

**CCNA2018 WORK ORDER 02**

**West Regional WWTF Reclaimed Water Storage**

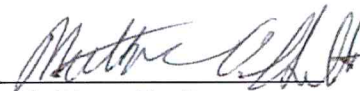
This Work Order Number 02 is entered into as of this 26th day of March, 2019, pursuant to that certain Continuing Consulting Engineering Services Agreement for Professional Services entered into as of this 17<sup>th</sup> day of April, 2018 (collectively referred to as the "Agreement"), by and between INDIAN RIVER COUNTY, a political subdivision of the State of Florida ("COUNTY") and Tetra Tech, Inc. ("Consultant").

The COUNTY has selected the Consultant to perform the professional services set forth on Exhibit A (Scope of Work), attached to this Work Order and made part hereof by this reference. The professional services will be performed by the Consultant for the fee schedule set forth in Exhibit B (Fee Schedule), attached to this Work Order and made a part hereof by this reference. The Consultant will perform the professional services within the timeframe more particularly set forth in Exhibit C (Time Schedule), attached to this Work Order and made a part hereof by this reference all in accordance with the terms and provisions set forth in the Agreement. Pursuant to paragraph 1.4 of the Agreement, nothing contained in any Work Order shall conflict with the terms of the Agreement and the terms of the Agreement shall be deemed to be incorporated in each individual Work Order as if fully set forth herein.

IN WITNESS WHEREOF, the parties hereto have executed this Work Order as of the date first written above.

**CONSULTANT:**

**BOARD OF COUNTY COMMISSIONERS  
OF INDIAN RIVER COUNTY**

By:  By: \_\_\_\_\_  
Matthew Shelton, Chairman

Print Name: \_\_\_\_\_

Title: Project Manager BCC Approved Date: \_\_\_\_\_

**Attest: Jeffrey R. Smith, Clerk of Court and Comptroller**

By: \_\_\_\_\_  
Deputy Clerk

Approved: \_\_\_\_\_  
Jason E. Brown, County Administrator

Approved as to form and legal sufficiency: \_\_\_\_\_  
Dylan T. Reingold, County Attorney



March 14, 2019

Arjuna Weragoda, P.E.  
Indian River County Department of Utility Services  
1801 27th Street,  
Vero Beach 32960-3388  
Email: [aweragoda@ircgov.com](mailto:aweragoda@ircgov.com)

**Subject: Proposal to Indian River County for Due Diligence and Project Review  
West Regional WWTF Reclaimed Water Storage**

Dear Mr. Weragoda:

Tetra Tech, Inc. (Tetra Tech) is pleased to provide Indian River County with this Scope of Work for services to provide due diligence services to assess a potential property purchase and construction of a reclaimed water storage area on a parcel located immediately to the south of the West Regional Waste Water Treatment Facility (WWTF).

#### **BACKGROUND**

Indian River County needs additional storage of reuse water from the West Regional WWTF during the rainy season when the necessity for reuse water is limited. The West Regional WWTF is sized for a treatment capacity of 6 million gallons per day (MGD). The plant is currently operating at approximately 2 MGD but can only discharge approximately 0.4 MGD or exceed the load allocations into the relief canal. The remainder of the treated water is sent back to the community for reuse. The goal of the proposed reclaimed water storage will be to provide sufficient capacity to store water during the wet season and supply reuse water in the dry season and achieve a zero discharge to the relief canal.

The county has identified an approximately 250-acre parcel immediately to the south of the West Regional WWTF as a potential site for the reclaimed water storage. It is zoned RS-3 and is a citrus grove. The County contacted Tetra Tech to complete due diligence required to assess this potential project, zoning and permitting issues associated with project, geotechnical conditions, limitations from Federal Aviation Administration (FAA) or other agencies, and other business and environmental risks associated with the purchase of the proposed parcel.

Tetra Tech, Inc.

11 Riverside Drive, Suite 204, Cocoa, FL 32922

Tel 321.636.6470 Fax 321.636.6473 [www.tetratech.com](http://www.tetratech.com)

## **SCOPE OF WORK**

### **Task 1 – General Property, Land Use, Permitting, and Zoning Review - \$6,046**

An overall assessment of site suitability based on current State of Florida waste water treatment regulations and other potential limitations will be completed. We will consider the following with our due diligence:

Existing permits or other encumbrances based on a review of Florida Department of Environmental Protection (DEP) Oculus and St. Johns River Water Management District (SJRWMD) records;

Evaluation of surrounding land uses and restrictions provided by those uses (specifically the air strip to the south);

Hydrologic survey;

Permitted potable wells within a one-mile radius;

Proximity to on and off-site water bodies, including wetlands;

Proximity to airports;

Proximity to power lines;

Setbacks;

County zoning and determination if rezoning is required;

Determination if mining permit is required;

Off-site improvement requirements;

Summary of applicable permits, permit fees, and potential limitations associated with each permit as well as anticipated timeframe needed to obtain each permit;

We assume that traffic impacts and availability of utilities are not an issue for the site.

