

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

RECEIVED
JUN 16 2008
DEPARTMENT OF WATER RESOURCES

A. GENERAL INFORMATION

Permit No. 63-31505

1. Owner: Rod & Maureen Frisby Family Ltd. Partnership Phone No.: 208.459.0875

Current Address: 6205 SE 8th Ave., Caldwell, ID 83607

2. Accompanied by: Russell Frisby EXAM DATE: 5/21/2008

Address: Sand Hollow Phone No. 208.941.1210

Relationship to Permit Holder: Son, Farm Manager

3. Source: Ground Water tributary to

B. OVERLAP REVIEW

1. Other water rights with the same place of use: 63-10785, 63-31178

2. Other water rights with the same point of diversion: 63-10785, 63-31178

C. DIVERSION AND DELIVERY SYSTEM

1. Point(s) of Diversion:

Ident No.	Gov't Lot	¼	¼	¼	Sec.	Twp.	Rge.	County	Method of Determination/Remarks
			SW	NW	20	6N	3W	Payette	Field Exam

2. Place(s) of Use:

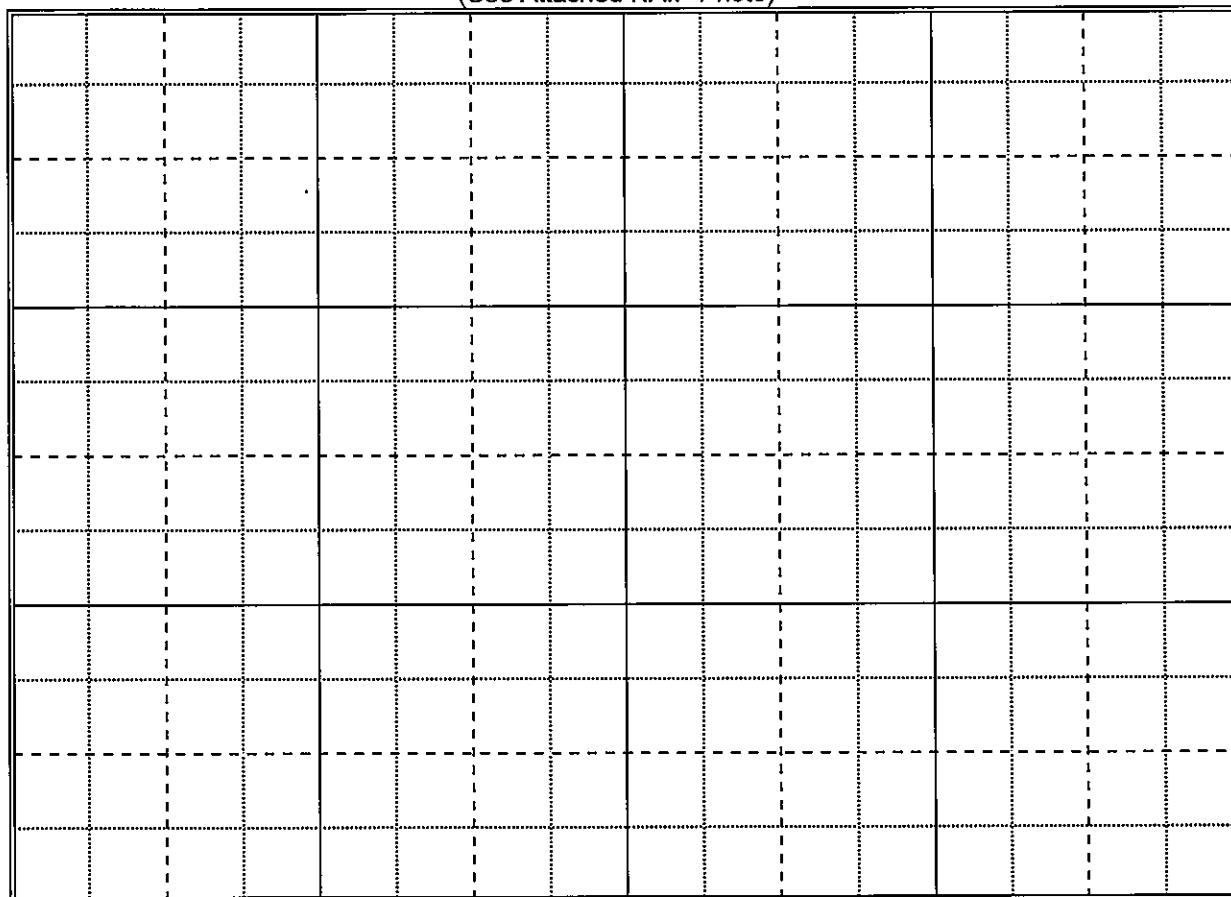
Indicate Method of Determination Field Exam, 2006 NAIP Photo

TWP	RGE	SEC	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
6N	3W	19	37.5	37														74.5	
		20		35	36		40	38.5	38	40								227.5	

Total 302

3. **Delivery System Diagram:** Indicate all major components and distances between components. Indicate weir size/ditch size/pipe id as applicable.

(See Attached NAIP Photo)



Scale: 1" = _____

X Copy of USGS Quadrangle Attached Showing location(s) of point(s) of diversion and place(s) of use (required).

