



Florida Department of Environmental Protection

Southwest District
13051 North Telecom Parkway
Temple Terrace, Florida 33637-0926
Telephone: 813-632-7600

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

Transmitted via email only to dan.gray@mymanatee.org

Mr. Daniel Gray, Utilities Department Director
Manatee County Government
4410 66th Street West
Bradenton, Florida 34210

December 10, 2009

RE: Lena Road Class I Landfill Operation Permit Renewal
Pending Permit No.: 39884-018-SO/01, Manatee County
WACS ID No: SWD-41-44795

Dear Mr. Gray:

This is to acknowledge receipt of the permit application prepared by PBS&J, dated November 11, 2009 (received November 12, 2009), for operation permit renewal, including construction and operation of a lateral expansion (Stage II), of an existing Class I landfill, referred to as the Lena Road Class I Landfill, located at 3333 Lena Road, Bradenton, Manatee County, Florida.

This letter constitutes notice that a permit will be required for your project pursuant to Chapter(s) 403, Florida Statutes.

Your application for a permit is incomplete. This is the Department's first request for information. Please provide the information listed below promptly. Evaluation of your proposed project will be delayed until all requested information has been received.

GENERAL:

1. The requested information and comments below do not necessarily repeat the information submitted by the applicant. However, every effort has been made to concisely refer to the section, page, drawing detail number, etc. where the information has been presented in the original submittal.
2. Please submit 4 copies of all requested information. Please specify if revised information is intended to supplement, or replace, previously submitted information. Please submit all revised plans and reports as a complete package. For revisions to the narrative reports, deletions may be struckthrough (~~struckthrough~~) and additions may be shaded shaded or similar notation method. This format will expedite the review process. Please include revision date on all revised pages.
3. Please provide a summary of all revisions to drawings, and indicate the revision on each of the applicable plan sheets. Please use a consistent numbering system for drawings. If new sheets must be added to the original plan set, please use the same numbering system with a prefix or suffix to indicate the sheet was an addition, e.g. Sheet 1A, 1B, P1-A, etc.
4. Please be advised that although some comments do not explicitly request additional information, the intent of all comments shall be to request revised calculations, narrative, technical specifications, QA documentation, plan sheets, clarification to the item, and/or other information as appropriate. **Please be reminded that all calculations must be signed and sealed by the registered professional engineer (or geologist as appropriate) preparing them.**

The following information is needed in support of the solid waste application [Chapter 62-701, Florida Administrative Code (F.A.C.)]:

1. **Rule 62-701.320(5)(b), F.A.C.** Please address the comments in John Morris' December 9, 2009 memorandum (attached) regarding this application. You may call Mr. Morris at (813) 632-7600, extension 336, to discuss the items in his memorandum.

Rule 62-701.320(7)(b), F.A.C. Application Form #62-701.900(1): Please address the following comments regarding the permit application form and/or supporting information and provide a revised application form with revised information, where applicable:

2. **Rule 62-701.320(10)(c), F.A.C.:** The N/C column is marked for several parts of the application form and references to information provided in previous applications are made. In accordance with Rule 62-701.320(10)(c), F.A.C., the applicant must also reaffirm that the information previously provided is still valid. For such referenced parts of the application, please verify that the applicant has reviewed the information referenced and reaffirm that the information provided is still valid for current operation of the facility. Please be advised that if the referenced information is not currently located in the Department's files, copies of these documents may be required to verify that the information referenced is still valid. Therefore please verify that the information is currently available in the Southwest District's files.

3. **Section B.1.:** Part of the proposed operation fill sequence appears to also include filling on parts of the west & north slopes of Stage I. Please revise the narrative in this part accordingly.

4. **Section C.1.:** Please revise this section to provide a brief description of the yard trash processing facility, household hazardous waste facility, and citizen drop-off facility operated at the facility.

a. **Parts D.1. & D.7.:** Please provide updated supporting documentation that demonstrates that the statements regarding the siting prohibitions are still valid for Stage II and revise Parts D.1 and D.7., as appropriate.

5. **Sections E.9.a. & b.:** These sections referenced Figures E-1 and E-2. However, two Figure E-1s were provided and no Figure E-2 was provided. Please verify and revise the figure titles, as appropriate.

6. **Section E.13.:** In accordance with Rule 62-110.106(6), F.A.C., publication of a notice of application shall be required for those projects that, because of their size and potential effect on the environment or natural resources, are reasonably expected by the Department to result in a heightened public concern. The Department considers a Class I landfill operation permit as a project of potential heightened concern and therefore publication of a notice of application is applicable. Please publish the attached Notice of Application, provide proof of publication to the Department, and revise Section E.13. of the application form to reference the submittal of this information, accordingly.

7. **Section F-1 and Figure E-1 (aerial photograph):** As a result of the recent eastern expansion of Stage 3 and the relocation of the administrative offices, HHW facility, and citizen drop-off area, the aerial photograph provided, although less than 1 year old, appears to no longer be representative of the current conditions at the facility. Please verify and provide a more current aerial photograph of the facility.

