



INDIAN RIVER COUNTY
SOLID WASTE DISPOSAL DISTRICT
BOARD MEMORANDUM



Date: February 8, 2019
To: Jason E. Brown, County Administrator
From: Vincent Burke, P.E., Director of Utility Services
Prepared By: Himanshu H. Mehta, P.E., Managing Director, Solid Waste Disposal District
Subject: CCNA-2018 Work Order No. 4 to Geosyntec Consultants for Professional Services with a Focused Feasibility Evaluation of Landfill Liquids Management Options

DESCRIPTIONS AND CONDITIONS:

The Indian River County (IRC) Solid Waste Disposal District (SWDD) operates a Class 1 Landfill that is designed and permitted to capture leachate (liquid that passes through the waste) from the landfill. The IRC Department of Utility Services (IRCDUS) operates a Residuals Dewatering Facility (RDF) on the landfill property. Currently, the leachate is combined with the centrate (liquid portion of the dewatering process) and is transmitted via a force main approximately five miles away to the West Regional Waste Water Treatment Facility (WRWWTF). The WRWWTF sends treated effluent to various users (golf courses) and is permitted to discharge treated effluent into the Lateral D Canal via the on-site created wetlands. However, the nutrient loading from the leachate and centrate are impacting the stringent permit conditions at the WRWWTF.

As a result, SWDD and IRCDUS want to explore other treatment and disposal options for the combined leachate and centrate liquids from the landfill facility. Aside from discharging the liquids to an off-site publicly-owned treatment works (POTW) such as the WRWWTF, the other commonly used leachate management approaches at municipal solid waste (MSW) (i.e., Class I) landfills are: (i) on-site leachate recirculation back into the landfill; (ii) volume reduction using evaporation technology; (iii) discharge into an on-site underground injection control (UIC) well; (iv) off-site trucking to an UIC well; and (v) on-site treatment using a variety of physical, chemical, and/or biological approaches ranging from reverse osmosis (RO) to sequencing batch reactors (SBRs), aerated lagoons, "Vetiver grass" and constructed wetlands. On-site treatment may be performed to meet industrial pretreatment standards for eventual discharge to a POTW, or it may be utilized as a stand-alone treatment system for subsequent discharge via a National Pollutant Discharge Elimination System (NPDES) permit or an UIC permit, on-site reuse, or land application. On January 22, 2019, the SWDD Board provided staff direction on not pursuing the use of a UIC well for the disposal of the liquids from the landfill facility. The purpose of this agenda is to seek authorization to explore other viable treatment / disposal methods.

ANALYSIS:

As part of the Continuing Contract Agreement for Continuing Engineering Services, entered into on April 17, 2018, SWDD staff requested Geosyntec to submit a proposal to provide professional and

consulting services for the subject project. Geosyntec’s lump sum proposal, including scope of work, schedule and budget, is shown in Attachment 1. Geosyntec’s proposal consists of four phases as follows:

PHASE	DESCRIPTION	\$ AMOUNT
1	General Consulting/Project Management	\$ 5,313
2	Review of Background Documents and Liquids Data	\$ 7,360
3	Evaluation of Liquids Management Options	\$ 11,700
4	Technical Memorandum	\$ 6,616
	Total =	\$ 30,989

Geosyntec proposes to submit the technical memorandum within five weeks of the notice to proceed.

The first phase includes two meetings: one via conference call to reduce costs, and a second meeting with SWDD and IRCDUS staff to review and discuss findings from the evaluation. The second phase includes reviewing background documents and includes review of a comprehensive sampling and analyses (to be performed separately by SWDD) of the landfill leachate, centrate, and combined liquids for use in the evaluation. The third phase will include compilation of the pertinent data, including the latest analytical data from the three samples and updated flow rates, and conducting a thorough evaluation of this information with respect to: (i) liquid chemistry and treatability; (ii) potentially applicable treatment options and relative costs of these options; (iii) local limits requirements of the WRWWTF; and (iv) feasibility of separating the landfill leachate from the centrate to meet pre-treatment and/or disposal requirements. It is anticipated that the following treatment options will be evaluated: 1) biological treatment using SBR system; 2) RO membrane system; and 3) advanced oxidation. In addition, leachate volume reduction via on-site evaporation will be evaluated as well as a potential option of using “Vetiver grass”. The evaluation of each alternative will include feasibility level cost estimates (capital as well as operations and maintenance) for major items required for implementation of each treatment/management option. Additionally, the evaluation will include non-economic aspects, such as ease of implementation, including permitting and regulatory hurdles; the complexity of the system; robustness of the system; and other requirements. The final phase is a technical memorandum that would provide recommendations on the options/alternatives evaluated for review and consideration by SWDD and IRCDUS staff, and for presentation to the Board at a future meeting.

FUNDING:

Funding for these professional services is budgeted and available in the Other Professional Services account in the SWDD Landfill Fund, which is funded from SWDD assessments and user fees. This account has a total budget of \$120,520 for the 2018/2019 fiscal year. The sampling and analysis would be performed via other contractual services, which are also funded from SWDD assessments and user fees. The account has a total budget of \$37,000 for field services and laboratory services.

Description	Account Number	Amount
Other Professional Services	41121734-033190	\$30,989
Field Services & Laboratory Services	41121734-033490	\$ 5,000

RECOMMENDATION:

Solid Waste Disposal District staff recommends that its Board approve the following:

- a) Approve CCNA-2018 Work Order No. 4 with Geosyntec in the amount of \$30,989 to provide professional services related to the Focused Feasibility Study to explore leachate/centrate treatment and disposal options.
- b) Authorize the Chairman to execute the same, as presented.

ATTACHMENT(s):

- 1) CCNA-2018 Work Order No. 4 – Geosyntec