

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

AMENDED APPLICATION FOR PERMIT

To appropriate the public water of the State of Idaho

RECEIVED

SEP 15 2011

Department of Water Resources
Eastern Region

1. Name: VIK RICHES
10410 W LOYOLA DR
LOS ALTOS CA 94024
2. Source: GROUND WATER
3. Location of Point of Diversion:
#1 GROUND WATER NW1/4SE1/4SE1/4 Sec. 23, Twp 15S, Rge 35E, B.M.
ONEIDA County

4. Water will be used for the following purposes:

<u>Purpose</u>	<u>From</u> <u>To</u>	<u>RATE OF DIVERSION</u>	<u>ANNUAL VOLUME</u>
IRRIGATION	04/15 to 10/15	3.34 CFS	1,193.0 AF

5. Total quantity to be appropriated is: 3.34 CFS

6. Proposed diverting works:

POINT OF DIVERSION #1

a. Type and size of devices used to divert water from the source: DEEP WELL PUMP DIVERTED INTO A MAIN LINE AND THEN TRANSFERED TO A CENTER PIVOT AND WHEEL LINES.

- b. Height of storage dam NA feet;
Active reservoir capacity NA acre-feet;
Total reservoir capacity NA acre-feet;

- c. Proposed well diameter is 16 inches;
Proposed depth of well is 400 feet.

- d. Is ground water with a temperature of greater than 85F being sought? N

- e. If well is already drilled, when? NO;
Drilling Firm _____;
Drilling Permit No. _____.

7. Time required for the completion of the works and application of the water to the proposed beneficial use is 5 year(s).

8. **PLACE OF USE:** IRRIGATION

Twp Rge Sec	NE				NW				SW				SE				Totals
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
15S 35E 23													1.2	32.0	40.0	19.5	92.7
15S 35E 26	40.0	40.0	15.0	15.0													110.0

Total Acres: 202.7

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

AMENDED APPLICATION FOR PERMIT

To appropriate the public water of the State of Idaho

9a. Who owns the property at the point of diversion? If other than applicant, describe the arrangement enabling the applicant to make this filing.

APPLICANT

9b. Who owns the land to be irrigated or place of use? If other than applicant, describe the arrangement enabling the applicant to make this filing.

APPLICANT

10. Remarks:

11. Map of proposed point of diversion and place of use attached? [YES]

BE IT KNOWN that the undersigned hereby makes application for permit to appropriate the public waters of the State of Idaho as herein set forth.



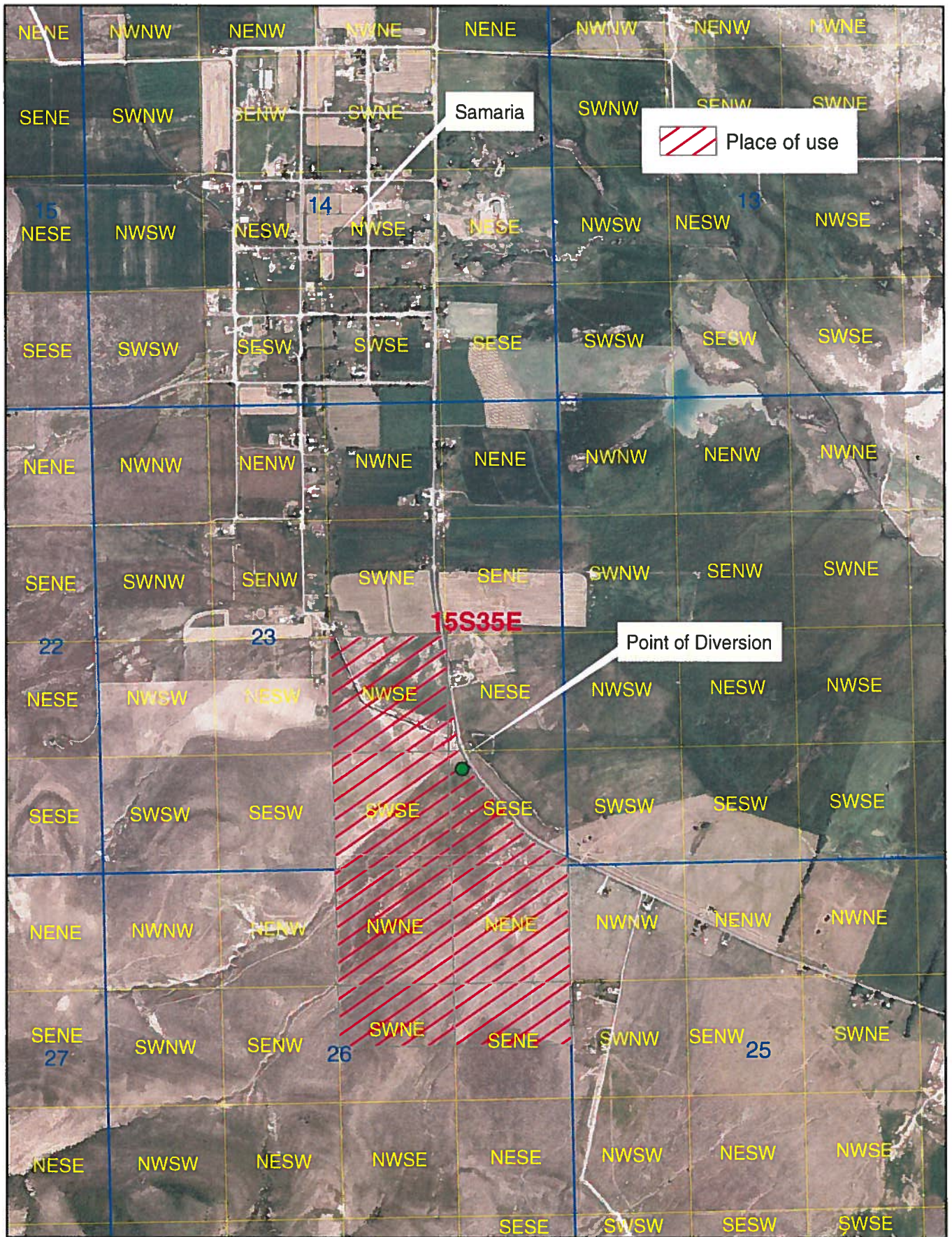
Applicant

Received by KM Date 9/16/2011 Time _____ Preliminary check by KM
Publication prepared by _____ Date _____ Published in _____
Publication approved _____ Date _____

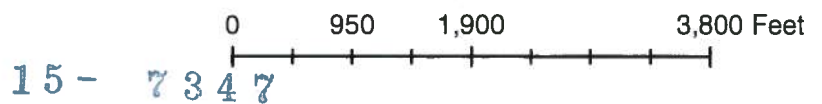
Receipt No. E036921

Date: 8/23/2003

Receipted by: KM



Vik Riches



RECEIVED

AUG 22 2011

Department of Water Resources
Eastern RegionSTATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
APPLICATION FOR PERMIT
To appropriate the public waters of the State of IdahoIdent. No. 15-73471. Name of applicant(s) Vik Riches Phone 415-559-7864
Name connector (check one): ☐ and ☐ or ☐ and/orMailing address: 10410 W Loyola Dr., City Los AltosState CA Zip 94024 Email: vicriches1@yahoo.com2. Source of water supply Ground Water which is a tributary of _____

3. Location of point(s) of diversion:

Twp	Rge	Sec	Govt Lot	¼	¼	¼	County	Source	Local name or tag #
15S	35E	23		SW	SE	SE	Oneida	Ground Water	

4. Water will be used for the following purposes:

Amount 3.34 cfs for Irrigation purposes from 4/15 to 10/15 (both dates inclusive)
(cfs or acre-feet per year)Amount _____ for _____ purposes from _____ to _____ (both dates inclusive)
(cfs or acre-feet per year)Amount _____ for _____ purposes from _____ to _____ (both dates inclusive)
(cfs or acre-feet per year)Amount _____ for _____ purposes from _____ to _____ (both dates inclusive)
(cfs or acre-feet per year)5. Total quantity to be appropriated is (a) 3.34 cubic feet per second (cfs) and/or (b) 1193 acre-feet per year (af).

6. Proposed diverting works:

a. Describe type and size of devices used to divert water from the source. Deep well pump diverted into a main line
and then transferred to a center pivot and wheel lines.

b. Height of storage dam _____ feet; active reservoir capacity _____ acre-feet; total reservoir capacity _____ acre-feet. If the reservoir will be filled more than once each year, describe the refill plan in item 11.

For dams 10 feet or more in height OR reservoirs with a total storage capacity of 50 acre-feet or more, submit a separate Application for Construction or Enlargement of a New or Existing Dam. Application required? ☐ Yes ☐ Noc. Proposed well diameter is 16 inches; proposed depth of well is 400 feet.d. Is ground water with a temperature of greater than 85°F being sought? ☐ Yes ☒ Noe. If well is already drilled, when? no; drilling firm _____;
Well was drilled for (well owner) _____; Drilling Permit No. _____

7. Description of proposed uses (if irrigation only, go to item 8):

a. Hydropower; show total feet of head and proposed capacity in kW. _____

b. Stockwatering; list number and kind of livestock. _____

c. Municipal; show name of municipality or the applicant's qualifications as a municipal provider. _____

d. Domestic; show number of households _____

e. Other; describe fully. _____

SUPERCEDED

15 - 7347

8. 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 the use (example: D for Domestic) in the corresponding place of use below. See instructions for standard symbols.

TWP	RGE	SEC	NE				NW				SW				SE				TOTALS
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
15S	35E	23													40	5	40	20	105
15S	35E	26	40	40	15	15													110

Total number of acres to be irrigated: 215

9. Describe any other water rights used for the same purposes as described above. Include water delivered by a municipality, canal company, or irrigation district. If this application is for domestic purposes, do you intend to use this water, water from another source, or both, to irrigate your lawn, garden, and/or landscaping? Not for domestic purposes.

10. a. Who owns the property at the point of diversion? Vik Riches
- b. Who owns the land to be irrigated or place of use? Vik Riches
- c. If the property is owned by a person other than the applicant, describe the arrangement enabling the applicant to make this filing: _____
11. Describe your proposal in narrative form, and provide additional explanation for any of the items above. Attach additional pages if necessary. The irrigation system will include a deep well with a pump used to bring water to land surface and pressurize the system. The water will flow to a main line and from there to a network of wheel lines used for crop irrigation.

12. Time required for completion of works and application of water to proposed beneficial use is 5 years (minimum 1 year).
13. **MAP OF PROPOSED PROJECT REQUIRED** - Attach an 8½" x 11" map clearly identifying the proposed point of diversion, place of use, section #, township & range. A photocopy of a USGS 7.5 minute topographic quadrangle map is preferred.

The information contained in this application is true to the best of my knowledge. I understand that any willful misrepresentations made in this application may result in rejection of the application or cancellation of an approval.

