pressure to provide 20 psi residual pressure during fire flow

185 gpm (15 hp pump) + 1115 gpm (100 hp pump) = 1300 gpm pumping capacity

Drawdown @ 1300 gpm = $1300 \text{ gpm} / 37 \text{ gpm/ft} = 35 \text{ feet}$

Pumping Water Level @ 1212 gpm = $97' + 35' = 132 \text{ feet}$

15 hp pump produces 185 gpm at 232 feet TDH

Friction Loss: 200' setting, 4" column and check valve, 185 gpm pump capacity = 8'

15-hp Pump Total Dynamic Head = ~232 feet (132' PWL + 8' Friction Loss + 40 psi)

100 hp pump produces 1115 gpm at 250 feet TDH

Friction Loss: 200' setting, 6" column and check valve, 1115 gpm pump capacity = 28'

100-hp Pump Total Dynamic Head = ~250' (132' PWL + 26' Friction Loss + 40 psi)

Limited to 2.70 cfs (1,212 gpm) by permit

ATTACHMENT D
TOPO MAP, 2009 AERIAL PHOTO
AND PLAT MAP

T3N R1W

27

34

Legend

-  Well
-  Place of Use
-  Quarter-quarters
-  Sections

Bittercreek Meadows Subdivision Permit 63-31957



0 175 350
Feet



T3N R1W

2009 Photo

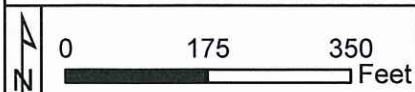
27

34

Legend

-  Well
-  Place of Use
-  Quarter-quarters
-  Sections

Bittercreek Meadows Subdivision Permit 63-31957



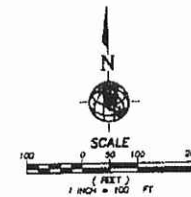
JLJ ENTERPRISES, INC. BITTERCREEK MEADOWS SUBDIVISION

