Florida Department of Environmental Protection

Central District
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803-3767

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

By E-Mail
mkaiser@wsii.us

Mr. Mike Kaiser
Omni Waste of Osceola County, LLC (Omni)
1501 Omni Way,
St. Cloud, FL 34773

OCD-SW-010-0424

Osceola County – SW
J.E.D Solid Waste Management Facility, Class I
Modification of GCCS System – Intermediate Modification
Addition of Horizontal Gas Collectors (Cell 7 through 10)
And GCCS/Leachate Sump Connections
First Request for Additional Information
Modification of Permit No. SO49-0199726-012
Permit Application No. SO49-0199726-015

WACS # 89544

Dear Mr. McCash:

Golder Associates, submitted on your behalf, "Horizontal Gas Collectors and GCCS/Leachate Sump Connections Intermediate Permit Modification". It was dated July 21, 2010, and received by the Department on July 26, 2010. We have assigned permit number SO49-0199726-015 to the application. The application is incomplete. Please provide the information listed on the attached sheet promptly. Evaluation of your application will be delayed until all the requested information has been received.

Pursuant to Section 120.60(2), Florida Statutes, the Department may deny an application, if the applicant, after receiving timely notice, fails to correct errors and omissions, or supply additional information within a reasonable period of time. Accordingly, please provide the additional information within 30 days of the date you receive this letter. Submit three copies of the requested information to the Department and reference the above permit application number in your correspondence.

If you have any questions, please contact me at (407) 893-3328 or by e-mail at Tom.Lubozynski@dep.state.fl.us.

Sincerely,

F. Thomas Lubozynski

F. Thomas Lubozynski, P.E.
Waste Program Administrator

Date: August 24, 2010

FTL/gc/sj

Enclosure
cc:
Kevin S. Brown, P.E. – Golder Associates, kbrown@golder.com

Note that all references to "Report" in the following text refer to the document entitled, "Horizontal Gas Collectors and GCCS/Leachate Sump Connections Intermediate Permit Modification, J.E.D. Solid Waste Management Facility", Prepared by: Golder Associates Inc., 9428 Baymeadows Road, Suite 400, Jacksonville, FL 32256 dated July 2010.

1. **DEP Form 62-701.900(1), Page 33 of 39, Item N.3, Provide Documentation describing how the gas remediation plan and odor remediation plan will be implemented (62-701.530(3), FAC):** You have checked two boxes marked S and N/C for this item. If S is correct, please submit the corrected page with information about where in the application the information is located. If N/C is correct, we can make that correction for you. Or, you can submit a corrected page.

2. **Exhibit 2, Engineering Design Narrative, Page 1, Section 1.0, Background, Third Paragraph:** No design data and calculations were presented to show how the current capacity of the GCCS system (including the anticipated flow rates, condensate management, flare system capacities, mechanical, and electrical systems) is sufficient to handle the additional gas flow anticipated from 16 new horizontal gas collectors, 4 sideslope gas collectors, some leachate sumps and adjoining cleanout risers. Please submit the additional information.

3. **Exhibit 2, Engineering Design Narrative, Page 2, Section 2.0, Design Information:** The last sentence states that the existing sumps and leachate cleanout risers are providing a significant source of landfill gas generated from the adjacent waste mass. What assumptions were used to determine the amount of gas flow necessary to adequately remove landfill gas from the existing sumps and leachate cleanout risers?

4. **Exhibit 2, Engineering Design Narrative, Page 3, Last Paragraph:** The last sentence states that the horizontal gas collectors will be terminated approximately 120 feet from the interior cell limit (from the first layer of HGCs) in order to stagger the wells. Clarify the following:
    a. Is the end cap for each run of HGC a solid cap or perforated cap?
    b. Provide the basis for the assumption that the horizontal radius of influence (ROI) will extend 120 feet horizontally past either end of the each HGC pipe.

5. **Exhibit 2, Engineering Design Narrative, Page 5, Section 2.1.2, HGC Pipe Sizing:** The second bullet states that the well flow is assumed to be approximately 0.2 cfm per foot of well screen. Clarify if the well flow unit is standard cubic feet per minute (scfm) or actual cubic feet per minute (acfm). Provide the data in scfm units that includes correction factor for field conditions.

6. **Exhibit 2, Engineering Design Narrative, Page 7, Section 2.2.1, SSC Pipe Sizing:** The second bullet states that the well flow is assumed to be approximately 0.1 cfm per foot of well screen. Clarify if the well flow unit is standard cubic feet per minute (scfm) or actual cubic feet per minute (acfm). Provide the data in scfm units that includes correction factor for field conditions.

7. **Exhibit 2, Engineering Design Narrative, Page 7, Section 2.3, Leachate Collection System Tie-In:** The third sentence states that the proposed design includes connections to select leachate cleanout risers located adjacent to the leachate sump pads. However, the first sentence of the third paragraph states that at each sump station, all sumps (Secondary, Primary No. 1, Primary No. 2) and associated leachate collection system cleanout riser will be connected to the GCCS via a single wellhead. Clarify the conflicting statements. Additionally, correct the monitoring point table provided on this page to reflect uniform labeling (i.e., LCS versus LSC). Show these locations on the drawings submitted in Exhibit 3.