Vik Riches

Signature of Applicant

Vik Riches

Print Name (and title, if applicable)

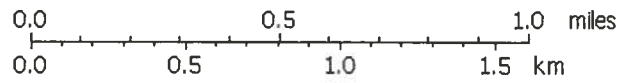
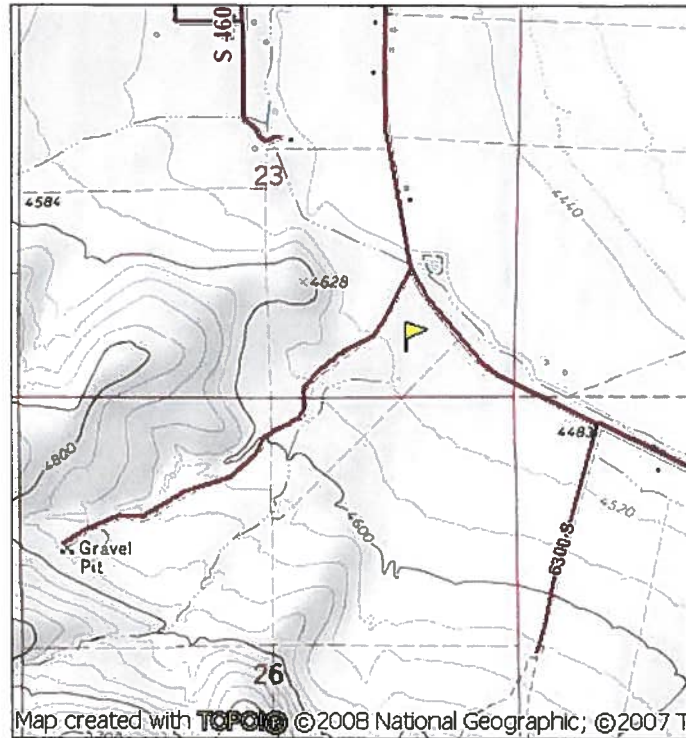
Signature of Applicant

Print Name (and title, if applicable)

For Department Use:

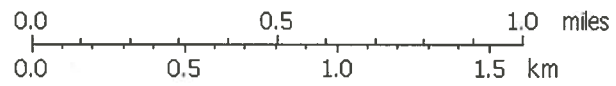
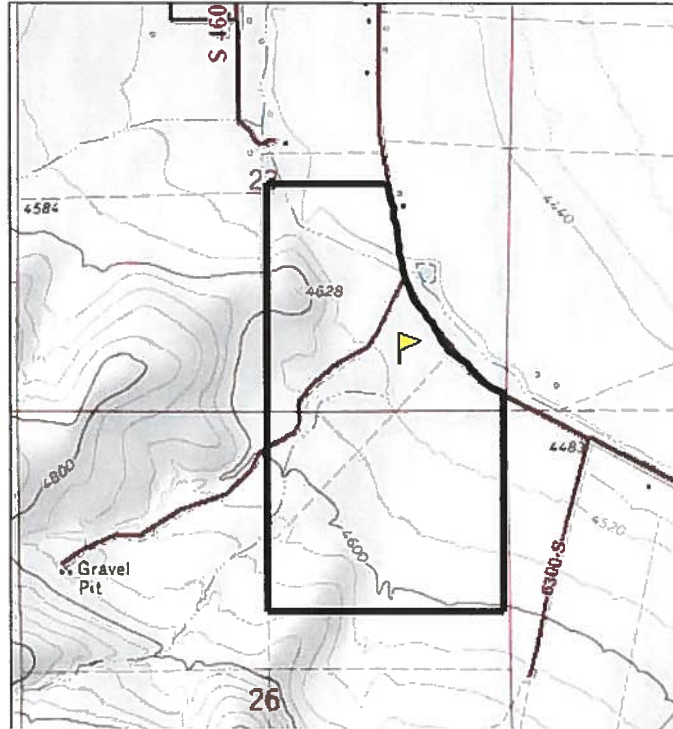
Received by Km Date 8/23/2011 Time _____ Preliminary check by Km

Fee \$ 1090.00 Received by Km Receipt No. E036921 Date 8/29/2011



TN* / MN
12 1/2
08/10/11

Map of proposed new POD for Vik Riches Application

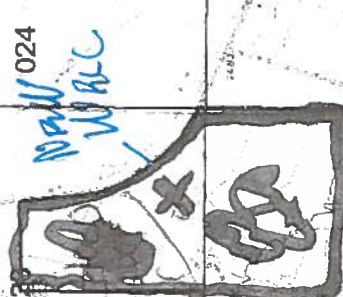


TN★/MN
12½
08/10/11

Map of Place of Use for Vik Riches Application

Township 15 S Range 35 E

Township 15 S Range 35 E





State of Idaho

DEPARTMENT OF WATER RESOURCES

Eastern Region, 900 North Skyline Drive, Suite A • Idaho Falls, Idaho 83402-1718
Phone: (208) 525-7161 • Fax: (208) 525-7177 • Web Site: www.idwr.idaho.gov

September 28, 2011

C. L. "BUTCH" OTTER
Governor

GARY SPACKMAN
Interim Director

VIK RICHES
10410 W LOYOLA DR
LOS ALTOS, CA 94024

Application For Permit No. 15-7347

Dear Applicant(s):

The Department of Water Resources has received your water right application. Please refer to the number referenced above in all future correspondence regarding this application.

A legal notice of the application has been prepared and is scheduled for publication in the IDAHO ENTERPRISE on October 6 and 13, 2011. Protests to this application may be submitted for a period ending ten (10) days after the second publication.

If the application is protested, you will be sent a copy of each protest. All protests must be resolved before the application can be considered for approval. If the protest(s) cannot be resolved voluntarily, the Department will conduct a conference and/or hearing on the matter.

If the application is not protested, the Department will process your application and notify you of any action taken on the application. If your application is approved, the Department will send you a copy of the permit.

Please contact this office if you have any questions regarding the application.

Sincerely,

Sharla Cox
Administrative Assistant

Cox, Sharla

From: Cox, Sharla
Sent: Wednesday, September 28, 2011 11:20 AM
To: 'enterpriseneews@atcnet.net'
Subject: Legal Notice for your paper
Attachments: Idaho Enterprise E-Mail.doc

Contacts: Idaho Enterprise

Sharla

Sharla Cox
Administrative Assistant
Idaho Department of Water Resources
900 N. Skyline Dr. Ste. A
Idaho Falls ID 83402
208-525-7161 - telephone
208-525-7177 - fax
sharla.cox@idwr.idaho.gov



State of Idaho

DEPARTMENT OF WATER RESOURCES

900 North Skyline Drive, Suite A Idaho Falls Idaho 83402-1718

Phone: (208) 525-7161 FAX: (208) 525-7177 www.idwr.idaho.gov

C.L. "BUTCH" OTTER
Governor

September 6, 2011

Gary Spackman
Interim Director

Vik Riches
10410 W Loyola Dr
Los Altos, CA 94024

RE: Application for Permit No. 15-7347

Dear Mr. Riches;

It was a pleasure speaking with you on the telephone the other day. Per our discussion, it was determined that several changes needed to be made to the original application which was submitted on August 22, 2011. I am enclosing an amended application for your review.

The changes which were made are as follows;

1. Point of diversion is located in the NESESE Sec., 23 Twp 15S, Rge 35E, and
2. The place of use located in Sec., 26 in the SE quarter is corrected to 1.2 acres in the NESE, and 32 acres in the NWSE.

I have also enclosed the original application so you can compare the changes that were made. Please review the amended application, sign and return.

If you have any questions please let me know.

Sincerely,

A handwritten signature in cursive script, appearing to read 'Kerrie'.

Kerrie Mathews

Water Resource Agent

Mathews, Kerrie

From: Mathews, Kerrie
Sent: Thursday, August 25, 2011 11:58 AM
To: 'vicriches1@yahoo.com'
Subject: Application for Permit
Attachments: Location map.pdf

Dear Mr. Riches;

The Department has received your application for permit to appropriate the water of the State of Idaho. In order to continue processing your application I need the following information;

1. I am providing a GIS map which shows Township, Section, Range and QQ section. Please clearly draw the intended place of use and point of diversion based on the acres that were submitted on the application.

Specifically where are these acres located within the QQ - 15S 35E 23 NW SE, 5 acres and SE SE, 20 acres
15S 35E 26 SW NE, 15 acres & SE NE, 15 Acres

If you have any questions please let me know.

Thank you,

Kerrie A Mathews
Water Resources Agent
Idaho Department of Water Resources
208.525.7161

"No culture can live, if it attempts to be exclusive."
-Mahatma Gandhi

**Business Entities (BE)****Online Services**

- **Business Search**
- **Disclosure Search**
- **E-File Statements**
- **Processing Times**

Main Page**Service Options****Name Availability****Forms, Samples & Fees****Annual/Biennial Statements****Filing Tips**
Information Requests
 (certificates, copies &
 status reports)
Service of Process**FAQs****Contact Information****Resources**

- **Business Resources**
- **Tax Information**
- **Starting A Business**
- **International Business Relations Program**

Customer Alert
 (misleading business
 solicitations)
Business Entity Detail

Data is updated weekly and is current as of Friday, August 19, 2011. It is not a complete or certified record of

Entity Name:	TRIPLE R DEVELOPMENT, LLC
Entity Number:	200708210250
Date Filed:	03/22/2007
Status:	ACTIVE
Jurisdiction:	UTAH
Entity Address:	10410 W LOYOLA PL
Entity City, State, Zip:	LOS ALTOS CA 94024
Agent for Service of Process:	VIC RICHES
Agent Address:	10410 W LOYOLA PL
Agent City, State, Zip:	LOS ALTOS CA 94024

* Indicates the information is not contained in the California Secretary of State's database.

* **Note:** If the agent for service of process is a corporation, the address of the agent may be requested by or

- For information on checking or reserving a name, refer to **Name Availability**.
- For information on ordering certificates, copies of documents and/or status reports or to request a more **Information Requests**.
- For help with searching an entity name, refer to **Search Tips**.
- For descriptions of the various fields and status types, refer to **Field Descriptions and Status Definitions**.

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HTO-55210



BE9200CTRADE-T

GRANTEE'S ADDRESS:

TRIPLE R. DEVELOPMENT LLC

10410 W. Loyola Dr.
Los Altos, CA 94024

Microfilm No. 146403

15 Day December 2010

3:45 PM

Arla Bott

1900

Northern Title Co.

WARRANTY DEED

DEE'S INC. A UTAH CORPORATION aka DEE'S INC., A UTAH CORP.

Grantors,

of SALT LAKE, County of SALT LAKE, State of UTAH,
hereby CONVEYS and WARRANTS to

~~PEOA RIVER VALLEY RANCH LAND LLC, a Utah Limited Liability Company aka PEOA RIVER VALLEY RANCH, LLC;~~

TRIPLE R DEVELOPMENT LLC; PEOA RIVER VALLEY RANCH LAND, LLC;
CREATIVE CENTER OF LOS ALTOS, INC.

Grantees,

of LOS ALTOS, County of Santa Clara, State of CALIFORNIA,
for the sum of TEN DOLLARS and other good and valuable consideration,
the following tract of land in ONEIDA County, State of IDAHO, to-wit:

SEE ATTACHED EXHIBIT "A"

TOGETHER WITH ALL GRANTORS INTEREST IN WATER USER CLAIM NUMBERS: 15-04146,
154987 AND 75% OF ALDREDGE SPRING.

Subject to easements, restrictions and rights of way appearing of record and enforceable in law and subject to
2011 taxes and thereafter.

WITNESS the hand of said grantor, this 13th day of December, 2010.

DEE'S INC. A UTAH CORPORATION

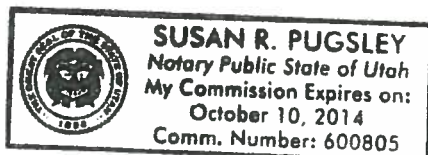
BY: MICHAEL W. OLSEN, PRESIDENT

BY: TODD M. OLSEN, VICE-PRESIDENT

STATE OF UTAH

COUNTY OF Box Elder

On the 13th day of December, 2010, personally appeared before me DEE'S INC. A UTAH CORPORATION, the
signer(s) of the within instrument, who duly acknowledged to me that they executed the same.

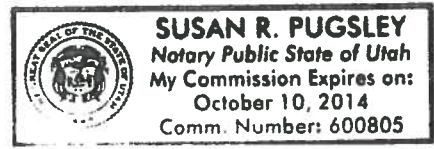

Notary Public

STATE OF Utah

146409

COUNTY OF Box Elder :ss)

On this ^{13th} 9th of December, 2010, personally appeared before me **MICHAEL W. OLSEN** who duly sworn did say that he is the **PRESIDENT** and **TODD M. OLSEN** who by me duly sworn did say that he is the **VICE-PRESIDENT of DEE'S, INC. A UTAH CORPORATION aka DEE'S INC., A UTAH CORP.** the signers of the within instrument who duly acknowledged to me that said Corporation executed the same.



