

Item # 4-4B

CARSON CITY, NEVADA
REQUEST FOR BOARD ACTION

Date Submitted: December 8, 2006

Agenda Date Requested: December 21, 2006

Time Requested: Consent

Labor Commissioner Pwp # CC-2007-108

To: Mayor and Supervisors

From: Public Works Contracts Division

Subject Title: Action to accept Public Works recommendation and accept the Contract issued for the **Emergency Re-Drilling of Well #24 Project – Consultant Services, Contract # 2006-091**, and authorize Public Works to issue payments to Aqua Hydrogeologic Consulting LLC, P.O. Box 18793, Reno, Nevada 89511, from the Production Wells Construction Account as provided for in FY 2006/2007, in the amount of \$44,682.00 and a contingency amount not to exceed \$4,400.00.

Staff Summary: Based on a video survey in November 2006, Well # 24 has failed due to corrosion. This well is over 30 years old and was given to the City with the development of the Riverview Estates Subdivision. As a result of the failure, Well 24 must be re-drilled as it is critical during peak summer flow conditions. In order to have a producing well for the next irrigation season a new well must be installed and re-equipped. This process usually takes 18 to 24 months if we were to follow the normal bidding process. We are requesting that this contract be declared an emergency due to timing for implementing replacement by the next irrigation season.

Type of Action Requested: (Check One)

- Resolution
- Ordinance
- Formal Action/motion
- Other (Specify)

Does this Action Require a Business Impact Statement: () Yes (X) No

Recommended Board Action: I Move to Accept Public Works recommendation and accept the Contract issued for the **Emergency Re-Drilling of Well #24 Project – Consultant Services, Contract # 2006-091**, and authorize Public Works to issue payments to Aqua Hydrogeologic Consulting LLC, P.O. Box 18793, Reno, Nevada 89511, from the Production Wells Construction Account as provided for in FY 2006/2007, in the amount of \$44,682.00 and a contingency amount not to exceed \$4,400.00.

Explanation for Recommended Board Action: On December 8, 2006, this project was declared an emergency by the City Manager, because this is one of the major production wells; getting it operational again is considered an emergency as continued down time of this well puts our ability to adequately supply water to our residents for consumption and fire protection at risk. A contract was solicited to provide an emergency quote. The quote was received and a contract will be issued December 21, 2006, that will require the contractor to pay Nevada State Prevailing Wage, provide bonds and insurance for the project. Since this project was deemed an emergency, it must be reported to the public body at its next regularly scheduled meeting.

Project Estimate: \$49,082.00

**CARSON CITY, NEVADA
REQUEST FOR BOARD ACTION**

Applicable Statute, Code, Policy, Rule or Regulation: Architects, Engineers and Surveyors are considered professional services contracts pursuant to the requirements of N.R.S., Chapters 332 and 625; therefore, a formal bidding process is not required. Pursuant to NRS 338.011, Section 2: The requirements of NRS 338 do not apply to a contract: "Awarded to meet an emergency which results from a natural or man-made disaster and which threatens the health, safety or welfare of the public. If the public body or its authorized representative determines that an emergency exists, a contract or contracts necessary to contend with the emergency may be let without complying with the requirements of this chapter. If such emergency action was taken by the authorized representative, the authorized representative shall report the contracts to the public body at the next regularly scheduled meeting of the public body."

Fiscal Impact: Not to exceed \$49,082.00

Funding Source: Production Wells Construction Account as provided for in FY 2006/2007 Initial Project Allocation:

Explanation of Impact: If Approved the above Referenced Account Could Be Decreased by \$49,082.00.

Alternatives: Provide Other Direction Pursuant to Board Action.

Supporting Material: Original Agreement, Proposal from Consultant and e-mail from City Manager.

Prepared by: Sandy Scott, Contract Coordinator

Reviewed By: [Signature] Date: 12/12/06
Ken Arnold, Public Works Operations Manager
Reviewed By: (C/M) [Signature] Date: 12/12/06
Reviewed By (Finance Dir) [Signature] Date: 12/12/06
Reviewed By: (DA) Melanie Puketta Date: 12/12/06
Reviewed By: (Public Works) [Signature] Date: 12/12/06

BOARD ACTION:

Motion _____ 1: _____ (Aye) ; (Nay)
2: _____

(Vote Recorded By)

PROFESSIONAL SERVICES AGREEMENT RELATED TO CONSTRUCTION PROJECTS

THIS AGREEMENT, made and entered into this 21st day of December, 2006, by and between the City and County of Carson City, a political subdivision of the State of Nevada, hereinafter referred to as the "**CITY**", and Aqua Hydrogeologic Consulting LLC, a qualified firm, licensed in the State of Nevada and Carson City, with an office located at P.O. Box 18793, Reno, Nevada, 89511, hereinafter referred to as the "**CONSULTANT**".

WITNESSETH:

WHEREAS, the Contracts Division for the City and County of Carson City is authorized to approve and accept the agreement as set forth in and by the following provisions; and

WHEREAS, no contract or agreement concerning the duties, responsibilities, and/or scope of work by the **CONSULTANT** presently exists; and

WHEREAS, the **CITY** desires to employ the services of the **CONSULTANT** for the intended work of hereinafter referred to as "**CONTRACT #2006-091**", and titled "**Emergency Re-Drilling of Well #24 Consultant Services**"; and

WHEREAS, the **CONSULTANT** shall be compensated for all services rendered as herein agreed.

NOW, THEREFORE, in consideration of the premises, mutual promises, covenants and undertakings hereinafter set forth, the parties agree as follows:

ARTICLE 1

1 SCOPE OF WORK:

1.1 Description of Work:

1.1.1 See attached proposal from Consultant dated November 16, 2006.

1.2 The **CONSULTANT**, as promptly and as economically as practicable, shall perform the services as described in the *Description of Work*.

1.3 This agreement represents the entire understanding between the parties. Any amendments to this agreement shall be agreed upon in writing between the **CITY** and **CONSULTANT**.

