

AGREEMENT FOR ENGINEERING SERVICES
SURFACE WATER TREATMENT PLANT
DISINFECTION ALTERNATIVE EVALUATION

This Agreement is made and entered into in Deer Park, Harris County, Texas on the
4th day of December 2018; by and between

The City of Deer Park, a Municipal Corporation in the State of Texas

And

Ardurra Group, LLC ENGINEER(s) duly licensed, and practicing under the laws of
the State of Texas.

Said Agreement being executed by the City pursuant to the City Charter, Ordinances,
and Resolutions of the City Council, and by the Engineer for engineering services
hereinafter set forth in connection with the above-designated Project for the City of
Deer Park.

DEER PARK retains **Ardurra Group, LLC** to perform engineering services related to the design
and construction of the **Surface Water Treatment Plant Disinfection Alternative Evaluation** in
return for consideration to be paid by DEER PARK under terms and conditions set forth below.

ARTICLE 1. SCOPE OF WORK

- 1.1 ENGINEER will provide engineering, design, consultation, project management, and other services as required to perform and complete the Scope of Work & Services specifically identified in Attachment A of this Agreement. The Services Scope of Work (the "Work") and the time schedules set forth in Attachment A are based on information provided by DEER PARK and ENGINEER. The schedule of milestones and deliverables are essential terms of this Agreement.
- 1.2 If this information is incomplete or inaccurate, or if site conditions are encountered which materially vary from those indicated by DEER PARK, or if DEER PARK directs ENGINEER to change the original Scope of Work shown in Attachment A, a written amendment equitably adjusting the costs, performance time and/or terms and conditions, shall be executed by DEER PARK and ENGINEER.

ARTICLE 2. COMPENSATION

- 2.1 ENGINEER bills for its services on a time and materials basis using the Schedule of Rates and Terms entitled Estimated Level of Effort ("Schedule of Rates") attached as Exhibit B of this Agreement. As requested, ENGINEER has provided an estimate of the fees for the Work amounting to \$74,862.00 ENGINEER will not exceed that estimate without prior approval from DEER PARK. ENGINEER will notify DEER PARK, for approval, of any proposed revisions to the Schedule of Rates and effective date thereof which shall not be less than thirty (30) days after such notice.
- 2.2 ENGINEER will submit monthly invoices for Services rendered, and DEER PARK will make payment within thirty (30) days of receipt of ENGINEER'S invoices. If DEER PARK objects to all or any portion of an invoice, it will notify ENGINEER of the same within fifteen (15) days from the date of receipt of the invoice and will pay that portion of the invoice not in dispute, and the parties shall immediately make every effort to settle the disputed portion of the invoice. Prices or rates quoted do not include state or local taxes.

ARTICLE 3. DEER PARK'S RESPONSIBILITIES

- 3.1 DEER PARK will designate in writing the person or persons with authority to act on DEER PARK's behalf on all matters concerning the work to be performed.
- 3.2 DEER PARK will furnish to ENGINEER all existing studies, reports, data and other information available to DEER PARK necessary for performance of the Work, authorize ENGINEER to obtain additional data as required, and furnish the services of others where necessary for the performance of the Work. ENGINEER will be entitled to use and rely upon all such information and services.
- 3.3 Where necessary to performance of the Work, DEER PARK shall arrange for ENGINEER to have access to any site or property.

ARTICLE 4. PERFORMANCE OF SERVICE

- 4.1 ENGINEER's services will be performed within the schedule and time period set forth in Exhibit A.
- 4.2 ENGINEER shall perform the Work, and any additional services as may be required, for the development of the Project to completion.
- 4.3 If required, additional services will be performed and completed within the time period agreed to in writing by the parties at the time such services are authorized.

- 4.4 If any time period within or date by which any of ENGINEER's services are to be performed is exceeded for reasons outside of ENGINEER's reasonable control, all rates, measures and amounts of compensation and the time for completion of performance shall be subject to equitable adjustment.