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

X 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
East Well	GE	150	WH6384024	Layne Turbine	14-TLC, 3-Stage, Full Dia
Booster	US Electric	125	HO18Y10Y255R 100M	Paco	KP, 12.5" Dia Impeller, 8" discharge

*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
Pump curve supplied by Riverside						

2. Measurements:

A well log was not available for this specific well, however, a 1977 pumping test for the well showed a static water level of 137' and well performance of 1,697 gpm with 63' drawdown (26.9 gpm/ft of drawdown) after 3.5 hours of pumping. Therefore, at 2,200 gpm, the calculated drawdown is 82' (2,200 gpm/26.9 gpm/ft) and the calculated pumping water level (PWL) is 219' (137' static + 82' drawdown). The pump curve shows Total Dynamic Head (TDH) of 234' at 2200 gpm. Assuming a 219' PWL and 20' friction loss*, the discharge pressure is -5' (234' TDH - 219' PWL - 20' friction = -5'). The

booster pump is rated at 2,200 gpm at 185' TDH. Therefore, booster pump discharge pressure is 78 psi. (185' TDH + -5' suction pressure = 180' / 2.31 = 78 psi)

*Friction Loss: 320' pump setting, 10" column, 2.5" tube. Head loss (friction) = 6'/100 or 320'/100' x 6' = 19.2' (assume 20')

** In this situation, the calculated suction pressure of negative 5 feet provides a safety factor of 15.5 feet because the booster pump can operate without cavitation at minimum suction pressure (Hs) of negative 20.5 feet based on the following equation:

$$\text{NPSHR} - H_a + H_{vp} - H_f = H_s$$

Where

- NPSHR net positive suction head required) = 11 feet at 2200 gpm (see pump curve)
- H_a is normal atmospheric pressure at the pump elevation = 31.0 feet at elevation 2550 ft
- H_{vp} is the vapor pressure of water = 0.50 feet at 55 degrees F
- H_f is headloss due to friction. At 2200 gpm, headloss between the well pump and the booster pump is estimated at 1 foot.
- H_s is suction pressure at the pump intake required to prevent cavitation

$$11 - 31.0 + 0.5 - 1.0 = -20.5 \text{ feet}$$

E. NARRATIVE/REMARKS/COMMENTS

A 16-inch well (aka the east well) equipped with a 150-hp turbine pump supplies irrigation water to 302 acres located east of I-84. The east well irrigation system includes a 125-hp booster pump one 7-tower pivot, and four 4-tower pivots. Ground water is also provided to portable hand lines and a half 2-tower pivot to irrigate the pivot corners. The system operates between 70 and 80 psi. The recommended acres only receive irrigation water from the well. Black Canyon irrigation District confirmed that applicants are assessed for 656.7 acres irrigation. These acres are in addition to the 302 recommended acres and are irrigated from a separate irrigation system. The ground water and the surface water are not co-mingled.

A well log for this well was not available. Riverside Inc. installed the pump. Dave Cleaver with Riverside Inc. supplied the attached pump curve. Agri-Lines designed the irrigation system. Russell Frisby provided the mainline information described on the attached system diagram.

Overlaps: The east irrigation well provides ground water to 302 total acres under the following three water rights: License 63-10785 for 1.7 cfs and 824.7 afa for irrigation of 292 acres

Permit 63-31178 for 2.42 cfs for irrigation of 121 acres

Permit 63-31505 for 1.92 cfs for irrigation of 302 acres

When combined, the license and two permits authorize irrigation of 302 acres at 0.02 cfs/acre or 6.04 total cfs. The system capacity found during the licensing exam is 4.91 cfs, which equates to 0.016 cfs/acre. Although less than 0.02 cfs/acre, the capacity is sufficient to provide full diversion volume (4.5 afa/acre). When combined, the three rights are limited to 4.91 cfs (system capacity) and 1,359 afa (4.5 afa/acre) for irrigation of 302 acres.

Have conditions of permit approval been met? ☒ yes ☐ no

F. FLOW CALCULATIONS

Measured Method:

Yes Additional Computation Sheets Attached
(Pump Curves)

Per pump curve: 2,200 gpm capacity or 4.91 cfs

Limited to 1.92 cfs per permit

G. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 302 \times 4.5 = 1359$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation Season}) \times 1.9835 = 1.92 \times 260 \times 1.9835 = 990.2$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 990.2$$

2. Volume Calculations for Other Uses:

H. RECOMMENDATIONS

1. Recommended Amounts

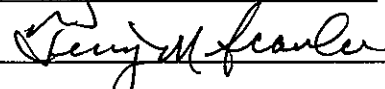
Beneficial Use	Period of Use		Rate of Diversion	Annual Volume
	From	To	Q (cfs)	V (afa)
Irrigation	3/1	11/15	1.92	990.2

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 Terry M. Scanlan Date 6/12/08

Field Examiner's Signature 

Reviewer _____ Date _____



ATTACHMENT A

PERMIT & PROOF OF BENEFICIAL USE RECORDS

Close

IDAHO DEPARTMENT OF WATER RESOURCES
Water Permit Report

05/19/2008

WATER RIGHT NO. 63-31505

Owner Type	Name and Address
Current Owner	ROD & MAUREEN FRISBY FAMILY LTD PARTNERSHIP 6208 S E 8TH AVE CALDWELL, ID 83605 (208)459-0875

Priority Date: 05/10/2002
Status: Active

Source	Tributary
GROUND WATER	

Beneficial Use	From	To	Diversion Rate	Volume
IRRIGATION	03/01	11/15	1.92 CFS	
Total Diversion			1.92 CFS	

Location of Point(s) of Diversion:

GROUND WATER|SWNW|Sec. 20|Township 06N|Range 03W|PAYETTE County

Place(s) of use:

Place of Use Legal Description: IRRIGATION PAYETTE County

Township	Range	Section	Lot	Tract	Acres	Lot	Tract	Acres	Lot	Tract	Acres	Lot	Tract	Acres
06N	03W	19		NENE	38		NWNE	38						
		20		NWNE	35		SWNE	35						
				NENW	40		NWNNW	38		SWNW	38		SENW	40

Total Acres: 302

Conditions of Approval:

- 26A 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 permit holder had no control.
- 01M 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.
- R65 This right when combined with all other rights shall provide no more than 0.02 cfs per acre nor more than 4.5 afa per acre at the field headgate for irrigation of the lands above.
- 121 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.
- 046 Right holder shall comply with the drilling permit requirements of Section 42-235, Idaho Code.
- 6 This permit is for the use of ground water and is subject to administration as a water right from connected sources in the Snake River Basin in accordance with applicable law.
- 7 This permit for the use of ground water shall be junior to, and subject to, the water rights of the United States Bureau of Reclamation heretofore appropriated, including, as authorized by applicable law, reuse of water under such water rights.

