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Transmitted via email
anthony.spencer@fultoncountyga.gov

Mr. Anthony Spencer
Solid Waste Director
Fulton County
141 Pryor Street
Suite G119
Atlanta, GA 30303

RE: Proposal for Methane Remediation Construction at
Morgan Falls Landfill
Fulton County, Georgia; Permit No.: 060-007D(SL), and
Merk/Miles Landfill
Fulton County, Georgia; Permit No.: 060-064D(SL)

Dear Mr. Spencer:

Atlantic Coast Consulting, Inc. (ACC) is pleased to present the Fulton County Real Estate and Asset Management (DREAM) this proposal to construct Methane (CH₄) remediation gas system components at Morgan Falls Landfill and Merk-Miles Landfill in support of approved Methane Remediation Plans.

Background

Morgan Falls Landfill: Wells MM-18 P1, MM-18 P2 and MM-53 have been recorded with exceedances of the methane limit (5% by volume). On behalf of DREAM, ACC submitted a Methane Remediation Plan Update (MRPU) addressing the corrective actions for MM-53. Per the MRPU, Morgan Falls will install three (3) Soil Vapor Extraction (SVE) wells and connect them to the active collection system. ACC will submit a separate MRPU to address the exceedances at MM-18P1 and MM-18P2 and will install three (3) passive SVE wells to intercept the gas.

Merk-Miles Landfill: In March of 2016 methane was detected above the lower explosive limit (LEL) in three methane monitoring wells (MM-16, MM-19, and MM-21), and another LEL exceedance was recorded at MM-20 in December 2017. A MRP was completed in 2016 and updated in 2018 to address the exceedances. Based on a review of MM-19R and MM-20R monitoring well boring logs and semiannual groundwater elevation gauging data, competent bedrock and/or groundwater is less than 20 feet below ground surface (which is the greatest depth reasonably achievable by conventional trench construction techniques). Because groundwater and competent rock act as methane migration barriers,

and are present within 20 feet of ground surface, gas extraction trenches in these areas can intercept the entire vertical methane migration zone. Therefore, two (2) engineered methane interceptor trenches will be constructed. Approximately 175-foot and 170-foot-long trenches will be constructed in the vicinity of MM-19R and MM-20R.

Scope of Work

Morgan Falls Landfill

In accordance with the MRPU dated September 29, 2020 and EPD letter dated November 3, 2020, ACC will install three (3) out of refuse soil vapor extraction (SVE) wells (SVE-53A, SVE-53B and SVE-53C); and provide a minor modification to the post closure permit to EPD,

-) Drilling will be advanced using 6.25-inch inside diameter (ID) hollow stem auger (has) to top of groundwater or bedrock, an estimated depth of approx. 20-feet below ground surface (BGS);
-) Wells will be constructed of 4-inch diameter, American Society for Testing and Materials, NSF-rated, flush-threaded, Schedule 40 polyvinyl chloride (PVC) riser pipe and screen. Wells will be screened from the bottom depth to 5 feet below ground surface with 0.010-inch, machine-slotted PVC pipe. Approx. 5-feet of stick up will be set above ground and topped with PVC well cap;
-) Inert, clean, well sorted silica pea gravel will be poured into the annular space surrounding the well screen to top of the screen then topped by 6-inches of clean, inert, well sorted silica sand;
-) Bentonite chips/pellets will be emplaced by tremie method into the annulus to ground surface and hydrated.
-) Wells will be connected to the active gas collection system via a four-inch SDR-17 High density Polyethylene (HDPE) header line and tied into the existing gas collection system at condensate sump 1; and
-) Each well would have an individual wellhead for vacuum control.

Additionally, the protective well casings for MM-18 and MM-5 have been damaged due to adjacent construction activity and will need to be repaired. These repairs will be completed under a separate project. Once MM-18 and MM-5 are repaired. ACC will conduct an evaluation of MM-5, MM-6, MM-7B and MM18 to determine the extent of methane migration in the vicinity of MM-18P1 and MM-18P2. A separate MRPU will be submitted for the exceedance at MM-18 with initial actions to install three (3) passive SVE wells (SVE-18A, SVE-18B and SVE-18C). These wells will be installed in the same manner as above and will have wind turbines installed to assist in gas venting.

If after an evaluation period and if the passive vents do not correct CH₄ migration to MM-18, ACC will connect SVE-18A, SVE-18B and SVE-18C to the active system.