ARTICLE 5. CONFIDENTIALITY

- 5.1 ENGINEER will hold confidential all information obtained from DEER PARK, not previously known by ENGINEER or in the public domain.

ARTICLE 6. STANDARD OF CARE & WARRANTY

- 6.1 Standard of Care. In performing services, ENGINEER agrees to exercise professional judgment, made on the basis of the information available to ENGINEER, and to perform its engineering services with the professional skill and care of competent design professionals practicing in the same or similar locale and under the same or similar circumstances and professional license. ENGINEER also agrees to perform its engineering services as expeditiously as is prudent considering this standard of care. This standard of care shall be judged as of the time and place the services are rendered, and not according to later standards.
- 6.2 Warranty. If any failure to meet the foregoing standard of care Warranty appears during one year from the date of completion of the service and ENGINEER is promptly notified thereof in writing, ENGINEER will at its expense re-perform the nonconforming work.
- 6.3 The foregoing Warranty is the sole and express warranty obligation of ENGINEER and is provided in lieu of all other warranties, whether written, oral, implied or statutory, including any warranty of merchantability. Engineer does not warrant any products or services of others. ENGINEER, however, expressly acknowledges that these warranty obligations do not eliminate the applicability of the standard of care to all of its work and that the OWNER may still retain remedies against ENGINEER following the expiration of the warranty period in contract, tort, or otherwise as the law allows.

ARTICLE 7. INSURANCE

- 7.1 ENGINEER will procure and maintain insurance as required by law. At a minimum, ENGINEER will have the following coverage:
- (1) Workers compensation and occupational disease insurance in statutory amounts.
 - (2) Employer's liability insurance in the amount of \$1,000,000.

- (3) Automobile liability in the amount of \$1,000,000.
- (4) Commercial General Liability insurance for bodily injury, death or loss of or damage to property of third persons in the amount of \$1,000,000 per occurrence, \$2,000,000 in the aggregate.
- (5) Professional errors and omissions insurance in the amount of \$1,000,000.

7.2 ENGINEER has provided a Statement of Insurance to DEER PARK demonstrating and reflecting that ENGINEER has procured and maintains insurance coverage in accordance with the requirements stated above. That Statement of Insurance is Attachment C of this Agreement.

ARTICLE 8. INDEMNITY

8.1 TO THE FULLEST EXTENT PERMITTED BY LAW, ENGINEER SHALL INDEMNIFY, AND HOLD HARMLESS THE CITY OF DEER PARK, ITS OFFICERS, OFFICIALS, AGENTS, DIRECTORS, AND EMPLOYEES, FROM AND AGAINST ALL CLAIMS, CAUSES OF ACTION, DAMAGES, LOSSES, LAWSUITS, JUDGMENTS, FINES, PENALTIES, OR LIABILITY OF ANY CHARACTER, TYPE OR DESCRIPTION INCLUDING WITHOUT LIMITATION, ALL EXPENSES OF LITIGATION, INCLUDING EXPERT OR CONSULTANT FEES, COURT COSTS, AND ATTORNEY'S FEES, ARISING OUT OF OR RESULTING FROM BODILY INJURY OR DEATH OF ANY PERSON, OR PROPERTY DAMAGE, OR OTHER HARM TO THE EXTENT SUCH BODILY INJURY, PROPERTY DAMAGE, OR HARM ARISES OUT OF OR IS OCCASIONED BY THE NEGLIGENCE, INTENTIONAL TORT, INTELLECTUAL PROPERTY INFRINGEMENT, OR FAILURE TO PAY A SUBCONTRACTOR OR SUPPLIER COMMITTED BY THE ENGINEER OR THE ENGINEER'S AGENT, CONSULTANT UNDER CONTRACT, OR ANOTHER ENTITY OVER WHICH THE INDEMNITOR EXERCISES CONTROL.

IF THE CITY DEFENDS AN ACTION, CLAIM, LAWSUIT OR OTHERWISE INCURS ATTORNEY'S FEES AS A RESULT OF AN INDEMNIFIED CLAIM AS STATED ABOVE, ENGINEER AGREES TO REIMBURSE THE CITY IN PROPORTION TO THE ENGINEER'S LIABILITY.