Susan R. Pugsley
Notary Public
Residing at: _____
My Comm. expires: _____

"EXHIBIT A"

146409

Parcel 1:

A parcel of land located in Section 27, Township 15 South, Range 35 East, Boise Meridian, Oneida County, Idaho and further described as follows:

Beginning at the North quarter corner of Section 34, Township 15 South, Range 35 East, Boise Meridian, from which the Northwest corner of Section 34 bears North 89° 59' 50" West 2646.57 feet; Thence North 89° 59' 50" West 790.35 feet along the North line of said Section 34 to a 5/8" rebar with cap; Thence North 46° 32' 43" East 1088.75 feet more or less to the meridional center line of said Section 27; Thence South 748.86 feet along said center line to the True Point of Beginning.

Township 15 South, Range 35 East, Boise Meridian

Section 20: Southeast quarter of the Southeast quarter

Section 21: Southwest quarter

Section 28: All

Section 29: North half of the Northeast quarter; South half of the North half; South half

Section 30: East half of the Southeast quarter

Section 32: North half of the Northwest quarter of the Northwest quarter

Township 15 South, Range 35 East, Boise Meridian;

Section 26; Northwest quarter; Northeast quarter.

Parcel 2:

A parcel of land situated in Oneida County, Idaho, described as follows:

Township 15 South, Range 35 East, Boise Meridian;

Section 16: South half of the Southeast quarter; Southeast quarter of the Southwest quarter.

Section 21: East half

Section 22: West half

Section 26: Southwest quarter

Section 27: East half

Section 35: Northeast quarter

A parcel of land located in Section 34, Township 15 South, Range 35 East Boise Meridian, Oneida County, Idaho and further described as follows:

All of the North-half of the North-half of said Section 34 lying North and East of the following described fence line: Beginning at the Northeast corner of said Section 34 from which the North quarter corner of Section 34 bears North 89° 57' 49" West 2651.18 feet; thence South 43.00 feet along the East line of said Section 34 to the intersection of a fence line, the True Point of Beginning; thence along said fence line the following ten courses:

thence South 56° 17' 41" West 1592.50 feet to a 5/8" rebar with cap labeled, "A.A. Hudson, PLS 4735"; South 76° 25' 56" West 451.46 feet to a 5/8" rebar with cap; South 82° 45' 08" West 248.13 feet to a 5/8" rebar with cap; South 89° 16' 53" West 278.55 feet to a 5/8" rebar with cap; North 81° 19' 32" West 677.95 feet to a 5/8" rebar with cap; North 76° 56' 02" West 261.30 feet to a 5/8" rebar with cap; North 77° 12' 37" West 696.81 feet to a 5/8" rebar with cap; North 77° 54' 03" West 843.70 feet to a 5/8" rebar with cap; North 77° 02' 25" West 418.80 feet to a 5/8" rebar with cap; North 12° 00' 44" East 493.73 feet to a 5/8" rebar with cap set on the North line of said Section 34; thence North 89° 59' 50" West 274.82 feet along said North line to the Northwest corner of Section 34.

Subject to a right of way described as follows: Beginning at the point an existing roadway (which runs through the property owned by M.J. Davis Memorial Limited Partnership) intersects the Southerly Section line of Section 27 and the Northerly Section line of Section 34, Township 15 South, Range 35 East, Boise Meridian; thence running in a Southeasterly direction along said existing roadway to the Northeast property line (and an existing fence line) of the above described property; thence following said roadway and existing fence line to the Northeast corner of Section 34, Township 15 South, Range 35 East, Boise Meridian.

Said Easement may be modified by the above parties by mutual agreement.

"EXHIBIT A"

All that part of the following described tract lying South and West of Samaria Road located in Sections 23, 24 and 25, Township 15 South, Range 35 East of the Boise Meridian, Oneida County, Idaho, and described as follows:
Commencing at the Southwest Corner of the Southeast Quarter of Section 23, above Township and Range; thence North 2640 feet; thence East 6600 feet; thence South 1026 feet; thence North $74^{\circ}39'$ West 472.84 feet; thence South $23^{\circ}00'$ West 194.24 rods; thence West 708 feet; thence South $12^{\circ}35'$ West 2742.5 feet to the South line of the North Half of the Southwest Quarter of said Section 25; thence West 968 feet; thence North $12^{\circ}45'$ East 2742.5 feet to the Forty Subdivision line; thence West 611 feet to the Southwest Corner of the Northwest Quarter of the Northwest Quarter of said Section 25; thence North 1320 feet to the Northwest Corner of Section 25; thence West 2640 feet to the Place of Beginning.

Excepting therefrom the following three tracts:

1. Commencing at the Southwest Corner of the Northwest Quarter of the Southwest Quarter of Section 25, Township 15 South, Range 35 East, Boise Meridian; thence running North $12^{\circ}45'$ East 1924.12 feet; thence South $68^{\circ}26'$ East 947 feet; thence South $12^{\circ}35'$ West 1566.2 feet; thence West 964.14 feet to Point of Beginning.
2. Commencing at the Corner between Sections 23 and 25, Township 15 South, Range 35 East, Boise Meridian; thence running South $68^{\circ}20'56''$ East 886.55 feet for the True Point of Beginning; thence running South $63^{\circ}21'10''$ East 208 feet; thence South $63^{\circ}12'49''$ East 464.57 feet; thence South $64^{\circ}06'21''$ East 320.47 feet; thence South $63^{\circ}33'46''$ East 615.19 feet; thence South $23^{\circ}00'00''$ West 214.17 feet; thence West 740.79 feet; thence South $12^{\circ}38'26''$ West 1125.82 feet; thence North $68^{\circ}26'$ West 947 feet; thence North $12^{\circ}45'00''$ East 777.67 feet; thence North $15^{\circ}09'25''$ East 303.06 feet; thence North $15^{\circ}10'34''$ East 624.17 feet to the True Point of Beginning.
3. Commencing at a point on the Southern Right of Way boundary of Samaria Road (a County Road) which intersects with the Eastern boundary of Section 23, Township 15 South, Range 35 East, Boise Meridian (the Point of Beginning); thence running South along the Eastern boundary of Sections 23 and 26 to the Quarter Corner of the Northeast Quarter of the Southeast Quarter of the Northeast Quarter of Section 26; thence East 570 feet; thence North $07^{\circ}23'55''$ East 97 feet; thence North $15^{\circ}09'25''$ East 303.06 feet; thence North $15^{\circ}10'34''$ East 624.17 feet; thence Northwesterly along the Southern Right of Way boundary of Samaria Road to the Point of Beginning.

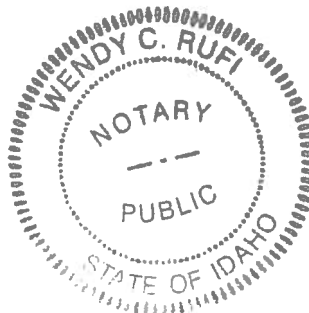
In March 1998 I was president of Holgate Enterprises and at that time Holgate Enterprises sold certain real property located in Samaria, Oneida County to Dee's Inc, a Utah corporation. At the time of the sale I was the owner of Idaho Water Right No. 15-4087 and intended that it be included in the sale and transferred to Dee's Inc. A copy of the Warranty Deed for that sale is attached as Exhibit A. This Deed references "Alldrige Big Canyon #154987". This should read "Alldrige Big Canyon #15-4087".

M. MarLynn Holgate
G. MarLynn Holgate

1st day of December, 2010,

Wendy C. Rubi
NOTARY PUBLIC

My Commission Expires 2-28-2011
Residing: Malad City ID



Mathews, Kerrie

From: Mathews, Kerrie
Sent: Tuesday, August 23, 2011 4:57 PM
To: 'vicriches1@yahoo.com'
Subject: Application for Permit
Attachments: Location map.pdf

Dear Mr. Riches;

The Department has received your application for permit to appropriate the water of the State of Idaho. In order to continue processing your application I need the following information;

1. ✓ Proof of ownership of the place of use and point of diversion. The information you provided shows Dee's Inc and Alfred Morgan as the current owners of the property.
2. I am providing a GIS map which show Township, Section, Range and QQ section. Please clearly draw the intended place of use and point of diversion based on the acres that were submitted *on the application*.
3. The property currently has two overlapping water-rights. Samaria Water & Irrigation Co. has part of this property listed as their covered place of use. Please verify that you do not own shares in the Irrigation company. If you do own shares please provide the amount and how much land can be irrigated.
4. There is a Spring water right in the name of Lavar Christoffersen 15-4087 listed at this place of use as well supplying water for 4 acres of irrigation. Please verify that this is not your right.

If you have any questions please let me know,

Thank you,

Kerrie A Mathews
Water Resources Agent
Idaho Department of Water Resources
208.525.7161

"No culture can live, if it attempts to be exclusive."
-Mahatma Gandhi

Calculator - Read Me

Step 1 - Calculate No. of Days

Is It a Leap Year?

☐ YES

☒ NO

Enter Starting Date:

April

15

April - 15

Enter Ending Date:

October

15

October - 15

Total Number of Days (Starting and Ending Dates Inclusive)

184

Step 2 - Input Flow Rate Value

Select Units

Cubic Feet per Second

Input Flow Rate

3.34

CFS

Step 3 - Select Units of Output

Select Units

Ac-Ft

Output Volume

1,219.0 Ac-Ft



Clearwater Geosciences, LLP
Ground Water Development and Exploration

RECEIVED

AUG 22 2011

Department of Water Resources
Eastern Region

August 10, 2011

Mr. Vic Riches,
10410 Loyola Dr
Los Altos, CA 94024

Dear Vic,

Attached are the application for permit and my ground water impact assessment. Sign the application for permit and attach a check for \$690 made out to IDWR. Mail both the application for permit and my impact assessment to

Idaho Department of Water Resources
900 N. Skyline Dr, Suite A
Idaho Falls, ID 83402

We will see what happens, hopefully you won't get protested.

Thank you,

A handwritten signature in black ink, appearing to read "Thomas R. Wood".

Tom Wood, PhD, PG





August 10, 2011

Mr. James Cefalo
Idaho Department of Water Resources
900 North Skyline Drive, Suite A
Idaho Falls, ID 83402-1718

RE: AQUIFER TEST FOR RICHES WATER RIGHTS APPLICATION

Dear Mr. Cefalo:

A groundwater impact assessment is provided in this letter report for the Vic Riches Water Right Application. He has 215 acres of farm land south of Samaria, Idaho (Figure 1), which he would like to irrigate. For this impact analysis we conducted a pumping test on April 23, 2011 in an existing well one mile north, but in the same geologic formation. The parameters from the aquifer test are used in a computer simulation to predict the potential impacts to neighboring wells within ½ mile of the proposed point of diversion (POD). The results of the computer analysis show that the proposed diversion rate will have a minimal or negligible impact on neighboring wells.

Nearby Wells

An evaluation was made for all existing wells and springs and permitted wells within ½ mile radius of the proposed well location. Figure 2 shows a circle of ½ mile radius centered on the proposed Riches well location. The circle encompasses portions of sections 23, 24, 25 and 26, T15S, R35E. A search of the IDWR on-line data base indicates that there are two groundwater diversion permits in Section 23, three springs are permitted in Section 24, three springs and one groundwater permitted point of diversion in section 25 (Peoa River Valley Ranch Land LLC owned by Mr. Riches) and no permits in section 26. The results of the water right search are provided in Tables 1 through 4.

