



Holden Kidwell
Hahn & Crapo P.L.L.C.
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June 30, 2011

RECEIVED
JUL 05 2011
DEPARTMENT OF
WATER RESOURCES

Nick Spencer
Idaho Department of Water Resources
PO Box 83720
Boise, ID 83720-0098

RE: Documents Relating to Injury Analysis for Water Right Nos. 34-2459, 34-2460, 34-2461, 34-2462, 34-7037, and 34-10925.

Dear Nick:

On behalf of my client, Telford Lands LLC, I am providing the Department information relative to the above subcases. These documents are in submitted for the Department's consideration, similar to the objectors' *Injury Analysis* documents submitted on May 24, 2011 (along with a revised injury document prepared by Charles G. Brockway submitted on June 10, 2011).

Attached to this letter are the following documents:

1. *Water Rights Summary*
2. *Affidavit of Nathan Hancock*
3. *Affidavit of Eric Staley*
4. *Affidavit of Don Isom*
5. *email and documents from Kolby Cazier*
6. *Memorandum in Support of Motion for Summary Judgment*
7. *Second Affidavit of Attorney Robert L. Harris*
8. *ERO Power Analysis*
9. *Preliminary Order In the Matter of Application for Transfer Nos. 55659, 5661 and 5660 The Names of M. Todd Perks and Mitchell D. Sorensen Respectively*
10. *Hydrogeologic Assessment of the Accomplished Transfer of Water Rights 34-2459, 34-2460, 34-2461, 34-2462, 34-10925, prepared by Brian Higgs, P.G. Water Well Consultants, Inc.*
11. *Comments on Brockway Report.*

It may be helpful to provide a brief description of these documents and what they are intended to communicate relative to whether or not the accomplished transfer occurred and whether it will result in injury to the objectors.

Established in 1896

As an initial matter, we note that the *Amended Director's Report* for the above subcases provides for a subordination priority date of May 18, 1982 for diversion of Water Right Nos. 34-2459, 34-2460, 34-2461, 34-2462, 34-7037, and 34-10925 out of the Island Wells. This priority date is junior to any of the objectors' priority dates, and under priority administration, diversion of the additional 12.5 cfs would be curtailed prior to the objector's diversions as a result of a delivery call.

Additionally, we note that Idaho Code § 42-226 provides that prior appropriators of groundwater "shall be protected in the maintenance of reasonable groundwater pumping levels as may be established by the Director of the Department of Water Resources," and that a reasonable exercise of prior appropriation "should not block the full economic development of underground water resources." We are unaware of any established reasonable groundwater levels in Big Lost River Basin, but we presume that this factor will be taken into consideration in the Department's Injury Analysis, as well as the need to accomplish full economic development of that resource.

The enclosed documents focus on two major items:

1. Whether or not the Island Wells had the capacity to divert the 24.5 cfs prior to 1987, demonstrating that an accomplished transfer did occur, and whether changes made to the wells 2003 increased the amounts the wells historically diverted or restored them to their original pumping capacity.
2. With the accomplished transfer occurring before 1987, we are providing information that the change did not injure, and will not now injure, the objectors.

First, regarding the diversion capacity of the Island Wells, especially in regard to changes made to the pumps in 2003, we refer you to the *Affidavit of Eric Staley* of G.J. Verti-Line Pumps Inc., who reviewed the 1985 beneficial use field exam and the pump curves for the bowls originally installed on the Island Wells. He also reviewed the changes that were made in 2003 during an extreme drought year, based upon records provided to him by two pump companies that worked on the pumps (See Affidavits of Nathan Hancock and emails from Kolby Cazier).

As you know, the *Beneficial Use Field Report* prepared by the Department of Water Resources shows a 1985 measurement of 24.66 cfs at the Island Wells. Based upon the pump design, Mr. Staley explains that the wells certainly could have diverted that amount of water,

Additionally, we are enclosing documents relating to a *Motion for Summary Judgment* that I filed in this matter, which contains copies of transport agreements held by Willard Bell, the predecessor in interest to the Telford property, to transport his water through the Big Lost River Irrigation District system. We would further refer you to the *Affidavit of Paul Arrington* which was previously submitted, because it supports our position that Mr. Bell had authorization from the irrigation district to carry is diverted ground water of 1,000 inches (20 cfs) through the irrigation district's system.

We have also included a letter prepared by David Shaw which we provided a few years ago to the Department, as well as power records that he reviewed by him to determine when increased power usage occurred at the Island Wells, which would indicate an increased use of those wells. Dr. Shaw did not attempt to evaluate or calculate any instantaneous diversion rate,

and we note that would likely be impossible based upon a review of power records. Nevertheless, these documents demonstrate that there was an increased use of the Island Wells before 1987, which is consistent with the measured diversion rate of 24.66 cfs made by the Department in 1985. A power conversion analysis is contained in the June 10, 2011 hydrogeologic report from Charles G. Brockway, and we note that he even indicates that power records cannot provide an accurate measure of instantaneous diversion rate.

With regards to the second question of whether the accomplished transfer would cause injury, we are submitting a hydrogeologic assessment of the accomplished transfer prepared by Brian Higgs of Water Well Consultants. He has also prepared a response to Mr. Brockway's report dated June 10, 2011. Lastly, we are submitting a prior hydrogeologic report and preliminary order involving a water rights transfer that occurred on lands just to the west of the Island Wells. The analysis was performed by Charles E. Brockway, and concludes that even in severe drought conditions the drawdown in one of the protestant's in that matter would be approximately 10 feet.

If you have any questions or concerns, please let me know.

Best Regards,



Robert L. Harris

HOLDEN, KIDWELL, HAHN & CRAPO, P.L.L.C.

Enclosures

CHARLES AND FERN ISOM WATER RIGHT SUMMARY

Owner	Water Right No.	Basis	Priority Date	Source	Individual Diversion Rate	Combined Diversion Rate (cfs)	Individual Volume Limitation	Combined Volume Limitation (Acre-feet per year)	Individual Acre Limitation	Combined Acres Limitation	Point of Diversion	Comments
-------	-----------------	-------	---------------	--------	---------------------------	-------------------------------	------------------------------	---	----------------------------	---------------------------	--------------------	----------

LICENSES

Crater Farms, Inc.	34-2459	License	April 19, 1965	Ground Water	4.17	NA	714	NA	238	NA	NESW, 3N, 28E, Sec. 2	These rights do not have a combined limitation on their license, but the combined limit in the licenses for 7037 & 7138 include them.
	34-2460	License	April 19, 1966	Ground Water	4.17		714	NA	238		NWSW, 3N, 28E, Sec. 2	
	34-2461	License	May 3, 1965	Ground Water	2.08		357	NA	119		NESE, 3N, 28E, Sec. 3	
	34-2462	License	May 3, 1966	Ground Water	2.08		357	NA	119		SWNW, 3N, 28E, Sec. 14	
	34-7037	License	May 4, 1973	Ground Water	12		None	6930 (all rights)	1664		NESENW, 4N, 28E, Sec. 3	
											SENWSW, 5N, 28E, Sec. 34	
	34-7138	License	May 5, 1976	Big Lost River	16		None	6930 (all rights)	1664		NWNW, 4N, 28E, Sec. 28	

INITIAL PARTIAL DECREES

Charles B. Isom Farm A Isom	34-2459	Partial Decree	April 19, 1965	Ground Water	4.17	12.5	None	8441.5	238	1980	SWSENW, 3N, 28E, Sec. 2 SENESW, 3N, 28E, Sec. 2	The "Airport Wells"
	34-2460	Partial Decree	April 19, 1966	Ground Water	4.17		None		238			
	34-2461	Partial Decree	May 3, 1965	Ground Water	2.08		None		119			
	34-2462	Partial Decree	May 3, 1966	Ground Water	2.08		None		119			
	34-10925	Partial Decree	May 1, 1982	Ground Water	7.6		None		1026 (enlargement)			
	34-7037	Partial Decree	May 4, 1973	Ground Water	12		None		1664			
	34-7138	Partial Decree	May 5, 1976	Big Lost River	16		None		1664		NESENW, 4N, 28E, Sec. 3 SENWSW, 5N, 28E, Sec. 34	The "Island Wells"

AMENDED PARTIAL DECREES

Charles B. Isom Farm A Isom	34-2459	Partial Decree	April 19, 1965	Ground Water	4.17	12.5	833	8441.5	238	1980	SWSENW, 3N, 28E, Sec. 2 SENESW, 3N, 28E, Sec. 2 NESENW, 4N, 28E, Sec. 3 SENWSW, 5N, 28E, Sec. 34	The "Airport Wells" are the top two PODs, and the "Island Wells" are the bottom two PODs.
	34-2460	Partial Decree	April 19, 1966	Ground Water	4.17		833		238			
	34-2461	Partial Decree	May 3, 1965	Ground Water	2.08		416.5		119			
	34-2462	Partial Decree	May 3, 1966	Ground Water	2.08		416.5		119			
	34-10925	Partial Decree	May 1, 1982	Ground Water	7.6		2806.8		1026 (enlargement)			
	34-7037	Partial Decree	May 4, 1973	Ground Water	12		None		1664			
	34-7138	Partial Decree	May 5, 1976	Big Lost River	16		None		1664		NESENW, 4N, 28E, Sec. 3 SENWSW, 5N, 28E, Sec. 34	The "Island Wells"

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Robert L. Harris, Esq. (ISB #7018)

rharris@holdenlegal.com

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Idaho Falls, Idaho 83402

P.O. Box 50130

Idaho Falls, Idaho 83405-0130

Telephone: (208) 523-0620

Facsimile: (208) 523-9518

IN THE DISTRICT COURT OF THE FIFTH JUDICIAL DISTRICT OF THE
STATE OF IDAHO, IN AND FOR THE COUNTY OF TWIN FALLS

In Re SRBA

Case No. 39576

Subcase Nos.: 34-2459, 34-2460, 34-2461,
34-2462, and 34-10925

AFFIDAVIT OF NATHAN HANCOCK

STATE OF IDAHO)
) ss.
County of Bonneville)

I, Nathan Hancock, do solemnly swear (or affirm) that the testimony given in this sworn statement is the truth, the whole truth, and nothing but the truth, that it is made on my personal knowledge, and that I would so testify in open court if called upon to do so.

And being so sworn I depose and say:

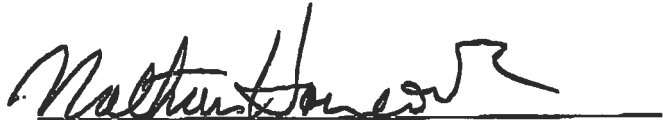
1. I am over the age of eighteen (18) and competent to testify to the matters contained herein.

I was born on December 6, 1953.

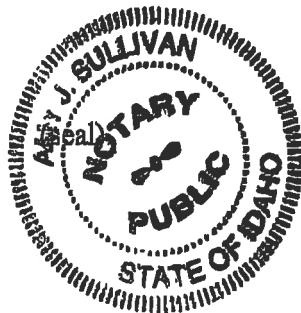
2. I have worked in the pump business since I was twenty-one (21) years old. I owned a predecessor company to American Pump Co. ("American") located in Ucon, Idaho, in 1981, and in 1989, American was formed. I have owned American since its beginning.
3. I understand that there are matters at issue in the above water rights in the Snake River Basin Adjudication water rights, and I do not intend to comment on the legal issues surrounding these water rights. I was asked to review American's records and provide information based upon my own personal involvement regarding a well known as one of the "Island Wells" located in Butte County, Idaho, which has a label on its electrical panel of "COOP 583." My understanding is that this is commonly referred to as the "South Well," and I will refer to it with that name.
4. In July of 2003, American was asked by the lessee of the Isom Property, Ralph Isom, to pull the pump at the South Well. Because the output from the well had decreased, we pulled the pump and added a bowl stage. The original bowl was a one stage 16FHH, but the trim was unknown to us.
5. We added a stage to the bowls, which also was a 16FHH because the bowls have to be of the same type. The new bowls were therefore a 2 stage 16FHH, but the impellers were trimmed to 10.5".
6. The well depth was 214 feet, and the static water level that we measured at 70 feet.
7. The column length was 202 feet, the column diameter was 12", and the tube and shaft size was 2 1/2" X 1 11/16".
8. In order to accommodate the additional stage, the pump was changed, and increased to a 200 horsepower pump.

9. When the pump was pulled, additional column length was not added. Additionally, we wanted to lower the pump, but were not able to do so.
10. All of the records we have the work done on the South Well are attached hereto as Exhibit A.

DATED this 30 day of June, 2011.


Nathan Hancock

SUBSCRIBED AND SWORN TO before me this 30th day of June, 2011.




Notary Public for Idaho
Residing at Idaho Falls, Idaho
My Commission Expires: Sept. 23, 2011

CERTIFICATE OF MAILING

I certify that on this 30th day of June, 2011, I mailed the original and copies of this form, including all attachments, to the following persons by mailing the original and/or copies, postage prepaid and addressed as follows:

Original to:

Nick Spencer
Idaho Department of Water Resources
PO Box 83720
Boise, Idaho 83720

(☒) *First Class Mail*
(☐) *Hand Delivery*
(☐) *Facsimile*
(☐) *Overnight Mail*
(☒) *Email*

Copies to:

Paul L. Arrington
Barker, Rosholt & Simpson, LLP
PO Box 485
Twin Falls, ID 83303

(☒) *First Class Mail*
(☐) *Hand Delivery*
(☐) *Facsimile*
(☐) *Overnight Mail*
(☒) *Email*

James P. Speck
Speck & Aanestad
PO Box 987
Ketchum, ID 83340

(☒) *First Class Mail*
(☐) *Hand Delivery*
(☐) *Facsimile*
(☐) *Overnight Mail*
(☒) *Email*


Robert L. Harris, Esq.
HOLDEN, KIDWELL, HAHN & CRAPO, PLLC

G:\WPDATA\RLH\15772 Isom, Don\Aff Nathan Hancock wpd cdv

EXHIBIT A

JUN. 30. 2011 9:23AM AMERICAN PUMP

NO. 221 P. 2

AMERICAN PUMP CO.
10758 N. YELLOWSTONE HWY
P.O. BOX 267,
UCON, ID 83454
208-529-4517
FAX 208-529-4587

* I N V O I C E *

Document Number: 009376

Document Date: 07/23/03

Page: 1

Sold RALPH ISOM
To: 5584 W. 33 N.
IDAHO FALLS, ID
83402

Ship RALPH ISOM
To: 5584 W. 33 N.
IDAHO FALLS, ID
83402

Ship Via.:
Ship Date: 07/12/03
Due Date.: 08/07/03
Terms..... NET 15

Cust I.D..... ISOMRA
P.O. Number...:
P.O. Date..... 07/12/03
Job/Order No.:
Salesperson...:

Item I.D./Desc.	Ordered	Shipped	Unit	Price	Net	TX
RIG TIME	32.00	32.00	HR	128.0000	4096.00	E
TRAVEL TIME	8.00	8.00	HR	60.0000	480.00	E
2STG 16" BOWL REPAIR	1.00	1.00		1250.0000	1250.00	T
SHOP TIME	5.00	5.00	HR	48.0000	240.00	E
2 3/16 x 68 1/8 BOWLSHAFT	1.00	1.00		167.5800	167.58	T
ADD-A-STAGE 16FHH BOWL & IMPELLER (USED)	1.00	1.00		630.0000	630.00	T
BRONZE STOCK (1 3/4 x 4 x 12")	1.00	1.00		95.0400	95.04	T
STEP COUPLINGS 1 11/16 x 2 1/2	2.00	2.00		109.3500	218.70	T

Continued

Subtotal: 7177.32

tel bud sun valley seed@gmail.com

8-11-03 N

JUN. 30. 2011 9:23AM

AMERICAN PUMP

NO. 221 P. 3

AMERICAN PUMP CO.
10758 N. YELLOWSTONE HWY
P.O. BOX 267
UCON, ID 83454
208-529-4517
FAX 208-529-4587

* I N V O I C E *

Document Number: 009376

Document Date: 07/23/03

Page: 2

Sold RALPH ISOM
To: 5584 W. 33 N.
IDAHO FALLS, ID
83402

Ship RALPH ISOM
To: 5584 W. 33 N.
IDAHO FALLS, ID
83402

Ship Via.:
Ship Date: 07/12/03
Due Date.: 08/07/03
Terms.....: NET 15

Cust I.D.....: ISOMRA
P.O. Number...:
P.O. Date.....: 07/12/03
Job/Order No.:
Salesperson...:

Item I.D./Desc.	Ordered	Shipped	Unit	Price	Net	TX
2 1/2 x 1 11/16 JP TUBE & SHAFT	7.00	7.00		338.5800	2370.06	T
14 x 12 COLUMN RE BUSH	1.00	1.00		682.0000	682.00	T
CHANGE BEARINGS 2 1/2 x 1 11/16	2.00	2.00		21.7800	43.56	T
14" x 3 1/2 USED CONE SCREEN	1.00	1.00		145.0000	145.00	T
12" COLUMN COUP	3.00	3.00		83.3300	249.99	T
200HP USED MOTOR	1.00	1.00		5000.0000	5000.00	T
10" GASKETS	2.00	2.00		7.8100	15.62	T
TAPING MATERIAL	1.00	1.00		30.0000	30.00	T

Continued

Subtotal: 15713.55

JUN. 30. 2011 9:23AM

AMERICAN PUMP

NO. 221 P. 4

AMERICAN PUMP CO.
10758 N. YELLOWSTONE HWY
P.O. BOX 267
UCON, ID 83454
208-529-4517
FAX 208-529-4587

*
* I N V O I C E *
*

Document Number: 009376

Document Date: 07/23/03

Page: 3

Sold RALPH ISOM
To: 5584 W. 33 N.
IDAHO FALLS, ID
83402

Ship RALPH ISOM
To: 5584 W. 33 N.
IDAHO FALLS, ID
83402

Ship Via.:
Ship Date: 07/12/03
Due Date: 08/07/03
Terms: NET 15

Cust I.D.: ISOMRA
P.O. Number:
P.O. Date: 07/12/03
Job/Order No.:
Salesperson..:

Item I.D./Desc.	Ordered	Shipped	Unit	Price	Net	TX
1 1/2 x 74" HEADSHAFT N/C	1.00	1.00		0.0000	0.00	E
2 1/2 x 1 11/16 JP TUBE & SHAFT	3.00	3.00		385.0000	1155.00	T

DEDUCT SALES TAX IF EXEMPT FORM
COMPLETED, SIGNED, AND RETURNED

FARM PLAN FINANCING NOW AVAILABLE

Subtotal: 16868.55
Tax: 723.15
Total: 17591.70

Tax Ex

AMERICAN PUMP									
BILLING		RALPH ISOM							
JOB #		307-325A							
DESCRIPTION									
LABOR AND EQUIP:									
32	Hours	Per	TIME	128			4096.00		
8	Hours	Travel	0	160			480.00		
~~1~~	~~Bowl Repair~~	~~2~~	~~STAGE~~	~~16"~~			~~1250.00~~		
~~5~~	~~Hrs~~	~~7.50~~	~~5~~	~~Hrs~~	~~48~~		240.00	OK	
3	Tube & Shaft	(2 1/2 x 1 1/16 x 20 JP)	338.52				1155.00		
1	Bowl Shaft	(2 3/16 x 68 1/8)					167.52		
2	ADD 1	STAGE 16 F.H.H Bowl & Emp. (used)					2520.00	(B)	
PARTS:	1	Bronze Stock	(1 3/4 x 4 x 12")				95.04		
	2	STEP COUPLINGS	(1 1/16 x 2 1/2)				218.70	(F)	
	1	Tube & Shaft	(2 1/2 x 1 1/16 x 20 JP)	338.52			2370.06		
OK	1	1 1/2" Column Coupler					191.67		
	1	14" x 12" COL. Reducer Bush					682.00	(C)	
	2	CHANCE Bearings	2 1/2 x 1 1/16	21.22			43.56		
	1	CONC SCREEN	(14" x 3 1/2) used				145.00	(A)	
	3	COLUMN Coupler	12"	83.33			249.99		
	1	200 HP MOTOR - used					5000.00		
	2	Gaskets	10"	7.81			15.62		
	1	TAPING Material	x2				30.00		
	1	Head Shaft	(1 1/2" x 74")	108.04			108.04		
							17,700.22		

SW New
 (A) $\frac{289.75}{x .6}$
 143.95

15" New
 (B) $\frac{2100}{x .6}$
 1260

(C) CUST Pipe
 505" A/COST
 $\frac{x 1.35}{681.75}$

JUN. 30. 2011 9:23AM

AMERICAN PUMP

NO. 221 P. 6



Pump Record

P.O. Box 267 • Ucon, Idaho 83454 • 1-800-529-4517 • (208) 529-4517

Date: 7-12-03, 19__

PO# _____

Customer Bob TsonLocation ArcoEquipment Used center 1 tonCrew leader Blair

Rate per Hour _____

X Hours _____

Well Depth: 214' Static Water Level: 70' Casing size I.D.: 19 1/2"
 Make of Motor: US old H.P.: 200 RPM: 1800 C.D.: 50 Volts: _____
 Make of Pump Head: Burkly Base Dia: _____ Register Dia: _____ A= _____
 Discharge Size: 10" Tube Nipple Size & Length: 19 1/2" x 2 1/2" Burkly
 Head Shaft Size: 1 1/2" Length: 74" K.W. Size & Length: 3/8" x 80"
 Length of Head Shaft from top of Clutch to Top of Shaft: _____
 Col. T. Lgth.: 202" Col. Sz. & Lgth: 12" x 10-20" 12" Strght ✓ Tpr. _____
 Make of Tube & Shaft: Burkly Threads/in.: Tube 10 x 12 x 1/2" Shaft 10 x 1 1/2"
 Bowls: _____ Oil ✓ Wtr _____ No. Stages: 2 Size OD: _____
 Impeller Dia.: _____ Screen Size: 4 x 12" Suction Size: 12"
 Tube Stickup: 13 1/2" Tube Threads/in.: _____ Tube Size & Length: _____
 Shaft Stickup: _____ Shaft Size: _____ Shaft Threads/in.: _____

All time is chargeable. DESCRIBE WORK DONE:

COST:

7-9 11 hr out

7-10 9.5

7-11 Blair

3 men 9 hr.

add stage to pump

PARTS USED:

Tape

200' 2 1/2 x 1 1/16 JP T+S

14" x 3 1/2" screen used conc

12" column cuppler 3 ea

2- change bearings 2 1/2 x 1 1/16

2- 10" gaskets

200 hp motor used

1 head shaft

40 hr total

8 hr travel

32 Rtg time

TOTAL:

WORK YET TO DO:

BOWL REPAIR INFORMATION

Job name: 150m
 Job number: _____
 Type of oil seal: _____
 End play in bowl: _____
 End play needed: _____
 Tube size: _____
 Tube style: _____
 Tube stick-up: 13 1/2
 Shaft stick-up: 19
 Tube threads per inch: _____
 Shaft threads per inch: _____
 Inches of threaded shaft: _____
 Make of pump: L+B
 # of stages: 2
 Size of impellers: 16
 Name of impellers: FHH
 Trim impeller: 10.500
 Full impeller: _____
 G.P.M. _____
 T.D.H. _____
 Bowl Shaft size: 60 1/2 x 2 3/8 + 0.13" to 0.14" to 0.3" to 1 1/2 10TA1
 Head Shaft size: 71 3/4 x 1 1/2 107P1 Top + Bot
 Pin length from bottom of seal ring: _____
 Bowl bolts size: _____
 Length: _____
 Approx. wear in bowls: _____
 " " " in bearing: _____
 Strainer: _____
 Strainer size: _____
 Strainer type: _____

PUMP REPAIR CHGS.

52us Soc
 2-add a stage
 Bronze STK 1 3/4 x 4 x 12 1/2 on 5.
 Mac Tube adapter - 2hr
 Mac Bowl shaft 2hr
 Trim Imp. 1hr

OTHER CHARGES:

1-14" Cd Coupler -
 1-14x12 RE Bushings.

#	inside diameter	outside diameter	length
_____ discharge bearing	_____	_____	_____
_____ intermediate bowl bearing	_____	_____	_____
_____ Suction Case Bearing	_____	_____	_____
_____ Rubber Bearing	_____	_____	_____
_____ Impeller Ring	_____	_____	_____
_____ Bowl Ring	_____	_____	_____

Misc: _____

Robert L. Harris, Esq. (ISB #7018)
rharris@holdenlegal.com
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Idaho Falls, Idaho 83405-0130
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In Re SRBA

Case No. 39576

Subcase Nos.: 34-2459, 34-2460, 34-2461,
34-2462, and 34-10925

AFFIDAVIT ERIC STALEY

STATE OF IDAHO)
) ss.
County of Twin Falls)

I, Eric Staley, do solemnly swear (or affirm) that the testimony given in this sworn statement is the truth, the whole truth, and nothing but the truth, that it is made on my personal knowledge, and that I would so testify in open court if called upon to do so.

And being so sworn I depose and say:

1. I am over the age of eighteen (18) and competent to testify to the matters contained herein. I was born on January 10, 1963.

2. I am currently the President of G.J. Verti-Line Pumps, Inc. (hereinafter "G .J."), located in Twin Falls, Idaho. Attached hereto as Exhibit A is a copy of the 2011 Annual Report for G.J. Verti-Line Pumps, Inc. I have been president of G.J. for approximately seven years.
3. I have worked for G.J. full-time beginning in August 1989. G.J. was a company initially formed by my father, who purchased a predecessor company known as Aurora Pump Company in 1985. Prior to that, he was employed with a number of other pump companies for approximately thirty (33) years, beginning in 1952.
4. During my time at G.J., I have become familiar with well and pump design, ground water development, pump diversion capacity, and interpretation of pump curves that accompany pumps and chart diversion rates based upon various factors.
5. Over the course of my career, I attended a semester of college at Ricks College in Rexburg, Idaho, and focused on machining equipment. I have also attended various pump schools sponsored by large pump companies, where those attending were educated on troubleshooting pump problems, reading pump curves, etc.
6. I understand that there are matters at issue concerning the above water rights in the Snake River Basin Adjudication, and I do not intend to comment on the legal issues surrounding these water rights. I was asked to review information provided to me regarding the initial development of two ground water wells located in Butte County, Idaho, known as the "Island Wells," as well as information concerning work done subsequently to the pumps on the Island Wells in 2003 by American Pump Company ("American") of Ucon, Idaho, and PumpTech Co. Inc. ("PumpTech") of Idaho Falls, Idaho.

7. The information I have reviewed regarding the work done by American and PumpTech was obtained from these entities, and I understand that representatives of these companies will submit affidavits similar to my affidavit explaining what work was done on the Island Wells. I have relied upon their representations about the work done on the Island Wells.
8. Regarding the initial development of the Island Wells, I have reviewed the Beneficial Use Field Report attached hereto as Exhibit B, which was conducted on August 8, 1985, as well as the Beneficial Use Field Report that resulted from a later visit on July 5, 1990. Based upon the 1985 Field Report, the Island Wells collectively were measured to divert 24.66 cfs.
9. As shown in this report, there are two "Island Wells," one that was labeled by the field examiner as "COOP 402" (which I will refer to as the "North Well") and one labeled as "COOP 583" (which I will refer to as the "South Well").
10. I visited the Island Wells in May of 2011 to inspect the both the North Well and the South Well.
11. Based upon the 1985 Field Report, the North Well pump was recorded to be a 125 horsepower Aurora Pump with a General Electric motor, and was measured to divert 12.62 cfs (5,664 gpm). The South Well pump was recorded to be a 100 horsepower Berkeley Pump with a Westinghouse Motor, and was measured to divert 12.04 cfs (5,404 gpm).
12. Generally speaking, the "pump" is the entire diversion structure that consists of (from bottom to top) bowls, column, tube and shaft, discharge head, and motor. The motor component of a pump is the driver, which spins the shaft, and rotates the impellers in the

bowl assembly. The impellers push water up through the column to discharge at the surface.

13. The amount of water discharged at the surface is dependant on a number of factors, including bowl design, pumping water level, the inside diameter of the column, the outside diameter of the oil tube, and depth of the column setting. Therefore, variations in these factors will impact water output.
14. When I design a pump, I first determine what the desired flow rate is. I then review a pump curve to determine if that flow rate is within an acceptable range of efficiency. I also need to have some indication of what the pumping level is, which can be determined by measurement and/or pump testing.
15. I then consider the size of the column, tube, and shaft in my analysis, and this is done to determine the correct friction loss calculation, which is then used in the determination of what the total head required will be to obtain the desired well output.
16. The total head then determines how many stages of the bowl assembly are needed. The flow rate and the head determine what horsepower is needed. The total horsepower requirement must also take into account shaft horsepower loss. The deeper the setting, the greater the shaft loss is. A bigger shaft takes more horsepower to turn. All of these factors need to be considered in any pump design.
17. Additionally, over time, a pump can experience wear, which will decrease the amount of water that it can pump, which will result in less production than is shown on a pump curve.
18. A pump curve is a document that assists in matching a bowl assembly to the flow rate and the head, as described above, with a maximum efficiency.

19. With the above items in mind, I have reviewed information relative to the North Well. At the North Well, there is a plate at the well site which states that the bowls installed consisted of a Verti-Line single stage 16FHH. A pump curve for this bowl design, along with lines I have drawn myself as further explained below, is attached hereto as Exhibit D.
20. Since the 1985 Field Report shows the measured diversion rate at the North Well, we can use that as a starting point to determine the other factors relative to the conditions that would produce a diversion rate of 12.62 cfs (5,664 gpm).
21. As shown on the pump curve, pump performance (output) is primarily dependant on total dynamic head-feet. Total dynamic head-feet is the total of pumping level, friction loss in the column, and pressure above ground if any.
22. One of the main factors that must be determined in order to determine total dynamic head-feet is the pumping level. I have reviewed the Well Driller's Report from 1976 attached hereto as Exhibit E, and it shows that when the North Well was drilled, it had a static water level of 9 feet. In my experience, this is very shallow. In order to get a better idea of what the water level could have been in 1985, I asked Michael Telford to provide any information he may have. The best available information available to him is a hydrograph from a well plotted by Water Well Consultants, Inc., which shows the water level of a well located in Township 5N, Range 26E, Section 23. Based upon the legal description, this well is located near the North Well. In August of 1985, it appears that the water depth was 16-18 feet. This hydrograph is attached at Exhibit F.
23. I also understand that Don Isom physically took a measurement in May of 1998 at the North Well, and measured the water depth to be 18 feet. In comparing this actual

measurement taken by Mr. Isom with the hydrograph, the depth measurement is nearly the same, with about a 3-4 foot difference. The hydrograph appears to be a reasonable measure of the water depth in the North Well.

24. Based upon my review of Pump Tech's records that were provided to me, the North Well was reworked in 2003, where 10 feet of column was added for a total column of 140 feet. This means that prior to 2003, there was 130 feet of column in the well. Based upon my calculations of 130 feet of column, there would be approximately 12 feet of friction loss while pumping 5,664 gpm, which means that the pumping level would be at approximately 67 feet.
25. The pumping level is different than the static water level shown on the hydrograph of approximately 18 feet because the water level drops when the pump is turned on. However, the static water level information tells me that the water levels were high in 1985, so the pumping level would be higher than it was in 1990.
26. Based upon this information, the total dynamic head would be at 79 feet, which includes the 67 foot pumping level added to the 12 feet of friction loss. In analyzing the pump curve for the North Well, all of the above-described factors indicate that the pump was designed for maximum efficiency. In the case of the North Well, this would be a maximum efficiency of 83%.
27. Additionally, in 1985, based upon my calculations, the pump was pulling 140 horsepower on a 125 horsepower motor, which is a 12% overload on that pump. It is possible to run a motor at an increased horsepower with increased electrical load, and with older motors, this is often done up to a general maximum of 15%.

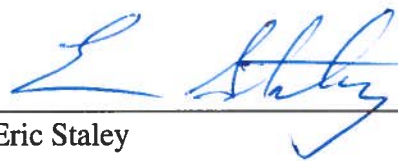
28. Regarding the North Well, in 1990, the field exam showed that the North Well could divert 3,246 gpm. Based upon the hydrograph, the water level in 1990 was at approximately 51 feet.
29. In 1985, the static water level versus the pumping level was roughly 47 feet, according to the hydrograph and my figures. In 1990, the difference is roughly 49 feet between the static water level versus the pumping level. This tells me that the drawdown is approximately 48 feet in the North Well.
30. By using the same drawdown of 48 feet, the lower water levels, as indicated on the hydrograph, would increase the pumping level to 100 feet. My calculations indicate that there would be 4 feet of friction loss. The total dynamic head would be at 104 feet, which according to the pump curve, would produce the 3,246 gpm that was measured.
31. Additionally, based upon my calculations, in 1990, the motor was pulling 144 horsepower on a 125 horsepower motor, which is a 15% power overload, and within a range I have observed in my experience.
32. When PumpTech worked on the North Well in 2003, my understanding is that they indicated to Ralph Isom, who was operating the farm, the pump was running at a 15% overload. This is consistent with my calculations.
33. If we consider things in 2003, there would have been 26 years of wear on the bowls because the pump was originally installed in 1977 based upon the well log and the serial number of the original North Well motor. When the bowls were pulled in 2003, my understanding was that the bowls were worn.
34. 2001 through 2005 were drought years according to the hydrograph. Based upon the hydrograph, the static water level was approximately 75 feet. If we take the 48 feet

- drawdown figure calculated above, and compare this to the hydrograph, then in 2003, the pumping level would have been roughly 123 feet, and the pump was set at 130 feet. Based upon the pump curve, it is clear why the well was no longer producing.
35. Given the problem, it seems obvious that something had to be done, and my understanding is that the lessee of the Isom property, Ralph Isom, requested that PumpTech inspect the pump and see what the problem was.
36. Based upon the information provided to me, in 2003, a ten-foot extension was added to the column, and a suction tube was added as well. This was due to lower water levels, and the changes were made in order to get the pump in water that could be pumped.
37. Additionally, the bowls were changed to a single-stage National E18HC in order to restore the pump to its historic pumping flow. Attached hereto as Exhibit G is a pump curve for these bowls with my notes on them.
38. With the new bowls, at the 2003 pumping level of 123 feet, and take the new pump curve, and a friction loss of 14 feet, this would result in 137 feet of head at 5900 gpm. This is close to the 5,664 gpm that the North Well originally produced. Attached hereto as Exhibit H is a pump curve from PumpTech with their notes that shows that they designed it to pump 6100 gpm.
39. Because the pumping level was at approximately 123 feet, with a total dynamic head of 137 feet (taking into account friction loss), the total horsepower would need to be 254. The motor at the North Well is now 250 horsepower, and this was needed strictly because of the increase in pumping level. The horsepower did not increase what the well could historically produce. It was increased, due to the increased pumping level, to restore the well's production to what it had produced previously.

40. Recent measurements indicate that the North Well, measured in May of 2011, is producing 4340 gpm. It is likely that the North Well needs to be investigated again to determine what may be causing the decreased output.
41. Regarding the South Well, it was also changed in 2003. Based upon American's records, the pump was pulled in July of 2003, and because of a drop in water levels, a stage was added to the bowls to overcome the increased head of pushing water up the column in order to match its historic diversion rate. The additional stage, because of the lower water level, also required an increase in horsepower to 200 horsepower.
42. Originally, the South Well had a single stage 16FHH bowl assembly. It should have produced nearly the same as the North Well, and based upon the actual measurements, the South Well discharged only 260 gpm less than the North Well in 1985.
43. The reduced diversion amounts in 1990 for the South Well track with the reduced diversion amounts of the North Well.
44. There is one difference between the North Well and South Well, in that the South Well had a 100 horsepower motor as opposed to a 125 horsepower motor in the North Well. Because of this horsepower, on the pump curve, the trim would likely have been a "B" trim, which means that the impellers would be reduced in size in order to allow the 100 horsepower motor to run without failure. The motor was also a Westinghouse motor, which in my experience, will not handle too much of an overloaded. Based upon this, the B trim at 100 horsepower would have produced the 1985 measured amount of 5400 gpm at 60 feet of head.
45. Based upon my review of the Field Reports and pump curves discussed above, I conclude that the 2003 pump work restored the historical outputs, and that the pumps installed in

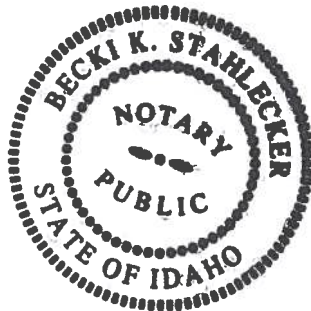
1985 were capable of delivering the 24.66 cfs measured and recorded in the 1985 Field Report.

DATED this 24 day of June, 2011.


Eric Staley

SUBSCRIBED AND SWORN TO before me this 24th day of June, 2011.

(seal)




Notary Public for Idaho
Residing at Twin Falls, Idaho
My Commission Expires on 1-28-2014

CERTIFICATE OF MAILING

I certify that on this 30th day of June, 2011, I mailed the original and copies of this form, including all attachments, to the following persons by mailing the original and/or copies, postage prepaid and addressed as follows:

Original to:

Nick Spencer
Idaho Department of Water Resources
PO Box 83720
Boise, Idaho 83720

(☒) *First Class Mail*
(☐) *Hand Delivery*
(☐) *Facsimile*
(☐) *Overnight Mail*
(☒) *Email*

Copies to:

Paul L. Arrington
Barker, Rosholt & Simpson, LLP
PO Box 485
Twin Falls, ID 83303

(☒) *First Class Mail*
(☐) *Hand Delivery*
(☐) *Facsimile*
(☐) *Overnight Mail*
(☒) *Email*

James P. Speck
Speck & Aanestad
PO Box 987
Ketchum, ID 83340

(☒) *First Class Mail*
(☐) *Hand Delivery*
(☐) *Facsimile*
(☐) *Overnight Mail*
(☒) *Email*


Robert L. Harris, Esq.
HOLDEN, KIDWELL, HAHN & CRAPO, PLLC

Exhibit A

No. C 81529	Due no later than Jun 30, 2011 Annual Report Form		2. Registered Agent and Address (NO PO BOX)			
Return to: SECRETARY OF STATE 700 WEST JEFFERSON PO BOX 83720 BOISE, ID 83720-0080 NO FILING FEE IF RECEIVED BY DUE DATE	1. Mailing Address: Correct in this box if needed. G. J. VERTI-LINE PUMPS, INC. ERIC STALEY PO BOX 892 TWIN FALLS ID 83301		ERIC STALEY 1970 HIGHLAND AVENUE TWIN FALLS ID 83301			
			3. <u>New</u> Registered Agent Signature:*			
4. Corporations: Enter Names and Business Addresses of President, Secretary, and Directors. Treasurer (optional).						
Office Held	Name	Street or PO Address	City	State	Country	Postal Code
SECRETARY	NANCY STALEY	P.O. BOX 892	TWIN FALLS	ID	USA	83301
PRESIDENT	ERIC STALEY	P.O. BOX 892	TWIN FALLS	ID	USA	83301
5. Organized Under the Laws of: ID C 81529		6. Annual Report must be signed.* Signature: Eric Staley Name (type or print): Eric Staley Date: 04/14/2011 Title: President				
Processed 04/14/2011		* Electronically provided signatures are accepted as original signatures.				

Exhibit B

-
- The image contains three hand-drawn diagrams on graph paper, illustrating the layout of a water supply system. Each diagram shows a horizontal line representing a pipe, with various components and dimensions labeled.
- Diagram 1 (Top):** Shows a horizontal line with a circular component labeled "Pump Station" on the left. To the right of the pump station, there is a section labeled "Open Discharge". Dimensions include a horizontal distance of 5' from the pump station to the start of the discharge, and a vertical distance of 15' 3" from the horizontal line to the top of the discharge. A small circle labeled "B" is located on the horizontal line.
- Diagram 2 (Middle):** Shows a horizontal line with a circular component labeled "Pump Station" on the left. To the right of the pump station, there is a section labeled "Open Discharge". Dimensions include a horizontal distance of 11' 5" from the pump station to the start of the discharge, and a vertical distance of 15' 3" from the horizontal line to the top of the discharge. A small circle labeled "B" is located on the horizontal line. The label "Open Discharge" is written vertically on the right side of the diagram.
- Diagram 3 (Bottom):** Shows a horizontal line with a circular component labeled "Pump Station" on the left. To the right of the pump station, there is a section labeled "Open Discharge". Dimensions include a horizontal distance of 11' 5" from the pump station to the start of the discharge, and a vertical distance of 15' 3" from the horizontal line to the top of the discharge. A small circle labeled "B" is located on the horizontal line. The label "Open Discharge" is written vertically on the right side of the diagram.

- ☐
- Aerial Photo of Place of Use Attached
-
- or Map of Irrigated Acreage Attached

14. Remarks Wells # 583/402 open discharge to Island Ditch to East Side Ditch to Big Lost River to Munsey ditch to Reduccioni 580/618 and 4/301 to private ditcher with Reduccioni to Linear Systems wheel, band lines.

- ☐ None
☐ Other

- Date 8 Aug 1985

Beneficial Use Examination

Date

CONSULTANT SEAL

Permit No. 31-7138
Phone No. 527-8903

1. Owner: CRATER FARMS INC Phone No. 527-8903
Current Address: P.O. Box 91 Arco Id 83213
2. Accompanied by: Willard Bell EXAM. DATE: 8 Aug 85
Address: SAME Phone No. 257-8903
Relationship to Permit Holder: OWNER
3. Source: Groundwater / Big Lost River tributary to N/A / Snake
GROUNDWATER REDIVERSIONS

Well/Diversion* No.	Motor Make	HP	Motor Serial No.	Pump Make	*Pump Serial No. or Discharge Size
REDIV 588	GE 1775	75	TVJ602119	Winthorpe	12"
REDIV 618 no # on picture	GE 1765	50	RKJ509012	Worthington	UTP 57306
REDIV #4	GE 1180	100	C.KT327163	Johnston	PG14366
Rediv # 301	US 1200	100	C1008158	Johnston	1H14112
SEE PAGE # 2					

*Code with points of diversion, system diagram & photos on reverse side. Disregard if only one.

5. System Description (As operating at time of measurement. Indicate pressure, number of sprinklers, etc.)
- Rediv # 588 Muncey Ditch to Private ditch
- Rediv # 618 " " " " "
- Rediv # 4/3101 " " " Mainline to private ditch or irrigation system with lateral with sprinklers

6.	Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
	Flame	Parshall	Thompson Rite + Steel	-	-	36"	
	Weir	Cipolletti	-	-	-	4'	
	FLUME	Parshall	Thompson Rite + Steel	-	-	30"	

7. Measurements 1.09' over 36" Birkhoff flume ☐ Additional data/computation sheets attached
= 13.7 cfs

1.34	over 4' Cipalotti weir upstream of Redirection #4	301	20.82
NO	over 30" Parshall flume below Redirection #4	301	10.00
		CAPACITY	10.82

- | B. Point(s) of Division ALSO SEE PAGE # 2 | | | | | | | | Indicate Method of Determination | | |
|---|-----|-----|-----|------|------|------|--|----------------------------------|---------|--|
| Ident # | 1/4 | 1/4 | 1/4 | Sec. | Twp. | Rge. | Survey Information from ~~Survey~~ Corner | County | Remarks | |
| # 588 | NW | SE | SE | 2 | 3N | 26E | | Butte | | |
| # 618 | NW | SE | SE | 2 | 3N | 26E | | Butte | | |
| # 4 | SW | SW | NW | 13 | 3N | 26E | S 5 1/2 1074 | Butte | | |
| # 301 | SW | SW | NW | 13 | 3N | 26E | | Butte | | |
| Ditch | NW | NW | NW | 26 | 4N | 26E | MUNSEY DITCH FROM BK LOST RIVER | Butte | | |

- | Place(s) of Use: | | Irrigation - give acres served by system at time of exam.
Indicate Method of Determination | | | | | | | | | | | | | | | | | |
|------------------|------|---|-------------------------|-------|-------|-------|--------|-------|-------|-------|--------|-------|-------|-------|--------|-------|-------|-------|--------|
| Twp. | Rge. | Sec. | NE 1/4 | | | | NW 1/4 | | | | SW 1/4 | | | | SE 1/4 | | | | Totals |
| | | | NE1/4 | NW1/4 | SW1/4 | SE1/4 | NE1/4 | NW1/4 | SW1/4 | SE1/4 | NE1/4 | NW1/4 | SW1/4 | SE1/4 | NE1/4 | NW1/4 | SW1/4 | SE1/4 | |
| 3N | 26E | 14 | | | | | 39 | 36 | 40 | 40 | 40 | 40 | 40 | 40 | | | | | 315 |
| | | 15 | 39 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 639 |
| | | 16 | 39 | 39 | 40 | 40 | | | | | | | | | 40 | 40 | 39 | 39 | 316 |
| | | 22 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 40 | | | | | | | | | 320 |
| | | 23 | | | | | 40 | 40 | 40 | 40 | 40 | | | | 33 | 39 | 40 | 40 | 392 |
| | | | Total Acres - 1666.1982 | | | | | | | | | | | | | | | | |

10. Other water rights on lands 34-2459/2460/2461/2462

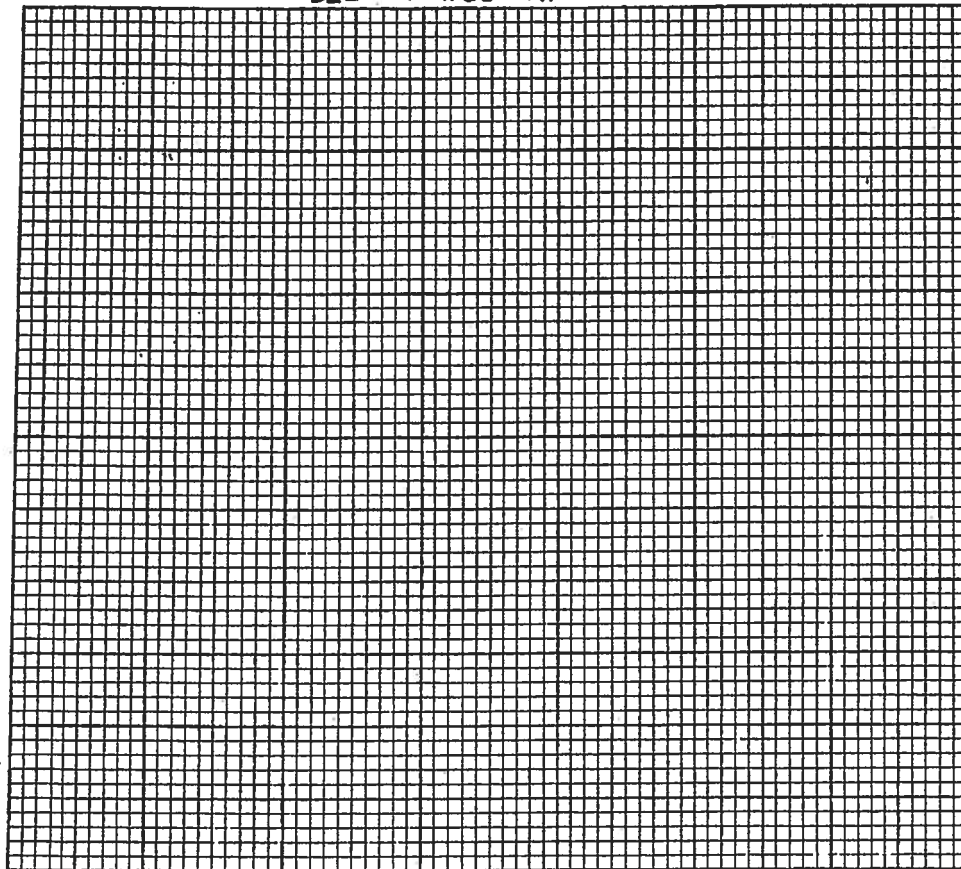
35 4 OF 40

11. Other water right diverted from same p.d. _____

REDIRECTED under 34-7037

12. **Diversion and Delivery System Diagram:** Indicate all major components and distances between components. Indicate ditch size/pipe i.d. as applicable. Indicate on systems with measurement port the distance between the port and the nearest component/pipe bend/restriction both upstream and downstream, and the inside pipe diameter at the measurement port. On multiple diversion systems indicate how diversion systems are connected.

SEE ATTACHED MAP



13. ☒ Photo of Diversion & System Attached

☒ Aerial Photo of Place of Use Attached
or Map of Irrigated Acreage Attached

14. Remarks PERIOD OF USE IS FOR High Water only.
R29

15. 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

16. Examiner's/Consultant's Signature Keith C. Wilcox

Date 11 JAN 1988

Consultant's License Number _____

IDWR Director's Authorization to Conduct

Beneficial Use Examination _____

Date

CONSULTANT SEAL

SEP 21 1988

Permit No. ~~34-7037~~

Phone No. 527-1903

1. Owner: Crater Farms Inc Phone No. 527-1903
Current Address: P.O. Box 91 Arco Id 83213
2. Accompanied by: Mr Willard Bell EXAM. DATE: 8 Aug 1981
Address: same Phone No. -
Relationship to Permit Holder: OWNER
3. Source: Private Ditch SW 1/4 Section tributary to FROM PRIVATE DITCH GROUNDWATER REDIVERSIONS

Well/Diversion* No.	Motor Make	HP	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
REDUCED 592	VASKAWA 775	100	0078316801	Worthington	14 H H 220
#2	Worthington	250	76A65060	Johnston	10"
#1	Worthington	250	676A650604	Johnston	JY 1/4 102
at Pond 4465	US Motors	100	R9981-01-210	Johnston	
			P2113078		

*Code with points of diversion, system diagram & photos on reverse side. Disregard if only one.

5. System Description (As operating at time of measurement. Indicate pressure, number of sprinklers, etc.)
REDIVERSIONS FROM PRIVATE DITCH/POND TO lateral with sprinkler

6.	Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
	NO MEASUREMENT	MADE FROM	RECONSTRUCTIONS	ON	PRIVATE	Ditch	

7. Measurements ☐ Additional data/computation sheets attached

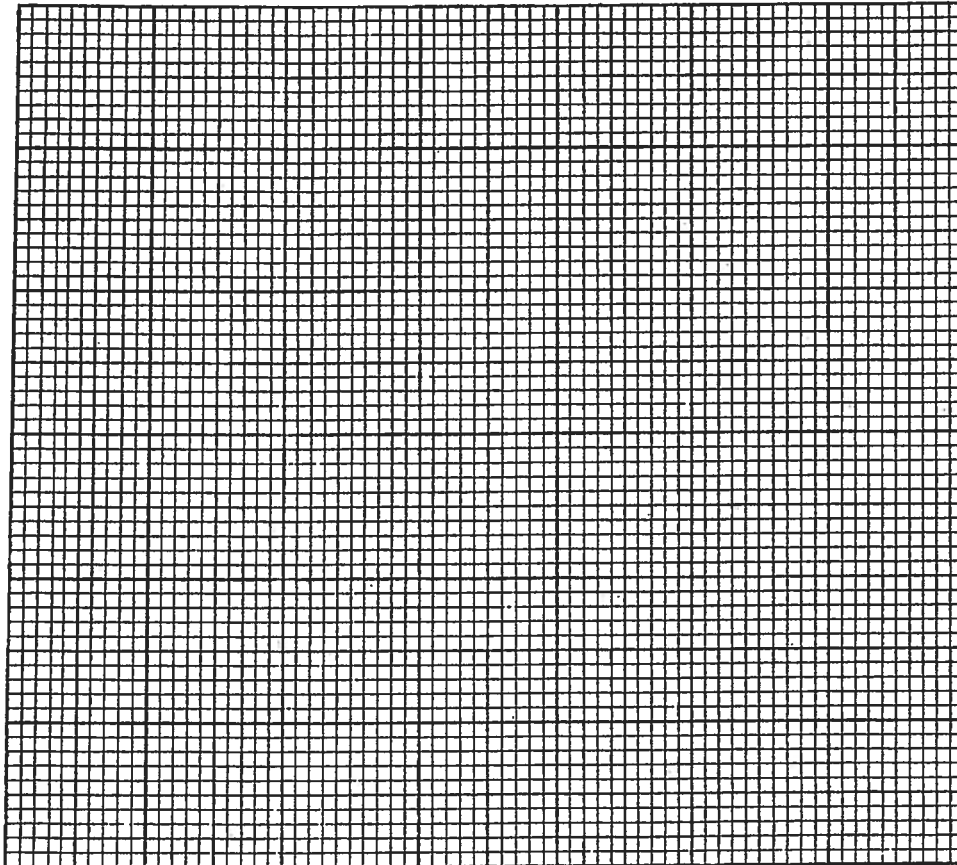
NO MEASUREMENTS MADE FROM REDIVERTIONS ON PRIVATE DITCH

- | <u>Reduction</u> | | | | | | | | | | |
|--------------------------|----|----|----|------|------|------|--------------------------------------|--|--------|---------|
| 8. Point(s) of Division: | | | | | | | Indicate Method of Determination | | | |
| Ident # | % | % | % | Sec. | Twp. | Rge. | Survey Information from Known Corner | | County | Remarks |
| #2/592 | SE | SE | NE | 15 | 3N | 26E | | | Bottle | |
| 465 | SE | NW | SW | 23 | 3N | 26E | | | Bottle | |
| #1 | SE | NE | NE | 22 | 3N | 26E | | | Bottle | |
| | | | | | | | | | | |
| | | | | | | | | | | |

- [illegible]

10. Other water rights on t. lands SEE FIRST PAGE 1-7037
11. Other water right diverted from same p.d. AGE 6 OF 40 -

12. **Diversion and Delivery System Diagram:** Indicate all major components and distances between components. Indicate ditch size/pipe i.d. as applicable. Indicate on systems with measurement port the distance between the port and the nearest component/pipe bend/restriction both upstream and downstream, and the inside pipe diameter at the measurement port. On multiple diversion systems indicate how diversion systems are connected.



13. ☐ Photo of Diversion & System Attached

☐ Aerial Photo of Place of Use Attached
or Map of Irrigated Acreage Attached

14. Remarks SEE FIRST PAGE

15. 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

16. Examiner's/Consultant's Signature Keith C. Wilson

Date 11 Jan 1988

Consultant's License Number _____

IDWR Director's Authorization to Conduct

Beneficial Use Examination _____

Date

CONSULTANT SEAL

SEP 21 1984

Exhibit C



Mike Telford <telfordsunvalleyseed@gmail.com>

FW: Isom Farms 250 HP Deep well

3 messages

Kolby Cazier <kcazier@pumptechco.com>
To: telfordsunvalleyseed@gmail.com

Wed, Jun 1, 2011 at 10:41 AM

RECEIVED
JUL 05 2011
DEPARTMENT OF
WATER RESOURCES

From: Kolby Cazier [mailto:kcazier@pumptechco.com]
Sent: Wednesday, May 25, 2011 11:25 AM
To: 'telfordsunvalleyseed@gmail.com'
Subject: Isom Farms 250 HP Deep well

Mike,

the pump is set 140' deep,

design conditions is 6100 GPM @ 125'TDH

it is on a 250 HP motor, I have included a pump curve and also a deep well installation sheet.

if you have any questions please let me know.

