COUNTY DEPARTMENT AGENDA REQUEST

Department:	Solid Waste Management	Presenter(s):	Vanessa Birrell
Meeting Date:	Thursday, October 13, 2011	Type of Request:	Old Business

Wording for the Agenda:

Consideration of staff's request to approve Contract Addendum No. 2 (Proposal P764) with Jacobs Engineering Group, Inc. authorizing expenditures not-to-exceed $180,000 to perform additional tasks required by the EPD to complete Phase II of the Methane Remediation Plan for the First Manassas Mile Road Southside Landfill; and authorization for the Chairman to execute said contract addendum.

Background/History/Details:

The Southside Landfill consists of two closed, unlined, municipal solid waste (MSW) landfills; the Grady Avenue Landfill Phases I&II and the First Manassas Mile Road Sanitary Landfill. Compliance monitoring was initiated at the Southside Landfill in the early 1990s. In response to the Feb. 2011 notification from EPD that two perimeter wells have repeatedly exhibited methane concentrations above the regulatory limit, field investigation and design work of the methane extraction systems is complete and subsequently approved by EPD.

Phase II is the installation of the proposed methane extraction systems. The additional tasks required to implement the methane remediation plan are: venting system installation; system startup and operation and maintenance (6-months); installation and minor permit modification required reporting to EPD; preliminary evaluation reporting to EPD.

The target completion dates approved by the EPD for the proposed work are December 16, 2011 for submittal of installation report and minor permit modification and May 25, 2012 for a preliminary evaluation report of the remediation system's effectiveness after six months of operation.

What action are you seeking from the Board of Commissioners?

Motion to approve Contract Addendum No. 2 (Proposal P764) with Jacobs Engineering Group, Inc. authorizing expenditures not-to-exceed $180,000 to perform additional tasks required by EPD to complete Phase II of the Methane Remediation Plan for the First Manassas Mile Road Southside Landfill; and authorization for the Chairman to execute the contract addendum pending approval by the County Attorney.

If this item requires funding, please describe:

$180,000 is needed and will be taken from the Solid Waste fund balance of $1.2M as of 9-28-2011.

Has this issue come before the Commissioners in the past?	Yes	If so, when?	8-25-2011
Do you need audio-visual for the presentation?	No	Back-up Material Submitted?	Yes

STAFF USE ONLY

Approved by Finance	Yes	Reviewed by Legal	Yes
Approved by Purchasing	Not Applicable	Approved by County Clerk	Yes
Administrator's Approval	Yes		

Staff Notes:

CONTRACT ADDENDUM #2
Solid Waste Contract for Environmental and Engineering Services
FAYETTE COUNTY
September 23, 2011

BACKGROUND

The Southside Landfill consists of two closed, unlined, municipal solid waste (MSW) landfills: the Grady Avenue Landfill Phases I & II and the First Manassas Mile Road Sanitary Landfill. Although separate landfills, the combined facility is tracked as one landfill using the permit number for the sanitary landfill (056-014D(SL)). In the Feb. 28th Notice of Deficiency letter EPD determined MM-11 and MM-12 have repeatedly exhibited methane concentrations above the regulatory limit (5% methane by volume.) These excedences must be mitigated according to Georgia Solid Waste Regulations.

This Methane Remediation Plan (MRP) describes the actions that will be taken in the areas of MM-11 and MM-12 to remediate the presence of methane above the regulatory limits. It is implemented in two phases. Phase I is the field investigation and design of the methane extraction system. Phase II is the installation of the proposed methane extraction system and subsequence monitoring. The data collected from the one-day field investigation on June 20, 2011 was inconclusive. As a result, additional field investigations were necessary to clarify the source of methane currently impacting MM-11 and MM-12 before the remedial design can be finalized.

Following the additional field investigations, it was determined that the methane was migrating from the Southside Landfill and that existing remedial measures were proving ineffective to remedy the problem. With the information obtained from the field investigations, Jacobs Engineering Group Inc. (Jacobs) designed methane remediation measures for both the MM-11 and MM-12 areas. Per the EPD-approved milestone schedule, the County must now move forward with installing the Phase Two remediation systems.