A search was performed of the IDWR drillers' log database for wells within ½ mile of the proposed well location. Five well logs were found and these are provided in Attachment 1. The average depth of the wells is 107 ft and the average depth to water is 45 ft. There maybe other wells within a ½ mile of the Riches location but not on record by either water right or drillers' logs in the IDWR data base. The locations of other probable wells within a ½ mile radius are shown in Figure 2. The probable locations were identified from satellite images. This search indicates that the density ground water PODs is relatively low.

The lithology in this area is a series of unconsolidated sands, gravels and clays. There is not a marker layer or geologic unit that can be correlated over distances between wells (~ ½ mile) based on a comparison of the lithology recorded on the well logs. The inability to correlate geologic layers is consistent with the area being situated in a cut and fill sequence of the Malad River. It is further complicated by waxing and waning cycles of Lake Bonneville. For the purposes of this investigation it is assumed that the aquifer thickness is 200 ft in this area. This is based on driller logs for three irrigations wells in Section 30, T15S, R36E about 1.5 miles east



of the proposed well and regional considerations of the hydrogeology. It should be noted that the aquifer is not one homogenous layer but a sequence of permeable lens of sand and gravel stringers, which are primarily confined. However, it is anticipated that locally the shallow sequences of the aquifer are unconfined.

Pumping Test

The test well is an irrigation well owned by Mr. Jeff Davis and it is located about 1 mile north of the location where Mr. Riches proposes to drill an irrigation well (see Figure 1). The Davis irrigation well is 140 ft deep, having an open bottom completion in gravel at 140 ft. The well log for the Davis Irrigation well is provided in Attachment 1, Figure 1-6. For the pumping test the Davis Irrigation Well was equipped with an INSITU brand downhole pressure transducer to collect automated water levels during the pumping test. The pumping test began at 11:20 AM on April 23, 2011 and the well was pumped at a steady rate of 140 gpm for 24 hours. A plot of the data can be found in Attachment 2.

Curve matching methods were conducted using the AQTESOLV aquifer test software. Output plots from the AQTESOLV analyses are presented in Attachment 3. Figure 3-1 shows the match of the early time data to the Theis unconfined solution. The calculated transmissivity is 1.3×10^4 ft²/day and the storativity is unreliable because there is no observation well. The match of the late time data is presented in Figure 3-2 and the calculated transmissivity is 7.8×10^4 ft²/day. Based on the good match to the Theis unconfined solution the aquifer appears to be confined in this area. For long term pumping calculations it is appropriate to use the late time value of 7.8×10^4 ft²/day for the transmissivity. This transmissivity is consistent with another pumping test conducted in the Davis Stock Well located about 1 mile northwest of the proposed site (Figure 1), which had a measured transmissivity of 5.1×10^4 ft²/day. The storativity cannot be measured reliably with a single well pumping test, so an estimated value of 0.1 is used, which is typical for these types of unconsolidated aquifer materials (Freeze and Cherry, 1979).

Impact Assessment

Mr. Riches wishes to irrigate 215 acres using a center pivot and one wheel line that will require a total of 1500 gpm or 3.34 cfs. To estimate the long-term drawdown and impact to neighboring wells from pumping of the proposed Riches Well, the forward solution capabilities of the AQTESOLV program were employed. The input parameters to the model are listed in Table 4-1 (see Attachment 4). Boundaries in AQTESOLV were enabled as shown in Figure 4-1 to represent Malad Valley. As depicted in Figure 4-1 and listed in Table 4-2 the model is 32,000 ft wide and 50,000 ft long. Because the Malad Valley is bounded by mountains consisting of Paleozoic and Mesozoic sedimentary rock that do not provide much water compared to the unconsolidated valley fill, the east, west and south boundaries are were set as impermeable or "no flow" boundaries. Water is allowed to enter the model domain only through the north boundary.

In the model domain the proposed POD well is located 4000 ft east of the west boundary and 2000 ft north of the south boundary. This represents the proximity of the proposed POD to the nearby mountains, which will have the effect of increasing drawdown.



Figure 4-2 shows the AQTESOLV[®] output plot of the forward calculation for the proposed well pumping at 3.34 cfs (1,500 gpm) constantly for 6 months (April 15 to Oct 15). At the end of the time period the predicted drawdown is estimated to be about 7 feet in the proposed Vik Riches Well. The calculated drawdown for a well 1/2 mile north of the proposed well is a little over 2 ft. This amount of drawdown will be negligible to other groundwater users in the area.

It is my professional opinion that Mr. Riches's water right application will not excessively impact his neighbors' right to divert water. For several reasons I believe that the calculated drawdown over estimates the actual drawdown to be expected: 1) Mr. Riches will probably never pump continuously at the maximum rate for 180 days nor will he consume 1194 acre – ft in a single year; 2) the Paleozoic/Mesozoic rocks of the mountains are not totally impermeable and will provide some water to the system, thus reducing drawdown, and 3) two canals and the Malad River are within the domain of the model and no credit for recharge/leakage is taken in the model. All of these factors will reduce the predicted drawdown presented here.

Please do not hesitate to call me if you have any questions about this letter or the calculations presented.

Respectfully,

A handwritten signature in black ink, appearing to read "Thomas R. Wood".

Thomas R. Wood, PhD, PG



cc

Mr. Vic Riches, 10410 W Loyola Dr., Los Altos, CA 94024

References

Freeze, R.A. and J.A. Cherry, 1979, Groundwater, ISBN 0-13-365312-9, Prentice-Hall, Inc., Englewood Cliffs, New Jersey 07632.

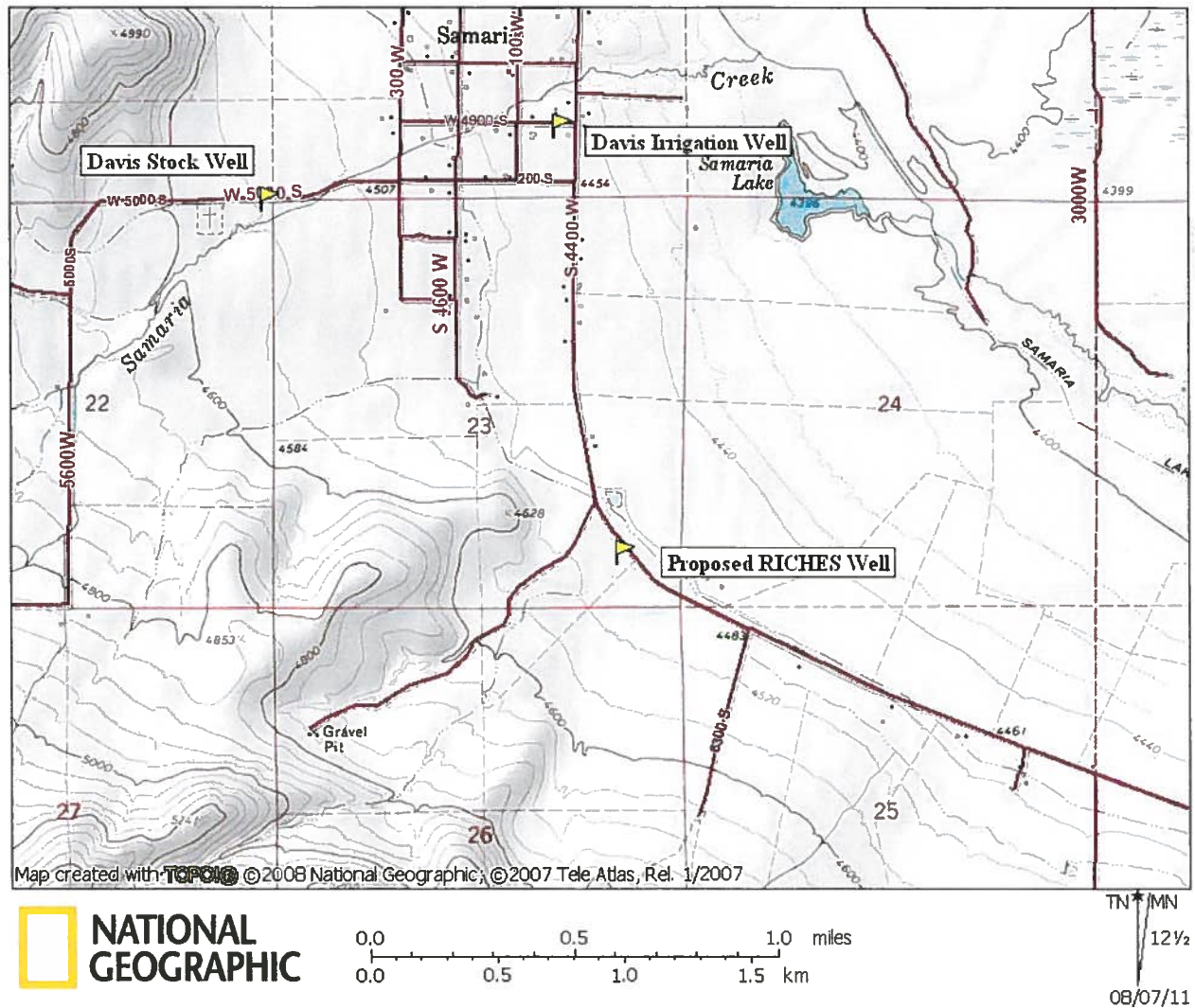


Figure 1. Map showing locations of the Proposed RICHES well, the Davis Irrigation Well and the Davis Stock Well.

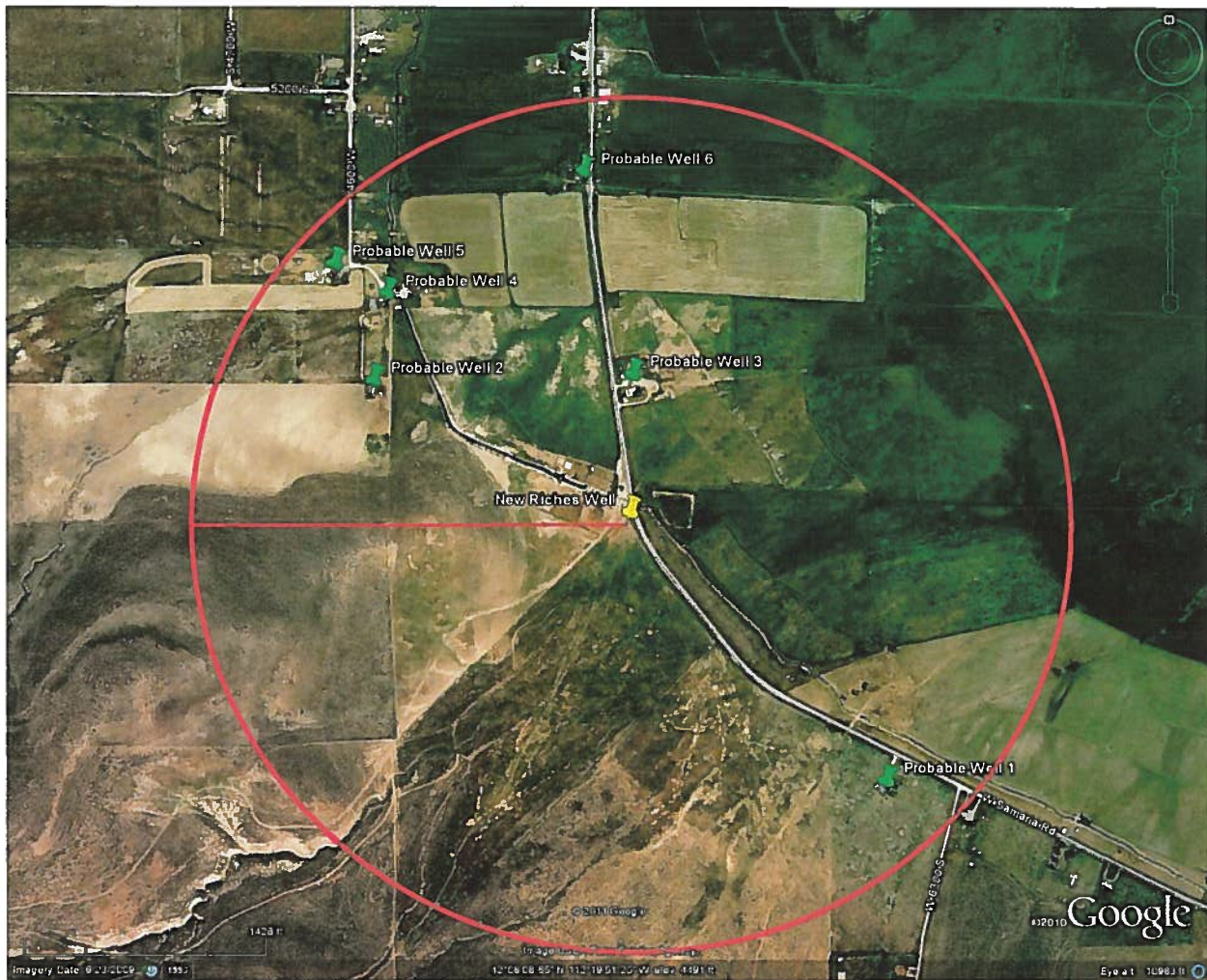


Figure 2 Google Earth image of area with a red circle of $\frac{1}{2}$ mile diameter. Records of neighboring wells are limited so probable locations of wells are plotted to be used in simulations.



