

November 25, 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
Surface Water Treatment Plant Solids Handling Improvements

Dear Mr. Pedersen:

Ardurra Group, LLC ("Ardurra") is excited to have the opportunity to submit this proposal to the City of Deer Park to provide professional engineering services for design, bidding, and construction phase of the Solids Handling Improvements project for city's surface water treatment plant.

Engineering
& Disaster
Management

Please find the attached Exhibit A - Detailed Scope of Services which provides a detailed description of engineering and professional services for the proposed improvements.

Based on the scope of services described in Exhibit A, we proposed to complete the work under a lump sum basis in the following amount:

Basic Services	\$457,362.00
Additional Services	\$38,028.00

In addition, please find the attached level of effort fee tabulation and the anticipated completion schedule.

We look forward to beginning work on this importance project and appreciate the opportunity to serve the City of Deer Park. Should you have any questions or require additional information, please feel free to contact me at (713) 208-9463 or Jeff Peters at (713) 385-5601.

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

Ardurra Group, LLC
2032 Buffalo Terrace
Houston, TX 77019
346.666.5130
Ardurragroup.com

Exhibit A / Detailed Scope of Engineering Services

SCOPE OF SERVICES FOR CITY OF DEER PARK WATER TREATMENT PLANT SOLIDS HANDLING IMPROVEMENTS

The City of Deer Park water treatment plant is currently using on-site sludge lagoons to process solids produced through water treatment processes. The sludge holding lagoons are near their capacity and cleaned out via sludge disposal contract with a vendor utilizing roll off containers. This solids disposal method has proven costly and therefore the City desires to improve the existing system to ease plant operations and provide a more economical solution. An evaluation was performed to assess several dewatering options including centrifuge, belt filter press, and roll-off container. As a result of the evaluation, it was recommended that the following improvements be implemented:

1. Construct a gravity sludge thickener and a thickened sludge pump station with two double disc pumps.
2. Construct a containment curb to house new roll-off containers, polymer feed skids, and all ancillary components to make a functional system.
3. Construct an intermediate transfer pump station with two submersible pumps to return decant from sludge handling processes to existing backwash holding basins.
4. Replacement of existing backwash return pumps with larger units.
5. Remove abandoned lime thickening mechanisms and convert to backwash holding basin or additional storage volume. Make structural modifications to interconnect the basins.
6. Construct associated structural, electrical, instrumentation control and SCADA, site civil, and yard piping work for proposed improvements.
7. Design provisions will be made for accommodating future centrifuge dewatering facility.

Ardurra Group (Engineer) will perform necessary tasks to complete design, bid phase and construction phase engineering services for proposed sludge handling improvements as defined in this scope document. The work associated with these engineering services is separated into the following tasks:

PART 1 - BASIC SERVICES

Task 1 General Project Management and Coordination
Task 2 Design Phase
Task 3 Bidding Phase
Task 4 Engineering Services during Construction Phase

PART 2 - ADDITIONAL SERVICES

Task 5 Site Topographic Survey
Task 6 Geotechnical Investigation

Exhibit A / Detailed Scope of Engineering Services

PART 1 - BASIC SERVICES

Task 1 General Project Management and Coordination

- 1.1 Conduct a project kick-off meeting with City staff. The project kick-off meeting will discuss project expectations, schedule, deliverables and confirm project goals.
- 1.2 Conduct monthly progress meetings during the project phase with City staff to review work completed to date, project schedule, and other issues. These meetings will be approximately 1-hour in duration. It is assumed a maximum of four (4) project progress/coordination meetings will be held.
- 1.3 Coordinate with project team to complete project tasks and meet project objectives.
- 1.4 Perform quality assurance/quality control procedures during the project phase. Those procedures will include a technical internal review of interim deliverables (60 percent and 90 percent) and Final Bid-Ready documents.
- 1.5 Coordinate client review meetings in accordance with City procedures. Reviews are anticipated at 60 percent and 90 percent completion of design. Engineer will review, consolidate and prepare written response to City's review committee.
- 1.6 Coordinate external regulatory review with the TCEQ. Meet requirements for notification and submission to the TCEQ for review/approval of documents and design.
- 1.7 Perform miscellaneous project management and coordination duties throughout the project, maintain and update project schedule, tracking budget, and prepare invoicing and progress reports.