Thank you

Kolby Cazier

PumpTech Co. Inc.

PH: [208-529-6868](tel:208-529-6868)

Fax: [208-529-4332](tel:208-529-4332)

E-Mail: kcazier@pumptechco.com



Mike Telford <telfordsunvalleyseed@gmail.com>

FW: old bowl pump curve

2 messages

*North well. Name plate
verifies*

Kolby Cazier <kcazier@pumptechco.com>
To: telfordsunvalleyseed@gmail.com

Wed, Jun 1, 2011 at 10:41 AM

From: Kolby Cazier [mailto:kcazier@pumptechco.com]
Sent: Wednesday, May 25, 2011 4:13 PM
To: 'telfordsunvalleyseed@gmail.com.'
Subject: FW: old bowl pump curve

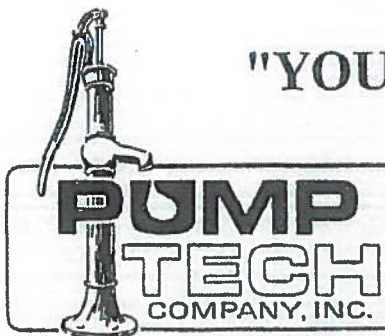
From: Kolby Cazier [mailto:kcazier@pumptechco.com]
Sent: Wednesday, May 25, 2011 4:13 PM
To: 'telfordsunvalleyseed@gmail.com.'
Subject: FW: old bowl pump curve

From: Kolby Cazier [mailto:kcazier@pumptechco.com]
Sent: Wednesday, May 25, 2011 3:49 PM
To: 'telfordsunvalleyfood@gmail.com'
Subject: old bowl pump curve

Mike,

this the attached is the pump curve that I believe was existing. All this was based off hand written notes in the file.

North well



"YOUR TOTAL PUMP SUPPLIER"

4444 So. Yellowstone Hwy.
P.O. Box 51259
Idaho Falls, ID 83405

Phone (208) 529-6868
FAX (208) 529-4332

Date: _____

Written By: _____

Name: Ralph Isom Uncle Charles Isom Farm

Location of Pump: _____

Make of Pump: E18 HC

Serial No.: 2K3-0405

Well Depth: 200'

Casing Size I.D.: _____

Static Water Level: _____

Well Test: _____

Driver: Electric H.P.: 250 Frame No.: _____ Make: _____

Model: _____ Serial No.: _____ R.P.M.: _____ Volts: _____

Upper Brg. #: _____ Lower Brg. #: _____ C.D.: _____

N.R.R.: Yes No: _____

GEAR Drive: _____ H.P.: _____ Ratio: _____ Frame No.: _____

Model: _____ Make: _____ Serial No.: _____

N.R.R.: Yes No: _____ C.D.: _____

Discharge Head: _____ Base Dia: 14" column please Register Dia: 20" Discharge Size: 12"

Tube Nipple Size & Length: _____ note reduced to 12"

Head Shaft Size: _____ Length: _____ K.W. Size & Length: _____ Oil or Water: _____

Length of Head Shaft from Top of Clutch to Top of Shaft: _____

Column Total Length: Pump set 140' Col. Size & Length: 12" x 240" Straight or Taper: _____

Tube Size & Length: 2-1/2" x 1-1/16" x 240" Tube R ☒ or L ☐ Shaft Size: 1-11/16" Shaft Length: 240"

Shaft Threads Per Inch: 10 TPI

Make Bowls: E18HC National No. Stages: one Size OD.: _____ Impeller Dia: _____

Tube Stickup: _____ Shaft Stickup: _____

Tube Threads Per Inch: 10 TPI

Suction: _____ Size: _____ Length: _____ No. Thds. Per Inch: _____

Strainer: _____ Size: _____ Type: _____

Miscellaneous: _____

took off old pipe to
get it 10' lower

Date **October 1995**

Supersedes **April 1994**

Original Pump North wall

Section **1110** Page **167**

CURVE data

Verti-Line

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

16FHH

1770

R.P.M.

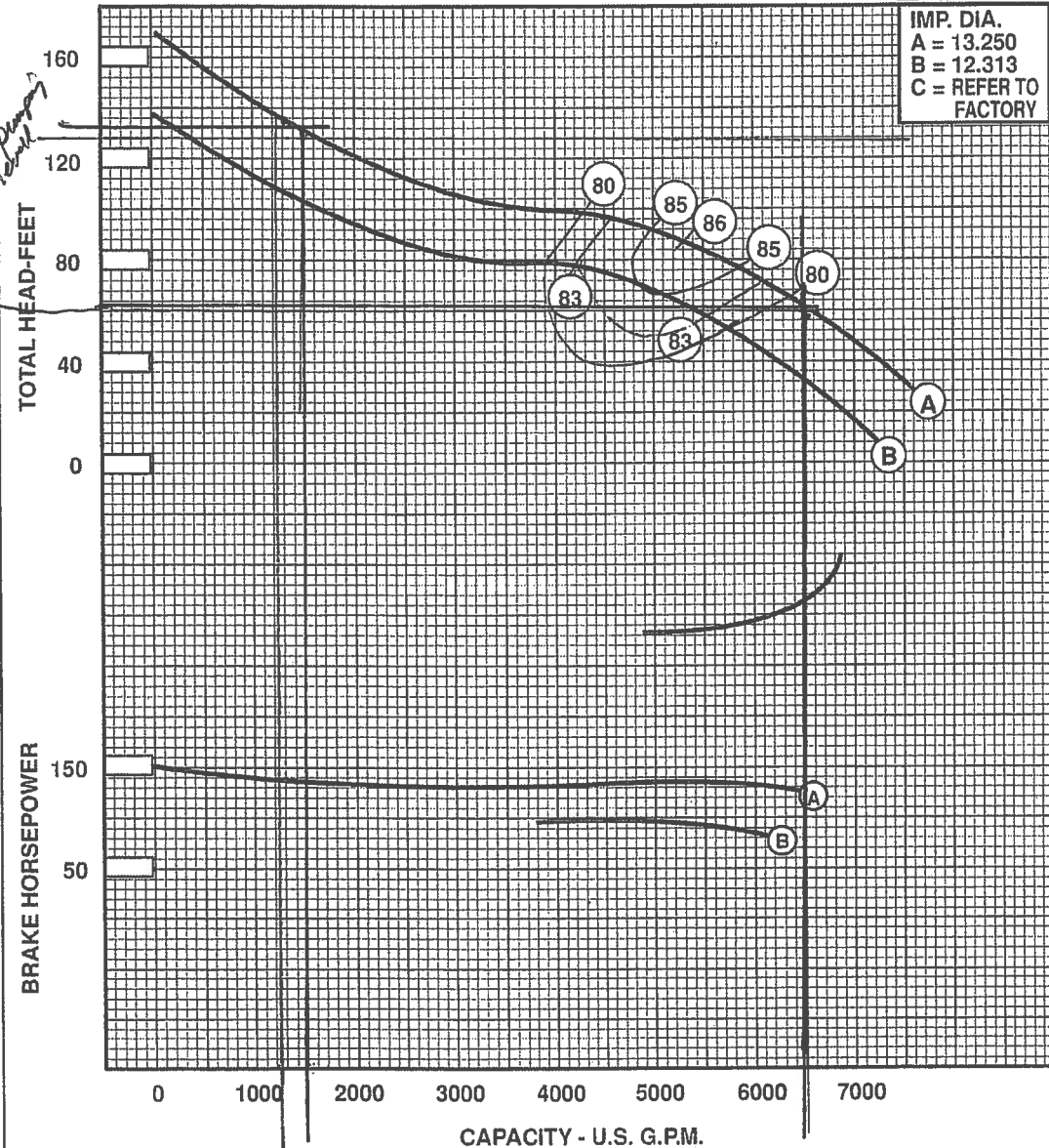
SINGLE STAGE LAB PERFORMANCE WITH STANDARD MATERIALS. EFFICIENCY SHOWN FOR 3 OR MORE STAGES. HORSE POWER SHOWN FOR ONE STAGE BASED ON 3 STAGE EFFICIENCY. CORRECTIONS SHOULD BE MADE FOR STAGES AND MATERIAL.

ONE () STAGES

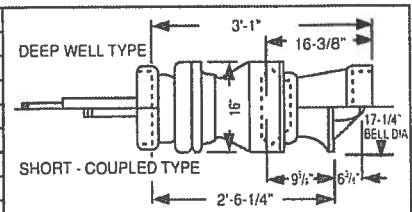
PUMP PERFORMANCE

K = 31.5

IMP. DIA.
A = 13.250
B = 12.313
C = REFER TO FACTORY



EYE AREA - SQ. IN.	= 78.0	IMPELLER WT. - LBS.	= 36
WR ² PER IMPELLER LB.-FT. ²	= 6.36	ONE STAGE WT. - LBS.	= 650
MAX. NO. STD. STAGES	= 5	ADD'L STAGE WT. - LBS.	= 230
MAX. OPERATING - P.S.I.	= 400	DISCH. - IN.	= 12.14
STD. LATERAL - IN.	= 0.560	SUCTION - IN.	= BELL
STD. SHAFT DIA. - IN.	= 2.188	BOWL CONN. FLANGED-COLLET	
MAX. SHAFT DIA. - IN.	=	ADD 14.5" PER ADDITIONAL STAGE.	
MIN. SUBMERGENCE - IN.	= 45		



Curves reflect typical performance, refer to factory for certification

2K3-0405
Ralph Isom
250 HP Deep well

North well

PERFORMANCE BASED ON
PUMPING CLEAR, FRESH
NON-AERATED WATER AT
85° F. MAXIMUM.

N^{PC} NATIONAL PUMP
COMPANY

E18HC
1770 RPM

CHANGE
EFFICIENCY
AS FOLLOWS

NUMBER
OF STAGES
NUMBER OF
POINTS

1	2	3
-2	-1	0

DESIGN

G.P.M.

6100

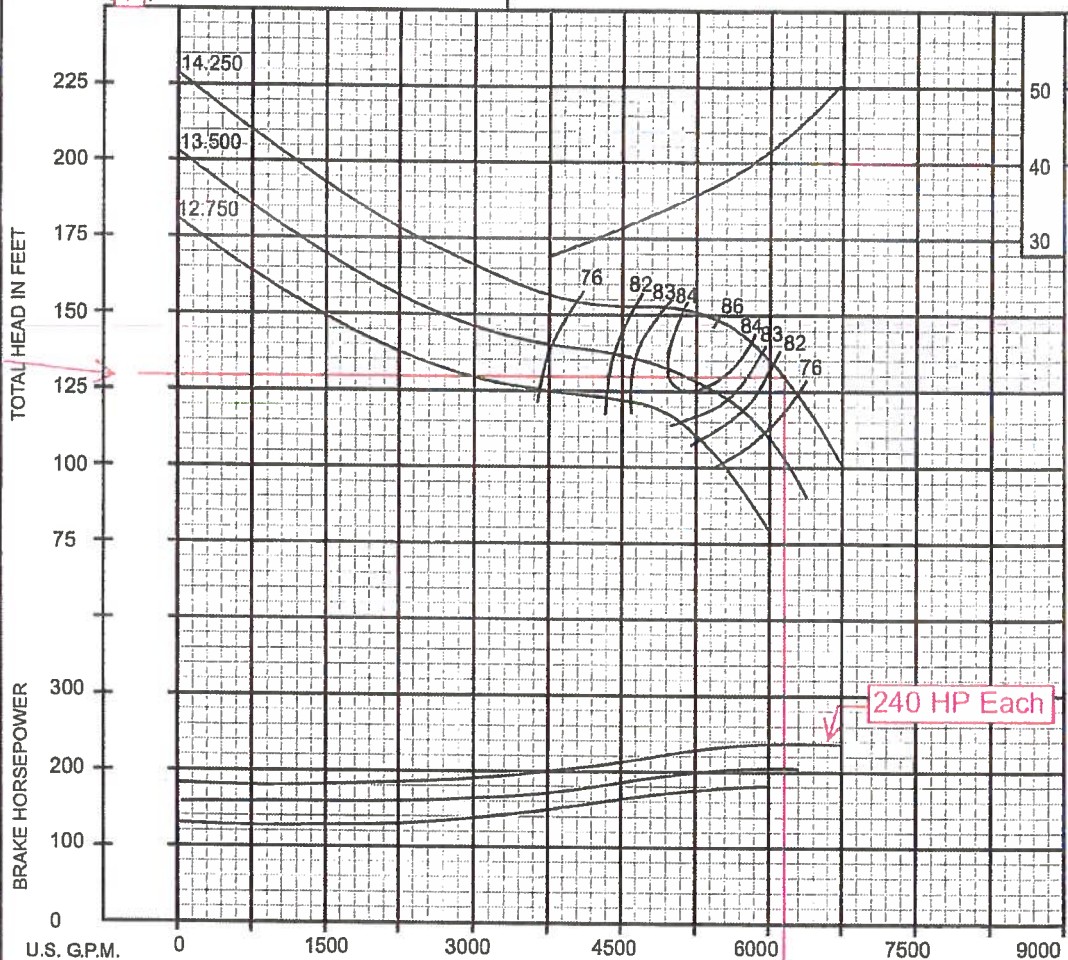
TDH

130'

BPH

EFF.

1 STG. (1) STG.



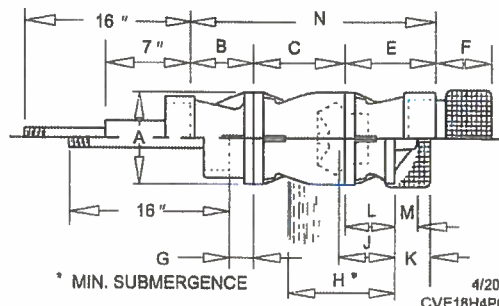
U.S. G.P.M. 0 1500 3000 4500 6000 7500 9000
LITERS/SEC. 0 100 200 300 400 500

DIMENSIONS IN INCHES	A	B	C ADD/STG	E	F	G	H *	J	K	L	M	N
	17.50	6.44	15.00	N/A	N/A	0.81	48	11.25	13.88	10.50	2.50	N/A

PUMP DATA

IMPELLER:	ENCLOSED	BOWL CONNECTION:	FLANGED
NO. OF VANES:	7	DISCHARGE SIZE:	12", 14"
THRUST CONSTANT:	26.5	SUCTION SIZE:	BELL
LATERAL:	0.62"	STD. TUBE:	3.5"
EYE AREA IN:	63.88	WR ² :	9.26LB./FT ²
SHAFT DIA:	2.187	ONE STG. WT. LB.	492
		ADD STG. WT. / LBS.	315

*THIS DIMENSION TO BE USED WITH NPSHR. PUMP INSTALLATION
AND SYSTEM MUST SATISFY BOTH VALUES. PERFORMANCE BASED
ON CAST IRON ENAMELED BOWLS AND BRONZE IMPELLERS.



4/20/01
CVE18H4P6CY

Pump Data Sheet - National Pump Company

Company:
Name:
Date: 5/31/2011

North well
2006



Pump:

Size: E18HC (1 stage)
Type: VERT. TURB CLOSED IMP
Synch speed: 1800 rpm
Curve: CVE18H4P6CY
Specific Speeds:

Dimensions:

Speed: 1770 rpm
Dia: 14.25 in
Impeller:
Ns: 3047
Nss: 8706
Suction: —
Discharge: 14 in

Search Criteria:

Flow: —

Head: —

Fluid:

Water
SG: 1
Viscosity: 1.105 cP
NPSHa: —

Temperature: 60 °F
Vapor pressure: 0.2563 psi a
Atm pressure: 12.51 psi a

Motor:

Standard: NEMA
Enclosure: WP-1

Size: 300 hp
Speed: 1800
Frame: 449

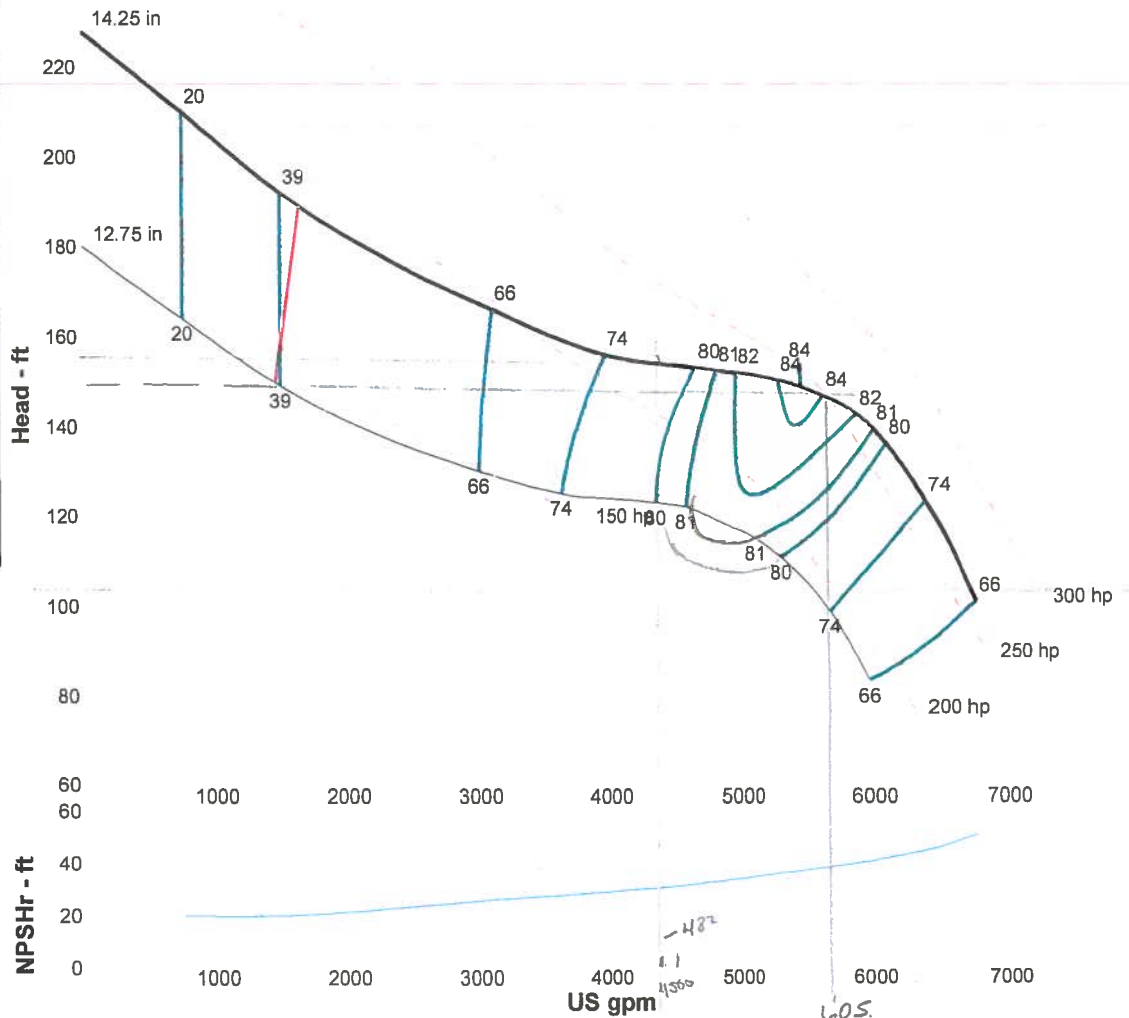
Sizing criteria: Max Power on Design Curve

Pump Limits:

Temperature: 180 °F
Pressure: 330 psi g
Sphere size: 1.13 in

Power: —
Eye area: 63.9 in²

— Data Point —	
Flow:	5453 US gpm
Head:	149 ft
Eff:	84%
Power:	244 hp
NPSHr:	37 ft
— Design Curve —	
Shutoff head:	228 ft
Shutoff dP:	98.6 psi
Min flow:	1636 US gpm
BEP:	84% @ 5453 US gpm
NOL power:	269 hp @ 6382 US gpm
-- Max Curve --	
Max power:	269 hp @ 6382 US gpm



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
6480	1770	117	71.9	267	46.6
5400	1770	149	84	242	36.7
4320	1770	154	77.1	218	30.6
3240	1770	164	67.3	199	26.5
2160	1770	181	50.1	191	22.5

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

34-7037
PAGE 10 OF 40

A. GENERAL INFORMATION

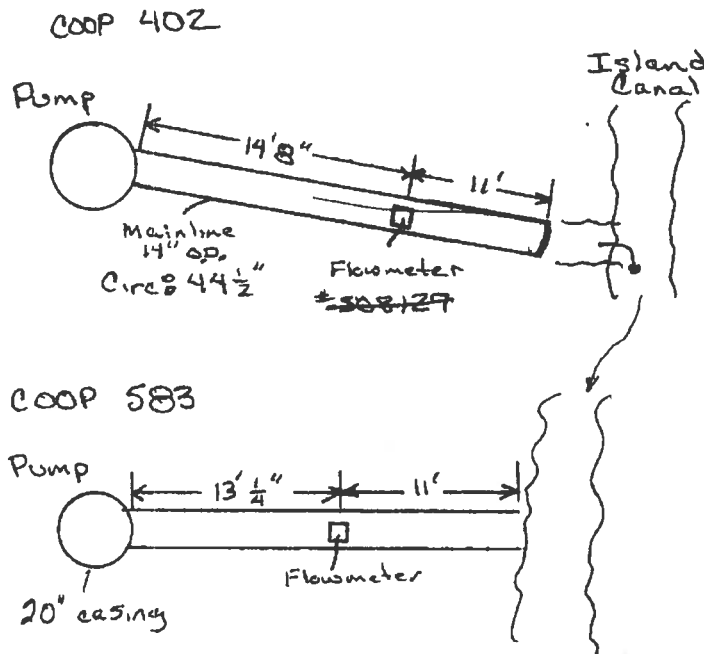
1 Owner to Crater Farms Permit No 34-7037
Current Address: P.O. Box 91 Phone No 527-8903
2. Accompanied by Willard Bell EXAM. DATE 7/5/90
Address. Same Phone No _____
Relationship to Permit Holder _____
3 Source Groundwater tributary to _____

B. OVERLAP REVIEW

- 1 Other water rights with same place of use _____
_____ ☐ Copies Attached
- 2 Other water rights with same point of diversion _____
_____ ☐ Copies Attached ☐ Copies of Field Exam's Attached

C. SYSTEM DESCRIPTION

- 1 **Diversion System Diagram:** Indicate all major components and distances between components. Indicate weir size/ditch size/pipe id as applicable ☐ Alternative diagram attached



Scale: 1" = _____

SEP 21 1994

2. ☐ Copy of U S G.S. Quadrangle Attached
Showing location(s) of point(s) of diversion and
place(s) of use (required)
- ☐ Photo of Diversion and System Attached
(required for all but single household domestic groundwater, and stockwater)
- ☐ Aerial Photo Attached
(required for irrigation of 10 acres or more)

System Description (continued)

34-7037

PAGE 11 OF 40

- 3 Narrative: Description (As operating at time of measurement Indicate pressure, number of sprinklers, etc.)

See Exam 8 Aug 85

4. Also see attached System description

☐ See Remarks on page 4 for continuation

Well or Diversion Identification No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
COOP 402	General Elect	125	EAS526174F ~~SK02700835~~	Aurora	V77-71337
COOP 583	General Elect	100	CWJ316286	Berkeley	8200408

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

- 5 Point(s) of Diversion: SEE Original Exam 8 Aug 1985 also attached system description

Ident. No.	Gov't. Lot	1/4	1/4	1/4	Sec.	Twp.	Rge.	County	Method of Determination/Remarks

- 6 Place(s) of Use: See Exam 8 Aug 1985 Indicate Method of Determination

Twp.	Rge.	Sec.	NE 1/4				NW 1/4				SW 1/4				SE 1/4				Totals
			NE 1/4	NW 1/4	SW 1/4	SE 1/4	NE 1/4	NW 1/4	SW 1/4	SE 1/4	NE 1/4	NW 1/4	SW 1/4	SE 1/4	NE 1/4	NW 1/4	SW 1/4	SE 1/4	

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SEE PAGE 12

Do not use this space

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D. FLOW MEASUREMENTS

☐ Additional Data Sheets Attached

1.

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

2. Measurements:

3250 gpm $0.01 \times 10^5 \text{ gal} / 18.4 \text{ sec}$ (COOP 402)
in-mainline flow meter
COOP 583 3600 gpm $0.01 \times 10^5 \text{ gal} / 16.64$

E. FLOW CALCULATIONS

☐ Additional Computation Sheets Attached

1. Measured Method $Q_{402} = (0.01 \times 10^5 \text{ gal} / 18.4 \text{ sec}) (60 \text{ sec} / \text{min}) = 3246.8 \text{ gpm} = 7.23 \text{ cfs}$
 $Q_{583} = (0.01 \times 10^5 \text{ gal} / 16.64 \text{ sec}) (60 \text{ sec} / \text{min}) = 3605.8 \text{ gpm} = 8.03 \text{ cfs}$
2. Alternate Method for Checking Purposes.

F. PUMP EFFICIENCY DATA (Optional)

Discharge Pressure. _____ psi x 2.31 = _____ ft (1); Dynamic pumping level _____ ft (2)
Total Head: (1) + (2) = _____ (3) . Flow rate _____ cfs (4)

Water HP (3) x (4) ÷ 8.8 = _____ (5)
Meter Input KW 3.6 x _____ KH x _____ CTR or _____ MULT x _____ PTR x _____ N / _____ T = _____ (6)
Meter Input HP. (6) x 1.34 = _____ (7)
Panel Input KW _____ Ave PF x _____ Ave Volts x _____ Ave Amps x .001732 = _____ (6)
Panel Input HP. (6) x 1.34 = _____ (7) Efficiency: (5)/(7) x 100 = _____ %

G. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation

$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) =$ _____
 $V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation Season}) \times 1.9835 =$ _____
 $V = \text{Smaller of } V_{IR} \text{ and } V_{DR} =$ _____

2. Volume Calculations for Other Uses

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[illegible]

Beneficial Use	Period of Use		Rate of Diversion Q (cfs)	Annual Volume V (afa)
	From	To		
Totals:				

K. Licensing recommendation shall be prepared by an Idaho Department of Water Resources employee on a computer printout attached hereto.

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

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PAGE 14 OF 40Permit No. 34-7037**System Description (continued)**

4.

W E L L S	Well or Diversion Identification No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
	Well # 583	G.E.	100	CWJ316286	Berkeley	# 8200408
	Well # 402	G.E.	125	EAT526171	Aurora	V 77-71337
	Well # 182	G.E.	200	EDJ515138	Layne-Bowler	# 44660
	Well # 217	U.S. Motors	125	C2954-03-273	Johnston	10" discharge
R E D I V E R S I O N S	RE-DIVERSIONS					
	Munsey Ditch	-	-	-	-	-
	# 588	G.E.	75	TVJ 602119	Winthreath	12" discharge
	# 618	G.E.	50	RKJ 309012	Worthington	VTP-57306
	# 4	G.E.	100	CKJ 327163	Johnston	PG-14366
	# 301	U.S. Motors	100	C 1008138	Johnston	# 1H 14112
	# 2	Westinghouse	250	76A65066	Johnston	10" discharge
	# 592	Yaskawa	100	0078316801	Worthington	# 14 HH 220
	# 1	Westinghouse	250	676A650604	Johnston	JY 14102
	Pond # 465	U.S. Motors	100	R9981-01-210 R2113073	Johnston	

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

5. Point(s) of Diversion:

W E L L S	Ident. No.	Gov't. Lot	1/4	1/4	1/4	Sec.	Twp.	Rge.	County	Method of Determination/Remarks
	# 583		NE	SE	NW	3	4N	26E	Butte	U.S.G.S. Map/on site inspection
	# 402		SE	NW	SW	34	5N	26E	Butte	"
	# 182			NE	SW	2	3N	26E	Butte	"
	# 217			SE	NW	2	3N	26E	Butte	"
R E D I V E R S I O N S	RE-DIVERSIONS									
	MUNSEY DITCH		NW	NW	NW	26	4N	26E	Butte	USGS Map/ON SITE INSPECTION
	# 588		NW	SE	SE	2	3N	26E	Butte	"
	# 618		NW	SE	SE	2	3N	26E	Butte	"
	# 4		SW	SW	NW	13	3N	26E	Butte	"
	# 301		SW	SW	NW	13	3N	26E	Butte	"
	# 2		SE	SE	NE	15	3N	26E	Butte	"
	# 592		SE	SE	NE	15	3N	26E	Butte	"
	# 1		SE	NE	NE	22	3N	26E	Butte	"
	# 465		SE	NW	SW	23	3N	26E	Butte	"

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SEP 21 1994



Note: To convert to gallons per minute, multiply figures shown by 448.8. To convert to Miners' Inches multiply figures shown by: 38.4 for Colorado, 40 for California, Arizona, Montana, and Oregon; 50 for New Mexico, Nebraska, Utah, Idaho and Washington.

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Parshall Flume

GAGE READING		DISCHARGE IN CUBIC FEET PER SECOND FOR VARIOUS THROAT WIDTHS																		GAGE READING	
Feet	Inches	3 Inch	6 Inch	9 Inch	1 Foot	1 1/2 Feet	2 Feet	2 1/2 Feet	3 Feet	4 Feet	5 Feet	6 Feet	7 Feet	8 Feet	10 Feet	12 Feet	15 Feet	20 Feet	Feet	Inches	
.66	7 1/8	.522	1.07	1.63	2.13	3.17	4.20	5.23	6.26	8.31	10.34	12.38	14.40	16.41	20.23	24.03	29.74	39.22	.66	7 1/8	
.67	7 3/8	.534	1.10	1.66	2.18	3.24	4.30	5.36	6.41	8.51	10.59	12.68	14.75	16.81	20.75	24.63	30.46	40.18	.67	7 3/8	
.68	7 1/2	.546	1.12	1.70	2.23	3.32	4.40	5.48	6.56	8.71	10.85	12.98	15.10	17.22	21.24	25.22	31.19	41.14	.68	7 1/2	
.69	7 3/4	.558	1.15	1.74	2.28	3.39	4.50	5.61	6.71	8.91	11.10	13.28	15.46	17.63	21.73	25.82	31.93	42.11	.69	7 3/4	
.70	7 7/8	.571	1.17	1.78	2.33	3.47	4.60	5.74	6.88	9.11	11.38	13.59	15.82	18.04	22.25	26.42	32.67	43.09	.70	7 7/8	
.71	8	.584	1.20	1.82	2.38	3.54	4.70	5.86	7.02	9.32	11.62	13.90	16.18	18.45	22.78	27.03	33.42	44.08	.71	8	
.72	8 1/8	.597	1.23	1.86	2.43	3.62	4.81	5.99	7.17	9.53	11.88	14.22	16.55	18.87	23.28	27.64	34.18	45.08	.72	8 1/8	
.73	8 1/4	.610	1.26	1.90	2.48	3.70	4.91	6.12	7.33	9.74	12.14	14.53	16.92	19.29	23.80	28.26	34.94	46.09	.73	8 1/4	
.74	8 1/2	.623	1.28	1.94	2.53	3.78	5.02	6.25	7.49	9.93	12.40	14.85	17.29	19.71	24.32	28.88	35.71	47.10	.74	8 1/2	
.75	8 3/4	.636	1.31	1.98	2.58	3.85	5.12	6.39	7.65	10.16	12.67	15.17	17.66	20.14	24.85	29.50	36.48	48.12	.75	8 3/4	
.76	8 1/2	.649	1.34	2.02	2.63	3.93	5.23	6.52	7.81	10.38	12.94	15.49	18.04	20.57	25.38	30.14	37.26	49.15	.76	8 1/2	
.77	8 5/8	.662	1.36	2.06	2.68	4.01	5.34	6.65	7.97	10.60	13.21	15.82	18.42	21.01	25.92	30.77	38.03	50.19	.77	8 5/8	
.78	8 3/4	.675	1.39	2.10	2.74	4.09	5.44	6.79	8.13	10.81	13.48	16.15	18.81	21.46	26.48	31.42	38.85	51.24	.78	8 3/4	
.79	8 7/8	.689	1.42	2.14	2.83	4.18	5.55	6.92	8.30	11.03	13.76	16.48	19.20	21.81	27.00	32.06	38.85	52.29	.79	8 7/8	
.80	9	.702	1.45	2.18	2.85	4.26	5.66	7.06	8.48	11.25	14.04	16.81	19.59	22.36	27.55	32.72	40.48	53.36	.80	9	
.81	9 1/8	.716	1.48	2.22	2.90	4.34	5.77	7.20	8.63	11.48	14.32	17.15	19.99	22.81	28.11	33.37	41.26	54.43	.81	9 1/8	
.82	9 1/4	.730	1.50	2.27	2.96	4.42	5.88	7.34	8.79	11.70	14.60	17.49	20.39	23.26	28.67	34.03	42.09	55.51	.82	9 1/4	
.83	9 1/2	.744	1.53	2.31	3.02	4.51	6.00	7.48	8.96	11.92	14.88	17.83	20.79	23.72	29.22	34.70	42.91	56.59	.83	9 1/2	
.84	9 3/4	.757	1.56	2.35	3.07	4.59	6.11	7.62	9.13	12.15	15.17	18.17	21.18	24.18	29.79	35.37	43.74	57.69	.84	9 3/4	
.85	9 7/8	.771	1.59	2.39	3.12	4.67	6.22	7.76	9.30	12.38	15.46	18.52	21.58	24.64	30.36	36.04	44.57	58.79	.85	9 7/8	
.86	10	.786	1.62	2.44	3.18	4.78	6.33	7.91	9.48	12.61	15.75	18.87	21.99	25.11	30.93	36.73	45.42	59.90	.86	10	
.87	10 1/8	.800	1.65	2.48	3.24	4.84	6.44	8.05	9.65	12.84	16.04	19.22	22.40	25.58	31.51	37.41	46.27	61.02	.87	10 1/8	
.88	10 1/4	.814	1.68	2.52	3.28	4.92	6.56	8.19	9.82	13.07	16.33	19.57	22.82	26.06	32.09	38.10	47.12	62.14	.88	10 1/4	
.89	10 1/2	.828	1.71	2.57	3.35	5.02	6.68	8.34	10.00	13.31	16.62	19.93	23.24	26.54	32.68	38.80	47.99	63.26	.89	10 1/2	
.90	10 3/4	.843	1.74	2.61	3.41	5.11	6.80	8.49	10.17	13.55	16.92	20.29	23.66	27.02	33.27	39.50	48.84	64.42	.90	10 3/4	
.91	10 7/8	.858	1.77	2.66	3.46	5.19	6.92	8.63	10.35	13.79	17.22	20.65	24.08	27.50	33.85	40.20	49.71	65.57	.91	10 7/8	
.92	11	.872	1.81	2.70	3.52	5.28	7.03	8.78	10.53	14.03	17.52	21.01	24.50	27.99	34.46	40.91	50.59	66.73	.92	11	
.93	11 1/8	.887	1.84	2.75	3.58	5.37	7.15	8.93	10.71	14.27	17.82	21.38	24.93	28.48	35.06	41.63	51.47	67.89	.93	11 1/8	
.94	11 1/4	.902	1.87	2.79	3.64	5.46	7.27	9.08	10.89	14.51	18.13	21.75	25.36	28.97	35.67	42.35	52.36	69.07	.94	11 1/4	
.95	11 1/2	.916	1.90	2.84	3.70	5.55	7.39	9.23	11.07	14.76	18.44	22.12	25.79	29.47	36.27	43.07	53.25	70.24	.95	11 1/2	
.96	11 3/4	.931	1.93	2.88	3.78	5.64	7.51	9.38	11.26	15.00	18.75	22.49	26.22	29.97	36.83	43.80	54.18	71.43	.96	11 3/4	
.97	11 7/8	.946	1.97	2.93	3.82	5.73	7.63	9.54	11.44	15.25	19.08	22.86	26.68	30.48	37.50	44.52	55.08	72.62	.97	11 7/8	
.98	12	.961	2.00	2.98	3.88	5.82	7.75	9.69	11.63	15.50	19.37	23.24	27.10	30.98	38.12	45.28	55.97	73.83	.98	12	
.99	12 1/8	.977	2.03	3.02	3.94	5.91	7.88	9.85	11.82	15.75	19.68	23.62	27.53	31.49	38.75	46.01	56.89	75.04	.99	12 1/8	
1.00	12 1/4	.992	2.06	3.07	4.00	6.00	8.00	10.00	12.00	16.00	20.00	24.00	28.00	32.00	39.38	46.75	57.81	76.25	1.00	12 1/4	
1.01	12 1/2	1.01	2.09	3.12	4.06	6.09	8.12	10.16	12.19	16.25	20.32	24.38	28.45	32.52	40.01	47.50	58.73	77.47	1.01	12 1/2	
1.02	12 3/4	1.02	2.12	3.17	4.12	6.18	8.25	10.31	12.38	16.51	20.64	24.77	28.90	33.04	40.64	48.26	59.67	78.71	1.02	12 3/4	
1.03	12 5/8	1.04	2.16	3.21	4.18	6.28	8.38	10.47	12.57	16.76	20.96	25.16	29.36	33.56	41.28	49.01	60.61	79.94	1.03	12 5/8	
1.04	12 7/8	1.05	2.19	3.26	4.25	6.38	8.50	10.63	12.78	17.02	21.28	25.55	29.82	34.08	41.92	49.77	61.55	81.18	1.04	12 7/8	
1.05	13	1.07	2.22	3.31	4.31	6.47	8.63	10.79	12.96	17.28	21.61	25.94	30.28	34.61	42.57	50.55	62.50	82.44	1.05	13	
1.06	13 1/8	1.09	2.26	3.36	4.37	6.57	8.76	10.95	13.15	17.54	21.94	26.34	30.74	35.14	43.23	51.32	63.46	83.71	1.06	13 1/8	
1.07	13 1/4	1.10	2.29	3.40	4.43	6.66	8.88	11.10	13.34	17.80	22.27	26.74	31.20	35.68	43.88	52.09	64.42	84.97	1.07	13 1/4	
1.08	13 1/2	1.12	2.32	3.45	4.50	6.78	9.01	11.27	13.54	18.07	22.60	27.13	31.67	36.22	44.53	52.87	65.38	86.24	1.08	13 1/2	
1.09	13 3/4	1.13	2.36	3.50	4.56	6.85	9.14	11.44	13.74	18.34	22.93	27.53	32.14	36.78	45.19	53.66	66.35	87.52	1.09	13 3/4	
1.10	13 7/8	1.15	2.40	3.55	4.62	6.95	9.27	11.60	13.93	18.60	23.28	27.94	32.62	37.30	45.86	54.43	67.33	88.81	1.10	13 7/8	
1.11	14	1.17	2.43	3.60	4.68	7.04	9.40	11.77	14.13	18.86	23.60	28.35	33.10	37.84	46.54	55.26	68.33	90.13	1.11	14	
1.12	14 1/8	1.19	2.46	3.65	4.75	7.14	9.54	11.93	14.33	19.13	23.94	28.76	33.58	38.39	47.21	56.05	69.31	91.42	1.12	14 1/8	
1.13	14 1/4	1.20	2.50	3.70	4.82	7.24	9.67	12.10	14.53	19.40	24.28	29.17	34.06	38.94	47.88	56.85	70.30	92.72	1.13	14 1/4	
1.14	14 1/2	1.23	2.53	3.75	4.88	7.34	9.80	12.27	14.73	19.67	24.62	29.58	34.54	39.50	48.55	57.64	71.28	94.02	1.14	14 1/2	
1.15	14 3/4	1.25	2.57	3.80	4.94	7.44	9.94	12.43	14.94	19.94	24.96	30.00	35.02	40.06	49.26	58.48	72.32	95.39	1.15	14 3/4	
1.16	14 7/8	1.28	2.60	3.85	5.01	7.54	10.07	12.60	15.14	20.22	25.31	30.41	35.51	40.82	49.93	59.28	73.30	96.69	1.16	14 7/8	
1.17	15	1.29	2.64	3.90	5.08	7.64	10.20	12.77	15.34	20.50	25.66	30.83	36.00	41.18	50.84	60.12	74.34	98.00	1.17	15	
1.18	15 1/8	1.31	2.68	3.95	5.15	7.75	10.34	12.94	15.55	20.78	26.01	31.25	36.50	41.75	51.38	60.92	75.33	99.35	1.18	15 1/8	
1.19	15 1/4	1.33	2.71	4.01	5.21	7.85	10.48	13.12	15.76	21.05	26.36	31.68	37.00	42.32	52.01	61.76					

21 1994

5

METER NO. 0914RANGE 10-80DATE TESTED 7-19-1985

HWS

091473

APPLIED PRESSURE			METER READING	FLOW ERROR (%)	FLOW CORRECTION FACTOR
UPSCALE	DOWNSCALE	AVERAGE			
14.00	13.50	13.75	10	-0.147	1.173
19.75	19.68	19.72	16	-0.099	1.110
23.50	23.00	23.25	20	-0.072	1.078
29.56	29.37	29.46	26	-0.060	1.064
33.75	34.0	33.88	30	-0.059	1.063
41.0	41.0	41.0	36	-0.063	1.067

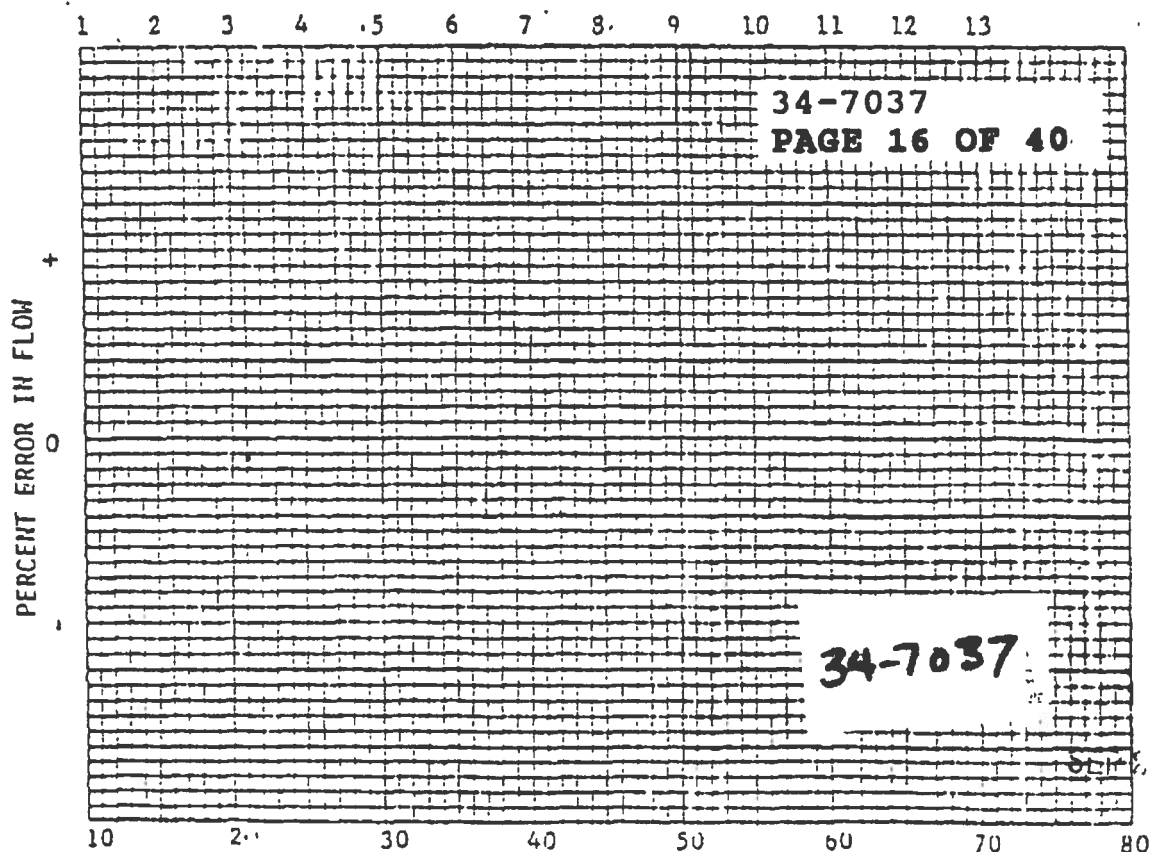
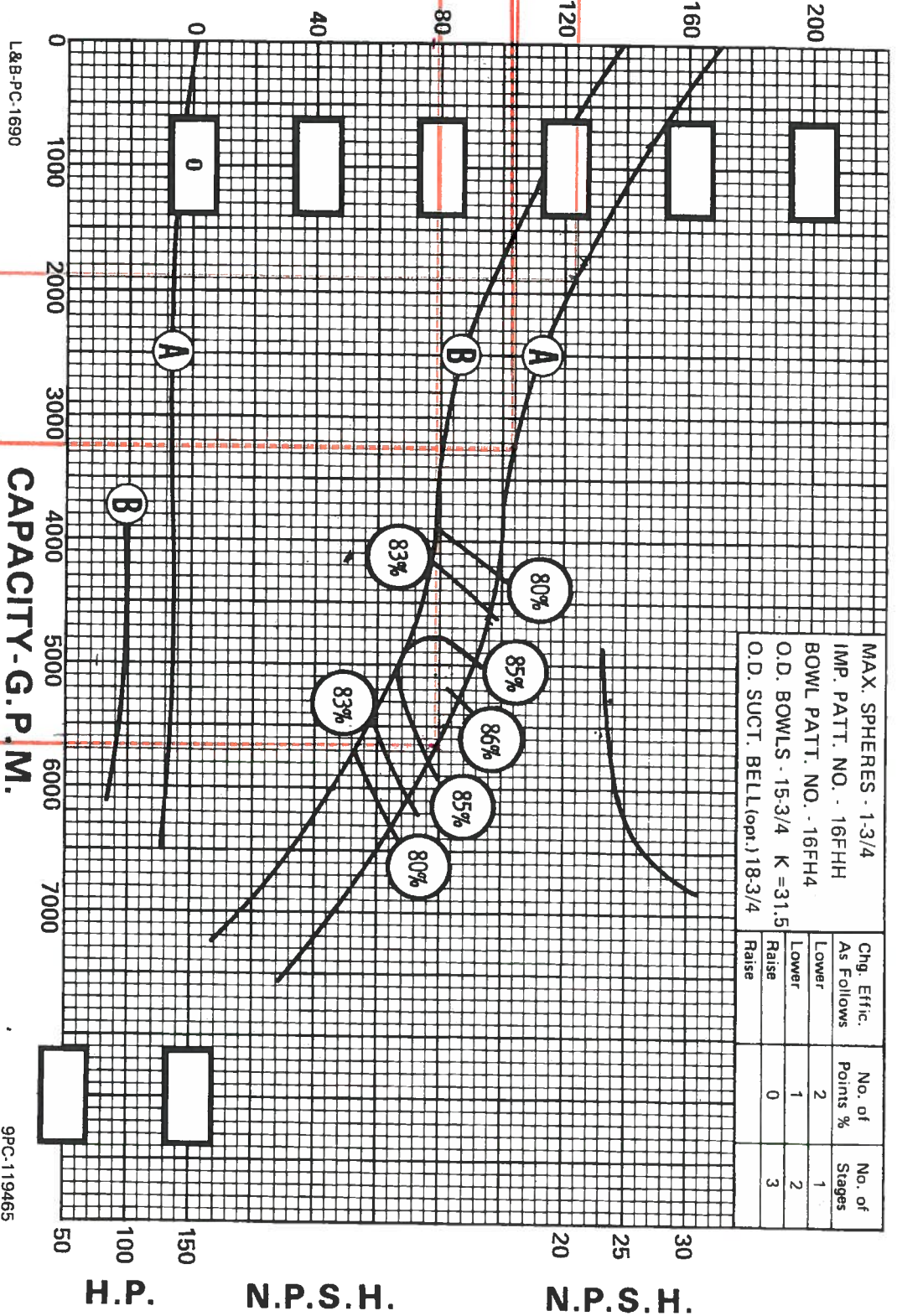


Exhibit D

16FHH SERIES 1110

Verti-Line PUMP



MAX. SPHERES - 1-3/4	Chg. Effic. As Follows	No. of Points %	No. of Stages
IMP. PATT. NO. - 16FHH	Lower	2	1
BOWL PATT. NO. - 16FHH4	Lower	1	2
O.D. BOWLS - 15-3/4 K = 31.5	Raise	0	3
O.D. SUCT. BELL (opt.) 18-3/4	Raise		

NUMBER OF STAGES REQUIRED FOR APPLICATION
 STANDARD CURVE ILLUSTRATES SINGLE STAGE PERFORMANCE ONLY.

1983 1990

(A) = 13.250
 (B) = 12.313
 (C) = REFER TO FACTORY

1985

AURORA PUMP

A UNIT OF GENERAL SIGNAL
 P. O. BOX 1300 • CITY OF INDUSTRY, CA • 91749

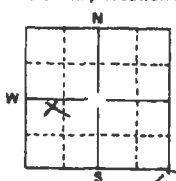
Exhibit E

USE TYPEWRITER OR
BALL POINT PEN

State of Idaho
Department of Water Resources

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

1. WELL OWNER Name <u>Crater Farms</u> Address <u>Arco Idaho</u> Owner's Permit No. <u>34-7637</u>	7. WATER LEVEL Static water level <u>9</u> feet below land surface Flowing? ☐ Yes ☒ No G.P.M. flow _____ Temperature <u>43</u> ° F. Quality _____ Artesian closed-in pressure _____ p.s.i. Controlled by ☐ Valve ☐ Cap ☐ Plug																																														
2. NATURE OF WORK ☒ New well ☐ Deepened ☐ Replacement ☐ Abandoned (describe method of abandoning) _____	8. WELL TEST DATA ☐ Pump ☐ Bailer ☐ Other _____ <table border="1"><thead><tr><th>Discharge G.P.M.</th><th>Draw Down</th><th>Hours Pumped</th></tr></thead><tbody><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr></tbody></table>	Discharge G.P.M.	Draw Down	Hours Pumped																																											
Discharge G.P.M.	Draw Down	Hours Pumped																																													
3. PROPOSED USE ☐ Domestic ☒ Irrigation ☐ Test ☐ Other (specify type) _____ ☐ Municipal ☐ Industrial ☐ Stock ☐ Waste Disposal or Injection	9. LITHOLOGIC LOG <table border="1"><thead><tr><th rowspan="2">Hole Diam.</th><th colspan="2">Depth</th><th rowspan="2">Material</th><th colspan="2">Water</th></tr><tr><th>From</th><th>To</th><th>Yes</th><th>No</th></tr></thead><tbody><tr><td>20</td><td>0</td><td>2</td><td>soil</td><td> </td><td> </td></tr><tr><td> </td><td>2</td><td>10.5</td><td>gravel</td><td> </td><td> </td></tr><tr><td> </td><td>10.5</td><td>12.5</td><td>gravel & clay mix</td><td> </td><td> </td></tr><tr><td> </td><td>12.5</td><td>13.5</td><td>gravel</td><td> </td><td> </td></tr><tr><td> </td><td>13.5</td><td>14.7</td><td>clay & sand</td><td> </td><td> </td></tr><tr><td> </td><td>14.7</td><td>17.1</td><td>gravel</td><td> </td><td> </td></tr></tbody></table>	Hole Diam.	Depth		Material	Water		From	To	Yes	No	20	0	2	soil				2	10.5	gravel				10.5	12.5	gravel & clay mix				12.5	13.5	gravel				13.5	14.7	clay & sand				14.7	17.1	gravel		
Hole Diam.	Depth		Material	Water																																											
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	14.7	17.1	gravel																																												
4. METHOD DRILLED ☒ Cable ☐ Rotary ☐ Dug ☐ Other																																															
5. WELL CONSTRUCTION Diameter of hole <u>20</u> inches Total depth <u>17.1</u> feet Casing schedule: ☒ Steel ☐ Concrete <table border="1"><thead><tr><th>Thickness</th><th>Diameter</th><th>From</th><th>To</th></tr></thead><tbody><tr><td><u>3/2</u> inches</td><td><u>20</u> inches</td><td><u>1</u> feet</td><td><u>17.1</u> feet</td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr></tbody></table> Was casing drive shoe used? ☒ Yes ☐ No Was a packer or seal used? ☐ Yes ☒ No Perforated? ☒ Yes ☐ No How perforated? ☒ Factory ☐ Knife ☐ Torch Size of perforation <u>8</u> inches by <u>2</u> inches Number <u>3900</u> From <u>35</u> feet To <u>16.5</u> feet <u> </u> perforations <u> </u> feet <u> </u> feet <u> </u> perforations <u> </u> feet <u> </u> feet <u> </u> perforations <u> </u> feet <u> </u> feet Well screen installed? ☐ Yes ☒ No Manufacturer's name _____ Type _____ Model No. _____ Diameter _____ Slot size _____ Set from _____ feet to _____ feet Diameter _____ Slot size _____ Set from _____ feet to _____ feet Gravel packed? ☐ Yes ☒ No Size of gravel _____ Placed from _____ feet to _____ feet Surface seal depth <u>20</u> Material used in seal ☐ Cement grout <u> </u> ☐ Pudding clay ☒ Well cuttings Sealing procedure used ☒ Slurry pit ☐ Temporary surface casing <u> </u> ☒ Overbore to seal depth	Thickness	Diameter	From	To	<u>3/2</u> inches	<u>20</u> inches	<u>1</u> feet	<u>17.1</u> feet																																							
Thickness	Diameter	From	To																																												
<u>3/2</u> inches	<u>20</u> inches	<u>1</u> feet	<u>17.1</u> feet																																												
6. LOCATION OF WELL Sketch map location must agree with written location.  County <u>Butte</u> <u>NW 1/4 SW 1/4 Sec. 34, T. 5 N., R. 26 E.</u>	10. Work started <u>8-4-76</u> finished <u>8-23-76</u> 11. DRILLERS CERTIFICATION Firm Name <u>Lambert Well Drilling</u> Firm No. <u>57</u> Address <u>Box 301, Arco, Idaho</u> Date <u>8-27-76</u> Signed by (Firm Official) <u>C. B. Lambert</u> and (Operator) <u>C. B. Lambert</u>																																														

USE ADDITIONAL SHEETS IF NECESSARY

FORWARD THE WHITE COPY TO THE DEPARTMENT

Exhibit F

Water level

05N 26E 23 CDA1

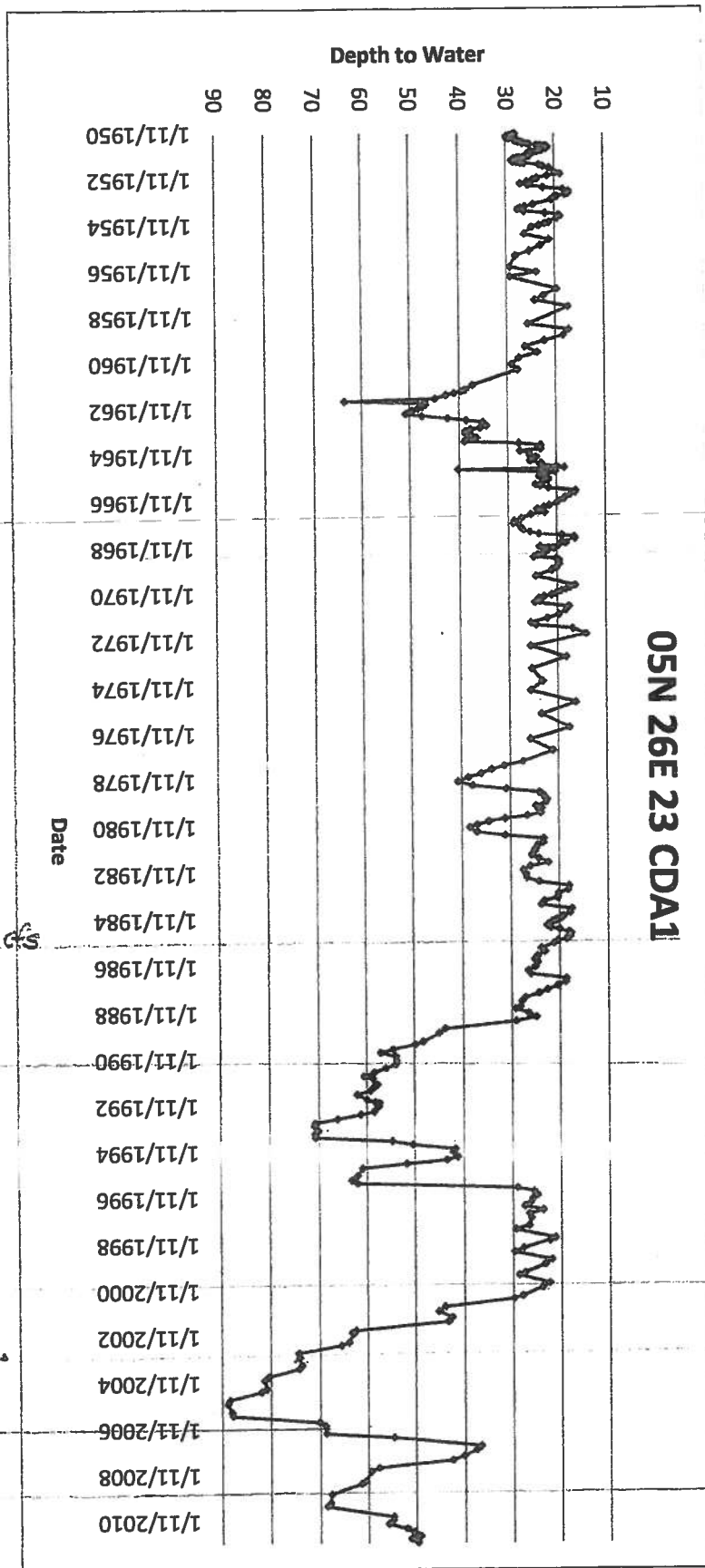


Figure 3. Hydrograph of well 05N 26E 23 SESWNE.