Table 1 IDWR Search results for point of diversions in T15S, R35E, Section 23

Record	Basin	Sequence	Basis	Status	Priority Date	Diversi on Rate	Source List	Water Uses	Owner List
1	15	4018	Statutory Claim	Active	1908-06-01	0.03	GROUND WATER	DOMESTIC	THOMAS, ALVIN J (Current); THOMAS, GRACE B (Current)
2	15	7179	Active	2000-04-10	0.18	GROUND WATER	DOMESTIC, IRRIGATION		M J DAVIS MEMORIAL LTD PARTNERSHIP (Current)

Table 2 IDWR Search results for point of diversions in T15S, R35E, Section 24

Record	Basin	Sequence	Basis	Status	Priority Date	Diversi on Rate	Source List	Water Uses	Owner List
1	15	2105	License	Active	1949-02-16	0.01	SPRING	STOCKWATER	UNITED STATES OF AMERICA ACTING THROUGH (Current)
2	15	4034	Statutory Claim	Active	1880-07-30	0.5	SPRING	IRRIGATION	DURBIN, ILENE J (Current); HUGHES, LEVI (Current)
3	15	7277	Statutory Claim	Active	1875-02-15	111.8	SAMARIA CREEK, SPRING	IRRIGATION, IRRIGATION FROM STORAGE, IRRIGATION STORAGE	SAMARIA LAKE IRRIGATING CO (Current)

Table 3 IDWR Search results for point of diversions in T15S, R35E, Section 25

Record	Basin	Sequence	Basis	Status	Priority Date	Diversi on Rate	Source List	Water Uses	Owner List
1	15	4041	Statutory Claim	Active	1925-11-01	4	UNNA MED DITCH	IRRIGATION, STOCK	DURBIN, ILENE J (Current)



								WATER	
2	15	4051	Statutory Claim	Active	1888-04-18	0.62	ALDRIDGE CANYON SPRING, BIG CANYON SPRING	IRRIGATION	WILLIAMS, MARCENE L (Current); WILLIAMS, THOMAS C (Current)
3	15	4087	Statutory Claim	Active	1888-04-18	0.03	ALDRIDGE CANYON SPRING, BIG CANYON SPRING	IRRIGATION, STOCK WATER	CHRISTOFFERSEN, KLEA MAE (Current); CHRISTOFFERSEN, LAVAR (Current)
4	15	7223	License	Active	2002-02-26	2.7	GROUND WATER	IRRIGATION	PEOA RIVER VALLEY RANCH LAND LLC (Current); TRIPLE R DEVELOPMENT LLC (Current)
5	15	7341	Statutory Claim	Active	1888-04-18	0.59	ALDRIDGE CANYON SPRING, BIG CANYON SPRING	IRRIGATION, STOCK WATER	TWO BUCK CHUCK LLC (Current)

Table 4 IDWR Search results for point of diversions in T15S, R35E, Section 26
 NONE



Attachment 1

WELL LOGS



Clearwater Geosciences, LLP
Ground Water Development and Exploration

Form 236-7
11/87

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

051647

Office Use Only
Inspected by _____
Twp _____ Rge _____ Sec _____
1/4 _____ 1/4 _____ 1/4 _____
Lat _____ Long _____

1. WELL TAG NO. D 0006940
DRILLING PERMIT NO. 15-99-E-0018
Other IDWR No. _____

2. OWNER:
Name Brend Warren
Address 5199 S. 4600 W
City Madrid State UT Zip 83252

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

North _____ or South _____
East _____ or West _____
Twp. 15 Rge. 35 Sec. 23
Gov't Lot _____ County Oneida Long. _____
Address of Well Site Samana City _____

Li. _____ Bk. _____ Sub. Name _____

4. USE:
☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other _____

5. TYPE OF WORK check all that apply (Replacement etc.)
☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD
☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT		METHOD
Material	From	To	Sacks or Pounds		
<u>Bentonite</u>	<u>0</u>	<u>20</u>	<u>4</u>	<u>Over Bore</u>	

Was drive shoe used? ☒ N Shoe Depth(s) 140'
Was drive shoe seal tested? ☐ Y ☐ N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
<u>6"</u>	<u>0</u>	<u>140</u>	<u>30</u>	<u>Steel</u>	☐	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

Perforations _____ Method _____
Screens _____ Screen Type _____

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

40 ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or control devices: _____

11. WELL TESTS:

Yield gal./min	Drawdown	Pumping Level	Time
<u>40</u>			

Water Temp. cold Bottom hole temp. cold

Water Quality test or comments: good

Depth first Water Encounter 85'

12. LITHOLOGIC LOG: (Describe repairs or abandonment) Water

Bore Dia	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
<u>8 1/2"</u>	<u>0</u>	<u>20</u>	<u>Brown clay + Gravel</u>	☒	☒
<u>6"</u>	<u>20</u>	<u>85</u>	<u>Brown clay</u>	☒	☒
<u>6"</u>	<u>85</u>	<u>90</u>	<u>Gravel</u>	☒	☒
<u>6"</u>	<u>90</u>	<u>98</u>	<u>Brown clay + Gravel</u>	☒	☒
<u>6"</u>	<u>98</u>	<u>100</u>	<u>Gravel + clay</u>	☒	☒
<u>6"</u>	<u>100</u>	<u>135</u>	<u>Brown clay</u>	☒	☒
<u>6"</u>	<u>135</u>	<u>140</u>	<u>Gravel + Fine sand</u>	☒	☒

6" 135/140 Gravel Packbed

RECEIVED

SEP 13 1999

Department of Water Resources
Eastern Region

RECEIVED

SEP 20 1999

MICROFILMED

NOV 30 1999

Department of Water Resources

Completed Depth 135 (Measurable)
Date: Started 6-12-99 Completed 6-15-99

13. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name W. Westfield Drilling Firm No. 543

Firm Official Michael Franden Date 7-15-99

and
Driller or Operator _____ Date _____
(Sign once if Firm Official & Operator)

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Figure 1-1 Well log for Warren Well.



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Ground Water Development and Exploration

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Form 238-7
3/95

MAR 04 1997

IDAHO DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

Use Typewriter or Ballpoint Pen

068717

Department of Water Resources
Eastern Region

1. DRILLING PERMIT NO. 15-96-E00-31

Other IDWR No. _____

2. OWNER:

Name Willard Higley
Address 411 S Samaria RD
City Malad State ID Zip _____

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

N		Twp. <u>15</u>		North ☐ or South ☒	
E		Rge. <u>35</u>		East ☒ or West ☐	
S		Sec. <u>24</u>		SW 1/4 SW 1/4 1/4	
W		Gov't Lot _____		County _____	
		Lat: _____		Long: _____	

Address of Well Site _____

(Give at least name of road - Distance to Road or Landmark)

Lt. _____ Blk. _____ Sub. Name _____

4. USE:

☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other _____

5. TYPE OF WORK check all that apply (Replacement etc.)

☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD

☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT		METHOD
Material	From	To	Sacks or Pounds		
Bensacel	0	18	12-50	lb.	

Was drive shoe used? ☒ N Shoe Depth(s) _____
Was drive shoe seal tested? ☒ N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	0	67	1/4	Prime	☒	☐	☒	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

☐ Perforations Method _____
☐ Screens Screen Type _____

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

_____ ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or control devices: _____

11. WELL TESTS:

☐ Pump ☐ Bailer

Office Use Only		
Inspected by _____		
Twp. _____	Rge. _____	Sec. _____
1/4 _____	1/4 _____	1/4 _____
Lat. _____	Long. _____	

Yield gal/min.	Drawdown	Pumping Level	Time

Water Temp. _____ Bottom hole temp. _____

Water Quality test or comments: _____

Depth first Water Encountered _____

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
10"	0	1	Top soil		
10"	1	19	Brown Clay		
10"	19	67	Brown Clay w/ B's Boulders		
			Collapsed casing		
			at shoe, twisted		
			off Drill still		

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MAR 12 1997

Department of Water Resources

Completed Depth 67 ft (Measurable)
Date Started Dec 2-96 Completed 12-17-96

13. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name Vallner Drilling Firm No. 403

Firm Official Harry Vallner Date Feb 28-97

and Supervisor or Operator Col Gahn Date Feb 28-97
(Sign once if Firm Official & Operator)

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Figure 1-2 Well log for Higley Well.



Clearwater Geosciences, LLP
Ground Water Development and Exploration

Form 238-7
3/95

IDAHO DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

Use Typewriter or Ballpoint Pen

63230

Office Use Only
Inspected by _____
Twp _____ Rge _____ Sec _____
1/4 1/4 1/4
Lat: _____ Long: _____

1. DRILLING PERMIT NO. 15-95-E-0016-000
Other IDWR No. _____

2. OWNER:
Name Edwin Dives
Address 54 W. SAMARIA LANE
City MARION State ID Zip 83252

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

Map grid showing location. Twp. 15 North ☐ or South ☒
Rge. 35 East ☒ or West ☐
Sec. 25 NE 1/4 NW 1/4
Gov't Lot _____ County ADAMS
Lat: _____ Long: _____

Address of Well Site 425 W. SAMARIA RD City MARION
(Give at least name of road + Distance in Road or Longitude)

LT. _____ Blk. 11 Sub Name _____

4. USE:
☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other _____

5. TYPE OF WORK check all that apply (Replacement etc.)
☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD
☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT		METHOD
Material	From	To	Sacks or Pounds		
BEALONITE	120	0	450		OVER BURE

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 98'
Was drive shoe seal tested? ☒ Y ☐ N How? N/A

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
16" x 2	87	250		STEEL	☒	☐	☒	☐

Length of Headpipe N/A Length of Tailpipe N/A

9. PERFORATIONS/SCREENS

☒ Perforations Method TOUCH
☐ Screens Screen Type _____

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
68	85	12"	4	41		☒	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

52 ft. below ground Artesian pressure _____ lb.
Depth flow encountered 85 ft. Describe access port or control devices: TOP

11. WELL TESTS:

Yield gal./min.	Drawdown	Pumping Level	Time
	<u>NONE</u>		

Water Temp. COLD Bottom hole temp. COLD
Water Quality test or comments: NONE

Depth first Water Encountered 70'

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
8 1/4"	0	10	CLAY, SOME COBBLE ROCK		
	10	19	CLAY		
	19	22	COBBLE ROCK		
	22	25	CLAY, GRAVEL		
	25	35	CLAY		
	35	40	GRAVEL COBBLE ROCK		
	40	45	CLAY		
	45	48	GRAVEL COBBLE ROCK		
	48	50	CLAY		
	50	52	COBBLE ROCK, GRAVEL		
	52	54	CLAY		
	54	57	COBBLE ROCK, GRAVEL		
	57	64	CLAY, GRAVEL COBBLE ROCK		
	64	66	HARD LIMESTONE		
	66	72	BROWN LIME, CLAY		
	72	85	CLAY BROWN ROCK		
	85	86	LIMESTONE		
	86	90	GRAVEL CLAY, LORSTON		
	90	100	GRAVEL, BROWN LIME		

RECEIVED

OCT 06 1995

RECEIVED

NOV 24 1995

Department of Water Resources

Eastern District Office

MAR 07 1996

Completed Depth 8 100' (Measurable)
Date: Started 8-29-95 Completed 8-1-95

13. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name Clearwater Geosciences, LLP Firm No. 102

Firm Official [Signature] Date 9-1-95

and [Signature] Date 9-1-95

Supervisor or Operator [Signature] Date 9-1-95

(Signees if Firm Official & Operator)

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Figure 1-3 Well log for Dives Well.



