

# Department of Environmental Protection

Jeb Bush  
Governor

Southwest District  
3804 Coconut Palm Drive  
Tampa, Florida 33619

David B. Struhs  
Secretary

## PERMITTEE

Citrus County  
Board of County Commissioners  
c/o Ms. Susan Metcalfe, P.G.  
P.O. Box 340  
Lecanto, FL 34460

## PERMIT/CERTIFICATION

WACS Facility No: SWD-09-39859  
Permit No: 21375-002-SC  
Date of Issue: 04/25/2001  
Expiration Date: 04/25/2002  
County: Citrus  
Lat/Long: 28°51'10"N  
82°26'40"W  
Sec/Town/Rge: 1/19S/18E  
Project: Citrus County Central  
Landfill - Liner Repairs

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule(s) 62-4 and 62-701. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans and other documents, attached hereto or on file with the Department and made a part hereof and specifically described as follows:

To construct liner repairs for the existing landfill, referred to as the Citrus County Central landfill, subject to the specific and general conditions attached, located near S.R. 44, 3 miles east of Lecanto, Citrus County, Florida. The specific conditions attached are for the construction of:

1. Class I Landfill Disposal Facility - Liner Repairs

General Information: A new liner will be installed over portions of the existing single liner.

Replaces Permit No.: N/A

This permit contains compliance items summarized in Attachment 1 that shall be complied with and submitted to the Department by the dates noted. If the compliance dates are not met and submittals are not received by the Department on the dates noted, enforcement action may be initiated to assure compliance with the conditions of this permit.

PERMITTEE: Citrus County Board of County  
County Commissioners  
c/o Ms. Susan Metcalfe, P.G.

PERMIT NO.: 21375-002-SC  
Citrus County Central  
Landfill - Liner Repairs

**GENERAL CONDITIONS:**

1. The terms, conditions, requirements, limitations and restrictions set forth in this permit, are "permit conditions" and are binding and enforceable pursuant to Sections 403.141, 403.161, 403.727, or 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
3. As provided in subsections 403.087(6) and 403.722(5), F.S., the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of rights, nor any infringement of federal, State, or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in this permit.
4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.
6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed and used by the permittee to achieve compliance with the conditions of this permit, are required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

PERMITTEE: Citrus County Board of County  
County Commissioners  
c/o Ms. Susan Metcalfe, P.G.

PERMIT NO.: 21375-002-SC  
Citrus County Central  
Landfill - Liner Repairs

**GENERAL CONDITIONS:**

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at reasonable times, access to the premises where the permitted activity is located or conducted to:

- (a) Have access to and copy any records that must be kept under conditions of the permit;
- (b) Inspect the facility, equipment, practices, or operations regulated or required under this permit; and
- (c) Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

- (a) A description of and cause of noncompliance; and
- (b) The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.111 and 403.73, F.S. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance; provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

PERMITTEE: Citrus County Board of County  
County Commissioners  
c/o Ms. Susan Metcalfe, P.G.

PER. NO.: 21375-002-SC  
Citrus County Central  
Landfill - Liner Repairs

**GENERAL CONDITIONS:**

11. This permit is transferable only upon Department approval in accordance with Rule 62-4.120 and 62-730.300, Florida Administrative Code, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit also constitutes:

- (a) Determination of Best Available Control Technology (BACT)
- (b) Determination of Prevention of Significant Deterioration (PSD)
- (c) Certification of compliance with State Water Quality Standards (Section 401, PL 92-500)
- (d) Compliance with New Source Performance Standards

14. The permittee shall comply with the following:

- (a) Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
- (b) The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.
- (c) Records of monitoring information shall include:
  - 1. the date, exact place, and time of sampling or measurements;
  - 2. the person responsible for performing the sampling or measurements;
  - 3. the dates analyses were performed;
  - 4. the person responsible for performing the analyses;
  - 5. the analytical techniques or methods used;
  - 6. the results of such analyses.



PERMITTEE: Citrus County Board of County  
County Commissioners  
c/o Ms. Susan Metcalfe, P.G.

PERMIT NO.: 21375-002-SC  
Citrus County Central  
Landfill - Liner Repairs

GENERAL CONDITIONS:

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware the relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

16. In the case of an underground injection control permit, the following permit conditions also shall apply:

- (a) All reports or information required by the Department shall be certified as being true, accurate and complete.
- (b) Reports of compliance or noncompliance with, or any progress reports on, requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.
- (c) Notification of any noncompliance which may endanger health or the environment shall be reported verbally to the Department within 24 hours and again within 72 hours, and a final written report provided within two weeks.
  - 1. The verbal reports shall contain any monitoring or other information which indicate that any contaminant may endanger an underground source of drinking water and any noncompliance with a permit condition or malfunction of the injection system which may cause fluid migration into or between underground sources of drinking water.
  - 2. The written submission shall contain a description of and a discussion of the cause of the noncompliance and, if it has not been corrected, the anticipated time the noncompliance is expected to continue, the steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance, and all information required by Rule 62-28.230(4)(b), F.A.C.
- (d) The Department shall be notified at least 180 days before conversion or abandonment of an injection well, unless abandonment within a lesser period of time is necessary to protect waters of the State.

PERMITTEE: Citrus County Board of County  
County Commissioners  
c/o Ms. Susan Metcalfe, P.G.

PERMIT NO.: 21375-002-SC  
Citrus County Central  
Landfill - Liner Repairs

GENERAL CONDITIONS:

17. The following conditions also shall apply to a hazardous waste facility permit.

- (a) The following reports shall be submitted to the Department:
  - 1. Manifest discrepancy report. If a significant discrepancy in a manifest is discovered, the permittee shall attempt to rectify the discrepancy. If not resolved within 15 days after the waste is received, the permittee shall immediately submit a letter report, including a copy of the manifest, to the Department.
  - 2. Unmanifested waste report. The permittee shall submit an unmanifested waste report to the Department within 15 days of receipt of unmanifested waste.
  - 3. Biennial report. A biennial report covering facility activities during the previous calendar year shall be submitted by March 1 of each even numbered year pursuant to Chapter 62-730, F.A.C.
- (b) Notification of any noncompliance which may endanger health or the environment, including the release of any hazardous waste that may endanger public drinking water supplies or the occurrence of a fire or explosion from the facility which could threaten the environment or human health outside the facility, shall be reported verbally to the Department within 24 hours, and a written report shall be provided within 5 days. The verbal report shall include the name, address, I.D. number, and telephone number of the facility, its owner or operator, the name and quantity of materials involved, the extent of any injuries, an assessment of actual or potential hazards, and the estimated quantity and disposition of recovered material. The written submission shall contain:
  - 1. A description and cause of the noncompliance.
  - 2. If not corrected, the expected time of correction, and the steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.
- (c) Reports of compliance or noncompliance with, or any progress reports on, requirements in any compliance schedule shall be submitted no later than 14 days after each schedule date.
- (d) All reports or information required by the Department by a hazardous waste permittee shall be signed by a person authorized to sign a permit application.

PERMITTEE: Citrus County Board of County  
County Commissioners  
c/o Ms. Susan Metcalfe, P.G.

PERMIT NO.: 21375-002-SC  
Citrus County Central  
Landfill - Liner Repairs

**SPECIFIC CONDITIONS:**

1. **Permit Application Documentation.** This permit is valid for construction of the liner repairs in accordance with the reports, plans and other information as follows:

- Application, specifications, and CQA Plan received on January 22, 2001;
- Replacement specifications Section 06800 dated March 8, 2001 and page 06800-10 dated March 28, 2001, received on March 12 and 28, 2001;
- Construction plans received on March 26, 2001;

and in accordance with all applicable requirements of Department rules. Upon receipt and approval of a request for a minor permit modification pursuant to FAC 62-4.050(4)(q) to operate the new components of the facility regulated by this permit, including Certification of Construction Completion for the related improvements, and related supporting documents identified in this permit, the current landfill operation permit shall be modified to allow the operation of the new system and related improvements or a new operation permit issued subject to Department rules.

2. **Permit Modifications.** Any construction subject to Department Solid Waste regulations not previously approved as part of this permit shall require a separate Department permit unless the Department determines a permit modification to be more appropriate, or unless otherwise approved in writing by the Department. Permits shall be modified in accordance with the requirements of 62-4.080, F.A.C. A modification which is reasonably expected to lead to substantially different environmental impacts which require a detailed review by the Department is considered a substantial modification.

3. **Permit Renewal.** No later than one hundred eighty (180) days before the expiration of the Department Permit, the permittee shall apply for a renewal of a permit, if necessary for continuing related activities, on forms and in a manner prescribed by the Department, in order to assure conformance with all applicable Department rules. Permits shall be renewed at least every five years as required by F.A.C. 62-4.070(4).

4. **Construction Schedule and Progress Report.** No later than two (2) weeks after the pre-construction conference, the owner or operator shall submit a construction schedule which includes estimated dates for related solid waste construction activities to the Department. The Engineer of Record or another qualified professional engineer shall make periodic inspections during construction to ensure that design integrity is maintained. An updated construction schedule and progress chart shall be submitted to the Department monthly.

PERMITTEE: Citrus County Board of County  
County Commissioners  
c/o Ms. Susan Metcalfe, P.G.

PERM. NO.: 21375-002-SC  
Citrus County Central  
Landfill - Liner Repairs

**SPECIFIC CONDITIONS:**

5. **Quality Assurance.** The construction quality assurance plan shall provide personnel with adequate information to achieve continuous compliance with the construction requirements. The plan shall include or refer to specifications and construction methods which use established engineering practices for construction and provide for quality control testing procedures and sampling frequencies, pursuant to F.A.C. 62-701.400(7) and (8). Sampling and testing shall be conducted by trained personnel during construction and after construction completion. Such personnel will be under the direction of the construction quality assurance professional engineer, to assure the project will comply with the standards. The engineer or his designee shall be on-site at all times during construction to monitor construction activities.

6. **Laboratory and Field Testing Requirements.** Field testing during the construction activities shall be conducted under the direct supervision of the Certifying Engineer or his designee representing the owner. A laboratory experienced in the testing of geosynthetics, independent of the liner manufacturer and installer, shall perform the required conformance testing and testing of seam shear and peel strength.

7. **Certification of Construction Completeness.** Within sixty (60) days after the specified construction has been completed, the following activities shall be completed:

a. The owner or operator shall submit a Certification of Construction Completion, Form 62-701.900(2), signed and sealed by the responsible professional engineer for the construction to the Department for approval, and shall arrange for Department representatives to inspect the construction in the company of the permittee, the engineer, and the facility operator.

b. The owner or operator shall submit Record Drawings showing all changes (i.e. additions, deletions, revisions to the plans previously approved by the Department including site grades and elevations).

c. The owner or operator shall submit a narrative indicating all changes in plans and the cause of the deviations and certification by the design engineer to the Department.

d. The engineer of record shall provide a report to verify conformance with the project specifications and applicable requirements of F.A.C. Rule 62-701.400(7) and (8). The report including all testing results for the entire project shall be submitted to the Department along with the completion of construction documents.

PERMITTEE: Citrus County Board of County  
County Commissioners  
c/o Ms. Susan Metcalfe, P.G.

PERMIT NO.: 21375-002-SC  
Citrus County Central  
Landfill - Liner Repairs

**SPECIFIC CONDITIONS:**

8. **Control of Nuisance Conditions.** The operating authority shall be responsible for the control of odors and fugitive particulates arising from the construction. Such control shall minimize the creation of nuisance conditions on adjoining property. If a complaint is received from the general public concerning activities regulated by this permit, and the Department personnel confirms that the complaint is based on a violation of the standards and criteria applicable to the permittee pursuant to this permit, then the permittee must take immediate corrective action to abate the violation.

9. **Facility Maintenance and Repair.** If there is any damage to any portion of the site facilities regulated by this permit or failure of any portion of the associated systems, and such damage or failure may adversely affect the continued compliance with this permit, then the permittee shall **immediately (within 24 hours)** notify the Department explaining such occurrence and remedial measures to be taken and time needed for repairs. Written detailed notification shall be submitted to the Department **within seven (7) days** following the occurrence.


10. **Professional Certification.** Where required by Chapter 471 (P.E.) or Chapter 492 (P.G.), Florida Statutes, applicable portions of permit applications and supporting documents which are submitted to the Department for public record shall be signed and sealed by the professional(s) who prepared or approved them.

11. **General Conditions.** The permittee shall be aware of and operate under the "General Conditions". General Conditions are binding upon the permittee and enforceable pursuant to Chapter 403, Florida Statutes.

12. **Permit Acceptance.** By acceptance of this Permit, the Permittee certifies that he/she has read and understands the obligations imposed by the Specific and General Conditions contained herein, including date of permit expiration and renewal deadlines. It is a violation of this permit for failure to comply with all conditions and deadlines.

Executed in Tampa, Florida

STATE OF FLORIDA DEPARTMENT  
OF ENVIRONMENTAL PROTECTION

  
Deborah A. Getzoff  
Director of District Management  
Southwest District

PERMITTEE: Citrus County Board of County  
County Commissioners  
c/o Ms. Susan Metcalfe, P.G.

PERMIT NO.: 21375-002-SC  
Citrus County Central  
Landfill - Liner Repairs

ATTACHMENT 1

SPECIFIC CONDITION	SUBMITTAL DUE DATE	REQUIRED ITEM
4.	2 weeks after pre-construction conference	Submit construction schedule
4.	Monthly	Update construction schedule
7.	Within 60 days after construction is complete	Submit Certification of Construction Completion, Arrange for inspection, submit Record Drawings, submit narrative describing all deviations.



Florida Department of Environmental Protection  
Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, FL 32399-2400

DEP Form # 62-701.900(2)
Form Title Certification of Construction Completion
Effective Date <u>May 19, 1994</u>
DEP Application No. _____
(Filled by DEP)

## Certification of Construction Completion of a Solid Waste Management Facility

DEP Construction Permit No: \_\_\_\_\_ County: \_\_\_\_\_

Name of Project: \_\_\_\_\_

Name of Owner: \_\_\_\_\_

Name of Engineer: \_\_\_\_\_

Type of Project: \_\_\_\_\_

Cost: Estimate \$ \_\_\_\_\_ Actual \$ \_\_\_\_\_

Site Design: Quantity: \_\_\_\_\_ ton/day Site Acreage: \_\_\_\_\_ Acres

Deviations from Plans and Application Approved by DEP: \_\_\_\_\_

Address and Telephone No. of Site: \_\_\_\_\_

Name(s) of Site Supervisor: \_\_\_\_\_

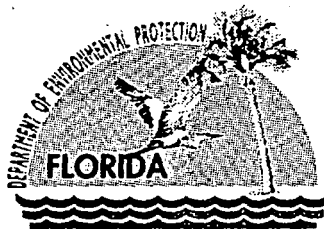
Date Site inspection is requested: \_\_\_\_\_

This is to certify that, with the exception of any deviation noted above, the construction of the project has been completed in substantial accordance with the plans authorized by Construction

Permit No.: \_\_\_\_\_ Dated: \_\_\_\_\_

Date: \_\_\_\_\_

\_\_\_\_\_  
Signature of Professional Engineer



Jeb Bush  
Governor

# Department of Environmental Protection

Southwest District  
3804 Coconut Palm Drive  
Tampa, Florida 33619

David B. Struhs  
Secretary

April 25, 2001

## NOTICE OF PERMIT

Citrus County  
Board of County Commissioners  
c/o Ms. Susan Metcalfe, P.G.  
P.O. Box 340  
Lecanto, FL 34460

Dear Ms. Metcalfe:

Enclosed is Permit Number 21375-002-SC, issued pursuant to Section(s) 403.087(1), Florida Statutes.

Any party to the Order (permit) has the right to seek judicial review of the Order pursuant to Section 120.68, Florida Statutes, by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, 2600 Blair Stone Road, Tallahassee, 32399-2400; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date the Final Order is filed with the Clerk of the Department.

Executed in Tampa Florida.

STATE OF FLORIDA DEPARTMENT  
OF ENVIRONMENTAL PROTECTION

Kim B. Ford, P.E.  
Solid Waste Section  
Division of Waste Management

KBF/ab  
Attachment

cc: David Keough, P.E., Jones, Edmunds & Associates  
Robert Butera, P.E., FDEP Tampa



Citrus County BCC  
c/o Ms. Susan Metcalfe  
Permit No.: 21375-002-SC

April 25, 2001  
Page Two

CERTIFICATE OF SERVICE

This is to certify that this NOTICE OF PERMIT and all copies were mailed before the close of business on April 25, 2001 to the listed persons.

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to §120.52(10), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Cenna Black  
Clerk

4-25-01  
Date

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
APPLICATION FOR A PERMIT TO CONSTRUCT, OPERATE, MODIFY OR CLOSE  
A SOLID WASTE MANAGEMENT FACILITY

Please Type or Print

A. GENERAL INFORMATION

1. Type of facility (check all that apply):

☒ Disposal

☒ Class I Landfill

☐ Ash Monofill

☐ Class II Landfill

☐ Asbestos Monofill

☐ Class III Landfill

☐ Industrial Solid Waste

☒ Other Describe: Yard Waste mulching and consumer goods recycling.

☐ Non-Disposal

☐ Incinerator For Non-biomedical Waste

☐ Waste to Energy Without Power Plant Certification

☐ Other Describe: \_\_\_\_\_

NOTE: Waste Processing Facilities should apply on Form 62-701.900(4), FAC;  
Land Clearing Disposal Facilities should notify on Form 62-701.900(3), FAC;  
Compost Facilities should apply on Form 62-701.900(10), FAC; and  
C&D Disposal Facilities should apply on Form 62-701.900(6), FAC

2. Type of application:

☒ Construction

☐ Operation

☐ Construction/Operation

☐ Closure

3. Classification of application:

☒ New

☐ Substantial Modification

☐ Renewal

☐ Intermediate Modification

☐ Minor Modification

4. Facility name: Citrus County Central Landfill

5. DEP ID number: 4009C00086 County: Citrus

6. Facility location (main entrance): State Road 44 between Lecanto and Inverness, Florida

7. Location coordinates:

Section: 1 Township: 19S Range: 18E

Latitude: 28 ° 51 ' 08 " Longitude: 82 ° 26 ' 16 "

*Confirmed  
Lat 28°51'08"  
Long 82°26'16"  
(on page 2 to permit)  
1/22/03  
fsh*

Solid Waste Permit  
QA/QC Construction Inspection Form

Facility: CITRUS - NEW LINE (REPAIR)

Inspecting Engineer: K. HEND

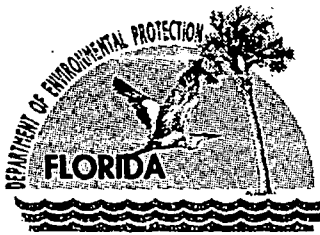
Date Inspected: 6/7/02

Inspection Type:	Permitting	Construction
	<input checked="" type="checkbox"/>	QA/QC
		<input type="checkbox"/>

Facility Type: CLASS I

OBSERVED INTERNAL SIDESLOPES  
WITH REPAIRS - ALREADY COVERED  
WITH WHITE AND TEMP. RAIN COVER  
DAVID KROGT SAID WILL SEND IN PHOTOS  
OF WORK PROGRESS.

Fill out the above documenting all inspections of facilities for permitting and/or construction QA/QC purposes. Please place in my basket within 3 days of inspections.



Jeb Bush  
Governor

# Department of Environmental Protection

Southwest District  
3804 Coconut Palm Drive  
Tampa, Florida 33619

David B. Struhs  
Secretary

July 3, 2002

Ms. Susan Metcalfe  
Solid Waste Management  
P.O. Box 340  
Lecanto, FL 34460

**Re: Citrus County Central Landfill - Liner Remediation  
Certification of Construction Completion  
Permit No.: 21375-002-SC, Citrus County**

Dear Ms. Metcalfe:

On June 7, 2002, an inspection of the above referenced facility relative to construction completion and adherence to the permit issued by the Florida Department of Environmental Protection (FDEP) was made by David Keough (JEA) and Kim Ford (FDEP).

Certification of Construction Completion dated June 5, 2002 with related report was received by the Department on June 7, 2002. Based on the certification, related documents and construction inspection, FDEP approves the certification for the above referenced project in accordance with the construction permit #21375-002-SC.

If you have any questions you may call me at (813) 744-6100, extension 382.

Sincerely,

Kim B. Ford, P.E.  
Solid Waste Section  
Division of Waste Management

KBF/ab

cc: David Keough, P.E., JEA  
Susan Pelz, P.E. FDEP Tampa



J CITRUS LANDFILL  
CITRUS COUNTY

06/07/02  
KBF

5> (3F)

CITRUS LANDFILL  
CITRUS COUNTY

06/07/02  
KBF

453 ✓  
Solid Waste Permit  
QA/QC Construction Inspection Form

Facility: CITRUS - NEW LINTA (REPAIR)

Inspecting Engineer: K. HEND

Date Inspected: 6/7/02

Inspection Type:

Permitting

☒

Construction

QA/QC

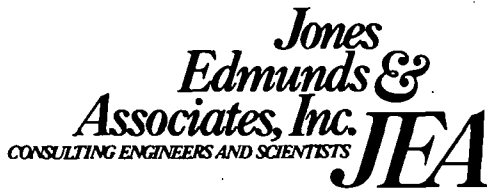
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Facility Type: CLASS I

OBSERVED INTERNAL SIDESLOPES  
WITH REPAIRS - ALREADY COVERED  
WITH WASTE AND TEMP. RAIN COVER.

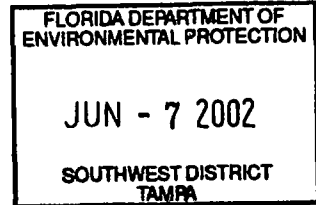
DAVID KROGT SAID WILL SEND IN PHOTOS  
OF WORK PROGRESS.

Fill out the above documenting all inspections of facilities for  
permitting and/or construction QA/QC purposes. Please place in  
my basket within 3 days of inspections.



June 6, 2002

Mr. Kim Ford, P.E.  
Florida Department of Environmental Protection  
Southwest District  
3804 Coconut Palm Drive  
Tampa, Florida 33619-8318



RE: Citrus County Central Landfill  
Geomembrane Liner Remediation Construction Completion Report  
JEA Project number: 03860-008-01

Dear Kim:

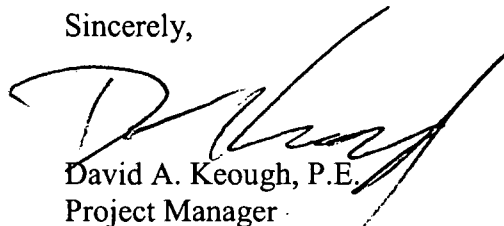
As the project engineer for the geomembrane liner remediation at Citrus County Central Landfill in Lecanto, Florida, Jones, Edmunds & Associates, Inc. (JEA) presents the enclosed Certification of Construction Completion and the associated Construction Completion Report.

Plans and specifications for the geomembrane liner remediation prepared by JEA were reviewed and approved by the Florida Department of Environmental Protection (FDEP) as part of the construction permit application submitted December 2000. FDEP issued a construction permit for this project on April 25, 2001. The notice to proceed for the geomembrane remediation was issued to the contractor MWM South, Inc. on July 2, 2001.

The work performed included placement of a new geomembrane liner over the existing, damaged geomembrane liner. The new geomembrane liner was covered with a protective Dura-Skrim D16WB "rain coat". JEA was retained by Citrus County to provide construction phase services associated with the geomembrane liner remediation.

If you have any questions regarding this information, please feel free to call Mickey Pollman or me at (353) 377-5821.

Sincerely,



David A. Keough, P.E.  
Project Manager

Enclosures

Xc: Mickey Pollman, JEA  
Susie Metcalfe, Citrus County Central Landfill

H:\JMcGregor\DKeough\03860\030.doc







Florida Department of Environmental Protection  
Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, FL 32399-2400

DEP Form # 62-701.900(2)  
Form Title Certification of Construction Completion  
Effective Date May 19, 1994  
DEP Application No. \_\_\_\_\_  
(Filled by DEP)

## Certification of Construction Completion of a Solid Waste Management Facility

DEP Construction Permit No: 21375-002-SC County: Citrus

Name of Project: Citrus County Central Landfill - Liner Remediation

Name of Owner: Citrus County Board of County Commissioners

Name of Engineer: Jones, Edmunds & Associates, Inc.

Type of Project: Construct liner repairs for the existing Class I Phase I and IA landfill. A new liner was installed over a portion of the existing single liner.

Cost: Estimate \$ 80,616.45 Actual \$ 85,616.45

Site Design: Quantity: 230 ton/day Site Acreage: 20 Acres

Deviations from Plans and Application Approved by DEP: See Citrus County Central Landfill Geomembrane Remediation Construction Completion Report.

Address and Telephone No. of Site: P.O. Box 340, Lecanto, Florida 34460, 352-746-5000

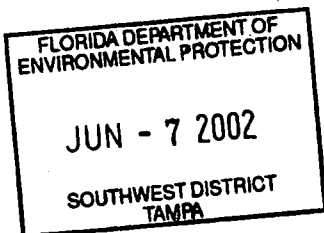
Name(s) of Site Supervisor: Susan Metcalfe, Division of Solid Waste Management

Date Site inspection is requested: June 2002

This is to certify that, with the exception of any deviation noted above, the construction of the project has been completed in substantial accordance with the plans authorized by Construction.

Permit No. 21375-002-SC Dated: April 25, 2001

Date: 6-05-02



Signature of Professional Engineer  
David Keough, Florida PE #38164

Page 1 of 1

Northwest District  
160 Governmental Center  
Pensacola, FL 32501-5794  
850-595-8360

Northeast District  
7825 Baymeadows Way, Ste. B200  
Jacksonville, FL 32256-7590  
904-448-4300

Central District  
3319 Maguire Blvd., Ste. 232  
Orlando, FL 32803-3767  
407-894-7555

Southwest District  
3804 Coconut Palm Dr.  
Tampa, FL 33619  
813-744-6100

South District  
2295 Victoria Ave., Ste. 364  
Fort Myers, FL 33901-3881  
941-332-6975

Southeast District  
400 North Congress Ave.  
West Palm Beach, FL 33401  
561-681-6600

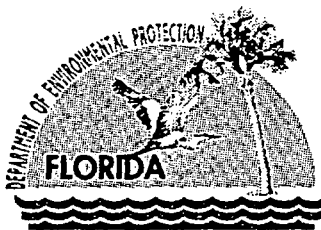
Ford, Kim

---

**From:** Butera, Robert  
**Sent:** Tuesday, October 16, 2001 6:06 PM  
**To:** Ford, Kim  
**Subject:** Citrus Central Landfill

A review of my permit list indicates the Contruction Permit for the liner is active.....Did we ever receive the certification of construction completion? My permitting inspection list does not indicate a site visit to verify. My records may not be up to date since I was out for some time. Thanks in advance, Bob.

Bob Work Just Completed )  
CERTIFICATION  
NOT  
RECEIVED  
fm 10/18/01



Jeb Bush  
Governor

# Department of Environmental Protection

Southwest District  
3804 Coconut Palm Drive  
Tampa, Florida 33619

David B. Struhs  
Secretary

April 25, 2001

## NOTICE OF PERMIT

Citrus County  
Board of County Commissioners  
c/o Ms. Susan Metcalfe, P.G.  
P.O. Box 340  
Lecanto, FL 34460

Dear Ms. Metcalfe:

Enclosed is Permit Number 21375-002-SC, issued pursuant to Section(s) 403.087(1), Florida Statutes.

Any party to the Order (permit) has the right to seek judicial review of the Order pursuant to Section 120.68, Florida Statutes, by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, 2600 Blair Stone Road, Tallahassee, 32399-2400; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date the Final Order is filed with the Clerk of the Department.

Executed in Tampa Florida.

STATE OF FLORIDA DEPARTMENT  
OF ENVIRONMENTAL PROTECTION

Kim B. Ford, P.E.  
Solid Waste Section  
Division of Waste Management

KBF/ab  
Attachment

cc: David Keough, P.E., Jones, Edmunds & Associates  
Robert Butera, P.E., FDEP Tampa

Citrus County BCC  
c/o Ms. Susan Metcalfe  
Permit No.: 21375-002-SC

April 25, 2001  
Page Two

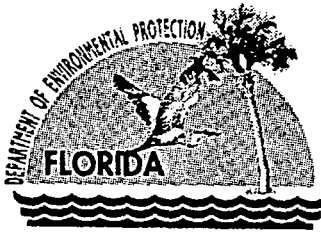
CERTIFICATE OF SERVICE

This is to certify that this NOTICE OF PERMIT and all copies were mailed before the close of business on April 25, 2001 to the listed persons.

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to §120.52(10), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Cerna Black  
Clerk

4-25-01  
Date



# Department of Environmental Protection

Jeb Bush  
Governor

Southwest District  
3804 Coconut Palm Drive  
Tampa, Florida 33619

David B. Struhs  
Secretary

## PERMITTEE

Citrus County  
Board of County Commissioners  
c/o Ms. Susan Metcalfe, P.G.  
P.O. Box 340  
Lecanto, FL 34460

## PERMIT/CERTIFICATION

WACS Facility No: SWD-09-39859  
Permit No: 21375-002-SC  
Date of Issue: 04/25/2001  
Expiration Date: 04/25/2002  
County: Citrus  
Lat/Long: 28°51'10"N  
82°26'40"W  
Sec/Town/Rge: 1/19S/18E  
Project: Citrus County Central  
Landfill - Liner Repairs

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule(s) 62-4 and 62-701. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans and other documents, attached hereto or on file with the Department and made a part hereof and specifically described as follows:

To construct liner repairs for the existing landfill, referred to as the Citrus County Central landfill, subject to the specific and general conditions attached, located near S.R. 44, 3 miles east of Lecanto, Citrus County, Florida. The specific conditions attached are for the construction of:

### 1. Class I Landfill Disposal Facility - Liner Repairs

General Information: A new liner will be installed over portions of the existing single liner.

Replaces Permit No.: N/A

This permit contains compliance items summarized in Attachment 1 that shall be complied with and submitted to the Department by the dates noted. If the compliance dates are not met and submittals are not received by the Department on the dates noted, enforcement action may be initiated to assure compliance with the conditions of this permit.

PERMITTEE: Citrus County Board of County  
County Commissioners  
c/o Ms. Susan Metcalfe, P.G.

PERMIT NO.: 21375-002-SC  
Citrus County Central  
Landfill - Liner Repairs

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations and restrictions set forth in this permit, are "permit conditions" and are binding and enforceable pursuant to Sections 403.141, 403.161, 403.727, or 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
3. As provided in subsections 403.087(6) and 403.722(5), F.S., the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of rights, nor any infringement of federal, State, or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in this permit.
4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.
6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed and used by the permittee to achieve compliance with the conditions of this permit, are required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

PERMITTEE: Citrus County Board of County  
County Commissioners  
c/o Ms. Susan Metcalfe, P.G.

PERMIT NO.: 21375-002-SC  
Citrus County Central  
Landfill - Liner Repairs

GENERAL CONDITIONS:

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at reasonable times, access to the premises where the permitted activity is located or conducted to:

- (a) Have access to and copy any records that must be kept under conditions of the permit;
- (b) Inspect the facility, equipment, practices, or operations regulated or required under this permit; and
- (c) Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

- (a) A description of and cause of noncompliance; and
- (b) The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.111 and 403.73, F.S. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance; provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

PERMITTEE: Citrus County Board of County  
County Commissioners  
c/o Ms. Susan Metcalfe, P.G.