Task 2 Design Phase

- 2.1 Design and Plans
 - 2.1.1 The Engineer will prepare complete design drawings for constructing the proposed improvement work. Plans will be developed at 60 percent, 90 percent, and Final Bid-Ready Documents.
 - 2.1.2 Instrumentation, control and SCADA upgrades necessary to accommodate the proposed improvements, and integration of new equipment control and PLCs with plant SCADA system.
 - 2.1.3 Site civil design including grading, paving, drainage, and a stormwater pollution prevention plan (SWPPP) to address erosion and sediment control strategies during construction, prepare TCEQ Notice of Intent (NOI) forms, and develop construction costs for SWPPP measures.

Exhibit A / Detailed Scope of Engineering Services

- 2.1.4 Structural design for new thickener and thickened sludge pump stations, roll-off containment, intermediate transfer pump station, and structural modifications to existing backwash basins and abandoned lime thickeners etc.
- 2.1.5 Electrical upgrades to handle additional electrical loads and accommodate the proposed improvements.
- 2.2 Specifications: The Engineer will prepare complete contract documents, bid form, and technical specifications for constructing the proposed improvement work. Specifications will be developed at 60 percent, 90 percent, and Final Bid-Ready Documents. Engineer will use a combination of City and Ardurra's standard specifications modified as necessary to accommodate local conditions. Specification format will be Ardurra standard format.
- 2.3 Cost Estimate. Develop a quantity take-off and prepare an opinion of probable construction cost (OPCC) and include it with each submittal.
- 2.4 Engineer will coordinate with City building permit department to obtain review and approval for the proposed improvements.

Deliverables:

- Three (3) 11"x17" (half-size) copies of the submittal drawings, Technical Specifications, and OPCC for each deliverable
- One electronic copy containing the Plans, Technical Specifications and OPCC in PDF format for each design milestone

Task 3 Bidding Phase

Upon completion of the Contract Documents, Engineer will assist the City in the bidding phase and provide the following services:

- 3.1 Attend the pre-bid meeting and site walkthrough.
- 3.2 Respond to questions during bidding, prepare and issue addenda if necessary.
- 3.3 Prepare bid tabulation, evaluate bids, and submit a letter of recommendation of award.
- 3.4 Prepare conformed documents.

Deliverables:

- Addenda as Required to Response to Bidder's Questions;
- Bid Tab;
- Engineer Letter of Recommendation of Bid Award;
- Conformed Documents including
 - a) Three (3) 11"x17" (half-size) sets of plans and specifications for use by the city
 - b) Three full size sets of plans and specifications for use by the Contractor

Exhibit A / Detailed Scope of Engineering Services

- c) One electronic copy of plans and specifications

Task 4 Construction Phase

4.1 General

- 4.1.1 Attend pre-construction meeting to provide information & answer questions.
- 4.1.2 Attend twelve (12) construction monthly progress meetings and site visits. It is assumed that construction duration will include ten (10) months from start to substantial completion, and two more months to final acceptance. Per discussion with the City, construction management and field inspection will be provided by the City.
- 4.1.3 Additional site visits up to four (4) to assist city with addressing field construction issues.
- 4.1.4 Perform project management and contract administration duties similar to those in the previous phases, throughout construction.

4.2 Substantial Completion and Final Acceptance

- 4.2.1 Review progress of work for Substantial Completion (in the form of a Substantial Completion walkthrough inspection); with production of punch list; substantiation that items are completed; and issue Certificate of Substantial Completion with concurrence of the City.
- 4.2.2 Conduct a final inspection to substantiate that the completed work of Contractor is acceptable to certify work completion and issue Certificate of Final Acceptance with concurrence of the City.

4.3 Submittal, RFI, CO Review

Engineer will review and comment on Contractor's submittals, RFIs, RCOs including coordination with the City on Change Directives and Change Orders.

It is assumed shop drawings and other submittals will be reviewed no more than twice and Preliminary and Final O&M Manual will be reviewed once. It is assumed 25% resubmittals. Engineer will proactively work with the City and Contractor to address technical deficiencies of submittals in order to minimize multiple reviews. This would be accomplished by way of notification of serious noted deficiencies upon initial receipt of a submittal where the defective submittal would be promptly returned.

Engineer will provide interpretive guidance for Contractor and City in resolution of problems.

