

Council Meeting of
February 2, 2010

Honorable Mayor and Members
of the City Council
City Hall
Torrance, California

Members of the Council:

**SUBJECT: Public Works – Approve a Third Amendment to Consulting Services Agreement C2008-012 for Inspection Services for Water Well No. 9.
Expenditure: None**

RECOMMENDATION

Recommendation of the Public Works Director that City Council approve a Third Amendment to Consulting Services Agreement C2008-012 with AECOM USA, Inc. to extend the term of the Agreement for inspection services for an additional twelve (12) months, through February 5, 2011.

Funding

Funding is not required.

BACKGROUND AND ANALYSIS

On February 5, 2008, your Honorable Body approved Public Works Agreement C2008-012 with Boyle Engineering for the design and inspection services for Well No. 9 water well and wellhead facilities construction. On December 16, 2008, the First Amendment to the contract was approved to increase the consultant's scope of services to provide hydro-geotechnical engineering support during the construction of a pilot well, and extend the term of the Agreement through August 5, 2009. On March 24, 2009, the Second Amendment to the contract was approved to include professional services for the design of a Variable Speed Pump for Well No. 9 due to the unforeseen increased well production in McMaster Park. The additional design services required a need to extend the term of the Agreement through February 5, 2010 in order to complete the design work. Additionally, on May 5, 2009, an approved Request for Assignment changed the contractual company name from Boyle Engineering to AECOM USA, Inc. as a result of their corporation acquisition. The project has since been advertised for bid and on November 3, 2009, Your Honorable Body awarded Public Works Agreement C2009-208 to MG Enterprise, Inc. to construct Well No. 9 Wellhead Facilities in McMaster Park. The project began last month and is anticipated to be completed by August, 2010.

The original Agreement with Boyle (now AECOM) included inspection services for the construction of the wellhead facilities. However, due to the unforeseen conditions during the design phase, the Agreement is set to expire before this work can be

completed. It is therefore the recommendation of the Public Works Director to approve a Third Amendment to extend the term of the contract with AECOM USA, Inc. an additional twelve (12) months in order to perform the inspection services as detailed in their original scope of services.

This new well construction is important because it will replace an older well that has deteriorated over the years and has declined in production from 2,500 gallons per minute to only 600 gallons per minute. This new well will produce 3,000 gallons per minute, which is a significant improvement.

Respectfully submitted,

ROBERT J. BESTE
Public Works Director



By Elizabeth Overstreet
Engineering Manager

CONCUR:



Robert J. Beste
Public Works Director



LeRoy J. Jackson
City Manager

Attachments: A. Third Amendment, C2008-012
B. Location Map

THIRD AMENDMENT TO AGREEMENT C2008-012

This Third Amendment to Agreement (C2008-012) is made and entered into as of February 2, 2010 by and between the City of Torrance ("CITY"), a municipal corporation, and AECOM USA, Inc., a New York corporation ("CONSULTANT").

RECITALS:

- A. CITY and CONSULTANT entered into an agreement on February 5, 2008, whereby CONSULTANT agreed to provide engineering services for the design of a Well in McMaster Park.
- B. City approved a First Amendment on December 16, 2008 to increase CONSULTANT's Scope of Services to provide hydro-geotechnical engineering support during the construction of a pilot well, and extend the term of the Agreement through August 5, 2009.
- C. City approved a Second Amendment on March 24, 2009 to increase CONSULTANT's Scope of Work to provide additional design services due to increased well production in McMaster Park, and extend the term of the Agreement through February 5, 2010.
- D. City approved, on May 5, 2009, a Request for Assignment of Agreement from Boyle Engineering, Inc., to AECOM USA, Inc., a New York corporation, as a result of their corporation acquisition.
- E. Both parties wish to extend the Term of the Contract to retain the CONSULTANT's inspection services for the construction of Wellhead Facilities in McMaster Park as intended in the original scope of work under Task 6 – Construction Phase Services in order to complete the project.

AGREEMENT:

- 1. Paragraph 2, entitled "TERM", is amended to read in its entirety as follows:

"2. TERM

Unless earlier terminated in accordance with paragraph 4 below, this Agreement will continue in full force from effective date through February 5, 2011."

2. In all other respects, the Agreement dated February 5, 2008 and the subsequent amendments between CITY and CONSULTANT is ratified and reaffirmed and is in full force and effect.

CITY OF TORRANCE,
Municipal corporation

AECOM USA, Inc.
a New York corporation

By: _____
Frank Scotto, Mayor

By: _____
David W. Huchel
Assistant Secretary

ATTEST:

Sue Herbers, City Clerk

APPROVED AS TO FORM:
JOHN L. FELLOWS III
City Attorney

By: _____

Attachments: Agreement C2008-012
 First Amendment
 Second Amendment
 Assignment of Agreement

SECOND AMENDMENT TO AGREEMENT C2008-012

This Second Amendment to Agreement (C2008-012) is made and entered into as of MARCH 24, 2009, by and between the CITY OF TORRANCE, a municipal corporation ("CITY"), and Boyle Engineering Corporation, Inc., a California corporation ("CONSULTANT").

RECITALS:

- A. CITY and CONSULTANT entered into an Agreement on February 5, 2008, whereby CONSULTANT agreed to provide engineering services for design and construction of a Well in McMaster Park,
- B. CITY approved a First Amendment on December 16, 2008, for CONSULTANT to perform additional design services.
- C. CITY wishes to increase CONSULTANT's Scope to provide additional engineering design services due to increased well production,
- D. Due to the increase in the Scope of Services, CITY wishes to provide an increment to the CONSULTANT's Fee in the amount of \$21,000.00.
- E. Both parties wish to extend the Term of the Contract to include the additional services.

AGREEMENT:

- 1. Paragraph 1, entitled SERVICES TO BE PERFORMED BY CONSULTANT, is amended to read in its entirety as follows:

1. **"SERVICES TO BE PERFORMED BY CONSULTANT**

CONSULTANT will provide the services listed in the Scope of Services of Agreement C2008-012 (original scope), Amendment 1, and Exhibit A (additional scope attached here to). CONSULTANT warrants that all work and services set forth in the Scope of Services will be performed in a competent, professional and satisfactory manner."

- 2. Paragraph 2, entitled TERM, is amended to read in its entirety as follows:

2. **"TERM**

Unless otherwise terminated in accordance with Paragraph 4 below, this Agreement will continue in full force and effect from the Effective Date through February 5, 2010."

C2008-012

COPY
1st

- 3. Paragraph 3 Section A, entitled CONSULTANT's Fee, is amended to read in its entirety as follows:

3.A. "CONSULTANT's Fee

"For services rendered pursuant to this Agreement, CONSULTANT will be paid in accordance with the original Agreement compensation schedule, Amendment 1, and the amendment compensation schedule attached hereto as Exhibit A, however, that in no event will the amount of money paid the CONSULTANT, for services initially contemplated by the original agreement exceed the sum of \$409,508."

In all other respects, the Agreement dated February 5, 2008, and the Amendment dated December 16, 2008 between CITY and CONSULTANT are ratified and reaffirmed and are in full force and effect.

CITY OF TORRANCE,
Municipal Corporation

Boyle Engineering Corporation, a
Inc., a California Corporation

By: 
Frank Scotto, Mayor

By: 
Robert S. Reid
Managing Engineer

ATTEST


Sue Herbers, City Clerk

APPROVED AS TO FORM:

JOHN L. FELLOWS III
City Attorney

By: 
Deputy City Attorney

Attachments: Exhibit A Consultant Proposal for Additional Services

AECOM
1501 Quail Street, Newport Beach, CA 92660-2726
www.aecom.com

David L. Ringland, PE
CITY OF TORRANCE
20500 Madrona Avenue
Torrance, CA 90503

March 6, 2009
17161 00

Well No. 9
Additional Engineering Services

The City has recently completed construction of Well No. 9. The Pump Design Recommendations, February 16, 2009, by Geoscience recommends a well capacity of 3,000 gallons per minute (gpm). This is considerably greater than the 2,400 gpm used in our preliminary design.