PROFESSIONAL SERVICES AGREEMENT RELATED TO CONSTRUCTION PROJECTS

ARTICLE 2

2 TIME OF COMPLETION:

- 2.1 **CONSULTANT** shall complete the **Scope of Work** on or before February 15, 2007, however, this contract continues as long as funding exists to continue. The contract may be terminated after this date by either party giving five (5) days written notice to terminate the contract.
- 2.2 If, however, the **CONSULTANT** is delayed in the performance or completion of the work under this Agreement by labor strikes, lock-outs, fire, unavoidable casualties, or other causes beyond the control of the **CONSULTANT** and without his fault or negligence, then the time for the performance or completion of said work may be extended for a reasonable period to allow therefor.

ARTICLE 3

3 COMPENSATION:

- 3.1 **CITY** agrees to pay the **CONSULTANT** upon performance of the work described in **Scope of Work**.
- 3.2 **CITY** shall pay **CONSULTANT** compensation based upon time and materials not to exceed a maximum amount of \$44,682.00 hereinafter referred to as the **CONTRACT SUM**.
- 3.3 The compensation named herein is for the completed work, and includes the furnishing of all materials, and all labor, equipment, tools, and appliances, and all expenses, direct or indirect, connected with the proper execution of the work.
- 3.4 **CITY** agrees to make payments within thirty (30) days after acceptance of the completed work or from the date the correct invoice is received by the **Contact Person**, whichever is the latter date. Payment is deemed to be made on the date payment is mailed to the **CONSULTANT**.
- 3.5 The **CITY** reasonably believes that funds can be obtained sufficiently to make all payments during the term of this agreement. If the **CITY** does not allocate funds to continue the function performed by the **CONSULTANT** obtained under this Agreement, this Agreement shall be terminated when appropriated funds expire.
- 3.6 None of the sums due or to become due, nor any of the work to be performed under this Agreement shall be assigned, nor shall the **CONSULTANT** subcontract any substantial portion of this Agreement without the **CITY'S** prior written consent.

ARTICLE 4

4 PERMITS AND REGULATIONS:

- 4.1 Before commencing with the performance of any work under this Agreement, the **CONSULTANT** shall obtain all necessary permits and licenses as may be necessary.

PROFESSIONAL SERVICES AGREEMENT RELATED TO CONSTRUCTION PROJECTS

- 4.2 Before and during the progress of work under this Agreement, the **CONSULTANT** shall give all notice and comply with all the laws, ordinances, rules and regulations of every kind and nature now or hereafter in effect promulgated by any Federal, State, County, or other Governmental Authority, relating to the performance of work under this Agreement.
- 4.3 If the **CONSULTANT** performs any work that is contrary to any such law, ordinance, rule or regulation, he shall bear all the costs arising therefrom.
- 4.4 **CONSULTANT** agrees to obtain a Carson City Business License and provide a copy of same to Carson City Public Works - Contracts Division prior to commencing work.

ARTICLE 5

5 CITY'S RESPONSIBILITIES:

- 5.1 The **CITY** shall provide requested information to the **CONSULTANT** in a timely manner.
- 5.2 The **CITY** shall designate three (3) representatives who are authorized to act on the **CITY'S** behalf with respect to the Project. These authorized representatives shall render decisions on documents submitted by the **CONSULTANT** in a timely manner in order to avoid unreasonable delay in the orderly and sequential progress of the services.

5.2.1 Contract Administrator:

Sandy Scott, Contract Administrator
Carson City Public Works - Contracts Division
3505 Butti Way
Carson City, NV 89701
775-887-2355 x1101 / FAX 887-2112

5.2.2 Project Manager:

Ken Arnold, Public Works Operations Manager
Public Works - Operations
3505 Butti Way
Carson City, NV 89701
775-887- 2355 x1015 / FAX 887- 2164

5.2.3 Detailed Invoices using the City's format shall be mailed to:

Karen White, Accounting Clerk II
Carson City Public Works - Engineering
3505 Butti Way
Carson City, NV 89701
775-887-2355 x1023 / FAX 887-2112

PROFESSIONAL SERVICES AGREEMENT RELATED TO CONSTRUCTION PROJECTS

ARTICLE 6

6 INSURANCE:

6.1 GENERAL LIABILITY:

- 6.1.1 The **CONSULTANT** agrees, as a condition precedent to any duty of the **CITY** to make any payment under this Agreement, to furnish and maintain throughout the term of the Agreement at no cost to the **CITY**, such general liability and property damage insurance as shall protect him and any subconsultant performing work covered by the Agreement from claims for, but not limited to, bodily injury, sickness, disease, death, or property damage arising or resulting from the **CONSULTANT'S** performance, or by any subconsultant, person, firm or employee directly or indirectly employed by him.
- 6.1.2 The **CONSULTANT** agrees that the City of Carson City, 3505 Butti Way, Carson City, Nevada 89701 shall be listed as an additional insured.

6.2 PROFESSIONAL LIABILITY:

- 6.2.1 The **CONSULTANT** agrees, as a condition precedent to any duty of the **CITY** to make any payment under this Agreement, to furnish and maintain throughout the term of the Agreement at no cost to the **CITY**, errors and omissions insurance.

6.3 INDUSTRIAL INSURANCE:

- 6.3.1 The **CONSULTANT** agrees, as a condition precedent to any duty of the **CITY** to make any payment under this Agreement, to furnish and maintain throughout the term of the Agreement at no cost to the **CITY**, worker's compensation insurance as required by the provisions of Chapter 616 of the NRS.

6.4 ADDITIONAL INSURANCE REQUIREMENTS:

- 6.4.1 Upon failure to provide insurance, the **CITY** may, at its sole option, order the **CONSULTANT** to stop work, suspend the Agreement, or terminate the Agreement.
- 6.4.2 The **CONSULTANT** shall furnish to the City of Carson City, 3505 Butti Way, Carson City, Nevada 89701, the certificates of said insurances prior to commencing work.
- 6.4.3 Within 24 hours of any suspension, cancellation, reduction, or termination of coverage, the **CONSULTANT** agrees to provide the **CITY** written notice of same.
- 6.4.4 In the event the **CITY** must pay any premium(s) on behalf of the **CONSULTANT**, after the execution of this Agreement, the **CONSULTANT** shall reimburse the **CITY** for all such payment(s). Said payment(s) shall be deducted from any compensation due, or about to become due the **CONSULTANT** by the **CITY**.