1985 IOWR Field report 24.66 cfs

→ water →

1990 IOWR

16.64
16.6 cfs

2000 - ditch sides 20 cfs

2003 Work, High 6,993/wk 999 inches

2006

Better measurements 20+ cfs

Actual pump 2/24 90'
Brooklyn

Exhibit G

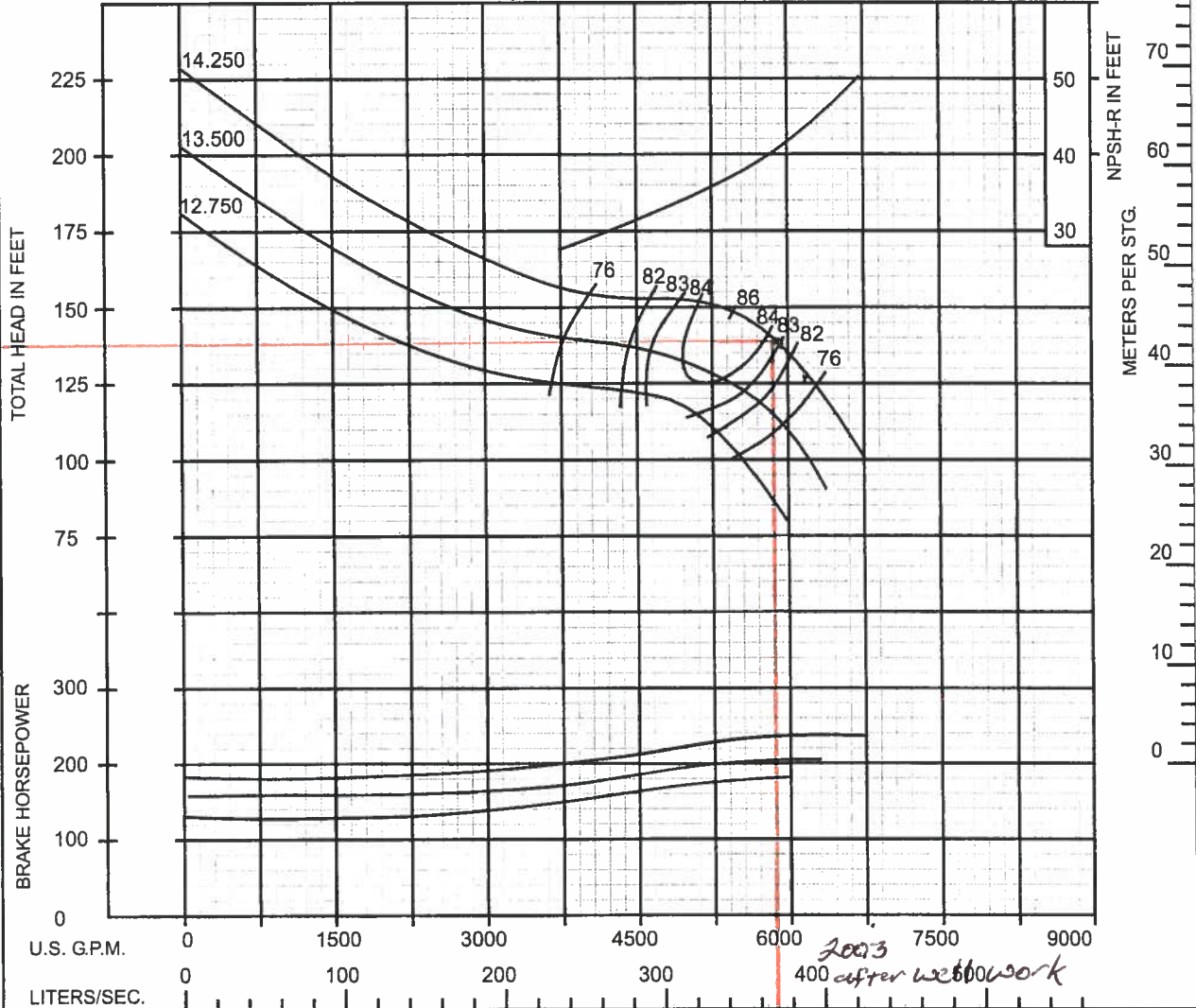
PERFORMANCE BASED ON
PUMPING CLEAR, FRESH
NON-AERATED WATER AT
85° F. MAXIMUM.

N^{PC} NATIONAL PUMP
COMPANY

E18HC
1770 RPM

CHANGE EFFICIENCY AS FOLLOWS	NUMBER OF STAGES	1	2	3	DESIGN	G.P.M.	TDH	BPH	EFF.
	NUMBER OF POINTS	-2	-1	0					

1 STG. () STG.

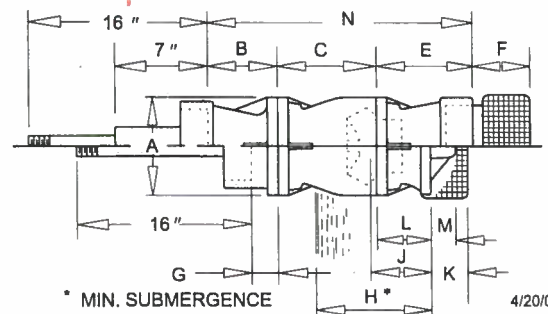


DIMENSIONS IN INCHES	A	B	C ADD/STG	E	F	G	H *	J	K	L	M	N
	17.50	6.44	15.00	N/A	N/A	0.81	48	11.25	13.88	10.50	2.50	N/A

PUMP DATA

IMPELLER:	ENCLOSED	BOWL CONNECTION:	FLANGED
NO. OF VANES:	7	DISCHARGE SIZE:	12", 14"
THRUST CONSTANT:	26.5	SUCTION SIZE:	BELL
LATERAL:	0.62"	STD. TUBE:	3.5"
EYE AREA IN:	63.88	WR 2:	9.26LB.FT ²
SHAFT DIA:	2.187	ONE STG: WT. LB:	492
		ADD STG WT. / LBS:	315

*THIS DIMENSION TO BE USED WITH NPSHR. PUMP INSTALLATION
AND SYSTEM MUST SATISFY BOTH VALUES. PERFORMANCE BASED
ON CAST IRON ENAMELED BOWLS AND BRONZE IMPELLERS.



4/20/01
CVE18H4P6CY

Exhibit H

2K3-0405
Ralph Isom
250 HP Deep well

North well

PERFORMANCE BASED ON
PUMPING CLEAR, FRESH
NON-AERATED WATER AT
85° F. MAXIMUM.

N^{PC} NATIONAL PUMP
COMPANY

E18HC
1770 RPM

CHANGE
EFFICIENCY
AS FOLLOWS

NUMBER
OF STAGES
NUMBER OF
POINTS

1 2 3
-2 -1 0

DESIGN

G.P.M.

6100

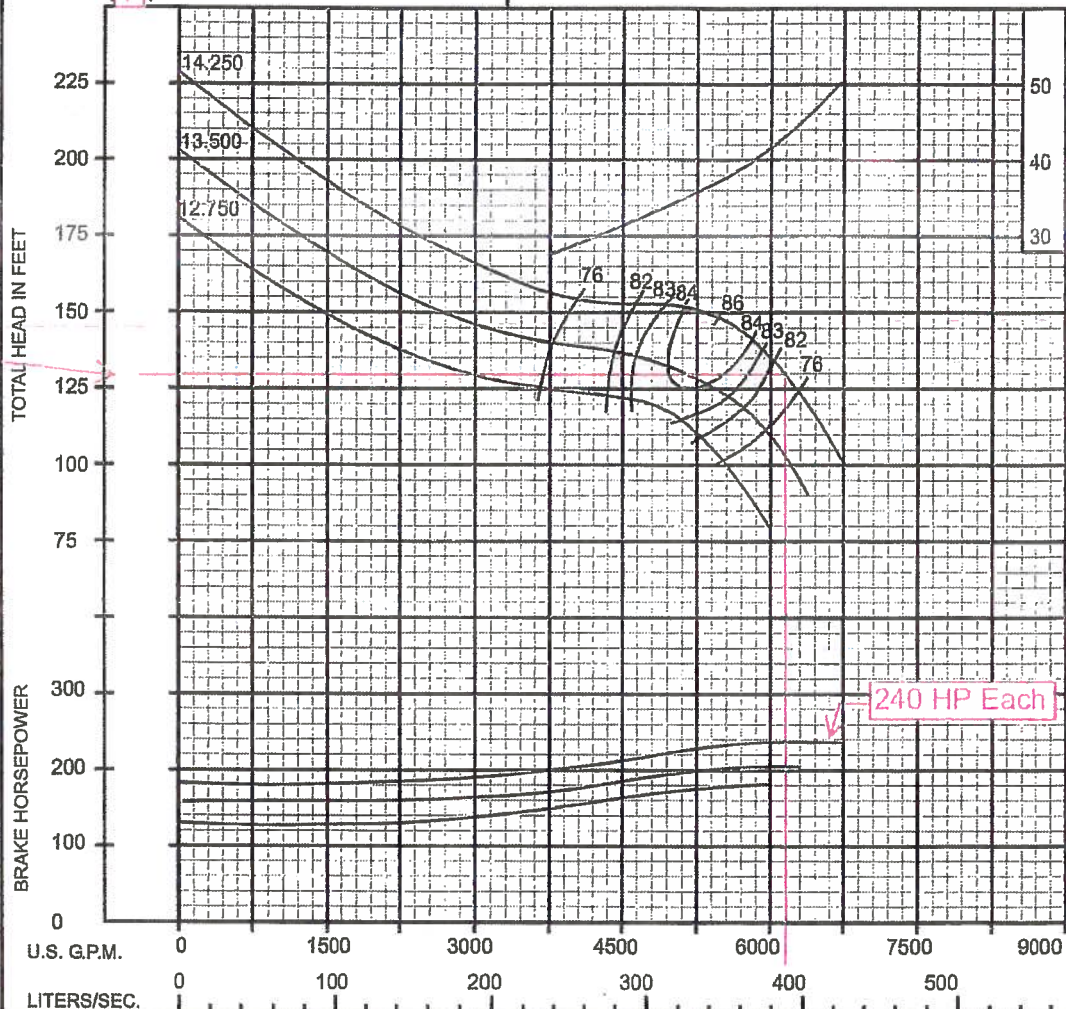
TDH

130'

BPH

EFF.

1 STG. (1) STG.



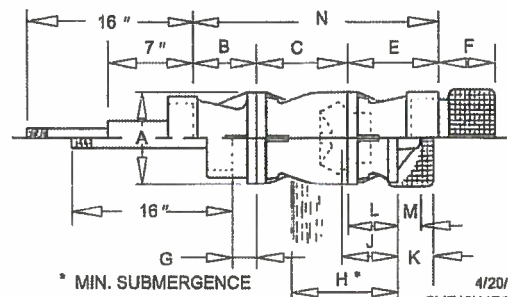
DIMENSIONS
IN
INCHES

A	B	C	E	F	G	H *	J	K	L	M	N
17.50	6.44	15.00	N/A	N/A	0.81	48	11.25	13.88	10.50	2.50	N/A

PUMP DATA

IMPELLER:	ENCLOSED	BOWL CONNECTION:	FLANGED
NO. OF VANES:	7	DISCHARGE SIZE:	12", 14"
THRUST CONSTANT:	26.5	SUCTION SIZE:	BELL
LATERAL:	0.82"	STD. TUBE:	3.5"
EYE AREA IN:	63.88	WR 2:	9.26 LB. FT ²
SHAFT DIA:	2.187	ONE STG. WT. LB:	492
		ADD STG. WT. / LBS:	315

*THIS DIMENSION TO BE USED WITH NPSHR. PUMP INSTALLATION
AND SYSTEM MUST SATISFY BOTH VALUES. PERFORMANCE BASED
ON CAST IRON ENAMELED BOWLS AND BRONZE IMPELLERS.



1770
CURVES

Robert L. Harris, Esq. (ISB #7018)

rharris@holdenlegal.com

HOLDEN, KIDWELL, HAHN & CRAPO, P.L.L.C.

1000 Riverwalk Drive, Suite 200

Idaho Falls, Idaho 83402

P.O. Box 50130

Idaho Falls, Idaho 83405-0130

Telephone: (208) 523-0620

Facsimile: (208) 523-9518

RECEIVED
JUL 05 2011
DEPARTMENT OF
WATER RESOURCES

IN THE DISTRICT COURT OF THE FIFTH JUDICIAL DISTRICT OF THE
STATE OF IDAHO, IN AND FOR THE COUNTY OF TWIN FALLS

In Re SRBA

Case No. 39576

Subcase Nos.: 34-2459, 34-2460, 34-2461,
34-2462, and 34-10925

AFFIDAVIT OF DON ISOM

STATE OF IDAHO)
) ss.
County of Bonneville)

I, Don Isom, do solemnly swear (or affirm) that the testimony given in this sworn statement is the truth, the whole truth, and nothing but the truth, that it is made on my personal knowledge, and that I would so testify in open court if called upon to do so.

And being so sworn I depose and say:

1. I am over the age of eighteen (18) and competent to testify to the matters contained herein.

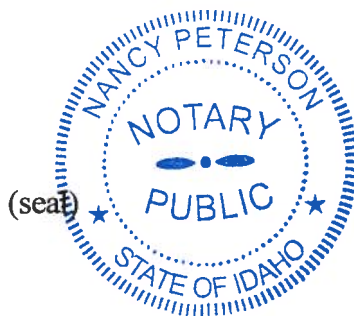
I was born on April 25, 1961.

2. I am a partner of Isom Acres Limited Partnership, which was the former owner of two wells known as the "Island Wells" located in Butte County, Idaho. The wells were used to irrigate the farm my mother and father purchased in 1997 that was formerly owned by Crater Farms, Inc. Because there are two Island Wells, they are often referred to as the "North Well" and the "South Well."
3. In May of 1998, shortly after my parents purchased the farm, I physically took a measurement in the North Well with a tape measure, and the depth to water was eighteen (18) feet.

DATED this 1st day of ^{July}~~June~~, 2011.

Donald Isom
Donald Isom

SUBSCRIBED AND SWORN TO before me this 1st day of ^{July}~~June~~, 2011.



Nancy Peterson
Notary Public for Idaho
Residing at Idaho Falls, Idaho
My Commission Expires: Feb 10, 2017

CERTIFICATE OF MAILING

I certify that on this 30th day of June, 2011, I mailed the original and copies of this form, including all attachments, to the following persons by mailing the original and/or copies, postage prepaid and addressed as follows:

Original to:

Nick Spencer
Idaho Department of Water Resources
PO Box 83720
Boise, Idaho 83720

(☒) First Class Mail
(☐) Hand Delivery
(☐) Facsimile
(☐) Overnight Mail
(☒) Email

Copies to:

Paul L. Arrington
Barker, Rosholt & Simpson, LLP
PO Box 485
Twin Falls, ID 83303

(☒) First Class Mail
(☐) Hand Delivery
(☐) Facsimile
(☐) Overnight Mail
(☒) Email

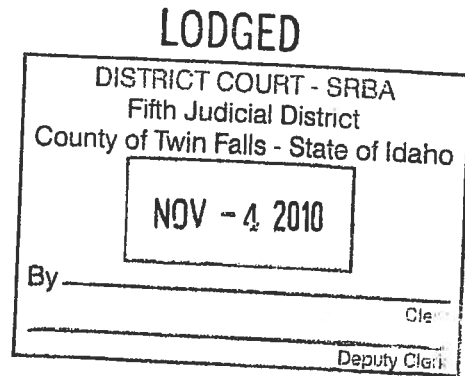
James P. Speck
Speck & Aanestad
PO Box 987
Ketchum, ID 83340

(☒) First Class Mail
(☐) Hand Delivery
(☐) Facsimile
(☐) Overnight Mail
(☒) Email


Robert L. Harris, Esq.
HOLDEN, KIDWELL, HAHN & CRAPO, PLLC

G:\WPDATA\RLH\15772 Isom, Don\Aff Don Isom wpd cdv

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rharris@holdenlegal.com
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Idaho Falls, Idaho 83405
Telephone: (208) 523-0620
Facsimile: (208) 523-9518



IN THE DISTRICT COURT OF THE FIFTH JUDICIAL DISTRICT OF THE
STATE OF IDAHO, IN AND FOR THE COUNTY OF TWIN FALLS

In Re SRBA

Case No. 39576

Subcase Nos: 34-2459, 34-2460, 34-2461,
34-2462, and 34-10925

**MEMORANDUM IN SUPPORT OF
MOTION FOR SUMMARY JUDGMENT**

Isom Acres Limited Partnership, Charles Isom, and Don Isom (collectively, "Isom"), by and through his counsel of record, Robert L. Harris of Holden, Kidwell, Hahn & Crapo, PLLC, hereby submit this *Memorandum in Support of Motion for Summary Judgment*. Isom's motion is made pursuant to Rule 56(c) of the Idaho Rules of Civil Procedure and Rule 6(4)(f) of this Court's Administrative Order 1 ("AO1"). This memorandum is supported by the *Second Affidavit of Attorney Robert L. Harris in Support of Motion for Summary Judgment*, (hereinafter, the "*Second Harris Affidavit*"), which includes documents previously submitted to this court on March 23, 2009 attached to the Affidavit of Attorney Robert L. Harris. For ease of reference, documents relevant to this motion contained in the prior Harris Affidavit will be attached to the *Second Harris Affidavit*.

Additionally, this motion is supported by the *Affidavit of Charles Isom*, and the *Affidavits of Ernest Carlsen* and *James Cefalo* submitted in a separate district court matter, but addressing the issue of reference to canal systems in water rights and the legal effect of that reference.

Isom's motion addresses objections filed by the Big Lost River Irrigation District ("BLRID"), by and through its counsel of record, Kent Fletcher of Fletcher Law Office, and by Doug Schureman, Jim Huelsman, and Tyler Felton (collectively, "Schureman"), by and through their counsel of record, Paul L. Arrington of Barker, Rosholt & Simpson, LLP. For the reasons set forth below, the objections filed by BLIRD and Schureman fail as a matter of law, and summary judgment in Isom's favor should be granted.

I. INTRODUCTION AND BACKGROUND

This matter concerns the adjudication of the above subcases that were initially claimed by Willard Bell, a predecessor-in-interest to Isom, in the late 1980s. On October 30, 1990, amended claims were filed by Willard Bell of Crater Farms, Inc. Importantly, the amended claim contained two maps: one map of the water right place of use (near the Arco Airport) and three claimed points of diversion (the Airport Wells), and the second map depicting the location of the Island Wells. This second map depicting the Island wells was not included in the original claim filed by Mr. Bell. *Second Harris Affidavit* at Exhibit A.

Further, in the claim document itself, at item 14 (the "Remarks Section"), it states the following

"Rediversion from Munsey Ditch: NW SE SE, (2 points), Section 2; SW SW NW, (2 points) Section 13,; SE SE NE Section 15; SE NE NE Section 22; SE NW SW Section 23; Township 3 North, Range 26 East."

Second Harris Affidavit at Exhibit A. The submission of this second map and the statement in the remarks section indicates that Mr. Bell claimed the Island Wells as authorized points of diversion under this water right. Unfortunately, for reasons not evident in the file, the legal descriptions for the Island Wells were not included on the first page of the amended claim (where the legal written legal descriptions are to be listed) as they apparently should have been based upon the included maps.

Incorrect partial decrees for the above subcases were eventually issued on December 16, 1997. They were also later amended for other reasons in 2001 as necessitated by the case of *A&B Irrigation Dist. v.; Idaho Conservation League*, 131 Idaho 411, 423, 958 P.2d 568, 580 (1998). *Second Harris Affidavit* at Exhibit B.

Unfortunately, the initial partial decrees did not include the Island wells as authorized points of diversion for Water Right Nos. 34-2459, 34-2460, 34-2461, 34-2462, and 34-10925, which was the intent of the amended claims filed by Willard Bell. The historical practices of Mr. Bell, and continued by Isom deserve additional explanation.

Water Right Nos. 34-2459, 34-2460, 34-2461, 34-2462, and 34-10925 share two common points of diversion which are located in the SWSNW and the SENESW, both in Section 2, T3N., R26E. These wells are commonly referred to as the "Airport Wells". Water Right No. 34-7037 is diverted through two wells found in the NESENW of Section 3, T4N., R26E., and the SENWSW of Section 34, T5N., R26E. These wells are commonly referred to as the "Island Wells", and these wells divert into the Island Canal, and then into the Munsey Canal, to be delivered to the same place of use as water from the Airport wells are delivered. Historically, the Island Wells diverted more than their licensed 12 cfs to service the 1980 acre place of use.

Because of the error in the initial partial decrees, the lessee of the Isom property, Mitchell Sorensen, filed a *Motion to Set Aside Partial Decrees Pursuant to I.R.C.P. 60(a)*. The court

eventually granted the motion based upon the argument and evidence submitted which demonstrated a meritorious position. That evidence demonstrated that the historic practice of Isom's predecessor-in-interest, Willard Bell, is that the wells were used interchangeably depending on the time of the year to divert the entirety of Mr. Isom's 24.5 cfs of ground water authorized under the above rights. The Island Wells were drilled in 1982. See Well Driller's Report attached as Exhibit C to the *Second Harris Affidavit*.

The Island Wells were designed to divert the full 24.5 cfs of ground water rights owned by Bell, and now owned by Isom. In the license for Water Right No. 34-7037, a copy of which is attached to the *Second Harris Affidavit* at Exhibit D, it specifically states that the Island Wells have a diversion capacity of 24.66 cfs, which is enough to divert 34-7037 (12 cfs) plus the additional 12.5 cfs under the other Isom water rights, for a total of 24.5 cfs.

The historic practice has been such that when the Airport wells are not producing sufficient amounts of water, the entirety of the Isom rights were diverted from the Island Wells. This practice was undertaken previous to 1987, and therefore, qualified the water rights at issue for an accomplished transfer. Additionally, even under the prior incorrect partial decrees, all of the above-referenced water rights shared a common place of use of 1980 acres, and further, shared a combined annual diversion volume limitation of 8441.5 acre-feet. It follows that the rights should likewise all share the same points of diversion and combined diversion rate.

Based upon this information, IDWR issued *Amended Director's Reports* on December 8, 2009 for the above subcases, which changed the partial decrees to allow for the interchanged use of the Airport and Island Wells. However, the amended partial decrees also contained additional conditions and/or clarifying language limiting volumes diverted pursuant to various rights, and importantly included the following remark to protect against injury to other water rights:

Pursuant to a call, in times of scarcity, the diversion of water under this right from the two wells in T05N R26E S34 SENWSW and T04N R25E S3 NESENW has a priority date of May 18, 1982.

Second Harris Affidavit at Exhibit E. Therefore, to extent a delivery call is filed, existing water rights are protected pursuant to this condition, including water rights owned by Schureman.

Additionally, IDWR included a remark simply indicating that water diverted from the Island Wells is injected into a canal system owned and operated by BLRID. The condition reads as follows:

Groundwater diverted from the points of diversion in T05N 26E S34 SENWSW and T04N R26E S3 NESENW is comingled with the Island Canal then injected into the Big Lost River at the point of injection and rediverted into the Munsey Canal at the point of rediversion.

Second Harris Affidavit at Exhibit E. Overall, Isom was satisfied with the changes made to the partial decrees.

Lastly, IDWR also took the opportunity to add volume limitations to the individual water rights, which is now standard IDWR practice, but was not at the time of issuance of the initial partial decree.

After the *Amended Director's Report* was issued, objections were subsequently filed by BLRID to the quantity of the water rights, the point of diversion, the place of use, and for other easement-related issues, specifically that "there is no transport agreement in place with the Big Lost River Irrigation District for this right," and that "[i]f the water right makes reference to transportation of water through the Big Lost River Irrigation District facilities, it must state that it is subject to the permission, rules and regulations of the Big Lost River Irrigation District."

Objections were also filed by Schureman, alleging that the diversion rate was inaccurate, that the acre-feet limitation of 8441.5 acre-feet was unjustified, and should be limited to 6930 acre-feet,

and that IDWR should perform an “injury analysis” as to inclusion of the Island Wells in the above subcases.

For the reasons set forth below, the objections made by BLRID and Schureman should be disposed of as a matter of law pursuant to an order of summary judgment.

II. ARGUMENT.

A. Summary Judgment Standard.

Summary judgment is appropriate when “the pleadings, depositions and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to judgment as a matter of law.”¹ When a jury trial has been demanded, disputed facts are to be construed in favor of the non-moving party, and all reasonable inferences that can be drawn from the record are drawn in favor of the non-moving party. Without a demand for a jury trial, however, the court may construe facts differently:

[I]f an action will be tried before the court without a jury, the judge is not constrained to draw inferences in favor of the party opposing a motion for summary judgment. Rather, the judge is free to arrive at the most probable inferences to be drawn from uncontroverted evidentiary facts.²

Further, the non-moving party must submit more than just conclusory assertions in response to a motion for summary judgment. In other words, “[a] mere scintilla of evidence or only slight doubt is not sufficient to create a genuine issue of material fact.”³

¹Idaho Rule of Civil Procedure 56(c).

²*Loomis v. City of Hailey*, 119 Idaho 434, 437, 807 P.2d 1272, 1275 (1991); *Blackmon v. Zufelt*, 108 Idaho 469, 470, 700 P.2d 91, 92 (Ct. App. 1985) (citing *Riverside Development Co. v. Ritchie*, 103 Idaho 515, 519, 650 P.2d 657, 661 (1982)).

³*Samuel v. Hepworth, Nungester & Lezamiz, Inc.*, 134 Idaho 84, 87, 996 P.2d 303, 306 (2000).

B. BLRID's and Schureman's objections relative to diversion volume limitations are barred by *res judicata* and/or collateral estoppel because these elements of the above subcases remain unchanged from the initial partial decrees of the above subcases, and were not objected to previously.

As set forth above, BLRID and Schureman objected to the volume quantity and place of use descriptions of the above-subcases contained the Amended Director's Report, yet the combined volume quantity and place of use elements of these subcases did not change in the *Amended Director's Report* from the prior partial decrees. A copy of the original partial decree for Water Right No. 34-2459 and the amended partial decree for the same water right are attached to the *Second Harris Affidavit* at Exhibits B and E respectively.

BLRID and Schureman had the opportunity to object to these elements prior to the issuance of the original partial decrees, but did not. Therefore, the objections now filed to the *Amended Director's Report* for these water rights as to the unchanged elements amount to a second bite at the apple, which should not be permitted pursuant to the doctrine of *res judicata* and/or collateral estoppel.

Regarding *res judicata*, the Idaho Supreme Court has held that *res judicata*, or claim preclusion, has "three requirements: (1) same parties; (2) same claim; and (3) final judgment."⁴ For collateral estoppel, or issue preclusion, five factors must be met to bar relitigation of an issue decided in an earlier proceeding:

- (1) the party against whom the earlier decision was asserted had a full and fair opportunity to litigate the issue decided in the earlier case; (2) the issue decided in the prior litigation was identical to the issue presented in the present action; (3) the issue sought to be precluded was actually decided in the prior litigation; (4) there was

⁴*Andrus v. Nicholson*, 145 Idaho 774, 777-78, 186 P.3d 630, 633-34 (2008) (citations omitted).

a final judgment on the merits in the prior litigation; and (5) the party against whom the issue is asserted was a party or in privity with a party to the litigation.⁵

As to *res judicata*, as water users that were necessarily part of the SRBA, BLRID and Schureman are parties to the SRBA litigation process, and therefore meet the first requirement under *res judicata*. Secondly, the elements of the water right previously unobjected to are now objected to by BLRID and Schureman, and involve the same claims for the Isom water rights. The second element of *res judicata* is therefore met. Thirdly, there was a final judgment as the elements of the water right as evidenced by the initial partial decree set forth as Exhibit B to the *Second Harris Affidavit*. Consequently, the third element of *res judicata* is likewise met. With these three elements met, BLRID and Schureman are barred by *res judicata* from asserting objections to the 1980 acre place of use and the volume limitation of 8441.5 acre-feet per year. BLRID and Schureman should not be entitled to a second bite of the apple as to these elements.

Regarding collateral estoppel, (1) BLRID and Schureman had a full and fair opportunity to litigate the elements of the Isom's water rights, (2) the issue relative to these elements is exactly the same as previously determined, (3) the issue of place of use and volume limitation was actually decided previously, (4) there was a final judgment—a partial decree—issued on the merits of the claim as to these elements which remain unchanged with the amended partial decrees, and (5) BLRID and Schureman were parties to the SRBA litigation. Therefore, similar to *res judicata*, BLRID and Schureman are likewise barred by collateral estoppel on this issue.

⁵*Waller v. State, Dept. of Health and Welfare*, 192 P.3d 1058, 1062 (2008).

- C. To the extent the place of use element remain subject to a second bite of the apple, it is undisputed that the above subcases were licensed with the 1980 acre place of use, and there is no dispute of fact as to their historic place of use.**

To the extent the place of use issue can be revisited, attached as Exhibits D and F to the *Second Harris Affidavit* are licenses for Water Right Nos. 34-7037 and 34-7138 that show the previously issued licenses for these water rights have a place of use of 1980 acres. The state-issued licenses serve as *prima facie* evidence of the water right place of use, and there has been no evidence presented otherwise that the 1980 licensed acres have subsequently been administratively reduced or forfeited. Therefore, as a matter of law, the place of use objections made by BLRID are without merit, and summary judgment in Isom's favor is appropriate.

- D. To the extent the volume limitation element remains subject to a second bite of the apple, it is undisputed that the volume remains the same as the prior partial decree, which was apparently calculated by adding additional volume to the licensed diversion volume to allow for conveyance losses through the BLRID canal system.**

It is undisputed that IDWR licensed the above subcases such that in combination, they are allowed 3.5 acre-feet per acre—based on an IDWR standard—for a total of 6930 acre-feet. The original and amended partial decrees have increased this amount to 8441.5 acre-feet to account for the conveyance losses suffered by Isom through the BLRID system, which is used for approximately 8 miles before reaching Isom's place of use. See *Harris Affidavit* at Exhibit I (showing location of Island wells and Isom place of use). Per acre, this means that the Isom's have been allocated approximately 4.26 acre-feet per acre, a reasonable amount given the over 8-mile trip the Isom water must make through the BLRID system before arriving at the authorized place of use.

Neither BLRID nor Schureman have presented evidence that the additional amount of acre-feet is unjustified under the circumstances. Conveyance losses are a consideration made by IDWR

in their SRBA recommendations when determining appropriate rates and volume allocations. For this reason, summary judgment in Isom's favor is appropriate.

E. Issues raised by BLRID relative to easement matters or canal usage are not elements of a water right subject to the SRBA, and therefore, should be disregarded as a matter of law.

BLRID has objected to the above subcases on easement-based grounds, asserting that "there is no transport agreement in place with the Big Lost River Irrigation District for this right," and that "[i]f the water right makes reference to transportation of water through the Big Lost River Irrigation District facilities, it must state that it is subject to the permission, rules and regulations of the Big Lost River Irrigation District." These matters are property rights issues, separate and apart from the adjudication of these water rights. Therefore, a simple reference to the delivery system is informational only, and does not purport to grant an easement or right-of-way or other authorization for use of the canal to the water right holder. The existence or nonexistence of a transport agreement is not an issue that needs to be addressed in the Isom amended partial decrees. BLRID's objection in this regard should therefore be disposed of as a matter of law.

The Idaho Supreme Court has held that "[a]lthough a ditch easement typically concerns the conveyance of water, it is 'a property right apart from and independent of' questions of water rights. *Beach Lateral Water Users Ass'n v. Harrison*, 142 Idaho 600, 130 P.3d 1138 (2006) (quoting *Savage Lateral Ditch Water Users Assoc. v. Pulley*, 125 Idaho 237, 242, 869 P.2d 554, 559 (1993)). Nevertheless, despite this clear state of Idaho law, BLRID attempt to inject easement matters into a water rights matters.

In order to understand the misguided nature of Defendants' arguments, brief background on two matters must be addressed: (1) The water rights permitting process, and (2) the elements addressed in the SRBA.

First, the water rights permitting process is set forth in Chapter 2 of Title 42 of the Idaho Code. In a nutshell, one desiring a water right submits an application for water right permit to IDWR. The application for permit is a standard form prepared by IDWR, and contains blanks for elements of the water right, but also contains blanks for additional information helpful to IDWR, including narrative forms to explain your proposal. Generally speaking, this will include reference to the type of project in greater detail, and generally includes descriptions of the water use and delivery system. After passing an initial review from IDWR, the application for permit is advertised to determine if anyone objects to the water right. Idaho Code § 42-203A. If no one objects, or if objections are resolved through negotiation or formal hearing, then IDWR will issue a permit to allow development of the water right. The permit will establish a time period within which the permit holder must “prove up” his water right by submitting “proof of beneficial use.” Idaho Code § 42-217. Once proof of beneficial use is reviewed, and a field exam performed to confirm the beneficial use, IDWR will issue a water right license confirming development of the water right. Idaho Code § 42-219.

Secondly, as this court is aware, the process for filing claims in the SRBA for water rights is set forth in Chapter 14 of Title 42. Once a claim is investigated by IDWR, recommended to the court with elements of the water right set forth in a “Director’s Report” (Idaho Code § 42-1411), the final step is issuance of a “partial decree,” which is a final order from the SRBA court for one water right, complete with a Rule 54(b) certificate. Idaho Code § 42-1412. Eventually, all of the single partial decrees, along with general provisions, will be combined into a final decree. Idaho Code § 42-1412 (8). A partial decree is final evidence of the elements of a water right.

In a district court case in which Isom’s counsel is involved, Ernest Carlsen, formerly of IDWR, and James Cefalo, currently employed by IDWR, submitted affidavit testimony regarding

the language included in a water right that references delivery through a canal. As explained in the Carlsen Affidavit, the partial decree elements are set forth at Idaho Code § 42-1411, and include “the water right owner, the source of water, the quantity of water (which can be described in both a diversion rate and a volume, or both), the priority date, the legal description of the point of diversion, the purpose of use of the water, the season (or period) of use within which a water right can be exercised, the legal description of the place of use, conditions on the exercise of the water right, and remarks that may clarify one of the above water right elements.” Carlsen Affidavit ¶ 10. Idaho Code § 42-1411 does not state that a conveyance system is an element of a water right. Succinctly put, In the words of long-time IDWR employee Ernest Carlsen, “[t]he delivery system (i.e., a canal or pipeline) is not an element of the water right.” Carlsen Affidavit ¶ 12. Mr. Carlsen’s affidavit was confirmed as the current policy of IDWR by Mr. Cefalo.

With the above background in mind, BLRID is wrong to presume that reference to a canal system grants property rights in that canal system to the water right holder. As clearly stated by the Supreme Court, they are separate issues. As explained by Mr. Carlsen, the reference to the delivery system is to aid the water master is delivering water, but inclusion of this language does not mandate that it be delivered through the referenced system. Otherwise, IDWR would be in the business of granting easements and rights-of-way, which they do not have authority to do. To the extent changes in the delivery system are made, the water user is to notify the water master to ensure accurate measuring and accounting of water.

In short, reference to a canal system does not make the canal system an element of Plaintiff’s water rights. Insisting on additional conditions relative to easement issues is not something that should be included in the amended partial decrees because they are not elements of the water right. Clearly, Isom acknowledges that they would need to secure such authorization prior to use of the

canal, and therefore, as a practical matter, it must be addressed. However, it is not necessary to include reference to this fact in the water right itself, and therefore, this basis for objection must be disregarded.

Isom also notes that there are many water rights delivered through the BLRID system, and to the best of Isom's knowledge, the proposed BLRID condition has not been imposed or suggested relative to those water rights. We are therefore unclear why the proposed reference is being made as to these subcases only. Isom is in a dispute with BLRID over BLRID's transport agreements, but this dispute does not implicate water rights matters, and we can therefore only presume that BLRID—who only holds storage water rights—has injected itself into these subcases due to the transport agreement disputes. Those issues will be dealt with in a separate forum, but as to the SRBA, are not issues that need to be addressed. Therefore, Isom is entitled to judgment as a matter of law as to these issues.

- G. There is no dispute of fact that the Island Wells have the capacity to divert water pursuant to all of the above subcases, that the wells have been used in this fashion prior to 1987, and even BLRID documents demonstrate that at least 20 cfs were carried through the BLRID system from the Island Wells. Isom is therefore entitled to judgment as a matter of law as to these issues.**

The Island Wells were drilled in 1982. See Well Driller's Report attached as Exhibit C to the *Second Harris Affidavit*. Since that time, to the best of the Isom's knowledge, the historic practice of Isom's predecessor-in-interest, Willard Bell, is that the wells were used interchangeably depending on the time of the year to divert the entirety of Mr. Isom's 24.5 cfs of ground water authorized under the above rights. See *Isom Affidavit*.

As shown on the license for Water Right No. 34-7037, the Island Wells have a capacity to divert 24.66 cfs (which was measured at the field exam performed 1985), and therefore, the accomplished transfer happened based on the physical capacity of the diversion system.

Additionally, the historic practice is also demonstrated by the existence of a transport agreement between Mr. Bell and BLRID, which increased the amount allowed for transport through the BLRID system from 12 cfs (600 inches) to 1000 inches (20 cfs). At a minimum, therefore, based on this transport agreement, the two Island Wells should be decreed such that they can divert, in combination with all other rights, at least 20 cfs. *Second Harris Affidavit* at Exhibit G.

Based on the evidence contained in the Isom Affidavit, the license of Water Right No. 34-7037, and the BLRID transport agreement, it is undisputed that the accomplished transfer occurred. Isom is aware of any evidence to the contrary possessed by BLRID or Schureman, and therefore, the matter can be determined as a matter of law.

F. Schureman's request for an injury analysis from IDWR as a basis for their objections is an attempt to circumvent the SRBA process in this matter, and should therefore be disregarded.

As part of Schureman's objection, they request that an injury analysis be performed by IDWR relative to the accomplished transfer. It is unclear whether this is an injury analysis to be performed pursuant to a delivery call or pursuant to the accomplished transfer statute, Idaho Code § 42-1425(2)(a). Obviously, the SRBA is not the appropriate forum for a delivery call, and to the extent the request for an injury analysis is pursuant to such a delivery call, it should be disregarded.

Likewise, to the extent the request is made pursuant to Idaho Code § 42-1425(2)(a), Isom submits that as a matter of law, such an analysis should not be undertaken. Counsel for Isom was involved with another set of subcases in Basin 74 (the Carmen Creek subcases) before Special Master Dolan, and requested a similar injury analysis from IDWR. The request was objected to by Barker, Rosholt & Simpson, counsel for the opposing water users. Ultimately, the request was denied, and Special Master Dolan reasoned that "[a] remand of the subcases to the Director would give the Burnses two "bites at the apple" and allow them to gather more information plus better

prepare for eventual trial. But there is no doubt that a remand would delay final resolution when nothing in I.C. § 42-1425(2)(a) 'mandates' such process. . . In these subcases, there is conflicting evidence that can be determined only through a full trial and there is no suggestion that the Director is the proper trier of such qualifying fact." *Second Harris Affidavit* at Exhibit H. Special Master Dolan went further to state that "IDWR determined that there was a transfer—presumably without injury to other water rights or enlargement of the original right—and now the SRBA Court will examine all the facts . . . " *Id.* Thus, based on this precedent, an injury analysis at this stage as requested by Schureman is not appropriate.

Furthermore, IDWR has already protected Schureman by including a new condition which protects water users against the very injury Schureman alleges:

Pursuant to a call, in times of scarcity, the diversion of water under this right from the two wells in T05N R26E S34 SENWSW and T04N R25E S3 NESENW has a priority date of May 18, 1982.

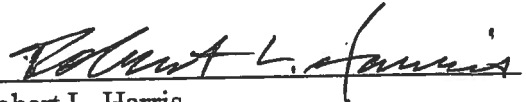
Therefore, to extent a delivery call is filed, existing water rights are protected, including those of Schureman.

In short, as a matter of law, no injury analysis needs to be performed based on existing SRBA precedent, and furthermore, the inclusion of the above language provides Schureman with the protection they desire. For these reasons, this portion of Schureman's objection should be addressed as a matter of law, with an order of summary judgment in favor of Isom on this issue.

III. CONCLUSION

For the reasons set forth above, summary judgment in favor of Isom as to BLRID's and Schureman's objections should be granted.

Dated this 3rd day of November, 2010.


Robert L. Harris
HOLDEN, KIDWELL, HAHN & CRAPO, PLLC

CERTIFICATE OF MAILING

I certify that on this 3rd day of November, 2010, I mailed the original and copies of this form, including all attachments, to the following persons by mailing the original and/or copies, postage prepaid and addressed as follows:

1. Original to:

Clerk of the District Court
Snake River Basin Adjudication
253 Third Avenue North
P.O. Box 2707
Twin Falls, ID 83303-2707

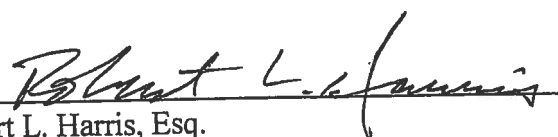
2. Copies to:

Paul L. Arrington
Barker, Rosholt & Simpson, LLP
PO Box 485
Twin Falls, ID 83303

(☒) First Class Mail
(☐) Hand Delivery
(☐) Facsimile
(☐) Overnight Mail
(☒) Email

W. Kent Fletcher
Fletcher Law Office
PO Box 248
Burley, ID 83318

(☒) First Class Mail
(☐) Hand Delivery
(☐) Facsimile
(☐) Overnight Mail
(☒) Email


Robert L. Harris, Esq.
HOLDEN, KIDWELL, HAHN & CRAPO, PLLC

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Exhibit F

State of Idaho
Department of Water Resources

WATER RIGHT LICENSE

WATER RIGHT NO. 34-07138

Priority: May 5, 1976

Maximum Diversion Rate:

16.00 CFS

This is to certify, that CRATER FARMS INC
PO BOX 91

ARCO ID 83213

has complied with the terms and conditions of the permit, issued pursuant to Application for Permit dated April 5, 1976; and has submitted Proof of Beneficial Use on May 31, 1983. An examination indicates that the works have a diversion capacity of 24.520 cfs of water from:

BIG LOST RIVER

tributary to SINKS

source, and a water right has been established as follows:

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>RATE OF DIVERSION</u>	<u>ANNUAL VOLUME</u>
IRRIGATION	05/01 to 10/15	16.00 CFS	

LOCATION OF POINT(S) OF DIVERSION:

NWNW , Sec. 26, Township 04N, Range 26E
BUTTE County

PLACE OF USE: IRRIGATION

<u>TWN</u>	<u>RGE</u>	<u>SEC</u>	<u>ACRES</u>	<u>ACRES</u>	<u>ACRES</u>	<u>TOTAL</u>
03N	26E	14	NENW 39	NWNW 36	SWNW 40	
			SENW 40	NESW 40	NWSW 40	
			SWSW 40	SESW 40		315
		15	NENE 39	NWNE 40	SWNE 40	
			SENE 40	NENW 39	NWNW 39	
			SWNW 40	SENW 40	NESW 40	
			NWSW 40	SWSW 40	SESW 40	
			NESE 40	NWSE 40	SWSE 40	
			SESE 40			637
		16	NENE 39	NWNE 39	SWNE 40	
			SENE 40	NESE 40	NWSE 40	
			SWSE 39	SESE 39		316
		22	NENE 40	NWNE 40	SWNE 40	
			SENE 40	NENW 40	NWNW 40	
			SWNW 40	SENW 40		320
		23	NENW 40	NWNW 40	SWNW 40	
			SENW 40	NESW 40	SESW 33	
			NESE 39	NWSE 40	SWSE 40	
			SESE 40			392

Total number of acres irrigated: 1980

CONDITIONS/REMARKS:

1. This water right is appurtenant to the described place of use.
2. This right is subject to all prior water rights and may be forfeited by five years of non-use.

SEP 21 1994

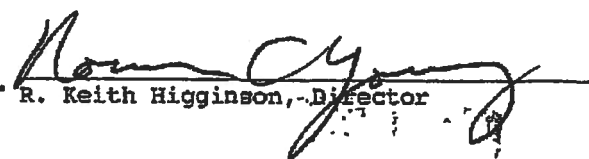
State of Idaho
Department of Water Resources**WATER RIGHT LICENSE**

WATER RIGHT NO. 34-07138

CONDITIONS/REMARKS:

3. Modifications to or variance from this license must be made within the limits of Section 42-222, Idaho Code, or the applicable Idaho law.
4. Use of water under this water right will be regulated by the watermaster of State Water District No. 34.
5. This right when combined with all other rights shall provide no more than .02 cfs per acre nor more than 3.5 afa per acre for the lands above.
6. This right is limited to the irrigation of 1664 acres in the place of use described above in a single irrigation season.
7. The combined annual volume of water under this right and Right Nos. 34-02459/02460/02461/02462/07037/10925 shall not exceed 6930.0 acre feet.
8. Measuring devices of a type approved by this Department shall be maintained at the point of diversion, point of redirection from the Big Lost River into Munsey Ditch and at all points described below where water is again redirected from ditches or a pond onto irrigated acres.
 - Munsey Ditch - SESE, S2, T3N, R26E (2 points)
 - Munsey Ditch - SWNW, S13, T3N, R26E (2 points)
 - Private Ditch - SENE, S15, T3N, R26E (2 points)
 - Private Ditch - NENE, S22, T3N, R26E
 - Pond at end of Private Ditch - NWSW, S23, T3N, R26E
9. Water is redirected from the Munsey Ditch into mainlines and a private ditch and pond for delivery to the acres irrigated.

This license is issued pursuant to the provisions of Section 42-219, Idaho Code.
Witness the seal and signature of the Director, affixed at Boise, this 15TH
day of JULY, 1994.

Acting for  R. Keith Higginson, Director

SEP 21 1994

Exhibit G

EXPIRE 2015

WATER PUMPING AND TRANSPORT AGREEMENT

THIS AGREEMENT, made and entered into this 5 th day of December, 1995, by and between Crater Farms and Willard Bell, hereinafter referred to as "Landowner" of Arco, County of Butte, State of Idaho and Big Lost River Irrigation District, an irrigation district duly organized under the laws of State of Idaho, hereinafter referred to as "District", with its principal office in Mackay, Custer County, State of Idaho.

W I T N E S S E T H:

WHEREAS, Landowner is the owner of certain real property located outside the boundaries of the District, described as follows, to-wit:

TOWNSHIP	RANGE	SECTION	1/4 OF 1/4	LOT	USE	ACRES
3N	26E	14	W2			320
		15	A11			640
		16	E2			320
		22	N2			320
		23	NW4			160
			SE4			160
			E2SW4			80

Containing 1980 irrigable acres; and,

WHEREAS, landowner has certain groundwater rights appurtenant to the above-described real property, which rights are described as follows, to-wit:

License No.: 34-07037

Date of Priority: 05-04-1973

Rate of Diversion: 12 CFS

Point of Diversion: T5N R26E Sec 34 SE4NW4SW4

T4N R26E Sec 3 NE4SE4NW4

Acres irrigable under said right: 1980; and

WHEREAS, Landowner desires the District to transport water diverted under the above-described right through an existing canal of District for use on the lands of Landowner above-described; and,

WHEREAS, the District is the owner of a canal known as the Island/Munsey Canal, being a part of the facilities of the District used for the delivery of decreed flows of Big Lost River of Landowners and storage water of the District for the irrigation of lands within the District; and,

WHEREAS, the District has, from time to time, additional capacity within said canal that could be used for the delivery of water to landowners outside of the District; and,

WHEREAS, the District has, from time to time, the delivery of water to landowners outside of the District; and,

WHEREAS, Landowner desires the District to transport water diverted under the above-described right into the District's Island/Munsey ^{Outside} Canal to a point described as follows, to-wit:
SE 1/4 SE 1/4 1/4 of Section 2, Township 3 North, Range 26 E.B.M. and SW 1/4 NW 1/4 1/4 of Section 13, Township 3 North, Range 26 E.B.M., which point shall be known as the point of delivery by the District to Landowner of said transported water, for use by Landowner on the lands above-described.

NOW, THEREFORE, in consideration of the mutual covenants and agreements herein contained, the parties do hereby agree:

1. District will transport groundwater of the Landowner diverted into the District's canal in the SE 1/4 NW 1/4 SW 1/4 of Section 34, Township 5 North, Range 26 East of the Boise Meridian and NE 1/4 SE 1/4 NW 1/4 of Section 3, Township 4 North, Range 26 East of the Boise Meridian, to the point of delivery from the District to Landowner, not to exceed the rate of diversion provided in Landowner's water right hereinabove described and actually diverted into the District's canal, less losses for seepage and evaporation as hereinafter provided, for the irrigation of Landowner's lands above described.

2. Landowner shall construct and maintain at their own expense, any additional ditches, structures, or other water conveyance facilities necessary for the conveyance of water from the District's canal to the Landowner's place of use that may be required for the delivery of said water from the District's canal to Landowner's place of use, and District assumes no responsibilities of whatsoever kind or nature for said water after it leaves the District's canal at the point of delivery above-described to Landowner. Landowner further hereby agrees to hold District harmless from all claims of whatsoever kind or nature arising from the transportation and use of said water by Landowner from the point of delivery from the District's canal.

3. The obligations of the District to transport water for Landowner under this agreement and the right of the Landowner to have water transported by the District under this agreement is subordinate to the obligations of the District to transport water within its distribution system for the irrigation of lands within the District and is conditioned upon there being sufficient additional capacity in the Island/Munsey Canal of the District over and above the capacity required for the delivery of water by the District to lands within the District. The determination of the availability of additional capacity in the District's Island/Munsey Canal shall be determined by the District, and its determination shall be binding upon the parties to this agreement. In the event it is determined by the District that there is not sufficient

additional capacity in the District's canal for the transportation of water under this agreement, no further transportation of water under this agreement shall be made by the District until such time as it is determined by the District that there is sufficient capacity in said canal to transport water under this agreement. In the event the transportation of water is curtailed under this agreement for the reason that there is a lack of capacity in the canal of the District, this agreement may be terminated at the request of Landowner at the end of the irrigation season in which said lack of capacity occurs.

4. Landowner shall construct and maintain at his sole cost and expense, all pipelines, pumps, headgates, measuring devices or structures, and other structures or other improvements necessary to divert water into the District's canal and to red divert said water, less transportation losses, from the District's canal.

5. Landowner shall be required to provide and maintain adequate measuring devices to measure and diversion of water into the District's Island/Munsey Canal and the volume of water to be diverted by the District from its Munsey Canal to Landowner at all times during the term of this agreement. ~~Under no condition shall Landowner be entitled to have diverted to him by the District from the District's canal under this agreement a quantity of water in excess of the capacity of the canal actually diverted from the said canal by Landowner under the transportation of water in the transportation losses attributed to the transportation of said water by the District.~~ No water may be diverted into the District's Island/Munsey Canal by Landowner or diverted from the District's Munsey Canal by the District to the Landowner under this agreement without the Landowner first providing to the District twenty-four (24) hours notice in advance as to the intent of the Landowner to divert water into the District's canal under this agreement and the amount to be diverted therein by Landowner. Landowner shall also notify the District immediately upon discovering that the diversion by the Landowner of water into the District's canal has been terminated or reduced for whatsoever reason, whether or not under the control of Landowner. Landowner shall also notify the District twenty-four (24) hours in advance of any voluntary cessation of diversion into the District's canal by Landowner.

6. Water Transportation for Landowner by the District under this agreement shall be limited to those periods of time in which the District is delivering water through its facilities for the irrigation of lands within the District.

7. For and in consideration of the transportation of Landowner's water by the District under the terms of this agreement, Landowner does hereby agree to pay to the District an annual fee, in advance, which will include the appropriate ditchrider fee and an operation and maintenance assessment equal to the operation and maintenance assessment of the District on Class 1 lands within the District.

