

Ms. Wilhelmina Montero, PE
Senior Project Manager, Public Utilities/Engineering
City of Hollywood – Department of Public Utilities
1621 North 14th Avenue
Hollywood, FL 33022

Arcadis U.S., Inc.
150 S Pine Island Road
Plantation, FL 33324
United States
Phone: 954 761 3460
www.arcadis.com

Date: May 2, 2024
Subject: Work Order Proposal
City of Hollywood - Water Treatment Plant Maintenance Package
A Projects

FL Engineering License #7917
FL Geology License #GB564
FL Surveying License #LB7062

Dear Ms. Montero:

Arcadis U.S., Inc. (Arcadis) is pleased to present the City of Hollywood (City) with our work order proposal to provide preliminary and detailed design services for maintenance and repair of several assets at the Hollywood Water Treatment Plant (WTP) located at 3441 Hollywood Blvd, Hollywood, FL 33021.

This work order shall be executed per the terms and conditions of the Professional Services Agreement for General Engineering Consultant Services: Water Treatment Plant and Wastewater Treatment Plant Projects No. 1324A (Agreement) executed on October 31, 2023, by and between the City and Arcadis.

BACKGROUND & PROJECT DEFINITION

The City identified several assets at the WTP in need of maintenance or repair. Much of this equipment is original, which makes some of it more than 50 years old. In addition, much of this equipment is no longer available as the manufacturers are no longer in business and aftermarket or rebuilt components are the only options for repair. Additional concerns are the safety of equipment layouts in existing rooms as well as resiliency of the related structures from extreme weather events. A site visit was conducted with the City to further discuss City direction on the scope items and visually observe the reference equipment and assets.

As part of Maintenance Package A, the equipment identified by the City as in need of evaluation for maintenance, repair or replacement are as follows:

1. Degasifier Nos. 2, 3 and 4

Degasifier No. 2 is used for both Membrane Softening (MS) and Reverse Osmosis (RO) processing, while Degasifier Nos. 3 and 4 are for MS use only. The City stated that all three units are over a decade old and are currently not working correctly, with compacted media causing premature blower failure and water flow restrictions. The City confirmed these tanks contain a significant amount of residue that has collected in the base of the tanks. The media in Degasifier No. 1 was recently replaced and is not in this scope of work but will provide guidance for the replacement media for the other three units. The City has also requested that the spray head, feed nozzles and troughs be evaluated for necessary repairs. Lastly, the coating on the tank walls will

also be checked. The City advised that only one degasifier unit can be taken offline at a time for inspection and repairs.

2. Lime Silo Structure Repair

The lime storage silos were installed in the 1960s and are in constant use. The silos have shown evidence of leaks, which the City believes was caused by recent replacement of vibrator equipment attached to the silos. A condition assessment will be done on all six lime silos and any recommended repairs coordinated with the work associated with item 3 – Silo Dust Collector System.

3. Silo Dust Collection System Rehab/Replacement

The WTP has two dust collection systems installed on Lime Silo Nos. 5 and 6. Each dust collection unit serves three silos (Silo Nos 1-6). Both dust collection systems are 30 years old, although the mechanical shakers were replaced since the original installation. The dust collector units will be replaced with new stainless-steel systems that have the shakers integrated into the dust collection unit. The new units are expected to be of a similar type/size/performance to the existing but with improved materials and a vendor-provided control panel. The existing 1973 as-built drawing shows a portable blower for emergency use in filling the silos. The City asked that Arcadis confirm the purpose of this unit. If the unit has never been used, it is likely that it can be removed from service. This will be confirmed in discussion with City staff. It is also noted that the City requested options for replacing the level indicator(s) in the lime silo. Arcadis will review the technology used for level indication in lime silos at neighboring facilities and report back to the City for recommendations on adding this as a scope item on a future work order.