This greater capacity will enable the City to provide additional well water and reduce the need to purchase MWD water. At your request, we have reviewed the impact of this change on our nearly complete plans and specifications and note the following:

- The current 12-inch well discharge piping is undersized for this higher flow rate. The piping diameter should be increased to either 14 or 16 inches. Some agencies consider a 14-inch size to be non-standard; if this is the case, we suggest a 16-inch size.
- With an increase in pipe size, the discharge line appurtenances within the building become longer. For example, the propeller meter for a 12-inch line is 28 inches long; the length for a 14-inch meter is 32 inches and the length for a 16-inch meter is 46 inches. In order to provide adequate upstream flow conditions for meter accuracy, the length of straight pipe would need to increase. The total effect is to lengthen the pipe run within the building. To provide adequate space, the building length should be increased.
- We have recalculated the system hydraulics to determine the effect on the pump motor size. The increased flow rate would require 200 horsepower (hp) instead of the current 150 hp. For a representative Peerless Pump selection (see attached pump and system head curves), the 14-inch piping option would actually require a maximum brake hp of about 204; the 16-inch option would require about 189 hp. Since we do not recommend running a motor in excess of the nameplate rating, we recommend using 16-inch piping. Fortunately, this will still require the same Southern California Edison service and will not affect motor starter size or panel modifications. The only electrical revision will be for the cable size.

David L. Ringland
City of Torrance

March 6, 2009
Page 2

- These modifications will require revisions to 9 of the 22 contract drawings and the pump specification. The effort to make these changes is the same if the pipe size changes to 14 or 16 inches.

As a result of the increased well discharge, the City is concerned about the booster pump station (BPS) capacity and has asked for a review of options to increase the capacity. We will analyze the existing BPS and provide a letter report summarizing options and our recommendation. The City will provide piping plans and SCE pump test data as a basis for this work.

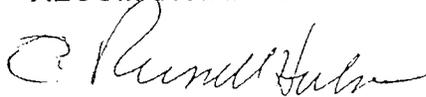
The well discharge to the reservoir uses a spray system near the roof to aerate for dissipation of hydrogen sulfide in the well water. The City is concerned about effect of the increased flow rate on the spray system and wants the ability to reduce the well flow. To provide flexibility and save energy, we will review an option of providing a variable frequency drive (VFD) to enable pumping at a reduced rate. This will also be summarized in the letter report.

If the City elects to include the VFD in the wellhead project, it will be as an optional bid item. Adding a VFD to the project will require an additional electrical drawing, a new specification, and changes to other electrical and instrumentation drawings.

In order to make the revisions to the drawings due to pipe size changes, review the BPS, evaluate the VFD, and prepare the letter report, we request a budget increase of \$11,800. If the VFD is included in the design, an additional budget increase of \$9,200 will be required. We suggest processing a total budget increase of \$21,000, with an initial authorization to AECOM of \$11,800.

Please call Russ Hulse at (949) 476-3305 if you have any questions. We await your written authorization to proceed.

AECOM U.S.A. Inc.



C. Russell Hulse, PE
Project Manager



Robert Reid, PE
Managing Engineer

Enclosures

ASSIGNMENT OF AGREEMENT

The undersigned, Boyle Engineering Corporation ("Boyle Engineering"), is a party to that certain Agreement entered into as of February 5, 2008, by and between the City of Torrance ("City") and Boyle Engineering (the "Agreement"). A First Amendment was subsequently entered into as of December 16, 2008, which extended the term of the original Agreement and increased the scope of services and compensation. A Second Amendment was also entered into as of March 24, 2009, which extended the term again and added additional services and compensation. These will be referred to as the "Amendments." With regard to the original Agreement and the Amendments, Boyle Engineering hereby assigns and transfers all of its right, title and interest in and to the Agreement and both Amendments to AECOM USA, Inc.

Date: 4/28/09

Boyle Engineering Corporation,



Brian Jordan
Regional Vice President

C2008-012

ASSUMPTION OF AGREEMENT

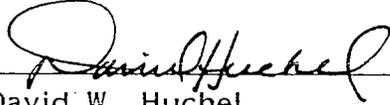
In consideration of the above assignment, and written consent of the City of Torrance thereto, AECOM USA, Inc., a New York corporation, hereby assumes and agrees to perform all of the services as set forth in the Agreement and both Amendments to fulfill all of the terms, covenants, conditions and obligations required to be performed

COPY
kst

and fulfilled by Boyle Engineering as set forth in the Agreement and both Amendments that Boyle Engineering agreed to be made and performed.

Date: 4.23.09

AECOM USA, Inc.

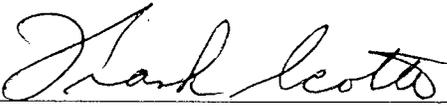

 David W. Huchel
 Assistant Secretary

CONSENT TO ASSIGNMENT

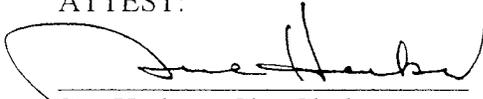
The City of Torrance hereby consents to the above assignment. Pursuant to the provisions of Paragraph 21 of the Agreement, the City of Torrance consents to the above-described assignment of the Agreement and both Amendments to AECOM USA, Inc.

Date: 05-07-2009

City of Torrance


 Frank Scott, Mayor

ATTEST:


 Sue Herbers, City Clerk

APPROVED AS TO FORM:

JOHN L. FELLOWS III
 City Attorney

By: 
 Heather K. Whitham
 Deputy City Attorney

FIRST AMENDMENT TO AGREEMENT C2008-012

This First Amendment to Agreement (C2008-012) is made and entered into as of December 16, 2008, by and between the CITY OF TORRANCE, a municipal corporation ("CITY"), and Boyle Engineering Corporation, a California corporation ("CONSULTANT").

RECITALS:

- A. CITY and CONSULTANT entered into an Agreement on February 5, 2008, whereby CONSULTANT agreed to provide engineering services for design and construction of a Well in McMaster Park.
- B. The CITY wishes to increase CONSULTANT's Scope of Services to provide geotechnical engineering support during construction of a pilot well.
- C. The CITY wishes to extend the Term of the Contract to include the additional services.
- D. Due to the increase in the Scope of Services, CITY wishes to provide an increment to the original CONSULTANT's Fee in the amount of \$34,910.

AGREEMENT:

1. Paragraph 1, entitled SERVICES TO BE PERFORMED BY CONSULTANT, is amended to read in its entirety as follows:

"1. **SERVICES TO BE PERFORMED BY CONSULTANT**

CONSULTANT will provide the services listed in the Scope of Services of Agreement C2008-012 (original scope) and Exhibit A (additional scope attached hereto). CONSULTANT warrants that all work and services set forth in the Scope of Services will be performed in a competent, professional and satisfactory manner."

2. Paragraph 2, entitled TERM, is amended to read in its entirety as follows:

"2. **TERM**

Unless earlier terminated in accordance with Paragraph 4 below, this Agreement will continue in full force and effect from the Effective Date through August 5, 2009."

C2008-012

COPY

3. Paragraph 3 Section A, entitled CONSULTANT's Fee, is amended to read in its entirety as follows:

"A. CONSULTANT's Fee

For services rendered pursuant to this Agreement, CONSULTANT will be paid in accordance with the original agreement compensation schedule and this Amendment Compensation Schedule attached as Exhibit A; however, that in no event will the amount of money paid the CONSULTANT, for services initially contemplated by the original agreement and this Amendment exceed the sum of \$388,508 ("Agreement Sum"), unless otherwise first approved in writing by CITY."

In all other respects, the Agreement dated February 5, 2008, between CITY and CONSULTANT is ratified and reaffirmed and is in full force and effect.

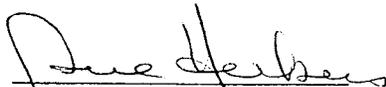
CITY OF TORRANCE,
a municipal corporation

Boyle Engineering Corporation
a California Corporation

By: 
Frank Scotto, Mayor

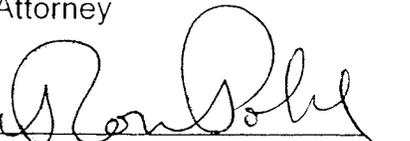
By: 
Allen J. Randall
Managing Engineer

ATTEST


Sue Herbers, City Clerk

APPROVED AS TO FORM:

JOHN L. FELLOWS III
City Attorney

By: 
Deputy City Attorney

Attachments: Exhibit A, Consultant Proposal for Additional Services

EXHIBIT A
ADDITIONAL SERVICES

BOYLE

1501 Quail Street
Newport Beach, CA 92660-2726
TEL: (949)476-3300
FAX: (949)721-7141
www.boyleengineering.com

David L. Ringland, PE
CITY OF TORRANCE
20500 Madrona Avenue
Torrance, CA 90503

October 9, 2008
17161.00

Well No. 9 **Additional Engineering Services**

The City has recently purchased a site for future water facilities behind the Yukon Elementary School. To assist in planning for a future well on this site, the City wishes to construct a drill hole to sample water quality at various depths and estimate possible well capacity. Construction would be similar to that for Well No. 9, except that the borehole would be backfilled at the completion of work.