### **Task 2 – Phase I Environmental Site Assessment (ESA) - \$4,031**

The Phase I ESA identifies the potential for existing environmental contamination from a review of present and historical land uses. The Phase I ESA is a due diligence document to ensure that those undertaking or investing in a project are fully aware of environmental contamination issues as well as the associated liability.

Tetra Tech will complete a historical and regulatory records review of the Site and adjacent properties. To facilitate the regulatory records review, a database review report will be procured from Environmental Data Resources, Inc. (EDR). Historical records to be reviewed include, but are not limited to, Sanborn Maps, city directories, Flood Insurance Rate Maps, water well records, and U.S. Geological Survey 7.5-minute topographic quads.

Tetra Tech will complete the following ESA Field activities at the subject site:

- Reconnaissance of the Site and adjoining properties and selected properties identified during the database review, where appropriate per ASTM E1527-13;
- Site interviews of key personnel;

- Reviews of federal, state, local and tribal (if applicable) records as defined in ASTM E1527-13;
- Incorporate All Appropriate Inquiries components which include a review of market value prices for the property adjacent properties and an environmental liens search as defined by E1527-13;
- Identify areas on site that will require analytical sampling assessment through records search and site visit.

Based on the findings of the historical records review and site reconnaissance, Tetra Tech will prepare an ASTM Phase I ESA Report for the Site. The report will be prepared in accordance to ASTM E1527-13.

### **Task 3 – Ecological Review (Limited) - \$3,562**

For this task we propose a field and desktop due diligence effort to make an initial assessment on the potential development constraints including wetlands, threatened & endangered species, and potential mitigation options for impacts to natural resources. The following scope will detail the components included with each of the three fatal flaw review topics provided, including Wetlands Habitat Classification and Quality, Threatened and Endangered Species habitat evaluation, and Federal Emergency Management Agency's flood zone information.

The desktop investigation will include National Wetlands Inventory (NWI) wetlands, U.S. Department of Agriculture-Natural Resources Conservation Service (USDA-NRCS) soils, Florida Land Use, Cover, and Forms Classification System (FLUCFCS) mapping of on-site land uses, Florida Fish & Wildlife Conservation Commission (FFWCC) listed species habitats and associated data, U.S. Fish & Wildlife Service (USFWS) Consultation Areas, and any other applicable publicly available resources with potential to effect. Additionally, Tetra Tech will provide the development constraints and potential permitting related to threatened and endangered species for which the Project site may provide suitable habitat.

### **Task 4 – Geotechnical Analysis - \$28,028**

A geotechnical analysis is required to determine suitability of the 250-acre property to support the reclaimed water storage. For this evaluation, borings should be focused on the proposed berm area. Since the berm locations have not been designated, we recommend 4 borings along a north-south transect, and 4 borings along an east-west transect (8 borings total) be completed to a depth of approximately 60 feet or to the bedrock, using standard penetration test. Tetra Tech's geologist will provide drilling oversight and will prepare detailed boring logs of each location. Percolation tests will also be completed on site in six locations. Additional borings and testing should be completed once the conceptual design is better defined.

Three Shelby Tube samples will be collected, in addition to approximately 10 bagged samples for geotechnical laboratory testing. Testing will include sieve/gradation, atterberg, hydraulic conductivity, and soil strength. Specific testing will be determined based on samples recovered. Data obtained from the laboratory testing will be used to prepare a preliminary determination of soil bearing capacity and settlement (using an assumed berm height with 4:1 slopes).

Since the site is an active citrus grove, it is assumed that soil samples will be required to assess the potential for contamination from past site activities. Based on this assumption, surface soil

samples will be collected from four areas and analyzed for: pesticides, herbicides, and arsenic. If maintenance and/or fuel storage areas or other hazardous materials use or storage are identified, additional sampling and analysis may be required.

**Task 5 – Stormwater Review - \$8,133**

A desktop review of the drainage and flood conditions of the site will be completed to coordinate the potential constructability of the potential reclaimed water storage area. We note that the establishment of a flood elevation, if not available from FEMA, is beyond the scope of this project. We will estimate the floodplain compensation that would be required if the land were to be developed.

The following documents will be reviewed as part of this evaluation:

ERPs for the property comprising the 250-acre parcel, if available;

Topographic survey for the property comprising the 250-acre parcel, if available;

Conservations easements for the property comprising the 250-acre parcel, if available;

Readily available USDA soil information;

Readily available USGS topographic information to determine overall drainage patterns;

Local stormwater regulations; and

Results of geotechnical analysis.