The operation and maintenance portions shall be based upon an assessment of the benefit received. Charges will be set against all lands benefitted hereby proportionately. Since all charges, including operation and maintenance are based on the number of irrigated acres, Willard Bell shall notify the District of the number of acres that have been irrigated by Willard Bell with said waters each year. On or before April 1 of each year, the District shall advise Landowner in writing as to the annual fee due for that year, which transportation fee must be paid by Landowner on or before the 1st of May of each year. Failure of the Landowner to pay the annual transportation fee under this agreement, when due, whether or not water is delivered or is to be delivered to the District by Landowner for transportation by the District, shall constitute a substantial breach of this agreement and the agreement may be terminated by the District, without further notice to the Landowner. Any transportation fee not paid when due shall bear a penalty of two percent (2%) and interest at the rate of one percent (1%) per month from the due date until paid.

8. No water rights, transmission rights, or ditch rights in the facilities of the District shall accrue to Landowner by reason of this agreement, the rights of landowner being fully contained herein, and landowner does hereby waive any other claims he may have. It is further understood and agreed that nothing in this agreement shall constitute a dedication or assignment to Landowner by District of the District's facilities and the rights of the District therein.

9. It is fully understood and agreed by the parties hereto that under no circumstances of whatsoever kind that are not within the District.

10. Landowner covenants and agrees that the transportation loss in the transportation of Landowner's water under this agreement shall be the actual transportation loss at such times as the only water being transported in the District's Island/Munsey Canal is the water of Landowner. In the event other water is being transported in the District's Island/Munsey Canal at a time that water is being transported for Landowner by District under this agreement, the transportation loss in the transporting of Landowner's water shall be the actual transportation loss of water diverted in the District's Island/Munsey Canal by Landowner. Transportation loss may be adjusted from time to time during the term of this agreement when it is determined by the district that the actual loss is greater or less than herein provided.

11. Landowner does hereby grant to the District the right of a designated employee of the District to go upon the real property of Landowner to be irrigated with the water transported under this

Agreement, for the purposes of confirming the place of use of said water being transported under this agreement and the number of irrigable acres to which said water is or can be applied.

12. Any breach of any of the covenants or conditions contained herein shall constitute a material breach of this agreement and a default hereunder. Upon such default occurring, the non-defaulting party may terminate this agreement, upon giving the defaulting party ten (10) days written notice of said default.

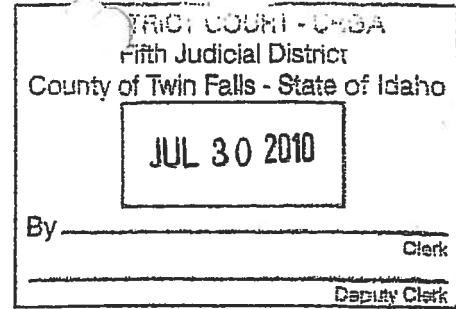
13. This agreement shall be for term of twenty (20) years, beginning the 5th day of December, 1995, and shall remain in full force and effect until the 5th day of December, 2015, unless terminated as herein provided.

14. Landowner agrees that no assignment or other transfer of this agreement may be made except for security purposes. In the event Landowner desires to assign this agreement to a lending institution as security for a farm loan, the District hereby agrees to give its written consent upon ten (10) days written notice of said assignment. In the event said assignment is consented to by the District, Landowner agrees to continue to remain responsible and obligated under all of the terms, covenants and conditions of this agreement, and the assignee shall be bound by the terms hereof.

15. In the event District is required to file suit to collect the sums agreed to be paid by Landowner to District under this agreement, or to remedy any other breach of this agreement or to terminate this agreement, Landowner agrees to pay the District's costs and attorney fees incurred in said proceeding.

16. This document constitutes the full agreement of the parties hereto, and no amendments or changes hereto may be made unless in writing and duly signed by each of the parties hereto.

Exhibit H



IN THE DISTRICT COURT OF THE FIFTH JUDICIAL DISTRICT OF THE
STATE OF IDAHO, IN AND FOR THE COUNTY OF TWIN FALLS

In Re SRBA	)	Subcases 75-10061A, et al. (see attached list)
	)	(Carmen Creek)
	)	
Case No. 39576	)	ORDER GRANTING MOTION TO
	)	WITHDRAW and
	)	ORDER DENYING MOTION FOR
	)	REHEARING

Order Denying Motion to Remand

On June 11, 2010, the Special Master entered an *Order Denying Motion to Remand Subcases* denying the *Motion to Remand Subcases* filed by the "Burns Group", also known as the "South Side Users." The *Motion* to remand was denied because there was no legal basis pursuant to I.C. § 42-1425(2)(a) since none of the current landowners' water rights existed at the time of an alleged transfer of exchange water from the south side of Carmen Creek to the north side in 1948. Frank Parmenter was then the sole owner of the land. "Hence, the Burns Group cannot claim injury from any accomplished transfer that may have occurred before they purchased their land." *Order Denying Motion*, at 2.

Motion to Withdraw

On June 16, 2010, Robert L. Harris, attorney for the Burns Group, filed his *Motion to Withdraw as Attorney of Record* stating it would be best if he were allowed to withdraw and allow the Burns Group to proceed to trial *pro se*.¹

Motion for Rehearing

On June 18, 2010, John and Ruth Burns, members of the Burns Group but representing themselves, filed a *Motion for Rehearing of Order Denying Motion to Remand Subcases*. They

¹ Trial is set to begin October 27, 2010, 9:00 a.m., at the Lemhi County Courthouse, Salmon, Idaho.

argued remand to the IDWR Director is needed to secure compliance with the mandatory requirements of I.C. § 42-1425(2)(a), to "correct errors of fact, omissions, and generalizations prejudicial to the claimants, and secure the claimants' due process entitlements." *Motion for Rehearing*, at 1.

Response and Opposition

On June 25, 2010, the "Carmen Creek Users", also known as the "Fols Group" or "North Side Users", filed their *Response to Motion to Withdraw as Attorney of Record* and their *Opposition to Motion for Rehearing of Order Denying Motion to Remand Subcases*. First, the Carmen Creek Users do not oppose Mr. Harris' *Motion to Withdraw* so long as the Court makes it clear that each of the Burns Group must proceed individually, unless they retain new counsel, and each *pro se* litigant will be held to the same standard as Idaho attorneys.

Regarding the Burns Group's *Motion for Rehearing*, the Carmen Creek Users argued the Burns Group failed to justify their *Motion* and thereby delay the trial schedule. They suggested the Group merely wants the Court to order IDWR to conduct a trial first instead of the SRBA Court.

Response to Opposition

The Burnses, *pro se*, filed their *Response to Opposition to Motion for Rehearing of Order Denying Motion to Remand Subcases* on June 29, 2010, essentially repeating their earlier arguments and urging their due process right to develop a full and complete administrative record.

Hearing

A hearing on the two *Motions* was held at the SRBA Courthouse in Twin Falls, Idaho, on July 1, 2010. Robert L. Harris appeared for the Burns Group, along with John E. Burns, George Matejko, James and Rowena Quinn, Rick and Linda Rice and William W. Clementz; Travis L. Thompson appeared for the Carmen Creek Users, along with Albert C. Fols; Cathleen and James Tippet and Robert D. Mosher appeared *pro se*; David L. Negri appeared for the United States of America, Department of Interior, Bureau of Land Management; and Garrick L. Baxter appeared for IDWR, along with Suzy Cooley-Denney.

Discussion

No one opposed Mr. Harris' *Motion to Withdraw as Attorney of Record* for the Burns Group. Mr. Burns and the other *pro se* parties at the hearing indicated their understanding that

each member of the Burns Group would now represent themselves and all *pro se* litigants will be held to the same standard as an Idaho attorney.

It is apparent from documents the Burnses submitted with their filings, plus arguments made at the hearing, that the Burnses want to argue their case twice – once before the IDWR Director and a second time before the Special Master. A remand of the subcases to the Director would give the Burnses two “bites at the apple” and allow them to gather more information plus better prepare for eventual trial. But there is no doubt that a remand would delay final resolution when nothing in I.C. § 42-1425(2)(a) “mandates” such process.

The statute requires a remand only where there is an objection to an accomplished transfer which “injured a water right existing on the date of the change or constituted an enlargement of the original right.” In these subcases, there is conflicting evidence that can be determined only through a full trial and there is no suggestion that the Director is the proper trier of such qualifying fact.

The Director determined the alleged transfer from one parcel to another occurred in 1948, when both parcels were owned by the same person. If that elemental fact is incorrect, as the Burnses suggest, they will have the opportunity to present such evidence at trial before the Special Master. IDWR will first present the basis of its recommendation at trial and then the Burnses will have a full opportunity to rebut the recommendation. IDWR determined there was a transfer – presumably without injury to other water rights or enlargement of the original right – and now the SRBA Court will examine all the facts and determine ownership of the water rights.

THEREFORE, IT IS ORDERED that:

1. Mr. Harris’ *Motion to Withdraw as Attorney of Record* is **granted**; and
2. The Burnses’ *Motion for Rehearing of Order Denying Motion to Remand Subcases* is **denied**.

DATED July 30, 2010.



TERRENCE A. DOLAN
Special Master
Snake River Basin Adjudication

CARMEN CREEK RIGHTS

Subcase Nos:

75-10061A
75-10061AA
75-10061AC
75-10061AE
75-10061AM
75-10061B
75-10061C
75-10061J
75-10061N
75-10061Q
75-10061R
75-10061T
75-10061X
75-10061Y
75-10061Z
75-10062A
75-10062AA
75-10062AB
75-10062AC
75-10062AL
75-10062C
75-10062H
75-10062L
75-10062P
75-10062R
75-10062V
75-10062W
75-10062X
75-10062Y
75-10136A
75-10136B
75-10137A
75-10137B
75-14025
75-14027
75-14044
75-14046
75-14055
75-14056
75-14057
75-14058
75-14388
75-14441
75-14443
75-14540

CERTIFICATE OF MAILING

I certify that a true and correct copy of the ORDER GRANTING MOTION TO WITHDRAW AND ORDER DENYING MOTION FOR REHEARING was mailed on July 30, 2010, with sufficient first-class postage to the following:

A C & LUELLA PILKERTON
A C PILKERTON
ALBERT C & ALVERA C FOLS
ALBERT C FOLS
ALVERA C FOLS
CARMEN CREEK USERS
CHARLES E & MARY N HARLING
CHARLES E HARLING
JAMES DAN EDGREN
JAMES EDGREN & JENNIFER BRADY
JENNIFER BRADY
LLOYD A & SHERYL L TUTOR
LLOYD A TUTOR
LUELLA PILKERTON
MARY N HARLING
SHERYL L TUTOR
TRACY MASCIA

Represented by:
TRAVIS L THOMPSON
113 MAIN AVE W, STE 303
PO BOX 485
TWIN FALLS, ID 83303-0485
Phone: 208-733-0700

UNITED STATES OF AMERICA
Represented by:
US DEPARTMENT OF JUSTICE
ENVIRONMENT & NATL' RESOURCES
550 WEST FORT STREET, MSC 033
BOISE, ID 83724

GEORGE MATEJKO
BOX 129
CARMEN, ID 83462

ROBERT M & JACQUELINE ERNEST
BOX 132
CARMEN, ID 83462

JAMES R & ROWENA D QUINN
BOX 1473
CARMEN, ID 83462

JOHN E & RUTH C BURNS
BOX 264
CARMEN, ID 83462

ORDER

RICK & LINDA RICE
BOX 285
CARMEN, ID 83462

TERRY J HERSHEY
VERALYN E HERSHEY
PO BOX 121
CARMEN, ID 83462
Phone: 208-756-5202

GEORGE MATEJKO
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JACQUELINE D ERNEST
ROBERT M ERNEST
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CARMEN, ID 83462
Phone: 208-756-3334

JAMES R QUINN
ROWENA D QUINN
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CARMEN, ID 83462
Phone: 208-756-1433

CATHLEEN TIPPETT
JAMES R TIPPETT
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Phone: 208-756-4594

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SUSAN FRANCINE EDMISTON
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WILLIAM W CLEMENTZ
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CARMEN, ID 83462

(Certificate of mailing continued)

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RUTH C BURNS
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SHIRLEY J MATTIS
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RICK & LINDA RICE
RICK RICE
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Phone: 208-756-6204

DANNY E FADNESS
ROBERTA FADNESS
ROBERTA V FADNESS
PO BOX 286
CARMEN, ID 83462
Phone: 208-756-6296

DONNA K JACKSON
THOMAS M JACKSON
PO BOX 47
CARMEN, ID 83462
Phone: 208-756-8047

DIRECTOR OF IDWR
PO BOX 83720
BOISE, ID 83720-0098

JOHNNY J CABIGAS
LANA J GREENWAY
1267 MOBIL AVE
CAMARILLO, CA 93010

PHILLIP G EISENHAUER
SHELLEY L ERWIN
1306 W VISTA VIEW
WASHINGTON, UT 84780
Phone: 435-688-1680

STEVEN K YOWELL
3509 BALLANCE CT
CHESAPEAKE, VA 23321
Phone: 757-686-8299

FRANSICKA MOSHER
ROBERT D MOSHER
54 PARMENTER RD
PO BOX 213
CARMEN, ID 83462-0213
Phone: 208-756-4607

ORDER

Page 2 7/30/10

FILE COPY FOR 00295 Deputy Clerk

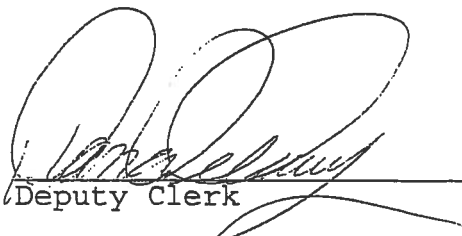
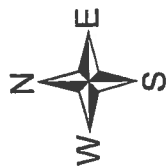


Exhibit I

ISOM WATER RIGHTS



Legend

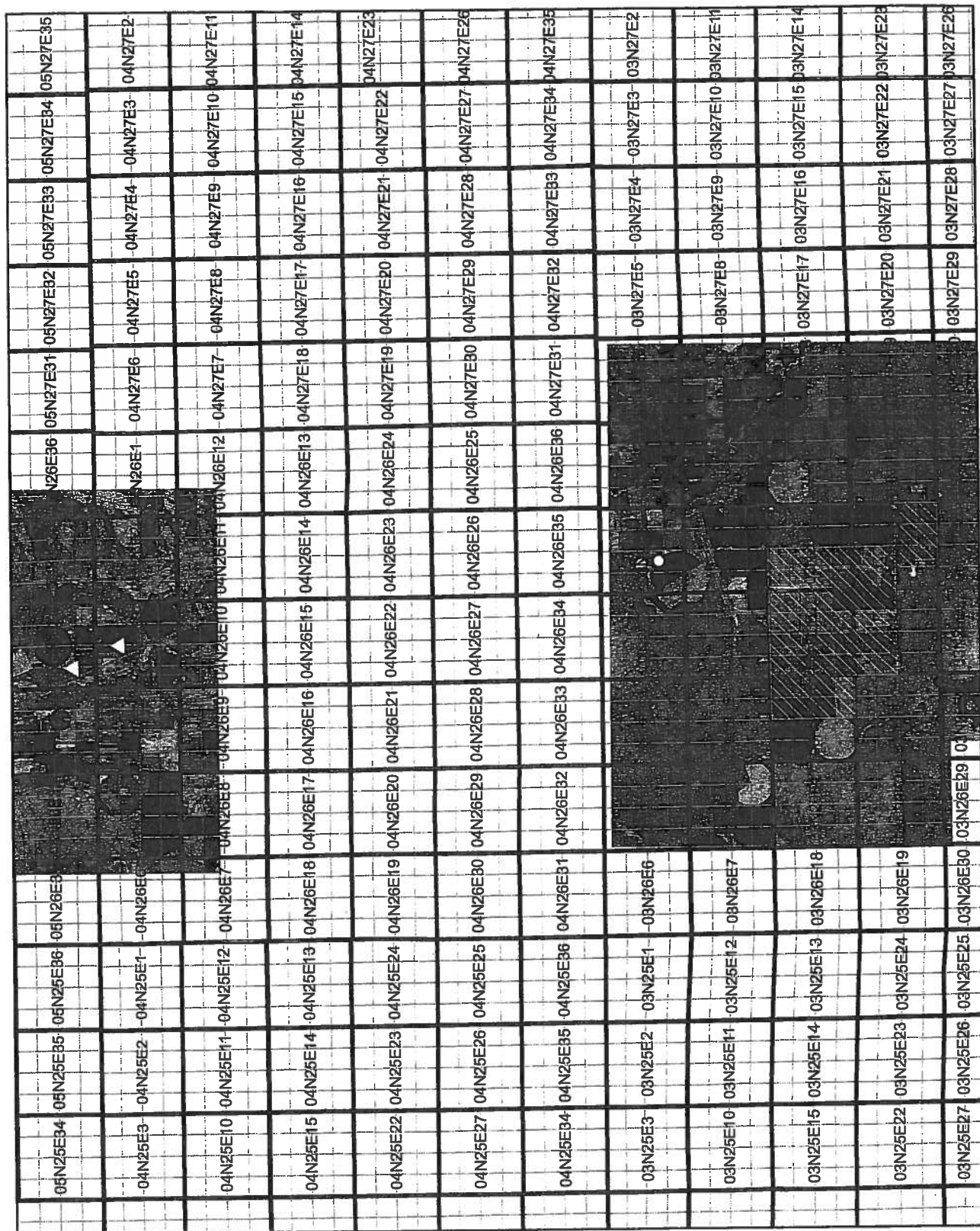
○ Airport Wells

Island Wells

Isom_POU

gcdb_sections

gcdb_qq



2006 NAIP Aerial Photo

5 Miles

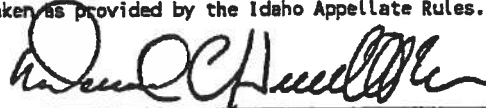
2.5

1.25

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RULE 54(b) CERTIFICATE

With respect to the issues determined by the above judgment or order, it is hereby CERTIFIED, in accordance with Rule 54(b), I.R.C.P., that the court has determined that there is no just reason for delay of the entry of a final judgment and that the court has and does hereby direct that the above judgment or order shall be a final judgment upon which execution may issue and an appeal may be taken as provided by the Idaho Appellate Rules.



DANIEL C. HURLBUTT, JR.
PRESIDING JUDGE
Snake River Basin Adjudication

Exhibit C

STATE OF ILLINOIS
DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL LOCATION		2. WELL IDENTIFICATION	
Township: _____ Range: _____ Section: _____ Subdivision Name: _____ Locality: _____ County: _____ State: _____		Well No.: _____ Date Drilled: _____ Driller's Name: _____ Address: _____ City: _____ State: _____ Zip: _____	
3. WELL CONSTRUCTION		4. WELL LOG	
Depth: _____ Diameter: _____ Casing: _____ Screen: _____ Gravel: _____ Sand: _____ Silt: _____ Clay: _____ Rock: _____ Other: _____		Depth: _____ Diameter: _____ Casing: _____ Screen: _____ Gravel: _____ Sand: _____ Silt: _____ Clay: _____ Rock: _____ Other: _____	
5. COLOCATION OF WELL		6. DRILLER'S CERTIFICATION	
Subdivision Name: _____ Locality: _____ County: _____ State: _____		I hereby certify that the above information is true and correct to the best of my knowledge and belief. Driller's Signature: _____ Date: _____	

RECEIVED

DEPARTMENT OF WATER RESOURCES
BUREAU OF WELL RECORDS

Exhibit D

State of Idaho
Department of Water Resources

WATER RIGHT LICENSE

WATER RIGHT NO. 34-07037

Priority: May 4, 1973

Maximum Diversion Rate:

12.00 CFS

This is to certify, that CRATER FARMS INC

PO BOX 91

ARCO ID 83213

has complied with the terms and conditions of the permit, issued pursuant to Application for Permit dated May 4, 1973; and has submitted Proof of Beneficial Use on March 5, 1985. An examination indicates that the works have a diversion capacity of 24.660 cfs of water from a GROUNDWATER source, and a water right has been established as follows:

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>RATE OF DIVERSION</u>	<u>ANNUAL VOLUME</u>
IRRIGATION	04/15 to 10/15	12.00 CFS	

LOCATION OF POINT(S) OF DIVERSION:

Injection
Rediversion

SENW , Sec. 3, Township 04N, Range 26E
NWSW , Sec. 34, Township 05N, Range 26E
NWNW , Sec. 26, Township 04N, Range 26E
NWNW , Sec. 26, Township 04N, Range 26E
BUTTE County

PLACE OF USE: IRRIGATION

<u>TWN</u>	<u>RGE</u>	<u>SEC</u>	<u>ACRES</u>	<u>ACRES</u>	<u>ACRES</u>	<u>TOTAL</u>
03N	26E	14	NENW 39	NWNW 36	SWNW 40	
			SESW 40	NESW 40	NWSW 40	
			SWSW 40	SESW 40		315
		15	NENE 39	NWNE 40	SWNE 40	
			SENE 40	NENW 39	NWNW 39	
			SWNW 40	SESW 40	NESW 40	
			NWSW 40	SWSW 40	SESW 40	
			NESE 40	NWSE 40	SWSE 40	
			SESE 40			637
		16	NENE 39	NWNE 39	SWNE 40	
			SENE 40	NESE 40	NWSE 40	
			SWSE 39	SESE 39		316
		22	NENE 40	NWNE 40	SWNE 40	
			SENE 40	NENW 40	NWNW 40	
			SWNW 40	SESW 40		320
		23	NENW 40	NWNW 40	SWNW 40	
			SESW 40	NESW 40	SESW 33	
			NESE 39	NWSE 40	SWSE 40	
			SESE 40			392

Total number of acres irrigated: 1980

CONDITIONS/REMARKS:

1. This water right is appurtenant to the described place of use.
2. This right is subject to all prior water rights and may be forfeited by five years of non-use.

State of Idaho
Department of Water Resources**WATER RIGHT LICENSE**

WATER RIGHT NO. 34-07037

CONDITIONS/REMARKS:

3. Modifications to or variance from this license must be made within the limits of Section 42-222, Idaho Code, or the applicable Idaho law.
4. Use of water under this water right will be regulated by the watermaster of State Water District No. 34.
5. This right when combined with all other rights shall provide no more than .02 cfs per acre nor more than 3.5 afa per acre for the lands above.
6. The combined annual volume of water under this right and Right Nos. 34-02459/02460/02461/02462/07138/10925 shall not exceed 6930.0 acre feet.
7. This right is limited to the irrigation of 1664 acres in the place of use described above in a single irrigation season.
8. Measuring devices of a type approved by this Department shall be maintained at the points of diversion, point of rediversion from the Big Lost River into Munsey Ditch and at all points described below where water is again rediverted from ditches or a pond onto irrigated acres.
 - Munsey Ditch - SESE, S2, T3N, R26E (2 points)
 - Munsey Ditch - SWNW, S13, T3N, R26E (2 points)
 - Private Ditch - SENE, S15, T3N, R26E (2 points)
 - Private Ditch - NENE, S22, T3N, R26E
 - Pond at end of Private Ditch - NWSW, S23, T3N, R26E
9. Water is discharged from the wells into Island Ditch which then flows into the East Side Ditch. It is then injected into the Big Lost River and rediverted into the Munsey Ditch. Water can be rediverted from the Munsey Ditch into mainlines or a private ditch and pond for delivery to the acres irrigated.

This license is issued pursuant to the provisions of Section 42-219, Idaho Code.
Witness the seal and signature of the Director, affixed at Boise, this 2ND
day of SEPTEMBER, 1994.

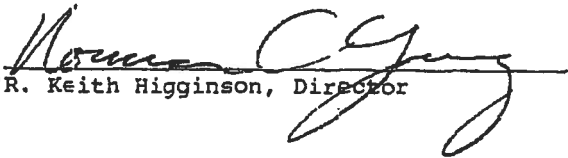

Acting for R. Keith Higginson, Director

Exhibit E

IDAHO DEPARTMENT OF WATER RESOURCES RECOMMENDED
WATER RIGHTS ACQUIRED UNDER STATE LAW

RIGHT NUMBER: 34-2459

NAME AND ADDRESS:

CHARLES B ISOM
3199 W 2200 N
ARCO ID 83213

FERN A ISOM
3199 W 2200 N
ARCO ID 83213

SOURCE:

Source:
GROUND WATER

Tributary:

QUANTITY:

4.170 CFS

833.000 AFY

0.000 AFY

The rights listed below are limited to a total combined diversion rate of 12.5 cfs.
Combined Right Nos.: 34-2459, 34-2460, 34-2461, 34-2462 and 34-10925.

The rights listed below are limited to a total combined diversion rate of 24.5 cfs.
Combined Right Nos.: 34-2459, 34-2460, 34-2461, 34-2462, 34-10925 and 34-7037.

The rights listed below are limited to a total combined annual diversion volume of
8441.5 af. Combined Right Nos.: 34-2459, 34-2460, 34-2461, 34-2462, 34-7037,
34-7138 and 34-10925.

~~USE OF THIS RIGHT WITH RIGHT NOS. 34-02460, 34-02461, 34-02462 AND
34-10925 IS LIMITED TO A TOTAL COMBINED DIVERSION RATE OF 12.50 CFS.~~

~~USE OF THIS RIGHT WITH THE RIGHTS LISTED BELOW IS LIMITED TO A TOTAL
COMBINED ANNUAL DIVERSION VOLUME OF 8441.5 AF.~~

~~COMBINED RIGHT NOS.: 34-07138, 34-02460, 34-02461, 34-02462, 34-07037 AND
34-10925.~~

PRIORITY DATE: 04/19/1965

Pursuant to a call, in times of scarcity, the diversion of water under this right from the
two wells in T05N R26E S34 SENWSW and T04N R26E S3 NESENW has a priority
date of May 18, 1982.

POINT OF DIVERSION:

T03N R26E S2 SWSENW
Within BUTTE County

T03N R26E S2 SENESW
Within BUTTE County

T04N R26E S3 NESENW
Within BUTTE County

T04N R26E S26 NWNWNW Injection
Within BUTTE County

T04N R26E S26 NWNWNW Rediversion
Within BUTTE County

T05N R26E S34 SENWSW
Within BUTTE County

Groundwater diverted from the points of diversion in T05N R26E S34 SENWSW and
T04N R26E S3 NESENW is comingled with the Island Canal then injected into the Big
Lost River at the point of injection and rediverted into the Munsey Canal at the point of
rediversion.

IDAHO DEPARTMENT OF WATER RESOURCES RECOMMENDED
WATER RIGHTS ACQUIRED UNDER STATE LAW

PURPOSE AND PERIOD OF USE:	Purpose of use	Period of use:	Quantity:
	IRRIGATION	04/01 11/01	4.170 CFS <u>833.00 AFY</u>

PLACE OF USE: IRRIGATION within BUTTE County

T03N R26E S14 NENW 39.0
 T03N R26E S14 NWNW 36.0
 T03N R26E S14 SWNW 40.0
 T03N R26E S14 SENW 40.0
 T03N R26E S14 NESW 40.0
 T03N R26E S14 NWSW 40.0
 T03N R26E S14 SWSW 40.0
 T03N R26E S14 SESW 40.0
 T03N R26E S15 NENE 39.0
 T03N R26E S15 NWNE 40.0
 T03N R26E S15 SWNE 40.0
 T03N R26E S15 SENE 40.0
 T03N R26E S15 NENW 39.0
 T03N R26E S15 NWNW 39.0
 T03N R26E S15 SWNW 40.0
 T03N R26E S15 SENW 40.0
 T03N R26E S15 NESW 40.0
 T03N R26E S15 NWSW 40.0
 T03N R26E S15 SWSW 40.0
 T03N R26E S15 SESW 40.0
 T03N R26E S15 NESE 40.0
 T03N R26E S15 NWSE 40.0
 T03N R26E S15 SWSE 40.0
 T03N R26E S15 SESE 40.0
 T03N R26E S16 NENE 39.0
 T03N R26E S16 NWNE 39.0
 T03N R26E S16 SWNE 40.0
 T03N R26E S16 SENE 40.0
 T03N R26E S16 NESE 40.0
 T03N R26E S16 NWSE 40.0
 T03N R26E S16 SWSE 39.0
 T03N R26E S16 SESE 39.0
 T03N R26E S22 NENE 40.0
 T03N R26E S22 NWNE 40.0
 T03N R26E S22 SWNE 40.0
 T03N R26E S22 SENE 40.0
 T03N R26E S22 NENW 40.0
 T03N R26E S22 NWNW 40.0
 T03N R26E S22 SWNW 40.0
 T03N R26E S22 SENW 40.0

IDAHO DEPARTMENT OF WATER RESOURCES RECOMMENDED
WATER RIGHTS ACQUIRED UNDER STATE LAW

T03N R26E S23 NENW 40.0
T03N R26E S23 NWNW 40.0
T03N R26E S23 SWNW 40.0
T03N R26E S23 SENW 40.0
T03N R26E S23 NESW 40.0
T03N R26E S23 SESW 33.0
T03N R26E S23 NESE 39.0
T03N R26E S23 NWSE 40.0
T03N R26E S23 SWSE 40.0
T03N R26E S23 SESE 40.0

1980 ACRES TOTAL

This right is limited to the irrigation of 238 acres within the place of use described above in a single irrigation season.

The rights listed below are limited to the irrigation of a combined total of 714 acres in a single irrigation season. Combined Right Nos.: 34-2459, 34-2460, 34-2461 and 34-2462.

The rights listed below are limited to the irrigation of a combined total of 1740 acres in a single irrigation season. Combined Right Nos.: 34-2459, 34-2460, 34-2461, 34-2462 and 34-10925.

The rights listed below are limited to the irrigation of a combined total of 1664 acres in a single irrigation season. Combined Right Nos.: 34-2459, 34-2460, 34-2461, 34-2462, 34-7037 and 34-7138.

The rights listed below are limited to the irrigation of a combined total of 1980 acres in a single irrigation season. Combined Right Nos.: 34-2459, 34-2460, 34-2461, 34-2462, 34-7037, 34-7138 and 34-10925.

~~USE OF THIS RIGHT WITH RIGHT NOS.: 34-02460, 34-02461, 34-02462 AND 34-07037 IS LIMITED TO THE IRRIGATION OF A COMBINED TOTAL OF 1664 ACRES IN A SINGLE IRRIGATION SEASON.~~

~~USE OF THIS RIGHT WITH THE RIGHTS LISTED BELOW IS LIMITED TO THE IRRIGATION OF A COMBINED TOTAL OF 1980 ACRES IN A SINGLE IRRIGATION SEASON. COMBINED RIGHT NOS.: 34-07138, 34-02460, 34-02461, 34-02462, 34-07037 AND 34-10925.~~

~~THIS RIGHT IS LIMITED TO THE IRRIGATION OF 238 ACRES WITHIN THE PLACE OF USE DESCRIBED ABOVE IN A SINGLE IRRIGATION SEASON.~~

OTHER PROVISIONS NECESSARY FOR DEFINITION OR ADMINISTRATION OF THIS WATER RIGHT:

This partial decree is subject to such general provisions necessary for the definition of the rights or for the efficient administration of the water rights as may be ultimately determined by the Court at a point in time no later than the entry of a final unified decree. Section 42-1412(6), Idaho Code.

~~THIS PARTIAL DECREE IS SUBJECT TO SUCH GENERAL PROVISIONS NECESSARY FOR THE DEFINITION OF THE RIGHTS OR FOR THE EFFICIENT ADMINISTRATION OF THE WATER RIGHTS AS MAY BE ULTIMATELY DETERMINED BY THE COURT AT A POINT IN TIME NO LATER THAN THE ENTRY OF A FINAL UNIFIED DECREE. SECTION 42-1412(6), IDAHO CODE.~~

IDAHO DEPARTMENT OF WATER RESOURCES RECOMMENDED
WATER RIGHTS ACQUIRED UNDER STATE LAW

EXPLANATORY MATERIAL: BASIS OF CLAIM - License ~~BASIS OF CLAIM - Decreed~~

Use of water under this right will be regulated by a watermaster with responsibility for the distribution of water among appropriators within a water district. At the time of this approval, this water right is within State Water District No. 34, Big Lost River. The right holder shall maintain a measuring device and lockable controlling works of a type approved by the Department in a manner that will provide the watermaster suitable control of the diversion(s).

Right includes accomplished change in place of use pursuant to Section 42-1425, Idaho Code.

Right includes accomplished change in point of diversion pursuant to Section 42-1425, Idaho Code.

Right No. 34-10925 is an enlargement of this right pursuant to Section 42-1426, Idaho Code.

~~RIGHT NOS. 34-02460, 34-02461, 34-02462 AND 34-10925 ARE ALSO DIVERTED THROUGH POINT OF DIVERSION DESCRIBED ABOVE.~~

~~RIGHT NO. 34-10925 IS AN ENLARGEMENT OF THIS RIGHT PURSUANT TO SECTION 42-1426, IDAHO CODE.~~

~~RIGHT INCLUDES ACCOMPLISHED CHANGE IN PLACE OF USE PURSUANT TO SECTION 42-1425, IDAHO CODE.~~

Robert L. Harris, Esq. (ISB #7018)

rharris@holdenlegal.com

HOLDEN, KIDWELL, HAHN & CRAPO, P.L.L.C.

1000 Riverwalk Drive, Suite 200

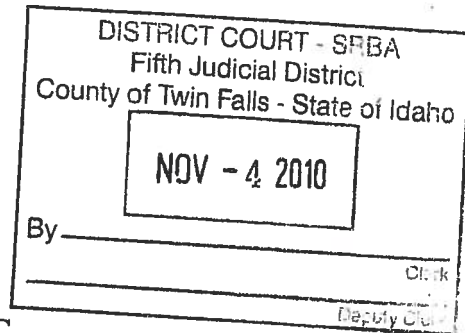
Idaho Falls, Idaho 83402

P.O. Box 50130

Idaho Falls, Idaho 83405-0130

Telephone: (208) 523-0620

Facsimile: (208) 523-9518



RECEIVED
JUL 05 2011
DEPARTMENT OF
WATER RESOURCES

IN THE DISTRICT COURT OF THE FIFTH JUDICIAL DISTRICT OF THE
STATE OF IDAHO, IN AND FOR THE COUNTY OF TWIN FALLS

In Re SRBA

Case No. 39576

Subcase Nos.: 34-2459, 34-2460, 34-2461,
34-2462, and 34-10925

**SECOND AFFIDAVIT OF ATTORNEY
ROBERT L. HARRIS**

STATE OF IDAHO)
) ss.
County of Bonneville)

I, Robert L. Harris, do solemnly swear (or affirm) that the testimony given in this sworn statement is the truth, the whole truth, and nothing but the truth, that it is made on my personal knowledge, and that I would so testify in open court if called upon to do so.

And being so sworn I depose and say:

1. I am an attorney licensed to practice law in the state of Idaho. I am a member of the firm of HOLDEN, KIDWELL, HAHN & CRAPO, P.L.L.C..

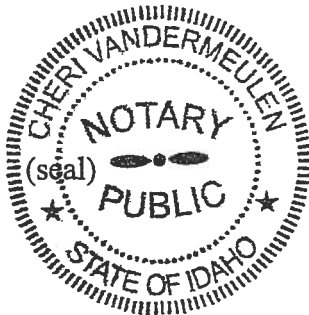
2. Attached hereto are true and correct copies of the following documents referenced in the Memorandum in Support of Motion for Summary Judgment:

- a. Exhibit A: Amended Claim for Water Right No. 34-2459 obtained by Affiant from microfiche stored and maintained at the Eastern Region Office of IDWR. The reference numbers for these documents are on the top of each page, listing numbers 208 to 212.
- b. Exhibit B: Order Amending Irrigation Period of Use Element in Partial Decree and Incorporating Into Partial Decree an Express Statement Regarding General Provisions, *Nunc Pro Tunc*, for Water Right No. 34-02459, dated December 14, 2001.
- c. Exhibit C: Well Driller's Report for one of the Island Wells, as contained in the water rights backfile obtained from the IDWR website for Water Right No. 34-7037.
- d. Exhibit D: Water Right License for Water Right No. 34-7037 obtained from the IDWR website.
- e. Exhibit E: Amended Director's Report for Water Right No. 34-2459.
- f. Exhibit F: Water Right License for Water Right No. 34-7138, dated July 15, 1994.
- g. Exhibit G: Water Pumping and Transport Agreement between Crater Farms and Willard Bell, dated December 5, 1995.
- h. Exhibit H: *Order Granting Motion to Withdraw and Order Denying Motion for Hearing* in Subcase Nos. 75-10061A, et al., dated July 30, 2010.
- i. Exhibit I: GIS Map prepared by Robert L. Harris.

DATED this 3rd day of November, 2010.

Robert L. Harris
Robert L. Harris, Esq.
HOLDEN, KIDWELL, HAHN & CRAPO, P.L.L.C.

SUBSCRIBED AND SWORN TO before me this 3rd day of November, 2010.



Cheri Vandermeulen
Notary Public for Idaho
Residing at Idaho Falls, Idaho
My Commission Expires: July 7, 2015

CERTIFICATE OF MAILING

I certify that on this 3rd day of November, 2010, I mailed the original and copies of this form, including all attachments, to the following persons by mailing the original and/or copies, postage prepaid and addressed as follows:

1. Original to:

Clerk of the District Court
Snake River Basin Adjudication
253 Third Avenue North
P.O. Box 2707
Twin Falls, ID 83303-2707

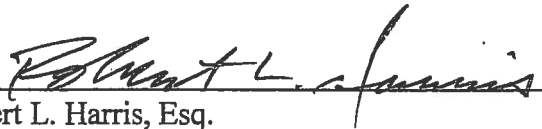
2. Copies to:

Paul L. Arrington
Barker, Rosholt & Simpson, LLP
PO Box 485
Twin Falls, ID 83303

(☒) First Class Mail
(☐) Hand Delivery
(☐) Facsimile
(☐) Overnight Mail
(☒) Email

W. Kent Fletcher
Fletcher Law Office
PO Box 248
Burley, ID 83318

(☒) First Class Mail
(☐) Hand Delivery
(☐) Facsimile
(☐) Overnight Mail
(☒) Email


Robert L. Harris, Esq.
HOLDEN, KIDWELL, HAHN & CRAPO, PLLC

G:\WPDATA\RLH\7151 SORESENSEN, MITCH\07 SRBA P.D., Isom\MSJ, Aff.RLH.wpd:cdv

Exhibit A

Form No. 42-1409(2) a 1/88

IN THE DISTRICT COURT OF THE FIFTH JUDICIAL DISTRICT OF THE
STATE OF IDAHO, IN AND FOR THE COUNTY OF TWIN FALLS

IN RE THE GENERAL ADJUDICATION
OF RIGHTS TO THE USE OF WATER FROM
THE SNAKE RIVER BASIN WATER SYSTEM

CIVIL CASE NUMBER: 39576
Ident. Number: A34-02459
Date Received
Receipt Number

AMENDED
NOTICE OF CLAIM
TO A
WATER RIGHT
ACQUIRED UNDER STATE LAW

RECEIVED
NOV 14 1990

Department of Water Resources
Eastern District Office

1. Name of Claimant(s) Crater Farms, Inc. Phone (208) 527-4903
Mailing Address P.O. Box 91, Arco, Idaho Zip 83213
2. Date of Priority (Only (1) per claim) April 12, 1961
3. Source of water supply (a) Groundwater
which is tributary to (b) _____
4. a. Location of existing
point of diversion is: Township 3N Range 26E Section 2
1/4 of SE 1/4 of NM, Govt. Lot B.M., County of Butte
Additional points of diversion if any: T.3N. R.26E. S.2. NE1/4 SW1/4
T.3N. R.26E. S.3. NE1/4 SE1/4
b. If instream flow, beginning point of claimed instream flow is:
Township _____ Range _____ Section _____ 1/4 of _____ 1/4 of _____ 1/4
Govt. Lot _____ B.M., County of _____
ending point is: Township _____ Range _____ Section _____ 1/4 of _____
1/4 of 1/4 Govt. Lot B.M., County of
5. Description of existing diversion works (Dams, Reservoirs, Ditches,
Wells, Pumps, Pipelines, Headgates, Etc) including the dates of any
changes or enlargements in use, the dimensions of the diversion works as
constructed and as enlarged and the depth of each well.
Wells open discharge to private ditch--pump mainline to sprinklers.

6. Water is claimed for the following purposes:

(Both dates are inclusive) (cfs) (acre feet)

For Irrigation purposes from 04/01 to 11/01 amount 4.17 or

For _____ purposes from _____ to _____ amount _____ or _____

For _____ purposes from _____ to _____ amount _____ or _____

For _____ purposes from _____ to _____ amount _____ or _____

7. Total quantity claimed (a) 4.17 (cfs) and/or (b) (acre feet)

8. Total consumptive use claimed is 724 acre feet per annum.

9. Non-irrigation uses; describe fully (eg. Domestic; Give number of households served; Stockwater; Type and number of livestock Etc.)

10. Description of place of use:

a. If water is for irrigation, indicate acreage in each subdivision in the tabulation below.

b. If water is used for other purposes, place a symbol of use (example: D for Domestic) in the corresponding place of use below. See instruction for standard symbols.

[illegible]

Total number of acres irrigated 1969

11. In which county(ies) are lands listed above as place of use located?
Butte

12. Do you own the property listed above as place of use? Yes X No
If your answer is No, describe in Remarks below the authority you have
to claim this water right.

13. Describe any other water rights used at the same place and for the same purposes as described above.

34-2460, 34-2461, 34-2462, 34-7037, 34-7138 and expansion of groundwater rights. _____ or None ()

14. Remarks:

Rediversion from Munsay Ditch: NW SE SE. (2 points)
Section 2: SW SW NW. (2 points) Section 13: SE SE NE Section 15:
SE NE NE Section 22: SE NW SW Section 23: Township 3 North, Range
26 East.

Last Name Crater Farms, Inc. Ident. Number A34-02459

0000 0000 02 10

15. Basis of Claim (Check one) Beneficial Use _____ Posted Notice _____
 Permit _____ Decree _____ License X

If applicable provide IDWR Water Right Number 32325
 Court _____ Case Number _____ Decree Date _____
 Plaintiff vs Defendant _____

16. Signature(s) _____

(a.) By signing below, I/We acknowledge that I/We have received, read, and understand the form entitled "How you will receive notice in the Snake River Basin Adjudication." (b.) I/We do not X wish to receive and pay a small annual fee for monthly copies of the docket sheet.

Number of attachments 2

For Individuals: I do solemnly swear or affirm that the statements contained in the foregoing document are true and correct.

Signature of Claimant(s) _____ Date _____

For Organizations: I do solemnly swear or affirm that I am President of Crater Farms, Inc. that I have signed the Title _____ Organization _____

foregoing document in the space below as President Title _____ of Crater Farms, Inc. and that the statements contained in the Organization _____

foregoing document are true and correct.

Signature of Authorized Agent Willard O. Bell
 WILLARD O. BELL

Title and Organization President, Crater Farms, Inc. Date _____

State of Idaho/or _____ SS.

County of Twin Falls

Subscribed and sworn (or affirmed) before me this 30th day of October, 1990.

Notary Public [Signature]
 Residing at Full
 My Commission Expires 1991

17. Notice of Appearance:

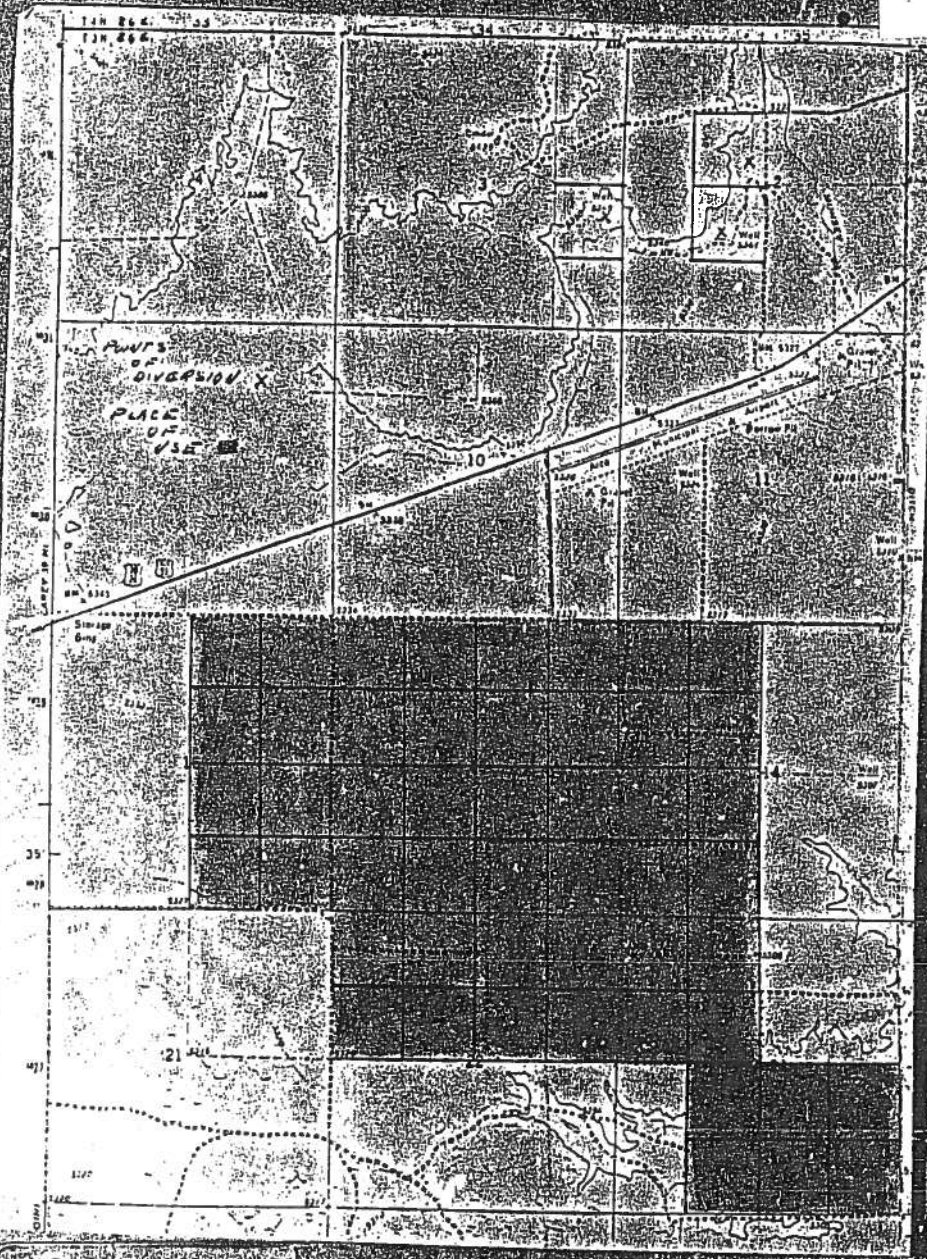
Notice is hereby given that I, Kent W. Foster will be acting as attorney at law on behalf of the claimant signing above, and that all notices required by law to be mailed by the director to the claimant signing above should be mailed to me at the address listed below.

Signature [Signature]
 Address P.O. Box 50130, Idaho Falls, Idaho 83405
 Date 11/6/90

Last Name Crater Farms, Inc. Agent Number AT-02159

000000 0000 0000 0000

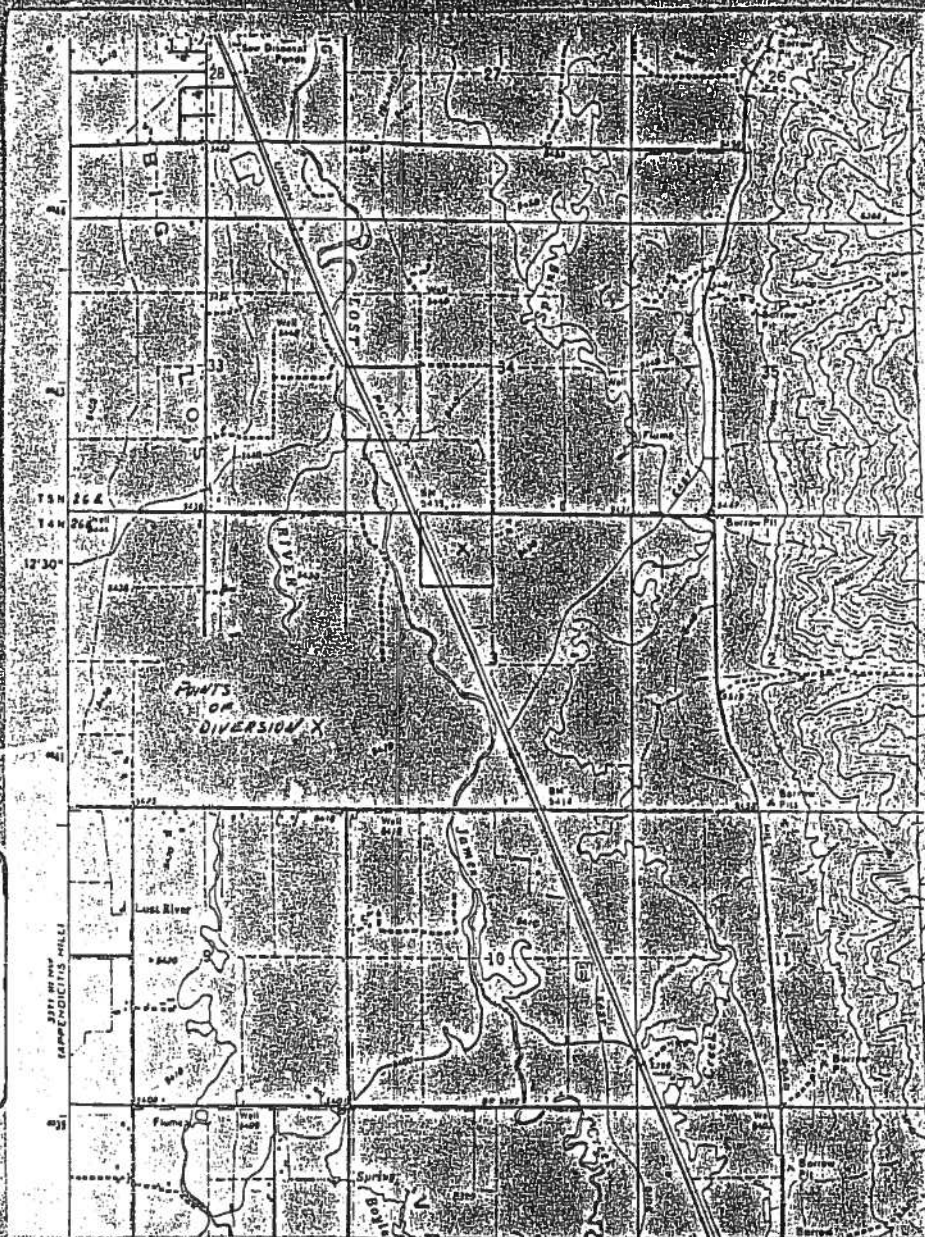
*John in
Munsey*



25X

32X

0000 0000 02 12



25 x 10

32 x 10

Exhibit B

IN THE DISTRICT COURT OF THE FIFTH JUDICIAL DISTRICT OF THE
STATE OF IDAHO, IN AND FOR THE COUNTY OF TWIN FALLS

In Re SRBA)

Water Right 34-02459

Case No. 39576)

ORDER AMENDING IRRIGATION PERIOD OF USE ELEMENT
IN PARTIAL DECREE AND INCORPORATING INTO PARTIAL
DECREE AN EXPRESS STATEMENT REGARDING GENERAL
PROVISIONS, *NUNC PRO TUNC*

A *Partial Decree* was entered for the above-captioned irrigation water right on December 16, 1997. The period of use element was decreed as "irrigation season." In *A&B Irrigation Dist. v. Idaho Conservation League*, 131 Idaho 411, 423, 958 P.2d 568, 580 (1998), the Idaho Supreme Court remanded with the directive to include specific dates for the period of use element. Following remand, IDWR filed a *Supplemental Director's Report, Reporting Area 1, IDWR Basin 34, Regarding Revision of Period of use (For Irrigation Water Uses) and Conjunctive Management General Provisions*, which included an irrigation period of use recommendation for this water right. No objections were filed to this recommendation and the time period for filing objections has now expired.

THEREFORE, IT IS ORDERED that the period of use for the irrigation element of the above-captioned water right is hereby amended and decreed as:

PERIOD OF USE: 04-01 11-01

IT IS FURTHER ORDERED that the *Partial Decree* for the above-captioned water right is hereby amended and decreed to contain the following:

This partial decree is subject to such general provisions necessary for the definition of the rights or for the efficient administration of the water rights as may be ultimately determined by the court at a point in time no later than the entry of a final unified decree. I.C. section 42-1412(6).

This order is being entered *nunc pro tunc* as of the date the *Partial Decree* was issued and is not intended to modify any subsequent administrative changes for the water right, if any, which occurred following entry of the *Partial Decree*.

RULE 54(b) CERTIFICATE

With respect to the issues determined by the above judgment or order, it is hereby CERTIFIED, in accordance with Rule 54(b), I.R.C.P., that the court has determined that there is no just reason for delay of the entry of a final judgment and that the court has and does hereby direct that the above judgment or order shall be a final judgment upon which execution may issue and an appeal may be taken as provided by the Idaho Appellate Rules.

Dated December 14, 2001

Roger Burdick
ROGER BURDICK
Presiding Judge
Snake River Basin Adjudication

IN THE DISTRICT COURT OF THE FIFTH JUDICIAL DISTRICT OF THE
STATE OF IDAHO, IN AND FOR THE COUNTY OF TWIN FALLS

In Re SRBA)
Case No. 39576)

PARTIAL DECREE PURSUANT TO
I.R.C.P. 54(b) FOR
Water Right 34-02459

1997 DEC 16 AM 11:07

DISTRICT COURT - SRBA
TWIN FALLS CO., IDAHO

FILED _____

NAME & ADDRESS: CRATER FARMS INC
PO BOX 91
ARCO ID 83213

SOURCE: GROUNDWATER

QUANTITY: 4.17 CFS

USE OF THIS RIGHT WITH RIGHT NOS. 34-02460, 34-02461, 34-02462
AND 34-10925 IS LIMITED TO A TOTAL COMBINED DIVERSION RATE OF
12.50 CFS.

USE OF THIS RIGHT WITH THE RIGHTS LISTED BELOW IS LIMITED TO A
TOTAL COMBINED ANNUAL DIVERSION VOLUME OF 8441.5 AF.
COMBINED RIGHT NOS.: 34-07138, 34-02460, 34-02461, 34-02462,
34-07037 AND 34-10925.