The proposed means to accomplish this work is as a change order to Bakersfield Well and Pump, the contractor for construction of Well No. 9. When the drill rig is removed from the Well No. 9 site, it would be remobilized to the Yukon site. A pilot hole would be drilled to a depth of 900 feet, after which zone sampling will be done, and then the hold backfilled. During this work, Geoscience Support Services, Inc. would be on-site as necessary to observe construction.

We have obtained a scope and budget from Geoscience for this work, copy attached. Our requested additional fee for this work is as follows:

Construction observation by Geoscience (with 10% mark-up)	\$ 33,270
Coordination by Boyle 8 hours @ \$205/hour	<u>1,640</u>
Total budget increase	\$ 34,910

Please call Russ Hulse at (949) 476-3305 if you have any questions.

Boyle Engineering Corporation



C. Russell Hulse, PE
Project Manager

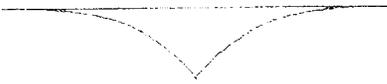


Allen J. Randall, PE
Managing Engineer

Enclosures

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GEOSCIENCE



October 7, 2008

Mr. C. Russell Hulse, P.E.
Principle Engineer
Boyle Engineering Corporation
1501 Quail Street
Newport Beach, CA 92660-2726

**Subject: Scope of Work and Cost Estimate for Professional Geohydrologic Services
Related to Borehole Drilling and Testing for the City of Torrance**

Dear Russell:

As per your request, GEOSCIENCE Support Services, Inc., is pleased to provide you with this scope of work and cost estimate for professional geohydrologic services related to the drilling and testing of one new borehole for evaluation as a potential municipal water supply source for the City of Torrance. It is our understanding that the test borehole will be approximately 900 ft deep and that it will be located approximately 1,200 ft southwest of City of Torrance Well No. 9 (currently under construction), and that this work will be concurrent or subsequent to the construction activities at Well No. 9. Furthermore, it is assumed that the drilling contractor will adhere to the technical specification currently in place for Well No. 9. Our proposal includes costs for attendance at one meeting prior to the start of work, field inspection during drilling and isolated aquifer zone testing, and preparation of a summary letter report providing recommendations as to the potential of the site for construction of a municipal water supply well.

Our proposed scope of work is as follows:

GEOSCIENCE SUPPORT SERVICES INCORPORATED

Ground Water Resources Development

P.O. Box 220, Claremont, CA 91711

FAX 909-920-0403

909-920-0707

TASK 1 CONSTRUCTION INSPECTION

1.1 Kick-off Meeting

GEOSCIENCE will attend a kick-off meeting with Bakersfield Well and Pump Company (BW&P), Boyle Engineering Corporation (Boyle) and City of Torrance (the City) personnel to review key issues related to the execution of this work. These issues may include, but are not limited to questions regarding logistical matters, required submittals and inspections, permitting, work schedule, invoicing, and communication protocols. Additionally, this meeting will provide an opportunity for all parties to visit the drilling site and address any issues regarding conditions that may affect equipment set up. Potential issues may include site access, location of the water source, electrical and other hazards, location of storm drains or flood control channels, placement of sound barriers (if required), location of staging areas, etc. At the time of the meeting, BW&P will have the opportunity to notify the City of any issues that they may have regarding preparation of the site for the work.

1.2 Field Inspection

1.2.1 Conductor Casing

Full-time field inspection will be provided during the drilling of the conductor borehole, and installation of the conductor casing and sanitary cement seal to ensure that all materials are furnished and installed in accordance with the technical specifications and regulatory requirements. It is typical for this work to be completed within one day.

1.2.2 Borehole Drilling, Sampling and Geophysical Logging

Onsite field inspection will be provided on a part-time basis during drilling of the 17.5-inch test borehole. Formation samples will be collected at 10 ft intervals (or more frequently depending on the stratigraphy encountered). Samples will be identified as to material type and production potential by visually logging them in the field using the Unified Soil Classification System (USCS). The samples will be placed in properly labeled Ziploc[®] plastic bags at the drilling site for transport to GEOSCIENCE's laboratory.

Upon completion of the pilot borehole drilling, GEOSCIENCE personnel will provide full-time onsite inspection of the geophysical borehole logging (i.e. short- and long-normal resistivity logs, spontaneous potential log and gamma-ray logs).

1.2.3 Mechanical Grading Analysis

Up to eight (8) formation samples will be selected from the borehole for mechanical grain size (i.e. sieve) analysis to assess permeability, sand migration potential, and uniformity coefficients. These analyses will be used as a basis for preparing a custom filter pack and well screen design, should the borehole be recommended for completion as a municipal supply well.

1.2.4 Evaluation of Geophysical Borehole Logs and Selection of Zones for Isolated Aquifer Testing

Permeable and non-permeable zones will be identified from the formation samples collected and from the geophysical borehole logs. GEOSCIENCE will provide recommendations for the selection of zones for isolated aquifer testing that will be based on analysis of formation samples and geophysical logs, as well as the correlation of drill cuttings with the penetration rate.

1.2.5 Isolated Aquifer Zone Testing

GEOSCIENCE will select three (3) depth intervals (zones) for testing based on lithologic samples and geophysical logs. GEOSCIENCE will closely monitor the construction and testing of each zone to ensure that each zone is constructed at the correct depth and in accordance with the existing technical specifications for Well No. 9. GEOSCIENCE always recommends that zone testing be performed at discharge rates exceeding 200 gallons per minute (gpm) to ensure that representative sampling of the aquifer is taking place and that the aquifer is being sufficiently stressed to provide the best available field data. Whenever possible, turbidity measurements taken of the discharge water should be less than 10 nephelometric turbidity units (NTUs) before collecting water quality samples from any given zone. Regardless of turbidity, GEOSCIENCE will filter all zone samples with a 0.45 micron filter prior to sample collection to reduce the risk of high metals analyses results.

After each zone has been developed, water samples will be collected and delivered to a State of California-certified water quality testing laboratory for general mineral and physical properties analysis (or any other analyses specific to the work site as may be required). Field measurements will also be collected during each zone test to determine field parameters such as pH, temperature, and total dissolved solids (TDS) concentration. Additionally, the discharge rate and pumping water levels will be measured frequently during pumping so that each zone's productivity can be determined.

The recommended zone selections and analytical suite will be presented to the City for approval prior to implementation in the field.

1.2.6 Backfilling of the Borehole

For safety reasons and to protect the borehole from introduction of contaminants, it is important to ensure that the borehole is properly backfilled and capped following the completion of drilling and testing. GEOSCIENCE will provide onsite inspection during backfilling of the borehole and will verify that the conductor casing is properly capped.

TASK 2 PREPARATION OF SUMMARY LETTER

Following completion of work at the project site, GEOSCIENCE will prepare a letter report summarizing findings from the drilling and testing of the borehole. This summary letter will include a detailed lithologic log of formation materials encountered during drilling, copies of geophysical borehole logs, results of mechanical grading analysis, and results of isolated aquifer zone testing.

The letter report will also include recommendations for future work at this project location. If the site is deemed suitable for construction of a municipal well, final well design recommendations will be provided, including final borehole diameter(s), filter pack gradation, and the proper screen opening size to complement the filter pack design. Recommended depths of screen intervals, well appurtenances, and deep annular seals will also be provided as necessary. This design will take into account all of the information gathered during the field work, including lithologic logs, geophysical logs, and the results of isolated aquifer zone testing.

Our estimated cost to complete this scope-of-work is \$30,249, and is detailed in the attached table.

If you have any questions or comments, please do not hesitate to call.

Sincerely,

A handwritten signature in black ink, appearing to read "D Williams", with a long horizontal flourish extending to the right.