4.4 Record Drawings

Engineer will coordinate with general contractor and sub-contractors to obtain complete record of As-Built "redlines".

Exhibit A / Detailed Scope of Engineering Services

Engineer will prepare Record Drawings from Contractor's As-Built "redlines" in electronic format (CD) & hard copy format.

Deliverables:

- One full-size hard copy and one electronic copy of Record Drawings.

PART 2 - ADDITIONAL SERVICES

Task 5 Site Topographic Survey

Conduct a site topographic survey of project improvements area to locate existing utilities, structure elevations, and locate geotechnical borings on the topographic survey maps.

Task 6 Geotechnical Investigation

Perform Geotechnical investigation and develop geotechnical report for structural foundation and design recommendations. The geotechnical investigation will include two borings in the proposed Gravity Sludge Thickener (50 ft deep) and one in the roll-off container containment area (25 ft deep).

Exhibit A / Detailed Scope of Engineering Services

TABLE A-1
TO AGREEMENT BETWEEN ENGINEER AND OWNER FOR PROFESSIONAL SERVICES
FOR
CITY OF DEER PARK
WATER TREATMENT PLANT SOLIDS HANDLING IMPROVEMENTS

BASIC AND ADDITIONAL SERVICES FEES

Task No.	Task Description	Amount
PART 1 Basic Services		
TASK 1	Project Management and Coordination (LS)	\$39,560.00
TASK 2	Design Phase (LS)	\$292,571.00
TASK 3	Bid Phase (LS)	\$15,520.00
TASK 4	Engineering Services During Construction (LS)	\$109,711.00
Subtotal Basic Services		\$457,362.00
PART 2 Additional Services		
TASK 5	Topographic Survey (LS)	\$23,421.00
TASK 6	Geotechnical Investigation (LS)	\$14,607.00
Subtotal Additional Services		\$38,028.00
Total Contract Amount		\$495,390.00

LS – Lump Sum

Exhibit A-1 Level of Effort Fee Estimate

Project: City of Deer Park WTP Solids Handling Improvements
Consultant: Ardurra Group
Date: 11/21/2018