8. **Section F-2 and Part F-2:** Please provide supporting information that verifies that no new airports within 5 miles have been located since 1997 and that the airports setback statements are valid for the operation of Stage II.
9. **Section F-3:** As a result of the changes to the facility since 1997, it is unlikely that plot plan information and drawings from 1997 and 1999 are representative of current site conditions. Please verify and provide updated plot plan information, as appropriate.
10. **Section F-4:** Although this section is marked N/C and refers to 1997 and 1999 information, a more current topographic survey and operation drawings appears to be provided with this application. Please verify and revise Part F.4, as appropriate.
11. **Section H-1:** The statement that "Part H is not applicable since this is renewal... which does not involve any new construction" appears incorrect. At a minimum, this application indicates that the excavation of Stage II to design bottom grades has not been completed to date and must be constructed and certified prior to operation in Stage II.

Since only part of the Stage II landfill system was originally constructed in the mid-late 1980's and the Department has found no records in its current files regarding either the design details and/or design calculations for Stage II, or a certification of construction completion of Stage II that approves construction or authorizes operation in Stage II, the applicable landfill construction design requirements in Part H for Stage II must be re-evaluated by the applicant and re-submitted as part of this application.

In addition, since the constructed parts of Stage II were constructed many years ago, the proposed operation of Stage II appears to have been modified from the operation originally proposed, and the function and adequacy of the construction landfill systems has not been monitored or re-evaluated for updated operation plans. Therefore the function and adequacy of these systems, based on the currently proposed operation of Stage II must be re-evaluated and recertified as complying with the applicable requirements of Department rules, prior to operation in Stage II.

It is strongly recommended that the information regarding Stage II design and permitting currently available in the Department files be verified, and that the applicant, their consultants, and Department discuss the information that will be required to be submitted in support of Stage II construction completion and operation at the meeting referenced at the end of this letter.

12. **Section J.:** The proposed operation of Stage II appears to be revised from that originally proposed. Therefore please provide updated geotechnical information based on the revised operational design. It is strongly recommended that the applicant, their consultants, and Department discuss the revised geotechnical information that will be required to be submitted at the meeting referenced at the end of this letter prior to submittal of additional information.

13. **Part J:**

- a. Slope Stability Analysis: Please provide the input/outputs printouts from the Slope/W program slope stability analysis discussed in this section.
- b. Please provide an updated sinkhole potential evaluation for the facility that includes the following:
 - a) An evaluation that identifies areas of loose sands and other anomalies, if any, that could indicate potentially unstable areas beneath or within the immediate vicinity of the Stage II footprint and adequately explains or addresses this potential, and/or identifies sufficient geotechnical measures necessary to modify the foundation to provide adequate structural support for the landfill.
 - b) An evaluation of the data generated as part of the compilation of hydrogeological and groundwater information provided in Part J of this application and any subsequent sinkhole evaluation information provided as part of permitting Stage II construction.
 - c) An evaluation of the sinkhole occurrences both on-site and in the vicinity of the site (within a 5 mile radius).
 - d) An evaluation of the additional subsurface investigation conducted as part of this application or since the reports provided in Part J.
 - e) An evaluation of any additional site investigation conducted, as deemed necessary; and
 - f) An evaluation of the proposed construction details for Stage II that address the findings in Comments (a) through (e) above.

PART L - OPERATIONS PLAN (RULE 62-701.730(9), F.A.C.)

Please provide the following additional information and revisions to the facility Operations Plan. Please provide replacement pages with revisions noted (deletions may be struckthrough [struckthrough] and additions may be underlined [underlined] or a similar method may be used) and each page numbered with the document title and date of revision.

14. Please provide a copy of the current HHW collection and storage facility operation plan as part of this application, updated as applicable.

15. **Section 2.0:**

- a. Contingency Operations for Emergencies: This section discusses the equipment required for "the excess volume of waste generated in an emergency" and then later states, "Refuse is not normally delivered to the site during an emergency." Please revise this section, as applicable to resolve these apparent contradictory statements.
- b. White Goods: Please revise this section to specifically identify where the white goods staging area is located.
- c. Waste Compaction and Application of Cover: Please revise this section to specifically identify where the designated stockpile area is located.

16. **Section 4.0:**

- a. Please explain the difference between "Yard Waste" and "Agricultural Waste", and confirm that these two waste streams are recorded separately.
- b. Please explain what "Debris" is and confirm that this waste stream is recorded separately.
- c. Please confirm whether "Illegal Dumping" is the same as unacceptable waste.
- d. Figure L-2: The waste types on Figure L-2 appear inconsistent with those listed in Section 4.0. Please verify and explain and revise Section 4.0 and/or Figure L-2, as appropriate.

