Gary

MOORE SMITH BUXTON & TURCKE, CHARTERED

ATTORNEYS AND COUNSELORS AT LAW

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PAUL A. TURCKE◊
CARL J. WITHROE»*
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JOHN J. MCFADDEN*‡
Of Counsel
» Also admitted in California
+ Also admitted in New Mexico
* Also admitted in Oregon
◊ Also admitted in South Dakota
‡ Also admitted in Washington

April 26, 2007

Mr. Gary Spackman
Idaho Department of Water Resources
322 E. Front Street
Boise, ID 83720-0098

RE: City of Eagle Applications Nos. 63-32089 and 63-32090

Dear Gary:

According to the Notice of Consideration of Additional Evidence and Post Hearing Order, any party who wanted a further evidentiary hearing on the above applications based on the Addendum report and the February 27, 2007 staff memorandum by Sean Vincent was to request an additional hearing day by April 25, 2007. I do not believe any party has asked for any additional hearing. The staff memorandum addressed all the issues raised by the staff's earlier memorandum. Notably, no other party presented any contrary technical testimony or other evidence to contradict the Applicant's information, data, and testimony.

The City of Eagle would appreciate the Department's expeditious consideration of these applications. There are several developments underway, which are dependent upon the City's water system incorporating these water rights.

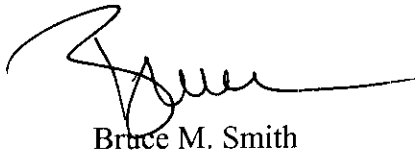
While the City believes that the evidence and analysis supports a finding that there is sufficient water for appropriation and that these applications should be granted as filed, the City has tried to address issues that have been raised at various points in the process. In the hope that it will help expedite the Department's processing, the City would offer the attached proposed

conditions that the City would voluntarily agree to have included as conditions on the permits. The City believes that these conditions, which reflect a carefully staged development process coupled with extensive monitoring, should allow the immediate issuance of these permits while providing assurances that the Department has the ability to determine if and when any impact or injury occurs. This approach also allows the Department to continue gathering information for future decisions on water rights in this basin.

Thank you.

Sincerely,

MOORE SMITH BUXTON & TURCKE, CHTD.



Bruce M. Smith

BMS/dls
Enclosure
cc: Client w/Enclosures
Protestants w/Enclosures

CERTIFICATE OF SERVICE

I hereby certify that on this 26 day of April, 2007, a true and correct copy of the foregoing document was served via U.S. Mail, postage prepaid, to the following persons:

DEAN & JAN COMBE 6440 W BEACON LIGHT EAGLE ID 83616	CHARLES HONSINGER DANIEL V. STEENSON RINGERT CLARK CHTD PO BOX 2773 BOISE, ID 83701-2773	LEEROY & BILLIE MELLIES 6860 W STATE STREET EAGLE ID 83616
JERRY & MARY TAYLOR 3410 HARTLEY EAGLE ID 83616	CORRIN & TERRY HUTTON 10820 NEW HOPE ROAD STAR ID 83669	SAM & KARI ROSTI 1460 N. POLLARD LANE STAR ID 83669
UNITED WATER ID INC c/o JOHN M. MARSHALL GIVENS PURSELY LLP 601 W. BANNOCK STREET BOISE ID 83702	IDWR - WESTERN REGION ATTN JOHN WESTRA 2735 AIRPORT WAY BOISE ID 83705-5082	

BRUCE M. SMITH

PROPOSED CONDITIONS FOR
PERMIT NOS. 63-32089 and 63-32090

- Prior to diversion of water under this right, the Permit Holder shall install at each well developed under Permit Nos. 63-32089 and 63-32090 a flow meter capable of instantaneous and totalized flow measurements.

- The Permit Holder shall record instantaneous flow, totalized flow, and water level in each well developed under Permit Nos. 63-32089 and 63-32090 on a monthly basis.

- The Permit Holder shall monitor water levels in up to four (4) appropriate observation wells in the vicinity of the proposed points of diversion on a quarterly basis. The observation wells shall be selected in consultation with the Department. These wells are in addition to the wells noted above.
- A summary report of monthly and annual diversions, and water level readings for each well developed under Permit Nos. 63-32089 and 63-32090 shall be submitted to the Department on an annual basis.

- Monitoring and reporting required as conditions of this permit shall be provided for a five-year period following permit approval.

- To provide for phased development, the maximum annual volume authorized under this Permit shall be limited to 1,200 acre-feet per year in each of the first three years following permit approval. The maximum annual diversion volume shall increase by 500 acre-feet in each year thereafter. The rate of volume diverted may be increased beyond that specified in any given year if the volume increase is offset by mitigation.

- This Permit is eligible for licensing when the system capacity to divert 8.9 cfs has been established.

MOORE SMITH BUXTON & TURCKE, CHARTERED

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Thank you.

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CHARLES L. HONSINGER (ISB #5240)
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Boise, Idaho 83701-2773
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Attorneys for Protestants Joseph, Lynn and Michael Moyle, Eugene Muller, Dana and Viki Purdy, Charles W. Meissner, Jr., Charles Howarth and Mike Dixon/Hoot Nanney Farms, Inc.

BEFORE THE IDAHO DEPARTMENT OF WATER RESOURCES

OF THE STATE OF IDAHO

IN THE MATTER OF APPLICATIONS TO, APPROPRIATE WATER RIGHT NOS. 63-32089 AND 63-32090 IN THE NAME OF THE CITY OF EAGLE	PROTESTANTS' TECHNICAL COMMENTS REGARDING ADDENDUM TO CITY OF EAGLE'S 7-DAY AQUIFER TEST REPORT AND IDWR'S STAFF MEMORANDUM

COMES NOW, Protestants Joseph, Lynn and Michael Moyle, Eugene Muller, Dana and Viki Purdy, Charles W. Meissner, Jr., Charles Howarth, and Mike Dixon/Hoot Nanney Farms, Inc. by and through their counsel of record Ringert Clark, Chartered, and, pursuant to the Hearing Officer's March 27, 2007 *Notice of Consideration of Additional Evidence and Post Hearing Order*, hereby submit technical comments regarding the *Addendum to the City of Eagle's 7-Day Aquifer Test Report* and IDWR's February 27, 2007 *Staff Memorandum* reviewing the same.

INTRODUCTION

After the December, 2006 hearing revealed severe deficiencies in its *7-Day Aquifer Test Report for Water Right Appropriation 63-32089 and 63-32090*, the City of Eagle met with IDWR personnel in an effort to flesh out its Report and address the concerns raised at hearing. On February 27, 2007, IDWR hydrogeologists authored a memorandum reviewing the February 22, 2007 *Addendum to City of Eagle 7-Day Aquifer Test Report* ("*Addendum*"). Both the City of Eagle's *Addendum* and the IDWR *Staff Memorandum* ("*Memorandum*") were provided to the parties by the end of March, 2007. The parties were then given until April 25, 2007 to submit "technical comments" about both documents pursuant to the Hearing Officer's March 27, 2007 *Notice and Order*.

Despite its attempt to better address concerns regarding its previous report, the City of Eagle's *Addendum* does not provide more and/or better information that the Hearing Officer can use to evaluate whether the proposed water rights will injure other water rights. Rather, the *Addendum* to address many of the same concerns raised at hearing, including the failure to analyze or explain data bearing upon the issue of injury to existing water rights.

COMMENTS

One of the primary issues in this litigation is whether and to what extent the water rights proposed by the City of Eagle will injure other water rights, including those of the protestants. At the December hearing in this matter, it was apparent that the City had not sufficiently demonstrated through its analysis that the proposed appropriation would not cause injury. As a result of the events at the hearing, the City conducted another round of analysis culminating in the *Addendum*.

1. Graph Showing Groundwater Withdrawals

Figure 10 of the *Addendum* (p. 30) is not current. Data through 2006 would have been helpful to determine whether groundwater withdrawals are continuing to increase or have instead stabilized. If groundwater withdrawals have continued the increasing trend shown from 1993 to 2001 in Figure 10, then the appropriation proposed by the City combined with all other withdrawals could very well result in injury to existing water rights. Figure 10 should have been updated with recent data so that the Hearing Officer could make an informed decision. Without such information, no informed decision can or should be made.

2. "Meaningful Drawdown"

The discharge rate during the aquifer test (and that which was used in drawdown-analysis calculations) was 1,580 gpm. *Addendum*, p. 8. The *Addendum* states that the "maximum diversion rate requested under Application 63-32089 (in which the Eaglefield well is listed as a point of diversion) would be limited to 4.0 cfs (1,795 gpm). *Id.* Apparently, the well had a potential capacity of 2,000 gpm. *Id.* Why then was the well pumped at a lower rate than either the proposed diversion rate or the well's capacity? It seems difficult to make the City's conclusion, based upon the data in evidence, that "it is unlikely that a higher pumping rate would have provided **meaningful** drawdown data in wells that showed no drawdown at the 1580 g.p.m. rate." *Id* (bolded emphasis added). We do not know what is meant by the term "meaningful drawdown data." We do not know the basis of the *Addendum* author's opinion that the discharge rate used (1,580 gpm) was sufficient.

In fact, every well monitored showed drawdown during the pumping portion of the test. The authors have concluded that in some wells the amount of drawdown was meaningless. Pumping at

a higher rate would have established if the minor drawdown was related to pumping or to other factors. One purpose of an aquifer test is to stress the interconnected aquifers. This test did not accomplish that purpose.

3. **Ricks Well**

The City states that "[w]ater levels during the measurement period declined approximately 1 foot, although it is not clear that the decline was caused by the aquifer test." *Addendum*, p. 10. Although the City explains that this decline was "most possibly caused by other, nearby wells", it does not provide the data to back up its conclusion. In fact,the City has never explained the water level change in the Ricks Well. It has simply failed to analyze the data that show rapid drawdown in the Ricks Well near the end of the pumping test without recovery - a situation that certainly warrants further analysis, data and explanation. One question that arises is what will happen to water levels in the Ricks Well when pumping lasts longer than one week? Will the drawdown continue? Will there ever be a recovery of drawdown levels? Certainly more analysis and data gathering was warranted.

4. Lack of response to pumping in the Ricks and QRC No. 4 Wells

In their Conclusions and Recommendations, the *Addendum's* authors state that Ricks and QRC No. 4 wells' lack of response to pumping is "likely because of an insufficient hydraulic connection." *Addendum*, p. 17. However, the premise for the conclusion that there is an "insufficient hydraulic connection" cannot be that there was no response to pumping. In fact, there was a response to pumping. Both wells showed a steady drawdown, the rate of which increased near the end of pumping period and then continued to drop after pumping had stopped. At a bare

minimum, the Applicant should have determined the cause of this decline in water levels; should have determined what would happen when pumping occurs on a continual basis; and should have determined the reason for the wells' failure to fully recover after pumping had ceased.

5. Wells Did Not Fully Recover

The *Addendum* concludes that "[w]ater levels fully recovered in the pumping and monitoring wells from drawdown associated with the aquifer test." *Addendum*, p. 18. This conclusion is erroneous. The data establishes that QCR No. 4, Ricks Well, Strata Well 1B, and UWI Well 1B did not fully recover. *See Addendum*, Appendices C.5, C.6., C.7, C.8, C.10. Only three wells fully recovered from drawdown and one well showed a very slight drawdown which was probably too small to be significant. Thus, less than 50% of the wells that were monitored fully recovered from drawdowns associated with the aquifer test - in direct contradiction to the *Addendum's* conclusion.

6. "Well Interference Event(s)"

Individual Water Level Elevation graphs for each well attached to the Addendum *show* an event on June 10 identified as "well interference event (see Table 1)". *Addendum*, Appendices C.3, C.4, C.5, etc. Although Table 1 is referenced on the graphs, neither it nor any other part of the *Addendum* or the *7-Day Aquifer Test* report address this well interference event. The event or events stopped recovery from June 10 until June 13th in the pumping well, Legacy well, QCR4, and Strata 1B well. The Water Level Elevation graph for Strata 1A well did not show significant drawdown so impact from the "well interference event(s)" was not noticeable in that well.

The Water Level Elevation graphs for UWI wells 1A and 1B didn't show any impact on recovery on June 10, but an event prevented drawdown recovery in those wells from about June 12th

to about June 13th. This well interference event was not discussed in either the *Addendum* or the *7-Day Aquifer Test* report, but the data demonstrates that combined pumping impacts can prevent recovery. The cumulative effect of all pumping from existing wells together with pumping from the wells proposed by the City may result in significant drawdowns to area wells, including those owned by the protestants. Neither the *Addendum* not the *7-Day Aquifer Test* report address the issue of the cumulative impacts on water levels if this application is approved - certainly, given the data showing the possibility that cumulative pumping effects may prevent drawdown recovery, further analysis and data gathering is and was warranted.

7. Summary

The deficiencies of the aquifer test and the *7-Day Aquifer Test* report and *Addendum* generated therefrom can be summarized as follows:

A. Test pumping lasted only seven days - an insufficient period of time to determine long-term effects both to the aquifer and to individual wells.

B. The pumping rate of 1,580 gpm did not stress the aquifer sufficiently to be able to determine the impact of the proposed higher pumping rates on both the aquifer and individual wells.

C. Only six or seven wells were monitored during the pumping test, instead of a number more appropriate to determining the impacts of this very significant proposed water right on the aquifer and individual wells in the area.

D. Surrounding well owners were not given adequate notice to monitor their own wells and determine the impacts of pumping upon them.

E. Significant effects such as well interference from sources other than the pumping of the test well were not explained or analyzed. Such explanation and analysis is necessary to determine the possible impacts of cumulative pumping from additional area wells on the aquifer and on existing wells.

F. A monitoring program using dedicated monitoring wells completed in the same aquifer zone as the pumping wells should be installed if the application is approved to assist the parties in determining how the City's pumping impacts the aquifer and to assist the parties in determining whether and to what extent existing wells are injured by such pumping.

There has simply not been sufficient data or analysis generated by the City in the *7-Day Aquifer Test* report and *Addendum* to warrant the approval of the City's applications. Accordingly, the Hearing Officer should either deny the applications, or require the gathering of additional data and additional analysis from the City prior to making any decision upon the applications.

Dated this 25th day of April, 2007

RINGERT CLARK, CHARTERED

By: Charles L. Honsinger

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on this 25th day of April, 2007, the above and foregoing document was served on the following by placing a copy of the same in the United States mail, postage prepaid and properly addressed to the following:

Jerry & Mary Taylor
3410 Hartley
Eagle, Idaho 83616

Corrin & Terry Hutton
10820 New Hope Road
Star, Idaho 83669

Sam & Kari Rosti
1460 N. Pollard Lane
Star, Idaho 83669

Western Region
Attn: John Westra
2735 Airport Way
Boise, Idaho 83705-5082

Leeroy & Billie Mellies
6860 W. State Street
Eagle, Idaho 83616

Dean & Jan Combe
6440 W. Beacon Light
Eagle, Idaho 83616

Bruce Smith
Moore Smith Buxton & Turke
225 N. 9th Street, Ste.420
Boise, Idaho 83702

John M. Marshall
Givens Pursley
P.O. Box 2720
Boise, Idaho 83701

Charles L. Honsinger

Gary

April 14, 2007

Dear Mr. Spackman,

This letter is in response to Eagle's submission of their aquifer test "Addendum". From the beginning of this process, we have been told the "burden of proof" rests upon the applicant - the City of Eagle.

The Addendum

December's hearing made clear Eagle's 7-Day Aquifer Test analysis was incomplete, at best. That result was a conscious choice on the part of Eagle in both collecting and analyzing the data. Since no additional testing has been done, no new data collected and no further monitoring completed the "Addendum" simply represents reworking old numbers. If the first report was "incomplete", what" proof" is there the second is not equally so?

Protesters testified they would have allowed the monitoring of their wells during the tests. I, for one, offered my well. Eagle rejected the offer. I had my own well monitored. The facts I presented during the hearing were documents from three different firms that deal in well drilling and hydrology.

The historical water level (1999-2006) of my well has been between 50-55 feet below ground surface. Within days of Eagle's pump tests, my well took an inexplicable drop to 75 feet below ground surface. Coupled with these facts, both Mr. Moyle and Dr. Howarth testified their wells lost pressure. Mrs. Purdy testified their well has been losing pressure. Eagle provided no "proof" their pump tests were not responsible for these sudden changes. Mrs. Purdy's well demonstrates there are changes occurring in this aquifer that are not good.

Evidence and testimony presented in December and now the "Addendum" leave a very murky picture of what is **really** occurring in our aquifer. In fact, the documents raise more questions than answers.

The Aquifer

Some protesters have owned land in this area for generations. We live with this aquifer. In the case of my family, since the mid 1940's. We are not scientists; but we have had to become experts on this aquifer. Our livelihoods depend upon it. And it is dropping! To be fair, those drops are probably due to a combination of factors - drought cycles, greater demands due to population growth and less recharge due to more development and less farm ground. Over appropriation of this finite resource will only increase the already existing problems.

As water right holders, we don't deal much in theories or models. We deal with cold, hard facts. Free flowing artesian wells have lost and are losing pressure.

In addition, wells in the area are having to go deeper and put in bigger pumps to access the water right that has been historically theirs. Even with those considerable costs, some landowners are still not able to access their full right.

Just since the hearing my neighbor's well, a quarter of a mile from my well, had to go deeper in order to maintain a reasonable - not historical - level. There are critical changes going in our ground water and Eagle's applications pose are very real threat. The experts do not want to address what impact continuing drought and no recharge will have on this aquifer. Injury is not a question of if, it is when. There is no "proof" these two applications will not cause permanent injury to this aquifer?

Wants versus Needs

As to Eagle's "need" for these two applications. The PUC has granted United Water the right to service this area. Star Sewer and Water have been granted parts of the area as well. IDWR has granted water rights to both entities for the specific purpose of supplying this northwest area of Ada County. There are suppliers and there are current allocations to meet the "need".

Eagle, with the stroke of a pen, has written these other suppliers out of doing the job for which they have planned. UW and Star Water's allocation will go some place. The City's attempt to change a "want" into a "need" is a misuse of power that should not be allowed to injure existing water right holders. Surely the eastern Snake River Aquifer and the Mountain Home aquifer should be a warning flag for us all. Eagle has **no need** for these two applications. They simply have a want.

That "want", however, represents an irresponsible waste and unnecessary duplication of a finite resource. Water is the life blood of this region. With our water right in tact, we are productive, contributing citizens. Without it, we are sage brush and sand. Unacceptable!

Conclusion

The "burden of proof" rests upon the applicant. Eagle has:

1. failed to prove a "need" for the two water right applications
2. failed to prove these applications, if granted, will not substantially and permanently damage the aquifer
3. failed to prove their applications will not permanently injure existing water right holders (both historical and reasonable) levels.

In fact, evidence presented in the December hearing, indicate they will!

Eagle has a right to submit these applications. But not everything we have a right to do, is right to do. Part of the Department's steward, as I understand it, is to guard against the kind of abuse Eagle's applications represent. There is currently a

moratorium on Ag. wells. Ag wells only draw from the aquifer a portion of the year: municipal year-round. Ag provides a portion of recharge; municipal none. So if there is a need for a moritorium on Ag there is certainly justification for one on municipal. I thought part of the responsibility of IDWR was to protect existing water right holders from just such injury. Why then reward any applicant that:

1. has failed to meet the "burden of proof"
2. is not regulated by any agency
3. has no oversight
4. has only offered "incomplete" research and evidence?

I am not, however, without a solution to Eagle's "wants".

Solution

Eagle has the opportunity to step forward and show responsibility for both current and future generations. Eagle's own experts testified repeatedly how much recharge there is to the Boise River (note - not the aquifer). In addition they testified how much of the River flow is wasted, gone each year and never recaptured.

Eagle should be a good steward of this resource in their own backyard. The City should do a reclamation project. Reclaim a portion of that excess flow that is lost each year, run it through a treatment facility, clean it up, recycle and use that River excess rather than allowing it to go to waste. At the same time, they would avoid exhausting the finite aquifer.

Eagle City Hall talks about citizens recycling and being good stewards. Let the walk begin at City Hall.

Sincerely,

Mary Taylor

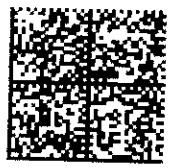
Mary Taylor
3410 Hartley
Eagle, Idaho 83616
286-7575

P.S. For the record, Mr. Smith (the attorney for the City of Eagle) has made no attempt to contact me since the hearing, though I have been told he is contacting other protesters to talk.

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
East Front Street, P.O. Box 83720
Boise, Idaho 83720-0098

Return Service Requested

PRESORTED FIRST CLASS



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FLACK
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DURKEE OR 97905-0258

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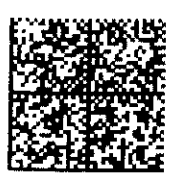
STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
East Front Street, P.O. Box 83720
Boise, Idaho 83720-0098

Return Service Requested

PRESORTED FIRST CLASS



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43-32084

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APR 04 2007
DEPARTMENT OF WATER RESOURCES

TIM CHENEY
PO BOX 190027
BOISE ID 83719

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RETURN TO SENDER
NOT DELIVERABLE AS ADDRESSED
UNABLE TO FORWARD
RETURN TO SENDER

83720/0098 BARCODE 837

BEFORE THE DEPARTMENT OF WATER RESOURCES

OF THE STATE OF IDAHO

IN THE MATTER OF APPLICATIONS TO APPROPRIATE WATER NOS. 63-32089 AND 63-32090 IN THE NAME OF THE CITY OF EAGLE	)	**DEFAULT ORDER**

FINDINGS OF FACT

1. On December 14, 2006, the Idaho Department of Water Resources ("Department") served a Notice of Proposed Default Order upon Michael McCollum, Michael and Nancy Heath, Tim Cheney, Bob and Elsie Hanson, Bill Flack, Ronald Schreiner, City of Star, Scott and Nancy Reeser, Bud Roundtree and Linda Ballard, Ralph and Barbara Wilder, and Norma Mares ("protestants/intervenors") for failure to appear at a hearing held on December 7, 8, 11, 12, and 18, 2006 in Boise, Idaho in the above captioned matter.

2. The protestants/intervenors did not respond to the Notice of Proposed Default Order.

CONCLUSIONS OF LAW

1. IDAPA Rule 37.01.01702 (Rule of Procedure 702) authorizes the Department to issue a Default Order for failure to timely respond to the Notice of Proposed Default Order.

2. The Department should issue a Default Order.

ORDER

IT IS THEREFORE, HEREBY ORDERED that protestants/intervenors Michael McCollum, Michael and Nancy Heath, Tim Cheney, Bob and Elsie Hanson, Bill Flack, Ronald Schreiner, City of Star, Scott and Nancy Reeser, Bud Roundtree and Linda Ballard, Ralph and Barbara Wilder, and Norma Mares are in default, and that their protest/intervention

in the City of Eagle's application, identified in the records of the Department, are **dismissed** and will be of no further consideration for the protested matter regarding applications nos. 63-32089 and 63-32090 before the Department.

Dated this 27th day of March, 2007.

Gary Spackman
Hearing Officer

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on this 28th day of March, 2007, a true and correct copy of the above and foregoing document described below was served on the following by placing a copy of the same in the United States mail, postage prepaid and properly addressed to the following:

Document(s) Served: Default Order

MICHAEL MCCOLLUM
1290 BUTTERFIELD
SAN ANSELMO CA 94960

MICHAEL HEATH
NANCY HEATH
401 N PALMER LN
EAGLE ID 83616

TIM CHENEY
TREASURE VALLEY
TURF
PO BOX 487
STAR ID 83669

JERRY & MARY TAYLOR
3410 HARTLEY
EAGLE ID 83616

CORRIN & TERRY
HUTTON
10820 NEW HOPE RD
STAR ID 83669

BOB & ELSIE HANSON
4151 HARTLEY RD
EAGLE ID 83616

SAM & KARI ROSTI
1460 N POLLARD LN
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BILL FLACK
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CITY OF STAR
C/O ROD LINJA
131 SW 5TH AVE STE A
MERIDIAN ID 83642

SCOTT & NANCY REESER
499 N LINDER RD
EAGLE ID 83616

LEEROY & BILLIE MELLIES
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RALPH & BARBARA WILDER
7320 W STATE ST
EAGLE ID 83616

DEAN & JAN COMBE
6440 W BEACON LIGHT
EAGLE ID 83616

NORMA MARES
4166 W PATEL DR
MERIDIAN ID 83646-9065

BUD ROUNDTREE
LINDA BALLARD
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BRUCE M SMITH
MOORE SMITH BUXTON TURKE
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JOHN M MARSHALL
GIVENS PURSLEY
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BOISE ID 83701-2720

CHARLES L HONSINGER
DANIEL V STEENSON
RINGERT CLARK
CHARTERED
PO BOX 2773
BOISE ID 83701-2773

WESTERN REGION
ATTN JOHN WESTRA
2735 AIRPORT WAY
BOISE ID 83705-5082

Deborah J. Gibson
Administrative Assistant
Water Allocations Bureau

BEFORE THE DEPARTMENT OF WATER RESOURCES

OF THE STATE OF IDAHO

IN THE MATTER OF APPLICATIONS TO APPROPRIATE WATER NOS. 63-32089 AND 63-32090 IN THE NAME OF THE CITY OF EAGLE	)))))	**NOTICE OF CONSIDERATION OF ADDITIONAL EVIDENCE AND POST HEARING ORDER**

The City of Eagle ("Eagle") conducted a pump test in preparation for the hearing for the above contested case. Prior to the hearing, Eagle submitted a report titled *City of Eagle, Idaho, 7-Day Aquifer Test* prepared by Chris H. Duncan of Holladay Engineering Company to the Idaho Department of Water Resources ("Department") describing the test and analyzing the data gathered. The hearing officer solicited a review of the report by Department staff.

Department employees Sean Vincent ("Vincent") and Shane Bendixsen ("Bendixsen") reviewed the technical document. After the review, Vincent and Bendixson issued a staff memorandum dated November 29, 2006. In the memorandum, Vincent and Bendixson stated that "the scope of the data collection was adequate, but the aquifer test analysis is incomplete."

On November 30, 2006, the hearing officer issued an *Order Denying Motion in Limine, Notice of Staff Memorandum, and Amended Notice of Hearing.* In notifying the parties about the staff memorandum written by Vincent and Bendixson, the hearing officer called attention to Vincent's and Bendixsen's conclusions of deficiency in the aquifer test analysis and stated:

> Because the analysis of the pump test submitted to Department staff was incomplete, the hearing officer will forward any additional evidence about the pump test received into evidence at the hearing to Department staff for further review to determine possible deficiencies. After the staff review, the hearing officer will distribute the results of the Department's post hearing review to the parties who will have an opportunity to submit additional comments and possibly request supplemental hearings about the document. This process will **delay** the ultimate consideration of the applications.

On December 7, 8, 11, 12, and 18, 2006, the Department conducted a hearing for the protests. On December 19, 2007, the hearing officer requested a post-hearing staff memorandum from Department staff to address additional evidence presented at the hearing and supplemental information submitted by Eagle.

On February 27, 2007, Vincent of the Department wrote a memorandum titled "Review of Addendum to City of Eagle, Idaho 7-Day Aquifer Test Report." The memorandum refers to a written addendum to the original pump test analysis submitted to the Department by Eagle at the hearing.

On March 13, 2007, Eagle mailed copies of the written addendum reviewed by Vincent to the parties who attended the December hearing.

Enclosed is a copy of the February 27, 2007, memorandum written by Vincent.

The purpose of this document is to establish a schedule for review and response to the addendum and the February 27, 2007, memorandum.

NOTICE AND ORDER

NOTICE IS GIVEN that the hearing officer will consider the addendum to the pump test report submitted to the Department by the City of Eagle and the staff memorandum titled "Review of Addendum to City of Eagle, Idaho 7-Day Aquifer Test Report."

IT IS HEREBY ORDERED that the parties shall have until April 25, 2007 to review the documents and to submit technical comments, if any, about the documents.

IT IS FURTHER ORDERED that any requests for an evidentiary hearing regarding the additional information shall be filed on or before April 25, 2007. A request for an evidentiary hearing must be accompanied by: (1) a detailed explanation of unresolved technical issues raised by the addendum that will be addressed by additional examination and presentation of evidence, and (2) identification of a full day in May 2007 when the parties and the hearing officer can conduct the additional evidentiary hearing. It is the responsibility of the requesting party to coordinate a hearing date with the other parties and the hearing officer. "Other parties" are the City of Eagle and the parties who attended the previous hearing. Parties who did not appear at the hearing conducted in December 2007 are being served with a default order enclosed with this order.

Dated this 27th day of March, 2007.

Gary Spackman
Hearing Officer

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on this 28th day of March, 2007, a true and correct copy of the document described below was served on the following by placing a copy of the same in the United States mail, postage prepaid and properly addressed to the following:

Document(s) Served: Notice of Consideration of Additional Evidence and Post Hearing Order with February 27, 2006, "Review of Addendum to City of Eagle, Idaho 7-Day Aquifer Test Report" Memo

JERRY & MARY TAYLOR
3410 HARTLEY
EAGLE ID 83616

CORRIN & TERRY HUTTON
10820 NEW HOPE RD
STAR ID 83669

SAM & KARI ROSTI
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LEEROY & BILLIE MELLIES
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GIVENS PURSLEY
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CHARLES L HONSINGER
DANIEL V STEENSON
RINGERT CLARK CHARTERED
PO BOX 2773
BOISE ID 83701-2773

WESTERN REGION
ATTN JOHN WESTRA
2735 AIRPORT WAY
BOISE ID 83705-5082

Deborah J. Gibson

Deborah J. Gibson, Administrative Assistant
Water Allocation Bureau

Gibson, Deborah

From: Gibson, Deborah
Sent: Tuesday, March 13, 2007 10:06 AM
To: Bruce Smith (E-mail)
Cc: Spackman, Gary
Subject: City of Eagle hearing participants

Bruce,

As you requested, here is a list of parties that attended the hearing:

Jerry & Mary Taylor;

Sam & Kari Rosti;

LeeRoy & Billie Mellies;

Dean & Jan Combe;

Charles Honsinger & Jon Gould for several clients; and

John Marshall for United Water.

Deborah Gibson
Administrative Assistant I
Water Allocation Bureau
Idaho Department of Water Resources
Phone (208) 287-4942
Fax (208) 287-6700
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Attending Parties
City of Eagle Hearing

Jerry & Mary Taylor

Corrin & Terry Hutton

Sam & Kari Rosti

LeeRoy & Billie Mellies

Dean & Jan Combe

Charles Hopsinger } for several parties
Jon Gould

John Marshall - for United Water

MEMO

State of Idaho
Department of Water Resources
322 E Front Street, P.O. Box 83720, Boise, Idaho 83720-0098
Phone: (208) 287-4800 Fax: (208) 287-6700

Date: February 27, 2006

To: Gary Spackman

From: Sean Vincent SV

cc: Shane Bendixsen
Rob Whitney
Rick Raymondi

Subject: **Review of Addendum to City of Eagle, Idaho 7-Day Aquifer Test Report**

Per your request, this memo summarizes my review of the subject report addendum prepared by Holladay Engineering and SPF Water Engineering and submitted to the Department as final on February 22, 2007. My general conclusion is that the Addendum adequately addresses comments made in a previous memo to you dated November 29, 2006.

Specific conclusions are as follows:

1. The water level and aquifer test data presented in the Addendum generally support the authors' primary conclusion (i.e., the deep sand layers that are targeted for production have sufficient capacity for additional withdrawals). The fact that static water levels in the deep system near the area of proposed development are above land surface and appear to be relatively stable suggests that the deep aquifer system is not currently in a state of overdraft.

2. An exception to the relatively stable water level trend described above is the hydrograph for Well 04N01W-31AAA1, which is located approximately 5 miles southwest of the area of proposed development. The water level in this well has declined by approximately 10 to 15 feet since 1970. Because the aquifer strata are dipping, however, this 462-foot deep well may not be producing from the same aquifer system that is targeted for development by the City of Eagle.

3. The inclusion of a conceptual hydrogeologic model, hydrographs for area wells, and additional analyses using the Cooper-Jacob (1946) and Theis (1935) residual drawdown

methods, significantly improves the value of the aquifer test as a basis for evaluating the water supply.

4. As discussed in the Addendum, semilogarithmic plots of drawdown and residual drawdown suggest that both positive (recharge) and negative (finite aquifer) boundaries affected the test data. The observed behavior is consistent with the conceptual model of a finite, confined aquifer that receives recharge from the surrounding uplands. Given the available data, application of the Theis (1935) solution to estimate aquifer properties is appropriate for this hydrogeologic setting.

5. The Addendum also includes calculations for estimating potential impacts to existing wells. The calculations, which also are based on the Theis (1935) solution, are conservative in that they neglect to account for aquifer recharge but non-conservative in that they are premised on the assumption of an infinite aquifer.

6. The 1-year timeframe for evaluating impacts to existing wells is appropriate, in my opinion, and is consistent with guidance for determining yield for public drinking water supply wells (IDEQ, 2007). The ranges of transmissivity and storativity values used to estimate drawdown also are appropriate based on available information.

7. I verified that the drawdown estimates presented in Table 4 of the Addendum were calculated correctly using the series approximation of the Theis (1935) solution and the assumed input values.

8. Although the data analysis provides the basis for estimating hydraulic properties for the target aquifer system, the aquifer test was not of sufficient duration to definitively evaluate aquifer boundary conditions and long-term impacts associated with pumping. As recommended in the Addendum (Recommendations 15 and 16), a long-term water level and discharge rate monitoring program should be implemented if the water right applications are approved in order to evaluate water level trends as affected by pumping. Dedicated upgradient and downgradient monitoring wells that are completed in the deep aquifer system within the zone of influence of the aquifer test are recommended.

References

Cooper, H.H., and C.E. Jacob, 1946, *A Generalized Graphical Method for Evaluating Formation Constants and Summarizing Well Field History*, Trans. Amer. Geophys. Union, v. 27, pp. 526-534.

IDEQ – see Idaho Department of Environmental Quality

Idaho Department of Environmental Quality, 2007, *Testing Guidance for Determining Adequate Yield of New Public Drinking Water System Wells (Draft)*, February, 11 pp.

Theis, C.V., 1935, *The Relation Between the Lowering of the Piezometric Surface and the Rate and Duration of Discharge of a Well Using Groundwater Storage*, Trans. Amer. Geophysical Union, v. 16, pp. 519-524.

SPF Water Engineering, LLC
water resource consultants

February 22, 2007

Sean Vincent
Idaho Department of Water Resources
322 East Front Street
P.O. Box 83720
Boise, Idaho 83720-0098

Subject: Eagle 7-day Aquifer Report Addendum

Dear Sean,

Please find attached a final addendum to the City of Eagle's 7-day aquifer report. Please call us if you have any questions or comments.

Sincerely,

Christian R. Petrich, Ph.D., P.E., P.G.
Principal Engineer/Hydrologist
SPF Water Engineering, LLC

Chris H. Duncan, P.G.
Geologist
Holladay Engineering Company

cc: Peter Harris, Harris Homes LLC
Bruce Smith, Moore Smith Buxton & Turcke, Chartered

600 East River Park Lane, Suite 105, Boise, Idaho 83706 Tel: 208-383-4140 Fax: 208-383-4156

ADDENDUM TO

CITY OF EAGLE 7-DAY AQUIFER TEST REPORT

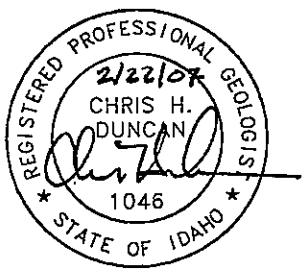
Prepared for the

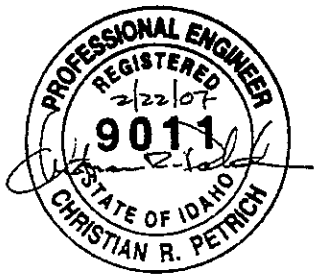
City of Eagle, Idaho
310 East State Street
Eagle, Idaho

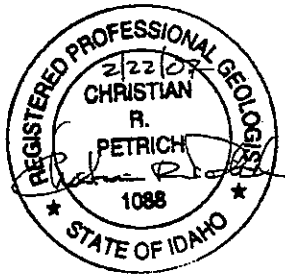
Prepared by

Holladay Engineering Company
P.O. Box 235
Payette, ID 83661

SPF Water Engineering, LLC
600 East River Park Lane
Boise, ID 83706







February 22, 2007

HOLLADAY ENGINEERING CO

SPF Water Engineering, LLC
water resource consultants

Executive Summary

Holladay Engineering, Inc. conducted a 7-day constant-rate aquifer test for the City of Eagle in June of 2006. An Idaho Department of Water Resources (IDWR) memorandum (dated November 29, 2006) listed several questions and/or issues stemming from a review of this aquifer test report. The purpose of this Aquifer Test Report Addendum was to review aquifer-test results and address questions raised in the IDWR review.

The results from this review are consistent with conclusions drawn from the original aquifer test report and testimony presented in an administrative hearing for Applications 63-32089 and 63-32090. The primary conclusion from this review is that the target aquifers for Applications 63-32089 and 63-32090 have sufficient capacity for additional withdrawals. Specific conclusions include the following:

Aquifer and Water Levels

1. The target aquifers consist of confined to partially-confined sand layers approximately 200 to 500 feet below ground surface.
2. Water levels in the vicinity of the proposed diversions are stable. Numerous deeper wells have artesian heads extending as high as 19 feet above ground surface.
3. Transmissivity estimates developed from previous tests of confined aquifers calculated from pumping tests of other wells in the west Eagle area (i.e., Redwood Creek and Floating Feather wells) ranged from 7,400 to 21,500 ft^2/day.

Aquifer Test

4. A 7-day aquifer test was conducted with an average discharge rate of approximately 1,580 gpm. This rate is consistent with expected diversion rates from individual wells under the proposed permit.
5. Responses to pumping in the Eagle 7-day aquifer test were observed in the No. 2 (Eaglefield), No. 1 (Legacy), and United Water wells. Lack of response in the Ricks and QRC No. 4 wells is likely because of an insufficient hydraulic connection.
6. Estimated transmissivity values from the 7-day aquifer test ranged from about 10,000 to 39,500 ft^2/day. One lower value (8,600 ft^2/day) is suspect because it was based on a period of apparent water-level fluctuations (which were likely caused by a clogged transducer vent tube).
7. Storativity values from the 7-day aquifer test ranged from 8.95×10^{-4} to 1.48×10^{-2}.

8. Semi-log plots of aquifer drawdown and recovery indicated possible barrier (negative) boundary effects, recharge (positive) boundary effects, variations in aquifer thickness, leakage, and/or changes in aquifer materials. The most apparent negative boundary effect was observed in the Legacy monitoring well. Offset strata or spatial variations in aquifer materials or thicknesses (which would result in an apparent negative boundary effect) are consistent with the conceptual model of aquifer conditions in this area.

9. Aquifer-recharge effects during the aquifer test are indicated by positive x-intercepts in straight-line UWI-well recovery plots (drawdown vs. t/t_0).

10. Water levels fully recovered in the pumping and monitoring wells from drawdown associated with the aquifer test.

Potential Impacts to Existing Users

11. Substantial increases in ground water withdrawals for municipal purposes in Eagle over the last 10 years have not resulted in substantial local water-level declines.

12. Potential well interference under reasonable pumping scenarios projected using the Theis method resulted in theoretical water-level drawdowns ranging from about 2 to 25 feet at a distance of two miles from the pumping well (depending on assumed aquifer parameter values, and assumed pumping rate). At 1,400 feet from a pumping well the theoretical drawdown estimates ranged from 4 to 40 feet (the closest distance between a protestants' well and potential point of diversion is approximately 1,500 feet). The effects of offset strata or spatial variations in aquifer materials or thicknesses (which would result in an apparent negative boundary effect) could exacerbate water level responses to pumping. However, these theoretical projections of water level impacts are likely very conservative because (a) aquifer recharge is excluded and (b) similar pumping rates in nearby wells (e.g., Floating Feather and Redwood Creek) have resulted in minor (if any) local water-level declines.

Aquifer Capacity

13. The aquifer in the vicinity of the proposed diversions has capacity for additional diversions, based on currently stable water levels.

14. The aquifer in the vicinity of the proposed diversions likely has the capacity to supply the entire amount of water that would likely be withdrawn under these permits (approximately 4,000 acre feet per year), although some drawdown from the proposed diversions will occur.

Monitoring

15. Monitoring and reporting of production rates from all points of diversion under the proposed permit is recommended.

16. Periodic (e.g., quarterly) water-level monitoring in selected wells near the points of diversion is recommended during the permit development period.

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1. INTRODUCTION

Holladay Engineering, Inc. conducted a 7-day constant-rate aquifer test for the City of Eagle in June of 2006 (Figure 1, Appendix A). Aquifer-test procedures, results, and data analysis were summarized in an aquifer test report (Holladay Engineering Company, 2006). An Idaho Department of Water Resources (IDWR) memorandum (dated November 29, 2006) listed several questions and/or issues stemming from a review of this aquifer test report.

The purpose of this Aquifer Test Report Addendum was to review aquifer-test results and address questions raised in the IDWR review. The general objective of the Addendum is to summarize and/or clarify previously-reported aquifer-test information and results. Specific objectives of this addendum are to:

1. Summarize relevant information previously provided in the (a) Aquifer Test Plan (*letter from Chris Duncan to Gary Spackman dated October 12, 2005 and letters from Chris Duncan to Rob Whitney dated November 28, 2005 and May 15,* 2005), (b) aquifer test report (Holladay Engineering Company, 2006), and/or (c) referred to in the administrative hearing for Water Right Applications 63-32089 and 63-32090
2. Review the conceptual model of ground water flow in the test vicinity
3. Review the aquifer-test discharge rate
4. Review the selected aquifer-test analysis methods in the context of the conceptual model
5. Report transmissivity and storativity values for additional monitoring wells (where appropriate)
6. Provide corrected well recovery analyses
7. Provide a graphical aquifer-test summary
8. Evaluate aquifer capacity and potential impacts on existing wells.

This addendum is organized as follows: Section 2 provides a description of hydrogeology in the aquifer-test area, Section 3 summarizes aquifer-test methods, Section 4 presents aquifer-test results and analyses, and Section 5 provides a summary of aquifer-test parameter values. Section 6 explores potential impacts to existing wells and Section 7 lists conclusions and recommendations. Figures, tables, aquifer-test hydrographs and curve-matching plots, and drillers' reports are provided in Appendices A, B, and C, respectively.

2. HYDROGEOLOGIC CONDITIONS AND CONCEPTUAL MODEL OF GROUND-WATER FLOW

2.1. Geologic Setting

The Eagle No. 2 well is located near the northern margins of the lower Boise River basin (Treasure Valley). Surficial geology (Figure 2) consists of Quaternary sandy alluvium, terrace gravels, and alluvial fan sediments (Othberg and Stanford, 1992) belonging to the Snake River Group. Underlying these sediments, and exposed at the surface north of the site, is a thick sequence of tilted, faulted, and eroded interbedded sand, silt, and clay sediments (Wood and Clemens, 2004) belonging to the Tertiary-aged Idaho Group. A series of southeast-northwest trending faults are present along or near the northern valley margins, with stratigraphic offsets ranging from feet to several hundred feet or more.

2.2. Drillers' Reports

Wells in the aquifer-test area extend from depths of less than 50 feet to almost 1,000 feet. Drillers' reports list shallow sand and gravel layers (Snake River Group) underlain by a thick sequence of interbedded sand and clay zones (Idaho Group). Drillers' reports for deeper wells list a transition from brown (or tan) to blue clay sediments at depths between 450 and 600 feet. Numerous water-bearing sand layers are noted within the brown sediments. Water bearing-zones below the brown-blue clay transition are thinner and less prevalent compared to overlying strata. Numerous drillers' reports indicate flowing artesian conditions; water levels above ground surface are a clear indication of confined aquifer conditions.

The nested United Water Idaho piezometers (UWI-1A and UWI-1B) penetrated a more extensive and consistent sand sequence (Figure 3) than the City of Eagle Test Well No. 2 (Eaglefield) or the Eagle Test Well No. 1 (Legacy). These differences reflect local aquifer heterogeneity (with apparent less and thinner water-producing sand layers to the north or northwest of the United Water test wells).

2.3. Ground-water Flow

Ground-water flow in the aquifer-test area occurs in shallow, local flow systems and in deeper, more regional flow systems. The potentiometric surface for the shallow aquifer in this area indicates flow in a southwesterly direction (Petrich and Urban, 2004). Shallow aquifers are recharged from surface channel seepage, irrigation infiltration, and precipitation infiltration. Shallow aquifers discharge to the Boise River and/or channels draining to the Boise River.

Ground water in deeper aquifers is confined by the multiple clay zones present in this area. Individual clay layers may not be of substantial thickness or great areal extent, but the clay layers, alone or in aggregate, appear to form effective aquitards.

Numerous wells with artesian heads rising more than 20 feet above ground surface attest to the confining nature of clay aquitards. Artesian hydraulic heads reflect ground-water elevations in areas where tilted, deeper, confined aquifer layers intersect with shallower water-table aquifers and/or surface water.

Ground water in intermediate and deeper aquifer zones in this area flows in a westerly or northwesterly direction (Petrich and Urban, 2004). Recharge to deeper aquifers occurs by downward leakage in upgradient areas (where tilted deeper aquifer zones intersect with shallow aquifers). Discharge from deeper aquifers occurs as vertical leakage and to wells.

2.4. Water Levels

Initial static water levels listed in drillers' reports for wells in the immediate vicinity of the aquifer-test area (i.e., T4N, R1W Section 11) range from about 10 feet below ground surface to above ground surface. Artesian heads in some wells completed more than about 250 feet below ground surface extend 19 feet or more above ground surface.

Water-level data for wells in the vicinity of the Eagle No. 2 well (T4N, R1W) were downloaded from IDWR's well log database (courtesy of Shane Bendixsen, IDWR). Water levels for wells with at least three measurements taken since 1990 and with at least one measurement taken since 2000 are plotted in Figure 4. Any measurements that were taken when a well was pumping or recently pumped (and were noted as such) were excluded.

Virtually all of the 25 wells with available water-level data (Figure 4) exhibited relatively stable water levels. Several wells exhibited recent variability, likely associated with local pumping conditions. The relative water-level stability is remarkable given the increases in local ground-water development over the last 10 years.

2.5. Aquifer Parameters

Aquifer parameter values have been estimated in two other well tests in the vicinity of the Eagle No. 2 well. First, an 8.5-hour test was conducted in a 415-foot deep well drilled for the Redwood Creek Subdivision[1] (Figure 5). A constant discharge rate of approximately 2,100 gpm yielded a transmissivity estimate in the pumping well of 7,400 ft^2/day (Scanlan Engineering, 1994). A transmissivity value from late-term recovery data was estimated at 21,500 ft^2/day. An apparent transmissivity and storativity calculated from the Ricks well[2] (which is located approximately ½ mile to the west of the pumping well) was 20,500 ft^2/day and $2x10^{-4}$ respectively. However, the estimates based on water-level responses to the Ricks well may be high because

[1] This well is now operated by United Water Idaho.
[2] This is a different Ricks well than was used in the Eagle No. 2 pumping test.

of an indirect aquifer connection between these two wells or partial penetration of the Ricks well into the pumping-well aquifer.

Second, a 51-hour test was conducted at an average discharge rate of 1,500 gpm in the 346-foot deep Floating Feather well (Scanlan Engineering, 1995). This test yielded a transmissivity estimate of approximately 20,000 ft^2/day. Water-level measurements in the Crandlemire Irrigation Well, located approximately 65 feet southeast of the Floating Feather Well, yielded a transmissivity estimate of 20,000 ft^2/day with a storage coefficient of $5x10^{-4}$. The transmissivity and storativity based on long-term recovery data were 20,500 ft^2/day and $1x10^{-4}$, respectively.

The Treasure Valley ground-water flow model (Petrich, 2004a) included the Eagle No. 2 area. Calibrated transmissivity values in this area ranged from approximately 4,000 to 9,000 ft^2/day. The Treasure Valley model was constructed to simulate regional ground-water flow, and as such, transmissivity values were calibrated to aggregate water levels over relatively large areas. The values estimated from actual aquifer tests in the west Eagle area are considered more representative aquifer parameter estimates than the model values.

2.6. Conceptual Model of Ground-water Flow

There are 3 general aquifer systems present in the west Eagle area: (1) shallow, unconfined aquifers present in coarse-grained sediments, (2) intermediate-depth partially-confined to confined aquifers in sand layers interbedded with clay, and (3) deeper, heterogeneous sand aquifers interbedded with and confined by multiple clay layers. Test wells No. 2 and No. 1 (Eaglefield and Legacy wells, respectively), completed between 280 and 425 feet below ground surface, draw water from the deeper, confined (or partially-confined) aquifer system. Ground-water flow in these deeper zones is in a general westerly direction (Petrich and Urban, 2004). Artesian heads in these deeper aquifers extend 19 or more feet above ground surface. Artesian heads reflect water-level elevations in upgradient recharge areas where the target aquifer zones intersect with shallow water-table aquifers. Recharge occurs primarily as underflow from upgradient areas. Discharge occurs as vertical seepage, underflow toward downgradient areas, and well withdrawals. Existing aquifer-test results suggest transmissivity values ranging up to 21,500 ft^2/day (160,000 gpd/ft) and with a storage coefficient of about 0.0001.

3. AQUIFER-TEST REVIEW

3.1. Aquifer-test Pumping and Monitoring Configuration

The Eagle aquifer test was performed in three phases: pre-test monitoring from May 25, 2006 to June 2, 2006; a 7-day aquifer test from June 2, 2006 through June 9, 2006; and post-test monitoring from June 9, 2006 through June 16, 2006. This section summarizes the aquifer test and analysis methods.

The pumping well for this aquifer test was the 430-foot deep Test Well No. 2 (Eaglefield well – see Figure 1), located northwest of the intersection of Highway 44 (State Street) and Linder Road. A step-test was conducted following well completion at artesian flow rates of 571, 782, and 1,010 gpm for 30-minute intervals (Appendix B1 in the Aquifer Test Report). Specific capacity (SC) estimates based on these flow rates ranged from approximately 73 to 77 gpm/ft. This well was pumped at a rate of approximately 1,580 gpm for the 7-day, constant-rate aquifer test.

Water levels were monitored in 8 wells (including the pumping well – see Figure 1 and Figure 6) prior to, during, and after the aquifer test. Information describing monitoring well selection was provided in the City of Eagle Aquifer Test Plan (*letter from Chris Duncan to Gary Spackman dated October 12, 2005 and letters from Chris Duncan to Rob Whitney dated November 28, 2005 and May 15,* 2005). Six of these wells (Eaglefield Well, Legacy Well, UWID wells, Ricks Irrigation Well, and the QCR No. 4 Well) are completed in the lower aquifer zone at depths between 200 feet to 500 feet. Two of the deep-zone monitoring wells (UWI 1A and UWI 1B) are configured as 2-inch nested monitoring wells within an 8-inch diameter borehole. There is no seal between the open intervals of the two wells so they represent, in effect, averaged water levels between the combined screened intervals. Monitoring wells No. 9 and No. 10 are dedicated water-level monitoring wells completed in a shallow unconfined water table aquifer at a depth of 55 feet. Monitoring well construction details, lithologic logs, and testing information are provided in Appendix B of the aquifer test report.

3.2. Drawdown and Recovery Analysis Methods

Aquifer-test analyses consisted of the following:

1. Review of antecedent water-level trends, including possible barometric effects
2. Analysis of constant-rate discharge over time
3. Determination of aquifer parameters (transmissivity and storativity) based on pumping-well and monitoring-well responses using the Theis (1935) and Cooper Jacob (1946) methods

4. Evaluation of potential impacts to existing wells using the a series approximation to the Theis (1935) solution for confined aquifers.

The Theis (1935) log-log and Cooper-Jacob (1946) semi-log graphical methods (Dawson and Istok, 1991) offer a way to solve the Theis (1935) equation for radial flow to a well in a confined aquifer. These methods are appropriate for aquifers bounded from above and below by aquicludes, in which layers are horizontal and of infinite areal extent, the pre-pumping piezometric surface is horizontal and extends infinitely in a radial direction, and the aquifer is homogeneous and isotropic. Virtually no aquifers fully meet these assumptions. Aquifers in the west Eagle area are heterogeneous (evidenced by varying stratigraphic profiles). The general aquifer sequence is areally extensive (although not infinitely extensive); individual water-producing sediment layers and/or aquitards may be of varying thickness or limited areal extent. It was assumed for these analyses that aquifers underlying the west Eagle area are sufficiently "homogeneously heterogeneous" to meet the Theis and Cooper-Jacob assumptions.

Other analytical methods were considered, including those that account for leakage from overlying confining layers (Hantush, 1955) or leakage from storage (Hantush, 1960; Hantush, 1964). However, substantial variations in aquifer and aquitard thickness, variations in areal extent, and material heterogeneity limits the appropriate application of these alternative methods. Furthermore, the effect of leakage into the aquifer zone would reduce predictions of aquifer drawdown within the primary confined aquifer. Thus, the Theis or Cooper-Jacob methods produces a more conservative estimate of potential impacts to existing wells within the target aquifer.

Theis analyses were performed using the Aquifer Test Pro™ 4.0 software (Waterloo Hydrologic, 2004). Semi-log plots were analyzed using a simplification of the Cooper-Jacobs method. Transmissivity was calculated using

$$T = \frac{35 * Q}{ds}$$

where T= transmissivity (ft^2/day)
Q= discharge (gpm)
d_s = change in drawdown per log cycle

A similar approach was used for analyzing residual recovery data. A semi-log plot of residual recovery (s') versus t/t' (where s' represents residual drawdown, t is the time since the pumping test began, and t' is the time since the pump was stopped) was used to plot residual recovery data and calculate transmissivity (Driscoll, 1986).

4. AQUIFER-TEST RESULTS AND ANALYSIS

4.1. Antecedent Water-level Trends

Pre-test water levels were measured in the pumping and monitoring wells (Table 1, Appendix B). Daily fluctuations of approximately 2 feet were observed in the pumping well. Slight rising or falling trends were observed in several monitoring wells.

Slight daily and multi-day barometric pressure variations were seen in the barometric data. A slight falling barometric trend was recorded during the test (and extending approximately 5 days in to the recovery) followed by a slight rising trend. Daily barometric fluctuations do not correspond (in timing or magnitude) with daily pumping-well fluctuations.

Corrections to water-level data for barometric and antecedent trends were considered, but confounding factors such as well interference effects (Table 2) in some wells and inconsistent water-level responses to possible barometric effects minimized the value of these corrections. The maximum barometric pressure change during the pumping test and recovery period was 0.45 and 0.51 feet of water, respectively. The maximum pre-test barometric fluctuation was 0.77 feet of water. Water-level responses to changes in barometric pressure in a confined aquifer generally ranges from about 20% to 75% of the barometric change (Freeze and Cherry, 1979). Thus, the barometric influence on any well was likely less than 0.34 feet (75% of 0.45 feet) during the pumping test and 0.38 feet during the recovery test. These maximum likely barometric influences are less than observed drawdown in all wells experiencing drawdown in this test.

Fluctuations in antecedent water levels (Table 2) prevented determination of exact static water levels. The static water level in the pumping well prior to the 7-day constant rate test was influenced by prior false starts. Static water levels in several wells were therefore defined as a range based on pre-test water-level fluctuations.

4.2. Pumping-Well Discharge Data

The pump test was conducted at a discharge rate of 1,580 gpm. Discharge measurements were made continuously at the start of the test and at regular intervals during the later stages of the test.

During the first eight minutes of the pump test, the rate of discharge fluctuated as high as 2,000 gpm while the discharge valve was adjusted. The discharge rate was observed to drift approximately 10 gpm from the constant target rate of 1,580 gpm. Three additional discharge adjustments were made during the test to compensate for pumping rate drift. A plot of the discharge rate during the test is shown in Figure 7. The plot shows three pumping interruptions from power failures and subsequent

restarts. The average discharge rate the 7-day pumping period was approximately 1,580 gpm; this rate was used in drawdown-analysis calculations.

The pumping well is capable of higher long-term discharge rates (2,000 gpm or more). However, the maximum diversion rate requested under Application 63-32089 (in which the Eaglefield well is listed as a point of diversion) would be limited to 4.0 cfs (1,795 gpm). The effects of a higher aquifer-test rate (e.g., 1,795 gpm instead of 1,580 gpm) would have been greater drawdown in the pumping and monitoring wells. It is unlikely that a higher pumping rate (e.g., 1,795 gpm) would have provided meaningful drawdown data in wells that showed no drawdown at the 1,580-gpm rate. The calculated aquifer parameters values (transmissivity and storativity) based on the 1,580-gpm rate should be similar to estimates based on a theoretical higher discharge rate. A greater pumping rate may have revealed more distant boundary conditions, if present, during the 7-day test. However, in our opinion, the 1,580-gpm discharge rate was sufficient to provide meaningful aquifer-test results.

4.3. Water-level Data and Analysis

This section summarizes water-level data, interpretations, and aquifer parameter estimates. Hydrographs, curve matches, and other supplemental plots are provided in Appendix C.

Estimated transmissivity and storativity values based on this aquifer test should be considered approximate. First, transmissivity and storativity estimates are, by nature, approximate because of aquifer heterogeneity, aquifer anisotropy, and the subjective nature of curve-matching approximations. Second, parameter estimates may be influenced by small variations in barometric pressure (or other) influences on water levels, pump discharge fluctuations, and well interference.

4.3.1. Test Well No. 2 (Pumping Well)

The water-level data collected in the pumping well shows approximate 2-foot diurnal water-level fluctuations (ranging between 1 and 2 feet) throughout the aquifer test. Diurnal fluctuations can be caused by discharge fluctuations, barometric pressure changes, transducer error, and/or well interference. The diurnal fluctuations were not caused by discharge fluctuations because the diurnal fluctuations occur prior to and after the pumping test. The water-level fluctuations exceed the magnitude of, and do not coincide with, barometric fluctuations. Well interference with this diurnal pattern was not observed in other monitoring wells. Transducer error is therefore a likely reason for the observed diurnal fluctuations. Excess transducer cable (approximately 250 feet) was wrapped on a reel and covered by a cardboard box but was otherwise exposed to the elements. A plugged vent tube (possibly by moisture from evening rains) and daily heating and cooling of the transducer cable and vent tube could easily create pressure fluctuations such as those observed. However, despite the apparent diurnal fluctuations, the aquifer test is considered valid because

the maximum drawdown of approximately 31 feet far exceeded the diurnal fluctuations.

The pre-test water levels fluctuated approximately 2 feet between an elevation of approximately 2,532 and 2,534 feet. The hydrograph shows an approximate 1-foot drawdown from these static levels at the start of the pumping test. This approximate 1-foot drawdown indicates that the well had not fully recovered from a prior false start. Regardless, water levels returned to the pre-test range following aquifer-test recovery.

Discharge adjustments and diurnal fluctuations distorted the drawdown curve on semi-log paper. Nonetheless, three general straight-line data segments were identified. Transmissivity estimates based on these three data segments range from 20,100 to 20,500 ft^2/day.

Residual drawdown (recovery) data plotted on a semi-log graph suggest an inflection point at $t/t' \sim 35$ (which correspond with approximately 640 minutes into the recovery period). Straight-line fits to these data yielded a transmissivity value of 25,100 ft^2/day before the inflection point and 8,900 ft^2/d for data after the inflection point. The latter value is lower than was calculated for the drawdown during the aquifer test. The difference may be associated with transducer fluctuations during the test.

4.3.2. Monitoring Well Test Well No.1 (Legacy Well)

Antecedent water-level data in Test Well No. 1 (Appendix C) show a relatively stable trend with an approximate 0.8-foot increase on 5/31/06. The reason for the water level increase is unknown but likely reflects interference from another pumping well (i.e., pumping stopped in a nearby well). The water-level elevation range between approximately 2,528 and 2,529 feet was assumed to be the pre-test static water level range in this well. The post-test water-level recovery returned to approximately 2,528.5 feet, representing full recovery.

A semi-log plot of drawdown data indicates a change in slope (inflection point) at approximately 8,000 minutes. This change in slope may have been caused by encountering a barrier (negative) boundary, change in aquifer thickness, change in aquifer material characteristics, leakage from overlying or underlying aquifers, and/or changes in discharge rates.

The transmissivity estimate based on the Theis analysis was 22,600 ft^2/day; storativity was estimate to be 0.014. Estimated transmissivity using the straight-line method for $t < 8{,}000$ minutes was 29,900 ft^2/day and 11,400 ft^2/day for $t > 8{,}000$ minutes. Recovery data yielded a transmissivity of 39,500 ft^2/day from late data (i.e., $t/t' < 5$) and 11,600 ft^2/day from early data ($t/t' > 5$).

4.3.3. Monitoring Well Test Well No. 4 (QCR Well No. 4)

A water-level decline and recovery of approximately 1.0 foot is seen in the QCR No. 4 well from 6/10/06 to 6/17/06 (the aquifer test ended on June 9, 2006). The drawdown does not appear to be related to the pumping test because the apparent drawdown trend extends approximately 4 days longer than the aquifer test, during which all other wells had mostly recovered. The drawdown and subsequent recovery was likely caused by interference from another well. Drawdown analysis was not performed with these data because of the apparent, confounding well interference.

With full hydraulic connection between the pumping well and the QCR No. 4 well, the predicted drawdown in the QCR No. 4 well would be approximately 0.5 feet after 7 days of continuous pumping in the pumping well at a rate of 1,580 gpm (assuming a transmissivity value of 20,000 ft^2/day and a storativity of 0.001). This drawdown was not apparent in the QCR No. 4 well measurements, which draws into question the degree of hydraulic connection between these two wells.

4.3.4. Monitoring Well Test Well No. 6 (Ricks Irrigation Well)

Water-level data for the Ricks Irrigation Well were collected from 6/2/2006 through 6/10/2006. The well was not available for measuring antecedent or complete recovery water levels (measurements in this well ceased when irrigation use began). Water levels during the measurement period declined approximately 1 foot, although it is not clear that the decline was caused by the aquifer test. Water-level changes in this well were most possibly caused by other, nearby wells. An analysis of these data was therefore not performed.

With full hydraulic connection between the pumping well and the Ricks well, the predicted drawdown in the Ricks well would be about 2.6 feet after 7 days of continuous pumping in the pumping well at a rate of 1,580 gpm (assuming a transmissivity value of 20,000 ft^2/day a storativity of 0.001). This drawdown was not apparent in the Ricks well measurements, which draws into question the degree of hydraulic connection between these two wells.

4.3.5. Monitoring Well Test Well No. 9 (Strata Well 1A)

The hydrograph from Test Well No. 9 shows no meaningful water-level change during the aquifer test. Substantial water-level drawdown would not be expected given the shallow 15-foot well depth. No analysis was performed with these data.

4.3.6. Monitoring Well Test Well No. 10 (Strata Well 1B)

A minor water-level decline of approximately 0.30 feet was observed from 6/11/2006 through 6/13/2006, which recovered over approximately 2 days. This slight decline and subsequent recovery coincides with the drawdown observed in Monitoring Well No. 4 (QCR No. 4), but does not directly coincide with the aquifer-test drawdown and

recovery period. The minor drawdown in Well No. 10 is attributed to interference from another well because the drawdown pattern does not coincide with the aquifer-test drawdown pattern.

4.3.7. Monitoring Well Test Well No. 11 (UWI 1A)

Water levels in Test Well No. 11 (UWI 1A) fluctuate over an approximate 0.7-foot range prior to the aquifer test. Water levels during the pre-test period were influenced by well interference events on 6/26/06, 5/31/06, and the aborted pump test on 6/1/06 (Table 2). The assumed static water level in this well is an elevation range between approximately 2531.5 and 2532.0 feet. The actual pump test began with an approximate 0.5-foot residual drawdown from the initial aborted test. The maximum drawdown during the test was approximately 5.75 feet. Water levels recovered to the initial static water-level range.

Drawdown data plotted on a semi-log graph indicate a change in slope at approximately 5,000 minutes into the test. The change in slope likely reflects a recharge (positive) boundary, change in aquifer thickness, change in aquifer material characteristics, leakage, and/or discharge variations. Two transmissivity values were calculated from the semi-log plot: 14,200 ft^2/day for t < 5,000 minutes and 21,500 ft^2/day for t > 5,000 minutes. A storativity value of $5.5x10^{-5}$ was estimated using the straight-line method.

A log-log plot of drawdown data and Theis curve match yielded an estimated transmissivity of 16,200 ft^2/day and a storativity of 8.95×10^{-4} (based on drawdown data collected after about 1500 minutes into the test).

Recovery data plotted in a semi-log graph yielded 3 transmissivity estimates: 14,200 ft^2/d for t/t' > 10.5, 10,500 ft^2/d for t/t' between 7 and 10.5, and 11,400 ft^2/day for t/t' < 7.

Recovery data plotted as drawdown versus t/t_0 returned to a positive x-intercept (i.e., the drawdown curves intercept the x-axis between t/t_0 values of 3 and 6). Small positive x-intercept values may result from variations in storativity; larger values (such as those seen here) reflect aquifer recharge (Driscoll, 1986).

4.3.8. Monitoring Well Test Well No. 12 (UWI 1B)

Monitoring well No. 12 is the deep completed piezometer nested with monitoring well No. 11. There is no annular seal separating open intervals in Wells No. 10 and No. 11. Similar water level responses to pumping in Well No. 2 reflect the open well construction or vertical connection within the aquifer. Water level responses are similar (but not identical) to those observed in Test Well No. 11 (UWI 1A).

Water levels in Test Well No. 12 (UWI 1B) fluctuate over an approximate 0.7-foot range prior to the aquifer test. Water levels during the pre-test period were

influenced by well interference events on 6/26/06, 5/31/06, and the aborted pump test on 6/1/06 (Table 2). The assumed static water level in this well is a range from approximately 2531.5 feet to 2532.0 feet. The actual pump test began with an approximate 0.5-foot residual drawdown from the initial aborted test. The maximum drawdown during the test was approximately 5.75 feet. Water levels recovered to the initial static water-level range.

Drawdown data plotted on a semi-log graph indicate a change in slope at approximately 5,000 minutes into the test. The change in slope likely reflects a recharge (positive) boundary, change in aquifer thickness, change in aquifer material characteristics, leakage, and/or discharge variation. Two transmissivity values of were calculated from the semi-log plot: 14,900 ft^2/day for t < 5,000 minutes and 20,900 ft^2/day for t > 5,000 minutes. A storativity value of $5.5x10^{-5}$ was estimated using the straight-line method.

A log-log plot of drawdown data and Theis curve match yielded an estimated transmissivity of 16,400 ft^2/day and a storativity of 9.84×10^{-4} (based on drawdown data collected after about 1,500 minutes into the test).

Recovery data plotted in a semi-log graph yielded 3 transmissivity estimates: 15,400 ft^2/d for t/t' > 10.5, 10,200 ft^2/d for t/t' between 7 and 10.5, and 11,300 ft^2/day for t/t' < 7.

5. SUMMARY OF AQUIFER PARAMETER VALUES

Responses to pumping in the Eagle aquifer test were observed in Test Well No. 2 (Eaglefield Well), Test Well No. 1 (Legacy Well), and the two UWI monitoring wells (1A and 1B). Water level changes in the Ricks and QCR No. 4 wells were attributed to well interference from other wells (because drawdown patterns did not correspond with pumping in Test Well No. 2). Lack of apparent response in the Ricks and QRC No. 4 wells to this aquifer test is likely because of indirect hydraulic connection between these wells and the No. 2 pumping well and/or partial aquifer penetration (despite being completed at similar depths). Lack of response in the Strata wells is not surprising because these wells are completed in shallow, hydraulically distinct aquifers.

Transmissivity values calculated from aquifer-test results (Table 4 and Figure 7) generally ranged from about 10,000 ft^2/day (74,800 gpd/ft) to 36,600 ft^2/day (274,000 gpd/ft). These transmissivity estimates are consistent with aquifer parameter values estimated from pumping tests in the nearby Floating Feather and Redwood Creek wells.

Storativity values (based on the Theis method) ranged from $5.5x10^{-4}$ to $1.48x10^{-2}$. The $5.5x10^{-4}$ value is consistent with confined-aquifer conditions and the $1.48x10^{-2}$ value is consistent with partially-confined aquifer conditions. The $1.48x10^{-2}$ value may reflect a poor Theis-curve match.

Changes in slopes of drawdown rates plotted on semi-log graphs indicate positive and/or negative boundary conditions, changes in aquifer thickness, variations in aquifer material characteristics, leakage from overlying and/or underlying aquifers, and/or discharge fluctuations. The drawdown-curve variations are consistent with lithologic heterogeneity described in well drillers' reports for this area.

6. IMPACTS TO EXISTING WELLS

Potential impacts to existing wells were estimated using the aquifer test results presented above. A series of drawdown estimates were calculated using a series approximation to the Theis solution (Theis, 1935) and using various discharge rates, distances from the pumping well, and aquifer parameter values (Table 4).

The various discharge rates for the impact projections were based on reasonably-anticipated annual withdrawals. Our understanding is that proposed water rights 63-32089 and 63-32090 will serve the west-Eagle area. The City of Eagle Amended Water Master Plan prepared in December 2005 projects approximately 8,000 equivalent residential units for this area. Based on the most current information there could be as many as 14,000 equivalent residential units in the west-Eagle area.

Water use under the proposed water rights will be used primarily for domestic purposes (because surface water is available for irrigation in most of this area). Average domestic water use, based on our experience, is less than 250 gallons per day (gpd) per unit. The American Water Works Association (2004) estimated that national indoor water use is 70 gallons per capita per year (enough water to supply an average of 3.6 residents per home at the 250 gpd per unit rate). The Surprise Valley subdivision in southeast Boise (which uses surface water for irrigation) used an average of approximately 200 gpd per residential unit for domestic purposes (based meter records between 2000 and 2004). Assuming 250 gpd per unit, a reasonable maximum expected withdrawal volume under the proposed water rights for 14,000 units is approximately 3,920 acre feet per year. This is equivalent to an average annual pumping rate of 2,430 gpm (5.41 cfs). Actual pumping rates could range from less than 5.41 cfs to as high as 8.9 cfs (which would represent a peaking factor of 1.65 over the average rate).

Thus, potential impacts were projected at annual volumetric withdrawals of 1,000, 2,000, and 4,000 acre feet per year, representing various stages of water development in the listed place of use. Realizing these withdrawal volumes will take multiple years.

Distances from the theoretical pumping well were based on approximate distances to protestant wells. The closest protestant's well is approximately 1,500 from the closest point of diversion under this permit. More distant protestant's wells are approximately 2 miles from the closest point of diversion.

The Theis approach used to estimate projected impacts likely over-predicts impacts because recharge is neglected and possibly under-predicts impacts because the aquifer is likely not of infinite areal extent. However, the net aquifer impacts in this case are likely over-predicted because of substantial aquifer recharge. Substantial aquifer recharge is the only explanation for stable water levels in the context of substantial local historical withdrawal increases (Section 2.4).

Potential drawdown from one well pumping water at average rates between 620 (1.38 cfs) and 3,995 gpm (8.9 cfs) for a 1-year period were estimated using aquifer parameter values in the range of those observed in the Eagle aquifer test (e.g., T = 10,000 and 20,000 ft^2/day and S = $1x10^{-4}$ and $1x10^{-3}$). Discharge rates equivalent to annual withdrawals of 1,000, 2000, and 4,000 acre-feet per year reflect possible withdrawals over the development period of this right. The effects of a continuous full diversion at 8.9 cfs (representing an annual withdrawal volume of 6,400 acre-feet per year), although highly unlikely, were also evaluated. All Theis projections were done for a theoretical 1-year period.

The estimated drawdown amounts following one year of continuous pumping (assuming a transmissivity value of 20,000 ft^2/day and a storativity of 0.001) at rates between 620 gpm and 2,480 gpm (equivalent to annual withdrawal volumes of 1,000 and 4,000 and depending on distance from the pumping well) range from 2.4 to 17 feet, respectively (Table 4). A lower transmissivity value (T=10,000 ft^2/day) and a storativity of 0.001 would result in drawdown rates ranging from 4.1 to 32 feet, respectively. A transmissivity of 20,000 ft^2/day and a storativity of 0.0001 results in projected impacts of 3.5 to 22 feet. Finally, a transmissivity value of 10,000 ft^2/day and storativity of $1x10^{-4}$ results in projected drawdown of 6.3 to 40 feet.

