APPENDIX C
FROM THE ADDENDUM TO THE GAS COLLECTION AND CONTROL SYSTEM DESIGN PLAN DATED MAY 2, 2008

5 REQUESTED ALTERNATIVE MONITORING/RECORD KEEPING/RECORDING PROCEDURES

Per 40 CFR 60.752(b)(2)(i)(B), the design plan allows for alternatives to the operational standards, test methods, procedures, compliance requirements, monitoring, record keeping, and reporting provision. The following are proposed variances to the monitoring, recordkeeping, and recording procedures of the NSPS.

5.3.1 PASSIVE VENT MONITORING AND OPERATION

Due to the passive nature of the proposed GCCS in the closed, unlined Class I landfill, it will be necessary to operate the vents with positive pressure. While the passive flares will have blowers installed, these blowers are intended to improve flame stability, not exert a significant vacuum on the vent. On a monthly basis, the vents will be monitored and data recorded for pressure, temperature, and oxygen; a positive pressure reading or oxygen concentration exceeding five percent will not constitute an exceedance, and no remedial action will be necessary for either of these situations.

A ball valve and sampling port will be installed on the flare assembly to isolate the flare assembly for maintenance purposes and to shut off the free-venting of gas if necessary. If temporarily closing a vent valve is necessary, Polk County will continue to monitor the vent on a monthly basis for oxygen concentration and pressure. However, non-negative pressure readings or oxygen concentrations greater than or equal to five percent by volume recorded during this period will not be considered an exceedance of the NSPS operating criteria.

5.4.1 WELLFIELD EXPANSION IN CLOSED, UNLINED LANDFILL

The drawings included with this submittal show the conceptual design of the proposed GCCS. Since the closed, unlined Class I landfill cells have reached final grade, it is not anticipated that the GCCS will be expanded. If expansion of the GCCS in these cells is required, similar vents and passive flare assemblies would likely be installed. Record drawings will be maintained on site to document the as-built conditions and surface emissions monitoring will demonstrate the adequacy of the vents and flares to control surface emissions in accordance with the intent of the NSPS.

5.5.1 ALTERNATIVE SURFACE EMISSIONS REMEDIAL ACTIONS FOR CLOSED, UNLINED LANDFILL

Polk County proposes that the following remedial actions be accepted on the closed, unlined Class I landfill cells as alternatives to installing additional wells:

- Addition of supplemental cover soil or other cap repairs.
- Troubleshooting and upgrades or repairs to the passive flare assemblies in the vicinity of the exceedance. A description of the improvements will be included in the semiannual NSPS report following the remediation.

Please note that the foregoing list is not intended to be exhaustive. Other actions that result in the remediation of an exceedance within the 120-day time frame would also be covered under this alternative. Any enhancements made to the GCCS will be documented in the semiannual NSPS reports required by the site's Title V permit. Please note that Polk County will be proactively implementing this variance to make certain that exceedances are addressed as expeditiously as possible. In the event that the GCCS cannot be brought back into compliance during the 120-day assessment period, Polk County will prepare an alternative compliance schedule for review and approval.

5.8 ESTABLISH HIGHER TEMPERATURE OPERATING VALUE

Per 40 CFR 60.753(c), the landfill owner/operator may establish a higher operating value for wellhead gas temperature. Polk County will only seek to establish a higher operating value at an extraction well subsequent to failed attempts to correct the temperature exceedance. In requesting higher operating temperatures, Polk County will submit information demonstrating that the following conditions will be met:

- The elevated parameters will not cause an environment conducive for subsurface oxidation.
- The higher temperature will not inhibit anaerobic decomposition by killing methanogens.

For this reason, if an extraction well is demonstrated to have a normal operating temperature that is stable above 131 °F as a result of anaerobic degradation within the waste mass, a higher operating temperature threshold will be established for the extraction well. Polk County will provide tow to three months of operational data to support the establishment of a higher operating temperature range for any particular landfill gas collection device. The following information will be included in this data set:

- The monthly and average oxygen content of the LFG;
- The monthly and average carbon dioxide of the LFG;

- The monthly and average methane content of the LFG;
- Well logs provided by drilling contractors during initial installation, if available;
- A carbon monoxide reading from each extraction well;
- The monthly and average temperature of the LFG; and
- No visual indication of subsurface oxidation (smoke, excessive settlement).

