COLUMBIA COUNTY BOARD OF COUNTY COMMISSIONERS
AGENDA ITEM REQUEST FORM

The Board of County Commissioners meets the 1st and 3rd Thursday of each month at 5:30 p.m. in the Columbia County School Board Administrative Complex Auditorium, 372 West Duval Street, Lake City, Florida 32055. All agenda items are due in the Board's office one week prior to the meeting date.

Today's Date: 10/24/2018 **Meeting Date:** 11/1/2018

Name: Ed Lontz **Department:** Solid Waste

Division Manager's Signature: 

1. Nature and purpose of agenda item:

Proposal to Perform New Source Performance Standards Tier 2 Non-Methane Organic Compound (Sampling by Darabi and Associates, Inc.) $62,530.

2. Recommended Motion/Action:

Approve Proposal to Perform New Source Performance Standards Tier 2 Non-Methane Organic Compound (Sampling by Darabi and Associates, Inc.) $62,530.

3. Fiscal impact on current budget.

This item is currently budgeted. The account number to be charged is 401-3400-534.30-31 and 401-3420-534.30-31

Darabi & Associates, Inc.
Environmental Consultants

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Gainesville, FL 32606

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October 19, 2018

Edfred Lontz
P.O. Box 1529
Lake City, FL 32056

Subject: Proposal to Perform NSPS Tier 2 NMOC Sampling
Winfield Solid Waste Management Facility
Columbia County, FL

Dear Edfred:

As you know, the Florida Department of Environmental Protection is requiring new landfill gas testing at your facility. The attached scope of work has been approved by FDEP and we are now required to implement it. We will be performing Tier 2 test sampling during 2018 at the Landfill to determine the landfill site's current NMOC concentration. Results will be used to prepare projected estimated annual emissions based on record site waste receipts and the current NMOC concentration. The attached protocol will be utilized in performing the sampling to meet the testing requirements.

The total for these required services is $62,530.00 which includes the following discrete costs:

Sampling, data review, report prep.	$28,500.00
Driller	$15,730.00
Laboratory	$18,300.00
Total	$62,530.00

The funds can come from the budgeted items for each landfill, we need to get authorization and start the work in mid- November. Please feel free to contact me if you have any questions or concerns about our proposal.

Sincerely,

Frank A. Darabi, P.E.
President

CC: Mr. Kevin Kirby

TIER 2 SAMPLING PROTOCOL

This protocol describes the method for selecting sample locations and the procedures for collecting landfill (LFG) samples at the Winfield Solid Waste Management Facility, for Columbia County (County), Florida. The purpose of the sampling is to determine a site-specific non- methane organic compound (NMOC) concentration in the LFG for use in determining the applicability of the New Source Performance Standards (NSPS) for LFG control at the site.

BACKGROUND

The Winfield Solid Waste Management Facility consists of the following:

- A 30-acre Closed Class I landfill
- A 34-acre Active Class I landfill

The waste in each of the Class I landfill areas is two years or older, and therefore subject to Tier 2 sampling 40 CFR 60.754(a)(3). Therefore, the total area subject to Tier 2 sampling is approximately 64 acres.

The sampling will be conducted by Darabi on behalf of the County. Sampling will be conducted according to U.S. EPA Method 25C, using the pilot probe procedure. Samples will be collected using a standard protocol that previously has been approved by U.S. EPA and the Florida Department of Environmental Protection (FDEP). Composite sampling will be used so that up to three samples will be collected in each six-liter canister. Gas from each canister will be analyzed for NMOC according to Method 25C, and for oxygen and nitrogen per Method 3C.

SAMPLE LOCATIONS

Section 60.754(a)(3) of the NSPS states that when conducting Tier 2 testing, the landfill owner must install at least two sample probes per hectare (2.47 acres) of landfill surface that has retained waste for at least two years. However, if the landfill area is larger than 25 hectares (61.8 acres), a maximum of 50 samples are required. Because the current active landfill footprint is approximately 34 acres (or roughly 14 hectares), 28 equivalent samples will be collected from the active landfill. Similarly, the closed landfill is approximately 30 acres (or roughly 12 hectares), so 24 samples will be collected from the closed landfill. Sample locations will be selected on an equilateral grid system to distribute the sample locations evenly across the entire landfill.