PROFESSIONAL SERVICES AGREEMENT RELATED TO CONSTRUCTION PROJECTS

ARTICLE 7

7 INDEMNIFICATION:

- 7.1 This agreement does not create an employee/employer relationship between the parties. It is the parties' intention that the **CONSULTANT** will be an independent contractor and not Carson City's employee for all purposes, including but not limited to the application of the Fair Labor Standards Act, The Federal Unemployment Tax Act, the provisions of the Internal Revenue Code, Nevada State revenue and taxation law. The **CONSULTANT** will remain sole and absolute discretion in the judgment of the manner and means of carrying out the **CONSULTANTS** activities and responsibilities hereunder. The **CONSULTANT** agrees that it is a separate and independent enterprise from the public employer, that it has full opportunity to find other business, that it has made its own investment in its business, and that it will utilize a high level of skill necessary to perform the work. This agreement shall not be construed as creating any joint employment relationship between the **CONSULTANT** and the City, and the City will not be liable for any obligation incurred by the **CONSULTANT**, including but not limited to unpaid minimum wages and/or overtime premiums.
- 7.2 The **CONSULTANT** hereby agrees to indemnify, hold harmless and defend, not excluding the City's right to participate, the City, its officers, agents and employees, from and against all liability, claims, actions, damages, losses and expense, including but not limited to reasonable attorneys' fees and costs arising out of any alleged negligent or willful acts or omissions of the Consultant, its officers, agents and employees.
- 7.3 The **CITY** hereby agrees to indemnify, hold harmless and defend, not excluding the Consultant's right to participate, the Consultant, its officers, agents and employees, from and against all liability, claims, actions, damages, losses and expense, including but not limited to reasonable attorneys' fees and costs arising out of any negligent or willful acts or omissions of the City, its officers, agents and employees.

ARTICLE 8

8 TERMINATION:

- 8.1 Anything in this Agreement to the contrary notwithstanding, if the **CONSULTANT** should fail to make progress as to endanger performance of this Agreement in accordance with its terms, or if he should fail to make prompt payments to subconsultants for material or labor, or if he should violate any laws, ordinances or regulations, or otherwise violate any provision of this Agreement; then the **CITY** may, without prejudice to any other right or remedy, terminate this Agreement in whole or from time to time in part upon written notice and proceed to complete or cause the work to be completed.
- 8.2 The **CITY** may deduct the cost of completing the said work from payments then or thereafter due to the **CONSULTANT**, who shall pay the **CITY** any amount by which such cost of completion shall exceed the unpaid monies due or to become due to the **CONSULTANT**.

PROFESSIONAL SERVICES AGREEMENT RELATED TO CONSTRUCTION PROJECTS

- 8.3 In addition to the provisions of the preceding paragraph, the **CITY** shall have the right to terminate this Agreement without cause upon five (5) days' written notice to the **CONSULTANT**. In that event, the **CITY** shall pay to the **CONSULTANT** a proportionate amount of the **CONTRACT SUM**, as amended, based upon the percentage of the completion of the work under this Agreement and any amendment hereto.

ARTICLE 9

9 USE OF CONSULTANT'S DRAWINGS, SPECIFICATIONS & OTHER DOCUMENTS:

- 9.1 The Drawing, Specifications and other documents prepared by the **CONSULTANT** for the Project are instruments of the **CONSULTANT'S** service for use solely with respect to the Project and, unless otherwise provided, the **CONSULTANT** shall be deemed the author of these documents and shall retain all common law statutory and other reserved rights, including the copyright.
- 9.2 The **CITY** shall be permitted to retain copies, including reproducible copies, of the **CONSULTANT'S** Drawings, Specifications, and other documents for information and reference in connection with the Project.
- 9.3 The **CONSULTANT'S** Drawings, Specifications and other documents shall not be used by the **CITY** or others without expressed permission of the **CONSULTANT**.

ARTICLE 10

10 MISCELLANEOUS:

- 10.1 This Agreement shall be construed, interpreted, and the rights of the parties determined in accordance with the laws of the State of Nevada.
- 10.2 Causes of action between the parties to this Agreement pertaining to acts or failures to act shall be deemed to have accrued and the applicable statutes of limitations shall commence to run not later than either the date of Substantial Completion for acts or failures to act occurring prior to Substantial Completion, or the date of issuance of the final Certificate for Payment for acts or failures to act occurring after Substantial Completion.
- 10.3 The **CITY** and **CONSULTANT**, respectively, bind themselves, their partners, successors, assigns and legal representatives to the other party to this Agreement and to the partners, successors, assigns and legal representatives of such other party with respect to all covenants of this Agreement.
- 10.4 This Agreement represents the entire and integrated agreement between the **CITY** and **CONSULTANT** and supersedes all prior negotiations, representations or agreements, either written or oral. This Agreement may be amended only by written instrument signed by both **CITY** and **CONSULTANT**.
- 10.5 Nothing contained in this Agreement shall create a contractual relationship with or a cause of action in favor of a third party against either the **CITY** or **CONSULTANT**.

PROFESSIONAL SERVICES AGREEMENT RELATED TO CONSTRUCTION PROJECTS

- 10.6 **CONSULTANT** shall be required to maintain telephone service such that the **CITY** may contact or leave a message for the **CONSULTANT** or their designee at any time. **CONSULTANT** shall provide advance notice to the **CITY** of any change in telephone number.
- 10.7 Written notice under this Agreement, shall be deemed to have been duly served when delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if sent by registered mail to the **CONSULTANT** at the address shown on page 9, or to the **CITY** at the address shown herein.

10.7.1 Notice to **CITY** shall be addressed to:

Carson City Public Works - Contracts Division
C/O Sandy Scott, Contract Administrator
3505 Butti Way
Carson City, NV 89701
775-887-2355 x1101 / FAX 887-2112

- 10.8 Failure of either party to this Agreement to enforce any provision of this Agreement shall not be deemed a waiver of such provision or of subsequent failures to comply with any such provision.

ARTICLE 11

11 COST ACCOUNTING AND AUDITS:

- 11.1 If required by the **CITY**, the **CONSULTANT** agrees to make available to the **CITY** within two (2) years after the completion of the work under this Agreement, such books, records, receipts, vouchers, or other data as may be deemed necessary by the **CITY** to enable it to arrive at appropriate cost figures for the purpose of establishing depreciation rates for the various materials and other elements which may have been incorporated into the work performed under this Agreement.