Projected impacts at a withdrawal rage of 3,995 gpm (8.9 cfs), equivalent to an annual withdrawal of 6,400 acre-feet per year, ranged from 15.2 to 65 feet between 1,400 feet and 2 miles from the pumping well. However, these impacts are highly unlikely because this withdrawal rate is unlikely.

Again, the estimates listed above are conservative because recharge to the target aquifers is neglected. Substantial recharge occurs, as evidenced by stable water levels (Section 2.4) despite increasing historical withdrawals. For example, production in the nearby Floating Feather Well (Figure 9), which is completed in a similar aquifer zone as the Test Well No. 2, increased from 266 acre-feet per year in 1997 to almost 1,500 acre-feet per year in 2004 with no apparent water-level decline. Production in the Redwood Creek well (Figure 9) increased from 2 acre-feet in 2000 to 314 acre-feet in 2004. In fact, municipal ground-water production throughout the Eagle area (Figure 10) increased from about 794 acre feet in 1993 to 3,923 acre feet in 2002 – a 3.7-fold increase. Current production may exceed 5,000 acre feet per year. Nonetheless, water levels in the west Eagle area remained relatively stable (Figure 4) during this time. Based on these observations, the Theis drawdown projections based on aquifer-test results are likely conservative.

The hydraulic connection between the pumping well and the Ricks and QCR No. 4 wells appears to be more limited than between the pumping well and the UWI wells to the south. The impacts of extended pumping from the No. 2 (Eaglefield) well (or other points of diversion under the proposed permit) would be less in aquifers of limited hydraulic connection.

The ultimate sustainable yield of aquifers in this area is unknown. However, stable water levels, despite historical production increases, bode well for continued water

development. Furthermore, simulations using the Treasure Valley aquifer model (Petrich, 2004a; Petrich, 2004b) suggest the potential for additional water development capacity in this area.

7. CONCLUSIONS AND RECOMMENDATIONS

The primary conclusion from this aquifer-test review and analysis is that the target aquifer for Applications 63-32089 and 63-32090 has sufficient capacity for additional withdrawals. Specific conclusions include the following:

Aquifer and Water Levels

1. The target aquifers consist of confined to partially-confined sand layers approximately 200 to 500 feet below ground surface.
2. Water levels in the vicinity of the proposed diversions are stable. Numerous deeper wells have artesian heads extending as high as 19 feet above ground surface.
3. Transmissivity estimates developed from previous tests of confined aquifers calculated from pumping tests of other wells in the west Eagle area (i.e., Redwood Creek and Floating Feather wells) ranged from 7,400 to 21,500 ft^2/day.

Aquifer Test

4. A 7-day aquifer test was conducted with an average discharge rate of approximately 1,580 gpm. This rate is consistent with expected diversion rates from individual wells under the proposed permit.
5. Responses to pumping in the Eagle 7-day aquifer test were observed in the No. 2 (Eaglefield), No. 1 (Legacy), and United Water wells. Lack of response in the Ricks and QRC No. 4 wells is likely because of an insufficient hydraulic connection.
6. Estimated transmissivity values from the 7-day aquifer test ranged from about 10,000 to 39,500 ft^2/day. One lower value (8,600 ft^2/day) is suspect because it was based on a period of apparent water-level fluctuations (which were likely caused by a clogged transducer vent tube).
7. Storativity values from the 7-day aquifer test ranged from 8.95×10^{-4} to 1.48×10^{-2}.
8. Semi-log plots of aquifer drawdown and recovery indicated possible barrier (negative) boundary effects, recharge (positive) boundary effects, variations in aquifer thickness, leakage, and/or changes in aquifer materials. The most apparent negative boundary effect was observed in the Legacy monitoring well. Offset strata or spatial variations in aquifer materials or thicknesses (which would result in an apparent negative boundary effect) are consistent with the conceptual model of aquifer conditions in this area.
9. Aquifer-recharge effects during the aquifer test are indicated by positive x-intercepts in straight-line UWI-well recovery plots (drawdown vs. t/t_0).

10. Water levels fully recovered in the pumping and monitoring wells from drawdown associated with the aquifer test.

Potential Impacts to Existing Users

11. Substantial increases in ground water withdrawals for municipal purposes in Eagle over the last 10 years have not resulted in substantial local water-level declines.

12. Potential well interference under reasonable pumping scenarios projected using the Theis method resulted in theoretical water-level drawdowns ranging from about 2 to 25 feet at a distance of two miles from the pumping well (depending on assumed aquifer parameter values, and assumed pumping rate). At 1,400 feet from a pumping well the theoretical drawdown estimates ranged from 4 to 40 feet (the closest distance between a protestants' well and potential point of diversion is approximately 1,500 feet). The effects of offset strata or spatial variations in aquifer materials or thicknesses (which would result in an apparent negative boundary effect) could exacerbate water level responses to pumping. However, these theoretical projections of water level impacts are likely very conservative because (a) aquifer recharge is excluded and (b) similar pumping rates in nearby wells (e.g., Floating Feather and Redwood Creek) have resulted in minor (if any) local water-level declines.

Aquifer Capacity

13. The aquifer in the vicinity of the proposed diversions has capacity for additional diversions, based on currently stable water levels.

14. The aquifer in the vicinity of the proposed diversions likely has the capacity to supply the entire amount of water that would likely be withdrawn under these permits (approximately 4,000 acre feet per year), although some drawdown from the proposed diversions will occur.

Monitoring

15. Monitoring and reporting of production rates from all points of diversion under the proposed permit is recommended.

16. Periodic (e.g., quarterly) water-level monitoring in selected wells near the points of diversion is recommended during the permit development period.

8. REFERENCES

American Water Works Association, 2004. Sizing Water Service Lines and Meters - Manual of Water Supply Practices, AWWA Manual M22.

Cooper, H.H. and Jacob, C.E., 1946. A generalized graphical method for evaluating formation constants and summarizing well field history. Transactions, American Geophysical Union, 27(4).

Dawson, K.J. and Istok, J.D., 1991. Aquifer Testing: Design and Analysis of Pumping and Slug Tests. Lewis Publishers, Inc., Chelsea, Michigan.

Driscoll, F.G., 1986. Groundwater and Wells. Johnson Division, St. Paul, MN.

Freeze, R.A. and Cherry, J.A., 1979. Groundwater. Prentice-Hall, Englewood Cliffs, NJ, 604 pp.

Hantush, M.S., 1955. Non-steady radial flow in an infinite leaky aquifer. Transactions, American Geophysical Union, 36(1): 583-590.

Hantush, M.S., 1960. Modification of the theory of leaky aquifers. Journal of Geophysical Research, 65(11): 3713-3725.

Hantush, M.S., 1964. Hydraulics of Wells, *in* Advances in Hydroscience, Chow, V.T., *ed.*,. Academic Press, pp. 281-442.

Holladay Engineering Company, 2006. City of Eagle, Idaho 7-Day Aquifer Test, Prepared for the City of Eagle, Project EG 061204.

Othberg, K.L. and Stanford, L., 1992. Geologic map of the Boise Valley and adjoining area, Western Snake River Plain, Idaho. Idaho Geological Survey.

Petrich, C. and Urban, S., 2004. Characterization of Ground Water Flow in the Lower Boise River Basin, Idaho Water Resources Research Institute and the Idaho Department of Water Resources, Research Report IWRRI-2004-01.

Petrich, C.R., 2004a. Simulation of Ground Water Flow in the Lower Boise River Basin, Idaho Water Resources Research Institute, Research Report IWRRI-2004-02.

Petrich, C.R., 2004b. Simulation of Increased Ground Water Withdrawals in the Treasure Valley Associated with Unprocessed Well Applications, Idaho Water Resources Research Institute, Research Report IWRRI-2004-03.

Scanlan Engineering, 1994. Final Report - Redwood Creek Subdivision Well No. 1, Letter report dated June 3, 1994 to Redwood Creek Development, Inc.

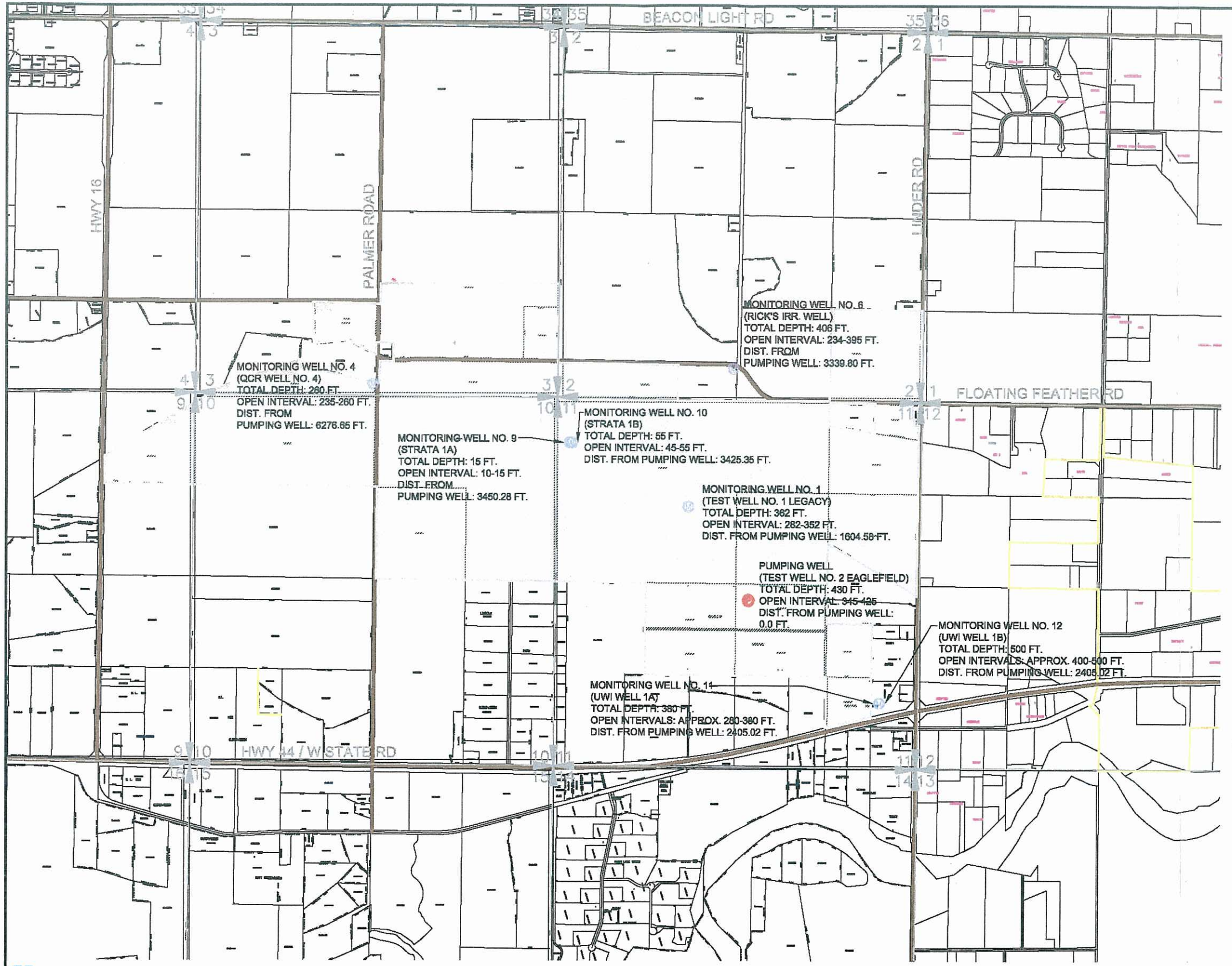
Scanlan Engineering, 1995. Aquifer Test at Floating Feather Well, Letter dated August 9, 1995 to Dan Brown, United Water Idaho.

Theis, C.V., 1935. The relation between the lowering of the piezometric surface and the rate and duration of a well using ground-water storage. Transactions, American Geophysical Union, 16: 519-524.

Wood, S.H. and Clemens, D.M., 2004. Geologic and tectonic history of the western Snake River Plain, Idaho and Oregon. In: B. Bonnichsen, C.M. White and M. McCurry (Editors), Tectonic and Magmatic Evolution of the Snake River Plain Volcanic Province. Idaho Geologic Survey.

APPENDIX A: FIGURES

CITY OF EAGLE
AQUIFER TEST WELL MAP



LEGEND:

PROPERTY OWNERSHIP
- PROPOSED DEVELOPMENT

AQUIFER TEST WELLS
- MONITORING WELL
- PUMPING WELL

- ROADS
- PARCEL LINES
- SECTION LINES
- SECTION CORNERS

1500 0 1500 3000
SCALE:1 INCH=1500 FEET

NOTE:

1) BASEMAP IS ADA AND CANYON COUNTY. (2005)

This map represents a compilation of public information from diverse records gathered by the City of Eagle and Holladay Engineering Company. The purpose for which this map is prepared is an overall general representation of positional relationships, and not a definitive description of location of any class of objects or conditions. Hence, no responsibility for errors can be or is assumed. The City of Eagle and Holladay Engineering Company CANNOT AND DO NOT GUARANTEE the absence of errors or the corrections of all information furnished to them for the preparation of this map.

REVISED JUNE 27 2006

HOLLADAY ENGINEERING CO.

G:\Eg\081204\SURVEY'S PROJECT\DWG\081204 11x17 1500 Scale layout

Figure 1: Site map

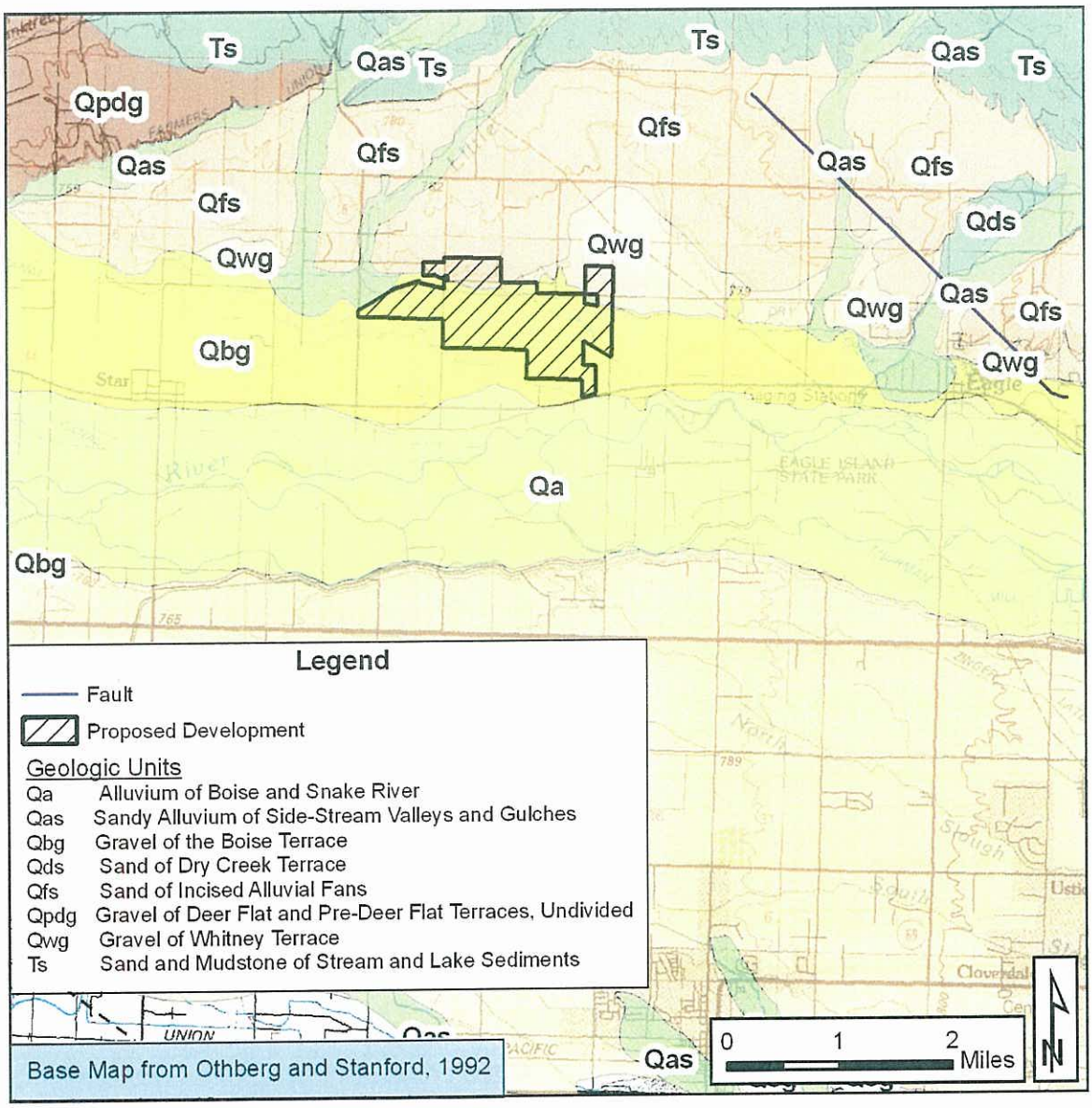


Figure 2: Surficial geology.

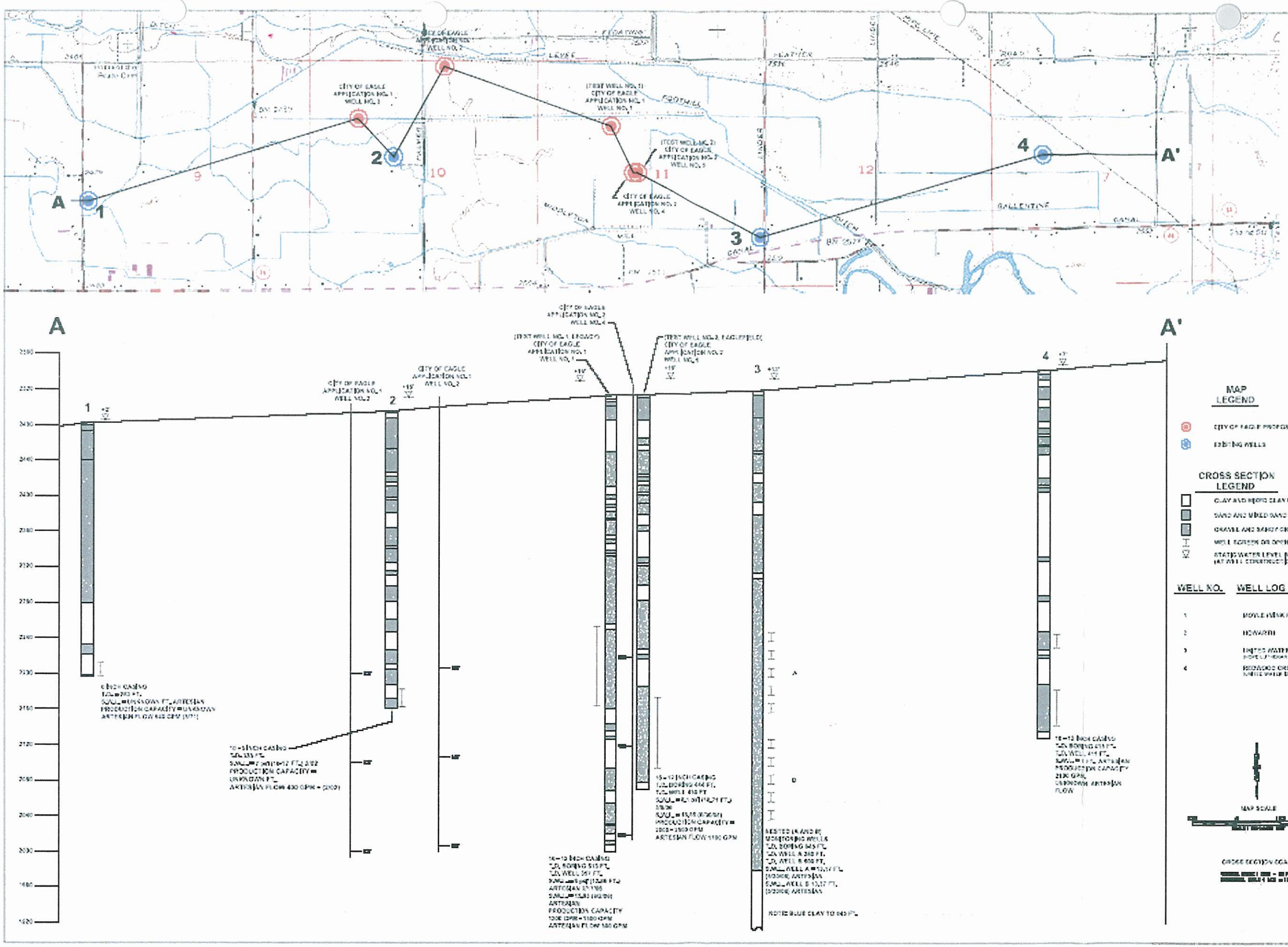
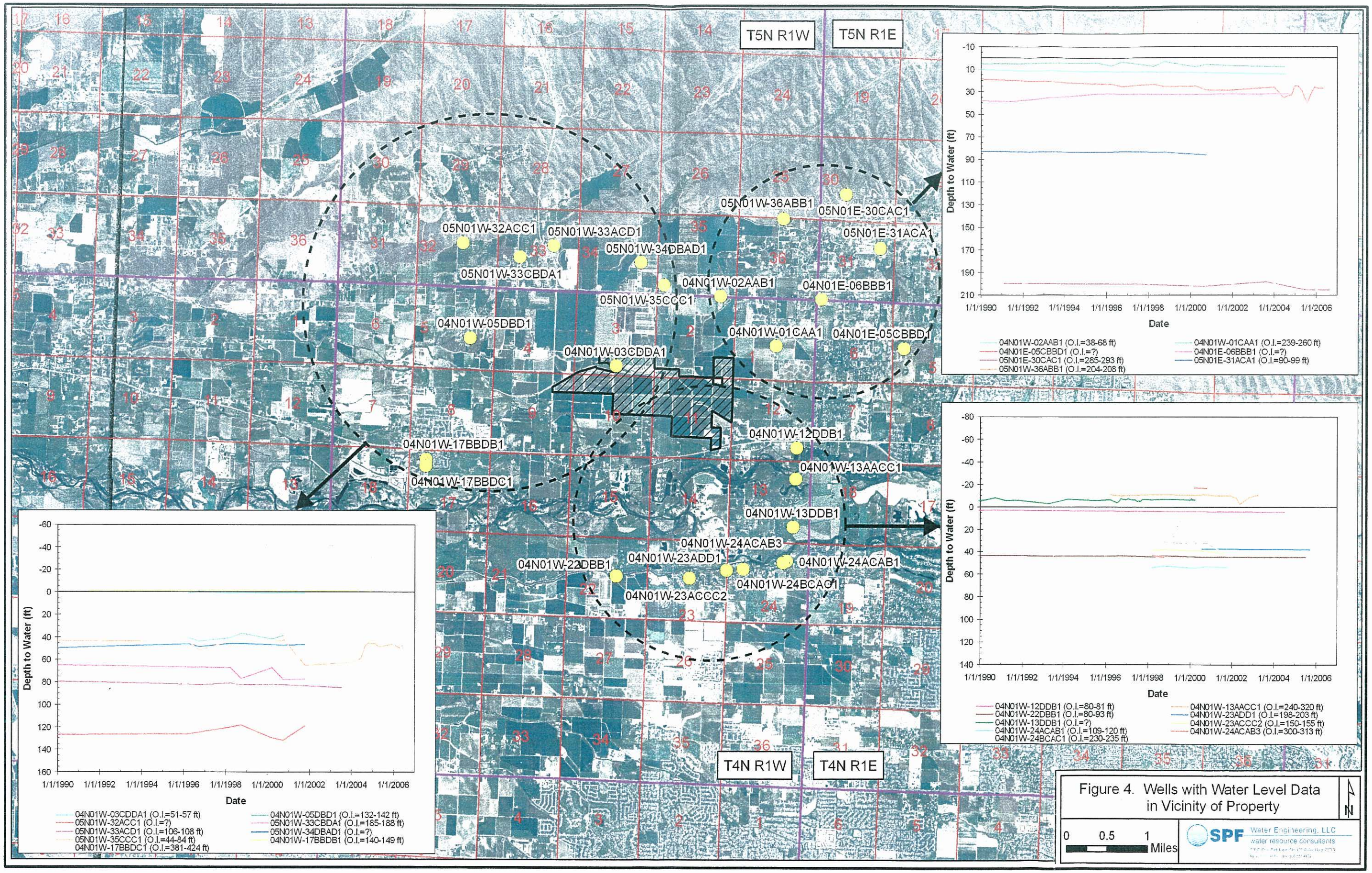


Figure 3: Lithologic cross section


T5N R1W
T5N R1E
T4N R1W
T4N R1E
05N01W-36ABB1
05N01E-30CAC1
05N01W-32ACC1
05N01W-33ACD1
05N01E-31ACA1
05N01W-34DBAD1
05N01W-33CBDA1
04N01W-02AAB1
04N01E-06BBB1
05N01W-35CCC1
04N01W-05DBD1
04N01W-01CAA1
04N01E-05CBBD1
04N01W-03CDDA1
04N01W-12DDB1
04N01W-17BBDB1
04N01W-13AACC1
04N01W-17BBDC1
04N01W-13DDB1
04N01W-24ACAB3
04N01W-22DBB1
04N01W-23ADD1
04N01W-24ACAB1
04N01W-24BCAC1
04N01W-23ACCC2
Depth to Water (ft)
Date
04N01W-02AAB1 (O.I.=38-68 ft)
04N01W-01CAA1 (O.I.=239-260 ft)
04N01E-05CBBD1 (O.I.=?)
04N01E-06BBB1 (O.I.=?)
05N01E-30CAC1 (O.I.=285-293 ft)
05N01E-31ACA1 (O.I.=90-99 ft)
05N01W-36ABB1 (O.I.=204-208 ft)
04N01W-03CDDA1 (O.I.=51-57 ft)
04N01W-05DBD1 (O.I.=132-142 ft)
05N01W-32ACC1 (O.I.=?)
05N01W-33CBDA1 (O.I.=185-188 ft)
05N01W-33ACD1 (O.I.=106-108 ft)
05N01W-34DBAD1 (O.I.=?)
05N01W-35CCC1 (O.I.=44-84 ft)
04N01W-17BBDB1 (O.I.=140-149 ft)
04N01W-17BBDC1 (O.I.=381-424 ft)
04N01W-12DDB1 (O.I.=80-81 ft)
04N01W-13AACC1 (O.I.=240-320 ft)
04N01W-22DBB1 (O.I.=80-93 ft)
04N01W-23ADD1 (O.I.=198-203 ft)
04N01W-13DDB1 (O.I.=?)
04N01W-23ACCC2 (O.I.=150-155 ft)
04N01W-24ACAB1 (O.I.=109-120 ft)
04N01W-24ACAB3 (O.I.=300-313 ft)
04N01W-24BCAC1 (O.I.=230-235 ft)
Figure 4. Wells with Water Level Data in Vicinity of Property
N
0 0.5 1 Miles
SPF Water Engineering, LLC
water resource consultants

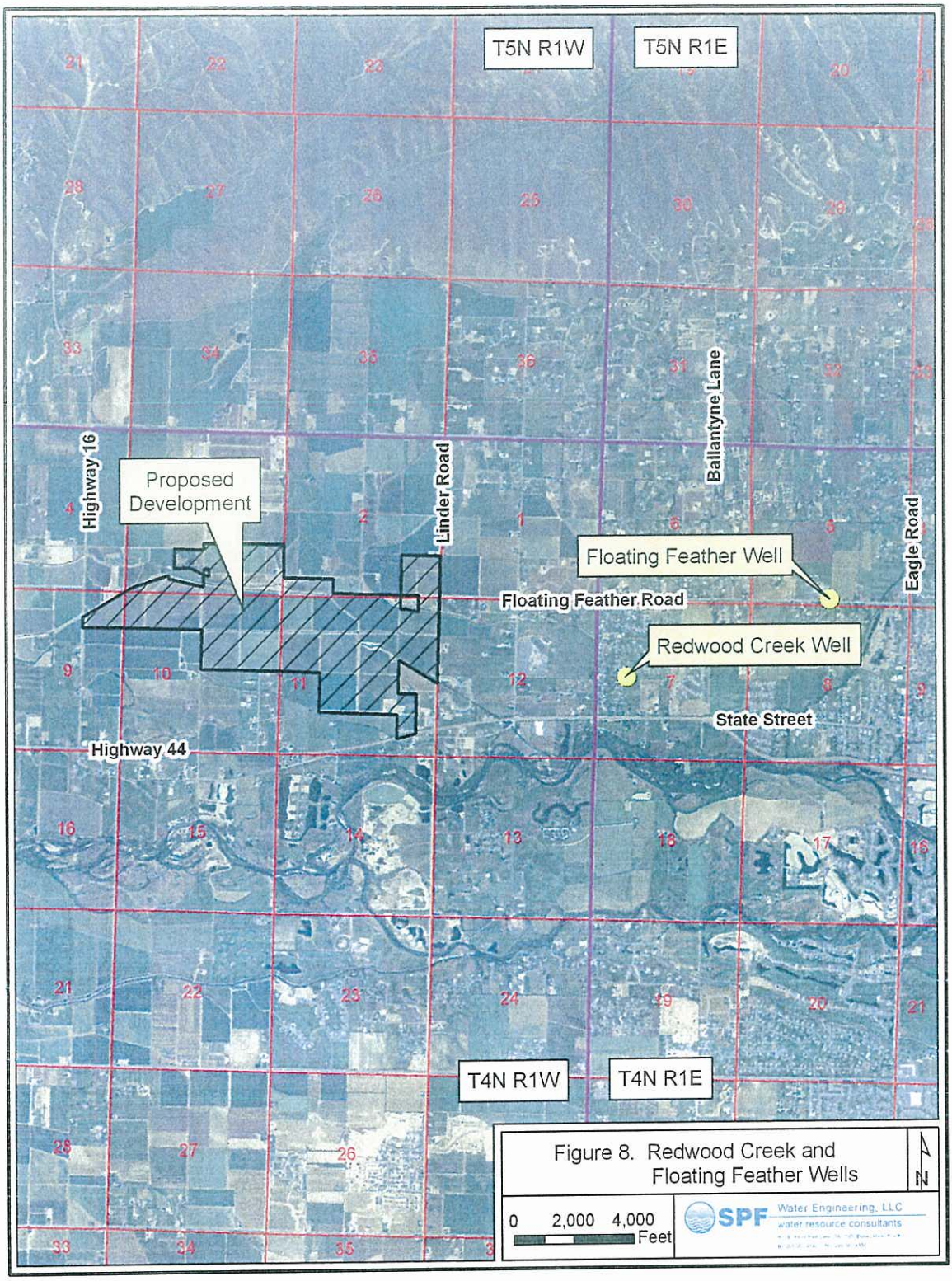


Figure 5: Location of Floating Feather and Redwood Creek wells.

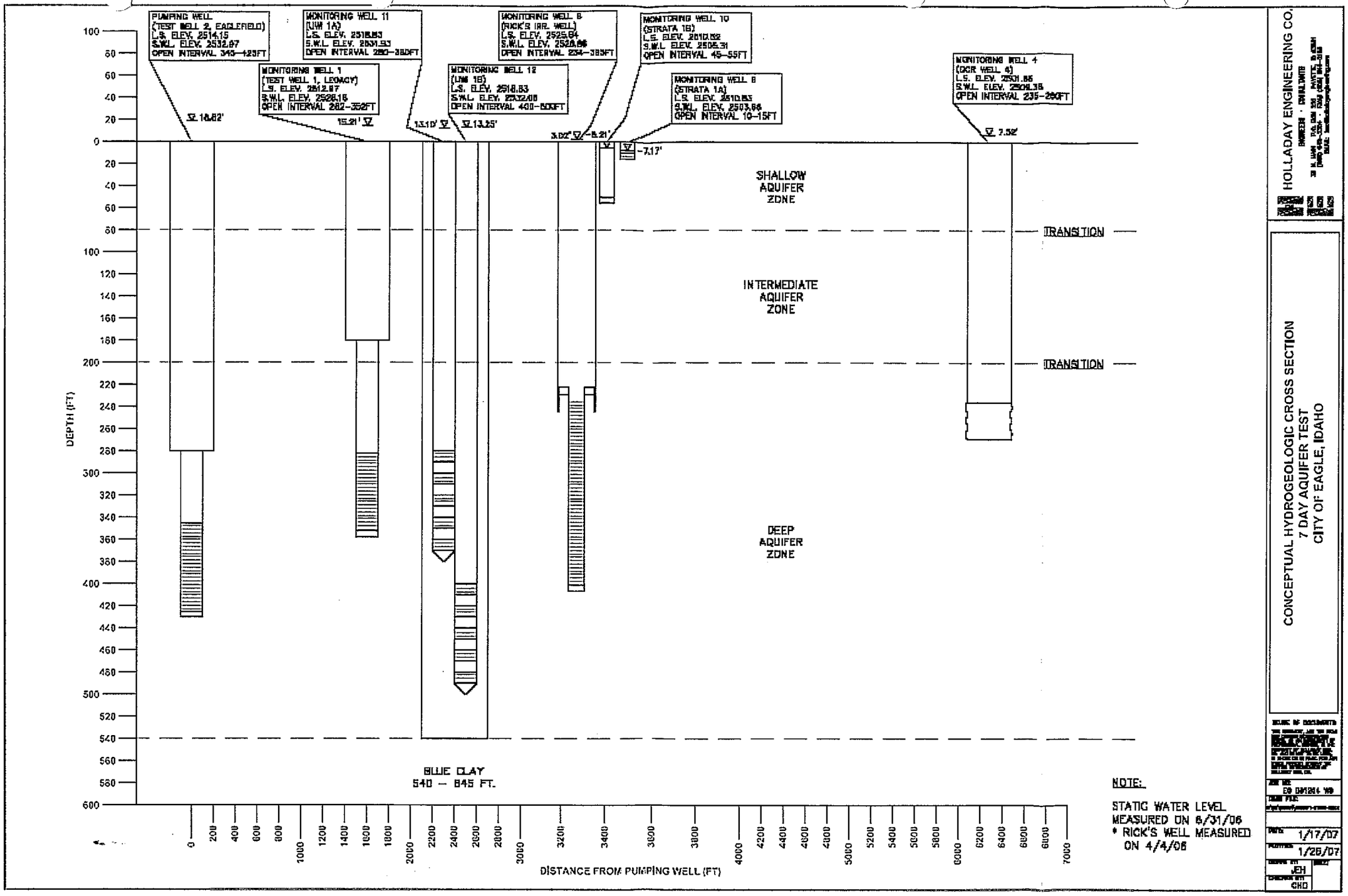


Figure 6: Conceptual cross section

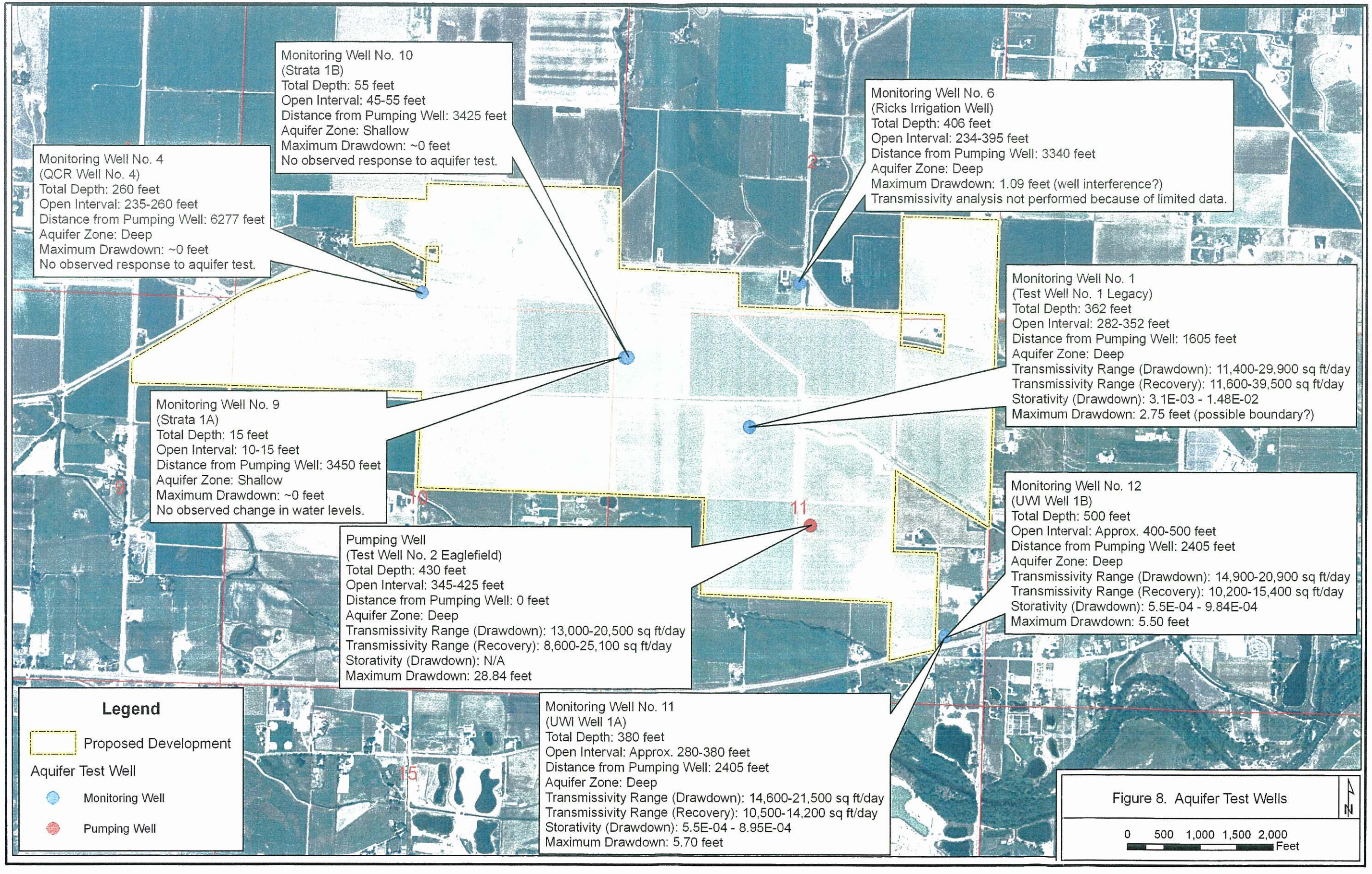


Figure 8: Aquifer test summary map

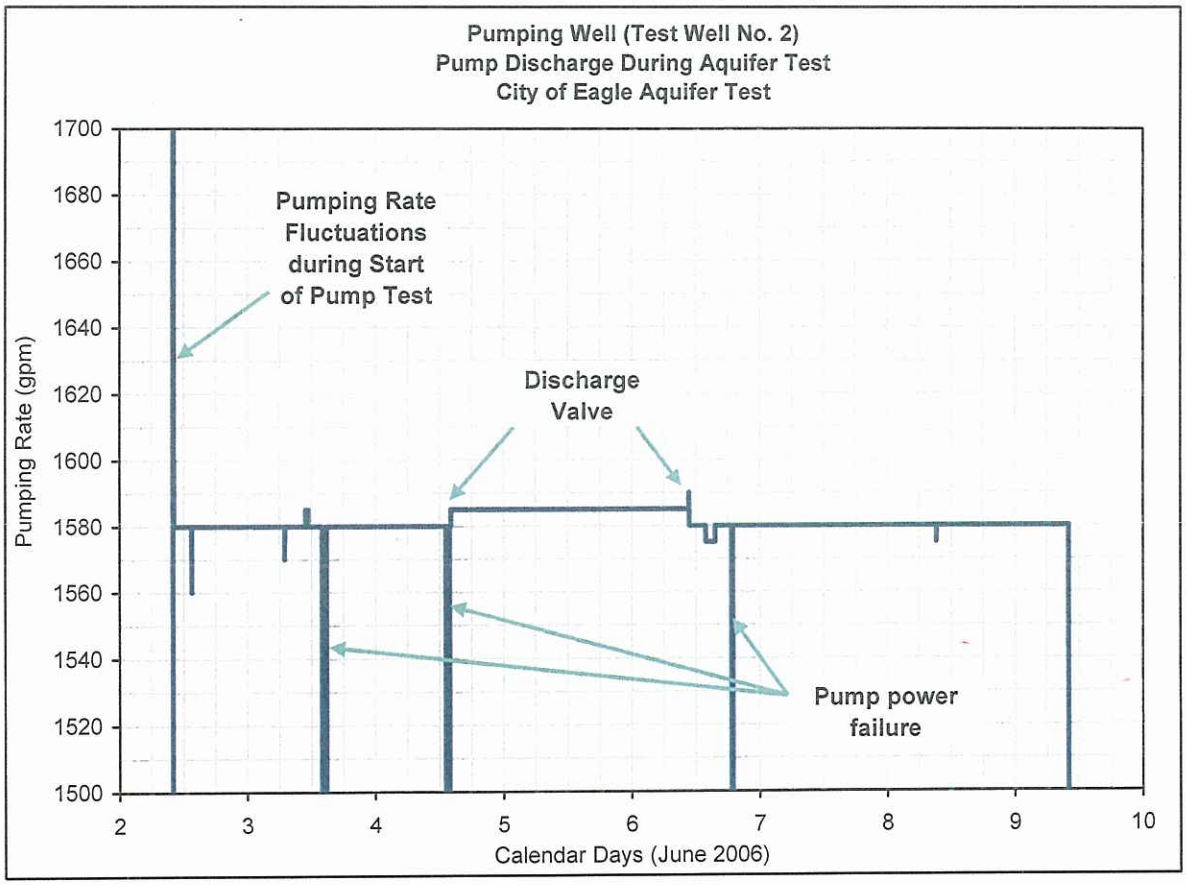
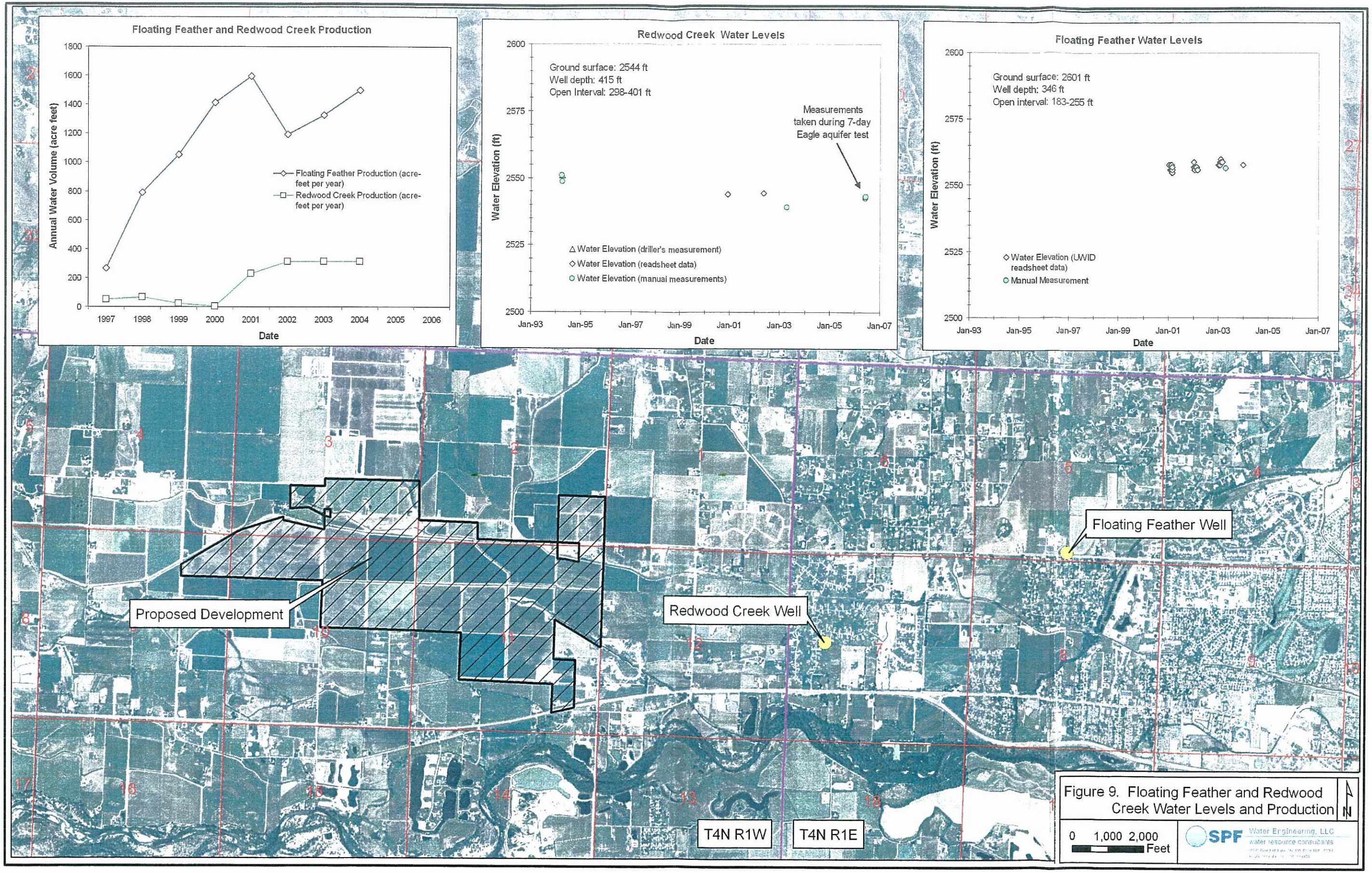


Figure 7: Discharge rate.


Floating Feather and Redwood Creek Production
Annual Water Volume (acre feet)
1800
1600
1400
1200
1000
800
600
400
200
0
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
Date
Floating Feather Production (acre-feet per year)
Redwood Creek Production (acre-feet per year)
Redwood Creek Water Levels
Ground surface: 2544 ft
Well depth: 415 ft
Open Interval: 298-401 ft
Measurements taken during 7-day Eagle aquifer test
Water Elevation (ft)
2600
2575
2550
2525
2500
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Date
Water Elevation (driller's measurement)
Water Elevation (readsheet data)
Water Elevation (manual measurements)
Floating Feather Water Levels
Ground surface: 2601 ft
Well depth: 346 ft
Open interval: 183-255 ft
Water Elevation (ft)
2600
2575
2550
2525
2500
Jan-93
Jan-95
Jan-97
Jan-99
Jan-01
Jan-03
Jan-05
Jan-07
Date
Water Elevation (UWID readsheet data)
Manual Measurement
Floating Feather Well
Redwood Creek Well
Proposed Development
T4N R1W
T4N R1E
Figure 9. Floating Feather and Redwood Creek Water Levels and Production
N
0 1,000 2,000 Feet
SPF Water Engineering, LLC water resource consultants

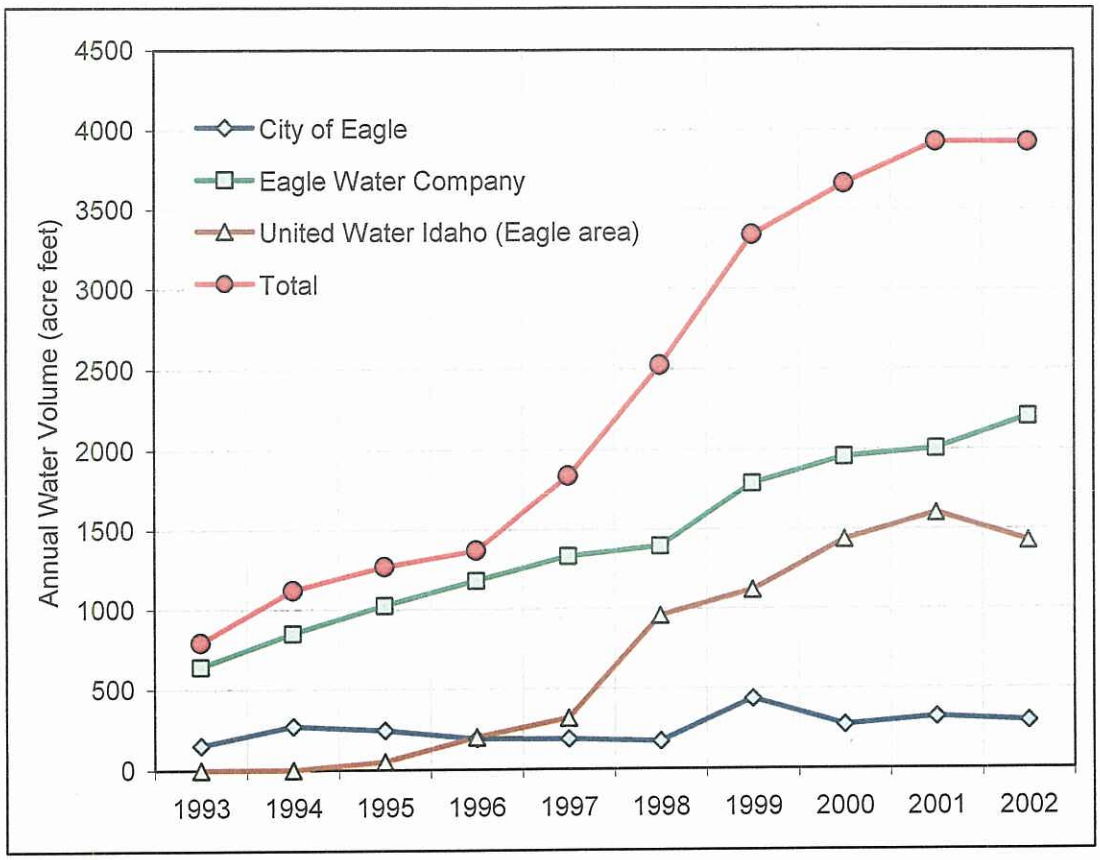


Figure 10: Eagle-area ground-water withdrawals, 1993-2002.

APPENDIX B: TABLES

Well	Antecedent Trend Comments
Test Well No. 2 (Eaglefield)	Diurnal fluctuations of approximately 2 feet observed in pre-test, test, and post-test data. The fluctuations are not similar to pre-test barometric pressure variations, and do not coincide with test and post-test barometric pressure variations. Water-level fluctuations are most likely caused by transducer vent-tube heating and cooling.
Test Well No. 1 (Legacy)	Pre-test water levels show a slight increasing trend and an approximate 2-foot rise during the day prior to the test. A slight decreasing barometric pressure trend during the test and increasing trend beginning approximately 5 days after the test may be influencing water levels in this test well, but apparent well interference (suggested by the water-level rise prior to the test) preclude a meaningful barometric pressure correction.
Monitoring Well No. 4 (QCR No. 4)	A slightly decreasing water-level trend extending to approximately Day 5 of the recovery test and subsequent water-level rise generally coincides with a barometric pressure change. However, an approximately 0.35 psi (0.81 feet of water) rise prior to the test resulted in no apparent water-level response, precluding meaningful barometric corrections.
Monitoring Well No. 6 (Ricks Well)	Water-level trends mirror a general barometric pressure decline, but the water-level decline exceeds the barometric pressure change. Water-level effects are likely a response to the pumping well or other nearby wells.
Monitoring Well No. 9	No meaningful water-level changes recorded during test (this well penetrates an unconfined aquifer so minimal barometric pressure impacts would be expected).
Monitoring Well No. 10	No meaningful water-level changes recorded during test (this well penetrates an unconfined aquifer so minimal barometric pressure impacts would be expected).
Monitoring Well No. 11 (UWI 1A South)	Slight visual appearance of barometric effects prior to, during, and after aquifer test, although other apparent interference events (such as from pumping well) minimizes value of barometric correction.
Monitoring Well No. 12 (UWI 1A South)	Slight visual appearance of barometric effects prior to, during, and after aquifer test, although other apparent interference events (such as from pumping well) minimizes value of barometric correction.

Table 1: Antecedent water-level trends.

Note	Date & Time	Description of Pumping Test Events
1	5/26/06 12:30	Installed production pump in Test Well No. 2, opened artesian discharge valve at Test Well No. 2 and discharged water at an estimated rate of 1,000 gpm from 5/26/06 12:30 to 5/26/06 18:20.
2	5/31/06 10:00	Tested pumping equipment prior to starting the pump test at Test Well No. 2. Pumped water at an estimated rate of 1,600 gpm on 5/31/06 10:00 to 5/31/06 12:00.
3	6/1/06 10:00	Started the aquifer test at a pumping rate of 1,500 gpm but aborted the test after a power failure at Test Well No. 2 (pumping well) on 6/1/06 at 15:45. Aborted pump test period was from 6/1/06 10:00 to 6/1/06 15:45.
4	6/2/06 9:15	Opened artesian discharge valve at Test Well No. 1 to replace water-level sight tube on 6/2/06 9:15 to 9:20. Discharge rate was estimated at 300 gpm.
5	6/2/06 10:00	Restarted pumping phase of aquifer test on 6/2/06 10:00 at 1,580 gpm and continued constant rate pumping to 6/9/06 10:00 am.
6	6/3/06 14:00	Power failure at pumping well (Test Well No. 2) because of possible generator overheating. Pumping rate was 1580 gpm. Pump stopped on 6/3/06 14:00. Restarted pump on 6/3/06 14:49.
7	6/4/06 13:11	Power failure at pumping well (Test Well No. 2) due to possible overheating of generator. Pumping rate was 1,580 gpm. Pump stopped on 6/4/06 13:11. Restarted pump on 6/4/06 13:52
8	6/6/06 18:41	Power failure at pumping well (Test Well No. 2) due to possible overheating of generator. Pumping rate was 1,580 gpm. Pump stopped on 6/6/06 18:41. Restarted pump on 6/6/06 18:52
9	6/10/06 9:15	Pumping of Tom Ricks Irrigation well (Monitoring Well No. 6) for irrigation of hay field. Well discharge rate into canal was estimated at 1,000 gpm from 6/10/06 9:15 to 6/10/06 17:00.
10	6/13/06 10:00	Removal of the production pump at Test Well No. 2. Artesian discharge valve was opened and water was discharged at an estimated rate of 1,000 gpm from 6/13/06 10:00 to 6/13/06 14:00; transducer was removed.

Table 2: Aquifer test notes.

Well ID	Monitoring Well Configurations			Drawdown Analysis					Recover Analysis	
	Open Interval (ft)	Aquifer Zone	Radial Distance From Pumping Well (ft)	Max DDN (ft)	Theis		Semi-Log Method		Semi-Log Method	
					T ft^2/day	S	T ft^2/day	S	T ft^2/day	S
Test Well 2 (Pumping Well)	345-425	Deep	0.00	28.84	13,000	n/a	20,500	n/a	25,100	n/a
							20,100	n/a	8,600	n/a
							20,100	n/a		
Test Well 1 (Legacy)	282-352	Deep	1,605	2.75	22,600	1.48E-02	29,900	3.1E-03	39,500	n/a
							25,600	n/a	11,600	n/a
							11,400	n/a		
Monitoring Well 11 (UWI 1A)	280-330	Deep	2,405	5.68	16,200	8.95E-04	14,600	5.5E-04	14,200	n/a
							21,500	n/a	10,500	n/a
									11,400	n/a
Monitoring Well 12 (UWI 1B)	400-500	Deep	2,405	5.51	16,400	9.84E-04	14,900	5.5E-04	15,400	n/a
							20,900	n/a	10,200	n/a
									11,300	n/a
Monitoring Well 6 (Ricks Well)	234-395	Deep	3,340	1.09	Limited data, no analysis preformed					
Monitoring Well 4 (QCR Well 4)	235-260	Deep	6,277	n/a	Observed water level change is not a response to aquifer test					
Monitoring Well 9 (Strata 1A)	10-15	Shallow	3,450	n/a	No observed water level change					
Monitoring Well 10 (Strata 1B)	45-55	Shallow	3,425	n/a	Observed water level change is not a response to aquifer test					
Range of Transmissivity Estimates: 34,600 - 8,900 ft^2/ft										
Range of Storativity Estimates: 1.48×10^{-2} - 9.84×10^{-4}										

Table 3: Summary of aquifer-test results.

T (ft^2/day)	S	Annual Volume (acre-feet)	Average Discharge to Meet Annual Volume (gpm)	Drawdown at 1400 feet (ft)	Drawdown at 3500 feet (ft)	Drawdown at 1 mile	Drawdown at 2 miles
20000	0.001	1000	620	4.3	3.4	3.0	2.4
20000	0.001	2000	1240	8.6	6.8	6.1	4.7
20000	0.001	4000	2480	17.2	13.7	12.1	9.5
20000	0.001	6400	3995	27.5	21.9	19.4	15.2

T (ft^2/day)	S	Annual Volume (acre-feet)	Average Discharge to Meet Annual Volume (gpm)	Drawdown at 1400 feet (ft)	Drawdown at 3500 feet (ft)	Drawdown at 5280 feet (ft)	Drawdown at 10560 feet (ft)
10000	0.001	1000	620	7.9	6.3	5.1	4.1
10000	0.001	2000	1240	15.8	12.5	10.1	8.2
10000	0.001	4000	2480	31.7	25.1	20.3	16.4
10000	0.001	6400	3995	51.0	40.4	32.7	26.3

T (ft^2/day)	S	Annual Volume (acre-feet)	Average Discharge to Meet Annual Volume (gpm)	Drawdown at 1400 feet (ft)	Drawdown at 3500 feet (ft)	Drawdown at 5280 feet (ft)	Drawdown at 10560 feet (ft)
20000	0.0001	1000	620	5.4	4.5	4.1	3.5
20000	0.0001	2000	1240	10.8	9 9.1	8.2 7.9	6.9
20000	0.0001	4000	2480	21.5	18 18.1	16.5	13.8 13.9
20000	0.0001	6400	3995	34.4 34.5	28.9	26.4	22.2

T (ft^2/day)	S	Annual Volume (acre-feet)	Average Discharge to Meet Annual Volume (gpm)	Drawdown at 1400 feet (ft)	Drawdown at 3500 feet (ft)	Drawdown at 5280 feet (ft)	Drawdown at 10560 feet (ft)
10000	0.0001	1000	620	10.1	8.5	7.6 7.3	6.3
10000	0.0001	2000	1240	20.2	16.7 16.9	15.2 14.5	12.5
10000	0.0001	4000	2480	40.4	33.8	30.3 29.0	25.1
10000	0.0001	6400	3995	64.6 65.1	53.5 54.5	48.5 46.8	40.1 40.4

Note:
Reasonably-anticipated pumping rates highlighted in blue.
Recharge is excluded in these estimates.

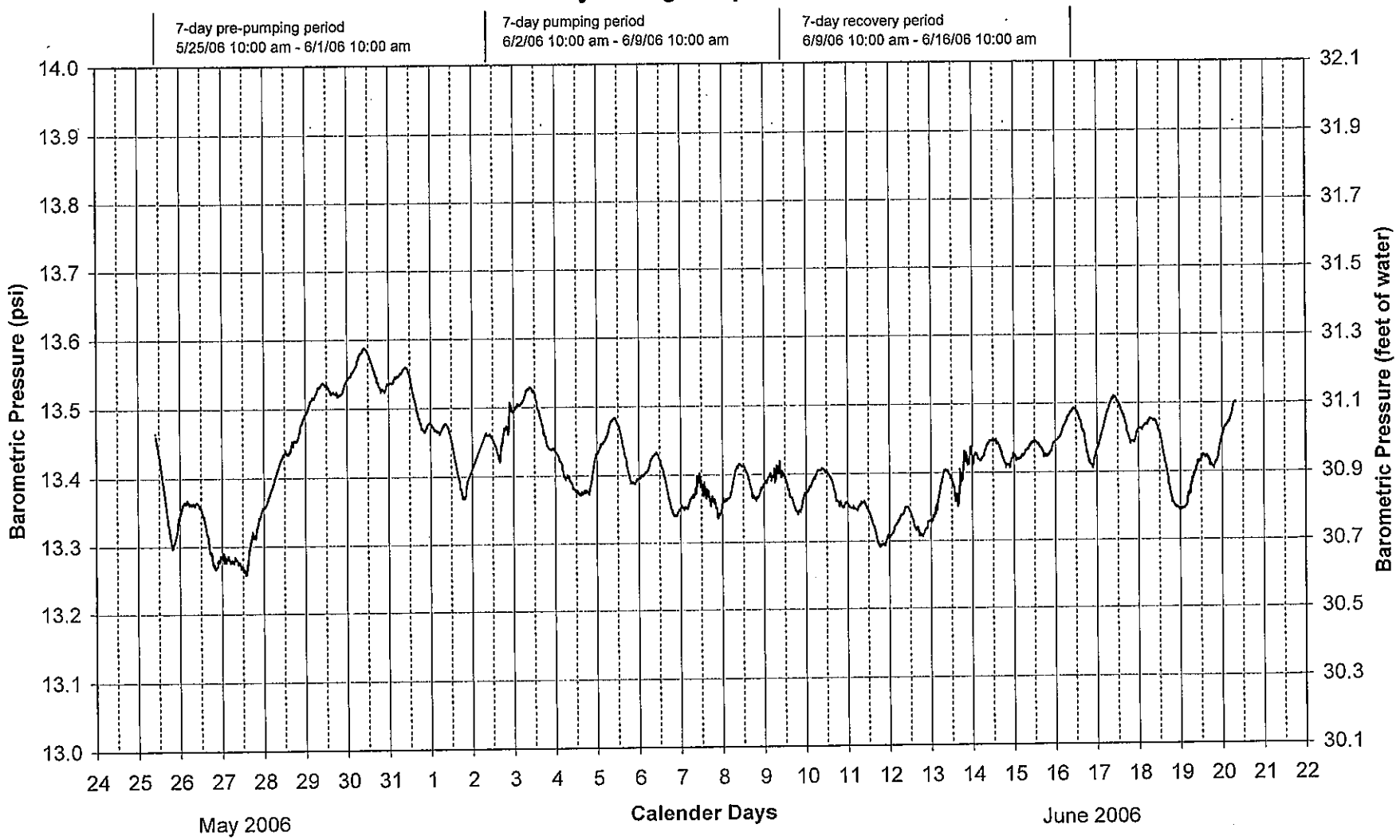
Table 4: Theis (1935) estimates of drawdown at various rates and at various distances from pumping well after 365 days of continuous pumping.

APPENDIX C: HYDROGRAPHS AND CURVE-MATCHING PLOTS

Appendix C.1

BAROMETRIC PRESSURE MONITORING

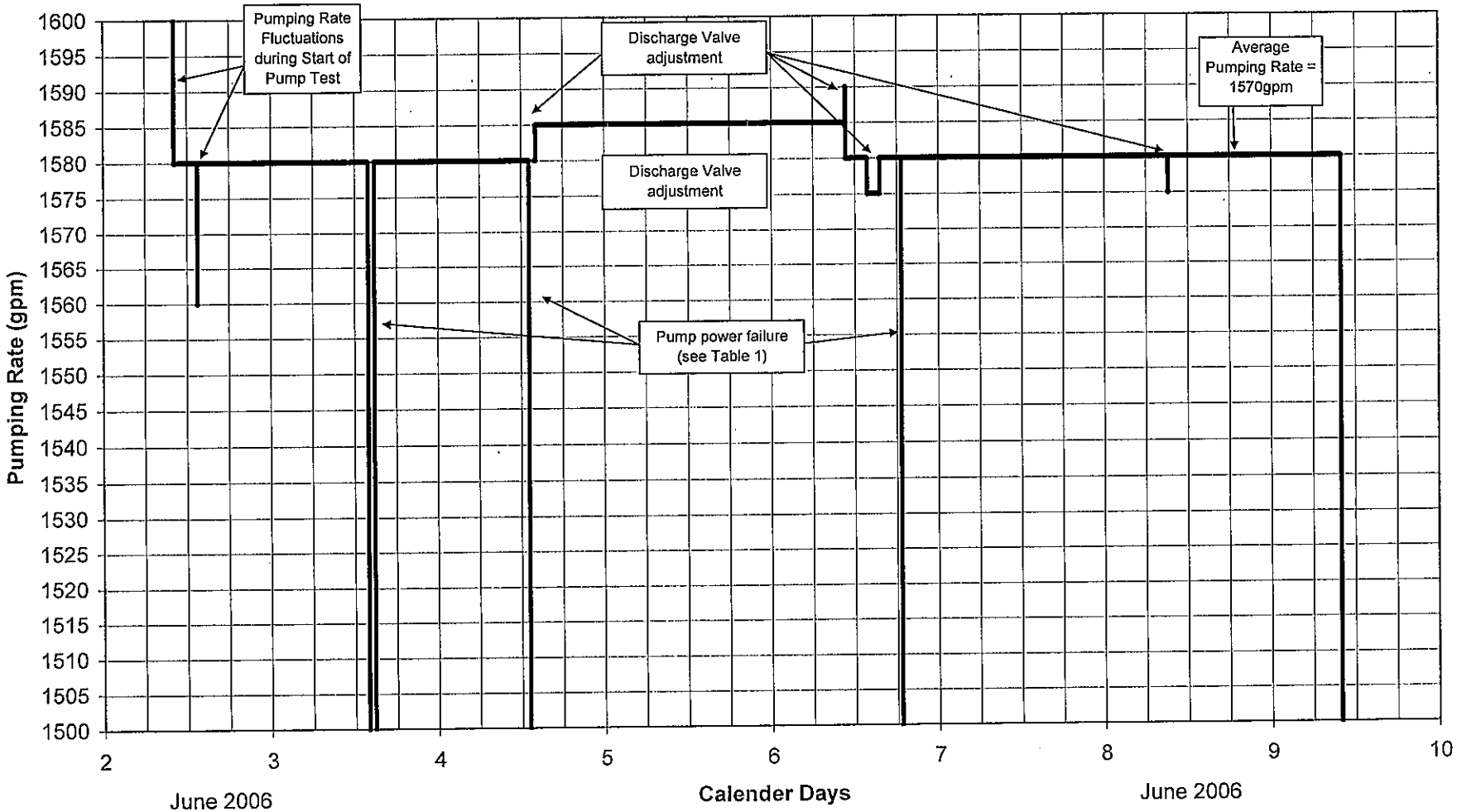
Barometric Presures Monitoring
Located at Test Well No. 2 (Eaglefield)
City of Eagle Aquifer Test



Appendix C.2

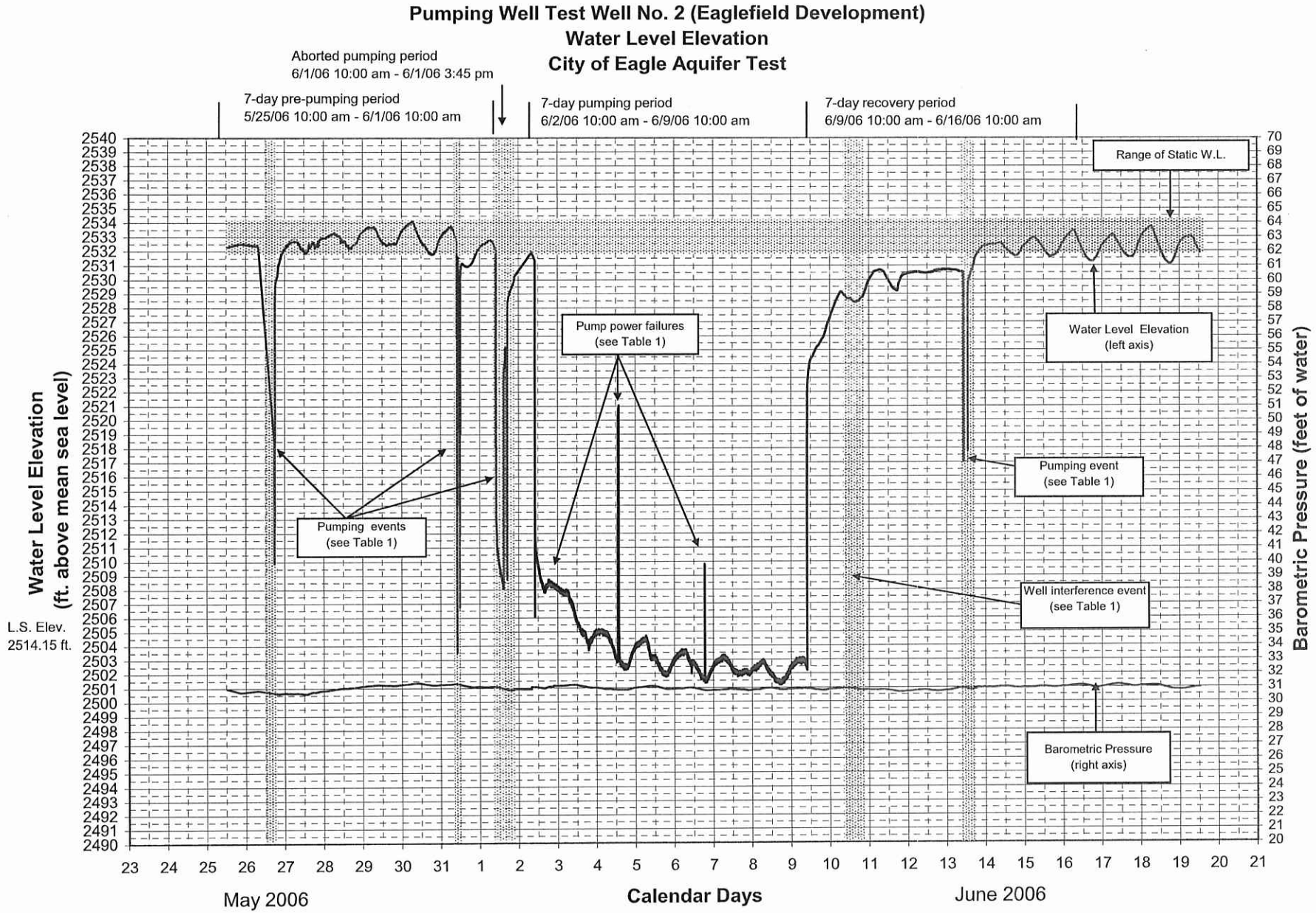
PUMP DISCHARGE MONITORING

Pumping Well (Test Well No. 2)
Pump Discharge During Aquifer Test
City of Eagle Aquifer Test



Appendix C.3

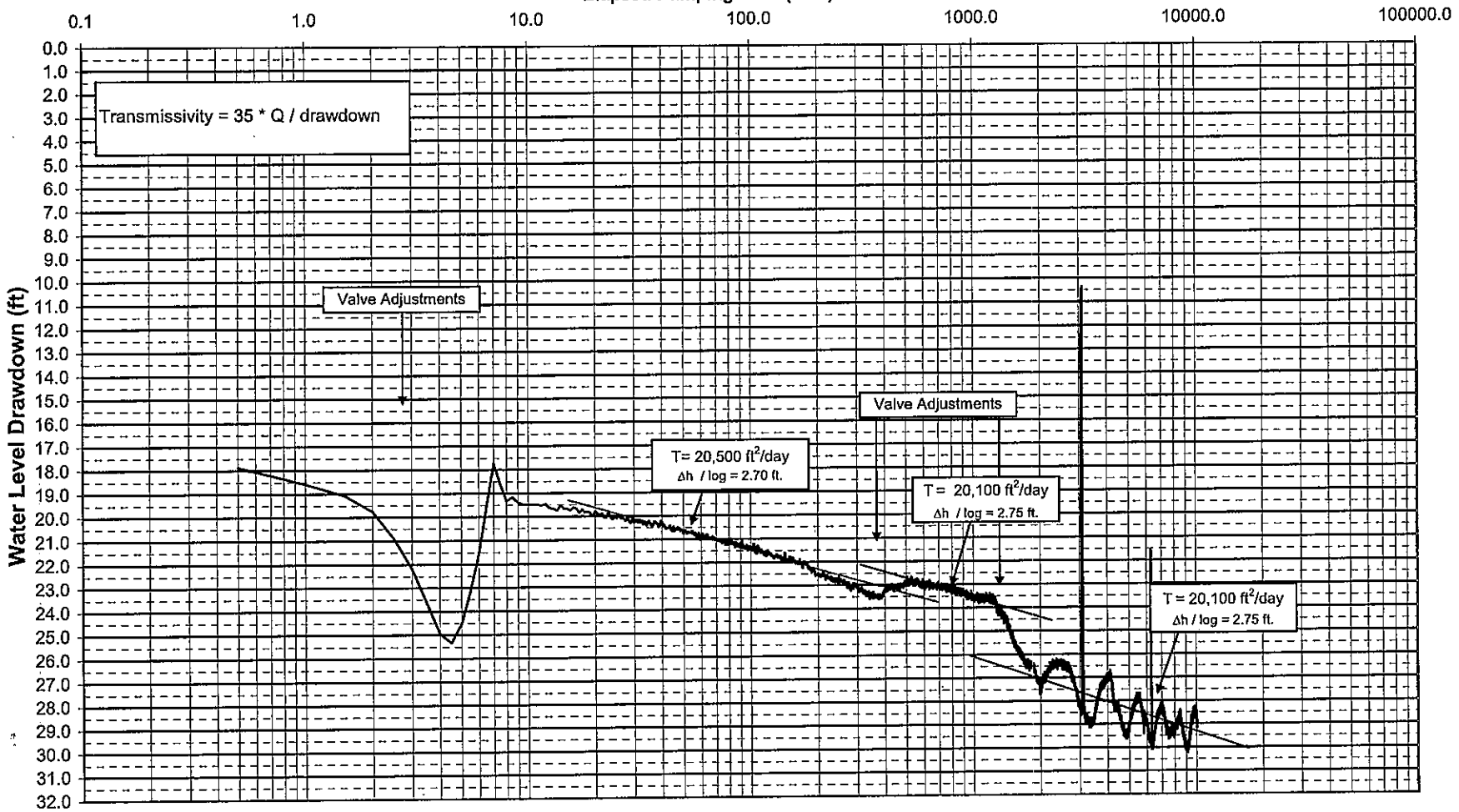
TEST WELL 2 (Eaglefield)(Pumping Well)


Pumping Well Test Well No. 2 (Eaglefield Development)
Water Level Elevation
City of Eagle Aquifer Test
Aborted pumping period
6/1/06 10:00 am - 6/1/06 3:45 pm
7-day pre-pumping period
5/25/06 10:00 am - 6/1/06 10:00 am
7-day pumping period
6/2/06 10:00 am - 6/9/06 10:00 am
7-day recovery period
6/9/06 10:00 am - 6/16/06 10:00 am
Range of Static W.L.
Water Level Elevation
(left axis)
Pump power failures
(see Table 1)
Pumping event
(see Table 1)
Pumping events
(see Table 1)
Well interference event
(see Table 1)
Barometric Pressure
(right axis)
Water Level Elevation
(ft. above mean sea level)
Barometric Pressure (feet of water)
L.S. Elev.
2514.15 ft.
May 2006
Calendar Days
June 2006

Pumping Well Test Well No. 2 (Eaglefield Development)
Drawdown Semi-log Plot
City of Eagle Aquifer Test

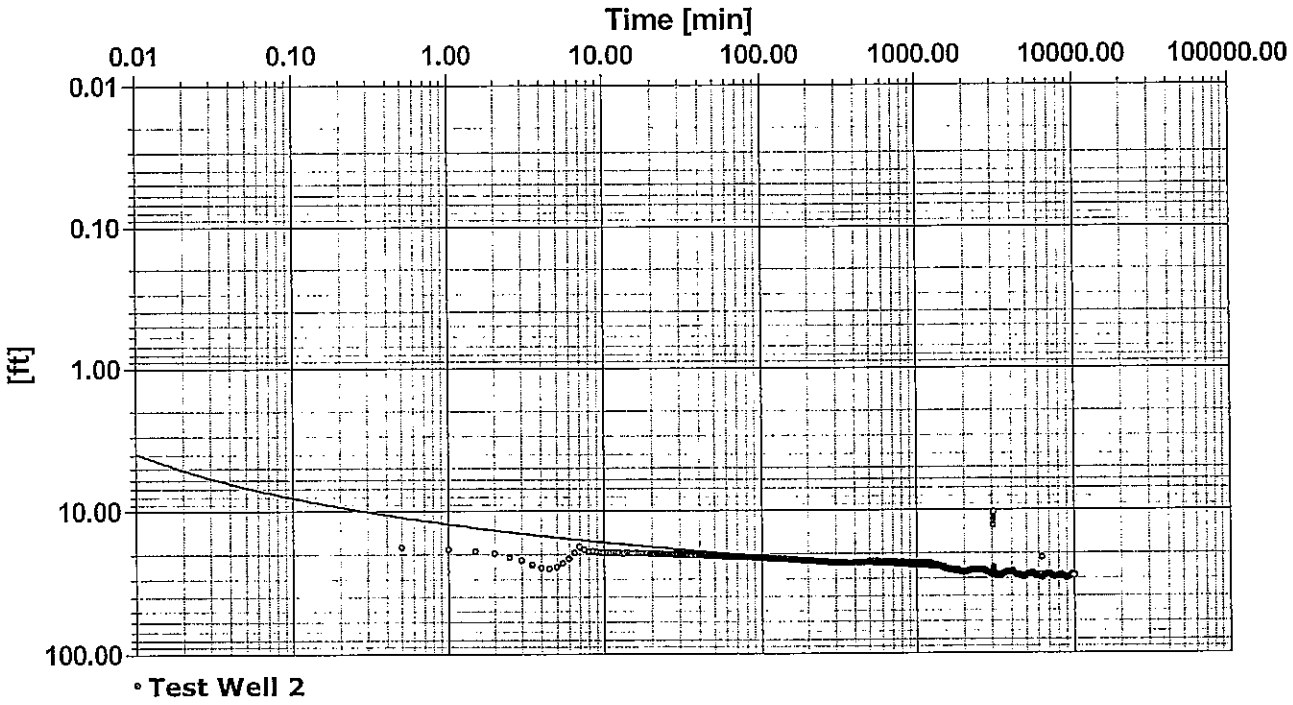
Pumping On 6/2/06 10:00 am
Elapsed pumping time = 0.0 min.