**Task 6 – Summary Report - \$5,680**

A summary report of all findings will be prepared for this due diligence effort, and will include:

General Property, Land Use, Permitting, and Zoning Review;

Results of the Phase I ESA (provided as a separate Appendix);

Results of the Geotechnical Analysis;

Results of the Ecological Review:

- Identification of threatened and endangered species which have potential to inhabit the site and permitting action necessary to mitigate in the event of development of the site;
- Results of the desktop mapping analysis; and
- Other potential development constraints raised during the investigation including permitting issues.

General summary and conclusion of design and permitting limitations anticipated for the site.

Tetra Tech will provide general order of magnitude costs for the design, permitting and construction of the proposed reclaimed water storage facility. The estimates will be made without detailed engineering data and subsequently will have a wide accuracy range. Please note that this level of cost estimating is intended for project screening, concept evaluation and alternative scheme analysis.

**Task 7 (future scope) – Conceptual Design**

Based on the assessment completed above, an assumed area available for development will be established, maximum berm height will also be established, resulting in an assumed maximum reclaimed water storage capacity. Design criteria will be provided by IRC to complete the conceptual design for the reclaimed water storage. Additional scope will be prepared for this task upon completion of the above summary. The conceptual design will also include a probable cost estimate for the design, permitting and construction of the conceptual water storage facility.

**PROJECT SCHEDULE**

The approximate duration noted for each task is based on our current understanding and best estimates of time required to perform the basic services and may be subject to change upon agreement between Indian River County and Tetra Tech.

<b>Task</b>	<b>Timeline</b>
Notice to Proceed (NTP)	March 26, 2019
Draft Summary Report and Skype Meeting with the County	June 4, 2019
County Comments on Draft Summary Report to Tetra Tech	June 8, 2019
Final Summary Report to the County	June 12, 2019

**ASSUMPTIONS**

Tetra Tech’s scope of services and project costs were developed with the following assumptions:

- Tetra Tech will review available data provided by Indian River County.
- Surveying services are not included.
- Ecological and geotechnical data for this stage of the project is incomplete for the final design and permitting. Additional ecological and geotechnical investigation will be required to complete the final design.
- A limited Phase II ESA scope of work (soil sampling and analysis) is provided based on known site conditions to reduce mobilization costs and project timeline; however, additional Phase II ESA activities may be required and proposed based on Phase I ESA findings.
- Tetra Tech assumes IRC will provide reasonable access to the site for drilling activities and Phase I ESA site walk.
- Design criteria will be provided by IRC to complete the conceptual design for the reclaimed water storage facility. Unless otherwise indicated, the proposed reclaimed water storage facility will consist of a lined, ring-dike system.
- IRC will provide sufficient information in order to size the proposed reclaimed water storage facility.

- It is assumed that a detailed design analysis and subsequent value engineering will occur during the design phase and a more detailed cost estimate will be completed at that time.

## PROJECT COST

The estimated costs are based on our current understanding of the project requirements and best estimates of level of effort required to perform the basic services and may be subject to change upon agreement between Indian River County and Tetra Tech. The estimated project costs are shown in the attached Table 1. This project would be provided as lump sum per task not to exceed \$55,480.

Indian River County will be invoiced each month for services rendered during the previous calendar month based on percent complete. Tetra Tech shall be paid for all invoices within 30 days of an approved submittal.

Tetra Tech looks forward to working with you on this project. We are available to discuss our approach with you in detail at your convenience. Should you have any questions regarding this proposal, please contact me at (321) 636-6470.

Sincerely,



Matthew D. Shelton  
Project Manager

Cc: Brian Watson, P.E., Tetra Tech

TABLE 1 - Cost Estimate - Indian River County West Regional WWTF Reclaimed Water Storage