			Ardurra Estimated Man-hours																	Subconsultants						
			Project Director	QA/QC	Sr. PM	Sr. Proj. Eng. (Process Mech)	Proj Eng.5/6 (Process Mech)	Proj Eng. 3/4 (Process Mech)	Sr. Proj. Eng. (Instru. & Control)	Proj Eng. Instru. & Control)	Cost Estimator	CAD Designer	Word Processor	Contract Administrator	Admin					Ardurra - Total Hours (Hrs)	Ardurra Subtotal Labor Cost (\$)	ODCs (\$)	Ardurra Subtotal (\$)			
Position	Rate		\$ 275.00	\$ 275.00	\$ 240.00	\$ 230.00	\$ 180.00	\$ 160.00	\$ 230.00	\$ 160.00	\$ 150.00	\$ 120.00	\$ 120.00	\$ 90.00												
Task	Subtask	Task Description																								
PART 1 - BASIC SERVICES																										
Task 1. GENERAL PROJECT MANAGEMENT AND COORDINATION																										
	1.1	Project Kick-off Meeting, Agenda and Meeting Minutes	2		4			4				2			12	\$ 2,390.00		\$ 2,390.00						12	\$ -	\$ 2,390.00
	1.2	Project Progress Meetings, Agenda and Meeting Minutes (up to 4)	4		8			12				8		2	34	\$ 6,080.00		\$ 6,080.00						34	\$ -	\$ 6,080.00
	1.3	Internal Project Team Coordination and Meetings			12			18						6	36	\$ 6,300.00		\$ 6,300.00						36	\$ -	\$ 6,300.00
	1.4	QA/QC and Technical Review (60%, 90%, & Final Bid-Ready)	8	24											32	\$ 8,800.00		\$ 8,800.00						32	\$ -	\$ 8,800.00
	1.5	City Review (60%, 90%) and Submittal Comments Incorporation, Comments-Response Log Preparation	6		8			16				6		4	40	\$ 7,210.00		\$ 7,210.00						40	\$ -	\$ 7,210.00
	1.6	TCEQ Regulatory Coordination and Document Submission			8			8				4			20	\$ 3,680.00		\$ 3,680.00						20	\$ -	\$ 3,680.00
	1.7	Project Schedule, Filing, Invoicing, Progress Report & Contract Administration (Final Design Phase)			4			8					8		20	\$ 3,200.00		\$ 3,200.00						20	\$ -	\$ 3,200.00
		Project Task Expenses (5% on Subtotal Hrs Cost)															\$ 1,900.00	\$ 1,900.00							\$ -	\$ 1,900.00
Task 1. GENERAL PROJECT MANAGEMENT AND COORDINATION			20	24	44	0	0	66	0	0	0	20	8	12	194	\$ 37,660.00	\$ 1,900.00	\$ 39,560.00	\$ -		\$ -	\$ -		194	\$ -	\$ 39,560.00
TASK 2. DESIGN PHASE																										
	2.1	Design and Plans																								
	2.1.1	Process Mechanical Design																								
1	G-1	Cover Sheet			0.5			1			2				3.5	\$ 580.00		\$ 580.00						3.5	\$ -	\$ 580.00
2	G-2	Drawing Index			0.5			1			4				5.5	\$ 880.00		\$ 880.00						5.5	\$ -	\$ 880.00
3	G-3	General Legend and Abbreviations I			0.5			1			1				2.5	\$ 430.00		\$ 430.00						2.5	\$ -	\$ 430.00
4	G-4	General Legend and Abbreviations II			0.5			1			1				2.5	\$ 430.00		\$ 430.00						2.5	\$ -	\$ 430.00
5	P-1	Overall Process Flow Diagram			1			4			4				9	\$ 1,480.00		\$ 1,480.00						9	\$ -	\$ 1,480.00
6	P-2	Sludge Processing Hydraulic Profile			1			8			4				13	\$ 2,120.00		\$ 2,120.00						13	\$ -	\$ 2,120.00
7	C-1	Existing Site Plan			1			2			4				7	\$ 1,160.00		\$ 1,160.00						7	\$ -	\$ 1,160.00
8	C-2	Proposed Improvement and Dimension Control Plan			1			4			8				13	\$ 2,080.00		\$ 2,080.00						13	\$ -	\$ 2,080.00
9	C-3	Overall Yard Piping Plan			1			6			12				19	\$ 3,000.00		\$ 3,000.00						19	\$ -	\$ 3,000.00
10	C-4	Yard Piping Plan I			1			6			12				19	\$ 3,000.00		\$ 3,000.00						19	\$ -	\$ 3,000.00
11	C-5	Yard Piping Plan II			1			6			12				19	\$ 3,000.00		\$ 3,000.00						19	\$ -	\$ 3,000.00
12	C-6	Yard Piping Plan III			1			6			12				19	\$ 3,000.00		\$ 3,000.00						19	\$ -	\$ 3,000.00
13	C-7	Yard Piping Sections and Details			1			6			8				15	\$ 2,400.00		\$ 2,400.00						15	\$ -	\$ 2,400.00
14	D-1	Backwash Holding Basin Return Pump Demolition Plan and Sections			1			8			6				15	\$ 2,420.00		\$ 2,420.00						15	\$ -	\$ 2,420.00
15	D-2	Lime Thickener Demolition Plan and Sections			1			8			6				15	\$ 2,420.00		\$ 2,420.00						15	\$ -	\$ 2,420.00

Exhibit A-1 Level of Effort Fee Estimate

Project: City of Deer Park WTP Solids Handling Improvements
Consultant: Ardurra Group
Date: 11/21/2018