Pump Off 6/9/06 10:00 am
Elapsed pumping time = 10080 min.



Payette, ID **P.O. Box 235** **Main St.** **Holladay Engineering**	**Pumping Test Analysis Report**	
	Project: Eagle 7 Day Aquifer Test	
	Number: EG 061204	
	Client: City of Eagle	

Location: Eagle, Idaho	Pumping Test: 7 Day Aquifer Test	Pumping well: Test Well 2
Test conducted by: Holladay Engineering		Test date: 6/2/2006
Analysis performed by:	Test well 2 Theis	Date: 1/17/2007
Aquifer Thickness: 100.00 ft	Discharge: variable, average rate 1569.2 [U.S. gal/min]	



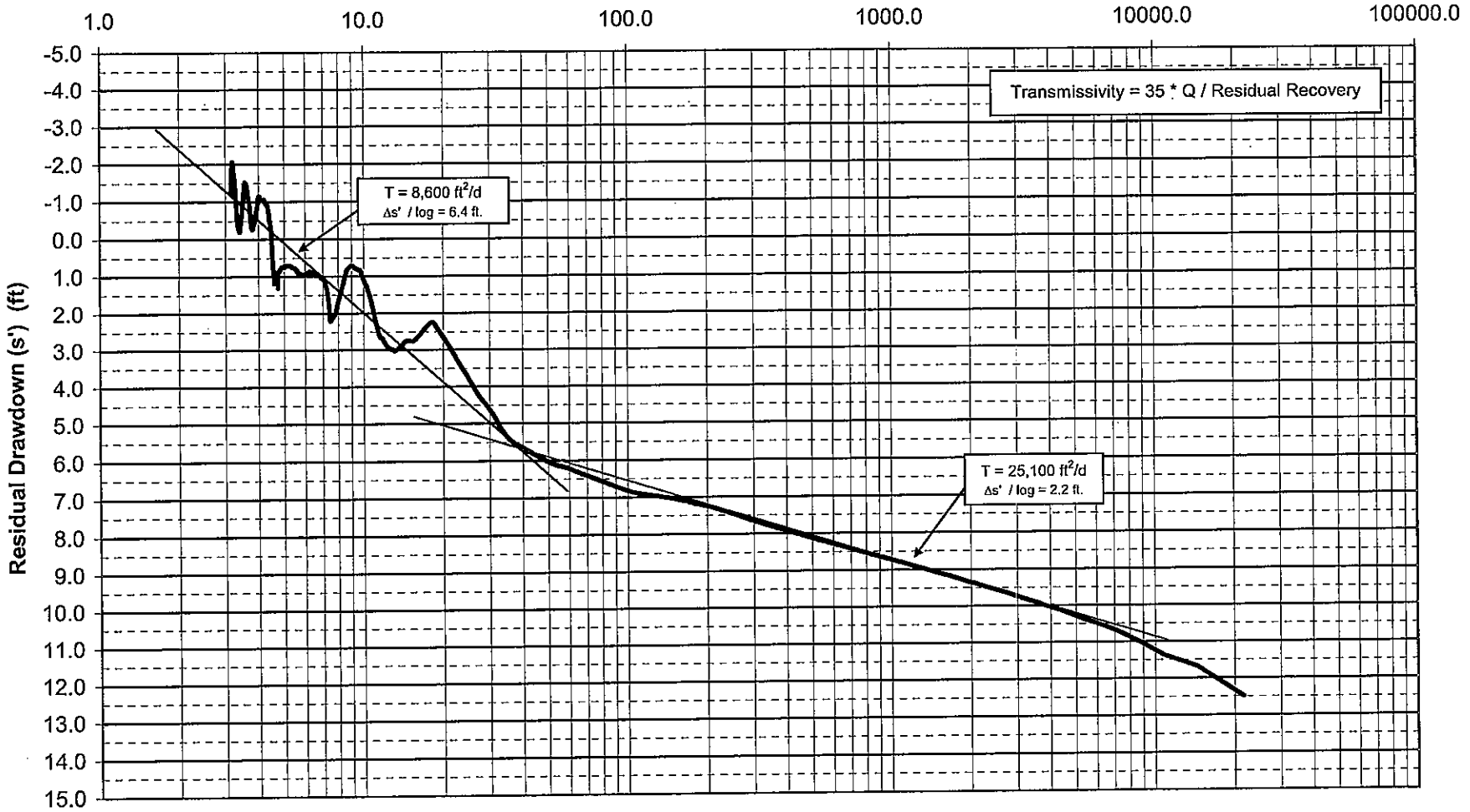
Calculation after Theis

Observation well	Transmissivity [ft²/d]			Radial distance to PW [ft]	
Test Well 2	1.30×10^4			0.5	

Test Well No. 2 (Eaglefield) Theis Analysis of Drawdown Data

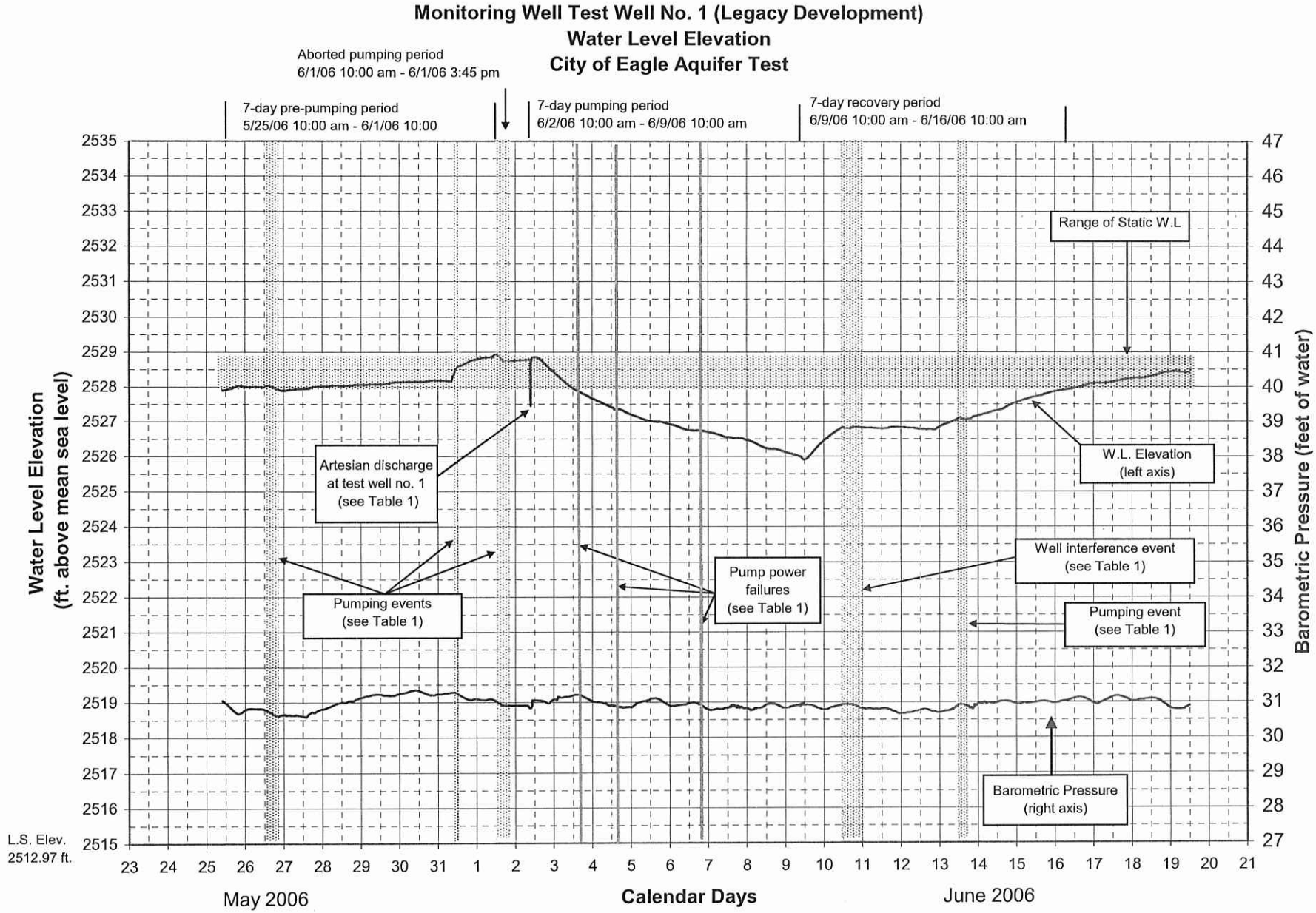
Notes: The Theis curve fit is an automatic fit for the entire data set.

Pumping Well Test Well No. 2 (Eaglefield Development)
Water Level Recovery Semi-log Plot
City of Eagle Aquifer Test



Appendix C.4

TEST WELL 1 (Legacy)


Monitoring Well Test Well No. 1 (Legacy Development)
Water Level Elevation
City of Eagle Aquifer Test
Aborted pumping period
6/1/06 10:00 am - 6/1/06 3:45 pm
7-day pre-pumping period
5/25/06 10:00 am - 6/1/06 10:00
7-day pumping period
6/2/06 10:00 am - 6/9/06 10:00 am
7-day recovery period
6/9/06 10:00 am - 6/16/06 10:00 am
Range of Static W.L
W.L. Elevation
(left axis)
Artesian discharge
at test well no. 1
(see Table 1)
Pumping events
(see Table 1)
Pump power
failures
(see Table 1)
Well interference event
(see Table 1)
Pumping event
(see Table 1)
Barometric Pressure
(right axis)
Water Level Elevation
(ft. above mean sea level)
Barometric Pressure (feet of water)
L.S. Elev.
2512.97 ft.
2535
2534
2533
2532
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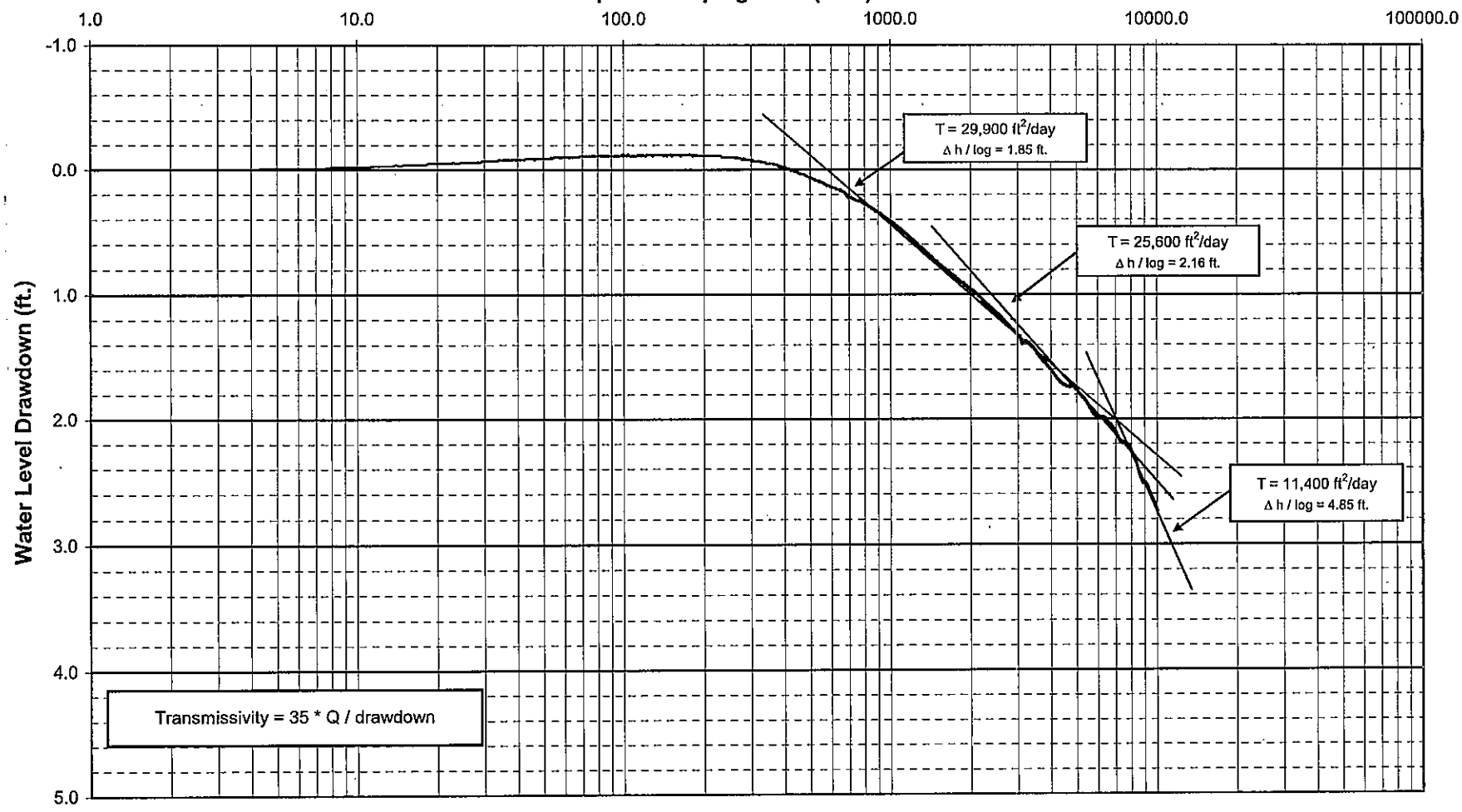
30
29
28
27
23 24 25 26 27 28 29 30 31 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
May 2006
Calendar Days
June 2006

Monitoring Well Test Well No. 1 (Legacy Development)
Water Level Drawdown Semi-log Plot
City of Eagle Aquifer Test

Pumping On 6/2/06 10:00 am
Elapsed pumping time = 0.0 min.

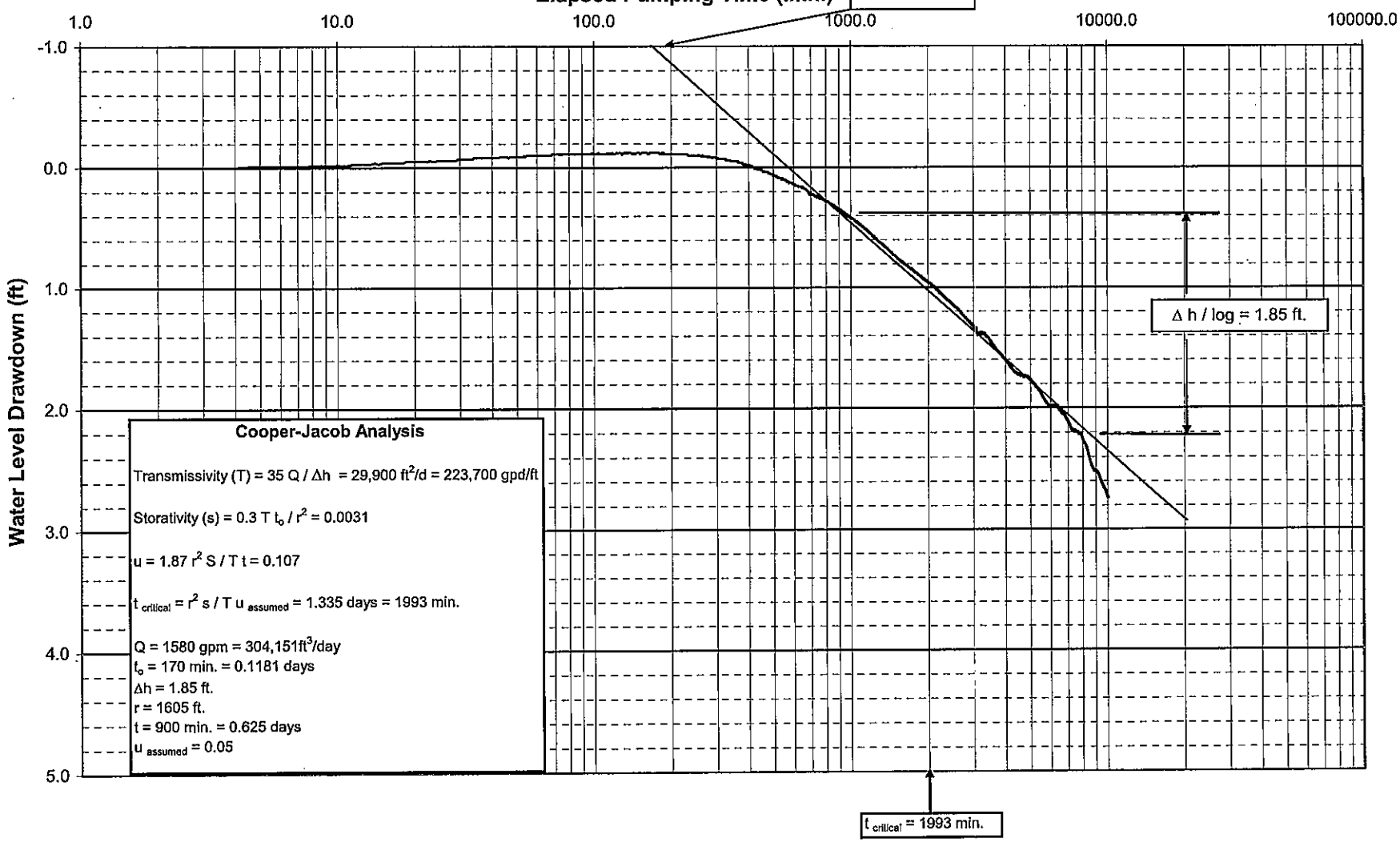
Pump Off 6/9/06 10:00 am
Elapsed pumping time = 10080 min.



Monitoring Well Test Well No. 1 (Legacy Development)
Cooper-Jacob Analysis
Water Level Drawdown Semi-log Plot
City of Eagle Aquifer Test

Pumping On 6/2/06 10:00 am
Elapsed pumping time = 0.0 min.

Pump Off 6/9/06 10:00 am
Elapsed pumping time = 10080 min.



Cooper-Jacob Analysis

Transmissivity (T) = 35 Q / Δh = 29,900 ft^2/d = 223,700 gpd/ft

Storativity (s) = 0.3 T t_o / r^2 = 0.0031

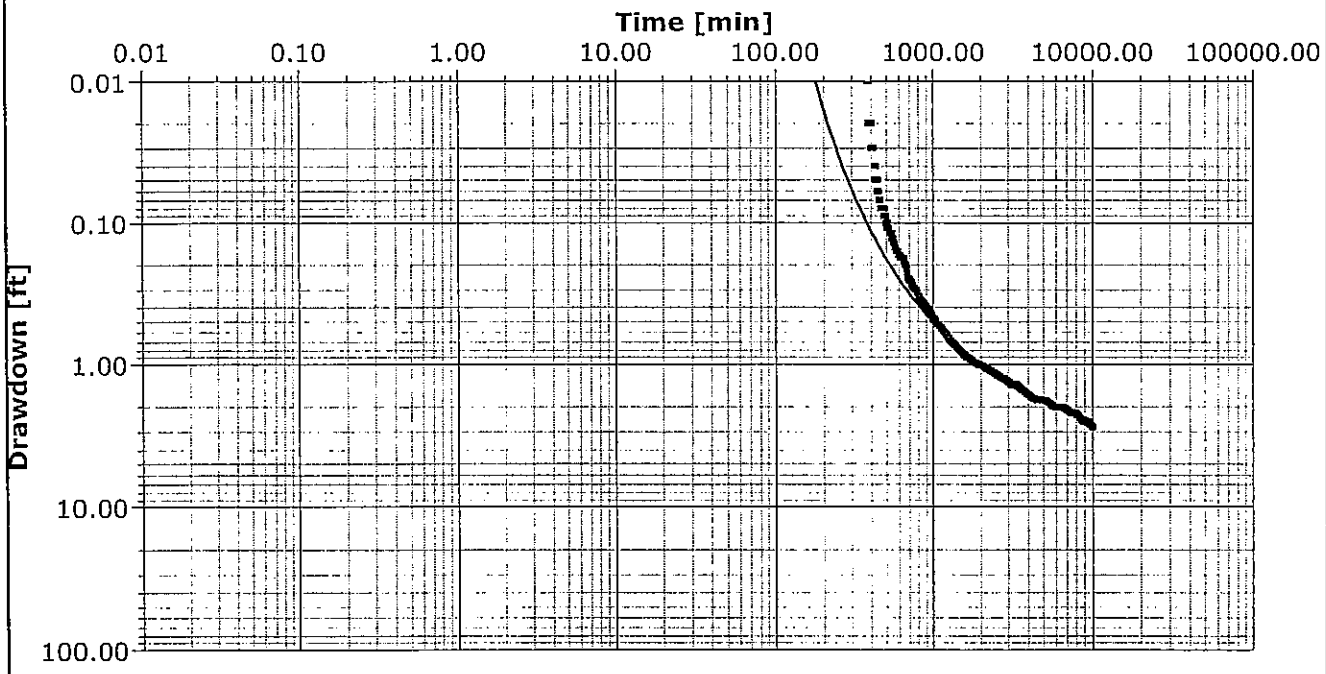
u = 1.87 r^2 S / T t = 0.107

$t_{critical}$ = r^2 s / T $u_{assumed}$ = 1.335 days = 1993 min.

Q = 1580 gpm = 304,151ft^3/day
t_o = 170 min. = 0.1181 days
Δh = 1.85 ft.
r = 1605 ft.
t = 900 min. = 0.625 days
$u_{assumed}$ = 0.05

Payette, ID P.O. Box 235 Main St. Holladay Engineering	Pumping Test Analysis Report
	Project: Eagle 7 Day Aquifer Test
	Number: EG 061204
	Client: City of Eagle

Location: Eagle, Idaho	Pumping Test: 7 Day Aquifer Test	Pumping well: Test Well 2
Test conducted by: Holladay Engineering		Test date: 6/2/2006
Analysis performed by:	Test Well 1 Theis	Date: 1/16/2007
Aquifer Thickness: 100.00 ft	Discharge: variable, average rate 1569.2 [U.S. gal/min]	



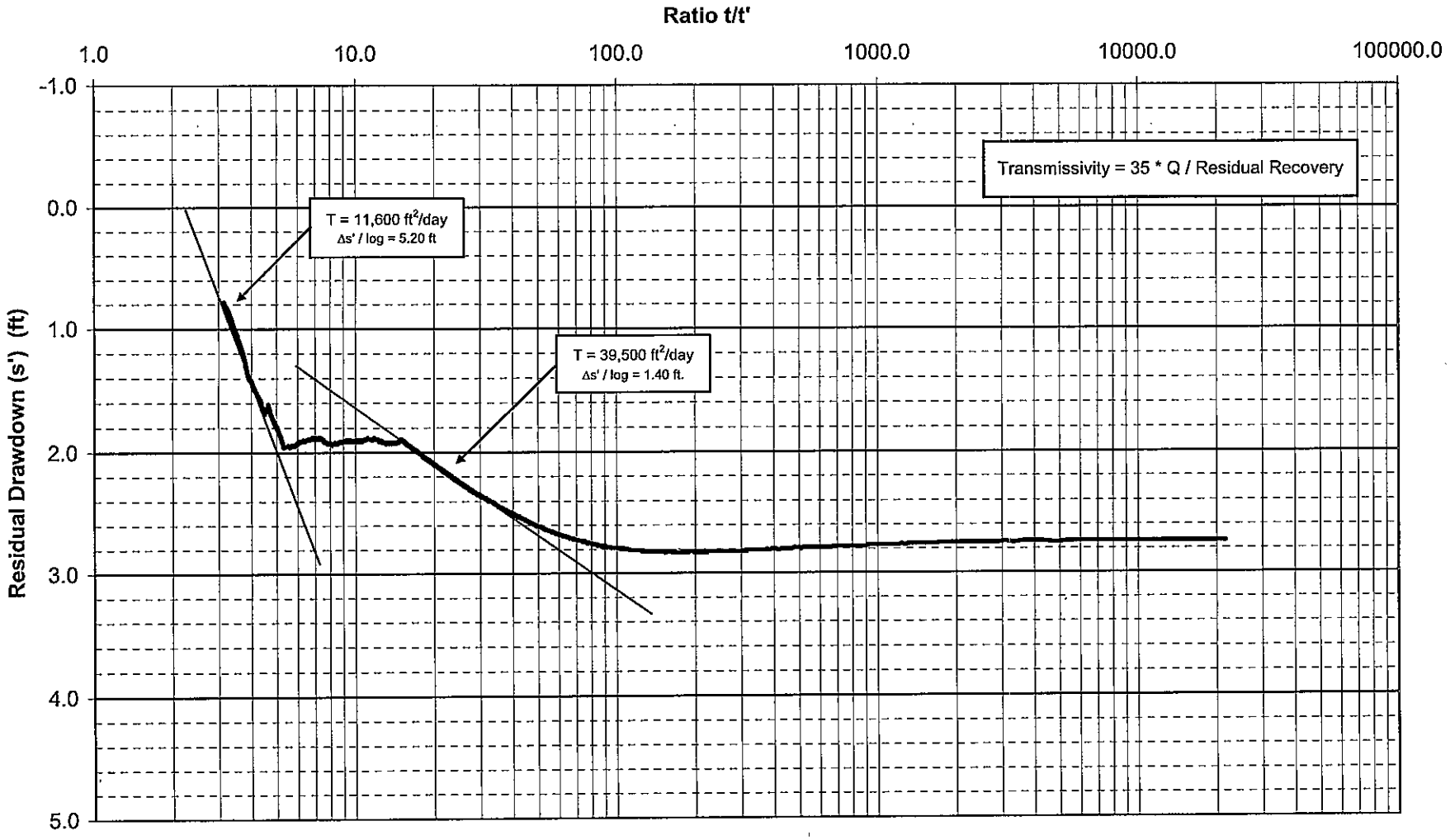
Calculation after Theis

Observation well	Transmissivity [ft²/d]		Storage coefficient	Radial distance to PW [ft]	
Test Well 1	2.26×10^{4}		1.41×10^{-2}	1604.58	

Test Well No. 1 (Legacy) Theis Analysis of Drawdown Data

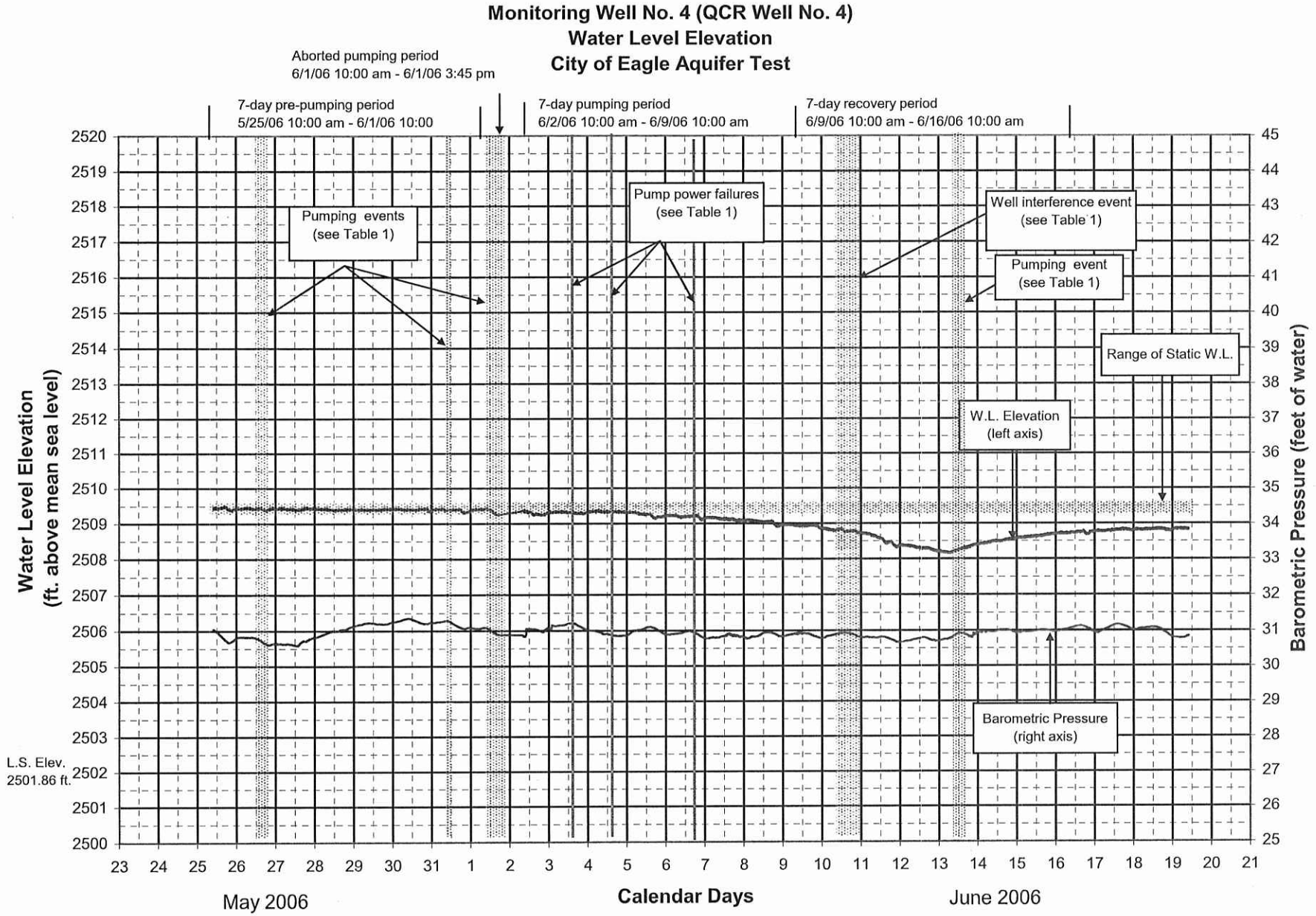
Notes: The Theis curve fit is an automatic fit for a portion of the data set (0-8000min). Data points (8000-10080min) were excluded from the analysis.

Monitoring Well Test Well No. 1 (Legacy Development)
Water Level Recovery Semi-log Plot
City of Eagle Aquifer Test



Appendix C.5

MONITORING WELL 4 (QCR 4)


Monitoring Well No. 4 (QCR Well No. 4)
Water Level Elevation
City of Eagle Aquifer Test
Aborted pumping period
6/1/06 10:00 am - 6/1/06 3:45 pm
7-day pre-pumping period
5/25/06 10:00 am - 6/1/06 10:00
7-day pumping period
6/2/06 10:00 am - 6/9/06 10:00 am
7-day recovery period
6/9/06 10:00 am - 6/16/06 10:00 am
Pumping events
(see Table 1)
Pump power failures
(see Table 1)
Well interference event
(see Table 1)
Pumping event
(see Table 1)
Range of Static W.L.
W.L. Elevation
(left axis)
Barometric Pressure
(right axis)
L.S. Elev.
2501.86 ft.
Water Level Elevation
(ft. above mean sea level)
Barometric Pressure (feet of water)
2520
2519
2518
2517
2516
2515
2514
2513
2512
2511
2510
2509
2508
2507
2506
2505
2504
2503
2502
2501
2500
45
44
43
42
41
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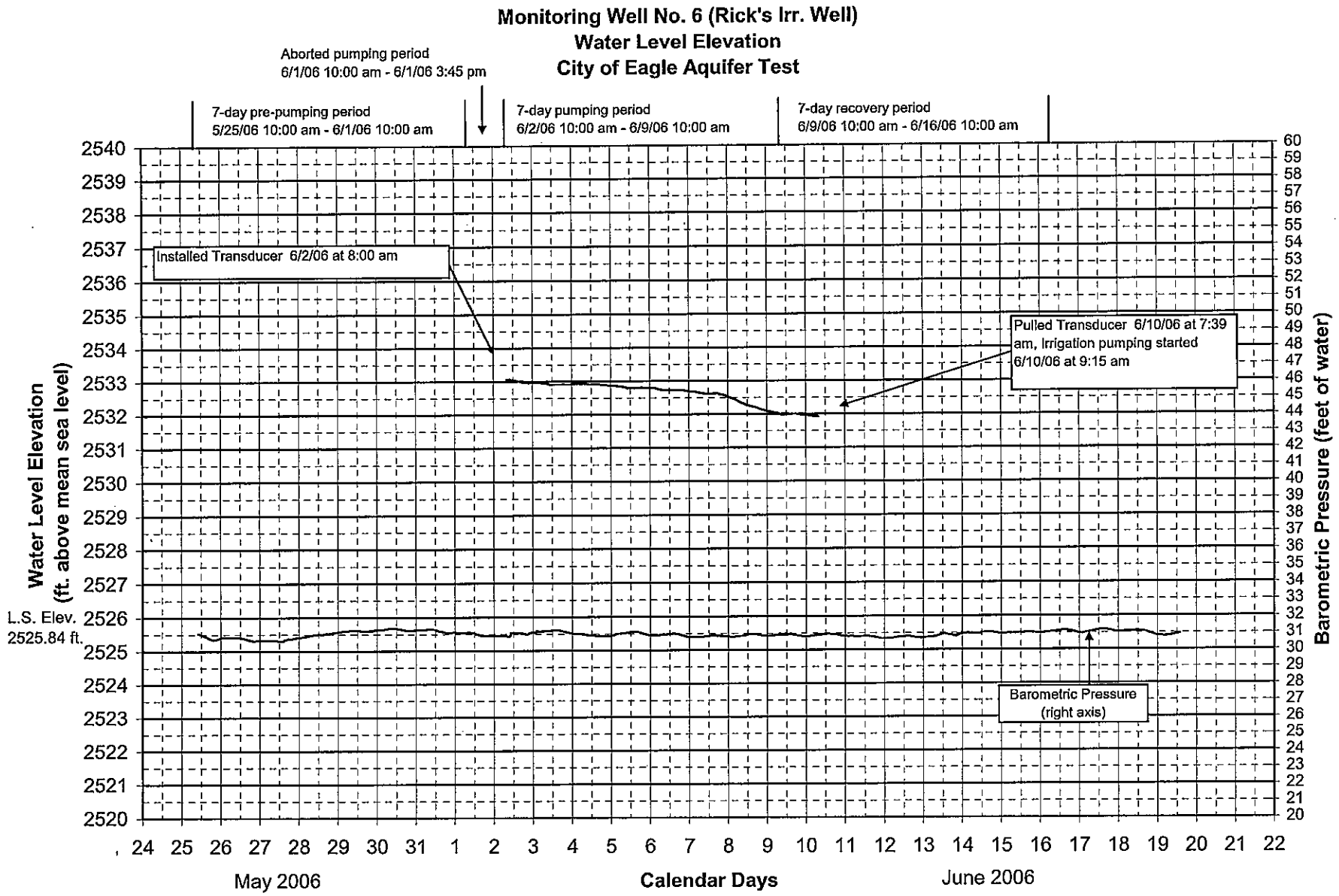
23 24 25 26 27 28 29 30 31 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
May 2006
Calendar Days
June 2006

Appendix C.6

MONITORING WELL 6 (Rick's)


Monitoring Well No. 6 (Rick's Irr. Well)
Water Level Elevation
City of Eagle Aquifer Test
Aborted pumping period
6/1/06 10:00 am - 6/1/06 3:45 pm
7-day pre-pumping period
5/25/06 10:00 am - 6/1/06 10:00 am
7-day pumping period
6/2/06 10:00 am - 6/9/06 10:00 am
7-day recovery period
6/9/06 10:00 am - 6/16/06 10:00 am
Installed Transducer 6/2/06 at 8:00 am
Pulled Transducer 6/10/06 at 7:39 am, Irrigation pumping started 6/10/06 at 9:15 am
Barometric Pressure (right axis)
L.S. Elev. 2525.84 ft.
Water Level Elevation (ft. above mean sea level)
Barometric Pressure (feet of water)
2540
2539
2538
2537
2536
2535
2534
2533
2532
2531
2530
2529
2528
2527
2526
2525
2524
2523
2522
2521
2520
60
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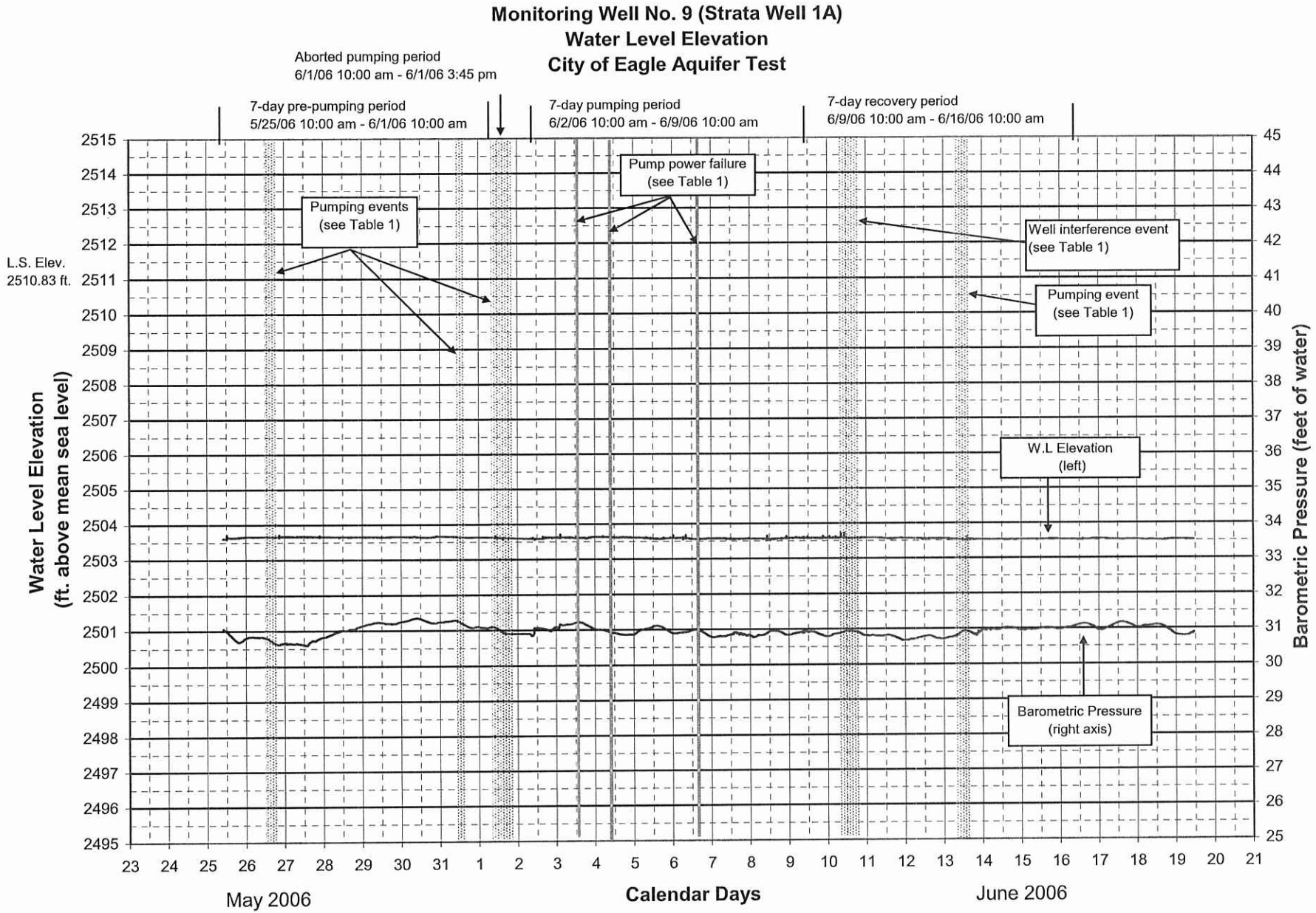
24 25 26 27 28 29 30 31 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22
May 2006
Calendar Days
June 2006

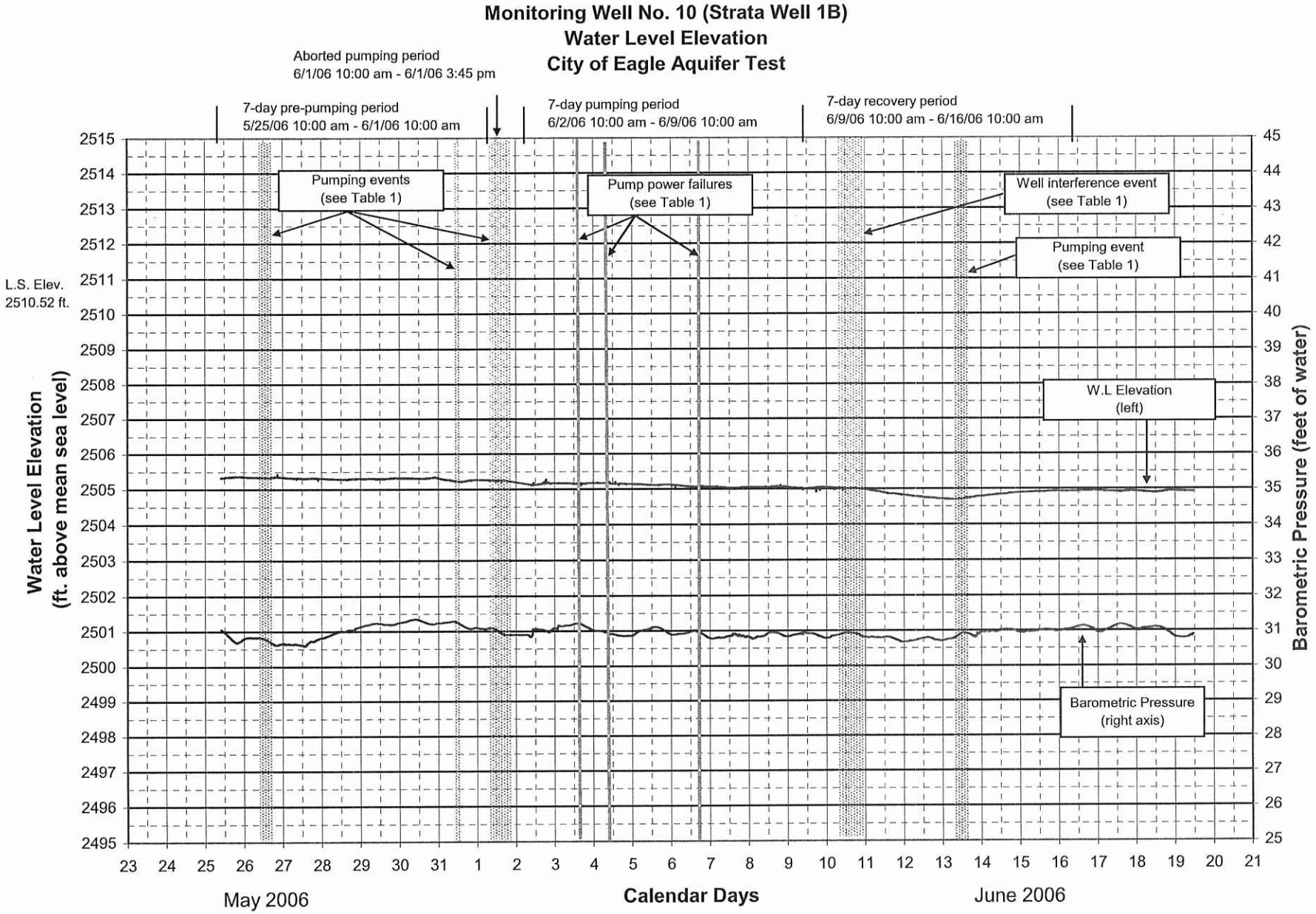
Appendix C.7

MONITORING WELL 9 (Strata 1A)


Monitoring Well No. 9 (Strata Well 1A)
Water Level Elevation
City of Eagle Aquifer Test
Aborted pumping period
6/1/06 10:00 am - 6/1/06 3:45 pm
7-day pre-pumping period
5/25/06 10:00 am - 6/1/06 10:00 am
7-day pumping period
6/2/06 10:00 am - 6/9/06 10:00 am
7-day recovery period
6/9/06 10:00 am - 6/16/06 10:00 am
Pump power failure
(see Table 1)
Pumping events
(see Table 1)
Well interference event
(see Table 1)
Pumping event
(see Table 1)
W.L Elevation
(left)
Barometric Pressure
(right axis)
L.S. Elev.
2510.83 ft.
Water Level Elevation
(ft. above mean sea level)
Barometric Pressure (feet of water)
Calendar Days
May 2006
June 2006

Appendix C.8

MONITORING WELL 10 (Strata 1B)


Monitoring Well No. 10 (Strata Well 1B)
Water Level Elevation
City of Eagle Aquifer Test
Aborted pumping period
6/1/06 10:00 am - 6/1/06 3:45 pm
7-day pre-pumping period
5/25/06 10:00 am - 6/1/06 10:00 am
7-day pumping period
6/2/06 10:00 am - 6/9/06 10:00 am
7-day recovery period
6/9/06 10:00 am - 6/16/06 10:00 am
Pumping events
(see Table 1)
Pump power failures
(see Table 1)
Well interference event
(see Table 1)
Pumping event
(see Table 1)
W.L Elevation
(left)
Barometric Pressure
(right axis)
L.S. Elev.
2510.52 ft.
Water Level Elevation
(ft. above mean sea level)
Barometric Pressure (feet of water)
2515
2514
2513
2512
2511
2510
2509
2508
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2503
2502
2501
2500
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2498
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2495
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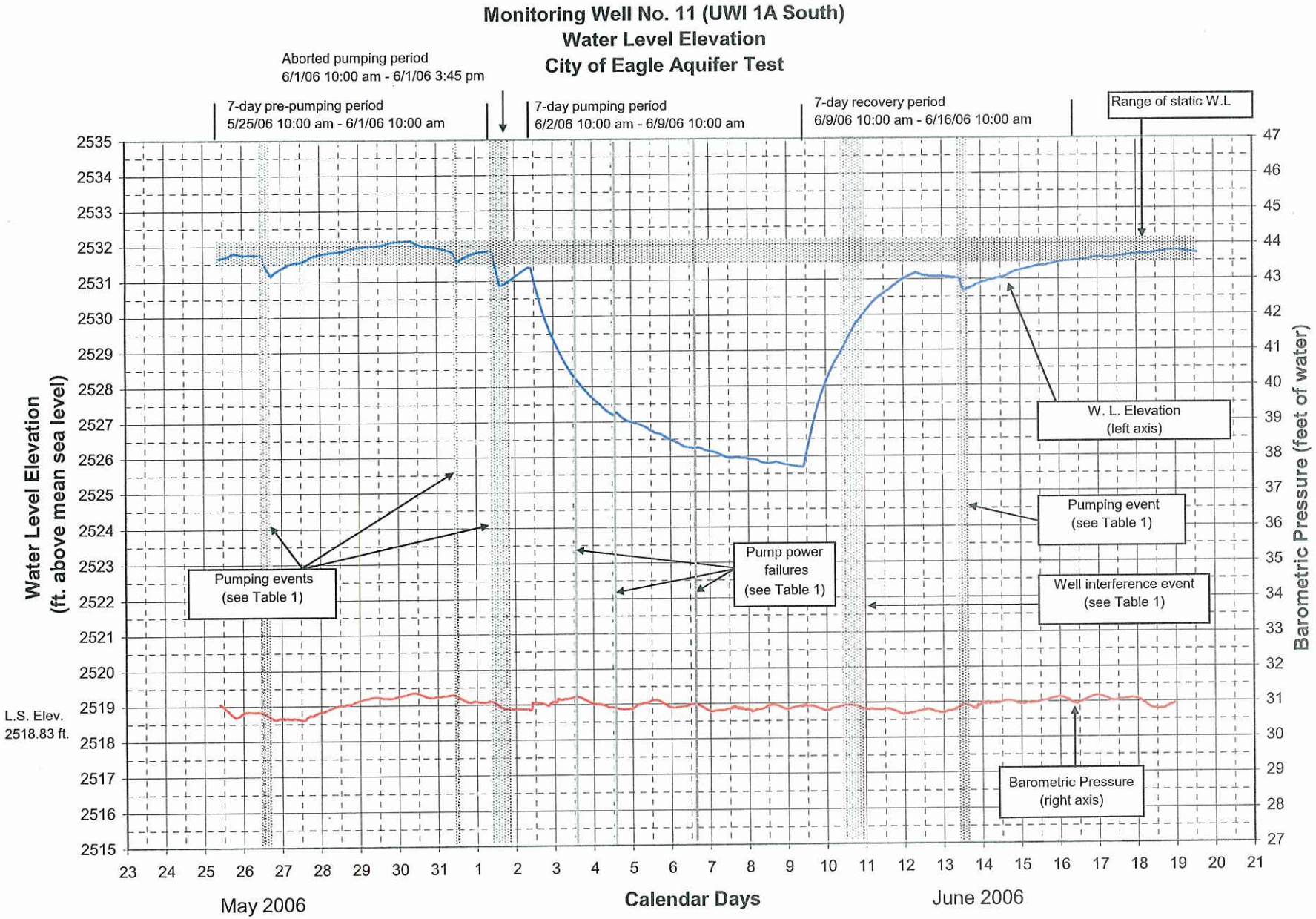
23 24 25 26 27 28 29 30 31 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
May 2006
Calendar Days
June 2006

Appendix C.9

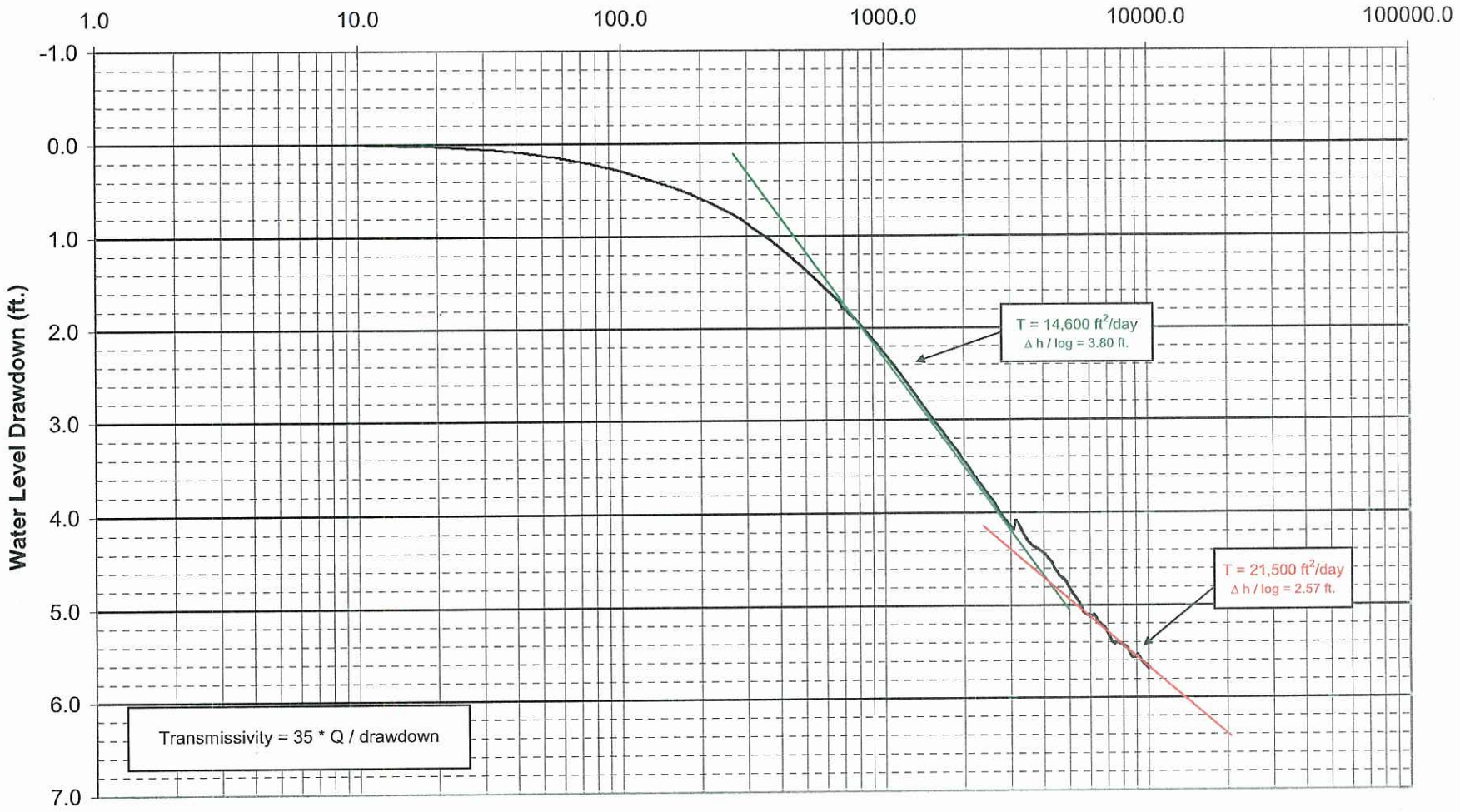
MONITORING WELL 11 (UWI 1A)


Monitoring Well No. 11 (UWI 1A South)
Water Level Elevation
City of Eagle Aquifer Test
Aborted pumping period
6/1/06 10:00 am - 6/1/06 3:45 pm
7-day pre-pumping period
5/25/06 10:00 am - 6/1/06 10:00 am
7-day pumping period
6/2/06 10:00 am - 6/9/06 10:00 am
7-day recovery period
6/9/06 10:00 am - 6/16/06 10:00 am
Range of static W.L
W. L. Elevation
(left axis)
Pumping event
(see Table 1)
Pump power
failures
(see Table 1)
Well interference event
(see Table 1)
Pumping events
(see Table 1)
Barometric Pressure
(right axis)
L.S. Elev.
2518.83 ft.
Water Level Elevation
(ft. above mean sea level)
Barometric Pressure (feet of water)
Calendar Days
May 2006
June 2006

Monitoring Well No. 11 (UWI 1A South)
Water Level Drawdown Semi-log Plot
City of Eagle Aquifer Test

Pumping On 6/2/06 10:00 am
Elapsed pumping time = 0.0 min.

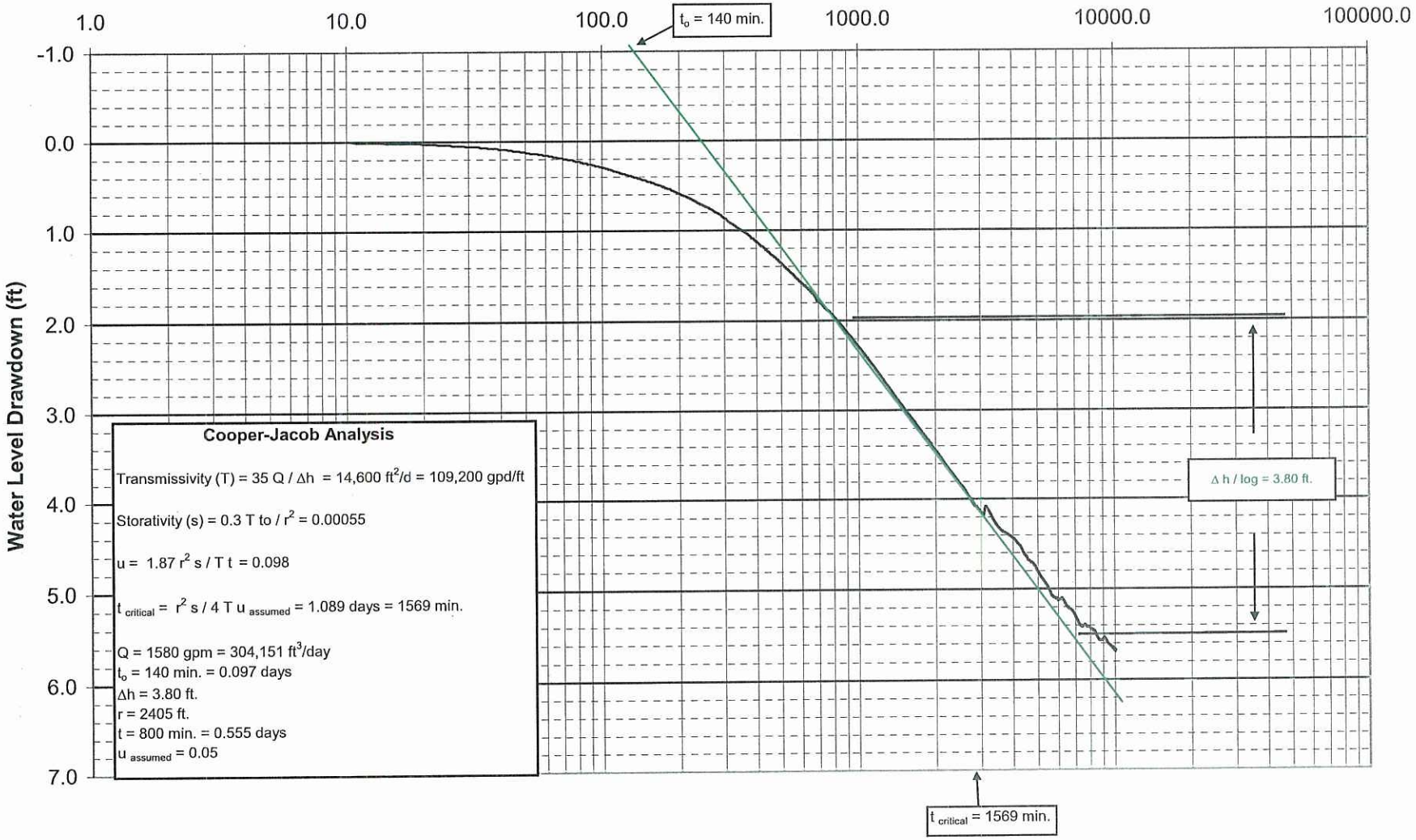
Pump Off 6/9/06 10:00 am
Elapsed pumping time = 10080 min.



Monitoring Well No. 11 (UWI 1A South)
Water Level Drawdown Semi-log Plot
City of Eagle Aquifer Test

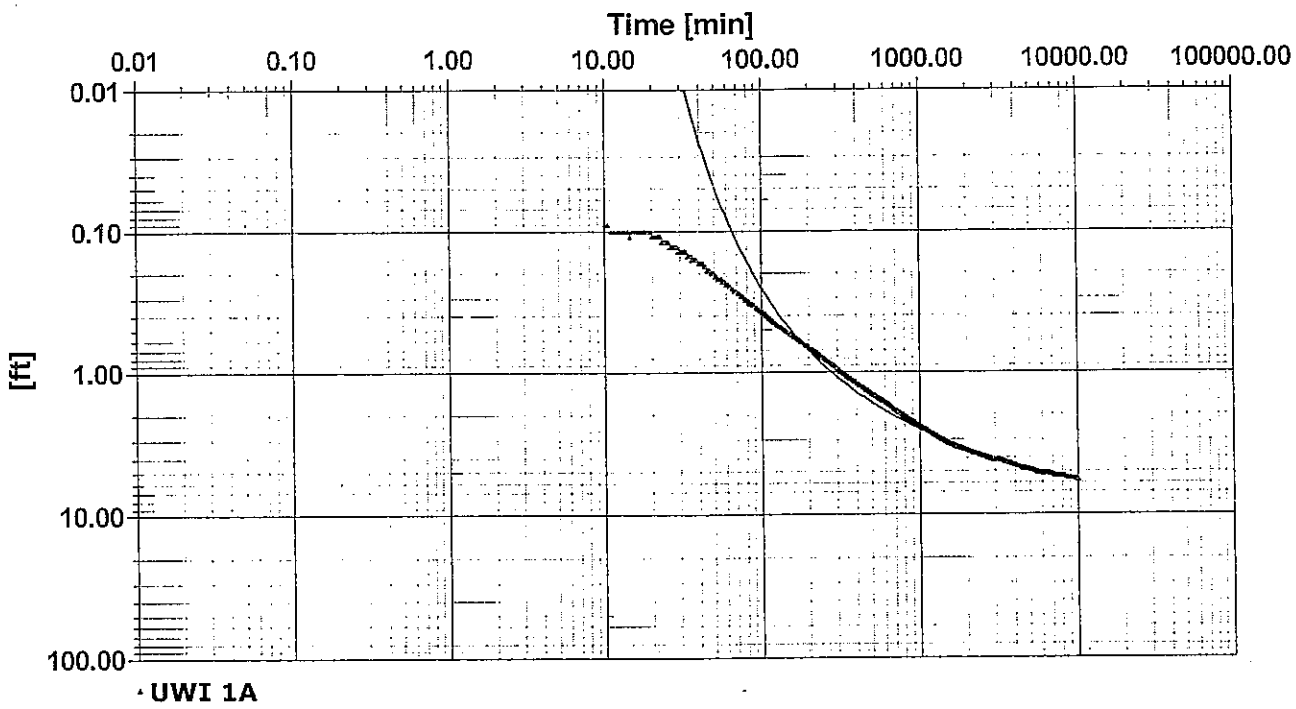
Pumping On 6/2/06 10:00 am
Elapsed pumping time = 0.0 min.

Pump Off 6/9/06 10:00 am
Elapsed pumping time = 10080 min.



Payette, ID P.O. Box 235 Main St. Holladay Engineering	Pumping Test Analysis Report
	Project: Eagle 7 Day Aquifer Test
	Number: EG 061204
	Client: City of Eagle

Location: Eagle, Idaho	Pumping Test: 7 Day Aquifer Test	Pumping well: Test Well 2
Test conducted by: Holladay Engineering		Test date: 6/2/2006
Analysis performed by:	UWI 1A (computer fit)	Date: 1/18/2007
Aquifer Thickness: 100.00 ft	Discharge: variable, average rate 1569.2 [U.S. gal/min]	



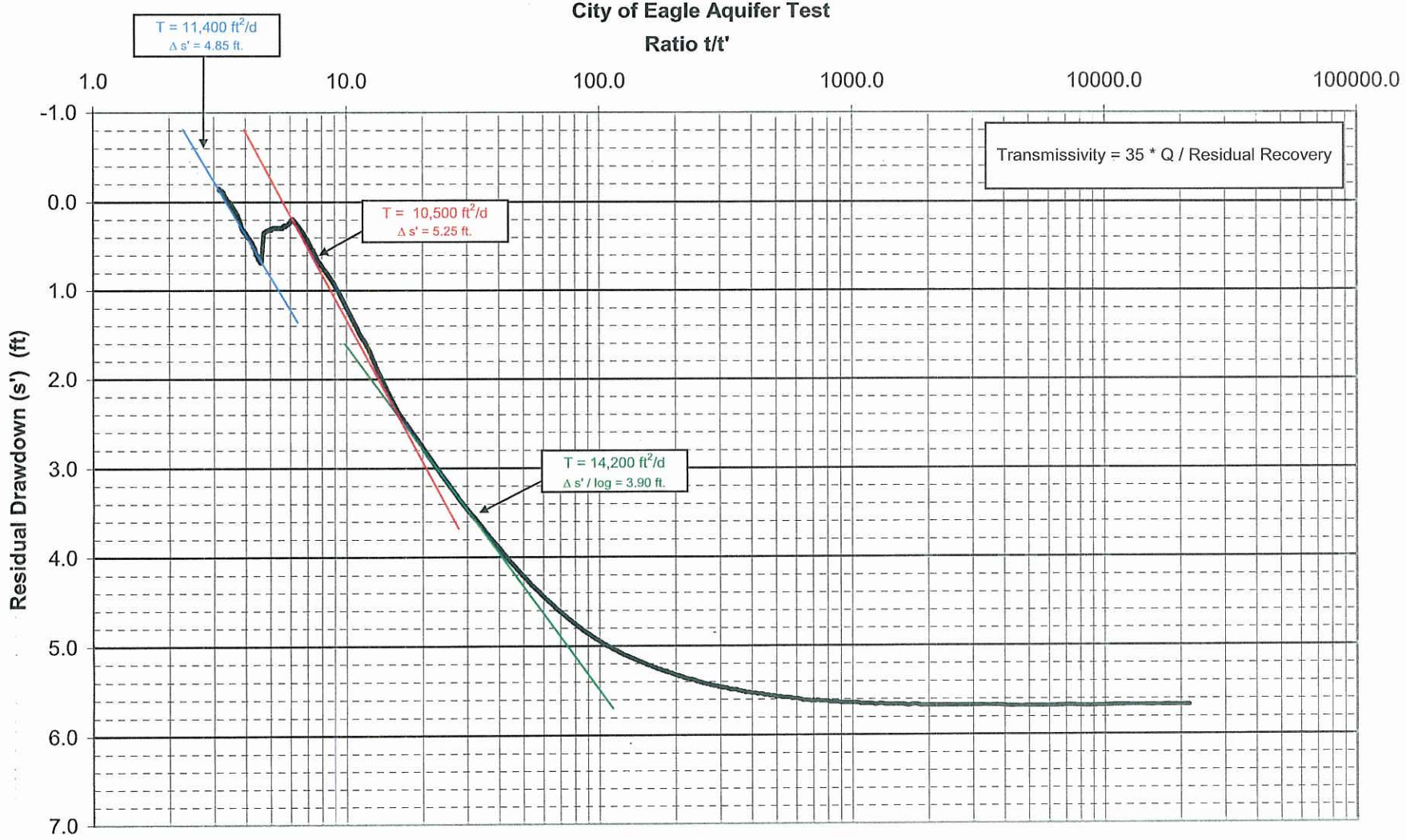
Calculation after Theis

Observation well	Transmissivity [ft²/d]		Storage coefficient	Radial distance to PW [ft]	
UWI 1A	1.62×10^{4}		8.95×10^{-4}	2405.02	

Monitoring Welll 11 (UWI 1A) Theis Analysis of Drawdown Data

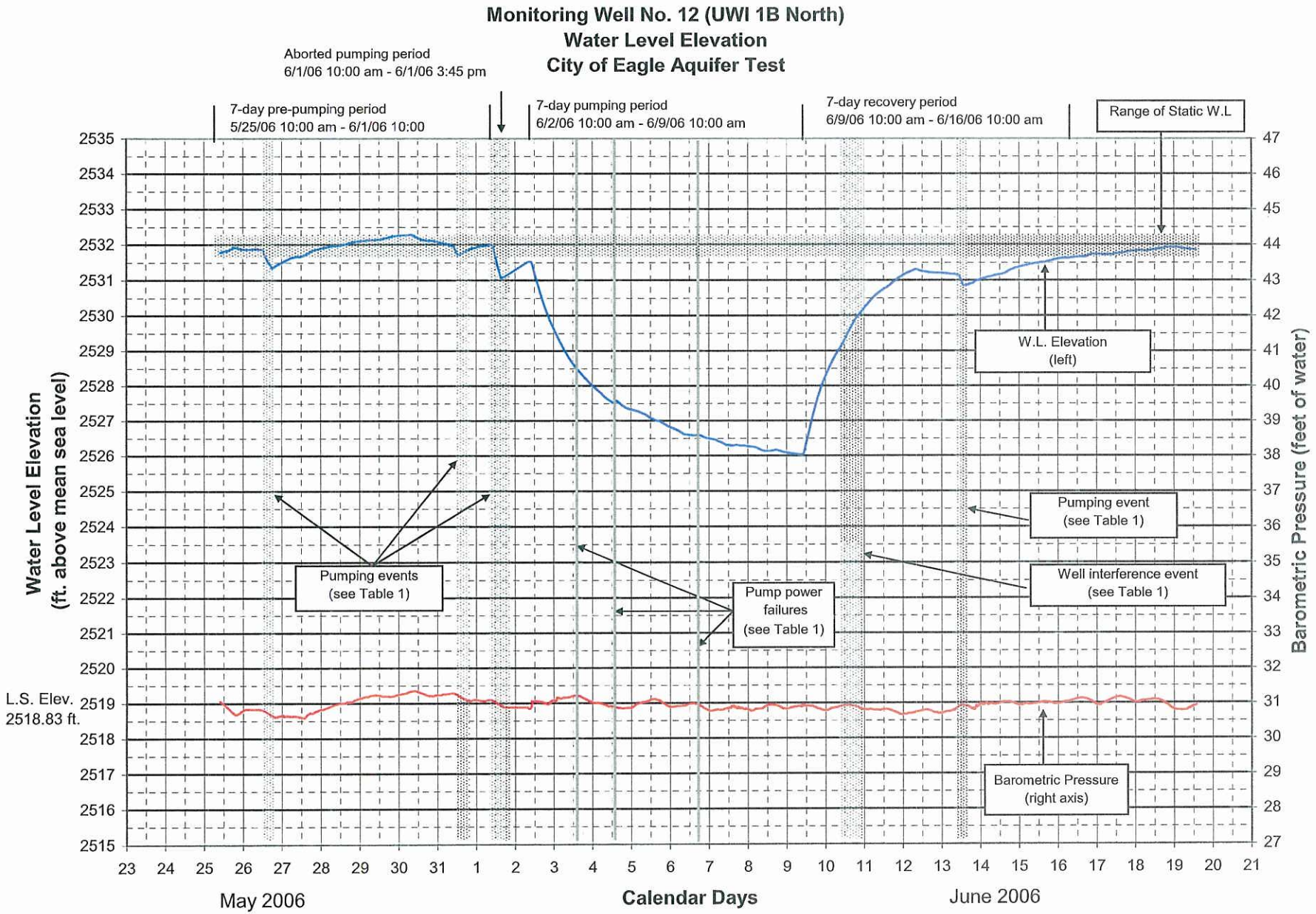
Notes: The Theis curve fit is an automatic fit for the entire data set.

