

**Indian River County, Florida  
Solid Waste Disposal District  
Board Memorandum**

**Date:** April 12, 2021

**To:** Jason E. Brown, County Administrator

**From:** Vincent Burke, PE, Director of Utility Services

**Prepared By:** Himanshu H. Mehta, PE, Managing Director, Solid Waste Disposal District

**Subject:** CCNA-2018 Work Order No. 11 to Geosyntec – Engineering and Permitting Services for Leachate Treatment Project

**Descriptions and Conditions:**

The Indian River County (IRC) Solid Waste Disposal District (SWDD) operates the Class 1 Landfill, which generates “leachate”, which is liquid that passes through the waste in the landfill that is collected by a collection system at the bottom of the landfill. The IRC Department of Utility Services (IRCDUS) also operates a Residual Dewatering Facility (RDF) that generates “centrate”, which is liquid generated through the dewatering of biosolids and septage. Both the leachate and the centrate are combined and transmitted via a force main to the West Regional Wastewater Treatment Facility (WRWWTF) for treatment and disposal. Based on the review of historical flows, the landfill generates an estimated leachate flow of 16,000 gallons per day (gpd) and a peak daily flow of 20,000 gpd based on substantial fluctuation on the leachate generated based on climatic and operational conditions at the landfill.

The WRWWTF has stringent permit conditions by the Florida Department of Environmental Protection (FDEP) for both the influent and the effluent managed by the facility. The IRCDUS also has industrial pretreatment standards, referenced in Section 201.68 of the Code of Indian River County, that are not being met by the leachate. Historical data show that arsenic (As), total nitrogen (TN) and total dissolved solids (TDS) exceed the specified local limits and that the leachate also contains ammonia nitrogen (NH<sub>3</sub>-N), and biological oxygen demand (BOD) in excess of limits stipulated in 40 CFR 445.21. More recently, the discharge of concentrated leachate from the landfill gas wells has caused concerns with meeting the FDEP permit conditions at the WRWWTF.

Both SWDD and IRCDUS have been exploring alternative treatment options for leachate for the past few years. In July 2019, the SWDD Board approved staff recommendation to further evaluate thermal evaporation technology as a potential solution for leachate treatment via a pilot study. In January 2020, a five-day pilot study by the Indian River Eco-District, LLC (IREDD) using the 1,000 gpd Heartland Concentrator™ unit provided by Heartland Water Technology, Inc (Heartland). The pilot was successful in demonstrating that a volume reduction of 98% was achieved and the laboratory analytical results indicated that the mulch-stabilized residuals passed both the Paint Filter Liquids Test as well as the Toxicity Characteristics Leachate Procedure (TCLP) criteria to be classified as non-hazardous and could potentially be landfilled in a Class 1 solid waste landfill in Florida. On May 19, 2020, the SWDD Board waived the bid requirements and directed staff to negotiate with IREDD and Heartland for a short- or long-term solution for leachate treatment or a solution,

which combines both, and bring back both the material on the choices and a clear recommendation for a path forward.

Staff is presenting a separate agenda item for the approval of the IRED/Heartland proposal to design, build, install and operate a 30,000 gpd leachate evaporation plant featuring a Heartland Concentrator™ system to be located at the IRC Landfill, that will be used to treat all of IRC’s Class 1 landfill leachate during a period of at least fifteen (15) years under the terms of a take-or-pay off-take agreement with SWDD. The purpose of this agenda item is for the approval of engineering and permitting services to Geosyntec that are associated with the leachate treatment project.

**Analysis:**

Geosyntec has prepared CCNA-2018 Work Order No. 11, provided in Attachment 1, for engineering and permitting services detailing the scope of work, budget, and schedule for each of the phases. The fees to be paid by SWDD for the execution of this work authorization are in accordance with the engineer's continuing consulting services master agreement. The phases are listed below, showing the expected completion dates and their estimated fees.

<i>PHASE</i>	<i>DESCRIPTION</i>	<i>DUE DATE</i>	<i>AMOUNT</i>
Phase 1	Project Management / Meetings	May– September 2021	\$ 20,345.18
Phase 2	Class 1 Landfill Permit Modification	June 30, 2021	\$ 22,146.72
Phase 3	Title V Permit Modification	July 16, 2021	\$ 22,400.06
TOTAL (Lump Sum) =			\$ 64,891.96

Note that this work would only occur if the SWDD Board enters into a contract with IRED for the leachate treatment process.

**Funding:**

Funding for the SWDD Leachate Treatment services is budgeted and available in a special project account, which is funded from SWDD assessments and user fees.

<b>Description</b>	<b>Account Number</b>	<b>Amount</b>
Leachate Pre-Treatment System	411-169000-19507	\$64,891.96

**Recommendation:**

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

- a) Conditionally approve CCNA-2018, amended and extended in 2021, Work Order No. 11 with Geosyntec for \$64,891.96 to provide engineering and permitting services related to the leachate treatment project. But direct staff to hold off on issuing a notice to proceed until the Board authorizes a contract with the Indian River Eco District, LLC, for the leachate treatment process.
- b) Authorize the Chairman to execute the same, as presented.

**Attachment (s):**

CCNA-2018 Work Order No. 11 – Geosyntec