			Ardurra Estimated Man-hours																Subconsultants							
Position Rate			Project Director	QA/QC	Sr. PM	Sr. Proj. Eng. (Process Mech)	Proj Eng.5/6 (Process Mech)	Proj Eng. 3/4 (Process Mech)	Sr. Proj. Eng. (Instru. & Control)	Proj Eng. Instru. & Control)	Cost Estimator	CAD Designer	Word Processor	Contract Administrator	Admin	Ardurra - Total Hours (Hrs)	Ardurra Subtotal Labor Cost (\$)	ODCs (\$)	Ardurra Subtotal (\$)	Briones (Survey) (\$)	Wekiva (Structural/ Arch) (\$)	Kalluri (Electrical /HVAC) (\$)	Geotest (Geotech) (\$)	Total Hours (Hrs)	Ardurra Sub Mark-up (10%) (\$)	Total Cost (Ardurra + Subs) (\$)
Task	Subtask	Task Description	\$ 275.00	\$ 275.00	\$ 240.00	\$ 230.00	\$ 180.00	\$ 160.00	\$ 230.00	\$ 160.00	\$ 160.00	\$ 150.00	\$ 120.00	\$ 120.00	\$ 90.00											
16	M-1	Gravity Sludge Thickener Mechanical Plan			1			12				16				29	\$ 4,560.00		\$ 4,560.00					29	\$ -	\$ 4,560.00
17	M-2	Gravity Sludge Thickener Mechanical Section			1			8				12				21	\$ 3,320.00		\$ 3,320.00					21	\$ -	\$ 3,320.00
18	M-3	Thickened Sludge Pump Station Plan and Sections			1			8				12				21	\$ 3,320.00		\$ 3,320.00					21	\$ -	\$ 3,320.00
19	M-4	Roll-off Container Plan			1			12				12				25	\$ 3,960.00		\$ 3,960.00					25	\$ -	\$ 3,960.00
20	M-5	Roll-off Container Section and Details			1			8				16				25	\$ 3,920.00		\$ 3,920.00					25	\$ -	\$ 3,920.00
21	M-6	Roll-off Polymer Feed System Plan and Sections			1			8				12				21	\$ 3,320.00		\$ 3,320.00					21	\$ -	\$ 3,320.00
22	M-7	Intermediate Transfer Pump Station Plan and Sections			1			8				12				21	\$ 3,320.00		\$ 3,320.00					21	\$ -	\$ 3,320.00
23	M-8	Backwash Holding Basin Improvement Plan			1			8				8				17	\$ 2,720.00		\$ 2,720.00					17	\$ -	\$ 2,720.00
24	M-9	Backwash Holding Basin Improvement Sections			1			8				6				15	\$ 2,420.00		\$ 2,420.00					15	\$ -	\$ 2,420.00
25	M-10	Lime Thickener Modification Plan			1			8				8				17	\$ 2,720.00		\$ 2,720.00					17	\$ -	\$ 2,720.00
26	M-11	Lime Thickener Modifications Sections			1			8				6				15	\$ 2,420.00		\$ 2,420.00					15	\$ -	\$ 2,420.00
27	M-12	Misc. Mechanical Improvements Plan			1			8				6				15	\$ 2,420.00		\$ 2,420.00					15	\$ -	\$ 2,420.00
28	M-13	Misc. Mechanical Improvements Section and Details			1			8				12				21	\$ 3,320.00		\$ 3,320.00					21	\$ -	\$ 3,320.00
29	M-14	Mechanical Standard details I			0.5			4				4				8.5	\$ 1,360.00		\$ 1,360.00					8.5	\$ -	\$ 1,360.00
30	M-15	Mechanical Standard details II			0.5			4				4				8.5	\$ 1,360.00		\$ 1,360.00					8.5	\$ -	\$ 1,360.00
	2.1.2	Instrumentation, Control, and SCADA Design																								
31	I-1	Instrumentation Legend							4			8				12	\$ 1,840.00		\$ 1,840.00					12	\$ -	\$ 1,840.00
32	I-2	SCADA System Architecture							16			8				24	\$ 3,760.00		\$ 3,760.00					24	\$ -	\$ 3,760.00
33	I-3	Gravity Sludge Thickener P&ID							8			8				16	\$ 2,480.00		\$ 2,480.00					16	\$ -	\$ 2,480.00
34	I-4	Thickener Sludge Pump Station P&ID							12			8				20	\$ 3,120.00		\$ 3,120.00					20	\$ -	\$ 3,120.00
35	I-5	Roll-off Container & Polymer Feed P&ID							12			8				20	\$ 3,120.00		\$ 3,120.00					20	\$ -	\$ 3,120.00
36	I-6	Intermediate Transfer Pump Station P&ID							12			8				20	\$ 3,120.00		\$ 3,120.00					20	\$ -	\$ 3,120.00
37	I-7	Backwash Return Pump P&ID							8			8				16	\$ 2,480.00		\$ 2,480.00					16	\$ -	\$ 2,480.00
38	I-8	Instrumentation Details							4			8				12	\$ 1,840.00		\$ 1,840.00					12	\$ -	\$ 1,840.00
	2.1.3	Site Civil Subdiscipline Design (grading, paving, drainage etc.)														0	\$ -		\$ -	\$ 33,864.50				0	\$ 3,386.45	\$ 37,250.95
	2.1.4	Structural Subdiscipline Design														0	\$ -		\$ -		\$ 20,400.00			0	\$ 2,040.00	\$ 22,440.00
	2.1.5	Electrical Subdiscipline Design														0	\$ -		\$ -			\$ 73,127		0	\$ 7,312.73	\$ 80,439.98
	2.2	Contract Documents, Bid Form, and Technical Specifications (full specs for 60%, 90%, and Final Bid-ready)	12		32			60		32			40		8	184	\$ 31,220.00		\$ 31,220.00					184	\$ -	\$ 31,220.00
	2.3	Cost Estimate Development & Review (60%, 90%, & Final bid-ready)	8		8			40		16						72	\$ 13,080.00		\$ 13,080.00					72	\$ -	\$ 13,080.00
	2.4	City Building Permit Review & Approval			4			24							8	36	\$ 5,520.00		\$ 5,520.00					36	\$ -	\$ 5,520.00
		Project Task Expenses (5% on Subtotal Hrs Cost)																\$ 8,000.00	\$ 8,000.00						\$ -	\$ 8,000.00
TASK 2. DESIGN PHASE			20	0	71	0	0	312	0	124	0	306	40	0	16	889	\$ 144,440.00	\$ 8,000.00	\$ 152,440.00	\$ 33,864.50	\$ 20,400.00	\$ 73,127.25	\$ -	889	\$ 12,739.18	\$ 292,571.00