Dennis. E. Williams, Ph.D., PG, CHG
President

Boyle Engineering Corporation
 Scope of Work and Cost Estimate to Provide Professional Geohydrologic Services Related to Borehole Drilling and Testing for the City of Torrance

Cost Estimate to Provide Professional Geohydrologic Services for Drilling and Testing of One (1) Borehole

Task Description	HOURS										Total	
	Principal Hydrologist \$250/Hr	Senior Geohydrologist \$155/Hr	Project Geohydrologist \$120/Hr	Staff Geohydrologist \$98/Hr	Technical Illustrator \$85/Hr	Clerical \$65/Hr	Labor	Reimbursables ¹				
1.0 Construction Inspection												
1.1 Attend Kick-off Meeting	0	6	0	0	0	0	\$ 930	\$ 125		\$ 1,055		
1.2 Construction Inspection												
1.2.1 Onsite Inspection of Conductor Borehole Drilling and Casing Installation	0	1	0	10	0	0	\$ 1,135	\$ 125		\$ 1,260		
1.2.2 Onsite Inspection During 17.5-inch Borehole Drilling, Sampling of Cuttings, and Geophysical Borehole	1	4	6	82	0	0	\$ 9,626	\$ 625		\$ 10,251		
1.2.3 Perform Mechanical Grading Analyses on Eight Samples	0	1	0	10	0	0	\$ 1,135	\$ -		\$ 1,135		
1.2.4 Evaluation of Geophysical Borehole Logs, Selection of Zones for Isolated Aquifer Tests	1	4	0	0	0	1	\$ 935	\$ -		\$ 935		
1.2.5 Onsite Inspection of Isolated Aquifer Zone Testing for Water Quality & Yield -- assume 3 zones	1	4	10	72	0	0	\$ 9,126	\$ 750		\$ 9,876		
1.2.6 Borehole Backfilling	0	1	0	8	0	0	\$ 939	\$ 125		\$ 1,064		
2.0 Reporting												
2.1 Prepare Letter Report Presenting the Results of Drilling and Testing, Including a Recommended Well Design	2	8	8	16	4	1	\$ 4,673	\$ -		\$ 4,673		
Total Hours and Cost	5	29	24	198	4	2	\$ 28,499	\$ 1,750		\$ 30,249		

NOTES:

¹ Reimbursable expenses include mailing charges, field equipment and mileage.

- Borehole drilling supervision costs assume a total well depth of 900 ft below ground surface. Supervision is assumed to be part-time. Additional well construction supervision can be provided, as necessary, on a time-and-materials basis.

- It should be recognized that additional costs, which cannot be foreseen at this time, are sometimes incurred due to equipment breakdowns on the part of the drilling contractor, and/or problems in material procurement or construction. Additional inspection hours for such field-related problems are not included in the above costs.

- Costs do not include water quality analyses by a State of California-Certified Laboratory. It is estimated that the lab cost for aquifer zones samples (3 samples) will be approximately \$1,200.

CONSULTING SERVICES AGREEMENT

This CONSULTING SERVICES AGREEMENT ("Agreement") is made and entered into as of February 5, 2008, by and between the CITY OF TORRANCE, a municipal corporation ("CITY"), and Boyle Engineering Corporation, a California corporation ("CONSULTANT").

RECITALS:

- A. CITY wishes to retain the services of an experienced and qualified CONSULTANT to provide engineering services for design and construction of Well No. 6A.
- B. CONSULTANT represents that it is qualified to perform those services.

AGREEMENT:

1. SERVICES TO BE PERFORMED BY CONSULTANT

CONSULTANT will provide the services listed in the Scope of Services attached as Exhibit A. CONSULTANT warrants that all work and services set forth in the Scope of Services will be performed in a competent, professional and satisfactory manner.

2. TERM

Unless earlier terminated in accordance with Paragraph 4 below, this Agreement will continue in full force and effect from the Effective Date through February 5, 2009 .

3. COMPENSATION

- A. CONSULTANT's Fee.

For services rendered pursuant to this Agreement, CONSULTANT will be paid in accordance with the Compensation Schedule attached as Exhibit B, provided, however, that in no event will the total amount of money paid the CONSULTANT, for services initially contemplated by this Agreement, exceed the sum of \$353,598 ("Agreement Sum"), unless otherwise first approved in writing by CITY.

- B. Schedule of Payment.

Provided that the CONSULTANT is not in default under the terms of this Agreement, upon presentation of an invoice, CONSULTANT will be paid monthly the fees described in Paragraph 3.A. above, according to the Compensation Schedule. Payment will be due within 30 days after the date of the monthly invoice.

4. TERMINATION OF AGREEMENT

- A. Termination by CITY for Convenience.

- 1. CITY may, at any time, terminate the Agreement for CITY's convenience and without cause.

2. Upon receipt of written notice from CITY of such termination for CITY's convenience, CONSULTANT will:
 - a. cease operations as directed by CITY in the notice;
 - b. take actions necessary, or that CITY may direct, for the protection and preservation of the work; and
 - c. except for work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.
3. In case of such termination for CITY's convenience, CONSULTANT will be entitled to receive payment for work executed; and costs incurred by reason of such termination, along with reasonable overhead and profit on the work not executed.

B. Termination for Cause.

1. If either party fails to perform any term, covenant or condition in this Agreement and that failure continues for 15 calendar days after the nondefaulting party gives the defaulting party written notice of the failure to perform, this Agreement may be terminated for cause; provided, however, that if during the notice period the defaulting party has promptly commenced and continues diligent efforts to remedy the default, the defaulting party will have such additional time as is reasonably necessary to remedy the default.
2. In the event this Agreement is terminated for cause by the default of the CONSULTANT, the CITY may, at the expense of the CONSULTANT and its surety, complete this Agreement or cause it to be completed. Any check or bond delivered to the CITY in connection with this Agreement, and the money payable thereon, will be forfeited to and remain the property of the CITY. All moneys due the CONSULTANT under the terms of this Agreement will be retained by the CITY, but the retention will not release the CONSULTANT and its surety from liability for the default. Under these circumstances, however, the CONSULTANT and its surety will be credited with the amount of money retained, toward any amount by which the cost of completion exceeds the Agreement Sum and any amount authorized for extra services.
3. Termination for cause will not affect or terminate any of the rights of the CITY as against the CONSULTANT or its surety then existing, or which may thereafter accrue because of the default; this provision is in addition to all other rights and remedies available to the CITY under law.

C. Termination for Breach of Law.

In the event the CONSULTANT or any of its officers, directors, shareholders,

employees, agents, subsidiaries or affiliates is convicted (i) of a criminal offense as an incident to obtaining or attempting to obtain a public or private contract or subcontract, or in the performance of a contract or subcontract; (ii) under state or federal statutes of embezzlement, theft, forgery, bribery, falsification or destruction of records, receiving stolen property, or any other offense indicating a lack of business integrity or business honesty which currently, seriously, and directly affects responsibility as a public consultant or contractor; (iii) under state or federal antitrust statutes arising out of the submission of bids or proposals; or (iv) of violation of Paragraph 19 of this Agreement; or for any other cause the CITY determines to be so serious and compelling as to affect CONSULTANT's responsibility as a public consultant or contractor, including but not limited to, debarment by another governmental agency, then the CITY reserves the unilateral right to terminate this Agreement or to impose such other sanctions (which may include financial sanctions, temporary suspensions or any other condition deemed appropriate short of termination) as it deems proper. The CITY will not take action until CONSULTANT has been given notice and an opportunity to present evidence in mitigation.

5. **FORCE MAJEURE**

If any party fails to perform its obligations because of strikes, lockouts, labor disputes, embargoes, acts of God, inability to obtain labor or materials or reasonable substitutes for labor or materials, governmental restrictions, governmental regulations, governmental control, judicial orders, enemy or hostile governmental action, civil commotion, fire or other casualty, or other causes beyond the reasonable control of the party obligated to perform, then that party's performance shall be excused for a period equal to the period of such cause for failure to perform.

6. **RETENTION OF FUNDS**

CONSULTANT authorizes CITY to deduct from any amount payable to CONSULTANT (whether or not arising out of this Agreement) any amounts the payment of which may be in dispute or that are necessary to compensate CITY for any losses, costs, liabilities, or damages suffered by CITY, and all amounts for which CITY may be liable to third parties, by reason of CONSULTANT's negligent acts or omissions or willful misconduct in performing or failing to perform CONSULTANT's obligations under this Agreement. In the event that any claim is made by a third party, the amount or validity of which is disputed by CONSULTANT, or any indebtedness exists that appears to be the basis for a claim of lien, CITY may withhold from any payment due, without liability for interest because of the withholding, an amount sufficient to cover the claim. The failure of CITY to exercise the right to deduct or to withhold will not, however, affect the obligations of CONSULTANT to insure, indemnify, and protect CITY as elsewhere provided in this Agreement.

7. **CITY REPRESENTATIVE**

Robert J. Beste is designated as the "City Representative," authorized to act in its behalf with respect to the work and services specified in this Agreement and to make all decisions in connection with this Agreement. Whenever approval, directions, or other actions are required by CITY under this Agreement, those actions will be taken by the City Representative, unless otherwise stated. The City Manager has the right to designate another City Representative at any time, by providing notice to CONSULTANT.

