CCNA2018 WORK ORDER _4_

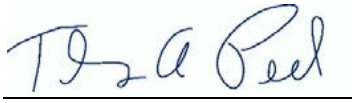
FEASIBILITY STUDY - DEEP INJECTION WELL FOR LEACHATE DISPOSAL

This Work Order Number _4__ is entered into as of this ___ day of _____, 2019_, pursuant to that certain Continuing Consulting Engineering Services Agreement for Professional Services entered into as of this 17th 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 Geosyntec Consultants, 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 A (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 A (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:

By: 

Thomas A. Peel, Ph.D.

Title: **Senior Vice-President**

BOARD OF COUNTY COMMISSIONERS OF INDIAN RIVER COUNTY

By: _____

Bob Solari, Chairman

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

EXHIBIT A

SCOPE OF WORK, FEE SCHEDULE,
AND TIME SCHEDULE

Geosyntec consultants

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14 January 2019

Mr. Himanshu Mehta, P.E., Managing Director
Solid Waste Disposal District
Indian River County
1325 74th Avenue SW
Vero Beach, Florida 32968

Subject: Proposal for Engineering Services
Focused Feasibility Study for Use of Deep Injection Well for Leachate Disposal
Indian River County Landfill Facility
Vero Beach, Indian River County, Florida

Dear Mr. Mehta:

Geosyntec Consultants, Inc. (Geosyntec) is pleased to submit this proposal to Indian River County (IRC) Solid Waste Disposal District (SWDD) to provide engineering services related to conducting a focused feasibility study (FS) for evaluating the use of a deep injection well to dispose of leachate and other liquids from the IRC Landfill (IRCL) facility and the West Regional Wastewater Treatment Facility (WRWWTF) in Indian River County, Florida. This proposal presents the scope of work, schedule, and budget estimate for conducting the FS. The proposal was prepared in response to verbal and email requests from Mr. Himanshu Mehta, P.E., Managing Director, of SWDD to Dr. Kwasi Badu-Tweneboah, P.E. of Geosyntec.

Geosyntec has prepared this proposal as Exhibit A of CCNA-2018-WO No. 4, pursuant to that certain Continuing Contract Agreement for Professional Services, dated 17 April 2018 (collectively referred to as the "Agreement"), by and between INDIAN RIVER COUNTY, a political subdivision of the State of Florida ("COUNTY") and Geosyntec ("Consultant").

The remainder of this proposal presents: (i) project background; (ii) proposed scope of work; (iii) schedule; and (iv) budget estimate.

PROJECT BACKGROUND

The IRCL facility is located in southern Indian River County, east of Interstate 95, south of Oslo Road, and west of Rangeline Road in Vero Beach, Florida. The landfill serves the unincorporated Indian River County and municipalities of Vero Beach, Orchid, Fellsmere, Sebastian, and Indian River Shores. The landfill property includes the Class I landfill, an inactive Construction and Demolition (C&D) debris disposal facility, and other support facilities. A Residuals Dewatering Facility (RDF) was constructed and started operation on 5 March 2010 at the site. Leachate from

the Class I landfill and centrate from the RDF are transmitted via force main to the WRWWTF for treatment and disposal. The regional lift station, force main, and WRWWTF are operated and maintained by the IRC Utilities Department. The WRWWTF is permitted to discharge treated effluent into the: (i) Lateral D Canal (Part I.A of Permit); and (ii) created wetland as land application and to the countywide reuse system (Part I.B of Permit).

Geosyntec understands that the WRWWTF is currently designed and permitted to treat 6 million gallons per day (mgd). However, the treatment capacity is limited by restrictions on the amount of treated effluent, due to severe Total Maximum Daily Load (TMDL) and wasteload allocations (WLA), that can be discharged to the Lateral D Canal via created wetlands (4 mgd). This is because the treated effluent that can go to the created wetland can also be reclaimed for use by golf courses and other services; however, the demand for this reclaimed wastewater declines during the rainy seasons resulting in more flow to the wetland. The component of the treated effluent that cannot be used as reclaimed wastewater is hereafter referred to as wet weather liquid. It is also anticipated that the capacity that can be discharged into the Lateral D Canal may be further restricted by nutrient WLA for the facility established as part of the TMDL for the Indian River Lagoon.

The SWDD in conjunction with the IRC Utilities Department would like to explore other treatment and disposal options for the combined leachate-centrate-wet weather liquids. One potential option is the use of either a new deep injection well or the existing injection well located at the nearby facility currently owned by Indian River Eco District, LLC (Eco District) of Lufkin, Texas. This facility including the deep injection well was previously owned by INEOS New Planet BioEnergy, LLC (INPB) of League City, Texas, and previously by OceanSpray of Florida. A preliminary review of records on the Florida Department of Environmental Protection (FDEP) Electronic Management System (OCULUS) indicates that the deep well injection permit was transferred from INPB to Eco District on 16 July 2018. The FDEP approved the transfer of Permit 31-309977-001-UO under FDEP permit transfer number 309977-004-UO/TO.