4. Replace Sludge Drum Thickener/Dewatering Equipment and Building

The City wishes to replace the existing Rotary Vacuum Drum Filter used for sludge dewatering with a new stainless-steel unit. The new unit is anticipated to be of similar type/size/performance to the existing unit but with improved materials and a vendor-provided control panel. Arcadis shall meet with City staff to confirm the overall strategy for sludge management at the plant. While a complete sludge management study is outside the scope for this assignment, Arcadis shall review whether any additional study is warranted prior to making a final recommendation for replacement of the sludge drum filter. The existing unit was installed in 2006 to replace an older unit. Additionally, the room housing the unit was modified to allow removal of the existing unit and replacing it with a new one. Considering this, the City has directed Arcadis to evaluate the existing structure to verify it complies with the requirements of the 2023 Florida Building Code (8th Edition) and other applicable codes and standards, as applicable. Arcadis shall provide recommendations for repairs and/or modifications to the existing building, as necessary, to bring the building up to code with the 2023 Florida Building Code (8th Edition).

5. Storage Tanks Nos. 3 and 4 Valves Replacement

The existing 24-in valves for Storage Tank Nos. 3 and 4 were installed in the 1960s, are leaking and require replacement. Each tank has two valves, so four valves will be replaced in total. The type of replacement valve will be confirmed in discussion with the City and is likely to be a standard gate valve. It is noted that the City prefers to have the new valves controlled with mechanical assistance such as electric actuators or provision for use of power tools. Only one tank can be offline during the proposed valve replacement.

6. Clear Wells Sample Line Leak Repairs/Replacement

The City has requested replacement of the sample line for both clear well tanks with stainless steel fittings. The City would also like to install a level sensor on each tank to provide operators with an indication of water levels inside the tanks. Only one tank can be serviced at a time, as tanks need to be emptied completely to install requested equipment.

SCOPE OF WORK

The scope of work for the task order will include the following:

1. Preliminary engineering which will include data collection, field condition assessments and recommendations for repair or replacement of the items listed and discussed in the *Background & Project Definition* above.
2. Detailed design which will detail the proposed repairs as agreed to with the City during the preliminary engineering stage.
3. Permitting coordination for proposed repairs.
4. Bidding assistance services.

TASK 1 – PROJECT MANAGEMENT

Arcadis shall provide project management services during delivery of the project. All communications, correspondence, and submittals shall be directed through the City's Project Manager. Project Management services shall include the following:

- Prepare and lead an in-person project kickoff meeting with City staff to review the scope of work, project schedule, data needs, key milestones, and key contacts.
- Quality control-Quality assurance (QA-QC) coordination of submittals
- Progress summaries
- Invoicing

Throughout the Design phase of the Project, Arcadis will engage senior technical staff who shall be responsible for conducting quality assurance and control (QA/QC) of the design at each key progress milestone.

Deliverables

- *Agenda and summary of kickoff meeting*
- *Monthly progress reports provided with invoices*

TASK 2 – PRELIMINARY DESIGN

Task 2.1 - Data collection and Site Visit

Arcadis shall prepare for and attend a site visit immediately following the in-person project kickoff meeting to review site conditions. During this visit, Arcadis will collect all available background information pertaining to the project. This will include existing record drawings and Operation and Maintenance (O&M) manuals.

Task 2.2 - Detailed Inspections and Condition Assessment

Arcadis, in coordination with our designated subconsultant Corrosion Probe, shall conduct detailed inspections of the assets in question to determine condition and inform the repair or replacement recommendations for the Basis of design Technical Memorandum (see Task 2.3). Corrosion Probe's proposal has been included in Attachment 1. Geotechnical services have also been accounted for and will be performed as needed to determine the composition of subsurface conditions and the substructure of the Sludge Drum Thickener/Dewatering Building should record drawings be unavailable for reference. Attachment 2 contains Radise International's proposal for geotechnical engineering services.