8. **CONSULTANT REPRESENTATIVE(S)**

The following principal(s) of CONSULTANT are designated as being the principal(s) and representative(s) of CONSULTANT authorized to act in its behalf with respect to the work specified in this Agreement and make all decisions in connection with this Agreement:

Allen J. Randall, Managing Engineer
C. Russell Hulse, Project Manager

9. **INDEPENDENT CONTRACTOR**

The CONSULTANT is, and at all times will remain as to CITY, a wholly independent contractor. Neither CITY nor any of its agents will have control over the conduct of the CONSULTANT or any of the CONSULTANT's employees, except as otherwise set forth in this Agreement. The CONSULTANT may not, at any time or in any manner, represent that it or any of its agents or employees are in any manner agents or employees of CITY.

10. **BUSINESS LICENSE**

The CONSULTANT must obtain a City business license prior to the start of work under this Agreement, unless CONSULTANT is qualified for an exemption.

11. **OTHER LICENSES AND PERMITS**

CONSULTANT warrants that it has all professional, contracting and other permits and licenses required to undertake the work contemplated by this Agreement.

12. **FAMILIARITY WITH WORK**

By executing this Agreement, CONSULTANT warrants that CONSULTANT (a) has thoroughly investigated and considered the scope of services to be performed, (b) has carefully considered how the services should be performed, and (c) fully understands the facilities, difficulties and restrictions attending performance of the services under this Agreement. If the services involve work upon any site, CONSULTANT warrants that CONSULTANT has or will investigate the site and is or will be fully acquainted with the conditions there existing, prior to commencement of services set forth in this Agreement. Should CONSULTANT discover any latent or unknown conditions that will materially affect the performance of the services set forth in this Agreement, CONSULTANT must immediately inform CITY of that fact and may not proceed except at CONSULTANT's risk until written instructions are received from CITY.

13. **CARE OF WORK**

CONSULTANT must adopt reasonable methods during the term of the Agreement to furnish continuous protection to the work, and the equipment, materials, papers, documents, plans, studies and other components to prevent losses or damages, and will be responsible for all damages, to persons or property, until acceptance of the work by CITY, except those losses or damages as may be caused by CITY's own negligence.

14. **CONSULTANT'S ACCOUNTING RECORDS; OTHER PROJECT RECORDS**

Records of the CONSULTANT's time pertaining to the project, and records of accounts between CITY and the CONSULTANT, will be kept on a generally recognized accounting basis. CONSULTANT will also maintain all other records, including without limitation specifications, drawings, progress reports and the like, relating to the project. All records will be available to CITY during normal working hours. CONSULTANT will maintain these records for three years after final payment.

15. **INDEMNIFICATION**

CONSULTANT will indemnify, pay for cost of defense, and hold harmless CITY, the City Council, each member thereof, present and future, its officers, agents and employees from and against any and all liability, expenses, including defense costs and legal fees, and claims for damages whatsoever, including, but not limited to, those arising from breach of contract, bodily injury, death, personal injury, property damage, loss of use, or property loss. The obligation to indemnify, pay for cost of defense, and hold harmless includes, but is not limited to, any liability or expense, including defense costs and legal fees, arising from the negligent acts or omissions, or willful misconduct of CONSULTANT, its officers, employees, agents, subconsultants or vendors. It is further agreed, CONSULTANT's obligations to indemnify, defend and hold harmless will apply, but only to the extent covered by CONSULTANT's negligence, even in the event of concurrent negligence on the part of CITY, the City Council, each member thereof, present and future, or its officers, agents and employees, except for liability resulting from the sole negligence or willful misconduct of CITY, its officers, employees or agents. Payment by CITY is not a condition precedent to enforcement of this indemnity.

16. **NON-LIABILITY OF CITY OFFICERS AND EMPLOYEES**

No officer or employee of CITY will be personally liable to CONSULTANT, in the event of any default or breach by the CITY or for any amount that may become due to CONSULTANT.

17. **INSURANCE**

A. CONSULTANT must maintain at its sole expense the following insurance, which will be full coverage not subject to self insurance provisions:

1. Automobile Liability, including owned, non-owned and hired vehicles, with at least the following limits of liability:
 - a. Primary Bodily Injury with limits of at least \$500,000 per person, \$1,000,000 per occurrence; and
 - b. Primary Property Damage of at least \$250,000 per occurrence; or
 - c. Combined single limits of \$1,000,000 per occurrence.
2. General Liability including coverage for premises, products and completed operations, independent contractors/vendors, personal injury and contractual obligations with combined single limits of coverage of at least \$1,000,000 per occurrence.
3. Professional liability insurance with limits of at least \$1,000,000 per occurrence.
4. Workers' Compensation with limits as required by the State of California and Employers Liability with limits of at least \$1,000,000.

B. The insurance provided by CONSULTANT will be primary and non-contributory

C. CITY, the City Council and each member thereof, members of boards and commissions, every officer, agent, official, employee and volunteer must be named as additional insured under the automobile and general liability policies.

D. CONSULTANT must provide certificates of insurance and/or endorsements to the City Clerk of the City of Torrance before the commencement of work.

E. Each insurance policy required by this Paragraph must contain a provision that no termination, cancellation or change of coverage can be made without thirty days notice to CITY.

18. **SUFFICIENCY OF INSURERS AND SURETIES**

Insurance or bonds required by this Agreement will be satisfactory only if issued by companies admitted to do business in California, rated "B+" or better in the most recent edition of Best's Key Rating Guide, and only if they are of a financial category Class VII or better, unless these requirements are waived by the Risk Manager of CITY ("Risk Manager") due to unique circumstances. In the event the Risk Manager determines that the work or services to be performed under this Agreement creates an increased or decreased risk of loss to CITY, the CONSULTANT agrees that the minimum limits of any insurance policies or performance bonds required by this Agreement may be changed

accordingly upon receipt of written notice from the Risk Manager; provided that CONSULTANT will have the right to appeal a determination of increased coverage by the Risk Manager to the City Council of CITY within 10 days of receipt of notice from the Risk Manager.

19. CONFLICT OF INTEREST

- A. No officer or employee of the CITY may have any financial interest, direct or indirect, in this Agreement, nor may any officer or employee participate in any decision relating to the Agreement that effects the officer or employee's financial interest or the financial interest of any corporation, partnership or association in which the officer or employee is, directly or indirectly interested, in violation of any law, rule or regulation.
- B. No person may offer, give, or agree to give any officer or employee or former officer or employee, nor may any officer or employee solicit, demand, accept, or agree to accept from another person, a gratuity or an offer of employment in connection with any decision, approval, disapproval, recommendation, preparation or any part of a program requirement or a purchase request, influencing the content of any specification or procurement standard, rendering of advice, investigation, auditing, or in any other advisory capacity in any way pertaining to any program requirement, contract or subcontract, or to any solicitation or proposal.

20. NOTICE

- A. All notices, requests, demands, or other communications under this Agreement will be in writing. Notice will be sufficiently given for all purposes as follows:
1. Personal delivery. When personally delivered to the recipient: notice is effective on delivery.
 2. First Class mail. When mailed first class to the last address of the recipient known to the party giving notice: notice is effective three mail delivery days after deposit in an United States Postal Service office or mailbox.
 3. Certified mail. When mailed certified mail, return receipt requested: notice is effective on receipt, if delivery is confirmed by a return receipt.
 4. Overnight delivery. When delivered by an overnight delivery service, charges prepaid or charged to the sender's account: notice is effective on delivery, if delivery is confirmed by the delivery service.
 5. Facsimile transmission. When sent by fax to the last fax number of the recipient known to the party giving notice: notice is effective on receipt. Any notice given by fax will be deemed received on the next business day if it is received after 5:00 p.m. (recipient's time) or on a non-business day.

6. Addresses for purpose of giving notice are as follows:

CONSULTANT: C. Russell Hulse, Project Manager
Boyle Engineering Corporation
1501 Quail Street
Newport Beach, CA 92660
Fax: (949) 721-7142

CITY: City Clerk
City of Torrance
3031 Torrance Boulevard
Torrance, CA 90509-2970
Fax: (310) 618-2931

- B. Any correctly addressed notice that is refused, unclaimed, or undeliverable because of an act or omission of the party to be notified, will be deemed effective as of the first date the notice was refused, unclaimed or deemed undeliverable by the postal authorities, messenger or overnight delivery service.
- C. Either party may change its address or fax number by giving the other party notice of the change in any manner permitted by this Agreement.

21. **PROHIBITION AGAINST ASSIGNMENT AND SUBCONTRACTING**

This Agreement and all exhibits are binding on the heirs, successors, and assigns of the parties. The Agreement may not be assigned or subcontracted by either CITY or CONSULTANT without the prior written consent of the other.

22. **INTEGRATION; AMENDMENT**

This Agreement represents the entire understanding of CITY and CONSULTANT as to those matters contained in it. No prior oral or written understanding will be of any force or effect with respect to the terms of this Agreement. The Agreement may not be modified or altered except in writing signed by both parties.