A PARCEL OF LAND ALL LOCATED IN A PORTION OF THE NW1/4 OF NE1/4 OF SECTION 34 T.3N., R.1W., B.M., ADA COUNTY, IDAHO
2004

BITTER CREEK HEIGHTS SUBDIVISION

N 1/4 CORNER OF SEC. 34
FND. 3-1/2" BRASS CAP SMJ RPE 777
CORNER RECORD #99121624

Point of diversion



LEGEND

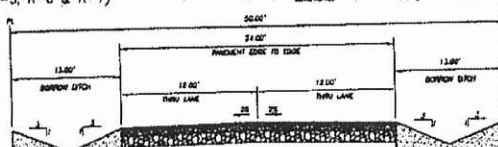
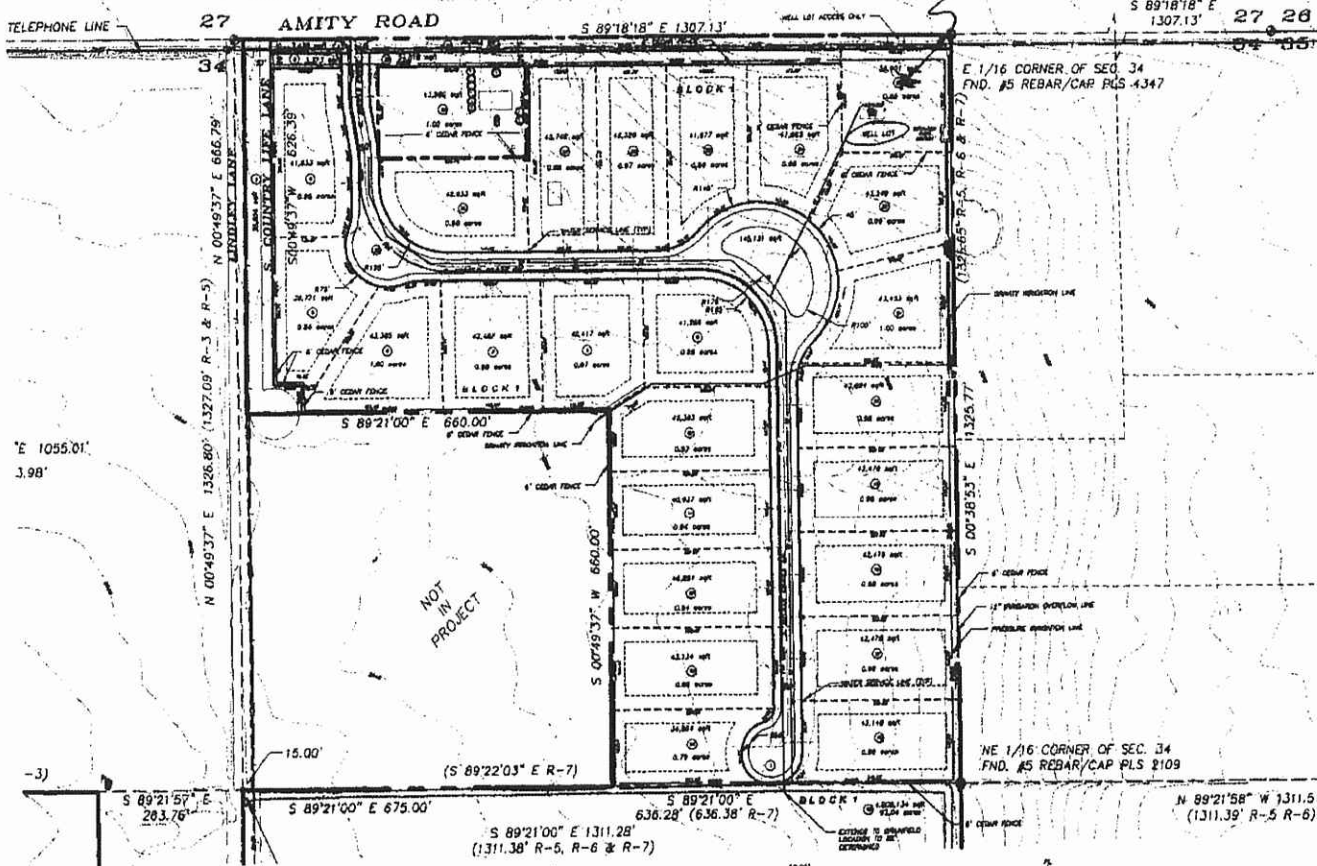
- PROPOSED LOT NUMBER
- PROPOSED FENCE
- PROPOSED BRASS/ALUMINUM CAP CORNER
- PROPOSED FENCE
- SET 6" REBAR 1/2" 1" FROM CURB
- EXISTING FENCE
- PROPOSED WATER MAIN
- PROPOSED SEWER FORCE MAIN
- PROPOSED PRESSURE REGULATION
- PROPOSED IRRIGATION OVERFLOW LINE
- PROPOSED IRRIGATION REGULATION LINE
- PROPOSED BOUNDARY LINE
- PROPOSED BOUNDARY LINE
- PROPOSED BOUNDARY LINE
- PROPOSED BOUNDARY LINE
- EXISTING CONTOUR LINES

PROJECT SUMMARY:

TOTAL ACRES	118.75 ACRES
DEVELOPED ACRES	127.75 ACRES/81.16%
TOTAL LOTS	32
SINGLE FAMILY LOTS	32
EXISTING SINGLE FAMILY LOTS	1
CORNER LOTS	1
OTHER	1 (WELL LOT)
DWELLING/HOME	0.15
OVERALL ZONING	R-5
OPEN SPACE EQUIV. TO	37.04 ACRES/31.21%

RR ZONE BUILDING SETBACKS:

FRONT	30'
REAR	30'
STREET SIDE	30'
REAR	30'



JLJ ENTERPRISES, INC.
BITTERCREEK MEADOWS SUBDIVISION
PRELIMINARY PLAT

31482 land-PE03

31482

1" = 100'