SCOPE OF WORK

Jacobs proposes a not-to-exceed amount of $180,000 to perform the additional tasks to complete Phase II of the MRP (detailed scope of work is provided in the attached Exhibit A):

1.	Remediation systems installation	$ 141,700
2.	System startup and operation and maintenance (6-months)	$ 15,000
3.	Installation report and minor modification	$ 18,800
4.	Preliminary evaluation (after 6-months of operation)	$ 4,500

EPD-APPROVED MILESTONE SCHEDULE

Milestone	**Target Completion Date**
Completion of Phase One field investigation and design	August 19, 2011
Installation of Phase Two remediation systems	October 21, 2011
Submittal of installation report and minor mod	December 16, 2011
Preliminary evaluation of updated MRP effectiveness	May 25, 2012

FEE ESTIMATE

The scope of work outlined herein will be performed and implemented in accordance with our existing contract, No.P764 with Fayette County. Jacobs Engineering Group Inc. will invoice Fayette County on a monthly basis in accordance with the fees outlined above. Any additional services will be performed in accordance with this contract and in addition to this fee estimate. Jacobs Engineering Group Inc. will obtain proper authorization prior to proceeding with any out-of-scope services.

AUTHORIZATION

Should the County wish for Jacobs Engineering Group Inc. to move forward with the efforts outlined herein, we will proceed under the current terms and conditions of our existing contract (Professional Services Agreement dated Feb. 24, 2011) with Fayette County as an addendum.

As our authorization, please sign in the space provided below.

Fayette County	**Jacobs Engineering Group Inc.**
_____	_____
Signature	Signature
_____	_____
Name	Name
_____	_____
Date	Date

Exhibit A

Scope of Work

September 23, 2011

Fayette County Southside Methane Remediation Installation

Background

The Fayette County Board of Commissioners (Fayette County) owns and maintains the First Manassas Mile Road Southside Landfill (Southside Landfill), which consists of two closed, unlined, municipal solid waste (MSW) landfills. Compliance monitoring at the Southside Landfill has detected repeated methane concentrations above the regulatory limit (5% methane by volume) in monitoring locations MM-11 and MM-12, which are located along the northern boundary of the landfill. In accordance with the Methane Remediation Plan (MRP) prepared by Jacobs Engineering Group Inc. (Jacobs) and approved by the Georgia Environmental Protection Division (EPD), Jacobs completed a one-day geoprobe investigation in the vicinity of MM-11 and MM-12 on June 20, 2011. The results of this investigation were inconclusive; therefore, with Fayette County and EPD's approval, Jacobs completed an additional geoprobe investigation on August 15, 2011, which did provide sufficient information to design remedial measures for the ongoing methane exceedances.

Using the data collected during both investigations, Jacobs has made revisions to the proposed remedial measures which comprise Phase 2 of the MRP for MM-11 and MM-12. Jacobs will provide construction monitoring services during the installation of the revised remedial measures and related activities as described in this scope of work.

Subsurface Scans of Waste Trenches Near MM-11

The existing passive methane vents in the Southside Landfill near MM-11 do not appear to be functioning as intended and are not venting methane from the trash; therefore, subsurface methane generated from the Southside Landfill is migrating north towards the property boundary. It appears that the existing vents may be installed in the soil between the waste trenches, rather than in the waste, as shown on the permit drawings. In order to better place the new remedial measures, Jacobs will coordinate and contract with a subcontractor to utilize a seismic survey method to locate the three waste trenches south of MM-11 and define their extents. The information obtained during this analysis will be used to determine the proper placement (i.e., within the waste trenches) of the methane remediation measures in the MM-11 area, described in the next section of this scope of work.

Installation of Enhanced Passive Methane Remediation at MM-11

As described above, the existing passive methane vents in the Southside Landfill near MM-11 do not appear to be venting methane from the trash as intended. Jacobs will coordinate and contract with a drilling firm to install a series of new passive vents with solar-powered fans in the trash along the north edge of the Southside Landfill. Twelve (12) passive vents are proposed in the approximate locations shown on Figure 1, although an adjustment to the number or location of vents may be made in the field based on the result of the seismic survey and/or methane concentrations encountered as the vents are installed. The vents will be installed approximately 25 feet apart as follows:

- Vent borings will be advanced utilizing 4.25-inch inside diameter hollow stem augers (HSA).
- Boreholes will be advanced to groundwater or rock, whichever is encountered first (assumed to be no deeper than 30 feet below ground surface).
- Vents will be constructed using 2-inch diameter, ASTM NSF-rated, flush-threaded, Schedule 40 PVC riser pipe and machine slotted (20-slot) or perforated PVC screen.
- Screened intervals will extend from a minimum of 3 feet below the ground surface to the bottom of each borehole.
- Solid pipe will extend from the top of the screen to a minimum of 7 feet above the ground surface to allow for possible future connections.
- Vent screens will be surrounded with clean gravel from the bottom of the boring to the top of the screen. A 0.5 foot layer of sand will be placed above the gravel pack. A hydrated bentonite seal will be placed above the sand layer extending to 0.5 feet below the ground surface. The remaining 0.5 feet will be backfilled with clean on-site soil.
- A 4-inch diameter PVC shroud will be installed around each riser. The shroud will be buried a minimum of 0.5 feet in the surrounding soil and will extend to the top of the 2-inch riser.
- A solar powered fan will be installed on each riser to facilitate the venting of methane. The fan will be mounted such that the weight of the fan is supported by the 4-inch shroud.

Installation of Active Methane Remediation at MM-12

In the vicinity of MM-12, Jacobs will coordinate with the drilling firm to install a small methane extraction system in residual soil along the north side of the site road, as shown on Figure 1. This system will consist of a series of 2-inch diameter extraction wells which are connected via a header pipe to an electric blower. Fourteen (14) wells are proposed for this system, although an adjustment to the number or location of wells may be made in the field based on methane

concentrations encountered as the wells are installed. The extraction wells will be installed approximately 50 feet apart as follows:

- Well borings will be advanced utilizing 4.25-inch inside diameter hollow stem augers (HSA).
- Boreholes will be advanced to groundwater or rock, whichever is encountered first (assumed to be no deeper than 50 feet below ground surface).
- Extraction wells will be constructed using 2-inch diameter, ASTM NSF-rated, flush-threaded, Schedule 40 PVC riser pipe and machine slotted (20-slot) or perforated PVC screen.
- Screened intervals will extend from a minimum of 10 feet below the ground surface to the bottom of each borehole.
- Solid pipe will extend from the top of the screen to a minimum of 5 feet above the ground surface.
- Well screens will be surrounded with clean gravel from the bottom of the boring to a minimum of 0.5 feet above the top of the screen. A 0.5 foot layer of sand will be placed above the gravel pack. A hydrated bentonite seal will be placed above the sand layer extending to 0.5 feet below the ground surface. The remaining 0.5 feet will be backfilled with clean on-site soil.
- A well head with an adjustable 2-inch ball valve for vacuum control and sample ports for gas monitoring will be installed on top of each extraction well. Rigid pipe will connect the well head to the header.

Jacobs will monitor the installation of header piping which connects the extraction wells to an electric blower. The header pipe will be installed as follows:

- A minimum 12-inch deep trench will be excavated in the approximate location shown on Figure 1. A condensate sump will be placed at the low point in the header at the west end of the system, and the trench will be constructed to slope toward the condensate sump.
- The header will consist of 4-inch diameter Schedule 40 PVC pipe which will be laid in the base of the trench. A 4-inch tee with a 4x2 reducer will be installed in the header at each extraction well location.
- An additional 4-inch tee with a 4x2 reducer will be installed in the header at the halfway point between each extraction well. Each additional tee will be stubbed and capped above grade to allow for future expansion to the system without re-excavating the header.
- On-site soil backfill will be placed over and around the header pipe.
- Extraction wells will be connected to the header.

- The header pipe will be connected to an electric blower at the approximate location shown on Figure 1. The blower will be placed on a concrete pad under a shed roof.

Fayette County will contract directly with a licensed electrician and Jacobs will coordinate with the electrician to provide electric power and the required electrical connections to the blower.

System Startup at MM-12

Jacobs will provide field and office support during startup of the MM-12 extraction system. Jacobs assumes a 1-day field effort following all electrical connections.

Surveying

Jacobs will provide surveying by a licensed surveyor registered in the State of Georgia, and will provide horizontal and vertical locations for the following:

- Seismic scans on the landfill near MM-11,
- Passive methane vents installed near MM-11, and
- Methane extraction wells, header pipe, condensate tank and blower pad near MM-12.

Jacobs will provide a stamped as-built survey providing horizontal and vertical locations of the above elements for inclusion in the installation report.