Monitoring Well No. 11 (UWI 1A South)
Water Level Recovery Semi-log Plot
City of Eagle Aquifer Test



Appendix C.10

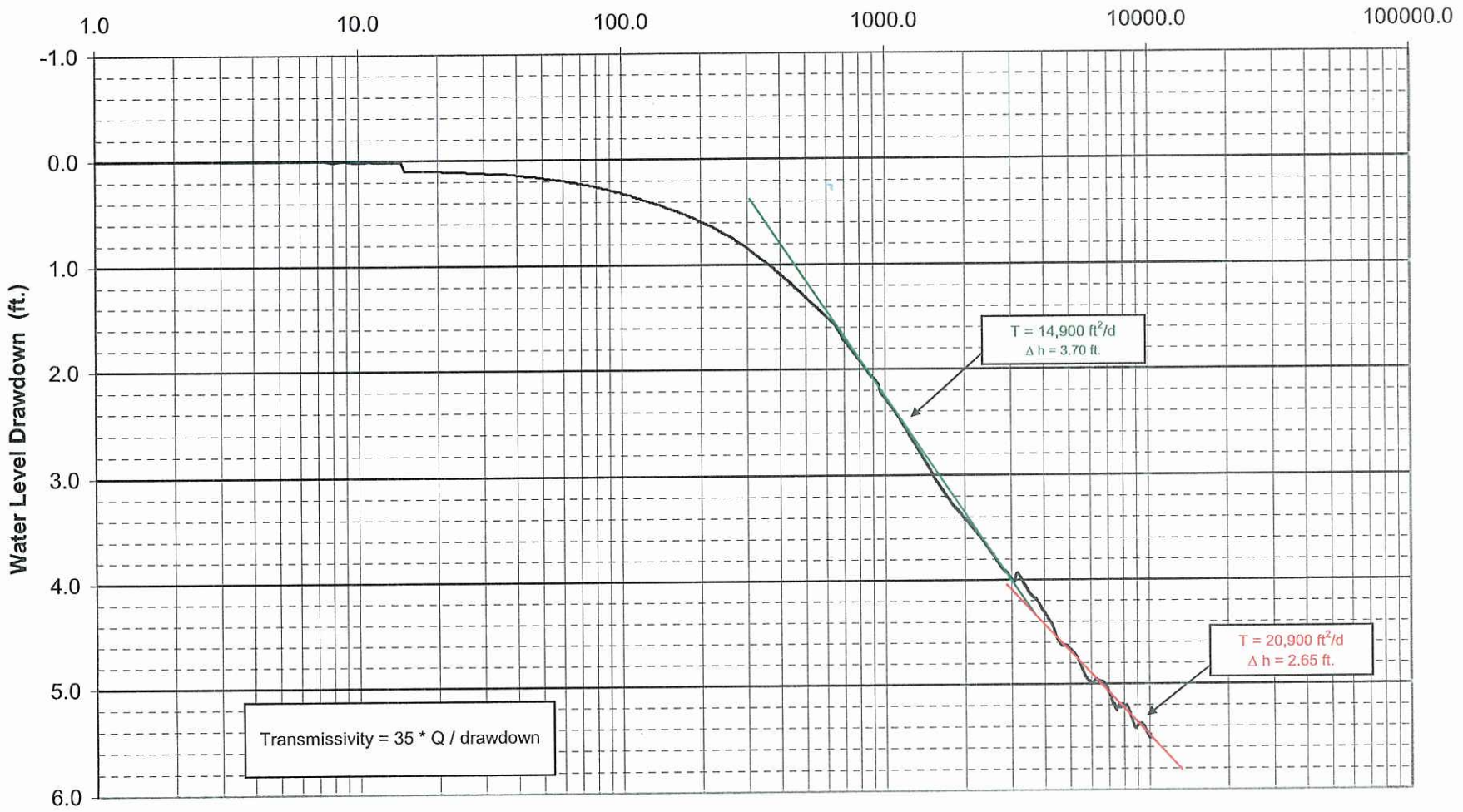
MONITORING WELL 12 (UWI 1B)


Monitoring Well No. 12 (UWI 1B North)
Water Level Elevation
City of Eagle Aquifer Test
Aborted pumping period
6/1/06 10:00 am - 6/1/06 3:45 pm
7-day pre-pumping period
5/25/06 10:00 am - 6/1/06 10:00
7-day pumping period
6/2/06 10:00 am - 6/9/06 10:00 am
7-day recovery period
6/9/06 10:00 am - 6/16/06 10:00 am
Range of Static W.L
W.L. Elevation
(left)
Pumping event
(see Table 1)
Well interference event
(see Table 1)
Pumping events
(see Table 1)
Pump power
failures
(see Table 1)
Barometric Pressure
(right axis)
L.S. Elev.
2518.83 ft.
Water Level Elevation
(ft. above mean sea level)
Barometric Pressure (feet of water)
Calendar Days
May 2006
June 2006

Monitoring Well No. 12 (UWI 1B North)
Water Level Drawdown Semi-log Plot
City of Eagle Aquifer Test

Pumping On 6/2/06 10:00 am
Elapsed pumping time = 0.0 min.

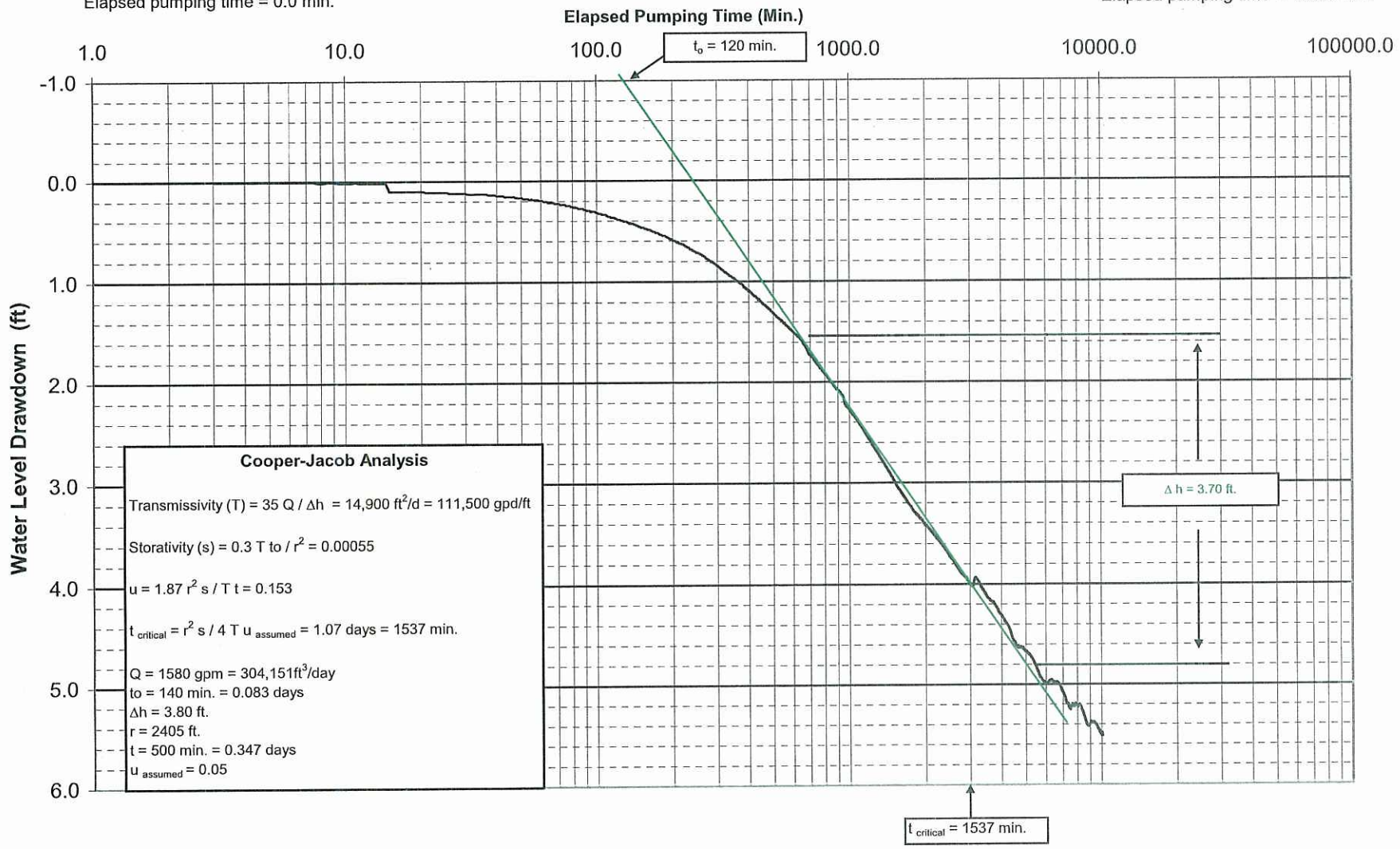
Pump Off 6/9/06 10:00 am
Elapsed pumping time = 10080 min.



Monitoring Well No. 12 (UWI 1B North)
Water Level Drawdown Semi-log Plot
City of Eagle Aquifer Test

Pumping On 6/2/06 10:00 am
Elapsed pumping time = 0.0 min.

Pump Off 6/9/06 10:00 am
Elapsed pumping time = 10080 min.



Cooper-Jacob Analysis

Transmissivity (T) = 35 Q / Δh = 14,900 ft^2/d = 111,500 gpd/ft

Storativity (s) = 0.3 T to / r^2 = 0.00055

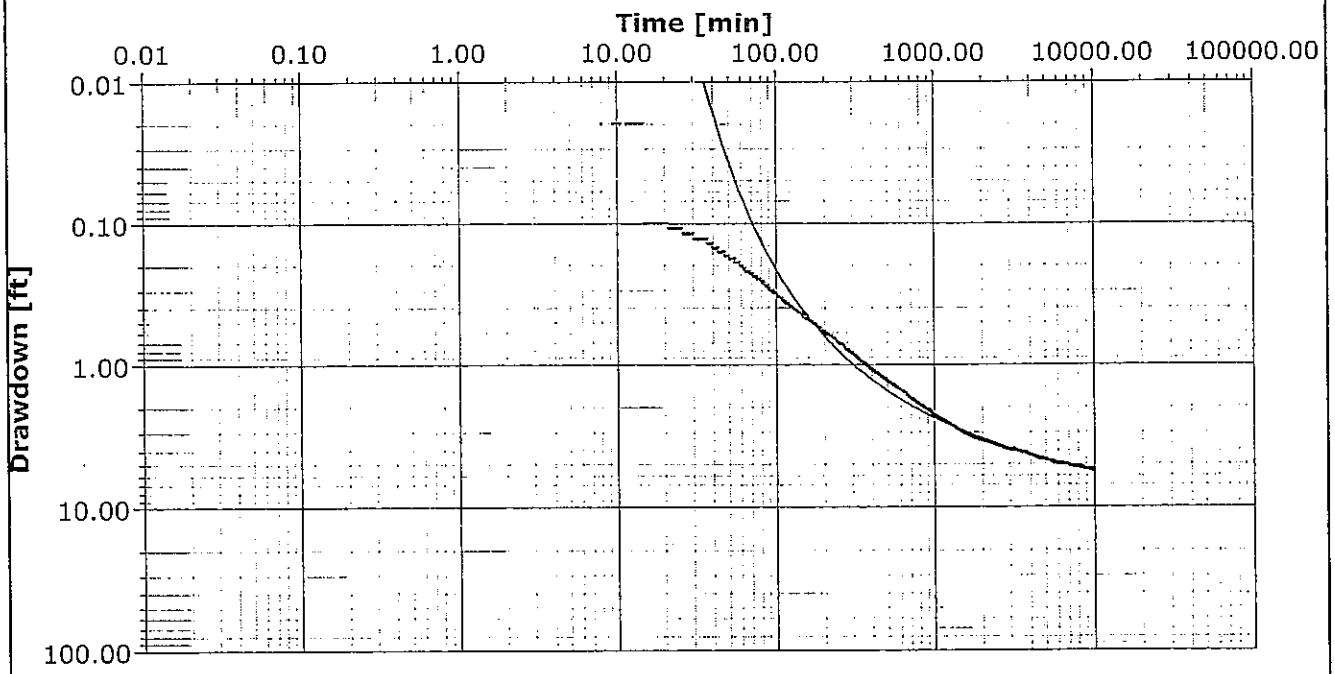
u = 1.87 r^2 s / T t = 0.153

$t_{critical}$ = r^2 s / 4 T $u_{assumed}$ = 1.07 days = 1537 min.

Q = 1580 gpm = 304,151ft^3/day
to = 140 min. = 0.083 days
Δh = 3.80 ft.
r = 2405 ft.
t = 500 min. = 0.347 days
$u_{assumed}$ = 0.05

Payette, ID P.O. Box 235 Main St. Holladay Engineering	Pumping Test Analysis Report
	Project: Eagle 7 Day Aquifer Test
	Number: EG 061204
	Client: City of Eagle

Location: Eagle, Idaho	Pumping Test: 7 Day Aquifer Test	Pumping well: Test Well 2
Test conducted by: Holladay Engineering		Test date: 6/2/2006
Analysis performed by:	UWI 1B (computer fit)	Date: 1/18/2007
Aquifer Thickness: 100.00 ft	Discharge: variable, average rate 1569.2 [U.S. gal/min]	



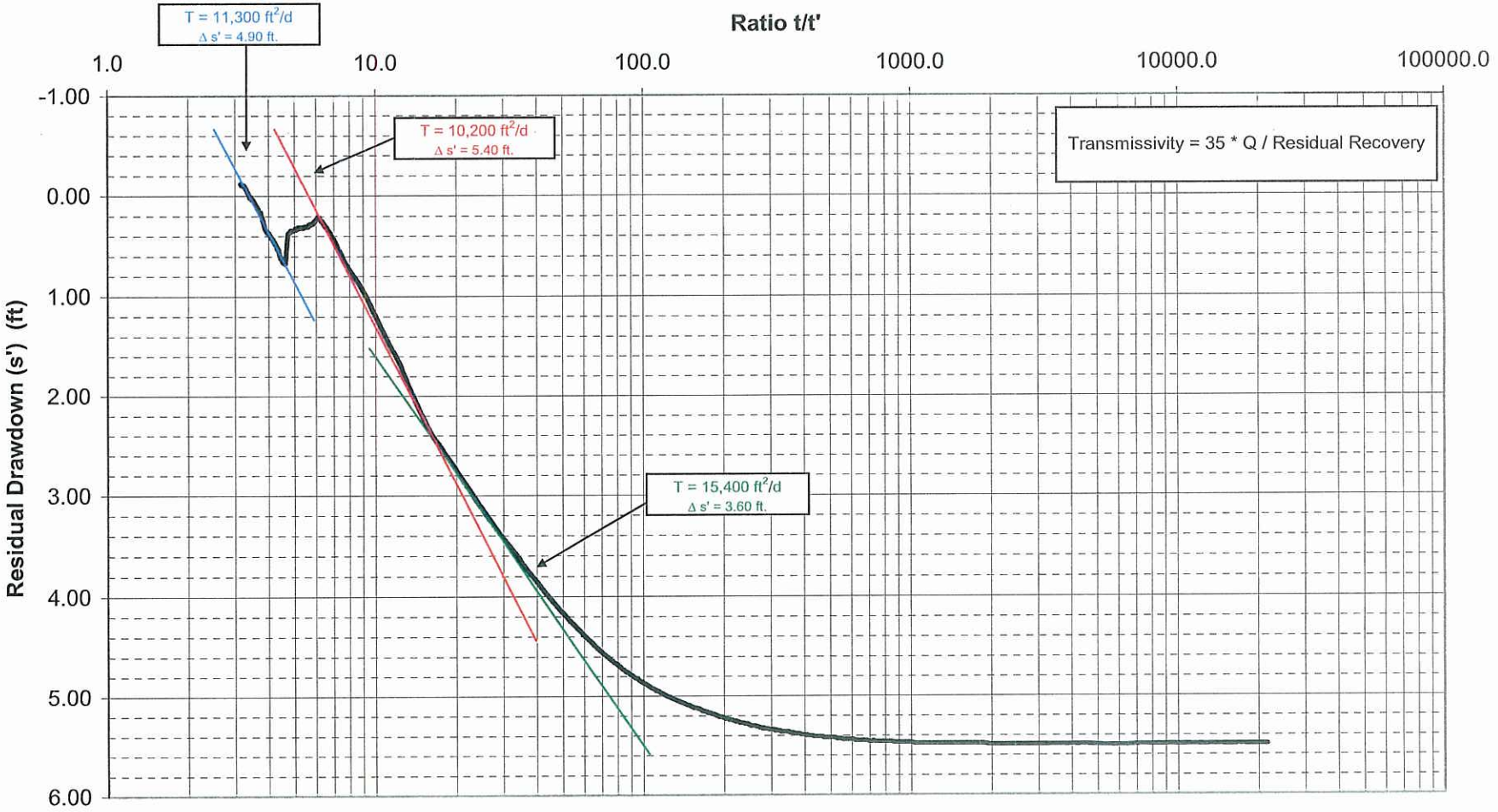
Calculation after Theis

Observation well	Transmissivity [ft²/d]		Storage coefficient	Radial distance to PW [ft]	
UWI 1B	1.64×10^{4}		9.84×10^{-4}	2405.02	

Monitoring Well 12 (UWI 1B) Theis Analysis of Drawdown Data

Notes: The Theis curve fit is an automatic fit for the entire data set.

Monitoring Well No. 12 (UWI 1B North)
Water Level Recovery Semi-Log Plot
City of Eagle Aquifer Test



CERTIFIED MAIL™

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
East Front Street, P.O. Box 83720
Boise, Idaho 83720-0098

Return Service Requested

7005 1160 0000 1544 4686 FIRST CLASS

UNITED STATES POSTAGE PITNEY BOWES
02 1A $ 04.88⁰
0004310839 DEC 14 2006
MAILED FROM ZIP CODE 83702

A.T. 12/15 12-28 1-3

UNCLAIMED

BOB & ELSIE HANSON
4151 HARTLEY RD
EAGLE ID 83616

83616+1359 [redacted]

CERTIFIED MAIL™

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
East Front Street, P.O. Box 83720
e, Idaho 83720-0098

Return Service Requested

7005 1160 0000 1544 4969 FIRST CLASS

UNITED STATES POSTAGE PITNEY BOWES
02 1A $ 04.88⁰
0004310839 DEC 14 2006
MAILED FROM ZIP CODE 83702

12/20/06

NAME
1st Notice
2nd Notice
Return

(2-28

JAN 12 2007

DEPARTMENT OF WATER RESOURCES

MICHAEL MCCOLLUM
290 BUTTERFIELD
SAN ANSELMO CA 94960

NIXIE 949 1 30 01/05/07
RETURN TO SENDER
UNCLAIMED
UNABLE TO FORWARD

BC: 837200098 *0736-08934-14-39

949604100639 CP11
83720x0098

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

BOB & ELSIE HANSON
4151 HARTLEY RD
EAGLE ID 83616

63-32089

2. Article ... (Trans... 7005 1160 0000 1544 4686

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ Agent ☐ Addressee

B. Received by (Printed Name) | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

WA

RECEIVED
JAN 09 2007
DEPARTMENT OF WATER RESOURCES

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

MICHAEL MCCOLLUM
1290 BUTTERFIELD
SAN ANSELMO CA 94960

63-32089

2. Article ... (Transfe... 7005 1160 0000 1544 4969

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X ☐ Agent ☐ Addressee

B. Received by (Printed Name) | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

DEAN & JAN COMBE
6440 W BEACON LIGHT
EAGLE ID 83616

63-32089

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Jan Combe ☐ Agent ☐ Addressee

B. Received by (Printed Name) Jan Combe
C. Date of Delivery 1-5-07

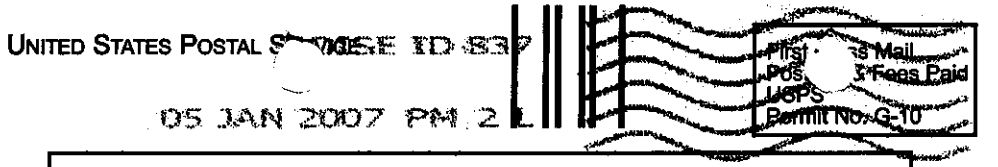
D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Transfer from se) 7005 1160 0000 1544 4761

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540



• Sender: Please print your name, address, and ZIP+4® in this box •

RECEIVED
JAN 09 2007
DEPARTMENT OF WATER RESOURCES

WA

IDAHO DEPT OF WATER RESOURCES
ATTN DEBORAH GIBSON
PO BOX 83720
BOISE ID 83720-0098

RECEIVED
DEPARTMENT OF WATER RESOURCES

State of Idaho
DEPARTMENT OF WATER RESOURCES
322 East Front Street, P.O. Box 83720, Boise, ID 83720-0098
Phone: (208) 287-4800 Fax: (208) 287-6700 Web Site: www.idwr.idaho.gov.

JAMES E. RISCH
Governor
KARL J. DREHER
Director

January 30, 2007

Re: In the matter of the protested applications for permit to appropriate water nos. 63-32089 and 63-32090 in the name of the City of Eagle

Dear Parties:

Enclosed for your consideration is a copy of a memo from Sean Vincent, Hydrology Section Manager, for the IDWR. This memo was received in response to the Request for Staff Memorandum, issued on December 21, 2006, and requests that hydrology staff be allowed 14-days, upon receipt of the City of Eagle's addendum to the aquifer test report, to issue their staff memorandum.

Sincerely,

Gary Spackman
Hearing Officer

Enclosure
Cc: All the parties on service list (attached)

MEMO

State of Idaho
Department of Water Resources
322 E Front Street, P.O. Box 83720, Boise, Idaho 83720-0098
Phone: (208) 287-4800 Fax: (208) 287-6700

Date: January 18, 2007

To: Gary Spackman

From: Sean Vincent SV

cc: Shane Bendixsen
Rick Raymondi

Subject: **Request for Staff Memorandum in Response to Staff Review of Technical Report Entitled *City of Eagle, Idaho, 7-Day Aquifer Test***

In response to the subject request, a meeting was held at IDWR on January 3, 2007 to discuss the report for the 7-Day Aquifer Test with its author (Chris Duncan of Holladay Engineering Company) and Dr. Christian Petrich, a hydrogeologic consultant that has been retained as an expert by the Eagle City Attorney. Potential improvements to the aquifer test report were discussed during the meeting and it was agreed that the most beneficial and expeditious course of action for all parties was to have Holladay Engineering submit an addendum to the aquifer test report which addresses comments made by IDWR staff in the November 29, 2006 memorandum entitled "*Review of City of Eagle, Idaho, 7-Day Aquifer Test Report in Support of Applications for Water Right Appropriation 63-32089 and 63-32-090*". Holladay Engineering has begun work on the aquifer test report addendum and has committed to its submittal by February 2, 2007. In order to allow adequate time for IDWR staff to review the addendum, I'd like to formally request an extension of the deadline for the requested IDWR staff memorandum from February 2, 2007 until 14 days after receipt by IDWR staff of the addendum to the aquifer test report

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on this 30th day of January 2007, a true and correct copy of the foregoing document(s) described below were served by placing a copy of the same in the United States mail, postage prepaid and properly addressed to the following:

Document(s) Served: Transmittal letter dated January 30, 2007 from Gary Spackman, Hearing Officer.

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Deborah J. Gibson
Administrative Assistant

BEFORE THE DEPARTMENT OF WATER RESOURCES

OF THE STATE OF IDAHO

IN THE MATTER OF APPLICATIONS TO APPROPRIATE WATER NOS. 63-32089 AND 63-32090 IN THE NAME OF THE CITY OF EAGLE	)	**REQUEST FOR STAFF MEMORANDUM**

To: Hal Anderson, Administrator
Planning and Technical Services Division

Rick Raymondi, Chief
Technical Services Bureau

Sean Vincent, Manager
Hydrology Section

Shane Bendixson, Hydrogeologist
Hydrology Section

The following is a request for staff memorandum pursuant to Rule 602 of the Idaho Department of Water Resources' Rules of Procedure (IDAPA 37.01.01.602).

Rule 600 of the Department's Rules of Procedure authorizes the hearing officer to use the Department's "experience, technical competence and specialized knowledge" in the evaluation of evidence.

Rule 602 of the Department's Rules of Procedure allows a hearing officer to take notice of technical or scientific facts within the Department's specialized knowledge, including agency staff memoranda and data.

Sean Vincent (Vincent) and Shane Bendixson (Bendixson) reviewed a technical document titled *City of Eagle, Idaho, 7-Day Aquifer Test* prepared by Chris H. Duncan of Holladay Engineering Company. After the review, Vincent and Bendixson issued a staff memorandum dated November 29, 2006. In the memorandum, Vincent and Bendixson stated that "the scope of the data collection was adequate, but the aquifer test analysis is incomplete."

On November 30, 2006, the hearing officer issued an *Order Denying Motion in Limine, Notice of Staff Memorandum, and Amended Notice of Hearing*. In notifying the parties about the staff memorandum written by Vincent and Bendixson, the hearing officer called attention to the Vncent's and Bendixson's conclusions of deficiency in the aquifer test analysis and stated:

> Because the analysis of the pump test submitted to Department staff was incomplete, the hearing officer will forward any additional evidence about the pump test received into evidence at the hearing to Department staff for further review to determine possible deficiencies. After the staff review, the hearing officer will distribute the results of the Department's post hearing review to the parties who will have an opportunity to submit additional comments and possibly request supplemental hearings about the document. This process will **delay** the ultimate consideration of the applications.

At a hearing conducted on December 7-8, 11-12, and 18, 2006, the City of Eagle presented additional analysis of the aquifer test data. In addition, the City of Eagle called Vincent to testify regarding the November 29, 2006 staff memorandum.

THEREFORE the hearing officer invites Department staff to augment the November 29, 2006 staff memoranda regarding the above-captioned matter, which could include, without limitation:

1. A full scrutiny of the methods of gathering data, the data presented, and results of the aquifer test contained in the *City of Eagle, Idaho, 7-Day Aquifer Test* report dated June 2006.

2. Presentation and analysis of additional data available to Department staff to enhance the hearing officer's understanding of the hydrogeology and aquifers in the vicinity of the proposed appropriations of water, including, but not limited to, data related to aquifer tests performed for the Lexington Hills well and the Floating Feather well.

3 An independent analysis of Eagle's 7-Day Aquifer Test test data using commonly accepted scientific methods in the fields of geology, hydrogeology, and engineering.

4. A technical review and critic of any information and analysis of data presented as evidence during the contested case hearing conducted on December 7-8, 11-12, and 18, 2006.

Any such staff memoranda shall be submitted to the hearing officer on or before February 2, 2007, and served upon the parties to this matter. The Department would be required to make relevant staff available for cross-examination at any hearing set in this matter pursuant to IDAPA 37.01.01.201 and 602.

Dated this 20th day of December, 2006.

Gary Spackman
Hearing Officer

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on this 21st day of December, 2006, a true and correct copy of the document described below was served on the following by placing a copy of the same in the United States mail, postage prepaid and properly addressed to the following:

Document(s) Served: REQUEST FOR STAFF MEMORANDUM

MICHAEL MCCOLLUM
1290 BUTTERFIELD
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ATTN JOHN WESTRA
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Deborah J. Gibson

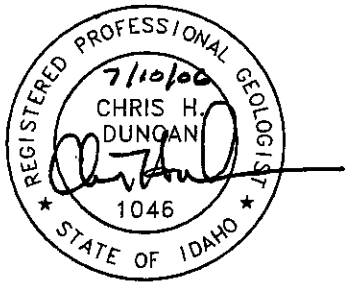
Deborah J. Gibson
Administrative Assistant
Water Allocation Bureau

S.O. File Copy

CITY OF EAGLE, IDAHO

7-Day Aquifer Test

June 2006



EG061204

Prepared By

Holladay Engineering Company
Payette, Idaho

Summary of Potential Well Interference

Protestant	Potential Drawdown (4.7 cfs for 365 days)
Cheney, Tim	unknown
City of Star	0.63 ft.
Combe, Dean	0.88 ft.
Dixon, Mike	well 1 : 3.97 ft. - 7.95 ft. well 2: 0.92 ft. well 3: 0.90 ft.
Flack, Bill	well 1 : 0.80 ft. well 2: 6.65 ft. well 3: 0.80 ft. well 4: 0.80 ft. well 5: 3.21 ft.- 6.43 ft.
Hanson, Bob	0.73 ft.
Heath, Michael	1 .06 ft.
Howarth, C. H.	1.06 ft.
Hutton, Terry	2.60 ft. - 6.43 ft.
Mares, Norma	0.37 ft.
McCollum, Michael	unknown
Meissner, Charles	well 1 : 0.96 ft. well 2: 0.96 ft. well 3: 0.96 ft.
Mellies, leeRoy	4.15 ft. - 8.31 ft.
Moyle, Joseph	well 1 : 6.91 ft. well 2: 7.73 ft.
Muller, Eugene	9.58 ft.
Purdy, Dana & Vicki	well 1: 10.25 ft. well 2: 4.74 ft. - 9.47 ft.
Reeser, Scott	1 .30 ft.
Rosti, Sam	9.42 ft.
Roundtree, Bud	1 .11 ft.
Schreiner, Ronald	well 1 : 3.63 ft. - 7.26 ft. well 2: 3.36 ft. - 7.26 ft.
Taylor, Mary	0.87 ft.
United Water Idaho	Redwood Ck. well 1 : 6.28 ft. Redwood Ck. well 2: 5.84 ft. Floating Feather well: 7.66 ft. Fox Tail well: 4.68 ft. Spurwing well: 5.50 ft.
Wilder, Ralph	1 .17 ft.

Eagle Exhibit 24

Summary of Protestant Information

Protestant	Submitted IDWR Information Questionnaire (1)	Submitted Response to City of Eagle Discovery Request	Well Description (4)	Static Water Level in Well (4)	Aquifer Zone of well (5)	Estimated Distance From Closest Proposed City of Eagle Well
Cheney, Tim	no	no	unknown	unknown	unknown	unknown
City of Star	no	no	unknown	unknown	unknown	11,256 ft. (6)
Combe, Dean	no	no	unknown	unknown	unknown	5,900 ft. (6)
Flack, Bill	yes	yes (3)	Well 1: total depth = unknown, open interval = unknown, pump level (intake) = 30 ft. ?, no well log available	unknown	unknown	7,210 ft
			Well 2: total depth = 355 ft., open interval = 130-140, 249-269, 291-331, 341-361 ft., pumping level (intake) = 180 ft., well log available	unknown	deep	7,780 ft.
			Well 3: total depth = 80 ft. ?, open interval = unknown, pumping level = unknown, no well log available	unknown	shallow	7,310 ft.
			Well 4: total depth = 72.5 ft., open interval 69-72.5 ft., pump intake unknown, well log available	unknown	shallow	7,240 ft.
			Well 5: total depth = 90 ft, open interval unknown, pump level (intake) = 65 ft., no well log available	38 ft. bgs	intermediate	8,300 ft
Hanson, Bob	no	no	unknown	unknown	unknown	8,686 ft. (6)
Heath, Michael	no	no	unknown	unknown	unknown	3,747 ft. (6)
Howarth, C. H.	no	yes	Well 1: total depth = 333 ft., open interval = 313-333 ft., pump intake = unknown, well log available	artesian 7 psi (16.2 ft.) in 2006	deep	1,399 ft.
Hutton, Terry	yes	no	Well 1: total depth = 115 ft., open interval 104-144 ft., pump level (intake) = 114 ft., well log available	unknown	intermediate	11,992 ft.
Mares, Norma	yes	no	Well 1: total depth = 220 ft., open inetrval = unknown, pumping level = unknown, no well log available	unknown	unknown	22,380 ft.
McCollum, Michael	no	no	unknown	unknown	unknown	unknown

Protestant	Submitted IDWR Information Questionnaire (1)	Submitted Response to City of Eagle Discovery Request	Well Description (4)	Static Water Level in Well (4)	Aquifer Zone of well (5)	Estimated Distance From Closest Proposed City of Eagle Well
Meissner, Charles	no	yes	Well 1: total depth = unknown, open interval = unknown, pump level = unknown, no well log available	50 ft. bgs	unknown	4,800 ft. (6)
			Well 2: total depth = unknown, open interval = unknown, pump level = unknown, no well log available	53 ft. bgs	unknown	4,800 ft. (6)
			Well 3: total depth = unknown, open interval = unknown, pump level = unknown, no well log available	unknown	unknown	4,800 ft. (6)
Mellies, LeeRoy	yes	no	Well 1: total depth = 147 ft., open interval 142-147ft., pump level listed as artesian at top of well, well log availble	unknown	intermediate	4,766 ft.
Moyle, Joseph	yes	no	Well 1: total depth = 300 ft., open interval = unknown, pumping level = unknown, no well log available	unknown	deep	7,200 ft.
			Well 2: total depth = 300 ft.?, open interval = uknown, pumping level = unknown, no well log available	unknown	deep	5,643 ft.
Muller, Eugene	yes	yes	Well 1: total depth = 238 ft., open interval = unknown, pumping level = unknown , well log available	artesian, but level unknown	deep	3,286 ft.
Prudy, Viki	yes	no	Well 1: total depth = 250 ft., open interval = unknown, pumping level = unknown, no well log available	unknown	deep	2,700 ft.
			Well 2: total depth = 100 ft., open interval = 97-100 ft., pumping level = unknown, well log available	unknown	intermediate	3,390 ft.
Reeser, Scott	no	no	Well 1: total depth = 60 ft. , open interval = unknown, pumping level = unknown, no well log available, reported by letter	unknown	shallow	2,030 ft. (6)
Rosti, Sam	no	no	Well 1: total depth = 445 ft. , open interval = 410-425 ft. and 430-425 ft., pumping level = unknown, well log available	unknown	deep	3,444 ft.
Roundtree, Bud	no	yes	Well 1: total depth = 78 ft., open interval = 70-75 ft., pump level = unknown, well log available	unknown	shallow	3,272 ft.
Schreiner, Ronald	yes	no	Well 1: total depth = 98 ft. reported by owner, open interval = 67-98 ft., unknown, pumping level = unknown, well log available	unknown	intermediate	6,480 ft.
			Well 2: total depth = 148 ft., open interval = unknown, pumping level = unknown, no well log available	unknown	intermediate	6,480 ft.

Protestant	Submitted IDWR Information Questionnaire (1)	Submitted Response to City of Eagle Discovery Request	Well Description (4)	Static Water Level in Well (4)	Aquifer Zone of well (5)	Estimated Distance From Closest Proposed City of Eagle Well
Taylor, Mary	no	yes (2)	unknown	unknown	unknown	5,997 ft. (6)
United Water Idaho	yes	yes (2)	Well 1 (Redwood Ck. well 1): total depth = 411 ft., open interval = 298-313 ft and 361-401 ft., pumping level = unknown, well log available	1.54 ft. artesian on 6/5/06	deep	8,662 ft.
			Well 2 (Redwood Ck. well 2): total depth = unknown., open interval = unknown, pumping level = unknown, no well log available	unknown	deep	9,892 ft.
			Well 3 (Floating Feather well): total depth = 340 ft., open interval = 183-193, 204-214, 225-255, 260-280, 300-330 ft., pumping level = unknown, well log available	unknown	deep	5,767 ft.
			Well 4 (Fox Tail well): total depth = 293 ft, open interval = 243-283 ft., pumping level = unknown, well log available	unknown	deep	14,018 ft.
			Well 5 (Spurwing well): total depth = 385 ft., open interval = 235-265, 272-282, 325-355 ft., pumping level = unknown, well log available	unknown	deep	10,947 ft.
Wilder, Ralph	no	no	unknown	unknown	unknown	2,808 ft. (6)

Notes:

1) IDWR request for Information on June 6, 2005 and July 28, 2005
2) Incomplete information provided
3) Have sold most our property and no plans to submit evidence
4) Well information is based on protestant supplied information and available IDWR records
5) Interpretations of aquifer zones are based on hydrologeologic conceptual model for the Treasure Valley aquifer system. The shallow aquifer zone is defined as 0-80 ft., intermediate aquifer zone 80-200 ft. and deep aquifer zone is below 200 feet
6) Protestant well location is based on listed address

bgs = below ground surface

Unknown = protestant did not provide requested information and no records were found

Summary of Protestant Information

Protestant	Submitted IDWR Information Questionnaire (1)	Submitted Response to City of Eagle Discovery Request	Well Description (4)	Static Water Level in Well (4)	Aquifer Zone of well (5)	Estimated Distance From Closest Proposed City of Eagle Well
Dixon, Mike	yes	no	Well 1: total depth = 200 ft.?, open interval 38-78 ft. and 88-108 ft., pump level unknown, well log available (two differing logs)	unknown	deep	5,300 ft.
			Well 2: total depth =70 ft, open interval 67-70 ft., pump intake unknown, well log available	unkown	shallow	5,300 ft.
			Well 3: total depth =65 ft, open interval = unknown, pump intake unknown, no well log available	unknown	shallow	5,600 ft.

Notes:

1) IDWR request for Information on June 6, 2005 and July 28, 2005
2) Incomplete information provided
3) Have sold most our property and no plans to submit evidence
4) Well information is based on protestant supplied information and available IDWR records
5) Interpretations of aquifer zones are based on hydrologeologic conceptual model for the Treasure Valley aquifer system. The shallow aquifer zone is defined as 0-80 ft., intermediate aquifer zone 80-200 ft. and deep aquifer zone is below 200 feet
6) Protestant well location is based on listed address

bgs = below ground surface
Unknown = protestant did not provide requested information and no records were found

TABLE 1

Potential Drawdown in Shallow Aquifer Zone

Distance from Pumping Well (ft)	Calculated Water Level Drawdown from Pumping 8.9 cfs for 365 days (ft)	Calculated Water Level Drawdown from Pumping 5.7 cfs for 365 days (ft)	Calculated Water Level Drawdown from Pumping 4.7 cfs for 365 days (ft)
1,200	2.86	1.83	1.51
1,400	2.75	1.76	1.45
1,600	2.65	1.70	1.40
1,800	2.56	1.64	1.35
2,000	2.48	1.59	1.31
2,500	2.31	1.48	1.22
3,000	2.18	1.39	1.15
3,500	2.06	1.32	1.09
4,000	1.96	1.25	1.04
4,500	1.87	1.20	0.99
5,000	1.79	1.15	0.95
6,000	1.66	1.06	0.87
7,000	1.54	0.99	0.81
8,000	1.44	0.92	0.76
9,000	1.35	0.87	0.71
10,000	1.28	0.82	0.67
15,000	0.98	0.59	0.52

Note:

Water level drawdown calculations are base on the Theis Equation result multiplied by 0.116 shallow aquifer coefficent. Aquifer parameters used in the Theis Equation are average value results from the City of Eagle 7-Day Aquifer Test. The shallow aquifer coeffient is based on the observed water level change in monitoring well no. 10 divided by Theis Equation predicted drawdown for the 7-day aquifer test.

TABLE 2

Potential Drawdown in Intermediate Aquifer Zone

Distance from Pumping Well (ft)	Calculated Water Level Drawdown from Pumping 8.9 cfs for 365 days (ft)	Calculated Water Level Drawdown from Pumping 5.7 cfs for 365 days (ft)	Calculated Water Level Drawdown from Pumping 4.7 cfs for 365 days (ft)
1,200	12.32 - 24.65	7.89 - 15.79	6.51 - 13.02
1,400	11.82 - 23.65	7.57 - 15.15	6.24 - 12.49
1,600	11.39 - 22.79	7.29 - 14.59	6.01 - 12.03
1,800	11.01 - 22.03	7.05 - 14.11	5.81 - 11.63
2,000	10.67 - 21.34	6.83 - 13.67	5.63 - 11.27
2,500	9.95 - 19.90	6.37 - 12.75	5.25 - 10.51
3,000	9.36 - 18.72	5.99 - 11.99	4.94 - 9.89
3,500	8.86 -17.73	5.67 - 11.35	4.68 - 9.36
4,000	8.43 - 16.86	5.40 - 10.80	4.45 - 8.91
4,500	8.05 - 16.10	5.15 - 10.31	4.25 - 8.50
5,000	7.71 - 15.42	4.94 - 9.88	4.07 - 8.15
6,000	7.125 - 14.25	4.56 - 9.13	3.76 - 7.53
7,000	6.63 - 13.26	4.24 - 8.49	3.50 - 7.00
8,000	6.20 - 12.41	3.97 - 7.95	3.27 - 6.55
9,000	5.82 - 11.65	3.73 - 7.46	3.07 - 6.15
10,000	5.49 - 10.98	3.51 - 7.03	2.90 - 5.80
15,000	4.21 - 8.43	2.52 - 5.04	2.22 - 4.45

Note:

Water level drawdown is shown as a range (0.5(T) - T). The first value is base on the Theis equation result multiplied by an intermediate aquifer zone coefficient of 0.5. The second value is the Theis Equation result for the deep aquifer zone. Aquifer parameters used in the Theis Equation are average value results from the City of Eagle 7-Day Aquifer Test. The intermediate aquifer zone coefficient is an estimate of hydraulic resistance of aquitard units.

TABLE 3

Potential Drawdown in Deep Aquifer Zone

Distance from Pumping Well (ft)	Calculated Water Level Drawdown from Pumping 8.9 cfs for 365 days (ft)	Calculated Water Level Drawdown from Pumping 5.7 cfs for 365 days (ft)	Calculated Water Level Drawdown from Pumping 4.7 cfs for 365 days (ft)
1,200	24.65	15.79	13.02
1,400	23.65	15.15	12.49
1,600	22.79	14.59	12.03
1,800	22.03	14.11	11.63
2,000	21.34	13.67	11.27
2,500	19.90	12.75	10.51
3,000	18.72	11.99	9.89
3,500	17.73	11.35	9.36
4,000	16.86	10.80	8.91
4,500	16.10	10.31	8.50
5,000	15.42	9.88	8.15
6,000	14.25	9.13	7.53
7,000	13.26	8.49	7.00
8,000	12.41	7.95	6.55
9,000	11.65	7.46	6.15
10,000	10.98	7.03	5.80
15,000	8.43	5.04	4.45

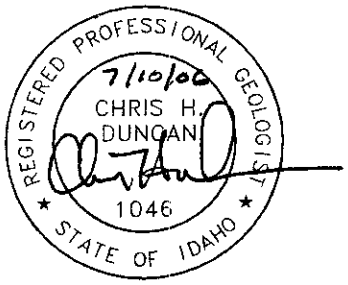
Note:

Water level drawdown calculations are base on the Theis equation. Aquifer parameters used are average value results from the City of Eagle 7-Day Aquifer Test.

CITY OF EAGLE, IDAHO

7-Day Aquifer Test

June 2006



EG061204

Prepared By

Holladay Engineering Company
Payette, Idaho

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APPENDICES

INTRODUCTION

In May and June of 2006, the City of Eagle conducted a 7-day constant rate aquifer pump test of the lower Treasure Valley Aquifer system to determine site specific aquifer conditions under Idaho Department of Water Resource applications for water appropriation 63-32089 and 63-32090. The aquifer test site is located in the western portion of the City of Eagle on the former Quarter Circle D. J. Ranch and Eaglefield Development properties. The test site location is shown in Figure 1.

The aquifer test plan was reviewed and approved by the Idaho Department of Water Resources in December 2005 under drilling permit no. 835987 and drilling permit no. 837870. The aquifer test plan included construction of test well no. 1 located in the proposed Legacy development and test well no. 2 located in the Eaglefield development. Well construction and testing information for the wells are included in Appendix B. Holladay Engineering Company was contracted to conduct the aquifer test and provide engineering services for the project.

The aquifer test was composed of three groundwater monitoring and testing phases. Background monitoring (starting on May 25th) was performed for 7-days prior to the pump and test to evaluate water level tends in the aquifer system. A 7-day constant rate pump test was started on June 2nd and ending on June 9th using a single pumping well and eight monitoring wells (including pumping well) conducted at a pumping rate of 1580 gpm. Seven-days of water level recovery monitoring was performed, immediately following the pump test and ending on June 15th. Additional water level recovery data was collected to June 19th. A total of eight wells (including the pumping well) were used to monitor groundwater levels during the aquifer test. The monitoring well configuration and well completion information is shown in Figure 1.

The aquifer test generated approximately 300,000 water level measurements that were used to evaluate the aquifer system response to pumping. Transmissivity and storativity values were computed using the Theis Method from drawdown and recovery datasets of monitoring wells completed in the lower aquifer zone.

This report presents data and results from the aquifer test. The following sections describe test procedures, data collection, data corrections, results and analysis.

AQUIFER TEST PROCEDURES

The aquifer test was designed as a constant rate pump test using 8 wells available at the site (including pumping well) for groundwater level monitoring. The aquifer test project was performed in three phases; background monitoring, constant rate pumping test and recovery monitoring. Each phase was conducted for a minimum duration of 7-days. Background water level monitoring was performed to determine groundwater level trends prior to pump testing. The pump test phase was conducted primarily to determine transmissivity and storativity valves in the lower aquifer zone and groundwater responses to pumping at monitoring well locations across the site. The recovery monitoring phase was conducted to determine transmissivity and storativity valves in the lower aquifer zone during water level recovery and to characterize the recovery response to pumping at monitoring well locations across the site.

The aquifer test was performed according to the approved aquifer test plan. Two changes were made prior to the start of the test. The pumping well location was moved to test well no. 2 (Eaglefield well) due to the lower capacity of test well no. 1, measured at approximately 1,300 gpm. Well capacity testing and construction information is located in Appendix B. Access to the monitoring well no. 6 (Rick's well) was withdrawn just prior to the start of the test. The City was able to gain limited use of the well during the aquifer test. The data set for monitoring well no. 4 shows limited background and recovery water level data.

Monitoring Wells

The monitoring wells (including the pumping well) used during the aquifer test are listed below and includes a description of well completion and monitoring configuration. Monitoring well locations are shown in Figure 1. Additional well construction information, well driller's reports and other available information for each monitoring well is located in Appendix B.

1. Monitoring well no. 2 (test well no. 2 - Eaglefield): 12- to 16-inch diameter production well with 12-inch well screens at a depth of 345 ft. to 425 ft. Total well depth is 430 ft. The well is located in the SE ¼ of the NW ¼, Section 11, T.4N, R.1W and surveyed location is shown on Figure 1. Surveyed ground surface elevation of 2514.15 ft. above mean sea level (amsl). Static water level is artesian. This well was used as the pumping well during the aquifer test. A line-shaft turbine pump (Lyane 12 TLC-4 bowl) was installed for the pump test with an intake depth of 111.22 ft. below ground surface and 100 h.p. 3-phase motor. Two 1-inch diameter pvc plastic sounder tubes were installed from the bottom of the pump column assembly to monitoring ports in motor flange. Water level was monitored with a pressure transducer (Instrumentation N.W. PS-9 with 0-

100 psi sensor) in monitoring port no. 1 and measured by hand using a water level meter and 16 foot sight tube at monitoring port no. 2. A drawing of the wellhead monitoring configuration is located in Appendix B.

2. Monitoring well no. 1 (test well no. 1 - Legacy): 12- to 16-inch diameter well completed with 12-inch diameter screens from a depth of 282 ft. to 352 ft. Total well depth is 362 ft. The well is located in the SW ¼ of the NE ¼, Section 11, T.4N, R.1W and surveyed well location is shown on Figure 1. Surveyed ground surface elevation of 2512.97 ft. amsl. The distance from the pumping well is 1604.58 ft. Static water level is artesian. The wellhead was configured with two 1¼ -inch diameter monitoring ports located in the sealed flange plate cover. Water level was monitored with a pressure transducer (Instrumentation NW PT2X with 0-50 psi sensor) in monitoring port no. 1 and measured by hand using a water level meter and 16 foot sight tube at monitoring port no. 2. A drawing of the wellhead monitoring configuration is located in Appendix B.

3. Monitoring well no. 4 (Quarter Circle D. J. Ranch well no. 4): 6-inch diameter irrigation production well completed with an open interval from 235 to 260 feet below ground surface. Total well depth is 260 feet. There is no pump present in the well. The IDWR well driller's report is not available. The well was video inspect using a down-hole camera to determine well completion. Well casing leaks at a constant rate measured at 11.8 gpm at the wellhead surface. Well is located in the SE ¼ of the SW ¼, Section 3, T.4N, R.1W and surveyed well location is shown on Figure 1. Surveyed ground surface elevation of 2501.86 ft. amsl. The distance from the pumping well is 6276.65 ft. Static water level is artesian. The wellhead was configured with three 1¼ -inch diameter monitoring ports located in the flange plate cover. Water level was monitored with a pressure transducer (Instrumentation Northwest PT2X with 0-50 psi sensor) in monitoring port no. 1 and measured by hand using a water level meter and 6 foot sight tube at monitoring port no. 2. A 0-15 psi pressure gauge was installed in monitoring port no. 3. A drawing of the wellhead monitoring configuration is located in Appendix B.

4. Monitoring well no. 6 (Quarter Circle D. J. Ranch well no. 6): 16- to 10-inch irrigation production well with line-shaft turbine pump and completed with an open interval from 234 to 395 feet below ground surface. Total well depth is 406 feet. Water level is artesian. Well is located in the SE ¼ of the SW ¼, Section 2, T.4N, R.1W and surveyed well location is shown on Figure 1. Surveyed ground surface elevation of 2525.84 ft. amsl. The distance from the pumping well is 3339.80 ft. Static water level is artesian. The wellhead was configured with two 1¼ -inch diameter monitoring ports located in motor support housing. Water level

was monitored with a pressure transducer (Instrumentation N.W. PS-9 with 0-50 psi sensor) in monitoring port no. 1 and measured by hand using a water level meter and 6 foot sight tube at monitoring port no. 2. A drawing of the wellhead monitoring configuration is located in Appendix B.

5. Monitoring well no. 9 (Strata monitoring well no. 1): 1¼ - inch pvc plastic monitoring well completed from 45 to 55 feet below ground surface. Total well depth is 55 feet. Static water level is below ground surface. Well is located in the NW ¼ of the NW ¼, Section 11, T.4N, R.1W and surveyed well location is shown on Figure 1. Surveyed ground surface elevation of 2510.52 ft. amsl. The distance from the pumping well is 3450.28 ft. The measuring point is located on north side of casing. Water level was monitored with a downhole pressure transducer (Instrumentation Northwest PT2X with 0-50 psi sensor) and measured by hand using a water level meter. A drawing of the wellhead monitoring configuration is located in Appendix B.

6. Monitoring well no. 10 (Strata monitoring well no. 1B): 1-inch pvc plastic monitoring well completed from 10 to 15 feet below ground. Total well depth is 15 feet. Static water level is below ground surface. Well is located in the NW ¼ of the NW ¼, Section 11, T.4N, R.1W and surveyed well location is shown on Figure 1. Surveyed ground surface elevation of 2510.52 ft. amsl. The distance from the pumping well is 3425.35 ft. The well measuring point is located on north side of casing. Water level was monitored with a downhole pressure transducer (Instrumentation Northwest PT2X with 0-50 psi sensor) and measured by hand using a water level meter. A drawing of the wellhead monitoring configuration is located in Appendix B.

7. Monitoring well no. 11 (United Water Idaho monitoring well 1A, Hope Lutheran Church): 2-inch pvc plastic monitoring well (part of a nested monitoring well) completed at staggered screen intervals from 280 ft. to 380 ft. below ground surface. Total well depth is 380 feet. Well is located in the SE ¼ of the SE ¼, Section 11, T.4N, R.1W and surveyed well location is shown on Figure 1. Surveyed ground surface elevation of 2518.83 ft. amsl. The distance from the pumping well is 2405.02 ft. Static water level is artesian. The wellhead was configured with an open ½-inch ball valve connected to a tee fitting used as two measuring ports. Port no. 1 was configured a sealed pressure chamber which housed a pressure transducer (Instrumentation Northwest PT2X with 0-50 psi sensor). A 0-15 psi pressure gauge was installed in port no. 2. Groundwater levels were measured by pressure transducer and by pressure gauge. A drawing of the wellhead monitoring configuration is located in Appendix B.

8. Monitoring well no. 12 (United Water Idaho monitoring well 1 B, Hope Lutheran Church): 2-inch pvc plastic monitoring well (part of a nested monitoring well) completed at staggered screen intervals from 400 ft. to 500 ft. below ground surface. Total well depth is 500 feet. Well is located in the SE ¼ of the SE ¼, Section 11, T.4N, R.1W and surveyed well location is shown on Figure 1. Surveyed ground surface elevation of 2518.83 ft. amsl. The distance from the pumping well is 2405.02 ft. Static water level is artesian. The wellhead was configured with an open ½-inch ball valve connected to a tee fitting used as two measuring ports. Port no. 1 was configured a sealed pressure chamber which housed a pressure transducer (Instrumentation Northwest PT2X with 0-50 psi sensor). A 0-30 psi pressure gauge was installed in port no. 2. Groundwater levels were measured by pressure transducer and by pressure gauge. A drawing of the wellhead monitoring configuration is located in Appendix B.

Water Level Measurements

Water level measurements were computed from downhole pressure transducer data collected at each monitoring well location. Transducer pressure measurements were made using Instrumentation Northwest PT2X and PS-9 series transducers with built-in data loggers. PT2X transducers record absolute pressure using a 0-50 psi sensor. Absolute pressure measurements were converted to gauge pressure using direct barometric compensation by subtracting corresponding atmospheric pressure measurements for the same time interval. Barometric pressure was measured and recorded using an Instrumentation Northwest PT2X-BV barometric sensor and data logger unit. Barometric pressure corrections were processed with the Instrumentation Northwest Aqua4plus software. The PS-9 series transducers are designed to measure gauge pressure directly using an atmospheric pressure compensation tube built into the unit and cable assembly.

Monitoring well gauge pressure data was converted to feet of groundwater above the pressure transducer sensor. The data was then converted to depth of groundwater below the measuring point (MP) using the sensor depth setting.

Groundwater level elevation data was calculated using the measured distance of the MP from the surveyed land surface elevation at each monitoring location and depth to groundwater data below the MP. The land surface elevation and location of each monitoring well was surveyed. Survey data for monitoring wells is located in Appendix D. Groundwater measurements and data conversions are shown on the monitoring well data sheet located in Appendix A.

Water level measurements were collected on 1-minute intervals during the background monitoring phase of the test. During the pumping and recovery phases of the test, water level measurements were made on 30-second intervals for the first 2-hour period. After the second hour, measurements were made on 1-minute intervals for the remainder of the test period. Backup hand measurements were made at all monitoring well locations to provide redundancy in the event a electronic transducer failed.

Pumping Configuration and Discharge Measurements

Test well no. 2 (Eaglefield) was used as the pumping well for the aquifer test. A line-shaft turbine pump (Layne 12 TLC-4 bowl) was installed with an intake depth of 111.22 ft. below ground surface. The pump was driven by a 100 h.p. 3-phase G.E. motor powered by a Caterpillar diesel generator. Groundwater discharge was controlled through an 8-inch diameter gate valve and piped approximately 330 feet to the northwest of the wellhead through 8-inch diameter portable aluminum irrigation pipe. Water flow was measured at the end of the pipeline using a 10-inch diameter circular orifice weir with 4-inch diameter constant discharge orifice plate and manometer tube. Water was discharged into the Middleton Irrigation Association canal system and flowed offsite.

AQUIFER TEST RESULTS

Barometric Pressure Monitoring

Barometric pressure measurement station was set up at the pumping well (test well no. 2) site. Barometric pressure measurements were performed on 1-minute intervals from May 24th to June 20th. The barometric data was use to correct PT2X transducer measurements. All barometric pressure corrections were processed with the Instrumentation Northwest Aqua4plus software.

Barometric data collected during the test is shown in the barometric data sheets located in Appendix A. A graph of barometric data collected during the test is located in Appendix C.

The pressure transducer data collected at the pumping well (test well no. 2) using an Instrumentation Northwest PS-9 gauge pressure transducer appears to be influenced by atmospheric pressure changes during the test. The water level elevation data graph of test well no. 2 shows a diurnal rise and fall in water level. The PS-9 transducer designed to operate with an atmospheric pressure compensation air tube. The transducer appears to have failed to fully compensate

for barometric pressure changes. The transducer data was not corrected and results are presented as recorded.

Background Water Level Monitoring

Background water level monitoring started at 10:00 am on May 25, 2006, except at monitoring well no. 6 were the City did not gain well access until June 2, 2006. Background water level measurements were suspended at test well no. 2 during the installation of the pump on May 25th and 26th. The pump installation required discharge of artesian flow on May 26, 2006 from 12:30 am to 3:30 for a brief period at 5:15 pm to install the transducer. Artesian flow was discharged into the irrigation canal adjacent to the well site. The pumping system was also tested intermittently between 10:00 am and 12:00 pm on May 31, 2006, which affected water levels in the aquifer during this period.

Water level data collected at each monitoring well is shown on the observation well data sheets located in Appendix A. Background water level data and trends are shown in the monitoring well water level elevation graphs for individual monitoring wells located in Appendix C.

Pump Test Water Level Monitoring

The pumping phase of the aquifer test was started on June 1, 2006 at 10:00 am as scheduled. The pumping rate was adjusted quickly at the discharge gate valve and set to a constant flow rate of 1580 gpm during the test. At 3:45 pm on June 1, pumping stopped due to a power failure. A field decision was made to restart the test on June 2 after the aquifer was allowed to recover overnight.

On June 2nd, at 10:00 am, the pump test was restarted for a 7-day period ending on June 9th at 10:00 am. At start up the pumping rate was adjusted at the discharge gate valve and set to a constant flow rate of 1580 gpm. The discharge flow rate was monitored continuously during start up and on a regular basis (approximately 1-hour intervals) during the later stage of the test. Two power failures occurred during the test on June 4th at 13:11 and June 6th at 18:51. In both cases, the pump was restarted immediately, resulting in only a few minutes of non-pumping time. Periodic flow adjustments were made at the discharge gate valve to maintain a constant flow rate of 1580 gpm. The flow rate was observed to drift up to approximately 1% before a flow adjustment was made. In the later portion of the pump test (June 8th and 9th), water levels in the well were observed to be fluctuating approximately 0.2 inches in the well while performing a hand measurements with an e-tape. On June 9th at 10:00 am, the pump was stopped after seven continuous days of pumping.

Groundwater water level data collected during the test is shown in the observation well data sheets located in Appendix A. Water level elevation graphs for individual monitoring wells are located in Appendix C. Water level drawdown results for test well no. 1 (Legacy), test well no. 2 (Eaglefield), monitoring well 11 (UWI 1A), and monitoring well 12 (UWI 1B) are shown on semi-log plots located in Appendix C.

Recovery Water Level Monitoring

The aquifer recovery period started immediately following the end of pumping on June 9th at 10:00 am and continued for seven days to June 16 at 10:00 am. Monitoring well transducers recorded data to June 19th and until each transducer was removed from the well, with the exception of monitoring well no. 6 (Rick's irrigation well) and the pumping well (Test well no. 2). The additional data collected from June 16th to June 19th was processed and included in the recovery dataset.

Several events occurred during the recovery monitoring period. The transducer at monitoring well no. 6 was removed on June 10th at 7:39 am. Monitoring well no. 6, an irrigation production owned by Tom Rick, was pumped for irrigation on June 10th from approximately 9:15 am to 5:00 pm at an estimated flow rate of 1000 gpm. On June 13th, the artesian discharge valve at the pumping well (Test well no. 2) was opened from 10:30 am to 1:08 pm to allow removal of the line-shaft turban pump assembly. The transducer was removed and continued to record measurements while out of the well. The open artesian discharge produced approximately 1000 gpm during this period. Water was discharge into the irrigation canal adjacent to the well site.

Groundwater water level data collected during the test is shown in the observation well data sheets located in Appendix A. Water level elevation graphs for individual monitoring wells are located in Appendix C. Water level recovery results for test well no. 1 (Legacy), test well no. 2 (Eaglefield), monitoring well 11 (UWI 1B), and monitoring well 12 (UWI 1B) are shown on semi-log plots located in Appendix C.

AQUIFER TEST DATA ANALYSIS

Water level data collected from the pumping and recovery periods of the aquifer test from monitoring well no. 1 (test well no. 1), monitoring well 11 (UWI 1A), monitoring well no. 12 (UWI 1B) and the pumping well (test well no. 2) was plotted as drawdown and recovery semi-log and log-log scale graphs. Monitoring well drawdown and recovery graphs are located in Appendix C. The drawdown and recovery data sets were analyzed using the Theis Method, based on a confined to semi-confined lower aquifer conceptual model for the test site. Transmissivity and

storativity values were computed from type curve matching of each data set using the Theis Method in AquiferTest 4.0 (Waterloo Hydrogeologic, Inc) computer software and results are listed below in Table 1.

Table 1
Computed Transmissivity and Storativity Values

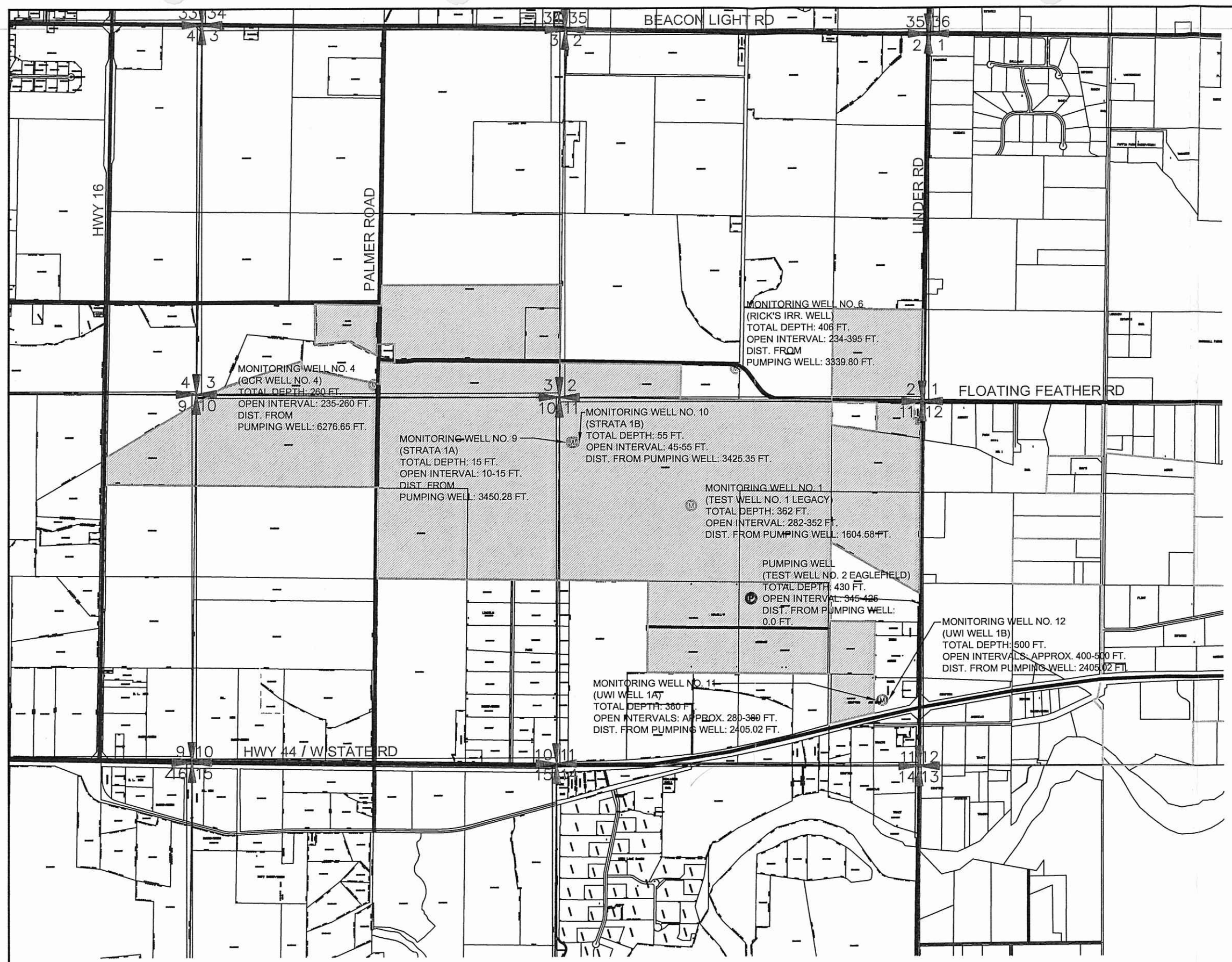
Monitoring Well	Data Set	Transmissivity (ft^2/day)	Storativity
Test well no. 1 (Legacy)	Drawdown	2.01×10^4	1.30×10^{-2}
Test well No. 2 (pumping well)	Drawdown	2.00×10^4	---
Monitoring well no. 11 (UWI 1A)	Drawdown	1.85×10^4	6.62×10^{-4}
Monitoring well no. 12 (UWI 1B)	Drawdown	1.80×10^4	8.00×10^{-4}
Test well no. 1 (Legacy)	Recovery	1.95×10^4	1.58×10^{-2}
Test well No. 2 (pumping well)	Recovery	1.75×10^4	---
Monitoring well no. 11 (UWI 1A)	Recovery	1.77×10^4	7.80×10^{-4}
Monitoring well no. 12 (UWI 1B)	Recovery	1.80×10^4	7.90×10^{-4}
Average Value	Test	1.87×10^4	5.31×10^{-3}

In the Theis analysis type curve fit, data points influenced by well interference or discharge of artesian flow were given a lower weighted valve or excluded from the data set to obtain a more representative type curve fit. The Theis analysis graphs showing calculated transmissivity and storativity valves for each data set are located in Appendix C. The computed average valve for transmissivity is 1.87×10^4 ft^2/day (139,886 gal/day/ft). The average value for storativity is 5.31×10^{-3}.

CITY OF EAGLE

AQUIFER TEST WELL MAP

FIGURE - 1



LEGEND:

PROPERTY OWNERSHIP

PROPOSED DEVELOPMENT

AQUIFER TEST WELLS

MONITORING WELL

PUMPING WELL

ROADS

PARCEL LINES

SECTION LINES

SECTION CORNERS

1500 0 1500 3000

SCALE: 1 INCH=1500 FEET

NOTE:

1) BASEMAP IS ADA AND CANYON COUNTY. (2005)

This map represents a compilation of public information from diverse records gathered by the City of Eagle and Holladay Engineering Company. The purpose for which this map is prepared is an overall general representation of positional relationships, and not a definitive description of location of any class of objects or conditions. Hence, no responsibility for errors can be or is assumed. The City of Eagle and Holladay Engineering Company CANNOT AND DO NOT GUARANTEE the absence of errors or the corrections of all information furnished to them for the preparation of this map.

REVISED JUNE 27 2006

HOLLADAY ENGINEERING CO.

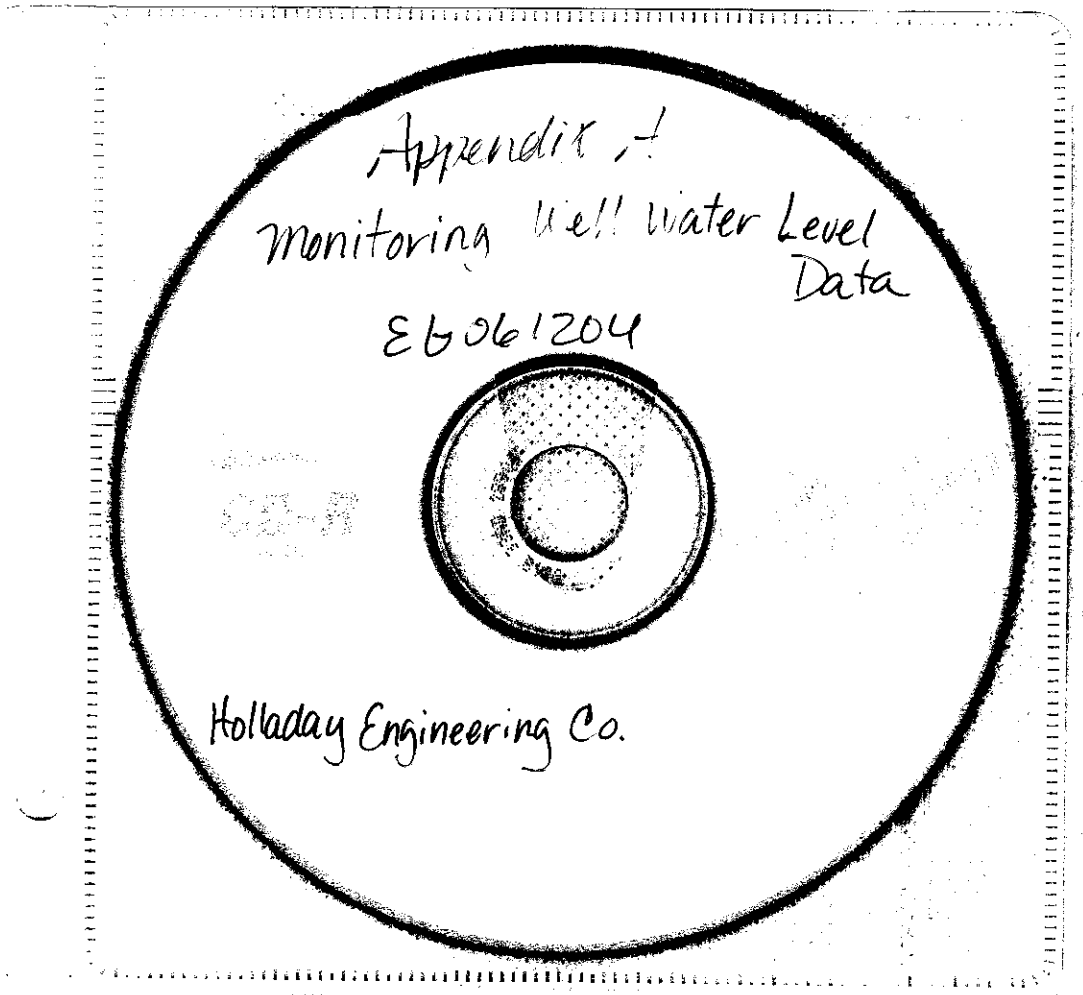
G:\Eg\061204\SURVEY'S PROJECT\DWG\061204 EAGLE layout

APPENDIX A

(Computer Disk Enclosed)

MONITORING WELL WATER LEVEL DATA

1. Test Well 2 (Eaglefield)(Pumping Well)
2. Test Well 1 (Legacy)
3. Monitoring Well 4 (QCR 4)
4. Monitoring Well 6 (Rick's)
5. Monitoring Well 9 (Strata 1A)
6. Monitoring Well 10 (Strata 1B)
7. Monitoring Well 11 (UWI 1A)
8. Monitoring Well 12 (UWI 1B)
9. Barometer


Appendix A
Monitoring Well Water Level Data
EB061204
Holladay Engineering Co.