PERMIT NO.: 21375-002-SC  
Citrus County Central  
Landfill - Liner Repairs

GENERAL CONDITIONS:

11. This permit is transferable only upon Department approval in accordance with Rule 62-4.120 and 62-730.300, Florida Administrative Code, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit also constitutes:

- (a) Determination of Best Available Control Technology (BACT)
- (b) Determination of Prevention of Significant Deterioration (PSD)
- (c) Certification of compliance with State Water Quality Standards (Section 401, PL 92-500)
- (d) Compliance with New Source Performance Standards

14. The permittee shall comply with the following:

- (a) Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
- (b) The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.
- (c) Records of monitoring information shall include:
  - 1. the date, exact place, and time of sampling or measurements;
  - 2. the person responsible for performing the sampling or measurements;
  - 3. the dates analyses were performed;
  - 4. the person responsible for performing the analyses;
  - 5. the analytical techniques or methods used;
  - 6. the results of such analyses..



PERMITTEE: Citrus County Board of County  
County Commissioners  
c/o Ms. Susan Metcalfe, P.G.

PERMIT NO.: 21375-002-SC  
Citrus County Central  
Landfill - Liner Repairs

GENERAL CONDITIONS:

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware the relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

16. In the case of an underground injection control permit, the following permit conditions also shall apply:

- (a) All reports or information required by the Department shall be certified as being true, accurate and complete.
- (b) Reports of compliance or noncompliance with, or any progress reports on, requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.
- (c) Notification of any noncompliance which may endanger health or the environment shall be reported verbally to the Department within 24 hours and again within 72 hours, and a final written report provided within two weeks.
  - 1. The verbal reports shall contain any monitoring or other information which indicate that any contaminant may endanger an underground source of drinking water and any noncompliance with a permit condition or malfunction of the injection system which may cause fluid migration into or between underground sources of drinking water.
  - 2. The written submission shall contain a description of and a discussion of the cause of the noncompliance and, if it has not been corrected, the anticipated time the noncompliance is expected to continue, the steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance, and all information required by Rule 62-28.230(4)(b), F.A.C.
- (d) The Department shall be notified at least 180 days before conversion or abandonment of an injection well, unless abandonment within a lesser period of time is necessary to protect waters of the State.

PERMITTEE: Citrus County Board of County  
County Commissioners  
c/o Ms. Susan Metcalfe, P.G.

PERMIT NO.: 21375-002-SC  
Citrus County Central  
Landfill - Liner Repairs

GENERAL CONDITIONS:

17. The following conditions also shall apply to a hazardous waste facility permit.

- (a) The following reports shall be submitted to the Department:
  - 1. Manifest discrepancy report. If a significant discrepancy in a manifest is discovered, the permittee shall attempt to rectify the discrepancy. If not resolved within 15 days after the waste is received, the permittee shall immediately submit a letter report, including a copy of the manifest, to the Department.
  - 2. Unmanifested waste report. The permittee shall submit an unmanifested waste report to the Department within 15 days of receipt of unmanifested waste.
  - 3. Biennial report. A biennial report covering facility activities during the previous calendar year shall be submitted by March 1 of each even numbered year pursuant to Chapter 62-730, F.A.C.
- (b) Notification of any noncompliance which may endanger health or the environment, including the release of any hazardous waste that may endanger public drinking water supplies or the occurrence of a fire or explosion from the facility which could threaten the environment or human health outside the facility, shall be reported verbally to the Department within 24 hours, and a written report shall be provided within 5 days. The verbal report shall include the name, address, I.D. number, and telephone number of the facility, its owner or operator, the name and quantity of materials involved, the extent of any injuries, an assessment of actual or potential hazards, and the estimated quantity and disposition of recovered material. The written submission shall contain:
  - 1. A description and cause of the noncompliance.
  - 2. If not corrected, the expected time of correction, and the steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.
- (c) Reports of compliance or noncompliance with, or any progress reports on, requirements in any compliance schedule shall be submitted no later than 14 days after each schedule date.
- (d) All reports or information required by the Department by a hazardous waste permittee shall be signed by a person authorized to sign a permit application.

PERMITTEE: Citrus County Board of County  
County Commissioners  
c/o Ms. Susan Metcalfe, P.G.

PERMIT NO.: 21375-002-SC  
Citrus County Central  
Landfill - Liner Repairs

**SPECIFIC CONDITIONS:**

1. **Permit Application Documentation.** This permit is valid for construction of the liner repairs in accordance with the reports, plans and other information as follows:

- Application, specifications, and CQA Plan received on January 22, 2001;
- Replacement specifications Section 06800 dated March 8, 2001 and page 06800-10 dated March 28, 2001, received on March 12 and 28, 2001;
- Construction plans received on March 26, 2001;

and in accordance with all applicable requirements of Department rules. Upon receipt and approval of a request for a minor permit modification pursuant to FAC 62-4.050(4)(q) to operate the new components of the facility regulated by this permit, including Certification of Construction Completion for the related improvements, and related supporting documents identified in this permit, the current landfill operation permit shall be modified to allow the operation of the new system and related improvements or a new operation permit issued subject to Department rules.

2. **Permit Modifications.** Any construction subject to Department Solid Waste regulations not previously approved as part of this permit shall require a separate Department permit unless the Department determines a permit modification to be more appropriate, or unless otherwise approved in writing by the Department. Permits shall be modified in accordance with the requirements of 62-4.080, F.A.C. A modification which is reasonably expected to lead to substantially different environmental impacts which require a detailed review by the Department is considered a substantial modification.

3. **Permit Renewal.** No later than one hundred eighty (180) days before the expiration of the Department Permit, the permittee shall apply for a renewal of a permit, if necessary for continuing related activities, on forms and in a manner prescribed by the Department, in order to assure conformance with all applicable Department rules. Permits shall be renewed at least every five years as required by F.A.C. 62-4.070(4).

4. **Construction Schedule and Progress Report.** No later than two (2) weeks after the pre-construction conference, the owner or operator shall submit a construction schedule which includes estimated dates for related solid waste construction activities to the Department. The Engineer of Record or another qualified professional engineer shall make periodic inspections during construction to ensure that design integrity is maintained. An updated construction schedule and progress chart shall be submitted to the Department monthly.

PERMITTEE: Citrus County Board of County  
County Commissioners  
c/o Ms. Susan Metcalfe, P.G.

PERMIT NO.: 21375-002-SC  
Citrus County Central  
Landfill - Liner Repairs

**SPECIFIC CONDITIONS:**

5. **Quality Assurance.** The construction quality assurance plan shall provide personnel with adequate information to achieve continuous compliance with the construction requirements. The plan shall include or refer to specifications and construction methods which use established engineering practices for construction and provide for quality control testing procedures and sampling frequencies, pursuant to F.A.C. 62-701.400(7) and (8). Sampling and testing shall be conducted by trained personnel during construction and after construction completion. Such personnel will be under the direction of the construction quality assurance professional engineer, to assure the project will comply with the standards. The engineer or his designee shall be on-site at all times during construction to monitor construction activities.

6. **Laboratory and Field Testing Requirements.** Field testing during the construction activities shall be conducted under the direct supervision of the Certifying Engineer or his designee representing the owner. A laboratory experienced in the testing of geosynthetics, independent of the liner manufacturer and installer, shall perform the required conformance testing and testing of seam shear and peel strength.

7. **Certification of Construction Completeness.** Within sixty (60) days after the specified construction has been completed, the following activities shall be completed:

a. The owner or operator shall submit a Certification of Construction Completion, Form 62-701.900(2), signed and sealed by the responsible professional engineer for the construction to the Department for approval, and shall arrange for Department representatives to inspect the construction in the company of the permittee, the engineer, and the facility operator.

b. The owner or operator shall submit Record Drawings showing all changes (i.e. additions, deletions, revisions to the plans previously approved by the Department including site grades and elevations).

c. The owner or operator shall submit a narrative indicating all changes in plans and the cause of the deviations and certification by the design engineer to the Department.

d. The engineer of record shall provide a report to verify conformance with the project specifications and applicable requirements of F.A.C. Rule 62-701.400(7) and (8). The report including all testing results for the entire project shall be submitted to the Department along with the completion of construction documents.

PERMITTEE: Citrus County Board of County  
County Commissioners  
c/o Ms. Susan Metcalfe, P.G.

PERMIT NO.: 21375-002-SC  
Citrus County Central  
Landfill - Liner Repairs

**SPECIFIC CONDITIONS:**

8. **Control of Nuisance Conditions.** The operating authority shall be responsible for the control of odors and fugitive particulates arising from the construction. Such control shall minimize the creation of nuisance conditions on adjoining property. If a complaint is received from the general public concerning activities regulated by this permit, and the Department personnel confirms that the complaint is based on a violation of the standards and criteria applicable to the permittee pursuant to this permit, then the permittee must take immediate corrective action to abate the violation.

9. **Facility Maintenance and Repair.** If there is any damage to any portion of the site facilities regulated by this permit or failure of any portion of the associated systems, and such damage or failure may adversely affect the continued compliance with this permit, then the permittee shall **immediately (within 24 hours)** notify the Department explaining such occurrence and remedial measures to be taken and time needed for repairs. Written detailed notification shall be submitted to the Department **within seven (7) days** following the occurrence.

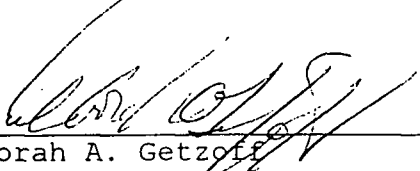
10. **Professional Certification.** Where required by Chapter 471 (P.E.) or Chapter 492 (P.G.), Florida Statutes, applicable portions of permit applications and supporting documents which are submitted to the Department for public record shall be signed and sealed by the professional(s) who prepared or approved them.

11. **General Conditions.** The permittee shall be aware of and operate under the "General Conditions". General Conditions are binding upon the permittee and enforceable pursuant to Chapter 403, Florida Statutes.

12. **Permit Acceptance.** By acceptance of this Permit, the Permittee certifies that he/she has read and understands the obligations imposed by the Specific and General Conditions contained herein, including date of permit expiration and renewal deadlines. It is a violation of this permit for failure to comply with all conditions and deadlines.

Executed in Tampa, Florida

STATE OF FLORIDA DEPARTMENT  
OF ENVIRONMENTAL PROTECTION

  
\_\_\_\_\_  
Deborah A. Getzoff  
Director of District Management  
Southwest District

PERMITTEE: Citrus County Board of County  
County Commissioners  
c/o Ms. Susan Metcalfe, P.G.

PERMIT NO.: 21375-002-SC  
Citrus County Central  
Landfill - Liner Repairs

ATTACHMENT 1

SPECIFIC CONDITION	SUBMITTAL DUE DATE	REQUIRED ITEM
4.	2 weeks after pre-construction conference	Submit construction schedule
4.	Monthly	Update construction schedule
7.	Within 60 days after construction is complete	Submit Certification of Construction Completion, Arrange for inspection, submit Record Drawings, submit narrative describing all deviations.



Florida Department of Environmental Protection  
Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, FL 32399-2400

DEP Form # 62-701.900(2)
Form Title Certification of Construction Completion
Effective Date May 19, 1994
DEP Application No. _____
(Filled by DEP)

## Certification of Construction Completion of a Solid Waste Management Facility

DEP Construction Permit No: \_\_\_\_\_ County: \_\_\_\_\_

Name of Project: \_\_\_\_\_

Name of Owner: \_\_\_\_\_

Name of Engineer: \_\_\_\_\_

Type of Project: \_\_\_\_\_

Cost: Estimate \$ \_\_\_\_\_ Actual \$ \_\_\_\_\_

Site Design: Quantity: \_\_\_\_\_ ton/day Site Acreage: \_\_\_\_\_ Acres

Deviations from Plans and Application Approved by DEP: \_\_\_\_\_

Address and Telephone No. of Site: \_\_\_\_\_

Name(s) of Site Supervisor: \_\_\_\_\_

Date Site inspection is requested: \_\_\_\_\_

This is to certify that, with the exception of any deviation noted above, the construction of the project has been completed in substantial accordance with the plans authorized by Construction

Permit No.: \_\_\_\_\_ Dated: \_\_\_\_\_

Date: \_\_\_\_\_

Signature of Professional Engineer

Memorandum

Florida Department of  
Environmental Protection

PERMIT COVER MEMO

TO: X DEBORAH GETZOFF, Director of District Management

FROM/THROUGH:

William Kutash WAK ENVIRONMENTAL ADMINISTRATOR  
Bob Butera RB 4/25/01 SUPERVISOR  
Kim Ford KF 4/25/01 ENGINEER

DATE: 4/25/01

FILE NAME: Citrus Central Landfill  
- Liner Repairs

PERMIT #: 21375-002-SC

PROGRAM: Solid Waste

COUNTY: Citrus

TYPE OF PERMIT ACTION: X ISSUE        DENY        MODIFY  
       TRANSFER OWNER        NOD  
       PUBLIC NOTICE        INTENT TO ISSUE

PUBLIC NOTICE PERIOD CLOSED? YES PETITION FILED? NO.

PERMIT SUMMARY: This permit is to allow the construction of liner repairs including installation of new liner over a portion of the existing single liner. Construction certification is required by this permit.

PROFESSIONAL RECOMMENDATION: X APPROVE        DENY

EVALUATION SUMMARY: The permit application fee was received on January 16, 2001. A revised application form and technical specifications were received on January 22, 2001. No deficiency letter was sent. Revised liner specifications and construction plans were received on March 12 and 26, 2001.

This application was deemed complete on **January 16, 2001.**  
Notice of Intent to Issue was published on **April 8, 2001.**

Department Processing Time = 99 days (thru 4/25/2001)  
Total Processing Time (TIH) = 99 days (thru 4/25/2001)

Day 90/30 for this Action is May 10, 2001.



Memorandum

Florida Department of  
Environmental Protection

PERMIT COVER MEMO

TO: X DEBORAH GETZOFF, Director of District Management

FROM/THROUGH:

William Kutash ENVIRONMENTAL ADMINISTRATOR  
Bob Butera 3/29/01 SUPERVISOR  
Kim Ford 3/29/01 ENGINEER

DATE: 3/29/01

FILE NAME: Citrus Central Landfill  
- Liner Repairs

PERMIT #: 21375-002-SC

PROGRAM: Solid Waste

COUNTY: Citrus

TYPE OF PERMIT ACTION: ISSUE DENY MODIFY  
TRANSFER OWNER NOD  
PUBLIC NOTICE X INTENT TO ISSUE

PUBLIC NOTICE PERIOD CLOSED?      PETITION FILED?     

PERMIT SUMMARY: This permit is to allow the construction of liner repairs including installation of new liner over a portion of the existing single liner. Construction certification is required by this permit.

PROFESSIONAL RECOMMENDATION:     X     APPROVE      DENY

EVALUATION SUMMARY: The permit application fee was received on January 16, 2001. A revised application form and technical specifications were received on January 22, 2001. No deficiency letter was sent. Revised liner specifications and construction plans were received on March 12 and 26, 2001.

This application was deemed complete on January 16, 2001.

Department Processing Time = 73 days (thru 3/28/2001)  
Total Processing Time (TIH) = 73 days (thru 3/28/2001)

Day 90/30 for this Action is April 15, 2001.

CERTIFICATION

Application No.

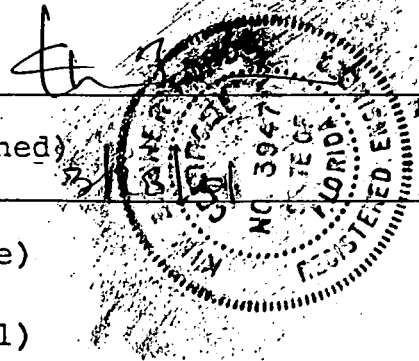
21375-002-SC CIRCULAR LINER REPAIR

I HEREBY CERTIFY that the engineering features described in the above referenced application (provide / ~~do not provide~~) reasonable assurance of compliance with applicable provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Title <sup>62</sup>27. However, I have not evaluated and I do not certify aspects of the proposal outside of my area of expertise (including but not limited to the electrical, mechanical and structural features).

(Signed)

(Date)

(Seal)



**Proof of Publication**

from the

**CITRUS COUNTY CHRONICLE**

Crystal River, Citrus County, Florida

**PUBLISHED DAILY****STATE OF FLORIDA****COUNTY OF CITRUS**

Before the undersigned authority personally appeared

Felicie Satchell

Of the Citrus County Chronicle, a newspaper published daily at Crystal River, in Citrus County, Florida, that the attached copy of advertisement being a public notice in the matter of the

Division of Solid Waste Management - Legal Notice for Permit Issuance Display Advertisement

Court, was published in said newspaper in the issues of April 8, 2001.

Affiant further says that the Citrus County Chronicle is a Newspaper published at Crystal River in said Citrus County, Florida, and that the said newspaper has heretofore been continuously published in Citrus County, Florida, each week and has been entered as second class mail matter at the post office in Inverness in said Citrus County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that he/she has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing his advertisement for publication in the said newspaper.

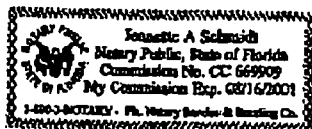
*Felicie Satchell*  
The foregoing instrument was acknowledged before me

This 8th day of April 2001

By: Felicie Satchell

who is personally known to me and who did take an oath.

*Jeannette A. Schmidt*  
Notary Public



**State of Florida**  
**Department of Environmental Protection**  
**Notice of Proposed Agency Action on Permit Application**

The Department gives notice of its intent to issue a permit (File No. 21375-001-SC) to Citrus County, c/o Ms. Susan Melcalfe, P.O. Box 340, Lecanto, Florida 34460, who applied on January 16, 2001 to the Department of Environmental Protection for a permit to construct liner repairs for the existing landfill, referred to as the Citrus County Central Landfill, located near S.R. 44, 3 miles east of Lecanto, Citrus County, Florida.

Persons whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below, and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, within fourteen (14) days of publication of this notice. A copy of the petition must also be mailed at the time of filing to the applicant at the address indicated. Failure to file a request for hearing within this time period shall constitute a waiver any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

The petition shall contain the following information) (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of Department's action, or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by Petitioner, if any; (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action; and (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department.

Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, Florida Statutes, and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, Florida Administrative Code.

The application 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 3804 Coconut Palm Drive, Tampa, Florida 33619-8318.

Postage Paid 4/1/01  
Permit File No. 21375-001-SC  
To: Ms. Susan Melcalfe  
From: Citrus County - Solid Waste  
Phone: 352/746-5000

Is your RETURN ADDRESS completed on the reverse side?

# SENDER:

- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "Return Receipt Requested" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):

- ☐ Addressee's Address
- ☐ Restricted Delivery

Consult postmaster for fee.

## 3. Article Addressed to:

CITRUS COUNTY  
BOARD OF COUNTY COMMISSIONERS  
c/o MS. SUSAN METCALFE, P.G.  
PO BOX 340  
LECANTO, FL 34460

## 4a. Article Number

7099 3400 0001 9760 305

## 4b. Service Type

- |  |   |
|--|---|
| <input type="checkbox"/> Registered                                | <input checked="" type="checkbox"/> Certified |
| <input type="checkbox"/> Express Mail                              | <input type="checkbox"/> Insured              |
| <input checked="" type="checkbox"/> Return Receipt for Merchandise | <input type="checkbox"/> COD                  |

## 7. Date of Delivery

## 5. Received By: (Print Name)

CSmith

## 6. Signature (Addressee or Agent)

X *[Signature]*

## 8. Address to Address (Only if requested and fee is paid)

PS Form 3811, December 1994

102595-97-B-0179

Domestic Return Receipt

Thank you for using Return Receipt Service.

# U.S. Postal Service

## CERTIFIED MAIL RECEIPT

(Domestic Mail Only; No Insurance Coverage Provided)

### Article Sent To:

Citrus County

### Postage

\$

### Certified Fee

\$

### Return Receipt Fee (Endorsement Required)

\$

### Restricted Delivery Fee (Endorsement Required)

\$

### Total Postage & Fees

\$

3-30-01

Postmark  
Here

### Name (Please Print Clearly) (to be completed by mailer)

Susan Metcalfe

### Street, Apt. No., or PO Box No.

P.O. Box 340

### City, State, ZIP+4

Lecanto, FL 34460

PS Form 3800, July 1999

See Reverse for Instructions

570E 0926 1000 000E 6602



First-Class Mail  
Postage & Fees Paid  
USPS  
Permit No. G-10

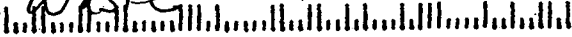
• Print your name, address, and ZIP code on the box •

State of Florida  
Department of Environmental Protection  
3804 Coconut Palm Drive  
Tampa, Florida 33619-8318

RECEIVED  
APR 05 2001  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
SOUTHWEST DISTRICT

Kim Ford  
Solid Waste

71



THE STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

March 30, 2001

In the matter of an  
Application for Permit by:

DEP File No. 21375-002-SC  
Citrus County

Citrus County  
Board of County Commissioners  
c/o Ms. Susan Metcalfe, P.G.  
P.O. Box 340  
Lecanto, FL 34460

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INTENT TO ISSUE

The Department of Environmental Protection gives notice of its Intent to Issue a permit for the proposed project as detailed in the application specified above, for the reasons stated below.

The applicant, Citrus County, applied on January 16, 2001 to the Department of Environmental Protection for a permit to construct liner repairs for the existing landfill, referred to as the Citrus County Central landfill, subject to the specific and general conditions attached, located near S.R. 44, 3 miles east of Lecanto, Citrus County, Florida.

The Department has permitting jurisdiction under Sections 403.707 and 403.861, Florida Statutes (F.S.), and Chapters 62-4 and 62-701, Florida Administrative Code (F.A.C.). The project is not exempt from permitting procedures. The Department has determined that a solid waste construction permit is required for the proposed work.

The Department intends to issue this permit based on its belief that reasonable assurances have been provided to indicate that the

proposed project will not adversely impact water quality and the proposed project will comply with appropriate provisions of Chapters 62-4 and 62-701, F.A.C., subject to the specific conditions attached in the permit. Pursuant to Section 403.815, Florida Statutes, you (the applicant) are required to publish at your own expense the enclosed Notice of Proposed Agency Action on Permit Application. The notice must be published one time only within thirty (30) days of receipt of this intent in the legal ad section of a newspaper of general circulation in the area affected. Proof of publication must be provided to the Department within seven (7) days of publication of the notice. Failure to publish the notice and provide proof of publication within the allotted time may result in the denial of the permit. The Department will issue the permit with the attached conditions unless petition for administrative proceeding (hearing) is filed pursuant to the provisions of Sections 120.569 and 120.57, Florida Statutes.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57 of the Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000. Petitions filed by the permit applicant or any of the parties listed below must be filed within fourteen days of receipt of this notice of intent. Petitions filed by any other person must be filed within fourteen days of publication of the public notice or within fourteen days of receipt

of this notice of intent, whichever occurs first. A petitioner must mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition (or a request for mediation, as discussed below) within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57 of the Florida Statutes, or to intervene in this proceeding and participate as a party to it. Any subsequent intervention will be only at the discretion of the presiding officer upon the filing of a motion in compliance with rule 28-5.207 of the Florida Administrative Code.

A petition must contain the following information:

- (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number, and the county in which the project is proposed;
- (b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
- (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;
- (d) A statement of the material facts disputed by the petitioner, if any;
- (e) A statement of the facts that the petitioner contends warrant reversal or modification of the Department's action or proposed action;
- (f) A statement identifying the rules or statutes that the petitioner contends require reversal or modification of the Department's action or proposed action; and
- (g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take with respect to the action or proposed action addressed in this notice of intent.



Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice of intent. Persons whose substantial interests will be affected by any such final decision of the Department on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Any person may elect to pursue mediation by reaching a mediation agreement with all parties to the proceeding (which include the applicant, the Department, and any person who has filed a timely and sufficient petition for a hearing) and by showing how the substantial interests of each mediating party are affected by the Department's action or proposed action. The agreement must be filed in (received by) the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, by the same deadline as set forth above for the filing of a petition.

The agreement to mediate must include the following:

- (a) The names, addresses, and telephone numbers of any persons who may attend the mediation;
- (b) The name, address, and telephone number of the mediator selected by the parties, or a provision for selecting a mediator within a specified time;
- (c) The agreed allocation of the costs and fees associated with the mediation;
- (d) The agreement of the parties on the confidentiality of discussions and documents introduced during mediation;

- (e) The date, time, and place of the first mediation session, or a deadline for holding the first session, if no mediator has yet been chosen;
- (f) The name of each party's representative who shall have authority to settle or recommend settlement; and
- (g) Either an explanation of how the substantial interests of each mediating party will be affected by the action or proposed action addressed in this notice of intent or a statement clearly identifying the petition for hearing that each party has already filed, and incorporating it by reference.
- (h) The signatures of all parties or their authorized representatives.

As provided in Section 120.573 of the Florida Statutes, the timely agreement of all parties to mediate will toll the time limitations imposed by Sections 120.569 and 120.57 for requesting and holding an administrative hearing. Unless otherwise agreed by the parties, the mediation must be concluded within sixty days of the execution of the agreement. If mediation results in settlement of the administrative dispute, the Department must enter a final order incorporating the agreement of the parties. Persons whose substantial interests will be affected by such a modified final decision of the Department have a right to petition for a hearing only in accordance with the requirements for such petitions set forth above, and must therefore file their petitions within fourteen days of receipt of this notice of intent. If mediation terminates without settlement of the dispute, the Department shall notify all parties in writing that the administrative hearing processes under Sections

120.569 and 120.57 remain available for disposition of the dispute, and the notice will specify the deadlines that then will apply for challenging the agency action and electing remedies under those two statutes.

Executed in Tampa, Florida.

STATE OF FLORIDA DEPARTMENT  
OF ENVIRONMENTAL PROTECTION



Deborah A. Getzoff  
Director of District Management  
Southwest District

DG/kbfb  
Attachment

Copies furnished to:

David Keough, P.E., Jones, Edmund and Associates


*pb* Robert Butera, P.E., FDEP Tampa

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this **NOTICE OF INTENT TO ISSUE** and all copies were mailed before the close of business on March 30, 2001 to the listed persons.

Clerk Stamp

**FILING AND ACKNOWLEDGMENT FILED,**  
on this date, pursuant to  
Section 120.52(11), Florida Statutes,  
with the designated Department Clerk,  
receipt of which is hereby  
acknowledged.

  
(Clerk)

Mar 30, 2001  
(Date)

**State of Florida**  
**Department of Environmental Protection**  
**Notice of Proposed Agency Action on Permit Application**

The Department gives notice of its intent to issue a permit (File No. 21375-001-SC) to Citrus County, c/o Ms. Susan Metcalfe, P.O. Box 340, Lecanto, Florida 34460, who applied on January 16, 2001 to the Department of Environmental Protection for a permit to construct liner repairs for the existing landfill, referred to as the Citrus County Central Landfill, located near S.R. 44, 3 miles east of Lecanto, Citrus County, Florida.

Persons whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below, and must be filed (received) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, within fourteen (14) days of publication of this notice. A copy of the petition must also be mailed at the time of filing to the applicant at the address indicated. Failure to file a request for hearing within this time period shall constitute a waiver any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

The petition shall contain the following information; (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed; (b) A statement of how and when each petitioner received notice of Department's action, or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by Petitioner, if any; (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action; and (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of publication of this notice in the Office of General Counsel at the above address of the Department.

Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, Florida Statutes, and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, Florida Administrative Code.

The application 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 3804 Coconut Palm Drive, Tampa, Florida 33619-8318.

RULES OF THE ADMINISTRATION COMMISSION, MODEL RULES OF PROCEDURE  
CHAPTER 28-5, DECISIONS DETERMINING SUBSTANTIAL INTERESTS  
PART II, FORMAL HEARINGS  
A) PREHEARING PROCEDURES

28-5.201 Initial of Formal Proceedings.

(1) Initiation of formal proceedings shall be made by petition to the Agency responsible for rendering final Agency action. The term petition as used herein includes any application or other document which expresses a request for formal proceedings. Each petition should be printed, typewritten or otherwise duplicated in legible form on white paper of standard legal size. Unless printed, the impression shall be on one side of the paper only and lines shall be double-spaced and indented.

(2) All petitions filed under these rules should contain:

(a) The name and address of each Agency affected and each Agency's file or identification number, if known;

(b) The name and address of the petitioner or petitioners, and an explanation of how his/her substantial interests will be affected by the Agency determination;

(c) A statement of when and how petitioner received notice of the Agency decision of intent to render a decision;

(d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate;

(e) A concise statement of the ultimate facts alleged, as well as the rules and statutes which entitle the petitioner to relief;

(f) A demand for relief to which the petitioner deems himself entitled; and

(g) Other information which the petitioner contends is material.

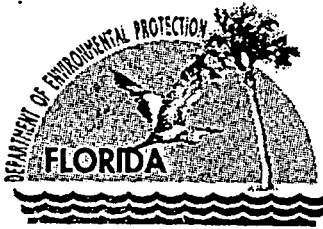
(3) Upon receipt of a petition for formal proceedings, the Agency shall either accept or deny the petition, and if accepted shall elect either to conduct the hearing itself through the Agency head, or member thereof, assign a person authorized by Subsection 120.57(1)(a) or other authority, or request that a Hearing Officer from the Division of Administrative Hearings be assigned to conduct the hearing.

(a) A petition may be denied if the petitioner does not state adequately a material factual allegation, such as a substantial interest in the Agency determination, or if the petition is untimely.

(b) The Agency shall promptly give written notice to all parties of the action taken on the petition, and shall state with particularity its reasons therefore.

(4) If the Agency elects to request that a Hearing Officer of the Division of Administrative Hearings be assigned to conduct the hearing, the Agency shall forward the petition, and all materials filed with the Agency, to the Division of Administrative hearings, and shall notify all parties of its action.

Specific Authority: 120.53(1), 120.54(10), F.S.  
Law Implemented: 120.57, F.S.  
History: New 3-23-80



# Department of Environmental Protection

Jeb Bush  
Governor

Southwest District  
3804 Coconut Palm Drive  
Tampa, Florida 33619

David B. Struhs  
Secretary

## PERMITTEE

Citrus County  
Board of County Commissioners  
c/o Ms. Susan Metcalfe, P.G.  
P.O. Box 340  
Lecanto, FL 34460

## PERMIT/CERTIFICATION

WACS Facility No: SWD-09-39859  
Permit No: 21375-002-SC  
Date of Issue:  
Expiration Date:  
County: Citrus  
Lat/Long: 28°51'10"N  
82°26'40"W  
Sec/Town/Rge: 1/19S/18E  
Project: Citrus County Central  
Landfill - Liner Repairs

**DRAFT**

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule(s) 62-4 and 62-701. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans and other documents, attached hereto or on file with the Department and made a part hereof and specifically described as follows:

To construct liner repairs for the existing landfill, referred to as the Citrus County Central landfill, subject to the specific and general conditions attached, located near S.R. 44, 3 miles east of Lecanto, Citrus County, Florida. The specific conditions attached are for the construction of:

1. Class I Landfill Disposal Facility - Liner Repairs

General Information: A new liner will be installed over portions of the existing single liner.

Replaces Permit No.: N/A

This permit contains compliance items summarized in Attachment 1 that shall be complied with and submitted to the Department by the dates noted. If the compliance dates are not met and submittals are not received by the Department on the dates noted, enforcement action may be initiated to assure compliance with the conditions of this permit.

**DRAFT**

PERMITTEE: Citrus County Board of County  
County Commissioners  
c/o Ms. Susan Metcalfe, P.G.