PRIORITY DATE: 04/19/1965

POINT OF DIVERSION: T03N R26E S02

SWSNW
SENESW

Within BUTTE County

PURPOSE AND
PERIOD OF USE:

PURPOSE OF USE
IRRIGATION

PERIOD OF USE
Irrigation Season

QUANTITY
4.17 CFS

PLACE OF USE:

IRRIGATION
T03N R26E S14

Within BUTTE County

S15

NENW 39
NESW 40
NENE 39
NENW 39
NESW 40
NESE 40
NENE 39
NESE 40
NENE 40
NENW 40
NENW 40
NESW 40
SWSE 40

NWNW 36
NWSW 40
NWNE 40
NWNW 39
NWSW 40
NWSE 40
NWNE 39
NWSE 40
NWNE 40
NWNW 40
NWNW 40
SESW 33
SESE 40

SWNW 40
SWSW 40
SWNE 40
SWNW 40
SWSW 40
SWSE 40
SWNE 40
SWSE 39
SWNE 40
SWNW 40
SWNW 40
NESE 39

SESW 40
SENE 40
SESW 40
SESE 40
SESE 40
SESE 40
SESE 39
SENE 40
SENE 40
SESW 40
SESW 40
NWSE 40

1980 ACRES TOTAL

USE OF THIS RIGHT WITH RIGHT NOS.: 34-02460, 34-02461,
34-02462 AND 34-07037 IS LIMITED TO THE IRRIGATION OF A COMBINED
TOTAL OF 1664 ACRES IN A SINGLE IRRIGATION SEASON.

USE OF THIS RIGHT WITH THE RIGHTS LISTED BELOW IS LIMITED TO
THE IRRIGATION OF A COMBINED TOTAL OF 1980 ACRES IN A SINGLE
IRRIGATION SEASON. COMBINED RIGHT NOS.: 34-07138, 34-02460,
34-02461, 34-02462, 34-07037 AND 34-10925.

THIS RIGHT IS LIMITED TO THE IRRIGATION OF 238 ACRES WITHIN
THE PLACE OF USE DESCRIBED ABOVE IN A SINGLE IRRIGATION SEASON.



ERO Resources Corp.
3314 Grace Street
Boise, ID 83703-5836
(208) 373-7983
Fax: 373-7985
Denver • Boise • Durango
www.eroresources.com
eroboise@eroresources.com

RECEIVED
JUL 05 2011
DEPARTMENT OF
WATER RESOURCES

February 12, 2009

Mr. Ernest Carlsen
Idaho Department of Water Resources
900 N. Skyline Drive, Suite A
Idaho Falls, ID 83402-1718

Re: Charles B Isom's Water Rights: 34-2459, 34-2460, 34-2461, 34-2462 and
34-10925

Dear Ernie:

This letter is a follow up to our telephone conversations regarding the use of the four wells used to supply Mr. Isom's above referenced water rights. For convenience the older wells near the airport will be referred to as the **airport wells** and the newer wells that pump into the Island Canal will be referred to as the **island wells**.

As of 2007 the airport wells were equipped with a 125 hp pump and a 200 hp pump. The first record of the 200 hp pump being in place is 2001 when a new pole number was assigned. The new pole number could mean the electrical service was changed, perhaps to supply power to a larger pump. The original horsepower prior to 2001 has not been confirmed.

As of 2007 the island wells were equipped with a 200 hp pump and a 250 hp pump. There is no indication the horsepower of either of these wells has been changed.

Power records for 1984 through 1987 when Bells owned the property were obtained and power records for 1998 through 2007 when Isom's owned the property were obtained. Obtaining the old records is more difficult because of the effort required by the Lost River Electric staff. In retrospect, the years 1984 through 1987 were not particularly good years for analysis because of the availability of surface water. The records indicate no ground water was pumped in 1984 and only a small amount was pumped in 1986.

Figure 1 is a monthly comparison of the airport wells and island wells use based upon the average monthly power consumption for the period 1984 through 1987. The figure shows the continuing use of the island wells later into the season and a higher rate of use for the airport wells earlier in the season. Of the period 1984 through 1987, the last year, 1987, showed the largest use of ground water. Figure 2 is a comparison of the average power use by month comparing the airport wells to the island wells. The peak use of the airport wells occurred in May and the peak use of the island wells was in July and August. The island wells continued to be used later in the season than the airport wells, apparently as the airport well supply diminished.

Figure 3 is the monthly comparison of the airport wells and island wells based upon the average monthly power consumption for the period 1998 through 2007. The figure shows the airport well use peaks in July but the island well peak is not until September after the airport well use has reduced significantly. Figure 3 shows notably higher

Mr. Ernest Carlsen
February 12, 2009

Page 2

power consumption than either Figures 1 or 2. Information is not currently available to know if that increased power use translates into more water being diverted or increased pumping levels and the increased energy required to maintain the same water supply. Likewise, the power use comparison between the sets of wells is instructive to show when each set is used most heavily during the year but the comparison of the values between the 2 sets is not necessarily a comparison of the relative amount of water pumped from each set of wells.

All 3 figures show the use of the island wells later in the season than the airport wells indicating the airport well supply is likely diminished toward the end of the season. Even though both sets of wells are used to meet the typical July peak water requirement, the two sets of wells do not peak simultaneously except in Figure 1 and I am not sure the Figure 1 averages are representative because of the short record and some years without any or only limited ground water use.

I hope this information helps resolve the issue of the island wells be alternate points of diversion for the airport wells. If you have any questions or need additional information, please let me know.

Yours truly,



David B. Shaw

Enc.

cc: Charles B. Isom

Figure 1

Airport Wells Diversions Compared to Island Wells Diversions 1984 - 1987

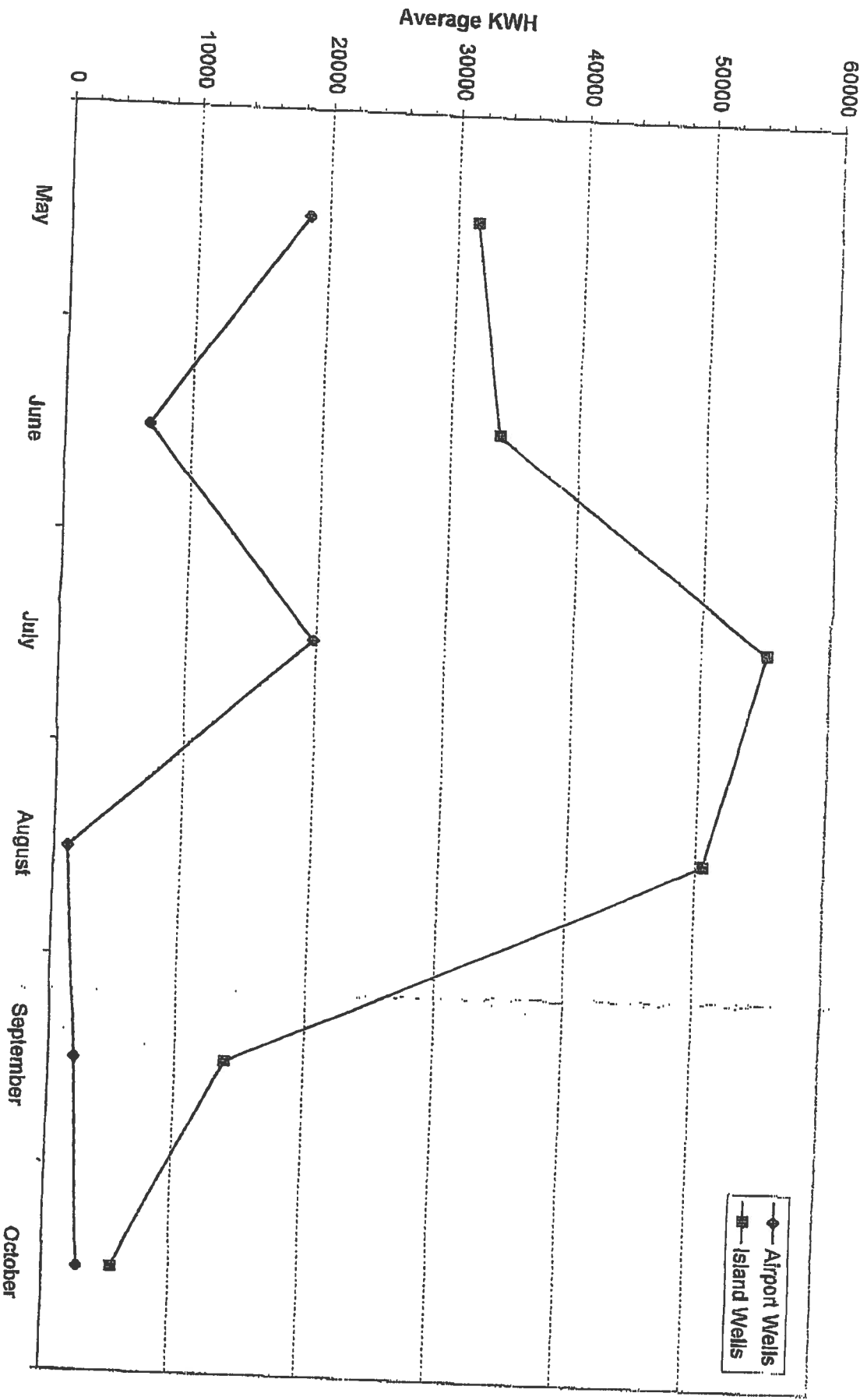


Figure 2

Airport Wells Diversions Compared to Island Wells Diversions 1987

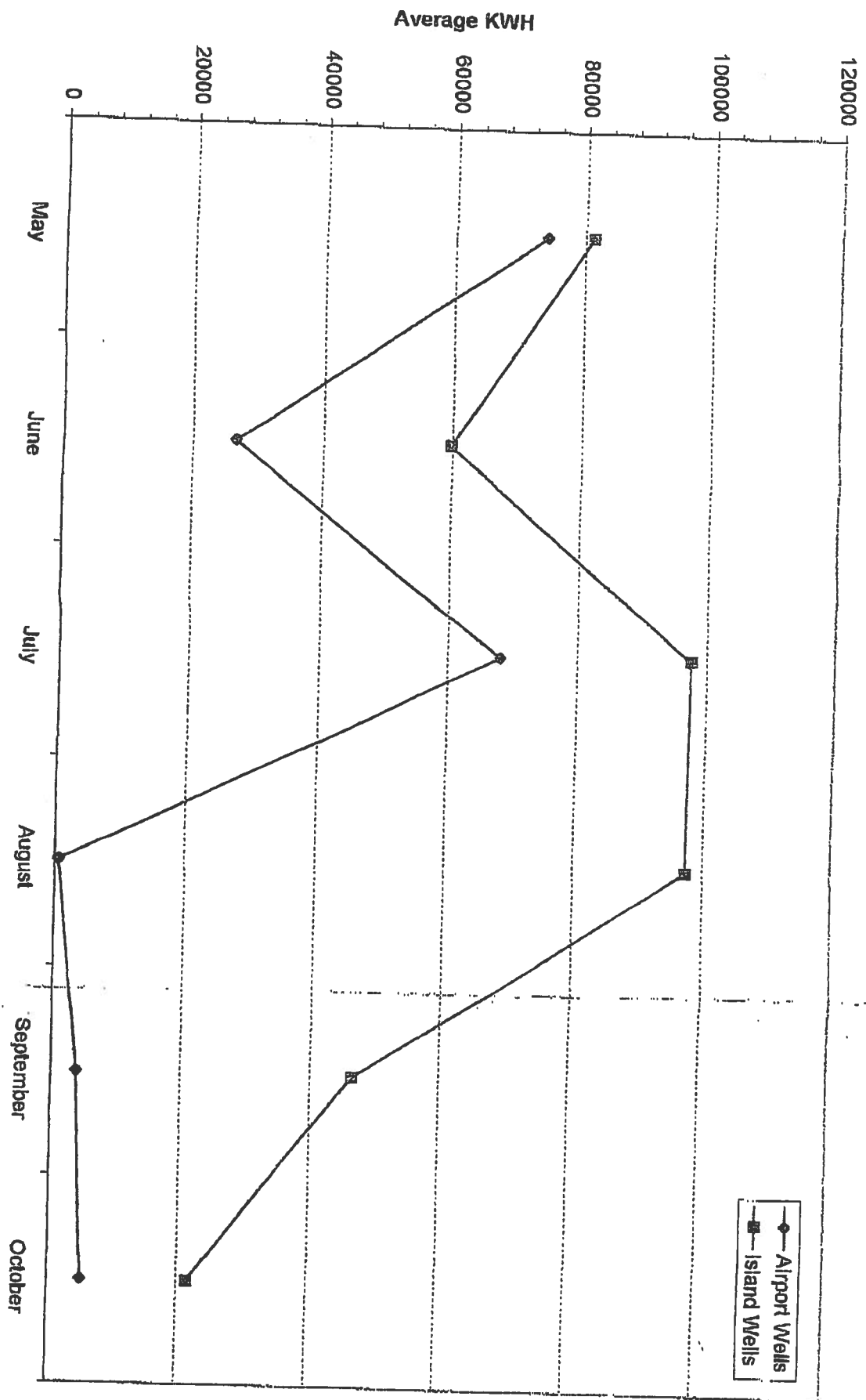
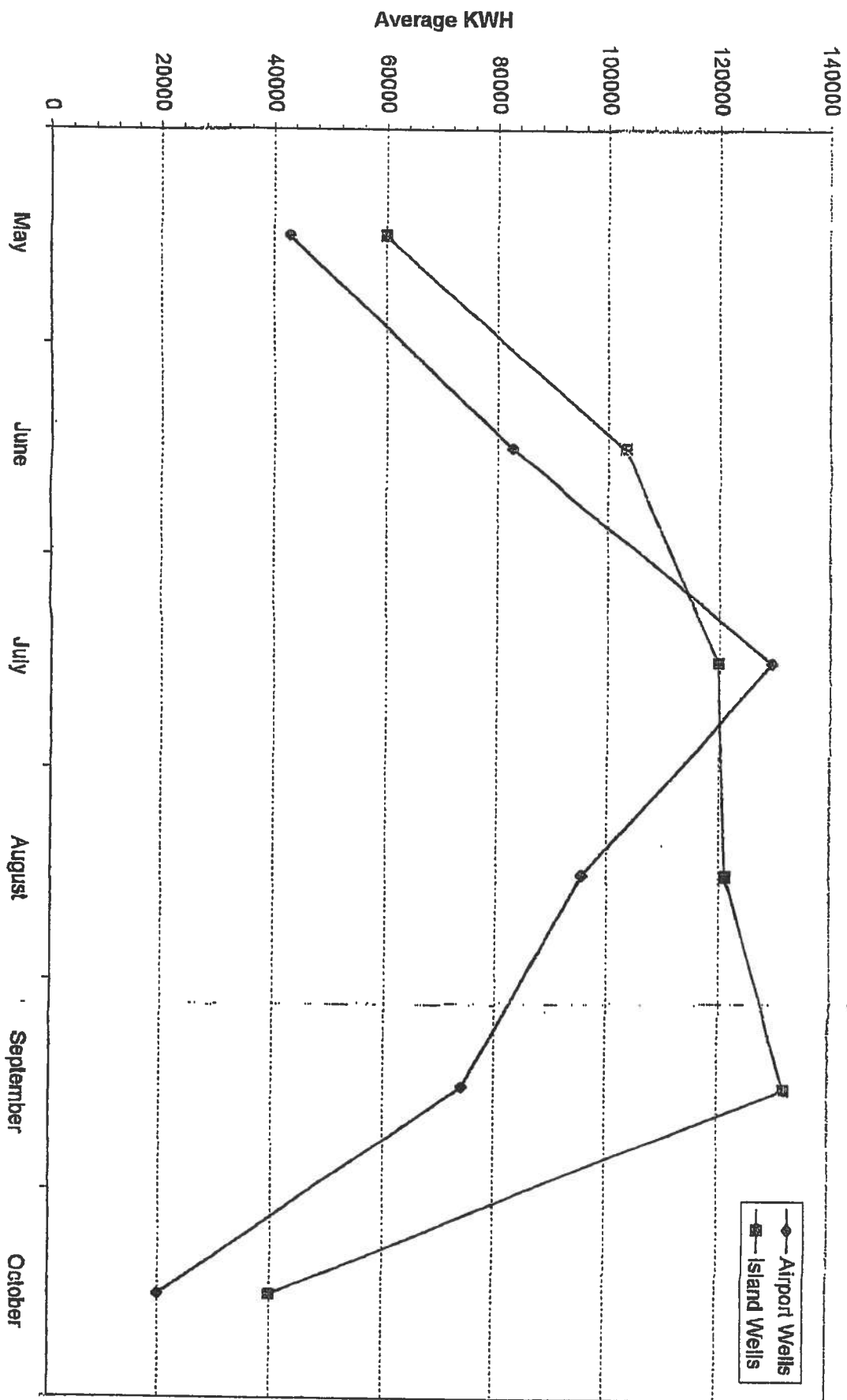


Figure 3

Airport Wells Diversions Compared to Island Wells Diversions 1998 - 2007





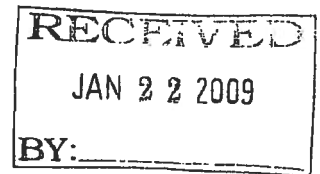
P. O. Box 420
305 Pine Street
Mackay, Idaho 83251-0420
Telephone (208) 588-3311
FAX (208) 588-3038

Office@LRECOOP.com • www.LRECOOP.com

Lost River Electric Cooperative, Inc.

January 20, 2009

David Shaw
3314 Grace Street
Boise, ID 83703



Dear Mr. Shaw,

Here is the information that you requested from our office. I am sorry that it has taken so long to get it to you. On the small slips I have highlighted the Co-op number and the horsepower for you. For all of the years the amount billed for April is the horsepower charge, that is why there is nothing in the kwh column.

Thank you for being so patient and again I am sorry that it took so long for us to get the information to you. If you have any questions please call me at (208) 588-3311.

Sincerely,

LOST RIVER ELECTRIC COOPERATIVE, INC.

Trisha Carlson, Staff Assistant

Enclosures

- DEPOSITS -
 ADVANCE: 0.00 CONSUMER: 0.00
 MEMBERSHIP: SEP. CON.: 5.00
 - CONTRACT -
 CONTRACT: 2255.00 APPLIED: 0.00
 FIRST DATE: (07/26/73) LENGTH: 0
 C-REF: (- -)
 Seq#0000 #PRT:1 Penalize:

= METER =
 = METER: 01-132-717 AMPS: 30 VOLTS: 480
 = METER SET: (04/01/98) MULT: 1 DIGIT: 5
 = DISCONNECT: () SECONDARY
 = LBN:(DEC07) LNR:(79613) SUBSTN(7C) PUMP#(217) H.P.(125) WTR.SRC.(W)
 = MAP PAGE: 0 SECTION: 0 HOUSE: NONE STREET NAME: NONE

= TRANSFORMERS =
 = (1)#: (2118) (2)#: (2698) (3)#: (2703)
 = SIZE: 37.5 SIZE: 37.5 SIZE: 37.5
 = SINGLE SINGLE SINGLE
 COUNTY: Butte

REM: ORIG. CONTRACT SIGNED BY CRATER FARMS INC.

PAST - ACTIVITY

MONTH	METER		DEMAND	SALE \$ AMOUNT	PENALTY	READINGS by LOST RIVER ELEC	ADJUSTMENTS		
	READING	KWH USED					METER #	KWH(S)	DEMAND
APR07	10527	0	0	2255.00					
JUN07	10701	174	8.756	7.22	F				
JUL07	98850	88149	8.893	3658.18	P				
AUG07	56434	57584	10.993	2389.74	P				
SEP07	79613	23179	10.301	961.93	P				
OCT07	79613	0	0.	0.00					
DEC07	79613	0	0	-878.85					

2007

- DEPOSITS -
 ADVANCE: 7600.00 CONSUMER: 0.00
 MEMBERSHIP: SEP. CON.: 5.00
 - CONTRACT -
 CONTRACT: 2255.00 APPLIED: 0.00
 FIRST DATE: (07/26/73) LENGTH: 0
 C-REF: (- -)
 Seq#0000 #PRT:1

= METER =
 = METER: 01-132-717 AMPS: 30 VOLTS: 480
 = METER SET: (04/01/98) MULT: 1 DIGIT: 5
 = DISCONNECT: () SECONDARY
 = LBN:(OCT06) LNR:(10527) SUBSTN(7C) PUMP#(217) H.P.(125) WTR.SRC.(W)
 = MAP PAGE: 0 SECTION: 0 HOUSE: NONE STREET NAME: NONE

= TRANSFORMERS =
 = (1)#: (2118) (2)#: (2698) (3)#: (2703)
 = SIZE: 37.5 SIZE: 37.5 SIZE: 37.5
 = SINGLE SINGLE SINGLE
 COUNTY: Butte

REM: ORIG. CONTRACT SIGNED BY CRATER FARMS INC.

PAST - ACTIVITY

MONTH	METER		DEMAND	SALE \$ AMOUNT	PENALTY	READINGS by LOST RIVER ELEC	ADJUSTMENTS		
	READING	KWH USED					METER #	KWH(S)	DEMAND
APR06	00688	0	0	2255.00					
JUL06	10527	9839	8.796	488.32					
AUG06	10527	0	0.	0.00					
SEP06	10527	0	0.	0.00					
OCT06	10527	0	0.	0.00					

2006

- DEPOSITS -
 ADVANCE: 0.00 CONSUMER: 0.00
 MEMBERSHIP: SEP. CON.: 5.00
 - CONTRACT -
 CONTRACT: 2255.00 APPLIED: 0.00
 FIRST DATE: (07/26/73) LENGTH: 0
 C-REF: ()
 Seq#0000 #PRT:1

= METER = TRANSFORMERS
 = METER: 01-132-717 AMPS: 30 VOLTS: 480 = (1)#: (2118) (2)#: (2698) (3)#: (2703)
 = METER SET: (04/01/98) MULT: 1 DIGIT: 5 = SIZE: 37.5 SIZE: 37.5 SIZE: 37.5
 = DISCONNECT: () SECONDARY = SINGLE SINGLE SINGLE
 = LBM: (OCT05) LMR: (00688) SUBSTN(7C) WTR.SRC. (W)
 = MAP PAGE: 0 SECTION: 0 HOUSE: NONE STREET NAME: NONE COUNTY: Butte

REM: ORIG BY CRATER FARMS INC.

PAST - ACTIVITY

MONTH	METER READING	KWH USED	DEMAND	SALE \$ AMOUNT	PENALTY	READINGS by LOST RIVER ELEC	ADJUSTMENTS METER # KWH(S) DEMAND
APR05	91517	0	0	2255.00			
MAY04	45398	28269	5.104	1144.89			
JUN04	31414	86016	4.654	3483.65			
JUL05	47528	56011	13.079	2324.46	F		
AUG05	00688	53160	5.809	2206.14	P		
SEP05	00688	0	0.	0.00			
OCT05	00688	0	0.	0.00			

2005

- DEPOSITS -
 ADVANCE: 9730.00 CONSUMER: 0.00
 MEMBERSHIP: SEP. CON.: 5.00
 - CONTRACT -
 CONTRACT: 2300.00 APPLIED: 0.00
 FIRST DATE: (07/26/72) LENGTH: 0
 C-REF: ()
 Seq#0000 #PRT:1

= METER = TRANSFORMERS
 = METER: 01-132-717 AMPS: 30 VOLTS: 480 = (1)#: (2118) (2)#: (2698) (3)#: (2703)
 = METER SET: (04/01/98) MULT: 1 DIGIT: 5 = SIZE: 37.5 SIZE: 37.5 SIZE: 37.5
 = DISCONNECT: () SECONDARY = SINGLE SINGLE SINGLE
 = LBM: (OCT04) LMR: (91517) SUBSTN(7C) WTR.SRC. (W)
 = MAP PAGE: 0 SECTION: 0 HOUSE: NONE STREET NAME: NONE COUNTY: Butte

REM: ORIG BY CRATER FARMS INC.

PAST - ACTIVITY

MONTH	METER READING	KWH USED	DEMAND	SALE \$ AMOUNT	PENALTY	READINGS by LOST RIVER ELEC	ADJUSTMENTS METER # KWH(S) DEMAND
APR04	17129	0	0	2200.00			
MAY04	45398	28269	5.104	1144.89			
JUN04	31414	86016	4.654	3483.65			
JUL04	91517	60103	5.889	2434.17			
AUG04	91517	0	0.	0.00			
SEP04	91517	0	0.	0.00			
OCT04	91517	0	0.	3.00			

2004

Isom pumps

YEAR	CO-OP #	KWH	\$ amount	Month
1998	217		\$1,631.25	April
		2388	\$71.64	July
1999	217		\$1,631.25	April
		12728	\$381.84	August
		48838	\$1,465.14	September
2000	217		\$1,631.25	April
		59861	\$1,795.82	May
		68857	\$2,065.71	June
		6049	\$181.47	July
		38285	\$1,148.55	August
		18040	\$541.20	September
2001	217		\$1,631.25	April
		25272	\$758.16	May
		78729	\$2,361.87	June
		87403	\$2,622.09	July
		47125	\$1,413.75	August
		46887	\$1,406.61	September
		22680	\$680.40	October
2002	217		\$1,793.75	April
		30619	\$1,010.43	May
		50451	\$1,664.88	June
		69019	\$2,277.63	July
		60562	\$1,998.55	August
		48294	\$1,593.70	September
2003	217		\$2,200.00	April
		4789	\$193.95	May
		8629	\$3,265.47	June
		89303	\$3,616.77	July
		29064	\$1,177.09	August
		32954	\$1,334.64	September
		40609	\$1,644.60	October

- DEPOSITS -
 ADVANCE: 0.00 CONSUMER: 10.00
 MEMBERSHIP: 5.00 SEP. CON.: 0.00
 - CONTRACT -
 CONTRACT: 4510.00 APPLIED: 0.00
 FIRST DATE: (06/25/03) LENGTH: 1
 C-REF: (- -)
 Seq#0000 #PRT:1 Penalize!

= METER = TRANSFORMERS
 = METER: 20-680-206 AMPS: 2.5 VOLTS: 480 = (1)#: (669) (2)#: (670) (3)#: (671)
 = METER SET: (06/25/03) MULT: 20 DIGIT: 5 = SIZE: 100 SIZE: 100 SIZE: 100
 = DISCONNECT: () SECONDARY = SINGLE SINGLE SINGLE
 = LBM:(DEC07) LMR:(27727) SUBSTN(4C) PUMP(442) H.P.(250) WTR.SRC.(W)
 = MAP PAGE: 0 SECTION: 0 HOUSE: NONE STREET NAME: NONE COUNTY: None

REM: ORIG. CONTRACT SIGNED BY CRATER FARMS INC. FOR 125 H.P. DTD MARCH 7-1977 CANCELLED & SUPERSEDED W/NEW CONTRACT FOR 250 H.P. DTD JUNE 23-2003.

PAST - ACTIVITY

MONTH	METER		DEMAND	SALE \$ AMOUNT	PENALTY	READINGS by LOST RIVER ELEC	ADJUSTMENTS		
	READING	KWH USED					METER #	KWH(S)	DEMAND
APR07	96780	0	0	4510.00					
MAY07	01195	88300	207.96	3664.45	F				
JUN07	07140	118900	204.24	4934.35	P				
JUL07	14513	147460	196.00	6119.59	P				
AUG07	20787	125480	194.04	5207.42	P				
SEP07	26479	113840	184.70	4724.36	P				
OCT07	27727	24960	179.52	1035.84	P				
DEC07	27727	0	0	-3217.03					

2007

- DEPOSITS -
 ADVANCE: 0.00 CONSUMER: 10.00
 MEMBERSHIP: 5.00 SEP. CON.: 0.00
 - CONTRACT -
 CONTRACT: 4510.00 APPLIED: 0.00
 FIRST DATE: (06/25/03) LENGTH: 1
 C-REF: (- -)
 Seq#0000 #PRT:1

= METER = TRANSFORMERS
 = METER: 20-680-206 AMPS: 2.5 VOLTS: 480 = (1)#: (669) (2)#: (670) (3)#: (671)
 = METER SET: (06/25/03) MULT: 20 DIGIT: 5 = SIZE: 100 SIZE: 100 SIZE: 100
 = DISCONNECT: () SECONDARY = SINGLE SINGLE SINGLE
 = LBM:(OCT06) LMR:(96780) SUBSTN(4C) PUMP(442) H.P.(250) WTR.SRC.(W)
 = MAP PAGE: 0 SECTION: 0 HOUSE: NONE STREET NAME: NONE COUNTY: None

REM: ORIG. CONTRACT SIGNED BY CRATER FARMS INC. FOR 125 H.P. DTD MARCH 7-1977 CANCELLED & SUPERSEDED W/NEW CONTRACT FOR 250 H.P. DTD JUNE 23-2003.

PAST - ACTIVITY

MONTH	METER		DEMAND	SALE \$ AMOUNT	PENALTY	READINGS by LOST RIVER ELEC	ADJUSTMENTS		
	READING	KWH USED					METER #	KWH(S)	DEMAND
APR06	87829	0	0	4510.00					
JUL06	89063	40600	165.42	1688.22					
AUG06	90568	30100	214.06	1249.15					
SEP06	96769	124020	211.98	5146.83					
OCT06	96780	220	208.26	9.13					

2006

- DEPOSITS -
 ADVANCE: 16700.00 CONSUMER: 10.00
 MEMBERSHIP: 5.00 SEP. CON.: 0.00
 - CONTRACT -
 CONTRACT: 4510.00 APPLIED: 0.00
 FIRST DATE: (06/25/03) LENGTH: 1
 C-REF: (- -)
 Seq#00000 #PRT:1

METER
 = METER: 20-680-206 AMPS: 2.5 VOLTS: 480
 = METER SET: (06/25/03) MULT: 20 DIGIT: 5
 = DISCONNECT: () SECONDARY
 = LBM: (OCT05) LMR: (87029) SUBSTN(4C) PUMP#(402) H.P. (250) WTR.SRC. (W)
 = MAP PAGE: 0 SECTION: 0 HOUSE: NONE STREET NAME: NONE

TRANSFORMERS
 = (1)#: (669) (2)#: (670) (3)#: (671)
 = SIZE: 50 SIZE: 50 SIZE: 50
 = SINGLE SINGLE SINGLE
 COUNTY: None

REM: ORIG. CONTRACT SIGNED BY CRATER FARMS INC. FOR 125 H.P. DTD MARCH 7-1977 CANCELLED & SUPERSEDED W/NEW CONTRACT FOR 250 H.P. DTD JUNE 23-2003.

PAST - ACTIVITY

MONTH	METER READING	KWH USED	DEMAND	SALE \$ AMOUNT	PENALTY	READINGS by LOST RIVER ELEC	ADJUSTMENTS METER # KWH(S) DEMAND
APR05	68718	0	0	4510.00			
MAY04	44049	33200	181.78	1347.84			
JUN04	50972	138460	174.94	5607.63			
JUL05	73301	91660	198.26	3803.89			
AUG05	79812	130220	194.12	5404.13			
SEP05	86823	140220	189.62	5819.13			
OCT05	87029	4120	176.60	170.98			

2005

- DEPOSITS -
 ADVANCE: 13200.00 CONSUMER: 10.00
 MEMBERSHIP: 5.00 SEP. CON.: 0.00
 - CONTRACT -
 CONTRACT: 4420.00 APPLIED: 0.00
 FIRST DATE: (06/25/03) LENGTH: 1
 C-REF: (- -)
 Seq#00000 #PRT:1

METER
 = METER: 20-680-206 AMPS: 2.5 VOLTS: 480
 = METER SET: (06/25/03) MULT: 20 DIGIT: 5
 = DISCONNECT: () SECONDARY
 = LBM: (OCT04) LMR: (68718) SUBSTN(4C) PUMP#(402) H.P. (250) WTR.SRC. (W)
 = MAP PAGE: 0 SECTION: 0 HOUSE: NONE STREET NAME: NONE

TRANSFORMERS
 = (1)#: (669) (2)#: (669) (3)#: (671)
 = SIZE: 50 SIZE: 50 SIZE: 50
 = SINGLE SINGLE SINGLE
 COUNTY: None

REM: ORIG. CONTRACT SIGNED BY CRATER FARMS INC. FOR 125 H.P. DTD MARCH 7-1977 CANCELLED & SUPERSEDED W/NEW CONTRACT FOR 250 H.P. DTD JUNE 23-2003.

PAST - ACTIVITY

MONTH	METER READING	KWH USED	DEMAND	SALE \$ AMOUNT	PENALTY	READINGS by LOST RIVER ELEC	ADJUSTMENTS METER # KWH(S) DEMAND
APR04	42385	0	0	4400.00			
MAY04	44049	33200	181.78	1347.84			
JUN04	50972	138460	174.94	5607.63			
JUL04	56758	115720	172.62	4686.66			
AUG04	60274	70320	167.54	2847.96			
SEP04	65322	100960	171.44	4088.88			
OCT04	68718	67920	170.26	2750.76			

2004

YEAR	CO-OP #	KWH	\$ amount	Month
1998	402		\$1,631.25	April
1999	402		\$1,631.25	April
		57880	\$1,736.40	August
2000	402		\$1,631.25	April
		63680	\$1,910.40	May
		75740	\$2,272.20	June
		73660	\$2,209.80	July
		75560	\$2,266.80	August
		71540	\$2,146.20	September
		14720	\$441.60	October
2001	402		\$1,631.25	April
		52700	\$1,581.00	May
		72360	\$2,170.80	June
		7750	\$2,325.00	July
		68780	\$2,063.40	August
		73840	\$2,215.20	September
		21480	\$644.40	October
2002	402		\$1,793.75	April
		39020	\$1,287.66	May
		72700	\$2,399.10	June
		80840	\$2,667.72	July
		72780	\$2,401.74	August
		69600	\$2,296.80	September
		14020	\$462.66	October
2003	402		\$2,200.00	April
		9020	\$365.31	May
		65780	\$2,664.09	June
		112740	\$4,565.97	July
		77800	\$3,150.00	August
		119380	\$4,834.89	September
		114020	\$4,617.81	October

- DEPOSITS -
 ADVANCE: 0.00 CONSUMER: 5.00
 MEMBERSHIP: SEP. CON.: 0.00
 - CONTRACT -
 CONTRACT: 3608.00 APPLIED: 0.00
 FIRST DATE: (07/11/03) LENGTH: 1
 C-REF: (- -)
 Seq#0000 #PRT:1 Penalize!

= METER =
 = METER: 24-410-189 AMPS: 2.5 VOLTS: 480
 = METER SET: (07/11/03) MULT: 20 DIGIT: 5
 = DISCONNECT: () SECONDARY
 = LBM:(DEC07) LMR:(37661) SUBSTN(4C) PUMP(583) H.P.(200) WTR.SRC.(W)
 = MAP PAGE: 0 SECTION: 0 HOUSE: NONE STREET NAME: NONE COUNTY: None

= TRANSFORMERS =
 = (1)#: (2251) (2)#: (2252) (3)#: (2253)
 = SIZE: 100 SIZE: 100 SIZE: 100
 = MULTIPLE MULTIPLE MULTIPLE

REM: ORIG. CONTRACT SIGNED BY CRATER FARMS INC. FOR 100 H.P. DATED AUGUST 3-1983 CANCELLED & SUPERSEDED W/NEW CONTRACT FOR 200 H.P. DATED JULY 10-2003.

PAST-ACTIVITY

MONTH	METER READING	KWH USED	DEMAND	SALE \$ AMOUNT	PENALTY	READINGS by LOST RIVER ELEC	ADJUSTMENTS		
							METER #	KWH(S)	DEMAND
APR07	26354	0	0	3608.00					
MAY07	27880	30520	66.840	1266.58	F				
JUN07	29795	38300	67.080	1589.45	P				
JUL07	32516	54420	71.180	2258.43	P				
AUG07	34976	49200	72.140	2041.80	P				
SEP07	37194	44360	71.020	1840.94	P				
OCT07	37661	9340	69.120	387.61	P				
DEC07	37661	0	0	-1175.40					

2007

- DEPOSITS -
 ADVANCE: 6200.00 CONSUMER: 5.00
 MEMBERSHIP: SEP. CON.: 0.00
 - CONTRACT -
 CONTRACT: 3608.00 APPLIED: 0.00
 FIRST DATE: (07/11/03) LENGTH: 1
 C-REF: (- -)
 Seq#0000 #PRT:1

= METER =
 = METER: 24-410-189 AMPS: 2.5 VOLTS: 480
 = METER SET: (07/11/03) MULT: 20 DIGIT: 5
 = DISCONNECT: () SECONDARY
 = LBM:(OCT06) LMR:(26354) SUBSTN(4C) PUMP(583) H.P.(200) WTR.SRC.(W)
 = MAP PAGE: 0 SECTION: 0 HOUSE: NONE STREET NAME: NONE COUNTY: None

= TRANSFORMERS =
 = (1)#: (2251) (2)#: (2252) (3)#: (2253)
 = SIZE: 100 SIZE: 100 SIZE: 100
 = MULTIPLE MULTIPLE MULTIPLE

REM: ORIG. CONTRACT SIGNED BY CRATER FARMS INC. FOR 100 H.P. DATED AUGUST 3-1983 CANCELLED & SUPERSEDED W/NEW CONTRACT FOR 200 H.P. DATED JULY 10-2003.

PAST-ACTIVITY

MONTH	METER READING	KWH USED	DEMAND	SALE \$ AMOUNT	PENALTY	READINGS by LOST RIVER ELEC	ADJUSTMENTS		
							METER #	KWH(S)	DEMAND
APR06	21237	0	0	3608.00					
MAY06	21237	0	0.	0.00					
JUN06	21237	0	0.	0.00					
JUL06	22210	19460	60.880	887.59					
AUG06	24347	42740	61.860	1773.71					
SEP06	26351	40080	59.260	1663.32					
OCT06	26354	60	58.340	2.49					

2006

- DEPOSITS -
 ADVANCE: 0.00 CONSUMER: 5.00
 MEMBERSHIP: SEP. CON.: 0.00
 - CONTRACT -
 CONTRACT: 3500.00 APPLIED: 0.00
 FIRST DATE: (07/11/03) LENGTH: 1
 C-REF: ()
 Seq#0000 #PRT:1

METER
 = METER: 24-110-100 AMPS: 2.5 VOLTS: 400
 = METER SET: (07/11/03) MULT: 20 DIGIT: 5
 = DISCONNECT: () SECONDARY
 = LBM: (OCT05) LMR: (21237) SUBSTN(4C) 500V (503) H.P. (200) CONTR. SRC. (W)
 = MAP PAGE: 0 SECTION: 0 HOUSE: NONE STREET NAME: NONE COUNTY: None

TRANSFORMERS
 = (1)#: (2251) (2)#: (2252) (3)#: (2253)
 = SIZE: 100 SIZE: 100 SIZE: 100
 = MULTIPLE MULTIPLE MULTIPLE

REM: ORIG. CONTRACT SIGNED BY CRATER FARMS INC. FOR 100 H.P. DATED AUGUST 3-1983 CANCELLED & SUPERSEDED W/NEW CONTRACT FOR 200 H.P. DATED JULY 10-2003.

PAST ACTIVITY

MONTH	METER READING	KWH USED	DEMAND	SALE \$ AMOUNT	PENALTY	READINGs by LOST RIVER ELEC	ADJUSTMENTS		
							METER #	KWH(S)	DEMAND
APR05	15394	0	0	3500.00					
MAY04	06207	6640	61.960	268.92					
JUN04	08617	48200	53.100	1952.10					
JUL05	16856	29240	60.860	1213.46					
AUG05	19049	43860	50.780	1820.19					
SEP05	21167	42360	62.420	1757.94	F				
OCT05	21237	1400	61.220	58.10	P				

2005

- DEPOSITS -
 ADVANCE: 8100.00 CONSUMER: 5.00
 MEMBERSHIP: SEP. CON.: 3.00
 - CONTRACT -
 CONTRACT: 3520.00 APPLIED: 0.00
 FIRST DATE: (07/11/03) LENGTH: 1
 C-REF: ()
 Seq#0000 #PRT:1

METER
 = METER: 24-410-100 AMPS: 2.5 VOLTS: 400
 = METER SET: (07/11/03) MULT: 20 DIGIT: 5
 = DISCONNECT: () SECONDARY
 = LBM: (OCT04) LMR: (15394) SUBSTN(4C) 500V (503) H.P. (200) CONTR. SRC. (W)
 = MAP PAGE: 0 SECTION: 0 HOUSE: NONE STREET NAME: NONE COUNTY: 1

TRANSFORMERS
 = (1)#: (2251) (2)#: (2252) (3)#: (2253)
 = SIZE: 100 SIZE: 100 SIZE: 100
 = MULTIPLE MULTIPLE MULTIPLE

REM: ORIG. CONTRACT SIGNED BY CRATER FARMS INC. FOR 100 H.P. DATED AUGUST 3-1983 CANCELLED & SUPERSEDED W/NEW CONTRACT FOR 200 H.P. DATED JULY 10-2003.

PAST ACTIVITY

MONTH	METER READING	KWH USED	DEMAND	SALE \$ AMOUNT	PENALTY	READINGs by LOST RIVER ELEC	ADJUSTMENTS		
							METER #	KWH(S)	DEMAND
APR04	05875	0	0	3520.00					
MAY04	06207	6640	61.960	268.92					
JUN04	08617	48200	53.100	1952.10					
JUL04	10635	40360	59.860	1634.58					
AUG04	12215	31600	61.380	1279.80					
SEP04	14168	39060	59.560	1581.93					
OCT04	15394	24520	60.460	993.06					

2004

YEAR	CO-OP #	KWH	\$ amount	Month
1998	583		\$1,305.00	April
1999	583		\$1,305.00	April
		81932	\$2,457.96	may
		59761	\$1,792.86	June
		27213	\$816.39	July
2000	583		\$1,305.00	April
		50907	\$1,527.21	May
		60220	\$1,806.60	June
		53911	\$1,617.33	July
		64917	\$1,947.51	August
		57002	\$1,710.06	September
		11806	\$354.18	October
2001	583		\$1,305.00	April
		43765	\$1,312.95	May
		59709	\$1,719.27	June
		63107	\$1,893.21	July
		45838	\$1,375.14	August
		56078	\$1,682.34	September
		23211	\$696.33	October
2002	583		\$1,435.00	April
		31771	\$1,048.44	May
		59650	\$1,968.45	June
		67446	\$2,225.72	July
		61891	\$2,042.40	August
		58320	\$1,924.56	September
		11672	\$385.18	October
2003	583		\$1,760.00	April
		7319	\$296.42	May
		56895	\$2,304.25	June
		52568	\$3,135.00	July
		42020	\$1,701.81	August
		38640	\$1,564.92	September
		14380	\$582.39	October

- DEPOSITS -
 ADVANCE: 0.00 CONSUMER: 10.00
 MEMBERSHIP: 5.00 SEP. CON.: 0.00
 - CONTRACT -
 CONTRACT: 3608.00 APPLIED: 0.00
 FIRST DATE: (05/11/01) LENGTH: 5
 C-REF: (- -)
 Seq#0000 #PRT:1 Penalize:

METER
 = METER: 85-346-097 AMPS: 2.5 VOLTS: 480
 = METER SET: (06/21/07) MULT: 20 DIGIT: 5
 = DISCONNECT: () SECONDARY
 = LBM:(DECO7) LMR:(12173) SUBSTN(7C) WTR.SRC.(W)
 = MAP PAGE: 0 SECTION: 0 HOUSE: NONE STREET NAME: NONE

TRANSFORMERS
 = (1): (1399) (2): (1416) (3): (1417)
 = SIZE: 50 SIZE: 50 SIZE: 50
 = SINGLE SINGLE SINGLE
 COUNTY: Butte

REM: ORIG. CONTRACT SIGNED BY ISOM ACRES LIMITED PARTNERSHIP.

PAST - ACTIVITY

MONTH	METER READING	KWH USED	DEMAND	SALE \$ AMOUNT	PENALTY	READINGS by LOST RIVER ELEC	ADJUSTMENTS		
							METER #	KWH(S)	DEMAND
APR07	86413	0	0	3608.00					
MAY07	90150	74740	176.76	3101.71	F				
JUN07	00963	43884	332.60	1821.19	P				
JUL07	06005	100840	170.40	4184.86	P				
AUG07	09696	73820	173.40	3063.53	P				
SEP07	12173	49540	174.20	2055.91	P				
OCT07	12173	0	0.	0.00					
DEC07	12173	0	0	-1781.88					

2007

- DEPOSITS -
 ADVANCE: 0.00 CONSUMER: 10.00
 MEMBERSHIP: 5.00 SEP. CON.: 0.00
 - CONTRACT -
 CONTRACT: 3608.00 APPLIED: 0.00
 FIRST DATE: (05/11/01) LENGTH: 5
 C-REF: (- -)
 Seq#0000 #PRT:1

METER
 = METER: 20-680-204 AMPS: 2.5 VOLTS: 480
 = METER SET: (05/11/01) MULT: 20 DIGIT: 5
 = DISCONNECT: () SECONDARY
 = LBM:(OCT06) LMR:(86413) SUBSTN(7C) WTR.SRC.(W)
 = MAP PAGE: 0 SECTION: 0 HOUSE: NONE STREET NAME: NONE

TRANSFORMERS
 = (1): (1399) (2): (1416) (3):
 = SIZE: 50 SIZE: 50 SIZE:
 = SINGLE SINGLE SINGLE
 COUNTY:

REM: ORIG. CONTRACT SIGNED BY ISOM ACRES LIMITED PARTNERSHIP.

PAST - ACTIVITY

MONTH	METER READING	KWH USED	DEMAND	SALE \$ AMOUNT	PENALTY	READINGS by LOST RIVER ELEC	ADJUSTMENTS		
							METER #	KWH(S)	DI
APR06	81672	0	0	3608.00					
JUL06	84222	51000	172.14	2116.50					
AUG06	84222	0	0.	0.00					
SEP06	86413	43820	176.12	1818.53					
OCT06	86413	0	0.	0.00					

2006

- DEPOSITS -
 ADVANCE: 13900.00 CONSUMER: 10.00
 MEMBERSHIP: 5.00 SEP. CON.: 0.00

- CONTRACT -
 CONTRACT: 3608.00 APPLIED: 0.00
 FIRST DATE: (05/11/01) LENGTH: 5
 C-REF: ()

Seq#00000 #PRT:1

= METER = TRANSFORMERS
 = METER: 20-680-204 AMPS: 2.5 VOLTS: 480 = (1)#: (1399) (2)#: (1416) (3)#: (1417)
 = METER SET: (05/11/01) MULT: 20 DIGIT: 5 = SIZE: 50 SIZE: 50 SIZE: 50
 = DISCONNECT: () - SECONDARY = SINGLE SINGLE SINGLE
 = LBM: (OCT05) LMR: (81672) SUBSTN(7C) LMP# (861) H. P. (200) WTR. SRC. (W)
 = MAP PAGE: 0 SECTION: 0 HOUSE: NONE STREET NAME: NONE COUNTY: Butte

REM: ORIG. CONTRACT SIGNED BY ISOM ACRES LIMITED PARTNERSHIP.

PAST - ACTIVITY

MONTH	METER READING	KWH USED	DEMAND	SALE \$ AMOUNT	PENALTY	READINGS by LOST RIVER ELEC	ADJUSTMENTS		
							METER #	KWH(S)	DEMAND
APR05	73041	0	0	3608.00					
MAY04	54220	47900	133.62	1939.95					
JUN04	59071	97020	174.60	3929.31					
JUL05	76531	69800	177.28	2896.70					
AUG05	79562	60520	120.54	2515.73					
SEP05	80500	18760	174.36	778.54					
OCT05	81672	23440	175.12	972.76					

2005

- DEPOSITS -
 ADVANCE: 11900.00 CONSUMER: 10.00
 MEMBERSHIP: 5.00 SEP. CON.: 0.00

- CONTRACT -
 CONTRACT: 3520.00 APPLIED: 0.00
 FIRST DATE: (05/11/01) LENGTH: 5
 C-REF: ()

Seq#00000 #PRT:1

= METER = TRANSFORMERS
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 = DISCONNECT: (10/25/04) SECONDARY = SINGLE SINGLE SINGLE
 = LBM: (OCT04) LMR: (73041) SUBSTN(7C) LMP# (861) H. P. (200) WTR. SRC. (W)
 = MAP PAGE: 0 SECTION: 0 HOUSE: NONE STREET NAME: NONE COUNTY: Butte

REM: ORIG. CONTRACT SIGNED BY ISOM ACRES LIMITED PARTNERSHIP.

PAST - ACTIVITY

MONTH	METER READING	KWH USED	DEMAND	SALE \$ AMOUNT	PENALTY	READINGS by LOST RIVER ELEC	ADJUSTMENTS		
							METER #	KWH(S)	DEMAND
APR04	51825	0	0	3520.00					
MAY04	54220	47900	133.62	1939.95					
JUN04	59071	97020	174.60	3929.31					
JUL04	63435	87280	147.08	3534.24					
AUG04	68002	91340	178.40	3699.27	F				
SEP04	72533	90620	160.74	3670.11	P				
OCT04	73041	10160	178.68	411.48	P				

2004

YEAR	CO-OP #	KWH	\$ amount	Month
2001	861		\$2,610.00	April
		30940	\$3,166.20	May
		82960	\$2,488.80	June
		96280	\$2,888.40	July
		85660	\$2,569.80	August
		56160	\$1,684.80	September
		26680	\$800.40	October
2002	861		\$2,870.00	April
		36820	\$1,215.06	May
		59260	\$1,955.58	June
		77420	\$2,554.86	July
		61600	\$2,032.80	August
		53180	\$1,754.94	September
2003	861		\$3,520.00	April
		5640	\$228.42	May
		91380	\$3,700.89	June
		96620	\$3,913.11	July
		86560	\$3,505.68	August
		55120	\$2,232.36	September
		34220	\$1,385.91	October



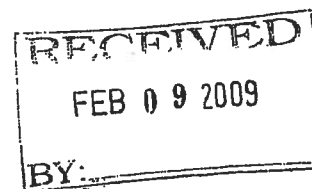
P. O. Box 420
305 Pine Street
Mackay, Idaho 83251-0420
Telephone (208) 588-3311
FAX (208) 588-3038

Office@LRECOOP.com • www.LRECOOP.com

Lost River Electric Cooperative, Inc.

February 4, 2009

David Shaw
3314 Grace Street
Boise, ID 83703



Dear Mr. Shaw,

Here is the information that you requested from our office. I am sorry that it has taken so long to get it to you. As per our phone conversation, I sent you the information for the years 1984 through 1987. The pumps were under the Crater Farms name at that time. Co-op #861 was co-op # 182 at that time. This is noted on that page.

Thank you for being so patient and again I am sorry that it took so long for us to get the information to you. If you have any questions please call me at (208) 588-3311.

Sincerely,

LOST RIVER ELECTRIC COOPERATIVE, INC.

Trisha Carlson, Staff Assistant

Enclosures

Craters Farms pumps

YEAR	CO-OP #	KWH	Month
1984	217	no use	
1985	217		
		5832	October
1986	217	no use	
1987	217		
		37372	May
		6507	June
		57653	July
		0	August
		2552	September
		1835	October
YEAR	CO-OP #	KWH	Month
1984	402	no use	
1985	402		
		23840	May
		21280	June
		34080	July
		20160	August
		2240	September
1986	402		
		13920	July
		12560	August
1987	402		
		46880	May
		30880	June
		58320	July
		39200	August

YEAR	CO-OP #	KWH	Month
1984	583	no use	
1985	583		
		21209	may
		53874	June
		53302	July
		36358	August
		6439	September
1986	583		April
		21612	July
		35719	August
1987	583		April
		34298	May
		28908	June
		39375	July
		58240	August
		46437	September
YEAR	CO-OP #	KWH	Month
Co-op #861 used to be #182			
1984	861	no use	
1985	861		
		11200	July
		3840	August
		4240	September
1986	861	no use	
1987	861		
		36720	May
		20160	June
		10400	July
		560	August
		2320	September
		3120	October

BEFORE THE DEPARTMENT OF WATER RESOURCES
OF THE STATE OF IDAHO

RECEIVED
JUL 05 2011
DEPARTMENT OF
WATER RESOURCES

IN THE MATTER OF APPLICATION)
FOR TRANSFER NOS 5659, 5661 AND 5660) **PRELIMINARY ORDER**
THE NAMES OF M. TODD PERKS AND)
MITCHELL D. SORENSEN RESPECTIVELY)

The sequence of events that resulted in the filing of applications for transfer 5659, 5660, and 5661 is unusual. The transfers reflect the elements of the settlement of a civil suit between Kirby A. Jensen and Sharon W. Jensen, husband and wife and Mitchell D. Sorensen and Elaine R. Sorensen, husband and wife. In this case, the matter was adjudicated in district court, and that decision was appealed to the Idaho Supreme Court. Ultimately, Supreme Court Justice, Byron J. Johnson, retired, agreed to personally mediate a settlement that would allow Sorensens to dismiss their appeal before the Supreme Court. The three referenced transfers are part of this settlement agreement. As part of this settlement M. Todd Perkes and his wife Norma Perkes were to take over Sorensens position in specified water exchange agreements with Kirby Jensen et ux. Under this agreement, water rights were to be exchanged between Perkes and Sorensen.

Application for Transfer, NOS. 5659, 5660, and 5661 were received by the Department of Water Resourcee (IDWR) on January 10, 2000. After initial IDWR review, notice of the proposed changes was published in the Arco Advertiser on February 17 & March 2, 2000. A protest against the approval of all three applications was received from a group identifying itself as the Big Lost River Water Users Association. Of those signing the protest, only Larman D. Andersen and Joel Andersen appeared at the hearing and were not represented by counsel. Their objections to the changes are reflected as follows:

1. Water Right 34-07035(B) ("T5659") proposes a well just north and west of Larman Andersen's supplemental well. Mr. Andersen believes that

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JUL 11 2011

pumping at this location would adversely affect the pumping level in his well.

2. Larman Andersen has a water right on a spring located near Arco. This spring has not produced sufficient water during the "last few years" to fill the Andersen water right. He believes that because the water from the new well will be used outside the "A-Line", this right would not be helped by the recharge from water diverted from the proposed well.
3. The use of water would affect all rights north of the "A-Line".
4. Joel Andersen has a supplemental well in Section 4, east of Mitchell Sorensen's property, and one-half mile south of the "Pump Orchard". This well is less than a quarter of a mile from the location where Sorensen's new well is proposed. The protestants also claim (although not a relevant issue) in this matter that, "Some of these wells have cease and desist orders on them. However, under the Higginson administration they were never enforced. Also the priority on wells was never enforced."

Evidence having been taken, the hearing officer, as a representative of the Director of the Department of Water Resources, enters the following findings of fact, conclusions of law and preliminary order:

FINDINGS OF FACT

1. On January 5, 2000, M. Todd Perkes and Norma Perkes, husband and wife, here-in-after Perkes, executed a Quitclaim Deed for Water Rights granting 4.98 cfs of right 34-07035 to Mitchell D. Sorensen and Elaine R. Sorensen, husband and wife, here-in-after Sorensen. Right 34-07035 was originally licensed for 5.62 cfs from ground water, and appurtenant to 561 acres located in the NE1/4 Section 1, Township 3 North, Range 25 East, and the W1/2 and the SE1/4, Section 25, Township 4 North, Range 25 East, B.M. The SRBA Director's report limits the use of this right to 417 acres within the described place of use in any single irrigation season. Based upon this agreement and split, Perkes would retain sufficient water from right 34-0735 (the "A" portion) to irrigate 47.5 acres

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SEP 11 2000

within the above described lands. Sorensen would have the right under portion "B" to irrigate 369.5 acres within an 828 acre tract, the description of which will be more specifically identified later in this decision.