Dates:

Proof Due Date: 08/01/2007
Proof Made Date: 07/02/2007
Approved Date: 08/09/2002
Moratorium Expiration Date:
Enlargement Use Priority Date:
Enlargement Statute Priority Date:
Application Received Date: 05/10/2002
Protest Deadline Date: 07/22/2002
Number of Protests: 0
Field Exam Date:
Date Sent to State Off:
Date Received at State Off:

Other Information:

State or Federal:
Owner Name Connector:
Water District Number: 63
Generic Max Rate per Acre: 0.02
Generic Max Volume per Acre: 4.5
Swan Falls Trust or Nontrust:
Swan Falls Dismissed:
DLE Act Number:
Cary Act Number:
Mitigation Plan: False

Close

FOR OFFICE USE ONLY
Amt. of Fee \$: 125.00
Receipt No. 084466
Receipt By: AMBL
Date Received: 7-2-07

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

RECEIVED

PROOF OF BENEFICIAL USE

JUL 02 2007

DEPARTMENT OF
WATER RESOURCES

The Idaho Department of Water Resources considers this form a statement that the permit holder(s) has/have completed all development that will occur under this permit and that water has been applied according to the provisions of the permit for the beneficial use(s) described below. This form must be accompanied by a license examination fee, when necessary, or be accompanied by a completed field examination report prepared by a certified water right examiner.

1. Permit No. 03-31505 Telephone No. 208-459-0875
2. Name of Permit Holder(s): Rod & Maureen Frisby Family LP
3. Mailing Address: 6205 S.E. 8th AVE
City Caldwell State Id Zip 83605
4. Source of Water: _____ If GROUNDWATER (well), Date Drilled: mo. 5 / yr. 1979
Well Driller: Pete Cope Drilling Permit Number: 65-12063
5. Use(s) (as authorized by the water right permit):
Domestic (No. of households): _____ Stockwater (No. and type of stock): _____
Irrigation (No. of acres): 302 Other: _____
6. Total rate of diversion and/or volume for which proof is submitted: 1.92 cfs OR _____ acre-feet
7. Measuring Device Requirement: (refer to the approval conditions on your permit and respond accordingly)
(This question is not optional. Please check either yes or no. Proofs returned not checked accordingly, will be considered incomplete)
Measuring Device: Is a measuring device required? Yes _____ or No /
Has the measuring device been installed? Yes _____ or No /
8. Fee Enclosed: \$ 125.00 (See Fee Schedule on back of the instructions for filing proof of beneficial use)
9. Person to contact to accompany the Department representative during field examination of the water system.
Name: Rod Frisby Telephone Number: 208 459 0875
Address: 6205 S.E. 8th AVE Caldwell Id 83607

10. 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. I agree to relinquish any undeveloped portion of the permit to the State of Idaho.

Signature of permit holder: Maureen Frisby Date: 6/30/07
(include your title, if on behalf of company or organization)

ATTACHMENT B
PUMP CURVES & 1977 PUMP TEST

East Well

CURVE NO.
18-146
9-1-78

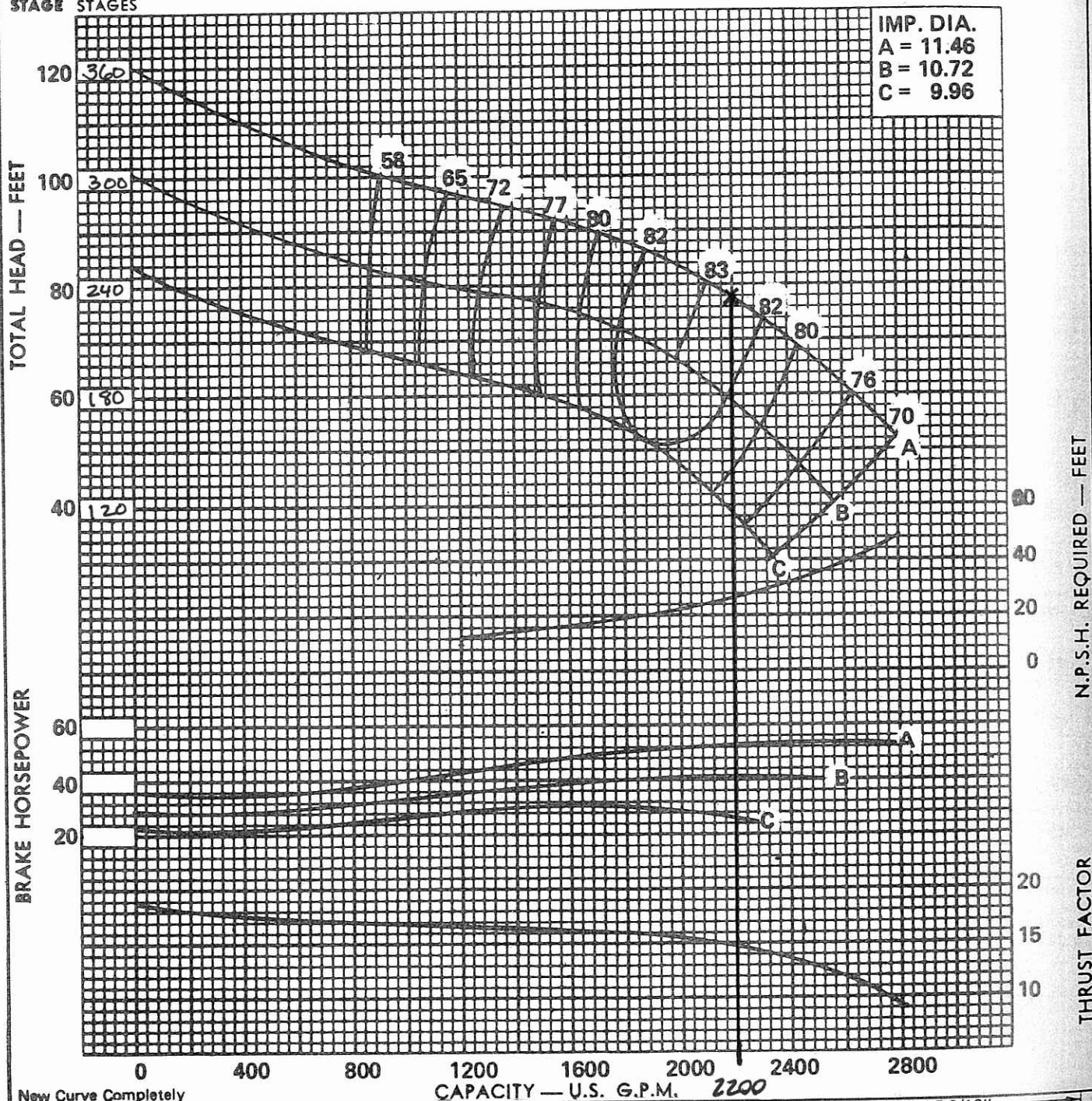
No. Stages	Eff. Change	MATERIAL	Eff. Change
1	-2	IMP.—C.I.	-1
2	0	IMP.—NI-RI	-2
3		BOWL—BRZ.	-1
4		BOWL—NI-R.	-1