PERMIT NO.: 21375-002-SC  
Citrus County Central  
Landfill - Liner Repairs

GENERAL CONDITIONS:

**DRAFT**

1. The terms, conditions, requirements, limitations and restrictions set forth in this permit, are "permit conditions" and are binding and enforceable pursuant to Sections 403.141, 403.161, 403.727, or 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
3. As provided in subsections 403.087(6) and 403.722(5), F.S., the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of rights, nor any infringement of federal, State, or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in this permit.
4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.
6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed and used by the permittee to achieve compliance with the conditions of this permit, are required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.



PERMITTEE: Citrus County Board of County  
County Commissioners  
c/o Ms. Susan Metcalfe, P.G.

PERMIT NO.: 21375-002-SC  
Citrus County Central  
Landfill - Liner Repairs

## DRAFT

### GENERAL CONDITIONS:

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at reasonable times, access to the premises where the permitted activity is located or conducted to:

- (a) Have access to and copy any records that must be kept under conditions of the permit;
- (b) Inspect the facility, equipment, practices, or operations regulated or required under this permit; and
- (c) Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

- (a) A description of and cause of noncompliance; and
- (b) The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.111 and 403.73, F.S. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance; provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

PERMITTEE: Citrus County Board of County  
County Commissioners  
c/o Ms. Susan Metcalfe, P.G.

PERMIT NO.: 21375-002-SC  
Citrus County Central  
Landfill - Liner Repairs

## DRAFT

### GENERAL CONDITIONS:

11. This permit is transferable only upon Department approval in accordance with Rule 62-4.120 and 62-730.300, Florida Administrative Code, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.
12. This permit or a copy thereof shall be kept at the work site of the permitted activity.
13. This permit also constitutes:
  - (a) Determination of Best Available Control Technology (BACT)
  - (b) Determination of Prevention of Significant Deterioration (PSD)
  - (c) Certification of compliance with State Water Quality Standards (Section 401, PL 92-500)
  - (d) Compliance with New Source Performance Standards
14. The permittee shall comply with the following:
  - (a) Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
  - (b) The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.
  - (c) Records of monitoring information shall include:
    1. the date, exact place, and time of sampling or measurements;
    2. the person responsible for performing the sampling or measurements;
    3. the dates analyses were performed;
    4. the person responsible for performing the analyses;
    5. the analytical techniques or methods used;
    6. the results of such analyses.

PERMITTEE: Citrus County Board of County  
County Commissioners  
c/o Ms. Susan Metcalfe, P.G.

PERMIT NO.: 21375-002-SC  
Citrus County Central  
Landfill - Liner Repairs

## DRAFT

### GENERAL CONDITIONS:

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware the relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

16. In the case of an underground injection control permit, the following permit conditions also shall apply:

- (a) All reports or information required by the Department shall be certified as being true, accurate and complete.
- (b) Reports of compliance or noncompliance with, or any progress reports on, requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.
- (c) Notification of any noncompliance which may endanger health or the environment shall be reported verbally to the Department within 24 hours and again within 72 hours, and a final written report provided within two weeks.
  - 1. The verbal reports shall contain any monitoring or other information which indicate that any contaminant may endanger an underground source of drinking water and any noncompliance with a permit condition or malfunction of the injection system which may cause fluid migration into or between underground sources of drinking water.
  - 2. The written submission shall contain a description of and a discussion of the cause of the noncompliance and, if it has not been corrected, the anticipated time the noncompliance is expected to continue, the steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance, and all information required by Rule 62-28.230(4)(b), F.A.C.
- (d) The Department shall be notified at least 180 days before conversion or abandonment of an injection well, unless abandonment within a lesser period of time is necessary to protect waters of the State.

PERMITTEE: Citrus County Board of County  
County Commissioners  
c/o Ms. Susan Metcalfe, P.G.

PERMIT NO.: 21375-002-SC  
Citrus County Central  
Landfill - Liner Repairs

## DRAFT

### GENERAL CONDITIONS:

17. The following conditions also shall apply to a hazardous waste facility permit.

- (a) The following reports shall be submitted to the Department:
  - 1. Manifest discrepancy report. If a significant discrepancy in a manifest is discovered, the permittee shall attempt to rectify the discrepancy. If not resolved within 15 days after the waste is received, the permittee shall immediately submit a letter report, including a copy of the manifest, to the Department.
  - 2. Unmanifested waste report. The permittee shall submit an unmanifested waste report to the Department within 15 days of receipt of unmanifested waste.
  - 3. Biennial report. A biennial report covering facility activities during the previous calendar year shall be submitted by March 1 of each even numbered year pursuant to Chapter 62-730, F.A.C.
- (b) Notification of any noncompliance which may endanger health or the environment, including the release of any hazardous waste that may endanger public drinking water supplies or the occurrence of a fire or explosion from the facility which could threaten the environment or human health outside the facility, shall be reported verbally to the Department within 24 hours, and a written report shall be provided within 5 days. The verbal report shall include the name, address, I.D. number, and telephone number of the facility, its owner or operator, the name and quantity of materials involved, the extent of any injuries, an assessment of actual or potential hazards, and the estimated quantity and disposition of recovered material. The written submission shall contain:
  - 1. A description and cause of the noncompliance.
  - 2. If not corrected, the expected time of correction, and the steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.
- (c) Reports of compliance or noncompliance with, or any progress reports on, requirements in any compliance schedule shall be submitted no later than 14 days after each schedule date.
- (d) All reports or information required by the Department by a hazardous waste permittee shall be signed by a person authorized to sign a permit application.

PERMITTEE: Citrus County Board of County  
County Commissioners  
c/o Ms. Susan Metcalfe, P.G.

PERMIT NO.: 21375-002-SC  
Citrus County Central  
Landfill - Liner Repairs

**DRAFT**

**SPECIFIC CONDITIONS:**

1. **Permit Application Documentation.** This permit is valid for construction of the liner repairs in accordance with the reports, plans and other information as follows:

- Application, specifications, and CQA Plan received on January 22, 2001;
- Replacement specifications Section 06800 dated March 8, 2001 and page 06800-10 dated March 28, 2001, received on March 12 and 28, 2001;
- Construction plans received on March 26, 2001;

and in accordance with all applicable requirements of Department rules. Upon receipt and approval of a request for a minor permit modification pursuant to FAC 62-4.050(4)(q) to operate the new components of the facility regulated by this permit, including Certification of Construction Completion for the related improvements, and related supporting documents identified in this permit, the current landfill operation permit shall be modified to allow the operation of the new system and related improvements or a new operation permit issued subject to Department rules.

2. **Permit Modifications.** Any construction subject to Department Solid Waste regulations not previously approved as part of this permit shall require a separate Department permit unless the Department determines a permit modification to be more appropriate, or unless otherwise approved in writing by the Department. Permits shall be modified in accordance with the requirements of 62-4.080, F.A.C. A modification which is reasonably expected to lead to substantially different environmental impacts which require a detailed review by the Department is considered a substantial modification.

3. **Permit Renewal.** No later than one hundred eighty (180) days before the expiration of the Department Permit, the permittee shall apply for a renewal of a permit, if necessary for continuing related activities, on forms and in a manner prescribed by the Department, in order to assure conformance with all applicable Department rules. Permits shall be renewed at least every five years as required by F.A.C. 62-4.070(4).

4. **Construction Schedule and Progress Report.** No later than two (2) weeks after the pre-construction conference, the owner or operator shall submit a construction schedule which includes estimated dates for related solid waste construction activities to the Department. The Engineer of Record or another qualified professional engineer shall make periodic inspections during construction to ensure that design integrity is maintained. An updated construction schedule and progress chart shall be submitted to the Department monthly.

**DRAFT**

## DRAFT

### SPECIFIC CONDITIONS:

5. **Quality Assurance.** The construction quality assurance plan shall provide personnel with adequate information to achieve continuous compliance with the construction requirements. The plan shall include or refer to specifications and construction methods which use established engineering practices for construction and provide for quality control testing procedures and sampling frequencies, pursuant to F.A.C. 62-701.400(7) and (8). Sampling and testing shall be conducted by trained personnel during construction and after construction completion. Such personnel will be under the direction of the construction quality assurance professional engineer, to assure the project will comply with the standards. The engineer or his designee shall be on-site at all times during construction to monitor construction activities.

6. **Laboratory and Field Testing Requirements.** Field testing during the construction activities shall be conducted under the direct supervision of the Certifying Engineer or his designee representing the owner. A laboratory experienced in the testing of geosynthetics, independent of the liner manufacturer and installer, shall perform the required conformance testing and testing of seam shear and peel strength.

7. **Certification of Construction Completeness.** Within sixty (60) days after the specified construction has been completed, the following activities shall be completed:

a. The owner or operator shall submit a Certification of Construction Completion, Form 62-701.900(2), signed and sealed by the responsible professional engineer for the construction to the Department for approval, and shall arrange for Department representatives to inspect the construction in the company of the permittee, the engineer, and the facility operator.

b. The owner or operator shall submit Record Drawings showing all changes (i.e. additions, deletions, revisions to the plans previously approved by the Department including site grades and elevations).

c. The owner or operator shall submit a narrative indicating all changes in plans and the cause of the deviations and certification by the design engineer to the Department.

d. The engineer of record shall provide a report to verify conformance with the project specifications and applicable requirements of F.A.C. Rule 62-701.400(7) and (8). The report including all testing results for the entire project shall be submitted to the Department along with the completion of construction documents.

DRAFT

PERMITTEE: Citrus County Board of County  
County Commissioners  
c/o Ms. Susan Metcalfe, P.G.

PERMIT NO.: 21375-002-SC  
Citrus County Central  
Landfill - Liner Repairs

**DRAFT**

**SPECIFIC CONDITIONS:**

8. **Control of Nuisance Conditions.** The operating authority shall be responsible for the control of odors and fugitive particulates arising from the construction. Such control shall minimize the creation of nuisance conditions on adjoining property. If a complaint is received from the general public concerning activities regulated by this permit, and the Department personnel confirms that the complaint is based on a violation of the standards and criteria applicable to the permittee pursuant to this permit, then the permittee must take immediate corrective action to abate the violation.

9. **Facility Maintenance and Repair.** If there is any damage to any portion of the site facilities regulated by this permit or failure of any portion of the associated systems, and such damage or failure may adversely affect the continued compliance with this permit, then the permittee shall **immediately** (within 24 hours) notify the Department explaining such occurrence and remedial measures to be taken and time needed for repairs. Written detailed notification shall be submitted to the Department within seven (7) days following the occurrence.

10. **Professional Certification.** Where required by Chapter 471 (P.E.) or Chapter 492 (P.G.), Florida Statutes, applicable portions of permit applications and supporting documents which are submitted to the Department for public record shall be signed and sealed by the professional(s) who prepared or approved them.

11. **General Conditions.** The permittee shall be aware of and operate under the "General Conditions". General Conditions are binding upon the permittee and enforceable pursuant to Chapter 403, Florida Statutes.

12. **Permit Acceptance.** By acceptance of this Permit, the Permittee certifies that he/she has read and understands the obligations imposed by the Specific and General Conditions contained herein, including date of permit expiration and renewal deadlines. It is a violation of this permit for failure to comply with all conditions and deadlines.

Executed in Tampa, Florida

STATE OF FLORIDA DEPARTMENT  
OF ENVIRONMENTAL PROTECTION

**DRAFT**

Deborah A. Getzoff  
Director of District Management  
Southwest District

PERMITTEE: Citrus County Board of County  
County Commissioners  
c/o Ms. Susan Metcalfe, P.G.

PERMIT NO.: 21375-002-SC  
Citrus County Central  
Landfill - Liner Repairs

DRAFT

ATTACHMENT 1

SPECIFIC CONDITION	SUBMITTAL DUE DATE	REQUIRED ITEM
4.	2 weeks after pre-construction conference	Submit construction schedule
4.	Monthly	Update construction schedule
7.	Within 60 days after construction is complete	Submit Certification of Construction Completion, Arrange for inspection, submit Record Drawings, submit narrative describing all deviations.





Florida Department of Environmental Protection  
Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, FL 32399-2400

DEP Form # 62-701.900(2)
Form Title <u>Certification of Construction Completion</u>
Effective Date <u>May 19, 1994</u>
DEP Application No. _____
(Filled by DEP)

## Certification of Construction Completion of a Solid Waste Management Facility

DEP Construction Permit No: \_\_\_\_\_ County: \_\_\_\_\_

Name of Project: \_\_\_\_\_

Name of Owner: \_\_\_\_\_

Name of Engineer: \_\_\_\_\_

Type of Project: \_\_\_\_\_

Cost: Estimate \$ \_\_\_\_\_ Actual \$ \_\_\_\_\_

Site Design: Quantity: \_\_\_\_\_ ton/day Site Acreage: \_\_\_\_\_ Acres

Deviations from Plans and Application Approved by DEP: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Address and Telephone No. of Site: \_\_\_\_\_

\_\_\_\_\_

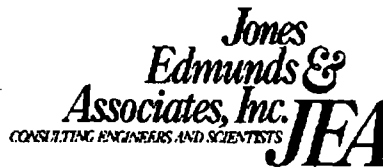
Name(s) of Site Supervisor: \_\_\_\_\_

Date Site inspection is requested: \_\_\_\_\_

This is to certify that, with the exception of any deviation noted above, the construction of the project has been completed in substantial accordance with the plans authorized by Construction

Permit No.: \_\_\_\_\_ Dated: \_\_\_\_\_

Date: \_\_\_\_\_  
Signature of Professional Engineer



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**FAX TRANSMITTAL SHEET**

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DATE	March 28, 2001
PROJECT NUMBER	03860-004-04-1000
NUMBER OF PAGES (including cover sheet)	2
TO	Kim Ford, FDEP
FAX NUMBER	813-744-6125
FROM	Judy DeVita

RE: Citrus County Central Landfill - Geomembrane Remediation

Attached is the revised Geomembrane technical specification page 06800-10, per your comments. Please call me at 352-377-5821 if you any additional comments or questions.

Thank you,

Judy DeVita

This message is intended only for the use of the individual or entity to which it is addressed and may contain information that is privileged, confidential, and exempt from disclosure under applicable law. If the reader of this message is not the intended recipient, or the employee or agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone and return the original message to us at the return address listed above via the U.S. Postal Service. Thank you.

If you do not receive all pages, please contact Judy DeVita at (352) 377-5821, ext. 1247.

Original to Follow by Mail:       

Fax Copy Only:   X

Table 2 Conformance Testing			
Property	Frequency of Testing	Test Method	Value
Geomembrane Thickness * (mils) (minimum)	Every roll	GRI GM 13/ ASTM D 5994	54
Geomembrane Density (g/cubic cm) (minimum)	Every 5 <sup>th</sup> roll	GRI GM 13/ ASTM D 1505	0.94
Carbon Content (%)	Every 5 <sup>th</sup> roll	GRI GM 13/ ASTM D 1603	2.5 ± 0.5
A. Tensile Properties (min) Table and graph of stress versus strain with stress recorded at every 1% strain. Tensile stress and elongation at yield shall be clearly indicated.	Every 5 <sup>th</sup> roll	ASTM D 4885	
B. Tensile Stress at Yield (lbs/inch width) (minimum)			126
C. Elongation at Yield (%)(2.5" Gage Length) (minimum)			12
Oxidation Induction Time (minimum)	Every 5 <sup>th</sup> roll	GRI GM 13/ ASTM D 3895	100
Notched Constant Tensile Load Stress Cracking (NCTL) Test (hr)	Every 5 <sup>th</sup> roll	GRI GM 13/ ASTM D 5397	>400

\* Thickness shall be field-verified.

- E. Each roll shall be given a prominent, unique, indelible identifying marking indicating the sheet number, date of fabrication, and proper direction of unrolling and/or unfolding to facilitate layout and positioning in the field. This marking shall be on the top of the sheet.

## 2.02 SEAMS

- A. All seams shall be of sufficient strength to withstand all loads applied during handling, installation, and operation and to prevent seam leaks over the life of the geomembrane. Seam shear strength and peel strength shall be as specified herein for split-wedge (fusion) and extrusion-type welds. Seams shall be sealed smooth and provide a film-tearing bond mode of failure when tested for shear and peel.
- B. Resin used for extrudate material shall be compatible with the geomembrane material resin.

## LETTER OF TRANSMITTAL



*Jones  
Edmunds &  
Associates, Inc.*  
CONSULTING ENGINEERS AND SCIENTISTS  
**JEA**

Department of Environmental Protection  
SOUTHWEST DISTRICT

TO:	Mr. Kim B. Ford, P.E. FL Dept of Environmental Protection Southwest District 3804 Coconut Palm Drive Tampa, FL 33619-8318	DATE	March 22, 2001
		JOB. NO.	03860-004-01
		RE:	Citrus County Central Landfill Liner Remediation

## WE ARE SENDING YOU:

- |   |   |
|---|---|
| <input checked="" type="checkbox"/> Enclosed  | <input type="checkbox"/> Under Separate Cover |
| <input checked="" type="checkbox"/> U.S. Mail | <input type="checkbox"/> UPS overnight        |
| <input type="checkbox"/> Shop Drawings        | <input type="checkbox"/> Prints               |
| <input type="checkbox"/> Specifications       | <input type="checkbox"/> Copy of Letter       |
| <input type="checkbox"/> Report               | <input type="checkbox"/> Other:               |
- |  |                                  |
|--|----------------------------------|
| <input type="checkbox"/> Federal Express | <input type="checkbox"/> Other   |
| <input type="checkbox"/> Plans           | <input type="checkbox"/> Samples |
| <input type="checkbox"/> Change Order    |                                  |

# Copies	Date	Description
1	Dec 2000	Signed and Sealed Plan Set, half size, Citrus County Central Landfill Liner Remediation

## THESE ARE TRANSMITTED AS CHECKED BELOW:

- |  |   |
|--|---|
| <input type="checkbox"/> For Approval            | <input type="checkbox"/> For Your Information   |
| <input checked="" type="checkbox"/> For Your Use | <input type="checkbox"/> For Review and Comment |
| <input type="checkbox"/> As Requested            | <input type="checkbox"/> Other:                 |

## REMARKS:

COPY TO: \_\_\_\_\_

SIGNED: \_\_\_\_\_

*Judy L. DeVita*  
for Judy L. DeVita, P.E.*If enclosures are not as noted, kindly notify us at once.*

# LETTER OF TRANSMITTAL

**D.E.P.**

**MAR 12 2001**

**Southwest District Tampa**

*Jones  
Edmunds &  
Associates, Inc.*  
CONSULTING ENGINEERS AND SCIENTISTS  
**JEA**

TO:	Mr. Kim B. Ford, P.E. FL Dept of Environmental Protection Southwest District Solid Waste Section 3804 Coconut Palm Drive Tampa, FL 33619-8318	DATE	March 9, 2001
		JOB. NO.	03860-004-01-1000
		RE:	Citrus County Liner Remediation

## WE ARE SENDING YOU:

- |   |   |
|---|---|
| <input checked="" type="checkbox"/> Enclosed  | <input type="checkbox"/> Under Separate Cover |
| <input checked="" type="checkbox"/> U.S. Mail | <input type="checkbox"/> UPS overnight        |
| <input type="checkbox"/> Shop Drawings        | <input type="checkbox"/> Prints               |
| <input type="checkbox"/> Specifications       | <input type="checkbox"/> Copy of Letter       |
| <input type="checkbox"/> Report               | <input type="checkbox"/> Other:               |
- |  |                                  |
|--|----------------------------------|
| <input type="checkbox"/> Federal Express | <input type="checkbox"/> Other   |
| <input type="checkbox"/> Plans           | <input type="checkbox"/> Samples |
| <input type="checkbox"/> Change Order    |                                  |

# Copies	Date	Description
1	3/8/01	Revised Technical Specification Section 06800 - Geomembrane
1		Anchor Trench Design Calculations
1	3/9/01	Revised Drawing 3
1	3/9/01	Revised Drawing 4

## THESE ARE TRANSMITTED AS CHECKED BELOW:

- |  |   |
|--|---|
| <input type="checkbox"/> For Approval            | <input type="checkbox"/> For Your Information   |
| <input type="checkbox"/> For Your Use            | <input type="checkbox"/> For Review and Comment |
| <input checked="" type="checkbox"/> As Requested | <input type="checkbox"/> Other:                 |

## REMARKS:

If you have any questions or comments, please call me.

COPY TO: Susan Metcalfe, David Keough

SIGNED: \_\_\_\_\_

*Judy L. DeVita*  
Judy L. DeVita, P.E.  
Project Engineer

*If enclosures are not as noted, kindly notify us at once.*

SECTION 06800  
GEOMEMBRANE

PART 1	GENERAL .....	06800-1
1.01	SUMMARY .....	06800-1
1.02	RELATED WORK .....	06800-1
1.03	DEFINITIONS .....	06800-1
1.04	REFERENCE STANDARDS .....	06800-2
1.05	SUBMITTALS, SHOP DRAWINGS, AND SAMPLES .....	06800-3
1.06	QUALITY ASSURANCE AND CONTROL (QA/QC) - GENERAL ...	06800-5
1.07	GEOMEMBRANE MANUFACTURER'S QA/QC .....	06800-6
1.08	FIELD SEAMING QA/QC .....	06800-7
PART 2	PRODUCTS .....	06800-9
2.01	GEOMEMBRANE MATERIAL .....	06800-9
2.02	SEAMS .....	06800-10
2.03	PENETRATIONS AND ACCESSORIES .....	06800-10
PART 3	EXECUTION .....	06800-10
3.01	GENERAL .....	06800-10
3.02	SURFACE PREPARATION .....	06800-10
3.03	STORAGE AND HANDLING .....	06800-11
3.04	GEOMEMBRANE INSTALLATION .....	06800-11
3.05	REPAIRS .....	06800-12
3.06	SUBMITTALS REQUIRED FOR PROJECT CLOSEOUT .....	06800-12

FLORIDA DEPARTMENT OF  
ENVIRONMENTAL PROTECTION  
MAR 12 2001  
SOUTHWEST DISTRICT  
TALLAHASSEE

## SECTION 06800 GEOMEMBRANE

### PART 1 GENERAL

#### 1.01 SUMMARY

This section covers the work required to furnish and install the high-density polyethylene (HDPE) geomembranes including all necessary labor, equipment, and appurtenances.

#### 1.02 RELATED WORK

- A. The Standard and Supplementary Conditions of these specifications are a part of this section as if incorporated herein.
- B. Other related specification sections contained herein are listed below:

Section 01300, Schedule, Reports, Records, and Submittals

#### 1.03 DEFINITIONS

- A. "Manufacturer" is defined as a person or company that is in the business of processing and manufacturing the polyethylene resin and other components into the extruded, usable form of geomembrane sheet material. This person or company will be responsible for all Quality Assurance/Quality Control (QA/QC) requirements of the resin material testing, factory testing, and the material warranty.
- B. "Installer" is defined as a person or company that is in the business of joining the extruded, rolled panels and other related products and permanently installing the material in a manner consistent with the project plans and specifications. This person or company shall be responsible for all QA/QC requirements of "field testing" and is responsible for the complete and proper installation of the geomembrane material and the related products. This person or company must act as a manufacturer's authorized installer.
- C. "Technical Representative" is defined as a person who has demonstrated, in the Engineer's opinion, sufficient technical competence and geomembrane material installation supervision, and is a designated representative of the manufacturer. This person shall possess a thorough knowledge and understanding of the project plans and specifications as well as the submitted and approved QA/QC plan.
- D. Quality Assurance (QA): A program establishing policies, procedures, standards, training, guidelines, testing, and systems necessary to provide quality in the work to meet the project requirements and accepted industry standards.
- E. Quality Control (QC): The specific implementation of the Quality Assurance program, including checking and review of activities.

#### 1.04 REFERENCE STANDARDS

A. Reference standards and recommended practices referred to herein shall be the latest revision of any such document.

B. Standards referenced herein are as listed below:

1. ASTM D 638 Tensile Properties of Plastics
2. ASTM D 696 Coefficient of Thermal Expansion of Plastics
3. ASTM D 1004 Initial Tear Resistance of Plastic Film and Sheeting
4. ASTM D 1204 Linear Dimensional Changes of Nonrigid Thermoplastic Sheeting or Film at Elevated Temperature
5. ASTM D 1238 Flow Rates of Thermoplastics by Extrusion Plastometer
6. ASTM D 1505 Density of Plastics by the Density-Gradient Technique
7. ASTM D 1603 Carbon Black in Olefin Plastics
8. ASTM D 3895 Carbon Dispersion
9. ASTM D 4437 Determining the Integrity of Field Seams Used in Joining Flexible Polymeric Sheet Geomembranes
10. ASTM D 4885 Standard Test Method for Determining Performance Strength of Geomembranes by the Wide Strip Tensile Method
11. ASTM D 5321 Determining the Coefficient of Soil and Geosynthetic or Geosynthetic and Geosynthetic Friction by the Direct Shear Method
12. ASTM D 5397 Evaluation of Stress Crack Resistance of Polyolefin Geomembrane Using Notched Constant Tensile Load Test
13. ASTM D 5596 Standard Test Method for Microscopic Evaluation of the Dispersion of Carbon Black in Polyolefin Geosynthetics
14. ASTM D 5641 Geomembrane Seam Evaluation by Vacuum Chamber



- |     |             |  |
|-----|-------------|--|
| 15. | ASTM D 5820 | Pressurized Air Channels Evaluation of Dual Seamed Geomembranes  |
| 16. | ASTM D 5994 | Measuring Core Thickness of Textured Geomembranes  |
| 17. | ASTM D 6365 | Standard Practice for the Nondestructive Testing of Geomembrane Seams Using Spark Test                                     |
| 18. | ASTM D 6392 | Standard Test Method for Determining the Integrity of Nonreinforced Geomembrane Seams Produced Using Thermo-Fusion Methods |
| 19. | ASTM E 96   | Water Vapor Transmission of Materials  |
| 20. | GRI GM13    | Test Properties, Test Frequency, and Recommended Warrant for High Density  |

#### 1.05 SUBMITTALS, SHOP DRAWINGS, AND SAMPLES

- A. All submittals shall be in accordance with Section 01300, Schedules, Reports, Records, and Submittals, and shall be in sufficient detail to show full compliance with these specifications.
- B. The Installer shall submit a copy of the geomembrane liner manufacture and installation QA/QC plan. This information shall include information regarding repair of geomembrane defects. The QA/QC plan and the records of experience as specified herein shall be provided with the executed agreement/documents submitted to the Owner.
- C. The Installer shall submit the printed product data for all materials, including material specifications and drawing details. The Installer shall submit the printed installation instructions including a complete description of methods to be used for seaming, splicing, patching, repairs, anchoring, and penetrating the geomembrane. Submittals shall include manufacturer's recommended methods for handling and storage.
- D. Installer shall submit all installation drawings and procedures for carrying out the work. Shop drawings shall include a panel layout drawing to show the geomembrane sheet layout including the proposed configuration, size, number, position of all sheets, and the sequence of placements. The submittal shall include the location and direction of all seams.
- E. Installer shall submit samples of HDPE geomembrane, penetration materials, anchor strips, anchor bolts, clamps, and other appurtenances.
- F. Product data, samples, certifications, and shop drawings shall be submitted by the Installer for review and approval by the Engineer.

- G. Testing certification as specified herein shall be submitted to the Engineer.
- H. Laboratory test results shall be provided to the Engineer by the Installer no later than 48 hours after receipt of the test results. The Installer shall also provide test results, certifications, and submittals as required to conform to these specifications.
- I. During construction, the Installer shall submit installation reports to the Engineer. Reports of installation shall include the following:
  - 1. Material delivery report.
  - 2. Pre-start site inspection.
  - 3. Soil subgrade acceptance.
  - 4. Daily records of construction (text documentation).
  - 5. Daily personnel activity reports.
  - 6. Equipment list, including manufacturer and serial number.
  - 7. Chain-of-custody for destructive samples.
  - 8. Field seam strength test reports and patch testing (destructive).
  - 9. Meeting reports.
  - 10. Problem/solution reports.
  - 11. Seam records.
    - a. Name of welder.
    - b. Date of weld.
    - c. Time of weld.
    - d. Location of weld.
    - e. Equipment used.
    - f. Equipment temperature; start and finish.
    - g. Ambient air temperature
  - 12. Nondestructive test records.
  - 13. Certification of completed installation.
  - 14. Maps-updated weekly.
- J. The following schedule of submittals identifies, but does not limit, the submittals/shop drawings referenced in this specification section. Refer to the specification paragraph referenced for additional information and/or requirements.

ITEM	SPECIFICATION PARAGRAPH	NUMBER REQUIRED	WHEN REQUIRED
QA/QC Plan	06800-1.5.B	----	At contract execution
Material specification, installation instructions, handling and storage recommendations	06800-1.5.C	----	At contract execution or within 10 days
Shop and installation drawings	06800-1.5.D	----	At contract execution or within 10 days
HDPE material product data, and certifications	06800-1.5.E	----	At contract execution or within 10 days
Testing certifications and results	06800-1.5.G	----	Field results within 48 hours of receipt
Documentation of experience	06800-1.6.B, C	----	Bid/proposal
Subgrade acceptance certificate	06800-1.6.D	As required	Prior to placement of geomembrane
Factory material tests and manufacturer's certification	06800-1.8	1/50,000 SF, unless noted otherwise	Within 60 days of contract execution and 30 days prior to material shipment
Nondestructive field seam, penetrations, and repair test results	06800-1.9.B, C, -1.5.J	All seams	Within 24 hours after testing is performed
Destructive field seam test results	06800-1.9.D, -1.5.J	1/500 LF of seam or 3/seam period (greater) and start up test strips	Within 48 hours of receipt of test results from the approved independent testing lab
Destructive cap (patch) testing	06800-1.9.G, -1.5.J	If required, as needed	Within 48 hours of receipt of test results from the approved independent testing lab
Record documents	06800-3.9.A,B,&C, -1.6H	As required by specification	30 days prior to project closeout

## 1.06 QUALITY ASSURANCE AND CONTROL (QA/QC) - GENERAL

A. Geomembrane installation shall be performed by an Installer certified, in writing, by the Manufacturer of the geomembrane.

### B. Documentation

1. The Manufacturer shall submit documented evidence of proven technical competence, past record of satisfactory performance on similar projects totaling at least 100 million square feet and sufficient capacity to do the volume of work within the required time frame for total project completion within the contract time period. Documentation shall include a typewritten list indicating the name and location of each project which geomembrane was

supplied by the manufacturer; Owner's name, address, and telephone number; square footage of installed geomembrane; type and thickness of geomembrane material installed; seaming method(s) used; and name of installer. This information shall be submitted with the bid or within 10 days of that date.