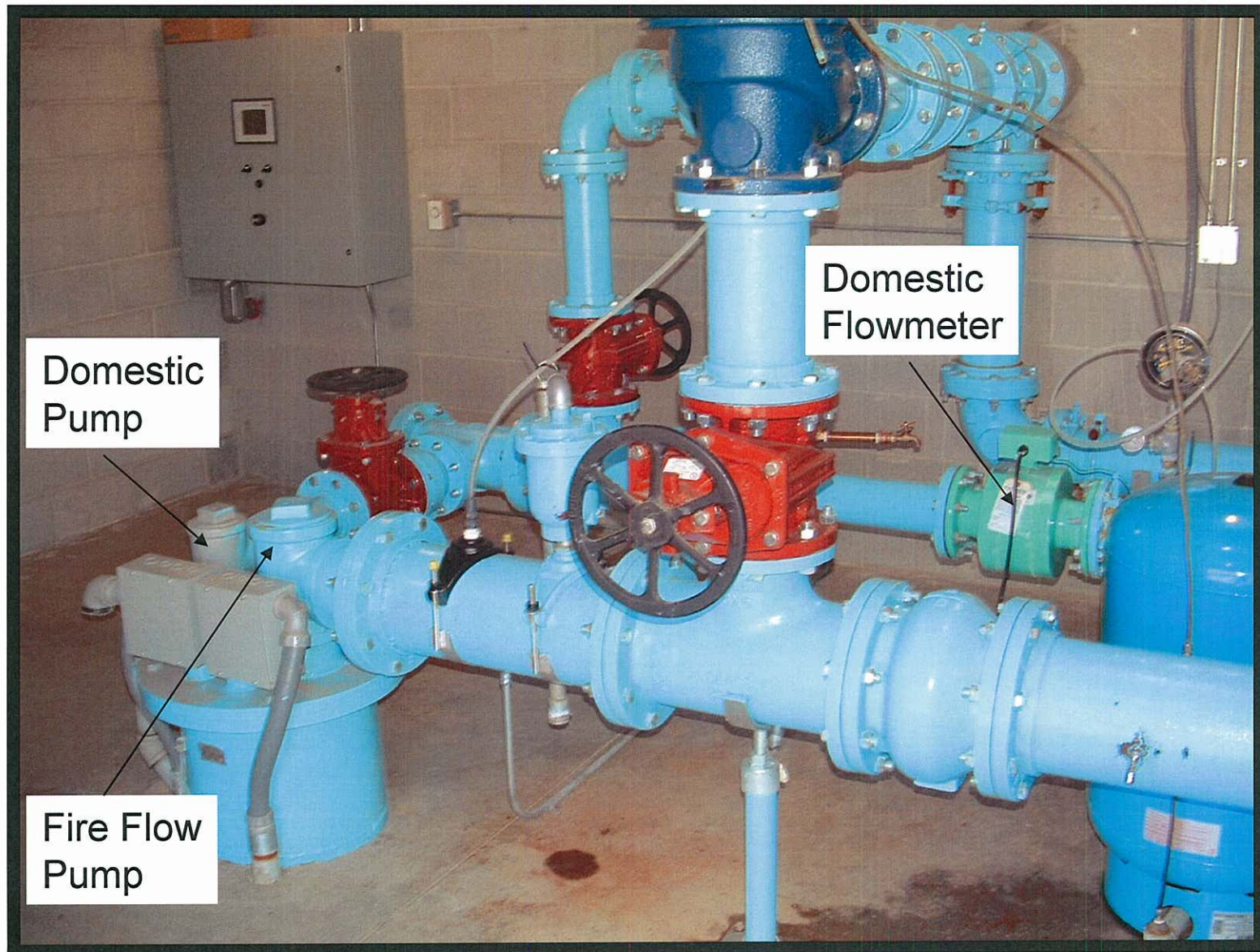
2

63.31957

ATTACHMENT E
PHOTOS



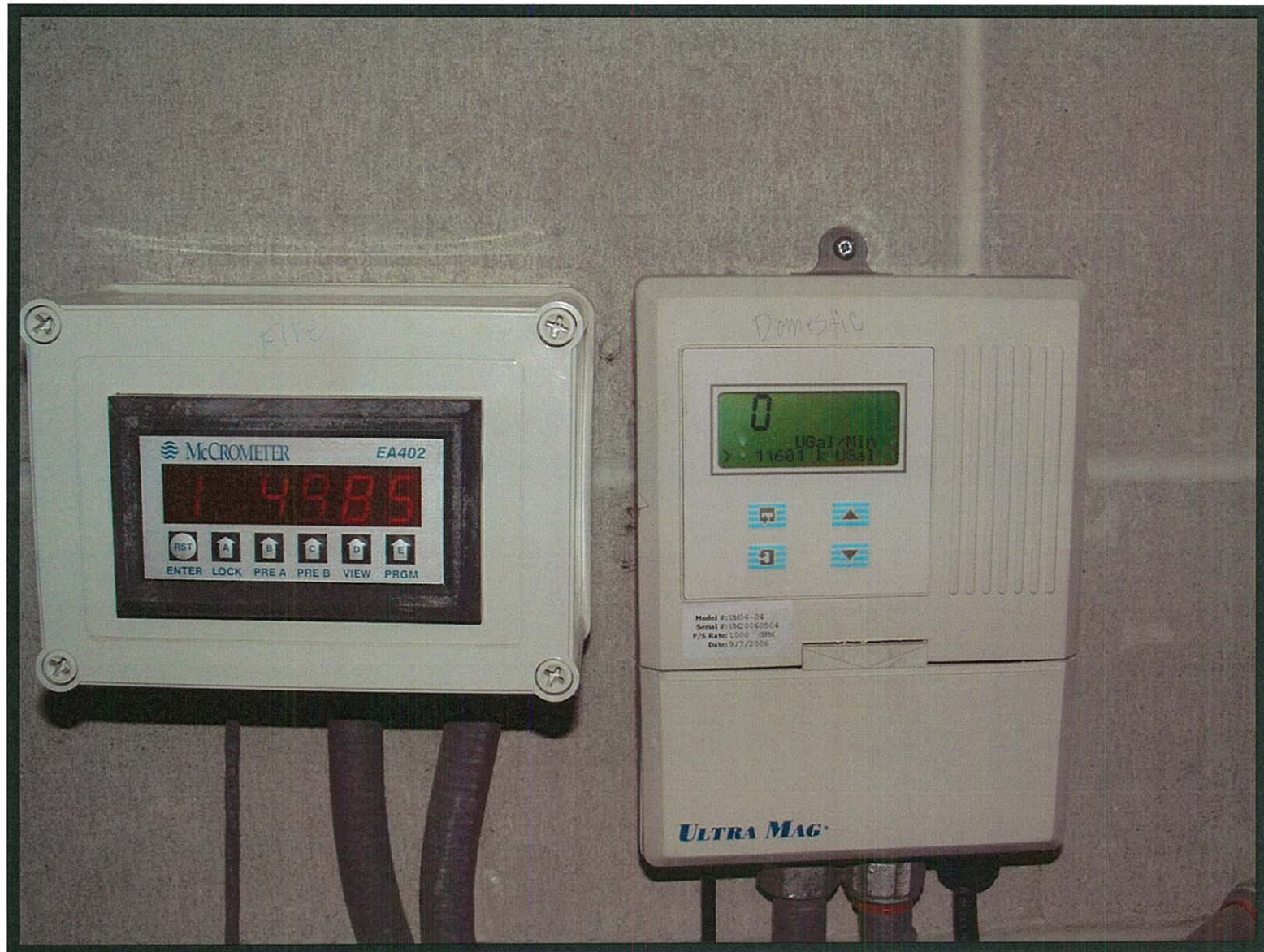
Well and Pump House, Lot 7, Block 1