23. **INTERPRETATION**

The terms of this Agreement should be construed in accordance with the meaning of the language used and should not be construed for or against either party by reason of the authorship of this Agreement or any other rule of construction that might otherwise apply.

24. **SEVERABILITY**

If any part of this Agreement is found to be in conflict with applicable laws, that part will be inoperative, null and void insofar as it is in conflict with any applicable laws, but the remainder of the Agreement will remain in full force and effect.

25. **TIME OF ESSENCE**

Time is of the essence in the performance of this Agreement.

26. **GOVERNING LAW; JURISDICTION**

This Agreement will be administered and interpreted under the laws of the State of California. Jurisdiction of any litigation arising from the Agreement will be in Los Angeles County, California.

27. COMPLIANCE WITH STATUTES AND REGULATIONS

CONSULTANT will be knowledgeable of and will comply with all applicable federal, state, county and city statutes, rules, regulations, ordinances and orders.

28. WAIVER OF BREACH

No delay or omission in the exercise of any right or remedy by a nondefaulting party on any default will impair the right or remedy or be construed as a waiver. A party's consent or approval of any act by the other party requiring the party's consent or approval will not be deemed to waive or render unnecessary the other party's consent to or approval of any subsequent act. Any waiver by either party of any default must be in writing and will not be a waiver of any other default concerning the same or any other provision of this Agreement.

29. ATTORNEY'S FEES

Except as provided for in Paragraph 15, in any dispute, litigation, arbitration, or other proceeding by which one party either seeks to enforce its rights under this Agreement (whether in contract, tort or both) or seeks a declaration of any rights or obligations under this Agreement, the prevailing party will be awarded reasonable attorney's fees, together with any costs and expenses, to resolve the dispute and to enforce any judgment.

30. EXHIBITS

All exhibits identified in this Agreement are incorporated into the Agreement by this reference.

31. CONSULTANT'S AUTHORITY TO EXECUTE

The person(s) executing this Agreement on behalf of the CONSULTANT warrant that (i) the CONSULTANT is duly organized and existing; (ii) they are duly authorized to execute this Agreement on behalf of the CONSULTANT; (iii) by so executing this Agreement, the CONSULTANT is formally bound to the provisions of this Agreement;

and (iv) the entering into this Agreement does not violate any provision of any other Agreement to which the CONSULTANT is bound.

CITY OF TORRANCE
a Municipal Corporation

Boyle Engineering Corporation
a California corporation



Frank Scotto, Mayor

By: 

Allen J. Randall
Managing Engineer

ATTEST:



Sue Herbers
City Clerk

APPROVED AS TO FORM:
JOHN L. FELLOWS III
City Attorney

By: 

Attachments: Exhibit A Scope of Services
 Exhibit B Compensation Schedule

Revised: 12/13/2006

City of Torrance Well No. 6A

Scope of Services

SCOPE OF SERVICES

To expedite completion of the project, a single set of contract documents will be prepared for construction of the well and wellhead facilities.

Task 1 – Data Acquisition

- 1.1 Obtain information from the City, including street improvement plans for Yukon Avenue, storm drain details and reservoir/Well 6 site and piping details.
- 1.2 Perform a utility search along Yukon Avenue.
- 1.3 Obtain and review data for other wells in the vicinity.
- 1.4 Site survey, covering the proposed well site, adjacent reservoir facilities. This will extend along Yukon to Artesia and also follow the 12-inch pipeline from the site to Artesia, as alternative flush line routes. Survey control will tie into NAD83 coordinates and Los Angeles County benchmark elevations.

Task 2 – Preliminary Design

- 2.1 Review the Southern California Edison (SCE) easement to determine if the well could be constructed in their easement. Initiate coordination for application for a new electrical service. Assume a meeting with SCE is required to discuss issues. Determine alternative well location within the site.
- 2.2 Geoscience will assist the City with obtaining an NPDES permit.
- 2.3 Geoscience will develop the recommended well design, based on data from Item 1.3 above. This will include casing depth and diameter, comparison of costs for copper-bearing and stainless steel well casing, and anticipated well capacity and specific capacity.
- 2.4 Prepare preliminary wellhead layouts, showing piping configuration, well vault plan, and connection to existing facilities. Concept will follow that of the City of Beverly Hills well project designed by Boyle in 1999.

- 2.5 Evaluate system hydraulics and make preliminary pump selections, based on City-preferred pump manufacturers.
- 2.6 Prepare drawings for the revised aeration equipment at the reservoir discharge. This will replace the existing aeration system.
- 2.7 Prepare a preliminary design report, summarizing Items 2.1 through 2.6. Include a preliminary cost estimate.

Task 3 – Final Design

- 3.1 Geotechnical investigation. This will involve drilling one bore hole to a depth of 25 feet, after determination of the final well location. Includes laboratory testing and preparation of a report defining design loading conditions.
- 3.2 Potholing of utilities which may affect pipeline grades. This is most applicable to the proposed pipeline in Yukon, for flush water disposal. A total of two potholes are assumed; the need for additional holes will be discussed with the City. This is an optional task; work could be performed by the City.
- 3.3 Prepare construction drawings. These will be in AutoCAD format. A total of 28 drawings are anticipated, per the attached preliminary drawing list.
- 3.4 Develop project specifications. The City's front-end documents will be modified as necessary. Technical specifications will be based on Boyle's master specification system, which follows the CSI format.
- 3.5 Submit plans and specifications for City review. Submittals will be made at the 30, 75, and 100 percent completion stages.
- 3.6 Provide signed mylar original drawings and specification originals for City advertisement for bids. Copies of all documents will also be provided on CD in AutoCAD and Word formats.

Task 4 -- Meeting, Project Management, Quality Control

- 4.1 Attend kick-off meeting with City staff to discuss issues such as existing facilities, design issues, allowable construction working hours, schedules, and permits. Include site visit.
- 4.2 Attend three coordination meetings during the design period. Boyle will prepare and distribute meeting minutes.
- 4.3 Project management involves coordination between Boyle's in-house disciplines, subconsultants, and liaison with City staff.
- 4.4 Quality control reviews will be scheduled prior to any submittal to the City. This is performed by senior staff not involved with the project.

Optional Services

We suggest the City consider the following additional optional services.

Task 5 -- Bid Assistance

- 5.1 Respond to questions from potential bidders.
- 5.2 Assist with preparation of addenda, if necessary.

Task 6 -- Construction Phase Services

- 6.1 Prepare for and attend preconstruction meeting.
- 6.2 Review contractor's shop drawing submittals. Assume 30 submittals/resubmittals.
- 6.3 Field observation of well construction activities, consisting of the following subtasks:
 - 6.3.1 Maintain telephone coordination with the contractor during drilling/installation of the conductor casing.
 - 6.3.2 Provide field geologists to log the pilot hole; this will be a part-time activity. Select drill cutting samples and have them tested for grain size distribution. This will be used to select casing slot size.

- 6.3.3 Witness and analyze the downhole geophysical surveys. Recommend final ream diameter and casing depth.
- 6.3.4 Aquifer zone testing (optional). If deemed necessary, select specific zones for testing. Field geologists will observe/measure temperature, pH, electrical conductivity, and turbidity of water from each zone. Water samples from each zone will be collected for quality testing. A maximum of three zones is assumed.
- 6.3.5 Prepare a well design technical memo. This will be submitted within 48 hours of completion of pilot hole drilling (or after receipt of sample results from isolated aquifer zone testing, if performed). This memo will state the basis for the well design and final recommendations for casing lengths and diameters; well screen placement, perforation/slot size, gravel pack type and gradation, and depth of cement around the black casing.
- 6.3.6 Part-time observation of borehole reaming for monitoring the drilling mud properties to ensure specification conformance. The field geologist will also be present to observe the caliper survey.
- 6.3.7 Field geologists will be present to observe, on a full-time basis, the installation of the blank and perforated casing, gravel pack, and annular (sanitary) seal.
- 6.3.8 Observation of well development by mechanical and pumping methods will be on a part-time basis. Typically, mechanical development will require 60 to 90 hours of contractor time, and pumping development will require 40 hours. During site visits, field geologists will measure water quality parameters (temperature, pH, conductivity, and turbidity) and evaluate progress of development.
- 6.3.9 Provide part-time observation during production testing, consisting of step-drawdown and constant-rate discharge testing. Downhole pressure transducers will be provided by Geoscience to continuously monitor water level changes during testing. The constant-rate

discharge test will be 24 to 48 hours in duration. Water samples will be collected at the end of the testing for laboratory testing.