14 TLC

1770 R.P.M.

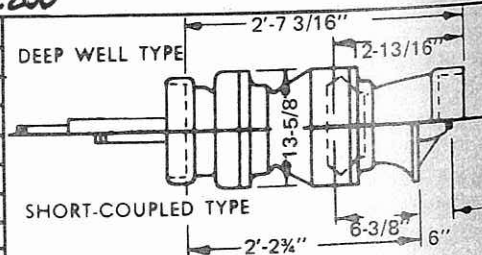
SINGLE STAGE LAB PERFORMANCE WITH STANDARD MATERIALS. EFFICIENCY SHOWN FOR 2 OR MORE STAGES. HORSE POWER SHOWN FOR ONE STAGE BASED ON 2 STAGE EFFICIENCY. CORRECTIONS SHOULD BE MADE FOR STAGES AND MATERIAL.

ONE (3) STAGE STAGES 2200 GPM 234' TDH 150 HP Full Dia



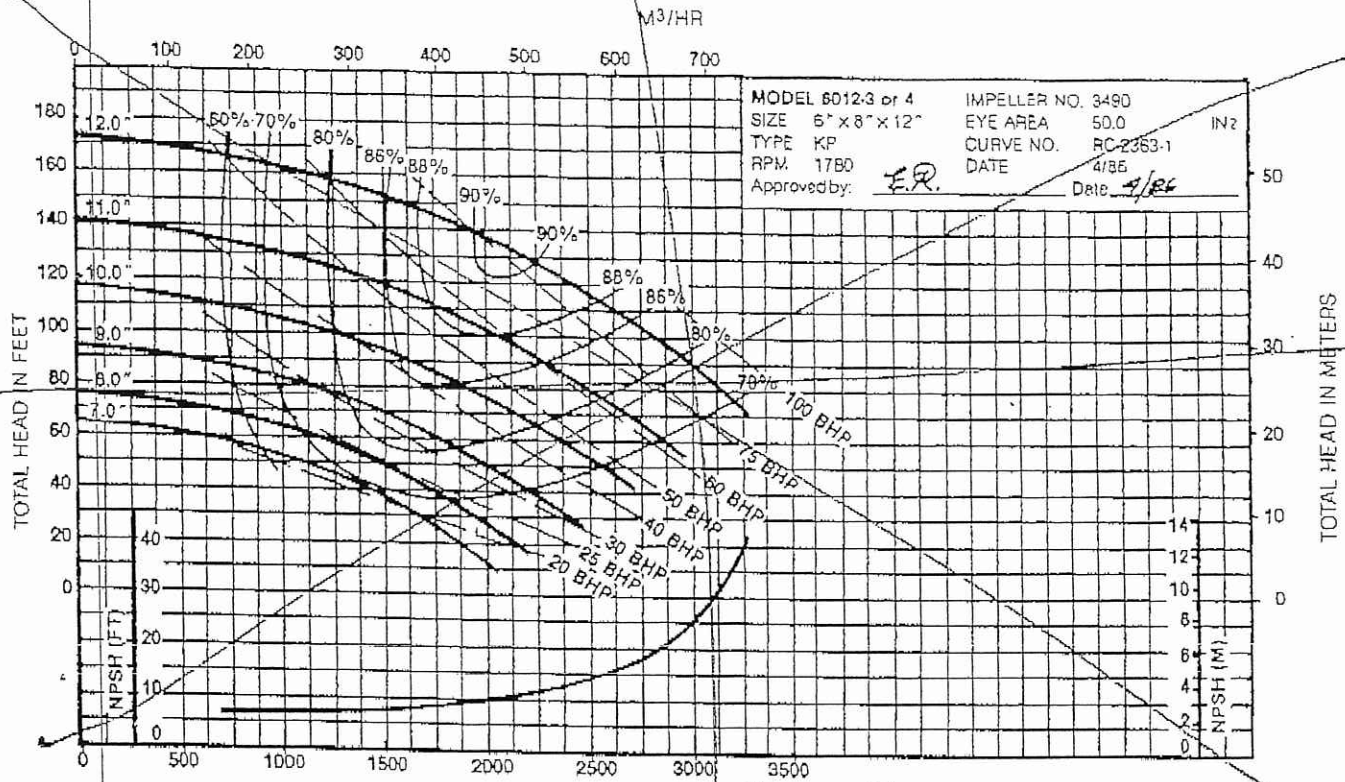
New Curve Completely

EYE AREA — SQ. IN.	= 34.26	IMPELLER WT.-LBS.	= 32.1
WR ² PER IMPELLER	= 2.72 LB.-FT ²	ONE STAGE WT.-LBS.	= 435
MAX. SPHERE SIZE	= 1.25 in.	ADD'L STAGE WT.-LBS.	= 164