2. The Installer shall submit documented evidence of proven technical competence, past record of satisfactory performance on five HDPE liner installation jobs and sufficient capacity to do the volume of work within the required time frame for total project completion within the contract time period. Documentation shall include a typewritten list indicating the name and location of each geomembrane installation performed by the Installer; the final construction cost of the geomembrane (if known); Owner's name, address, and telephone number; square footage of installed geomembrane; type and thickness of geomembrane material installed; seaming method(s) used; and resumes of senior installation personnel. This information shall be submitted at Contract execution or within 10 days of that date.
- C. The Installer shall, at his expense, provide a geomembrane Manufacturer's Technical Representative at the job site full-time to ensure compliance with the geomembrane Manufacturer's and Installer's submitted and approved QA/QC plan. The geomembrane Manufacturer's Technical Representative shall be present during geomembrane construction and provide technical supervision and assistance at all times during the installation of the geomembrane and as may be required by the Engineer. The Manufacturer's Technical Representative shall have supervised a minimum of 4 million square feet of geomembrane installation. The Manufacturer's Technical Representative shall be responsible for a thorough knowledge and understanding of the project specifications and approved QA/QC plan. The Manufacturer's Technical Representative shall be excluded from routine physical installation of the geomembrane material.
- D. Testing and test results shall be performed and certified as specified herein.
- E. The finished geomembrane installation shall be inspected by the Installer, the Engineer, and the geomembrane Manufacturer's Technical Representative. The geomembrane Manufacturer's Technical Representative shall provide a letter to the Engineer certifying that, without exception, the geomembrane system has been installed in complete accordance with the project Contract Documents, the approved QA/QC plan, and the Manufacturer's recommendations. All items precluding this certification shall be remedied by and at the expense of the Installer.

#### 1.07 GEOMEMBRANE MANUFACTURER'S QA/QC

- A. The manufacturer shall submit factory material test results representative of every 40,000 square feet of geomembrane per batch, and as stated herein, showing conformance with the requirements of these specifications. In the case of a failure, subsequent testing shall be performed at the Installer's expense on all geomembrane material produced from the same batch of compounds to determine if rolls produced from the entire batch are unsatisfactory. Additional testing of individual rolls may

be required at the Installer's expense to identify the noncomplying rolls and/or to qualify individual rolls. All rolls not conforming to the requirements of the Contract Documents will be rejected.

- B. The Installer shall submit the manufacturer's certification stating the lot, panel number, and location of each test specimen taken and that the geomembrane material meets the specifications and is suitable for the intended application.
- C. There shall be no holes, blisters, or areas of undisbursed resin.
- D. The cost of all testing required for the manufacturer's QA/QC program or as specified herein shall be borne by the Installer. Materials failing testing and/or inspection shall be repaired, reinspected, and retested by, and at the expense of, the Installer until compliance is attained.
- E. Geomembrane material shall not be shipped to the project site until the results of all manufacturer's QA/QC testing have been submitted and approved by the Engineer.

#### 1.08 FIELD SEAMING QA/QC

- A. The cost of all testing, both destructive and nondestructive, required for the field seaming QA/QC program shall be borne by the Installer with the exception of testing on samples submitted to the Engineer as described herein. Seams failing testing and/or inspection shall be repaired, reinspected, and retested by, and at the expense of, the Installer until compliance is attained. All laboratory test reports shall be reviewed and approved for project conformance by a Professional Engineer registered in the state of Florida. All test reports shall be signed and sealed by the Professional Engineer.
- B. The Installer shall nondestructively test all field seams over their full length. Continuity testing shall be carried out as the seaming work progresses. The Installer shall complete any required repairs in accordance with the approved QA/QC program. All nondestructive testing shall be observed by the Engineer and the geomembrane Manufacturer's Technical Representative. Documentation of these tests shall be submitted daily to the Engineer's field representative.
  - 1. All extrusion seams, penetrations, and repairs shall be continuously nondestructively tested using vacuum box methods in accordance with ASTM D 5641. Alternatively, a holiday spark test method may be employed on all penetrations, seams, and repairs.
  - 2. Split-wedge seams shall be pressure tested in accordance with ASTM D 5820. The repaired seam will be retested and repaired until the seam passes the pressure test.
- C. Sample coupons of field seams shall be taken or made for destructive test purposes for every 500 linear feet of field seaming or 3 times during each seaming period, whichever is greater, and during seaming start up by each crew as directed by the

Engineer. Coupons shall be cut by the Contractor at locations designated by the Engineer as the seaming progresses. The coupons shall measure a minimum 12 inches in width (perpendicular to the seam) plus the width of the seam and 30 inches in length. Each coupon shall be numbered, dated, identified as to the personnel making the seam, and keyed as to the location of the field seam via reference to the panel layout diagrams. Ten 1-inch-wide strips shall be cut from the sample for testing by an independent testing laboratory approved by the Engineer as part of the field seaming QA/QC program in accordance with ASTM D 638 and ASTM D 413. The results of these tests shall be submitted to the Engineer as part of the geomembrane certification requirements. The remaining portion of the coupon shall be submitted to the Engineer for independent (third party) laboratory testing by an independent testing laboratory retained by the Owner, if required. All holes in the geomembrane due to destructive seam sampling shall be immediately repaired by the Installer. The continuity of the new seams in the repaired area shall be nondestructively tested as specified herein.

- D. All field seam sample specimens tested by the independent testing agencies retained by both the Installer and the Owner shall be required to pass the minimum material properties specified herein. If any specimen fails, the entire sample from which it was taken shall be considered as a failure and the field seam shall be rejected due to nonconformance with the specifications. Seam shear and peel test requirements are for both wedge and extrusion welds. Seam shear strength shall have a minimum value of 121 pounds per inch (ppi) of width (fusion) and 117 ppi (extrusion). Peel test strength shall have a minimum value of 91 pounds per inch of width (fusion) and 80 ppi (extrusion).
- E. The Installer shall comply with the following corrective measures if a seam sample test failure is recorded:
  - 1. Cap each field seam represented by the failed sample and submit 1 new destructive test sample for each seam made during the capping procedure. Failed seam must be completely bounded by new cap.
  - 2. Perform a visual inspection of the geomembrane sheets, seams, anchors, seals, and repairs for defects as the installation progresses and again on completion.
  - 3. Defective and questionable areas (per visual inspection) shall be clearly marked and repaired to the Engineer's satisfaction. Each area showing damage due to scuffing, penetration by foreign objects, or distress from rough subsurface shall, at the expense of the Installer, be replaced or covered with an additional layer of geomembrane material.
- F. The Installer shall retain responsibility for the integrity of the geomembrane system until acceptance by the Engineer. The geomembrane will not be accepted by the Engineer until:
  - 1. Installation is completed in accordance with the Contract Documents.

2. Written certification letters, warranty, installation record documents, and record drawings have been received by the Owner.
3. Documentation of completed installation test results, including all reports, is complete.
4. Verification of adequacy of field seams and repairs, including all testing, is complete.

## PART 2 PRODUCTS

### 2.01 GEOMEMBRANE MATERIAL

- A. The geomembrane shall be a co-extruded, textured, HDPE and shall consist of products designed and manufactured specifically for the intended purpose which shall have been satisfactorily demonstrated by prior use to be suitable and durable.
- B. The geomembrane shall be manufactured completely of virgin poly-ethylene resin.
- C. The geomembrane shall be supplied as a factory-fabricated sheet with no factory seams, individually packaged on a heavy cardboard roll which shall have a minimum width of 22 feet or as available from the Manufacturer and approved by the Engineer. The roll length and width shall be maximized to provide the largest manageable sheet for the fewest field seams.
- D. The HDPE geomembrane shall have the following physical properties when measured in accordance with the referenced standard.

Table 2 Conformance Testing			
Property	Frequency of Testing	Test Method	Value
Geomembrane Thickness * (mils) (min)	Every roll	GRI GM 13/ ASTM D 5994	54 +/- 10%
Geomembrane Density (g/cubic cm) (min-max)	Every 5 <sup>th</sup> roll	GRI GM 13/ ASTM D 1505	0.94
Carbon Content (%)	Every 5 <sup>th</sup> roll	GRI GM 13/ ASTM D 1603	2.5 ± 0.5
A. Tensile Properties (min) Table and graph of stress versus strain with stress recorded at every 1% strain. Tensile stress and elongation at yield shall be clearly indicated.	Every 5 <sup>th</sup> roll	ASTM D 4885	
B. Tensile Stress at Yield (lbs/inch width) (minimum)			126
C. Elongation at Yield (%)(2.5" Gage Length) (minimum)			12
Oxidation Induction Time (MIN)	Every 5 <sup>th</sup> roll	GRI GM 13/ ASTM D 3895	100
Notched Constant Tensile Load Stress Cracking (NCTL) Test (hr)	Every 5 <sup>th</sup> roll	GRI GM 13/ ASTM D 5397	>400

\* Thickness shall be field-verified.

- E. Each roll shall be given a prominent, unique, indelible identifying marking indicating the sheet number, date of fabrication, and proper direction of unrolling and/or unfolding to facilitate layout and positioning in the field. This marking shall be on the top of the sheet.

## 2.02 SEAMS

- A. All seams shall be of sufficient strength to withstand all loads applied during handling, installation, and operation and to prevent seam leaks over the life of the geomembrane. Seam shear strength and peel strength shall be as specified herein for split-wedge (fusion) and extrusion-type welds. Seams shall be sealed smooth and provide a film-tearing bond mode of failure when tested for shear and peel.
- B. Resin used for extrudate material shall be compatible with the geomembrane material resin.



Table 2 Conformance Testing			
Property	Frequency of Testing	Test Method	Value
Geomembrane Thickness * (mils) (min)	Every roll	GRI GM 13	60
Geomembrane Density (g/cubic cm) (min-max)	Every 5 <sup>th</sup> roll	GRI GM 13	0.920 - 0.935
Carbon Content (%)	Every 5 <sup>th</sup> roll	GRI GM 13	2.5 ± 0.5
A. Tensile Properties (min) Table and graph of stress versus strain with stress recorded at every 1% strain. Tensile stress and elongation at yield shall be clearly indicated.	Every 5 <sup>th</sup> roll	ASTM D 4885	
B. Tensile Stress at Yield (lbs/inch width) (minimum)			130
C. Elongation at Yield (%)(2.5" Gage Length) (minimum)			12
Oxidation Induction Time (hr)	Every 5 <sup>th</sup> roll	GRI GM 13	24
Notched Constant Tensile Load Stress Cracking (NCTL) Test (hr)	Every 5 <sup>th</sup> roll	GRI GM 13	>200

\* Thickness shall be field-verified.

- E. Each roll shall be given a prominent, unique, indelible identifying marking indicating the sheet number, date of fabrication, and proper direction of unrolling and/or unfolding to facilitate layout and positioning in the field. This marking shall be on the top of the sheet.

## 2.02 SEAMS

- A. All seams shall be of sufficient strength to withstand all loads applied during handling, installation, and operation and to prevent seam leaks over the life of the geomembrane. Seam shear strength and peel strength shall be as specified herein for split-wedge (fusion) and extrusion-type welds. Seams shall be sealed smooth and provide a film-tearing bond mode of failure when tested for shear and peel.
- B. Resin used for extrudate material shall be compatible with the geomembrane material resin.

- C. The fusion welding equipment used shall be capable of continuously monitoring and controlling the temperatures and pressures in the zone of contact where the machine is actually fusing the geomembrane material, so as to ensure that changes in environmental conditions will not affect the integrity of the weld.

## 2.03 PENETRATIONS AND ACCESSORIES

- A. All required accessories (i.e., vents, battens, gaskets, sealants, ballast tubes, fasteners, etc.) shall be designed, fabricated, and supplied by the geomembrane installer.
- B. Anchor strips shall be continuous for straight runs.
- C. Boots are to be fabricated so as to allow excess material to be gathered around the pipe below the stainless steel mechanical clamps in a "socked" fashion or otherwise constructed to allow for 1 foot of landfill settlement before requiring clamp adjustment. Boots' construction technique and details shall be approved by the Engineer.

## PART 3 EXECUTION

### 3.01 GENERAL

All installation procedures shall conform to the requirements of the submitted and approved QA/QC documentation and the requirements of these specifications.

### 3.02 SURFACE PREPARATION

- A. Surfaces to be covered shall be smooth and free of all rocks, stones, sticks, roots, sharp objects, or debris of any kind.
- B. The prepared surface underlying the geomembrane shall not be allowed to deteriorate after acceptance and shall remain acceptable up to the time of geomembrane placement.

### 3.03 STORAGE AND HANDLING

- A. Geomembrane materials shall be transported, stored, and handled in strict conformance with the fabricator's submitted and approved QA/QC plan.
- B. Material is to be stored in an area designated by the Owner until the material is to be deployed for seaming. Geomembrane material shall not be deployed as a measure to protect the completed subgrade from inclement weather.

### 3.04 GEOMEMBRANE INSTALLATION

- A. Geomembrane installation shall not commence until geomembrane shop drawings and QA/QC plans have been approved and the letters of certification and required

documentation, as specified herein, have been received, accepted, and approved by the Engineer.

- B. The geomembrane shall be placed over the prepared surfaces in such a manner as to minimize handling. It shall be attached/sealed to all structures in accordance with details shown on the drawings and/or in accordance with details prepared by the geomembrane Manufacturer which have been submitted by the Installer and approved by the Engineer. The geomembrane shall be closely fitted and completely sealed around projections through the geomembrane. Sufficient excess geomembrane material shall be provided to accommodate thermal expansion and contraction and normal settlement; but not excessive to the extent that folds left in the geomembrane material could cause it to crack, break, or pond liquid. All folds shall be repaired or the material realigned to remove any folds.
- C. Hardware shall not protrude against the geomembrane so as to cause abrasion or other damage.
- D. No equipment used shall damage the geomembrane by handling, trafficking, leaking of hydrocarbons, or other means.
- E. No persons in contact with the geomembrane shall smoke, wear damaging shoes, or engage in other activities which could damage the geomembrane.
- F. The method used to unroll the panels shall not cause scratches or crimps in the geomembrane and shall not damage the supporting soil.
- G. The Installer shall provide adequate temporary ballasting and/or anchoring to prevent uplift by wind. Selection of ballast (e.g., sand bags, tires, etc.) shall not contain sharp edges (e.g., steel-belted radials) which would damage the geomembrane. Wind-blown geomembrane shall be considered damaged and shall be replaced at the Installer's expense.
- H. The geomembrane in high-traffic areas shall be protected by geotextiles, extra geomembrane, or other suitable materials.

### 3.05 REPAIRS

- A. Repairs to the geomembrane shall be made with the geomembrane material meeting the requirements of the specifications listed herein. All wrinkles shall be smoothed out. All patches shall be round or have rounded corners. Patch size shall be sufficient to cover the defective area plus 6 inches in all directions from the boundary of the defective area.
- B. Any necessary repairs to the geomembrane shall be made with the geomembrane material itself. The contact surfaces shall be prepared and the patch applied by extrusion welding methods.

- C. Repair methods shall conform to the submitted and approved QA/QC plan, as approved by the Engineer.

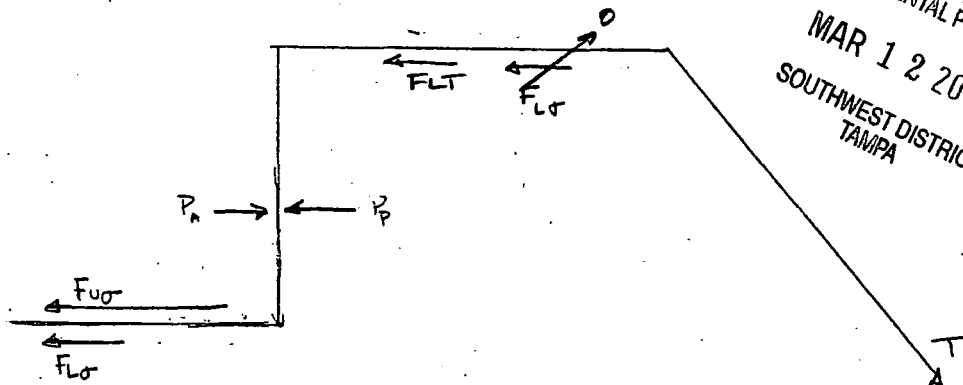
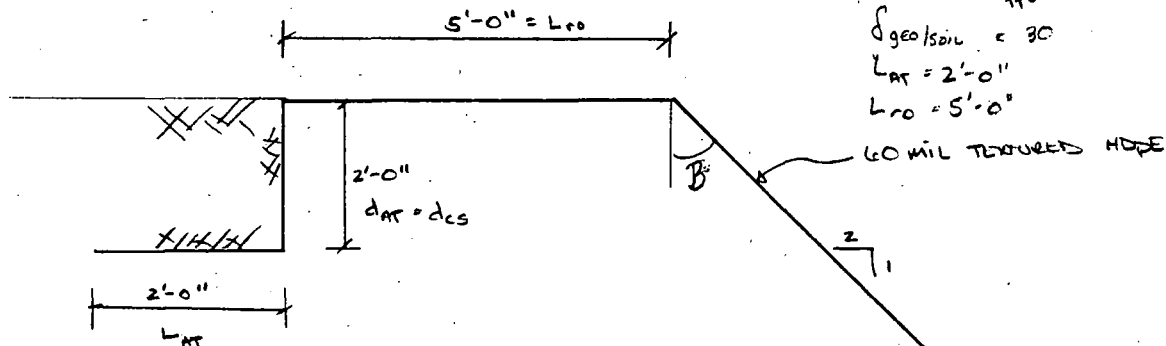
### 3.06 SUBMITTALS REQUIRED FOR PROJECT CLOSEOUT

- A. **Certifications:** Submit certification by the geomembrane Manufacturer and Installer that the geomembrane was installed in substantial accordance with their recommendations and to the Manufacturer's satisfaction. Certification shall be made on the forms attached at the end of this section.
- B. **Record Drawings:** Submit reproducible drawings of record showing changes from the approved installation drawings. The record drawings shall include the identity and location of each repair, cap strip, penetration, and sample taken from the installed geomembrane for testing.
- C. **Quality Control Records:** Submit three original copies of a Quality Control Record Document containing copies of all material and seam test results. Each test shall be identified by date of sampling, date of testing, location of sampling, individual who performed the test, standard test used, departures from standard test methods, and any other pertinent information. These records are submitted in addition to any previously required quality control records.
- D. **Records of Installation:** These include daily records of construction, seaming logs, Installer's and welder's resumes, nondestructive test reports, problem/solution sheets, and other record documents of installation.

ANCHOR TRENCH DESIGN

DESIGN REFERENCE: "DESIGNING WITH GEOMEMBRANES", 4th Ed.  
by: Robert M. Koerner

$$\begin{aligned}\beta &= 26.56^\circ \\ d_{AT} &= 2' \\ \gamma_{soil} &= 110 \frac{\text{lb}_s}{\text{ft}^3} \\ \phi_{geo/soil} &= 30^\circ \\ L_{AT} &= 2'-0" \\ L_{ro} &= 5'-0"\end{aligned}$$



$\nearrow^O$  = ASSUME ZERO CONTRIBUTION TO RESIST PULL OUT (CONSERVATIVE)

- $F_{UO}$  = SHEAR FORCE ABOVE GEOMEMBRANE DUE TO COVER SOIL
- $F_{LG}$  = SHEAR FORCE BELOW GEOMEMBRANE DUE TO COVER SOIL
- $F_{LT}$  = SHEAR FORCE BELOW GEOMEMBRANE DUE TO VERTICAL COMPONENT OF T
- $P_P$  = PASSIVE EARTH PRESSURE AGAINST IN-SITU SIDE OF ANCHOR TRENCH
- $P_A$  = ACTIVE EARTH PRESSURE AGAINST BACKSIDE OF ANCHOR TRENCH

FLORIDA DEPARTMENT OF  
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MAR 12 2001  
SOUTHWEST DISTRICT  
TAMPA

MAX ALLOWABLE TENSION IN MEMBRANE = MEMBRANE STRENGTH @ YIELD  $130 \frac{\text{lbs}}{\text{in}}$

$$130 \frac{\text{lbs}}{\text{in}} \times \frac{12 \text{ in}}{1 \text{ ft}} = \underline{1560 \frac{\text{lbs}}{\text{ft}}} \quad \text{MAX TENSION IN MEMBRANE BEFORE MEMBRANE WILL YIELD.}$$

DETERMINE MAX TENSION OF ANCHOR TRENCH

$$\Rightarrow T_{\text{max}} \cos \beta = F_{\text{UR}} + F_{\text{LU}} + F_{\text{LT}} + P_{\text{P}} - P_{\text{A}} + F_{\text{X}}^0$$

$$\textcircled{1} F_{\text{UR}} = \sigma_n \tan \delta_u (L_{ro}) = (2 \times 110) \tan(30)(2) = \underline{254}$$

$$\textcircled{2} F_{\text{LU}} = \sigma_n \tan \delta_L (L_{ro}) = (2 \times 110) \tan(30)(2) = \underline{254}$$

$$\textcircled{3} F_{\text{LT}} = T \sin \beta \tan(\phi_L) = 1560 \sin(26.56) \tan(30) = \underline{402.7}$$

$$\textcircled{4} P_{\text{P}} = (0.5)(\gamma_{cs}) + \sigma_n) K_{\text{P}} d_{\text{AT}} = [(0.5 \times 110) + (2 \times 110)] \tan^2(45 + \frac{\phi}{2})(2) \downarrow$$

$$(660) \cdot \tan^2(45 + \frac{32}{2}) \Rightarrow \underline{2148}$$

$$\textcircled{5} P_{\text{A}} = (0.5)(\gamma_{cs}) + \sigma_n) K_{\text{A}} d_{\text{AT}} = [(0.5 \times 110) + (2 \times 110)] \tan^2(45 - \frac{\phi}{2})(2) = \downarrow$$

$$(660) \cdot \tan^2(45 - \frac{32}{2}) = \underline{202.8}$$

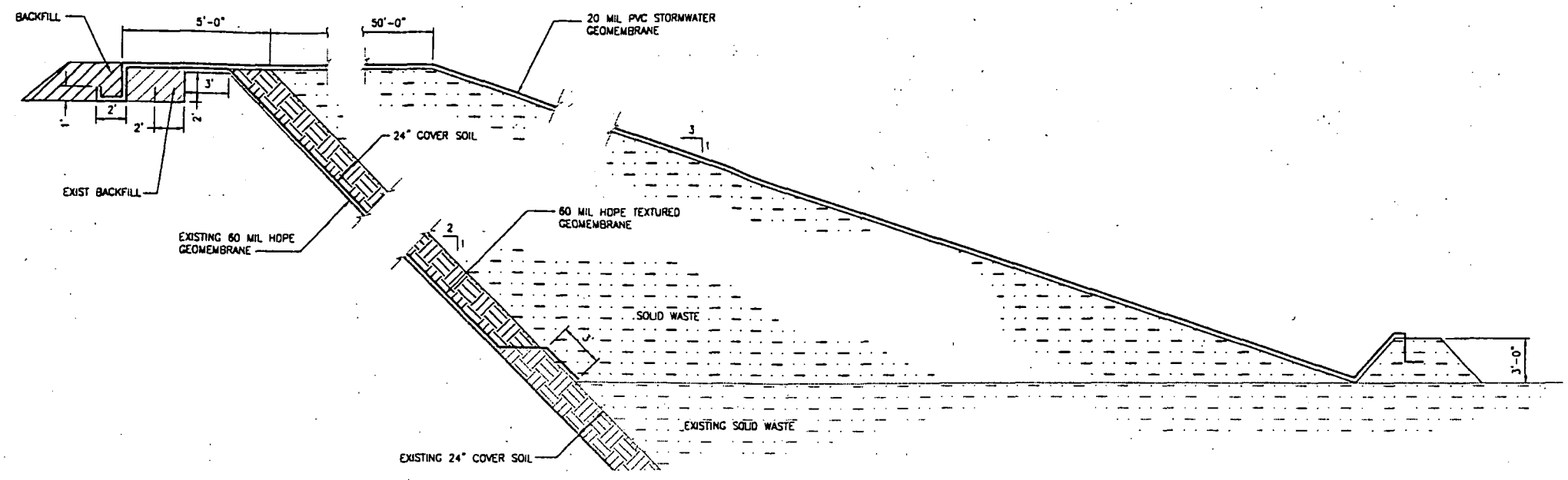
$$\Rightarrow T_{\text{max}} \cos \beta = 254 + 254 + 402.7 + 2148 - 202.8$$

$$\Rightarrow T_{\text{max}} \cos \beta = 2855.9$$

$$F.S. = \frac{T_{\text{max}}(\text{AT})}{T_{\text{all}}(\text{mem})} = \frac{3192}{1560} = \underline{2.05}$$

$$\Rightarrow T_{\text{max}} = \frac{2855.9}{\cos(26.56)} = \underline{3192 \frac{\text{lbs}}{\text{ft}}}$$

F.S. > 1.5  $\therefore$  O.K. ✓



TYPICAL SECTION A  
1"=5'

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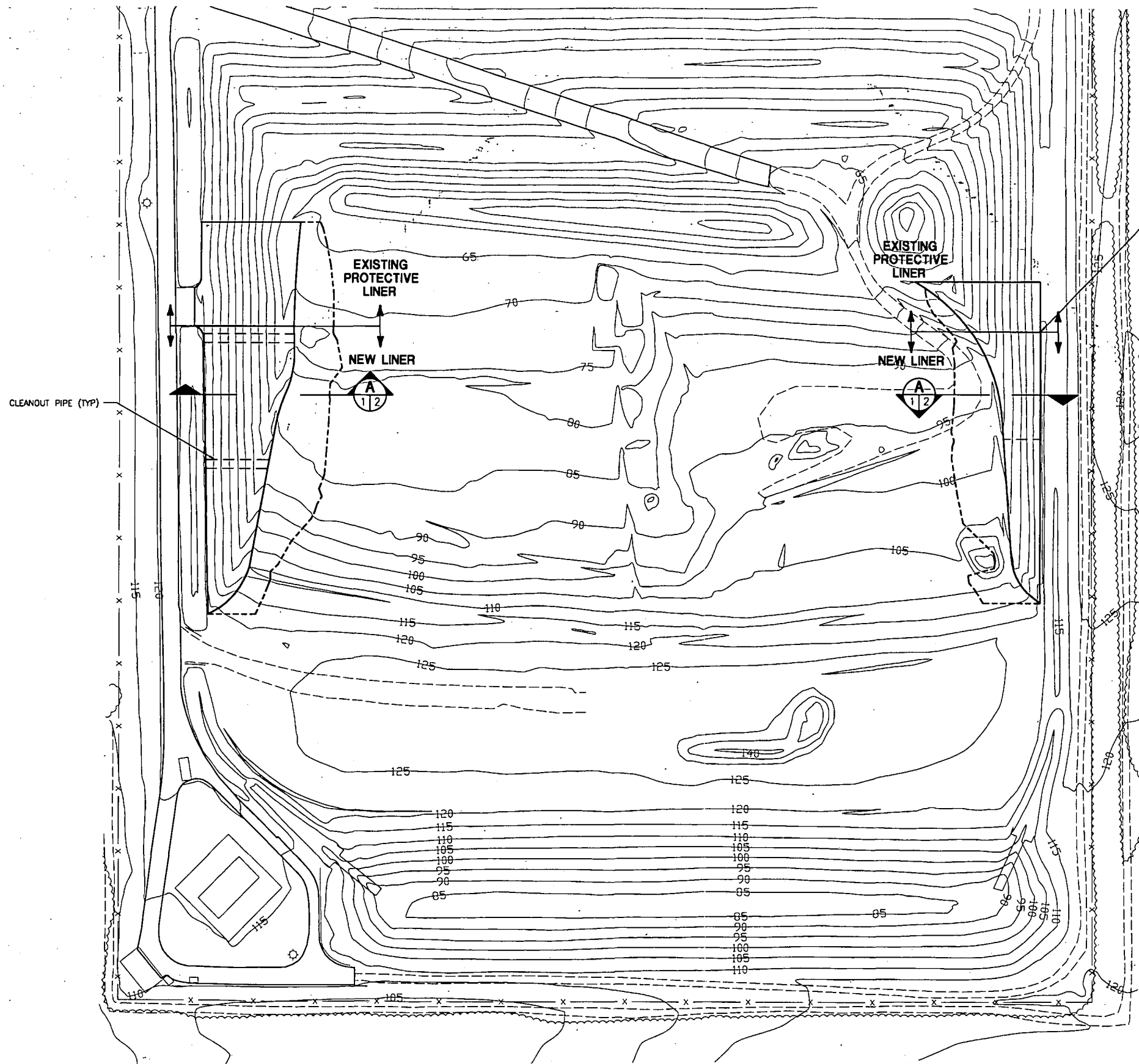
					DESIGNED JLD
					DRAWN JAW
					CHECKED DAK
					J. L. DeVITA, EI
LTR.	DATE	REVISIONS	BY	APPROD.	PROJECT ENGINEER

*Jones Edmunds & Associates, Inc.*  
**JEA**  
CONSULTING ENGINEERS AND SCIENTISTS  
700 Northeast Pablo Road/Cocoa, Florida 32911 / (321) 377-5821

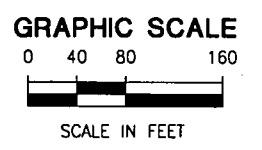
CITRUS COUNTY CENTRAL LANDFILL  
CITRUS COUNTY, FLORIDA

LINER REMEDIATION SECTION

APPROVED FOR JEA BY	DATE	PROJECT NO.
D. A. KEOUGH, PE	DEC 2000	03860-004-01
P.E. # 33164	SCALE	DWG. NO.
	1"=5'	4 OF 4



EXISTING/NEW LINER WELD  
SEE DETAIL



**LEGEND**

- LIMITS OF EXISTING EXPOSED GEOMEMBRANE
- - - LIMITS OF SOIL/SOLID WASTE 3H:1V SLOPE

**NOTES**

1. SURVEY DATA PROVIDED BY PTI, 6/20/00
2. NORTH AND SOUTH EDGES OF NEW LINER SHALL BE EXTRUSION WELDED ALONG ENTIRE SLOPE LENGTH. SEE DETAIL
3. NOTE THAT LOCATION OF EXISTING CLEANOUT PIPES ARE APPROXIMATE. CONTRACTOR SHALL SUBMIT A PLAN FOR ENGINEER APPROVAL OUTLINING LINER INSTALLATION IN CLEANOUT VICINITY.

FLORIDA DEPARTMENT OF  
ENVIRONMENTAL PROTECTION  
MAR 12 2001  
SOUTHWEST DISTRICT  
TAMPA

03/09/01 10:35 PEU je004-03.dwg

DESIGNED	JLD
DRAWN	JAW
CHECKED	DAK
J. L. DeVITA, EI	
PROJECT ENGINEER	

LTR.	DATE	REVISIONS	BY	APPROD.