5.9 WELL ABANDONMENT

Polk County may abandon an extraction well or horizontal collector under the following guidance:

- Decommission the well or collector in accordance with the design plan.
- Provide data to the Administrator that states the landfill will still have sufficient well field density in compliance with the NSPS.
- Provide four consecutive quarters of surface emissions monitoring events without exceedances to the Administrator.
- Document that the zone of influence of the decommissioned extraction well had methane readings below 500 ppm.

The data and information submitted to the Administrator shall be certified by a Florida Professional Engineer.

5.10 EARLY INSTALLATION OF COLLECTION DEVICES

Per 40 CFR 60.755(b), each extraction well shall be installed no later than 60 days after the date on which the initial solid waste has been in place for a period of five years or more in active areas or two years or more if closed or at final grade. However, there may be occasions when Polk County will decide to install extraction wells prior to the onset of NSPS requirements. Based on the foregoing regulatory citation, any extraction wells installed prior to the requirements of NSPS will not be subject to the operational and/or record-keeping requirements of NSPS until the age of the initial waste placed reaches five years old if in an active area or two years old if closed or at final grade.

Polk County will include information in the semi-annual report required by NSPS and the site's Title V permit indicating the date of initial extraction well installation and the NSPS compliance date of the "early extraction well".

5.11 MONITORING OF LEACHATE CLEANOUT RISERS

During the operating life of the landfill, Polk County may decide to connect the leachate collection system to the GCCS to help control odors, to increase the quantity of LFG available

for beneficial use, or to meet other landfill operating needs beyond regulatory compliance with the rule. This Plan has been prepared to meet the required level of LFG control without the use of the aforementioned connections. For this reason, Polk County does not believe that the operating requirements of the rule should be applied to voluntarily-added collectors because these collectors only act to enhance the performance of the system beyond that required by the rule. Furthermore, because these devices are installed for purposes other than to meet the requirements of the rule, their design may preclude their ability to meet the stipulated operational requirements.

Additionally, these leachate collection risers often operate with oxygen at atmospheric level (approximately 21 percent), which is far greater than the five percent oxygen limit stipulated in the NSPS. Furthermore, leachate collection risers connected to the GCCS may need to be closed off on occasion for operational reasons, in which case it would not be possible to apply negative pressure.

If Polk County is required to operate any gas connection points to the leachate collection system, then the County will need to operate those points at a variance of 21 percent and at times be allowed to be operated under a positive pressure. Therefore, Polk County is requesting that connections to the leachate risers not be required to be operated and monitored in compliance with the NSPS. If the Administrator feels that any leachate risers connected to the GCCS must be operated and monitored in accordance with the NSPS, then the County would need to establish a oxygen variance of less than twenty-one percent and be allowed to operate them at positive pressures as well.

5.12 EXCLUSION OF DANGEROUS AREAS FROM SEM REQUIREMENTS

In accordance with 40 CFR 60.753(d), which allows a landfill owner to exclude areas with steep slopes or other dangerous areas from surface emissions monitoring, Polk County is proposing to exclude the following dangerous areas from surface emissions monitoring:

- Roads;
- Active areas or working face;
- Truck traffic areas;
- Slopes steeper than 3:1;
- Areas where the landfill cover material has been exposed for the express purpose of installing, expanding, replacing, or repairing components of the LFG, leachate, or gas condensate collection and removal systems.

5.13 SURFACE EMISSIONS MONITORING ON SYNTHETIC CAPS

In a determination dated April 26, 2004, U.S. EPA stated that a 60-meter surface emissions monitoring path can be implemented if a synthetic cap is in place and the following criteria are satisfied:

- No monitored exceedances of 500 ppm or more above background are detected in three consecutive quarterly monitoring periods;
- No monitored methane exceedances of 500 ppm or more above background are detected during the yearly SEM events.

Based on the abovementioned clarification letter, Polk County will incorporate a 60-meter surface emissions monitoring path in areas where a synthetic cap is in place.