Task 2.3 - Basis of Design Technical Memorandum

Arcadis shall provide a Basis of Design technical memorandum for review by the City that includes the following:

- Brief description on project background and scope of work
- Design criteria information for new equipment and structures associated with the Project.
- Preliminary (30%) plans showing the civil, mechanical, structural, ventilation, electrical and I&C aspects of the Project
- Preliminary construction cost estimate (Class 4 – Used for Budget authorization or control. Expected accuracy ranges from -30% to + 50%)

Arcadis shall prepare a Draft Basis of Design Technical Memorandum for City review. Following receipt of the City's comments on the draft at the review meeting noted in Task 2.4, Arcadis shall incorporate and issue a Final Basis of Design Technical Memorandum addressing comments received on the Basis of Design Review Workshop (see Task 2.4).

Deliverables

- *Basis of Design technical memorandum Draft and Final versions (in PDF form submitted to the City electronically)*

Task 2.4 - Basis of Design Review Workshop

Within two weeks of submittal of the Draft Basis of Design Technical Memorandum, Arcadis shall prepare for and attend a Basis of Design review meeting to review comments and requested revisions provided by the City from the deliverable made in Task 2.3. This meeting will be held in-person at the City's offices.

Deliverables

- *Meeting agenda and minutes for site visit*
- *Meeting agenda and summary for Basis of Design Review Meeting*

TASK 3 – DETAILED DESIGN

The design will be delivered in stages of completion to allow for input by the City. At each stage, an Engineer's opinion of probable construction cost (EOPCC) will be provided. Contract Drawings will be prepared in AutoCAD format, latest version. Technical Specifications will follow the Master Format® 2016 50 Division format from the Construction Specifications Institute (CSI).

Task 3.1 - 60% Design

Arcadis shall prepare 60% design plans, which will incorporate comments from the City and feedback obtained and defined as part of the previous tasks. This package will include the following:

- 60% Design Drawings (PDF file)
- Draft 60% Technical Specifications (PDF file)
- 60% EOPCC Class 3 (Accuracy -20% to +30%) (PDF file)

Within two weeks of submittal of the 60% design package, Arcadis shall coordinate one review workshop with City staff to discuss comments on the 60% submittal. This workshop will be held in-person.

Task 3.2 - 100% Design/Bid Ready Documents

Arcadis shall prepare final design plans, which will incorporate comments from the City and feedback obtained and defined as part of the previous tasks. This package will include the following:

- Final Signed and Sealed Design Drawings (PDF file)
- EOPCC Class 2 (Accuracy -15% to +20%) (PDF file)
- Final Project Manual that consists of the City's latest Invitation to Bid highlighted for the information needed from the City for this Project, the City's latest Construction Contract Document, and the Technical Specifications for the Project (PDF file).
- Comment resolution form for the 60% design package documenting City comments and how they were addressed in the 100% design submittal.

TASK 4 – PERMITTING SERVICES

Task 4.1 - Permit Application

Arcadis shall prepare the permit application and corresponding supporting documentation and obtain applicable signatures utilizing the 60% Design Plans provided in Task 3.1. In-person meetings with permitting agencies are not anticipated nor included in this scope of work. Correspondence with all permitting agencies will be done via email or phone call. Phone call discussions will be documented for future reference in an email.

No FDEP permit modification is anticipated due to the equipment being replaced with units of similar size/type/performance. This will be confirmed in pre-consultation with the FDEP following completion of the Preliminary Design.

It is anticipated that permits will be required from the following agencies:

- City of Hollywood Building Department

The permit application will generally consist of the following information and activities:

- Submit drawings (signed and sealed by Florida Registered Professional Engineer).
- Provide required supplemental information to support permit request.
- Complete permit application to be signed and sealed by the design engineer.
- Prepare tracking sheet with indication of dates of submittal of the application and approval or comments the building department. Arcadis will respond to one (1) Request for Additional Information (RAI) and incorporate revisions requested and re-submit information.

The City shall be responsible for paying all permit application fees.

TASK 5 – BIDDING SERVICES

Task 5.1 - Pre-Bid Meeting

It is anticipated that one construction contract with one Bid document will be used to implement all the improvements. Arcadis shall coordinate one pre-bid meeting in conjunction with City staff. The City's purchasing department will lead the pre-bid meeting and coordinate one site visit. Arcadis shall lead all technical aspects of this meeting.