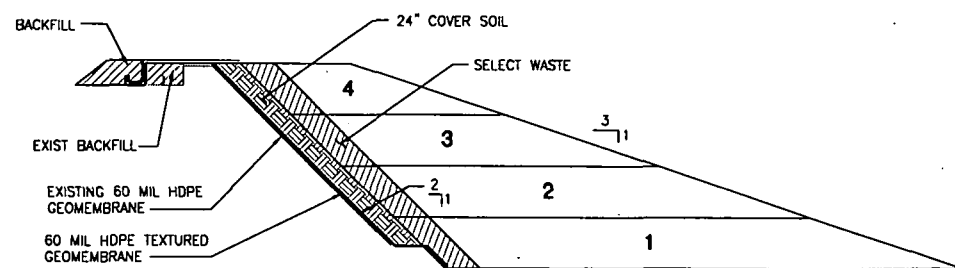
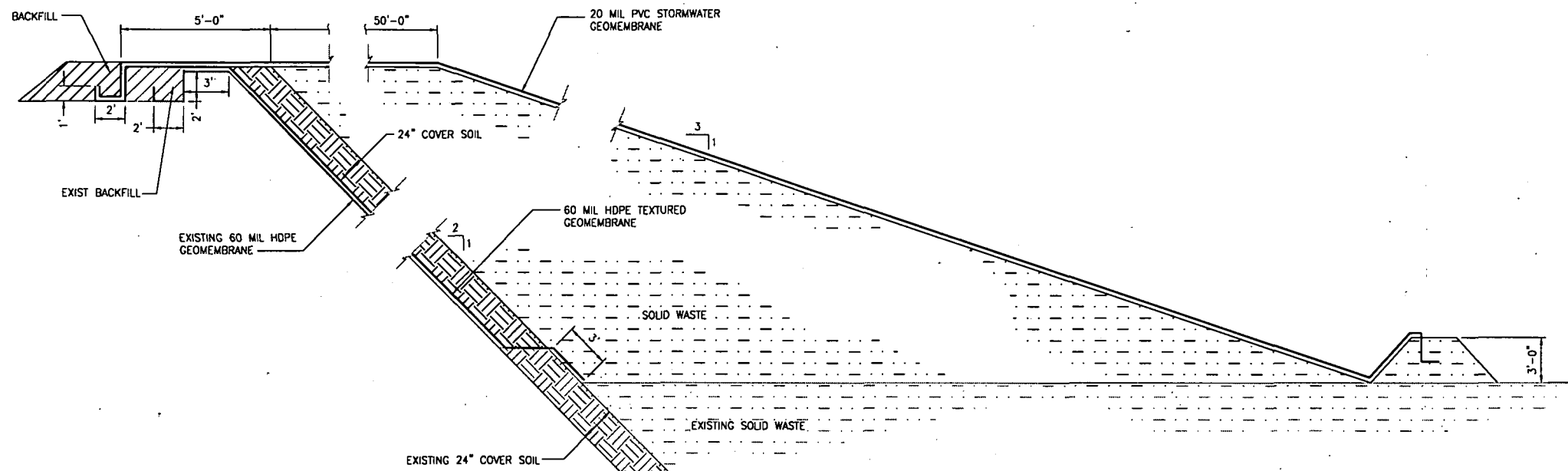
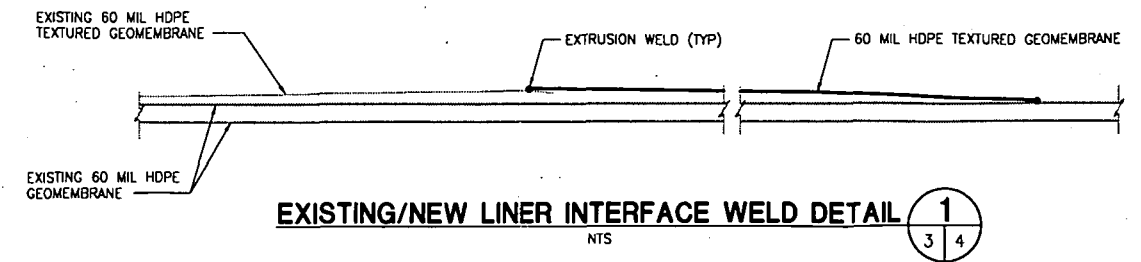
*Jones Edmunds & Associates, Inc.*  
**JEA**  
CONSULTING ENGINEERS AND SCIENTISTS  
730 Northeast Pulte Road, Clearwater, Florida 34611 / (813) 577-6821

CITRUS COUNTY CENTRAL LANDFILL  
CITRUS COUNTY, FLORIDA

LINER REMEDIATION

APPROVED FOR JEA BY	DATE	PROJECT NO.
D. A. KEOUGH, PE	DEC 2000	03860-004-01
P.E. # 33164	SCALE 1"=80'	DWG. NO. 3 OF 4





**NOTES:**

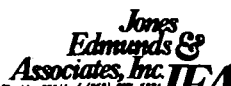
1. UPON COMPLETION OF NEW LINER INSTALLATION, WASTE FILLING OPERATIONS WILL COMMENCE AT TOE OF NEW LINER SLOPE, ALONG ENTIRE NEW LINER EXISTING SOLID WASTE INTERFACE.
2. WASTE FILLING WILL CONTINUE IN 10'-15' LIFTS AS SHOWN IN NEW LINER AREA WASTE FILLING PLAN.
3. ONCE WASTE FILL HAS ACHIEVED A 3:1 SLOPE, THE PROPOSED STORMWATER LINER WILL BE INSTALLED.

**NEW LINER AREA WASTE FILLING PLAN**

NTS

FLORIDA DEPARTMENT OF  
ENVIRONMENTAL PROTECTION  
MAR 12 2001  
SOUTHWEST DISTRICT  
TAMPA

03/09/01 11:18 PEU je004-04.dwg

LIT.		DATE	REVISIONS	BY	APPRO.	DESIGNED JLD	 <p>730 Northeast Palm Road, Clearwater, Florida 34611 / (813) 977-6221 CONSULTING ENGINEERS AND SCIENTISTS</p>		CITRUS COUNTY CENTRAL LANDFILL CITRUS COUNTY, FLORIDA		LINER REMEDIATION SECTION		APPROVED FOR JEA BY		DATE	PROJECT NO.
						DRAWN JAW									DEC 2000	03860-004-01
						CHECKED DAK									SCALE	DWG. NO.
						J. L. DeVITA, EI							D. A. KEOUGH, PE		1"=5'	4 OF 4
						PROJECT ENGINEER							P.E. # 33164			

**Ford, Kim**

---

**From:** Judy DeVita [jdevita@jea.net]  
**Sent:** Wednesday, March 07, 2001 8:52 AM  
**To:** Ford, Kim  
**Subject:** FW: Citrus Co Liner Remediation



06800rev.wpd

-----Original Message-----

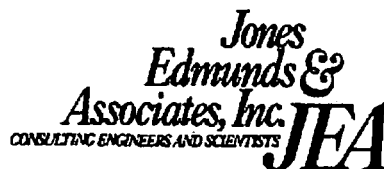
**From:** Judy DeVita  
**Sent:** Tuesday, March 06, 2001 10:17 AM  
**To:** 'ford\_k@tpal.dep.state.fl.us'  
**Subject:** Citrus Co Liner Remediation

Attached is the revised geomembrane spec. The following pages have been revised to include your comments: 5, 7, 8, 10. Please let me know if you would like me to mail a hard copy.

Thanks,

Judy L. DeVita, P.E.  
Project Engineer  
Jones, Edmunds & Associates, Inc.  
730 NE Waldo Road, Building A  
Gainesville, FL 32641  
352-377-5821  
352-377-3166 (fax)

✓ 12/5/01 3/2/01  
DAGMAN  
LEFT - YES. MAIL



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**FAX TRANSMITTAL SHEET**

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DATE	3-5-01
PROJECT NUMBER	02860-004-01-0100
NUMBER OF PAGES (including cover sheet)	7
TO	KIM FORD, FDEP SW DISTRICT
FAX NUMBER	813-744-6125
FROM	JUDY DEVITA

ATTACHED ARE THE ASTM STANDARDS YOU REQUESTED.  
I AM IN THE PROCESS OF DESIGNING GEOMEMBRANE  
SPEC. & WILL FORWARD ASAP.

This message is intended only for the use of the individual or entity to which it is addressed and may contain information that is privileged, confidential, and exempt from disclosure under applicable law. If the reader of this message is not the intended recipient, or the employee or agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone and return the original message to us at the return address listed below via the U.S. Postal Service. Thank you.

If you do not receive all pages, please contact JUDY at 352/377-5821, ext. 1247

Original to Follow by Mail:     

Fax Copy Only:   X

Designation: D 5641 - 94<sup>1</sup>

## Standard Practice for Geomembrane Seam Evaluation by Vacuum Chamber<sup>1</sup>

This standard is issued under the fixed designation D 5641; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

<sup>1</sup> NOTE—The title was corrected editorially in June 1995.

### 1. Scope

1.1 This practice covers procedures to perform nondestructive quality control testing described in Practice D 4437 and D 4545 for evaluating the continuity of all types of geomembrane seams using the bubble emission or vacuum chamber method.

1.2 The technique described in this practice is intended for use on geomembrane seams, patches, and defects.

1.3 The values stated in SI units are to be regarded as the standard. The inch-pound units in parentheses are provided for information only.

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

### 2. Referenced Documents

#### 2.1 ASTM Standards:

D 4437 Practice for Determining the Integrity of Field Seams Used in Joining Polymeric Flexible Sheet Geomembranes<sup>2</sup>

D 4439 Terminology for Geotextiles<sup>2</sup>

D 4545 Practice for Determining the Integrity of Factory Seams Used in Joining Flexible Sheet Geomembranes<sup>2</sup>

E 515 Test Method for Leaks Using Bubble Emission Techniques<sup>3</sup>

#### E.P.A. Documents:

EPA/600/2-88/052 Lining of Waste Containment and Other Impoundment Facilities, NTIS PB89-129-670<sup>4</sup>

EPA/530/SW-91/051 Inspection Techniques for the Fabrication of Geomembrane Field Seams<sup>4</sup>

### 3. Terminology

#### 3.1 Descriptions of Terms Specific to This Standard:

3.1.1 *geomembrane, n*—an essentially impermeable geosynthetic composed of one or more synthetic sheets. (See Terminology D 4439).

3.1.2 *seam, n*—the connection of two or more pieces of material by mechanical, chemical, or fusion methods to

provide the integrity of a single piece of the material.

3.1.3 *vacuum chamber, n*—a device that allows a vacuum to be applied to a surface.

3.1.3.1 *Discussion*—In geomembranes, typical seams would include adhesive bonded, bodied chemical fusion welds; chemical fusion welds; dielectric; dual hot wedge; fillet extrusion; flat extrusion; hot air, single hot wedge; and ultrasonic. (See EPA/530/SW-91/051.)

NOTE 1—For definition of other terms used in this practice, refer to Terminology D 4439.

### 4. Summary of Practice

4.1 The basic principle of this practice consists of creating a pressure differential across a seam and observing for bubbles in a film of foaming solution over the low pressure side, within the vacuum chamber. The vacuum chamber has a viewing port that allows observation of the seam area being tested. The foaming solution is applied to the surface to be tested and the vacuum chamber is placed over the test area. As the chamber is held firmly in place, vacuum is applied. Air leakage through flaws in the test area cause bubbles in the foaming solution that may be observed.

### 5. Significance and Use

5.1 This practice is a nondestructive evaluation intended to be used for quality control purposes during factory or field seaming of geomembranes.

5.2 This practice may also be used to evaluate geomembrane panels for holes that penetrate the entire thickness of material. Limitations on the test practice are that it may not be suitable for uneven or curved surfaces, thick seams, seams in corners, and thin extensible geomembranes.

### 6. Apparatus

6.1 *Vacuum Pump*—The vacuum pump shall be fuel or electric powered and capable of sustaining the required vacuum for the duration of the test.

6.2 *Vacuum Gage*—The vacuum gage shall be capable of registering, as a minimum, to 70 kPa (10 psi) in increments of 5 kPa ( $\frac{1}{4}$  psi).

6.3 *Calibration and Adjustment*—The calibration of the vacuum gage shall be checked and adjusted periodically, and routinely at a minimum of once every twelve months.

6.4 *Foaming Solution*—The foaming solution shall be pre-mixed with water at a ratio conducive to the formation of bubbles. It shall be dispensed by spray, brush, or any other convenient means. The foaming solution shall be compatible with the geomembrane.

<sup>1</sup> This practice is under the jurisdiction of ASTM Committee D-35 on Geosynthetics and is the direct responsibility of Subcommittee D35.10 on Geomembranes.

Current edition approved Nov. 15, 1994. Published January 1995.

<sup>2</sup> Annual Book of ASTM Standards, Vol 04.09.

<sup>3</sup> Annual Book of ASTM Standards, Vol 03.03.

<sup>4</sup> Available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

## D 5641

NOTE 2—If the component to be tested has parts made of polyethylene or structural plastics, the test fluid must not promote environmental stress cracking (E.S.C.). (See Test Method E 515.)

**6.5 Vacuum Chamber**—The vacuum chamber shall have an open bottom and a clear viewing panel on top. It shall be an appropriate and convenient size and shape, made of rigid materials and equipped with a vacuum gage, valve, and soft pliable gasket around the periphery of the open bottom (see Fig. 1).

NOTE 3—Vacuum chamber equipment may be obtained from the suppliers given in Footnote 5.<sup>5</sup> These suppliers are cited only for convenience and no commercial endorsement is expressed or implied by incorporation into this practice.

## 7. Procedure

7.1 The area of the seam to be evaluated should be clean and free of soil or foreign objects that might prohibit a good seal from being formed between the vacuum chamber and the geomembrane.

7.2 Energize the vacuum pump.

7.3 Wet an area immediately adjacent to and including the geomembrane seam or test area measuring approximately twice the width and length of the vacuum chamber with a foaming solution.

7.4 Place the vacuum chamber over the wet area of the geomembrane such that the gasket is in complete contact with the geomembrane surface, and the test area is centered under the viewing port.

7.5 Apply a normal force to the top of the vacuum chamber to effect a seal and open the vacuum valve.

7.6 Ensure that a leak tight seal is created between the vacuum chamber gasket and the geomembrane material. For most cases, a minimum vacuum of 28 to 55 kPa (4 to 8 psi) as registered on the vacuum gage should be appropriate.

7.7 With the vacuum applied, maintain the normal force and observe the geomembrane seam or test area through the viewing port for bubbles resulting from the flow of air through defects in the seam. The vacuum should be held over the test site for a duration of not less than 10 s. If the vacuum cannot be held for the minimum 10 s, the test area shall be marked as untested. It is essential that the viewing port remain clean at all times to facilitate unobstructed viewing.

7.8 If bubbles appear on the geomembrane seam, turn the three-way vacuum valve to vent the chamber and remove the

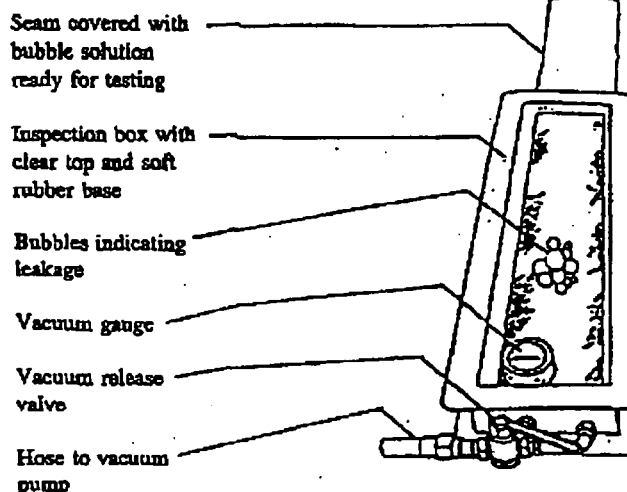


FIG. 1 Vacuum Chamber

vacuum chamber from the seam. The defective area should then be marked for repair.

7.9 If bubbles do not appear through the geomembrane seam within the specified dwell time, turn the vacuum valve to vent the chamber and remove the chamber from the seam.

7.10 Move the vacuum chamber to the adjoining portion of the seam or test area overlapping the previously tested area by a distance no less than 10 % of the minimum chamber length or at least 50 mm (2 in.), whichever is the greater and repeat the procedure until the entire seam has been tested.

## 8. Report

8.1 Report the following information:

8.1.1 Identification of the geomembrane material, including type of polymer, source, thickness, reinforced or nonreinforced sheeting, seaming system used, ambient temperature, seam tested, seam width, date of seam fabrication, and date of seam evaluation, and results of seam evaluation.

NOTE 4—The intent of the form is not to imply that each VCT is to be recorded on said form.

8.1.2 Documentation of the typical vacuum pressure and hold duration and latest pressure gage calibrations,

8.1.3 Identification of the location and approximate size of all defective areas, and

8.1.4 Identification of foaming solution used for the test and if different types were used, the location of use for each type.

## 9. Keywords

9.1 bubble emission testing; geomembrane; nondestructive testing; seam; testing; vacuum; vacuum chamber

<sup>5</sup> Series A 100 Straight Seam Tester supplied by the American Parts and Service Company, 2201 West Commonwealth Avenue, P.O. Box 702, Alhambra, CA 91802. Vacuum Chamber Test System as supplied by Sinclair Equipment Company, 6686 A Merchandise Way, Diamond Springs, CA 95619. Columbine International, Ltd., 3441 Merchant Circle, Placerville, CA 95667.

D 5641

## APPENDIX

(Nonmandatory Information)

Testing Agency: \_\_\_\_\_  
Date of Test: \_\_\_\_\_ Operator: \_\_\_\_\_  
Project Name: \_\_\_\_\_  
Installer: \_\_\_\_\_  
Job Number: \_\_\_\_\_ Geomembrane Type: \_\_\_\_\_  
Manufacturer: \_\_\_\_\_ Fabricator: \_\_\_\_\_  
Seam Width: \_\_\_\_\_ Geomembrane Thickness: \_\_\_\_\_

SEAM      Factory \_\_\_\_\_      Field \_\_\_\_\_

Seam Type:    Single Hot Wedge \_\_\_\_\_    Dual Hot Wedge \_\_\_\_\_    Hot Air \_\_\_\_\_  
                 Flat Extrusion \_\_\_\_\_    Fillet Extrusion \_\_\_\_\_    Dielectric \_\_\_\_\_  
                 Chemical/Adhesive \_\_\_\_\_

Vacuum Gauge Calibration Date: \_\_\_\_\_

Weather: \_\_\_\_\_ Ambient Temp: \_\_\_\_\_

Seam Tested	Vacuum Applied	Hold Time Duration	Number of Defects Found	Number of Defects Repaired	Date Seam Accepted

Comments: \_\_\_\_\_

Seams Accepted By: \_\_\_\_\_

Date: \_\_\_\_\_

FIG. X1.1 Evaluation Form

*The American Society for Testing and Materials takes no position respecting the validity of any patent rights asserted in connection with any item mentioned in this standard. Users of this standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, are entirely their own responsibility.*

*This standard is subject to revision at any time by the responsible technical committee and must be reviewed every five years and if not revised, either reapproved or withdrawn. Your comments are invited either for revision of this standard or for additional standards and should be addressed to ASTM Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend. If you feel that your comments have not received a fair hearing you should make your views known to the ASTM Committee on Standards, 1916 Race St., Philadelphia, PA 19103.*



Designation: D 5820 - 95

## Standard Practice for Pressurized Air Channel Evaluation of Dual Seamed Geomembranes<sup>1</sup>

This standard is issued under the fixed designation D 5820; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

### 1. Scope

1.1 The practice covers a nondestructive evaluation of the continuity of parallel geomembrane seams separated by an unwelded air channel. The unwelded air channel between the two distinct seamed regions is sealed and inflated with air to a predetermined pressure. Long lengths of seam can be evaluated by this practice more quickly than by other common nondestructive tests.

1.2 This practice should not be used as a substitute for destructive testing. Used in conjunction with destructive testing, this method can provide additional information regarding the seams undergoing testing.

1.3 This practice supercedes Practice D 4437 for geomembrane seams that include an air channel. Practice D 4437 may continue to be used for other types of seams. The user is referred to the referenced standards, or to EPA/530/SW-91/051 for additional information regarding geomembrane seaming techniques and construction quality assurance.

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

### 2. Referenced Documents

#### 2.1 ASTM Standards:

D 4437 Practice for Determining the Integrity of Field Seams Used in Joining Flexible Polymeric Sheet Geomembranes<sup>2</sup>

D 4439 Terminology for Geotextiles<sup>2</sup>

D 4491 Test Methods for Water Permeability of Geotextiles by Permittivity<sup>2</sup>

#### 2.2 Other Standard:

CGSB 148.1 #112 Dual Seam Non-Destructive Pressure Testing Method for Geomembranes<sup>3</sup>

EPA/530/SW-91/051 Technical Guidance Document: Inspection Techniques for the Fabrication of Geomembrane Field Seams<sup>4</sup>

### 3. Terminology

#### 3.1 Definitions:

3.1.1 *dual seam, n*—a geomembrane seam with two

parallel welded zones separated by an unwelded air space.

3.1.1.1 *Discussion*—The dual seam itself can be made by a number of methods, the most common being the hot wedge technique. Other possible methods include hot air and ultrasonic bonding techniques.

3.1.2 *geomembrane, n*—an essentially impermeable geosynthetic composed of one or more synthetic sheets.

3.1.2.1 *Discussion*—In geotechnical engineering, impermeable essentially means that no measurable liquid flows through a geosynthetic when tested in accordance with Test Methods D 4491.

3.1.3 *seam, n*—a permanent joining of two or more materials.

3.2 For definitions of other terms, see Terminology D 4439.

### 4. Summary of Practice

4.1 This practice utilizes a dual seam where an air channel exists between the two welded zones. Both ends of the air channel are sealed and then a pressure gage is attached to the air space. Air pressure is applied and the gage is monitored for excessive gage air pressure drop.

4.2 Air pressures used in this practice are related to the thickness, stiffness and material type of the geomembrane.

4.3 The minimum monitoring time is recommended to be 2 min following stabilization of the pressure.

4.4 Maximum allowable loss of air pressure varies depending upon thickness, stiffness and type of material of the geomembrane.

### 5. Significance and Use

5.1 The increased use of geomembranes as barrier materials to restrict liquid or gas movement, and the common use of dual track seams in joining these sheets, has created a need for a standard nondestructive test by which the quality of the seams can be assessed for continuity and water tightness. The test is not intended to provide any indication of the physical strength of the seam.

5.2 This practice recommends an air pressure test within the channel created between dual seamed tracks whereby the presence of unbonded sections or channels, voids, nonhomogenities, discontinuities, foreign objects, and the like, in the seamed region can be identified.

5.3 This technique is intended for use on seams between geomembrane sheets formulated from the appropriate polymers and compounding ingredients to form a plastic or elastomer sheet material that meets all specified requirements for the end use of the product.

### 6. Equipment

6.1 *Sealing Equipment*, appropriate to seal the two ends of the air channel.

<sup>1</sup> This practice is under the jurisdiction of ASTM Committee D-35 on Geosynthetics and is the direct responsibility of Subcommittee D35.10 on Geomembranes.

Current edition approved Oct. 10, 1995. Published January 1996.

<sup>2</sup> Annual Book of ASTM Standards, Vol 04.09.

<sup>3</sup> Available from Canadian General Standards Board, 222 Queen Street, Ottawa, Ontario, Canada, K1A1G6.

<sup>4</sup> Available from the Superintendent of Documents, U. S. Government Printing Office, Washington, DC 20402.

## D 5820

6.2 A device is necessary to insert air into the open channel and to allow monitoring its pressure.

NOTE 1—A sharp, hollow needle attached to a properly functioning pressure gage has been used successfully. Other devices may provide equivalent functions.

6.3 *Air Pump*, either manual or motor driven, capable of generating up to 350 kPa (50 lb/in.<sup>2</sup>) pressure is necessary. It must be placed on an adequate cushion to preclude damage to the geomembrane. A flexible hose is used to connect the pump to the air pressure device. This hose should have a quick connect on its end for disengagement after pressure is supplied to its desired value, that is, the pump is not to be attached while the air pressure is being monitored.

6.4 *Knife*, capable of cutting or trimming the liner material.

NOTE 2—A hook bladed knife is recommended. Straight bladed knives may damage the geomembrane by cutting through the material being trimmed and into the underlying geomembrane.

6.5 *Pressure Gage*, capable of indicating the air pressure in 7 kPa (1 lb/in.<sup>2</sup>) within the test range.

NOTE 3—The gage should be calibrated as specified by the manufacturer, or at a frequency of at least once per year.

## 7. Procedure

7.1 After the dual track seam is fabricated and the length of seam that is to be evaluated is determined, seal off the two ends of the continuous air channel.

7.2 Connect the pressure gage directly to the air channel.

7.3 Connect an air pump to the pressure gage with a flexible hose via a quick connect and pressurize the air channel to the pressure appropriate for the geomembrane type.

7.4 Remove the flexible hose that connects the air channel to the pressure gage. Following pressure stabilization, observe the air pressure gage for the desired test time. The test time should be a minimum of 2 min. Mark the time and pressure of the beginning and end of the test on the geomembrane with a visible marker. The maximum allowable pressure drop may be compared to the maximum allowable value.

7.5 If the pressure does not drop below the maximum allowable value after the specified test period, open the air channel at the end away from the pressure gage. Air should rush out and the pressure gage should register an immediate drop in pressure, indicating that the entire length of the seam

has been tested. If this does not happen, either the air channel is blocked or the equipment is faulty, and the test is not valid. Attempt to locate the problem and retest the seam in accordance with the project specifications.

7.6 If the pressure drop is greater than the maximum allowable value after the test period, check the end seals of the air channel. Reseal these areas if a leak is noticed and then repeat the entire test.

NOTE 4—Leaks around the end seals and air pressure device can usually be located by putting moisture around the suspected area and looking for bubbles.

7.7 If significant changes in geomembrane temperature occur during pressure testing (for example, cloud cover or other shading), a variation in channel pressure may be recorded due to expansion or contraction of the air channel. If an increase or decrease in temperature is suspected of having caused a pressure variation, repeat the test after the geomembrane temperature has stabilized.

7.8 Any dual seam that cannot be successfully tested using this practice should be marked and tested using another nondestructive testing practice when possible.

## 8. Report

8.1 The report of a pressurized dual seam test is usually given in the form of a completed chart. It should include the following information as a minimum:

- 8.1.1 Data of test,
- 8.1.2 Time of test,
- 8.1.3 Temperature at time of test,
- 8.1.4 Location of test with respect to panel layout plan,
- 8.1.5 Stabilized air channel pressure,
- 8.1.6 Duration of test time,
- 8.1.7 Gage pressure drop during test,
- 8.1.8 Outcome of test (pass/fail/retest), and
- 8.1.9 If fail—remedial action is described in detail.

8.2 A form as shown in Fig. 1 includes the above information and may be used for such reporting.

## 9. Precision and Bias

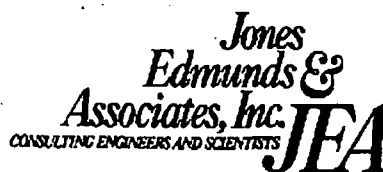
9.1 The precision of this test has not been established.

9.2 The threshold value for accepting seam quality is that value agreed upon by all parties overseeing the installation of the project and is thus the source of bias in this procedure.



Page \_\_\_\_ of \_\_\_\_

*This standard is subject to revision at any time by the responsible technical committee and must be reviewed every five years and if not revised, either reapproved or withdrawn. Your comments are invited either for revision of this standard or for additional standards and should be addressed to ASTM Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend. If you feel that your comments have not received a fair hearing you should make your views known to the ASTM Committee on Standards, 100 Barr Harbor Drive, West Conshohocken, PA 19428.*



## FAX TRANSMITTAL SHEET

DATE	3-1-01
PROJECT NUMBER	03860-004-01-0100
NUMBER OF PAGES (including cover sheet)	2
TO	KIM FORD, DEP
FAX NUMBER	813-744-6125
FROM	JUDY DEVITA

KIM,

I'VE PROVIDED REFERENCES FOR MOST OF YOUR NOTES.  
SPECS CAN BE REVISED TO INCLUDE SAMPLE SIZE  
& CORRECT "GREEN".

LET ME KNOW IF YOU HAVE ANY OTHER QUESTIONS.

JUDY

This message is intended only for the use of the individual or entity to which it is addressed and may contain information that is privileged, confidential, and exempt from disclosure under applicable law. If the reader of this message is not the intended recipient, or the employee or agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone and return the original message to us at the return address listed below via the U.S. Postal Service. Thank you.

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## CITRUS Line Repair

NEED CQA plan

→ w/ ① Sample Size?

SPEC 1.05 Table

② Sample Frequency

SPEC 1.05 Table

③ STARTUP TESTS (When?)

SPEC 1.08 B.1.

④ VACUUM & AIR TESTS (ASTM D 564?)

SPEC 9 1.05 Table 9 1.09 D

⑤ DESTRUCTIVE TESTS

SPEC 2.01 - Table 2

⑥ CONFORMANCE TESTS (by who?)

NEED Specs for

① → CUTTING & WELDING PIPES

ADD NOTE TO DWG

② → QUALIFICATION

OMIT "GREEN"

NOT FOR GREEN LINER

③ → ANCHOR TRENCH

INSTALLATION

ADD NOTE TO DWG

SPEC IS NOT FOR MICRO-SPIKE LINER

④ NOT MICRO-SPIKE LINER

NEED Const plans w/ NOTES

refer to Section 2.01 of specs

① MATERIALS & PROCEDURES FOR COVENOR LINER

②

Department of  
Environmental Protection

Southwest District  
3804 Coconut Palm Drive  
Tampa, Florida 33619-8318

INFORMATION REQUEST

TO:

JUDY DINTO

Jones/Edmunds & Assoc.

730 N.E. WALDO ROAD, Bldg. A

GRANTSVILLE, FL

32641-5699

NCE PLAN  
NSION SECTION 1  
DA

We are pleased to send the enclosed information you requested.

If we can be of further service, please contact:

Kim B. Ford, P.E.  
Solid Waste Section  
Waste Management Division  
3804 Coconut Palm Drive  
Tampa, FL 33619-8318  
(813) 744-6100, ext. 382

COMMENTS:

COA

Tampa, Florida 33619  
(813) 621-0080

March 15, 2000  
09195029.35

**LINER CONSTRUCTION QUALITY ASSURANCE PLAN  
SOUTHEAST COUNTY LANDFILL CAPACITY EXPANSION SECTION 1  
HILLSBOROUGH COUNTY, FLORIDA**

For:  
Hillsborough County  
Solid Waste Management Department  
P.O. Box 1110  
Tampa, Florida 33601

By:  
SCS ENGINEERS  
3012 U.S. Highway 301 North  
Suite 700  
Tampa, Florida 33619  
(813) 621-0080

March 15, 2000  
09195029.35

## \*\* Transmit Conf. Report \*\*

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CIMS3 Line Repair

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CITRUS Linea Repair

## CITRUS LINE Repair

NEED CQA plan

w/ : ① Sample size

② sample frequency

③ STARTUP TESTS

④ VACUUM & AIR TESTS

⑤ DESTRUCTIVE TESTS

⑥ CONFORMANCE TESTS

NEED Specs for

① COATING & WELDING PIPES

② QUALIFICATION

NOT FOR GREEN LINE

③ ANCHOR TRENCH

INSTALLATION

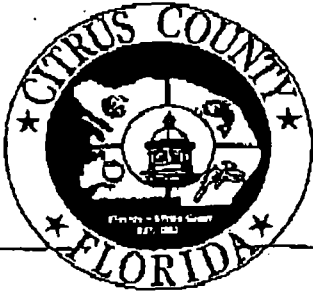
④ NOT MICRO-SPIKE LINE

NEED Const plans w/ NOTES

① MATERIALS & PROCEDURES  
FOR COGREEN LINE

②





BOARD OF COUNTY COMMISSIONERS  
DEPARTMENT OF PUBLIC WORKS  
SOLID WASTE MANAGEMENT DIVISION

P.O. Box 340, Lecanto, Florida 34460

(352) 746-5000 FAX (352) 527-1204

Citrus Springs/Dunnellon area Toll Free # (352) 489-2120

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Kim Ford

FOEP

813

744-6125

FROM:

Susie Metcalfe

SUBJECT:

Proof of publication - liner repair

MESSAGE:

Attached

# Proof of Publication

from the  
**CITRUS COUNTY CHRONICLE**  
 Crystal River, Citrus County, Florida  
**PUBLISHED DAILY**

STATE OF FLORIDA  
 COUNTY OF CITRUS

Before the undersigned authority personally appeared

Felicia Satchell

Of the Citrus County Chronicle, a newspaper published daily at Crystal River, in Citrus County, Florida, that the attached copy of advertisement being a public notice in the matter of the

State of Florida Department of Environmental  
Protection Notice of Application  
Display Advertisement

Court, was published in said newspaper in the issues of February 4, 2001

Affiant further says that the Citrus County Chronicle is a Newspaper published at Crystal River in said Citrus County, Florida, and that the said newspaper has heretofore been continuously published in Citrus County, Florida, each week and has been entered as second class mail matter at the post office in Inverness in said Citrus County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that he/she has neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

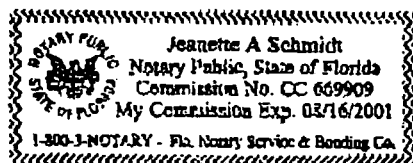
*Felicia Satchell*  
 The foregoing instrument was acknowledged before me

This 4th day of February, 2001

By: Felicia Satchell

who is personally known to me and who did take an oath.