Clearwater Geosciences, LLP
Ground Water Development and Exploration

Form 238-7
3/95

IDAHO DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT
Use Typewriter or Ballpoint Pen **60231**

Office Use Only			
Inspected by _____			
Twp _____	Rge _____	Sec _____	
_____ 1/4 _____ 1/4 _____ 1/4			
Lat: _____	Long: _____		

1. DRILLING PERMIT NO. 15-98-E-0015
Other IDWR No. 0000 4716

2. OWNER:
Name Marilyn Holgate
Address 142 S Samaria Rd
City Metol City State ID Zip 83257

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

N		Twp <u>15S</u>		North ☐ or South ☒	
E		Rge. <u>35</u>		East ☐ or West ☐	
S		Sec. <u>25</u>		NW 1/4 <u>NEL</u> 1/4 NW 1/4 _____	
		Gov't Lot _____		County <u>ONEIDA</u> 10 acres 40 acres 160 acres	
		Lat: _____		Long: _____	
		Address of Well Site <u>142 S SAMARIA</u>		City _____	

(Give at least name of road - Distance to Road or Landmark)

Lt. _____ Blk. _____ Sub. Name _____

4. USE:

☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other _____

5. TYPE OF WORK check all that apply (Replacement etc.)

☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD

☐ Air Rotary ☒ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT		METHOD
Material	From	To	Sacks or Pounds	Other	
Bentonite	0	20	6		Poured

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 123'

Was drive shoe seal tested? ☐ Y ☐ N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6	0	121.5	250	STEEL	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

☐ Perforations Method _____
☐ Screens Screen Type _____

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
						☐	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

45 ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or control devices: _____

11. WELL TESTS:

☐ Pump ☒ Baller ☐ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
20	None		

Water Temp. 68° Bottom hole temp. 68°

Water Quality test or comments: _____

Depth first Water Encountered _____

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
6	0	20	Top Soil - Clay + Gravel		☒
	20	30	Gravel		☒
	30	40	Clay		☒
	40	46	11"		☒
	46	50	Cemented Gravel		☒
	50	60	Clay + Rock		☒
	60	75	Gravel		☒
	75	80	Gravel		☒
	80	90	Clay + Gravel		☒
	90	105	Gravel		☒
	105	113	Sand		☒
	113	123	Gravel		☒

RECEIVED

JUN 08 1998

Department of Water Resources
Eastern Region

RECEIVED

JUN 19 1998

Department of Water Resources

Completed Depth 123 (Measurable)

Date: Started 5-27-98 Completed 6-2-98

13. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name A & I Well Drilling Firm No. 585

Firm Official William T Adoma Date 6-6-98

and Supervisor or Operator William T Adoma Date 6-6-98

(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

Figure 1-4 Well log for Holgate well



Clearwater Geosciences, LLP
Ground Water Development and Exploration

Form 238-7
8/90

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

USE TYPEWRITER OR
BALLPOINT PEN

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>TAM ORDRILL HUGHES</u> Address <u>457 SOUTH SAMANU RD. IDAHO FALLS</u> Drilling Permit No. <u>15-92E-008</u> Water Right Permit No. _____		7. WATER LEVEL Static water level <u>45</u> feet below land surface. Flowing? ☐ Yes ☒ No G.P.M. flow _____ Artesian closed-in pressure _____ p.s.i. Controlled by: ☐ Valve ☐ Cap ☐ Plug Temperature _____ °F. Quality _____ Describe artesian or temperature zones below.																																																	
2. NATURE OF WORK ☐ New well ☐ Deepened ☒ Replacement ☐ Well diameter increase ☐ Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)		8. WELL TEST DATA ☐ Pump ☐ Bailer ☒ Air ☐ Other _____ Discharge G.P.M. <u>30</u> Pumping Level _____ Hours Pumped <u>15</u>																																																	
3. PROPOSED USE ☒ Domestic ☐ Irrigation ☐ Test ☐ Municipal ☐ Industrial ☒ Stock ☐ Waste Disposal or Injection ☐ Other _____ (specify type)		9. LITHOLOGIC LOG <table border="1"><thead><tr><th>Bore Diam.</th><th>Depth From</th><th>To</th><th>Material</th><th>Water Yes</th><th>No</th></tr></thead><tbody><tr><td>9</td><td>0</td><td>25</td><td>BROWN CLAY</td><td></td><td>☒</td></tr><tr><td>16</td><td>25</td><td>40</td><td>BROWN CLAY & COARSE ROCK BIG ROCK</td><td></td><td>☒</td></tr><tr><td></td><td>40</td><td>65</td><td>CLAY CLAY</td><td></td><td>☒</td></tr><tr><td></td><td>65</td><td>72</td><td>GRAVEL & LITTLE WATER</td><td></td><td>☒</td></tr><tr><td></td><td>72</td><td>85</td><td>BROWN CLAY & ROCK</td><td></td><td>☒</td></tr><tr><td></td><td>85</td><td>107</td><td>SAND</td><td></td><td>☒</td></tr><tr><td></td><td>107</td><td>166</td><td>GRAVEL & GREY ROCK</td><td></td><td>☒</td></tr></tbody></table>		Bore Diam.	Depth From	To	Material	Water Yes	No	9	0	25	BROWN CLAY		☒	16	25	40	BROWN CLAY & COARSE ROCK BIG ROCK		☒		40	65	CLAY CLAY		☒		65	72	GRAVEL & LITTLE WATER		☒		72	85	BROWN CLAY & ROCK		☒		85	107	SAND		☒		107	166	GRAVEL & GREY ROCK		☒
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4. METHOD DRILLED ☒ Rotary ☐ Air ☐ Hydraulic ☐ Reverse rotary ☐ Cable ☐ Dug ☐ Other _____		RECEIVED AUG 10 1992 Department of Water Resources Eastern District Office RECEIVED AUG 21 1992 Department of Water Resources																																																	
5. WELL CONSTRUCTION Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____ <table border="1"><thead><tr><th>Thickness</th><th>Diameter</th><th>From</th><th>To</th></tr></thead><tbody><tr><td><u>2.50</u> inches</td><td><u>6</u> inches</td><td><u>18</u> feet</td><td><u>126</u> feet</td></tr><tr><td>_____ inches</td><td>_____ inches</td><td>_____ feet</td><td>_____ feet</td></tr><tr><td>_____ inches</td><td>_____ inches</td><td>_____ feet</td><td>_____ feet</td></tr><tr><td>_____ inches</td><td>_____ inches</td><td>_____ feet</td><td>_____ feet</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 ☐ Gun Size of perforation <u>1/8</u> inches by <u>2</u> inches <table border="1"><thead><tr><th>Number</th><th>From</th><th>To</th></tr></thead><tbody><tr><td><u>45</u> perforations</td><td><u>90</u> feet</td><td><u>112</u> feet</td></tr><tr><td>_____ perforations</td><td>_____ feet</td><td>_____ feet</td></tr><tr><td>_____ perforations</td><td>_____ feet</td><td>_____ feet</td></tr></tbody></table> 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 ☒ Bentonite ☐ Pudding clay Sealing procedure used: ☐ Slurry pit ☐ Temp. surface casing ☒ Overbore to seal depth Method of joining casing: ☐ Threaded ☒ Welded ☐ Solvent Weld ☐ Cemented between strata Describe access port _____				Thickness	Diameter	From	To	<u>2.50</u> inches	<u>6</u> inches	<u>18</u> feet	<u>126</u> feet	_____ inches	_____ inches	_____ feet	_____ feet	_____ inches	_____ inches	_____ feet	_____ feet	_____ inches	_____ inches	_____ feet	_____ feet	Number	From	To	<u>45</u> perforations	<u>90</u> feet	<u>112</u> feet	_____ perforations	_____ feet	_____ feet	_____ perforations	_____ feet	_____ feet																
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6. LOCATION OF WELL Sketch map location must agree with written location. <table border="1"><tr><td>N</td><td></td><td>E</td></tr><tr><td>W</td><td>X</td><td></td></tr></table> Subdivision Name _____ Lot No. _____ Block No. _____ County <u>ONEIDA</u> Sec. <u>25</u> T. <u>45</u> N. R. <u>35</u> W.		N		E	W	X		10. Work started <u>6/15/92</u> finished <u>6/18/92</u>																																											
N		E																																																	
W	X																																																		
11. DRILLERS CERTIFICATION I/We certify that all minimum well construction standards were complied with at the time the rig was removed. Firm Name <u>DURIE DRILLING & PUMP</u> Firm No. <u>118</u> Address <u>PO BOX 4465 BOCA TON</u> Date <u>6/18/92</u> Signed by (Firm Official) <u>M. H. Dalpe</u> and (Operator) <u>Bert Kuehling</u>		10. Work started <u>6/15/92</u> finished <u>6/18/92</u>																																																	

Figure 1-5 Well log for Hughes Well.



Clearwater Geosciences, LLP
Ground Water Development and Exploration

Form 238-7
11/97

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Inspected by _____
Twp _____ Rge _____ Sec _____
1/4 _____ 1/4 _____ 1/4 _____
Lat _____ Long _____
☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

1. WELL TAG NO. D D0011944
DRILLING PERMIT NO. 764121
Other IDWR No. _____

2. OWNER:
Name M. J. Manual Limit Partnership
Address 2525 Himsley Rd
City Colorado Springs Colorado Zip 80914

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

North ☐ or South ☒
East ☒ or West ☐
Twp. 15 Rge. 35 Sec. 14
Gov't Lot _____ County ONEIDA 100 acres
Lat _____ Long _____
Address of Well Site 130 South Main
City SAMARIA

Li. _____ Bk. _____ Sub. _____ Name _____

4. USE:

☐ Domestic ☐ Municipal ☐ Monitor ☒ Irrigation
☐ Thermal ☐ Injection ☐ Other _____

5. TYPE OF WORK check all that apply (Replacement etc.)

☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD

☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT Sacks or Pounds	METHOD
Material	From	To		
<u>Bentonite</u>	<u>0</u>	<u>20</u>		<u>Over Bore</u>

Was drive shoe used? ☒ N ☐ Shoe Depth(s) _____

Was drive shoe seal tested? ☐ Y ☐ N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Welded	Threaded
<u>8</u>	<u>1</u>	<u>140</u>	<u>20</u>	<u>Steel</u>	☒	☒	☐
					☐	☐	☐
					☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

Perforations _____ Method _____
Screens _____ Screen Type _____

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
						☐	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

21 ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or
control devices: _____

11. WELL TESTS:

☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Pumping Level	Time
<u>120-130</u>		<u>140</u>	<u>1 1/2</u>

Water Temp. _____ Bottom hole temp. _____

Water Quality test or comments: _____

Depth first Water Encounter _____

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
<u>10</u>	<u>0</u>	<u>20</u>	<u>clay +</u>		
<u>80</u>	<u>20</u>	<u>40</u>	<u>C/AY</u>		
<u>40</u>	<u>50</u>	<u>100</u>	<u>C/AY + GRAVEL</u>		
<u>80</u>	<u>100</u>	<u>110</u>	<u>GRAVEL</u>		
<u>100</u>	<u>110</u>	<u>120</u>	<u>SAND GRAVEL</u>		
<u>110</u>	<u>120</u>	<u>130</u>	<u>LARGE GRAVEL</u>		
<u>130</u>	<u>140</u>	<u>150</u>	<u>CLAY</u>		

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SEP 18 2000

Department of Water Resources

RECEIVED

SEP 06 2000

Department of Water Resources
Eastern Region

Completed _____ Depth 140 (Measurable)
Date: Started 6-21-00 Completed 6-29-00

13. DRILLER'S CERTIFICATION

We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name Lundstrom Well Drilling Firm No. 118

Firm Official Dr. Lundstrom Date 6-29-00

and _____
Driller or Operator _____ Date _____
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

Figure 1-6 Well log for Jeff Davis Irrigation Well.