8.2 ENGINEER agrees to and shall contractually require its consultants and subcontractors of any tier to assume the same indemnification obligations to Indemnities as stated herein.

ARTICLE 9. OWNERSHIP OF DOCUMENTS

9.1 As long as DEER PARK is current in the payment of all undisputed invoices, all work product prepared by the ENGINEER pursuant to this Agreement, including, but not limited to, all Contract Documents, Plans and Specifications and any computer aided design, shall be

the sole and exclusive property of DEER PARK, subject to the ENGINEER's reserved rights.

- 9.2 ENGINEER's technology, including without limitation customary techniques and details, skill, processes, knowledge, and computer software developed or acquired by ENGINEER or its Consultants to prepare and manipulate the data which comprises the instruments of services shall all be and remain the property of the ENGINEER.

ARTICLE 10. INDEPENDENT CONTRACTOR

- 10.1 The ENGINEER is an independent contractor and shall not be regarded as an employee or agent of the DEER PARK.

ARTICLE 11. COMPLIANCE WITH FEDERAL, STATE AND LOCAL LAWS

- 11.1 The ENGINEER shall observe all applicable provisions of the federal, state and local laws and regulations, including those relating to equal opportunity employment.

ARTICLE 12. SAFETY

- 12.1 DEER PARK shall inform the ENGINEER and its employees of any applicable site safety procedures and regulations known to DEER PARK as well as any special safety concerns or dangerous conditions at the site. The ENGINEER and its employees will be obligated to adhere to such procedures and regulations once notice has been given.
- 12.2 ENGINEER shall not have any responsibility for overall job safety at the site. If in ENGINEER's opinion, its field personnel are unable to access required locations or perform required services in conformance with applicable safety standards, ENGINEER may immediately suspend performance until such safety standards can be attained. If within a reasonable time site operations or conditions are not brought into compliance with such safety standards, ENGINEER may in its discretion terminate its performance, in which event, DEER PARK shall pay for services and termination expenses as provided in Article 18.

ARTICLE 13. LITIGATION

- 13.1 At the request of DEER PARK, ENGINEER agrees to provide testimony and other evidence in any litigation, hearings or proceedings to which DEER PARK is or becomes a party in connection with the work performed under this Agreement, unless DEER PARK and the ENGINEER are adverse to one-another in any such litigation.

- 13.2 Any litigation arising out of this Agreement between DEER PARK and ENGINEER shall be heard by the state district courts of Harris County.

ARTICLE 14. NOTICE

- 14.1 All notices to either party by the other shall be deemed to have been sufficiently given when made in writing and delivered in person, by electronic mail, facsimile, certified mail or courier to the address of the respective party or to such other address as such party may designate.

ARTICLE 15. TERMINATION

- 15.1 The performance of work may be terminated or suspended by DEER PARK, for any reason. Such suspension or termination shall be subject to notice of DEER PARK's election to either suspend or terminate the Agreement fifteen (15) days' prior to the effective suspension or termination date. The Notice shall specify the extent to which performance of work is suspended or terminated and the date upon which such action shall become effective. In the event work is terminated or suspended by DEER PARK prior to the completion of services contemplated hereunder, ENGINEER shall be paid for (i) the services rendered to the date of termination or suspension and reasonable services provided to effectuate a professional and timely project termination or suspension.

ARTICLE 16. SEVERABILITY

- 16.1 If any term, covenant, condition or provision of this Agreement is found by a court of competent jurisdiction to be invalid, void or unenforceable, the remainder of this Agreement shall remain in full force and effect, and shall in no way be affected, impaired or invalidated thereby.

ARTICLE 17. WAIVER

- 17.1 Any waiver by either party or any provision or condition of this Agreement shall not be construed or deemed to be a waiver of a subsequent breach of the same provision or condition, unless such waiver is so expressed in writing and signed by the party to be bound.