8. **Exhibit 2, Engineering Design Narrative, Page 7, Section 2.4, Design Life:** Provide additional information related to the following:
    a. Maintenance procedures that will be used during the operating life of the horizontal gas collectors (HGC), including what actions will be taken to prevent "watering-in".
    b. What field data will be collected from each HGC to determine whether it is operating correctly?
    c. Procedures that will be used to revive an HGC if the field operating data indicates that the HGC is inoperable due to "watering-in".
    d. If the HGC will not be revived in the event of watering in, describe the process that will be used to abandon the HGC in place, associated well heads, and piping.

9. **Exhibit 2, Engineering Design Narrative, Appendix A, Design Calculations:** Provide the source/reference used for the following constants used in your design calculations: $P_{landfill}$, Intrinsic Waste Permeability (Ki), Gas Generation Rate (GGR), Waste Density, and Dynamic Viscosity.

10. **Exhibit 2, Engineering Design Narrative, Appendix A, Design Calculations, LFG Extraction Well Horizontal Design and Spacing Calculations:** The longest perforated pipe length is Well HGC-8; it is approximately 1005 feet long. Provide the basis for using 400 feet, 500 feet, and 600 feet H values in the calculations for well pressure and well ROI. Provide the revised calculations using H value of 1005 feet or explain why this H value of 1005 ft was not used in the design calculations related to well pressure and well ROI.

11. **Exhibit 2, Engineering Design Narrative, Appendix A, Design Calculations, Horizontal Gas Well Design Calculations:** Provide the source/reference for the Q value (120 cfm) used in the calculation of head loss using the Darcy-Weisbach Equation. If the well flow is 0.20 cfm/ft of perforated pipe and well HGC-8 has slotted length of 1005 feet, this equates to approximately 200 cfm. Additionally, clarify the conflicting statements provided in the "Given Information/Assumptions Section" that indicates SDR 17 pipe is used to calculate Pipe Area and the very last sentence in this section that states SDR 11 HDPE pipe will be used for the wells. Provide the revised calculations based on the correct pipe type that will be used for Horizontal Gas Well Design.

12. **Exhibit 2, Engineering Design Narrative, Appendix A, Design Calculations, Horizontal Gas Well Design Calculations:** The second set of horizontal gas well design calculations presented in Appendix A using well flow of 0.10 cfm/ft of perforated pipe appears to have error in Step 2 of the calculation (Solve the Bernoulli equation to determine the pressure at the end of the horizontal well.) Specifically, the h_L (head loss) value used in the equation should be -1516.01 ft gas instead of -735.77 ft gas. Additionally, the z_1 and z_2 (elevation head) values used in this calculation appears to be very similar to the previous data set (i.e., using well flow of 0.20 cfm/ft of perforated pipe). Clarify this discrepancy and, if necessary, submit the corrected page.

13. **Exhibit 3, Drawings, Drawing No. 29A and 29B of 40:** Review of the Drawings 29A and 29B show only two side slope collectors. However, Section 2.2 titled Sideslope Gas Collection Wells, on page 6 of Exhibit 2, shows a Table with well identifications SSC-1 through SSC-4. These wells are not marked or identified on Drawing 29A or 29B of 40. Submit the revised corrected drawings that show these sideslope gas collection wells. Additionally, show if these side slope gas collection wells are tied to existing headers or new headers will be installed and connected to the flare stations.

14. **Exhibit 3, Drawings, Drawing No. 29B of 40:** The Legend refers to Note 5 and Note 6 for information related to Wetland Boundary and 100-Year Floodplain. However, there is no Note 5 or 6 in the Notes section. It appears that Notes 5 and 6 refers to Reference Nos. 3 and 4. Please submit the corrected drawing or if you prefer the Department can make this correction for you. Additionally, clarify if more recently updated 100-year flood-plain map is available for this site.

The 100-year flood-plain information presented on Drawing No. 29B is based on map dated January 9, 2002.

15. **Exhibit 3, Drawings, Drawing No. 32A of 40:** The typical section of 10" diameter HDPE Horizontal Gas Collector shown on Section 2/32A is confusing. It appears that the Geotextile wrap should be around the 10" diameter pipe as shown on Section 1/32A and not on top of the trench as shown on Sectin2/32A. Please clarify or, if necessary, submit the corrected drawing.

16. **Exhibit 3, Drawings, Drawing No. 32B of 40:** Refer to Sections C/32B and D/32B. Show the locations of the proposed vertical gas extraction wells on these sectional drawings. Drawing No. 29A of 40 shows the location of the vertical gas extraction wells in cells 7 through 10. Additionally, provide a drawing that shows the radius of influence (ROI) associated with the proposed horizontal gas collectors and also the vertical gas extraction wells for cells 7 through 10. The Department recognizes that the ROI for the horizontal gas well collectors are elliptical and difficult to depict on a drawing. An approximation of these details is acceptable.

17. **Exhibit 3, Drawings, Drawing No. 32B of 40:** Clarify why only two rows of horizontal gas collectors are recommended as part of this permit application located at approximate elevations of 95 feet NGVD and 180 feet NGVD of waste fill in Cells 7 through 10. The Department Solid Waste Permit Nos. SC49-0199726-006 and SO49-0199726-007 issued on April 04, 2008, in the modified Specific Condition No. A states that the final maximum top elevation for Cells 1-21 has been modified from 178 feet NGVD to 330 ft NGVD.
    a. Will there be additional horizontal gas well collectors added as more waste lifts are added beyond 180 feet NGVD elevation?
    b. Additionally, the Sections C/32B and D/32B show final covers for Cells 7 and 8 and Cells 9 and 10 at elevations of approximately 220 feet NGVD elevations instead of 330 feet NGVD. Clarify this discrepancy and if necessary submit the revised drawing.