Task 5.2 - Bid Clarification/Addenda

Arcadis shall respond to technical questions and Request for Information (RFIs) received from potential bidders by preparing addendum documents to be issued by the City. A maximum of three addenda requiring a technical response covering the RFIs received during the bid phase will be provided.

Task 5.3 - Contract Awards

The City shall open bids and provide Arcadis with bid responses received. Arcadis shall assist City in evaluating bids, preparing bid tabulations, conducting reference checks, and preparing a written award recommendation.

Task 5.4 - Conformed Documents

Arcadis shall prepare conformed drawings and specifications that incorporate revisions made via addenda during the bid phase.

Deliverables

- *Up to three (3) addenda requiring a technical response covering the RFIs received during the bid phase submitted electronically to the City.*
- *Bid evaluation and written award recommendation submitted electronically to the City.*

- *A maximum of three (3) hard copies of the conformed (24" x 36" size format) design drawings and two (2) bounded technical specifications. Electronic files including AutoCAD files, pdfs and Word documents to be provided to the City.*

SCHEDULE

Arcadis estimates 12 months total from Authorization to Proceed (ATP) for design, permitting and bidding. Estimates for completion of key milestones are as follows:

Task	Estimated Duration (months)	Time from ATP (months)
Preliminary Design	3	3
60% Design	3	6
100% Design	2	8
Permitting	3	7
Bid Support	2	13
TOTAL	13	13

BUDGET AND INVOICING

The proposed lump sum fee for the Project is \$385,124.00. This time and materials fee has been prepared in accordance with the terms and conditions of the Agreement between the City and Arcadis. The task breakdown for the fee is as follows; further detail is provided in Attachment 3.

Task No.	Task	Subtotal
1	Project Management	\$26,740.00
2	Preliminary Design	\$89,528.00
3	Detailed Design	\$238,723.00
4	Permitting Services	\$12,510.00
5	Bidding Support	\$17,623.00
	TOTAL	\$385,124.00

ASSUMPTIONS

This Scope of Work and Budget Fee is based on the following assumptions:

- It is anticipated that one construction contract with one bid set will be used to implement all the improvements.
- City will provide all the available drawings and record drawings for the lime silos and sludge dewatering building.
- City will provide all data requested and available in a timely manner to ensure the overall schedule is kept.
- All corrosion testing and concrete testing will be non-destructive. Destructive testing will be performed if deemed necessary during inspections and condition assessment.
- City Operations staff will isolate and empty only two of the lime silo tanks selected by Arcadis and prepare them for inspection.
- No permitting application will be required for FDEP.
- All new mechanical equipment to replace existing equipment is assumed to be standalone, packaged systems that will not require any PLC programming or integration to the existing electrical/instrumentation infrastructure at the WTP.
- This proposal does not include design services during construction, including but not limited to production of record drawings, operational and maintenance manuals or training manuals.

Arcadis is excited about this opportunity to provide the engineering design and bidding services for this Project. Should you have any questions regarding this work order proposal, please do not hesitate to contact me.

Sincerely,

Arcadis U.S., Inc.



Daniel Garcia, P.E.
Project Manager

Copies:

Plantation Files (Arcadis)

Leah Richter (Arcadis)

Enclosures:

Attachment 1 – Lime Silo Structure Condition Assessment

Attachment 2 – Geotechnical investigation

Attachment 3 – Fee breakdown

This proposal and its contents shall not be duplicated, used or disclosed — in whole or in part — for any purpose other than to evaluate the proposal. This proposal is not intended to be binding or form the terms of a contract. The scope and price of this proposal will be superseded by the contract. If this proposal is accepted and a contract is awarded to Arcadis as a result of — or in connection with — the submission of this proposal, Arcadis and/or the client shall have the right to make appropriate revisions of its terms, including scope and price, for purposes of the contract. Further, client shall have the right to duplicate, use or disclose the data contained in this proposal only to the extent provided in the resulting contract.