SAMPLES

Landfill gas samples will be collected using the pilot probe procedure described in U.S. Method 25C. Darabi will use composite sampling as allowed under §60.574(a)(3), and each canister will contain samples of equal volume. As mentioned above, samples will be taken from a total of 50 locations.

Pilot Probe

Each sample probe will be installed to a depth of at least 3 feet below the bottom of the landfill cap or intermediate or daily cover soil layer, which is estimated to be one to three feet thick. The maximum probe depth will be approximately 12 feet. A direct-push (geoprobe) rig will be used to install the probes. After pushing the pilot probe to the required depth, the pilot probe will be removed and a stainless steel sampling probe will be installed in the pilot hole. The sampling probe will be capped at the bottom, and at least the bottom one-third will be perforated. A threaded cap and sampling attachment will be connected to the top of the probe. The annular space around the probe at the top of the hole will be filled with soil.

Sample Train

The sampling train will be according to Method 25C and include the following components: teflon tubing, purge pump or vacuum tank, sampling valves, needle valve, digital vacuum gauge, and a pre- evacuated six-liter stainless steel SUMMA canister.

Sampling Procedure

The sampling procedure will be according to Section 8.0 of Method 25C. The canisters will be pre- evacuated to approximately 30 inches of mercury (in-Hg) vacuum, pre-charged with three liters of helium, and checked for leaks at the laboratory. After probe installation, a purge pump or vacuum tank will be used to evacuate at least two probe volumes at a flow rate of 500 milliliters per minute (ml/min) or less. After purging, the sample train will be checked for leaks using the sample train vacuum gauge.

A Landtec GEM-2000, or equivalent, monitor will be used to measure the volumetric concentrations of methane, carbon dioxide, oxygen and balance gas, which is assumed to be almost entirely nitrogen. The purpose of measuring gas quality with the GEM-2000 is to ensure that the oxygen concentration is less than 5 percent, as required by Method 25C. U.S. EPA is aware of the potential for residual nitrogen in some landfills and has amended Method 25C to address this issue. Consequently, the oxygen reading is important in the case where the LFG contains a high concentration of residual nitrogen.

After checking the gas quality, the sample valves will be turned so that LFG will flow only to the SUMMA canister, and the needle valve will be closed. The valve on the canister will be opened and the initial vacuum of the canister will be recorded. Next, the needle valve will be adjusted to allow a sampling flow rate of 500 ml/min or less.

During sampling, the sampling data such as canister vacuum, sampling time, approximate flow rate, ambient temperature, barometric etc., will be recorded. After one liter of gas is collected, the canister will be closed, final vacuum and time will be recorded and the sampling probe removed. The abandoned probe hole will then be filled with soil. As mentioned earlier, equal-volume samples, dete1mined based on vacuum readings as allowed under Section 8.4.1 of EPA Method 25C, will be collected into six-liter canisters. Samples will not be collected using the final canister vacuum. Typically, final canister vacuum is approximately - 3 inches-Hg.

LABORATORY ANALYSIS

LFG samples will be shipped to a laboratory for NMOC analysis per Method 25C and nitrogen and oxygen analysis per Method 3C. resulting site-specific NMOC concentrations will then be used in EPA's Landfill Gas Emission Model to calculate the Tier 2 NMOC emissions.

TIER 2 REPORTING

Upon completion of the sampling and analysis, a Tier 2 NMOC emission estimate report wi1l be prepared and submitted to FDEP. The report will include the following:

- Letter report summarizing the field work, lab results, and emission calculations
- Copies of field sampling forms
- Copy of lab data report
- Site plan showing sample locations
- Calculations and emission calculation results
- Conclusions about applicability of the NSPS requirements for installing and operating a LFG collection and control system.