Reporting

Jacobs will observe the installation of all methane remediation components at MM-11 and MM-12 as describe above, and will prepare daily reports and boring logs documenting the progress of the work. Following the installation of these systems, Jacobs will prepare a letter report documenting the installation and a completed minor modification form for submittal to EPD. The installation report will be stamped and signed by a Georgia-registered P.E. or P.G. and will include as-built survey data, boring logs, and plan drawings for the remediation systems. After six months of monitoring data has been collected, Jacobs will provide a letter report to EPD evaluating the effectiveness of the remedial measures. If additional remedial measures are needed based on the results of the performance monitoring data, those measures will be designed and installed under a future scope of work and budget.

Operation and Maintenance

Jacobs will provide system operation and maintenance services for the MM-12 limited extraction system for six (6) months following system startup. During the first month, Jacobs will perform two (2) site visits to balance the system. Jacobs will then make monthly site visits

for the next five (5) months to balance the system. System balancing will involve checking vacuum and methane levels in each extraction well and monitoring for balance gases in order to identify excessive atmospheric air intrusion. Adjustments to the system will be made as necessary as part of each site visit.

Schedule

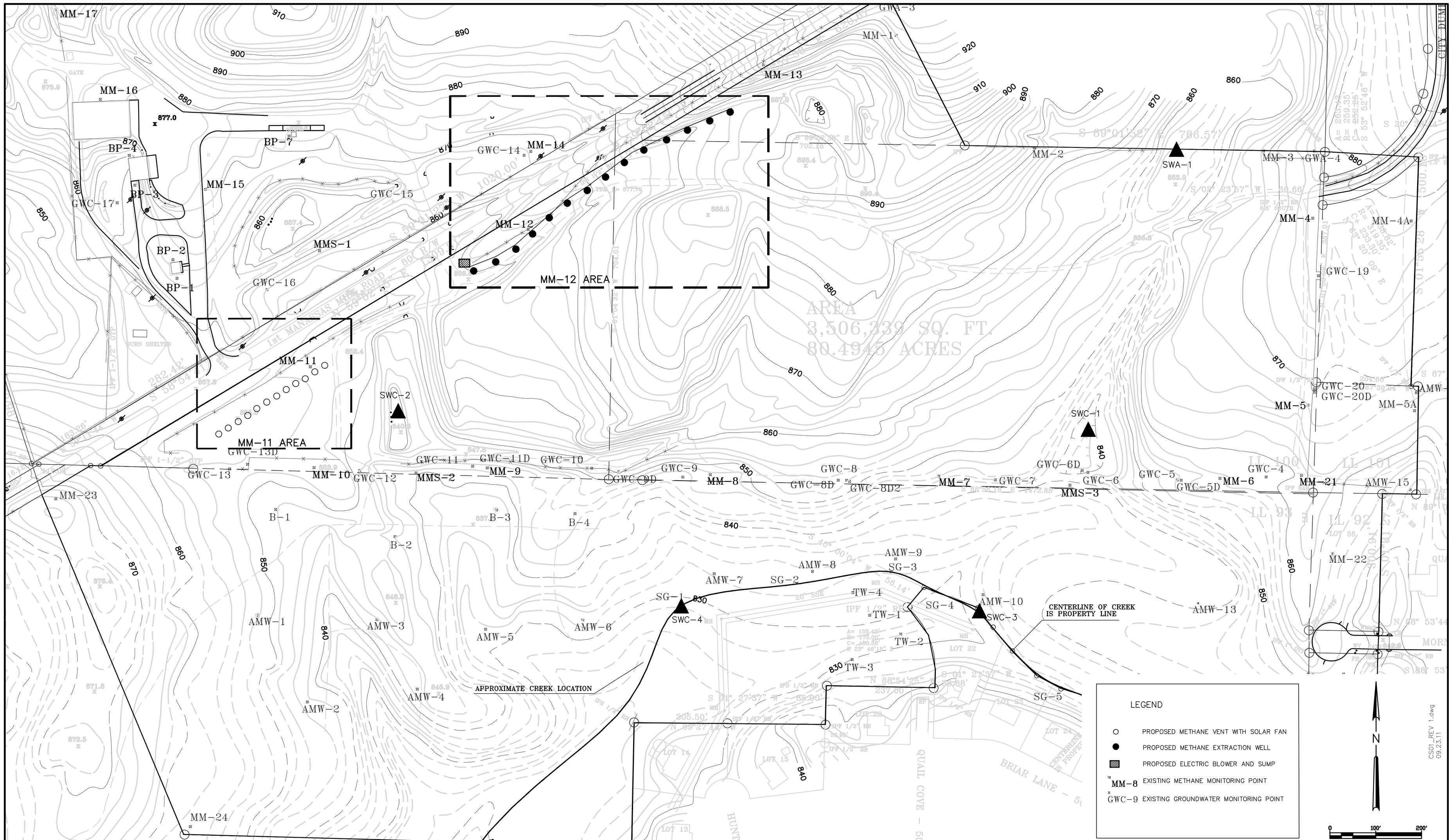
Jacobs anticipates that subsurface scans of the Southside Landfill near MM-11 will be performed in early October and will take two (2) days to complete. Construction of the methane remediation systems at MM-11 and MM-12 will begin in mid-late October and will take 17 days to complete. System startup will take one (1) day and will be performed after all electrical connections are completed (assumed to be within 2 weeks of completing construction). Jacobs will begin operation and maintenance of the MM-12 system two (2) weeks following system startup.