ARTICLE 18. GOVERNING LAW

- 18.1 This Agreement will be governed by and construed and interpreted in accordance with the laws of the State of Texas.

ARTICLE 19. CAPTIONS

- 19.1 The captions contained herein are intended solely for the convenience of reference and shall not define, limit or affect in any way the provisions, terms and conditions hereof or their interpretation.

ARTICLE 20. ENTIRE AGREEMENT

- 20.1 This Agreement, its articles, provision, terms, and attached Schedules represent the entire understanding and agreement between DEER PARK and ENGINEER and supersede any and all prior agreements, whether written or oral, and may be amended or modified only by a written amendment signed by both parties.

This Agreement is effective on the last day signed.

Ardurra Group, LLC

By_____

Name_____

Title_____

Date_____

The City of Deer Park

By_____

Name_____

Title_____

Date_____

ATTACHMENT 'A'

October 9, 2018



Mr. Bill Pedersen
Director of Public Works
City of Deer Park
710 East San Augustine
Deer Park, Texas 77536

Subject: Proposal to Provide Professional Engineering Services
City of Deer Park Water Treatment Plant
Disinfection Alternative Evaluation

Dear Mr. Pedersen:

Engineering
& Disaster
Management

Ardurra Group, LLC ("Ardurra") is pleased to submit this proposal to the City of Deer Park to perform an evaluation study of disinfection alternatives for City's surface water treatment plant. The Deer Park surface water treatment plant currently uses gas chlorine and aqua ammonia to form chloramine as their disinfectant. The City has a concern with chemical safety and handling risks. Therefore, the City desires to evaluate alternative disinfection systems for the plant. In addition, the City also requested to look at the option of using liquid ammonium sulfate (LAS) to replace aqua ammonia that is currently being used at the plant.

The following presents our understanding of the proposed project, the required scope of work for engineering services, our proposed technical approach, anticipated schedule, and estimated fees.

1.0 Description and Scope

Ardurra will provide the following scope of services:

- Task 1 – Project Management and Coordination
- Task 2 – Data Collection and Basis of Design
- Task 3 – Alternative Evaluation
- Task 4 – Electrical Service Analysis
- Task 5 – Development of Evaluation Report

Task 1 – Project Management and Coordination

- 1.1 Engineer will perform project management and coordination duties throughout the project, including tracking budget, schedule, and progress of work. Engineer will provide a project status report to the City with the monthly invoices.
- 1.2 Engineer will provide quality control reviews and technical reviews of all evaluations and recommendations, and technical memorandum.
- 1.3 Engineer will coordinate with regulatory agencies for inputs and guidance.

Ardurra Group, LLC
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Houston, TX 77019
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Ardurragroup.com



- 1.4 Upon submission of the evaluation report, Engineer will hold a review workshop with the City to discuss alternatives being evaluated, improvement recommendations, and path forward.

Task 2 – Data Collection and Basis of Design

- 2.1 Engineer will review the existing plant drawings, previous reports, and operations data necessary to understand current operating conditions and disinfection chemical storage and feed systems. The following data will be requested from the City, if available:
 - 5-year worth of chlorine and aqua ammonia chemical dosage from CWA in excel format.
 - 5-year worth of chlorine and aqua ammonia chemical dosage from the City in excel format.
 - Chemical MSDS sheets.
- 2.2 Engineer has obtained 5-year worth of plant raw water flow data and record drawings from recent Solids Handling Evaluation study and will use them as part of this project. The Engineer will process these data and develop a basis of design for the new chemical storage and feed system.
- 2.3 Engineer will conduct up to three (3) site visits with plant staff to gather operations data and field-verify conditions.

Task 3 –Alternative Evaluation

- 3.1 Disinfection Alternatives - Engineer will evaluate three (3) disinfection alternatives, including the following.
 - a. Gas chlorine disinfection with improvements to add ChlorTainer containment system and scrubber system.
 - b. Bulk-delivered sodium hypochlorite solution, typically 12.5%.
 - c. Low-strength on-site hypochlorite generation (OSHG), typically 0.8%. MicroClor system will be assumed for the purpose of this study.