Clearwater Geosciences, LLP
Ground Water Development and Exploration

F 2-7

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Inspected by _____
Twp _____ Rge _____ Sec _____
1/4 1/4 1/4
Lat: _____ Long: _____
☒ Air ☐ Flowing Artesian

1. WELL TAG NO. D 00 14152
DRILLING PERMIT NO. 765240
Other IOWR No. 15-07179

2. OWNER:
Name M.J. Davis Medical Unit
Address 2525 HIMALAYA
City COLORADO SPRING State CO Zip 80919

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

W Twp. 15 North ☐ or South ☒
Rge. 35 East ☒ or West ☐
Sec. 23 1/4 SE 1/4 NW 1/4
Gov't Lot _____ County ONTARIO
Lat: _____ Long: _____
Address of Well Site S 054 So 4600 W.
City SHARPE IDAHO
(Give at least name of road - Distance to Road or Landmark)

Lt. _____ Blk. _____ Sub. Name _____

4. USE:

☒ Domestic ☐ Municipal ☐ Monitor ☒ Irrigation
☐ Thermal ☐ Injection ☐ Other _____

5. TYPE OF WORK check all that apply (Replacement etc.)

☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD

☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK		AMOUNT		METHOD
Material	From To	From To	Sacks or Bags	
Bentonite	0 30	4		OVER BORE

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) _____
Was drive shoe seal tested? ☐ Y ☐ N How? _____

8. CASING/LINER:

Diameter	From To	Gauge	Material	Casing	Liner	Welded	Threaded
8 1/2	121	25	Steel	☒	☐	☒	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

Perforations _____ Method _____

Screens _____ Screen Type _____

From To	Slot Size	Number	Diameter	Material	Casing	Liner
					☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

51 ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or control devices: _____

11. WELL TESTS:

Yield gal/min.	Drawdown	Pumping Level	Time
30-40		140	1 hr

Water Temp. _____ Bottom hole temp. _____

Water Quality test or comments: _____

12. LITHOLOGIC LOG: (Describe repairs or abandonment) Water

Bore Dia.	From To	Remarks: Lithology, Water Quality & Temperature	Y	N
8 1/2	0 30	CLAY & SUMMER ROCK		
8 1/2	30 60	1" ROCKS		
8 1/2	60 90	1" ROCK LARGE		
8 1/2	90 100	SAND GRAVEL ROCKS		
8 1/2	100 120	1" " "		
8 1/2	120 140	CLAY & ROCKS GRAVEL		

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FEB 06 2001
Department of Water Resources
Eastern Region

RECEIVED
DEC 18 2000
Department of Water Resources
Eastern Region

Completed Depth 140 - 120 (Measurable)
Date: Started 10-4-2000 Completed 10-25-2000

13. DRILLER'S CERTIFICATION

We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name Lundstrom Well Drilling Firm No. 118

Firm Official Arnold Lundstrom Date 10-25-2000

and Driller or Operator _____ Date _____

(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

Figure 1-7 Well log for Jeff Davis Stock Well.



Attachment 2

DATA PLOTS



Pumping Test of Davis Well for Vik Riches Impact Assessment
140 gpm April 23, 2011

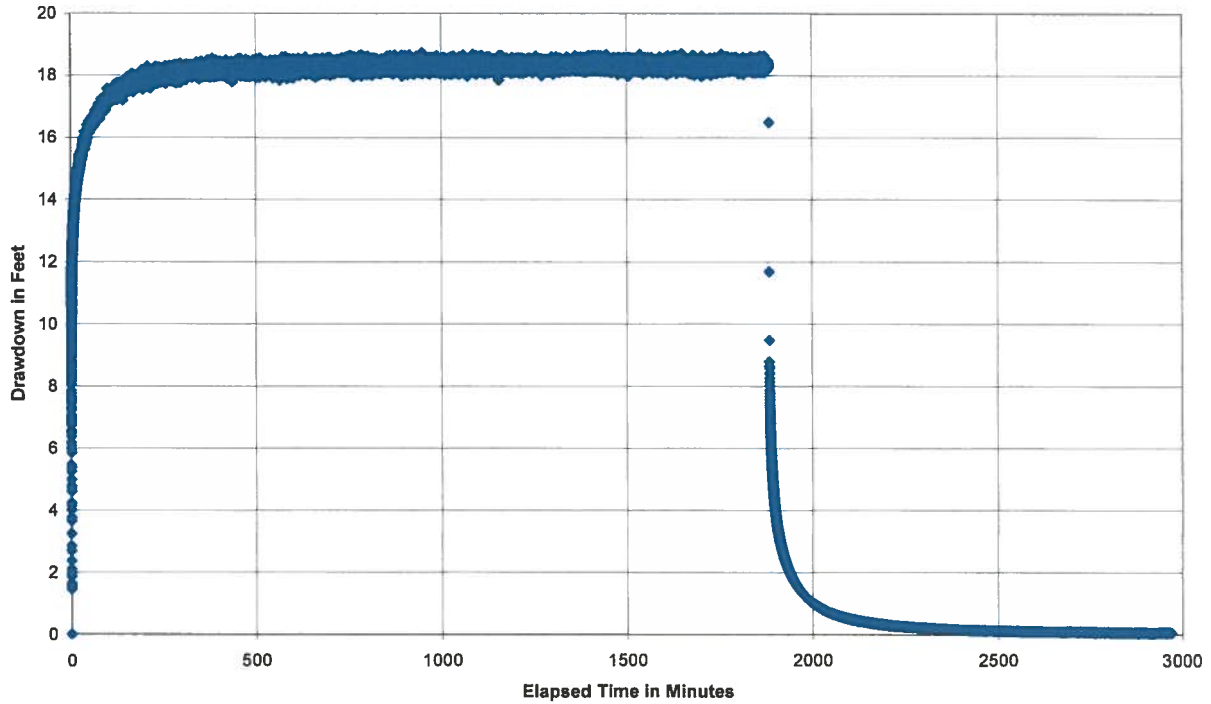


Figure 2-1. Plot of entire data set for pumping test of the Jeff Davis Irrigation well.



Attachment 3

AQTESOLV PLOTS

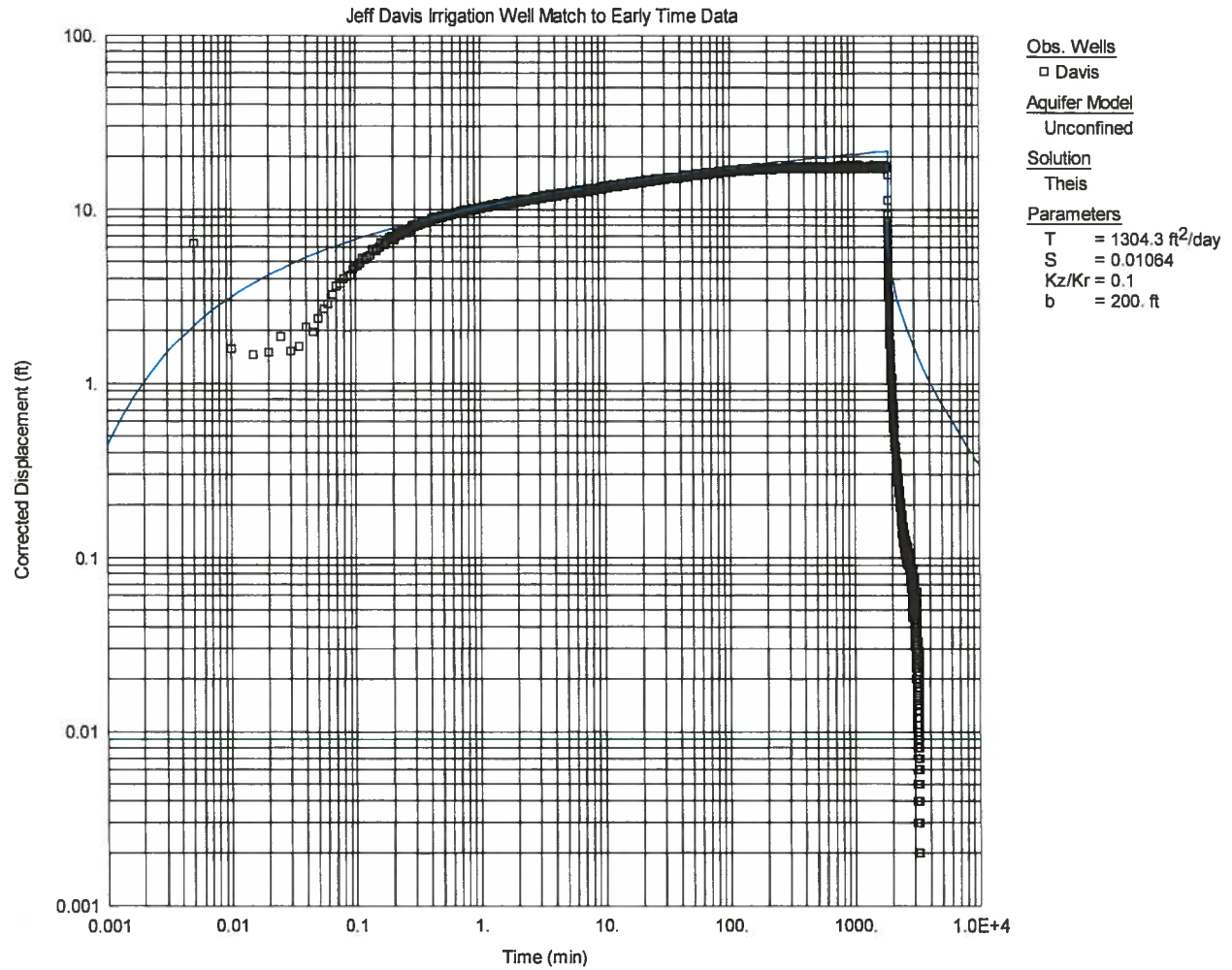


Figure 3-1 Theis unconfined solution matched to early time well data.