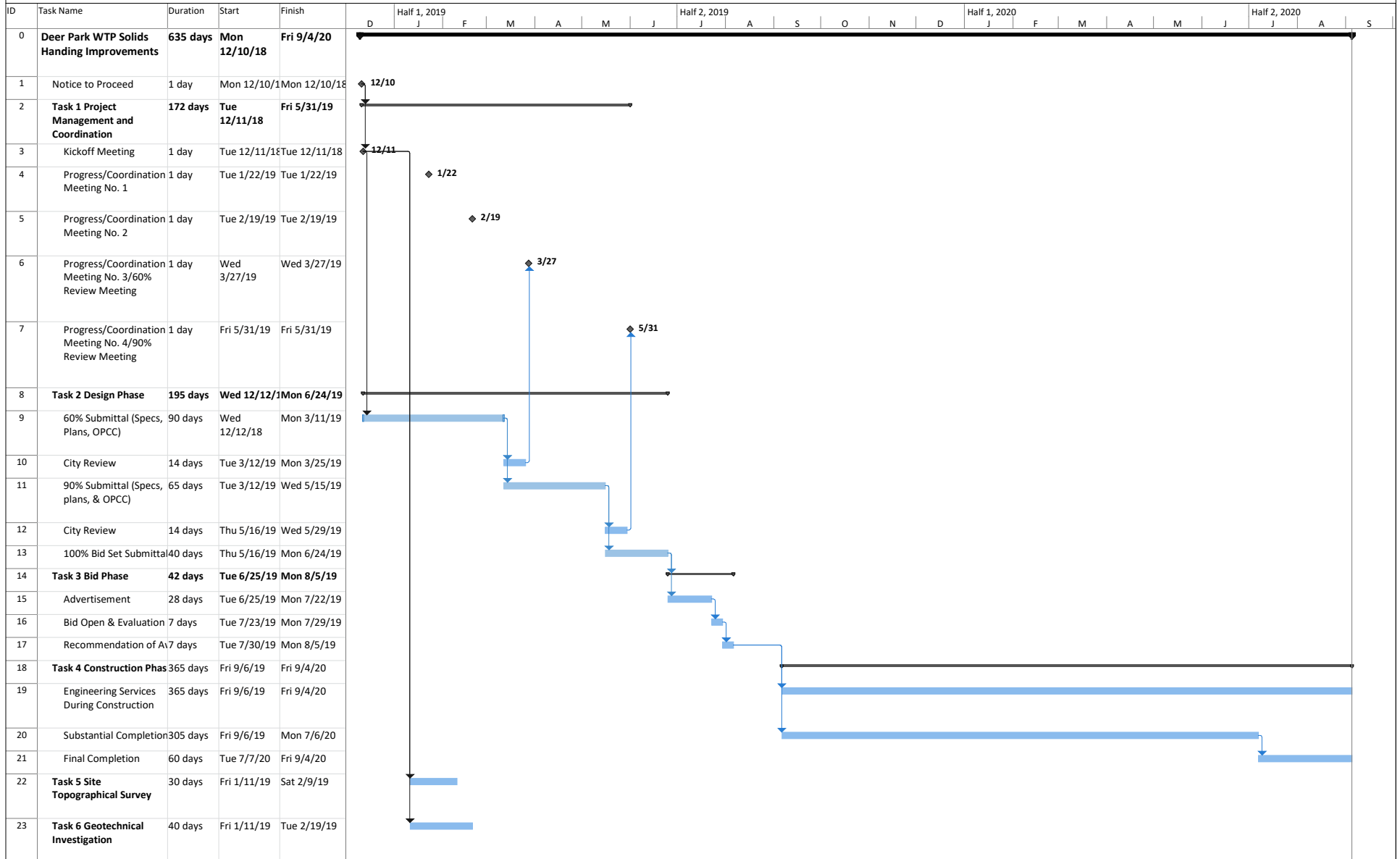
Exhibit A-1 Level of Effort Fee Estimate