**PROFESSIONAL SERVICES AGREEMENT RELATED
TO CONSTRUCTION PROJECTS**

12 ACKNOWLEDGMENT AND EXECUTION:

12.1 This **AGREEMENT** entered into as of the day and year first written above.

CITY'S CONTRACTING AGENT

BY: Sandy Scottt
Title: Contract Administrator
Carson City Public Works
Contracts Division
3505 Butti Way
Carson City, Nevada 89701
Telephone: 775-887-2355 x1101

CITY DEPARTMENT:

Public Works - Operations

I hereby concur with the initiation of this Agreement and I certify that the consultant will not be given authorization to begin work until this agreement has been signed by all parties.

Signature

DATED this ____ day of December, 2006.

CITY CONTACT PERSON

NAME: Ken Arnold

PHONE: 887-2355 x1015

BY: Andrew Burnham

Title: Public Works Director

Address: 3505 Butti Way

Carson City, NV 89706

Telephone: 775-887-2355 x 1001

Signature

DATED this ____ day of December, 2006.

I certify that the funds are available for this project.

FUNDING SOURCE: 520-3505-435-7857

BUDGET ALLOCATION: ???

By: Ken Arnold

Signature

**PROFESSIONAL SERVICES AGREEMENT RELATED
TO CONSTRUCTION PROJECTS**

STATE OF NEVADA)
) SS
CARSON CITY)

David Carlson deposes and says: That he is the Consultant, or authorized agent of the Consultant, for whom the aforesaid described work is to be performed by; that he has read the foregoing Agreement and understands the terms, conditions, and requirements thereof.

I further understand that I must not begin work on this project until this agreement has been signed by the Contracts Division.

CONSULTANT

BY: David Carlson
TITLE: Principal
FIRM: Aqua Hydrogeologic Consulting LLC
BUSINESS LICENSE #:
Address: P.O. Box 18793
City: Reno
State/Zip Code: Nevada, 89511
Telephone: (775) 250-9700
Fax# (775) 852-3642

David Carlson

(Signature of Consultant)

DATED this 11 day of December, 2006.

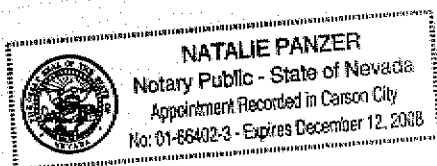
WITNESS

NAME: Natalie Panzer
(printed name of witness)

Natalie Panzer
(signature of witness)

L.S.

DATED this 11 day of December, 2006.



**PROFESSIONAL SERVICES AGREEMENT RELATED
TO CONSTRUCTION PROJECTS**

CONTRACT ACCEPTANCE AND EXECUTION:

- A. The Board of Supervisors for Carson City, Nevada at their publicly noticed meeting of December 21, 2006, approved the acceptance of the attached contract hereinbefore identified as **CONTRACT No. 2006-0-91** and titled **"Emergency Re-Drilling of Well #24 Project"** Further, the Board of Supervisors authorizes the Mayor of Carson City, Nevada, to set his hand to this document and record his signature for the execution of this contract in accordance with the action taken.

CARSON CITY, NEVADA

MARV TEIXEIRA, MAYOR

DATED this 21st day of December, 2006.

ATTEST:

ALAN GLOVER, CLERK-RECORDER

DATED this 21st day of December, 2006.

***** END OF DOCUMENT *****

PROFESSIONAL SERVICES AGREEMENT RELATED TO CONSTRUCTION PROJECTS

SAMPLE INVOICE

Carson City
 Attn: Karen White
 3505 Butti Way
 Carson City NV 89701

Invoice Number:
 Invoice Date:

Carson City Contract Number:
 Carson City Contract Name (as it appears in the Agreement):
 Service Period: From January 1, 2006 through January 31, 2006

Task	Title	Hours This Cycle	Rate	Total \$\$	Hours To Date	Total \$\$ To Date
Name of task (per scope of work)	Title or professional category of person performing the task	Total hours billed this cycle for this title or category	Hourly rate in \$/hr.	\$\$	Total hours for this task for this title or category from notice to proceed to date	\$\$
ditto	Title or professional category of NEXT person performing this task	Total hours billed this cycle for this person	Hourly rate in \$/hr.	\$\$	Total hours for this task for NEXT title or category from notice to proceed to date	\$\$
Continue for all persons performing on this task						
NEXT task	Fill in all personnel and task information as above					

Invoice Amount this cycle \$\$
 Budgeted Amount \$\$
 Bill to date (incl. This inv.) \$\$
 Dollars remaining on Contract \$\$

% of project complete %
 % of budget billed to date %

Status of Tasks (as described in scope of work)

- List of Tasks Completed
- List of Tasks in Progress
 - Current status of tasks in progress and % complete
 - Expected date of completion
 - Critical path/action/items that may impact expected date of completion
- List of Future Tasks
 - Expected date of completion
 - Critical path/action/items that may impact expected date of completion

ENCLOSE COPIES OF ALL SUPPORTING DOCUMENTATION INCLUDING TIME SHEETS, RECEIPTS, INCLUDING THOSE FOR INVOICES FOR EXPENSES & OUTSIDE SERVICES

*** END OF DOCUMENT ***



November 16, 2006

Rit Palmer
Operations Chief – Water
Public Work Department
Carson City Nevada
3505 Butti Way,
Carson City, NV 89701-3498

RFP - Hydrogeologic Consulting Services and Drilling Cost Estimate for No. 24 replacement well

Dear Mr. Palmer:

AquA Hydrogeologic Consulting (AquA) is pleased to submit our proposal for hydrogeologic consulting services for the drilling of a test borehole/well and replacement production well for the existing well No. 24. This proposal and driller's cost estimate were requested during our meeting of November 8, 2006.

Before proceeding with the proposal, I will present to you the following paragraphs which highlight AquA's background and some of the projects that we have completed in the past few years.