ATTACHMENT 1

26 March 2024

Via E-mail: daniel.i.garcia@arcadis.com

Daniel I. Garcia, PE, ENV SP
Arcadis | Arcadis US, Inc.
701 Waterford Way Suite 420,
Miami, FL 33126

Subject: Proposal for Lime Silo – Condition Assessment – Hollywood, FL – Rv 1

Dear Mr. Dan Garcia,

Corrosion Probe, Inc. (CPI) is pleased to provide this proposal for the subject services in response to your request. It is our understanding that an inspection to determine the condition of lime silo structures at the Hollywood, FL water treatment plant is desired. It is our understanding that six silos exist but are of similar age and construction. CPI will thoroughly inspect two of the structures to determine the severity of corrosion.

1.0 Scope of Services

CPI will provide the following scope of services:

A. Desktop Review, Inspection Setup, & Project Management

CPI will review and carefully available background information, including related design drawings, specifications, rehabilitation efforts, and prior inspection efforts. CPI will review and document key information in the report (e.g., wall thicknesses and known leak locations). This information should be provided promptly to allow for use in Inspection Planning efforts. CPI will set up the inspection, including evaluating ingress and egress to the structure and assessing the proper safety programs & protocols that are required. Confined Space Entry needs will be reviewed and required training.

B. Field Inspection

CPI will inspect the lime silo in accordance with CPI Internal Best Practices to understand the condition of the structure, including for use in planning of repairs. CPI will perform a field inspection of two steel tank by a two person CPI field team over the course of two mobilizations (one tank per mobilization is assumed). One CPI personnel will be acting as an entry attendant for the other CPI entrant. The inspection will include the following:

CORPORATE HEADQUARTERS:

12 INDUSTRIAL PARK ROAD • P.O. BOX 178 • CENTERBROOK, CT 06409-0178 • PHONE: (860) 767-4402 • WWW.CPIENGINEERING.COM

ALABAMA • ARKANSAS • COLORADO • DELAWARE • FLORIDA • GEORGIA

ILLINOIS • MAINE • MASSACHUSETTS • NEW JERSEY • ONTARIO • TEXAS

- a. **General Assessment of Structure.** The structure will undergo careful visual examination, including general documentation of the structure. Observations will be captured via digital photographs, field notes, and field sketches.
 - i. The severity (depth & distribution) of corrosion throughout the vessel will be carefully documented.
 - ii. Pit depth and micrometer measurement of accessible corroded surfaces.
 - iii. Ultrasonic testing (UT) can be performed at the exterior where access is provided to measure steel thickness.
 - iv. The presence of lining/coatings will be documented including general indication of where they are intact or failing (if present). An in-depth documentation of exact locations is not included in this scope.

C. Technical Reporting & Related Consultation

CPI will prepare a technical report documenting all field findings. This report will include marked up record drawings to identify test locations and areas of note. The report will include assessment, conclusions, and general recommendations for repair / corrosion protection (drawings or specification are not included in this scope).

2.0 Qualifications to Proposal

The following assumptions and qualifications are made relative to this proposal:

1. The scope and associated cost in this proposal are valid for 90 days.
2. CPI has assumed that two (2) structures will be inspected. CPI will provide two (2) personnel for the field scope of work. This scope of work is to be performed over the course of one (1) full day per mobilization per structure as two mobilizations.
3. OTHERS will provide safe access to inspection surfaces within the structure. This can include ladders, scaffolding, or lifts, as deemed appropriate to accomplish the set forth scope. Access required may include access to exterior features, the floor, interior walls, and representative interior roof areas (interior, perimeter). Field inspection will be limited to areas made accessible by OTHERS.
 - a. It has been assumed that one of the cylindrical silos and one of the conical silos will be entered. The cylindrical tank presumably has a reasonably flat floor, and it is assumed that CPI will be able to safely walk around on the floor of the tank. The conical bottom tanks must be made safe to walk around on the floor by OTHERS; temporary flooring is likely required. CPI will not proceed with the inspection if it has not been determined that the team can safely enter and navigate inside of the tank.