2. The portion of water right 34-07035 deeded to Sorensen would be diverted from a new well to be drilled within the SE1/4SE1/4 Section 5, Township 4 North, Range 26 East, B M. The change proposed in right 34-07035 is the subject of transfer application 5659.

3. On January 7, 2000, Sorensen transferred the ownership of the water rights listed below to Perkes.

4.

34 - 07096A	January 31, 1975	1.84 cfs	79 acres/yr
34 - 07097A	January 31, 1975	1.58 cfs	92 acres/yr
34 - 07223	April 16, 1979	1.58 cfs	80 acres/yr

The Perkes would have the right to annually irrigate 251 acres within their 561 acre described place of use with the rights received from the Sorensens. These three rights are the subject of transfer application 5660.

5. The rights transferred from the Sorensen to the Perks were appurtenant to 828 acres described as being within:

NW1/4	Sec 2 TWP 3N RGE 25E	158 acres
NE1/4	Sec 3 TWP 3N RGE 25E	78 acres
E1/2	Sec 34 TWP 4N RGE 25E	317 acres
W1/2	Sec 35 TWP 4N RGE 25 E	275 acres

Within this described area, right 34-07035, which was transferred to Sorensen could provide water to 369.5 acres or 44.62% of the total acreage. Water rights 34-07096A,

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SEP 11 2003

34-07097A and 34-07223, which were transferred from Sorensen to Perkes could supply water to 251 acres, or 30.31% of the total acreage.

The third transfer, 5661, proposes to add a point of diversion within the NE1/4 SE1/4NW1/4 Sec. 5 TWP 4N RGE 26E, B.M. Butte County for right 34-07035(A). And to add a point of diversion within the NE1/4NW1/4NW1/4 Sec 8 TWP 4N Rge 26 E B.M. Butte County for right 34-07122A. The change would make both wells points of diversion for either or both rights owned by Perkes. The Place of use of these two rights contains 561 acres, which would remain unchanged by the proposed transfer.

6. The changes specified in the mediated agreement require a change in the ownership of water rights, changes in points of diversion where rights are diverted, but do not change the total acreage irrigated by the combined rights. Sorensen will continue to irrigate 828 acres and Perkes will continue to irrigate 561 acres after the proposed changes have been made.

7. The protestants expressed concern that the new well proposed in application 5659 would interfere with their ground water rights. Joel Andersen has an existing supplemental well that will be approximately 1900 feet northeast ^{of the} proposed Sorensen well. Larman Andersen indicated that his supplemental well was about 4200 feet southeast of the proposed new well. Joel Andersen said that in 1992, (one of the driest years of record in eastern Idaho), he measured the water level in his well on April 8, 1992 at 26 ft below land surface, on July 10, he measured the pumping level at 67 feet. At that time Joel Andersen had an additional 10 feet of casing added to his well. On August 12, he was unable to get adequate water to pressurize his system.

8. Dr. Charles Brockway, P.E. of Brockway Engineering was hired by the applicants as an expert to determine the impacts that other water users might expect as a result the changes required by the settlement agreement. Dr. Brockway located the wells of Perkes, Andersen and the proposed well of Sorensen as follows.

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SEP 11 1995

SUBJECT WELL

APPROXIMATE DISTANCE
FROM THE JOEL ANDERSEN
WELL

Perkes North Well	4500 feet
Perkes South Well	5300 feet
Sorensen Well	1900 feet

Based upon the aquifer characteristics that had been previously determined by a pump test conducted by the USGS, Dr. Brockway compared anticipated pumping drawdown effects on the wells of the protestants under the existing pumping scenario and then after implementation of the proposed changes. The results of these comparisons were submitted in Applicant's Exhibit A. These results indicated that under the existing scenario, without the proposed Sorensen well, the Joel Andersen well is subject to a cumulative draw down in water level of about 8.27 feet after 210 days of continuous pumping. After the change the draw down, at the Joel Andersen well, assuming combined maximum pumping rates comparable to the pre-agreement rates, the protestants could anticipate, after 210 days of pumping, that the Joel Andersen supplemental well could expect to have the water in his well decline approximately one additional foot. Under this worst ^{case} scenario and drought conditions the pumping level in the Joel Andersen well could not be expected to be greater than 90 feet. It is possible that under an extreme set of circumstances the Joel Andersen well might have to be deepened.

9. Idaho Code § 42-226 provides that, *while the doctrine of "first in time is first in right" is recognized, a reasonable exercise of this (ground water) right shall not block full economic development of underground water resources. Prior appropriators of underground water shall be protected in the maintenance of reasonable ground water*

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SEP 11 2005

pumping levels as may be established by the director of the department of water resources...

10. Water right owners are entitled to make changes in their water rights pursuant to state law if the changes do not result in an increased use of water, do not injure other water rights, and are in the public interest.

11. Exhibits admitted as a part of the hearing record include the following.

- a.) Applicant's Exhibit A – Map showing water right service areas.
- b.) Applicant's Exhibit B – Map showing well locations
- c.) Applicant's Exhibit C – USGA Map showing aquifer test results and groundwater contours
- d.) Applicant's Exhibit D – Brockway impact analysis

CONCLUSIONS OF LAW

1. M. Todd Perkes is the owner of water right 34-07035 and ~~was~~^{is} entitled under Idaho Law to apply to change this right pursuant to §42-108 & §42-222, Idaho Code.
2. M. Todd Perkes has the right to apply to add a point of diversion to water rights 34-07035(A) and 34-07122A as requested in application for transfer 5660.
3. Mitchell Sorensen is entitled under Idaho Law to apply to the Idaho Department of Water Resources to change the point of diversion, place of use, or nature of use of water rights 34-07096A, 34-07097A and 34-07223.
4. The applicants are entitled to apply to make changes in their water rights pursuant to state law.
5. The changes proposed in applications for transfer 5659, 5660 and 5661 are in the local public interest, will not injure other water rights, and will not result in an enlargement under these rights.

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SEP 11 1988

ORDER

IT IS HEREBY ORDERED that Applications for Transfer 5659, 5660 and 5661 are APPROVED subject to the following conditions:

Transfer #5661

Conditions:

1. Water Right #34-07035A is limited to the irrigation of 47.5 acres within the place of use described above in a single irrigation season.
2. Water Right #34-07122A is limited to the irrigation of 561 acres within the place of use described above in a single irrigation season.
3. Rights #34-07035A and 34-07122A when combined shall not exceed a total diversion rate of 4.95 cfs, a total annual maximum diversion volume of 1963.5 af at the field headgate, and the irrigation of 561 acres.
4. The total instantaneous diversion of water from all points of diversion under Transfer #5661 shall not exceed 4.95 cfs, nor a total combined annual volume of 1963.5 af.
5. Approval of Transfer #5661 does not grant any right-of-way or easement for use of a delivery system owned by person(s) other than the right owner.
6. Use of water under this water right will be regulated by the watermaster of State Water District No. 34, Big Lost River.
7. The right holder shall maintain a measuring device and lockable controlling works of a type approved by the Department in the manner that will provide the watermaster suitable control of the diversion.
8. The right holder shall accomplish the change authorized by this transfer within one (1) year of the date of this approval.
9. Failure of the right holder to comply with the conditions of this transfer is cause for the Director to rescind approval of the transfer.
10. Right holder shall comply with the drilling permit requirements of Section 42-235, Idaho Code

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SEP 11 1986

ORDER

IT IS HEREBY ORDERED that Applications for Transfer 5659, 5660 and 5661 are APPROVED subject to the following conditions.

Transfer #5660

Conditions:

1. Water Right #34-07223 is limited to the irrigation of 80 acres within the place of use described above in a single irrigation season.
2. Water Right #34-07096A is limited to the irrigation of 92 acres within the place of use described above in a single irrigation season.
3. Water Right #34-07097A is limited to the irrigation of 79 acres within the place of use described above in a single irrigation season.
4. Rights #34-07096A, 34-07097A and 34-07223 when combined shall not exceed a total diversion rate of 5.00 cfs, a total annual maximum diversion volume of 878.5 af at the field headgate, and the irrigation of 251 acres.
5. The total instantaneous diversion of water from all points of diversion under Transfer #5660 shall not exceed 5.00 cfs, nor a total combined annual volume of 878.5 af.
6. Approval of Transfer #5660 does not grant any right-of-way or easement for use of a delivery system owned by person(s) other than the right owner.
7. Use of water under this water right will be regulated by the watermaster of State Water District No. 34, Big Lost River.
8. The right holder shall maintain a measuring device and lockable controlling works of a type approved by the Department in a manner that will provide the watermaster suitable control of the diversion.
9. The right holder shall accomplish the change authorized by this transfer within one (1) year of the date of this approval.
10. Failure of the right holder comply with the conditions of this transfer is cause for the Director to rescind approval of the transfer.

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SEP 7 1988

ORDER

IT IS HEREBY ORDERED that Applications for Transfer 5659, 5660 and 5661 are APPROVED subject to the following conditions:

Transfer #5659

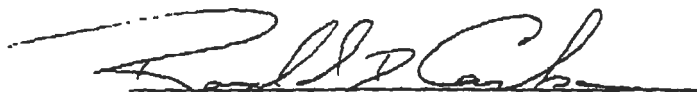
Conditions:

1. Right #34-07035B is limited to the irrigation of 369.5 acres within the place of use described as 828 acres in a single irrigation season.
2. Right holder shall comply with the drilling permit requirements of Section 42-235, Idaho Code.
3. Use of water under this right will be regulated by the watermaster of State Water District No. 34, Big Lost River.
4. The right holder shall maintain a measuring device and lockable controlling works of a type approved by the Department in a manner that will provide the watermaster suitable control of the diversion.
5. The right holder shall accomplish the change authorized by this transfer within one (1) year of the date of this approval.
6. Failure of the right holder to comply with the conditions of this transfer is cause for the Director to rescind approval of the transfer.

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1957 1 1 1967

DATED this th 6 day of June, 2000.

A handwritten signature in cursive script, appearing to read "Ronald D. Carlson", written over a horizontal line.

RONALD D CARLSON
Hearing Officer

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SEP 11 2000

TIME	0	10	20	48	96	288	2000	5000
WELL NO 2								
r2(Well radius)=	0.500	0.00	0.42	0.83	2.00	4.00	12.00	83.33
Dist well 2 to point A	100	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dist well 2 to point B	1320	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dist Well 2 to point C	5257	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Q well 1	2522.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TIME	0	10	20	48	96	288	2000	5000
HOURS	0	10	20	48	96	288	2000	5000
DAYS	0	0.42	0.83	2.00	4.00	12.00	83.33	208.33

TIME	0	10	20	48	96	288	2000	5000
WELL NO 2								
r2(Well radius)=	0.500	0.00	0.42	0.83	2.00	4.00	12.00	83.33
Dist well 2 to point A	100	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dist well 2 to point B	1320	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dist Well 2 to point C	5257	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Q well 1	2522.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TIME	0	10	20	48	96	288	2000	5000
HOURS	0	10	20	48	96	288	2000	5000
DAYS	0	0.42	0.83	2.00	4.00	12.00	83.33	208.33

TIME	0	10	20	48	96	288	2000	5000
WELL NO 2								
r2(Well radius)=	0.500	0.00	0.42	0.83	2.00	4.00	12.00	83.33
Dist well 2 to point A	100	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dist well 2 to point B	1320	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dist Well 2 to point C	5257	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Q well 1	2522.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TIME	0	10	20	48	96	288	2000	5000
HOURS	0	10	20	48	96	288	2000	5000
DAYS	0	0.42	0.83	2.00	4.00	12.00	83.33	208.33

SCENARIO A

[illegible]

HOURS	DAYS	@Well 3	Point A	Point B	Point C	Point
0	0.00	0	0	0	0	0
10	0.42	-9.31	-4.32	-1.90	-0.81	
20	0.83	-9.83	-4.65	-2.22	-1.11	
48	2.00	-10.04	-5.06	-2.63	-1.51	
96	4.00	-10.37	-5.39	-2.96	-1.83	
288	12.00	-10.89	-5.90	-3.48	-2.34	
2000	83.33	-11.80	-6.81	-4.39	-3.25	
5000	208.33	-12.23	-7.24	-4.82	-3.68	

COMBINED DRAWDOWN DUE TO THREE WELLS PUMPING

HOURS	DAYS	A				B				C ANDERSON			
		by Well 1	by Well 2	by Well 3	Total	by Well 1	by Well 2	by Well	Total	by Well 1	by Well 2	by Well 3	Total
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.42	0.00	-5.64	-4.32	-9.96	0.00	-2.48	-1.90	-4.38	0.00	-0.87	-0.81	-1.68
20	0.83	0.00	-6.06	-4.65	-10.71	0.00	-2.90	-2.22	-5.13	0.00	-1.25	-1.11	-2.36
48	2.00	0.00	-6.60	-5.06	-11.66	0.00	-3.44	-2.63	-6.07	0.00	-1.76	-1.51	-3.27
96	4.00	0.00	-7.02	-5.39	-12.41	0.00	-3.86	-2.96	-6.82	0.00	-2.17	-1.83	-4.00
288	12.00	0.00	-7.70	-5.90	-13.60	0.00	-4.53	-3.48	-8.01	0.00	-2.84	-2.34	-5.18
2000	83.33	0.00	-8.89	-6.81	-15.70	0.00	-5.72	-4.39	-10.11	0.00	-4.03	-3.25	-7.28
5000	208.33	0.00	-9.45	-7.24	-16.69	0.00	-6.28	-4.82	-11.10	0.00	-4.59	-3.68	-8.27
SCENARIO 2													

HOURS	DAYS	@Well 1	Point A	Point B	Point C	Point	Distance from Well 1
0		0.500	100	1320	2028	0	
10		0.00	0	0	0	0	
20		0.42	-10.75	-4.99	-2.20	-1.74	
48		0.83	-11.13	-5.37	-2.57	-2.11	
96		2.00	-11.60	-5.85	-3.04	-2.58	
288		4.00	-11.98	-6.22	-3.42	-2.95	
2000		12.00	-12.53	-6.82	-4.02	-3.55	
5000		83.33	-13.63	-7.87	-5.07	-4.60	
		208.33	-14.13	-8.37	-5.57	-5.10	

WELL NO 2	r2(Well radius)=	0.500 FT	@Well 2
Dist well 2 to point A	100 FT	Point A	
Dist well 2 to point B	1320 FT	Point B	
Dist Well 2 to point C	5257 FT	Point C	
Q well 1	0.00 GPM =	0.000 CFS	

HOURS	DAYS	TIME t	U	WELL FUNCT.	W(U)1	WELL FUNCT.	W(U)2	WELL FUNCT.	W(U)3	WELL FUNCT.	W(U)4	WELL FUNCT.	W(U)5
10		0.42	1.428E-09	19.7898	0.00	#DIV/0!	5.712E-05	9.1932	0.00	9.952E-03	4.0427	0.00	1.579E-01
20		0.83	7.140E-10	20.4830	0.00	#DIV/0!	2.856E-05	9.8863	0.00	4.976E-03	4.7309	0.00	7.893E-02
48		2.00	2.975E-10	21.3584	0.00	#DIV/0!	1.190E-05	10.7818	0.00	2.073E-03	5.6034	0.00	3.289E-02
96		4.00	1.487E-10	22.0516	0.00	#DIV/0!	5.950E-06	11.4549	0.00	1.037E-03	6.2955	0.00	1.644E-02
288		12.00	4.958E-11	23.1502	0.00	#DIV/0!	1.983E-06	12.5535	0.00	3.456E-04	7.3935	0.00	5.481E-03
2000		83.33	7.140E-12	25.0881	0.00	#DIV/0!	2.856E-07	14.4915	0.00	4.976E-05	9.3311	0.00	7.893E-04
5000		208.33	2.858E-12	26.0044	0.00	#DIV/0!	1.142E-07	15.4078	0.00	1.990E-05	10.2474	0.00	3.157E-04

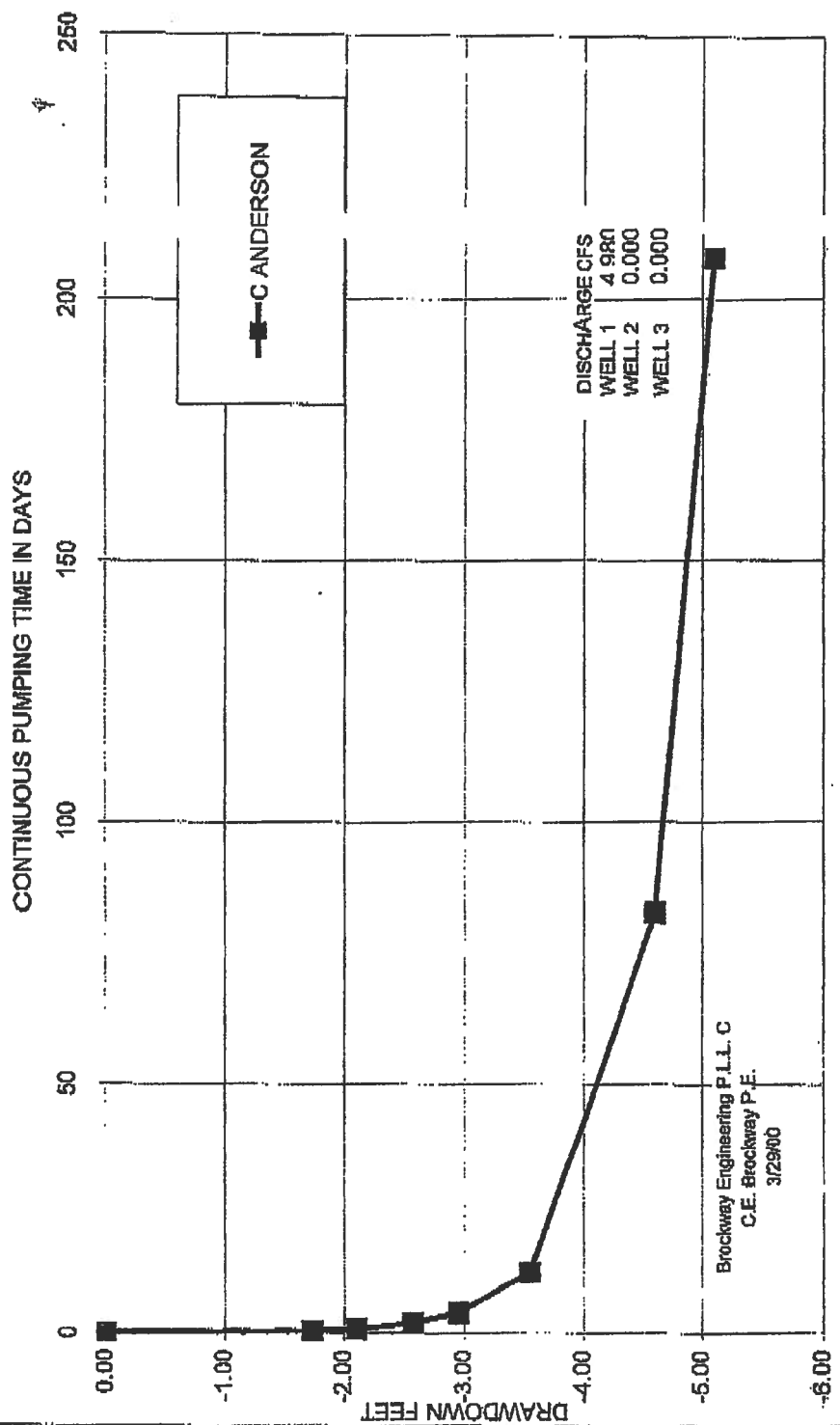
SCENARIO B

HOURS	DAYS	@Well 2	Point A	Point B	Point C	Point	Distance from Well 1
0		0.500	100	1320	5257	0	
10		0.00	0	0	0	0	
20		0.42	0.00	0.00	0.00	0.00	
48		0.83	0.00	0.00	0.00	0.00	
96		2.00	0.00	0.00	0.00	0.00	
288		4.00	0.00	0.00	0.00	0.00	
2000		12.00	0.00	0.00	0.00	0.00	
5000		83.33	0.00	0.00	0.00	0.00	
		208.33	0.00	0.00	0.00	0.00	

SCENARIO B Chart 1

ESTIMATED DRAWDOWN AT SELECTED POINTS FROM MULTIPLE PUMPING WELLS

Sorenson/Perkes Transfers Scenario B



Scenario C

Sorenson/Herkes Transfers

Multiple Well Interference Analysis

Estimated Well Drawdown at target points from multiple pumping wells

C.E. BROCKWAY Revised March 29, 2000, Brockway Engineering P.L.L.C.

AQUIFER PROPERTIES BASED ON PUMPING TESTS, USGS

ENTER ONLY

USING THEIS FORMULA $S=114.6 \cdot Q \cdot t \cdot W(U)$ $W(U)=-5772 \cdot \log e U + U \cdot U^2(2 \cdot 2) + U^3(3 \cdot 3) - U^4(4 \cdot 4) \dots$ S = DRAWDOWN IN FT $U=1.87 \cdot \sqrt{2 \cdot S/(T \cdot t)}$ Q = PUMPING RATE GPM t = DISTANCE IN FT. FROM CENTER OF PUMPED WELL TO DRAWDOWN POINT T = COEFFICIENT OF TRANSMISSIBILITY GPD/ S= COEFFICIENT OF STORAGE $W(U)$ = WELL FUNCTION OF U T = COEFFICIENT OF TRANSMISSIBILITY, GPD/FT

WELL

 t = TIME SINCE PUMPING STARTED, DAYS

DIA. IN

CFS

INPUT

AQUIFER PROPERTIES

$K=574.50$ FT/DAY
 $K=0.006649306$ CFS/FT²
 $K=4285.77$ GPD/FT²
 $SAT.DEP=110$ FT
 TRANSMISSIVITY $5.45E+09$ FT²/SEC
 TRANSMISSIVITY 63026.0 FT²/DAY
 TRANSMISSIVITY 471435 GPD/FT
 STORAGE 0.0006

WELL NO 1

r1(Well radius)= 0.500 FT @Well 1

Dist well 1 to point A 100 FT Point A

Dist well 1 to point B 1320 FT Point B

Dist Well 1 to point C 2028 FT Point C

Q well 1 2235.02 GPM = 4.980 CFS

TIME	HOURS	TIME t	U w/r1	WELL FUNCT. W(U)1	DRAW DOWN @Well 1	SPEC. CAP GPM/FT	U w/r2	WELL FUNCT. W(U)2	DRAW OWN Point A	U w/r3	WELL FUNCT. W(U)3	DRAW DOWN @Point B	U w/r4	WELL FUNCT. W(U)4	DRAW DOWN @Point C	U w/r5	WELL FUNCT. W(U)5	DRAW DOWN @Point D	U w/r6	WELL FUNCT. W(U)6	DRAW DOWN @Point E	U w/r7	WELL FUNCT. W(U)7	DRAW DOWN @Point F	U w/r8	WELL FUNCT. W(U)8	DRAW DOWN @Point G	U w/r9	WELL FUNCT. W(U)9	DRAW DOWN @Point H	U w/r10	WELL FUNCT. W(U)10	DRAW DOWN @Point I	U w/r11	WELL FUNCT. W(U)11	DRAW DOWN @Point J	U w/r12	WELL FUNCT. W(U)12	DRAW DOWN @Point K	U w/r13	WELL FUNCT. W(U)13	DRAW DOWN @Point L	U w/r14	WELL FUNCT. W(U)14	DRAW DOWN @Point M	U w/r15	WELL FUNCT. W(U)15	DRAW DOWN @Point N	U w/r16	WELL FUNCT. W(U)16	DRAW DOWN @Point O	U w/r17	WELL FUNCT. W(U)17	DRAW DOWN @Point P	U w/r18	WELL FUNCT. W(U)18	DRAW DOWN @Point Q	U w/r19	WELL FUNCT. W(U)19	DRAW DOWN @Point R	U w/r20	WELL FUNCT. W(U)20	DRAW DOWN @Point S	U w/r21	WELL FUNCT. W(U)21	DRAW DOWN @Point T	U w/r22	WELL FUNCT. W(U)22	DRAW DOWN @Point U	U w/r23	WELL FUNCT. W(U)23	DRAW DOWN @Point V	U w/r24	WELL FUNCT. W(U)24	DRAW DOWN @Point W	U w/r25	WELL FUNCT. W(U)25	DRAW DOWN @Point X	U w/r26	WELL FUNCT. W(U)26	DRAW DOWN @Point Y	U w/r27	WELL FUNCT. W(U)27	DRAW DOWN @Point Z	U w/r28	WELL FUNCT. W(U)28	DRAW DOWN @Point AA	U w/r29	WELL FUNCT. W(U)29	DRAW DOWN @Point AB	U w/r30	WELL FUNCT. W(U)30	DRAW DOWN @Point AC	U w/r31	WELL FUNCT. W(U)31	DRAW DOWN @Point AD	U w/r32	WELL FUNCT. W(U)32	DRAW DOWN @Point AE	U w/r33	WELL FUNCT. W(U)33	DRAW DOWN @Point AF	U w/r34	WELL FUNCT. W(U)34	DRAW DOWN @Point AG	U w/r35	WELL FUNCT. W(U)35	DRAW DOWN @Point AH	U w/r36	WELL FUNCT. W(U)36	DRAW DOWN @Point AI	U w/r37	WELL FUNCT. W(U)37	DRAW DOWN @Point AJ	U w/r38	WELL FUNCT. W(U)38	DRAW DOWN @Point AK	U w/r39	WELL FUNCT. W(U)39	DRAW DOWN @Point AL	U w/r40	WELL FUNCT. W(U)40	DRAW DOWN @Point AM	U w/r41	WELL FUNCT. W(U)41	DRAW DOWN @Point AN	U w/r42	WELL FUNCT. W(U)42	DRAW DOWN @Point AO	U w/r43	WELL FUNCT. W(U)43	DRAW DOWN @Point AP	U w/r44	WELL FUNCT. W(U)44	DRAW DOWN @Point AQ	U w/r45	WELL FUNCT. W(U)45	DRAW DOWN @Point AR	U w/r46	WELL FUNCT. W(U)46	DRAW DOWN @Point AS	U w/r47	WELL FUNCT. W(U)47	DRAW DOWN @Point AT	U w/r48	WELL FUNCT. W(U)48	DRAW DOWN @Point AU	U w/r49	WELL FUNCT. W(U)49	DRAW DOWN @Point AV	U w/r50	WELL FUNCT. W(U)50	DRAW DOWN @Point AW	U w/r51	WELL FUNCT. W(U)51	DRAW DOWN @Point AX	U w/r52	WELL FUNCT. W(U)52	DRAW DOWN @Point AY	U w/r53	WELL FUNCT. W(U)53	DRAW DOWN @Point AZ	U w/r54	WELL FUNCT. W(U)54	DRAW DOWN @Point BA	U w/r55	WELL FUNCT. W(U)55	DRAW DOWN @Point BB	U w/r56	WELL FUNCT. W(U)56	DRAW DOWN @Point BC	U w/r57	WELL FUNCT. W(U)57	DRAW DOWN @Point BD	U w/r58	WELL FUNCT. W(U)58	DRAW DOWN @Point BE	U w/r59	WELL FUNCT. W(U)59	DRAW DOWN @Point BF	U w/r60	WELL FUNCT. W(U)60	DRAW DOWN @Point BG	U w/r61	WELL FUNCT. W(U)61	DRAW DOWN @Point BH	U w/r62	WELL FUNCT. W(U)62	DRAW DOWN @Point BI	U w/r63	WELL FUNCT. W(U)63	DRAW DOWN @Point BJ	U w/r64	WELL FUNCT. W(U)64	DRAW DOWN @Point BK	U w/r65	WELL FUNCT. W(U)65	DRAW DOWN @Point BL	U w/r66	WELL FUNCT. W(U)66	DRAW DOWN @Point BM	U w/r67	WELL FUNCT. W(U)67	DRAW DOWN @Point BN	U w/r68	WELL FUNCT. W(U)68	DRAW DOWN @Point BO	U w/r69	WELL FUNCT. W(U)69	DRAW DOWN @Point BP	U w/r70	WELL FUNCT. W(U)70	DRAW DOWN @Point BQ	U w/r71	WELL FUNCT. W(U)71	DRAW DOWN @Point BR	U w/r72	WELL FUNCT. W(U)72	DRAW DOWN @Point BS	U w/r73	WELL FUNCT. W(U)73	DRAW DOWN @Point BT	U w/r74	WELL FUNCT. W(U)74	DRAW DOWN @Point BU	U w/r75	WELL FUNCT. W(U)75	DRAW DOWN @Point BV	U w/r76	WELL FUNCT. W(U)76	DRAW DOWN @Point BW	U w/r77	WELL FUNCT. W(U)77	DRAW DOWN @Point BX	U w/r78	WELL FUNCT. W(U)78	DRAW DOWN @Point BY	U w/r79	WELL FUNCT. W(U)79	DRAW DOWN @Point BZ	U w/r80	WELL FUNCT. W(U)80	DRAW DOWN @Point CA	U w/r81	WELL FUNCT. W(U)81	DRAW DOWN @Point CB	U w/r82	WELL FUNCT. W(U)82	DRAW DOWN @Point CC	U w/r83	WELL FUNCT. W(U)83	DRAW DOWN @Point CD	U w/r84	WELL FUNCT. W(U)84	DRAW DOWN @Point CE	U w/r85	WELL FUNCT. W(U)85	DRAW DOWN @Point CF	U w/r86	WELL FUNCT. W(U)86	DRAW DOWN @Point CG	U w/r87	WELL FUNCT. W(U)87	DRAW DOWN @Point CH	U w/r88	WELL FUNCT. W(U)88	DRAW DOWN @Point CI	U w/r89	WELL FUNCT. W(U)89	DRAW DOWN @Point CJ	U w/r90	WELL FUNCT. W(U)90	DRAW DOWN @Point CK	U w/r91	WELL FUNCT. W(U)91	DRAW DOWN @Point CL	U w/r92	WELL FUNCT. W(U)92	DRAW DOWN @Point CM	U w/r93	WELL FUNCT. W(U)93	DRAW DOWN @Point CN	U w/r94	WELL FUNCT. W(U)94	DRAW DOWN @Point CO	U w/r95	WELL FUNCT. W(U)95	DRAW DOWN @Point CP	U w/r96	WELL FUNCT. W(U)96	DRAW DOWN @Point CQ	U w/r97	WELL FUNCT. W(U)97	DRAW DOWN @Point CR	U w/r98	WELL FUNCT. W(U)98	DRAW DOWN @Point CS	U w/r99	WELL FUNCT. W(U)99	DRAW DOWN @Point CT	U w/r100	WELL FUNCT. W(U)100	DRAW DOWN @Point CU	U w/r101	WELL FUNCT. W(U)101	DRAW DOWN @Point CV	U w/r102	WELL FUNCT. W(U)102	DRAW DOWN @Point CW	U w/r103	WELL FUNCT. W(U)103	DRAW DOWN @Point CX	U w/r104	WELL FUNCT. W(U)104	DRAW DOWN @Point CY	U w/r105	WELL FUNCT. W(U)105	DRAW DOWN @Point CZ	U w/r106	WELL FUNCT. W(U)106	DRAW DOWN @Point DA	U w/r107	WELL FUNCT. W(U)107	DRAW DOWN @Point DB	U w/r108	WELL FUNCT. W(U)108	DRAW DOWN @Point DC	U w/r109	WELL FUNCT. W(U)109	DRAW DOWN @Point DD	U w/r110	WELL FUNCT. W(U)110	DRAW DOWN @Point DE	U w/r111	WELL FUNCT. W(U)111	DRAW DOWN @Point DF	U w/r112	WELL FUNCT. W(U)112	DRAW DOWN @Point DG	U w/r113	WELL FUNCT. W(U)113	DRAW DOWN @Point DH	U w/r114	WELL FUNCT. W(U)114	DRAW DOWN @Point DI	U w/r115	WELL FUNCT. W(U)115	DRAW DOWN @Point DJ	U w/r116	WELL FUNCT. W(U)116	DRAW DOWN @Point DK	U w/r117	WELL FUNCT. W(U)117	DRAW DOWN @Point DL	U w/r118	WELL FUNCT. W(U)118	DRAW DOWN @Point DM	U w/r119	WELL FUNCT. W(U)119	DRAW DOWN @Point DN	U w/r120	WELL FUNCT. W(U)120	DRAW DOWN @Point DO	U w/r121	WELL FUNCT. W(U)121	DRAW DOWN @Point DP	U w/r122	WELL FUNCT. W(U)122	DRAW DOWN @Point DQ	U w/r123	WELL FUNCT. W(U)123	DRAW DOWN @Point DR	U w/r124	WELL FUNCT. W(U)124	DRAW DOWN @Point DS	U w/r125	WELL FUNCT. W(U)125	DRAW DOWN @Point DT	U w/r126	WELL FUNCT. W(U)126	DRAW DOWN @Point DU	U w/r127	WELL FUNCT. W(U)127	DRAW DOWN @Point DV	U w/r128	WELL FUNCT. W(U)128	DRAW DOWN @Point DW	U w/r129	WELL FUNCT. W(U)129	DRAW DOWN @Point DX	U w/r130	WELL FUNCT. W(U)130	DRAW DOWN @Point DY	U w/r131	WELL FUNCT. W(U)131	DRAW DOWN @Point DZ	U w/r132	WELL FUNCT. W(U)132	DRAW DOWN @Point EA	U w/r133	WELL FUNCT. W(U)133	DRAW DOWN @Point EB	U w/r134	WELL FUNCT. W(U)134	DRAW DOWN @Point EC	U w/r135	WELL FUNCT. W(U)135	DRAW DOWN @Point ED	U w/r136	WELL FUNCT. W(U)136	DRAW DOWN @Point EE	U w/r137	WELL FUNCT. W(U)137	DRAW DOWN @Point EF	U w/r138	WELL FUNCT. W(U)138	DRAW DOWN @Point EG	U w/r139	WELL FUNCT. W(U)139	DRAW DOWN @Point EH	U w/r140	WELL FUNCT. W(U)140	DRAW DOWN @Point EI	U w/r141	WELL FUNCT. W(U)141	DRAW DOWN @Point EJ	U w/r142	WELL FUNCT. W(U)142	DRAW DOWN @Point EK	U w/r143	WELL FUNCT. W(U)143	DRAW DOWN @Point EL	U w/r144	WELL FUNCT. W(U)144	DRAW DOWN @Point EM	U w/r145	WELL FUNCT. W(U)145	DRAW DOWN @Point EN	U w/r146	WELL FUNCT. W(U)146	DRAW DOWN @Point EO	U w/r147	WELL FUNCT. W(U)147	DRAW DOWN @Point EP	U w/r148	WELL FUNCT. W(U)148	DRAW DOWN @Point EQ	U w/r149	WELL FUNCT. W(U)149	DRAW DOWN @Point ER	U w/r150	WELL FUNCT. W(U)150	DRAW DOWN @Point ES	U w/r151	WELL FUNCT. W(U)151	DRAW DOWN @Point ET	U w/r152	WELL FUNCT. W(U)152	DRAW DOWN @Point EU	U w/r153	WELL FUNCT. W(U)153	DRAW DOWN @Point EV	U w/r154	WELL FUNCT. W(U)154	DRAW DOWN @Point EW	U w/r155	WELL FUNCT. W(U)155	DRAW DOWN @Point EX	U w/r156	WELL FUNCT. W(U)156	DRAW DOWN @Point EY	U w/r157	WELL FUNCT. W(U)157	DRAW DOWN @Point EZ	U w/r158	WELL FUNCT. W(U)158	DRAW DOWN @Point FA	U w/r159	WELL FUNCT. W(U)159	DRAW DOWN @Point FB	U w/r160	WELL FUNCT. W(U)160	DRAW DOWN @Point FC	U w/r161	WELL FUNCT. W(U)161	DRAW DOWN @Point FD	U w/r162	WELL FUNCT. W(U)162	DRAW DOWN @Point FE	U w/r163	WELL FUNCT. W(U)163	DRAW DOWN @Point FF	U w/r164	WELL FUNCT. W(U)164	DRAW DOWN @Point FG	U w/r165	WELL FUNCT. W(U)165	DRAW DOWN @Point FH	U w/r166	WELL FUNCT. W(U)166	DRAW DOWN @Point FI	U w/r167	WELL FUNCT. W(U)167	DRAW DOWN @Point FJ	U w/r168	WELL FUNCT. W(U)168	DRAW DOWN @Point FK	U w/r169	WELL FUNCT. W(U)169	DRAW DOWN @Point FL	U w/r170	WELL FUNCT. W(U)170	DRAW DOWN @Point FM	U w/r171	WELL FUNCT. W(U)171	DRAW DOWN @Point FN	U w/r172	WELL FUNCT. W(U)172	DRAW DOWN @Point FO	U w/r173	WELL FUNCT. W(U)173	DRAW DOWN @Point FP	U w/r174	WELL FUNCT. W(U)174	DRAW DOWN @Point FQ	U w/r175	WELL FUNCT. W(U)175	DRAW DOWN @Point FR	U w/r176	WELL FUNCT. W(U)176	DRAW DOWN @Point FS	U w/r177	WELL FUNCT. W(U)177	DRAW DOWN @Point FT	U w/r178	WELL FUNCT. W(U)178	DRAW DOWN @Point FU	U w/r179	WELL FUNCT. W(U)179	DRAW DOWN @Point FV	U w/r180	WELL FUNCT. W(U)180	DRAW DOWN @Point FW	U w/r181	WELL FUNCT. W(U)181	DRAW DOWN @Point FX	U w/r182	WELL FUNCT. W(U)182	DRAW DOWN @Point FY	U w/r183	WELL FUNCT. W(U)183	DRAW DOWN @Point FZ	U w/r184	WELL FUNCT. W(U)184	DRAW DOWN @Point GA	U w/r185	WELL FUNCT. W(U)185	DRAW DOWN @Point GB	U w/r186	WELL FUNCT. W(U)186	DRAW DOWN @Point GC	U w/r187	WELL FUNCT. W(U)187	DRAW DOWN @Point GD	U w/r188	WELL FUNCT. W(U)188	DRAW DOWN @Point GE	U w/r189	WELL FUNCT. W(U)189	DRAW DOWN @Point GF	U w/r190	WELL FUNCT. W(U)190	DRAW DOWN @Point GH	U w/r191	WELL FUNCT. W(U)191	DRAW DOWN @Point GI	U w/r192	WELL FUNCT. W(U)192	DRAW DOWN @Point GJ	U w/r193	WELL FUNCT. W(U)193	DRAW DOWN @Point GK	U w/r194	WELL FUNCT. W(U)194	DRAW DOWN @Point GL	U w/r195	WELL FUNCT. W(U)195	DRAW DOWN @Point GM	U w/r196	WELL FUNCT. W(U)196	DRAW DOWN @Point GN	U w/r197	WELL FUNCT. W(U)197	DRAW DOWN @Point GO	U w/r198	WELL FUNCT. W(U)198	DRAW DOWN @Point GP	U w/r199	WELL FUNCT. W(U)199	DRAW DOWN @Point GQ	U w/r200	WELL FUNCT. W(U)200	DRAW DOWN @Point GR	U w/r201	WELL FUNCT. W(U)201	DRAW DOWN @Point GS	U w/r202	WELL FUNCT. W(U)202	DRAW DOWN @Point GT	U w/r203	WELL FUNCT. W(U)203	DRAW DOWN @Point GU	U w/r204	WELL FUNCT. W(U)204	DRAW DOWN @Point GV	U w/r205	WELL FUNCT. W(U)205	DRAW DOWN @Point GW	U w/r206	WELL FUNCT. W(U)206	DRAW DOWN @Point GX	U w/r207	WELL FUNCT. W(U)207	DRAW DOWN @Point GY	U w/r208	WELL FUNCT. W(U)208	DRAW DOWN @Point GZ	U w/r209	WELL FUNCT. W(U)209	DRAW DOWN @Point HA	U w/r210	WELL FUNCT. W(U)210	DRAW DOWN @Point HB	U w/r211	WELL FUNCT. W(U)211	DRAW DOWN @Point HC	U w/r212	WELL FUNCT. W(U)212	DRAW DOWN @Point HD	U w/r213	WELL FUNCT. W(U)213	DRAW DOWN @Point HE	U w/r214	WELL FUNCT. W(U)214	DRAW DOWN @Point HF	U w/r215	WELL FUNCT. W(U)215	DRAW DOWN @Point HG	U w/r216	WELL FUNCT. W(U)216	DRAW DOWN @Point HH	U w/r217	WELL FUNCT. W(U)217	DRAW DOWN @Point HI	U w/r218	WELL FUNCT. W(U)218	DRAW DOWN @Point HJ	U w/r219	WELL FUNCT. W(U)219	DRAW DOWN @Point HK	U w/r220	WELL FUNCT. W(U)220	DRAW DOWN @Point HL	U w/r221	WELL FUNCT. W(U)221	DRAW DOWN @Point HM	U w/r222	WELL FUNCT. W(U)222	DRAW DOWN @Point HN	U w/r223	WELL FUNCT. W(U)223	DRAW DOWN @Point HO	U w/r224	WELL FUNCT. W(U)224	DRAW DOWN @Point HP	U w/r225	WELL FUNCT. W(U)225	DRAW DOWN @Point HQ	U w/r226	WELL FUNCT. W(U)226	DRAW DOWN @Point HR	U w/r227	WELL FUNCT. W(U)227	DRAW DOWN @Point HS	U w/r228	WELL FUNCT. W(U)228	DRAW DOWN @Point HT	U w/r229	WELL FUNCT. W(U)229	DRAW DOWN @Point HU	U w/r230	WELL FUNCT. W(U)230	DRAW DOWN @Point HV	U w/r231	WELL FUNCT. W(U)231	DRAW DOWN @Point HW	U w/r232	WELL FUNCT. W(U)232	DRAW DOWN @Point HX	U w/r233	WELL FUNCT. W(U)233	DRAW DOWN @Point HY	U w/r234	WELL FUNCT. W(U)234	DRAW DOWN @Point HZ	U w/r235	WELL FUNCT. W(U)235	DRAW DOWN @Point IA	U w/r236	WELL FUNCT. W(U)236	DRAW DOWN @Point IB	U w/r237	WELL FUNCT. W(U)237	DRAW DOWN @Point IC	U w/r238	WELL FUNCT. W(U)238	DRAW DOWN @Point ID	U w/r239	WELL FUNCT. W(U)239	DRAW DOWN @Point IE	U w/r240	WELL FUNCT. W(U)240	DRAW DOWN @Point IF	U w/r241	WELL FUNCT. W(U)241	DRAW DOWN @Point IG	U w/r242	WELL FUNCT. W(U)242	DRAW DOWN @Point IH	U w/r243	WELL FUNCT. W(U)243	DRAW DOWN @Point II	U w/r244	WELL FUNCT. W(U)244	DRAW DOWN @Point IJ	U w/r245	WELL FUNCT. W(U)245	DRAW DOWN @Point IK	U w/r246	WELL FUNCT. W(U)246	DRAW DOWN @Point IL	U w/r247	WELL FUNCT. W(U)247	DRAW DOWN @Point IM	U w/r248	WELL FUNCT. W(U)248	DRAW DOWN @Point IN	U w/r249	WELL FUNCT. W(U)249	DRAW DOWN @Point IO	U w/r250	WELL FUNCT. W(U)250	DRAW DOWN @Point IP	U w/r251	WELL FUNCT. W(U)251	DRAW DOWN @Point IQ	U w/r252	WELL FUNCT. W(U)252	DRAW DOWN @Point IR	U w/r253	WELL FUNCT. W(U)253	DRAW DOWN @Point IS	U w/r254	WELL FUNCT. W(U)254	DRAW DOWN @Point IT	U w/r255	WELL FUNCT. W(U)255	DRAW DOWN @Point IU	U w/r256	WELL FUNCT. W(U)256	DRAW DOWN @Point IV	U w/r257	WELL FUNCT. W(U)257	DRAW DOWN @Point IW	U w/r258	WELL FUNCT. W(U)258	DRAW DOWN @Point IX	U w/r259	WELL FUNCT. W(U)259	DRAW DOWN @Point IY	U w/r260	WELL FUNCT. W(U)260	DRAW DOWN @Point IZ	U w/r261	WELL FUNCT. W(U)261	DRAW DOWN @Point JA	U w/r262	WELL FUNCT. W(U)262	DRAW DOWN @Point JB	U w/r263	WELL FUNCT. W(U)263	DRAW DOWN @Point JC	U w/r264	WELL FUNCT. W(U)264	DRAW DOWN @Point JD	U w/r265	WELL FUNCT. W(U)265	DRAW DOWN @Point JE	U w/r266	WELL FUNCT. W(U)266	DRAW DOWN @Point JF	U w/r267	WELL FUNCT. W(U)267	DRAW
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HOURS	TIME	Q well 1	U	WELL FUNCT.	Point A	Point B	Point C	Distance from Well 1
0	0.00	0.500	0	0	0	0	0	0
10	0.42	-10.75	-4.99	-2.20	-1.74			
20	0.83	-11.13	-5.37	-2.57	-2.11			
48	2.00	-11.80	-5.85	-3.04	-2.58			
96	4.00	-11.98	-6.22	-3.42	-2.95			
288	12.00	-12.58	-6.82	-4.02	-3.55			
2000	83.33	-13.63	-7.87	-5.07	-4.80			
5000	208.33	-14.13	-8.37	-5.57	-5.10			

WELL NO 2

r2(Wall radius)=

Dist well 2 to point A

Dist well 2 to point B

Dist Well 2 to point C

Q well 1

@Well 2

Point A

Point B

Point C

2221.56 GPM = 4.950 CFS

HOURS	TIME	Q well 1	U	WELL FUNCT.	Point A	Point B	Point C	Distance from Well 1
10	0.42	1.428E-09	19.7898	10.69	208	5.712E-05	9.1832	0
20	0.83	7.140E-10	20.4830	11.06	201	2.856E-05	9.8863	0
48	2.00	2.975E-10	21.3584	11.53	193	1.190E-05	10.7618	0
96	4.00	1.487E-10	22.0516	11.91	187	5.950E-06	11.4549	0
288	12.00	4.958E-11	23.1502	12.50	178	1.983E-06	12.5535	0
2000	83.33	7.140E-12	25.0881	13.55	164	2.866E-07	14.4915	0
5000	208.33	2.856E-12	26.0044	14.04	158	1.142E-07	15.4078	0

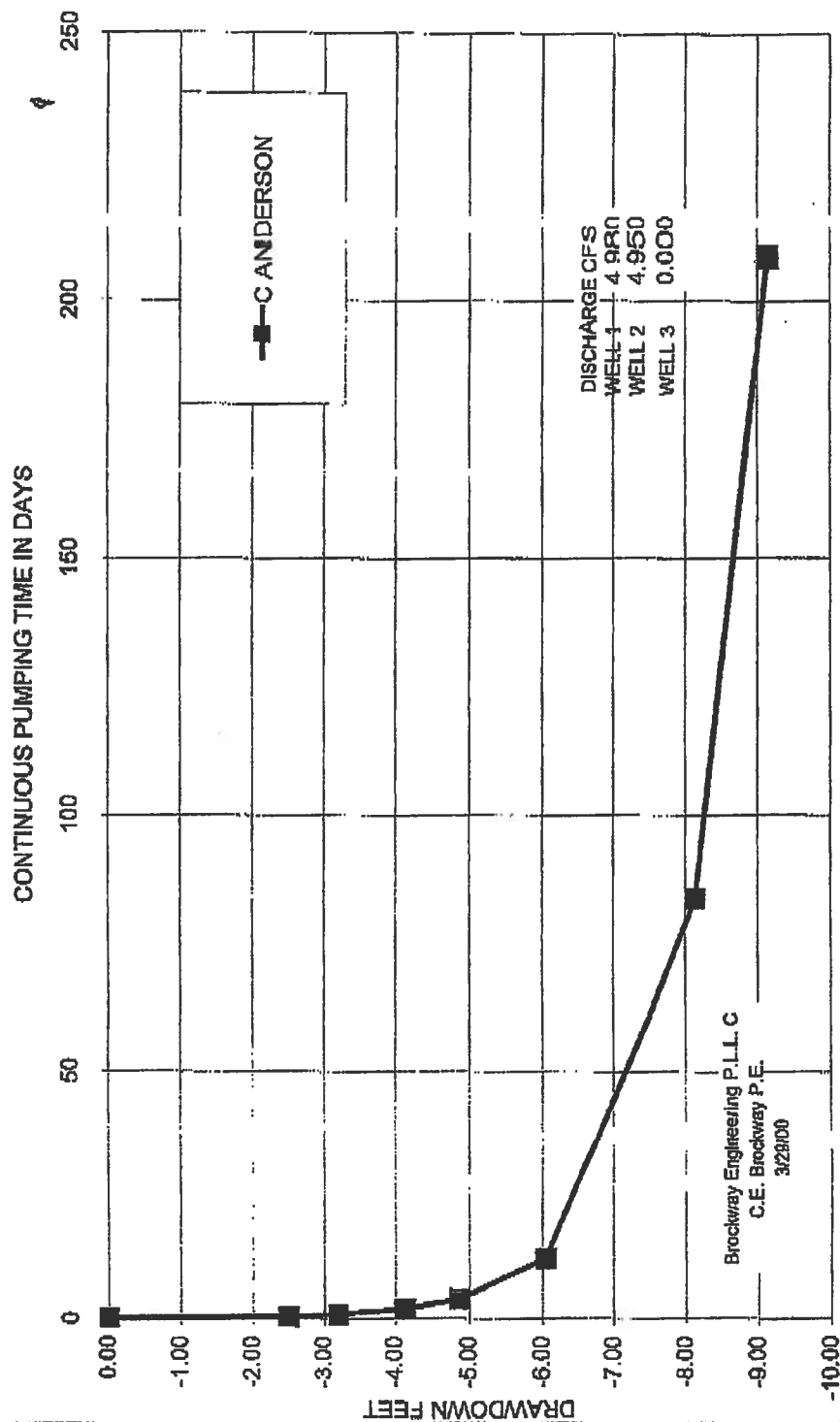
HOURS	TIME	Q well 1	U	WELL FUNCT.	Point A	Point B	Point C	Distance from Well 1
0	0.00	0.500	0	0	0	0	0	0
10	0.42	-10.69	-4.96	-2.18	-0.77			
20	0.83	-11.06	-5.34	-2.55	-1.10			
48	2.00	-11.53	-5.81	-3.03	-1.55			
96	4.00	-11.91	-6.19	-3.40	-1.92			
288	12.00	-12.50	-6.78	-3.99	-2.50			
2000	83.33	-13.55	-7.83	-5.04	-3.55			
5000	208.33	-14.04	-8.32	-5.53	-4.04			

SCENARIO C

SCENARIO C Chart 1

ESTIMATED DRAWDOWN AT SELECTED POINTS FROM MULTIPLE PUMPING WELLS

Sorenson/Perkes Transfers Scenario C



Multiple Well Interference Analysis

3,29,00

AQUIFER PROPERTIES BASED ON PUMPING TESTS, USGS

ENTER ONLY

$$U = 1.87 \cdot r^2 \cdot S / (T \cdot t)$$

S= DRAWDOWN IN FT

Q = PUMPING RATE GPM

 $T = \text{COEFFICIENT OF TRANSMISSIBILITY GPD/S} = \text{COEFFICIENT OF STORAGE}$

WELL ELUCTION OF "U"

TIME SINCE PUMPING STARTED, DAYS

2	12	4.95
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ACQUIRED PROPERTIES

4.50 FT/DAY

006649306 CFS/FT^2

4285.77 GPD/FT^{1.2}

110 FT

PAGE | NO 1

100% Satisfaction Guarantee

Just well 1 to point A

Dist well 1 to point B

Diet Water 1 to point C

0.00 GPM = 0.000 CFS

TIME	TIME	WELL	DRAW	SPE
10:00	10:00	10:00	10:00	10:00
10:05	10:05	10:05	10:05	10:05
10:10	10:10	10:10	10:10	10:10
10:15	10:15	10:15	10:15	10:15
10:20	10:20	10:20	10:20	10:20
10:25	10:25	10:25	10:25	10:25
10:30	10:30	10:30	10:30	10:30
10:35	10:35	10:35	10:35	10:35
10:40	10:40	10:40	10:40	10:40
10:45	10:45	10:45	10:45	10:45
10:50	10:50	10:50	10:50	10:50
10:55	10:55	10:55	10:55	10:55
11:00	11:00	11:00	11:00	11:00
11:05	11:05	11:05	11:05	11:05
11:10	11:10	11:10	11:10	11:10
11:15	11:15	11:15	11:15	11:15
11:20	11:20	11:20	11:20	11:20
11:25	11:25	11:25	11:25	11:25
11:30	11:30	11:30	11:30	11:30
11:35	11:35	11:35	11:35	11:35
11:40	11:40	11:40	11:40	11:40
11:45	11:45	11:45	11:45	11:45
11:50	11:50	11:50	11:50	11:50
11:55	11:55	11:55	11:55	11:55
12:00	12:00	12:00	12:00	12:00
12:05	12:05	12:05	12:05	12:05
12:10	12:10	12:10	12:10	12:10
12:15	12:15	12:15	12:15	12:15
12:20	12:20	12:20	12:20	12:20
12:25	12:25	12:25	12:25	12:25
12:30	12:30	12:30	12:30	12:30
12:35	12:35	12:35	12:35	12:35
12:40	12:40	12:40	12:40	12:40
12:45	12:45	12:45	12:45	12:45
12:50	12:50	12:50	12:50	12:50
12:55	12:55	12:55	12:55	12:55
13:00	13:00	13:00	13:00	13:00
13:05	13:05	13:05	13:05	13:05
13:10	13:10	13:10	13:10	13:10
13:15	13:15	13:15	13:15	13:15
13:20	13:20	13:20	13:20	13:20
13:25	13:25	13:25	13:25	13:25
13:30	13:30	13:30	13:30	13:30
13:35	13:35	13:35	13:35	13:35
13:40	13:40	13:40	13:40	13:40
13:45	13:45	13:45	13:45	13:45
13:50	13:50	13:50	13:50	13:50
13:55	13:55	13:55	13:55	13:55
14:00	14:00	14:00	14:00	14:00
14:05	14:05	14:05	14:05	14:05
14:10	14:10	14:10	14:10	14:10
14:15	14:15	14:15	14:15	14:15
14:20	14:20	14:20	14:20	14:20
14:25	14:25	14:25	14:25	14:25
14:30	14:30	14:30	14:30	14:30
14:35	14:35	14:35	14:35	14:35
14:40	14:40	14:40	14:40	14:40
14:45	14:45	14:45	14:45	14:45
14:50	14:50	14:50	14:50	14:50
14:55	14:55	14:55	14:55	14:55
15:00	15:00	15:00	15:00	15:00
15:05	15:05	15:05	15:05	15:05
15:10	15:10	15:10	15:10	15:10
15:15	15:15	15:15	15:15	15:15
15:20	15:20	15:20	15:20	15:20
15				

INFLUENCE	+	w/H	EFFECT	DOWN	CASE
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HOURLS	DAYS	WELL	INSTR:	CONV	SH
		0.5000	WU1	@Well 1	GPM

10000	10	0.42	1.428E-09	19.7898	0.00	#DIV/0!
10000	10	0.42	1.428E-09	19.7898	0.00	#DIV/0!