17. **Section 7.0:**

- a. Slope and Lift Depths & Working Face: Based on a review of the Typical Working Face Detail on Sheet C-13, the interior 3H:1V active face appears to refer to the excavated interior slopes and the slope of the perimeter berm around the working face. Please verify this understanding and revise this section to clarify what parts of the operation will have 3H:1V and 5H:1V slopes, consistent with the typical working face detail.
- b. Initial Cover Controls:
 - 1) Please revise this section to verify whether asphalt roofing shingles are the only type of ground-up C&D debris that will be utilized for initial cover or to identify the other types and sources of ground-up C&D debris that will be utilized and revise this section and Section 3.0 of the Operations Plan to indicate that records of the referenced weekly testing of ground-up C&D debris will be maintained on-site for inspection by the Department, upon request.
 - 2) Please provide a copy of the referenced August 27, 2002 letter.
- c. Final Cover Timing: Please revise this section to describe what part of the facility will be closed in 2011 and if that closure construction has already been permitted.

18. **Section 8.0:**

- a. Please revise Section 8.0 to provide specific operation and maintenance procedures for the Stage II leachate collection system during the operation of Stage II.
- b. Stage II: Because the facility has not operated Stage II to remove leachate or maintain an inward gradient to date, the applicant must evaluate the effectiveness of the constructed system prior to operation of Stage II, including a video inspection of the system and a report on the condition and effectiveness of the system. Please revise this section to discuss the system evaluation to be conducted prior to operation of Stage II.
- c. The "Leachate Collection System Plan" figure in this section is illegible. Please provide an appropriately sized figure that can be read and reviewed.

- d. Figure L-4-A: Please provide a revised figure(s) that identifies each of the numbered components on this figure, including the leachate meters.
 - e. Operational Performance Objectives: Please revise this or an appropriate section of Section 8.0 to specifically describe the procedures for monitoring and maintenance of the gradient across the Stage II slurry wall during operation of Stage II.
 - f. Compliance Monitoring and Evaluation: Please revise the narrative in this section to include Stage II.
 - g. Figures L-5 through L-7: Please revise these spreadsheets and figures to include monitoring of Stage II.
 - h. Operation and Maintenance of Leachate Collection System: Please revise this section to specifically discuss the operation and maintenance of the Stage II leachate collection system.
 - i. Leachate Management Contingency Plan:
 - a. This section states, "The County intends to maintain a one-foot inward gradient across the slurry wall." Please provide the gradient monitoring reports for the Stages I & III slurry wall for the last five years that demonstrate whether the facility is complying with this requirement. A review of the Department's files appears to indicate that gradient information has not consistently been provided over the last five years.
 - b. Please provide the supporting information and calculations for the statement, "Based on average flow rates, each inch of storage in the landfill will provide over two weeks of storage volume" and revise this section, as applicable.
19. **Section 9.0:**
- a. Gas Well and Point Monitoring:
 - 1) Several previously permitted gas wells and ambient gas monitoring locations appear to have been eliminated as part of the Stage III eastern expansion. Please revise this section to provide the replacement ambient and/or well monitoring locations associated with the relocated buildings and structures and revise Figures L-8 and L-9 accordingly.
 - 2) Please explain why gas monitoring well locations GMW-11B and GMW-11C were eliminated from the gas monitoring plan and revise this section and Figures L-8 and L-9 accordingly.
 - b. Figure L-8: Figure L-8 is illegible. Please provide an appropriately sized figure that can be read and reviewed.
 - c. Surface Emission Monitoring: Please revise this section to discuss surface emission monitoring in Stage II. Please verify whether the proposed operation of Stage II is part of the facility's current Title V permit.

20. **Section 10.0:**

- a. Figure L-11: This figure appears inconsistent with the operation drawings provided with this application. Please verify and revise Figure L-11 accordingly.
- b. Stage II System: Please revise this section to specifically describe the procedures for stormwater management in Stage II as part of the operation of Stage II.
- c. Maintenance Plan: The descriptions in this section do not appear applicable to Stage II operation. Please verify and revise this section accordingly.

21. **Section 13.0:**

- a. Groundwater: Please update the narrative in this section, as applicable to include groundwater monitoring for Stage II operation.

22. **Section 13.0:**

- a. Asbestos: Please revise this section to specify how thick a non-asbestos containing waste or soil cover layer will be applied before the area is compacted.

ATTACHMENT L-1 LANDFILL FILL SEQUENCE DRAWINGS TITLED - MANATEE COUNTY LENA ROAD CLASS I LANDFILL FILL SEQUENCE PLAN FROM 2009 TO 2015 - NOVEMBER 2009 (RULE 62-701.320(7)(f), F.A.C.)

Please provide the following additional information and revisions to the facility fill sequence plan drawings.