MAX. NO. STD. STAGES	= 7	IMPELLER NUMBER	= 7T13
MAX. OPERATING P.S.I.	= 390	DISCH. SIZES	= 10, 12
STD. LATERAL	= 0.78 in.	SUCTION SIZES	= 10
STD. SHAFT DIA.	= 1.937 in.	MAX. LATERAL	= 1.26 in.
MAX. SHAFT DIA.	= 2.187 in.	BOWL CONN.	FLANGED—COLLETS
MIN. SUBMERGENCE	= 36 in.	ADD 13	" PER ADDITIONAL STAGE.



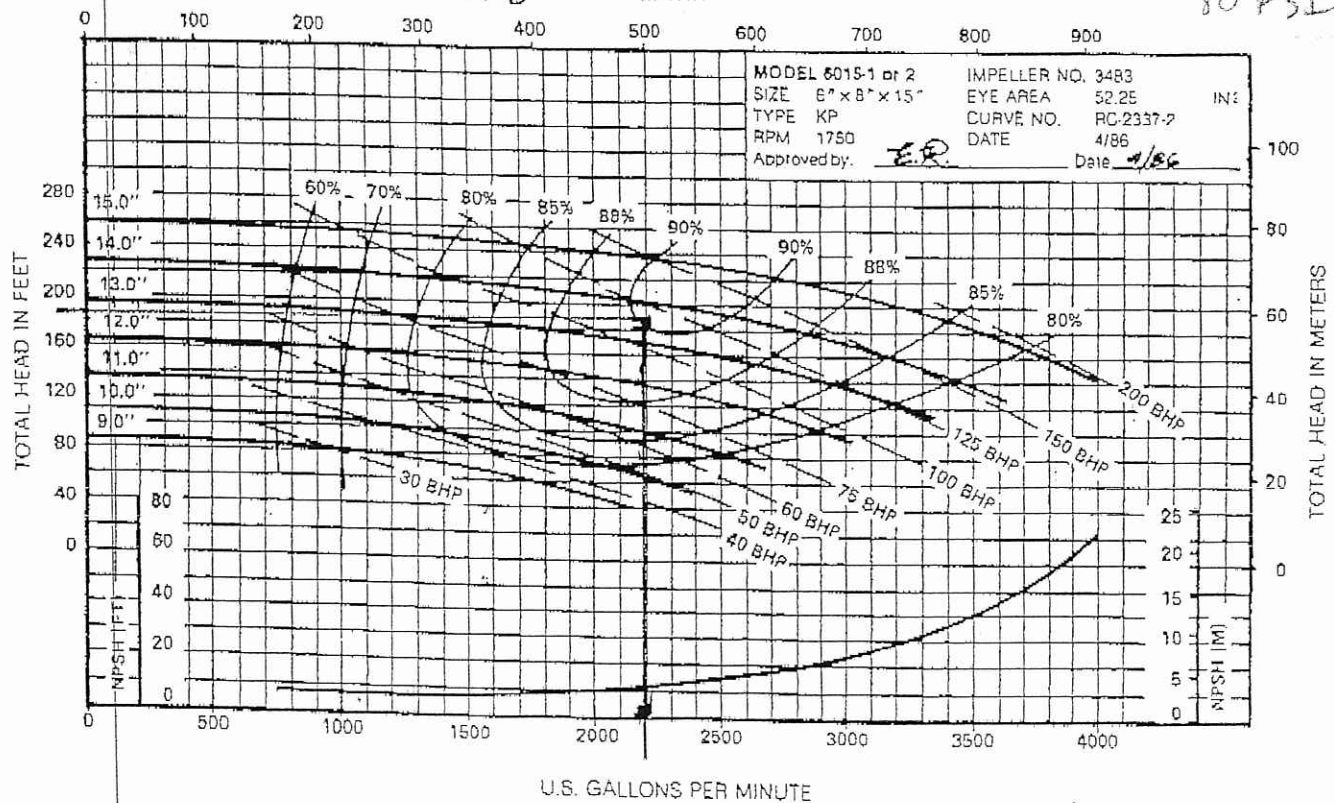
Type KP and KPV

PERFORMANCE CURVES — 1750 RPM



175 HP 12.5" Dia. Imp
2200 GPM 185 TDH
U.S. GALLONS PER MINUTE
M3/HR

Frisbee
East Wall booster
80 PSI





LAYNE PUMPS, INC.