Run	Time	Area	Height	Area%	Height%
20	0.83	7.140E-10	20.4830	0.00	0.00

LINE	DATE	TIME	DESCRIPTION	AMOUNT	BALANCE	CHECK #	DATE
48	200	2 975E-10	21 3584	0.00	#DIV		

96	4 00	1 487E-10	22 0516	0 00
#DIV!				

388	12 00	4 958E-11	23 1502	0 00 #DIV
39				
39				

2000	12/30	7/30/02	25/08/01	0.00	#DN
2000	83.33	7.140E-12	25.0881	0.00	#DN

Year	2000	2003	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099
2000	2000	2003	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099

44-38861-2 21-70000-2 : 0000

SCENARIO DI

HOURS	DAYS	@Well 1	Point A	Point B	Point C	Point
		0.500	100	1320	2028	Distance from Well 1
0		0.00	0	0	0	
10		0.00	0.00	0.00	0.00	
20		0.00	0.00	0.00	0.00	
48		0.00	0.00	0.00	0.00	
96		0.00	0.00	0.00	0.00	
288		0.00	0.00	0.00	0.00	
2000		0.00	0.00	0.00	0.00	
5000		0.00	0.00	0.00	0.00	

WELL NO 2

r2(Well radius)=

Dist well 2 to point A

Dist well 2 to point B

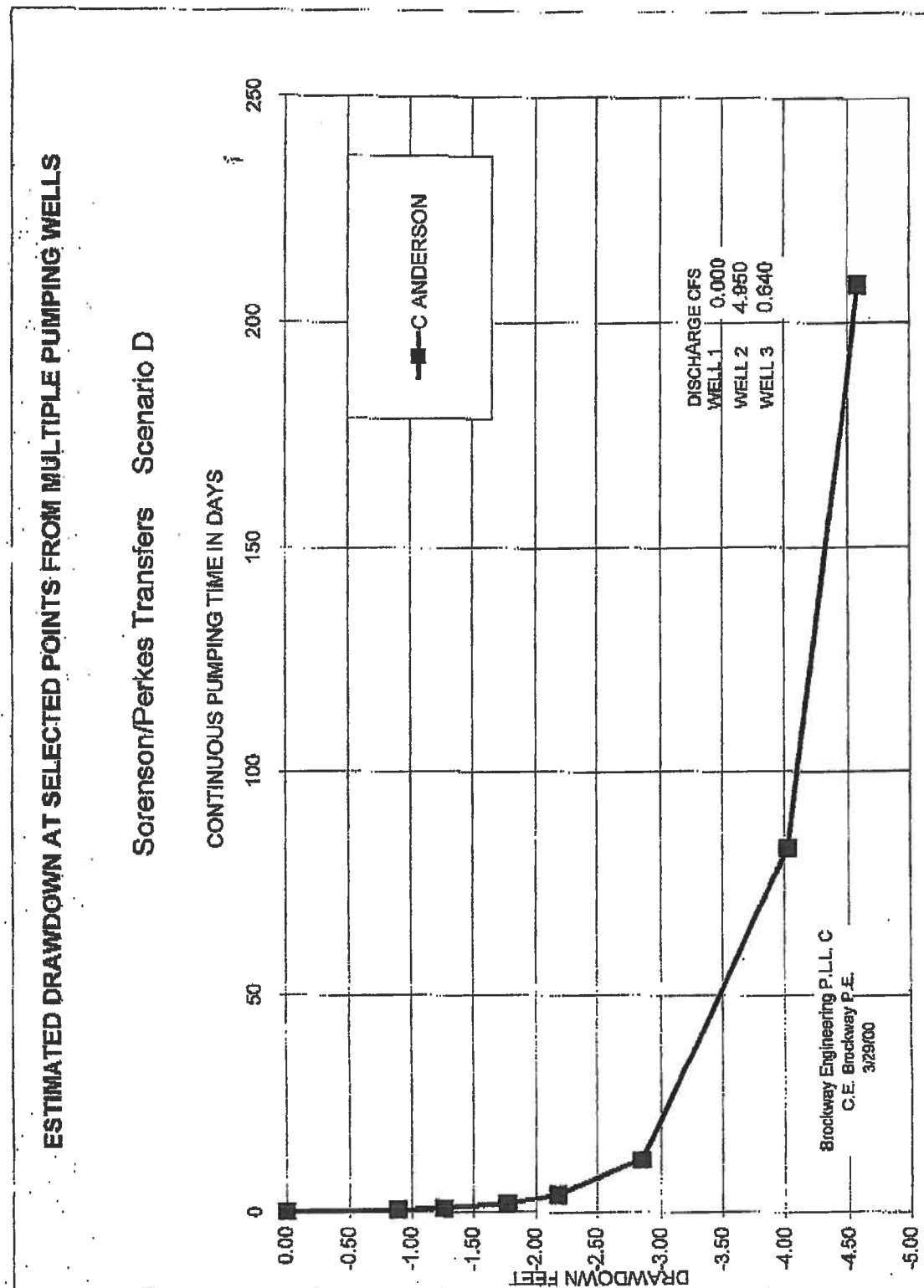
Dist Well 2 to point C

Q well 1

0.500 FT @Well 2
 100 FT Point A
 1320 FT Point B
 5257 FT Point C
 2221.56 GPM = 4.950 CFS

HOURS	TIME	TIME	U	WELL	DRAW	SPEC.	U	WELL	DRAW	OWN	DRAW	U	WELL	FUNCT.	W(U)2	DRAW	OWN	DRAW	U	WELL	FUNCT.	W(U)3	DRAW	DOWN @	U	WELL	FUNCT.	W(U)4	DRAW	DOWN @	U	WELL	FUNCT.	W(U)5	DRAW	DOWN @	U	WELL	FUNCT.	W(U)6	DRAW	DOWN @	U	WELL	FUNCT.	W(U)7	DRAW	DOWN @	U	WELL	FUNCT.	W(U)8	DRAW	DOWN @	U	WELL	FUNCT.	W(U)9	DRAW	DOWN @	U	WELL	FUNCT.	W(U)10	DRAW	DOWN @	U	WELL	FUNCT.	W(U)11	DRAW	DOWN @	U	WELL	FUNCT.	W(U)12	DRAW	DOWN @	U	WELL	FUNCT.	W(U)13	DRAW	DOWN @	U	WELL	FUNCT.	W(U)14	DRAW	DOWN @	U	WELL	FUNCT.	W(U)15	DRAW	DOWN @	U	WELL	FUNCT.	W(U)16	DRAW	DOWN @	U	WELL	FUNCT.	W(U)17	DRAW	DOWN @	U	WELL	FUNCT.	W(U)18	DRAW	DOWN @	U	WELL	FUNCT.	W(U)19	DRAW	DOWN @	U	WELL	FUNCT.	W(U)20	DRAW	DOWN @	U	WELL	FUNCT.	W(U)21	DRAW	DOWN @	U	WELL	FUNCT.	W(U)22	DRAW	DOWN @	U	WELL	FUNCT.	W(U)23	DRAW	DOWN @	U	WELL	FUNCT.	W(U)24	DRAW	DOWN @	U	WELL	FUNCT.	W(U)25	DRAW	DOWN @	U	WELL	FUNCT.	W(U)26	DRAW	DOWN @	U	WELL	FUNCT.	W(U)27	DRAW	DOWN @	U	WELL	FUNCT.	W(U)28	DRAW	DOWN @	U	WELL	FUNCT.	W(U)29	DRAW	DOWN @	U	WELL	FUNCT.	W(U)30	DRAW	DOWN @	U	WELL	FUNCT.	W(U)31	DRAW	DOWN @	U	WELL	FUNCT.	W(U)32	DRAW	DOWN @	U	WELL	FUNCT.	W(U)33	DRAW	DOWN @	U	WELL	FUNCT.	W(U)34	DRAW	DOWN @	U	WELL	FUNCT.	W(U)35	DRAW	DOWN @	U	WELL	FUNCT.	W(U)36	DRAW	DOWN @	U	WELL	FUNCT.	W(U)37	DRAW	DOWN @	U	WELL	FUNCT.	W(U)38	DRAW	DOWN @	U	WELL	FUNCT.	W(U)39	DRAW	DOWN @	U	WELL	FUNCT.	W(U)40	DRAW	DOWN @	U	WELL	FUNCT.	W(U)41	DRAW	DOWN @	U	WELL	FUNCT.	W(U)42	DRAW	DOWN @	U	WELL	FUNCT.	W(U)43	DRAW	DOWN @	U	WELL	FUNCT.	W(U)44	DRAW	DOWN @	U	WELL	FUNCT.	W(U)45	DRAW	DOWN @	U	WELL	FUNCT.	W(U)46	DRAW	DOWN @	U	WELL	FUNCT.	W(U)47	DRAW	DOWN @	U	WELL	FUNCT.	W(U)48	DRAW	DOWN @	U	WELL	FUNCT.	W(U)49	DRAW	DOWN @	U	WELL	FUNCT.	W(U)50	DRAW	DOWN @	U	WELL	FUNCT.	W(U)51	DRAW	DOWN @	U	WELL	FUNCT.	W(U)52	DRAW	DOWN @	U	WELL	FUNCT.	W(U)53	DRAW	DOWN @	U	WELL	FUNCT.	W(U)54	DRAW	DOWN @	U	WELL	FUNCT.	W(U)55	DRAW	DOWN @	U	WELL	FUNCT.	W(U)56	DRAW	DOWN @	U	WELL	FUNCT.	W(U)57	DRAW	DOWN @	U	WELL	FUNCT.	W(U)58	DRAW	DOWN @	U	WELL	FUNCT.	W(U)59	DRAW	DOWN @	U	WELL	FUNCT.	W(U)60	DRAW	DOWN @	U	WELL	FUNCT.	W(U)61	DRAW	DOWN @	U	WELL	FUNCT.	W(U)62	DRAW	DOWN @	U	WELL	FUNCT.	W(U)63	DRAW	DOWN @	U	WELL	FUNCT.	W(U)64	DRAW	DOWN @	U	WELL	FUNCT.	W(U)65	DRAW	DOWN @	U	WELL	FUNCT.	W(U)66	DRAW	DOWN @	U	WELL	FUNCT.	W(U)67	DRAW	DOWN @	U	WELL	FUNCT.	W(U)68	DRAW	DOWN @	U	WELL	FUNCT.	W(U)69	DRAW	DOWN @	U	WELL	FUNCT.	W(U)70	DRAW	DOWN @	U	WELL	FUNCT.	W(U)71	DRAW	DOWN @	U	WELL	FUNCT.	W(U)72	DRAW	DOWN @	U	WELL	FUNCT.	W(U)73	DRAW	DOWN @	U	WELL	FUNCT.	W(U)74	DRAW	DOWN @	U	WELL	FUNCT.	W(U)75	DRAW	DOWN @	U	WELL	FUNCT.	W(U)76	DRAW	DOWN @	U	WELL	FUNCT.	W(U)77	DRAW	DOWN @	U	WELL	FUNCT.	W(U)78	DRAW	DOWN @	U	WELL	FUNCT.	W(U)79	DRAW	DOWN @	U	WELL	FUNCT.	W(U)80	DRAW	DOWN @	U	WELL	FUNCT.	W(U)81	DRAW	DOWN @	U	WELL	FUNCT.	W(U)82	DRAW	DOWN @	U	WELL	FUNCT.	W(U)83	DRAW	DOWN @	U	WELL	FUNCT.	W(U)84	DRAW	DOWN @	U	WELL	FUNCT.	W(U)85	DRAW	DOWN @	U	WELL	FUNCT.	W(U)86	DRAW	DOWN @	U	WELL	FUNCT.	W(U)87	DRAW	DOWN @	U	WELL	FUNCT.	W(U)88	DRAW	DOWN @	U	WELL	FUNCT.	W(U)89	DRAW	DOWN @	U	WELL	FUNCT.	W(U)90	DRAW	DOWN @	U	WELL	FUNCT.	W(U)91	DRAW	DOWN @	U	WELL	FUNCT.	W(U)92	DRAW	DOWN @	U	WELL	FUNCT.	W(U)93	DRAW	DOWN @	U	WELL	FUNCT.	W(U)94	DRAW	DOWN @	U	WELL	FUNCT.	W(U)95	DRAW	DOWN @	U	WELL	FUNCT.	W(U)96	DRAW	DOWN @	U	WELL	FUNCT.	W(U)97	DRAW	DOWN @	U	WELL	FUNCT.	W(U)98	DRAW	DOWN @	U	WELL	FUNCT.	W(U)99	DRAW	DOWN @	U	WELL	FUNCT.	W(U)100	DRAW	DOWN @	U	WELL	FUNCT.	W(U)101	DRAW	DOWN @	U	WELL	FUNCT.	W(U)102	DRAW	DOWN @	U	WELL	FUNCT.	W(U)103	DRAW	DOWN @	U	WELL	FUNCT.	W(U)104	DRAW	DOWN @	U	WELL	FUNCT.	W(U)105	DRAW	DOWN @	U	WELL	FUNCT.	W(U)106	DRAW	DOWN @	U	WELL	FUNCT.	W(U)107	DRAW	DOWN @	U	WELL	FUNCT.	W(U)108	DRAW	DOWN @	U	WELL	FUNCT.	W(U)109	DRAW	DOWN @	U	WELL	FUNCT.	W(U)110	DRAW	DOWN @	U	WELL	FUNCT.	W(U)111	DRAW	DOWN @	U	WELL	FUNCT.	W(U)112	DRAW	DOWN @	U	WELL	FUNCT.	W(U)113	DRAW	DOWN @	U	WELL	FUNCT.	W(U)114	DRAW	DOWN @	U	WELL	FUNCT.	W(U)115	DRAW	DOWN @	U	WELL	FUNCT.	W(U)116	DRAW	DOWN @	U	WELL	FUNCT.	W(U)117	DRAW	DOWN @	U	WELL	FUNCT.	W(U)118	DRAW	DOWN @	U	WELL	FUNCT.	W(U)119	DRAW	DOWN @	U	WELL	FUNCT.	W(U)120	DRAW	DOWN @	U	WELL	FUNCT.	W(U)121	DRAW	DOWN @	U	WELL	FUNCT.	W(U)122	DRAW	DOWN @	U	WELL	FUNCT.	W(U)123	DRAW	DOWN @	U	WELL	FUNCT.	W(U)124	DRAW	DOWN @	U	WELL	FUNCT.	W(U)125	DRAW	DOWN @	U	WELL	FUNCT.	W(U)126	DRAW	DOWN @	U	WELL	FUNCT.	W(U)127	DRAW	DOWN @	U	WELL	FUNCT.	W(U)128	DRAW	DOWN @	U	WELL	FUNCT.	W(U)129	DRAW	DOWN @	U	WELL	FUNCT.	W(U)130	DRAW	DOWN @	U	WELL	FUNCT.	W(U)131	DRAW	DOWN @	U	WELL	FUNCT.	W(U)132	DRAW	DOWN @	U	WELL	FUNCT.	W(U)133	DRAW	DOWN @	U	WELL	FUNCT.	W(U)134	DRAW	DOWN @	U	WELL	FUNCT.	W(U)135	DRAW	DOWN @	U	WELL	FUNCT.	W(U)136	DRAW	DOWN @	U	WELL	FUNCT.	W(U)137	DRAW	DOWN @	U	WELL	FUNCT.	W(U)138	DRAW	DOWN @	U	WELL	FUNCT.	W(U)139	DRAW	DOWN @	U	WELL	FUNCT.	W(U)140	DRAW	DOWN @	U	WELL	FUNCT.	W(U)141	DRAW	DOWN @	U	WELL	FUNCT.	W(U)142	DRAW	DOWN @	U	WELL	FUNCT.	W(U)143	DRAW	DOWN @	U	WELL	FUNCT.	W(U)144	DRAW	DOWN @	U	WELL	FUNCT.	W(U)145	DRAW	DOWN @	U	WELL	FUNCT.	W(U)146	DRAW	DOWN @	U	WELL	FUNCT.	W(U)147	DRAW	DOWN @	U	WELL	FUNCT.	W(U)148	DRAW	DOWN @	U	WELL	FUNCT.	W(U)149	DRAW	DOWN @	U	WELL	FUNCT.	W(U)150	DRAW	DOWN @	U	WELL	FUNCT.	W(U)151	DRAW	DOWN @	U	WELL	FUNCT.	W(U)152	DRAW	DOWN @	U	WELL	FUNCT.	W(U)153	DRAW	DOWN @	U	WELL	FUNCT.	W(U)154	DRAW	DOWN @	U	WELL	FUNCT.	W(U)155	DRAW	DOWN @	U	WELL	FUNCT.	W(U)156	DRAW	DOWN @	U	WELL	FUNCT.	W(U)157	DRAW	DOWN @	U	WELL	FUNCT.	W(U)158	DRAW	DOWN @	U	WELL	FUNCT.	W(U)159	DRAW	DOWN @	U	WELL	FUNCT.	W(U)160	DRAW	DOWN @	U	WELL	FUNCT.	W(U)161	DRAW	DOWN @	U	WELL	FUNCT.	W(U)162	DRAW	DOWN @	U	WELL	FUNCT.	W(U)163	DRAW	DOWN @	U	WELL	FUNCT.	W(U)164	DRAW	DOWN @	U	WELL	FUNCT.	W(U)165	DRAW	DOWN @	U	WELL	FUNCT.	W(U)166	DRAW	DOWN @	U	WELL	FUNCT.	W(U)167	DRAW	DOWN @	U	WELL	FUNCT.	W(U)168	DRAW	DOWN @	U	WELL	FUNCT.	W(U)169	DRAW	DOWN @	U	WELL	FUNCT.	W(U)170	DRAW	DOWN @	U	WELL	FUNCT.	W(U)171	DRAW	DOWN @	U	WELL	FUNCT.	W(U)172	DRAW	DOWN @	U	WELL	FUNCT.	W(U)173	DRAW	DOWN @	U	WELL	FUNCT.	W(U)174	DRAW	DOWN @	U	WELL	FUNCT.	W(U)175	DRAW	DOWN @	U	WELL	FUNCT.	W(U)176	DRAW	DOWN @	U	WELL	FUNCT.	W(U)177	DRAW	DOWN @	U	WELL	FUNCT.	W(U)178	DRAW	DOWN @	U	WELL	FUNCT.	W(U)179	DRAW	DOWN @	U	WELL	FUNCT.	W(U)180	DRAW	DOWN @	U	WELL	FUNCT.	W(U)181	DRAW	DOWN @	U	WELL	FUNCT.	W(U)182	DRAW	DOWN @	U	WELL	FUNCT.	W(U)183	DRAW	DOWN @	U	WELL	FUNCT.	W(U)184	DRAW	DOWN @	U	WELL	FUNCT.	W(U)185	DRAW	DOWN @	U	WELL	FUNCT.	W(U)186	DRAW	DOWN @	U	WELL	FUNCT.	W(U)187	DRAW	DOWN @	U	WELL	FUNCT.	W(U)188	DRAW	DOWN @	U	WELL	FUNCT.	W(U)189	DRAW	DOWN @	U	WELL	FUNCT.	W(U)190	DRAW	DOWN @	U	WELL	FUNCT.	W(U)191	DRAW	DOWN @	U	WELL	FUNCT.	W(U)192	DRAW	DOWN @	U	WELL	FUNCT.	W(U)193	DRAW	DOWN @	U	WELL	FUNCT.	W(U)194	DRAW	DOWN @	U	WELL	FUNCT.	W(U)195	DRAW	DOWN @	U	WELL	FUNCT.	W(U)196	DRAW	DOWN @	U	WELL	FUNCT.	W(U)197	DRAW	DOWN @	U	WELL	FUNCT.	W(U)198	DRAW	DOWN @	U	WELL	FUNCT.	W(U)199	DRAW	DOWN @	U	WELL	FUNCT.	W(U)200	DRAW	DOWN @	U	WELL	FUNCT.	W(U)201	DRAW	DOWN @	U	WELL	FUNCT.	W(U)202	DRAW	DOWN @	U	WELL	FUNCT.	W(U)203	DRAW	DOWN @	U	WELL	FUNCT.	W(U)204	DRAW	DOWN @	U	WELL	FUNCT.	W(U)205	DRAW	DOWN @	U	WELL	FUNCT.	W(U)206	DRAW	DOWN @	U	WELL	FUNCT.	W(U)207	DRAW	DOWN @	U	WELL	FUNCT.	W(U)208	DRAW	DOWN @	U	WELL	FUNCT.	W(U)209	DRAW	DOWN @	U	WELL	FUNCT.	W(U)210	DRAW	DOWN @	U	WELL	FUNCT.	W(U)211	DRAW	DOWN @	U	WELL	FUNCT.	W(U)212	DRAW	DOWN @	U	WELL	FUNCT.	W(U)213	DRAW	DOWN @	U	WELL	FUNCT.	W(U)214	DRAW	DOWN @	U	WELL	FUNCT.	W(U)215	DRAW	DOWN @	U	WELL	FUNCT.	W(U)216	DRAW	DOWN @	U	WELL	FUNCT.	W(U)217	DRAW	DOWN @	U	WELL	FUNCT.	W(U)218	DRAW	DOWN @	U	WELL	FUNCT.	W(U)219	DRAW	DOWN @	U	WELL	FUNCT.	W(U)220	DRAW	DOWN @	U	WELL	FUNCT.	W(U)221	DRAW	DOWN @	U	WELL	FUNCT.	W(U)222	DRAW	DOWN @	U	WELL	FUNCT.	W(U)223	DRAW	DOWN @	U	WELL	FUNCT.	W(U)224	DRAW	DOWN @	U	WELL	FUNCT.	W(U)225	DRAW	DOWN @	U	WELL	FUNCT.	W(U)226	DRAW	DOWN @	U	WELL	FUNCT.	W(U)227	DRAW	DOWN @	U	WELL	FUNCT.	W(U)228	DRAW	DOWN @	U	WELL	FUNCT.	W(U)229	DRAW	DOWN @	U	WELL	FUNCT.	W(U)230	DRAW	DOWN @	U	WELL	FUNCT.	W(U)231	DRAW	DOWN @	U	WELL	FUNCT.	W(U)232	DRAW	DOWN @	U	WELL	FUNCT.	W(U)233	DRAW	DOWN @	U	WELL	FUNCT.	W(U)234	DRAW	DOWN @	U	WELL	FUNCT.	W(U)235	DRAW	DOWN @	U	WELL	FUNCT.	W(U)236	DRAW	DOWN @	U	WELL	FUNCT.	W(U)237	DRAW	DOWN @	U	WELL	FUNCT.	W(U)238	DRAW	DOWN @	U	WELL	FUNCT.	W(U)239	DRAW	DOWN @	U	WELL	FUNCT.	W(U)240	DRAW	DOWN @	U	WELL	FUNCT.	W(U)241	DRAW	DOWN @	U	WELL	FUNCT.	W(U)242	DRAW	DOWN @	U	WELL	FUNCT.	W(U)243	DRAW	DOWN @	U	WELL	FUNCT.	W(U)244	DRAW	DOWN @	U	WELL	FUNCT.	W(U)245	DRAW	DOWN @	U	WELL	FUNCT.	W(U)246	DRAW	DOWN @	U	WELL	FUNCT.	W(U)247	DRAW	DOWN @	U	WELL	FUNCT.	W(U)248	DRAW	DOWN @	U	WELL	FUNCT.	W(U)249	DRAW	DOWN @	U	WELL	FUNCT.	W(U)250	DRAW	DOWN @	U	WELL	FUNCT.	W(U)251	DRAW	DOWN @	U	WELL	FUNCT.	W(U)252	DRAW	DOWN @	U	WELL	FUNCT.	W(U)253	DRAW	DOWN @	U	WELL	FUNCT.	W(U)254	DRAW	DOWN @	U	WELL	FUNCT.	W(U)255	DRAW	DOWN @	U	WELL	FUNCT.	W(U)256	DRAW	DOWN @	U	WELL	FUNCT.	W(U)257	DRAW	DOWN @	U	WELL	FUNCT.	W(U)258	DRAW	DOWN @	U	WELL	FUNCT.	W(U)259	DRAW	DOWN @	U	WELL	FUNCT.	W(U)260	DRAW	DOWN @	U	WELL	FUNCT.	W(U)261	DRAW	DOWN @	U	WELL	FUNCT.	W(U)262	DRAW	DOWN @	U	WELL	FUNCT.	W(U)263	DRAW	DOWN @	U	WELL	FUNCT.	W(U)264	DRAW	DOWN @	U	WELL	FUNCT.	W(U)265	DRAW	DOWN @	U	WELL	FUNCT.	W(U)266	DRAW	DOWN @	U	WELL	FUNCT.	W(U)267	DRAW	DOWN @	U	WELL	FUNCT.	W(U)268	DRAW	DOWN @	U	WELL	FUNCT.	W(U)269	DRAW	DOWN @	U	WELL	FUNCT.	W(U)270	DRAW	DOWN @	U	WELL	FUNCT.	W(U)271	DRAW	DOWN @	U	WELL	FUNCT.	W(U)272	DRAW	DOWN @	U	WELL	FUNCT.	W(U)273	DRAW	DOWN @	U	WELL	FUNCT.	W(U)274	DRAW	DOWN @	U	WELL	FUNCT.	W(U)275	DRAW	DOWN @	U	WELL	FUNCT.	W(U)276	DRAW	DOWN @	U	WELL	FUNCT.	W(U)277	DRAW	DOWN @	U	WELL	FUNCT.	W(U)278	DRAW	DOWN @	U	WELL	FUNCT.	W(U)279	DRAW	DOWN @	U	WELL	FUNCT.	W(U)280	DRAW	DOWN @	U	WELL	FUNCT.	W(U)281	DRAW	DOWN @	U	WELL	FUNCT.	W(U)282	DRAW	DOWN @	U	WELL	FUNCT.	W(U)283	DRAW	DOWN @	U	WELL	FUNCT.	W(U)284	DRAW	DOWN @	U	WELL	FUNCT.	W(U)285	DRAW	DOWN @	U	WELL	FUNCT.	W(U)286	DRAW	DOWN @	U	WELL	FUNCT.	W(U)287	DRAW	DOWN @	U	WELL	FUNCT.	W(U)288	DRAW	DOWN @	U	WELL	FUNCT.	W(U)289	DRAW	DOWN @	U	WELL	FUNCT.	W(U
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SCENARIO D) Chart 1



HOURS	DAYS	@Well 1	Point A	Point B	Point C	Point
0		0.00	0	0	0	Distance from Well 1
10		0.42	-10.75	-4.99	-2.20	-1.74
20		0.83	-11.13	-5.37	-2.57	-2.11
48		2.00	-11.60	-5.85	-3.04	-2.58
96		4.00	-11.98	-6.22	-3.42	-2.95
288		12.00	-12.58	-6.82	-4.02	-3.55
2000		83.33	-13.63	-7.87	-5.07	-4.60
5000		208.33	-14.13	-8.37	-5.57	-5.10

WELL NO 2

$$r_2(\text{well radius})=$$

Dist well 2 to point A

Dist well 2 to point B

Dist Well 2 to point C

1. Item D

0.00 GPM = 0.000 CFS

TIME	TIME t	U w/r1	WELL FUNCT.	DRAW DOWN	SPEC. CAP	U w/r2	WELL FUNCT.	DRAW OWN	U w/r3	WELL FUNCT.	DRAW DOWN	U w/r4	WELL FUNCT.	DRAW DOWN	U w/r5
HOURS	DAYS	0.5000	W(U)1	@Well 2	GPM/FT	Point A	W(U)2	Point A	Point B	W(U)3	Point B	Point C	W(U)4	Point C	Point D
10	0.42	1.428E-09	19.7898	0.00	#DIV/0!	5.712E-05	9.1932	0.00	9.952E-03	4.0427	0.00	1.579E-01	1.4207	0.00	0.00
20	0.83	7.140E-10	20.4830	0.00	#DIV/0!	2.868E-05	9.8863	0.00	4.976E-03	4.7309	0.00	7.893E-02	2.0394	0.00	0.00
48	2.00	2.975E-10	21.3584	0.00	#DIV/0!	1.190E-05	10.7618	0.00	2.073E-03	5.6034	0.00	3.289E-02	2.8701	0.00	0.00
96	4.00	1.487E-10	22.0516	0.00	#DIV/0!	5.950E-06	11.4549	0.00	1.037E-03	6.2955	0.00	1.644E-02	3.5470	0.00	0.00
288	12.00	4.958E-11	23.1502	0.00	#DIV/0!	1.983E-06	12.5535	0.00	3.456E-04	7.3935	0.00	5.481E-03	4.6347	0.00	0.00
2000	83.33	7.140E-12	25.0881	0.00	#DIV/0!	2.858E-07	14.4915	0.00	4.976E-05	9.3311	0.00	7.893E-04	6.5680	0.00	0.00
5000	208.33	2.856E-12	26.0044	0.00	#DIV/0!	1.142E-07	15.4078	0.00	1.990E-05	10.2474	0.00	3.157E-04	7.4838	0.00	0.00

HOURS	DAYS	@Well 2	Point A	Point B	Point C	Point
		0.500	100	1320	5257	Distance from Well 1
0		0.00	0	0	0	
10		0.42	0.00	0.00	0.00	
20		0.83	0.00	0.00	0.00	
48		2.00	0.00	0.00	0.00	
96		4.00	0.00	0.00	0.00	
288		12.00	0.00	0.00	0.00	
2000		83.33	0.00	0.00	0.00	
5000		208.33	0.00	0.00	0.00	

SCENARIO E

WELL NO 3		0.500 FT		@Well 3		4.950 CFS		2221.56 GPM =		Q well 1	
r3(Well radius)=		100 FT		Point A		Point B		Point C		Point C	
Dist well 3 to point A		1320 FT		Point B		Point C		Point C		Point C	
Dist well 3 to point B		4426 FT		Point C		Point C		Point C		Point C	
Dist Well 3 to point C		2221.56 GPM =		Point C		Point C		Point C		Point C	
TIME	U	WELL FUNCT.	W(U)1	WELL FUNCT.	W(U)2	WELL FUNCT.	W(U)3	WELL FUNCT.	W(U)4	WELL FUNCT.	W(U)5
HOURS	DAYS	U	W(U)1	W(U)2	W(U)3	W(U)4	W(U)5	W(U)6	W(U)7	W(U)8	W(U)9
10	0.42	1.428E-09	19.7898	9.1932	4.96	9.952E-03	4.0427	2.18	1.119E-01	1.7218	0.93
20	0.83	7.140E-10	20.4830	9.8863	5.34	4.976E-03	4.7309	2.55	5.595E-02	2.3613	1.28
48	2.00	2.975E-10	21.3584	10.7618	5.81	2.073E-03	5.6034	3.03	2.331E-02	3.2048	1.73
96	4.00	1.487E-10	22.0516	11.4549	6.19	1.037E-03	6.2955	3.40	1.166E-02	3.8864	2.10
288	12.00	4.958E-11	23.1502	12.5535	6.78	3.456E-04	7.3935	3.99	3.885E-03	4.9773	2.69
2000	83.33	7.140E-12	25.0881	14.4915	7.83	4.976E-05	9.3311	5.04	5.595E-04	6.9119	3.73
5000	208.33	2.856E-12	26.0044	15.4078	8.32	1.990E-05	10.2474	5.53	2.238E-04	7.8278	4.23

HOURS	DAYS	@Well 3	Point A	Point B	Point C	Point
0		0.00	0	0	0	
10		0.42	-10.69	-4.96	-2.18	-0.93
20		0.83	-11.06	-5.34	-2.55	-1.28
48		2.00	-11.53	-5.81	-3.03	-1.73
96		4.00	-11.91	-6.19	-3.40	-2.10
288		12.00	-12.50	-6.78	-3.99	-2.69
2000		83.33	-13.55	-7.83	-5.04	-3.73
5000		208.33	-14.04	-8.32	-5.53	-4.23

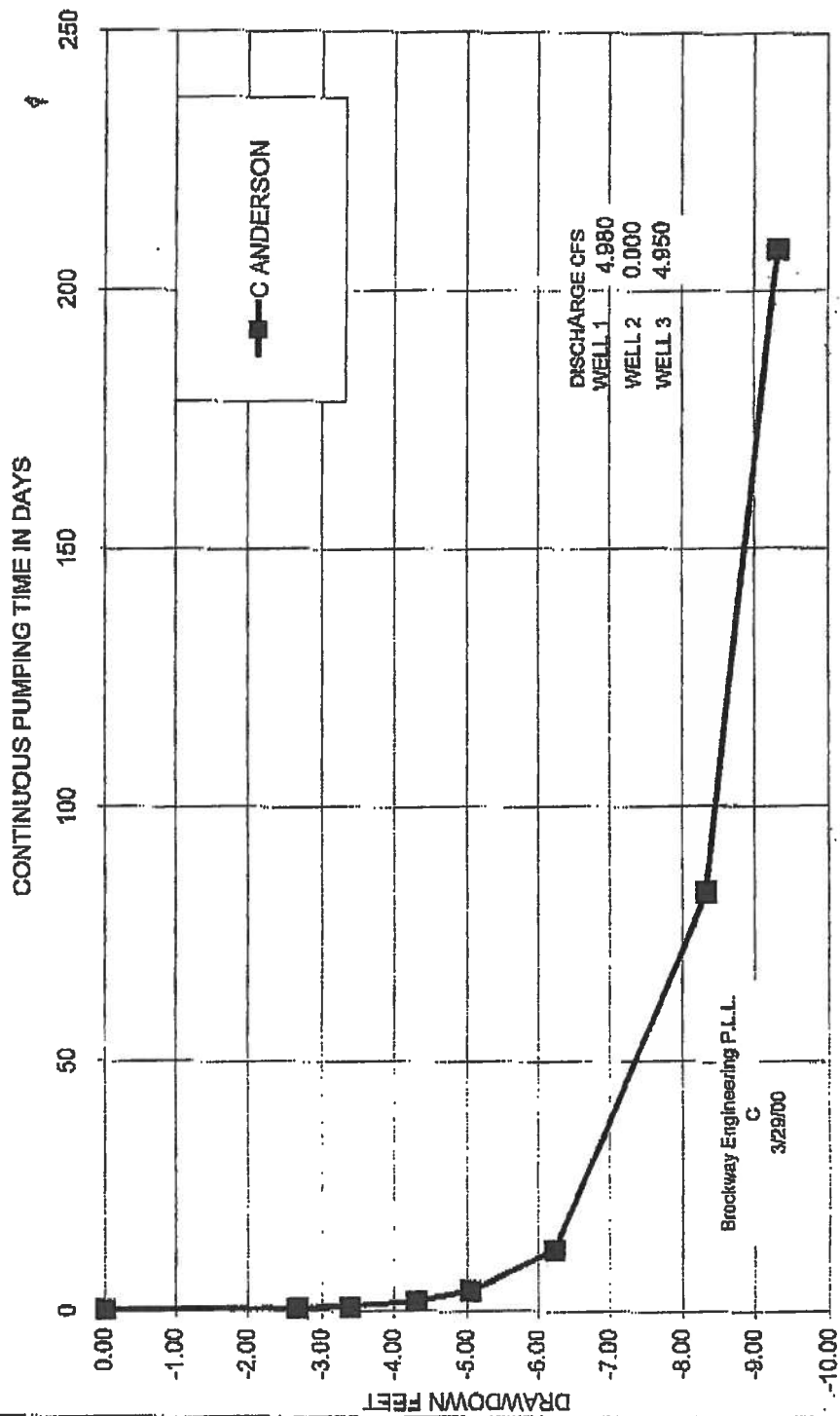
COMBINED DRAWDOWN DUE TO THREE WELLS PUMPING

HOURS	A			B			C ANDERSON		
	by Well 1	by Well 2	Total	by Well 1	by Well 2	Total	by Well 1	by Well 2	Total
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.42	0.00	-9.96	-2.20	0.00	-2.18	-1.74	0.00	-0.93
20	0.83	0.00	-10.71	-2.57	0.00	-2.55	-2.11	0.00	-1.28
48	2.00	0.00	-11.66	-3.04	0.00	-3.03	-2.58	0.00	-1.73
96	4.00	0.00	-12.41	-3.42	0.00	-3.40	-2.95	0.00	-2.10
288	12.00	0.00	-13.60	-4.02	0.00	-3.99	-3.55	0.00	-2.69
2000	83.33	0.00	-15.70	-5.07	0.00	-5.04	-4.60	0.00	-3.73
5000	208.33	0.00	-16.69	-5.57	0.00	-5.53	-5.10	0.00	-4.23

SCENARIO B Chart 1

ESTIMATED DRAWDOWN AT SELECTED POINTS FROM MULTIPLE PUMPING WELLS

Sorenson/Perkes Transfers Scenario E



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WATER RESOURCES

Hydrogeologic Assessment
of the
Accomplished Transfer of Water Rights
34-2459, 34-2460, 34-2461, 34-2462, 34-10925

Prepared
By
Brian Higgs, P.G.
Water Well Consultants, Inc.

**Hydrogeologic Assessment
of the
Accomplished Transfer of Water Rights
34-2459, 34-2460, 34-2461, 34-2462, 34-10925**

BACKGROUND

Telford Land, LLC owns approximately 1,980 acres at the southern portion of the Big Lost River Valley in IDWR-designated Basin 34. The 1,980 acres are irrigated primarily with groundwater, although there is a late-priority surface water right appurtenant to the property.

There are a total of four (4) groundwater wells which deliver irrigation water to the Telford farm. The farm is located in sections 14, 15, 16, 22, and 23 of Township 3N, Range 26 E, Boise Meridian, and the wells are grouped in pairs. One set of wells, known as the “Airport Wells”, is located in section 2 in the same township and range. The second set of wells are known as the “Island Wells,” and are located in the SW1/4 of section 34, Township 5N, Range 26E and the NW1/4 of section 3, Township 4N, Range 26E. The Airport Wells are located much closer to the Telford farm, and water diverted from them is delivered through a private delivery system in a very efficient manner. The Island Wells are located much further north than the Airport Wells, and water diverted from them is delivered into a canal system operated by the Big Lost River Irrigation District, which is much less efficient than the Airport Wells delivery system, often resulting in significant shrink charges of 50% or more, the result being less water delivered to the Telford farm.

Telford has asserting that an accomplished transfer within the Snake River Basin Adjudication (SRBA) occurred, allowing for a total combined diversion from the Airport Wells and the Island Wells of 24.5 cfs. As a practical matter, water from the Airport Wells is diverted first because delivery is much more efficient. However, there are times when the Airport Wells do not produce sufficient quantities of water, and the Island Wells must be used to divert the entirety of Telford’s 24.5 cfs of water right.

IDWR has recommended that the accomplished transfer happened, and in grandfathering in this change, has also included a subordination provision to protect water users with more senior water rights by providing that when there is a call in times of scarcity, the diversion of Water Right Nos. 34-2459, 34-2460, 34-2461, 34-2462, and 34-10925 from the Island Wells “has a priority date of May 18, 1982.” The presumption is that in times of shortage and to the extent priority dates are enforced for groundwater pumping, this would protect existing water right holders from any additional drawdown from the Island Wells and its ability to divert an additional 12.5 cfs.

Based upon a review of actual measurements of these wells from field examination for the Island Wells conducted in August of 1985, they collectively had a measured diversion rate of 24.66 cfs. For purposes of this report, we presume that the wells have historically diverted that amount of water since 1985.

Nevertheless, certain water users have filed objections in the SRBA objecting to the accomplished transfer, alleging that if the accomplished transfer is grandfathered in, they will be injured. These water users own wells in the vicinity of the Island Wells. The area of concern for this report is limited to the Island Wells and the immediate area since they are the subject of the contested accomplished transfer. The purpose of this report is to discuss the hydrogeology of the study area, with an emphasis on possible impacts from the increased 12.5 cfs that could be diverted from the Island Wells under the accomplished transfer.

Water Well Consultants, Inc. (WWC) was initially hired by Telford in June of 2010 to determine the possible impacts to surrounding wells in an area approximately 2 miles northwest of the Island Wells (5N 26E 29), which was necessary to address concerns relating to a proposed water right transfer (Transfer No. 76286). Since the previous work was conducted within the same general area and aquifer, with similar geology and hydrogeology some of the data from the previous study will be used in this study.

PUBLISHED REPORTS

Several reports on the water resources of the BLR Valley have been published. The United States Geological Survey (USGS) is the most prominent source of these publications. Many reports directed toward the BLR Valley have also been published by the Idaho National Laboratory (INL) but are limited to the effect of the BLR on the INL. A limited number of reports describe measured aquifer parameters.

Other authors include Mundorf, Water Supply Paper 1654 (Mundorf, et al. 1964), Said (Said, et al.), Rice (Rice et al. 2008), Bassick (Bassick and Jones (1992), Johnson (Johnson et al. 1991), and Szczepanowski, (1982). An additional report associated with the protested transfer mentioned above was written by Wood (2011). Wood completed a pumping test on a well, located at 5N 26E 29NE, in April of 2011 as part of his study.

GEOLOGY

For this report it is not necessary to describe the areal geology. It suffices to describe the shallow lithology only in the study area.

Several hundred wells have been drilled throughout the BLR Basin. The IDWR has catalogued the driller's reports from many of these wells. The reports can be viewed and printed from the IDWR website at www.idwr.idaho.gov.

The driller's logs describe the lithology of the area as typical for fluvial deposition. The top soil is underlain with interfingering layers of clay, silts, sands, gravels of varying size to cobbles, and mixtures of all sediments. The typical depth of a production well in the area varies from 150 to 250 ft bls. A good description of the subsurface in the area of concern is found in a well log presented as figure 1.

State of Idaho
Department of Reclamation

WELL DRILLER'S REPORT

State law requires that this report be filed with the State Reclamation Engineer within 30 days after completion or abandonment of the well.

USE TYPEWRITER OR BALL POINT PEN

1. WELL OWNER <u>17040218</u> Name <u>City of Moora</u> Address <u>Moora, Idaho</u> Owner's Permit No. <u> </u>	7. WATER LEVEL <u>14.8"</u> Department of Reclamation Static water level <u>18**</u> feet below land surface Flowing? ☐ Yes ☒ No G.P.M. flow <u> </u> Temperature <u>48</u> ° F. Quality <u> </u> Artesian closed-in pressure <u> </u> p.s.i. Controlled by ☐ Valve ☐ Cap ☐ Plug																																																																													
2. NATURE OF WORK <u>Well # 1</u> ☒ New well ☐ Deepened ☐ Replacement ☐ Abandoned (describe method of abandoning) <u> </u>	8. WELL TEST DATA ☒ Pump ☐ Sailer ☐ Other <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Discharge G.P.M.</th> <th>Draw Down</th> <th>Hours Pumped</th> </tr> <tr> <td><u>445</u></td> <td><u>21.10"</u></td> <td><u>6</u></td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	Discharge G.P.M.	Draw Down	Hours Pumped	<u>445</u>	<u>21.10"</u>	<u>6</u>																																																																							
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3. PROPOSED USE ☐ Domestic ☐ Irrigation ☐ Test ☒ Municipal ☐ Industrial ☐ Stock	9. LITHOLOGIC LOG <u>30123</u> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Hole Diam.</th> <th colspan="2">Depth</th> <th rowspan="2">Material</th> <th colspan="2">Water</th> </tr> <tr> <th>From</th> <th>To</th> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td rowspan="12">12</td> <td>0</td> <td>5</td> <td>Soil & Gravel</td> <td></td> <td></td> </tr> <tr> <td>5</td> <td>15</td> <td>Large Gravel & Clay</td> <td></td> <td></td> </tr> <tr> <td>15</td> <td>30</td> <td>Gravel Sand & Clay</td> <td>X</td> <td></td> </tr> <tr> <td>30</td> <td>40</td> <td>Fine Gravel Sand</td> <td>X</td> <td></td> </tr> <tr> <td>40</td> <td>45</td> <td>Fine Gravel Some Clay</td> <td>X</td> <td></td> </tr> <tr> <td>45</td> <td>52</td> <td>Larger Gravel</td> <td>X</td> <td></td> </tr> <tr> <td>52</td> <td>55</td> <td>Clay Sand</td> <td></td> <td></td> </tr> <tr> <td>55</td> <td>65</td> <td>Clay Sand (some gravel)</td> <td></td> <td></td> </tr> <tr> <td>65</td> <td>75</td> <td>Gravel Some Clay</td> <td></td> <td></td> </tr> <tr> <td>75</td> <td>105</td> <td>Gravel Silt</td> <td>X</td> <td></td> </tr> <tr> <td>105</td> <td>160</td> <td>Gravel Silt Sand</td> <td>X</td> <td></td> </tr> <tr> <td>160</td> <td>165</td> <td>Clean Gravel & Sand</td> <td>X</td> <td></td> </tr> <tr> <td>12</td> <td>165</td> <td>174</td> <td>Gravel Silt Sand</td> <td>X</td> <td></td> </tr> </tbody> </table>	Hole Diam.	Depth		Material	Water		From	To	Yes	No	12	0	5	Soil & Gravel			5	15	Large Gravel & Clay			15	30	Gravel Sand & Clay	X		30	40	Fine Gravel Sand	X		40	45	Fine Gravel Some Clay	X		45	52	Larger Gravel	X		52	55	Clay Sand			55	65	Clay Sand (some gravel)			65	75	Gravel Some Clay			75	105	Gravel Silt	X		105	160	Gravel Silt Sand	X		160	165	Clean Gravel & Sand	X		12	165	174	Gravel Silt Sand	X	
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5. WELL CONSTRUCTION Diameter of hole <u>12</u> inches Total depth <u>174</u> feet Casing schedule: ☒ Steel ☐ Concrete <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Thickness</th> <th>Diameter</th> <th>From</th> <th>To</th> </tr> </thead> <tbody> <tr> <td><u>.250</u> inches</td> <td><u>12</u> inches</td> <td><u>1</u> feet</td> <td><u>174</u> feet</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> Was a packer or seal used? ☐ Yes ☒ No Perforated? ☒ Yes ☐ No How perforated? ☐ Factory ☒ Knife ☐ Torch Size of perforation <u>2 1/2</u> inches by <u>3 1/2</u> inches <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Number</th> <th>From</th> <th>To</th> </tr> </thead> <tbody> <tr> <td><u>341</u> perforations</td> <td><u>125</u> feet</td> <td><u>147</u> feet</td> </tr> <tr> <td><u>210</u> perforations</td> <td><u>147</u> feet</td> <td><u>151</u> feet</td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> Well screen installed? ☐ Yes ☒ No Manufacturer's name <u> </u> Type <u> </u> Model No. <u> </u> Diameter <u> </u> Slot size <u> </u> Set from <u> </u> feet to <u> </u> feet Diameter <u> </u> Slot size <u> </u> Set from <u> </u> feet to <u> </u> feet Gravel packed? ☐ Yes ☒ No Size of gravel <u> </u> feet Placed from <u> </u> feet to <u> </u> feet Surface seal? ☒ Yes ☐ No To what depth <u>18</u> feet Material used in seal ☒ Cement grout ☐ Pudding clay	Thickness	Diameter	From	To	<u>.250</u> inches	<u>12</u> inches	<u>1</u> feet	<u>174</u> feet																	Number	From	To	<u>341</u> perforations	<u>125</u> feet	<u>147</u> feet	<u>210</u> perforations	<u>147</u> feet	<u>151</u> feet							11. DRILLER'S CERTIFICATION <u>8024</u> This well was drilled under my supervision and this report is true to the best of my knowledge. <u>Andrew Well Drilling Contractors</u> <u>5</u> Driller's or Firm's Name <u> </u> Number <u> </u> <u>1268 E. 17th St. Idaho Falls, Idaho 83401</u> Address <u> </u> Signed By <u> </u> 1 - 27 - 70 Date <u> </u>																																						
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Figure 1. Driller's log describing the typical subsurface of the Big Lost River Valley.

According to Crosthwaite (Crosthwaite et al. 1964) the alluvium of the basin can reach depths of more than 3,000 feet below land surface (bls). Crosthwaite describes a clay layer below 250 ft bls. Since most irrigation wells in the area are completed above 250 feet bls it is not necessary to describe geologic features below 250 ft.

HYDROGEOLOGY

The following subsections describe the hydrogeology of the area.

Water Level Hydrographs

Hydrographs throughout most of the BLR Valley illustrate the fact that ground water is highly connected with surface water. Flows in the BLR increase during the spring, maintain high flows through the irrigation season and then diminish to very low or no flow in the fall. Ground water levels reflect this pattern. Ground water levels increase during the spring and reach peaks after the surface water system has had maximum time to infiltrate. The lowest elevation of the static water level is in the late winter or early spring.

Ground water levels are also influenced by the climate (water cycle or precipitation cycle). Water levels in the area reflect periods of high precipitation and low precipitation. This fact is evidenced in figure 2, which is a hydrograph of a well located slightly more than 2 miles north northeast (5N 26E 23 NENWSW) of the wells in this study.

The precipitation cycle is easily recognized in the drought of the early 1960's, again in 1977, 1992, and the most recent drought of the early 2000's. This hydrograph (Figure 2) was included to show the interaction of the aquifer with the river through time. Note that droughts prior to 1980 did not draw the aquifer down as far the droughts since 1980. The drought of the late 1970's was severe, but did not cause a drop in the water levels of the aquifer as significantly as the early 1990's and the early 2000's. The likely reason for this is the increase in ground water rights and ground water diversions beginning in the 1970's.

Low water levels in early spring and high levels in late fall show that this well reacts to annual fluctuations during moderate to high water. However, notice that at the beginning of the droughts the effect of pumping is completely overshadowed by the absence of surface water influx. Figure 3 illustrates this point. Water levels rose during the irrigation season of 2005 and 2006. However, the water levels dropped during the 2007 and 2008 irrigation seasons. This fact is discussed in a later section.

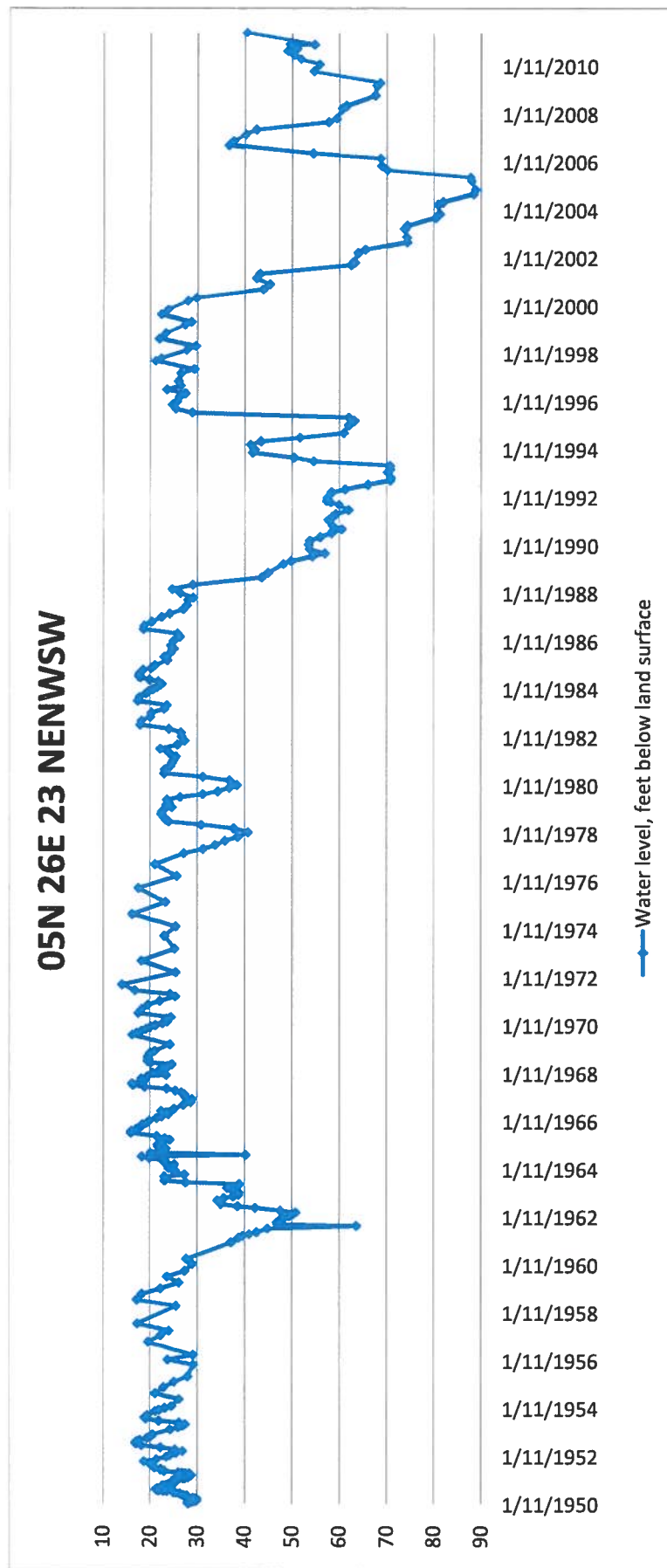


Figure 2. Hydrograph of well 05N 26E 23 NENWSW.

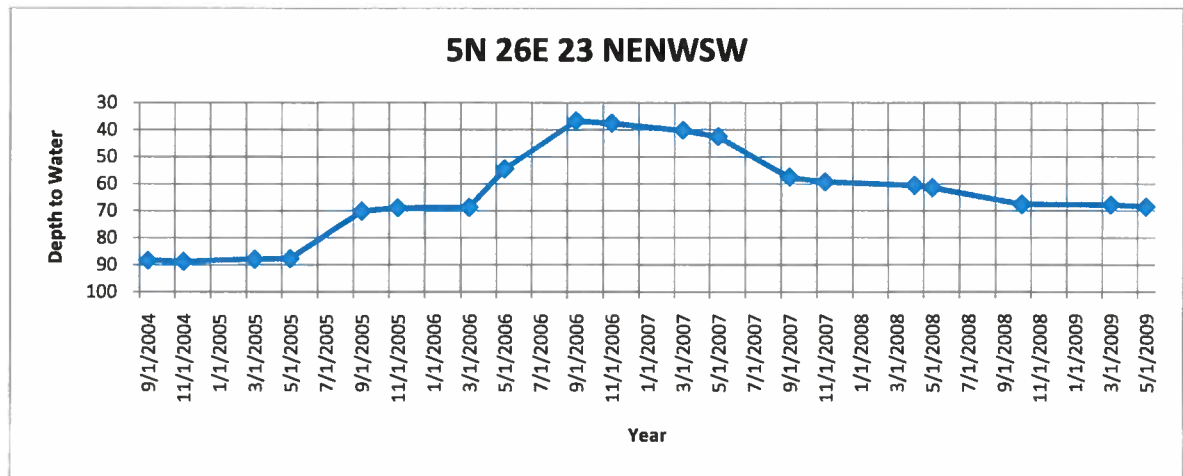


Figure 3. Hydrograph of well 5N 26E 23 NENWSW during 2005 through 2009.