Project: City of Deer Park WTP Solids Handling Improvements
Consultant: Ardurra Group
Date: 11/21/2018

			Ardurra Estimated Man-hours												Subconsultants												
Position			Project Director	QA/QC	Sr. PM	Sr. Proj. Eng. (Process Mech)	Proj Eng.5/6 (Process Mech)	Proj Eng. 3/4 (Process Mech)	Sr. Proj. Eng. (Instru. & Control)	Proj Eng. Instru. & Control)	Cost Estimator	CAD Designer	Word Processor	Contract Administrator	Admin	Ardurra - Total Hours (Hrs)	Ardurra Subtotal Labor Cost (\$)	ODCs (\$)	Ardurra Subtotal (\$)	Briones (Survey) (\$)	Wekiva (Structural/ Arch) (\$)	Kalluri (Electrical /HVAC) (\$)	Geotest (Geotech) (\$)	Total Hours (Hrs)	Ardurra Sub Mark-up (10%) (\$)	Total Cost (Ardurra + Subs) (\$)	
Task	Subtask	Task Description	Rate	\$ 275.00	\$ 275.00	\$ 240.00	\$ 230.00	\$ 180.00	\$ 160.00	\$ 230.00	\$ 160.00	\$ 150.00	\$ 120.00	\$ 120.00	\$ 90.00												
TASK 3. BIDDING PHASE																											
	3.1	Attend Pre-bid Meeting and Site Walkthrough			4											4	\$ 960.00		\$ 960.00					4	\$ -	\$ 960.00	
	3.2	Respond to Bidder Questions, Prepare & Issue Addenda			4			16		4			8			32	\$ 5,120.00		\$ 5,120.00	\$ 540.00	\$ 550.00	\$ 1,764.00		32	\$ 285.40	\$ 8,259.40	
	3.3	Bid Evaluation, Bid Tabulation, & Recommendation of Award			2			4								6	\$ 1,120.00		\$ 1,120.00					6	\$ -	\$ 1,120.00	
	3.4	Prepare Conformed Documents						4				16	8		2	30	\$ 4,180.00		\$ 4,180.00					30	\$ -	\$ 4,180.00	
		Project Task Expenses (5% on Subtotal Hrs Cost)																\$ 1,000.00	\$ 1,000.00						\$ -	\$ 1,000.00	
TASK 3. BIDDING PHASE			0	0	10	0	0	24	0	4	0	16	16	0	2	72	\$ 11,380.00	\$ 1,000.00	\$ 12,380.00	\$ 540.00	\$ 550.00	\$ 1,764.00	\$ -	72	\$ 285.40	\$ 15,520.00	
TASK 4. ENGINEERING SERVICES DURING CONSTRUCTION PHASE																											
	4.1	General																									
	4.1.1	Attend pre-construction meeting			4											4	\$ 960.00		\$ 960.00					4	\$ -	\$ 960.00	
	4.1.2	Attend construction progress meetings/site visits (up to 12)			24											24	\$ 5,760.00		\$ 5,760.00					24	\$ -	\$ 5,760.00	
	4.1.3	Additional Site Visits (up to 4)			8											8	\$ 1,920.00		\$ 1,920.00					8	\$ -	\$ 1,920.00	
	4.1.4	Project management & coordination, invoicing, progress report, subconsultant management, and contract management	6		12			12						12	6	48	\$ 8,430.00		\$ 8,430.00					48	\$ -	\$ 8,430.00	
	4.2	Substantial Completion and Final Acceptance																						0	\$ -	\$ -	