5.14 10-DAY SURFACE EMISSIONS REMONITORING EVENT

Polk County is requesting a variance to the 10-day surface emissions remonitoring event window allotted for adjustments to the cover and/or GCCS. Industry experience with NSPS facilities across the Southeast U.S. suggests that this 10-day time frame may not be a long enough timeframe in which to effect comprehensive repairs during all quarters of a typical year. For example, if the facility experiences precipitation events following a surface scan, it may take several days or even weeks for the sideslopes of the landfill to dry out enough to support construction equipment cover repairs. If the sideslopes are not completely dry, the repair equipment could cause greater damage to the final cap (and subsequently higher emissions) than the original erosion or crack. Poor weather conditions can prevent cover maintenance, which likely will result in the follow-up surface emissions remonitoring event 10 days later to show another exceedance. This can ultimately force a facility to install an unnecessary LFG collection device when all that was really required was enough time to effect a cover repair.

For this reason, the Polk County is requesting that the 10-day remonitoring event timeframe be extended by an additional two (2) weeks in the event of inclement weather conditions after a quarterly surface emissions monitoring event. Polk County is proposing to obtain this two-week extension automatically upon providing the Florida Department of Environmental Protection with the following written information:

- The date of the initial quarterly surface emissions monitoring event
- The date of the inclement weather event
- Description of inclement weather event
- The name of the responsible sampling technician

Please note that a copy of this information will also be maintained in the Polk County NSPS files.

5.15 CONTROL DEVICE

The following variances pertain to control devices.

5.15.1 1-hour and 5-day Standards

Section 60.755(e) states that the compliance provisions apply at all times, except during periods of startup, shutdown or malfunction provided that the duration of the start-up, shutdown or malfunction shall not exceed 5 days for collection systems and shall not exceed 1 hour for treatment or control devices. The collection and control systems are designed so that when the control system is off-line the gas moving equipment is shutdown as well preventing gas from being vented to the atmosphere. Therefore, the entire collection system is off-line when the control system is shutdown.

It is the understanding of Polk County that the 1-hour and 5-day downtime provisions mean that the collection system cannot be down for more than 5 days at a time. Further, the treatment and/or control system (i.e., flare) cannot be down for more than 1 hour at a time while the collection system is running, in a manner that allows uncontrolled LFG to vent to the atmosphere.

For this reason Polk County will operate the GCCS such that control system downtime in excess of 5 days, assuming no uncontrolled LFG emissions into the atmosphere in excess of 1 hour, is not considered an exceedance of the standard. This type of operational procedure is understood to meet the intent of the regulation. Furthermore, U.S. EPA appears to agree with this understanding of the regulation, because the proposed NSPS revision does not include the 1-hour rule as part of the regulation. This information is shown in the U.S. EPA-Solid Waste Association of North America Meeting Summary of Responses, which can be found in Appendix D-1.

5.15.2 Flow Meters When No Bypass is Present

The Municipal Solid Waste Landfill NSPS/EG Questions and Answers (Q&A) document issued by U.S. EPA states that LFG flow measurement or lock and key requirements do not apply to a GCCS that is designed such that there is no physical means to bypass the LFG flow before it reaches the control device. In the event that a malfunction occurs with the GCCS equipment, a pneumatically operated valve will close and prevent the direct venting of uncombusted LFG into the atmosphere.

The existing GCCS design satisfies the foregoing LFG flow measurement/lock-and-key waiver criteria; therefore, Polk County is requesting to not be required to install and operate flow-measuring device in accordance with the requirements of the NSPS. If Polk County decides to install a flow measuring device, it will not be subject to the monitoring and recording requirements of the NSPS.

5.15.3 Passive Flares in Landfill Areas with Active Controls

Polk County currently has an active GCCS in the Class I, Class III, and Class I/III landfill areas. In the event that there is a malfunction of the flare or other control devices currently in operation at the facility, Polk County requests the flexibility to install passive flares in strategic locations throughout the landfill to provide LFG emissions control until the existing flare is repaired or replaced. Should this situation occur, the number and location of the passive vent flares will be included in the Semi-Annual Report required by the NSPS. U.S. EPA has approved this type of scenario in the past, as shown in Appendix D-2, which is a U.S.EPA letter dated November 26, 2002 (Control Number 0500095)].

Please call Allan Choate of Polk County at (863) 284-4319 if you have any questions about this submittal or require additional information.

Sincerely,

Lindsey E. Kennelly, P.E.
Senior Project Engineer

No. 56065
5/2/08

David H. Penoyer, P.E.
Project Manager
SCS ENGINEERS

attachment