Recent Water Level Measurements in the Study Area

For the previous transfer study, mentioned in the background section of this report, four (4) wells in the area either owned or jointly owned by telford, were measured 3 times during the 2010 irrigation season. The wells and measurements are recorded in Table 1.

Well Water Levels

		6/28/2010	8/9/2010	9/13/2010
Burnett	5N 26E 21 SWNWNW	77.75	69.30	78.63
Babcock	5N 26E 29 SENWSE	75.00	76.61	76.69
River Place	4N 26E 4 NENWNE	48.24*	54.58*	51.98
Old Moss	5N 26E 21 NWNWNW		81.40	80.50

Table 1. Water levels in the area of concern measured during the 2010 irrigation season. The asterisk indicates a measurement while the pump was operating.

Another well with recent measurements is well 05N 26E 23 NENWSW, which is measured by the USGS. It rose 3.5 ft from April 2010 to late August 2010. The water level in this well was the same at the end of the irrigation season as it was in April 2010. WWC measured this well on June 11, 2011 and the level was up 9 ft to 40.5 ft bls.

The hydrograph of well 05N 26E 23 NENWSW illustrates that the water cycle is currently increasing. The hydrograph is trending upward and will likely continue to increase because of high precipitation during the 2010-2011 winter. Water in the BLR was turned into the canals early in 2011 in order to clear space for the upcoming runoff and should remain high throughout the year. With the high influx of surface water in 2011, it will mask impacts from pumping during the irrigation season.

There are some important points worth making concerning these measurements.

1. The measurement results of the Burnett well on August 9th may be questionable. The field notes indicate there were large volumes of water cascading down the well bore. Cascading water makes an accurate measurement difficult because the cascading water encompasses the probe causing it to act as if it were submerged in water. Therefore, the water level was examined and it dropped approximately 1 ft between June and the end of irrigation season. July is typically the month of greatest pumping from wells in the area. This well pumped 662 AF in 2010. Therefore, a drop of 1 foot is very minimal especially when considering the Old Moss well located 1,500 ft east northeast from the Burnett well, which is a high producing well. The water level in the Old Moss well rose 1 foot during the same interval.
2. The Babcock well pumped 359 AF during 2010. The water level dropped approximately 1.5 ft from June to October.
3. The River Place well dropped 3.5 ft during the irrigation season. It pumped 466 AF.
4. Despite all the surrounding pumping, including production of 129 AF, the water level in the Old Moss well rose 1 ft.

Drawdown Analysis

Transmissivity (T) values, measured and estimated, in the area from previous reports vary widely. The values range from below 50,000 ft²/day (Bassick, 1991) to 1,000,000 ft²/day (Said).

For the previous transfer, mentioned in the background section of this report, a model was created to represent the hypothetical drawdown according to the Theis equations. This model was used to back-calculate T using the water level data measured during the 2010 irrigation season. The modeled T was then used to determine expected drawdown in the Island wells and nearby wells. The T value is a critical input into any groundwater model, and generally speaking, the lower the T value, the steeper the cone of depression will be near the well site. A higher T value produces the opposite result.

All assumptions of the Theis method are in effect. The model, created in ESRI's ArcGIS, uses a series of grid layers that represent variables of the Theis equation. These variables are: transmissivity, storativity, pumping duration, distance from pumping well, and pumping rate. Pumping rates (taken from IDWR WMIS) from five wells surrounding the proposed location were used as discharge values in the equations. Based upon various records, many other pumping wells are used throughout the irrigation season, but were not included in the discharge component of the model. Based upon our methodology, the omission of these other pumping wells was offset by not including influx from the river. The aquifer was also assumed to be flat.

As with any model, we acknowledge that these inputs do not capture the actual on-the-ground values. However, with minimal drawdown or rising water levels throughout the irrigation season, the hypothesis is that the model must be conservative in order to segregate any possible effect on nearby wells.

The model creates a grid that represents the drawdown for each well input and combines the five (5) grids to show a cumulative drawdown. The pumping rates that used for diversions were based upon the actual measured rates taken by IDWR in 1985, which showed approximately 12 cfs from each well. Therefore, a total of 12 cfs from each well, for a grand total of 24 cfs, was modeled. Because the Island Wells are already authorized to divert 12 cfs, and the impacts from that 12 cfs are not at issue, the inputs we made for diversions are very conservative. This also represented on-the-ground diversions in order to understand what impact pumping would have on neighboring measurement locations. The irrigation season is approximately 150 days. A 100-day pumping duration was used to accurately simulate pumping, which likely stops when grain is ripe or hay is cut and drying. A storativity of 0.025 was held constant through the four (4) model runs. A large storativity (0.025) is conservative in the T function.

To produce all possible scenarios, the model was utilized with varying T 's. Four T rates were used: 50,000 ft²/day, 100,000 ft²/day, 250,000 ft²/day and 500,000 ft²/day. These four (4) T 's were taken from varying reports of the area. Transmissivity values vary depending on aquifer formations and can be misinterpreted when an aquifer contains several impermeable layers scattered throughout. Because the Theis equation assumes homogeneity throughout the entire aquifer, the various modeled T values were compared to actual observed water levels in neighboring wells. The model describing the T that most closely resembled the measured water levels was applied to the Island Wells. The model was then run with the chosen T to simulate drawdown in nearby wells.

Figures 4 through 11 illustrate the results of the model. These figures are located at the end of this report. The results are summarized below:

- Figure 4 illustrates the results of the model with all 5 pumping wells with a T of 50,000 ft²/day. At the end of the 100 continuous pumping days, the drawdown of the pumping wells reaches 20 feet. According to the model, the River Well (4N 26E 4 NENWNE) should show a drawdown of 8.5 to 9 ft. The measured drawdown on September 13th after 100 days of pumping was approximately 3.5 ft. Analysis of other wells demonstrated the following:

The model predicted the drawdown at well 5N 26E 23 NENWSE after 100 days of pumping at a T of 50,000 ft²/day to be 5 ft. However, the measured water level at the end of the irrigation season was equal to the water level at the beginning of the season. Hence the actual measurement for drawdown of 0 ft.

Drawdown at the Babcock well (5N 26E 29 SENWSE) was predicted to be 11 ft. However, the measured drawdown was approximately 1.5 ft at the end of the season after pumping 359 AF.

The Old Moss well was predicted to show a drawdown of 6 ft. After 100 days of pumping, the measured water level rose a little over 1 ft.

These analyzed results show that an aquifer T of 50k is not likely because the results do not match the actual measurements. Therefore, it is highly likely that the T of the pumping wells must be greater than 50,000 ft²/day.

- Figure 5 is the modeled results utilizing 100,000 ft²/day in the pumping wells. A similar review of Figure 5 resulted in the same conclusion as that in Figure 4, i.e. none of the modeled results matched the measured water levels at the end of the irrigation season. Therefore, the T of the cumulative formations is likely greater than 100,000 ft²/day.
- Figure 6 is the modeled results at 250,000 ft²/day. Close inspection of Figure 6 reveals that the modeled drawdown matches the measured drawdown at the River well (4N 26E 4 NENWNE). The modeled prediction of drawdown is 3.5 ft and the measured water level is 3.5 ft after 100 days of pumping. However, none of the other modeled results match the measured data at the River Well with a value of 250,000 ft²/day.
- Figure 7 is the modeled results at 500,000 ft²/day. The modeled results at the River well (4N 26E 4 NENWNE) are less than the measured levels depicting that the T in the southerly direction is less than 500,000 ft²/day. Furthermore, the observation well 5N 26E 23 NENWSW does not match (1.5 ft modeled drawdown as opposed to 0 ft of measured drawdown). The Babcock well (5N 26E 29 SENWSE) results are, however, a good match, with 2 ft of modeled drawdown compared to 1.5 ft of measured drawdown. The Old Moss well (5N 26E 21 NWNWNW) does not match well, with 1.75 ft of modeled as opposed to +1 ft (rise of 1 ft) that was actually measured.

This drawdown analysis determines only 3 of the 16 measured water levels match the modeled drawdown. The highest modeled T most closely resembles the measured values. Therefore, the T of the aquifer when taken as an areal formation is much greater than 250,000 ft²/day and closer to 500,000 ft²/day or more.

This analysis indicates that in a normal or above-normal water year, the drawdown from the additional diversion of 12 cfs is masked by the influx of water from the Big Lost River. Drought conditions present difficulty for all wells, not just at the objector's wells or at the Island Wells, because there is reduced water influx for all ground water users.

Analysis of Tom Wood Pumping Test

Tom Wood of Clearwater Geosciences completed a pumping test in April 2011 on a well located at 5N 26E 29 NE, and provided interpretations of that data. The well is an irrigation production well. Two wells were also used as observation wells. Based upon our review of Mr. Wood's test, it appears that Mr. Wood misinterpreted the results of the pumping test. However, the data from the test can be used as another determination of T when analyzed correctly.

The pump ran just short of 3 days at a reported rate of 1,500 gallons per minute (gpm). The well used for the pump test is open to the atmosphere and pressure compensating transducers were not utilized. The data from the observation wells was not used because of rising water levels in the boreholes.

The data from the pump test was fitted to a Theis type curve utilizing AQTESOLV. The curve fit is excellent. The calculated T is 747,000 ft²/day.

This result is higher than results from the AcrGIS model discussed above. However, when taken in conjunction with the ArcGIS modeled results, it appears that the aquifer likely has a T of approximately 750,000 ft²/day in more than 1 direction. This is likely the case when considering that the water level in the Old Moss well rose more than 1 foot throughout the season after pumping 129 AF, and in light of the fact that there were a number of surrounding wells that were pumping large volumes of water.

The curve is shown in figure 10. The slight variation in the curve slope is more than likely caused by barometric fluctuations (noted in the Wood report). However, note the text book perfect fit on the recovery data when presuming a modeled T of approximately 747,000 ft²/day.

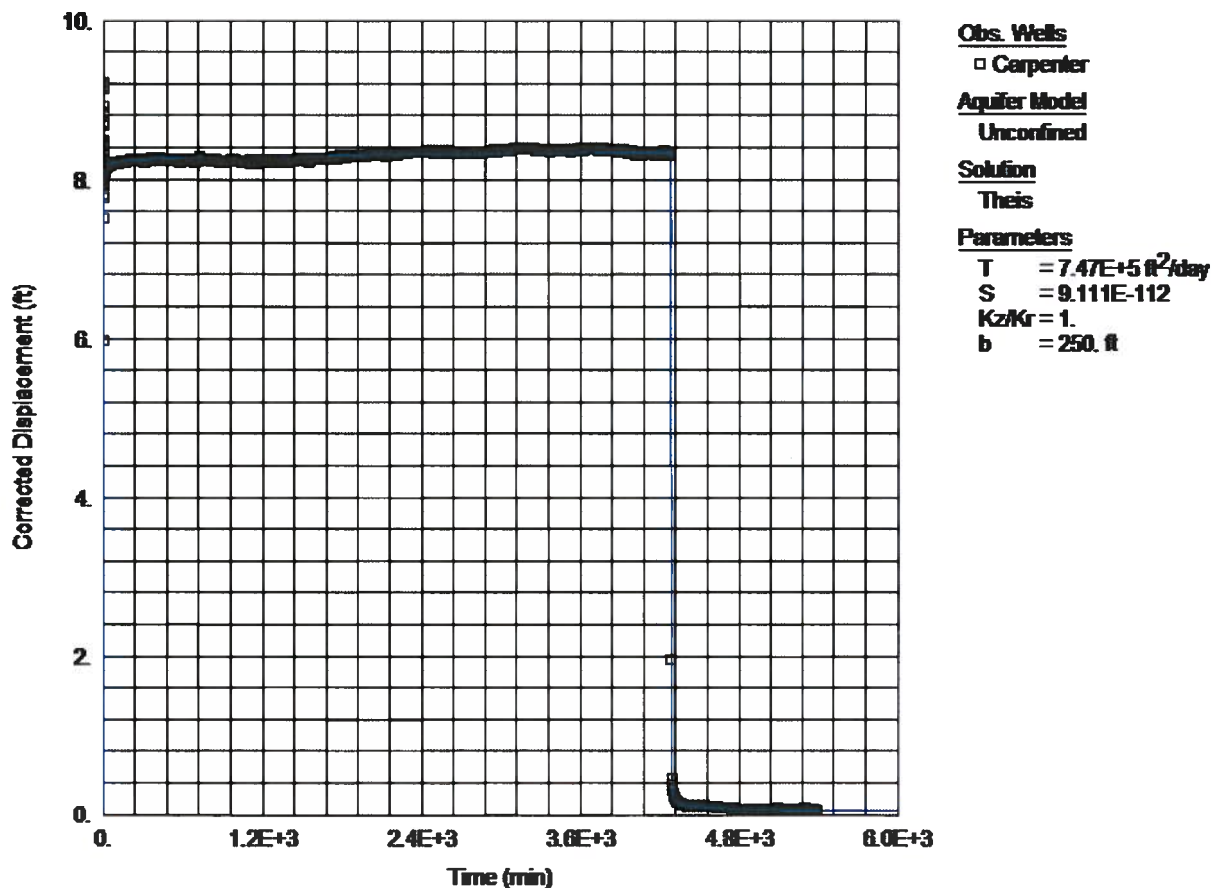


Figure 10. Drawdown curve from Wood pumping test utilizing AQTESOLV software.

As stated above, the main consideration of this study to determine the impacts of the additional water that could be pumped from the Island Wells under the accomplished transfer. It should be noted that all of the water can be pumped from one well or distributed between the wells to obtain the authorized amounts.

Based upon our review of the reports cited above, as well as our own analysis, the T in the area of the Island Wells is between 250,000 ft²/day and 750,000 ft²/day. This is much higher than the approximately 50,000 ft²/day used in the June 10, 2011 Brockway Report (Appendix A calculated average). To ensure estimation of maximum impact on the Island Wells and surrounding wells, a simple model that generates an expected combined drawdown was used. Two scenarios were run; 250,000 ft²/day as a maximum impact; 370,000 ft²/day as an average T value.

The combined pumping rate from the Island wells will be 24 cfs. In this scenario each of the Island wells were assigned a pumping rate of 12 cfs in order to determine actual impact from the wells, even though 12 cfs of diversion is already authorized under Water Right No. 34-7037. The pumping rate was held constant for 100 days. The Theis equation was used. Similar to the above model runs, we did not consider pumping from the nearby wells. In order to offset for not including these wells, we did not include influx from the river.

Result of the model predicts drawdown in the Island wells at slightly more than seven (7) feet using a T of 250,000 ft²/day. At a radius of approximately 1.5 miles, the drawdown is four (4) feet. The result of the 370,000 ft²/day model run is five (5) ft of drawdown in the Island Wells, and three (3) feet drawdown at a radius of 1.5 miles. These results are illustrated in figures 8 and 9 below.

CONCLUSIONS

1. The average T of the aquifer in the area of the Island wells is between 250,000 ft²/day and 500,000 ft²/day.
2. Drawdown from both Island wells pumping 12 cfs each will be between 3 and 4 feet within a radius 1.5 miles of the wells, and approximately 7 feet closer to the well sites.
3. In a normal or above-normal water year, the drawdown from the additional diversion of 12 cfs at the Island Wells will be masked by the influx of water from the Big Lost River and from delivery ditches. Drought conditions present difficulty for all wells, not just at the objector's wells or at the Island Wells, because there is reduced water influx for all ground water users.

$T = 50,000 \text{ ft}^2/\text{day}$ Model Output- Proposed Well

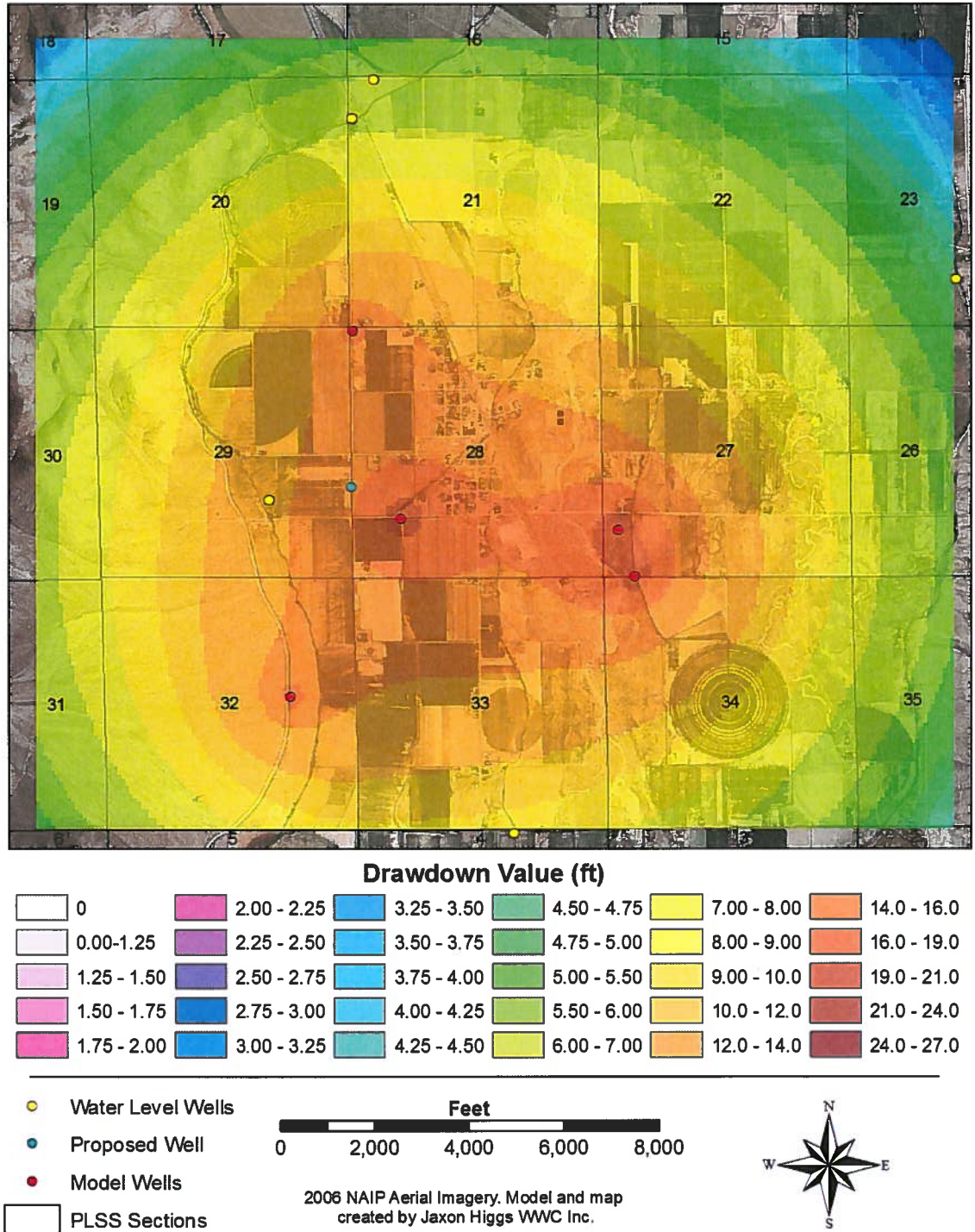


Figure 5. Model results utilizing a T of $50,000 \text{ ft}^2/\text{day}$

$T = 100,000 \text{ ft}^2/\text{day}$ Model Output- Proposed Well

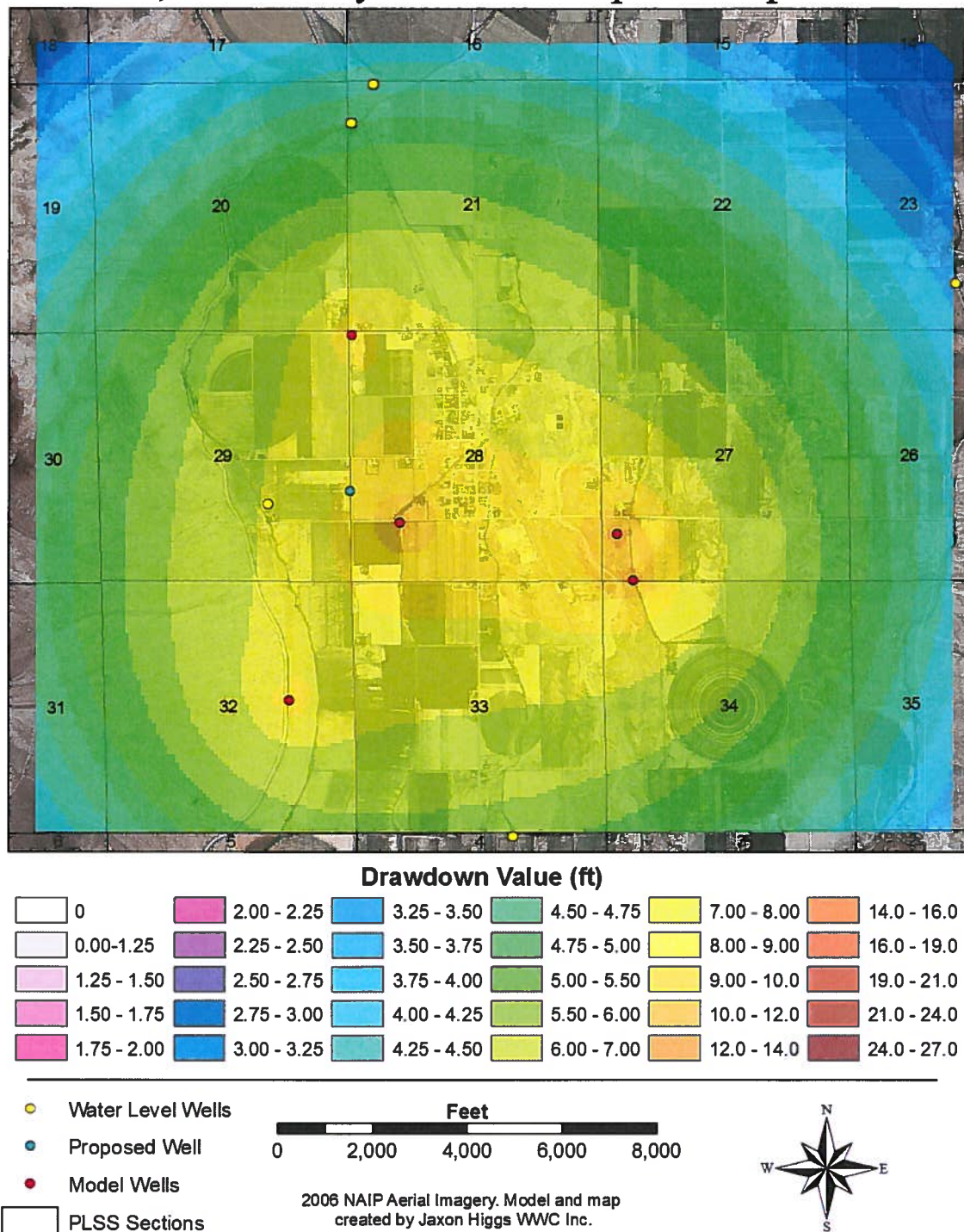


Figure 6. Model results utilizing a T of $100,000 \text{ ft}^2/\text{day}$

$T = 250,000 \text{ ft}^2/\text{day}$ Model Output- Proposed Well

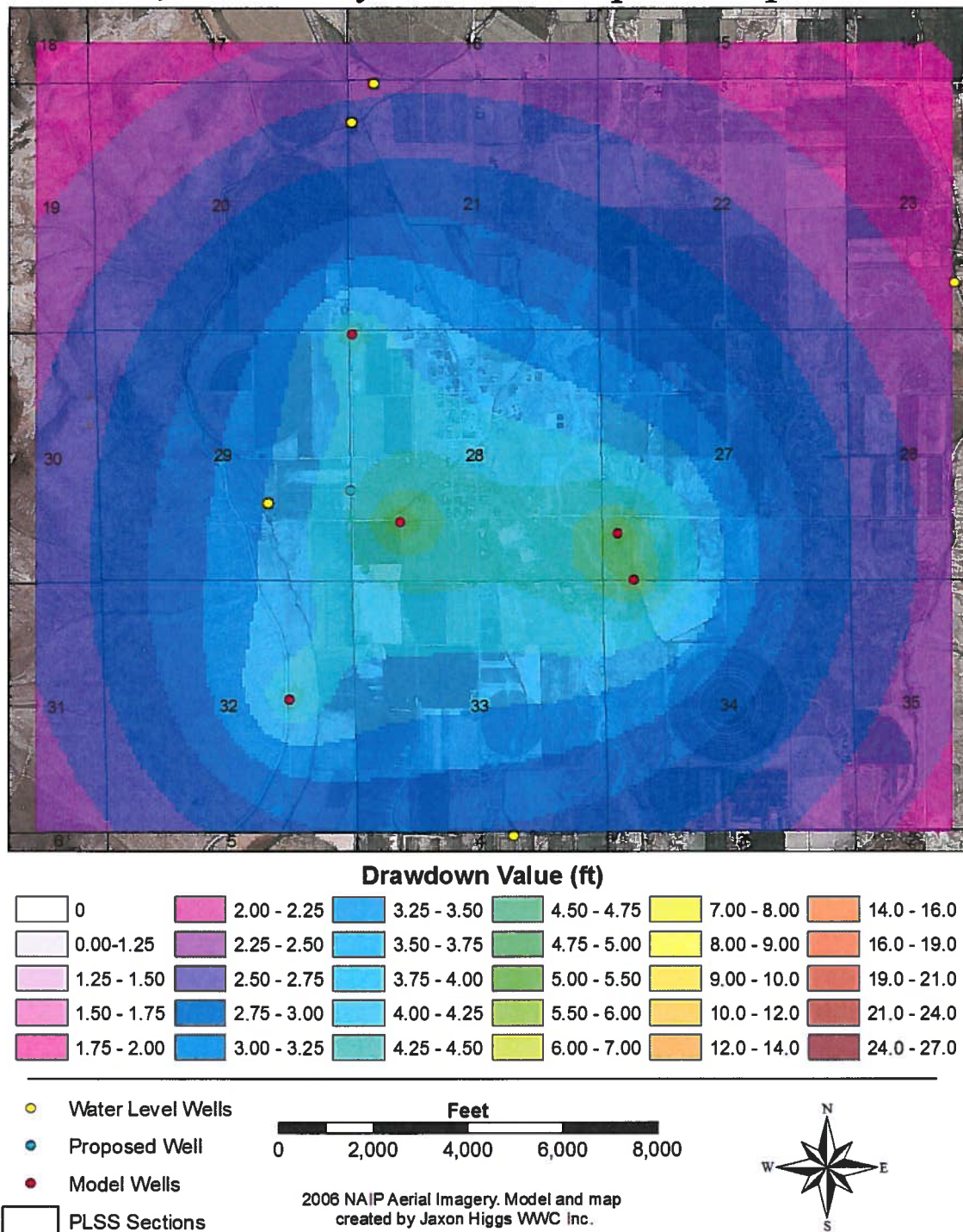
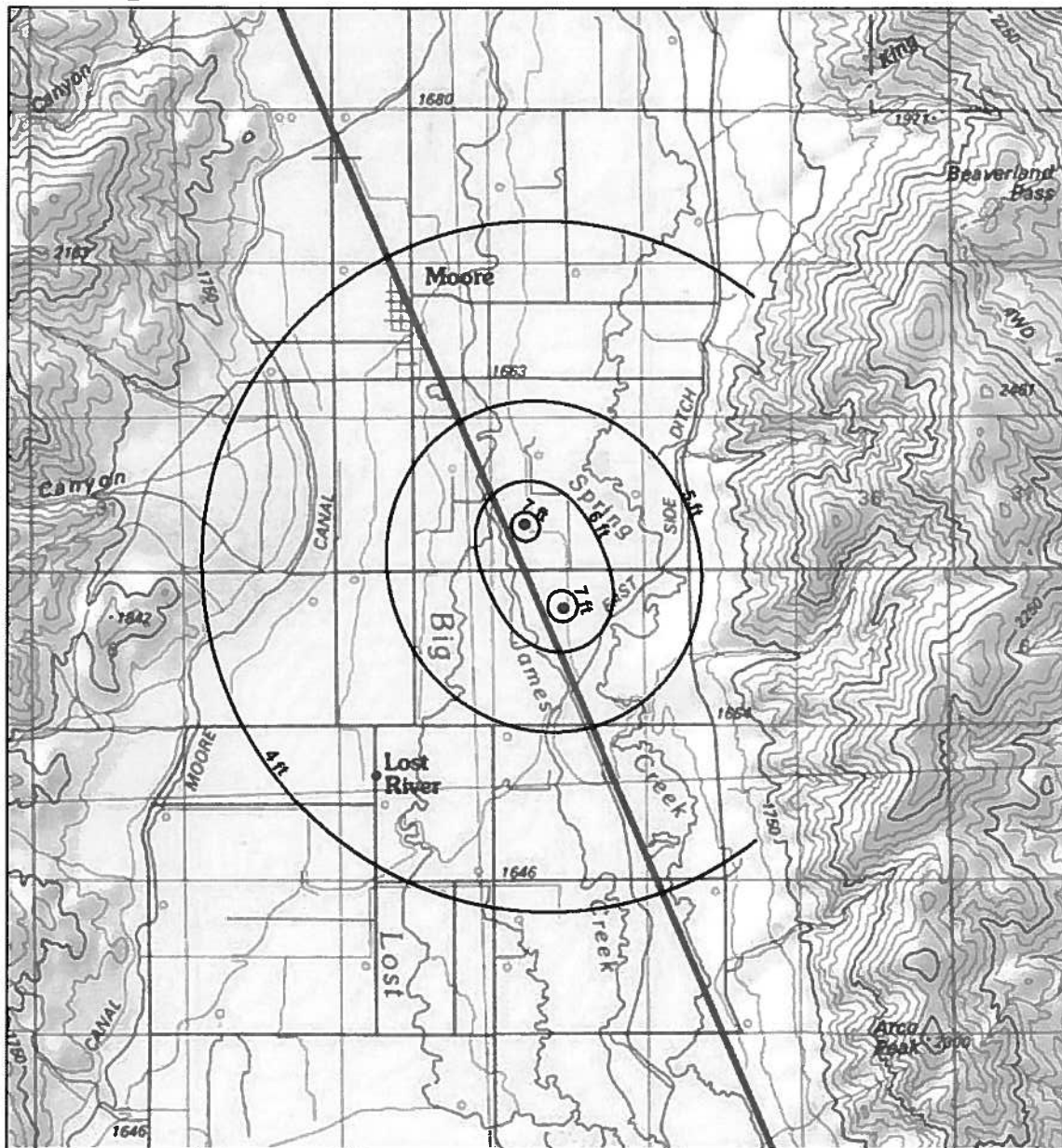


Figure 7. Model results utilizing a T of $250,000 \text{ ft}^2/\text{day}$

Expected Drawdown for Island Wells- 250,000 T



Map shows calculated drawdown based on a 250,000 ft²/day transmissivity and 12 cfs per diversion point.

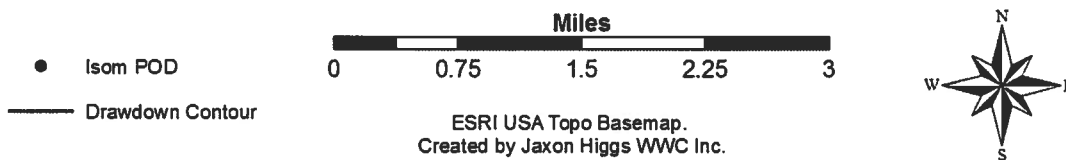
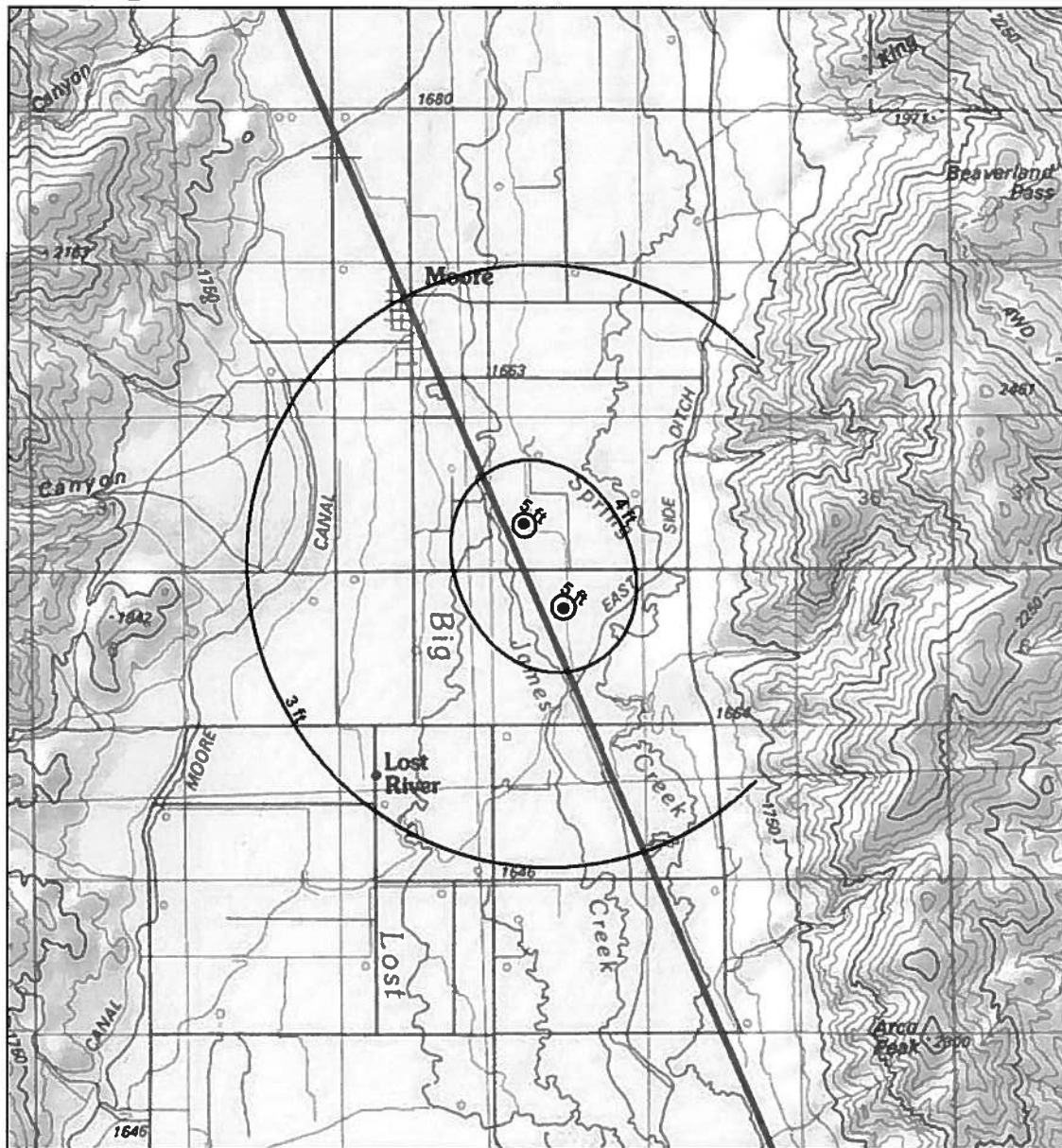


Figure 8. Model results utilizing a T of 250,000 ft²/day

Expected Drawdown for Island Wells- 370,000 T



Map shows calculated drawdown based on a 370,000 ft²/day transmissivity and 12 cfs per diversion point.

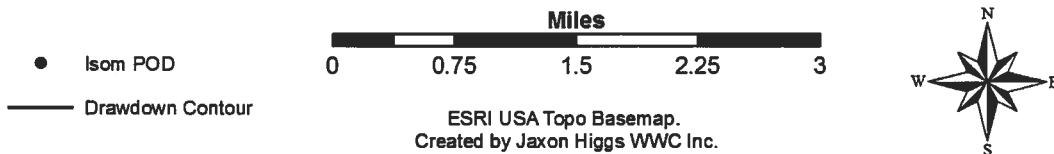


Figure 9. Model results utilizing a T of 370,000 ft²/day

REFERENCES

Bassick, M.D. and M.J. Jones, 1992, Water Resources Investigation Report 92-4006. *Aquifer-Test Results, Direction of Ground-WaterFlow, and 1984-90 Annual Ground-Water Pumpage for Irrigation, Lower Big Lost River Valley, Idaho.*

United States Bureau of Reclamation, 2008. *Lower Colorado River Accounting System, Evapotranspiration and Evaporation Calculations.*

Crosthwaite, E.G., Thomas, C.A., and Dyer, K.L. Open File Report 70-93. *Water Resources in the Big Lost River Basin, South-Central Idaho*, 1970.

Johnson, G.S., Ralston, D. R., and Mink, L. L., 1991. *Ground-Water Pumping Impacts on Surface Water Irrigation Diversions From Big Lost River.*

Mundorff, M.J., Crosthwaite, E.G., Kilburn, C., Water Supply Paper 1654, *Ground Water for Irrigation in the Snake River Basin in Idaho*, 1964.

Rice, J. B., Boyd, K., 2008. *Big Lost River Darlington Sinks Geomorphology, Loss Rates and Conceptual Alternatives Development.*

Said, A., Stevens, D.K., Sehlke, G., *Estimating Water Budget in a Regional Aquifer Using HSPF-MODFLOW Integrated Model.*

Szczepanowski, S.P., 1982, *Review of Ground-Water Conditions in the Big Lost River Valley*", Idaho Department of Water Resources

Wood, Thomas R., 2011, *Groundwater Injury Analysis Regarding Transfer Application of Telford Lands, LLC Moore, Idaho.*

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COMMENTS ON
***EVALUATION OF HYDROLOGIC
IMPACTS OF ADDITIONAL PUMPING
FROM TWO WELLS IN THE LOWER BIG
LOST RIVER VALLEY***

***(Prepared by Charles G. Brockway of
Brockway Engineering)***

Comments Prepared By
Brian Higgs, P.G.
WATER WELL CONSULTANTS, INC

BACKGROUND

These comments are prepared in response to a report entitled *Evaluation of Hydrologic Impacts of Additional Pumping from Two Wells in the Lower Big Lost River Valley* prepared by Charles G. Brockway of Brockway Engineering (Brockway Report).

INTRODUCTION

The issues addressed by the Brockway Report can be described as addressing two categories of issues: (1) Site-specific impacts from the additional diversion of 12.5 cfs from the Island Wells; and (2) Overall Big Lost River Aquifer conditions and alleged declines of ground water levels over time.

The first category of the Brockway Analysis, the site-specific analysis, is similar to the first report submitted by Brockway on May 25, 2011. The second category, overall aquifer conditions, was added in the June 10, 2011 report. Regarding this second category, it is unclear how the information and analysis is important or relevant to the accomplished transfer issue. As summarized in the Brockway Report, there are numerous other ground water diversions in the Big Lost River Valley, which have been authorized and decreed in the SRBA. We presume aquifer-wide matters could be addressed by statewide management or priority administration similar to surface water regulation, with the additional consideration of reasonable pumping levels and full economic development of the aquifer resource under Idaho law.

The Airport Wells are located in the Big Lost River aquifer, and are located just north of the current official ESPA boundary line. The Island Wells are located further up the Big Lost River Valley, also outside of the ESPA and within the Big Lost River aquifer. The overall pumping of Telford's water rights is limited to 24.5 cfs, whether pumping occurs at the Airport Wells or the Island Wells. The change in location therefore will not increase withdrawal from the Big Lost River aquifer, but it would allow the Airport Wells to be idled and the full 24.5 cfs diverted at the Island Wells. The accomplished transfer does not increase diversions from the Big Lost River aquifer, but changes the location of those diversions, and this should be the focus of the analysis, not overall basin-wide matters.

Overall, we cannot necessarily find any criticisms or problems with the second portion of the Brockway Report on aquifer-wide matters, although with any statistical analysis, comments could be made regarding what data was used and how it was analyzed. For example, Conclusion No. 7 summarizes long term aquifer trends, but on the hydrograph of 5N 26E 23 NENSW (page 10 of the Brockway Report) water levels in the latter half of the 1990's rose to within a couple feet of pre-1987 levels before the drop shown in the hydrograph. The hydrograph also stops in 2008, but there has been a significant increase in ground water levels since then. If the current wet cycle continues, it appears that the water levels will rise to historic levels. Additionally, the Brockway Report discusses ground-surface water interactions, but these are issues for conjunctive management. The objectors have not asserted interference with any surface water rights they may have, but have focused only on the potential for ground water interference.

Issues regarding basin-wise management could likely be addressed at some point. However, as stated above, it does not appear that the issues raised in the aquifer-wide portion of the Brockway Report are relevant, and no comments will be made regarding this portion of its analysis.

Regarding the relevant first portion of the Brockway Report, as a general matter, the analysis involves modeling, which is the same analysis Water Well Consultants has prepared. (See *Hydrologic Assessment of Accomplished Transfer of Water Rights 34-2459, 34-2460, 34-2461, 34-2462, and 34-10925*—the “WWC Report”). There is nothing to comment on with this approach, as it is the same approach used by Water Well Consultants. The primary critique with any model is the input values that are made in the model, and it seems that any number included in the model could be criticized. Our major comment below concerns the transmissivity (T) value. There are also a few other comments made on matters other than the model input values. For ease of reference, Water Well Consultants will cite to the page of the Brockway Report it is addressing.

COMMENTS

1. Throughout the Brockway Report, reference is made to a barrier boundary on the east and west edges of the Big Lost River basin. However, it is unclear in the report if this barrier boundary for the Big Lost River Valley has been defined. Much has been written on the boundaries of the Big Lost River Valley hydrologic system. Each author includes the boundaries in their text. However, there has only been one report that specifically locates a possible barrier boundary, Bassick (1991). Bassick located a boundary described by the trace of data from a pumping test. The boundary described by Bassick could have easily been a lithologic change since the pumping test was conducted at the bottom of an alluvial fan.

It is obvious that there is a barrier boundary somewhere on the east and west edges of the Big Lost River Valley. However, the location of the boundaries and their depth has not been determined. Therefore, to assume that a well cone of depression intersects or may intersect a boundary of crystalline rock is suspect. The dip of the formations that are covered by valley fill describe an intersection of alluvium and crystalline far below the depth of any of the wells in the valley.

2. **Page 8, last paragraph on the page.** The Brockway Report states that “calculated transmissivities ranged from 5,000 to 243,000 ft²/day,” but does not explain how those values were calculated. In conversations with the author of the Brockway Report, it is understood that the author selected 17 driller’s logs that contain information or claims that a pump test was performed. The driller’s logs often do not describe the methodology of the pump test, and it is suspect to assume that the pump tests produce reliable data. In the experience of Water Wells Consultants, relying on pumping tests when at a time wells are drilled is problematic for the following reasons:
 - a. Water Wells Consulting is not familiar with any local drilling companies that perform actual pump tests with transducers and other sophisticated equipment. Drilling companies often “develop” a well and call it a pumping test. For example, a

pumping test conducted by a drilling company, after completing a well which is drilled utilizing a cable tool, will commonly only include:

1. Measure water level
2. Bailing the well several times
3. Measuring the water level again.

This process will be continued for several minutes or hours. The pumping rate is determined by the volume of water the bailer can hold and how many times it removed water from the well in a given time period.

- b. Wells drilled utilizing a rotary drill generally perform a pumping test as follows:
 - a. The drills rods are placed near the bottom of the borehole.
 - b. Air is then blown through the rods and water is pushed to the surface.
 - c. The discharge is then typically estimated (determined by the experience of the driller) by how much water is blown out of the top of the casing. The drawdown is measured after the air is turned off since nothing can go down the well with the air on.

None of these methods from well drillers are likely capable of producing reliable data for purposes of a more scientific hydrogeologic report. Rather, valid pumping tests are conducted by pump companies. After the well is constructed, a pump is installed in the well, and test of that pump is then conducted properly or at least as properly as can be done in the field soon after drilling. The pump company then supplies a report to the owner stating the results. This methodology is completed in order for the pump company to determine the size and volume of the bowls to be installed in the well.

It therefore appears that the calculated values may be based upon suspect pump test methodologies. More reliable measures of T are contained in hydrogeologic reports, which show ranges of T values from 50,000 ft²/day to 1,000,000 ft²/day (See WWC Report at p. 8). These values are much higher than the Brockway Report's calculated T value of only 50,000 ft²/day. A lower T value input in a ground water model will result in a steeper cone of depression, and likely overstated drawdown depth at the well site.

Page 8, 4th paragraph, last sentence. This describes a short pumping test conducted on May 20, 2011. Jaxon Higgs from WWC was present during the pump test. Generally speaking, Dr. Brockway completed 2 separate tests on the Island wells. The first test used the south Island Well. It was conducted by taking water level measurements in the well itself before and during pumping. The test lasted about 5 hours. Before the pump was turned on, the water level was around 30 ft. During the pumping test, when the water level reached about 50 ft below land surface, cascading of groundwater into the well occurred and was present until the end of the test. The water level reached about 140 ft according to the data collected by Dr. Brockway.

This pumping test at the South Island Well should not be used as a data source for two reasons:

1. Cascading water from 50 to 140 ft results in inaccurate measurements taken beyond 50 ft because if sounding of the instrument is heard the measurement can be easily misread.
2. If the water level did indeed reach 140 ft, most of the drawdown was likely due to casing evacuation, which can also be seen in the Tom Wood pumping test described in the WWC Report. Such a short pumping duration does not allow the casing evacuation to be completed for the true drawdown curve to be seen.

The second pumping test, which was not included in Dr. Brockway's report, was conducted on the north Island Well. Access to measure water level was not available in this well and an observation well roughly 200 ft southeast of the island well was used to record water table changes. This test also lasted about 5 hours and measurements were also sporadic. Water level change was recorded in the observation well during the pumping of the North Island well. A quick analysis of this data in Aquatesolv generated a transmissivity value of 200,400 ft²/day. This data is superior to the South Island well test data. No reasons are given in the Brockway Report as to why this data was not used instead of or in addition to the south Island test data (see attached letter to Mr. Mike Telford from Jaxon Higgs, May 21, 2011).

Page 10. Significance of Drawdown. The Brockway Report states that increased pumping costs result from lowered ground water levels. Even if we assume that the additional 12.5 cfs of pumping at the Island Wells causes some additional drawdown (even though significant drawdown is more likely to result from drought conditions and reduced influx from the Big Lost River), the amount of additional pumping costs is not significant. Electrical costs in the Big Lost Valley is \$0.045 per KWHr. The average cost to lift 1 AF, 1 ft above the ground at \$0.045/KWHr is approximately \$0.10. This average is taken from the West Cassia Pipeline. The West Cassia Pipeline pumps 20,000 AF per year, 300 ft above the river and distributes the water for irrigation in the Golden Valley southwest of Burley. Therefore, if the water level in a well drops 50 ft, the cost to lift 1 AF the additional 50 ft is \$5. If irrigators apply an average of 2 AF/ac, the additional cost for a 130 acre pivot of potatoes, for example, is \$1,300. Revenue from that pivot of potatoes at \$10/sack and 150 sacks/acre results is almost \$200,000. The additional cost to lift water 50 feet higher under this example appears negligible and is certainly reasonable.

Table 1. This table records the AF pumped in 1966 as 102,000. In 1966 there were 305 groundwater rights totaling 15,413 acres. The righted groundwater was only 61,653.53 AF. Either the table is in error or most irrigators illegally diverted more water than their water right. The table also records the 1965 pumping at 11,000 AF. Precipitation in 1965 was average at 9.1 inches. Precipitation in 1966 was just over 5 inches. The ratio of groundwater pumping to precipitation is not accurate. If the highest and lowest numbers in the data set are inaccurate, it follows that the conclusions drawn from the data set are also inaccurate.

Page 32, last paragraph. WWC understand that the accomplished transfer issues relates to the peak diversion rate diverted from the Island Wells prior to 1987. The measured diversion rate was 24.66 cfs based upon the field exam report. Calculating a pumping volume from power usage is a reasonable, but extrapolating an average diversion rate is unreasonable. Additionally, this method of necessary discharge does not take into account irrigation practices. It is not practical

for an irrigator to pump a lower volume for a longer period rather than a higher volume for a shorter period. Crops and irrigation equipment dictate when, how much, and how long the pump needs to run. Also, the 1987 calculated volume used the PCC that was collected in 1980, which makes the PCC accuracy suspect because many parameters may have changed during that 7 year period. It also should not be applied to volume and discharge requirements. Overall, even the Brockway Report acknowledges that “Instantaneous pumping rate during the peak month cannot be determined from power records.” Power records that show increased power usage at certain times of the year, however, indicate an increased use of the wells, which tends to support information from the landowner that the Island Wells were historically used more later in the season because of decreased production in the Airport Wells.

Conclusion 11. This conclusion is directly contrary to the prior statement that “Instantaneous pumping rate during the peak month cannot be determined from power records.” It concludes that all but .5 cfs of the monthly average flow was covered by the 12.0 cfs 34-7037. This conclusion ignores the 24.66 cfs measured diversion rate taken in 1985, which is prior to 1987. If all water rights in Idaho were calculated based upon a monthly average, this calculated diversion rate would be far less than the instantaneous diversion rate, and therefore, the diversion of the water right would have no practical limitation. It is therefore unsupportable for the Brockway Report, based on its calculated monthly average calculation, to conclude that “an accomplished transfer of the entire Airport Well water rights did not occur.”

Additionally, PCC values are not significantly reliable to determine water output because it appears from the WMIS database that the PCC measurements were only taken twice between 1980 and 2010. IDWR requirements are that each well is supposed to be measured and new PCC values calculated every 3 years because of potential changes to the system (motor upgrades, horsepower, bowls, wear, pivot packages, etc.). Therefore, in reality, PCC calculations need to be looked at when they are more than a few years old. This is especially true when the depth to water fluctuates like it does in the Big Lost River Valley. There will be different PCC values for each year because there will likely be a difference of ± 10 feet in the depth to water.

Measurement from these wells can also be suspect due to entrapped air. There are no methods that can measure the volume of water when air is present. The only way is to allow the water sufficient time to settle so the air can rise to the top and escape. Generally, the measurement boxes on pumps in the Big Lost River Valley are too short. That is, the water going over the weir is still milky. The measurement is taken by measuring the height of the water over the weir. If there is air in the water then the depth of the water cresting the weir is higher resulting in more water. This can impact the PCC calculation.

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May 21, 2011

Mike Telford
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RE: EVALUATION OF PUMP TESTS ON ISOM WELLS- TELFORD LANDS LLC, MOORE, IDAHO

Dear Mike,

On May 20, 2011 I observed a pumping test carried out by Chuck Brockway, Jr. of Brockway Engineering. Three wells were used in the test process including two pumping wells and one observation well. The Isom wells are site tagged A0007516 (north well) and A0000484 (south well). The observation well is located 220 ft south south-east of the north well and is site tagged A0007515. All three wells are located within 15 yards of the canal into which they pump. Across the highway to the West less than one half mile is the Big Lost River which was flowing.

Water level measuring access was not available in the north well, but was available in the observation well. Access was also available in the south well. Each of the Isom wells is equipped with a steel box with dimensions of about 6 ft by 10 ft which the well discharges into. At one end of the box is a Cipoletti Weir used to measure discharge.

For the pumping test on the northern well, the well was turned on and water level measurements were taken at sporadic intervals on the observation well to the south. Discharge was also measured at sporadic intervals, but appeared to remain somewhat constant during the test. The water level in the observation well showed a decline within a few minutes of pumping, but appeared to level off after 63 minutes of pumping and showed a very small rebound at 105 minutes. The attached table shows the measured data. Due to the short duration of this test and the measuring methods, a huge margin of error exists. In such cases the data is very susceptible to manipulation and transmissivity values can be derived ranging from tens of thousands to hundreds of thousands. This will mainly be subject to the interpretation of the consultant. After a quick analysis of this data using the Theis equations a transmissivity value of 200,500 ft²/day was calculated with discharge 3068 gpm, storativity 0.001, radius 220 ft, and duration 0.07 days. This transmissivity value falls within the range of published data for the area.

The pumping test on the south well consisted of discharge measurements and sporadic water level measurements within the pumping well itself. As shown in the attached chart, the water level in this well dropped dramatically during the first few minutes of pumping. After the water level dropped below about 50 ft from land surface cascading water made water measurements difficult. Any measurements from that time forward were affected by large volumes of cascading water and are suspect. As measured by Mr. Brockway, the water level reached about 104 ft below land surface after about 25 minutes and remained constant until the end of the test at about 90 minutes after pumping started. The same uncertainty exists with this test as does with the north well test. Even more uncertainty exists because of the large volumes

of cascading water. Quick analysis of the values collected showed transmissivity values of less than 20,000 ft²/day which is highly unlikely and very unreliable. Because of major uncertainty caused by the cascading water this data should not be used for any reliable scientific analysis.

Existing seasonal conditions should also be considered. The water levels in these two wells tested could be artificially high because of high precipitation and their locations between the river and canal. Water levels in the area have shown a rise during the spring months in the past which greatly affects any test completed during this season. All of these conditions must be considered when attempting to derive aquifer parameters.

I feel the responsibility to say that given the circumstances of low budget and short time periods these tests were completed with a good effort on the part of Mr. Brockway. The methods were questionable and the duration was constricted, but not much else can be done when these circumstances exist. Values can be derived from the data, but all involved parties should know that any value derived is subject to very large uncertainty and should be subject to scrutiny.

Please call if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Jaxon Higgs". The signature is written in a cursive, slightly stylized font.

Jaxon Higgs

Attachment 1:**Observation Well Data (A0007515)**

Time	Elapsed Time (min)	Meas. Depth (ft)	Actual Depth (ft)	Displacement (ft)
1422	0	56.51	33.34	0.00
pump on				
1536	1 to 5	56.65	33.48	0.14
1550.5	14.5	57.69	34.52	1.18
1601	25	57.86	34.70	1.36
1639	63	58.04	34.88	1.54
1721	105	58.03	34.86	1.52
pump off				

214 ft South of pumping well
45 ft East of pumping well
220 ft from pumping well
3068 gpm @ 9.5 inches head

South Well Data (A0000484)

Time	Elapsed Time (min)	Meas. Depth (ft)	Displacement (ft)
1459		30.46	
1501.25		pump on	
1502.5	1.25	47.2	16.74
1503.75	2.5	68.7	38.24
1506.17	4.92	95.2	64.74
1516	14.75	95.2	64.74
1527	25.75	104.5	74.04
1615	73.75	104±	73.54
1630	88.75	104±	73.54
pump off			

4253 gpm @ 11.5 inches head