P.O. BOX 1005
Nampa, IDAHO 83651
(208) 466-4776

ROD FRISKY

WELL TESTING REPORT AND AGREEMENT 371E #5#E

CUSTOMER NAME Thermond Hughes LOCATION San Yellow Star DATE 5-18-77

DRILLER COPE

WELL ID 16" WELL DEPTH 468 STATIC LEVEL 137

AMOUNT OF CASING _____ AMOUNT OF SCREEN _____

PUMP SETTING 2 1/2' BOWL SIZE _____ DISCHARGE SIZE 10" ORIFICE SIZE 8"

TIME	WATER LEVEL FROM TOP	FLOW RATE	G.P.M.	REMARKS
11:45 AM	137	1400		START up
12:00	171	1500	530??	Chasing up
12:30	178	1500		Clear
1:00	178	1500		Clear
1:15	182	1800	1194	41
1:30	182	1700	1174	
1:45	182	1800	1194	
2:15	192	1900	1353	
2:30	200	2100	1697	
2:45	200	2100	1697	
3:15	200	2100	1697	Shut off
				100
				137
				120
				235
				250
				300
				137

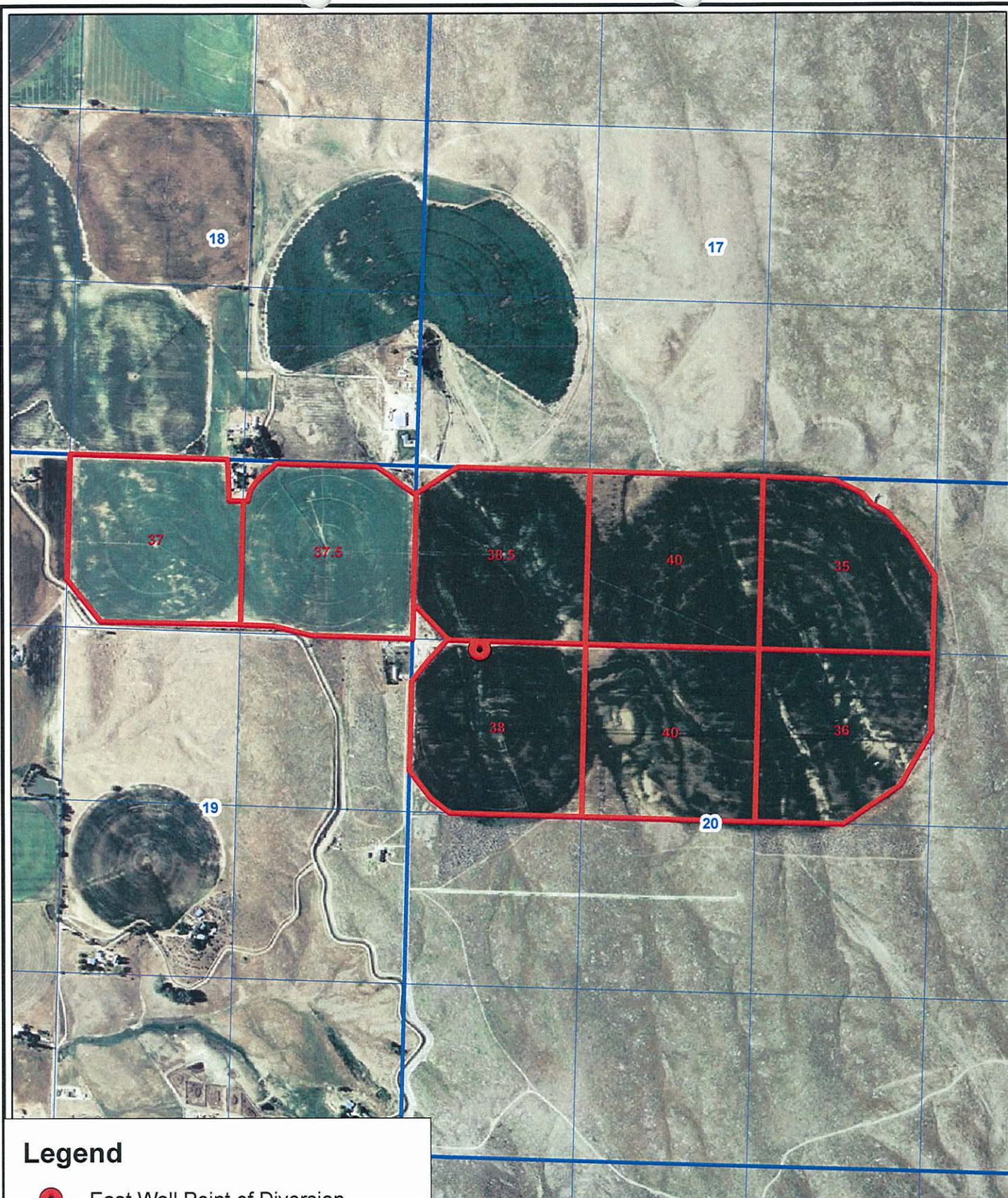
Russ Holman
TESTED BY

Norman Price
APPROVED BY

32
GALLONS TESTED

ATTACHMENT C

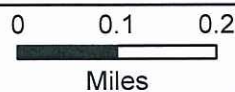
**RECOMMENDED PLACE OF USE & POINT OF DIVERSION
(2006 NAIP PHOTO & TOPO MAP)**



Legend

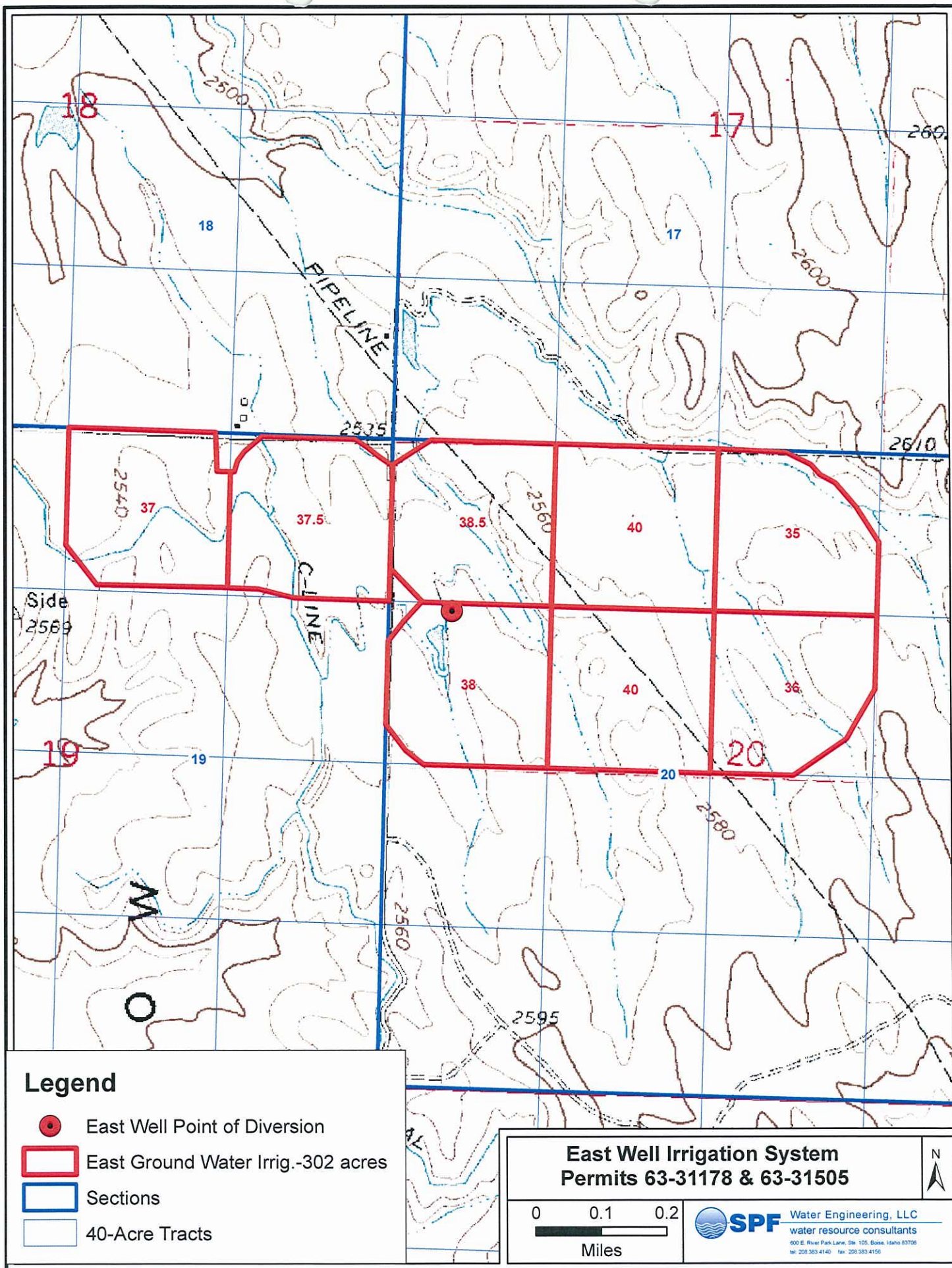
-  East Well Point of Diversion
-  East Ground Water Irrig.-302 acres
-  Sections
-  40-Acre Tracts