4. Development or submission of drawings, specifications, or other design documentation for repair work is not included in this scope of work. Additional services can be rendered upon request. P.E. stamp on reporting is not included unless specifically stated / discussed.
5. The lime silo inspection constitutes a Confined Space according to OSHA definition & CPI Programs. Entry will be performed as a permit-required confined space entry in accordance with OSHA regulations and CPI's Health and Safety Program. Review has established this as a Permit-Required Confined Space. The following will apply:
 - a. As this is a Permit Space, Rescue will be On-Call through the local fire department or similar.
 - b. CPI will provide/perform the following:
 - A Job Hazard Analysis.
 - An entry attendant who will remain continuously outside the space.
 - Task-appropriate PPE required to complete the field work as stated, including, but not limited to, hardhat, steel-toed boots, coveralls, gloves suitable for described tasks, air monitors, full body harness, etc.
 - CPI personnel will be trained and competent for the assigned tasks (entrant, attendant).
 - CPI inspectors will be equipped with locks to comply with LOTO procedures required by the facility and CPI's Health and Safety Policy.
 - b. OTHERS will provide the following support:
 - Provide lockout-tagout of all necessary equipment (valves, gates, engulfment sources, electrical sources, mechanical equipment); CPI will add locks to the hasps installed by the facility.
 - Perform dewatering and cleaning of the space to clearly expose inspected surfaces. Water washing with plant effluent is acceptable.
 - Provide safe access/egress from space (e.g., ladder, lift, tripod and hoist).
 - Render the atmosphere of the confined space breathable, including through the use of ventilation as required. Use of supplied air systems, other than for emergencies, is not included.

3.0 CPI Scope Cost

The cost for this scope of work was assessed based on CPI's experience with similar efforts and our understanding of the desired scope of work. Should the results of any task indicate the need for a change in work scope or cost, CPI will first contact you to discuss our findings and obtain your approval to modify the Scope of Work and/or Fee.

The compensation for performing the proposed scope of work as described herein is to be Thirteen Thousand Eight Hundred Dollars (\$26,600) as a lump sum (or fixed price).

Should the results of any task indicate the need for a change in work scope or cost, CPI will first contact you to discuss our findings and obtain your approval to modify the Scope of Work and/or Fee.

We at CPI sincerely appreciate the opportunity to support this important effort. This proposal is respectfully submitted for your review and consideration by,

The Staff of Corrosion Probe, Inc.

A handwritten signature in blue ink that reads "Cristina Ponte". The signature is written in a cursive, flowing style.

Cristina Ponte
Consultant Metallurgy and Materials
pontec@cpengineering.com
860-605-3767

ATTACHMENT 2



March 19, 2024

Arcadis US, Inc.
701 Waterford Way, Suite 420
Miami, FL 33126

Attn: Daniel Garcia, PE, ENV SP
Ph: 786-687-1001
Email: daniel.i.garcia@arcadis.com

**Ref: Proposal for Geotechnical Engineering Services
Hollywood Water Treatment Plant Existing Building
Geotechnical Investigation
Hollywood, Florida**

Dear Mr. Garcia,

RADISE International, LC (RADISE) is pleased to submit this proposal to provide geotechnical engineering services for the above referenced project. This proposal presents our proposed scope of work and establishes our schedule and fee for performing the work. We understand that an existing building is proposed be converted to an equipment building, and a geotechnical investigation is required to estimate the foundation type and size and to confirm the soil-bearing capacity near the existing foundation.