The alternative analysis will include development of design criteria, process flow diagrams, preliminary equipment selection and sizing, and conceptual layouts depicting general footprint of new chemical storage and feed facilities.

- 3.2 Ammonia Storage and Feed System improvements – Engineer will perform preliminary equipment selection and sizing for replacing the existing aqua ammonia storage and feed system with LAS storage and feed system.



- 3.3 Cost Analysis - Engineer will coordinate with equipment vendors and manufacturers to obtain necessary engineering, operational, layout and budgetary cost information, and develop conceptual-level cost opinions (capital costs and operation and maintenance costs), to evaluate each alternative on a lifecycle basis.

Task 4 – Electrical Service Analysis

- 4.1 Perform an electrical service analysis to evaluate if the existing electrical power source is adequate to handle increased electrical loads from proposed improvements. The analysis will include determining new equipment loads from the plant Solids Handling Improvement project, Clearwell and Transfer Pump Station Improvement project, and Disinfection Improvement project, evaluation of existing electrical services, and review of power company operating bills.
- 4.2 Develop modifications for existing services, one-line diagram for service modifications, and preliminary site plan to route power to improvement area.
- 4.3 Develop preliminary cost opinion for proposed electrical improvements and upgrades and summarize the findings and recommendations from the analysis in the evaluation report.

Task 5 – Evaluation Report

- 5.1 Prepare and develop a draft evaluation report with associated graphs, tables, and figures. Engineer will provide plan views of alternative layouts in pdf format utilizing existing aerial images and existing site layout drawings. A draft table of content is provided below:
- Section 1 – Introduction
 - Section 2 – Basis of Design
 - Section 3 – Alternative Evaluation
 - Section 4 – Electrical Service Analysis
 - Section 5 – Recommendations
- 5.2 Upon review of the City, Engineer will incorporate review comments and issue the final report.

2.0 Schedule

We anticipate being able to commence work immediately after receiving Notice to Proceed. A project schedule is provided on **Exhibit A**.

3.0 Fees, Terms and Conditions

Based on the scope of services outlined above, we have prepared a detailed level of effort estimate as shown on **Exhibit B**. Our fee estimate is based on the scope of work defined for the project and in part on an estimate of required services. We estimate a lump sum, not to exceed fee to complete the subject project.



This letter is to request authorization from the City to perform the above services in the amount of **\$74,862.00**.

We will not exceed our quoted budget unless the nature of the project changes. Your approval will be secured before any extra charges are incurred.

Services will be billed on a monthly basis in accordance with the scope of services for work incurred. Payment shall be due within 30 days after date of invoice. Interest at the rate of 1% per month (or the highest rate allowable by law) shall accrue on all amounts not paid within 30 days after date of invoice. All attorney fees and expenses associated with collection of past due invoices will be paid to client. Failure to timely pay any invoice shall constitute a waiver of any and all claims against Ardurra.

Please feel free to contact me at (713) 208-9463 or Jeff Peters at (713) 385-5601 to discuss any questions you may have. Thank you for the opportunity to propose these professional engineering services for the City of Deer Park.