*Jeanette A. Schmidt*  
 Notary Public



309-0204 SUCRN

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

The Department announces receipt of an application for permit from Citrus County Board of County Commissioners for a permit to remediate exposed liner with new liner, subject to Department rules, located at the Citrus County Central Landfill, near S.R. 44, 3 miles east of Lecanto, in Citrus 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, 3804 Coconut Palm Drive, Tampa, Florida 33619-1352.

## \*\* Transmit Conf. Report \*\*

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Jan 30 2001 12:24

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# FAX

Date:

1/30/01

Number of pages including cover sheet:

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To:

Susan Metcalfe

Citrus Co

Phone:

352-7465000

Fax phone:

352-5271204

CC:

From:

Em Ford

Phone:

- (813) 744-6100 x-382

Fax phone:

(813) 744-6125

REMARKS:

☐ Urgent☒ For your review☒ Reply ASAP☐ Please comment

CITRUS LENA  
OUTSIDE OFFICE OF APPLICATION  
PROOF OF PUBLICATION  
I'll REVIEW BY THE 15th  
on 1/30/01

TXX

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1/30/01

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Susan Metcalfe

CITRUS CO

Phone:

352-746-5000

Fax phone:

352-527-1204

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From:

Em Ford

Phone:

(813) 744-6100 x 382

Fax phone:

(813) 744-6125

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or sooner

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

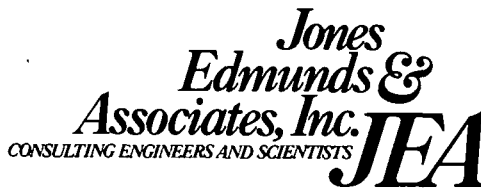
Each person who files an application for a Department permit or other approval may publish, or be required to publish, a notice of application or other notice as set forth below in this section. Except as specifically provided otherwise in this paragraph, each person publishing such a notice under this section shall do so at his own expense in the legal advertisements section of 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 an application for permit from Citrus County Board of County Commissioners for a permit to remediate exposed liner with new liner, subject to Department rules, located at the existing Citrus County Central Landfill, near S.R. 44, 3 miles east of Lecanto, in Citrus 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, 3804 Coconut Palm Drive, Tampa, Florida 33619-1352.



January 18, 2001

Mr Kim B. Ford, P.E.  
Florida Department of Environmental Protection  
Southwest District - Solid Waste Section  
3804 Coconut Palm Drive  
Tampa, FL 33619-8318

**D.E.P.**

**JAN 22 2001**

**Southwest District Tampa**

RE: Citrus County Central Landfill  
Class I Landfill Geomembrane Remediation  
Permit No. SO09-247381  
JEA Project No.: 03860-004-01-1000

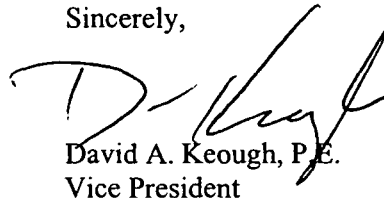
Dear Mr. Ford:

Enclosed please find the construction permit application, construction drawings, and supporting information for the project referenced above. Additional copies of the permit application package have been forwarded to Mr. Bob Butera, and Mr. Richard Tedder, as requested.

The objective of the proposed construction project is to remediate sections of the existing geomembrane bottom liner which has suffered from, or will be subject to, stress-cracking. The geomembrane liner and causes of stress-cracking were investigated by Dr. Ian Peggs of I-CORP International, Inc. (July 20, 2000). Liner remediation alternatives, based on Dr. Peggs' investigative conclusions, and additional analyses, were assessed by Jones, Edmunds & Associates, Inc. and forwarded to the Florida Department of Environmental Protection (FDEP) in correspondence dated October 10, 2000. The proposed liner remediation consists of contracting with a geomembrane installer to place a new, 60-mil, HDPE, textured, geomembrane in the presently-exposed liner areas, as shown on enclosed construction drawings. In addition, a stormwater geomembrane will be installed once a layer of solid waste is placed along the side slope. The stormwater geomembrane will provide erosion control and better leachate management.

If you have any questions, please call me at 352/377-5821.

Sincerely,



David A. Keough, P.E.  
Vice President

H:\DeVita\CitrusCo\Liner\_remediation\DEP\_remed\_app\_final2.wpd

Enclosures

XC: Bob Butera, FDEP-Tampa  
Richard Tedder, FDEP-Tallahassee  
Susan Metcalfe, Citrus Co.



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION  
Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, FL 32399-2400

DEP FORM # \_\_\_\_\_  
Form Title Solid Waste Management Facility Permit  
Effective Date May 19, 1994  
DEP Application No. \_\_\_\_\_  
(Filed by DEP)

**D.E.P.**  
**JAN 22 2001**  
**Southwest District Tampa**

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SOLID WASTE MANAGEMENT FACILITY PERMIT

APPLICATION INSTRUCTIONS AND FORMS

## INSTRUCTIONS TO APPLY FOR A SOLID WASTE AGREEMENT PERMIT

### I. General

Solid Waste Management Facilities shall be permitted pursuant to Section 403.707, Florida Statutes, (FS) and in accordance with Florida Administrative Code (FAC) Chapter 62-701. A minimum of six copies of the application shall be submitted to the Department District Office having jurisdiction over the facility. The appropriate fee in accordance with Chapter 62-4, FAC, and Rule 62-701.320(5)(c), FAC, shall be submitted with the application by check made payable to the Department of Environmental Protection (DEP).

Complete appropriate sections for the type of facility for which application is made. Entries shall be typed or printed in ink. All blanks shall be filled in or marked "not applicable" or "no substantial change". Information provided in support of the application shall be marked "submitted" and the location of this information in the application package indicated. The application shall include all information, drawings, and reports necessary to evaluate the facility. Information required to complete the application is listed on the attached pages of this form.

### II. Application Parts Required for Construction and Operation Permits

- A. Landfills and Ash Monofills - Submit parts A, B, D through R, and T
- B. Asbestos Monofills - Submit parts A, B, D, E, F, I, K, M through Q, and T
- C. Industrial Solid Waste Facilities - Submit parts A, B, D through Q, and T
- D. Volume Reduction Facilities - Submit parts A, C, D, S, and T
- E. Materials Recovery Facilities - Submit parts A, C, D, S, and T

NOTE: Portions of some parts may not be applicable.

NOTE: For facilities that have been satisfactorily constructed in accordance with their construction permit, the information required for A, B, C, D, and E type facilities does not have to be resubmitted for an operation permit if the information has not substantially changed during the construction period. The appropriate portion of the form should be marked "no substantial change".

### III. Application Parts Required for Closure Permits

- A. Landfills and Ash Monofills - Submit parts A, B, N through R, and T
- B. Asbestos Monofills - Submit parts A, B, M through Q, and T
- C. Industrial Solid Waste Facilities - Submit parts A, B, N through Q, and T
- D. Volume Reduction Facilities - Submit parts A, C, S, and T
- E. Materials Recovery Facilities - Submit parts A, C, S, and T

NOTE: Portions of some parts may not be applicable.

### IV. Permit Renewals

The above information shall be submitted at time of permit renewal in support of the new permit. However, 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. Portions of the application not re-submitted shall be marked "no substantial change" on the application form.



V. Application Codes

S	-	Submitted
LOCATION	-	Physical location of information in application
N/A	-	Not Applicable
N/C	-	No Substantial Change

VI. LISTING OF APPLICATION PARTS

PART A	-	GENERAL INFORMATION
PART B	-	DISPOSAL FACILITY GENERAL INFORMATION
PART C	-	MATERIALS RECOVERY / VOLUME REDUCTION FACILITY GENERAL INFORMATION
PART D	-	SOLID WASTE MANAGEMENT FACILITY PERMIT GENERAL REQUIREMENTS
PART E	-	LANDFILL PERMIT GENERAL REQUIREMENTS
PART F	-	GENERAL CRITERIA FOR LANDFILLS
PART G	-	LANDFILL CONSTRUCTION REQUIREMENTS
PART H	-	HYDROGEOLOGICAL INVESTIGATION REQUIREMENTS
PART I	-	GEOTECHNICAL INVESTIGATION REQUIREMENTS
PART J	-	VERTICAL EXPANSION OF LANDFILLS
PART K	-	LANDFILL OPERATION REQUIREMENTS
PART L	-	WATER QUALITY AND LEACHATE MONITORING REQUIREMENTS
PART M	-	SPECIAL WASTE HANDLING REQUIREMENTS
PART N	-	LANDFILL CLOSURE REQUIREMENTS
PART O	-	CLOSURE PROCEDURES
PART P	-	LONG-TERM CARE REQUIREMENTS
PART Q	-	FINANCIAL RESPONSIBILITY REQUIREMENTS
PART R	-	CLOSURE OF EXISTING LANDFILL REQUIREMENTS
PART S	-	MATERIALS RECOVERY FACILITY REQUIREMENTS
PART T	-	CERTIFICATION BY APPLICANT AND ENGINEER OR PUBLIC OFFICER

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

APPLICATION FOR PERMIT TO CONSTRUCT, OPERATE, MODIFY OR CLOSE  
A SOLID WASTE MANAGEMENT FACILITY

Please Type or Print

A. GENERAL INFORMATION

1. Type of Facility

Disposal ☒ [ X ]

Class I Landfill	<input checked="" type="checkbox"/> [ X ]	Ash Monofill	<input type="checkbox"/> [ ]
Class II Landfill	<input type="checkbox"/> [ ]	Asbestos Monofill	<input type="checkbox"/> [ ]
Class III Landfill	<input type="checkbox"/> [ ]	Industrial Solid Waste	<input type="checkbox"/> [ ]
Other	<input type="checkbox"/> [ ]		

Volume Reduction ☐ [ ]

Incinerator	<input type="checkbox"/> [ ]	Pulverizer / Shredder	<input type="checkbox"/> [ ]
Composing	<input type="checkbox"/> [ ]	Compactor / Baling Plant	<input type="checkbox"/> [ ]
Materials Recovery	<input type="checkbox"/> [ ]	Energy Recovery	<input type="checkbox"/> [ ]
Other	<input type="checkbox"/> [ ]		

2. Type of Application:

Construction	<input checked="" type="checkbox"/> [ X ]	Construction / Operation	<input type="checkbox"/> [ ]
Operation	<input type="checkbox"/> [ ]	Closure	<input type="checkbox"/> [ ]

3. Classification of application:

New	<input checked="" type="checkbox"/> [ X ]	Substantial Modification	<input type="checkbox"/> [ ]
Renewal	<input type="checkbox"/> [ ]	Minor Modification	<input type="checkbox"/> [ ]

4. Facility name: Citrus County Central Landfill

5. DEP ID number: 4009C00086 County: Citrus

6. Facility location (main entrance): State Road 44 between Lecanto and Inverness, Florida

7. Location coordinates:

Section:	<u>1</u>	Township:	<u>19S</u>	Range:	<u>18E</u>
UTMs:	Zone <u></u>		km E <u></u>		km N <u></u>
Latitude:	<u>28</u> ° <u>51</u> ' <u>08</u> "	Longitude:	<u>82</u> ° <u>26</u> ' <u>38</u> "		

8. Applicant name (operating authority): Citrus County Board of County Commissioners  
Mailing address: P.O. Box 340 Lecanto FL 34460  
Street or P.O. Box City State Zip  
Contact person: Susan Metcalfe, PG Telephone: (904) 746-5000  
Title: Solid Waste Management Division Director
9. Authorized agent / Consultant: Jones, Edmunds & Associates, Inc.  
Mailing address: 730 NE Waldo Road, Building A Gainesville FL 32641  
Street or P.O. Box City State Zip  
Contact person: David A. Keough, PE Telephone: (352) 377-5821  
Title: Project Manager
10. Landowner (if different than applicant): \_\_\_\_\_  
Mailing address: \_\_\_\_\_  
Street or P.O. Box City State Zip  
Contact person: \_\_\_\_\_ Telephone: ( ) \_\_\_\_\_
11. Cities, towns, and areas to be served: Citrus County
12. Population to be served:  
Current: 117,500 (FY2000) Five-year Projection: 129,500 (FY2005)
13. Volume of solid waste to be received: 90,000 (FY2001 estimated) tons/year
14. Date site will be ready to be inspected for completion: March 2001
15. Estimated life of facility: 3 years years
16. Estimated costs:  
Total Construction: \$ 750,000\* Closing Costs: \$ 2,756,705 (1 & 1A)
17. Anticipated construction starting and completion dates:  
From: February 2001 To: March 2001  
\* Cost of Geomembrane Remediation

B. DISPOSAL FACILITY GENERAL INFORMATION

1. Provide brief description of disposal facility design and operations planned by this application:

Remediate exposed geomembrane areas by installing new geomembrane.

2. Facility site supervisor: David Chamblin

Title: Section Chief

Telephone: (352) 745-5000

3. Disposal area: Total 80\* acres; Used 19.1\*\* acres; Available 60.9 acres

4. Weighing scales used: Yes ☒ No ☐

5. Security to prevent unauthorized use: Yes ☒ No ☐

6. Charge for waste received: \_\_\_\_\_ \$/yds<sup>3</sup> varies\* \$/ton

7. Surrounding land use, zoning:

Residential	<input type="checkbox"/>	Industrial	<input checked="" type="checkbox"/>
Agricultural	<input type="checkbox"/>	None	<input type="checkbox"/>
Commercial	<input checked="" type="checkbox"/>	Other	<input checked="" type="checkbox"/> <u>Conservation</u>

8. Types of waste received:

Residential	<input checked="" type="checkbox"/>	C & D debris (mixed loads only)	<input checked="" type="checkbox"/>
Commercial	<input checked="" type="checkbox"/>	Shredded / cut tires	<input type="checkbox"/>
Incinerator / WTE ash	<input type="checkbox"/>	Yard trash	<input checked="" type="checkbox"/>
Treated biohazardous	<input type="checkbox"/>	Septic tank	<input type="checkbox"/>
Water treatment sludge	<input type="checkbox"/>	Industrial	<input checked="" type="checkbox"/>
Air treatment sludge	<input type="checkbox"/>	Industrial sludge	<input type="checkbox"/>
Agricultural	<input type="checkbox"/>	Domestic sludge	<input checked="" type="checkbox"/>
Asbestos	<input checked="" type="checkbox"/>		
Other	<input type="checkbox"/>		

9. Salvaging permitted: Yes ☐ No ☒

10. Attendant: Yes ☒ No ☐ Trained operator: Yes ☒ No ☐

11. Spotters: Yes ☒ No ☐ Number of spotters used: minimum of one

12. Site located in: Floodplain ☐ Wetlands ☐ Other ☒ upland

13. Property recorded as a Disposal Site in County Land Records: Yes ☒ No ☐

14. Days of operation: Monday - Saturday

15. Hours of operation: Monday-Friday: 6:30am-4:30pm; Holidays and Saturdays: 6:30am-2:30pm

16. Days Working Face covered: Monday - Saturday

17. Elevation of water table: 7 Ft. NGVD

\* Total Citrus County Central Landfill Site

\*\* Existing Phase 1 and 1A Disposal Area

18. Number of monitoring wells: 12

19. Number of surface monitoring points: 0

20. Gas controls used: Yes ☐ No ☒ Type controls: Active ☐ Passive ☐  
 Gas flaring: Yes ☐ No ☐ Gas recovery: Yes ☐ No ☐

21. Landfill Unit - liner type:

Natural soils	<input type="checkbox"/>	Double geomembrane	<input checked="" type="checkbox"/> 1A
Single clay liner	<input type="checkbox"/>	Geomembrane & composite	<input checked="" type="checkbox"/> 1
Single geomembrane	<input type="checkbox"/>	Double composite	<input type="checkbox"/>
Single composite	<input type="checkbox"/>	None	<input type="checkbox"/>
Slurry wall	<input type="checkbox"/>		
Other	<input type="checkbox"/>		

22. Leachate collection method:

Collection pipes	<input checked="" type="checkbox"/>	Sand layer	<input type="checkbox"/>
Geonets	<input checked="" type="checkbox"/>	Gravel layer	<input type="checkbox"/>
Well points	<input type="checkbox"/>	Interceptor trench	<input type="checkbox"/>
Perimeter ditch	<input type="checkbox"/>	None	<input type="checkbox"/>
Other	<input type="checkbox"/>		

23. Leachate storage method:

Tanks	<input checked="" type="checkbox"/>	Surface impoundments	<input type="checkbox"/>
Other	<input type="checkbox"/>		

24. Leachate treatment method:

Oxidation	<input type="checkbox"/>	Chemical treatment	<input checked="" type="checkbox"/>
Secondary	<input type="checkbox"/>	Settling	<input type="checkbox"/>
Advanced	<input checked="" type="checkbox"/>	None	<input type="checkbox"/>
Other	<input type="checkbox"/>		

25. Leachate disposal method:

Recirculated	<input type="checkbox"/>	Pumped to WWTP	<input type="checkbox"/>
Transported to WWTP	<input checked="" type="checkbox"/>	Discharged to surface water	<input type="checkbox"/>
Injection well	<input type="checkbox"/>	Evaporation (i.e.: Perc Pond)	<input checked="" type="checkbox"/>
Other	<input type="checkbox"/>		

26. For leachate discharged to surface waters:  
 Name and Class of receiving water: \_\_\_\_\_

27. Storm Water:  
 Collected: Yes ☒ No ☐ Type of treatment: Dry retention  
 Name of Class of receiving water: None

28. Management and Storage of Surface Waters ( MSSW ) Permit number or status: Southwest Florida Water Management District #402023.02

C. MATERIALS RECOVERY / VOLUME REDUCTION FACILITY GENERAL INFORMATION

1. Provide brief description of materials recovery / volume reduction facility design and operations planned by this application:

N/A

2. Facility site supervisor: \_\_\_\_\_

Title: \_\_\_\_\_ Telephone: ( ) \_\_\_\_\_

3. Disposal area: Total \_\_\_\_\_ acres; Used \_\_\_\_\_ acres; Available \_\_\_\_\_ acres

4. Security to prevent unauthorized use: Yes [ ] No [ ]

5. Site located in: Floodplain [ ] Wetlands [ ] Other [ ] \_\_\_\_\_

6. Days of operation: \_\_\_\_\_

7. Hours of operation: \_\_\_\_\_

8. Number of operating staff: \_\_\_\_\_

9. Expected useful life: \_\_\_\_\_ Years

10. Weighing scales used: Yes [ ] No [ ]

11. Normal processing rate: \_\_\_\_\_ yd<sup>3</sup>/day \_\_\_\_\_ tons/day \_\_\_\_\_ gal/day

12. Maximum processing rate: \_\_\_\_\_ yd<sup>3</sup>/day \_\_\_\_\_ tons/day \_\_\_\_\_ gal/day

13. Charge for waste received: \_\_\_\_\_

14. Type of facility (check one or more):

Incinerator	[ ]	Composting	[ ]
Pulverizer/shredder	[ ]	Materials recovery	[ ]
Compactor/baling	[ ]	Energy recovery	[ ]
Sludge concentration	[ ]	Pyrolysis	[ ]
Other	[ ]	_____	

15. Material recovered, tons/week:

_____ Paper	_____ Glass
_____ Ferrous metals	_____ Non-ferrous metals
_____ Aluminum	_____ Plastics
_____ Other:	_____

16. Energy recovery, in units shown:

\_\_\_\_\_ High pressure steam, lb/hr  
\_\_\_\_\_ Low pressure steam, lb/hr  
\_\_\_\_\_ Electricity, kw/hr  
\_\_\_\_\_ Gas, ft<sup>3</sup>/hr  
\_\_\_\_\_ Other: \_\_\_\_\_

\_\_\_\_\_ Chilled water, gal/hr  
\_\_\_\_\_ Oil, gal/hr  
\_\_\_\_\_ Oil, BTU/hr  
\_\_\_\_\_ Gas, BTU/hr  
\_\_\_\_\_

17. Process water management:

Recycled: Yes ☐ No ☐

Treatment method used: \_\_\_\_\_

Discharged to: Surface waters ☐ Underground ☐ Other ☐

18. Storm Water:

Collected: Yes ☐ No ☐ Type of treatment: \_\_\_\_\_

Name and Class of receiving water: \_\_\_\_\_

19. ERP Permit number or status: \_\_\_\_\_

20. Final residue produced:

\_\_\_\_\_ % of normal processing rate

\_\_\_\_\_ % of maximum processing rate

Disposed of at (Site name): \_\_\_\_\_

21. Supplemental fuel used:

Type: \_\_\_\_\_ Quantity used/hour: \_\_\_\_\_

22. Costs:

Estimated operating costs (material-energy revenue): \$ \_\_\_\_\_

Total cost/ton: \$ \_\_\_\_\_ Net cost/ton: \$ \_\_\_\_\_

23. State pollution control bond financing amount: \$ \_\_\_\_\_

24. Estimated amount of tax exemptions that will be requested: \$ \_\_\_\_\_

D. SOLID WASTE MANAGEMENT FACILITY PERMIT GENERAL REQUIREMENTS (62-701.320, FAC)

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>	
<u>X</u>				1. Six copies, at minimum, of the completed application form, all supporting data and reports; (62-701.320(5)(a), FAC)
<u>X</u>				2. Engineering and/or professional certification (signature, date and seal) provided on the applications and all engineering plans, reports and supporting information for the application; (62-701.320(6), FAC)
<u>X</u>				3. A letter of transmittal to the Department; (62-701.320(7) (a), FAC)
<u>X</u>				4. A completed application form dated and signed by the applicant; (62-701.320(7)(b), FAC)
<u>X</u>				5. Permit fee specified in Rule 62-4.050, FAC and Rule 62-701.320(5)(c), FAC in check or money order, payable to the Department; (62-701.320(7)(c), FAC)
	<u>App. 1995, Letter 10/00, D.7</u>		<u>X</u>	6. An engineering report addressing the requirements of this rule and with the following format: a cover sheet, text printed on 8 ½ inch by 11 inch consecutively numbered pages, a table of contents or index, the body of the report and all appendices including an operation plan, contingency plan, illustrative charts and graphs, records or logs of tests and investigations, engineering calculations: (62-701.320(7)(d), FAC)
	<u>App. 1995, D.8</u>		<u>X</u>	7. Operation Plan; (62-701.320(7)(e)1, FAC)
	<u>App. 1995, D.9</u>		<u>X</u>	8. Contingency Plan; (62-701.320(7)(e)2, FAC)
				9. Plans or drawings for the solid waste management facilities in appropriate format (including sheet size restrictions, cover sheet, legends, north arrow, horizontal and vertical scales, elevations referenced to NGVD) showing; (62-702.320(7)(f), FAC)
	<u>App. 1995, D.9</u>		<u>X</u>	a. A regional map or plan with the project location;
	<u>App. 1995, D.9</u>		<u>X</u>	b. A vicinity map or aerial photograph no more than 1 year old;
	<u>App. 1995, D.9</u>		<u>X</u>	c. A site plan showing all property boundaries certified by a registered Florida land surveyor;



<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>	
<u>X</u>	<u>App. 1995, Letter 10/00, D.9</u>	<u>      </u>	<u>      </u>	d. Other necessary details to support the engineering report.
<u>      </u>	<u>App. 1995, D.10</u>	<u>      </u>	<u>X</u>	10. Proof of property ownership or a copy of appropriate agreements between the facility operator and property owner authorizing use of property; (62-701.320(7)(g), FAC)
<u>      </u>	<u>App. 1995, D.11</u>	<u>      </u>	<u>X</u>	11. For facilities owned or operated by a county, provide a description of how, if any, the facilities covered in this application will contribute to the county's achievement of recycling goals contained in Section 403.706,FS; (62-701.320(7)(h), FAC)
<u>      </u>	<u>App. 1995, D.12</u>	<u>      </u>	<u>X</u>	12. Provide a history and description of any enforcement actions taken by the Department against the applicant for violations of applicable statutes, rules, orders or permit conditions relating to the operation of any solid waste management facility in this state; (62-701.320(7)(i), FAC)
<u>      </u>	<u>App. 1995, D.13</u>	<u>      </u>	<u>X</u>	13. Proof of publication in a newspaper of general circulation of notice of application for a permit to construct or substantially modify a solid waste management facility; (62-701.320(8), FAC)
<u>      </u>	<u>App. 1995, D.14</u>	<u>      </u>	<u>X</u>	14. Provide a description of how the requirements for airport safety will be achieved including proof of required notices if applicable; (62-701.320(12), FAC)

E. LANDFILL PERMIT GENERAL REQUIREMENTS (62-701.330, FAC)

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>	
_____	<u>App. 1995, E.1</u>	_____	<u>X</u>	1. Vicinity map or aerial photograph no more than 1 year old and of appropriate scale showing land use and local zoning within one mile of the landfill and of sufficient scale to show all homes or other structures, water bodies, and roads other significant features of the vicinity. All significant features shall be labeled; (62-701.330(4)(a), FAC)
_____	<u>App. 1995, E.2</u>	_____	<u>X</u>	2. Vicinity map or aerial photograph no more than 1 year old showing all airports that are located within five miles of the proposed landfill; (62-701.330(4)(b), FAC)
_____	<u>App. 1995, E.3</u>	_____	<u>X</u>	3. Plot plan with a scale not greater than 200 feet to the inch showing; (62-701.330(4)(c), FAC)
_____	<u>App. 1995, E.3</u>	_____	<u>X</u>	a. Dimensions;
_____	<u>App. 1995, E.3</u>	_____	<u>X</u>	b. Locations of proposed and existing water quality monitoring wells;
_____	<u>App. 1995, E.3</u>	_____	<u>X</u>	c. Locations of soil borings;
_____	<u>App. 1995, E.3</u>	_____	<u>X</u>	d. Proposed plan of trenching or disposal areas;
_____	<u>App. 1995, E.3</u>	_____	<u>X</u>	e. Cross sections showing original elevations and proposed final contours which shall be included either on the plot plan or on separate sheets;
_____	<u>App. 1995, E.3</u>	_____	<u>X</u>	f. Any previously filled waste disposal areas;
_____	<u>App. 1995, E.3</u>	_____	<u>X</u>	g. Fencing or other measures to restrict access.
_____				4. Topographic maps with a scale not greater than 200 feet to the inch with 5-foot contour intervals showing; (62-701.330(4)(d), FAC):
_____	<u>App. 1995, E.4</u>	_____	<u>X</u>	a. Proposed fill areas;
_____	<u>App. 1995, E.4</u>	_____	<u>X</u>	b. Borrow areas;
_____	<u>App. 1995, E.4</u>	_____	<u>X</u>	c. Access roads;
_____	<u>App. 1995, E.4</u>	_____	<u>X</u>	d. Grades required for proper drainage;
_____	<u>App. 1995, E.4</u>	_____	<u>X</u>	e. Cross sections of lifts;
_____	<u>App. 1995, E.4</u>	_____	<u>X</u>	f. Special drainage devices if necessary;
_____	<u>App. 1995, E.4</u>	_____	<u>X</u>	g. Fencing;
_____	<u>App. 1995, E.4</u>	_____	<u>X</u>	h. Equipment facilities.

S	LOCATION	N/A	N/C
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_____	App. 1995, E.5	_____	X
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_____	App. 1995, E.5	_____	X
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_____	App. 1995, E.5	_____	X
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_____	App. 1995, E.5	_____	X
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_____	App. 1995, E.5	_____	X
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_____	App. 1995, E.5	_____	X
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5. A report on the landfill describing the following; (62-701.330(4)(e), FAC)

a. The current and projected population and area to be served by the proposed site;

b. The anticipated type, annual quantity, and source of solid waste, expressed in tons;

c. The anticipated facility life;

d. The source and type of cover material used for the landfill.