Firm's Background

AquA was formed in Reno, Nevada in 2001 to provide hydrogeologic consulting expertise in the field of ground water development. Since 1980, individual members of the AquA team have been involved in developing and managing ground water resources throughout the world including South America, the Middle East, Indonesia, Guatemala, and the United States. In particular members of the AquA have been involved in ground water resource development in the following states: California, Nevada, Oregon, Idaho, Montana, Utah, and Arizona. In the area of ground water development, AquA offers the following capabilities:

- Basin-wide hydrogeologic study and evaluation experience
- Preparation of technical specifications for exploration, monitoring, and production wells
- Supervision of drilling and data collection
- Production well design, testing, supervision, data acquisition, and analysis
- Analytical and three-dimensional numerical groundwater modeling
- Reporting, including estimation of long-term well yield, and pumping impact analysis

Firm's qualifications and resources

Since being formed nearly six years ago, AquA personnel have proved to be experienced in groundwater resource evaluations and development. For the past six years AquA has been the groundwater consultant for the Truckee Donner Public Utility District, (Truckee, CA) and the Truckee Meadows Water Authority (Reno-Sparks, Nevada), this is in addition to several other municipalities. In this period of time AquA has distinguished itself in providing quality groundwater consulting services in water resource evaluation, development, and groundwater modeling.

Summary of firm's experience

During the past three years AquA has undertaken and completed six groundwater studies and eight municipal well design and construction projects. The following describes some of these tasks in detail and illustrates the capability of AquA as a groundwater consultant to develop a detail picture of the groundwater system and then supervise the design and construction projects to develop the groundwater resource.

Groundwater Studies

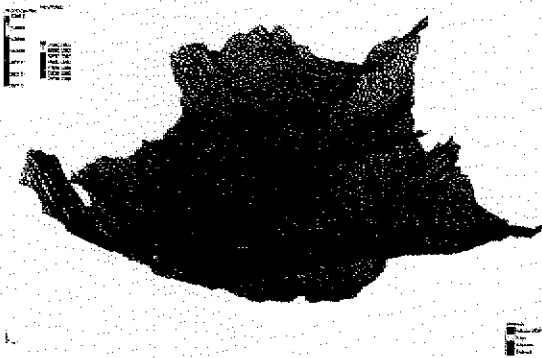


- **Martis Valley groundwater study – Truckee, California**

This study was undertaken to develop an understanding of the basin geology and its relationship to the groundwater system. The basin has a surface area of approximately 167 square miles. The ultimate goal of the first phase was to select exploration drill sites and future production well sites. As the exploration and production wells are constructed, follow-on work will be the development of a detailed three-dimensional groundwater flow model. The initial phase of the basin study was the collection of all basin well logs on file at the State of California Department of Water Resources; from this information detailed geologic cross-sections were then developed throughout the basin. In one

particular area of interest two surface geophysical seismic surveys were completed. After the first phase of the study was completed and evaluated, four exploration well-sites were selected. At these sites boreholes were drilled to depths exceeding 1,200 feet. During drilling, detailed geologic logs were developed. In addition, water quality samples were collected at 40 foot intervals. At the completion of the drilling, downhole geophysical surveys were completed. All of this information was then evaluated with expected production yields assigned for each of the four sites. The first production well was drilled and constructed to a depth of 1,370 feet and is capable of producing in excess of 2,000 gallons per minute (gpm).

- **Lemmon Valley groundwater study/model – Reno, Nevada**

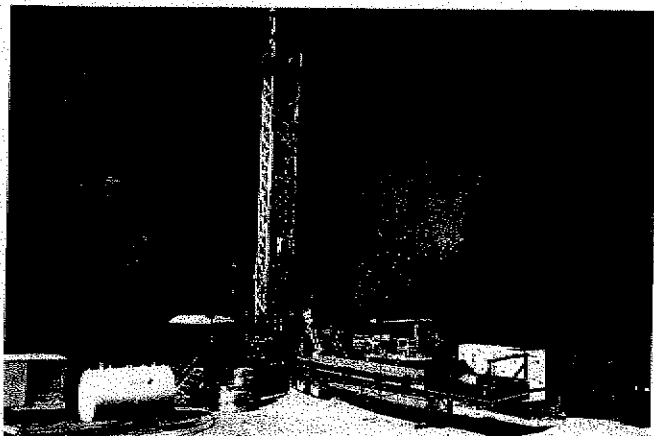


This study was conducted to determine the percentage of groundwater withdrawals for the 3,000 domestic well users in the basin and the percentage of withdrawal for the county and municipal production wells within the basin. This study was requested by the State of Nevada, Division of Water Resources. The geology of the basin was defined as four distinct layers with the 3,000 domestic wells and 10 municipal wells extracting most of the groundwater from the alluvial third layer. Information collected and incorporated into the study included geologic data, geophysical gravity survey data, geologic faults, well log information, snow and precipitation data, domestic and municipal groundwater pumpage, wastewater treatment facility recharge, and evaporation data. The end result of the groundwater study was to

incorporate all of the information into a three-dimensional groundwater flow model.

Municipal well design and construction projects

- **Old Greenwood Production Well – Truckee Donner PUD, Truckee, California**

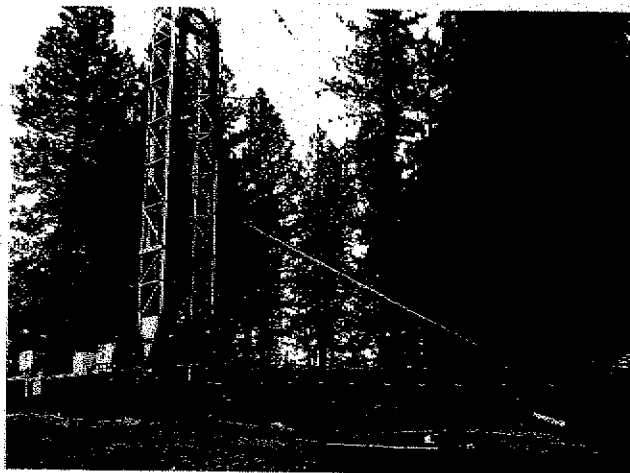


Aqua began the project with the development of technical specifications for the proposed well and testing program. These specifications were unique in the design requirements, because the production well would have to be drilled to a depth of 1,370 feet, and with the static water level at 232 feet below ground surface, a deep production pump setting of 640 feet would be required. The on-site drilling and construction program began with the drilling of a 48-inch diameter conductor borehole to a depth of 40 feet. After this was