-) Wells will be connected to the active gas collection system via a four-inch SDR-17 header line and tied into the existing system near gas well A2;
-) A new condensate sump (CS6-A) would be installed to create a low point for liquid removal;
-) Each well would have an individual wellhead for vacuum control; and
-) Bollards or Jersey Barriers will be used to protect the wells from damage.

Merk-Miles Landfill.

In accordance with the MRPU dated September 2020 two (2) gas trenches will be installed in vicinity of MM-19R and MM-20R. The depths of the trenches will be determined at the time of construction based on depth to competent rock and/or groundwater and may range from approximately 10 to 15-feet below ground surface. Following trenching activities, construction will consist of the following:

- Each location will be excavated with equipment capable of creating an approximately two (2) foot wide trenches extending to top of bedrock, which is anticipated to be less than 20 feet below ground surface.
- Plastic sheeting (minimum thickness of 3 mil) will be placed on the outer wall (i.e. opposite wall furthest away from waste);
- As detailed on Figure 2, the bottom two feet of the trench will be backfilled with gravel;
- An HDPE perforated pipe, minimum of 4" in diameter, will be installed in the trench at approximately the middle of the trench;
- Additional gravel will be placed above the horizontal piping to within approximately 2 feet of ground surface;
- Three 4" vertical vent pipes will be installed (2 of which will have butt fused caps) at either end of the perforated horizontal piping with the third in each trench being located closest to SVE points (MV-19 or MV-20) for connection to the gas extraction system (GES);
- A layer of geotextile fabric will be placed above the gravel and covered by the top of the plastic sheeting;
- Above the geotextile fabric/plastic sheeting, the excavation will be backfilled to ground surface with the excavated natural material; and
- After trench construction, the vertical vent pipes will be connected to the GES to apply vacuum to the trenches by installing a well head on the 4" vent riser pipe with flex hose and "T" connector which connects to the SVE point (MV-19 or MV-20) and establishes the vacuum source.

Project Fee

ACC has broken the activities associated with the Tier 2 Testing into four(4) tasks. Below is a summary of the fee for each task:

Task Description	Fee	Fee Basis
Install 3 active SVE wells at Morgan Falls Landfill (MM-53)	\$35,710.00	Lump Sum
Install 3 passive vents at Morgan Falls Landfill (MM-18)	\$14,570.00	Lump Sum
Connect SVE-18 A,B & C to active system (if necessary)	\$90,970.00	Lump Sum
Install 2 gas interceptor Trenches at Merk/Miles Landfill (MM-19 and MM-20)	\$83,590.00	Lump Sum
Project Total	\$224,840.00	

Assumptions

In preparing this estimate and scope of work, ACC has made several assumptions as to the condition and accessibility of the landfill and information necessary to complete the project. ACC assumes that DREAM will provide the following:

-) Access to the construction locations;
-) Blount Construction will install bollards, or Jersey barriers to protect SGV-53A, SGV-53B and SGV-53C; and
-) Coordination will Steel Canyon Golf Course for construction activities near hole number four.

In addition to the information to be provided by DREAM listed above, the following assumptions were also used in the preparation of this estimate:

-) Drilling for well installation will be completed by Tri-State Drilling Services (TDS);
-) Well component install, condensate sump installation (if necessary) and connection to the active system will be done by BMS Enterprises;
-) SVE Wells 18 A,B and C will only be connected to the active system if passive venting fails to correct the methane exceedance at MM-18P1 and MM-18P2;
-) ACC will mark the right of ways for power and sewer lines before installing the SVE wells;
-) ACC personnel will be on site during well installations to gather data for as-built documentation;
-) ACC personnel will not be on site full time during gas trench installation, but will make site visits to do quality checks and gather as built information;

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) Any permit modifications or MRP updates required will be completed as a separate project and will be covered under the normal budgeting process.

If this scope of work and fee estimate meets with your approval, we will begin work upon receipt of your notice to proceed. Please provide us with either a signature or purchase order as your notice to proceed. If you have any questions about our scope or budget, please do not hesitate to contact us. ACC looks forward to the opportunity to work with you on this project.

Sincerely,

ATLANTIC COAST CONSULTING, INC

Joel Scott
Vice President – Landfill Operations

cc: Shaista Begum, Fulton County (via email)
Bill Tennant - ACC
Project file: G029-101