6. Provide evidence that an approved laboratory shall conduct water quality monitoring for the facility in accordance with Rule 62-160, FAC; (62-701.330(4)(h), FAC)

7. Provide a statement of how the applicant will demonstrate financial responsibility for the closing and long-term care of the landfill; (62-701.330(4)(i), FAC)

F. GENERAL CRITERIA FOR LANDFILLS (62-701.340, FAC)

_____	App. 1995, F.1	_____	X
-------	----------------	-------	---

1. Describe (and show on a Federal Insurance Administration flood map, if available) how the landfill or solid waste disposal unit shall not be located in the 100-year floodplain where it will restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the floodplain unless compensating storage is provided, or result is a washout of solid waste; (62-701.340(4)(b), FAC)

_____	App. 1995, F.2	_____	X
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2. Describe how the minimum horizontal separation between waste deposits in the landfill and the landfill property boundary shall be 100 feet, measured from the toe of the proposed final cover slope; (62-701.340(4)(c), FAC)

_____	App. 1995, F.3	_____	X
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3. Describe what methods shall be taken to screen the landfill from public view where such screening can practically be provided; (62-701.340(4)(d), FAC)

G. LANDFILL CONSTRUCTION REQUIREMENTS (62-701.400, FAC)

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>
<u>      </u>	<u>App. 1995, G.1</u>	<u>      </u>	<u>X</u>

1. Describe how the landfill shall be designed so that solid waste disposal units will be constructed and closed at planned intervals throughout the design period of the landfill; (62-701.400(2), FAC)

2. Landfill liner requirements; (62-701.400(3), FAC)

a. General construction requirements; (62-701.400(3)(a), FAC):

<u>X</u>	<u>COA, 12/00</u>	<u>      </u>	<u>      </u>
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(1) Provide test information and documentation to ensure the liner will be constructed of materials that have appropriate physical, chemical, and mechanical properties to prevent failure;

<u>      </u>	<u>App. 1995, G.2.a</u>	<u>      </u>	<u>X</u>
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(2) Document foundation is adequate to prevent liner failure;

<u>      </u>	<u>App. 1995, G.2.a</u>	<u>      </u>	<u>X</u>
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(3) Constructed so bottom liner will not be adversely impacted by fluctuations of the ground water;

<u>      </u>	<u>App. 1995, G.2.a</u>	<u>      </u>	<u>X</u>
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(4) Designed to resist hydrostatic uplift if bottom liner located below seasonal high ground water table;

<u>      </u>	<u>App. 1995, G.2.a</u>	<u>      </u>	<u>X</u>
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(5) Installed to cover all surrounding earth which could come into contact with the waste or leachate.

b. Composite liners; (62-701.400(3)(b), FAC)

<u>      </u>	<u>App. 1995, G.2.b</u>	<u>X</u>	<u>      </u>
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(1) Upper geomembrane thickness and properties;

<u>      </u>	<u>App. 1995, G.2.b</u>	<u>      </u>	<u>X</u>
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(2) Design leachate head for primary LCRS including leachate recirculation if appropriate;

<u>      </u>	<u>App. 1995, G.2.b</u>	<u>      </u>	<u>X</u>
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(3) Design thickness in accordance with Table A and number of lifts planned for lower soil component.

c. Double liners; (62-701.400(3)(c), FAC)

<u>      </u>	<u>App. 1995, G.2.c</u>	<u>X</u>	<u>      </u>
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(1) Upper and lower geomembrane thicknesses and properties;

<u>      </u>	<u>App. 1995, G.2.c</u>	<u>X</u>	<u>      </u>
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(2) Design leachate head for primary LCRS to limit the head to one foot above the liner;

<u>      </u>	<u>App. 1995, G.2.c</u>	<u>X</u>	<u>      </u>
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(3) Lower geomembrane sub-base design;

<u>      </u>	<u>App. 1995, G.2.c</u>	<u>X</u>	<u>      </u>
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(4) Leak detection and secondary leachate collection system minimum design criteria ( $k \geq 1$  cm/sec, head on lower liner  $\leq 1$  inch, head not to exceed thickness of drainage layer);

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>
<u>X</u>	<u>COA, 12/00</u>	<u>      </u>	<u>      </u>
<u>X</u>	<u>App. 1995 G.2.d,</u> <u>Letter 10/00</u>	<u>      </u>	<u>      </u>
<u>      </u>	<u>App. 1995 G.2.d</u>	<u>      </u>	<u>X</u>
<u>X</u>	<u>COA, 12/00</u>	<u>      </u>	<u>      </u>
<u>X</u>	<u>COA, 12/00</u>	<u>      </u>	<u>      </u>
<u>X</u>	<u>COA, 12/00</u>	<u>      </u>	<u>      </u>
<u>X</u>	<u>COA, 12/00</u>	<u>      </u>	<u>      </u>
<u>      </u>	<u>App. 1995, G.2.e</u>	<u>      </u>	<u>X</u>
<u>      </u>	<u>App. 1995, G.2.e</u>	<u>      </u>	<u>X</u>

d. Standards for geomembranes; (62-701.400 (3) (d), FAC)

- (1) Field seam test methods to ensure all field seams are at least 90 percent of the yield strength for the lining material;
- (2) Design of 24-inch-thick protective layer above upper geomembrane liner;
- (3) Describe operational plans to protect the liner and leachate collection system when placing the first layer of waste above 24-inch-thick protective layer.

e. Geosynthetic specification requirements; (62-701.400(3) (e), FAC)

- (1) Definition and qualifications of the designer, manufacturer, installer, QA consultant and laboratory, and QA program;
- (2) Material specifications for geomembranes, geotextiles, geogrids, and geonets;
- (3) Manufacturing and fabrication specifications including geomembrane raw material and roll QA, fabrication personnel qualifications, seaming equipment and procedures, overlaps, trial seams, destructive and nondestructive seam testing, seam testing location, frequency, procedure, sample size and geomembrane repairs;
- (4) Geomembrane installation specifications including earthwork, conformance testing, geomembrane placement, installation personnel qualifications, field seaming and testing, overlapping and repairs, materials in contact with geomembrane and procedures for lining system acceptance;
- (5) Geotextile and geogrid specifications including handling and placement, conformance testing, seams and overlaps, repair, and placement of soil materials;
- (6) Geonet specification, including handling and placement, conformance testing, stacking and joining, repair, and placement of soil materials;

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>
_____	<u>App. 1995, G.2.f</u>	<u>X</u>	_____
_____	<u>App. 1995, G.2.f</u>	<u>X</u>	_____
_____	<u>App. 1995, G.2.f</u>	<u>X</u>	_____
_____	<u>App. 1995, G.2.f</u>	<u>X</u>	_____
_____	<u>App. 1995, G.2.f</u>	<u>X</u>	_____
_____	<u>App. 1995, G.2.f</u>	<u>X</u>	_____
_____	<u>App. 1995, G.2.f</u>	<u>X</u>	_____
_____	<u>App. 1995, G.2.f</u>	<u>X</u>	_____
_____	<u>App. 1995, G.2.f</u>	<u>X</u>	_____

f. Standards for soil components (62-701.400(3)(f), FAC):

- (1) Description of construction procedures including over-excavation and backfilling to preclude structural inconsistencies and procedures for placing and compacting soil component in layers;
- (2) Demonstration of compatibility of the soil component with actual or simulated leachate in accordance with EPA Test Method 9100 or an equivalent test method;
- (3) Procedures for testing in-situ soils to demonstrate they meet the specifications for soil liners;
- (4) Specifications for soil component of liner including at a minimum:
  - (a) Allowable particle size distribution, Atterberg limits, shrinkage limit;
  - (b) Placement moisture and dry density criteria;
  - (c) Maximum laboratory-determined saturated hydraulic conductivity using simulated leachate;
  - (d) Minimum thickness of soil liner;
  - (e) Lift thickness;
  - (f) Surface preparation (scarification);
  - (g) Type and percentage of clay mineral within the soil component;
- (5) Procedures for constructing and using a field test section to document the desired saturated hydraulic conductivity and thickness can be achieved in the field.

3. Leachate collection and removal system (LCRS); (62-701.400(4), FAC)

a. The primary and secondary LCRS requirements; (62-701.400(4)(a), FAC)

_____	<u>App. 1995, G.3.a</u>	_____	<u>X</u>
_____	<u>App. 1995, G.3.a</u>	_____	<u>X</u>

- (1) Constructed of materials chemically resistant to the waste and leachate;
- (2) Have sufficient mechanical properties to prevent collapse under pressure;

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>
_____	<u>App. 1995, G.3.a</u>	<u>X</u>	_____
_____	<u>App. 1995, G.3.a</u>	<u>X</u>	_____
_____	<u>App. 1995, G.3.b</u>	<u>X</u>	_____
_____	<u>App. 1995, G.3.b</u>	<u>X</u>	_____
_____	<u>App. 1995, G.3.b</u>	<u>X</u>	_____
_____	<u>App. 1995, G.3.b</u>	<u>X</u>	_____
_____	<u>App. 1995, G.4</u>	<u>X</u>	_____
_____	<u>App. 1995, G.4</u>	<u>X</u>	_____
_____	<u>App. 1995, G.4</u>	<u>X</u>	_____
_____	<u>App. 1995, G.4</u>	<u>X</u>	_____
_____	<u>App. 1995, G.4</u>	<u>X</u>	_____
_____	<u>App. 1995, G.4</u>	<u>X</u>	_____

(3) Have granular material or synthetic geotextile to prevent clogging;

(4) Have method for testing and cleaning clogged pipes or contingent designs for rerouting leachate around failed areas;

b. Primary LCRS requirements; (62-701.400(4)(b), FAC)

(1) Bottom 12 inches having hydraulic conductivity  $\geq 1 \times 10^{-3}$  cm/sec;

(2) Total thickness of 24 inches of material chemically resistant to the waste and leachate;

(3) Bottom slope design to accommodate for predicted settlement;

(4) Demonstration that synthetic drainage material, if used, is equivalent or better than granular material in chemical compatibility, flow under load and protection of geomembrane liner.

4. Leachate recirculation; (62-701.400(5), FAC)

a. Describe general procedures for recirculating leachate;

b. Describe procedures for controlling leachate runoff and minimizing mixing of leachate runoff with storm water;

c. Describe procedures for preventing perched water conditions and gas buildup;

d. Describe alternate methods for leachate management when it cannot be recirculated due to weather or runoff conditions, surface seeps, wind-blown spray, or elevated levels of leachate head on the liner;

e. Describe methods of gas management to control odors and migration of methane;

f. If leachate irrigation is proposed, describe treatment methods and standards for leachate treatment prior to irrigation over final cover and provide documentation that irrigation does not contribute significantly to leachate generation.

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>
<u>      </u>	<u>App. 1995, G.5.a</u>	<u>X</u>	<u>      </u>
<u>      </u>	<u>App. 1995, G.5.a</u>	<u>X</u>	<u>      </u>
<u>      </u>	<u>App. 1995, G.5.a</u>	<u>X</u>	<u>      </u>
<u>      </u>	<u>App. 1995, G.5.a</u>	<u>X</u>	<u>      </u>
<u>      </u>	<u>App. 1995, G.5.a</u>	<u>X</u>	<u>      </u>
<u>      </u>	<u>App. 1995, G.5.a</u>	<u>X</u>	<u>      </u>
<u>      </u>	<u>App. 1995, G.5.a</u>	<u>X</u>	<u>      </u>
<u>      </u>	<u>App. 1995, G.5.a</u>	<u>X</u>	<u>      </u>
<u>      </u>	<u>App. 1995, G.5.a</u>	<u>X</u>	<u>      </u>
<u>      </u>	<u>App. 1995, G.5.b</u>	<u>X</u>	<u>      </u>
<u>      </u>	<u>App. 1995, G.5.b</u>	<u>X</u>	<u>      </u>

5. Leachate storage tanks and leachate surface impoundments; (62-701.400(6), FAC)

a. Surface impoundment requirements; (62-701.400(6)(b), FAC)

- (1) Documentation that the design of the bottom liner will not be adversely impacted by fluctuations of the ground water;
- (2) Designed in segments to allow for inspection and repair as needed without interruption of service;
- (3) General design requirements;
  - (a) Double liner system consisting of an upper and lower 60-mil minimum thickness geomembrane;
  - (b) Leak detection and collection system with hydraulic conductivity  $\geq 1$  cm/sec;
  - (c) Lower geomembrane placed on subbase  $\geq 6$  inches thick with  $k \leq 1 \times 10^{-5}$  cm/sec;
  - (d) Design calculation to predict potential leakage through the upper liner;
  - (e) Daily inspection requirements and notification and corrective action requirements if leakage rates exceed that predicted by design calculations;
- (4) Description of procedures to prevent uplift, if applicable;
- (5) Design calculations to demonstrate minimum two feet of freeboard will be maintained;
- (6) Procedures for controlling vectors and off-site odors.

b. Above-ground leachate storage tanks; (62-701.400(6)(c), FAC)

- (1) Describe tank materials of construction and ensure foundation is sufficient to support tank;
- (2) Describe procedures for cathodic protection if needed for the tank;



<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>
_____	<u>App. 1995, G.5.b</u>	<u>X</u>	_____
_____	<u>App. 1995, G.5.b</u>	<u>X</u>	_____
_____	<u>App. 1995, G.5.b</u>	<u>X</u>	_____
_____	<u>App. 1995, G.5.b</u>	<u>X</u>	_____
_____	<u>App. 1995, G.5.b</u>	<u>X</u>	_____
_____	<u>App. 1995, G.5.b</u>	<u>X</u>	_____
_____	<u>App. 1995, G.5.b</u>	<u>X</u>	_____
_____	<u>App. 1995, G.5.c</u>	<u>X</u>	_____
_____	<u>App. 1995, G.5.c</u>	<u>X</u>	_____
_____	<u>App. 1995, G.5.c</u>	<u>X</u>	_____
_____	<u>App. 1995, G.5.c</u>	<u>X</u>	_____
_____	<u>App. 1995, G.5.c</u>	<u>X</u>	_____
_____	<u>App. 1995, G.5.c</u>	<u>X</u>	_____
_____	<u>App. 1995, G.5.c</u>	<u>X</u>	_____
_____	<u>App. 1995, G.5.d</u>	_____	<u>X</u>

- (3) Describe exterior painting and interior lining of the tank to protect it from the weather and the leachate stored;
- (4) Describe secondary containment design to ensure adequate capacity will be provided and compatibility of materials of construction;
- (5) Describe design to remove and dispose of stormwater from the secondary containment system;
- (6) Describe an overfill prevention system such as level sensors, gauges, alarms and shutoff controls to prevent overfilling;
- (7) Inspections, corrective action and reporting requirements;
  - (a) Overfill prevention system weekly;
  - (b) Exposed tank exteriors weekly;
  - (c) Tank interiors when tank is drained or at least every three years;
  - (d) Procedures for immediate corrective action if failures detected;
  - (e) Inspection reports available for department review.

c. Underground leachate storage tanks; (62-701.400(6)(d), FAC)

- (1) Describe materials of construction;
- (2) A-double-walled tank design system to be used with the following requirements;
  - (a) Interstitial space monitoring at least weekly;
  - (b) Corrosion protection provided for primary tank interior and external surface of outer shell;
  - (c) Interior tank coatings compatible with stored leachate;
  - (d) Cathodic protection inspected weekly and repaired as needed;
- (3) Describe an overfill prevention system such as level sensors, gauges, alarms and shutoff controls to prevent overfilling and provide for weekly inspections;
- (4) Inspection reports available for department review.

d. Schedule provided for routine maintenance of LCRS; (62-701.400(6)(e), FAC)

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>
<u>X</u>	<u>CQA 12/00</u>	<u>      </u>	<u>      </u>
<u>X</u>	<u>CQA 12/00</u>	<u>      </u>	<u>      </u>
<u>X</u>	<u>CQA 12/00</u>	<u>      </u>	<u>      </u>
<u>X</u>	<u>CQA 12/00</u>	<u>      </u>	<u>      </u>
<u>X</u>	<u>CQA 12/00</u>	<u>      </u>	<u>      </u>
<u>X</u>	<u>CQA 12/00</u>	<u>      </u>	<u>      </u>
<u>X</u>	<u>CQA 12/00</u>	<u>      </u>	<u>      </u>
<u>      </u>	<u>App. 1995, G.7</u>	<u>X</u>	<u>      </u>
<u>      </u>	<u>App. 1995, G.7</u>	<u>X</u>	<u>      </u>
<u>      </u>	<u>App. 1995, G.7</u>	<u>X</u>	<u>      </u>
<u>      </u>	<u>App. 1995, G.8.a</u>	<u>X</u>	<u>      </u>
<u>      </u>	<u>App. 1995, G.8.a</u>	<u>X</u>	<u>      </u>

6. Liner systems construction quality assurance ( CQA ): (62-701.400(7), FAC)

a. Provide CQA Plan including:

- (1) Specifications and construction requirements for liner system;
- (2) Detailed description of quality control testing procedures and frequencies;
- (3) Identification of supervising professional engineer;
- (4) Identify responsibility and authority of all appropriate organizations and key personnel involved in the construction project;
- (5) State qualifications of CQA professional engineer and support personnel;
- (6) Description of CQA reporting forms and documents;

b. An independent laboratory experienced in the testing of geosynthetics to perform required testing;

7. Soil Liner CQA (62-701.400(8)FAC)

- a. Documentation that an adequate borrow source has been located with test results or description of the field exploration and laboratory testing program to define a suitable borrow source;
- b. Description of field test section construction and test methods to be implemented prior to liner installation;
- c. Description of field test methods including rejection criteria and corrective measures to insure proper liner installation.

8. Surface water management systems; (62-701.400(9), FAC)

- a. Design of surface water management system to isolate surface water from waste filled areas and to control stormwater run-off;
- b. Details of stormwater control design including retention ponds, detention ponds, and drainage ways;

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>
_____	<u>App. 1995, G.9.a</u>	_____	<u>X</u>
_____	<u>App. 1995, G.9.b</u>	_____	<u>X</u>
_____	<u>App. 1995, G.9.c</u>	_____	<u>X</u>
_____	<u>App. 1995, G.9.d</u>	_____	<u>X</u>
_____	<u>App. 1995, G.9.d</u>	_____	<u>X</u>
_____	<u>App. 1995, G.9.d</u>	_____	<u>X</u>
_____	<u>App. 1995, G.9.e</u>	_____	<u>X</u>
_____	<u>App. 1995, G.10.a</u>	_____	<u>X</u>
_____	<u>App. 1995, G.10.b</u>	_____	<u>X</u>
_____	<u>App. 1995, G.10.c</u>	_____	<u>X</u>
_____	<u>App. 1995, G.10.d</u>	_____	<u>X</u>
_____	<u>App. 1995, G.10.e</u>	_____	<u>X</u>
_____	<u>App. 1995, G.10.f</u>	_____	<u>X</u>
_____	<u>App. 1995, G.11</u>	<u>X</u>	_____

9. Gas control systems; (62-701.400(10), FAC)

- a. Design details for gas control system including collection pipes and vents, and passive venting or vacuum extraction details;
- b. Documentation that the gas control system will not impact the liner or leachate control system;
- c. Proposed methods of odor control including flaring designs in accordance with Chapter 62-296, FAC;
- d. Description of a routine gas monitoring program to ensure gas control system is operating properly including:
  - (1) Location of monitoring points;
  - (2) Requirements for quarterly sampling of all monitoring points;
  - (3) Description of corrective measures to be completed within 60 days of detection of elevated levels of explosive gases;
- e. Description of condensate collection and disposal methods.

10. Landfill gas recovery facilities; (62-701.400(11), FAC)

- a. Information required in Rules 62-701.320(7) and 62-701.330(4), FAC supplied;
- b. Information required in Rule 62-701.600(4), FAC supplied where relevant and practical;
- c. Estimate of current and expected gas generation rates and description of condensate disposal methods provided;
- d. Description of procedures for condensate sampling, analyzing and data reporting provided;
- e. Closure plan provided describing methods to control gas after recovery facility ceases operation;
- f. Performance bond provided to cover closure costs if not already included in other landfill closure costs.

11. For landfills designed in ground water, provide documentation that the landfill will provide a degree of protection equivalent to landfills designed with bottom liners not in contact with ground water; (62-701.400 (12), FAC)

# H. HYDROGEOLOGICAL INVESTIGATION REQUIREMENTS (62-701.410, FAC)

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>
<u>      </u>	<u>App. 1995, H.1.a</u>	<u>      </u>	<u>  X  </u>
<u>      </u>	<u>App. 1995, H.1.b</u>	<u>      </u>	<u>  X  </u>
<u>      </u>	<u>App. 1995, H.1.c</u>	<u>      </u>	<u>  X  </u>
<u>      </u>	<u>App. 1995, H.1.d</u>	<u>      </u>	<u>  X  </u>
<u>      </u>	<u>App. 1995, H.1.e</u>	<u>      </u>	<u>  X  </u>
<u>      </u>	<u>App. 1995, H.1.f</u>	<u>      </u>	<u>  X  </u>
<u>      </u>	<u>App. 1995, H.1.g</u>	<u>      </u>	<u>  X  </u>
<u>      </u>	<u>App. 1995, H.1.h</u>	<u>      </u>	<u>  X  </u>
<u>      </u>	<u>App. 1995, H.1.i</u>	<u>      </u>	<u>  X  </u>
<u>      </u>	<u>App. 1995, H.1.j</u>	<u>      </u>	<u>  X  </u>
<u>      </u>	<u>App. 1995, H.2</u>	<u>      </u>	<u>  X  </u>

1. Submit a hydrogeological investigation and site report including at least the following information:
  - a. Regional and site specific geology and hydrogeology;
  - b. Direction and rate of ground water and surface water flow including seasonal variations;
  - c. Background quality of ground water and surface water;
  - d. Any on-site hydraulic connections between aquifers;
  - e. Site stratigraphy and aquifer characteristics for confining layers, semi-confining layers, and all aquifers below the landfill site that may be affected by the landfill;
  - f. Site topography and soil characteristics;
  - g. Inventory of all public and private water wells within a one-mile radius of the landfill including well top of casing and bottom elevations, name of owner, age and usage of each well, stratigraphic unit screened, well construction technique and static water level;
  - h. Description of topography, soil types and surface water drainage systems;
  - i. An inventory of all public and private water wells within one mile of the landfill.
  - j. Existing contaminated areas on landfill site.
2. Report signed, sealed and dated by PE or PG.

I. GEOTECHNICAL INVESTIGATION REQUIREMENTS (62-701.420, FAC)

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>	
				1. Submit a geotechnical site investigation report defining the engineering properties of the site including at least the following:
<u>      </u>	<u>App. 1995, I.1.a</u>	<u>      </u>	<u>  X  </u>	a. Description of subsurface conditions including soil stratigraphy and ground water table conditions;
<u>      </u>	<u>App. 1995, I.1.b</u>	<u>      </u>	<u>  X  </u>	b. Investigate for the presence of muck, previously filled areas, soft ground, lineaments and sink holes;
<u>      </u>	<u>App. 1995, I.1.c</u>	<u>      </u>	<u>  X  </u>	c. Estimates of average and maximum high water table across the site;
<u>      </u>	<u>App. 1995, I.1.d</u>	<u>      </u>	<u>  X  </u>	d. Foundation analysis including:
<u>      </u>	<u>App. 1995, I.1.d</u>	<u>      </u>	<u>  X  </u>	(1) Foundation bearing capacity analysis;
<u>      </u>	<u>App. 1995, I.1.d</u>	<u>      </u>	<u>  X  </u>	(2) Total and differential subgrade settlement analysis;
<u>      </u>	<u>App. 1995, I.1.d</u>	<u>      </u>	<u>  X  </u>	(3) Slope stability analysis;
<u>      </u>	<u>App. 1995, I.1.e</u>	<u>      </u>	<u>  X  </u>	e. Description of methods used in the investigation and includes soil boring logs, laboratory results, analytical calculations, cross sections, interpretations and conclusions;
<u>      </u>	<u>App. 1995, I.1.f</u>	<u>      </u>	<u>  X  </u>	f. An evaluation of fault areas, seismic impact zones, and unstable areas as described in 40 CFR 258.13, 40 CFR 258.14 and 40 CFR 258.15.
<u>      </u>	<u>App. 1995, I.2</u>	<u>      </u>	<u>  X  </u>	2. Report signed, sealed and dated by PE or PG.

J. VERTICAL EXPANSION OF LANDFILLS (62-701.430, FAC)

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>	
<u>      </u>	<u>App. 1995, J</u>	<u>X</u>	<u>      </u>	1. Describe how the vertical expansion shall not cause or contribute to leachate leakage from the existing landfill or adversely affect the closure design of the existing landfill;
<u>      </u>	<u>App. 1995, J</u>	<u>X</u>	<u>      </u>	2. Describe how the vertical expansion over unlined landfills will meet the requirements of Rule 62-701.400, FAC with the exceptions of Rule 62-701.430(1)(c), FAC;
<u>      </u>	<u>App. 1995, J</u>	<u>X</u>	<u>      </u>	3. Provide foundation and settlement analysis for the vertical expansion;
<u>      </u>	<u>App. 1995, J</u>	<u>X</u>	<u>      </u>	4. Provide total settlement calculations demonstrating that the final elevations of the lining system, that gravity drainage, and that no other component of the design will be adversely affected;
<u>      </u>	<u>App. 1995, J</u>	<u>X</u>	<u>      </u>	5. Minimum stability safety factor of 1.5 for the lining system component interface stability and deep stability;
<u>      </u>	<u>App. 1995, J</u>	<u>X</u>	<u>      </u>	6. Provide documentation to show the surface water management system will not be adversely affected by the vertical expansion;
<u>      </u>	<u>App. 1995, J</u>	<u>X</u>	<u>      </u>	7. Provide gas control designs to prevent accumulation of gas under the new liner for the vertical expansion.

K. LANDFILL OPERATION REQUIREMENTS (62-701.500, FAC)

<u>      </u>	<u>Op. Plan, 1996</u>	<u>      </u>	<u>X</u>	1. Provide documentation that landfill will have at least one trained operator during operation and at least one trained spotter at each working face; (62-701.500(1), FAC)
				2. Provide a landfill operation plan including procedures for: (62-701.500(2), FAC)
<u>      </u>	<u>Op. Plan, 1996</u>	<u>      </u>	<u>X</u>	a. Designating responsible operating and maintenance personnel;
<u>      </u>	<u>Op. Plan, 1996</u>	<u>      </u>	<u>X</u>	b. Contingency operations for emergencies;
<u>      </u>	<u>Op. Plan, 1996</u>	<u>      </u>	<u>X</u>	c. Controlling types of waste received at the landfill;
<u>      </u>	<u>Op. Plan, 1996</u>	<u>      </u>	<u>X</u>	d. Weighing incoming waste;
<u>      </u>	<u>Op. Plan, 1996</u>	<u>      </u>	<u>X</u>	e. Vehicle traffic control and unloading;
<u>      </u>	<u>Op. Plan, 1996</u>	<u>      </u>	<u>X</u>	f. Method and sequence of filling waste;
<u>      </u>	<u>Op. Plan, 1996</u>	<u>      </u>	<u>X</u>	g. Waste compaction and application of cover;
<u>      </u>	<u>Op. Plan, 1996</u>	<u>      </u>	<u>X</u>	h. Operations of gas, leachate, and stormwater controls;
<u>      </u>	<u>Op. Plan, 1996</u>	<u>      </u>	<u>X</u>	i. Water quality monitoring.

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>	
_____	<u>Op. Plan, 1996</u>	_____	<u>X</u>	3. Provide a description of the landfill operation record to be used at the landfill; details as to location of where various operational records will be kept (i.e. FDEP permit, engineering drawings, water quality records, etc.) (62-701.500(3), FAC)
_____	<u>Op. Plan, 1996</u>	_____	<u>X</u>	4. Describe the waste records that will be compiled monthly and provided to the Department quarterly; (62-701.500(4), FAC)
_____	<u>Op. Plan, 1996</u>	_____	<u>X</u>	5. Describe methods of access control; (62-701.500(5), FAC)
_____	<u>Op. Plan, 1996</u>	_____	<u>X</u>	6. Describe load checking program to be implemented at the landfill to discourage disposal of unauthorized wastes at the landfill; (62-701.500(6), FAC)
				7. Describe procedures for spreading and compacting waste at the landfill that include: (62-701.500(7), FAC)
_____	<u>Op. Plan, 1996</u>	_____	<u>X</u>	a. Waste layer thickness and compaction frequencies;
_____	<u>Op. Plan, 1996</u>	_____	<u>X</u>	b. Special considerations for first layer of waste placed above liner and leachate collection system;
<u>X</u>	<u>App. 2000, Att. 1</u>	_____	_____	c. Slopes of cell working face and side grades above land surface, planned lift depths during operation;
_____	<u>Op. Plan, 1996</u>	_____	<u>X</u>	d. Maximum width of working face;
				e. Description of type of initial cover to be used at the facility that controls:
				(1) Disease vector breeding/animal attraction
				(2) Fires
				(3) Odors
				(4) Blowing litter
				(5) Moisture infiltration
_____	<u>Op. Plan, 1996</u>	_____	<u>X</u>	f. Procedures for applying initial cover including minimum cover frequencies;
_____	<u>Op. Plan, 1996</u>	_____	<u>X</u>	g. Procedures for applying intermediate cover;
_____	<u>Op. Plan, 1996</u>	_____	<u>X</u>	h. Time frames for applying final cover;
_____	<u>Op. Plan, 1996</u>	_____	<u>X</u>	i. Description of litter policing methods;
_____	<u>Op. Plan, 1996</u>	_____	<u>X</u>	j. Erosion control procedures.

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>
<u>      </u>	<u>Op. Plan, 1996</u>	<u>      </u>	<u>X</u>
<u>      </u>	<u>Op. Plan, 1996</u>	<u>      </u>	<u>X</u>
<u>      </u>	<u>Op. Plan, 1996</u>	<u>      </u>	<u>X</u>
<u>      </u>	<u>Op. Plan, 1996</u>	<u>      </u>	<u>X</u>
<u>      </u>	<u>Op. Plan, 1996</u>	<u>      </u>	<u>X</u>
<u>      </u>	<u>Op. Plan, 1996</u>	<u>      </u>	<u>X</u>
<u>      </u>	<u>Op. Plan, 1996</u>	<u>      </u>	<u>X</u>

8. Describe operational procedures for leachate management including; (62-701.500(8), FAC)
- a. Leachate level monitoring, sampling, analysis and data results submitted to the Department;
  - b. Operation and maintenance of leachate collection and removal system, and treatment as required;
  - c. Procedures for managing leachate if it becomes regulated as a hazardous waste;
  - d. Agreements for off-site discharge and treatment of leachate;
  - e. Contingency plan for managing leachate during emergencies or equipment problems;
  - f. Procedures for recording quantities of leachate generated in gal/day;
  - g. Procedures for comparing precipitation experienced at the landfill with leachate generation rates.



<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>	
_____	<u>Op. Plan, 1996</u>	_____	<u>X</u>	9. Describe routine gas monitoring program for the landfill as required by Rule 62-701.400(10), FAC; (62-701.500(9), FAC)
_____	<u>Op. Plan, 1996</u>	_____	<u>X</u>	10. Describe procedures for operating and maintaining the landfill stormwater management system to comply with the standards of Chapters 62-3, 62-302 and 62-25, FAC; (62-701.500(10), FAC)
				11. Equipment and operation feature requirements; (62- 701.500(11), FAC)
_____	<u>Op. Plan, 1996</u>	_____	<u>X</u>	a. Sufficient equipment for excavating, spreading, compacting and covering waste;
_____	<u>Op. Plan, 1996</u>	_____	<u>X</u>	b. Reserve equipment or arrangements to obtain additional equipment within 24 hours of breakdown;
_____	<u>Op. Plan, 1996</u>	_____	<u>X</u>	c. Communications equipment;
_____	<u>Op. Plan, 1996</u>	_____	<u>X</u>	d. Personnel shelter and sanitary facilities, first aid equipment;
_____	<u>Op. Plan, 1996</u>	_____	<u>X</u>	e. Dust control methods;
_____	<u>Op. Plan, 1996</u>	_____	<u>X</u>	f. Fire protection capabilities and procedures for notifying local fire department authorities in emergencies;
_____	<u>Op. Plan, 1996</u>	_____	<u>X</u>	g. Litter control devices;
_____	<u>Op. Plan, 1996</u>	_____	<u>X</u>	h. Signs indicating operating authority, traffic flow, hours of operation, disposal restrictions.
_____	<u>Op. Plan, 1996</u>	_____	<u>X</u>	12. Provide a descriptions of all-weather access road, inside perimeter road and other roads necessary for access which shall be provided at the landfill; (62-701.500(12), FAC)
				13. Additional record keeping and reporting requirements; (62-701.500(13), FAC)
_____	<u>Op. Plan, 1996</u>	_____	<u>X</u>	a. Records used for developing permit applications and supplemental information maintained for the design period of the landfill;
_____	<u>Op. Plan, 1996</u>	_____	<u>X</u>	b. Monitoring information, calibration and maintenance records, copies of reports required by permit maintained for at least 10 years;
_____	<u>Op. Plan, 1996</u>	_____	<u>X</u>	c. Background water quality records shall be maintained for the design period of the landfill;
_____	<u>Op. Plan, 1996</u>	_____	<u>X</u>	d. Maintain annual estimates of the remaining life of constructed landfills and of other permitted areas not yet constructed and submit this estimate annually to the Department.

L. WATER QUALITY AND LEACHATE MONITORING REQUIREMENTS (62-701.510, FAC)

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>	
<u>      </u>	<u>Op. Plan, 1996</u>	<u>      </u>	<u>X</u>	1. Water quality and leachate monitoring plan shall be submitted describing the proposed ground water, surface water and leachate monitoring systems and shall meet at least the following requirements;
<u>      </u>	<u>Op. Plan, 1996</u>	<u>      </u>	<u>X</u>	a. Based on the information obtained in the hydrogeological investigation and signed, dated and sealed by the PG or PE who prepared it; (62-701.510(2)(a), FAC)
<u>      </u>	<u>Op. Plan, 1996</u>	<u>      </u>	<u>X</u>	b. All sampling and analysis performed by organizations having Department approved Comprehensive Quality Assurance Plans; (62 701.510(2)(b), FAC)
<u>      </u>	<u>Op. Plan, 1996</u>	<u>      </u>	<u>X</u>	c. Ground water monitoring requirements; (62-701.510(3), FAC)
<u>      </u>	<u>Op. Plan, 1996</u>	<u>      </u>	<u>X</u>	(1) Detection wells located downgradient from and within 50 feet of disposal units;
<u>      </u>	<u>Op. Plan, 1996</u>	<u>      </u>	<u>X</u>	(2) Downgradient compliance wells as required;
<u>      </u>	<u>Op. Plan, 1996</u>	<u>      </u>	<u>X</u>	(3) Background wells screened in all aquifers below the landfill that may be affected by the landfill;
<u>      </u>	<u>Op. Plan, 1996</u>	<u>      </u>	<u>X</u>	(4) Location information for each monitoring well;
<u>      </u>	<u>Op. Plan, 1996</u>	<u>      </u>	<u>X</u>	(5) Well spacing no greater than 500 feet apart for downgradient wells and no greater than 1500 feet apart for upgradient wells unless site specific conditions justify alternate well spacings;
<u>      </u>	<u>Op. Plan, 1996</u>	<u>      </u>	<u>X</u>	(6) Well screen locations properly selected;
<u>      </u>	<u>Op. Plan, 1996</u>	<u>      </u>	<u>X</u>	(7) Procedures for properly abandoning monitoring wells;
<u>      </u>	<u>Op. Plan, 1996</u>	<u>      </u>	<u>X</u>	(8) Detailed description of detection sensors if proposed.