completed, nominal 38-inch diameter conductor casing was installed and cemented into place. A 36-inch diameter borehole was then drilled to a depth of 250-feet, with nominal 30-inch diameter blank, steel casing installed and cement into place. After the second string of conductor casing was installed, a flooded-reverse drilling method was then utilized to drill the borehole to target depth of 1,390 feet. A detail geologic log recorded during the drilling process and the downhole geophysical survey provided the basis for the final production well casing design. After the 18-inch diameter blank steel casing and 100-slot wire-wrapped screen was installed, the annular space was filled with a gravel pack up to a depth of 230 feet below ground surface. The next stage of well construction involved an air-lift development phase where the drilling mud and geologic material fines were removed from the well-bore and adjacent formation. After completing the air-lift development program, a pump develop program commenced. This program involved utilizing a double-swab tool with a 450 gpm submersible pump installed inside the 10-foot swab tool. Through the use of this tool, additional drilling mud and geologic fines were removed from the well-bore. Water quality samples were also collected at 40-foot intervals. After the development program was completed, a 1,000 gpm test pump was installed to a depth of 420 feet. A step-drawdown and 72-hour constant-discharge pumping test program then was completed. Based on results and analysis of the pumping test data, a final well rating of 2,000 gpm was assigned to the well.

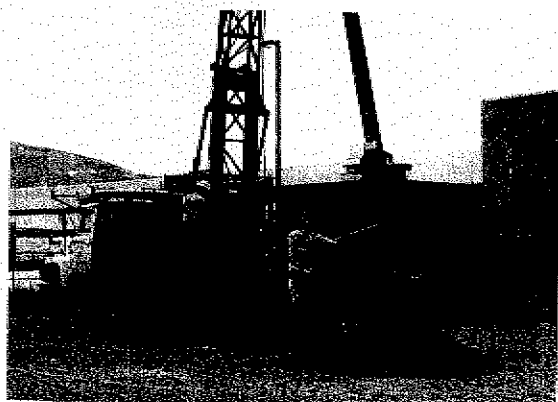
- ***Prosser Village Production Well – Truckee Donner PUD, Truckee, California***

Aqua began the project with the development of technical specifications for the proposed well and testing program. These specifications were included in bid documents that were sent to prospective drilling contractors. The on-site drilling and construction program began with the drilling of a 28-inch diameter borehole to a depth of 1,142 feet. After the borehole was completed, 18-inch diameter steel casing containing 100-slot wire-wrapped screen was placed in the annular space to a depth of 1,132 feet. The final production well design was based on the geologic log derived during drilling, a geophysical survey, and detailed notes taken during the drilling program. After the casing was installed to total depth, a gravel pack and cement seal was installed, then the well was air-lift developed. During this program drilling mud and material fines were removed from the well-bore and adjacent geologic formation. After completing the air-lift development program, a pump develop program commenced. The involved utilizing a double-swab tool with a 500 gpm submersible pump installed inside the 10-foot swab tool. Through the use of this tool, additional drilling mud and geologic fines were removed from the well-bore. The specific capacity of the well increased over 25 percent from the values calculated during the air-lift development program. After this program was completed, a 1,000 gpm pump was installed to a depth of 300 feet. A step-drawdown and 72-hour constant-discharge pumping test program then commenced. Based on results and analysis of the pumping test, a final well rating of 1,000 gpm was assigned to the well.



- ***Silver Lake Production Well – Truckee Meadows Water Authority, Reno, Nevada***

The program commenced with the drilling of a geologic test borehole to a depth of 600 feet. The test hole was drilled approximately 50 feet from the existing production. This location was selected to develop a detailed profile of the geologic material, to perform a downhole geophysical survey, and to collect samples to be submitted for sieve analysis. This information was used to determine the screen slot size and the location of the screen in the final production well design. After the test borehole was drilled and the data collected, the borehole was abandoned per State of Nevada regulations.

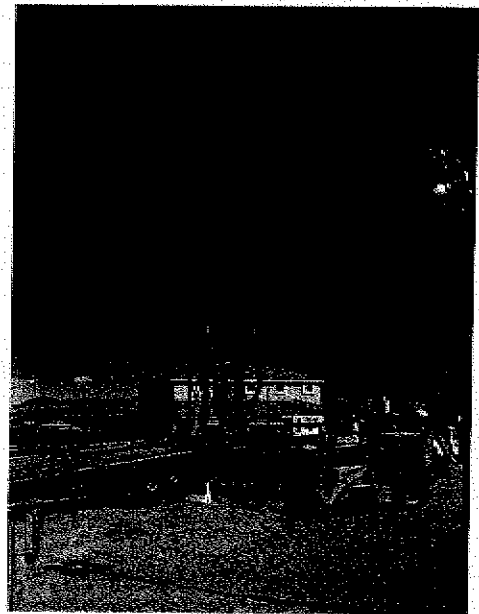


Aqua provided complete on-site supervision and data collection during the drilling and construction of the production well.

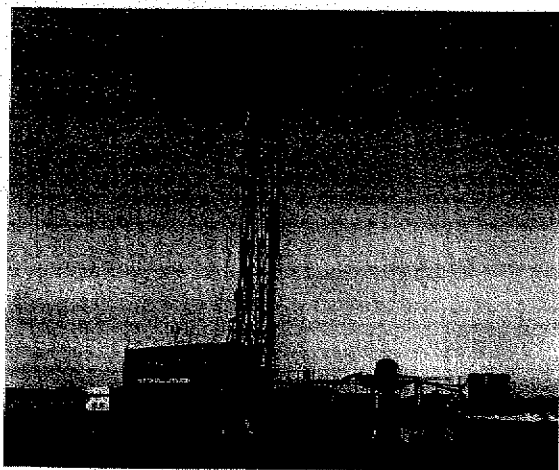
Drilling of the production well commenced with the drilling and installation of nominal 32-inch diameter conductor casing to a depth of 40 feet. After this was completed, the 28-inch diameter production borehole was drilled to a depth of 610 feet below ground surface. Based on information collected during the drilling of the test borehole, the final production well design incorporated specific screen slot size to maximize water production, yet eliminate any sand production during pumping. After the well was air-lift developed, a step-drawdown and 48-hour constant-discharge pumping test was conducted on the well. Analysis of the step test data indicated that a constant-discharge pumping rate of 2,500 gpm would stress the aquifer and help determine the maximum production pumping rate of the well. At the end of the pumping test, a specific capacity of 19 gpm/ft.dd was calculated from the pumping data. After final analysis of the pumping/recovery data by AquaA personnel, a recommendation of installing a production pump capable of producing 2,400 gpm from a pumping water level of 210 feet was made.