23. **Sheet C-2**: Please provide a more current aerial of the facility that shows the current conditions at the facility (See Comment #7, above).
24. **Sheet C-3**: Please provide a copy of the topographic survey of the facility signed and certified by the professional surveyor that prepared the survey.
25. **Sheet C-4**: A review of the currently permitted fill sequence drawings (Sheet C-7A dated 4/15/08) appears to indicate that Stage III was to be filled to a maximum elevation of 94 ft. NGVD prior to beginning filling in the excavated eastern expansion of Stage III. The topographic survey on this sheet appears to indicate that Stage III was filled to an elevation of 104 ft NGVD prior to excavation and filling in the eastern expansion. Please explain this apparent operational inconsistency and provide documentation that demonstrates that the Department approved this change in height.
26. **Sheets C-5 through C-8**:
 - a. Sheet C-7 provides a detail reference (Section D) for the stormwater downcomer pipes and stormwater swale on the north side of Stage III. Please verify whether this configuration is the same for the west and south slopes of Stage III.
 - b. Sheet C-8 shows no stormwater downcomer pipes on the lower level of the western half of Stage III. Please verify whether a stormwater conveyances system has already been installed in this area and revise these drawings, as applicable to show this system.

c. The side stormwater conveyance system for Stage III appears to route stormwater collected from several upper level stormwater conveyance pipes to a lesser number of lower level pipes that appear to be sized the same. Please provide supporting calculations for the side slope stormwater conveyance system for Stage III that demonstrates that the system will function as designed.

d. It is unclear from these drawings where stormwater conveyed to the toe of slope in Stage III discharges. Please explain and revise these sheets to show the toe of slope stormwater conveyance system in Stage III, including discharge locations and structures, as applicable.

e. The continued reference to Section E-13 on Sheets C-6 through C-8 appears to indicate that the temporary berm shown on Section E-13 will remain in place during Fill Sequences 3 and 4. Please verify and revise these sheets as applicable.

27. **Sheets C-7 and C-8:**

a. Sections A and B on Sheet C-11 shows 5H:1V side slopes between the terraces. However the contours on the upper three lifts of Stage III on these sheets appear to show a 4H:1V slope between the terraces. Please verify and revise these sheets accordingly.

28. **Sheets C-9 and C-10:** The initial excavation and fill sequence presented on these sheets differs significantly from the fill sequence included in the compilation of hydrogeological information for Stage II provided in Part J of this application and as indicated in Comment #11 above. Records are not currently available in the Department files to evaluate whether the proposed initial excavation and fill sequence in Stage II is consistent with the design of Stage II. The proposed excavation and fill sequence will be re-evaluated by the Department upon receipt of the design information for Stage II. **This comment is for informational purposes only and does not necessarily require a response.**

29. **Sheet C-9:**

a. This sheet appears to indicate that the Stage II will be excavated to a flat elevation of 29 ft NGVD. Please explain why the excavation is not sloped to convey leachate to the lateral leachate conveyance pipes.

b. Please revise this sheet to show the slope and elevations of the lateral and perimeter leachate pipes.

c. Please provide details (including elevations) of the lateral and perimeter leachate conveyance pipe system, the perimeter manholes, and Lift Station #4 and revise either this sheet or Sheet C-10 to provide cross-references to these details.

30. **Sheet C-10:**

- a. It is unclear from this drawing where stormwater conveyed to the toe of slope discharges. Please explain and revise these sheets to show the toe of slope stormwater conveyance system for Sequence 5 in Stage II, including discharge locations and structures, as applicable.
- b. Sections A and B on Sheet C-12 shows 5H:1V side slopes. However the side slope contours on this sheet show a 4H:1V side slope. Please verify and revise these sheets accordingly.

31. **Sheet C-11:**

- a. Please revise these sections to show the location of the interior perimeter toe of slope stormwater conveyance system, as applicable.
- b. Section A: Please verify the location of the slurry wall and Stage III leachate collection system shown on this section, and revise this section accordingly.
- c. Section B: Please verify that there is a Stage III leachate collection system interior of the east and west slurry wall and revise this section to show its location.

32. **Sheets C-13:**

- a. Section I: Please provide a detail of the stormwater inlet.

PART S - FINANCIAL RESPONSIBILITY REQUIREMENTS (RULE 62-701.630, F.A.C.)

33. Cost estimates provided as part of permit renewal shall be revised cost estimates, and cannot be based on previously approved cost estimates. These revised estimates must be on DEP Form #62-701.900(28), signed by the applicant and signed and sealed by the professional engineer preparing the cost estimates, and shall include information and calculations to support quantities provided and current third-party quotes to support unit costs provided. Revised cost estimates, supporting information and calculations, and copies of the supporting third-party quotes were not provided with the November 11, 2009 submittal. Please provide this information.


Please provide all responses that relate to engineering for design and operation, including plan sheets, signed and sealed by a professional engineer. Responses that relate to the facility operations should be included as part of the Operation Plan. All replacement pages should be numbered, and with revision date.

This staff assessment is preliminary and is designed to assist in the review of the application prior to final agency action. The comments provided herein are not the final position of the Department and may be subject to revision pursuant to additional information and further review.