- 6.3.10 Prepare a technical memorandum at the end of the well testing to identify static and pumping water levels, specific capacity, and recommended pump setting. This will allow immediate verification/revision of the well pump selection. The draft memo will be submitted for review and comment; after revision, the final memo will be prepared.
- 6.3.11 Review data obtained from video survey and alignment and plumbness testing.
- 6.3.12 Prepare a summary of well construction report. This will document the drilling, construction, and testing activities. The draft report will be submitted for review and comment. The final report will include well logs and test results in the appendix.
- 6.3.13 Prepare a drinking water source assessment and protection report, as required by DPH.
- 6.4 Respond to contractor requests for information (RFIs) as necessary. A total of 10 RFIs is assumed for budget purposes.
- 6.5 Part-time field observation of wellhead construction. Daily observation of contractor activities for up to 4 hours per day is included, with an average of 16 hours per week. A 35-week construction period has been assumed. Daily reports will be prepared. The report will include a description of the work completed that day, observations performed to verify compliance with contract documents, deficiencies noted and contractor corrective actions, contractor personnel on site, weather, etc.
- 6.6 Assist in preparation of change orders, as necessary. A total of four change orders are assumed.
- 6.7 Assist with start-up of the facility as required. Assume 16 hours for budget purposes.

- 6.8 Prepare record drawings based on contractor-furnished "redline" construction plans. Mylar originals will be submitted, along with an electronic copy.

Assumptions

1. The City will apply for and obtain the NPDES permit, with assistance from Geoscience.
2. The City will prepare environmental documents. At this time, a categorical exemption is assumed.
3. No easement descriptions will be required.
4. The contractor will be responsible for construction surveying, soil compaction testing, and concrete sampling and testing.
5. The cost for water quality testing during well construction is not included in Boyle's budget. This could be handled either by the contractor or the City.
6. The contractor will be responsible for preparation of traffic control plans and processing same through the City.
7. If necessary, the City will process documents through the City Building Department.
8. For the SCADA system:
 - a. Radio antenna could be mounted on a lighting pole or on a new dedicated pole in the grassy area.
 - b. Existing Well No. 6 will be able to be shut down when the new well is connected to the existing PLC.

Additional Provisions

Right to Rely. Consistent with the professional standard of care and unless specifically provided for herein, the Consultant is entitled to rely on the accuracy of data and information provided by the City or others without independent review or evaluation.

Opinion of Construction Cost. The opinion of construction cost by the Consultant represents our judgment as a design professional and it

is supplied for the general guidance of the City. It is represented in general industry terms and, because it does not provide for market fluctuation, it may differ from contractor bids or actual costs to the City.

Construction Contractor Indemnification. The City will require that construction contractors working with the project hold harmless and indemnify the City, the Consultant and its consultants (if any) from liabilities, claims, losses, damages and costs, as a result of the construction contractors' performance.

Construction Contractor Insurance. The City will require that the construction contractor provide commercial general liability insurance with the City and the Consultant as additional insureds. The construction contractor shall also provide workers' compensation insurance in amounts required by law and shall provide waivers of subrogation in favor of the City and the Consultant.

Construction Safety and Methods. The City agrees that the construction contractor will be responsible for job site conditions during construction with regard to safety. The Consultant will not have authority to stop or reject the work of the construction contractor.

Asbestos or Hazardous Materials. In providing its services hereunder, the Consultant shall not be responsible for identification, handling, containment, abatement, or in any other respect, for any asbestos or hazardous material if such is present in connection with the project. In the event that the City becomes aware of the presence of asbestos or hazardous material at the jobsite, the City shall be responsible for complying with all applicable federal and state rules and regulations, and shall immediately notify the Consultant, who shall then be entitled to cease any of its services that may be affected by such presence, without any liability to the Consultant arising there from.

Construction Observation. The Consultant has estimated the hours required or requested for construction observation based on the level of effort requested by the City and/or required for similar projects. Should the contractor require additional time, whether approved for contract purposes or not, then the Consultant shall be entitled to a renegotiation of the fee based on the additional contractor time.

COMPENSATION SCHEDULE

Project Budget

Well No. 6A
Well and Wellhead Construction

City of Torrance

Task Description	Personnel Hours					Budget					
	Principal Engineer	Senior Engineer	Associate Engineer	CADD	Clerical	Total Hours	Labor	Boyle Non-Labor	Subconsultants	Total Non-Labor	Total
Task 1 - Data Acquisition											
1.1 - Obtain information from City	4				2	6	\$ 950			\$ -	\$ 950
1.2 Utility search		4				4	\$ 644			\$ -	\$ 644
1.3 Obtain/review data from other wells in the vicinity	1					1	\$ 205		\$ 3,180	\$ 3,180	\$ 3,385
1.4 Topographic survey of the well site and pipeline route (Bush)	2					2	\$ 410		\$ 8,200	\$ 8,200	\$ 8,610
Computer/communication						-	\$ -	\$ 66		\$ 66	\$ 66
Subtotal	7	4	-	-	2	13	\$ 2,209	\$ 66	\$ 11,380	\$ 11,446	\$ 13,655
Task 2 - Preliminary Design											
2.1 Review SCE easement regarding well location. Initiate application for electrical service. Meet with SCE if necessary	6	4				10	\$ 1,874			\$ -	\$ 1,874
2.2 Assist City with obtaining NPDES permit (Geoscience)	1					1	\$ 205		\$ 3,100	\$ 3,100	\$ 3,305
2.3 Develop well design parameters, including cost comparison (Geoscience)	2					2	\$ 410		\$ 1,830	\$ 1,830	\$ 2,240
2.4 Prepare preliminary wellhead layouts	6			4		10	\$ 1,594			\$ -	\$ 1,594
2.5 System hydraulics and pump selection	4				4	8	\$ 1,080			\$ -	\$ 1,080
2.6 Drawings for reservoir aeration system. Include field visit for structural observation	8			4		12	\$ 2,004			\$ -	\$ 2,004
2.7 Prepare Preliminary Design Report. Submit for City review; finalize report	12	4			4	20	\$ 3,364	\$ 100	\$ 3,840	\$ 3,940	\$ 7,304
Computer/communication						-	\$ -	\$ 321		\$ 321	\$ 321
Subtotal	39	8	-	8	8	63	\$ 10,531	\$ 421	\$ 8,770	\$ 9,191	\$ 19,722
Task 3 - Final Design											
3.1 Geotechnical investigation and report	2					2	\$ 410		\$ 6,800	\$ 6,800	\$ 7,210
3.2 Pothe utilities (assume two required)	4					4	\$ 820		\$ 2,500	\$ 2,500	\$ 3,320
3.3 Prepare construction drawings, assumed 26 total per Preliminary Drawing List	59	252	45	308		664	\$ 86,320	\$ 2,770	\$ 9,800	\$ 12,570	\$ 98,890
3.4 Develop project specifications, modify City front end documents	16				4	20	\$ 3,540			\$ -	\$ 3,540
3.5 Submit plans/specs for City review						-	\$ -			\$ -	\$ -
30% submittal	2			4		6	\$ 774	\$ 200		\$ 200	\$ 974
75% submittal	2			4		6	\$ 774	\$ 200		\$ 200	\$ 974
100% submittal	2			4		6	\$ 774	\$ 200		\$ 200	\$ 974
3.6 Provide signed mylar plans and spec originals	2			4		6	\$ 774			\$ -	\$ 774
Computer/communication						-	\$ -	\$ 3,641		\$ 3,641	\$ 3,641
Subtotal	89	252	45	324	4	714	\$ 94,186	\$ 7,011	\$ 19,100	\$ 26,111	\$ 120,297
Task 4 - Project Management and Meetings											
4.1 Kickoff meeting	4	4			2	10	\$ 1,594	\$ 50	\$ 1,360	\$ 1,410	\$ 3,004
4.2 Attend three coordination meetings	12	4			4	20	\$ 3,364	\$ 150	\$ 1,020	\$ 1,170	\$ 4,534
4.3 Project management, coordination with in-house disciplines and subconsultants, invoice review (assume 3 hours/month for 5 months)	15				8	23	\$ 3,595			\$ -	\$ 3,595
4.4 Quality control reviews	18					18	\$ 3,690			\$ -	\$ 3,690
Computer/communication						-	\$ -	\$ 362		\$ 362	\$ 362
Subtotal	49	8	-	-	14	71	\$ 12,243	\$ 562	\$ 2,380	\$ 2,942	\$ 15,185
Total	184	272	45	332	28	861	\$ 119,169	\$ 8,061	\$ 41,630	\$ 49,691	\$ 168,860