Very truly yours,

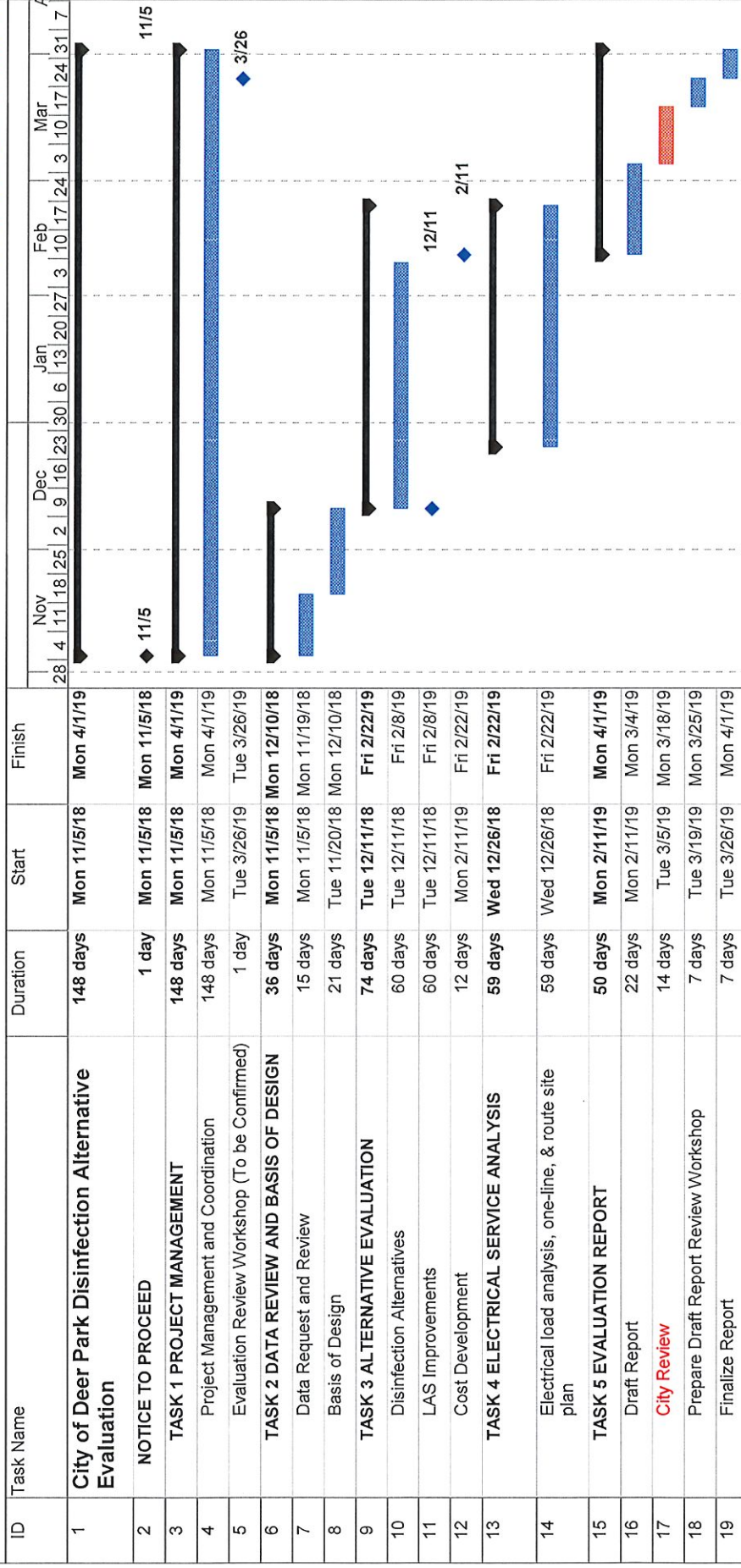
Yue Sun, P.E., BCEE
Senior Project Manager/Water Treatment Practice Leader
TBPE Firm Registration No F-17004

cc: Jeff Peters, PE, BCEE, Client Account Manager, File

**EXHIBIT A - City of Deer Park
Disinfection Alternative Evaluation
PROJECT SCHEDULE VERSION V1.0**



ARDURRA



Task

External Tasks

Milestone

Summary

Inactive Task

Task

Inactive Milestone

Inactive Summary

Manual Task

Duration-only

Manual Summary Rollup

Manual Summary

Start-only

Finish-only

Progress

Deadline

Project: Deer Park Disinfection Study S
Date: Tue 10/9/18

Exhibit A-1 - Level of Efforts Fee Estimate
City of Deer Park
Surface Water Treatment Plant - Disinfection Alternative Evaluation