Point of Diversion System & Submersible Pump System



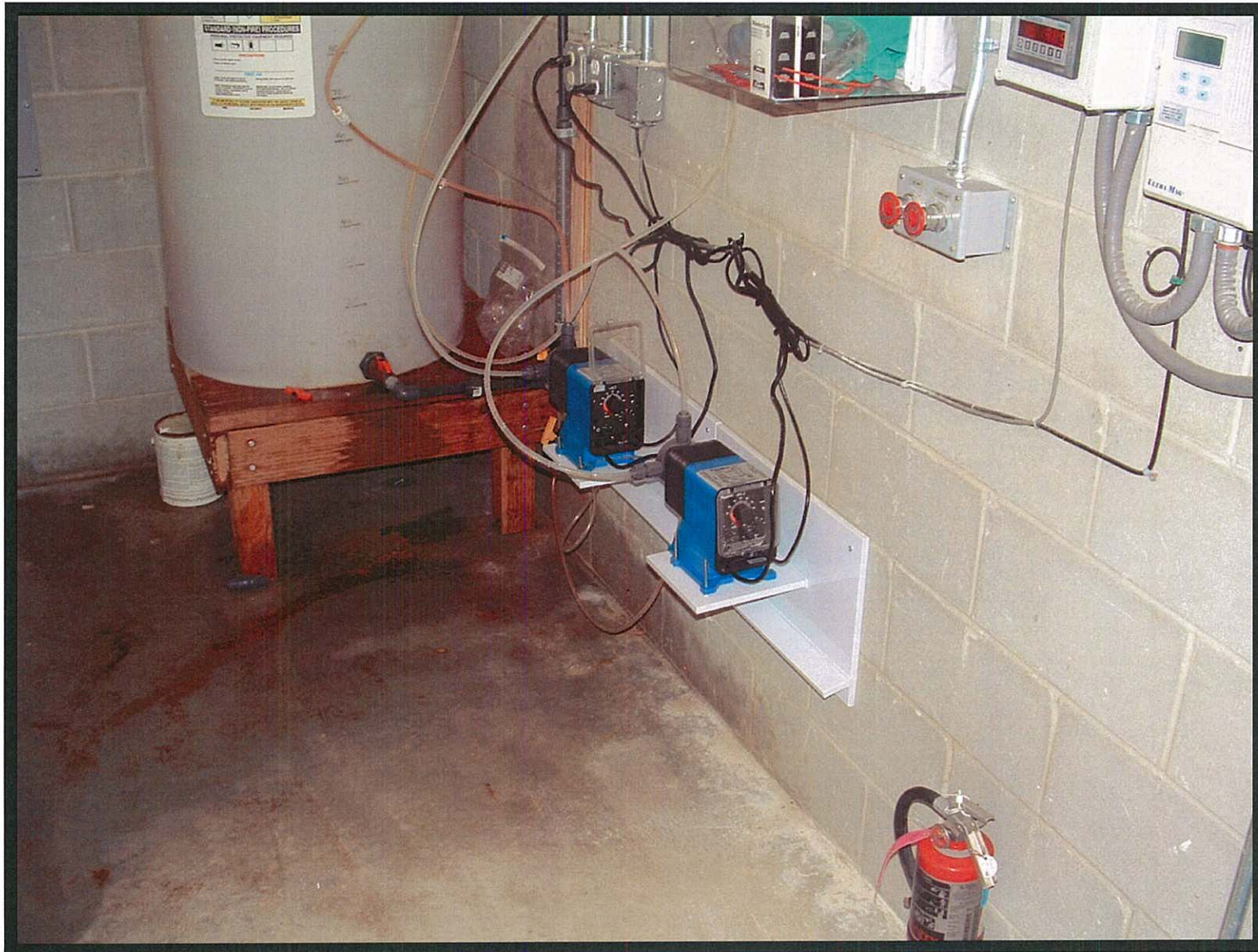
Fire Protection Flowmeter and Hydropneumatic Tanks



Flowmeter Monitors



Pump Controlling Works



Chemical Feed Pumps & Chlorine Tank



Pressurized Irrigation System



Place of Use; Lot 24, Block 1



Ground Water System Stub, Lot 17, Block 1



Fire Protection Hydrant