Amounts shown are fee

Due to the significance of the hydrogeologic subconsultant participation in this project, their subconsultant costs have been marked up by 10% instead of the 15% described in Boyle's Rate Schedule

Personnel Category	\$/HR
Principal Engineer	\$205.00
Senior Engineer	\$161.00
Associate Engineer	\$125.00
CADD	\$91.00
Clerical	\$65.00

Project Budget

City of Torrance

Well No. 6A
Well and Wellhead Construction
Optional Services

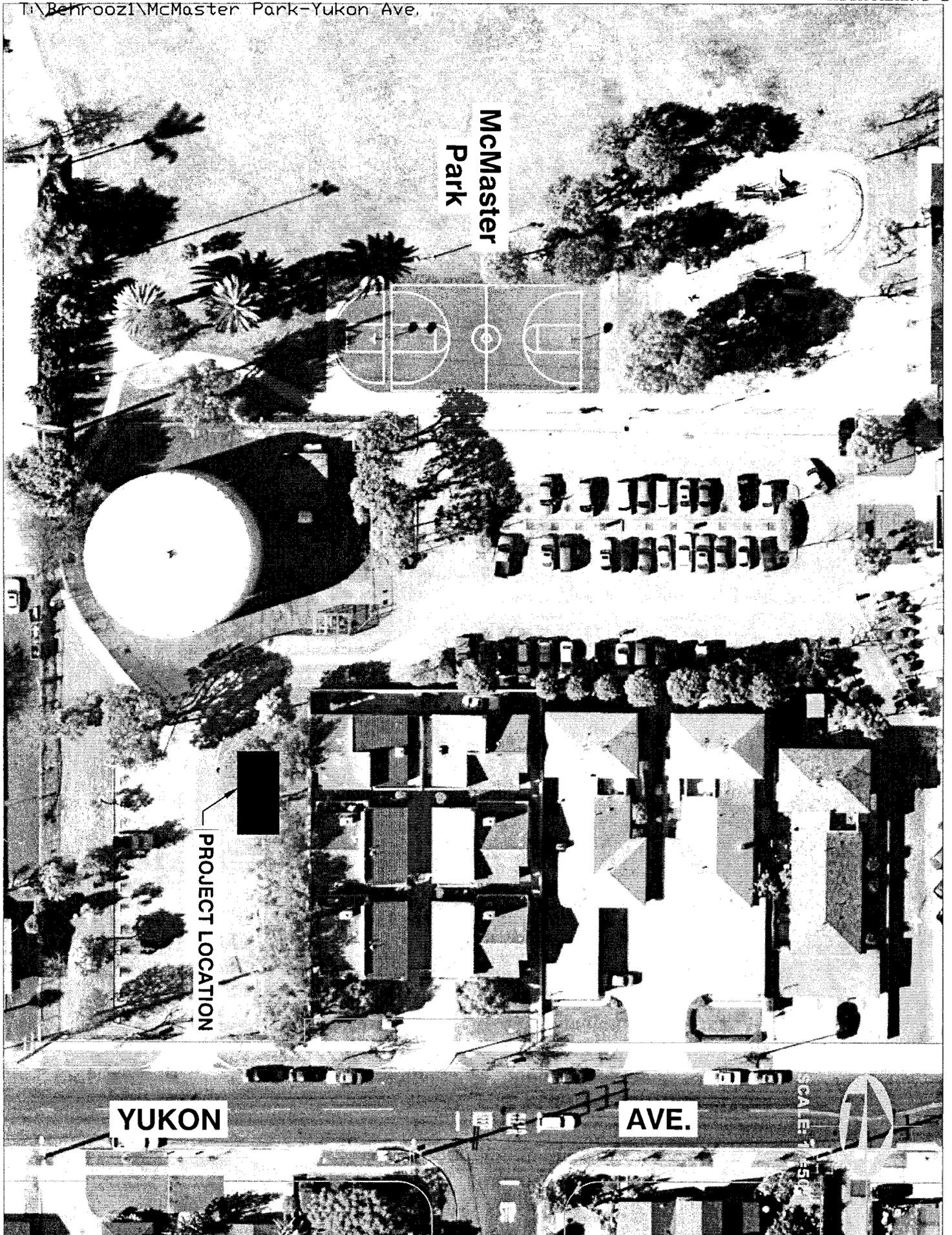
Task Description	Personnel Hours						Budget					
	Principal Engineer	Senior Engineer	Associate Engineer	Field Observer	CADD	Clerical	Total Hours	Labor	Boyle Non-Labor	Subconsultants	Total Non-Labor	Total
Task 5 - Bid Assistance												
5.1 Respond to bidder questions	4	4					8	\$ 1,460		\$ 2,600	\$ 2,600	\$ 4,060
5.2 Assist with preparation of addenda (assume two)	6	12				2	20	\$ 3,280		\$ 1,470	\$ 1,470	\$ 4,750
Computer/communication							-	\$ -	\$ 143		\$ 143	\$ 143
Subtotal	10	16	-	-	-	2	28	\$ 4,740	\$ 143	\$ 4,070	\$ 4,213	\$ 8,953
Task 6 - Construction Phase Services												
6.1 Prepare for and attend preconstruction meeting							-	\$ -		\$ 1,130	\$ 1,130	\$ 1,130
6.2 Review contractor shop drawing submittals (assume 30)	36	20				8	64	\$ 11,100		\$ 1,920	\$ 1,920	\$ 13,020
6.3 Field observation of well construction (Geoscience)							-	\$ -		\$ -	\$ -	\$ -
6.3.1 Coordinate during conductor casing placement							-	\$ -		\$ 510	\$ 510	\$ 510
6.3.2 Log pilot hole, select samples for grain size testing							-	\$ -		\$ 12,270	\$ 12,270	\$ 12,270
6.3.3 Witness and analyze geophysical surveys							-	\$ -		\$ 1,030	\$ 1,030	\$ 1,030
6.3.4 Aquifer zone testing (Optional)							-	\$ -		\$ 10,700	\$ 10,700	\$ 10,700
6.3.5 Prepare well design Technical Memo							-	\$ -		\$ 2,670	\$ 2,670	\$ 2,670
6.3.6 Observe casing and caliper survey							-	\$ -		\$ 8,100	\$ 8,100	\$ 8,100
6.3.7 Observe placement of well casing and gravel pack							-	\$ -		\$ 7,130	\$ 7,130	\$ 7,130
6.3.8 Observe well development							-	\$ -		\$ 10,830	\$ 10,830	\$ 10,830
6.3.9 Observe step-drawdown and constant-rate test pumping							-	\$ -		\$ 5,920	\$ 5,920	\$ 5,920
6.3.10 Prepare Tech Memo summarizing well characteristics							-	\$ -		\$ 2,720	\$ 2,720	\$ 2,720
6.3.11 Review video and alignment tests							-	\$ -		\$ 1,570	\$ 1,570	\$ 1,570
6.3.12 Prepare Summary of Well Construction Report							-	\$ -		\$ 11,000	\$ 11,000	\$ 11,000
6.3.13 Prepare DWSAP report							-	\$ -		\$ 6,600	\$ 6,600	\$ 6,600
6.4 Respond to contractor RFIs (assume 10)	16	10				6	32	\$ 5,270		\$ 2,730	\$ 2,730	\$ 8,000
6.5 Part-time observation of wellhead construction (average 16 hrs/week for estimated 30 weeks)	24			480			504	\$ 55,320	\$ 4,000		\$ 4,000	\$ 59,320
6.6 Assist in preparation of Change Orders (assume four)	8					6	14	\$ 2,030		\$ 1,360	\$ 1,360	\$ 3,390
6.7 Assist with start up of the facility	16						16	\$ 3,280			\$ -	\$ 3,280
6.8 Prepare record drawings	6				20		26	\$ 3,050	\$ 200		\$ 200	\$ 3,250
Computer/communication							-	\$ -	\$ 3,346		\$ 3,346	\$ 3,346
Subtotal	106	30	-	480	20	22	656	\$ 80,050	\$ 7,546	\$ 88,190	\$ 95,736	\$ 175,786
Total	116	46	-	480	20	22	684	\$ 84,790	\$ 7,688	\$ 92,260	\$ 99,948	\$ 184,738

Amounts shown are fee

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Personnel Category	\$/HR
Principal Engineer	\$205 00
Senior Engineer	\$160 00
Associate Engineer	\$125 00
Field Observer	\$105 00
CADD	\$91 00
Clerical	\$65 00

T:\Behroozi\McMaster Park-Yukon Ave.



McMaster
Park

PROJECT LOCATION

YUKON

AVE.

SCALE: 1"=50'