Task No.	Task Description	Principal / QA/QC \$275 hrs	Sr. Project Manager \$240 hrs	Sr. Project Engineer \$230 hrs	Engineer 5/6 \$180 hrs	Project Engineer \$160 hrs	Sr. CAD Designer \$150 hrs	Admin Support \$120 hrs	Accounting \$120 hrs	Ardurra Subtotal Cost \$	OP \$	ODC \$	Totals \$	Total hrs
1.0	Project Management and Coordination													
1.1	Plant Management, Coordination, invoicing and progress reports		6			4		4	4	\$3,040			\$3,040	18
1.2	QA/QC Review	4								\$1,100			\$1,100	4
1.3	Regulatory Coordination		2		6					\$1,560			\$1,560	8
1.4	Study Review Workshop	2	4			6				\$2,470			\$2,470	12
	Expense (5% of labor cost)											\$410	\$410	
	Task 1.0 - Sub Total	6	12	0	6	10	0	4	4	\$8,170	\$0	\$410	\$8,580	42
2.0	Data Collection and Basis of Design													
2.1	Plant Record Drawing and Data Research					8				\$1,280			\$1,280	8
2.2	Site Visit (up to 3)		6			6				\$2,400			\$2,400	12
2.3	Basis of Design Development		2			16				\$3,040			\$3,040	18
	Expense (5% of labor cost)											\$340	\$340	
	Task 2.0 - Sub Total	0	8	0	0	30	0	0	0	\$6,720	\$0	\$340	\$7,060	38
3.0	Alternative Evaluation													
3.1	Disinfection Alternatives													
a	Alternative 1 - Gas chlorine with Chloroform and Scrubber													
a.1	Design criteria, safety review, and constructability review			4	8					\$2,360			\$2,360	12
a.2	Development of preliminary layouts		2		8		10			\$3,420			\$3,420	20
a.3	Development of Planning-level POC					16				\$2,560			\$2,560	16
b	Alternative 2 - Bulk-delivered sodium hypochlorite solution (10-12.5%)													
b.1	Design criteria, safety review, and constructability review			4	8					\$2,360			\$2,360	12
b.2	Development of preliminary layouts		2		8		10			\$3,420			\$3,420	20
b.3	Development of Planning-level POC					16				\$2,560			\$2,560	16
c	Alternative 3 - Low strength on-site hypochlorite generation													
c.1	Design criteria, safety review, and constructability review			4	8					\$2,360			\$2,360	12
c.2	Development of preliminary layouts		2		8		10			\$3,420			\$3,420	20
c.3	Development of Planning-level POC					16				\$2,560			\$2,560	16
3.2	Ammonia Storage and Feed System Improvements		2	4	8	16	12			\$7,200			\$7,200	42
	Cost analysis (capital included above under individual POC development, O&M, and life cycle cost analysis)													
3.3	Expense (5% of labor cost)		3			24				\$4,560			\$4,560	27
	Task 3.0 - Sub Total	0	11	16	56	88	42	0	0	\$36,780	\$0	\$1,840	\$38,620	213
4.0	Electrical Service Analysis													
4.1	Load analysis									\$0	\$3,213		\$3,213	0
4.2	One-line and preliminary power route site plan									\$0	\$4,851		\$4,851	0
4.3	Development of cost opinion									\$0	\$2,048		\$2,048	0
	Expense (5% of labor cost)											\$0	\$0	
	Task 4.0 - Sub Total	0	0	0	0	0	0	0	0	\$0	\$10,112	\$0	\$10,112	0
5.0	Evaluation Report													
5.1	Development of DRAFT Report		4		4	24		8		\$6,480			\$6,480	40
5.2	Incorporate City Comments and FINAL Report	2	4			8		6		\$3,510			\$3,510	20
	Expense (5% of labor cost)											\$500	\$500	
	Task 5.0 - Sub Total	2	8	0	4	32	0	14	0	\$9,990	\$0	\$500	\$10,490	60
	TOTAL	8	39	16	66	160	42	18	4	\$61,660	\$10,112	\$3,090	\$74,862	353