APPENDIX B

MONITORING WELL INFORMATION

1. Test Well 2 (Eaglefield)(Pumping Well)
2. Test Well 1 (Legacy)
3. Monitoring Well 4 (QCR 4)
4. Monitoring Well 6 (Rick's)
5. Monitoring Well 9 (Strata 1A)
6. Monitoring Well 10 (Strata 1B)
7. Monitoring Well 11 (UWI 1A)
8. Monitoring Well 12 (UWI 1B)

Appendix B.1

TEST WELL 2 (Eaglefield)(Pumping Well)

Form 238-7
6/02

[redacted] OF WATER RESOURCES

WELL DRILLER'S REPORT

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

1. WELL TAG NO. D 0043405
DRILLING PERMIT NO. 88605 - 83870
Water Right or Injection Well No. 63-32089, 63-32090

2. OWNER:
Name CITY OF EAGLE
Address 310 E. STATE ST.
City EAGLE State ID Zip 83616

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub. or Directions to well. WELL #2 (EAGLEFIELD)
Twp. 4 North ☒ or South ☐
Rge. 1 East ☐ or West ☒
Sec. 22 ____ 1/4 NW 1/4 SE 1/4 (for mines)
Gov't Lot ____ County ADA
Lat: : : Long: : :
Address of Well Site 550' W of INTERSECTION of W TAYLOR DR + W GOLDEN EAGLE DRIVE City EAGLE
(Give at least name of road + distance to road or landmark)
LOT 24 Blk. 2 Sub. Name EAGLE FIELD ESTATES

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

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

6. DRILL METHOD:
☐ Air Rotary ☐ Cable ☐ Mud Rotary ☒ Other REVERSE

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
CEMENT GROUT	0	320	24 yards	PUMPED FROM BOTTOM TO TOP

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

8. CASING/LINER: 280' 16"x 13" REDUCER.

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
16	+5	280	.375	STEEL	☒	☐	☒	☐
10	280	345	.365	STEEL	☒	☐	☒	☐
					☐	☐	☐	☐

Length of Headpipe ____ Length of Tailpipe 5'
Packer ☐Y ☒N Type ____

9. PERFORATIONS/SCREENS PACKER TYPE
Perforation Method ____
Screen Type & Method of Installation JOHNSON WIRE WRAP

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
345	430	.020		10	SS	☒	☐
						☐	☐
						☐	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method
#6-9 CSSR SAND	330	430	30,000	DRY POUR

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
____ ft. below ground Artesian pressure 0.1 lb.
Depth flow encountered ____ ft. Describe access port or control devices: ____
FLANGE CAP W/ 2- 1¼" BRASS PLUGS

12. WELL TESTS:
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
1125 gpm		45.2'	10 min

Water Temp. ____ Bottom hole temp. ____
Water Quality test or comments: ____
Depth first Water Encounter ____

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
28	0	3	TOP SOIL		
	3	28	RIVER GRAVEL		
	28	48	TAN CLAY		
	48	56	SAND		
	56	63	RUSTY TAN CLAY		
	63	135	SAND W/SM TAN CLAY STRINGERS		
	135	183	TAN CLAY W/SAND STRINGERS		
	183	189	FINE - MED SAND		
	189	194	TAN CLAY		
	194	315	SAND SM GRAVEL		
	315	328	CLAY		
↓	328	290	SAND FINE - MED W/SM CLAY STRINGERS		
20	290	297	SAND - FINE		
	297	339	BR. RUSTY, GREEN + GRAY CLAY		
	339	436	COARSE SAND, SOME BRN CLAY		
	436	444	BRN RUSTY CLAY		

Completed Depth 430' (Measurable)
Date: Started 5-21-06 Completed 5-22-06

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

Company Name RUSSELL INC Firm No. 333
Principal Driller [signature] Date 5-22-06
and
Driller or Operator II Justin Clark Date 5-22-06
Operator I ____ Date ____
Principal Driller and Rig Operator *Required*.
Operator I must have signature of Driller/Operator II.

FORWARD WHITE COPY TO WATER RESOURCES

SPF Water Engineering, LLC
water resource consultants

April 8, 2006

Peter Harris
Eaglefield, LLC
6951 Duncan Lane
Boise, ID 83714

Subject: Final Design for Eaglefield Well No. 1 (City of Eagle Test Well 4)

Dear Peter:

Drilling of the municipal test well borehole at Eaglefield was completed to approximately 444 feet on April 7, 2006. The borehole is nominal 20-inch diameter and was advanced using the reverse rotary method. The drill cuttings consist primarily of brown sand, tan clay, and brown clay above 438 feet. Blue-gray clay was encountered from 438 to 444 feet.

Geophysical logging was conducted on April 7. Strata Data, Inc. from Casper, Wyoming, was the geophysical contractor. Logs run include natural gamma radiation, spontaneous potential, single point resistivity, 16-inch normal resistivity, and 64-inch normal resistivity.

Drill cuttings and geophysical logs document the presence of a potentially productive sand layer from 330 feet to 433 feet. This sand layer corresponds with the target interval for this well, and we propose completing the well with screens extending from 345 to 425 feet.

The completed well will include 16-inch casing from approximately 5 feet above ground surface to 280 feet, 12-inch casing from 280 feet to 345 feet, 12-inch well screen from 345 feet to 425 feet, and 12-inch tail pipe with plate bottom from 425 feet to 430 feet. A 16-inch by 12-inch welded reducer will be used to connect the 12-inch and 16-inch casing strings. The invert of the 10-inch artesian by-pass line will be approximately 2.5 feet above existing ground surface.

No. 6-9 Colorado Silica Sand filter pack will be installed in the borehole annulus from 320 to 430 feet. Estimated volume is approximately 5 cubic yards.

Bentonite chips will be used as surface seal material. The chips will extend from 320 feet to ground surface. Estimated volume is approximately 34 cubic yards. Prior to installation of casing and screen, the borehole from ground surface to 300 feet will be reamed to 28-inch diameter to facilitate installation of the bentonite surface seal.

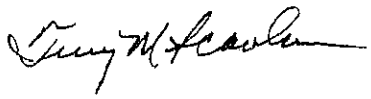
We are still discussing well development options with Riverside. Our current thinking is to develop the well initially by bailing, air lifting, or pumping until artesian flow is

achieved. After the initial artesian flow clears, development will continue by shutting in the well, pressurizing the casing with compressed air, and then releasing pressure to allow artesian flow. This procedure can be repeated until the artesian flow clears. Air pressures should start low, and gradually increase up to 100 psi. The artesian flow rate and shut-in pressure following initial development will allow a preliminary determination of well capacity as soon as possible. Final development will be completed using the test pump.

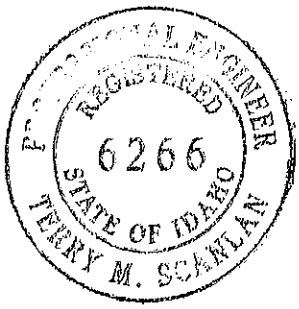
A well design schematic, drill log, and field geophysical logs are enclosed for your records.

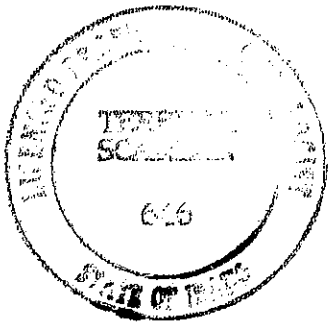
Please contact me with any questions.

Sincerely,



Terry M. Scanlan, P.E., P.G.





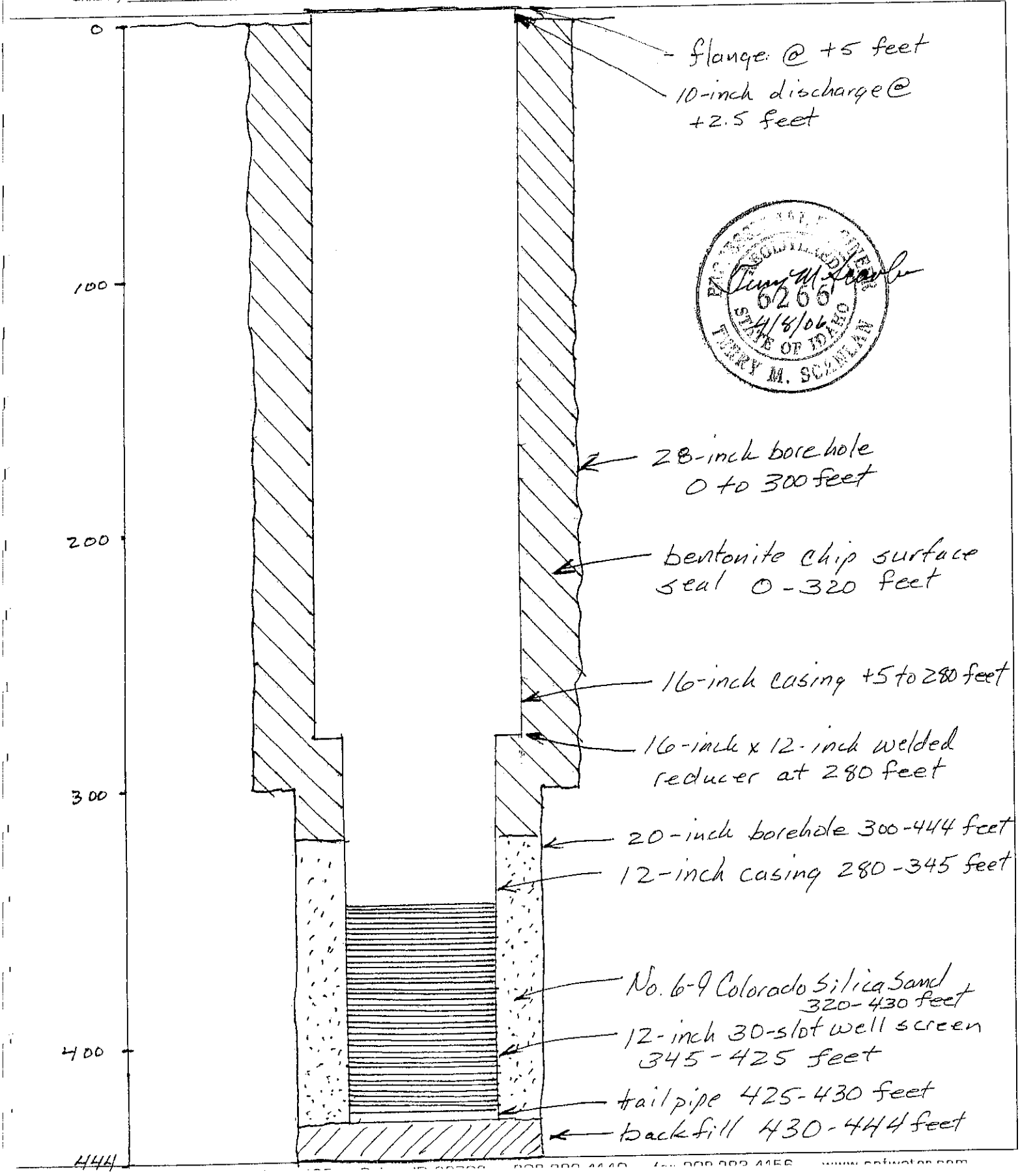
cc: Terry Daugherty – Riverside, Inc.
Rob Whitney – Idaho Department of Water Resources
Chris Duncan – Holladay Engineering

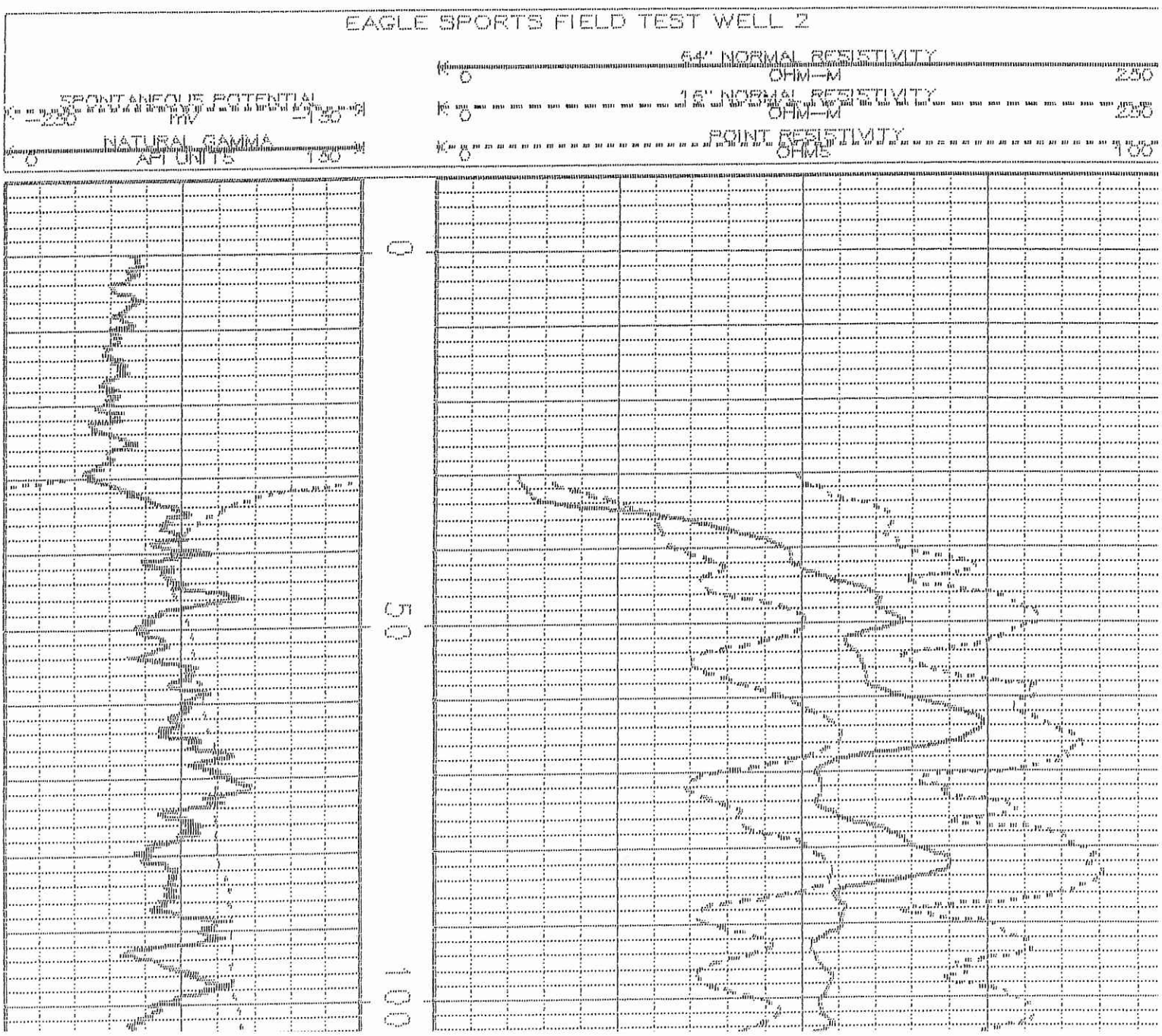
Attachments: Well Schematic
Drill Log
Geophysical Logs

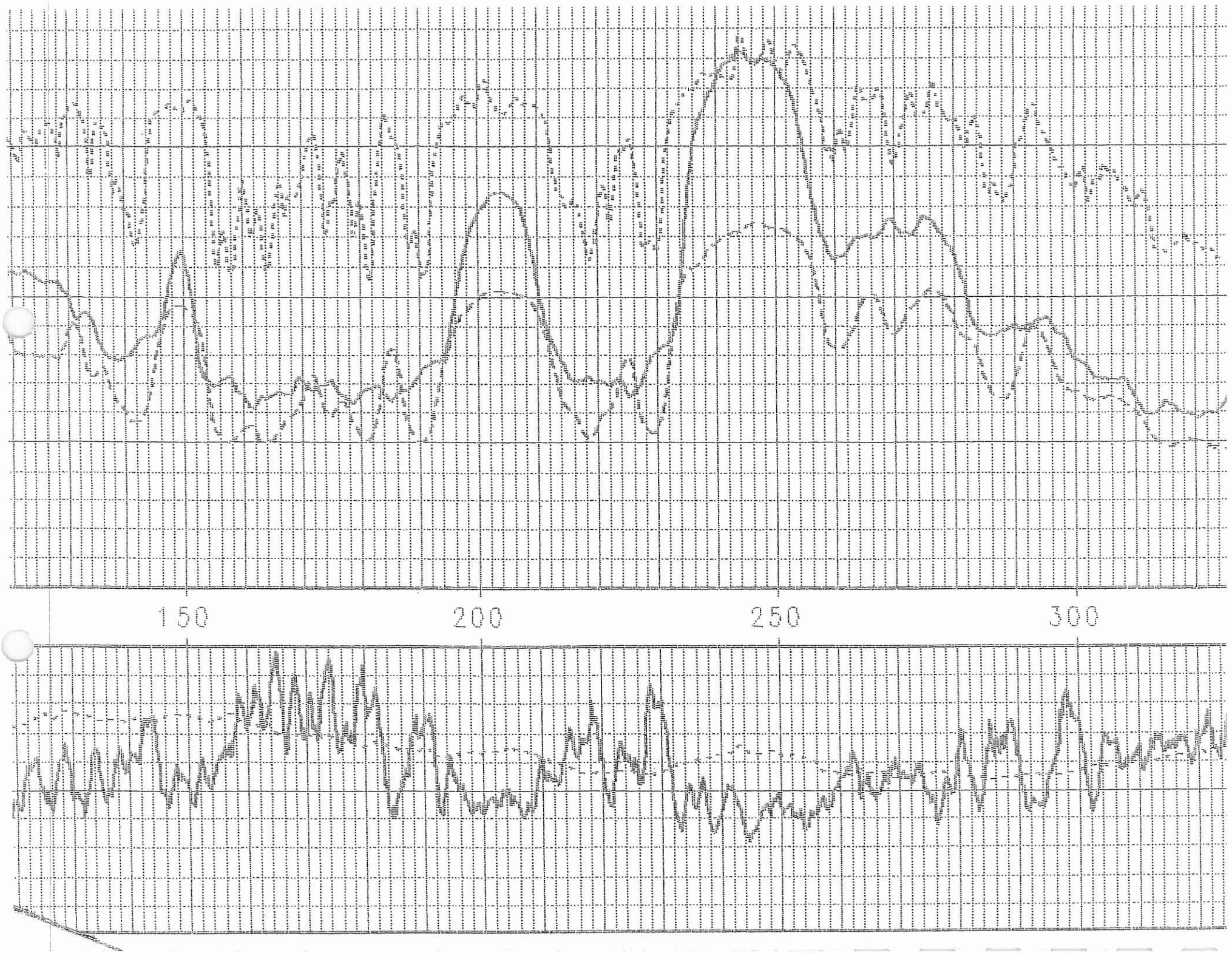
SPF Water Engineering, LLC
water resource consultants

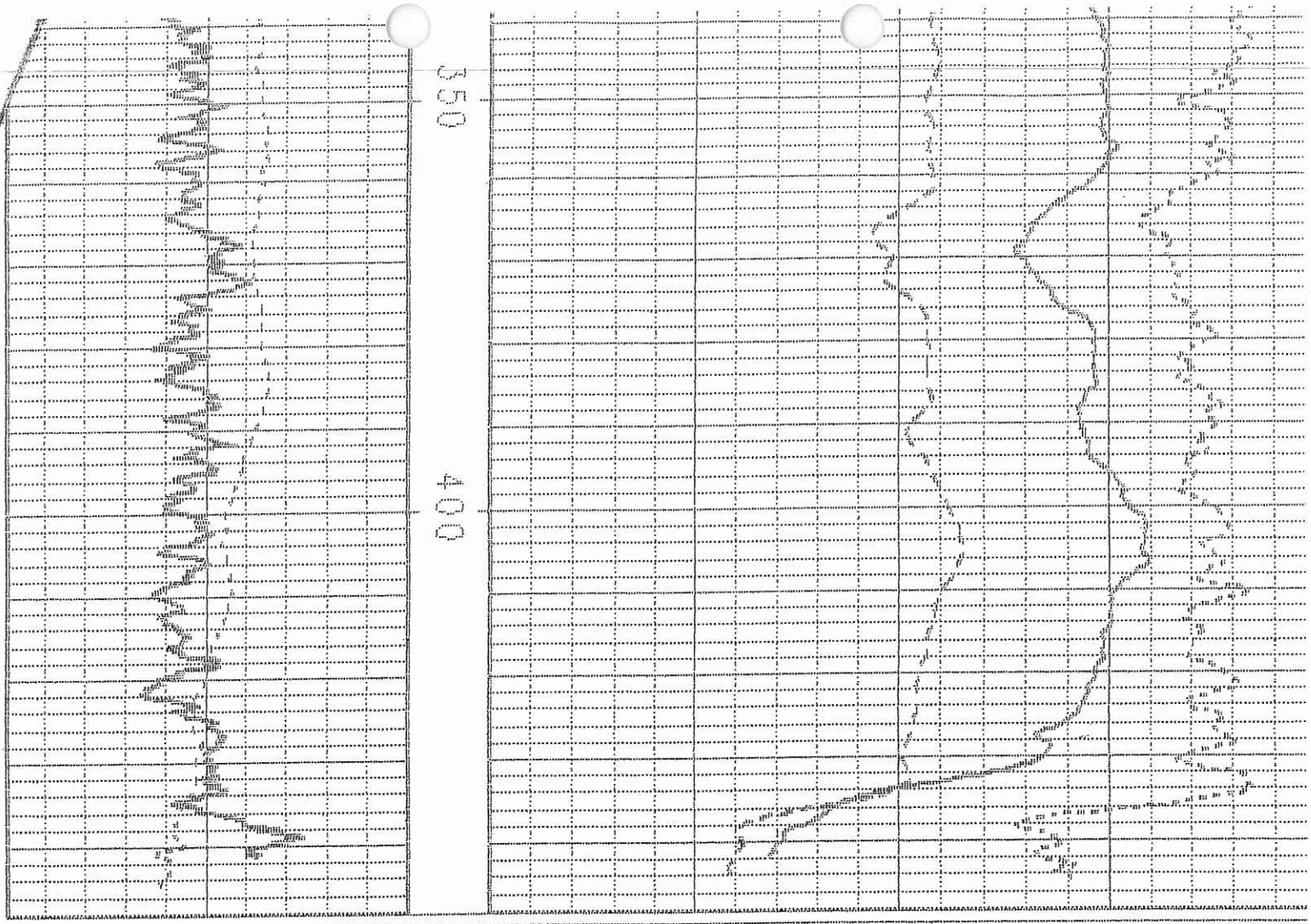
By TS Date 4/4/06 Client Eaglefield Sheet 1 of 1

Chkd By _____ Description Final Well Design - Eagle Well #4 Job No 421.0010

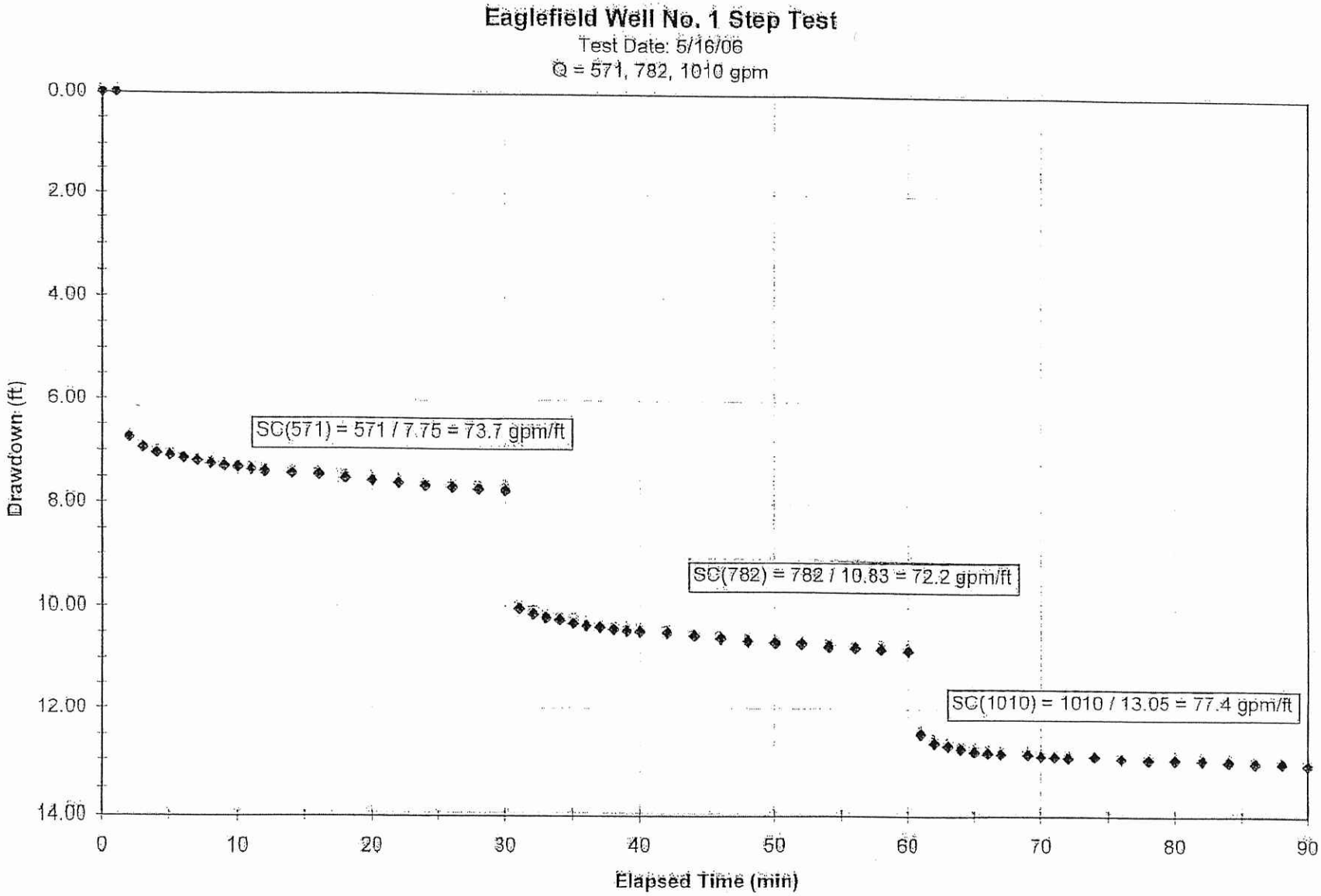



EAGLE SPORTS FIELD TEST WELL 2
64" NORMAL RESISTIVITY
0
OHM-M
250
16" NORMAL RESISTIVITY
0
OHM-M
250
SPONTANEOUS POTENTIAL
-250
MV
-150
NATURAL GAMMA
0
API UNITS
150
POINT RESISTIVITY
0
OHMS
100
0
50
100


150
200
250
300



EAGLE SPORTS FIELD TEST WELL 2


Eaglefield Well No. 1 Step Test
Test Date: 5/16/06
Q = 571, 782, 1010 gpm
Drawdown (ft)
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
SC(571) = 571 / 7.75 = 73.7 gpm/ft
SC(782) = 782 / 10.83 = 72.2 gpm/ft
SC(1010) = 1010 / 13.05 = 77.4 gpm/ft
0
10
20
30
40
50
60
70
80
90
Elapsed Time (min)

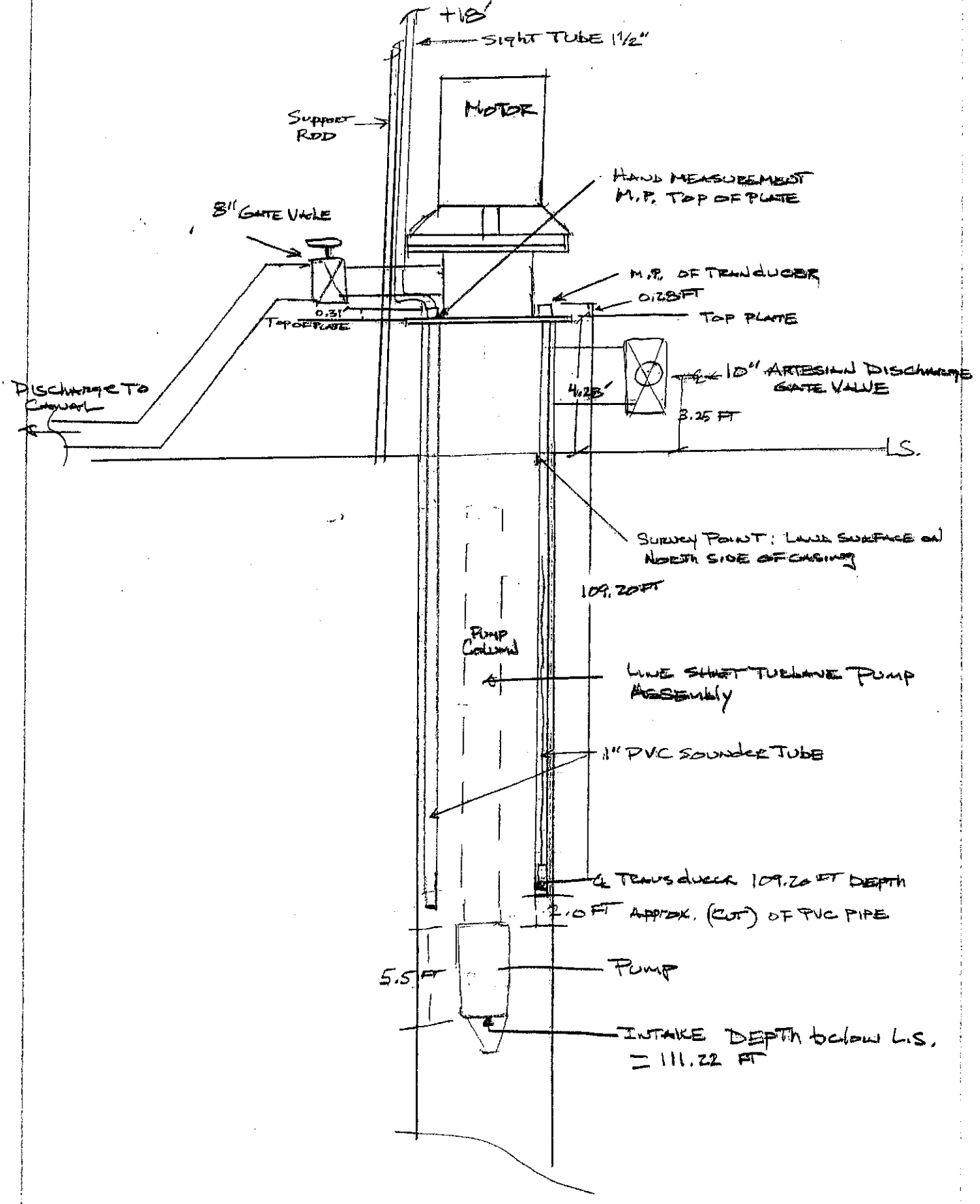
Eaglefield Well No. 1 Step Test, Q = 571, 782, 1010 gpm					
Test conducted by: SPF Water					
Flow measured by: 10x7 orifice, h = 8, 15, 25-inches					
Water level measured by: manometer, all water levels above ground surface					
Date	Time	WL (ft)	Elapsed Time (min)	DD (ft)	Remarks
5/16	12:56	18.75			static
5/16	13:00		0	0.00	open gate valve
5/16	13:01	18.75	1	0.00	adjust h=8"
5/16	13:02	12.00	2	6.75	
5/16	13:03	11.80	3	6.95	
5/16	13:04	11.70	4	7.05	
5/16	13:05	11.65	5	7.10	
5/16	13:06	11.60	6	7.15	
5/16	13:07	11.55	7	7.20	
5/16	13:08	11.50	8	7.25	
5/16	13:09	11.45	9	7.30	
5/16	13:10	11.43	10	7.32	
5/16	13:11	11.39	11	7.36	
5/16	13:12	11.35	12	7.40	T=16.3, pH=7.44, EC/SC=208.1/244.0
5/16	13:14	11.32	14	7.43	
5/16	13:16	11.30	16	7.45	
5/16	13:18	11.23	18	7.52	T=15.9, pH=7.46, EC/SC=209.9/246.4
5/16	13:20	11.19	20	7.56	
5/16	13:22	11.14	22	7.61	
5/16	13:24	11.09	24	7.66	
5/16	13:26	11.06	26	7.69	
5/16	13:28	11.03	28	7.72	T=16.1, pH=7.45, EC/SC=209.9/246.4
5/16	13:30	11.00	30	7.75	Increase h=15"
5/16	13:31	8.70	31	10.05	
5/16	13:32	8.60	32	10.15	
5/16	13:33	8.53	33	10.22	
5/16	13:34	8.49	34	10.26	
5/16	13:35	8.42	35	10.33	
5/16	13:36	8.38	36	10.37	
5/16	13:37	8.35	37	10.40	
5/16	13:38	8.31	38	10.44	
5/16	13:39	8.28	39	10.47	difficult to read manometer, behind duct
5/16	13:40	8.27	40	10.48	tape
5/16	13:42	8.25	42	10.50	
5/16	13:44	8.20	44	10.55	T=16.1, EC/SC=208.8/245.6
5/16	13:46	8.15	46	10.60	
5/16	13:48	8.10	48	10.65	
5/16	13:50	8.07	50	10.68	
5/16	13:52	8.05	52	10.70	
5/16	13:54	8.00	54	10.75	T=16.0, pH=7.38, EC/SC=208.2/245.4
5/16	13:56	7.98	56	10.77	
5/16	13:58	7.95	58	10.80	T=16.0, pH=7.37, EC/SC=208.0/244.9
5/16	14:00	7.92	60	10.83	
5/16	14:01	6.28	61	12.47	increase h=25"
5/16	14:02	6.11	62	12.64	

Date	Time	WL (ft)	Elapsed Time (min)	DD (ft)	Remarks
5/16	14:03	6.05	63	12.70	
5/16	14:04	6.00	64	12.75	
5/16	14:05	5.94	65	12.81	
5/16	14:06	5.92	66	12.83	
5/16	14:07	5.90	67	12.85	check on flow along discharge channel,
5/16	14:09	5.89	69	12.86	mised reading
5/16	14:10	5.85	70	12.90	adjust gate valve couple of turns
5/16	14:11	5.84	71	12.91	
5/16	14:12	5.83	72	12.92	
5/16	14:14	5.85	74	12.90	T=16.0, pH=7.43, EC/SC=208.6/245.6
5/16	14:16	5.81	76	12.94	
5/16	14:18	5.79	78	12.96	
5/16	14:20	5.79	80	12.96	T=16.0, pH=7.42, EC/SC=208.7/245.7
5/16	14:22	5.78	82	12.97	
5/16	14:24	5.75	84	13.00	
5/16	14:26	5.73	86	13.02	
5/16	14:28	5.73	88	13.02	
5/16	14:30	5.70	90	13.05	closed gate valve

TEST WELL No. 2 (EAGLE FIED)

Pumping Well

EAGLE 7-DAY AQUIFER TEST



Appendix B.2

TEST WELL 1 (Legacy)

Form 238-7
6/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Well ID No.
Inspected by
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: : : Long: : :

1. WELL TAG NO. D 0041980
DRILLING PERMIT NO. 890994 - 835987
Water Right or Injection Well No. 63-32089 & 63-32090

2. OWNER:
Name CITY OF EAGLE
Address P.O. Box 1520
City EAGLE State ID Zip 83616

3. LOCATION OF WELL by legal description: LEGACY WELL #2
You must provide address or Lot, Blk, Sub. or Directions to well.
Twp. 4 North ☒ or South ☐
Rge. 1 East ☐ or West ☒
Sec. 11 SE 1/4 NW 1/4
Gov't Lot ____ County ADA
Lat: : : Long: : :
Address of Well Site QUARTER CIRCLE DJ RANCH, WEST OF EAGLE ROAD City EAGLE
(Give or draw name of road + Distance to (nearest) Landmark)
Lt. ____ Blk. ____ Sub. Name ____

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

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

6. DRILL METHOD:
☐ Air Rotary ☐ Cable ☐ Mud Rotary ☒ Other REVERSE

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
CEMENT GROUT	0	272	24 gals	PUMPED BOTTOM TO TOP
BENTONITE	360	415	12,000	DRY POUR

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

8. CASING/LINER: 16" X 12" REDUCER @ 180' TO 181'

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
16	+4	180	.375	STEEL	☒	☐	☒	☐
12	181	282	.375	STEEL	☒	☐	☒	☐
					☐	☐	☐	☐

Length of Headpipe ____ Length of Tailpipe 5'
Packer ☐Y ☒N Type ____

9. PERFORATIONS/SCREENS PACKER TYPE
Perforation Method ____
Screen Type & Method of Installation JOHNSON WIRE WRAP

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
282	352	.030		12	S.S.	☒	☐
						☐	☐
						☐	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method
#8-12 SAND	278	360	24,000	DRY POUR

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
____ ft. below ground Artesian pressure 6 lb.
Depth flow encountered ____ ft. Describe access port or control devices: ____
FLANGED CAP W/ 1¼" PIPE PLUG

12. WELL TESTS:
☒ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
1300 gpm	149'	135'	4 ½ hrs

Water Temp. ____ Bottom hole temp. ____
Water Quality test or comments: ____
Depth first Water Encounter ____

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
24	0	4	TOP SOIL		
	4	7	CLAY		
	7	11	SAND		
	11	28	SAND, RIVER GRAVELS		
	28	60	BRN CLAY		
	60	63	SAND		
	63	72	BRN CLAY		
	72	92	SAND		
	92	94	BRN CLAY		
	94	166	SAND W/BRN CLAY STREAKS		
	166	174	CLAY		
	174	178	SAND		
	178	181	CLAY		
	181	183	SAND, CLAY STREAKS		
	183	257	SAND		
	257	264	CLAY		
	264	274	SAND W/CLAY STREAKS		
	274	353	SAND		
	353	360	BLUE CLAY		
	360	384	BLUE CLAY		
20	384	387	SAND		
	387	419	BLUE-GRAY CLAY		
	419	444	SAND		
	444	459	BLUE-GRAY CLAY		
	459	493	SAND W/ CLAY LAYERS		
	493	501	BLUE-GRAY CLAY		
	501	505	CEMENTED SAND		
	505	513	BLUE-GRAY CLAY		
			NOTE: BORE HOLE ABANDONMENT FROM 415' TO 513' WITH DRILL CUTTINGS		

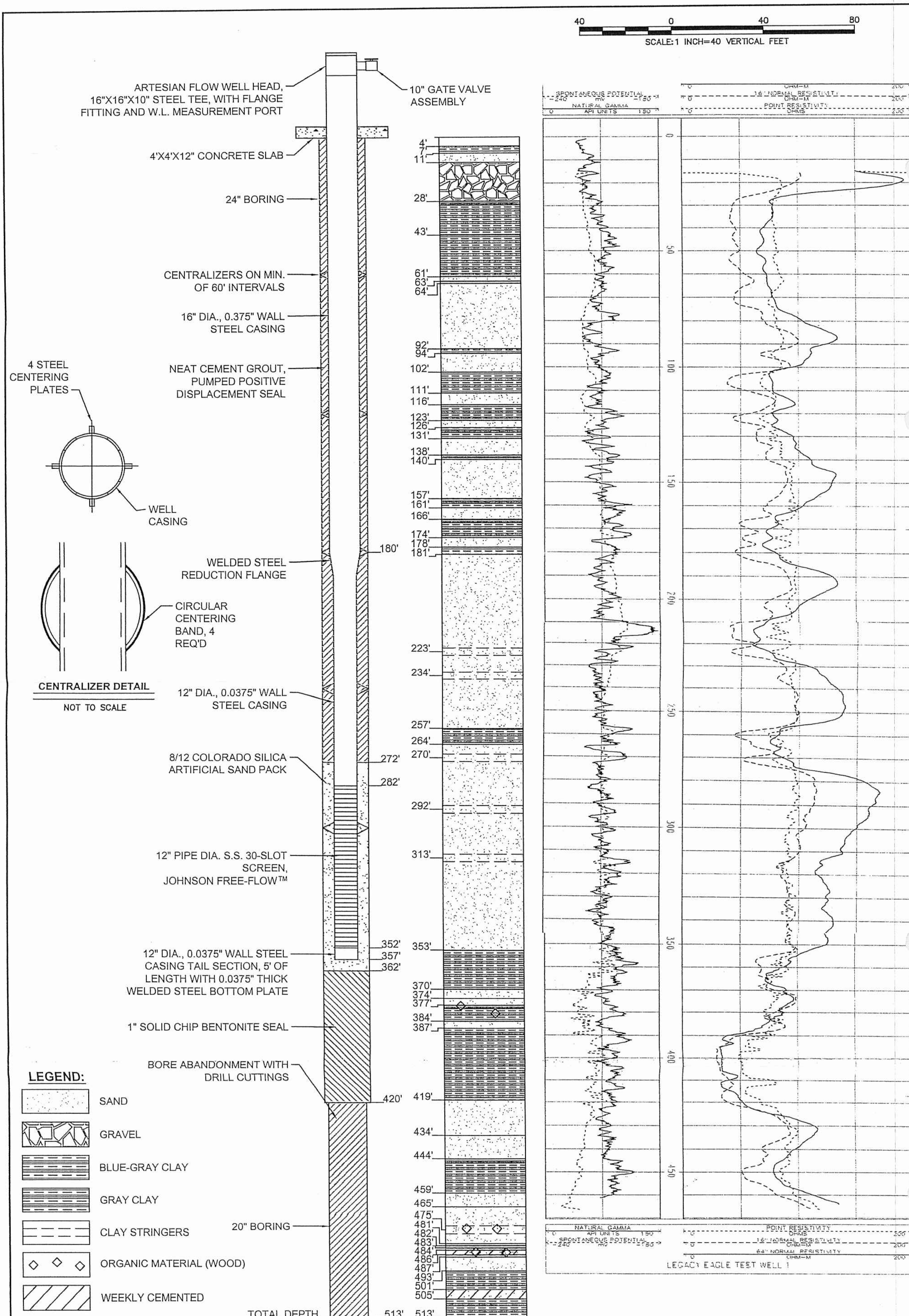
Completed Depth 351' (Measurable)
Date: Started 1-24-06 Completed 4-17-06

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

Company Name RIVERSIDE INC Firm No. 333
Principal Driller [signature] Date 5-15-06
and
Driller or Operator II ____ Date ____
Operator I Jeff Nash Date 5-15-06

Principal Driller and Rig Operator *Required.*
Operator I must have signature of Driller/Operator II.

FORWARD WHITE COPY TO WATER RESOURCES



REUSE OF DOCUMENTS

THIS DOCUMENT, AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICE, IS THE PROPERTY OF HOLLADAY ENG. CO. AND IS NOT TO BE USED, IN WHOLE OR IN PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF HOLLADAY ENG. CO.

JOB NO:	EG 061204
CADD FILE:	I:\EG\061204\As-Built\061204_TESTWELL
DATE:	2/10/06
REVISED:	3/13/06
PLOTTED:	3/13/06
DRAWN BY:	MGM
CHECKED BY:	CHD
SHEET	

AS-BUILT 2-17-06
EAGLE TEST WELL NO. 1
CITY OF EAGLE, IDAHO

HOLLADAY ENGINEERING CO.
ENGINEERS · CONSULTANTS
32 N. MAIN P.O. BOX 235 PAYETTE, ID 83661
(208) 642-3304 · FAX# (208) 642-2159
EMAIL: hec@holladayengineering.com

GEOTECHNICAL BOREHOLE LOG

HOLLADAY ENGINEERING COMPANY

BOREHOLE ID: TEST WELL No. 1 (LEGACY) PROJECT NO.: EG061204 PAGE: 1 of 6

PROJECT NAME: CITY OF EAGLE WR 63-32051 AND WR 63-32076 LOCATION: QUARTER CIRCLE DJ RANCH EAGLE, ID SITE LOCATION: SE, NW, S.11, T.4N, R.1

COLLAR EL: _____ NORTHING: _____ EASTING: _____

HOLE DIAMETER: 18", 20" (BIT) DRILL METHOD: REVERSE ROTARY MUD DRILL MODEL: JED-A

DRILLER: RIVERSIDE, INC. LOGGER: C.D. RIVERSIDE, INC. (JEFF HASH) STATIC WATER DEPTH: _____

Depth (ft)	Date Time	Induration & Color	Soil or Rock Description	Graph Log	Sample format	Blows (N)	%Moisture water level	Fracture Density, Drill Notes, Gen Comment
0-4	1/20/06	Med-DK. Brown	LOAM SOIL. Approx. 40% SILT, 30% SAND, 20% CLAY AND 10% ORGANIC.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	MUD 9/3 MIX, BAROID 18" BIT, WASHED SAMPLE 8 lbs. MUD (DRILLER)
4-7	1/20/06	DK. Brown	SILTY CLAY. Approx 40% SILT, 50% CLAY 10% SAND. SOFT		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE
7-11	1/23/06	TAN/IGH-GRAY	SILTY SAND. Approx. 20% SILT AND 80% V. FINE TO COARSE SAND, GRANITIC.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE
11-13	1/23/06	TAN/ISH-GRAY	SANDY GRAVEL. Approx. 60% FINE-V. COARSE SAND, 40% FINE-COARSE GRAVEL AND 10% COBBLE ANGULAR TO WELL ROUNDED.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	DIFFICULT DRILL, BIT BOUNCE, WASHED SAMPLE, BORING ENLARGEMENT, COBBLE SEAMING
13-18	1/23/06	TAN/ISH-GRAY	SANDY GRAVEL. Approx. 70% Med-V. COARSE SAND, 40% F.-C. GRAVEL 20% COBBLE, WELL ROUNDED GRANITIC.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	DIFFICULT BOUNCE, SLOW DRILLING, WASHED SAMPLE, BORING ENLARGEMENT.
18-28	1/24/06	TAN/ISH-GRAY	SANDY GRAVEL. Approx. 60% Med-V. COARSE SAND 40% F.-C. GRAVEL MINOR COBBLE. WELL ROUNDED GRANITIC.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE BORING ENLARGEMENT
28-43	1/24/06	TAN	SANDY SILTY CLAY. Approx. 10% FINE SAND, 30% SILT AND 60% CLAY. STICKY, Good Ribbon.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE
43-60	1/25/06	TAN	SILTY CLAY. Approx. 30% SILT AND 70% CLAY. STICKY, Good Ribbon.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	20" BIT AT 53 FT, WASHED SAMPLE
60-63	1/26/06	TAN	CLAYEY SANDY SILT. Approx. 15% CLAY, 20% FINE SAND AND 65% CLAY. STICKY Good Ribbon.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE
63-64	1/26/06	ORANGISH-TAN	SILTY CLAY. Approx. 30% SILT AND 70% CLAY. STICKY, Good Ribbon.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE

GEOTECHNICAL BOREHOLE LOG
HOLLADAY ENGINEERING COMPANY

BOREHOLE ID: EAGLE TEST Well No. 1 PROJECT NO.: EG 061204 PAGE: 2 of 6

PROJECT NAME: CITY OF EAGLE (WR 63-32089, WR 63-32090) LOCATION: QUARTER CIRCLE D.I. RANCH, EAGLE, ID SITE LOCATION: SE, NW, S.11, T.4N, R.1W

COLLAR EL: _____ NORTHING: _____ EASTING: _____

HOLE DIAMETER: 18", 20" (BIT) DRILL METHOD: REVERSE ROTARY MUD DRILL MODEL: JED-A

DRILLER: RIVERSIDE, INC. LOGGER: C.D. & RIVERSIDE, INC. (JEFF HASH) STATIC WATER DEPTH: _____

Depth (ft)	Date Time	Induration & Color	Soil or Rock Description	Graph Log	Sample format	Blows (N)	%Moisture water level	Fracture Density, Drill Notes, Gen Comment
64-72	1/26/06	TAN	SILTY CLAY. APPROX. 30% SILT AND 70% CLAY. STICKY & GOOD RIBBON.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE
72-74	1/27/06	TANNISH-GRAY	SILTY SAND. APPROX. 30% SILT AND 70% FINE-GRAINED SAND. POORLY SORTED. GRANITIC.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE. MUD TESTED AT 9 lbs. MIX.
74-92	1/27/06	TANNISH-GRAY	SAND. FINE TO COARSE GRAINED. WELL SORTED, GRANITIC.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE
92-94	1/27/06	TAN	SILTY CLAY. APPROX. 50% SILT AND 50% CLAY. STICKY. MOD. RIBBON.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE
94-102	1/27/06	TANNISH-GRAY	SAND, FINE TO COARSE GRAINED, WELL SORTED, GRANITIC		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE
102-104	1/27/06	TAN	SILTY CLAY. APPROX. 60% SILT AND 40% CLAY. MOD. RIBBON. STICKY.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE
104-109	1/27/06	TAN	SILTY CLAY. APPROX. 40% SILT AND 60% CLAY. GOOD RIBBON. STICKY.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
109-111	1/27/06	TAN	CLAYEY SILT. APPROX. 20% CLAY AND 70% SILT. POOR - NO RIBBON.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
111-116	1/27/06	TANNISH-GRAY	SAND. FINE - V. COARSE GRAINED. GRANITIC.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
116-123	1/27/06	TAN	CLAY. APPROX. 20% SILT AND 80% CLAY. STICKY. GOOD RIBBON.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.

GEOTECHNICAL BOREHOLE LOG
HOLLADAY ENGINEERING COMPANY

BOREHOLE ID: EAGLE TEST WELL No. 1 PROJECT NO.: EG06-1204 PAGE: 3 of 6

PROJECT NAME: CITY OF EAGLE WR 63-32089 WR 63-32090 LOCATION: QUARTER CIRCLE D.J. RANCH SITE LOCATION: SE, NW, S.11, T.4N, R.1W

COLLAR EL: _____ NORTHING: _____ EASTING: _____

HOLE DIAMETER: 18", 20" (BIT) DRILL METHOD: REVERSE ROTATY MUD DRILL MODEL: JED-A

DRILLER: RIVERSIDE, INC. LOGGER: C.D. & RIVERSIDE, INC. (JEFF HANSEN) STATIC WATER DEPTH: _____

Depth (ft)	Date Time	Induration & Color	Soil or Rock Description	Graph Log	Sample format	Blows (N)	%Moisture water level	Fracture Density, Drill Notes, Gen Comment
123-126	1/27/06	TAN/WISH-GRAY	SAND, FINE TO V. COARSE SAND. WELL SORTED. GRANITIC,		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
126-131	1/27/06	TAN	SILTY CLAY. APPROX. 50% SILT AND 50% CLAY. STICKY. GOOD RIBBON.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
131-134	1/27/06	TAN/WISH-GRAY	SAND, FINE TO COARSE GRAINED. GRANITIC.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
134-140	1/27/06	TAN	SILTY CLAY. APPROX. 60% SILT AND 40% CLAY. MOD. RIBBON. STICKY.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
140-157	1/27/06	TAN/WISH-GRAY	SAND. FINE - COARSE GRAINED. GRANITIC.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
157-161	1/28/06	TAN	SILTY CLAY. APPROX. 50% SILT AND 50% CLAY. SOFT. STICKY GOOD RIBBON.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
161-166	1/28/06	TAN/WISH-GRAY	SAND. FINE TO COARSE WELL SORTED; GRANITIC.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
166-174	1/28/06	TAN	CLAY. APPROX. 30% AND 70% CLAY. SOFT. STICKY. GOOD RIBBON.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
174-181	1/28/06	TAN	SANDY SILTY CLAY. APPROX. 10% FINE SAND, 30% SILT AND 60% CLAY. SOFT. STICKY. MOD. RIBBON.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
181-191	1/28/06	TAN/WISH-GRAY	SILTY CLAYEY SAND. APPROX. 10% CLAY, 30% SILT AND 60% SAND, VFINE TO COARSE, POORLY SORTED.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.

GEOTECHNICAL BOREHOLE LOG
HOLLADAY ENGINEERING COMPANY

BOREHOLE ID: EAGLE TEST WELL No.1 PROJECT NO.: EG061204 PAGE: 4 of 6

PROJECT NAME: CITY OF EAGLE LOCATION: QUARTER CIRCLE D.J. RANCH SITE LOCATION: SE, NW, S.11, T.4N. R.1W
WR 63-32089
WR 63-32090

COLLAR EL: _____ NORTHING: _____ EASTING: _____

HOLE DIAMETER: 18", 20" (BIT) DRILL METHOD: REVERSE ROTARY MUD DRILL MODEL: JED-A

DRILLER: RIVERSIDE, INC. LOGGER: C.D. & RIVERSIDE INC. (JEFF HASH) STATIC WATER DEPTH: _____

Depth (ft)	Date Time	Induration & Color	Soil or Rock Description	Graph Log	Sample format	Blows (N)	%Moisture water level	Fracture Density, Drill Notes, Gen Comment
191-203	1/28/06	TAN/GRAY	SAND, FINE TO COARSE GRAINED. MOD. SORTED, GRANITIC.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
203-221	1/28/06	TAN/GRAY	CLAYEY SILTY SAND, APPROX. 10% CLAY, 20% SILT AND 70% V. FINE TO MED. SAND, POORLY SORTED.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
221-223	1/28/06	TAN	SILTY CLAY. APPROX. 60% SILT AND 40% CLAY. MOD. RIBBON		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE. NOTE: REPORT AS STRINGERS, BASED ON DRILL RATE.
223-257	1/28/06	TAN/GRAY	SAND, FINE TO MED. GRAINED SAND, WELL SORTED, SUBANGULAR, GRANITIC.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE. NOTE: CLAY STRINGER AT 234 FT. REPORTED BY DRILLER.
257-264	1/28/06	TAN	CLAY, APPROX. 10% SILT AND 90% CLAY, SOFT, STICKY. GOOD RIBBON.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE NOTE: SAND STRINGER REPORTED BY DRILLER AT 260 FT.
264-320	1/28/06	TAN/GRAY	SAND, V. FINE TO MED. GRAINED. WELL SORTED, SUBANGULAR, GRANITIC		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE. NOTE: CLAY STRINGER REPORTED BY DRILLER AT 292 FT. AND 313 FT.
320-353	1/30/06	TAN/GRAY	SAND GRADING TO SILTY SAND. APPROX. 20% SILT AND 80% V. FINE TO MED. SAND. MODERATELY SORTED.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
353-370	1/30/06	BLUE-GRAY	SANDY SILTY CLAY. APPROX. 20% V. FINE SAND, 20% SILT AND 60% CLAY. SOFT. POORLY SORTED. GRANITIC.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
370-377	1/30/06	TAN/GRAY	SILTY SAND, APPROX. 10% CLAY, 20% SILT AND 70% V. FINE TO COARSE SAND. POORLY SORTED. GRANITIC.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE. 9.0 LBS MUD (DRILLER)
377-384	1/30/06	BLUE-GRAY	SANDY SILTY CLAY. APPROX. 20% V. FINE TO FINE SAND, 20% SILT AND 60% CLAY. SOFT, STICKY MOD. RIBBON, 5% CARBON WOOD		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.

GEOTECHNICAL BOREHOLE LOG
HOLLADAY ENGINEERING COMPANY

BOREHOLE ID: EAGLE TEST WELL No. 1 PROJECT NO.: EG 061204 PAGE: 5 of 6

PROJECT NAME: CITY OF EAGLE WR 63-32089 WR 63-32090 LOCATION: QUARTER CIRCLE D. J. RANCH SITE LOCATION: SE, NW, S. 11, T. 4N, R. 1W

COLLAR EL: _____ NORTHING: _____ EASTING: _____

HOLE DIAMETER: 18", 20" (BIT) DRILL METHOD: REVERSE ROTARY MUD DRILL MODEL: JED-A

DRILLER: RIVERSIDE, INC. LOGGER: C.D. & RIVERSIDE INC. (JEFF HASH) STATIC WATER DEPTH: _____

Depth (ft)	Date Time	Induration & Color	Soil or Rock Description	Graph Log	Sample format	Blows (N)	%Moisture water level	Fracture Density, Drill Notes, Gen Comment
384-387	1/30/06	Tannish-gray	SAND. Approx. 90% V. Fine to Med. Sand and 10% Silt. Well Sorted. Granitic.		Grab, Reverse Flow Discharge		UNKNOWN	WASHED SAMPLE.
387-419	1/30/06	Blue-gray	CLAY. Approx 80% Clay and 20% Silt. Soft. Good Ribbon.		Grab, Reverse Flow Discharge		UNKNOWN	WASHED SAMPLE.
419-434	1/30/06	LT, Gray	SAND. Approx. 15% Silt and V. Fine to V. Coarse Sand, Minor Pebbles. Mod. Sorted.		Grab, Reverse Flow Discharge		UNKNOWN	WASHED SAMPLE.
434-444	1/30/06	LT, Gray	Clayey Silty Sand, Approx. 20% Clay, 40% Silt and 40% V. Fine to Med. Sand, Poorly Sorted.		Grab, Reverse Flow Discharge		UNKNOWN	WASHED SAMPLE.
444-459	1/30/06	Blue-gray	Silty Clay. Approx. 60% Silt and 40% Clay. Soft. Mod. Ribbon.		Grab, Reverse Flow Discharge		UNKNOWN	WASHED SAMPLE.
459-465	1/30/06	Gray	Clayey Silty Sand. Approx. 10% Clay, 20% Silt and 70% V. Fine to Med. Sand, Poorly Sorted.		Grab, Reverse Flow Discharge		UNKNOWN	WASHED SAMPLE. STOPPED Drilling by Engineer.
465-481	1/31/06	LT, Gray	SAND, Fine to Med. Sand. Well Sorted. Granitic. Clay String 6" at 475'. Carbonized Wood (475-480').		Grab, Reverse Flow Discharge		UNKNOWN	WASHED SAMPLE. RESUMED Drilling by Engineer. MUD 9.7 lbs (driller)
481-482	1/31/06	Blue-Gray	Silty Clay. Approx. 60% Silt and 40% Clay. Soft. Good Ribbon.		Grab, Reverse Flow Discharge		UNKNOWN	WASHED SAMPLE.
482-483	1/31/06	LT, Gray	Clayey Silt Sand. Approx. 10% Clay, 30% Silt and 60% Fine to Coarse Sand Poorly Sorted. Carbonized Wood Frag.		Grab, Reverse Flow Discharge		UNKNOWN	WASHED SAMPLE.
483-484 10ft	1/31/06	Blue-gray	Silty Clay. Approx. 40% Silt and 60% Clay. 5-10% Carbonized Wood Frag.		Grab, Reverse Flow Discharge		UNKNOWN	WASHED SAMPLE.

GEOTECHNICAL BOREHOLE LOG
HOLLADAY ENGINEERING COMPANY

BOREHOLE ID: EAGLE TEST WELL NO. 1 PROJECT NO.: EG0601204 PAGE: 6 of 6

PROJECT NAME: CITY OF EAGLE WR 63-32089 WR 63-32090 LOCATION: QUARTER CIRCLE D.J. RANCH SITE LOCATION: SE, NW, S. 11, T. 4N, R. 1W

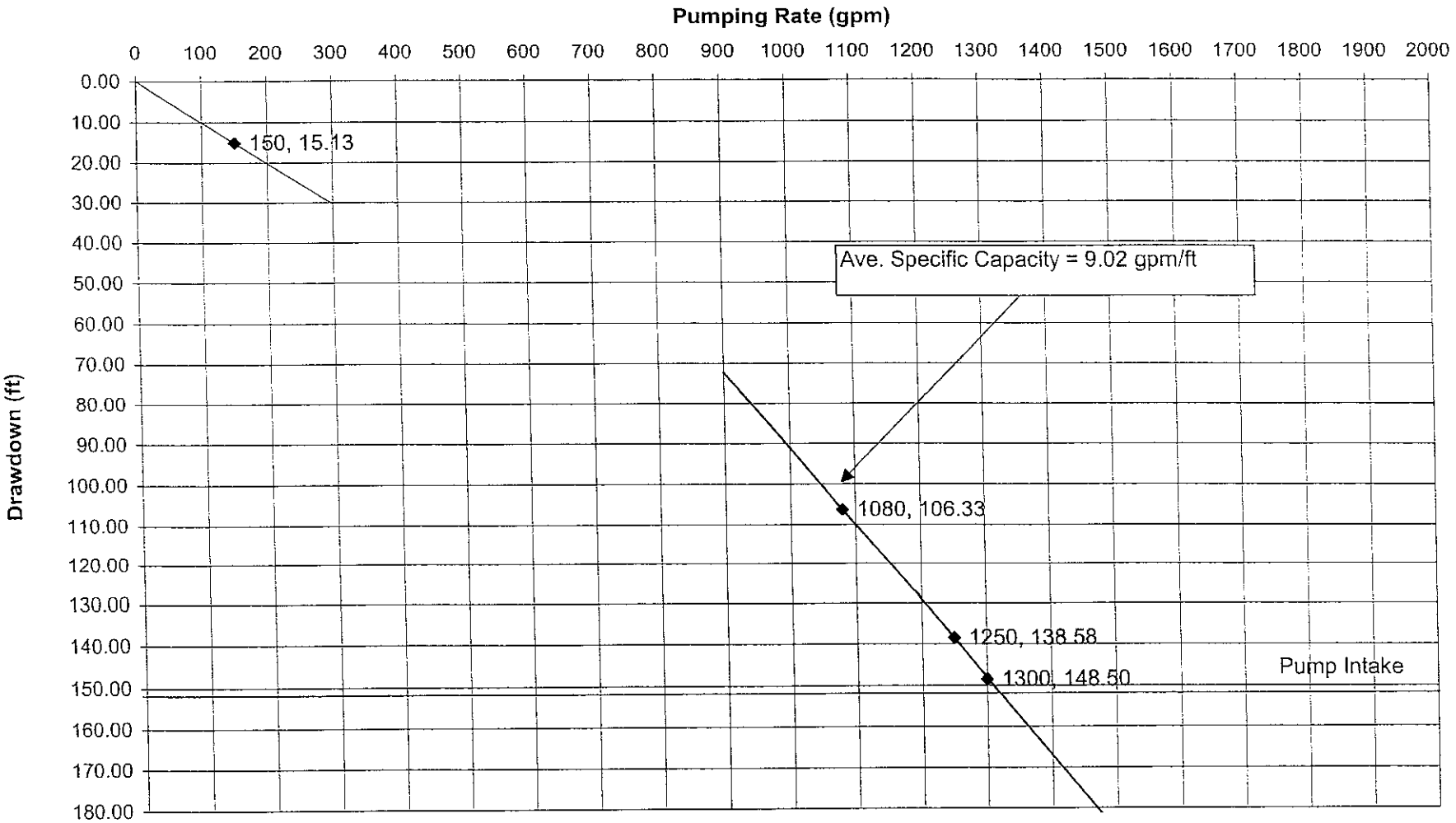
COLLAR EL: _____ NORTHING: _____ EASTING: _____

HOLE DIAMETER: 18", 20" (BIT) DRILL METHOD: REVERSE ROTARY MUD DRILL MODEL: JED-A

DRILLER: RIVERSIDE, INC. LOGGER: C.I.D. & RIVERSIDE INC. (JEFF HASH) STATIC WATER DEPTH: _____

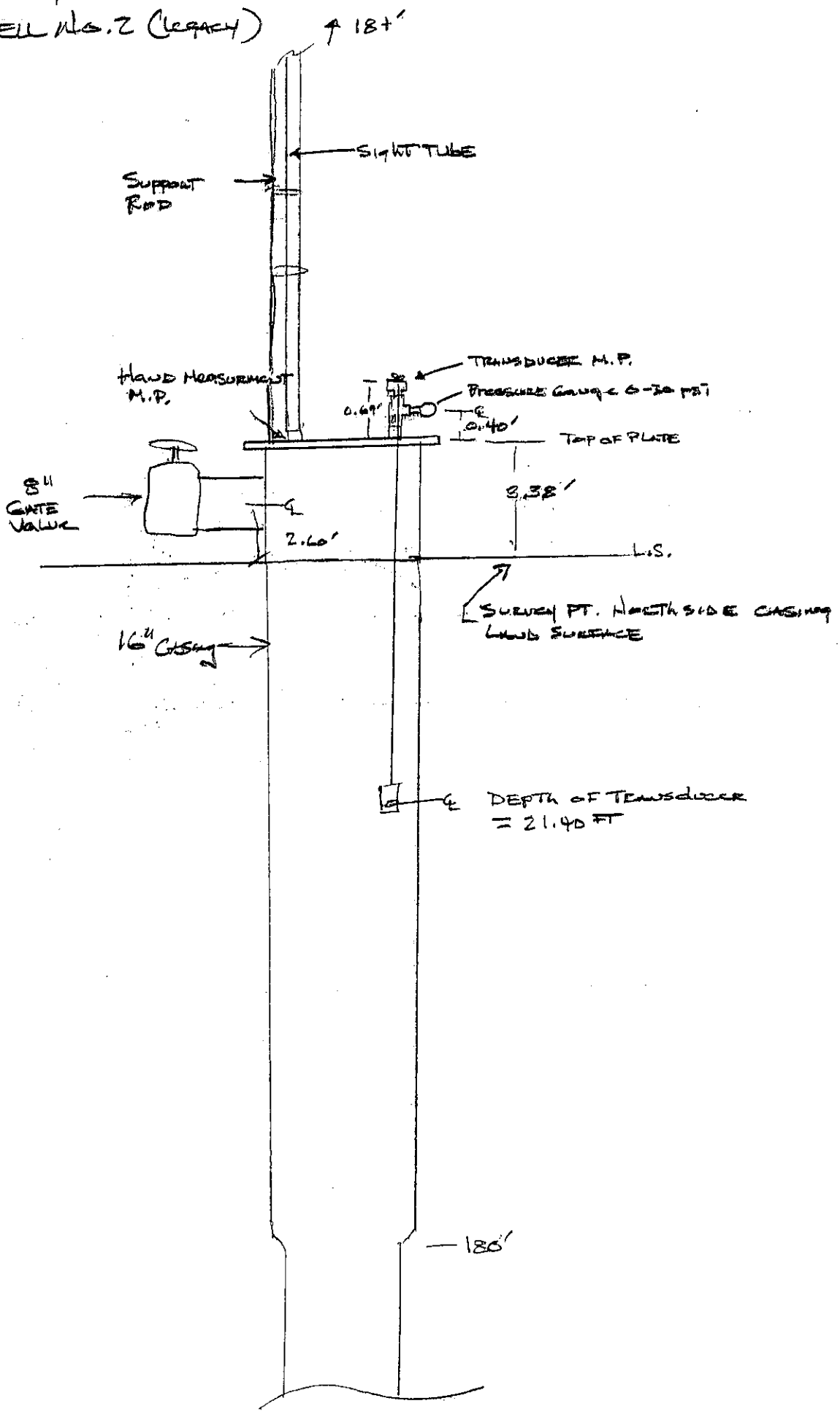
Depth (ft)	Date Time	Induration & Color	Soil or Rock Description	Graph Log	Sample format	Blows (N)	%Moisture water level	Fracture Density, Drill Notes, Gen Comment
484-486	1/31/06	LT. GRAY	SAND: FINE-MED, SAND, WELL SORTED, WEAKLY CEMENTED CARBONATE? WELL SORTED, GRANITIC, DRY; SED, FRAG CARBONIZED WOOD FRAG.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE, HARDER DRILLING.
486-487	1/31/06	BLUE-GRAY	CLAY, SOFT, STICKY, GOOD RIBBON.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
487-489	1/31/06	LT. GRAY	SAND, MED. TO COARSE SAND AND MINOR FINE SAND. WELL SORTED. GRANITIC.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
489-493	1/31/06	LT. GRAY	SAND, MED. TO V. COARSE SAND AND 10% PEBBLES. SUBANGULAR. MOD. SORTED, GRANITIC.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE.
493-501	1/31/06	DK. GRAY TO BLUE-GRAY	CLAY. STIFF. GOOD RIBBON. GRADING IN COLOR FROM DK. GRAY TO BLUE-GRAY.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE. DRILL RIG BOUNCE.
501-505	1/31/06	WEAK BLUE-GRAY TO GRAY	CLAYEY SILTY SAND. APPROX. 10% CLAY, 40% SILT, AND V. FINE TO FINE SAND. POORLY SORTED. WEAKLY CEMENTED CARBONATE?		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE. HARDER DRILLING.
505-513	1/31/06	BLUE-GRAY	CLAY, MOD. STIFF. STICKY. GOOD RIBBON.		GRAB, REVERSE FLOW DISCHARGE		UNKNOWN	WASHED SAMPLE. T.D. 513' ENGINEER STOPPED DRILLING.