- ***Huffaker Circle Production Well – Truckee Meadows Water Authority, Reno, Nevada***

AquaA began the project by providing on-site supervision and data collection during the test borehole drilling. Drilling was completed utilizing the direct mud rotary drilling method to a total depth of 300 feet. Geologic data collected during the drilling of the borehole confirmed interbedded layers of sands and clays. The geologic sequence and its potential was further evaluated through the use of a downhole geophysical survey. Based on information collected during the drilling and results of the geophysical survey, the decision was made to go forward with the construction of the nominal 14-inch diameter cased production well. After the production well was constructed and air-lift developed, the well was further developed using a test pump. After this was completed a pumping test program was undertaken which included a step-drawdown test and a constant-discharge test. Through analysis of the pumping test data completed on the production well, it was determined that a production well yield would be approximately 800 gpm. Water quality samples were collected during the pump development and testing programs. Results indicate that ground water in this area contains meet all primary and secondary drinking water standards.



- ***HUC Well No. 2 – Herlong Utilities Cooperative, Herlong, California***



The project started with the site selection of HUC well No. 2 located approximately 2,000 feet east of production well (HUC No. 1). It is anticipated that HUC No. 2 will serve as a backup supply source to meet demand in the event HUC No. 1 needs to be taken off-line for a short period of time. In 2001 AquaA personnel supervised the drilling and construction of a monitoring well at this location. The geologic data collected during the drilling of the monitoring well indicated a very favorable site for the second production well. Drilling of the production well commenced in February 2005 with the drilling of a nominal 22-inch diameter borehole to a depth of 600 feet. The well design was similar to the design of well No. 1 and as such produced similar amounts of groundwater during the development phase. A 24-hour constant-discharge test was conducted during June 2005. The test was conducted to confirm

the yield potential of the well and to collect water quality samples for laboratory analysis. Results of the pumping tests indicated that the production potential at this location was slightly better than at well No. 1. During the testing period, a specific capacity of 61.52 gpm/ft.dd was calculated. There was not pumping impact measured at any of the four monitoring wells located in the vicinity, except at MW-4 which was located 50 feet from the

pumping well. At this location, approximately four feet for drawdown was measured. A final report was prepared and submitted to the client documenting all field activity and data collected during the well drilling and construction phase and pumping test program. A copy was also submitted to the State of California, Division of Water Resources.

Team members

Following is the organizational chart and qualification and experience of each member of the proposed team.

Project Manager - David Carlson – Senior Hydrogeologist - I will be the corporate project manager. I have over 26 years of hydrogeologic experience. Since 1988, the majority of my experience has been in the field of developing water supplies for municipalities. I have developed ground water from both fractured rock and alluvial setting. My responsibilities have included initial project planning, site investigations, preparation of drilling contracts, development of hydrogeologic parameters for well drilling and pumping tests, interpretation and analysis of the pumping data, and chemical and physical rehabilitation of production wells. Recently my experience includes development and use of finite-difference three-dimensional ground water flow models to assist and predict hydrogeologic conditions and water quality issues for impact on basin and municipal production wells.

Project Hydrogeologist

Richard Johnson – Project Geologist/Hydrogeologist - Mr. Johnson has over 17 years as a ground water hydrologist. Mr. Johnson has supervised groundwater resource development programs for mining clients and municipal utilities. Programs that Mr. Johnson has supervised included drilling operations, well construction, well development, and aquifer testing of medium and large-diameter wells ranging in depths from 300 feet to 1,500 feet. Well yields ranged from 200 gpm to 3000 gpm in alluvial and fractured bedrock terrain. Mr. Johnson was the on-site project geologist for the HUC Well No. 2 production well (Herlong), and Huffaker Circle production well (Truckee Meadows Water Authority) drilling, construction, and testing programs.

Support personnel

David M Carlson – Geologist/Groundwater Modeler - Mr. Carlson has 6 years experience in the supervision of drilling and construction of production wells and associated air-lift and pump development programs. In addition, he has conducted pumping test including step drawdown and constant-discharge. These tests have ranged from 3 to 17 days. At this time, Mr. Carlson is activity involved in the development of three-dimensional ground water flow models for two of our municipal clients. Mr. Carlson was the on-site project manager for the Old Greenwood and Prosser Village production wells (Truckee Donner PUD), and HUC Well No. 2 production well (Herlong) drilling, construction, and testing programs.

Drilling and Testing Proposal

After reviewing data and information provided by State of Nevada – Division of Water Resources, Carson City Public Works Department, and verbal communication with Dan Trampe (Carson Pump), the following is the recommended approach for drilling a replacement well at well No. 24.

- Drill a nominal 12-inch diameter borehole to an approximate depth of 500 feet or until bedrock is encountered. The depth to bedrock is not known in this area, however as long a favorable alluvial material is encountered while drilling, the borehole should be drilled to a depth to where either bedrock is encountered, or approximately 60 feet of non-favorable alluvial material is encountered. The proposed drilling method to be used by the drilling contractor would be direct mud-rotary or fluid reverse.
- After the borehole is drilled to total depth, a downhole geophysical survey should be conducted. The following components of the survey should be completed; three resistivity surveys, a density survey, spontaneous potential survey, and a directional or deviation survey.