Personnel Classification	Hourly Rate	Task 1. General Property, Land Use, Permitting, and Zoning Review		Task 2. Phase I ESA		Task 3. Ecological Review		Task 4. Geotechnical Analysis		Task 5. Stormwater Review		Task 6. Summary Report		Subtotal	Total
		Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	
Project Manager	\$159	5	\$796	10	\$1,591	2	\$318	16	\$2,546	8	\$1,273	10	\$1,591	51	\$8,115
Engineer IV	\$137	20	\$2,740	10	\$1,370	0	\$0	28	\$3,836	20	\$2,740	5	\$685	83	\$11,372
Senior Engineer	\$195	12	\$2,340	0	\$0	0	\$0	0	\$0	15	\$2,925	8	\$1,560	35	\$6,825
Scientist V (Biologist)	\$130	0	\$0	0	\$0	20	\$2,596	0	\$0	0	\$0	5	\$649	25	\$3,245
GIS Analyst II	\$110	0	\$0	4	\$438	5	\$548	5	\$548	10	\$1,095	10	\$1,095	34	\$3,723
Contract Administrator	\$100	1	\$100	1	\$100	1	\$100	2	\$200	1	\$100	1	\$100	7	\$698
Engineering Technician	\$66	0	\$0	0	\$0	0	\$0	8	\$528	0	\$0	0	\$0	8	\$528
<b>Labor Total</b>		<b>38</b>	<b>\$5,976</b>	<b>25</b>	<b>\$3,499</b>	<b>28</b>	<b>\$3,562</b>	<b>59</b>	<b>\$7,657</b>	<b>54</b>	<b>\$8,133</b>	<b>39</b>	<b>\$5,680</b>	<b>243</b>	<b>\$34,506</b>
<b>Travel and ODCs</b>	<b>Unit Cost</b>	<b>Units</b>	<b>Cost</b>	<b>Units</b>	<b>Cost</b>	<b>Units</b>	<b>Cost</b>	<b>Units</b>	<b>Cost</b>	<b>Units</b>	<b>Cost</b>	<b>Units</b>	<b>Cost</b>	<b>Subtotal Units</b>	
Travel from Cocoa to IRC	\$70	1	\$70	1	\$70	0	\$0	2	\$140	0	\$0	0	\$0	4	\$280
Lodging (nights)	\$183	0	\$0	0	\$0	0	\$0	8	\$1,464	0	\$0	0	\$0	8	\$1,464
Travel day per diem	\$46	0	\$0	0	\$0	0	\$0	4	\$183	0	\$0	0	\$0	4	\$183
Per diem	\$61	0	\$0	0	\$0	0	\$0	6	\$366	0	\$0	0	\$0	6	\$366
Mobilization of Drilling Equipment	\$450	0	\$0	0	\$0	0	\$0	2	\$900	0	\$0	0	\$0	2	\$900
Standard Penetration Test (per foot)	\$16.5	0	\$0	0	\$0	0	\$0	480	\$7,920	0	\$0	0	\$0	480	\$7,920
Piezometer wells (per foot)	\$25	0	\$0	0	\$0	0	\$0	120	\$3,000	0	\$0	0	\$0	120	\$3,000
Permeability Tests (per slug test)	\$500	0	\$0	0	\$0	0	\$0	6	\$3,000	0	\$0	0	\$0	6	\$3,000
Internal Lab Test - Percent Fines	\$55	0	\$0	0	\$0	0	\$0	20	\$1,100	0	\$0	0	\$0	20	\$1,100
Internal Lab Test - Atterberg Limits	\$125	0	\$0	0	\$0	0	\$0	4	\$500	0	\$0	0	\$0	4	\$500
Internal Lab Test - Sieve Analysis	\$65	0	\$0	0	\$0	0	\$0	6	\$390	0	\$0	0	\$0	6	\$390
<b>Travel and ODCs Total</b>			<b>\$70</b>		<b>\$70</b>		<b>\$0</b>		<b>\$18,963</b>		<b>\$0</b>		<b>\$0</b>		<b>\$19,103</b>
<b>Subcontractor (cost +10%)</b>	<b>Unit Cost</b>	<b>Units</b>	<b>Cost</b>	<b>Units</b>	<b>Cost</b>	<b>Units</b>	<b>Cost</b>	<b>Units</b>	<b>Cost</b>	<b>Units</b>	<b>Cost</b>	<b>Units</b>	<b>Cost</b>	<b>Subtotal Units</b>	
EDR Reporting	\$420	0	\$0	1	\$462	0	\$0	0	\$0	0	\$0	0	\$0	1	\$462
Laboratory (Pesticides Organochlorine)	\$65	0	\$0	0	\$0	0	\$0	4	\$286	0	\$0	0	\$0	4	\$286
Laboratory (Pesticides Organophosphorus)	\$110	0	\$0	0	\$0	0	\$0	4	\$484	0	\$0	0	\$0	4	\$484
Laboratory (Arsenic)	\$35	0	\$0	0	\$0	0	\$0	4	\$154	0	\$0	0	\$0	4	\$154
Laboratory (Herbicides)	\$110	0	\$0	0	\$0	0	\$0	4	\$484	0	\$0	0	\$0	4	\$484
<b>Subcontractor Total</b>			<b>\$0</b>		<b>\$462</b>		<b>\$0</b>		<b>\$1,408</b>		<b>\$0</b>		<b>\$0</b>		<b>\$1,870</b>
<b>PROJECT TOTAL</b>			<b>\$6,046</b>		<b>\$4,031</b>		<b>\$3,562</b>		<b>\$28,028</b>		<b>\$8,133</b>		<b>\$5,680</b>		<b>\$55,480</b>