STEP PUMP TEST of TEST WELL No.1 (Legacy)
March 24th 9:15am to 2:30 pm
Specific Capacity



EAGLE 7-DAY & WATER TEST

TEST WELL No. 2 (LEGACY)



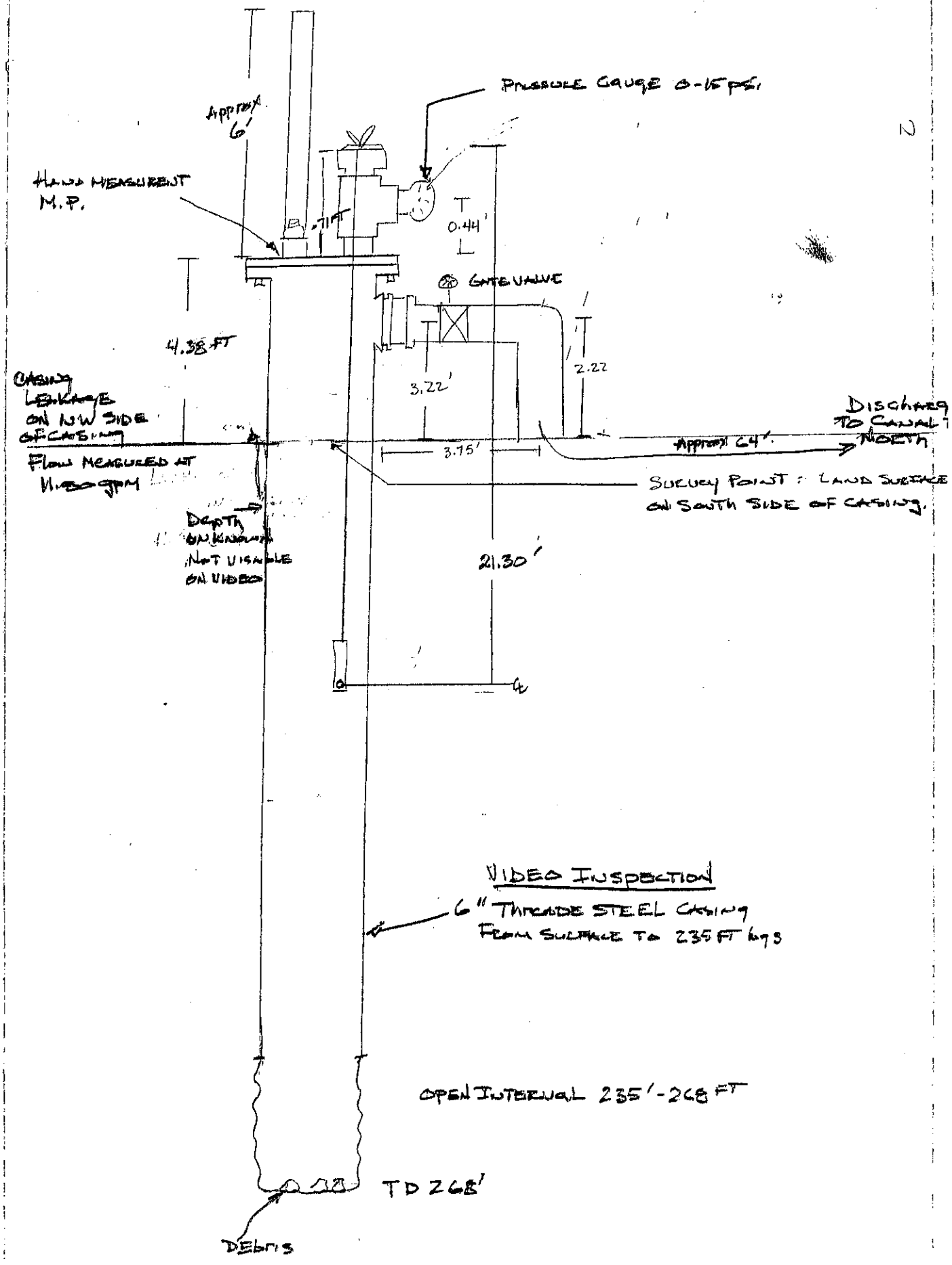
Appendix B.3

MONITORING WELL 4 (QCR 4)

CITY OF EAGLE · DAY AQUIFER TEST

QUARTER CIRCLE WELL NO. 4

MONITORING WELL NO. 4 (QCR 4)



Appendix B.4

MONITORING WELL 6 (Rick's)

USE TYPEWRITER OR BALL POINT PEN

S. Idaho
Department of Water Administration

WELL DRILLER'S REPORT

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

Depth 406

1. WELL OWNER

Name Quarter Circle D,J Ranch

Address Star, Idaho (Home Place)

Owner's Permit No.

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

3. PROPOSED USE

☐ Domestic ☒ Irrigation ☐ Test ☐ Other (specify type)

☐ Municipal ☐ Industrial ☐ Stock ☐ Waste Disposal or Injection

4. METHOD DRILLED

☒ Cable ☐ Rotary ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 16 inches Total depth 406 feet

Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
250 inches	16 inches	0 18" feet	253 feet
250 inches	10 inches	223 feet	406 feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet

Was a packer or seal used? ☐ Yes ☒ No

Perforated? ☒ Yes ☐ No

How perforated? ☒ Factory ☐ Knife ☐ Torch

Size of perforation 3/16 inches by 3 inches

Number		From	To
5,152	perforations	234 feet	395 feet
	perforations	feet	feet
	perforations	feet	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 3/8 minus 30 yds.

Placed from 223 feet to 406 feet

Surface seal depth 22 Material used in seal ☒ Cement grout ☐ Puddling clay ☐ Well cuttings

Sealing procedure used ☐ Slurry pit ☒ Temporary surface casing ☐ Overbore to seal depth

6. LOCATION OF WELL

Sketch map location must agree with written location.

N / W / E / S

Subdivision Name

Lot No. Block No.

County Ada

S/E ¼ S/W ¼ Sec. 2 T. 4 N/S R. 1 E/W

7. WATER LEVEL

Static water level feet below land surface

Flowing? ☒ Yes ☐ No G.P.M. flow

Temperature ° F. Quality

Artesian closed-in pressure p.s.i.

Controlled by ☒ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☐ Bailer ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped

9. LITHOLOGIC LOG 40055

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
16"	0	3	Top Soil		X
"	3	12	light clay and sand		X
"	12	27	Fine sand, some clay	X	
"	27	105	Blue clay		X
"	105	240	Sand with clay binder	X	
"	240	260	Sticky Brown clay		X
"	260	295	Sand, some small layers of clay	X	
"	295	318	Sticky brown clay		X
"	318	380	Sand, some small layers of clay	X	
"	380	404	Sand, some clay	X	
"	404	406	Sticky light brown clay		X
			Gravel pack		
			30 yds. of 3/8 minus gravel		
			10" shoe on top of liner		
			15" shoe on bottom of liner		
			NOT TESTED AS OF 2/20/74		

10. Work started Nov. 28/73 finished Dec. 30, 73

11. DRILLERS CERTIFICATION

Firm Name W. E. Stevens & Sons Firm No. 153

Address 3709 Hawthorne Drive Date 12/30/73

Signed by (Firm Official) Wayne E. Stevens

and

(Operator) Same

MICROFILMED

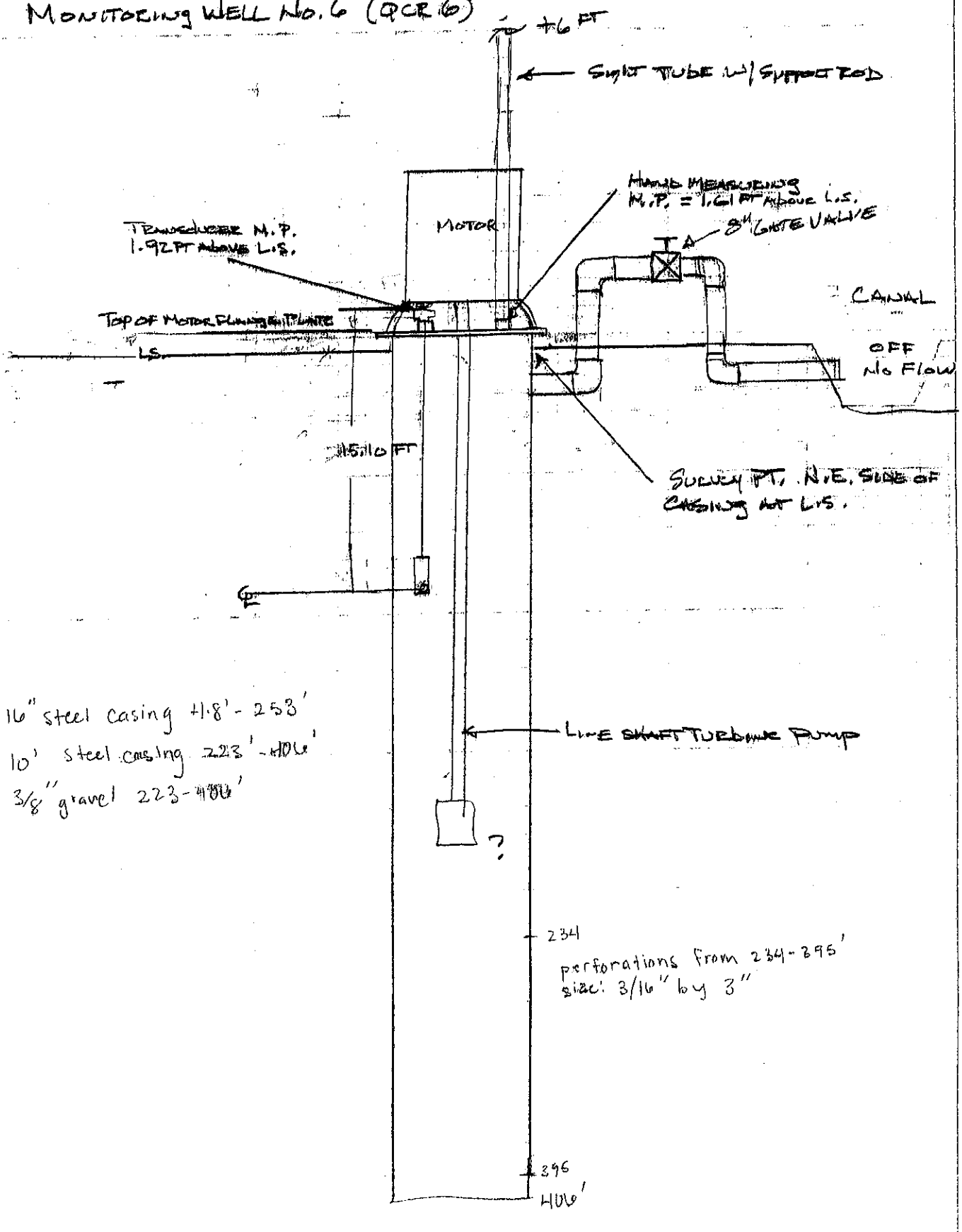
USE ADDITIONAL SHEETS IF NECESSARY FORWARD THE WHITE COPY TO THE DEPARTMENT

CITY OF EAGLE 7-DAY AQUIFER TEST

QUARTER CIRCLE WELL NO. 6

(RICK'S IRRIGATION WELL)

MONITORING WELL NO. 6 (QCR 6)



Appendix B.5

MONITORING WELL 9 (Strata 1A)

Draft

Boring No. 1a Subsurface Soil Description Top of Casing Elevation = Ground Surface Elevation =	DEPTH (In Feet)	USCS CLASS	SYMBOL	SAMPLE Type	BLOWS Per 6 Inches	SPT (Corrected) Blows Per Foot	POCKET Penetro-meter(tsf)	WELL CONSTRUCTION	REMARKS Note: BGS = Below Ground Surface
Sandy SILT (Native) – tan, very stiff, moist.	1	ML							Trace vegetation and organics observed to 3 inches BGS.
CLAY with SAND – brown, soft to stiff, moist to saturated.	2 3 4 5 6	CL							Top of protective steel casing above ground = 2.8 feet. Bentonite Seal from 0 to 10 feet 1 1/4 inch ø PVC Well
Poorly-Graded GRAVEL with Sand and Cobbles – light brown, dense, saturated. *Reading on 9-7-2005 = 7.1 feet	7 8 9 10 11 12 13 14 15	GP ▽ *							Sand pack from 10 to 15 feet 1 1/4 inch ø PVC screened well from 10 to 15 feet Standpipe piezometer installed to 15 feet.
Boring terminated at 15 feet BGS.	16 17 18 19 20								

File: EAGSPO	Boring Number: B-1a
Project No.: B05188A	Date Drilled: 8-30-2005
Drill Rig: BK-81	Boring Diameter: 8 inch
Depth to Groundwater: 6.5'	Logged By: AM

STRATA
GEOTECHNICAL ENGINEERING & MATERIALS TESTING
Integrity from the Ground Up

EXPLORATORY BORING LOGS

Sheet 1 of 1

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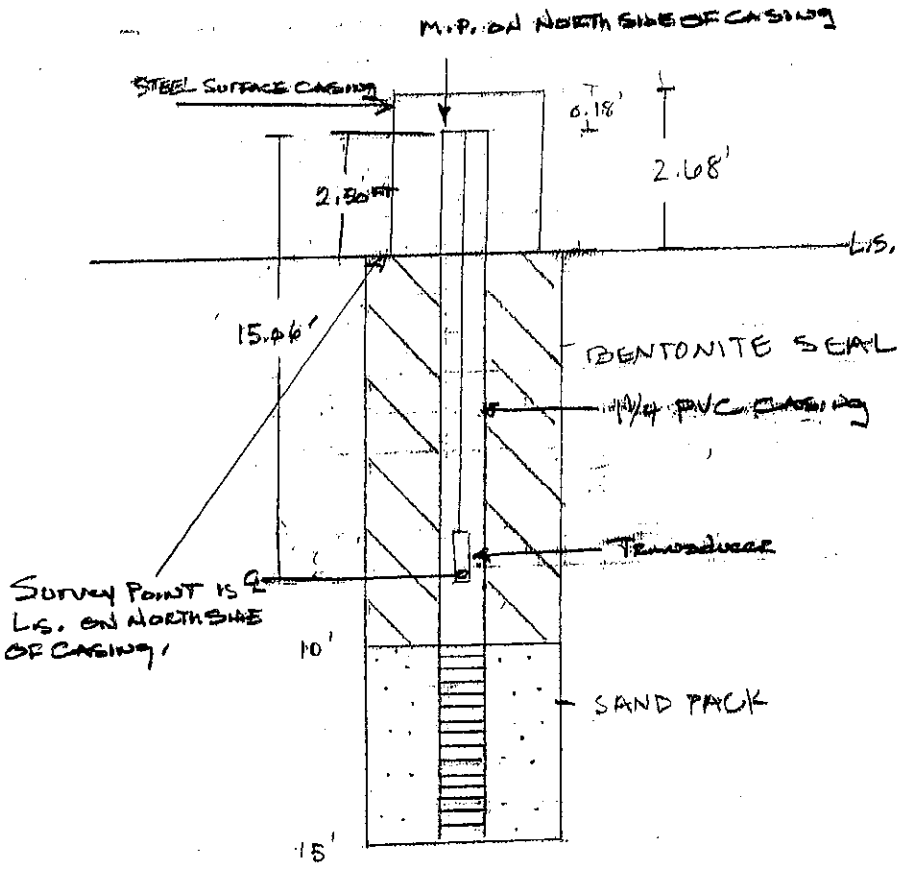
CITY OF EAGLE 6-DAY AQUIFER

MONITORING WELL NO. 9 (STRATA 1A)



Appendix B.6

MONITORING WELL 10 (Strata 1B)

Draft

~~Boring No. 1~~

Subsurface Soil Description

Top of Casing Elevation =

Ground Surface Elevation =

Subsurface Soil Description	DEPTH (In Feet)	USCS CLASS	SYMBOL	SAMPLE Type	BLOWS Per 6 Inches	SPT (Corrected) Blows Per Foot	POCKET Penetrometer (tsf)	WELL CONSTRUCTION	REMARKS
Sandy SILT (Native) – tan, very stiff, moist.	1	ML							Trace vegetation and organics observed to 3 inches BGS.
CLAY with SAND – brown, soft to stiff, moist to saturated.	2–5	CL			1 1 2	3	0.75		Top of protective steel casing above ground = 3.1 feet. Passing #200 screen = 78%. BG Liquid Limit (LL) = 30. Plastic Index (PI) = 11. Moisture Content = 24.9%.
	5–6				2 6 10	16	1.0 1.25		BG
Poorly-Graded GRAVEL with Sand and Cobbles – light brown, dense, saturated.	6	GP							
*Reading on 9-7-2005 = 6.8 feet	7–8				32 25 38	38			BG
	9–12								Bentonite Seal
	12–13								1 inch ø PVC Well
	14–15				4 15 27	26			Heaved sand from 15 to 16 feet. BG BG
	16–20								

File: EAGSP0	Boring Number: B-1
Project No.: B05188A	Date Drilled: 8-30-2005
Drill Rig: BK-81	Boring Diameter: 8 inch
Depth to Groundwater: 6'	Logged By: AM

STRATA
GEOTECHNICAL ENGINEERING & MATERIALS TESTING
Engineering from the Ground Up

EXPLORATORY BORING LOGS

Sheet 1 of 3

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Draft

Boring No. 1 Subsurface Soil Description	DEPTH (In Feet)	USCS CLASS	SYMBOL	SAMPLE Type	BLOWS Per 6 Inches	SPT (Corrected) Blows Per Foot	POCKET Penetrometer (tsf)	WELL CONSTRUCTION	REMARKS Note: BGS = Below Ground Surface
Poorly-Graded GRAVEL with Sand and Cobbles – light brown, dense, saturated.	21	GP			7 39 32	43			BG Heaved sand from 20 to 21 feet.
	22								
	23								
Fat CLAY – dark gray, hard to very stiff, wet.	24	CL							
	25				26 34 42	61			BG Minimal recovery, possible rock at bottom of spoon.
	26								
	27								Passing #200 screen = 96%.
	28				11 15 26	31	>4.5 4.0 3.5		BG RG RG Liquid Limit (LL) = 58. Plastic Index (PI) = 31.
	29								
	30				10 13 20	33	3.0 3.5		BG
	31								
	32								Bentonite Seal
	33								1 inch ø PVC Well
	34								
	35				7 12 17	29	1.5 3.0		BG
...except light brown at 36.5 feet.	36								
	37								
Clayey SAND – light brown, dense, saturated.	38	SC							
	39								
	40								

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File: EAGSPO	Boring Number: B-1
Project No.: B05188A	Date Drilled: 8-30-2005
Drill Rig: BK-B1	Boring Diameter: 8 inch
Depth to Groundwater: 6'	Logged By: AM

STRATA
GEOTECHNICAL ENGINEERING & MATERIALS TESTING
Integrity from the Ground Up

EXPLORATORY BORING LOGS

Draft

Boring No. 1 Subsurface Soil Description	DEPTH (In Feet)	USCS CLASS	SYMBOL	SAMPLE Type	BLOWS Per 6 Inches	SPT (Corrected) Blows Per Foot	POCKET Penetrometer (tsf)	WELL CONSTRUCTION	REMARKS Note: BGS = Below Ground Surface
Clayey SAND – light brown, dense, saturated.	41	SC			27 30 41	47			Trace orange staining observed in sample. BG RG RG Bentonite Seal from 0 to 45 feet 1 inch ø PVC Well
	42								
	43								
	44								
Poorly–Graded medium SAND – light brown, very dense, saturated.	45	SP			29 56 60	69			RG Sand pack from 45 to 55 feet
	46								
	47								
	48								
	49								1 inch ø PVC screened well from 45 to 55 feet
	50				33 59 62	71			RG BG
	51								
	52								
	53								
	54								Standpipe piezometer installed to 55 feet.
Boring terminated at 55 feet BGS.	55								
	56								
	57								
	58								
	59								
	60								

File: EAGSPO	Boring Number: B–1
Project No.: B05188A	Date Drilled: 8–30–2005
Drill Rig: BK–81	Boring Diameter: 8 inch
Depth to Groundwater: 6'	Logged By: AM

STRATA
GEOTECHNICAL ENGINEERING & MATERIALS TESTING
Integrity from the Ground Up

EXPLORATORY BORING LOGS

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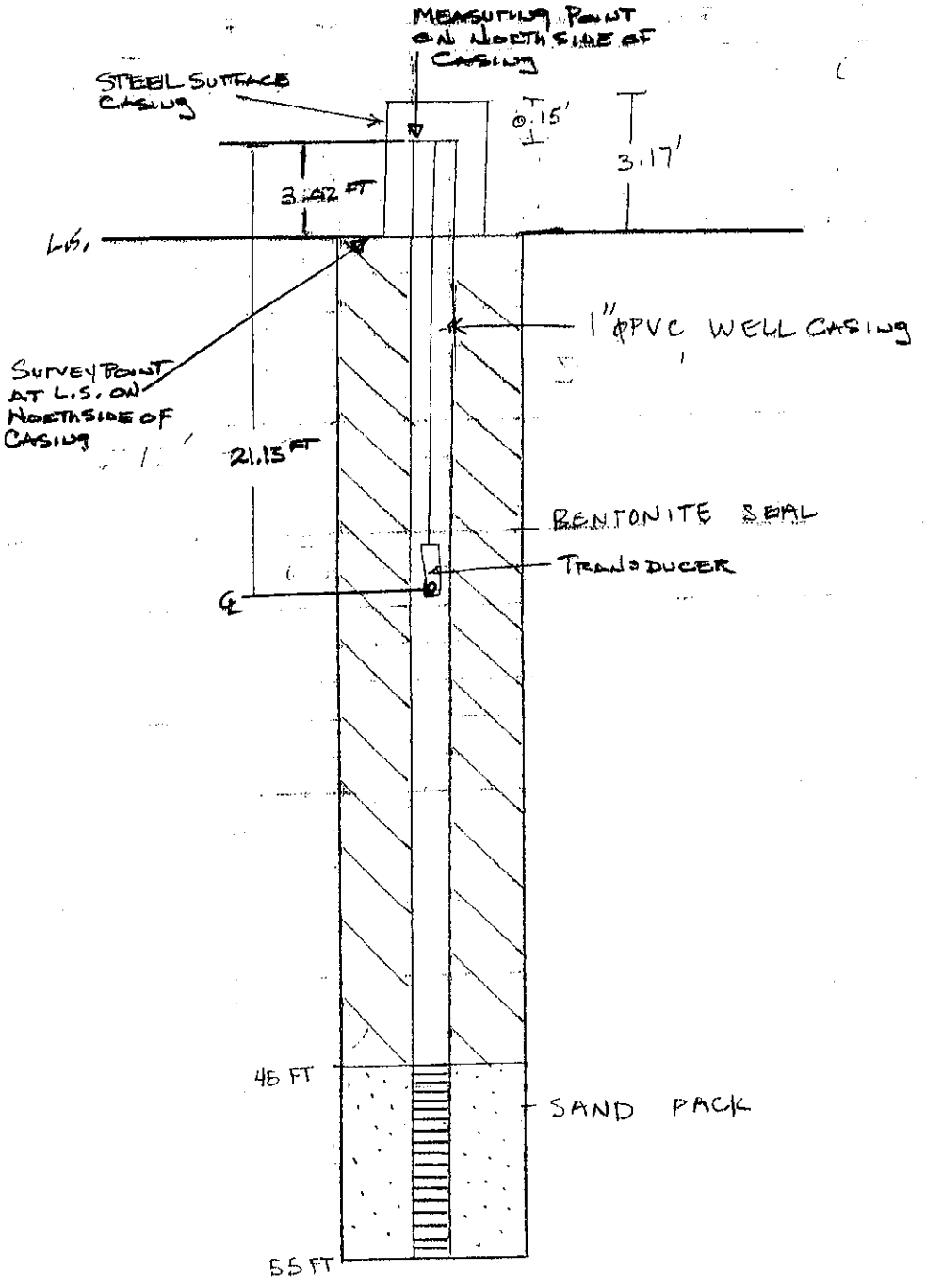
CITY OF EAGLE ~~AQUIFER~~ TEST

MONITORING WELL NO. 10 (STRATA 1B)



Appendix B.7

MONITORING WELL 11 (UWI 1A)

RECEIVED
Form 238-7
3/95
OCT 2 8 1997
Department of Water Resources

IDAHO DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT

Use Typewriter or Ballpoint Pen

Tag #000019

67930

Office Use Only
Inspected by_____
Twp____ Rge____ Sec____
____1/4 ____1/4 ____1/4
Lat: : : Long: : :

1. DRILLING PERMIT NO. 63-97-W-0633-801
Other IDWR No._____

2. OWNER: Hope Lutheran Church
Name United Water Corp
Address PO Box 7488
City Boise State ID Zip 83707

3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location.

N / W / E / S

Twp. 4 North ☒ or South ☐
Rge. 1 East ☐ or West ☒
Sec. 11, N/E 1/4 (10 acres) S/E 1/4 (40 acres) ____ 1/4 (160 acres) ____ 1/4
Gov't Lot ____ County Ada
Lat: : : Long: : :
Address of Well Site State St & Linder
(Hope Luth Church)
(Give at least name of road + Distance to Road or Landmark) City Eagle
Lt. 7 Blk. 1 Sub. Name Brush Acres

4. USE:
☐ Domestic ☐ Municipal ~~☒ Monitor~~ ☐ Irrigation
☐ Thermal ☐ Injection ☒ Other Test well

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 Material	From	To	AMOUNT Sacks or Pounds	METHOD

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
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

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 6 lb.
Depth flow encountered 212 ft. Describe access port or control devices: caps

11. WELL TESTS:
☐ Pump ☐ Bailer ☐ Air ☒ Flowing Artesian

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	Water Y	Water N
10	1	6	topsoil		X
	6	31	sand & gravel		X
8	31	43	sand & sandy clay	X	
	43	68	cemented sand	X	
	68	71	clay		X
	71	93	sand	X	
	93	103	clay		X
	103	125	sand	X	
	125	140	clay		X
	140	200	sand & clay streaks	X	
	200	205	sand	X	
	205	212	clay		X
	212	485	sand	X	
	485	513	sand & cemented sand streaks	X	
	513	540	sand	X	
	540	845	blue clay		X
			~~see drawing for pipe information~~		

RECEIVED
OCT 2 3 1997
WATER RESOURCES
WESTERN REGION
MICROFILMED
JAN 0 9 1998

Completed Depth 560 (Measurable)
Date: Started 9/25/97 Completed 10/13/97

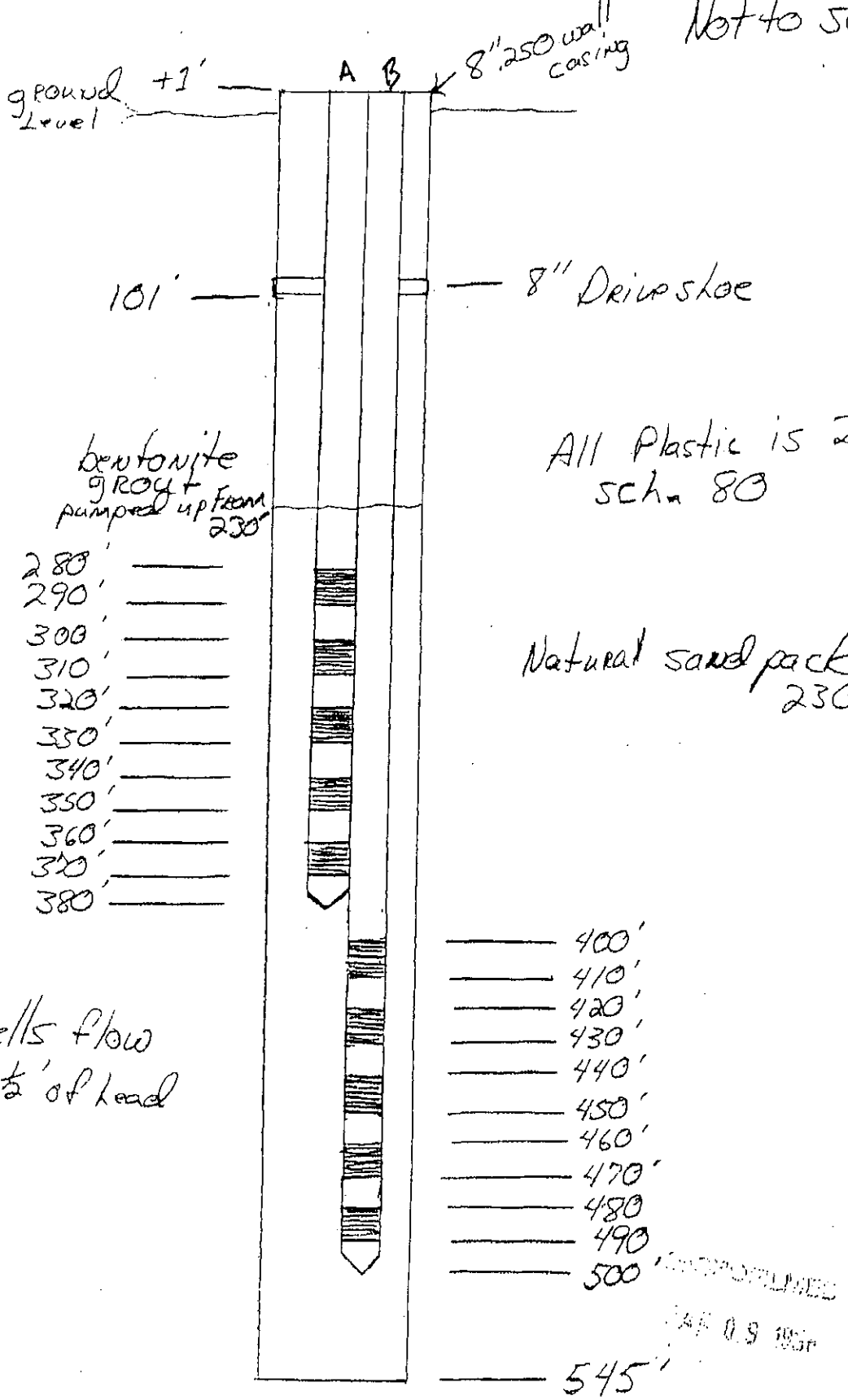
13. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name Stevens & Sons Firm No. 153
Firm Official_____ Date_____
and
Supervisor or Operator Ron Stevens Date 10/20/97
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

Unit: ? Water State # Line ? 63-97-W-0633-801
test Well #1
67931

Not to scale



All Plastic is 2" sch. 80

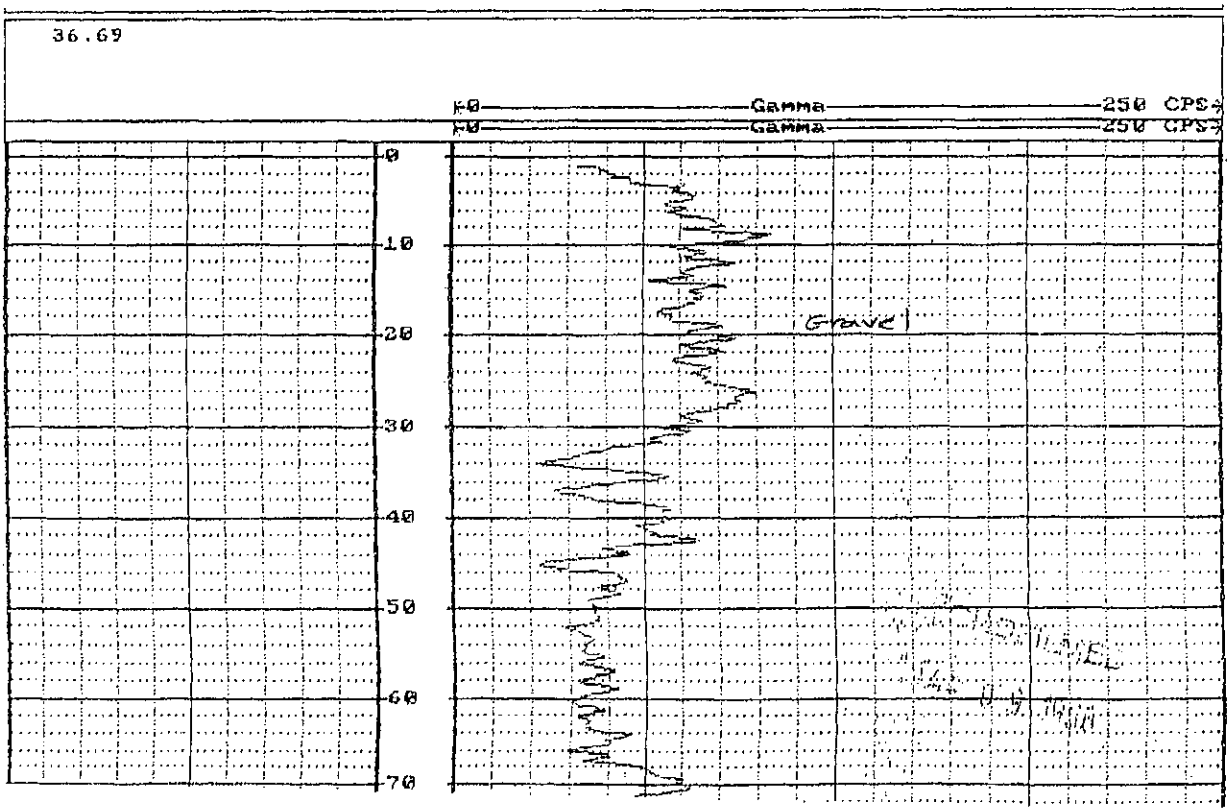
Natural sand pack 230' ± 545'

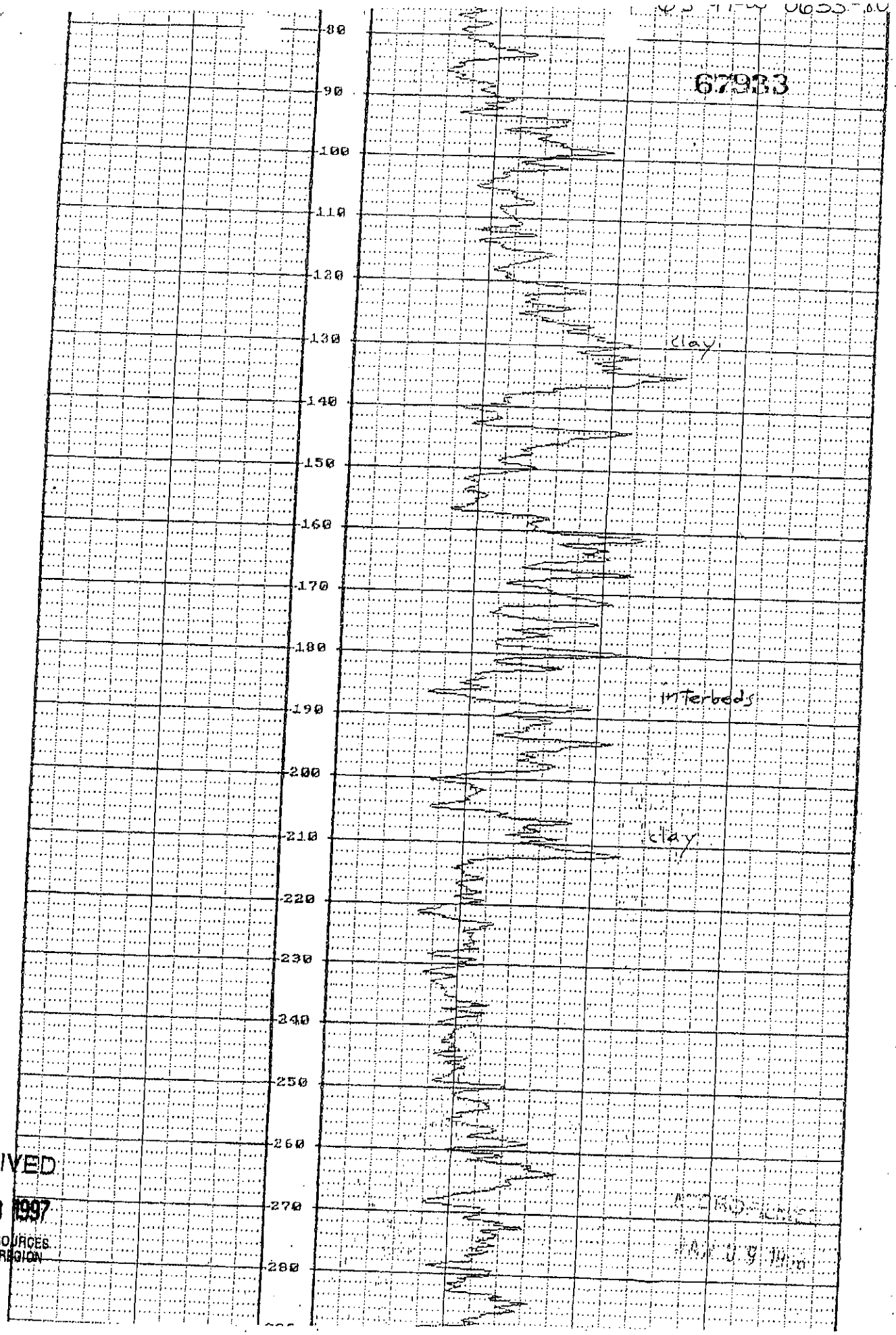
Both Wells flow under 14½' of head

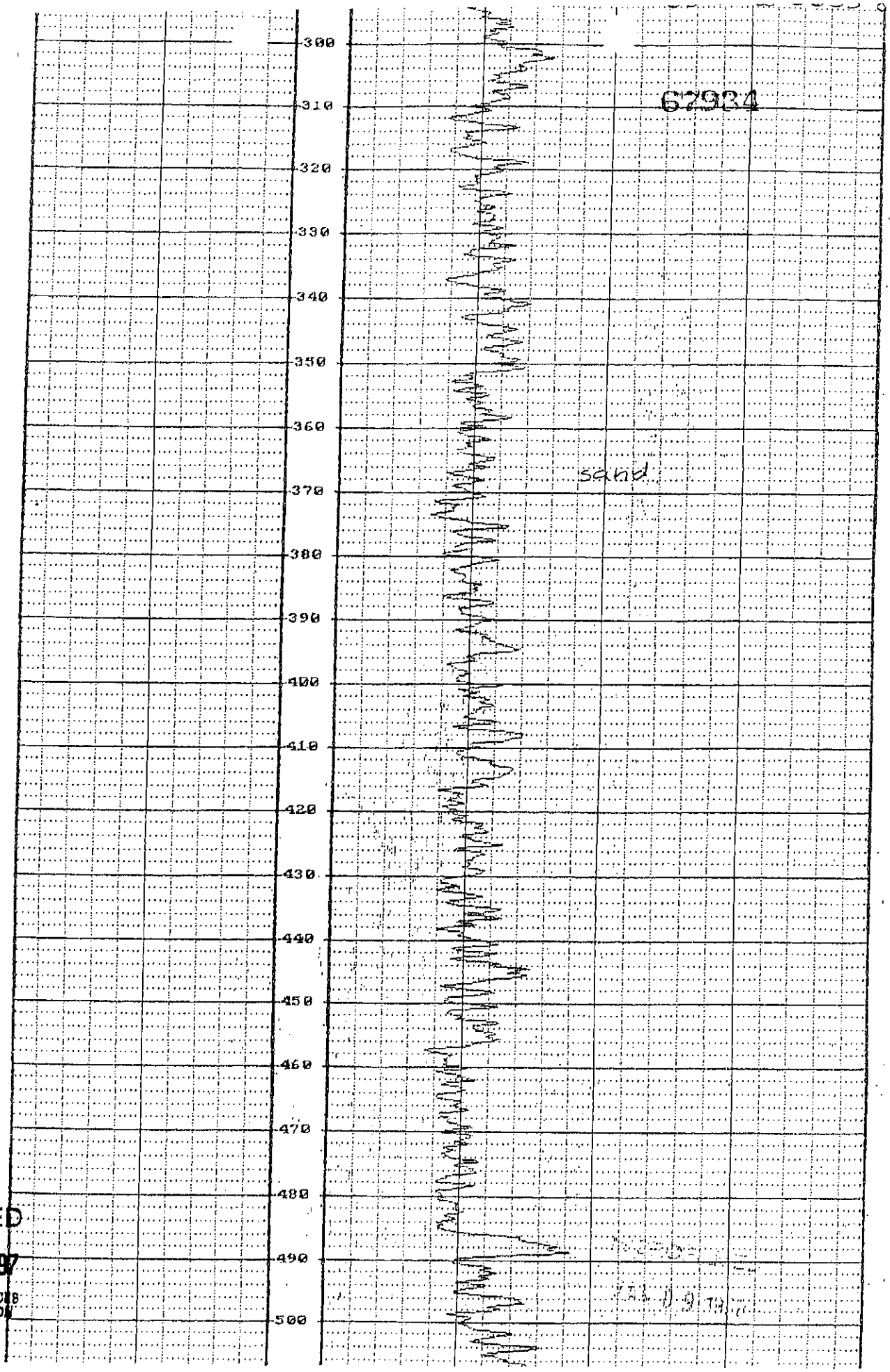
63-97-W-0633-80.

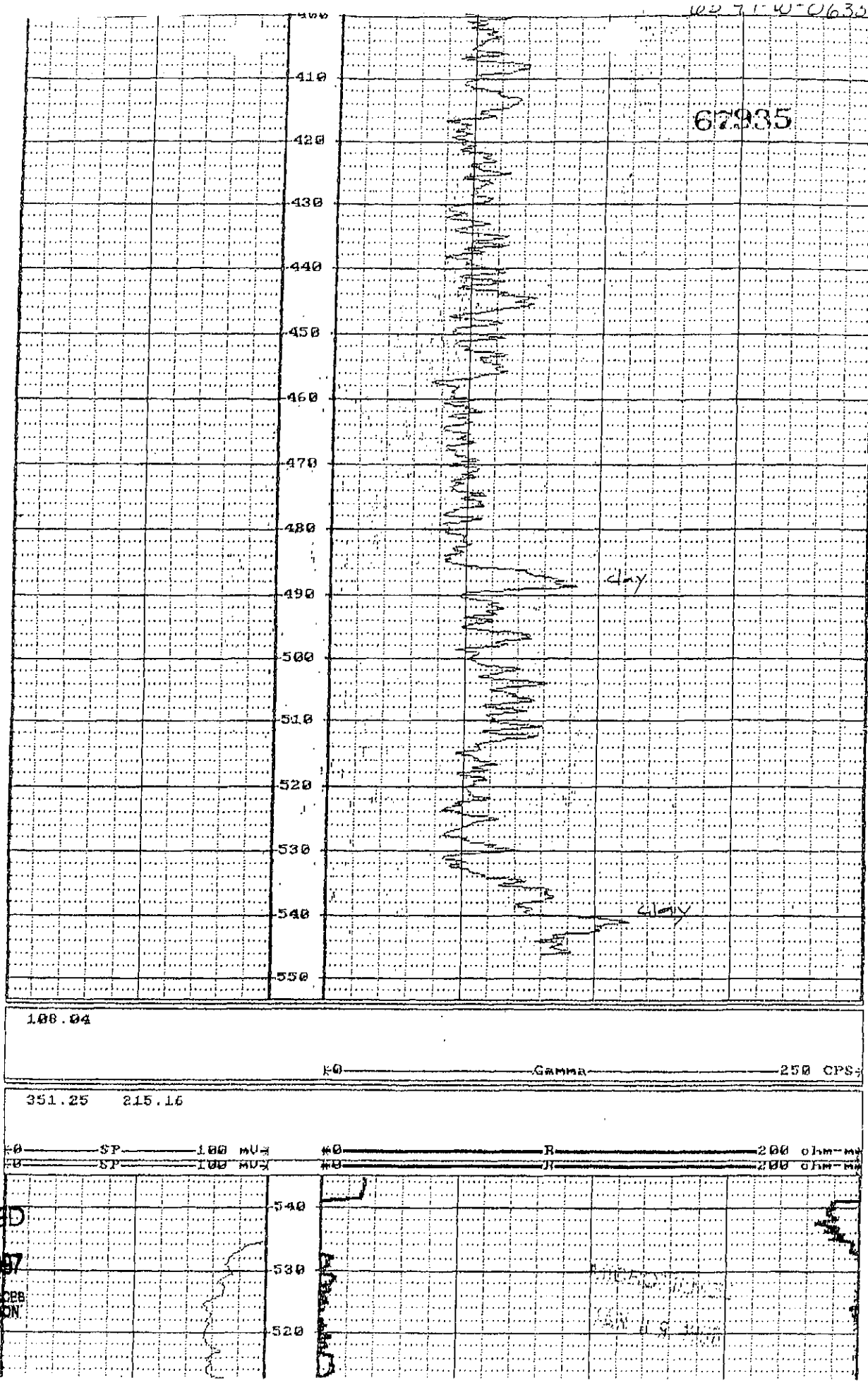
67932

State # Linder Test Well



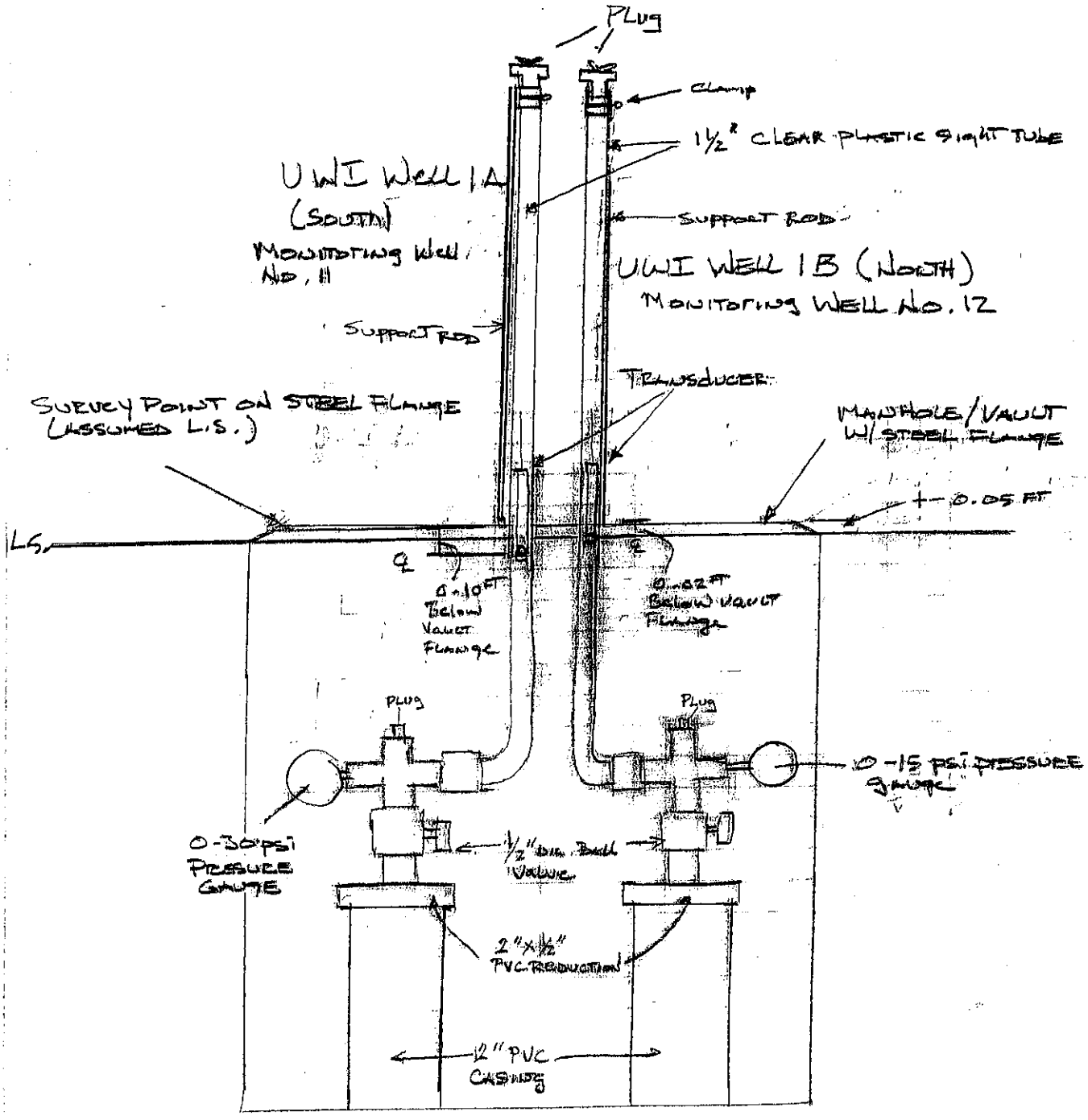






CITY OF EAGLE -DAY AQUIFER TEST

MONITORING WELL NO. 11 (UWI 1A) AND
MONITORING WELL NO. 12 (UWI 1B)



Appendix B.8

MONITORING WELL 12 (UWI 1B)

RECEIVED
Form 238-7
3/95
OCT 28 1997
Department of Water Resources

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Use Typewriter or Ballpoint Pen

Tag #000019

67930

Office Use Only
Inspected by _____
Twp____ Rge____ Sec____
____1/4 ____1/4 ____1/4
Lat: : : Long: : :

1. DRILLING PERMIT NO. 63-97-W-0633-801
Other IDWR No. _____

2. OWNER: Hope Lutheran Church
Name United Water Corp
Address PO Box 7488
City Boise State ID Zip 83707

3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location.

N / W / E / S

Twp. 4 North ☒ or South ☐
Rge. 1 East ☐ or West ☒
Sec. 11, N/E 1/4 (10 acres) S/E 1/4 (40 acres) ____ 1/4 (160 acres)
Gov't Lot ____ County Ada
Lat: : : Long: : :
Address of Well Site State St & Linder (Hope Luth Church)
City Eagle
(Give at least name of road + Distance to Road or Landmark)
Lt. 7 Blk. 1 Sub. Name Brush Acres

4. USE:
☐ Domestic ☐ Municipal ~~☒ Monitor~~ ☐ Irrigation
☐ Thermal ☐ Injection ☒ Other Test well

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	

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
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

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 6 lb.
Depth flow encountered 212 ft. Describe access port or control devices: caps

11. WELL TESTS:
☐ Pump ☐ Bailer ☐ Air ☒ Flowing Artesian

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	Water Y	Water N
10	1	6	topsoil		X
	6	31	sand & gravel		X
8	31	43	sand & sandy clay	X	
	43	68	cemented sand	X	
	68	71	clay		X
	71	93	sand	X	
	93	103	clay		X
	103	125	sand	X	
	125	140	clay		X
	140	200	sand & clay streaks	X	
	200	205	sand	X	
	205	212	clay		X
	212	485	sand	X	
	485	513	sand & cemented sand streaks	X	
	513	540	sand	X	
	540	845	blue clay		X
			~~see drawing for pipe information~~		

RECEIVED
OCT 23 1997
WATER RESOURCES
WESTERN REGION

MICROFILMED
JAN 09 1998

Completed Depth 845 (Measurable)
Date: Started 9/25/97 Completed 10/13/97

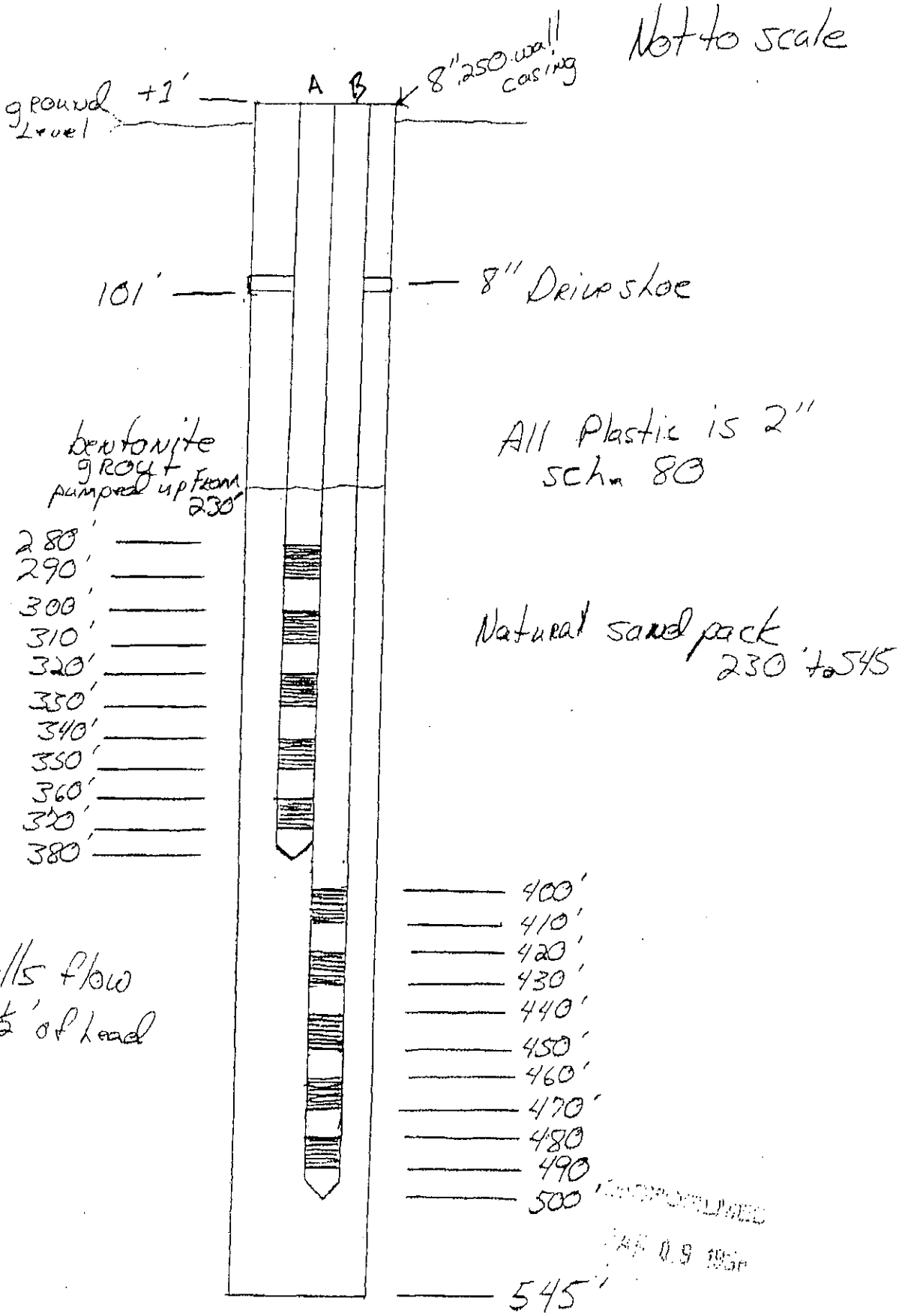
13. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name Stevens & Sons Firm No. 153
Firm Official _____ Date _____
and
Supervisor or Operator Ron Stevens Date 10/20/97
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

United Water State of Linar 63-97-W-0633-801
test Well #1 67931

Not to scale



All Plastic is 2" sch 80

Natural sand pack 230' to 545'

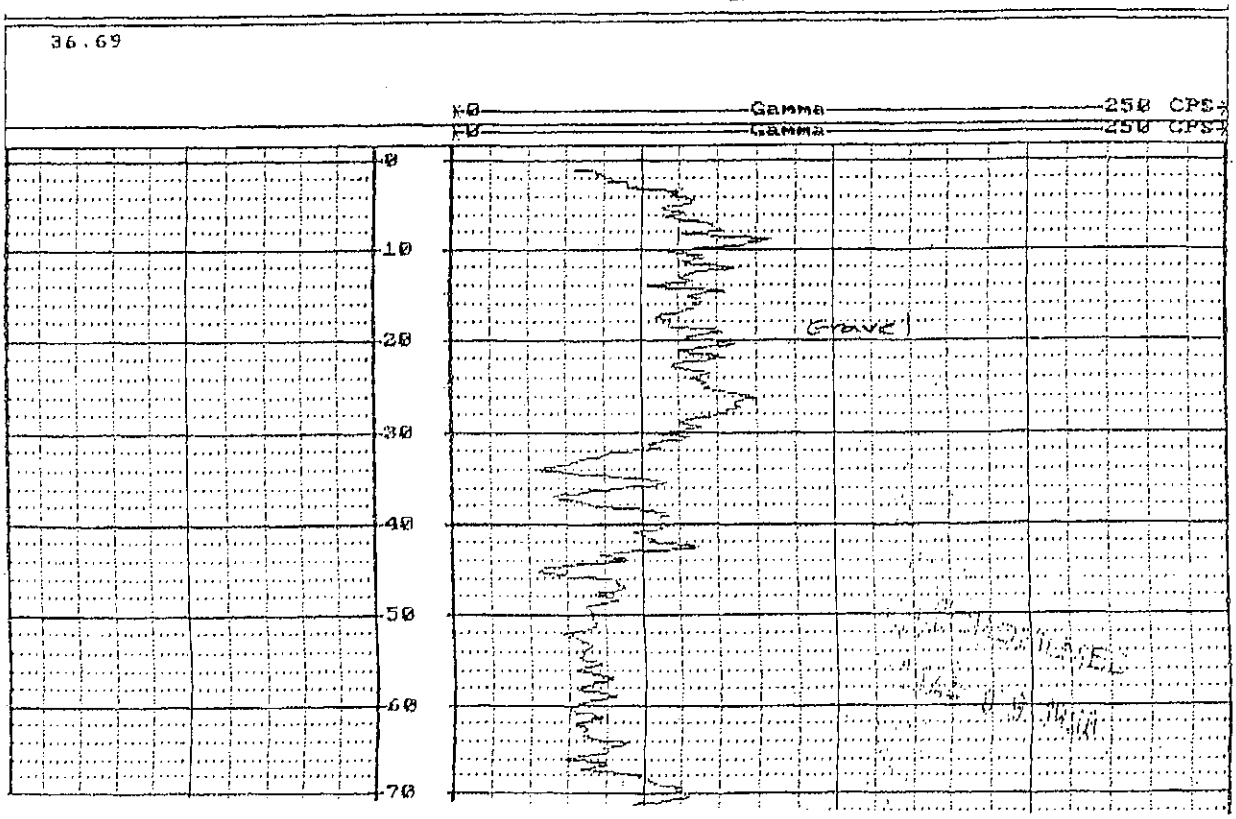
Both Wells flow under 14½' of head

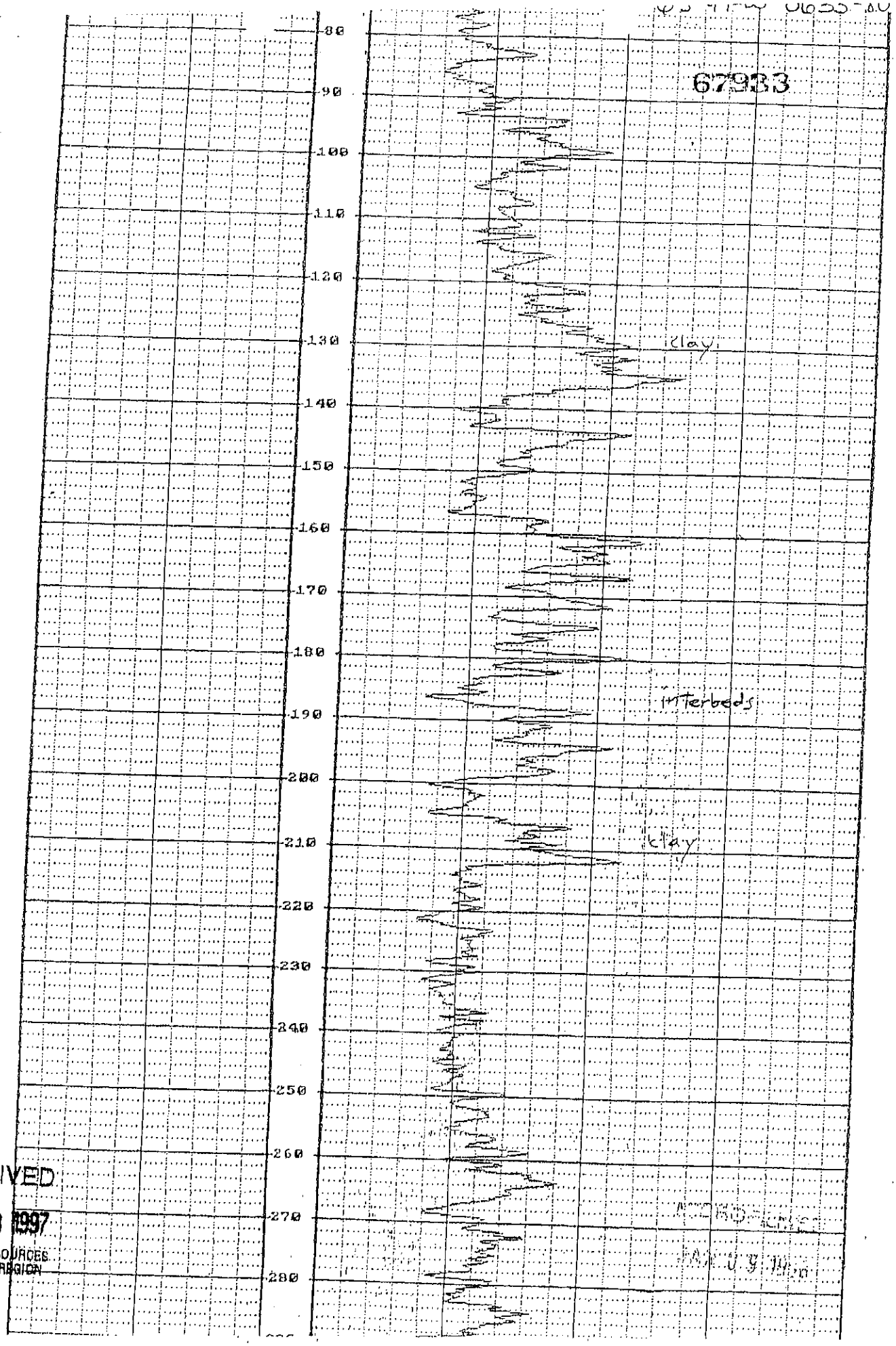
RECEIVED
OCT 23 1997
WATER RESOURCES
WESTERN REGION

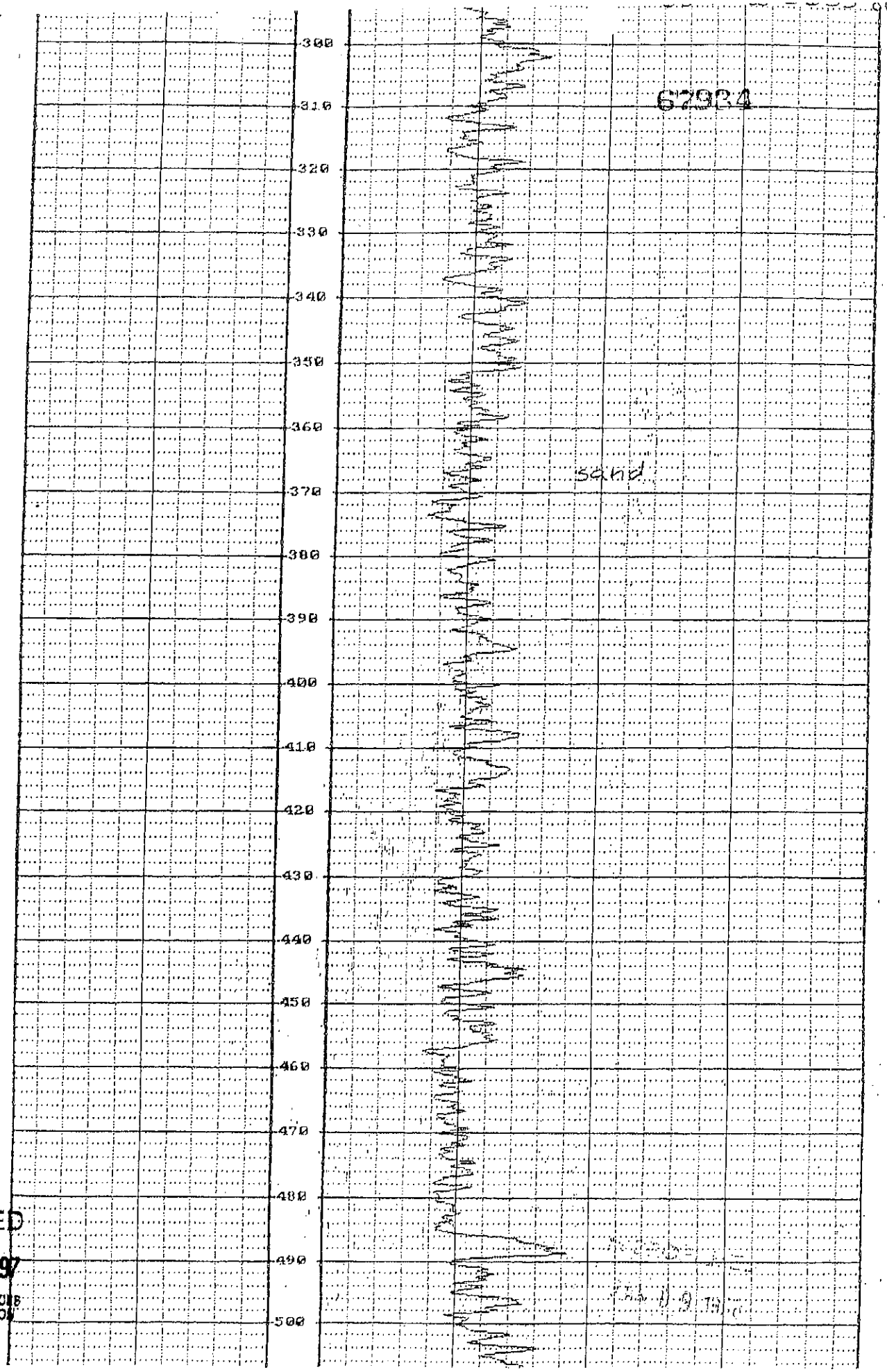
63-97-W-0633-801

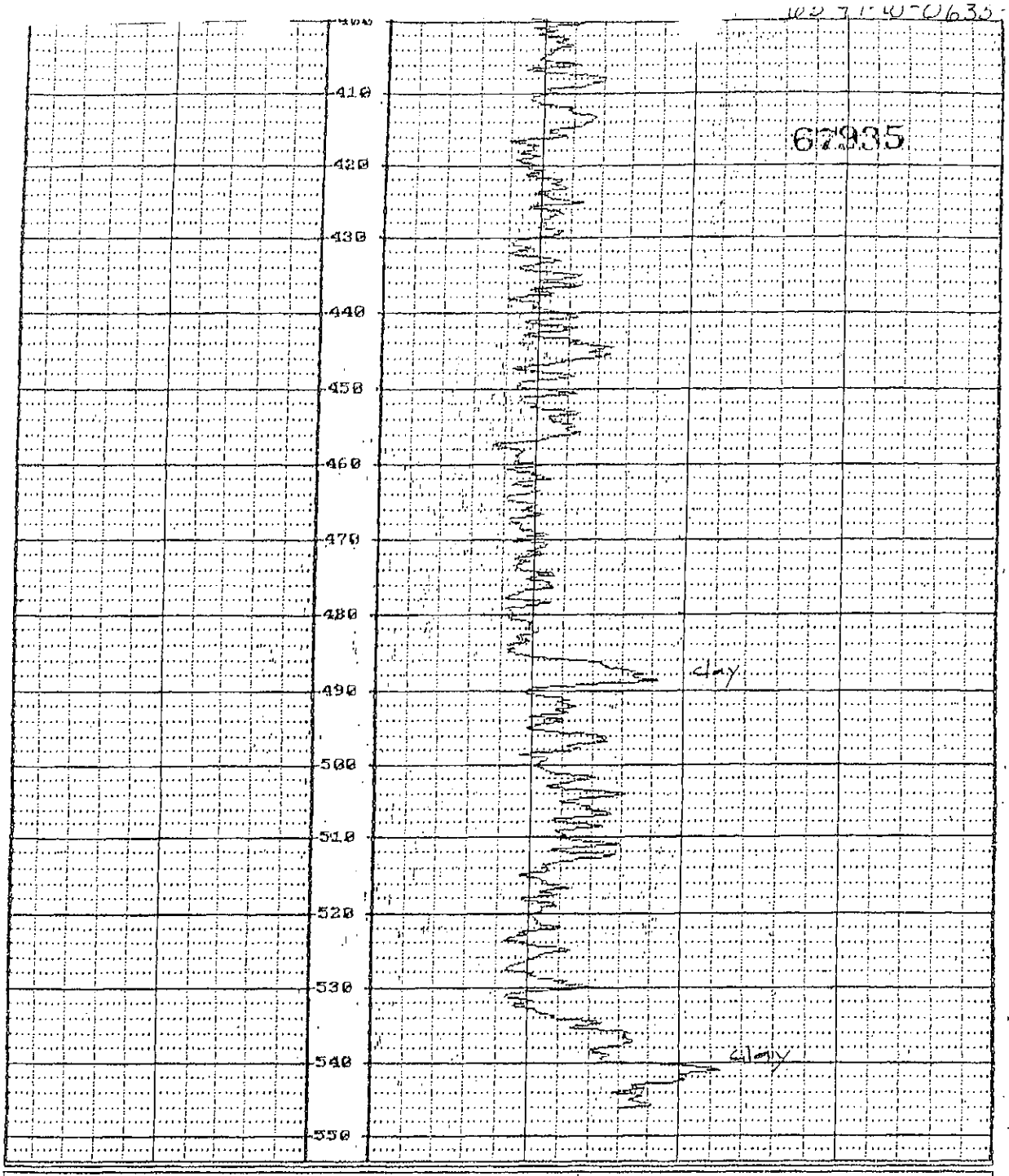
67932

State # Linder Test Well









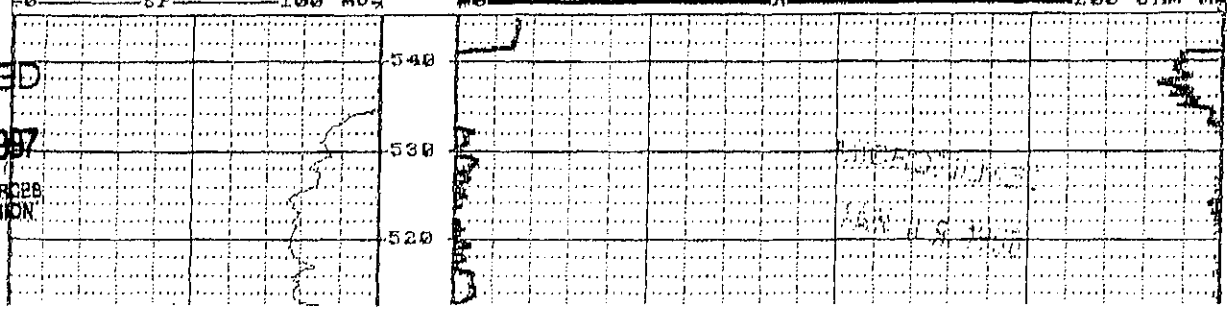
100.04

0 Gamma 250 CPS

351.25 215.16

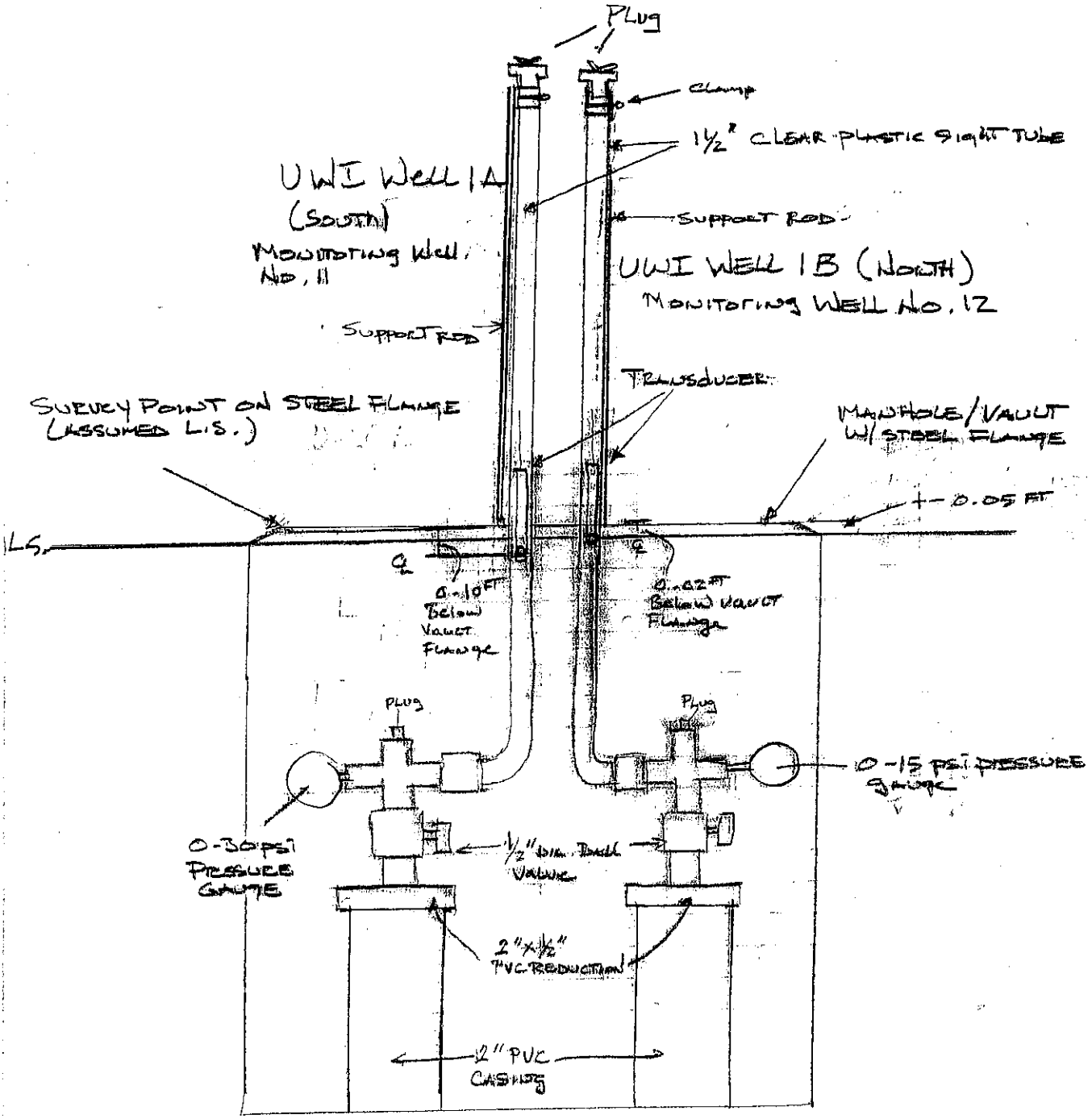
0 SP 100 mV 0 SP 100 mV

0 R 200 ohm-m 0 R 200 ohm-m



CITY OF EAGLE 1-DAY AQUIFER TEST

MONITORING WELL NO. 11 (UWI 1A) AND
MONITORING WELL NO. 12 (UWI 1B)