East Well Irrigation System Permits 63-31178 & 63-31505

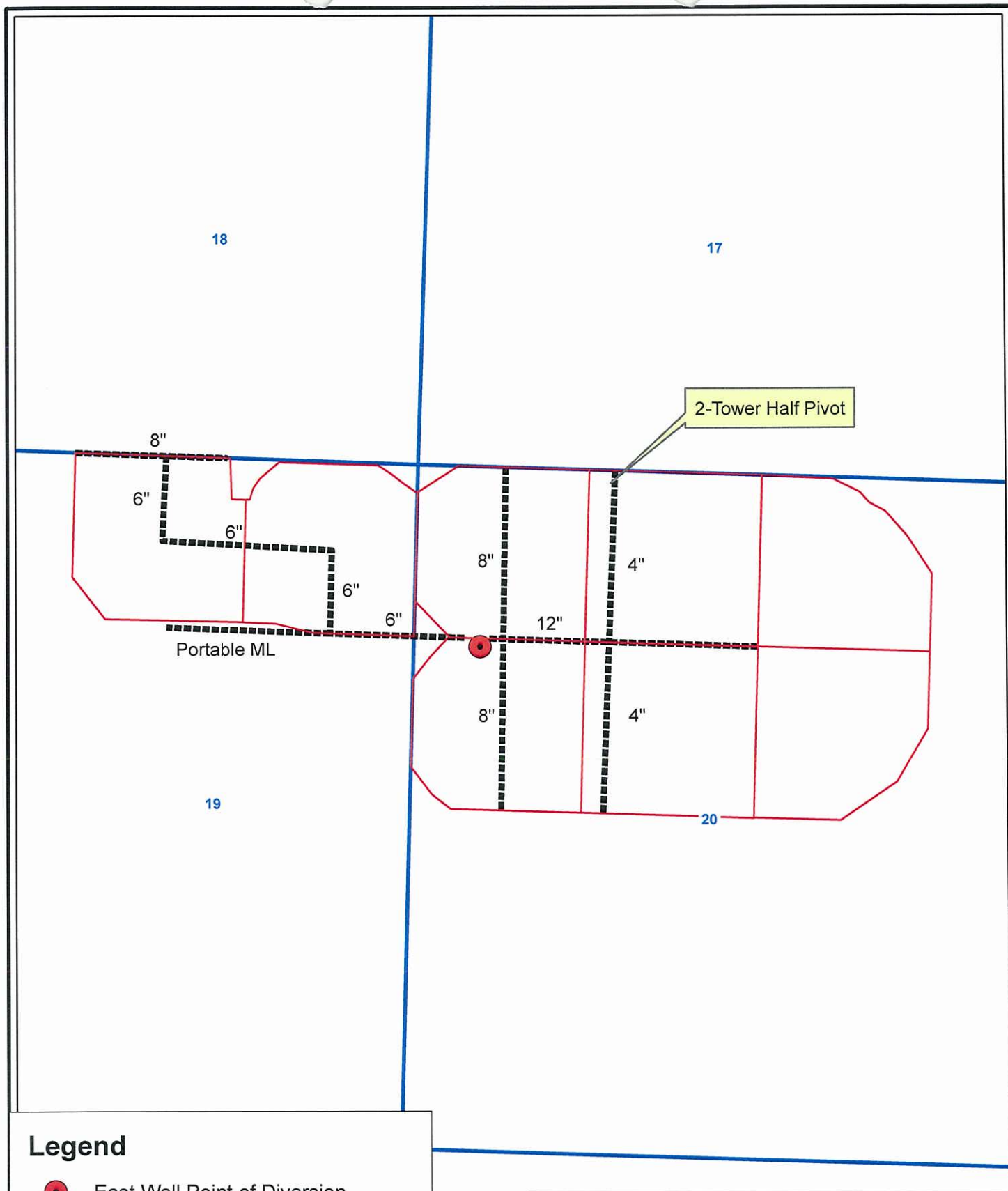


Water Engineering, LLC
water resource consultants
600 E. River Park Lane, Ste. 105, Boise, Idaho 83706
tel: 208.383.4140 fax: 208.383.4156





ATTACHMENT D
SYSTEM DIAGRAM



Legend

-  East Well Point of Diversion
-  East Ground Water Irrig.-302 acres
-  East Mainlines
-  Sections

East Well Irrigation System Diagram Permits 63-31178 & 63-31505

0 0.1 0.2
Miles



Water Engineering, LLC
water resource consultants
600 E. River Park Lane, Ste. 105, Boise, Idaho 83706
Tel. 208.353.4140 Fax. 208.353.4156



ATTACHMENT E
SYSTEM PHOTOS

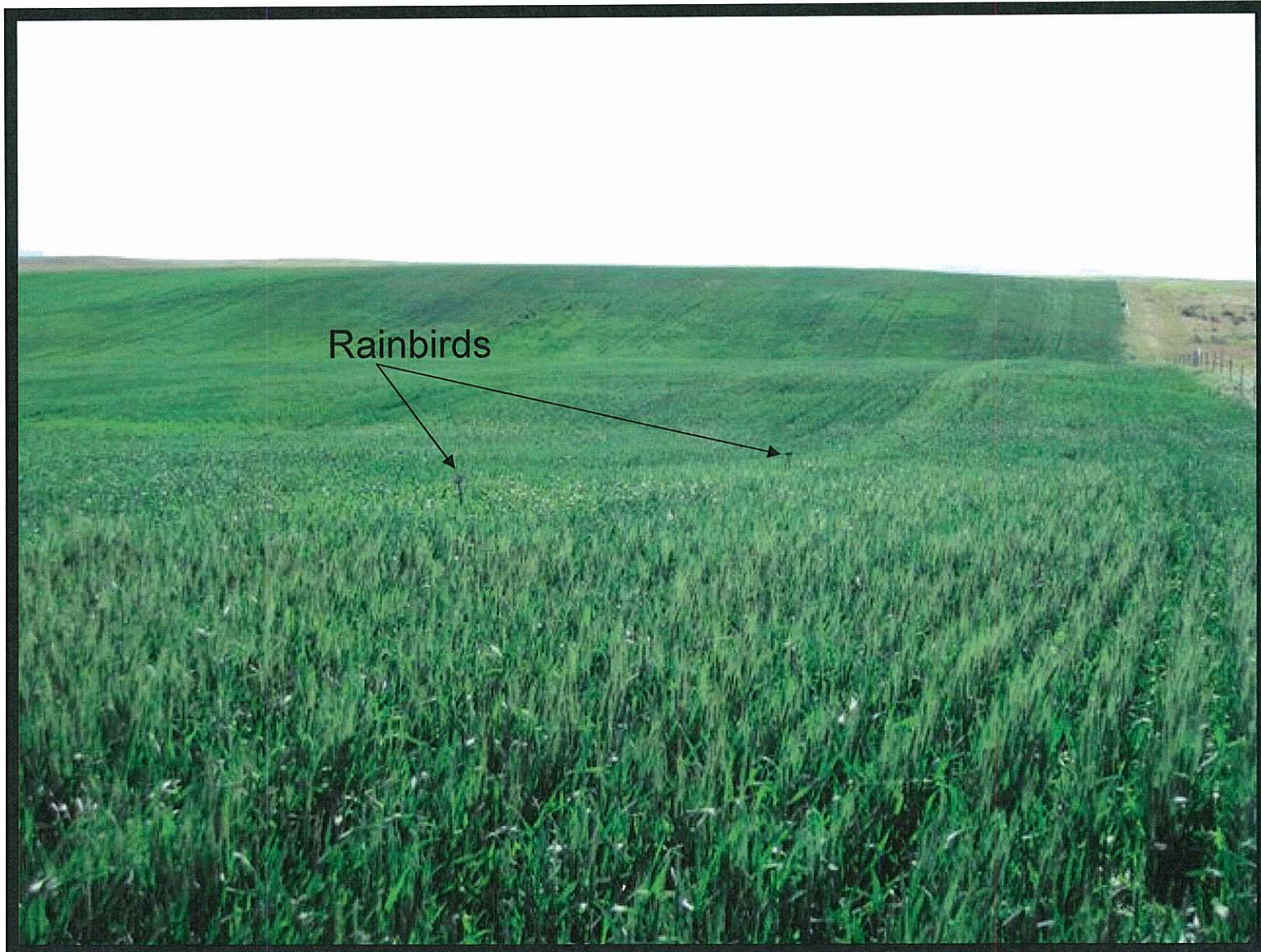


85
PSI @
Time
of
Exam

16" East Well, 150 HP Pump, 125 HP Booster



Irrigated Corner Area in the NWNENW, Section 20 (Facing East)



Irrigated Corner Area in the SWSENW, Section 20 (Facing East)