Please respond by **the date established in the meeting referenced below**, responding to all of the information requests and indicating when a response to any unanswered questions will be submitted. If the response will require longer than the above schedule, you should develop an alternate timetable for the submission of the requested information for Department review and consideration. If the Department does not receive a timely, complete response to this request for information, the Department may issue a final order denying your application. A denial for lack of information or response will be unbiased as to the merits of the application. The applicant may reapply as soon as the requested information is available.

You are requested to submit 4 copies of your response to this letter as one complete package. Please contact the Department to set up a meeting to discuss this letter and subsequent submittals, prior to response to this letter. Please contact me at (813) 632-7600 ext. 385 to schedule this meeting.

Sincerely,



Steven G. Morgan
Solid Waste Section
Southwest District

SM/sgm

Attachments

cc: Joseph L. Miller, P.E., PBSJ, jlmliller@pbsj.com
Frank Hornbrook, FDEP, Tallahassee (e-mail)
Richard Tedder, P.E., FDEP, Tallahassee (e-mail)
David Zell/Cindy Zhang-Torres, FDEP Tampa Air Section (e-mail)
John Morris, P.G., FDEP Tampa (e-mail)
Susan Pelz, P.E., FDEP Tampa (e-mail)

62-110.106(5). Notices: General Requirements.

Each person who files an application for a Department permit or other notice as may publish or be required to publish a notice of application or other notice as set forth below in this section. Except as specifically provided otherwise in this paragraph, each person publishing such a notice under this section shall do so at his own expense in the legal advertisements section a newspaper of general circulation (i.e., one that meets the requirements of sections 50.011 and 50.031 of the Florida Statutes) in the county or counties in which the activity will take place or the effects of the Department's proposed action will occur, and shall provide proof of the publication to the Department within seven days of the publication.

62-110.106(6). If required, the notice shall be published by the applicant one time only within fourteen days after a complete application is filed and shall contain the name of the applicant, a brief description of the project and its location, the location of the application file, and the times when it is available for public inspection. The notice shall be prepared by the Department and shall comply with the following format:

**State of Florida
Department of Environmental Protection
Notice of Application**

The Department announces receipt of application for a solid waste permit from the Manatee County Government for a renewal of the existing operation permit, including operation of a lateral expansion (Stage II) of a Class I Landfill, subject to Department rules, at the Lena Road Class I Landfill located at 3333 Lena Road, Bradenton, Manatee County, Florida.

This application is being processed and is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at the Department of Environmental Protection, Southwest District Office, 13051 Telecom Parkway, Temple Terrace, Florida 33637-0926

Memorandum

Florida Department of Environmental Protection

TO: Steve Morgan
FROM: John R. Morris, P.G. *JRM*
DATE: December 9, 2009
SUBJECT: Lena Road Class I Landfill, Manatee County
Operation Permit Renewal Application, Pending Permit #39884-018-SO
Environmental Monitoring Review Comments
cc: Susan Pelz, P.E.

I have reviewed portions of the permit application materials submitted to the Department in support of the referenced application for the Lena Road Class I Landfill that were prepared by Post Buckley Schuh & Jernigan (PBSJ), on behalf of Manatee County Utilities Department, Solid Waste Division, received November 12, 2009. The materials that I reviewed were related to the hydrogeologic investigation and environmental monitoring aspects of the permit application, and included the following:

- Document entitled "Application and Engineering Report for Renewal of the Class I Landfill Operation Permit" [referred to as the "**Engineering Report**"], dated November 11, 2009, including:
 - DEP Form #62-701.900(1), Application for a Permit to Construct, Operate, Modify or Close a Solid Waste Management Facility, signed/sealed October 21, 2009
 - Part I – Hydrogeological Investigation Requirements
 - Part M – Water Quality and Leachate Monitoring Requirements

The following document has been submitted to the Department for the referenced facility. As this document addresses aspects of the hydrogeology of the facility and the adequacy of the existing monitoring plan, its review was conducted concurrently with the above-referenced materials submitted in support of the pending permit application. Please address the review comments presented below regarding the following:

- Document entitled "Biennial Water Quality Monitoring Plan Evaluation, First Half 2007 Through First Half 2009, Manatee County Solid Waste Division, Lena Road Class I Landfill" [referred to as the "**BWQMPE document**"], prepared by PBSJ, dated November 2009, received November 5, 2009

Additional information is required to address the requirements of Rules 62-701.410 and 62-701.510, F.A.C., and to evaluate the adequacy of the monitoring plan. Please have the applicant submit responses to the following review comments and provide revised submittals, or replacement pages to the submittals, that use a strike-through and underline format, or similar format, to facilitate review. Please also have the applicant include the revision date as part of the header/footer for all revised pages [including text, figures, tables, attachments, forms, plan sheets, etc.].