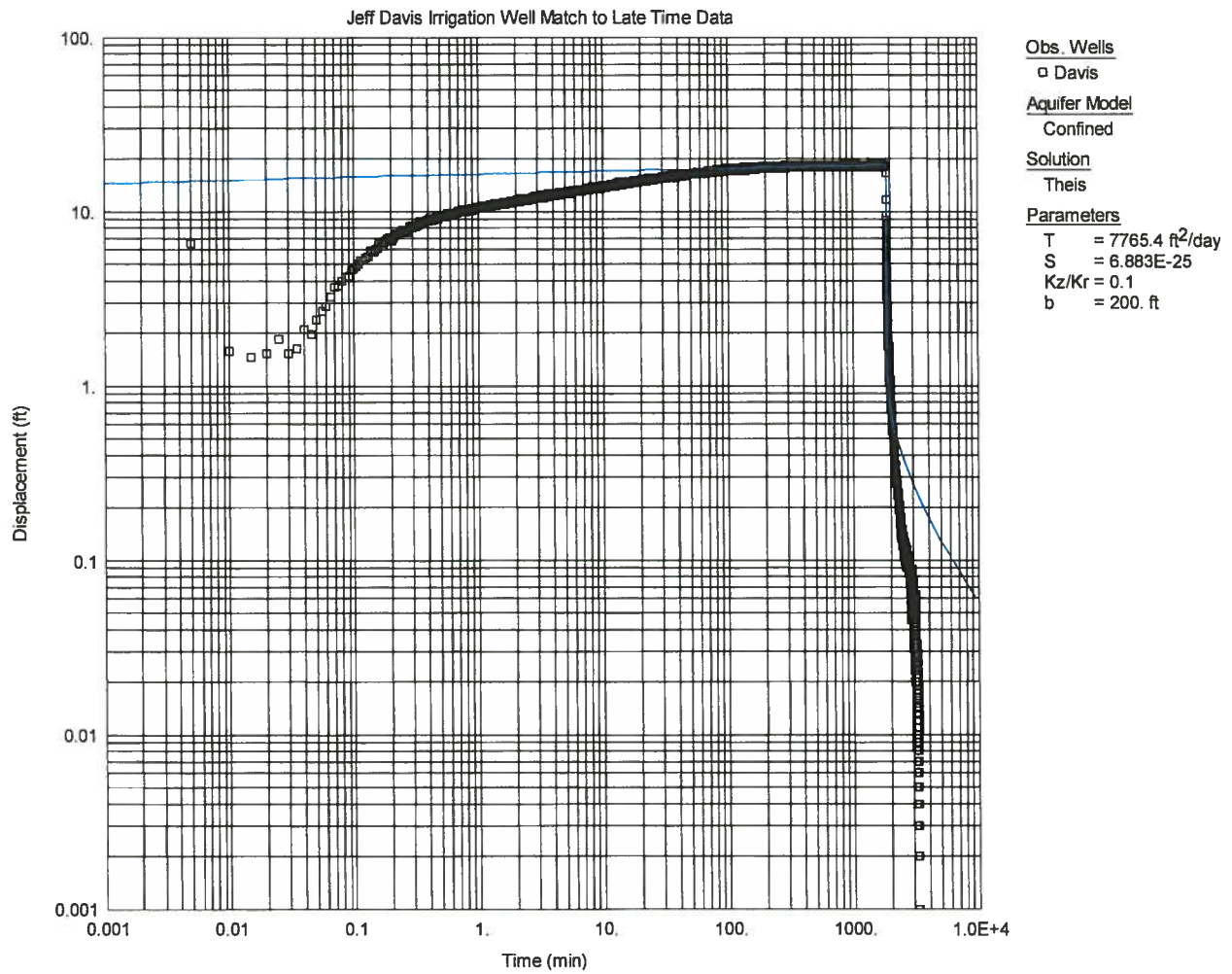


Figure 3-2 Theis unconfined solution matched to late time well data.



Attachment 4

AQUIFER IMPACT ANALYSIS



Table 4-1 Table of values used in AQTESOLV simulation.

Parameter	Value	Unit
Tranmissivity	78,000	ft ² /d
Storativity	0.1	unitless
Flow Rate	1500	gpm
Duration	259,200	min
Total volume	1,193	ac-ft
aquifer thickness (b)	200	ft
kz/Kr	0.1	na

Table 4-2 Table of locations for various boundary corners and wells used in the AQTESOLV simulation.

Location	x	y
NW Corner	0	50000
NE Corner	32000	50000
SW Corner	0	0
SE Corner	32000	0
Riches POD	4000	2000
Well 1/2 mile North	4000	4640

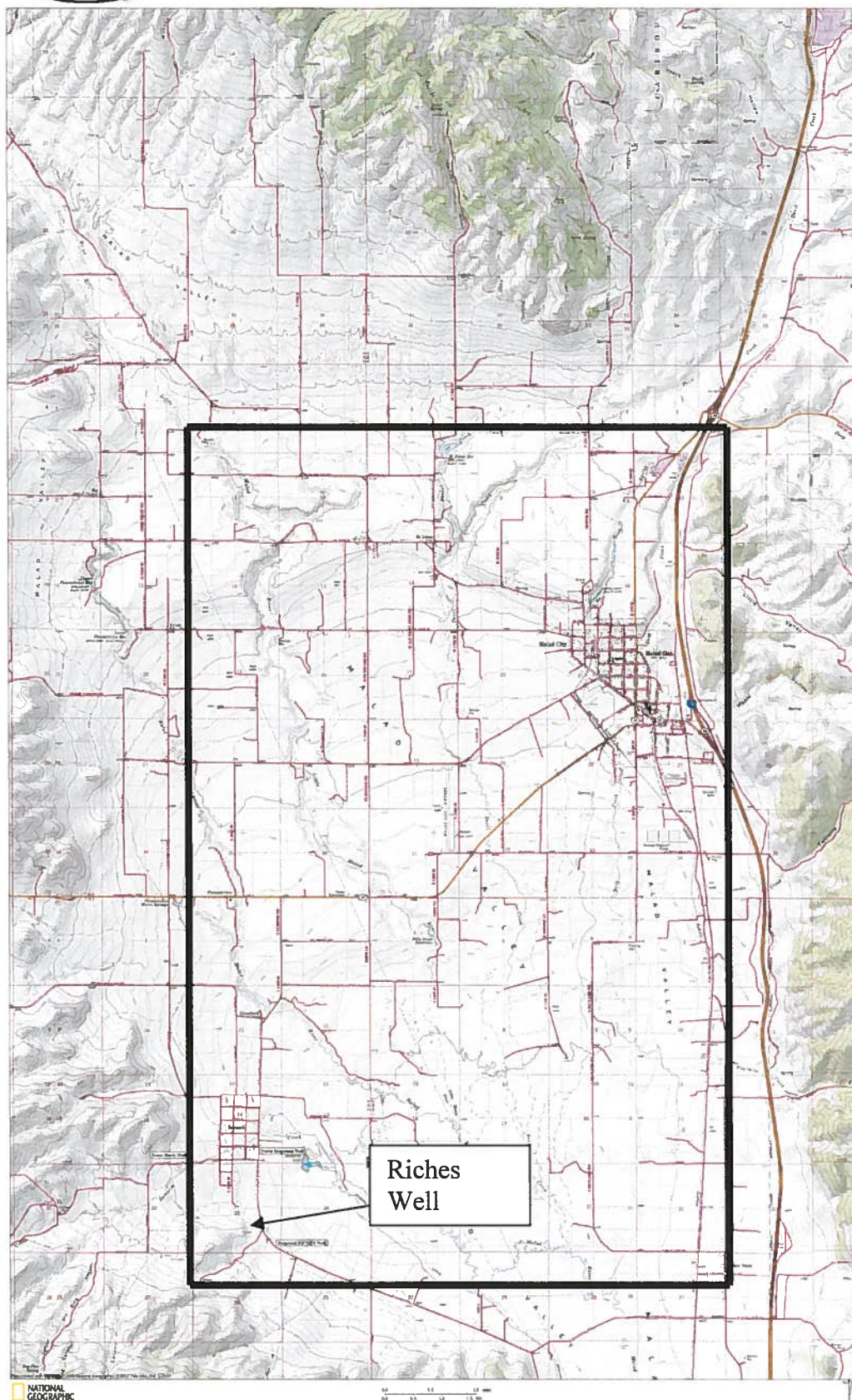


Figure 4-1 Outline of the boundaries used in the AQTESOLV forward solution calculation.

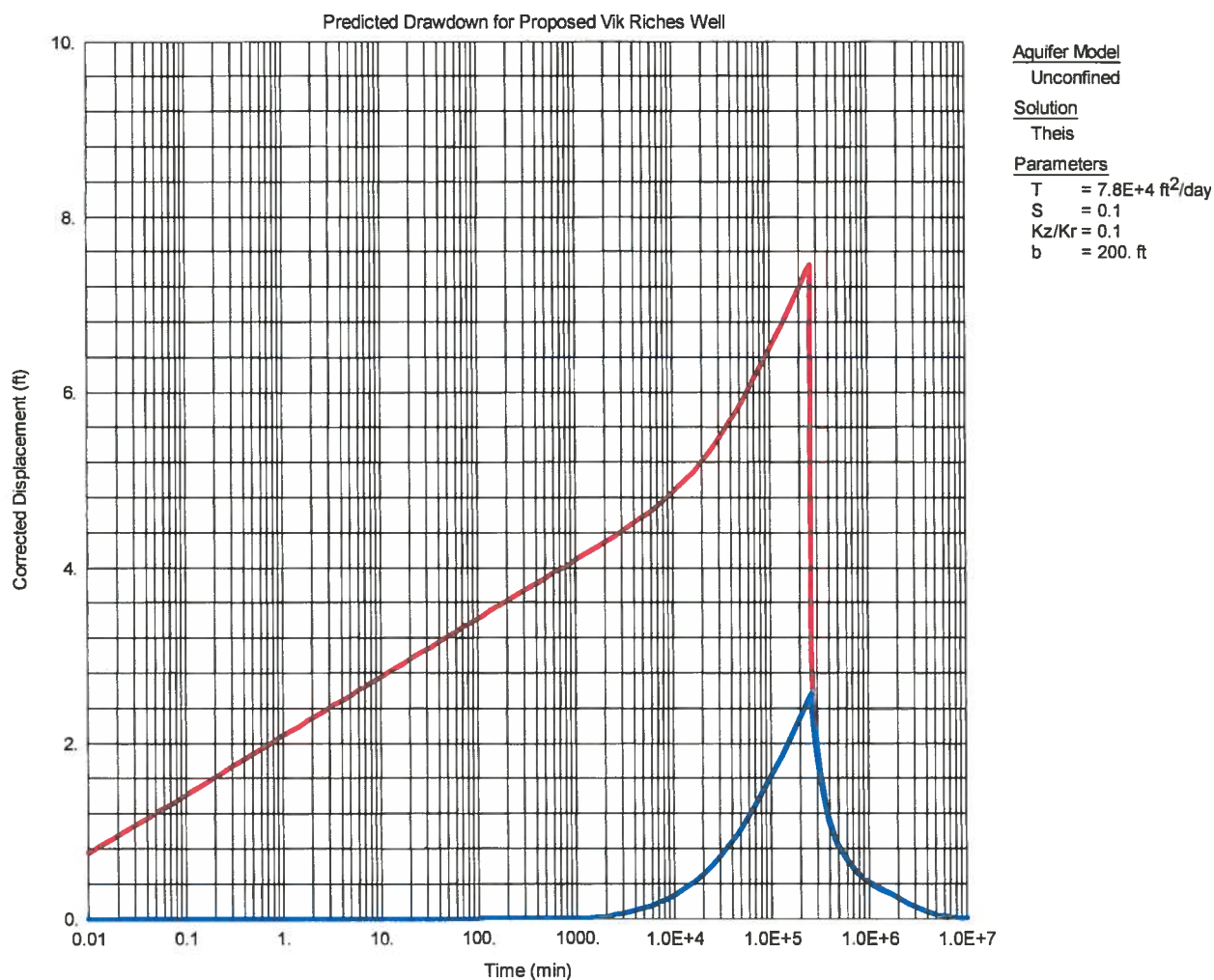


Figure 4-2 Predictive plot of drawdown at 1500 gpm or 3.34 cfs for the full period of use 180 days. The red line is for the water level in the proposed Riches Well pumping and the blue line is the water level predicted in a well ½ mile north of the proposed Riches Well.

Key to line colors

Blue Imaginary well ½ mile north of the proposed POD
Red Proposed POD for Vik Riches