GEOTECHNICAL SCOPE OF WORK

We understand that our geotechnical scope of work will involve the following tasks:

1. Mobilize Ground Penetrating Radar (GPR) survey equipment and personnel to the site and perform a GPR survey of the ground adjacent to the existing building columns to attempt to detect the foundation and its dimensions.
2. Mobilize hand auger equipment and crew to the project site.
3. Four (4) hand auger borings to depths of 10 feet below the existing ground surface with dynamic or static cone penetrometer testing. The four (4) hand auger borings will be performed adjacent to the existing foundation on the 4 corners of the building.
4. The results of the GPR survey, auger borings, and penetrometer testing will be provided in the Geotechnical Engineering Report. Estimated foundation dimensions, bearing capacity and density of the soils will be provided in the report.



 561.841.0103

 4152 W. Blue Heron Blvd. Suite 1114,
Riviera Beach, FL 33404

 www.RADISE.com

SCHEDULE

We estimate to complete the field work within three weeks of authorization to proceed. Laboratory testing and report preparation will require an additional two weeks to complete. We expect to provide the report within approximately 5 weeks of authorization to proceed, unless requested otherwise.

COMPENSATION

We have estimated the cost for performing the proposed geotechnical scope of work is **\$7,432.00** broken down as shown in Attachment A – Geotechnical Fee Estimate.

CLOSING

RADISE appreciates the opportunity to submit this proposal, and look forward to the opportunity of working with you. If you have any questions or would like to discuss the details of this proposal, please do not hesitate to give us a call at (561) 841-0103.

Sincerely,

RADISE International, LC



Akash Bissoon, P.E.
Senior Engineer

Attachments: Attachment A – Geotechnical Fee Estimate



Attachment A - Fee Breakdown
Hollywood Water Treatment Plant Existing Building
Geotechnical Investigation
Hollywood, Florida

Tuesday, March 19, 2024

ITEM/DESCRIPTION		QUANTITY	UNITS	UNIT RATE	EXTENSION
1.0 FIELD EXPLORATION					
1.1	<u>Coordination</u>				
1.1.1	Field Marking and Site Recon (Associate Engineer)	4	Hour	\$ 110.00	\$ 440.00
1.1.2	GPR Survey Existing Concrete Slab (Associate Engineer - 2 man crew)	16	Hour	\$ 110.00	\$ 1,760.00
1.2	<u>Soil Borings (4 Auger Borings @ 10')</u>				
1.2.3	Mobilize Drill Crew	1	Trip	\$ 90.00	\$ 90.00
1.2.4	Per Mile in Excess of 50 Miles	76	Mile	\$ 2.00	\$ 152.00
1.2.5	Shallow manual or power auger Borings - 4 @ 10'	40	LF	\$ 10.00	\$ 400.00
1.2.6	Dynamic or Static Cone Pentrometer Tests	40	LF	\$ 8.00	\$ 320.00
1.2.7	Casing of Boreholes	0	LF	\$ 5.00	\$ -
1.2.8	Grout Seal Boreholes	40	LF	\$ 3.00	\$ 120.00
	Subtotal				\$ 3,282.00
2.0 LABORATORY SERVICES					
2.1	Visual Classification (Associate Engineer)	2	Hour	\$ 110.00	\$ 220.00
2.2	Moisture Content	10	Each	\$ 12.00	\$ 120.00
2.3	Organic Content	4	Each	\$ 30.00	\$ 120.00
2.4	Particle Size Analysis (ASTM D 422)	2	Each	\$ 50.00	\$ 100.00
2.5	Particle Size Analysis (P-200)	4	Each	\$ 25.00	\$ 100.00
	Subtotal				\$ 660.00
3.0 PROJECT MANAGEMENT & ENGINEERING SUPPORT SERVICES					
3.1	Project Engineer (PE)	8	Hour	\$ 125.00	\$ 1,000.00
3.2	Associate Engineer (EIT)	16	Hour	\$ 110.00	\$ 1,760.00
3.3	Draftsman	8	Hour	\$ 80.00	\$ 640.00
3.4	Clerical	2	Hour	\$ 45.00	\$ 90.00
	Subtotal				\$ 3,490.00
GEOTECHNICAL SERVICES					\$ 7,432.00

ATTACHMENT 3

Project: WATER TREATMENT PLANT - MAINTENANCE PACKAGE A

1 OF 1