The review comments have been referenced to sections of the permit application and are also referenced to the sections of the supporting documents where appropriate, as presented below:

GENERAL COMMENTS

1. Rule 62-701.320(10)(c), F.A.C., indicates the following: "Facility information that was submitted to the Department to support the expiring permit, and which is still valid, does not need to be re-submitted for permit renewal. The permit renewal application shall list and reaffirm that the information is still valid." Please submit a list of all documents regarding the hydrogeologic investigation and the environmental monitoring aspects of the Lena Road landfill [ground water, surface water, and leachate monitoring for Stages I, II and III] that are being referenced in the renewal application, including title, date, revision, preparer, etc. Please verify that each of the referenced documents is available in the Department's files and is currently still valid. The Department will re-evaluate these documents to confirm their validity after the response to this comment is received. Please note that if the referenced documents are no longer valid or have changed since the previous permit, additional information may be requested.

SECTION I – HYDROGEOLOGICAL INVESTIGATION REQUIREMENTS

(Rule 62-701.410(1), F.A.C.)

2. I.g.: Inventory of all public and private water wells within a one-mile radius of the landfill including , . . .

I.i.: Include a map showing locations of all potable wells . . . [Rules 62-701.410(1)(b) and 62-701.410(1)(d), F.A.C., respectively] These items of the application form referenced Chapter 3.6 [“Well Inventory”] of the document entitled “Geotechnical and Hydrogeological Investigation, Lena Road Landfill,” prepared by Ardaman & Associates, Inc., dated March 3, 1983. Please submit a revised Engineering Report that provides a current well inventory for the Lena Road landfill footprint [Stages I, II and III]. Please submit revisions to these items of the application form that reference the requested information.

SECTION M – WATER QUALITY AND LEACHATE MONITORING REQUIREMENTS

(Rule 62-701.510, F.A.C.)

3. M.1.b.: All sampling and analysis performed . . . [Rule 62-701.510(2)(a), F.A.C.] This item of the application form referenced Section M.1.b., of the Engineering Report. Please submit revisions to Section M.1.b.(1) of the Engineering Report to reference the Department’s updated SOPs described in the document entitled “Department of Environmental Protection, Standard Operating Procedures for Field Activities, DEP-SOP-001-01,” dated March 31, 2008.

4. M.1.c.(1): Detection wells located downgradient from and within 50 feet of disposal units [Rule 62-701.510(3)(a), F.A.C.] This item of the application form referenced Section M.1.c., of the Engineering Report, however it does not appear that this section addressed the lateral distance between the slurry wall (considered to be the edge of the disposal unit for the Lena Road landfill) and the proposed detection wells. Please submit revisions to this section of the Engineering Report to address this item.

5. M.1.c.(2): Downgradient compliance wells as required [Rule 62-701.510(3)(b), F.A.C.] This item of the application form referenced Section M.1.c., of the Engineering Report, however it does not appear that this section addressed the criteria for requiring the installation of compliance wells. Please submit revisions to this section of the Engineering Report to address this item.

6. M.1.c.(4): Location information for each monitoring well [Rule 62-701.510(3)(d)1, F.A.C.] This item of the application form referenced Section M.1.c., of the Engineering Report. Please submit revisions to Note #3.A. on Figure M-2 and Section M.1.g.(1)(a) of the Engineering Report to reference revised DEP Form #62-520.900(3).

7. M.1.c.(6): Well screen locations properly selected [Rule 62-701.510(3)(d)4, F.A.C.] This item of the application form referenced Section M.1.c., of the Engineering Report. Inset Table 1 on Figure M-2 provided the range of screen elevations for proposed wells GW-18 through GW-28 [each well screened at 25 to 40 feet NGVD]. This proposed well screen elevation range is qualified by a note that indicated the elevations may change depending on water table elevation at the time of well installation. This note does not demonstrate that sufficient information has been collected to characterize seasonal variations in ground water elevations in the vicinity of Stage II [refer to Rule 62-701.410(1)(a)1, F.A.C.] to meet the technical justification of construction details for proposed monitor well to meet the requirements of this item. Please submit revisions to this section of the Engineering Report and to Figure M-2 as needed to support the construction details of the proposed monitor wells.

8. M.1.d.: Surface water monitoring requirements [Rule 62-701.510(4), F.A.C.] Items M.1.d.(1) and M.1.d.(2) of the application form referenced Section M.1.d., of the Engineering Report. Please submit revisions to these items of the application form that reference Section M.1.e., of the Engineering Report.

9. M.1.e.: Leachate sampling locations proposed [Rule 62-701.510(5), F.A.C.] This item of the application form referenced Section M.1.e., of the Engineering Report. Please submit revisions to this item of the application form that references Section M.1.f., of the Engineering Report. Please submit revisions to Section M.1.f., of the Engineering Report to indicate the leachate sampling location that will be included in the routine monitoring following the initiation of waste disposal in Stage II.