	4.2.1	Substantial completion walkthrough and punch list			8			8					4		4	24	\$ 4,040.00		\$ 4,040.00					24	\$ -	\$ 4,040.00	
	4.2.2	Final completion inspection and final acceptance			4			6					2			12	\$ 2,160.00		\$ 2,160.00					12	\$ -	\$ 2,160.00	
	4.3	Submittal, RFI, CO Review																						0	\$ -	\$ -	
	4.3.1	Submittals, estimated 25% resubmittals ¹			16			80		30			24			150	\$ 24,320.00		\$ 24,320.00	\$ 12,048.00	\$ 3,400.00	\$ 22,743.00		150	\$ 3,819.10	\$ 66,330.10	
	4.3.2	RFI Review and Response			6			10		8			8			32	\$ 5,280.00		\$ 5,280.00					32	\$ -	\$ 5,280.00	
	4.3.3	Change Order review and response	2		4					4		8	4			22	\$ 3,830.00		\$ 3,830.00					22	\$ -	\$ 3,830.00	
	4.4	Review contractor as-built redlines and Prepare Record Drawings			2			16				24			4	46	\$ 7,000.00		\$ 7,000.00					46	\$ -	\$ 7,000.00	
		Project Task Expenses (5% on Subtotal Hrs Cost)																\$ 4,000.00	\$ 4,000.00							\$ 4,000.00	
TASK 4. ENGINEERING SERVICES DURING CONSTRUCTION PHASE			8	0	88	0	0	132	0	42	0	32	42	12	14	370	\$ 63,700.00	\$ 4,000.00	\$ 67,700.00	\$ 12,048.00	\$ 3,400.00	\$ 22,743.00	\$ -	370	\$ 3,819.10	\$ 109,711.00	
TOTAL BASIC SERVICES			48	24	213	0	0	534	0	170	0	354	118	20	44	1525	\$ 257,180.00	\$ 14,900.00	\$ 272,080.00	\$ 46,452.50	\$ 24,350.00	\$ 97,634.25	\$ -	1525	\$ 16,843.68	\$ 457,362.00	
PART 2 - ADDITIONAL SERVICES																											
TASK 5		Site Topographic Survey														0	\$ -	\$ -	\$ -	\$ 21,291.00				0	\$ 2,130.00	\$ 23,421.00	
TASK 6		Geotechnical Investigation														0	\$ -	\$ -	\$ -				\$ 13,279.00	0	\$ 1,328.00	\$ 14,607.00	
TOTAL ADDITIONAL SERVICES			0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$ -	\$ -	\$ -	\$ 21,291.00	\$ -	\$ -	\$ 13,279.00	0	\$ 3,458.00	\$ 38,028.00	
TOTAL BASIC + ADDITIONAL			48	24	213	0	0	534	0	170	0	354	118	20	44	1,525	\$ 257,180.00	\$ 14,900.00	\$ 272,080.00	\$ 67,743.50	\$ 24,350.00	\$ 97,634.25	\$ 13,279.00	1,525	\$ 20,301.68	\$ 495,390.00	

Notes:
1. Subdiscipline LOE listed herein includes engineering services during Construction Phase.

City of Deer Park Water Treatment Plant Solids Handling Improvements Project Schedule v1.0 - 11/20/2018



Project: Deer Park WTP Solids Handling Improvements Date: Tue 11/20/18	Task		Project Summary		Inactive Milestone		Manual Summary Rollup		Deadline	
	Split		External Tasks		Inactive Summary		Manual Summary		Progress	
	Milestone		External Milestone		Manual Task		Start-only		Manual Progress	
	Summary		Inactive Task		Duration-only		Finish-only			