- After reviewing the geologic log developed during drilling of the borehole, drill rig response, fluid loss during drilling, and the geophysical survey, nominal 6-inch diameter steel should be installed to total depth with perforated sections opposite water producing zones.
- After the casing is installed, an appropriate size gravel pack should be installed from total depth to a depth of approximately 80 feet below land surface. It is anticipated that the replacement production well will be designed to have blank steel casing from ground surface to a depth of at least 100 feet. On top of the gravel pack, a five foot bentonite seal shall be place.
- Upon completion of the gravel pack and seal installation, air-lift development shall commence. This process shall remove drilling fluid, and formation clays and silts. It is anticipated that approximately 24-hours will be required to clean up the well.
- After the air-lift development program is completed, a double swab pump development program will commence. This program will clean the well further and also allow for water quality sampling from specific zones. Water quality samples collected during this sampling program will help localize specific zones of poor water which will have to be sealed off, if possible during the production well drilling and construction phase.
- After the sampling program has been completed, the gravel pack would be removed from the annular space and the well casing pulled from the borehole. This will allow the existing borehole to be reamed out to a nominal 26-inch diameter and completed to a depth which will maximize the water producing and minimize the poor quality water from entering the well-bore.
- Based on the water quality sampling results, the geophysical survey, and the geologic information collection during the drilling program, a production well design will be developed. It is anticipated that approximately 200 feet of 16-inch blank steel casing and 200 feet of 16-inch wire-wrapped screen will be used in the production well, if it is completed to 400 feet.
- After the casing is installed in the well-bore, an appropriate sized gravel pack will be installed from total depth to 100 feet below land surface. A cement seal would then be placed in the annular space from 100 feet to land surface.
- After the cement seal has set for approximately 12-hours, an air-lift development program will commence. This program will involve air-lifting the drilling mud, cuttings, and material fines from the well. Normal practice is to continue to air-lifting from a particular depth until a Imhoff cone reading of approximately 5 ppm is recorded. Afterwards 20 to 40 feet of drill pipe is removed from the well-bore and air-lifting continues at this depth until a 5 ppm reading is recorded.
- After the well-bore is completely air-lift, a double-swab/pump tool will be installed into the well-bore and pump/swabbing will commence. Each section of the screen is swabbed and pumped. This method has been found to be particularly effective in removing addition material from the gravel pack and formation. The swab tool will remain at each interval until the rossum sand tester has a reading of 2 ppm. After all of the screen sections are clean, the tool will be removed from the well-bore and a test pump will be installed.
- A test pump capable of producing in excess of 2,000 gpm will be installed in the well-bore at an anticipated depth of 300 feet. After this is completed the pump development program will commence with surging of the well at incremental increases in pumping rates until the well is sediment free.
- After the well is fully developed a step-drawdown test will be conducted. This program will involve pumping the well at three different pumping rates. The information collected during this program will be

used to calculate the well efficiency's and the pumping rate to be used during the constant-discharge pumping test.

- After the water level has recovered to its pre-step-drawdown level, a 48-hour constant-discharge pumping test will commence. Information collected during this test will be used to calculate aquifer parameters and the producing pump's capacity.
- After the test pump is removed, a downhole video survey will be conducted to view the final condition of the well-bore.
- After the pumping test (drawdown and recovery) is completed, all of the field information and data collected will be incorporated into a final report. This report will contain a findings and recommendations section in-addition to all of the field data and pumping test data.

The following cost estimate (\$273,100) for the previously described program was supplied by WDC Exploration & Wells. A copy of the estimate is provided at the end of this proposal. It is anticipated that a similar cost estimate would be available from ZIMM Industries, given past cost submittals on previously work.

Consulting Proposal and Cost Estimate

- Task 1** During Task 1, Aqua will put together the drilling and pumping tests bid documents and provide the documents to Rit Palmer to be sent out to qualified drilling and pumping contractors. A pre-bid meeting will be scheduled and Aqua will attend that meeting to answer questions regarding the drilling and pumping programs. A site visit is also scheduled and Aqua will be there to answer questions. After the completed bids are returned to the Mr. Palmer, Aqua will help evaluate both the drilling and pumping bids and provide a recommendation to Mr. Palmer.
- Task 2** Aqua personnel will provide field supervision and data collection during the drilling of the test borehole. These activities will include geologic logging of the borehole to its anticipated depth of 500 feet, accounting for drilling material used, recording drill rig activity, logging the time of the drilling to determine penetration rates, evaluation of downhole geophysical survey, and documenting drilling crew activities with respect to safety issues and maintaining a log of time spent for each activity that the drilling crew undertakes. After the drilling activity is completed, Aqua personnel will be on-site during the installation of the temporary 6-inch well casing to ensure the well design is followed per specifications. During air-lift development data will be collected during each phase of development to ensure the well is developed as completely as possible using the air-lift technique. After the air-lift program is completed, Aqua will be on-site for the double-swab development and water sampling. Aqua personnel will not be on-site for the temporary casing and gravel pack removal, or for the reaming of the test/pilot borehole to production diameter and depth. Aqua personnel will be back on-site for the installation of the production well casing, gravel pack, and cement seal. After the construction phase is complete, Aqua personnel will supervise the air-lift development program and the double-swab pump development program.
- Task 3** This task will involve providing on-site supervision and data collection during the pump development program and the aquifer pumping test program. After the double/swab development is completed, a large capacity test pump will be installed and the well will be developed through surging at increased pumping rates until the discharge is free of sediment. After the pump development is completed, a step-drawdown test will be conducted to determine well efficiency and the pumping rate to be used during the constant-discharge test.

The constant-discharge will involve pumping the well for 48-hours while monitoring the water level at the production well and the nearby existing production well. AquaA personnel will be on-site to maintain a constant flow and to monitor the water levels in both wells. After the pumping period is completed, water levels at the two wells will be monitored during the recovery period.

Task 4 This task involves summarizing all of the activity and data collection that was completed under Tasks 2 and 3. In addition, the report will contain data analysis and recommendations regarding the production potential for the production well.

Cost Estimate

Task 1	Bid Document activity		
	Senior Hydrogeologist	12 hrs @ \$110/hr	\$1,320
		Total	\$1,320
Task 2	Well Drilling Supervision and Data Collection		
	Senior Hydrogeologist	16 hrs @ \$110/hr	\$1,760
	Project Geologist(s)	182 hrs @ \$90/hr	16,380
		Total	\$18,140
Task 3	Pumping development and testing		
	Senior Hydrogeologist	16 hrs @ \$110/hr	\$1,760
	Project Geologist	100 hrs @ \$90/hr	9,000
		Total	\$10,760
Task 4	Evaluation and Reporting		
	Senior Hydrogeologist	60 hrs @ \$110/hr	\$6,600
	Graphics Designer	40 hrs @ \$95/hr	3,800
		Total	\$10,400
		Sub-Total	\$40,620
		Contingency 10%	\$4,062
		Project Total	\$44,682

If you have any questions regarding this proposal and its contents, please contact me at 250-9700.

Sincerely,

AquaA Hydrogeologic Consulting

David

David Carlson
Senior Hydrogeologist