10. **M.1.f.: Initial and routine sampling frequency and requirements** [Rule 62-701.510(6), F.A.C.]
- a. Items M.1.f.(1) through M.1.f.(4) of the application form referenced Section M.1.f., of the Engineering Report. Please submit revisions to these items of the application form that reference Section M.1.g., of the Engineering Report.
 - b. Section M.1.g.(3) of the Engineering Report (on page M-6) indicated that the monitor wells shall be sampled in accordance with Rule 62-701.510(6)(c), F.A.C. Please submit revisions to this section of the Engineering Report to provide a reference to Rule 62-701.510(6)(d), F.A.C.
11. **M.1.g.: Describe procedures for implementing evaluation monitoring, prevention measures and corrective action as required** [Rule 62-701.510(7), F.A.C.] This item of the application form referenced Section M.1.g., of the Engineering Report. Please submit revisions to this item of the application form that references Section M.1.h., of the Engineering Report.
12. **M.1.h.(1): Semi-annual report requirements** [Rule 62-701.510(9)(a), F.A.C.] This item of the application form referenced Section M.1.h., of the Engineering Report. Please submit revisions to this item of the application form that references Section M.1.i., of the Engineering Report.
13. **M.1.h.(2): Bi-annual report requirements signed, dated and sealed by PG or PE** [Rule 62-701.510(9)(b), F.A.C.] This item of the application form referenced the BWQMPE document that was submitted separately. Please submit revision to the BWQMPE documents to address the following:
- Section 1.1.1 – Water Quality Monitoring Network and Program
- a. This section referenced Specific Condition #31, 32 and 35 of the facility's permit that stipulated water quality and leachate monitoring requirements. Please submit revisions to this section to reference the appropriate Specific Conditions in current permit #39884-010-SO/01. Please note that Specific Condition #E.1.a., of the referenced permit requires field work to be conducted in accordance with the Department's SOPs. As the "Ground Water Sampling Log" forms submitted for the semi-annual sampling events conducted during the period of review have not specified the equipment used for ground water sample collection, insufficient information has been provided to demonstrate compliance with SOP FS 2200. Please submit revisions to this section to describe the equipment used for ground water sample collection. In the event that a peristaltic pump has been used for ground water sample collection, please submit additional revisions to this section to demonstrate that the samples collected for analysis of volatile organic compounds have met the requirements of Section FS 2221 [i.e., using the straw method or reverse flow method].
- Section 1.2 – Objectives
- b. This section indicated that the BWQMPE document was prepared in accordance with Rule 62-701.510(9)(b), F.A.C. Please submit revisions to the appropriate section of the BWQMPE document to include hydrographs for all wells using water levels measured during the period of review [please refer to Rule 62-701.510(9)(b)1, F.A.C.].
- Section 2.1.2 – Ground Water Data Summary
- c. ¶1 in this section referenced the summaries of ground water analytical results for the five sampling events conducted during the period of review provided in Tables 2-4 through 2-8. Table 2-7 reported an iron concentration at well GW-10 of 0.097 mg/L, however the report submitted to the Department for the August 2008 sampling event included a result of 0.997 mg/L. Please review this apparent inconsistency and submit revisions to the BWQMPE, as appropriate.

(Comment #13., continued)

d. ¶3 in this section indicated the concentrations of parameters reported for the sampling events were compared to the Maximum Contaminant Levels or Secondary Drinking Water Standards promulgated in Chapter 62-550, F.A.C. [i.e., the primary and secondary ground water standards referenced in Rule 62-520.420(1), F.A.C.]. Please submit revisions to this section to indicate if concentrations of parameters have been reported for the sampling events during the period of review meet the ground water minimum criteria referenced in Rule 62-520.400(1), F.A.C. Please specifically evaluate the concentrations of ammonia reported for samples collected from wells GW-2 and GW-13.

e. ¶4 of this section listed the parameters detected at concentrations in excess of the regulatory criteria. Please submit revisions to this section to indicate the MCL for arsenic is 0.01 mg/L.

Section 3.1.3 – Related Parameter Correlation

f. ¶2 of this section referred to Appendix C for the concentration graphs prepared for specific parameter correlations. It appears that some of the graphs prepared to evaluate the correlation between arsenic and turbidity that were provided in Appendix C-3 provide arsenic concentrations that are inconsistent with the results provided in Tables 2-4 through 2-8. Please review the arsenic results reported for the following events and submit revisions to Appendix C-3 as appropriate:

- March 2007 – GW-6 and GW-11
- August 2007 – GW-11, GW-13 and GW-16
- March 2008 – GW-5, GW-8, GW-11, GW-15 and GW-16
- August 2008 – GW-9 and GW-11
- March 2009 – GW-12

g. Please submit revisions to the discussion of turbidity vs. arsenic in this section to be consistent with the responses provided to comment #13.f., above, as appropriate.