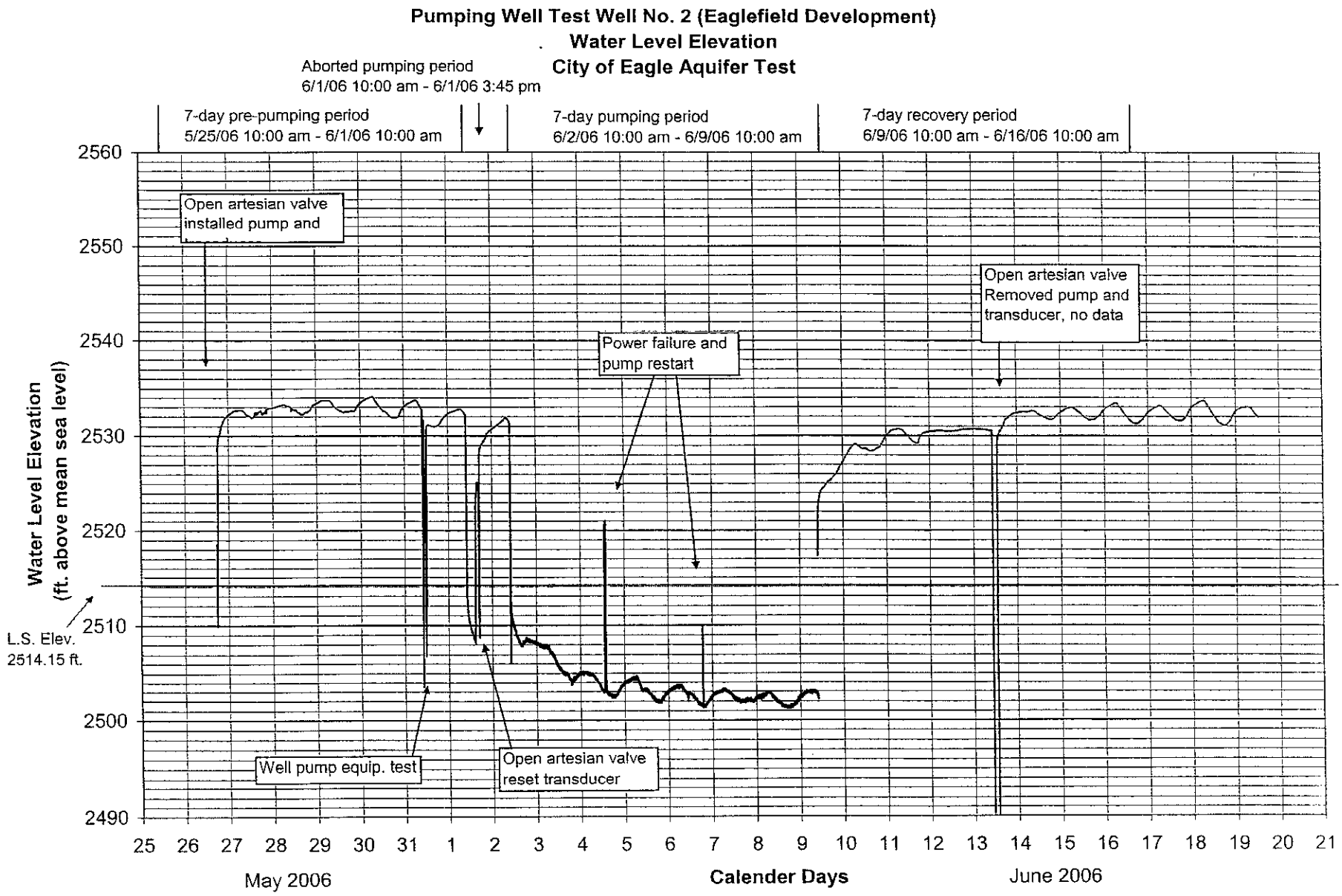
APPENDIX C

MONITORING WELL DATA GRAPHS

1. Test Well 2 (Eaglefield)(Pumping Well)
2. Test Well 1 (Legacy)
3. Monitoring Well 4 (QCR 4)
4. Monitoring Well 6 (Rick's)
5. Monitoring Well 9 (Strata 1A)
6. Monitoring Well 10 (Strata 1B)
7. Monitoring Well 11 (UWI 1A)
8. Monitoring Well 12 (UWI 1B)
9. Barometer

Appendix C.1

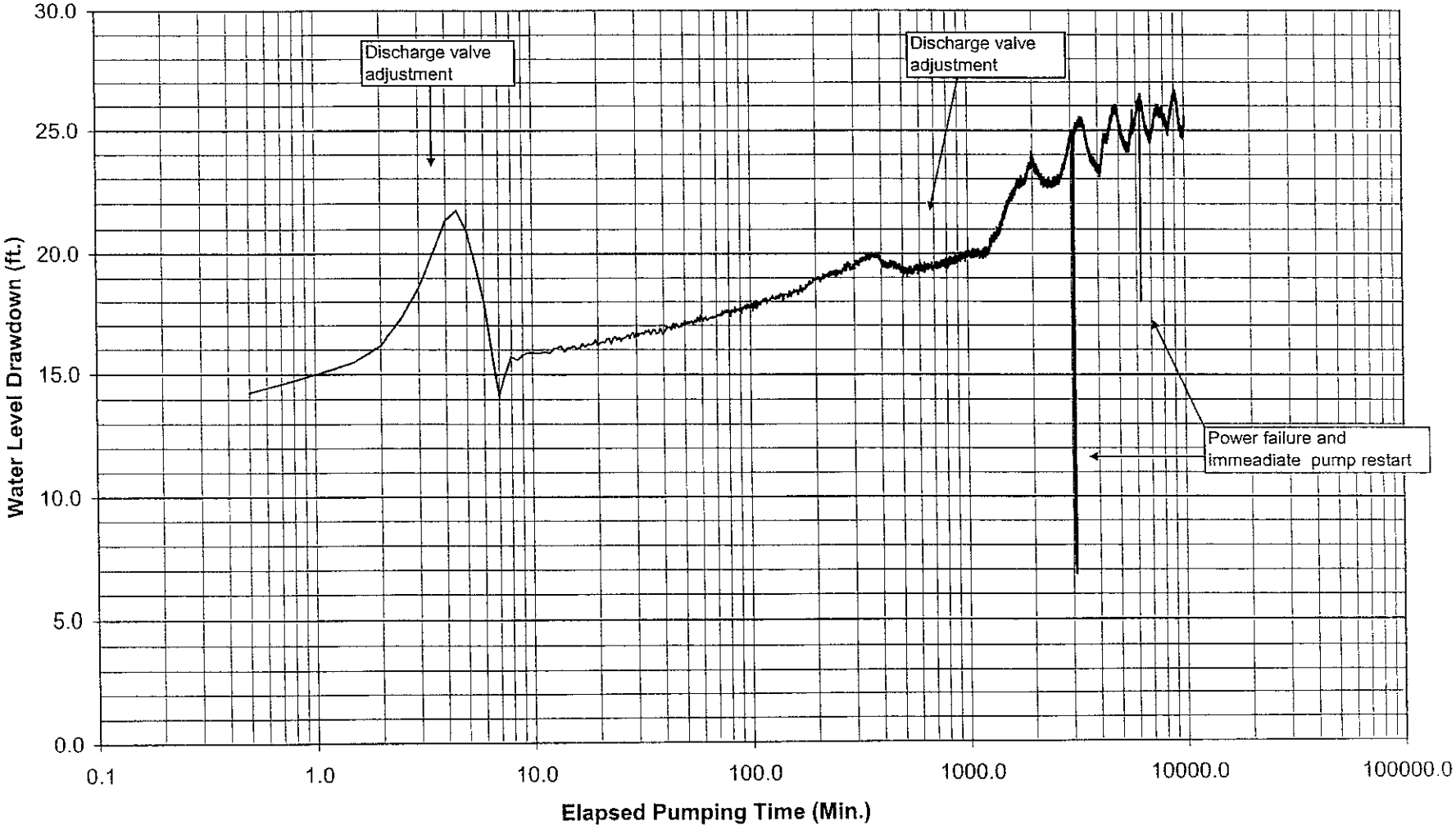
TEST WELL 2 (Eaglefield)(Pumping Well)


Pumping Well Test Well No. 2 (Eaglefield Development)
Water Level Elevation
City of Eagle Aquifer Test
Aborted pumping period
6/1/06 10:00 am - 6/1/06 3:45 pm
7-day pre-pumping period
5/25/06 10:00 am - 6/1/06 10:00 am
7-day pumping period
6/2/06 10:00 am - 6/9/06 10:00 am
7-day recovery period
6/9/06 10:00 am - 6/16/06 10:00 am
Open artesian valve
installed pump and
Power failure and
pump restart
Open artesian valve
Removed pump and
transducer, no data
Well pump equip. test
Open artesian valve
reset transducer
L.S. Elev.
2514.15 ft.
Water Level Elevation
(ft. above mean sea level)
2560
2550
2540
2530
2520
2510
2500
2490
25 26 27 28 29 30 31 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
May 2006
Calender Days
June 2006

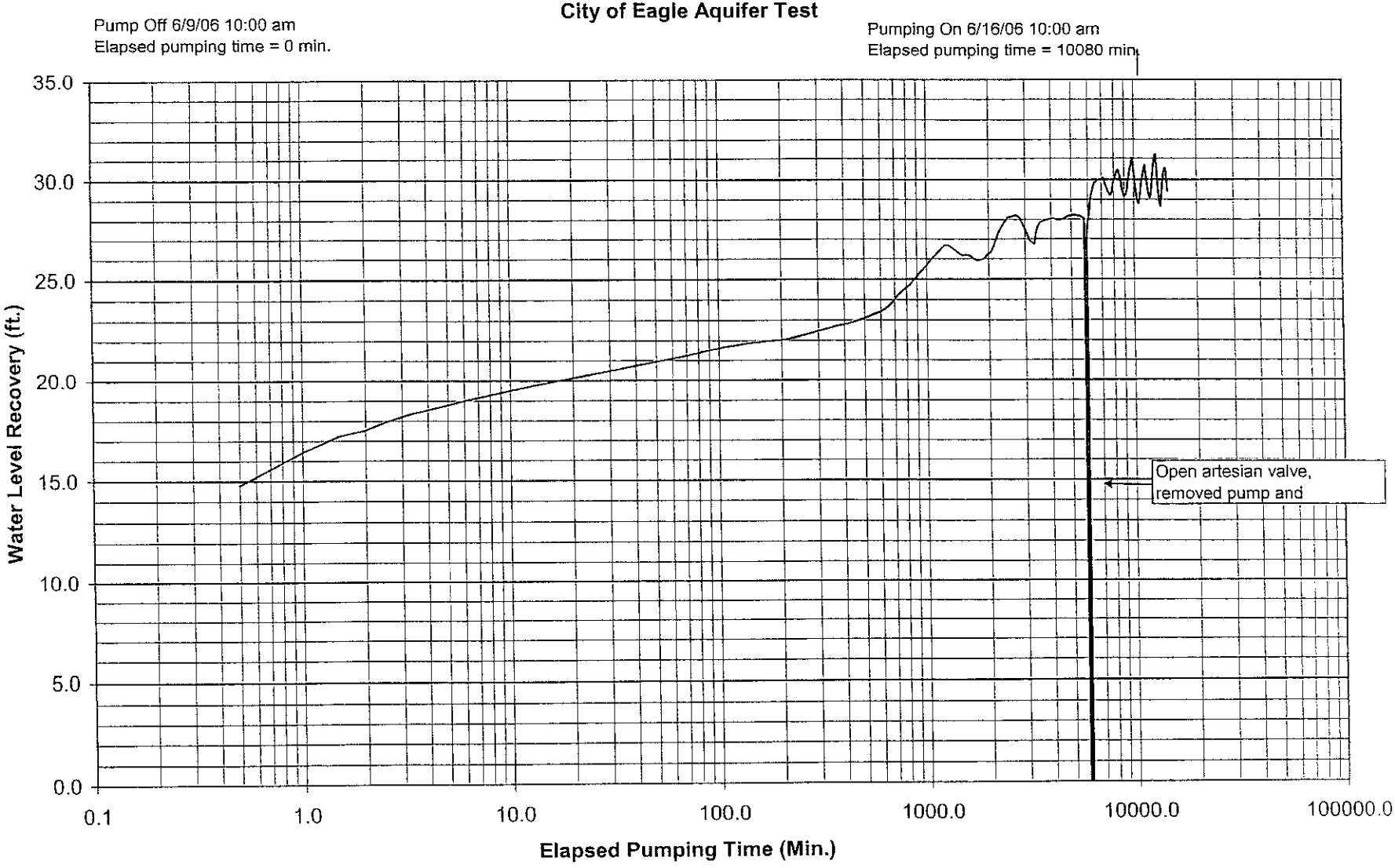
Pumping Well Test Well No. 2 (Eaglefield Development)
Drawdown Semi-log Plot
City of Eagle Aquifer Test

Pumping On 6/2/06 10:00 am
Elapsed pumping time = 0.0 min.

Pump Off 6/9/06 10:00 am
Elapsed pumping time = 10080 min.

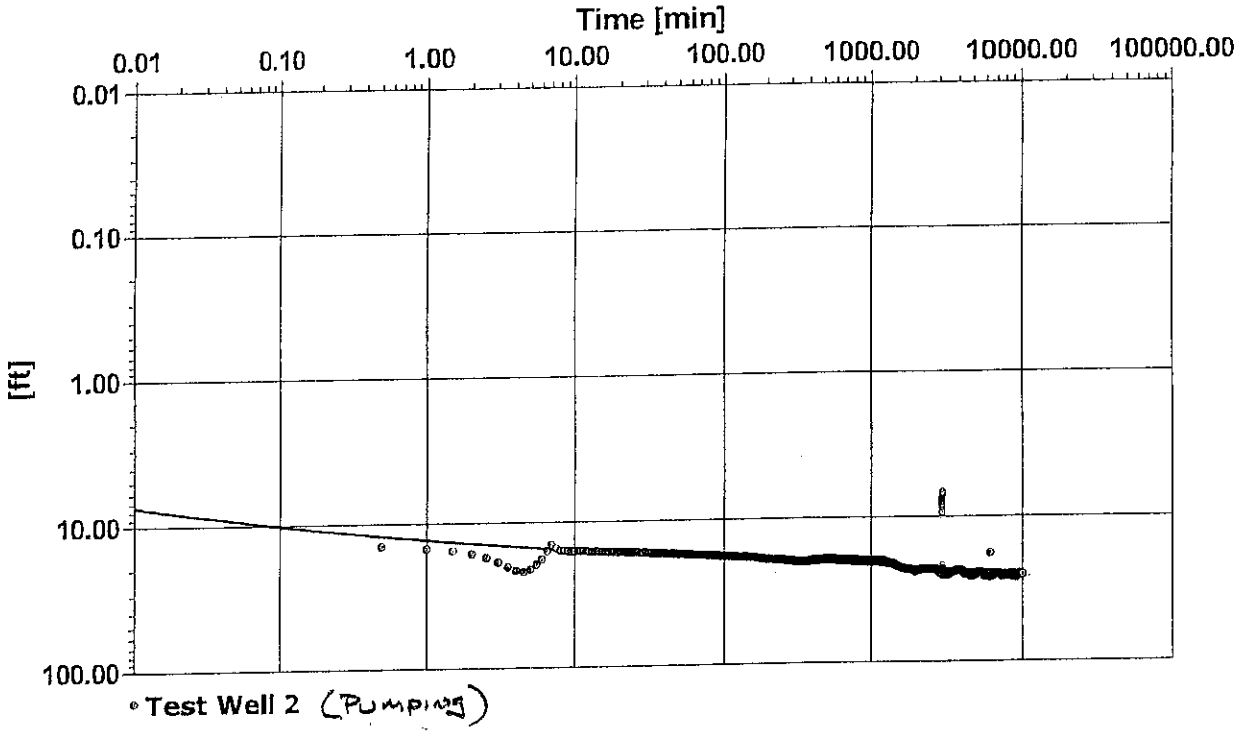


Pumping Well Test Well No. 2 (Eaglefield Development)
Recovery Semi-log Plot
City of Eagle Aquifer Test



City, State/Province Address Contact Info Company Name	Pumping Test Analysis Report	
	Project: Eagle Aquifer Test	
	Number:	
	Client:	

Location:	Pumping Test: Pumping Test 1	Pumping well: Test Well 2
Test conducted by:		Test date: 6/29/2006
Analysis performed by:	New analysis 1	Date: 6/29/2006
Aquifer Thickness: 100.00 ft	Discharge rate: 1580 [U.S. gal/min]	

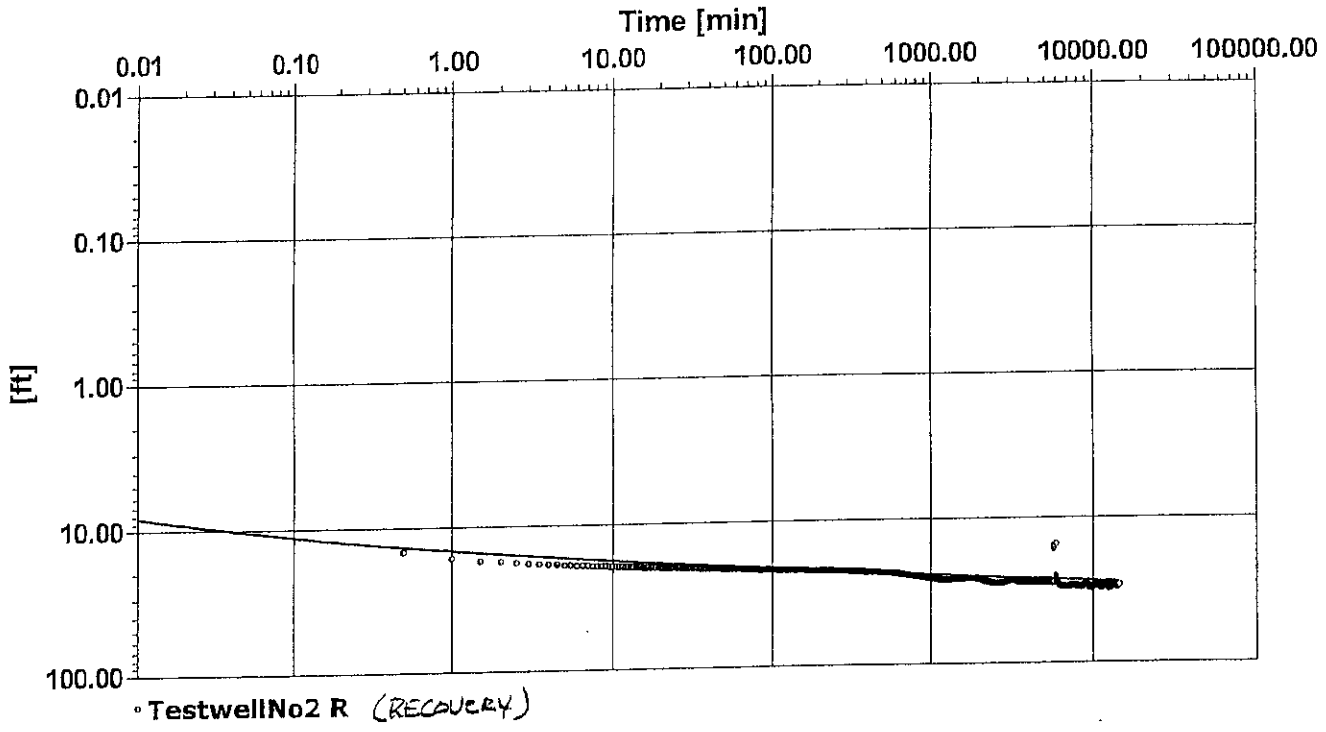


Calculation after Theis

Observation well	Transmissivity [ft²/d]	K [ft/d]	Storage coefficient	Radial distance to PW [ft]	
Test Well 2	2.00×10^{4}	2.00×10^{2}	2.93×10^{-3}	0.5	

City, State/Province Address Contact Info Company Name	Pumping Test Analysis Report
	Project: Recovery Eagle Aquifer Test
	Number:
	Client:

Location:	Pumping Test: Recovery Eagle Aqulfer Test	Pumping well: TestwellNo2 R
Test conducted by:		Test date: 6/30/2006
Analysis performed by:	recovery	Date: 6/30/2006
Aqulfer Thickness: 100.00 ft	Discharge rate: 1580 [U.S. gal/min]	

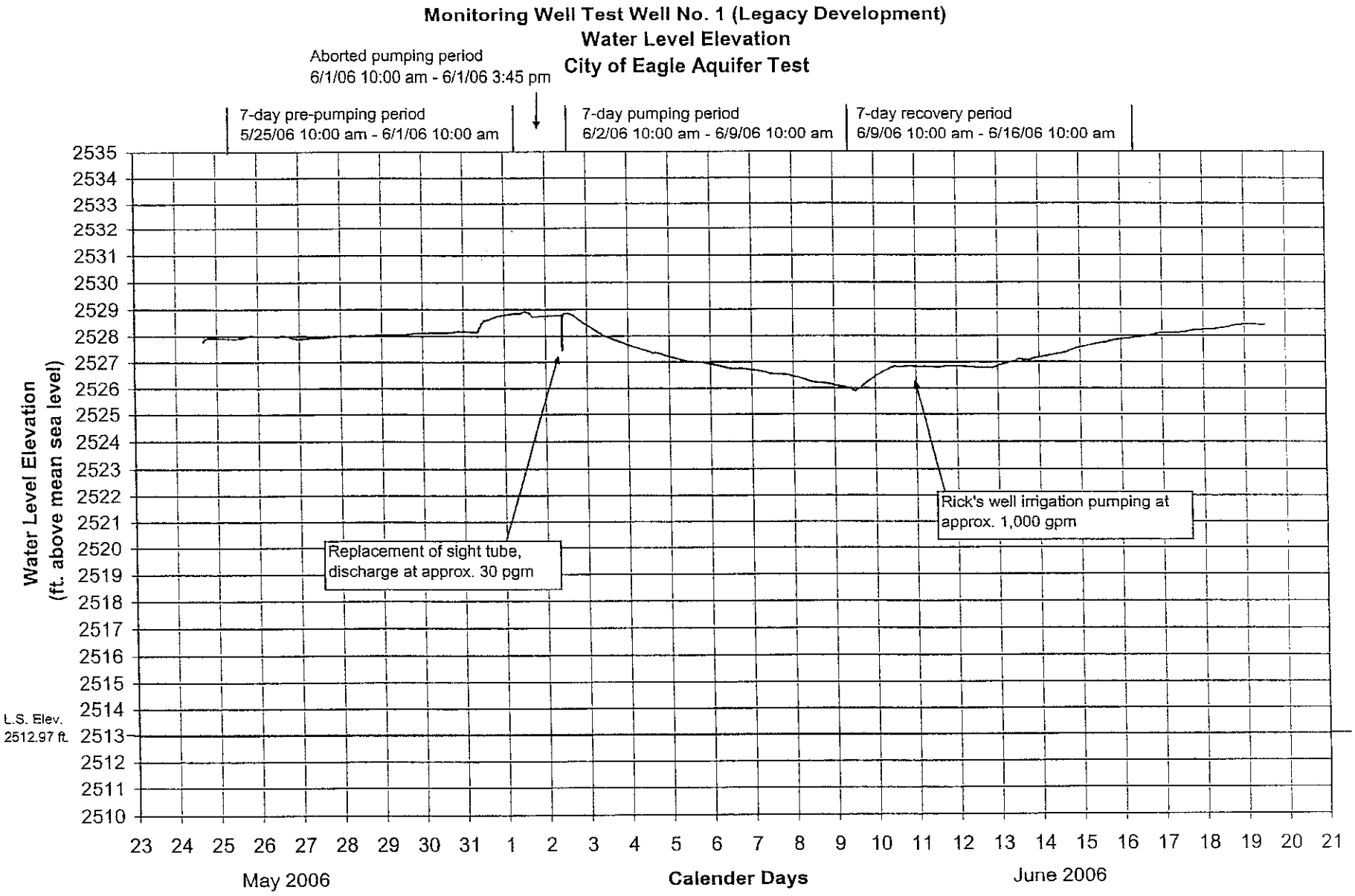


Calculation after Theis

Observation well	Transmissivity [ft²/d]	K [ft/d]	Storage coefficient	Radial distance to PW [ft]	
TestwellNo2 R	1.75×10^{4}	1.75×10^{2}	3.00×10^{-3}	0.5	

Appendix C.2

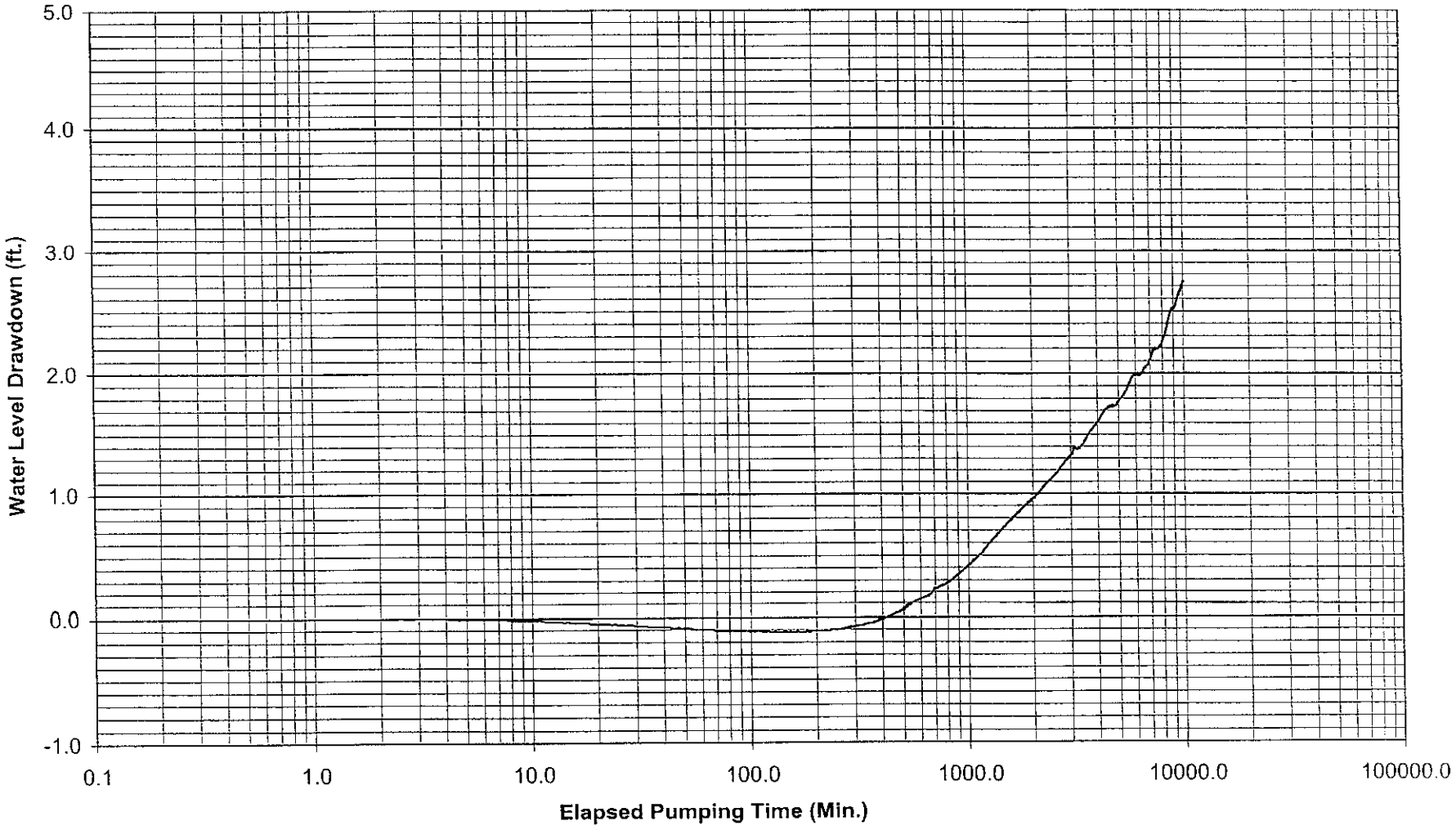
TEST WELL 1 (Legacy)


Monitoring Well Test Well No. 1 (Legacy Development)
Water Level Elevation
City of Eagle Aquifer Test
Aborted pumping period
6/1/06 10:00 am - 6/1/06 3:45 pm
7-day pre-pumping period
5/25/06 10:00 am - 6/1/06 10:00 am
7-day pumping period
6/2/06 10:00 am - 6/9/06 10:00 am
7-day recovery period
6/9/06 10:00 am - 6/16/06 10:00 am
Water Level Elevation
(ft. above mean sea level)
2535
2534
2533
2532
2531
2530
2529
2528
2527
2526
2525
2524
2523
2522
2521
2520
2519
2518
2517
2516
2515
2514
2513
2512
2511
2510
L.S. Elev.
2512.97 ft.
Replacement of sight tube,
discharge at approx. 30 pgm
Rick's well irrigation pumping at
approx. 1,000 gpm
23 24 25 26 27 28 29 30 31 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
May 2006
Calender Days
June 2006

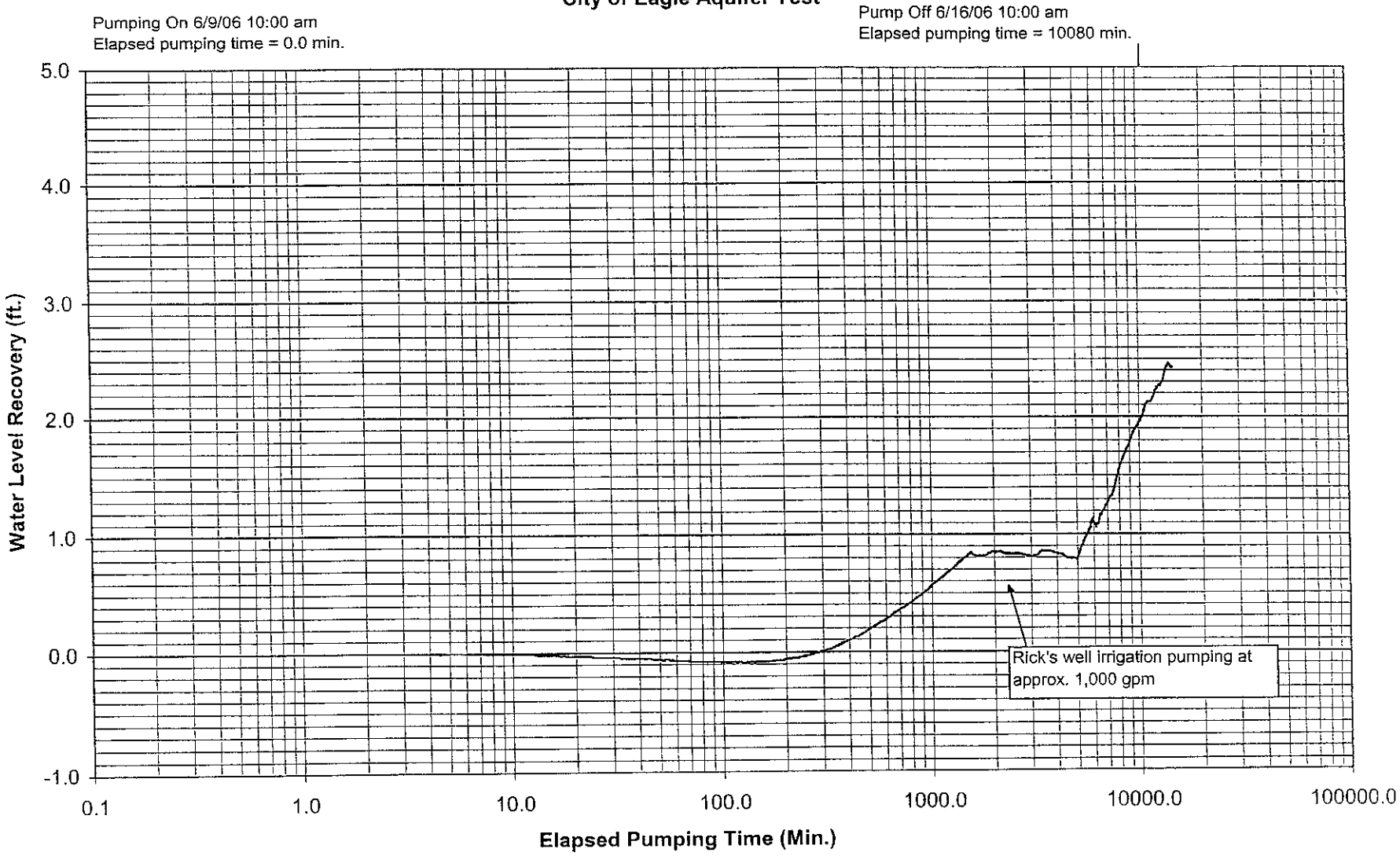
Monitoring Well Test Well No. 1 (Legacy Development)
Drawdown Semi-log Plot
City of Eagle Aquifer Test

Pumping On 6/2/06 10:00 am
Elapsed pumping time = 0.0 min.

Pump Off 6/9/06 10:00 am
Elapsed pumping time = 10080 min.

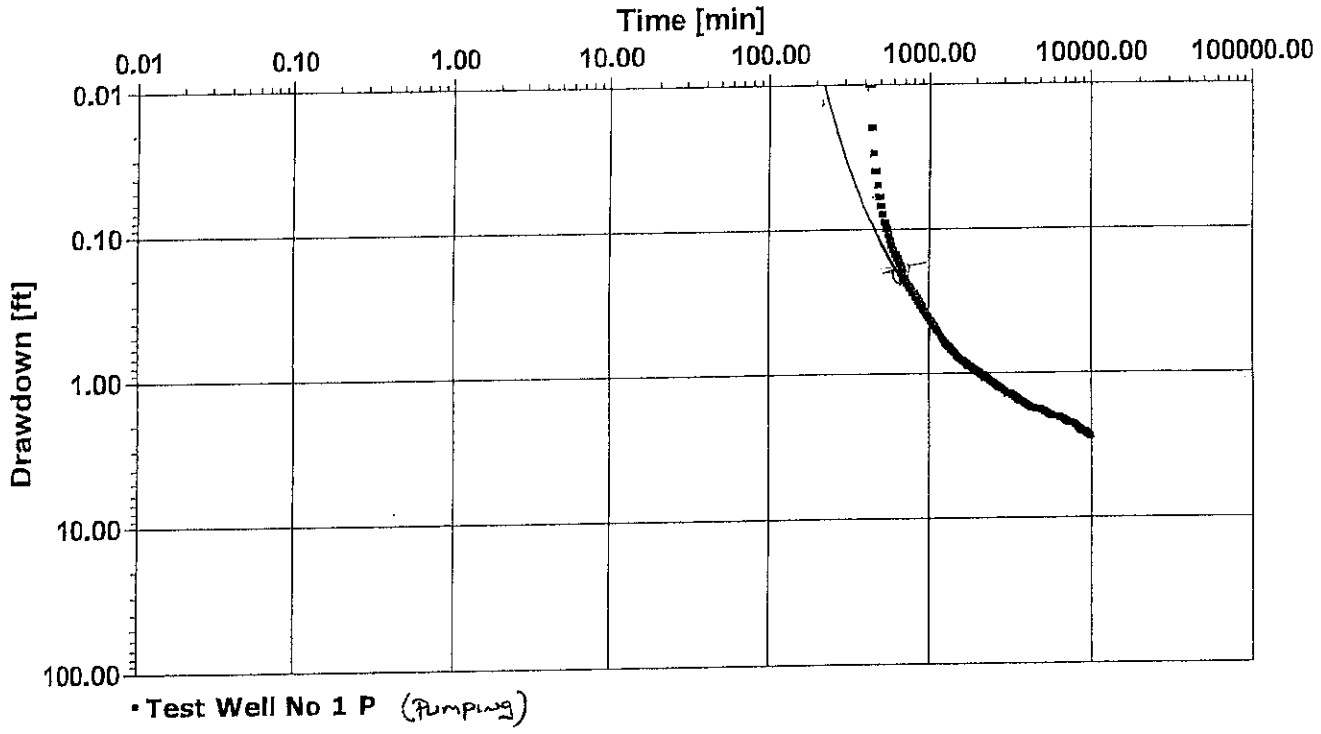


Monitoring Well Test Well No. 1 (Legacy Development)
Recovery Semi-log Plot
City of Eagle Aquifer Test



City, State/Province Address Contact Info Company Name	Pumping Test Analysis Report
	Project: Eagle Aquifer Test
	Number:
	Client:

Location:	Pumping Test: Drawdown	Pumping well: Test Well No 2 P
Test conducted by:		Test date: 6/30/2006
Analysis performed by:	New analysis 1	Date: 6/30/2006
Aqulfer Thickness: 100.00 ft	Discharge rate: 1580 [U.S. gal/min]	

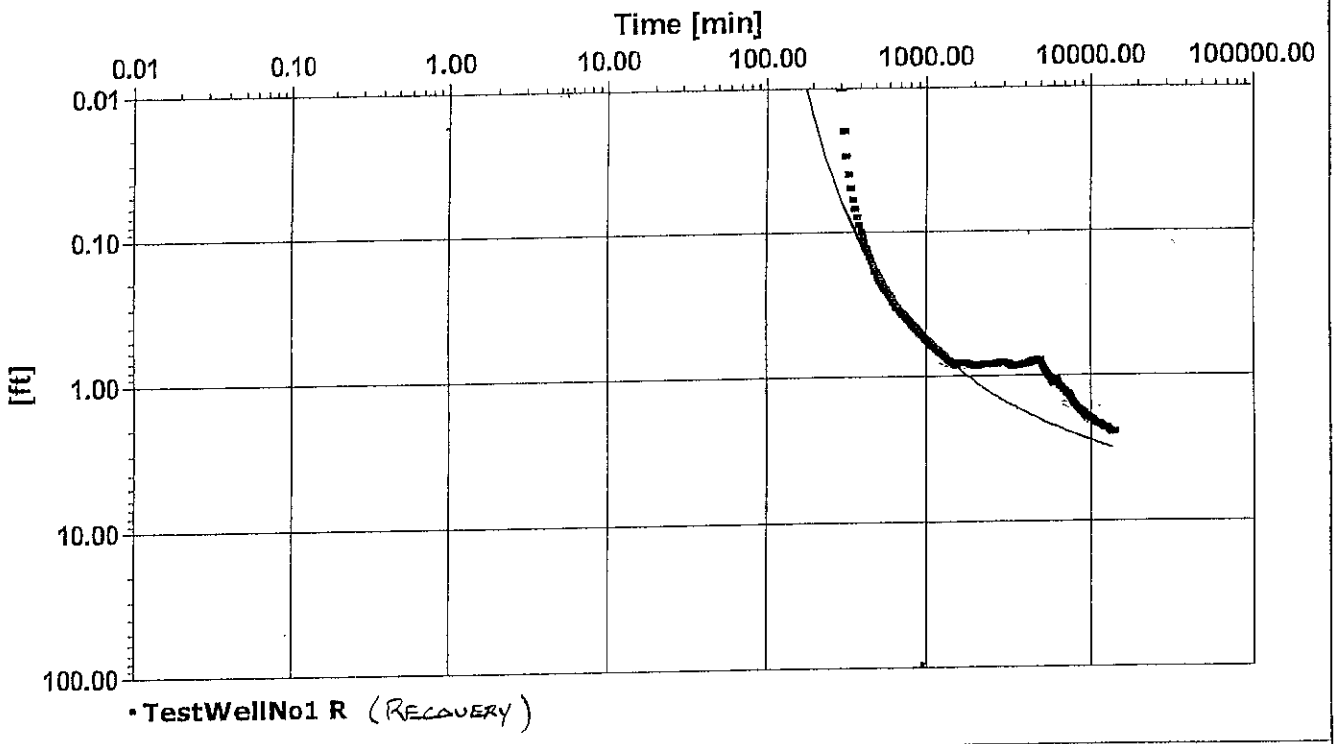


Calculation after Theis

Observation well	Transmissivity [ft²/d]	K [ft/d]	Storage coefficient	Radial distance to PW [ft]	
Test Well No 1 P	1.95×10^{4}	1.95×10^{2}	1.58×10^{-2}	1604.58	

City, State/Province Address Contact Info Company Name	Pumping Test Analysis Report
	Project: Recovery Eagle Aquifer Test
	Number:
	Client:

Location:	Pumping Test: Recovery Eagle Aquifer Test	Pumping well: TestwellNo2 R
Test conducted by:		Test date: 6/30/2006
Analysis performed by:	recovery	Date: 6/30/2006
Aquifer Thickness: 100.00 ft	Discharge rate: 1580 [U.S. gal/min]	

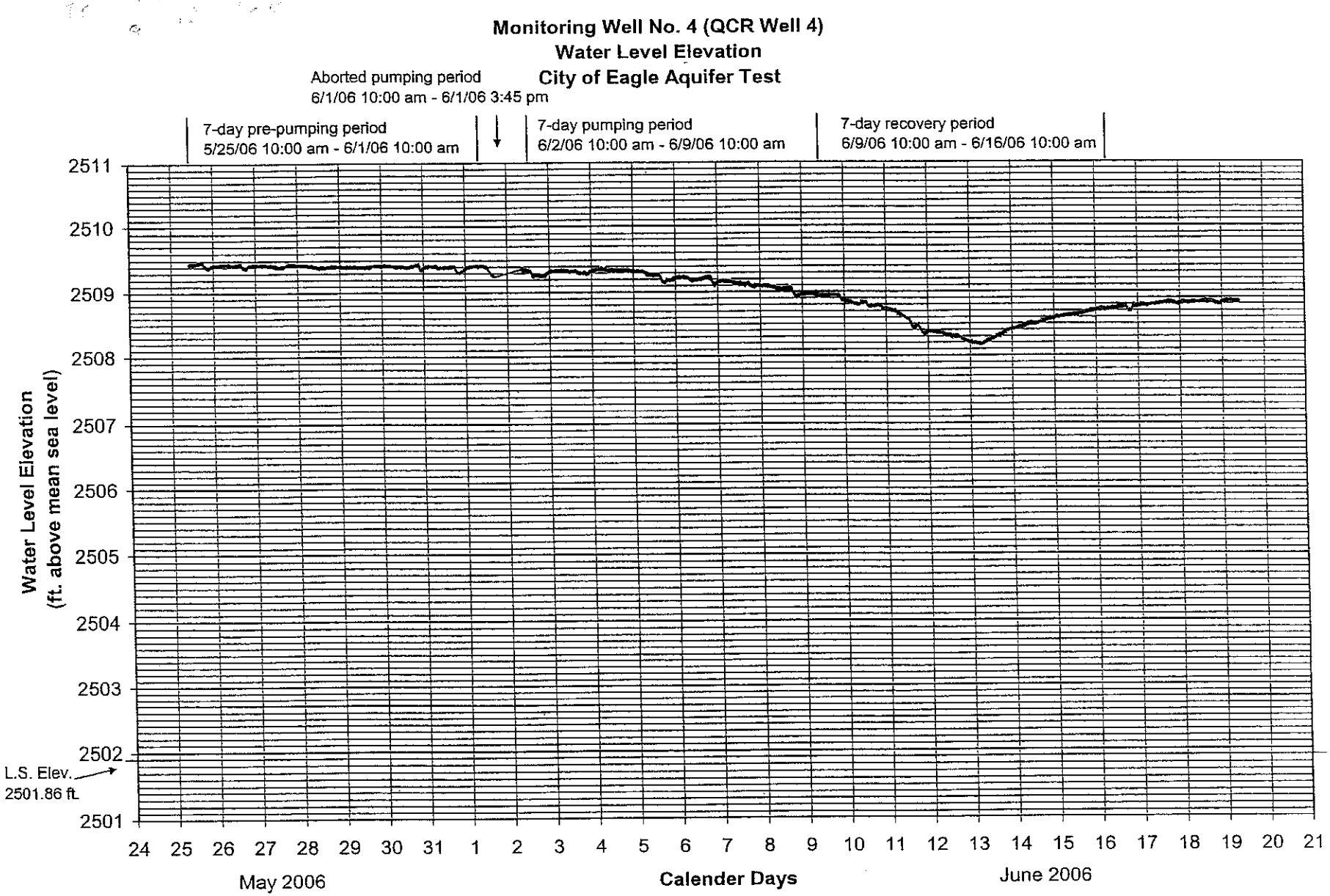


Calculation after Theis

Observation well	Transmissivity [ft²/d]	K [ft/d]	Storage coefficient	Radial distance to PW [ft]	
TestWellNo1 R	2.01×10^{4}	2.01×10^{2}	1.30×10^{-2}	1604.58	

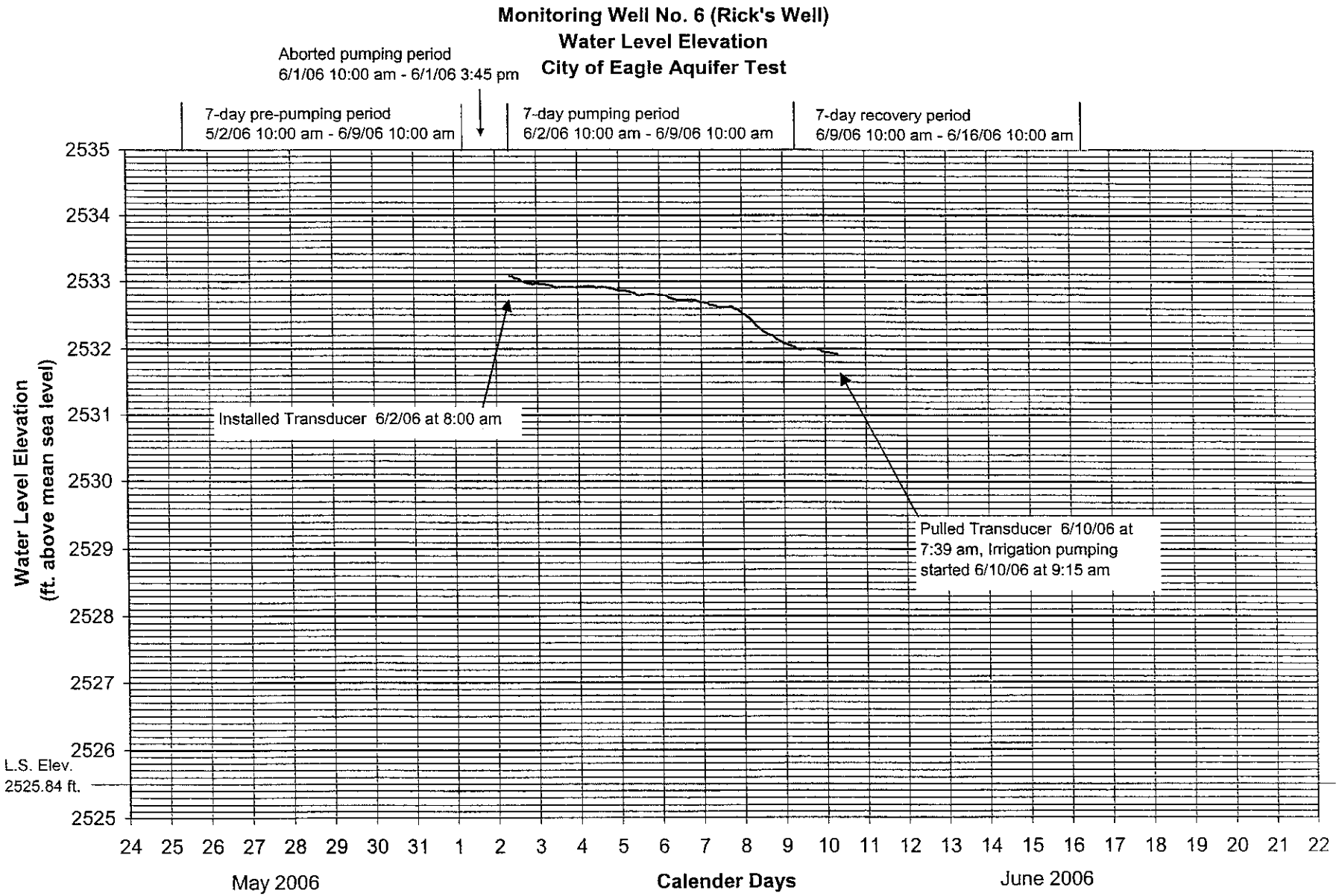
Appendix C.3

MONITORING WELL 4 (QCR 4)


Monitoring Well No. 4 (QCR Well 4)
Water Level Elevation
City of Eagle Aquifer Test
Aborted pumping period
6/1/06 10:00 am - 6/1/06 3:45 pm
7-day pre-pumping period
5/25/06 10:00 am - 6/1/06 10:00 am
7-day pumping period
6/2/06 10:00 am - 6/9/06 10:00 am
7-day recovery period
6/9/06 10:00 am - 6/16/06 10:00 am
Water Level Elevation
(ft. above mean sea level)
2511
2510
2509
2508
2507
2506
2505
2504
2503
2502
2501
L.S. Elev.
2501.86 ft.
24 25 26 27 28 29 30 31 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
May 2006
Calender Days
June 2006

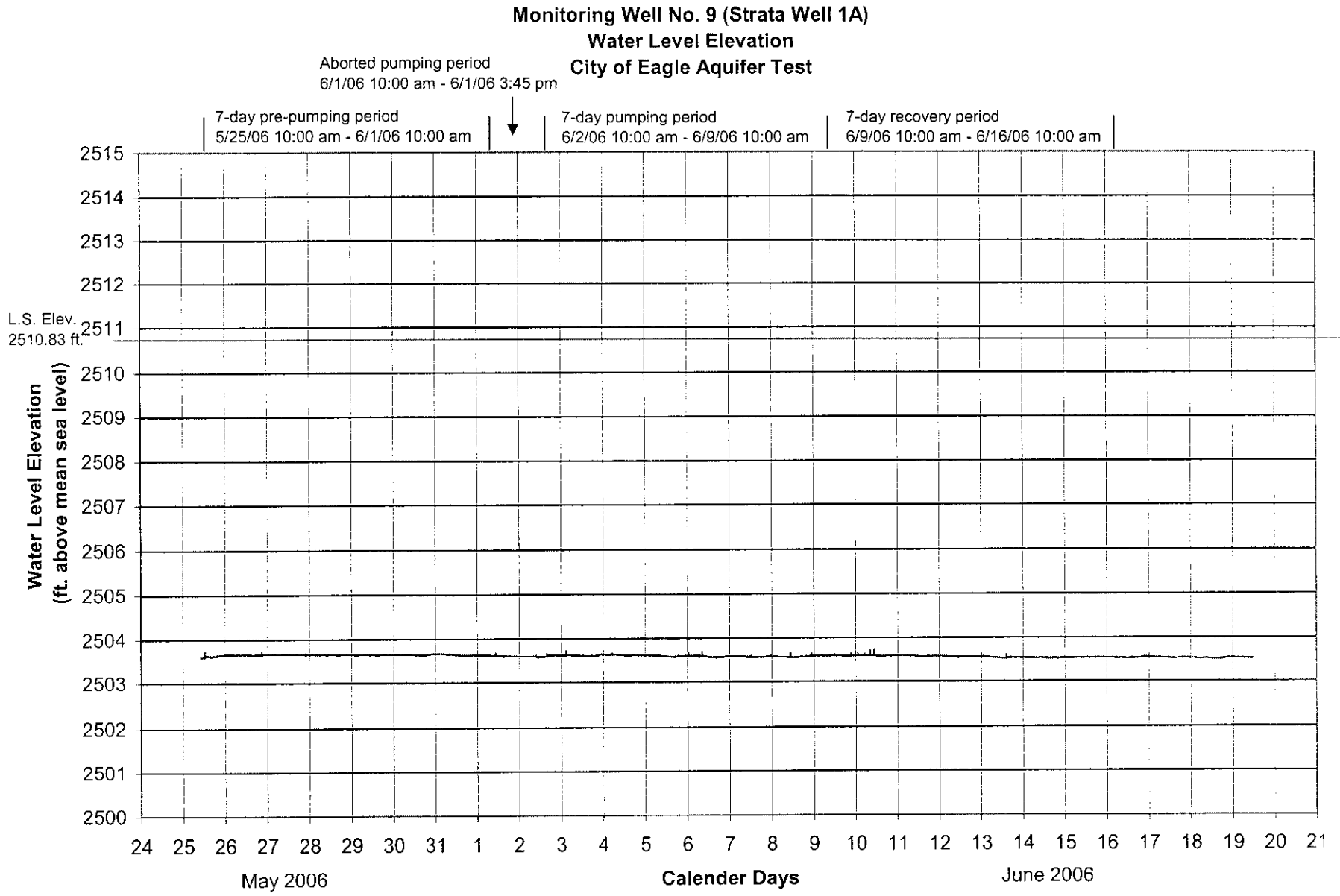
Appendix C.4

MONITORING WELL 6 (Rick's)


Monitoring Well No. 6 (Rick's Well)
Water Level Elevation
City of Eagle Aquifer Test
Aborted pumping period
6/1/06 10:00 am - 6/1/06 3:45 pm
7-day pre-pumping period
5/2/06 10:00 am - 6/9/06 10:00 am
7-day pumping period
6/2/06 10:00 am - 6/9/06 10:00 am
7-day recovery period
6/9/06 10:00 am - 6/16/06 10:00 am
Water Level Elevation
(ft. above mean sea level)
2535
2534
2533
2532
2531
2530
2529
2528
2527
2526
2525
L.S. Elev.
2525.84 ft.
Installed Transducer 6/2/06 at 8:00 am
Pulled Transducer 6/10/06 at
7:39 am, Irrigation pumping
started 6/10/06 at 9:15 am
24 25 26 27 28 29 30 31 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22
May 2006
Calender Days
June 2006

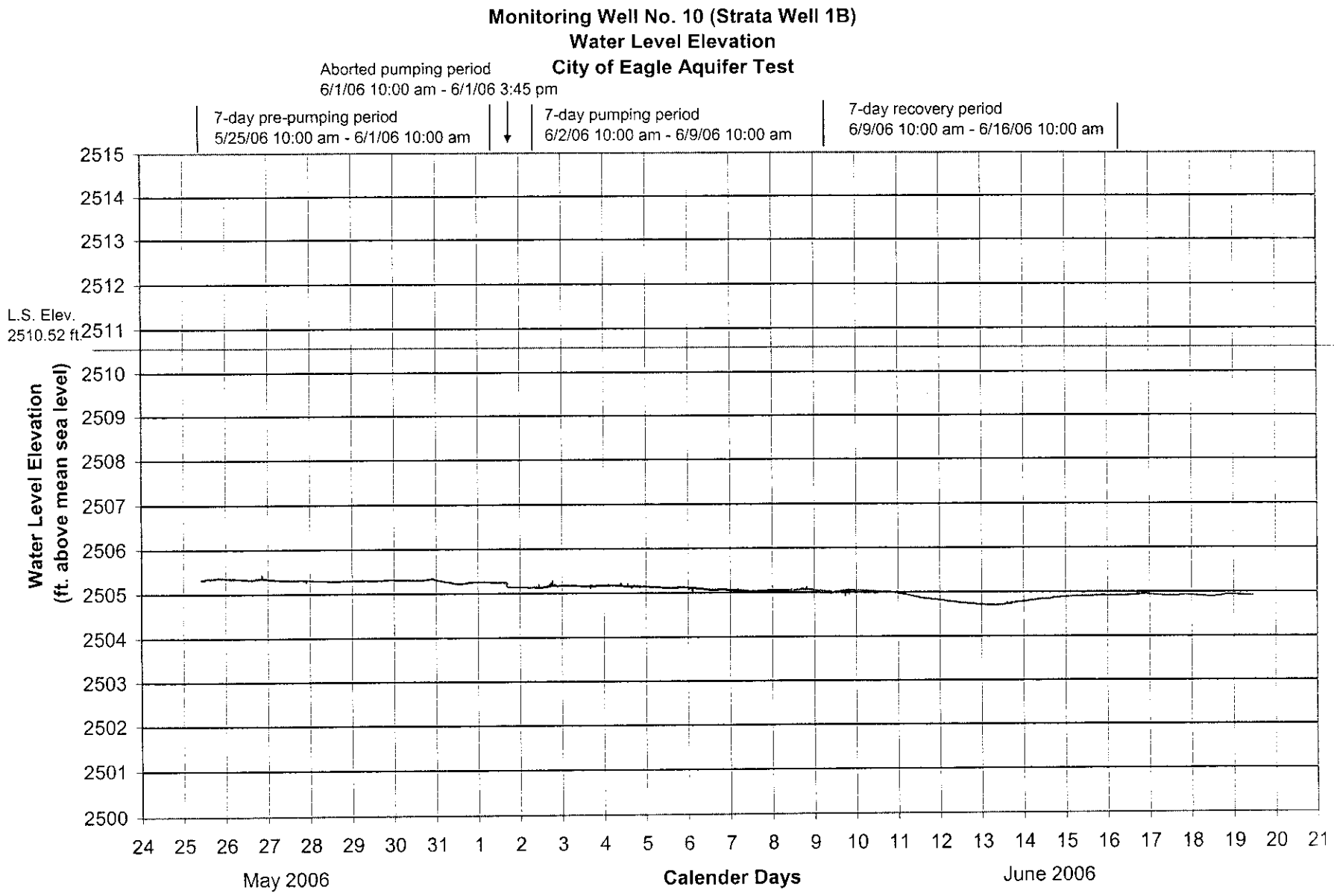
Appendix C.5

MONITORING WELL 9 (Strata 1A)


Monitoring Well No. 9 (Strata Well 1A)
Water Level Elevation
City of Eagle Aquifer Test
Aborted pumping period
6/1/06 10:00 am - 6/1/06 3:45 pm
7-day pre-pumping period
5/25/06 10:00 am - 6/1/06 10:00 am
7-day pumping period
6/2/06 10:00 am - 6/9/06 10:00 am
7-day recovery period
6/9/06 10:00 am - 6/16/06 10:00 am
L.S. Elev.
2510.83 ft.
Water Level Elevation
(ft. above mean sea level)
2515
2514
2513
2512
2511
2510
2509
2508
2507
2506
2505
2504
2503
2502
2501
2500
24 25 26 27 28 29 30 31 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
May 2006
Calender Days
June 2006

Appendix C.6

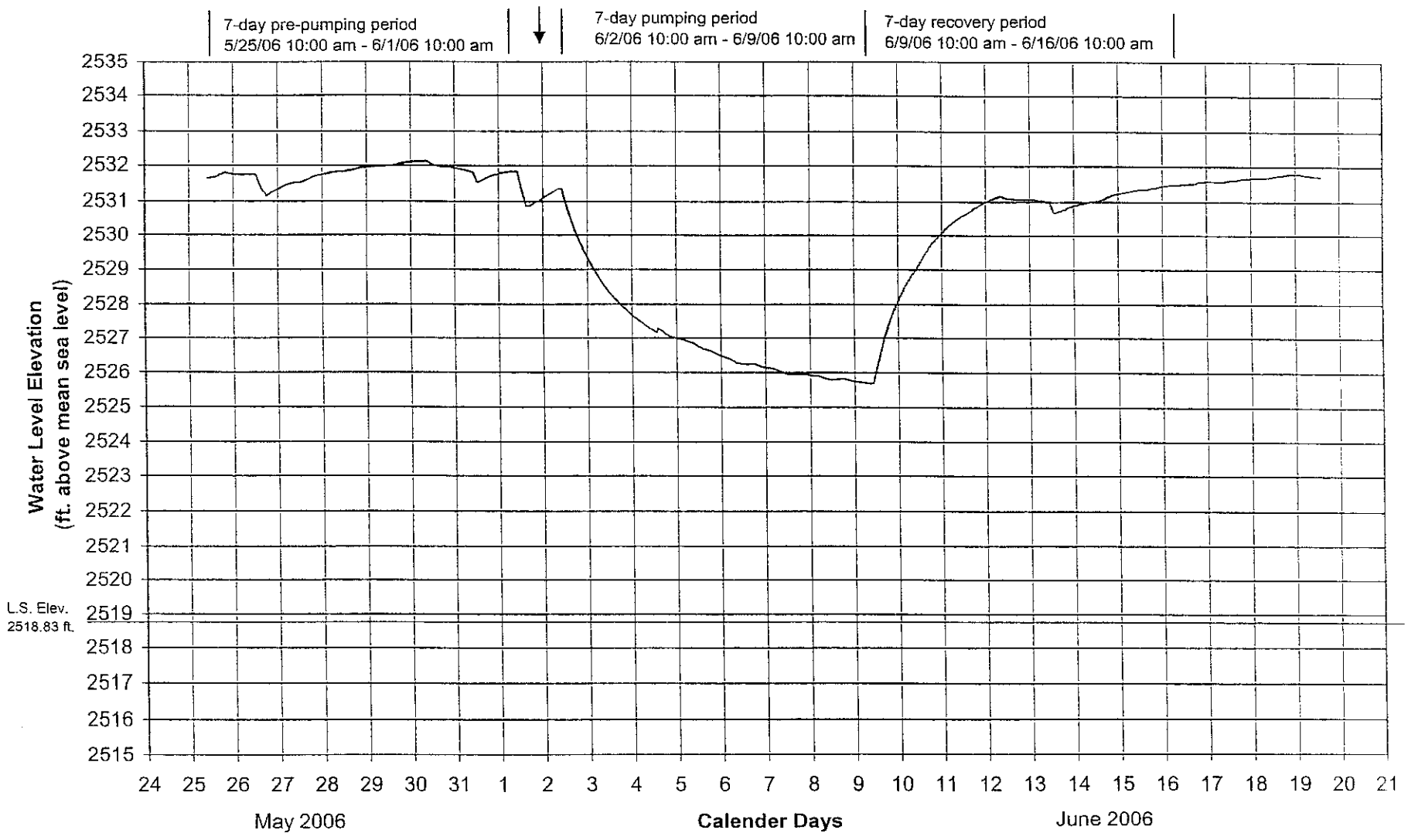
MONITORING WELL 10 (Strata Well 1B)


Monitoring Well No. 10 (Strata Well 1B)
Water Level Elevation
City of Eagle Aquifer Test
Aborted pumping period
6/1/06 10:00 am - 6/1/06 3:45 pm
7-day pre-pumping period
5/25/06 10:00 am - 6/1/06 10:00 am
7-day pumping period
6/2/06 10:00 am - 6/9/06 10:00 am
7-day recovery period
6/9/06 10:00 am - 6/16/06 10:00 am
L.S. Elev.
2510.52 ft
Water Level Elevation
(ft. above mean sea level)
2515
2514
2513
2512
2511
2510
2509
2508
2507
2506
2505
2504
2503
2502
2501
2500
24 25 26 27 28 29 30 31 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
May 2006
Calender Days
June 2006

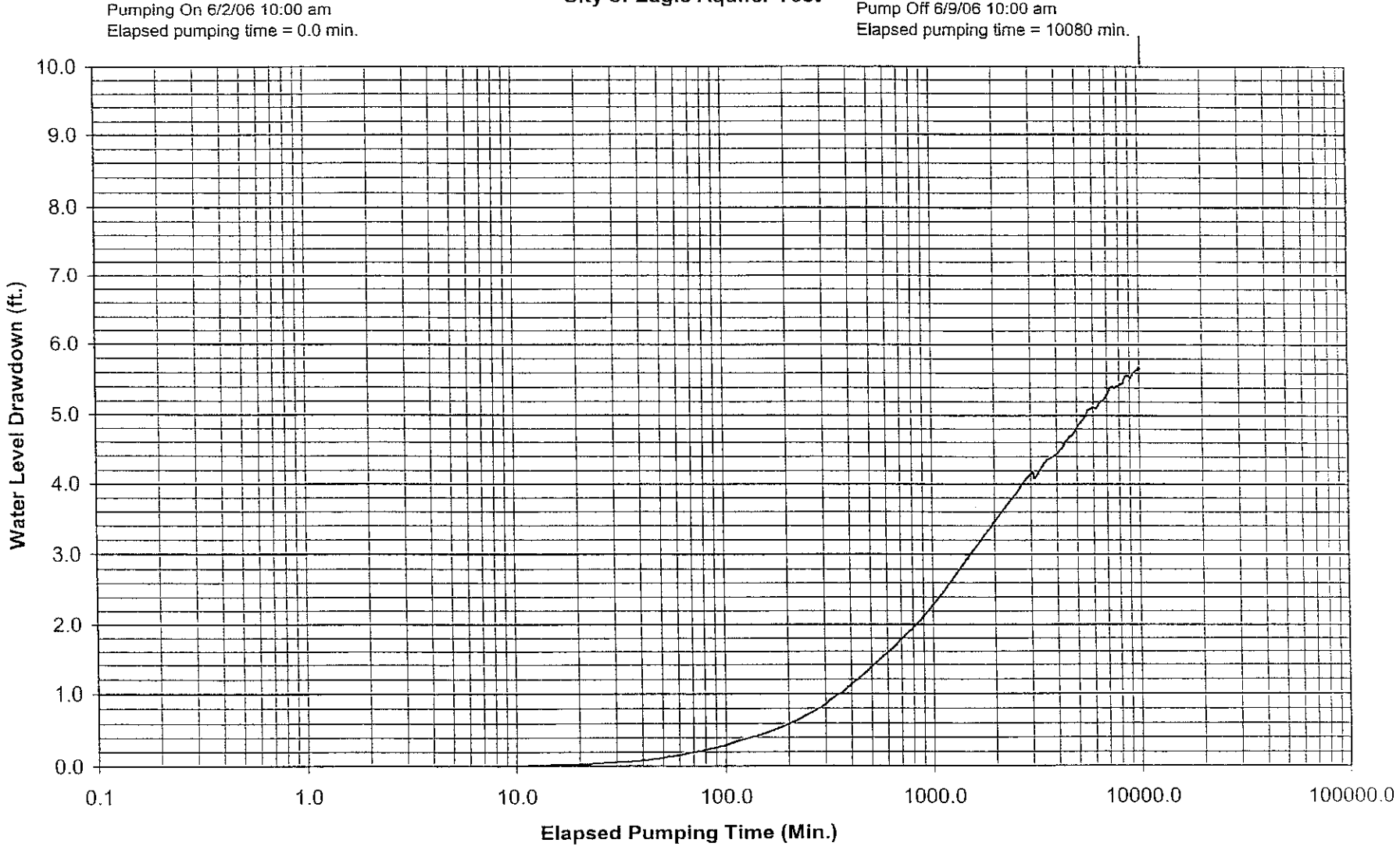
Appendix C.7

MONITORING WELL 11 (UWI 1A)

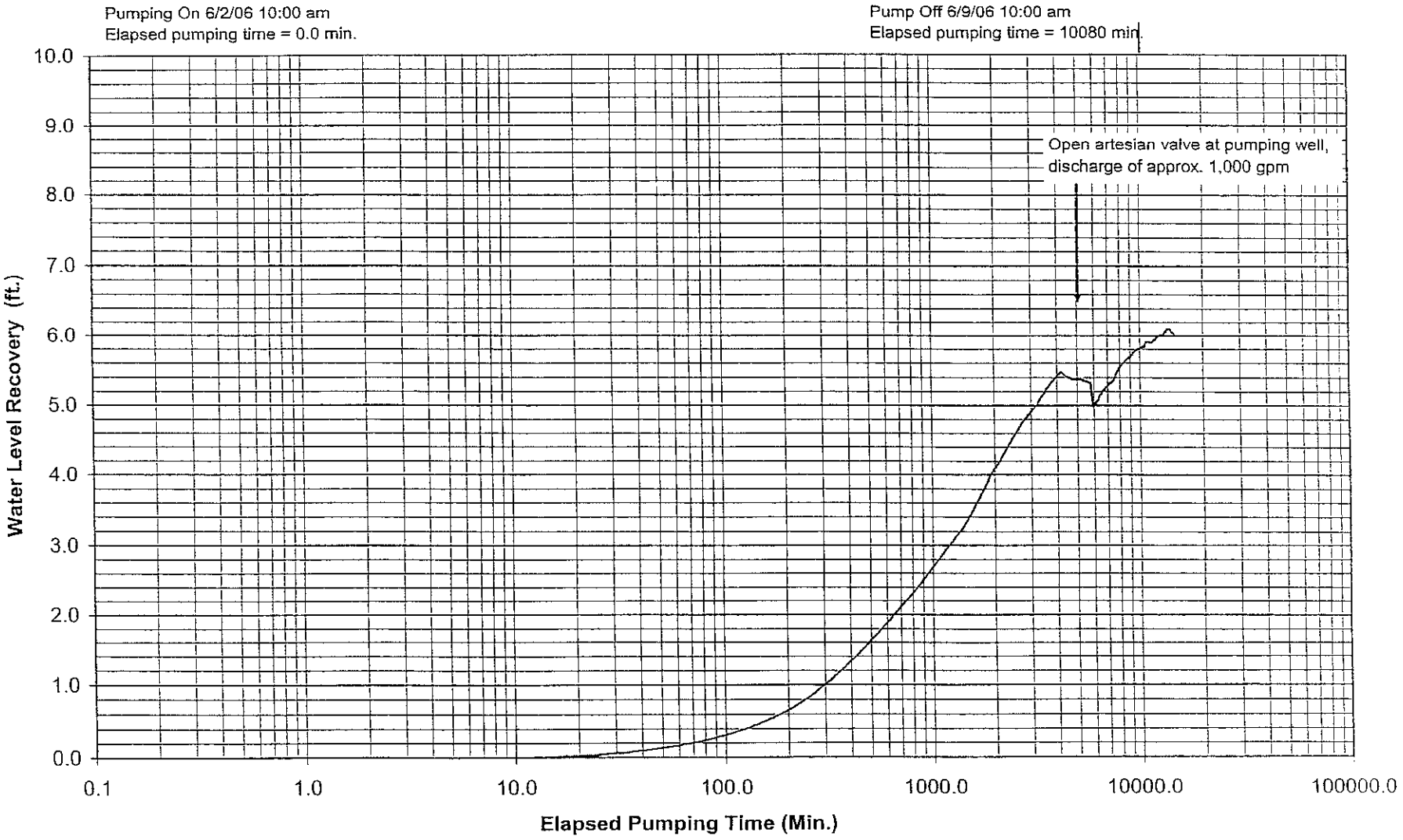
Monitoring Well No. 11 (UWI 1A South)
Water Level Elevation
City of Eagle Aquifer Test



Monitoring Well No. 11 (UWI 1A South)
Drawdown Semi-log Plot
City of Eagle Aquifer Test