A draft installation report (electronic copy only) will be provided to the County for one (1) round of review and comment within four (4) weeks following system startup. The final installation report (electronic copy only) will be provided to the County within two (2) weeks of receiving comments from the County. Jacobs will submit the final hard copy of the installation report to EPD on behalf of Fayette County. A draft system effectiveness report (electronic copy only) will be provided to the County for one (1) round of review and comment within two (2) weeks of completing the 6-month performance monitoring period. The final system effectiveness report (electronic copy only) will be provided to the County within one (1) week of receiving comments from the County. Jacobs will submit the final hard copy of the system effectiveness report to EPD on behalf of Fayette County.

Assumptions

- Subsurface methane migration is difficult to predict; and therefore, Jacobs cannot guarantee the success of the designed remedial measures. Jacobs has designed the remedial measures described in this scope of work to maximize effectiveness while maintaining a phased approach for the County. There is a possibility that additional remedial measures will be required in the future to fully address the methane migration issues at MM-11 and MM-12. Any required additional measures will be performed under a separate scope and budget.
- One preconstruction meeting will be held prior to beginning the construction of the methane remediation systems. Two representatives from Jacobs and one from the drilling subcontractor are anticipated to attend, along with representatives of Fayette County.

- Jacobs will prepare a health and safety plan prior to mobilizing to the site and will monitor for explosive gases throughout the duration of the construction effort.
- Jacobs will provide daily onsite field monitoring during performance of surface scans, installation of the passive vents at MM-11 and installation of the extraction system at MM-12.
- No more than 1060 feet of drilling and well construction will be performed.
- If additional drilling and well construction is necessitated by the subsurface conditions, the County will be informed and verbal approval will be obtained before drilling beyond the estimated depths outline in this proposal. Additional drilling and well construction will be charged at $8.70 per foot provided the additional drilling does not extend the project schedule. If the schedule is extended, additional subcontractor direct cost will also be incurred. Jacobs' time for additional drilling will be charged at our provided hourly rates.
- The installation of the passive vents and extraction system will take 17 days to complete.
- If the inherent difficulties of drilling in trash slow the progress of system installation such that it extends beyond 17 days, the County will be informed and verbal approval will be obtained to extend the construction schedule. If this occurs, additional subcontractor cost will be incurred, as well as additional time for Jacobs' field monitoring. Jacobs's time will be charged at our provided hourly rates.
- All investigation derived waste (IDW) will be staged to one central location and Fayette County will be responsible for the disposal of all IDW.
- All drilling locations will be accessible by a track-mounted rig and any necessary clearing for access will be performed by Fayette County prior to mobilization of the drilling rig.
- Drilling equipment decontamination will not be necessary between drilling locations.
- Any EPD comments received in response to either letter report submittal will be addressed under separate scope and budget.



NO.	DATE	DESCRIPTION OF REVISION
1	09-23-11	REVISE BASED ON GEOPROBE INVESTIGATIONS
0	05-04-11	INITIAL ISSUE

JACOBS

FAYETTE COUNTY BOARD
OF COMMISSIONERS

FIRST MANASSAS MILE ROAD
SOUTHSIDE LANDFILL

PLAN FOR METHANE REMEDIATION

DESIGNED: EGM	CHECKED:	DATE: APRIL 2011	1	1
DRAWN: AH	JOB NO. EEXE9300	SCALE: 1:100	SHEET	REV

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