PROPOSED SCOPE OF WORK

This proposal presents the scope of work for conducting the FS to evaluate options for disposal of leachate-centrate-wet weather liquids into a deep well either owned by IRC or Eco District. For budgeting purposes, the scope of work will be performed in four phases as follows:

- Phase 1 – General consulting/meeting support/project management;
- Phase 2 – Review of background documents and regulatory requirements;
- Phase 3 – Evaluation of deep injection well disposal options including the evaluation of leachate pre-treatment options and recommendations for infrastructure improvements; and

- Phase 4 – Preparation of technical memorandum.

Each of these phases is briefly described below.

Phase 1 – General Consulting/Meeting Support/Project Management

Under this phase, Geosyntec will perform project planning and management responsibilities, such as correspondence with the SWDD and IRC Utilities Department, invoice review, project coordination, budget and schedule tracking and project administration. Geosyntec has also included a budget for preparation and attendance (by two Geosyntec personnel) at two meetings: (i) kickoff meeting with the SWDD and IRC Utilities Department staff to obtain information required to complete the FS; and (ii) a site visit/discussions meeting with Eco District, IRC Utilities Department, and SWDD to discuss permitting and contractual requirements for using the deep well owned by the Eco District. Details are discussed in subsequent phases of this proposal. Geosyntec has assumed that a kickoff meeting will be held via teleconference in order to reduce overall costs and expedite the process of completing the project.

Phase 2 – Review of Background Documents and Regulatory Requirements

Geosyntec will review current documents that are accessible on FDEP OCULUS as well as those provided by IRC and Eco District. We anticipate reviewing the following available information:

- FDEP deep injection well permitting requirements;
- Existing permits, modifications, and other information related to the Eco District deep injection well;
- Relevant data and records from other deep injection well facilities proximal to the Eco District well or other deep injection wells currently being used for injecting landfill leachate;
- Hydrogeological reports for the IRCL property and Eco District deep injection well site;
- Construction and well integrity testing plans and reports for the Eco District injection well;
- Flows and analytical data for the potential injectate (includes leachate, centrate, and wet weather liquids); and
- Other documents that are deemed relevant for the FS.

The documents will be reviewed to help understand the requirements for permitting, constructing, and operating a new deep injection well to handle the anticipated flows or

modification of the existing permit held by Eco District to accept the anticipated waste stream and flows.

Phase 3 – Evaluation of Deep Injection Well Disposal Options

The following three options will be evaluated: (i) install new deep injection well; (ii) purchase the deep injection well located on the Eco District site; and (iii) enter into an agreement with Eco District to allow disposal of leachate-centrate-wet weather liquid in their deep well. The evaluation of each option will include:

- Review of the permitting requirements and estimation of permitting timeframes and costs for each option;
- Preliminary compatibility assessment between the proposed waste stream, former waste streams injected into the Eco District injection well, and formation fluid;
- Estimation of the associated infrastructure improvements and/or capital costs required for each option;
- Preliminary market analysis of the third-party charges for leachate disposal, and
- Evaluation of the condition of the Eco District well (condition of well components and injectivity) based upon available records.

An order of magnitude cost for the engineering, permitting, construction and ongoing O&M will be provided for each of the three options. Data gaps will also be summarized and their potential implications on the costing will be discussed. In addition, an estimated timeline for the permitting required for each option will also be provided. The advantages and disadvantages of each option will be evaluated with recommendations discussed in the technical memorandum under Phase 4.

Phase 4 – Preparation of Technical Memorandum

A technical memorandum will be prepared as the deliverable for the above scope of work. The memorandum will rank and provide recommendations on the three options for review and consideration by IRC staff and for presentation to the SWDD Board. A draft memorandum will first be issued to SWDD for review and will be finalized upon receipt of review comments.

SCHEDULE

Geosyntec will initiate work immediately upon receipt of Notice to Proceed (NTP) from SWDD. Geosyntec has assumed that this NTP would be issued no later than 22 January 2019 in order for us to complete the work within three (3) weeks of NTP as requested by SWDD.

BUDGET ESTIMATE

Geosyntec proposes to perform the above-referenced work on a lump sum basis for $27,500. Additional services or any significant change in the scope of work will be performed using the Rate Schedule included in our Agreement.

CLOSURE

Geosyntec appreciates this opportunity to offer our services. If this proposal is acceptable, please indicate your agreement by signing the attached work authorization, which references this proposal. Please return one signed work authorization to Dr. Badu-Tweneboah's attention. Please call the undersigned with questions you may have as you review this proposal.

Sincerely,

Richard Tedder, P.E,
Senior Consultant

Kwasi Badu-Tweneboah, Ph.D., P.E.
Principal