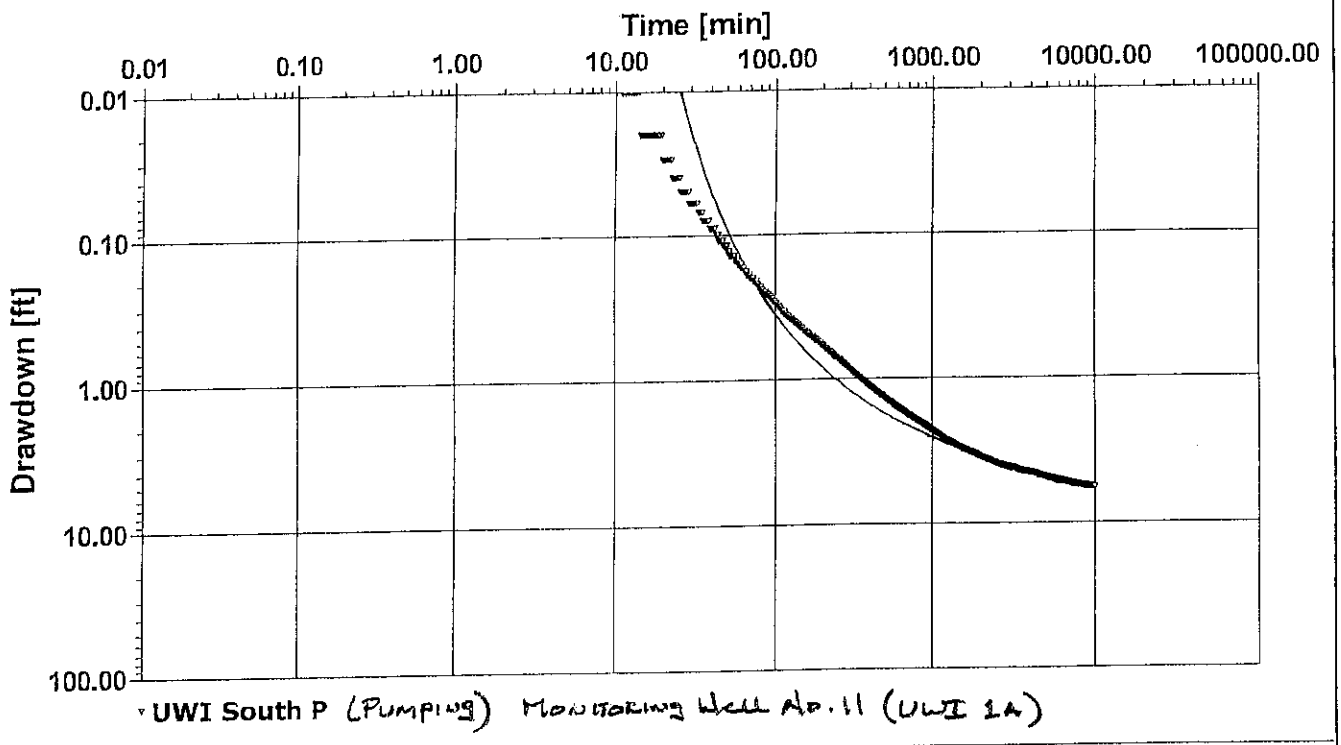


Monitoring Well No. 11 (UWI 1A South)
Recovery Semi-log Plot
City of Eagle Aquifer Test



City, State/Province Address Contact Info Company Name	Pumping Test Analysis Report
	Project: Eagle Aquifer Test
	Number:
	Client:

Location:	Pumping Test: Drawdown	Pumping well: Test Well No 2 P
Test conducted by:		Test date: 6/30/2006
Analysis performed by:	New analysis 1	Date: 6/30/2006
Aquifer Thickness: 100.00 ft	Discharge rate: 1580 [U.S. gal/min]	

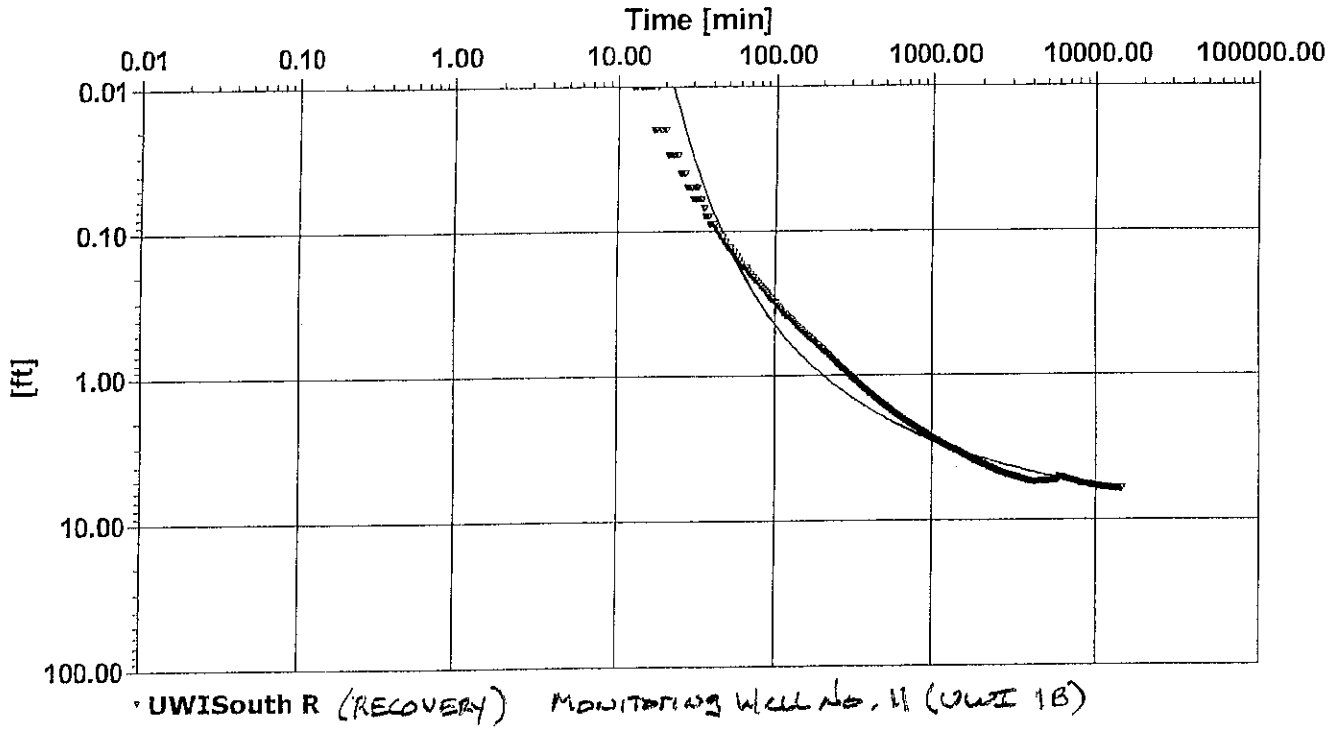


Calculation after Theis

Observation well	Transmissivity [ft²/d]	K [ft/d]	Storage coefficient	Radial distance to PW [ft]	
UWI South P	1.85×10^{4}	1.85×10^{2}	7.80×10^{-4}	2405.68	

City, State/Province Address Contact Info Company Name	Pumping Test Analysis Report
	Project: Recovery Eagle Aquifer Test
	Number:
	Client:

Location:	Pumping Test: Recovery Eagle Aquifer Test	Pumping well: TestwellNo2 R
Test conducted by:		Test date: 6/30/2006
Analysis performed by:	recovery	Date: 6/30/2006
Aquifer Thickness: 100.00 ft	Discharge rate: 1580 [U.S. gal/min]	



Calculation after Theis

Observation well	Transmissivity [ft²/d]	K [ft/d]	Storage coefficient	Radial distance to PW [ft]	
UWISouth R	1.77×10^4	1.77×10^2	6.62×10^{-4}	2405.68	

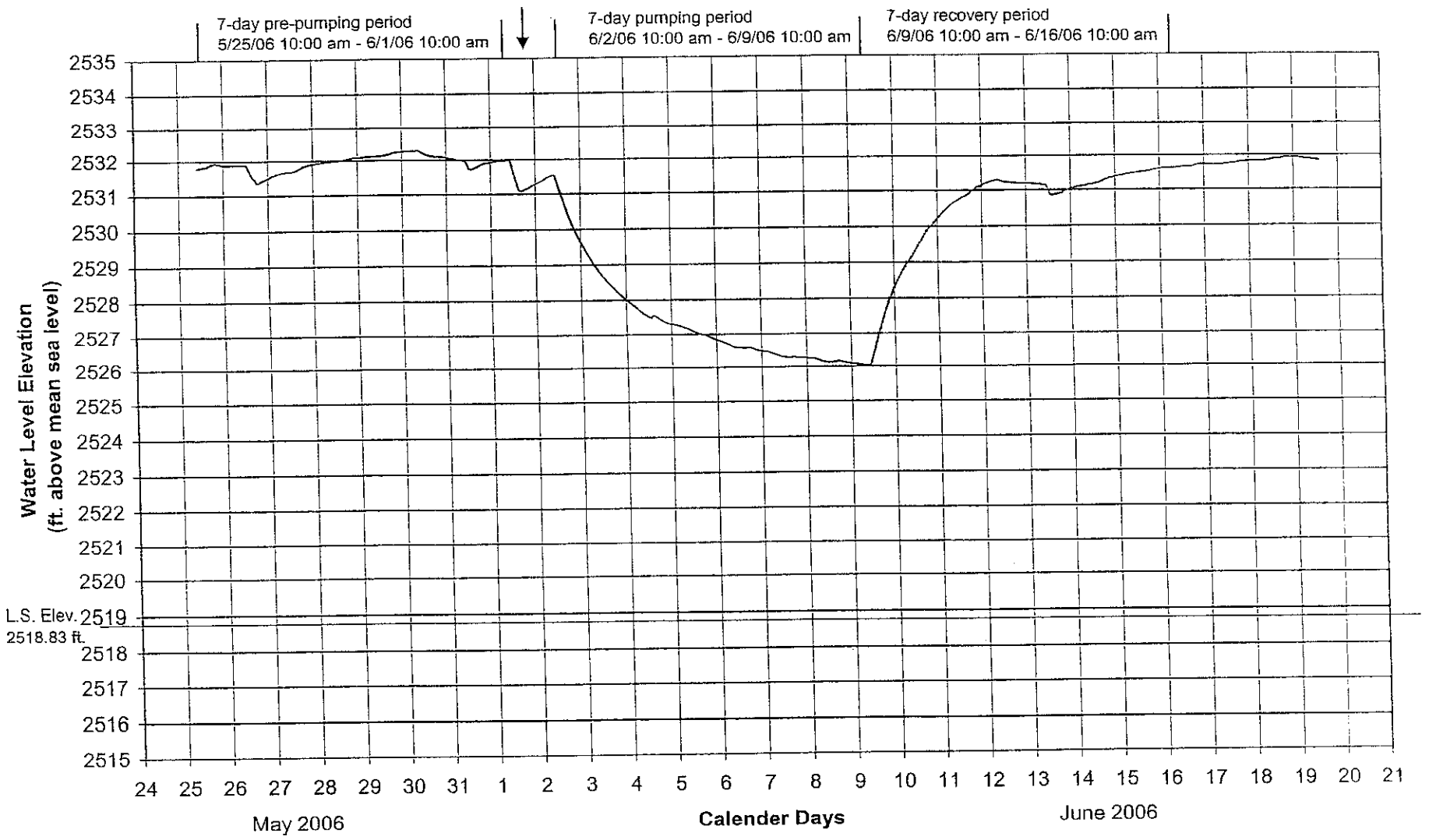
Exclusion of Points
$t = 2000$ to $t = 4257$

COMPUTER FIT

Appendix C.8

MONITORING WELL 12 (UWI 1B)

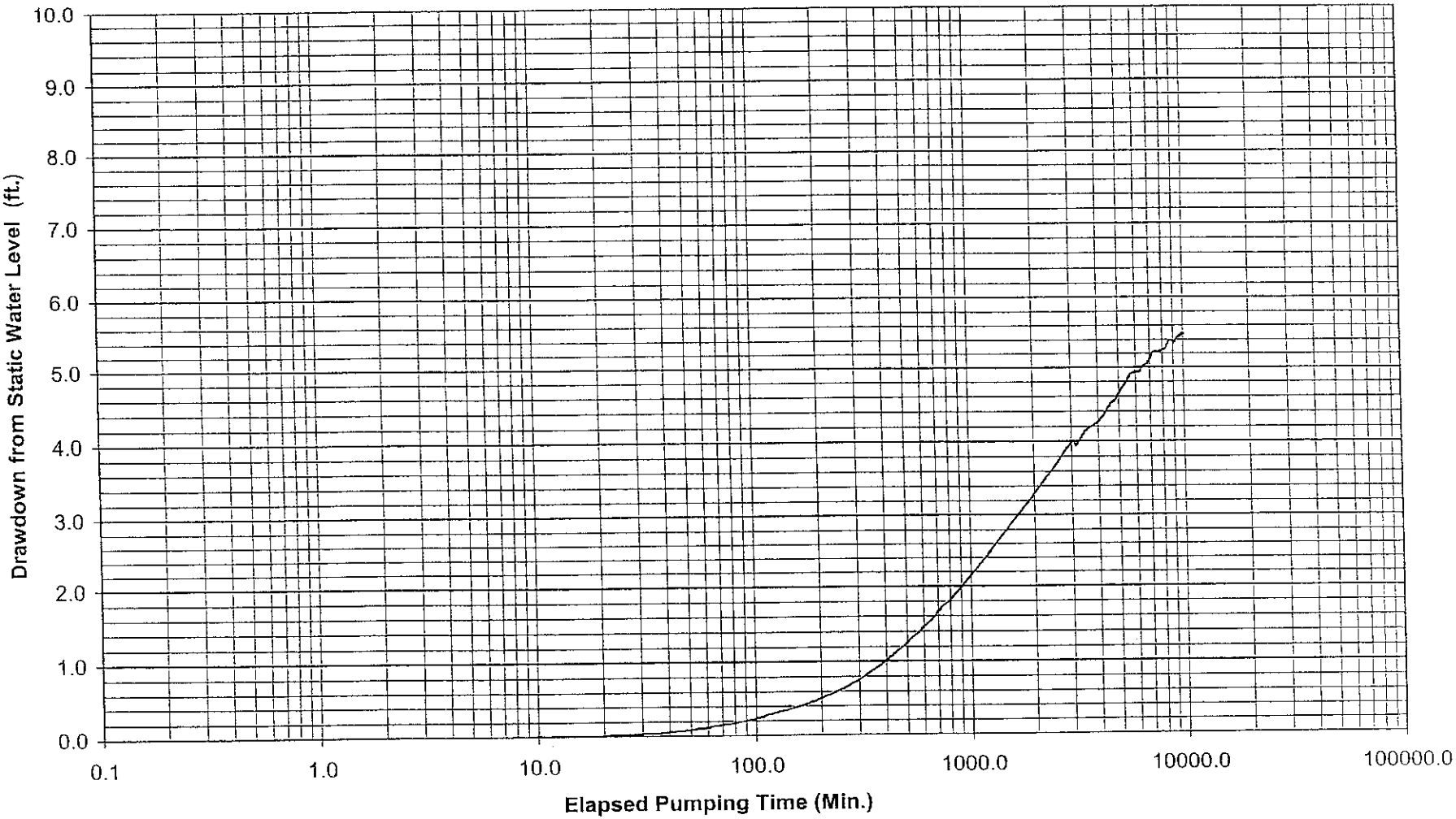
Monitoring Well No. 12 (UWI 1B North)
Water Level Elevation
City of Eagle Aquifer Test



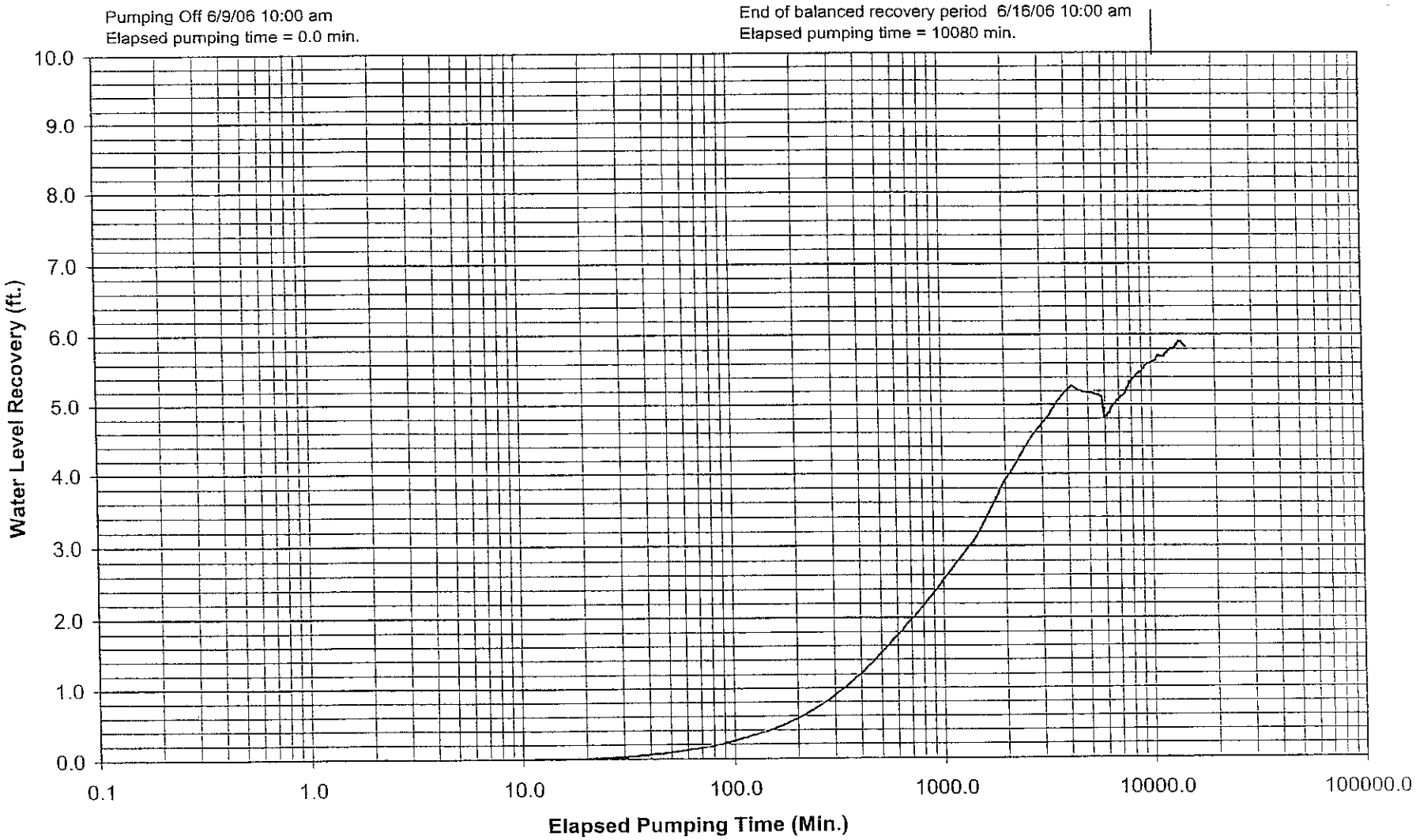
Monitoring Well No. 12 (UWI 1B North)
Drawdown Semi-log Plot
City of Eagle Aquifer Test

Pumping On 6/2/06 10:00 am
Elapsed pumping time = 0.0 min.

Pump Off 6/9/06 10:00 am
Elapsed pumping time = 10080 min.

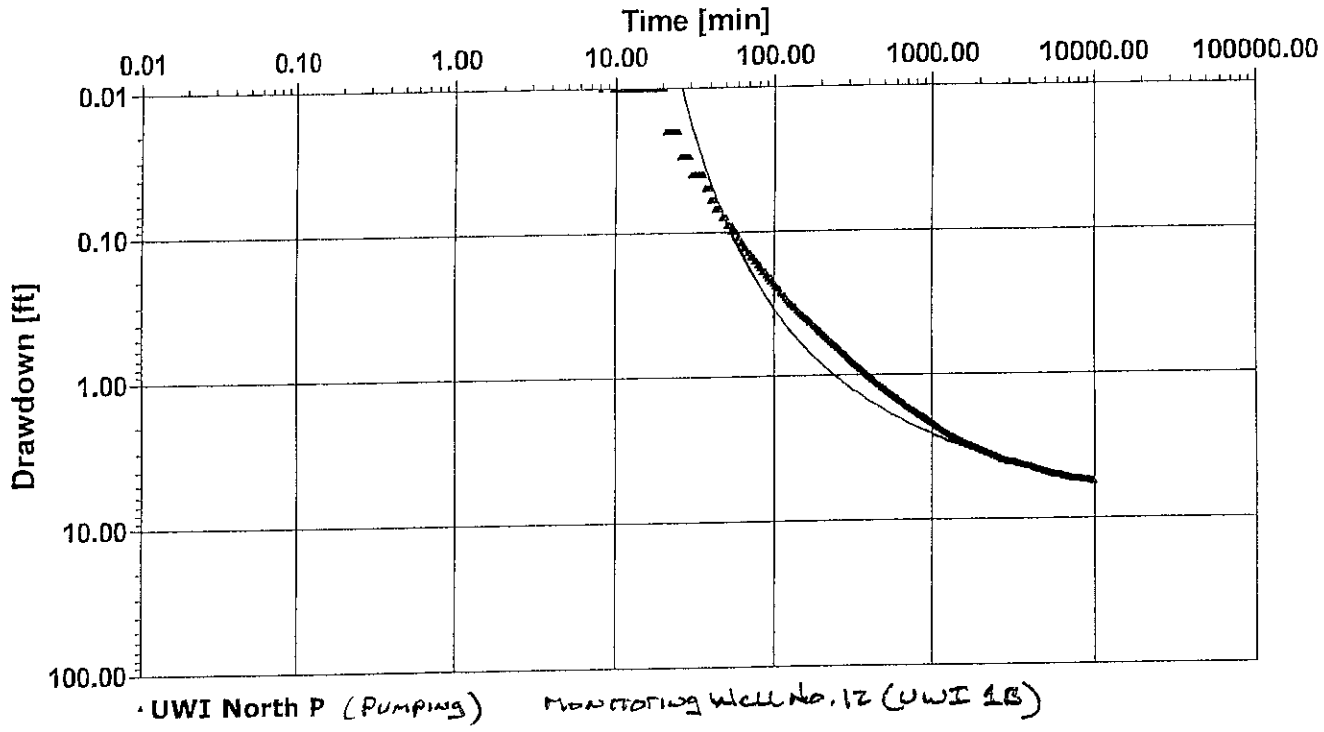


Monitoring Well No. 12 (UWI 1B North)
Recovery Semi-log Plot
City of Eagle Aquifer Test



City, State/Province Address Contact Info Company Name	Pumping Test Analysis Report	
	Project: Eagle Aquifer Test	
	Number:	
	Client:	

Location:	Pumping Test: Drawdown	Pumping well: Test Well No 2 P
Test conducted by:		Test date: 6/30/2006
Analysis performed by:	New analysis 1	Date: 6/30/2006
Aquifer Thickness: 100.00 ft	Discharge rate: 1580 [U.S. gal/min]	

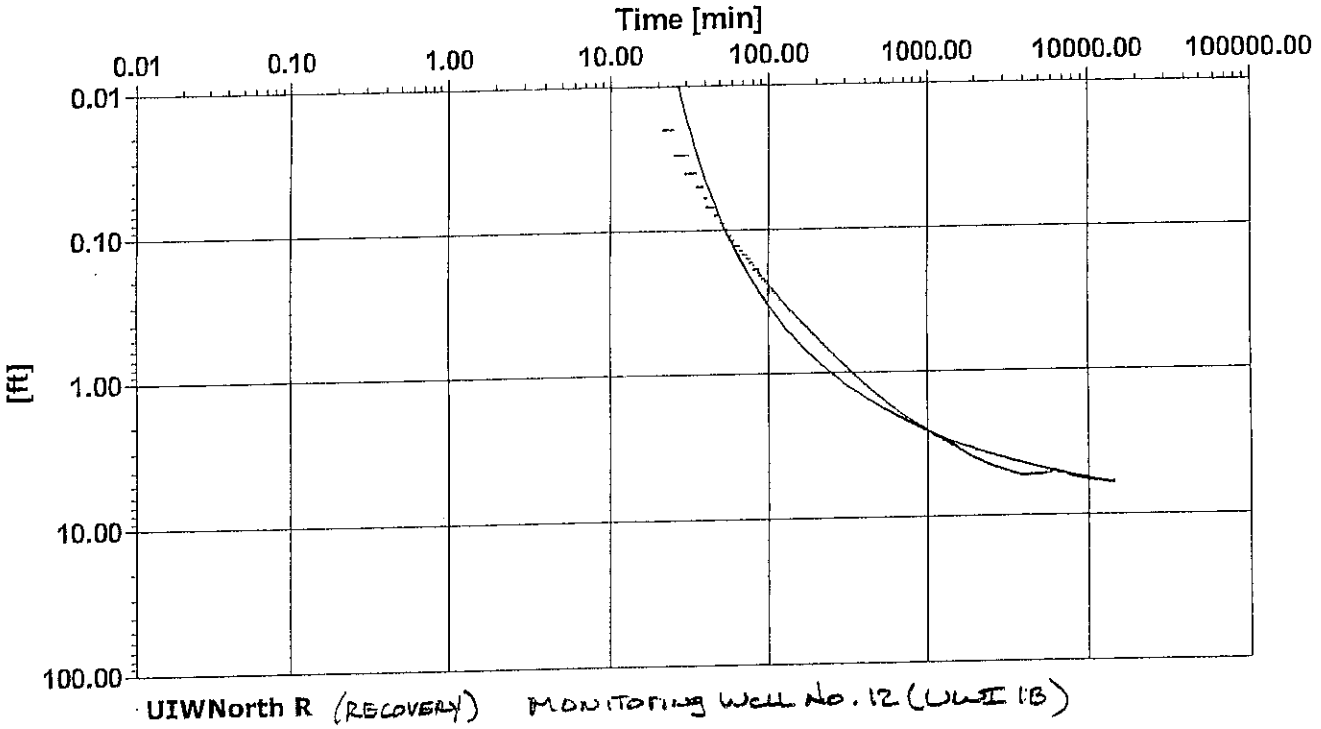


Calculation after Theis

Observation well	Transmissivity [ft²/d]	K [ft/d]	Storage coefficient	Radial distance to PW [ft]	
UWI North P	1.80×10^{4}	1.80×10^{2}	7.90×10^{-4}	2405.68	

City, State/Province Address Contact Info Company Name	Pumping Test Analysis Report
	Project: Recovery Eagle Aquifer Test
	Number:
	Client:

Location:	Pumping Test: Recovery Eagle Aquifer Test	Pumping well: TestwellNo2 R
Test conducted by:		Test date: 6/30/2006
Analysis performed by:	recovery	Date: 6/30/2006
Aquifer Thickness: 100.00 ft	Discharge rate: 1580 [U.S. gal/min]	

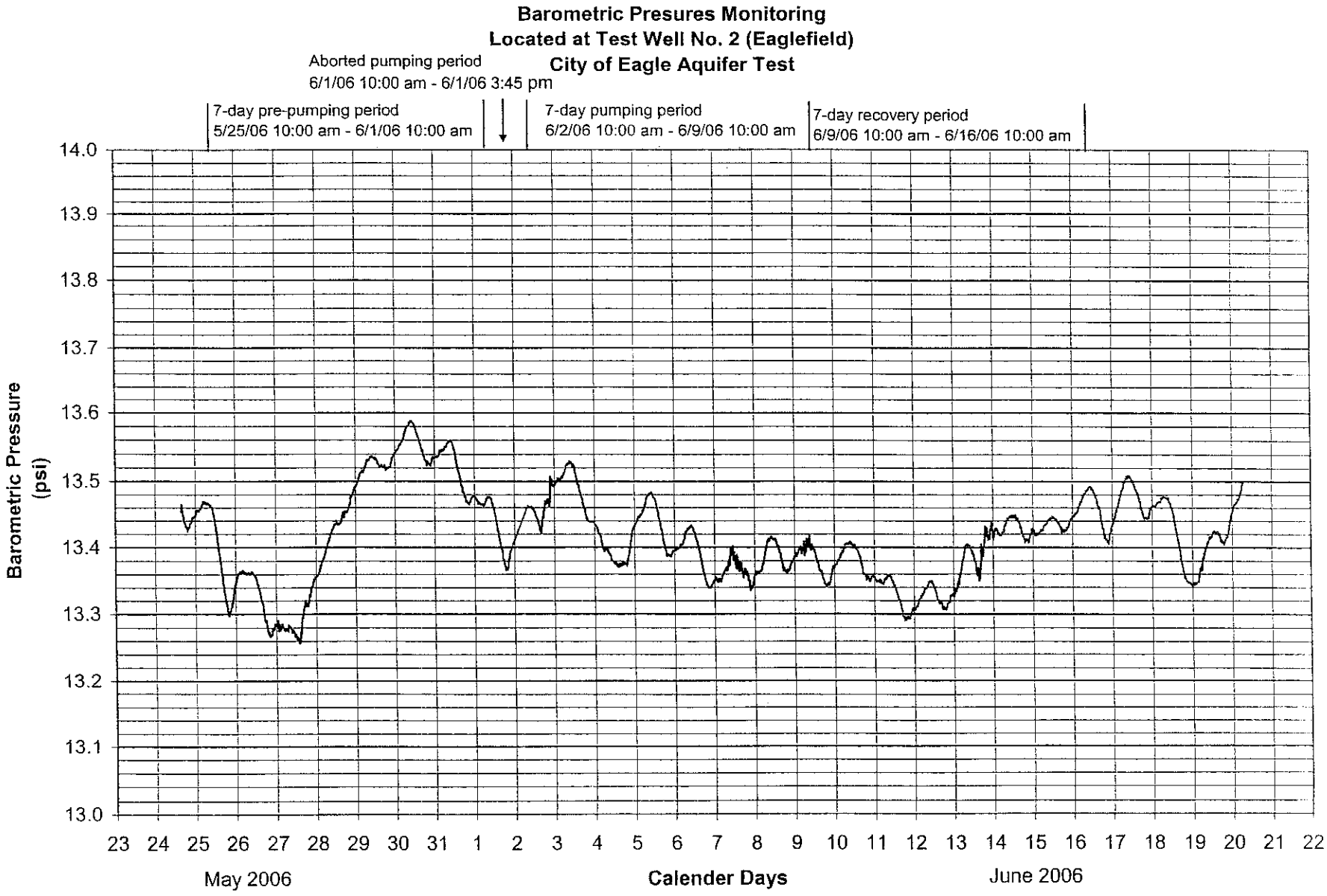


Calculation after Theis

Observation well	Transmissivity [ft²/d]	K [ft/d]	Storage coefficient	Radial distance to PW [ft]	
UIWNorth R	1.80×10^{4}	1.80×10^{2}	8.00×10^{-4}	2405.68	

Appendix C.9

BAROMETER


Barometric Presures Monitoring
Located at Test Well No. 2 (Eaglefield)
City of Eagle Aquifer Test
Aborted pumping period
6/1/06 10:00 am - 6/1/06 3:45 pm
7-day pre-pumping period
5/25/06 10:00 am - 6/1/06 10:00 am
7-day pumping period
6/2/06 10:00 am - 6/9/06 10:00 am
7-day recovery period
6/9/06 10:00 am - 6/16/06 10:00 am
Barometric Pressure (psi)
14.0
13.9
13.8
13.7
13.6
13.5
13.4
13.3
13.2
13.1
13.0
23 24 25 26 27 28 29 30 31 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22
May 2006
Calender Days
June 2006

APPENDIX D

MONITORING WELL SURVEY DATA

HOLLADAY ENGINEERING COMPANY
32 N. MAIN PAYETTE, ID 83661 (208) 642-3304 FAX (208)642-2159 email: hec@holladayengineering.com

MONITORING WELLS

OWNER : CITY OF EAGLE
PROJECT : MONITORING WELL ELEVATIONS
AREA : T.4N., R.1W., S. 11

DATE: 6/27/06
PROJECT: EG061204
PAGE:

COORDINATES:

SURVEY PT. NO.	WELL	NORTHING	EASTING	LATITUDE	LONGITUDE	ELLIP.
1001	MW4	744362.8	2441586.0	43° 42' 24.54111" N	116° 26' 37.01283" W	2445.52
1002	MW6	744588.6	2446816.4	43° 42' 27.19661" N	116° 25' 25.84087" W	2469.58
1006	MW7	744008.1	2447329.0	43° 42' 21.50594" N	116° 25' 18.79939" W	2464.49
1010	MW9	743615.2	2445294.5	43° 42' 16.44486" N	116° 25' 58.13148" W	2454.54
1011	MW10	743595.6	2445295.1	43° 42' 16.45073" N	116° 25' 57.67684" W	2454.22
1012	MW11	739778.3	2448944.4	43° 41' 39.86635" N	116° 24' 56.34880" W	2462.67
1015	MW12	739778.3	2448944.4	43° 41' 39.86635" N	116° 24' 56.34880" W	2462.67
1008	TW1	742602.3	2446166.4	43° 42' 07.53036" N	116° 25' 34.46777" W	2456.70
1007	TW2	741256.3	2447040.0	43° 41' 54.30943" N	116° 25' 22.42992" W	2457.89

ELEVATIONS: GROUND ELEVATIONS (NOT TOP CASING ELEVATIONS)

WELL	ELEVATION	DESC.
MW4	2501.86	(N) HUB
MW6	2525.84	(E) HUB
MW7	2520.74	(NW) HUB
MW9	2510.83	(N) HUB
MW10	2510.52	(N) HUB
MW11	2518.83	EAST (N) RIM
MW12	2518.83	EAST (N) RIM
TW1	2512.97	(N) HUB
TW2	2514.15	-

GENERAL NOTES:

VERTICAL: NAVD88 - BASED ON MEASURED ELLIPSOID HEIGHT AND CALCULATED GEOID SEPARATION (GEOID 03).

HORIZONTAL:

IDAHO STATE PLANE GRID (IDAHO WEST ZONE - NAD83) - GROUND DISTANCES SHOWN
USING AVERAGE COMBINED FACTOR OF 0.99986746067
TO CONVERT GRID TO GROUND DISTANCES

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

NORMA MARES
4166 W PATEL DR
MERIDIAN ID 83646-9065

63-32089

2. Article Number (Transfer from service label) 7005 1160 0000 1544 4785

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

2. Article Number (Transfer from service label) 7005 1160 0000 1544 4792

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

2. Article Number (Transfer from service label) 7005 1160 0000 1544 4983

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

2. Article Number (Transfer from service label) 7005 1160 0000 1544 4839

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

63-32089

2. Article Number (Transfer from service label) 7005 1160 0000 1544 5003

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

2. Article Number (Transfer from service label) 7005 1160 0000 1544 4723

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) NORMA MARES C. Date of Delivery 12-15-06

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

UNITED STATES POSTAL SERVICE

First-Class Mail
Postage & Fees Paid
USPS
Permit No. G-10

• Sender: Please print your name, address, and ZIP+4 in this box •

IDAHO DEPT OF WATER
RESOURCES
ATTN DEBORAH GIBSON
PO BOX 83720
BOISE ID 83720-0098

RECEIVED
DEC 19 2005
DEPARTMENT OF
WATER RESOURCES

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

CHARLES L HONSINGER
DANIEL V STEENSON
RINGERT CLARK CHARTERED
PO BOX 2773
BOISE ID 83701-2773

63-32089

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) C. Date of Delivery 12-15

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Transfer from service label) 7005 1160 0000 1544 4792

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

2. Article Number (Transfer from service label) 7005 1160 0000 1544 4983

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

2. Article Number (Transfer from service label) 7005 1160 0000 1544 4839

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

65-52007

2. Article Number (Transfer from service label) 7005 1160 0000 1544 5003

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

2. Article Number (Transfer from service label) 7005 1160 0000 1544 4723

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

BOISE ID 83720-0098

[redacted]

IDAHO DEPT OF WATER
RESOURCES
ATTN DEBORAH GIBSON
PO BOX 83720
BOISE ID 83720-0098

RECEIVED
18 2006
DEPARTMENT OF WATER RESOURCES

• Sender: Please print your name, address, and ZIP+4 in this box •

UNITED STATES POSTAL SERVICE

First-Class Mail
Postage & Fees Paid
USPS
Permit No. G-10

UN

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

TIM CHENEY
TREASURE VALLEY TURF
PO BOX 487
STAR ID 83669

63-32089

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Tim Cheney ☐ Agent ☐ Addressee

B. Received by (Printed Name) Tim Cheney

C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☒ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Transfer from service label) 7005 1160 0000 1544 4983

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

2. Article Number (Transfer from service label) 7005 1160 0000 1544 4839

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

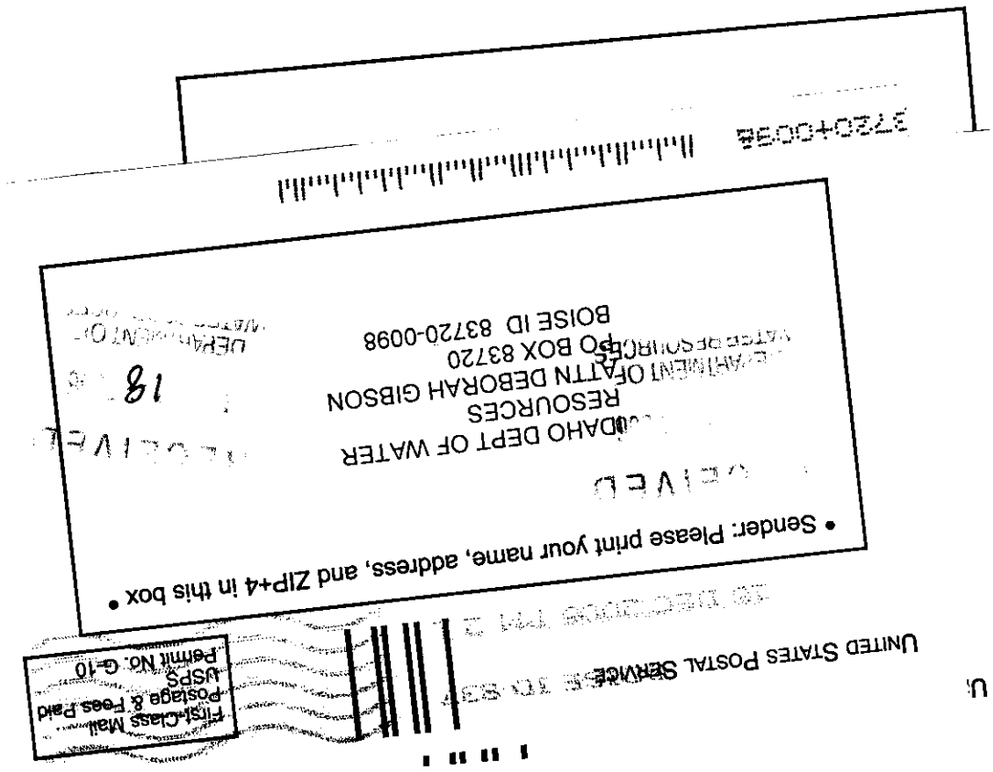
65-32064

2. Article Number (Transfer from service label) 7005 1160 0000 1544 5003

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

2. Article Number (Transfer from service label) 7005 1160 0000 1544 4723

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540



SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

BILL FLACK
PO BOX 258
DURKEE OR 97905-0258

63-32089

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Bill M Flack ☐ Agent ☑ Addressee

B. Received by (Printed Name) | C. Date of Delivery 12-18-06

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☑ No

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article N (Transfe 7005 1160 0000 1544 4839

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

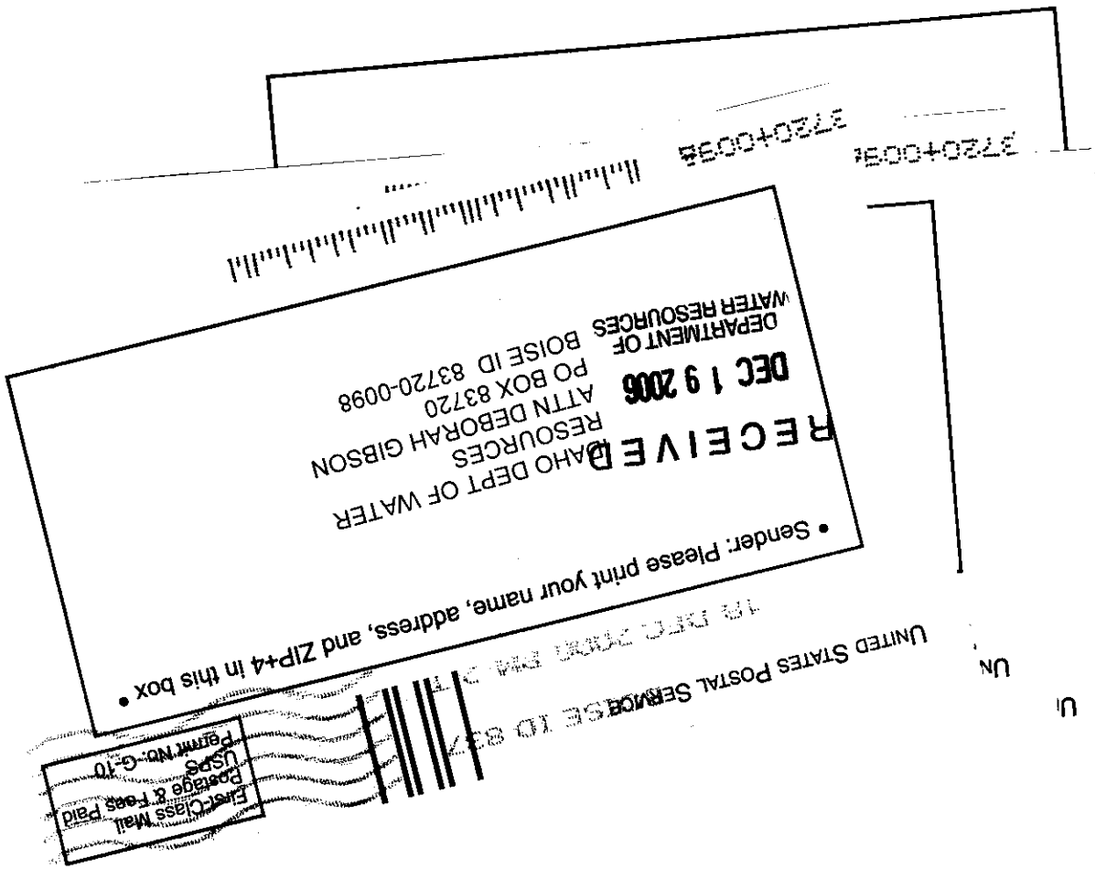
65-52084

2. Article Numl (Transfer fro 7005 1160 0000 1544 5003

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

2. Article Nu (Transfer fi 7005 1160 0000 1544 4723

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540



SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

CORRIN & TERRY HUTTON
10820 NEW HOPE RD
STAR ID 83669

63-32089

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Rebecca L. Hutton ☐ Agent ☐ Addressee

B. Received by (Printed Name) Rebecca L Hutton
C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

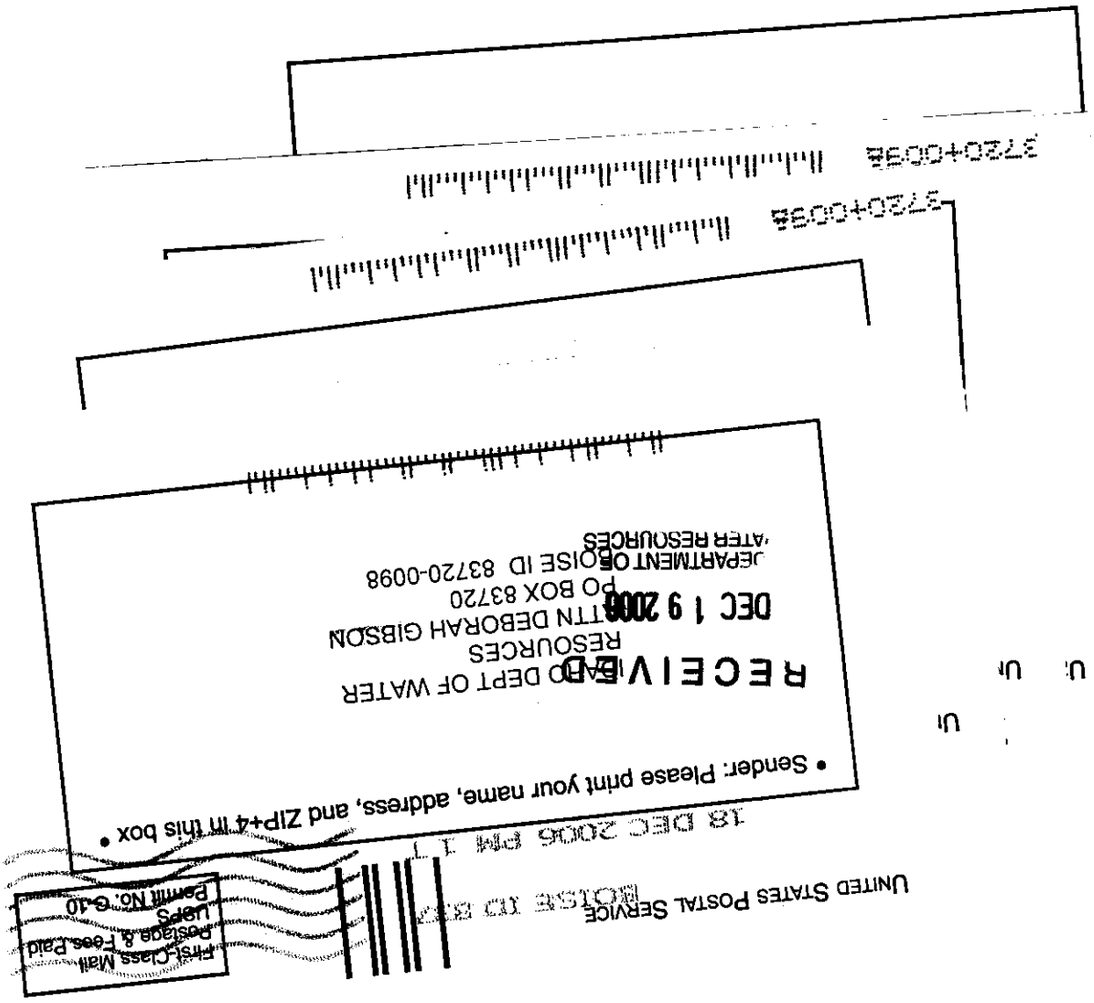
4. Restricted Delivery? *(Extra Fee)* ☐ Yes

2. Article Number
(Transfer from service label) 7005 1160 0000 1544 5003

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

2. Article Number
(Transfer from service label) 7005 1160 0000 1544 5003

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540



SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

CITY OF STAR
C/O ROD LINJA
131 SW 5TH AVE STE A
MERIDIAN ID 83642

63-32089

2. Article Nu
(Transfer fi 7005 1160 0000 1544 4723

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Michelle Ramos ☐ Agent ☐ Addressee

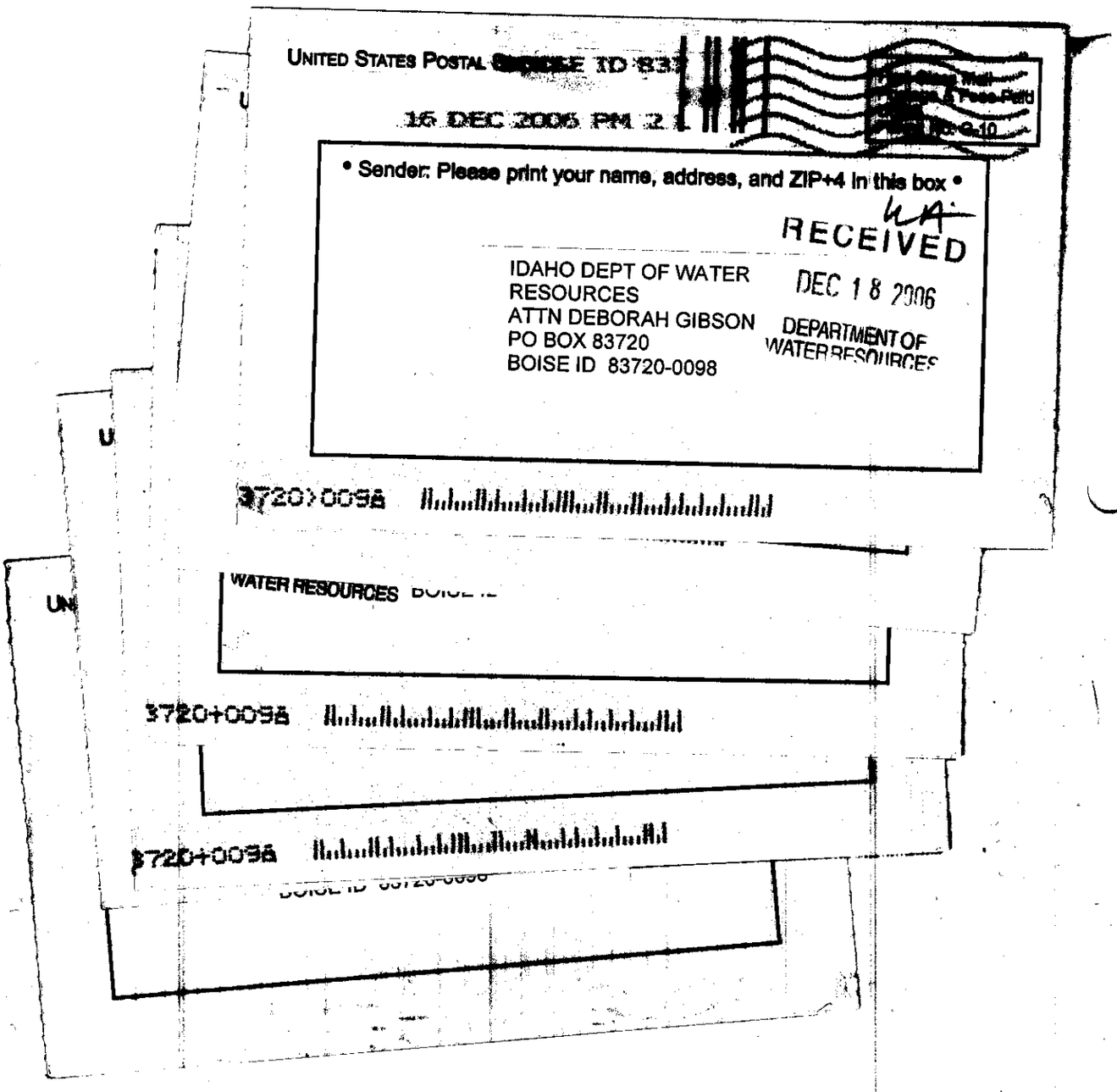
B. Received by (Printed Name) Michelle Ramos C. Date of Delivery 12/19/06

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540


UNITED STATES POSTAL
16 DEC 2006 PM
• Sender: Please print your name, address, and ZIP+4 in this box •
RECEIVED
IDAHO DEPT OF WATER RESOURCES
ATTN DEBORAH GIBSON
PO BOX 83720
BOISE ID 83720-0098
DEC 18 2006
DEPARTMENT OF WATER RESOURCES
3720+0098
WATER RESOURCES
3720+0098
3720+0098

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

BRUCE M SMITH
MOORE SMITH BUXTON TURKE
950 W BANNOCK ST STE 520
BOISE ID 83702-6118

63 - 32089

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Gena Crist ☒ Agent ☐ Addressee

B. Received by (Printed Name) GENA CRIST
C. Date of Delivery 12-15-06

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Transfer from se 7005 1160 0000 1544 4709

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

JERRY & MARY TAYLOR
3410 HARTLEY
EAGLE ID 83616

63-32089

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Mary Taylor ☐ Agent ☒ Addressee

B. Received by (Printed Name) MARY TAYLOR
C. Date of Delivery 12-18-06

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Nu (Transfer fi 7005 1160 0000 1544 4990

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

RONALD SCHREINER
2153 N POLLARD LN
STAR ID 83669

63-32089

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Ronald L Schreiner ☒ Agent ☐ Addressee

B. Received by (Printed Name) RONALD L. SCHREINER
C. Date of Delivery 12-15-06

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☒ No

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Ar (Tr 7005 1160 0000 1544 4716

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
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1. Article Addressed to:

JOHN M MARSHALL
GIVENS PURSLEY
PO BOX 2720
BOISE ID 83701-2720

63 - 32089

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Ronald Schreiner ☐ Agent ☐ Addressee

B. Received by (Printed Name) Michele Schreiner
C. Date of Delivery DEC 18 2006

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Artic (Tran 7005 1160 0000 1544 4808

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15 DEC 2006 PM 1 T

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• Sender: Please print your name, address, and ZIP+4 in this box •

IDAHO DEPT OF WATER
RESOURCES
ATTN DEBORAH GIBSON
PO BOX 83720
BOISE ID 83720-0098

UNITED STATES POSTAL SERVICE

BOISE ID 837

16 DEC 2006 PM 3 L

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USPS
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RESOURCES
ATTN DEBORAH GIBSON
PO BOX 83720
BOISE ID 83720-0098

3720>0098

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IDAHO DEPT OF WATER
RESOURCES
ATTN DEBORAH GIBSON
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BOISE ID 83720-0098

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USPS
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IDAHO DEPT OF WATER
RESOURCES
ATTN DEBORAH GIBSON
PO BOX 83720
BOISE ID 83720-0098

RECEIVED
DEC 20 2006
DEPARTMENT OF
WATER RESOURCES

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

RALPH & BARBARA WILDER
7320 W STATE ST
EAGLE ID 83616

63-32089

2. Article N
(Transfer 7005 1160 0000 1544 4754

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Barbara Wilder ☐ Agent ☐ Addressee

B. Received by (Printed Name) BARBARA Wilder C. Date of Delivery 12/13/06

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

SENDER: COMPLETE THIS SECTION

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- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

SAM & KARI ROSTI
1460 N POLLARD LN
STAR ID 83669

63-32089

2. Article
(Transf 7005 1160 0000 1544 4693

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Kari Rosti ☐ Agent ☑ Addressee

B. Received by (Printed Name) Kari Rosti C. Date of Delivery 12-15-06

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

LEEROY & BILLIE MELLIES
6860 W STATE ST
EAGLE ID 83616

63-32089

2. Article Num
(Transfer fro 7005 1160 0000 1544 4747

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Billie Mellies ☐ Agent ☐ Addressee

B. Received by (Printed Name) Billie Mellies C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

EAGLE ID 83616 DEC 16 2006

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

MICHAEL HEATH
NANCY HEATH
401 N PALMER LN
EAGLE ID 83616

63-32089

2. Article N
(Transfer 7005 1160 0000 1544 4976

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Michael Heath ☐ Agent ☐ Addressee

B. Received by (Printed Name) Michael Heath C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

EAGLE ID 83616 DEC 19 2006

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

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WATER RESOURCES

IDAHO DEPT OF WATER
RESOURCES
ATTN DEBORAH GIBSON
PO BOX 83720
BOISE ID 83720-0098

UNITED STATES POSTAL SERVICE

BOISE ID 837
15 DEC 2006 PM 1 T

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DEC 20 2006
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IDAHO DEPT OF WATER
RESOURCES
ATTN DEBORAH GIBSON
PO BOX 83720
BOISE ID 83720-0098

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UNITED STATES POSTAL SERVICE

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RECEIVED
DEC 20 2006
DEPARTMENT OF
WATER RESOURCES

IDAHO DEPT OF WATER
RESOURCES
ATTN DEBORAH GIBSON
PO BOX 83720
BOISE ID 83720-0098

83720>0098

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UA
RECEIVED
DEC 21 2006
DEPARTMENT OF
WATER RESOURCES

IDAHO DEPT OF WATER
RESOURCES
ATTN DEBORAH GIBSON
PO BOX 83720
BOISE ID 83720-0098

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- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

SCOTT & NANCY REESER
499 N LINDER RD
EAGLE ID 83616

63-32089

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Scott Reeser ☐ Agent ☐ Addressee

B. Received by (Printed Name) Scott Reeser
C. Date of Delivery 12/20/06

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Transfer from service label) 7005 1160 0000 1544 4730

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

AL SHOUSHTARIAN
1119 N EAGLE RD
EAGLE, ID 83616

63-32089

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Al Shoushtarian ☐ Agent ☐ Addressee

B. Received by (Printed Name) Al Shoushtarian
C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

USPS EAGLE ID DEC 20 2006

3. Service Type
☑ Certified Mail ☑ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. 7005 1160 0000 1544 4815

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

BUD ROUNDTREE
LINDA BALLARD
468 N LONGHORN AVE
EAGLE ID 83616

63-32089

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Bud Roundtree ☐ Agent ☐ Addressee

B. Received by (Printed Name) Bud R Roundtree
C. Date of Delivery 12/27/06

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
☑ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Transfer from service label) 7005 1160 0000 1544 4822

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

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DEC 21 2006
DEPARTMENT OF
WATER RESOURCES

IDAHO DEPT OF WATER
RESOURCES
ATTN DEBORAH GIBSON
PO BOX 83720
BOISE ID 83720-0098

3720+0098

UNITED STATES POSTAL SERVICE BOISE ID 837

20 DEC 2006 PM 1 L

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Postage & Fees Paid
USPS
Permit No. G-10

• Sender: Please print your name, address, and ZIP+4 in this box •

RECEIVED
DEC 21 2006
DEPARTMENT OF
WATER RESOURCES

IDAHO DEPT OF WATER
RESOURCES
ATTN DEBORAH GIBSON
PO BOX 83720
BOISE ID 83720-0098

3720+0098

UNITED STATES POSTAL SERVICE BOISE ID 837

27 DEC 2006 PM 3 L

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USPS
Permit No. G-10

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RECEIVED
DEC 27 2006
DEPARTMENT OF
WATER RESOURCES

IDAHO DEPT OF WATER
RESOURCES
ATTN DEBORAH GIBSON
PO BOX 83720
BOISE ID 83720-0098

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Sent To
Street, Apt. or PO Box
City, State

CHARLES L HONSINGER
DANIEL V STEENSON
RINGERT CLARK CHAR
PO BOX 2773
BOISE ID 83701-277

PS Form 3800, June 2002 See Reverse for Instructions

7005 1160 0000 1544 4709

BRUCE M SMITH
MOORE SMITH BUXTON TURKE
950 W BANNOCK ST STE 520
BOISE ID 83702-6118

7005 1160 0000 1544 4808

JOHN M MARSHALL
GIVENS PURSLEY
PO BOX 2720
BOISE ID 83701-2720

7005 1160 0000 1544 4723

RONALD SCHREINER
2153 N POLLARD LN
STAR ID 83669

7005 1160 0000 1544 4815

AL SHOUSHTARIAN
1119 N EAGLE RD
EAGLE, ID 83616

7005 1160 0000 1544 4730

CITY OF STAR
C/O ROD LINJA
131 SW 5TH AVE STE A
MERIDIAN ID 83642

7005 1160 0000 1544 4822

BUD ROUNDTREE
LINDA BALLARD
468 N LONGHORN AVE
EAGLE ID 83616

7005 1160 0000 1544 4747

SCOTT & NANCY REESER
499 N LINDER RD
EAGLE ID 83616

7005 1160 0000 1544 4839

BILL FLACK
PO BOX 258
DURKEE OR 97905-0258

7005 1160 0000 1544 4754

LEEROY & BILLIE MELLIES
6860 W STATE ST
EAGLE ID 83616

7005 1160 0000 1544 4785

NORMA MARES
4166 W PATEL DR
MERIDIAN ID 83646-9065

7005 1160 0000 1544 4761

RALPH & BARBARA WILDER
7320 W STATE ST
EAGLE ID 83616

DEAN & JAN COMBE
6440 W BEACON LIGHT
EAGLE ID 83616

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Total Postage & Fees	$

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7005 1160 0000 1544 4969

MICHAEL MCCOLLUM
1290 BUTTERFIELD
SAN ANSELMO CA 94960

7005 1160 0000 1544 4976

MICHAEL HEATH
NANCY HEATH
401 N PALMER LN
EAGLE ID 83616

7005 1160 0000 1544 4983

TIM CHENEY
TREASURE VALLEY TURF
PO BOX 487
STAR ID 83669

7005 1160 0000 1544 4990

JERRY & MARY TAYLOR
3410 HARTLEY
EAGLE ID 83616

7005 1160 0000 1544 5003

CORRIN & TERRY HUTTON
10820 NEW HOPE RD
STAR ID 83669

7005 1160 0000 1544 4686

BOB & ELSIE HANSON
4151 HARTLEY RD
EAGLE ID 83616

7005 1160 0000 1544 4693

SAM & KARI ROSTI
1460 N POLLARD LN
STAR ID 83669

BEFORE THE DEPARTMENT OF WATER RESOURCES

OF THE STATE OF IDAHO

IN THE MATTER OF APPLICATIONS TO APPROPRIATE WATER NOS. 63-32089 AND 63-32090 IN THE NAME OF THE CITY OF EAGLE	)))))	**NOTICE OF RESUMPTION OF HEARING**

PLEASE TAKE NOTICE that the formal hearing for the above referenced matter **will resume on December 18, 2006, at 9:00 am. The hearing will be held in Boise, Idaho** at the offices of the Idaho Department of Water Resources ("Department"), 322 East Front Street, Sixth Floor (in the Water Center building on the corner of Broadway Avenue and Front Street). Parking is available in the parking facility to the west of the Water Center building. There is a charge for parking in this location.

If you plan to offer exhibits for the record at the hearing, note that Rule 606 of the Department's Rules of Procedure requires that a copy be provided to each party and to the presiding officer.

The presiding officer at the hearing will be Gary Spackman.

The hearing will be held in accordance with the provisions of Chapters 2 and 17, Title 42 and Chapter 52, Title 67, Idaho Code, and the adopted Rules of Procedure of the department. IDAPA 37.01.01. A copy of the rules may be obtained from the Department upon request.

The hearing will be conducted in accordance with the accessibility requirements of the Americans with Disabilities Act. If you require special accommodations in order to attend, participate in or understand the hearing, please advise the Department by the morning of Friday, December 15, 2006. Inquiries about scheduling, hearing facilities, etc., should be directed to Deborah Gibson, Administrative Assistant, Idaho Department of Water Resources, P.O. Box 83720, Boise, Idaho 83720-0098, telephone: (208) 287-4942, fax: (208) 287-6700.

Dated this 14th day of December, 2006.

Gary Spackman

Gary Spackman
Hearing Officer

BEFORE THE DEPARTMENT OF WATER RESOURCES

OF THE STATE OF IDAHO

IN THE MATTER OF APPLICATIONS TO APPROPRIATE WATER NOS. 63-32089 AND 63-32090 IN THE NAME OF THE CITY OF EAGLE	)))))	**NOTICE OF PROPOSED DEFAULT ORDER**

On September 6, 2006, the Idaho Department of Water Resources ("Department") served a *Notice of Hearing, Order Authorizing Discovery, and Prehearing Order* on all parties to this matter by certified mail, including protestants/intervenors Michael McCollum, Michael and Nancy Heath, Tim Cheney, Bob and Elsie Hanson, Bill Flack, Ronald Schreiner, City of Star, Scott and Nancy Reeser, Bud Roundtree and Linda Ballard, Ralph and Barbara Wilder, and Norma Mares. The notice contained a certificate of mailing showing the parties were duly served. The notice scheduled a hearing for December 6-8 and December 11-12, 2006.

On November 30, 2006, the Department served an *Order Denying Motion in Limine, Notice of Staff Memorandum, and Amended Notice of Hearing* on the parties, including protestants/intervenors Michael McCollum, Michael and Nancy Heath, Tim Cheney, Bob and Elsie Hanson, Bill Flack, Ronald Schreiner, City of Star, Scott and Nancy Reeser, Bud Roundtree and Linda Ballard, Ralph and Barbara Wilder, and Norma Mares. The document notified the parties that the hearing would start December 7, 2006 instead of December 6, 2006, and would run until December 12, 2006 as originally planned. The notice contained a certificate of mailing showing the parties were duly served.

On December 7, 2006, beginning at 9:00 a.m., Gary Spackman commenced a hearing for protested applications to appropriate water nos. 63-32089 and 63-32090. The hearing was conducted on December 7, 8, 11, and 12, 2006. Protestants/intervenors Michael McCollum, Michael and Nancy Heath, Tim Cheney, Bob and Elsie Hanson, Bill Flack, Ronald Schreiner, City of Star, Scott and Nancy Reeser, Bud Roundtree and Linda Ballard, Ralph and Barbara Wilder, and Norma Mares did not appear at the hearing.

Based upon these facts, the Department hereby notifies protestants/intervenors Michael McCollum, Michael and Nancy Heath, Tim Cheney, Bob and Elsie Hanson, Bill Flack, Ronald Schreiner, City of Star, Scott and Nancy Reeser, Bud Roundtree and Linda Ballard, Ralph and Barbara Wilder, and Norma Mares that a default order will be issued dismissing them as parties to the contested case because of the failure of the protestants to appear at the time and place set for hearing pursuant to IDAPA 37.01.01.700.

PROPOSED DEFAULT ORDER

The following is a portion of the proposed default order:

Based upon the protestants'/intervenors' failure to appear at the time and place set for hearing, it is ORDERED that Michael McCollum, Michael and Nancy Heath, Tim Cheney, Bob and Elsie Hanson, Bill Flack, Ronald Schreiner, City of Star, Scott and Nancy Reeser, Bud Roundtree and Linda Ballard, Ralph and Barbara Wilder, and Norma Mares are dismissed as parties to the contested case.

RIGHT TO CHALLENGE

Pursuant to IDAPA 37.01.01.701, protestants/intervenors Michael McCollum, Michael and Nancy Heath, Tim Cheney, Bob and Elsie Hanson, Bill Flack, Ronald Schreiner, City of Star, Scott and Nancy Reeser, Bud Roundtree and Linda Ballard, Ralph and Barbara Wilder, and Norma Mares have seven (7) days after the service of this *Notice of Proposed Default Order* to file a written petition requesting that a default order not be issued.. The petition must state the grounds why the petitioning party believes that a default order should not be issued.

Dated this 14th day of December, 2006.

GARY SPACKMAN
Hearing Officer

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on this 15th day of December, 2006, a true and correct copy of the document described below was served on the following as noted:

Document(s) Served: NOTICE OF RESUMPTION OF HEARING, and NOTICE OF PROPOSED DEFAULT ORDER

MICHAEL MCCOLLUM 1290 BUTTERFIELD SAN ANSELMO CA 94960	(✓) U.S. Mail, Postage Prepaid ( ) Facsimile ( ) E-mail
MICHAEL HEATH NANCY HEATH 401 N PALMER LN EAGLE ID 83616	(✓) U.S. Mail, Postage Prepaid ( ) Facsimile ( ) E-mail
TIM CHENEY TREASURE VALLEY TURF PO BOX 487 STAR ID 83669	(✓) U.S. Mail, Postage Prepaid ( ) Facsimile (✓) E-mail - igrowsod@msn.com
JERRY & MARY TAYLOR 3410 HARTLEY EAGLE ID 83616	(✓) U.S. Mail, Postage Prepaid ( ) Facsimile ( ) E-mail
CORRIN & TERRY HUTTON 10820 NEW HOPE RD STAR ID 83669	(✓) U.S. Mail, Postage Prepaid ( ) Facsimile ( ) E-mail
BOB & ELSIE HANSON 4151 HARTLEY RD EAGLE ID 83616	(✓) U.S. Mail, Postage Prepaid ( ) Facsimile ( ) E-mail
SAM & KARI ROSTI 1460 N POLLARD LN STAR ID 83669	(✓) U.S. Mail, Postage Prepaid (✓) Facsimile - 286-9040 ( ) E-mail
BILL FLACK 4035 HARTLEY RD EAGLE ID 83616	(✓) U.S. Mail, Postage Prepaid ( ) Facsimile ( ) E-mail
RONALD SCHREINER 2153 N POLLARD LN STAR ID 83669	(✓) U.S. Mail, Postage Prepaid ( ) Facsimile ( ) E-mail
CITY OF STAR C/O ROD LINJA 131 SW 5TH AVE STE A MERIDIAN ID 83642	(✓) U.S. Mail, Postage Prepaid ( ) Facsimile ( ) E-mail

SCOTT & NANCY REESER 499 N LINDER RD EAGLE ID 83616	(✓) U.S. Mail, Postage Prepaid ( ) Facsimile ( ) E-mail
LEEROY & BILLIE MELLIES 6860 W STATE ST EAGLE ID 83616	(✓) U.S. Mail, Postage Prepaid ( ) Facsimile ( ) E-mail
RALPH & BARBARA WILDER 7320 W STATE ST EAGLE ID 83616	(✓) U.S. Mail, Postage Prepaid ( ) Facsimile ( ) E-mail
DEAN & JAN COMBE 6440 W BEACON LIGHT EAGLE ID 83616	(✓) U.S. Mail, Postage Prepaid ( ) Facsimile (✓) E-mail – combecrew@hotmail.com
NORMA MARES 4166 W PATEL DR MERIDIAN ID 83646-9065	(✓) U.S. Mail, Postage Prepaid ( ) Facsimile ( ) E-mail
BUD ROUNDTREE LINDA BALLARD 468 N LONGHORN AVE EAGLE ID 83616	(✓) U.S. Mail, Postage Prepaid ( ) Facsimile ( ) E-mail
BRUCE M SMITH MOORE SMITH BUXTON TURKE 950 W BANNOCK STE 520 BOISE ID 83702	(✓) U.S. Mail, Postage Prepaid ( ) Facsimile – 331-1202 (✓) E-mail – bms@msbtlaw.com
JOHN M MARSHALL GIVENS PURSLEY PO BOX 2720 BOISE ID 83701-2720	(✓) U.S. Mail, Postage Prepaid ( ) Facsimile – 388-1300 (✓) E-mail – jmm@givenspursley.com
CHARLES L HONSINGER DANIEL V STEENSON RINGERT CLARK CHARTERED PO BOX 2773 BOISE ID 83701-2773	(✓) U.S. Mail, Postage Prepaid ( ) Facsimile - 342-4657 (✓) E-mail – clh@ringertclark.com
AL SHOUSHTARIAN 1119 N EAGLE RD EAGLE, ID 83616	(✓) U.S. Mail, Postage Prepaid ( ) Facsimile ( ) E-mail
WESTERN REGION ATTN JOHN WESTRA 2735 AIRPORT WAY BOISE ID 83705-5082	( ) U.S. Mail, Postage Prepaid ( ) Facsimile – 334-2348 (✓) E-mail – sharla.curtis@idwr.idaho.gov

Deborah J. Gibson

Deborah J. Gibson
Administrative Assistant
Water Allocation Bureau

IDAHO DEPARTMENT OF WATER RESOURCES

FAX

To:	**Debbie** **Bruce Smith's Assistant**	**From:**	**Deborah J. Gibson** **(208) 287-4942**
Fax:	**331-1202**	**Date:**	**December 14, 2006**
Phone:		**Pages:**	6
Re:	**City of Eagle Appl. Nos. 63-32089 & 63-32090**	**CC:**	

☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

Debbie: I received a response to an email I sent to Bruce today regarding the City of Eagle's continued hearing schedule. Please calendar Bruce for December 18, 2006 at 9:00 a.m. here at the Department's offices on Front Street. Same conference rooms.

I am attaching the same notices that I sent to Bruce.

Please contact me at the above number if you have any problems with the transmission of this fax.

Sent @ 5:20 pm

IDAHO DEPARTMENT OF WATER RESOURCES

FAX

To:	**Sam & Kari Rosti**	**From:**	**Deborah J. Gibson** **(208) 287-4942**
Fax:	**286-9040**	**Date:**	**December 14, 2006**
Phone:		**Pages:**	6
Re:	**City of Eagle Appl. Nos. 63-32089 & 63-32090**	**CC:**	

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See attached Notices of Resumption of Hearing and Proposed Default Order. The resumption of the hearing is scheduled for Monday, December 18, 2006 at 9:00 a.m. here at the Department's offices.

Please contact me at the above number if you have any problems with the transmission of this fax.

ok - 3:30pm -