Section 3.1.4 – Upgradient vs. Downgradient Correlation

h. ¶1 of this section referred to Appendix D for the concentration graphs prepared to compare ground water quality at upgradient and downgradient sides to the facility. Please submit revisions to the arsenic graph that change the scale of the y-axis to provide a more clear presentation of the change in concentrations over time for each well location [i.e., to provide a better “spread” of the results across the graph].

i. The discussions provided in this section regarding iron and TDS indicated that elevated concentrations were reported at selected wells on the “upgradient side” of the facility. Please submit revisions to these discussions to compare the concentrations of iron and TDS reported for background well BGW-1 with the concentrations of iron and TDS reported for wells on the upgradient side of the facility, and indicate the source(s) of the elevated concentrations for iron and TDS.

j. The discussion provided in this section regarding arsenic indicated “there is some suggestion in the data that the arsenic concentrations increased in the areas around the landfill.” Please submit revisions to this discussion to indicate the source(s) of these elevated concentrations.

Section 4.1 – Ground Water Flow Patterns

k. ¶1 of this section referred to the ground water elevations measured during the five sampling events conducted during the period of review presented in Table 4-2. Please submit revisions to Table 4-2 to include the top of screen elevation at each well [as provided in Table 1-2].

(Comment #13., continued)

l. ¶2 of this section referred to the ground water surface contour maps prepared for the five sampling events conducted during the period of review and indicated that ground water flow in the surficial aquifer was to the north-northwest. It is noted that the inferred directions of ground water flow depicted on Figures 2 through 6 indicate a general northwest ground water flow direction across Stage I and a general west-southwest ground water flow direction across Stage III. Please review this apparent inconsistency and submit revisions, as appropriate.

m. ¶3 of this section provided a calculation of average ground water velocity in the surficial aquifer using an average horizontal hydraulic gradient [0.001 ft/ft] for the five sampling events conducted during the period of review, and an average horizontal hydraulic conductivity [8.2 ft/day] obtained by Ardaman & Associates, Inc. It is noted that Figures 2 through 6 depict a range of horizontal hydraulic gradients over time and at different locations around the facility. It is also noted that the tests conducted on piezometers completed in the surficial aquifer at the facility resulted in horizontal hydraulic conductivity values that ranged from 0.1 to 13.3 ft/day. Please submit revisions to this section to calculate the range of ground water velocity values that reflect the range of horizontal hydraulic gradient values, the range of horizontal hydraulic conductivity values obtained for the surficial aquifer, and a representative effective porosity value.

Section 5.0 – Summary, Conclusions and Recommendations

n. The indication in the second bullet item in ¶1 of this section that there were “no organic detections” in ground water samples is inconsistent with ¶2 in Section 2.1.2 [“Ground Water Analytical Data Summary”] that indicated “there were several scattered organic parameters detected in the monitoring network during the review period.” Please submit revisions to this section to clarify that there were no exceedances of ground water standards reported for volatile organic compounds.

o. Please submit revisions to the second bullet item in ¶1 of this section to be consistent with the response to comment #13.a., above, regarding compliance with the Department’s SOPs for collection of ground water samples for analysis of volatile organic compounds.

p. Please submit revision to ¶2 of this section to be consistent with the response to comment #13.l., above, regarding the direction of ground water flow across the facility.

q. Please submit revisions to the first sentence in ¶3 of this section to address the adequacy of well GW-11 to meet the requirements of Rule 62-701.510(3)(d)4, F.A.C. [“Wells monitoring the unconfined water table shall be screened so that the water table can be sampled at all times.”], and be consistent with the response to comment #13.k., above, regarding the submerged well screen during the period of review. In the event that a replacement for well GW-11 is proposed, please submit revisions to Part M of the Engineering Report to provide the justification of construction details to meet the requirements of the above-cited rule.

r. Please note that the discussion in ¶3 of this section regarding the occurrence and source(s) of elevated arsenic concentrations during the period of review and the recommended actions described in ¶4 of this section to reduce sample turbidity are inconclusive. Please submit revisions to this section that recommend supplemental activities to more fully characterize arsenic at the facility. These additional recommendations may include but not be limited to the collection of supplemental ground water samples at locations on both sides of the slurry wall [e.g., sample collection at piezometer P-1 to characterize the concentrations reported at well GW-1], the redevelopment of the monitor wells to remove fine-grained sediments from the well and sand pack, and the utilization of different equipment/methods to purge/sample the wells. Please indicate the time required to implement these supplemental activities, conduct data evaluation, and prepare revisions to this section of the BWQMPE document to characterize the occurrence and source(s) of arsenic in ground water.

(Comment #13., continued)

- s. In the event that responses to comment #13.a., through #13.r., above, require changes to the existing monitoring plan for Stages I and III, please submit revisions to ¶5 of this section and to Part M of the Engineering Report, as appropriate.

This staff assessment is preliminary and is designed to assist in the review of the application prior to final agency action. The comments provided herein are not the final position of the Department and may be subject to revision pursuant to additional information for further review.

I can be contacted at (813)-632-7600, extension 336, to discuss the comments in this memorandum.
jrm