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>
_____	<u>Op. Plan, 1996</u>	_____	<u>X</u>
_____	<u>Op. Plan, 1996</u>	_____	<u>X</u>
_____	<u>Op. Plan, 1996</u>	_____	<u>X</u>
_____	<u>Op. Plan, 1996</u>	_____	<u>X</u>
_____	<u>Op. Plan, 1996</u>	_____	<u>X</u>
_____	<u>Op. Plan, 1996</u>	_____	<u>X</u>
_____	<u>Op. Plan, 1996</u>	_____	<u>X</u>
_____	<u>Op. Plan, 1996</u>	_____	<u>X</u>
_____	<u>Op. Plan, 1996</u>	_____	<u>X</u>
_____	<u>Op. Plan, 1996</u>	_____	<u>X</u>

- d. Surface water monitoring requirements; (62-701.510(4), FAC)
  - (1) Location of and justification for all proposed surface water monitoring points;
  - (2) Each monitoring location to be marked and its position determined by a registered Florida land surveyor;
- e. Leachate sampling locations proposed; (62-701.510(5), FAC)
- f. Routine sampling frequency and requirements; (62-701.510(6), FAC)
  - (1) Background ground water and surface water sampling and analysis requirements;
  - (2) Leachate semi-annual and annual sampling and analysis requirements;
  - (3) Detection well semi-annual sampling and analysis requirements;
  - (4) Compliance well sampling and analysis requirements;
  - (5) Surface water sampling and analysis requirements.
- g. Describe procedures for implementing assessment monitoring and corrective action as required; (62-701.510 (7), FAC)
- h. Water quality monitoring report requirements; (62-701.510 (9), FAC)
  - (1) Semi-annual report requirements;
  - (2) Bi-annual report requirements signed, dated and sealed by PG or PE.

M. SPECIAL WASTE HANDLING REQUIREMENTS (62-701.520, FAC)

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>	
_____	<u>App. 1995, M</u>	<u>X</u>	_____	1. Describe procedures for managing motor vehicles; (62-701.520(1), FAC)
_____	<u>App. 1995, M</u>	<u>X</u>	_____	2. Describe procedures for landfilling shredded waste; (62-701.520(3), FAC)
_____	<u>App. 1995, M</u>	_____	<u>X</u>	3. Describe procedures for asbestos waste disposal; (62-701.520(4), FAC)
_____	<u>App. 1995, M</u>	_____	<u>X</u>	4. Describe procedures for contaminated soil disposal; (62-701.520(5), FAC)

N. LANDFILL FINAL CLOSURE REQUIREMENTS (62-701.600, FAC)

				1. Closure schedule requirements; (62-701.600(2), FAC)
_____	<u>App. 1995, N.1</u>	_____	<u>X</u>	a. Documentation that a written notice including a schedule for closure will be provided to the Department at least one year prior to final receipt of wastes;
_____	<u>App. 1995, N.1</u>	_____	<u>X</u>	b. Notice to user requirements within 120 days of final receipt of wastes;
_____	<u>App. 1995, N.1</u>	_____	<u>X</u>	c. Notice to public requirements within 10 days of final receipt of wastes.
				2. Closure permit general requirements; (62-701.600(3), FAC)
_____	<u>App. 1995, N.2</u>	<u>X</u>	_____	a. Application submitted to Department at least 90 days prior to final receipt of wastes;
_____	<u>App. 1995, N.2</u>	<u>X</u>	_____	b. Closure plan shall include the following:
_____	<u>App. 1995, N.2</u>	<u>X</u>	_____	(1) Closure report;
_____	<u>App. 1995, N.2</u>	<u>X</u>	_____	(2) Closure design plan;
_____	<u>App. 1995, N.2</u>	<u>X</u>	_____	(3) Closure operation plan;
_____	<u>App. 1995, N.2</u>	<u>X</u>	_____	(4) Closure procedures;
_____	<u>App. 1995, N.2</u>	<u>X</u>	_____	(5) Plan for long term care;
_____	<u>App. 1995, N.2</u>	<u>X</u>	_____	(6) A demonstration that proof of financial responsibility for long term care will be provided.

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>
_____	<u>App. 1995, N.3</u>	<u>X</u>	_____
_____	<u>App. 1995, N.3</u>	<u>X</u>	_____
_____	<u>App. 1995, N.3</u>	<u>X</u>	_____
_____	<u>App. 1995, N.3</u>	<u>X</u>	_____
_____	<u>App. 1995, N.3</u>	<u>X</u>	_____
_____	<u>App. 1995, N.3</u>	<u>X</u>	_____
_____	<u>App. 1995, N.3</u>	<u>X</u>	_____
_____	<u>App. 1995, N.3</u>	<u>X</u>	_____
_____	<u>App. 1995, N.3</u>	<u>X</u>	_____
_____	<u>App. 1995, N.3</u>	<u>X</u>	_____
_____	<u>App. 1995, N.4</u>	<u>X</u>	_____
_____	<u>App. 1995, N.4</u>	<u>X</u>	_____
_____	<u>App. 1995, N.4</u>	<u>X</u>	_____
_____	<u>App. 1995, N.4</u>	<u>X</u>	_____
_____	<u>App. 1995, N.4</u>	<u>X</u>	_____

3. Closure report requirements; (62-701.600(4), FAC)

a. General information requirements;

- (1) Identification of landfill;
- (2) Location, description and vicinity map;
- (3) Total acres of disposal area and landfill property;
- (4) Legal property description;
- (5) History of landfill;
- (6) Identification of types of waste disposed of at the landfill.

b. Geotechnical investigation report and water quality monitoring plan required by Rule 62-701.330(4), FAC;

c. Land use information report indicating: identification of adjacent landowners; zoning; present land uses; and roads, highways right-of-way, or easements.

d. Report on actual or potential gas migration at landfills containing biodegradable wastes including detailed description of test and investigation methods used;

e. Report assessing the effectiveness of the landfill design and operation including results of geotechnical investigations, surface water and storm water management, gas migration and concentrations, condition of existing cover, and nature of waste disposed of at the landfill;

4. Closure design requirements to be included in the closure design plan: (52-701.600(5), FAC)

a. Plan sheet showing phases of site closing;

b. Drawings showing existing topography and proposed final grades;

c. Provisions to close units when they reach approved design dimensions;

d. Final elevations before settlement;

e. Side slope design including benches, terraces, down slope drainage ways, energy dissipaters and discussion of expected precipitation effects;

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>
_____	<u>Appendix 1995, N.4</u>	<u>X</u>	_____
_____	<u>App. 1995, N.4</u>	<u>X</u>	_____
_____	<u>App. 1995, N.4</u>	<u>X</u>	_____
_____	<u>App. 1995, N.4</u>	<u>X</u>	_____
_____	<u>App. 1995, N.4</u>	<u>X</u>	_____
_____	<u>App. 1995, N.4</u>	<u>X</u>	_____
_____	<u>App. 1995, N.4</u>	<u>X</u>	_____
_____	<u>App. 1995, N.4</u>	<u>X</u>	_____
_____	<u>App. 1995, N.4</u>	<u>X</u>	_____
_____	<u>App. 1995, N.4</u>	<u>X</u>	_____
_____	<u>App. 1995, N.5</u>	<u>X</u>	_____
_____	<u>App. 1995, N.5</u>	<u>X</u>	_____
_____	<u>App. 1995, N.5</u>	<u>X</u>	_____
_____	<u>App. 1995, N.5</u>	<u>X</u>	_____
_____	<u>App. 1995, N.5</u>	<u>X</u>	_____
_____	<u>App. 1995, N.5</u>	<u>X</u>	_____
_____	<u>App. 1995, N.6</u>	<u>X</u>	_____

f. Final cover installation plans including:

- (1) CQA plan for installing and testing final cover;
- (2) Schedule for installing final cover after final receipt of waste;
- (3) Description of drought-resistant species to be used in the vegetative cover;
- (4) Top gradient design to maximize runoff and minimize erosion;
- (5) Provisions for cover material to be used for final cover maintenance.

g. Final cover design requirements:

- (1) Protective soil layer design;
- (2) Barrier soil layer design;
- (3) Erosion control vegetation;
- (4) Geomembrane barrier layer design.

h. Proposed method of stormwater control;

i. Proposed method of access control;

j. Description of proposed final use of the closed landfill, if any;

5. Closure operation plan shall include: (62-701.600(6), FAC)

- a. Detailed description of actions which will be taken to close the landfill;
- b. Time schedule for completion of closing and long term care;
- c. Describe proposed method for demonstrating financial responsibility;
- d. Indicate any additional equipment and personnel needed to complete closure.
- e. Development and implementation of the water quality monitoring plan required in Rule 62-701.510, FAC.
- f. Development and implementation of routine gas monitoring program required in Rule 62-701.400(10)(c), FAC

6. Justification for and detailed description of procedures to be followed for temporary closure of the landfill, if desired; (62-701.600(7), FAC)

O. CLOSURE PROCEDURES (62-701.610, FAC)

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>	
_____	<u>App. 1995, O</u>	<u>X</u>	_____	1. Survey monuments; (62-701.610(2), FAC)
_____	<u>App. 1995, O</u>	<u>X</u>	_____	2. Final survey report; (62-701.610(3), FAC)
_____	<u>App. 1995, O</u>	<u>X</u>	_____	3. Certification of closure construction completion; (62-701.610(4), FAC)
_____	<u>App. 1995, O</u>	<u>X</u>	_____	4. Declaration to the public; (62-701.610(5), FAC)
_____	<u>App. 1995, O</u>	<u>X</u>	_____	5. Official date of closing; (62-701.610(6), FAC)
_____	<u>App. 1995, O</u>	<u>X</u>	_____	6. Use of closed landfill areas; (62-701.610(7), FAC)

P. LONG TERM CARE REQUIREMENTS (62-701.620, FAC)

_____	<u>App. 1995, P.1</u>	_____	<u>X</u>	1. Right of property access requirements; (62-701.620(4), FAC)
_____	<u>App. 1995, P.2</u>	_____	<u>X</u>	2. Successors of interest requirements; (62-701.620(5), FAC)
_____	<u>App. 1995, P.3</u>	_____	<u>X</u>	3. Requirements for replacement of monitoring devices; (62-701.620(7), FAC)
_____	<u>App. 1995, P.4</u>	_____	<u>X</u>	4. Completion of long term care signed and sealed by professional engineer (62-701.620(8), FAC).

Q. FINANCIAL RESPONSIBILITY REQUIREMENTS (62-701.630, FAC)

_____	<u>App. 1995, Q.1</u>	_____	<u>X</u>	1. Provide cost estimates for closing, long term care, and corrective action costs estimated by a PE for a third party performing the work, on a per unit basis, with the source of estimates indicated; (62-701.630(3)&(7), FAC).
_____	<u>App. 1995, Q.2</u>	_____	<u>X</u>	2. Describe procedures for providing annual cost adjustments to the Department based on inflation and changes in the closing, long-term care, and corrective action plans; (62-701.630(4)&(8), FAC).
_____	<u>App. 1995, Q.3</u>	_____	<u>X</u>	3. Describe funding mechanisms for providing proof of financial assurance and include appropriate financial assurance forms; (62-701.630(5),(6),&(9), FAC).

R. CLOSURE OF EXISTING LANDFILLS (62-701.640, FAC)

_____	<u>App. 1995, R</u>	<u>X</u>	_____	1. Demonstration that facility does not pose a bird hazard to aircraft as specified in Rule 62-701.320(12)(b), FAC.
_____	<u>App. 1995, R</u>	<u>X</u>	_____	2. Demonstration that facility does not restrict the flow of the 100-year flood, reduce water storage capacity or result in wash-out of solid waste as specified in Rule 62-701.340(4)(b), FAC.

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>	
_____	<u>App. 1995, R</u>	<u>X</u>	_____	3. Demonstration that facility is not located in a fault area, seismic zone or unstable area as specified in Rule 62-701.420(1)(c), FAC.
_____	<u>App. 1995, R</u>	<u>X</u>	_____	4. Request for extension of closure criteria as specified in Rule 62-701.640(2)(a) & (2)(b), FAC.
_____	<u>App. 1995, R</u>	<u>X</u>	_____	a. Demonstration of no alternative disposal capacity.
_____	<u>App. 1995, R</u>	<u>X</u>	_____	b. Demonstration of no threat to human health or the environment.

S. MATERIALS RECOVERY FACILITY REQUIREMENTS (62-701.700, FAC)

_____	<u>App. 1995, S</u>	<u>X</u>	_____	1. Proof of posting a performance bond payable to the Department to cover closing costs, if required; (62-701.700(4), FAC)
_____	<u>App. 1995, S</u>	<u>X</u>	_____	2. Materials recovery facility requirements; (62-701.700, FAC)
_____	<u>App. 1995, S</u>	<u>X</u>	_____	a. Submit information required in Rule 62-701.320, FAC
_____	<u>App. 1995, S</u>	<u>X</u>	_____	b. Submit an engineering report including the following:
_____	<u>App. 1995, S</u>	<u>X</u>	_____	(1) Description of the solid waste proposed to be collected, stored, processed or disposed;
_____	<u>App. 1995, S</u>	<u>X</u>	_____	(2) Projection with assumptions for waste types and quantities expected in future years;
_____	<u>App. 1995, S</u>	<u>X</u>	_____	(3) Description of operation and functions of all processing equipment with design criteria and expected performance;
_____	<u>App. 1995, S</u>	<u>X</u>	_____	(4) Description of flow of solid waste, expected regular facility operations, procedures for start up and shut down, potential safety hazards and control methods including fire protection;
_____	<u>App. 1995, S</u>	<u>X</u>	_____	(5) Description of loading, unloading, and processing areas;
_____	<u>App. 1995, S</u>	<u>X</u>	_____	(6) Identification and capacity of temporary on-site storage areas for materials handled and provisions for solid waste and leachate containment;
_____	<u>App. 1995, S</u>	<u>X</u>	_____	(7) Identification of potential ground water and surface water contamination;



<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>
<u>      </u>	<u>App. 1995, S</u>	<u>X</u>	<u>      </u>
<u>      </u>	<u>App. 1995, S</u>	<u>X</u>	<u>      </u>
<u>      </u>	<u>App. 1995, S</u>	<u>X</u>	<u>      </u>
<u>      </u>	<u>App. 1995, S</u>	<u>X</u>	<u>      </u>
<u>      </u>	<u>App. 1995, S</u>	<u>X</u>	<u>      </u>
<u>      </u>	<u>App. 1995, S</u>	<u>X</u>	<u>      </u>
<u>      </u>	<u>App. 1995, S</u>	<u>X</u>	<u>      </u>

- (8) Plan for disposal of unmarketable recyclables and residue and contingencies for waste handling during breakdowns.

c. Submit the following operational information:

- (1) Operation and maintenance manual;
- (2) Waste control plan to manage unauthorized wastes;
- (3) Contingency plan for emergencies;
- (4) Closure plan including the following:
  - (a) Notification to Department 180 days prior to closure;
  - (b) Procedures for removal of all waste within 30 days of receipt of final waste;
  - (c) Completion of closure activities within 180 days of receipt of final waste and notification to the Department that closure is complete.

T. CERTIFICATION BY APPLICANT AND ENGINEER OR PUBLIC OFFICER

A. Applicant

The undersigned applicant or authorized representative of Citrus County Board of County Commissioners is aware that statements made in this form and attached information are an application for a Solid Waste Management Facility Permit from the Florida Department of Environmental Regulation and certifies that the information in this application is true, correct and complete to the best of his knowledge and belief. Further, the undersigned agrees to comply with the provisions of Chapter 403, Florida Statutes, and all rules and regulations of the Department. It is understood that the Permit is not transferable, and the Department will be notified prior to the sale or legal transfer of the permitted facility.

Susan J. Metcalfe

Signature of Applicant or Agent

Susan J. Metcalfe, Director, Division of Solid Waste Management

Name and Title

Date: 1/19/01

Attach letter of authorization if agent is not a governmental official, owner, or corporate officer.

B. Professional Engineer Registered in Florida or Public Officer as required in Section 403.707 and 403.707(5), Florida Statutes.

This is to certify that the engineering features of this solid waste management facility have been designed/examined by me and found to conform to engineering principals applicable to such facilities. In my professional judgement, this facility, when properly maintained and operated, will comply with all applicable statutes of the State of Florida and rules of the Department. It is agreed that the undersigned will provide the applicant with a set of instructions of proper maintenance and operation of the facility.

David A. Keough  
Signature  
David A. Keough, PE, Project Manager  
Name and Title (please type)  
#33164

Florida Registration Number  
(Please affix seal)

Date: 1-18-01

Jones, Edmunds & Associates, Inc.

730 NE Waldo Road, Building A

Mailing Address

Gainesville, Florida 32641

City, State, Zip

352-377-5821

Telephone Number

**ABBREVIATION****REFERENCE**

App. 1995

Citrus County Central Landfill  
Permit Application and Engineering Report  
Phase 1A Expansion  
CH2M HILL, 1995

Op. Plan 1996

Citrus County Central Landfill  
Operations Plan  
Phase 1A Expansion  
CH2M HILL, 1996

Letter 10/00

Jones, Edmunds & Associates, Inc. Correspondence  
October 10, 2000  
Class I Landfill Geomembrane Remediation

App. 2000

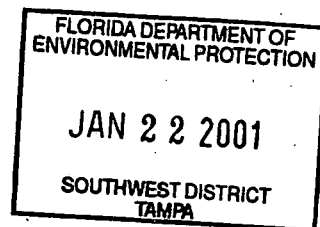
Citrus County Central Landfill  
Permit Application  
Geomembrane Remediation  
Jones, Edmunds & Associates, Inc., 2000

CQA 12/00

Citrus County Central Landfill  
Construction Quality Assurance Plan  
Geomembrane Remediation  
Jones, Edmunds & Associates, Inc., 2000

**ATTACHMENT 1**

**OPERATION PLAN REVISIONS**



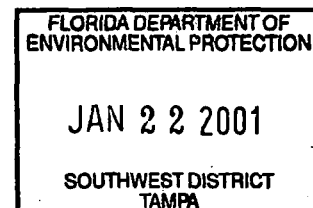
**7.b First Layer**  
**(62-701.500(7)(b), FAC)**

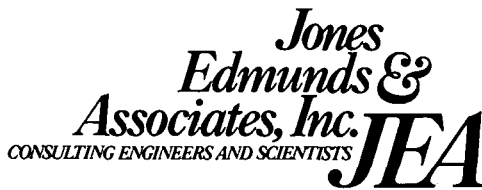
Prior to placing waste on the landfill side slopes and interior of the northern berm, a minimum of two feet of protective soil material must be placed on the lining. Required material properties are included in the Phase 1A Expansion Technical Specifications. In addition, the geomembrane stormwater diversion sheet on the side slopes of Phase 1A must be removed and raised as protective soil material is placed on the side slopes. The protective soil material in Phase 1A placed directly on the underlying geogrid (reference the lining section in the Phase 1A Expansion Construction Plans). The raised geomembrane stormwater diversion sheet will be used to form lined stormwater conveyance ditches as discussed in Section 7.j.2. Solid waste and stormwater diversion sheets will be placed along the sideslopes of Phase 1 as shown in the Geomembrane Remediation drawings (JEA 2000).

The first lift of material placed above the lining and leachate collection system will be a minimum of four feet in thickness before conventional compacting and heavy equipment are used. Waste loads in this first lift will be screened for any materials which would damage the lining.

**7.c Slopes of Working Face**  
**(62-701.500(7)(c), FAC)**

The working face will be sloped no greater than 3 feet horizontal to one foot vertical rise. The lift depth will be minimum of 10 feet. A plan and cross-section of a typical working face is shown on Figure 7-1.





**D.E.P.**  
**JAN 22 2001**  
**Southwest District Tampa**

January 17, 2001

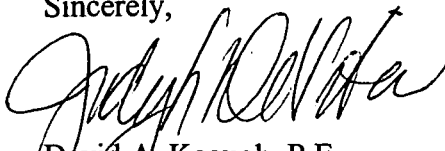
Mr Kim B. Ford, P.E.  
Florida Department of Environmental Protection  
Southwest District  
Solid Waste Section  
3804 Coconut Palm Drive  
Tampa, FL 33619-8318

RE: Citrus County Central Landfill  
Class I Landfill Geomembrane Remediation  
Permit No. SO09-247381  
JEA Project No.: 03860-003-01-1000

Dear Mr. Ford:

Please consider the permit application and supporting information forwarded to your office on December 29, 2000 not as a draft, but as the final document. If you have any questions, please call Judy DeVita or me at 352/377-5821.

Sincerely,

  
for David A. Keough, P.E.  
Vice President

H:\JDeVita\CitrusCo\Liner\_remediation\DEP\_remed\_app\_final.wpd

Enclosures

XC: Susan Metcalfe, Citrus Co.  
Judy DeVita, JEA

## \*\* Transmit Conf. Report \*\*

P.1

Jan 18 2001 9:51

Telephone Number	Mode	Start	Time	Pages	Result	Note
813525271204	NORMAL	18, 9:48	2'18"	7	* O K	

FLORIDA DEPARTMENT OF  
ENVIRONMENTAL PROTECTION

3804 Coconut Palm Drive  
Tampa, FL 33619-8318

# FAX

Date:

1/18/01

Number of pages including cover sheet:

7

To:

Susan MITCHELL

CITRUS CO

Phone:

352 746 5000

Fax phone:

352 527 1204

CC:

From:

K. J. Jones

Phone:

(813) 744-6100

0382

Fax phone:

(813) 744-6125

REMARKS:

☐

Urgent

☒

For your review

☒

Reply ASAP

☐

Please comment

CITRUS LINDER REPAIR

Comments

FLORIDA DEPARTMENT OF  
ENVIRONMENTAL PROTECTION

3804 Coconut Palm Drive  
Tampa, FL 33619-8318

**FAX**

Date:

1/18/01

Number of pages including cover sheet:

7

To:

Susan Mitchell

CITRUS CO

Phone:

352 746 5000

Fax phone:

352 527 1204

CC:

From:

Ken Jones

Phone:

(813) 744-6100 x382

Fax phone:

(813) 744-6125

REMARKS:

☐ Urgent

☒ For your review

☒ Reply ASAP

☐ Please comment

CITRUS LINDER REPAIR

Comments



Comments:

(1) Construction plans signed & sealed  
Cover page & Index

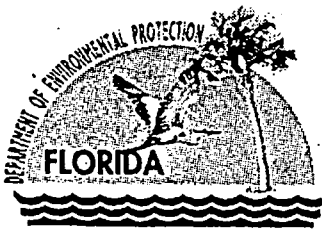
(2) Revised application form  
signed & sealed & dated

(3) 3 copies kn  
Bob  
Richard.

(4) Cover Letter  
Introduction  
scope of work

Reference previous reports and letter,  
ie JE 10/10/00 conclusions and recommendations.

km  
1/18/01



Jeb Bush  
Governor

# Department of Environmental Protection

Southwest District  
3804 Coconut Palm Drive  
Tampa, Florida 33619

David B. Struhs  
Secretary

October 17, 2000

Ms. Susan Metcalfe, P.G.  
Solid Waste Management  
Citrus County  
P. O. Box 340  
Lecanto, FL 34460

Re Citrus Central Landfill - Liner Repair  
Permit No.: SO09-247381, Citrus County

Dear Ms. Metcalfe:

The Department received the proposal for liner repair from your consultant and has no objection to the repair concept. You are advised that a Solid Waste "Other" Construction Permit is required for the work described in the October 10, 2000 proposal by Jones Edmunds and Associates according to FAC 62-4.050(4)(h)11., including the completed permit application (attached) and \$1000 processing fee and all applicable supporting information required by F.A.C. Rule 62-701.400 for new liner systems.

On all future correspondence, please include Robert Butera on distribution. If you have any questions you may call me at (813) 744-6100, extension 382.

Sincerely,

Kim B. Ford, P.E.  
Solid Waste Section  
Division of Waste Management

KBF/ab  
Attachment

cc: David Keough, P.E., Jones Edmunds & Associates  
Robert Butera, P.E., FDEP Tampa, Solid Waste Section

LD

"More Protection, Less Process"

Printed on recycled paper.

*Jones  
Edmunds &  
Associates, Inc.*  
CONSULTING ENGINEERS AND SCIENTISTS **JEA**

October 10, 2000

Mr. Kim B. Ford, P.E.  
Florida Department of Environmental Protection  
Southwest District  
Solid Waste Section  
3804 Coconut Palm Drive  
Tampa, FL 33619-8318

D.E.P.  
OCT 12 2000  
Southwest District Tampa

RE: Citrus County Central Landfill  
Class I Landfill Geomembrane Remediation  
Permit No. SO09-247381  
JEA Project No.: 03860-003-01-1000

Dear Mr. Ford:

The purpose of this correspondence is to present a proposed plan which addresses the stress-cracked areas of geomembrane liner in the Citrus County Central Landfill. The proposed remediation plan is based on an investigation conducted by Dr. Ian D. Peggs, of I-CORP International, Inc. and engineering analysis performed by Jones, Edmunds & Associates, Inc. (JEA).

Dr. Peggs' investigation report, previously-submitted to your office, states that cracks appear in a portion of the apex-down folds and in areas adjacent to a few seams of the currently-exposed liner areas. To estimate the amount of potential leakage resulting from the cracked areas, JEA performed a hydrologic analysis using the HELP Model ("Hydrologic Evaluation of Landfill Performance, Version 3.01," Schroeder, 1994). As a conservative estimate, model conditions assume that a penetrating crack exists in every fold (apex-up and apex-down) and that each crack extends the entire length of the exposed liner slope that is currently exposed. These assumptions are conservative based on Peggs' investigations which revealed only 12 penetrating cracks which did not extend the entire length of slope. HELP model results show the leakage rate to be considerably greater than that expected with typical landfill operations. HELP model results are included as Attachment 1.

Due to potential high leakage rates, application of a soil cover over the exposed areas would not by itself provide an appropriate solution. Repair methods which include welding of the existing geomembrane material (as suggested by the liner manufacturer) were also rejected on Dr. Peggs recommendation that added thermal energy from seaming procedures may aggravate the stress cracking problem. Therefore, it appears that applying new material may be the most viable remediation alternative.

Mr. Kim B. Ford, P.E.  
October 10, 2000  
Page 2

D.E.P.  
OCT 12 2000  
Southwest District Tampa

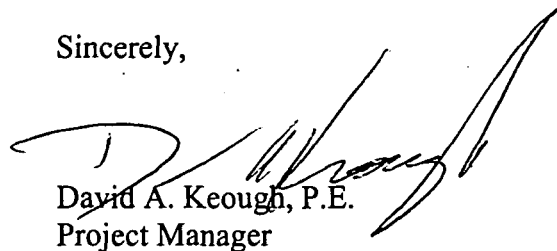
This alternative consists of using a geomembrane installer to place a new 60-mil HDPE geomembrane in the presently exposed liner areas, as shown in Drawing 1 (attached). Slope stability analyses to compare the factor of safety resulting from different geomembrane materials on the existing 2H:1V slope of smooth geomembrane have been performed. Results, provided as Attachment 2, show that a textured geomembrane liner would reduce the potential for material sloughing and slope failures when compared with a similar smooth geomembrane. Therefore, it is our recommendation that the proposed geomembrane consists of a 60-mil, HDPE, textured geomembrane. Please note that the proposed new material is composed of a different resin than that which was used for the original geomembrane material. As Dr. Peggs concluded in his investigative report, stress cracks were initiated due to the inadequacy of the antioxidant package incorporated into the geomembrane material. The proposed new geomembrane materials will contain a resin with improved oxidation resistance.

In addition, once a layer of solid waste is placed along the side slope, installation of a stormwater geomembrane is proposed. The stormwater geomembrane will provide erosion control and better leachate management.

We will advise the Department once arrangements for installation of the new liner are confirmed. It is anticipated that the time frame to fill the newly lined areas with solid waste to the level that will allow placement of the new stormwater liner and rain gutter will be between four and five months.

If you have any questions, please call me at 352/377-5821.

Sincerely,



David A. Keough, P.E.  
Project Manager

H:\JMcGregor\DKeough\03860\012.wpd

Attachments

XC: Susan Metcalfe, Citrus County

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

APPLICATION FOR PERMIT TO CONSTRUCT, OPERATE, MODIFY OR CLOSE  
A SOLID WASTE MANAGEMENT FACILITY

Please Type or Print

A. GENERAL INFORMATION

1. Type of Facility

Disposal ☒

Class I Landfill

☒

Ash Monofill

☐

Class II Landfill

☐

Asbestos Monofill

Class III Landfill

☐

Industrial Solid Waste

Other

☐

Volume Reduction ☐

Incinerator

☐

Pulverizer / Shredder

Composing

☐

Compactor / Baling Plant

Materials Recovery

☐

Energy Recovery

Other

☐

2. Type of Application:

Construction

☒

Construction / Operation

Operation

☐

Closure

3. Classification of application:

New

☒

Substantial Modification

☐

Renewal

☐

Minor Modification

☐

4. Facility name: Citrus County Central Landfill

5. DEP ID number: 4009C00086

County: Citrus

6. Facility location (main entrance): State Road 44 between Lecanto and Inverness, Florida

7. Location coordinates:

Section: 1

Township: 19S

Range: 18E

UTMs: Zone

km E

km N

Latitude: 28 ° 51 ' 08 "

Longitude: 82 ° 26 ' 38 "

T. CERTIFICATION BY APPLICANT AND ENGINEER OR PUBLIC OFFICER

A. Applicant

The undersigned applicant or authorized representative of Citrus County Board of County Commissioners is aware that statements made in this form and attached information are an application for a Solid Waste Management Facility Permit from the Florida Department of Environmental Regulation and certifies that the information in this application is true, correct and complete to the best of his knowledge and belief. Further, the undersigned agrees to comply with the provisions of Chapter 403, Florida Statutes, and all rules and regulations of the Department. It is understood that the Permit is not transferable, and the Department will be notified prior to the sale or legal transfer of the permitted facility.

Signature of Applicant or Agent

Susan J. Motcalf, Director, Division of Solid Waste Management

Name and Title

Date:

Attach letter of authorization if agent is not a governmental official, owner, or corporate officer.

B. Professional Engineer Registered in Florida or Public Officer as required in Section 403.707 and 403.707(5), Florida Statutes.

This is to certify that the engineering features of this solid waste management facility have been designed/examined by me and found to conform to engineering principals applicable to such facilities. In my professional judgement, this facility, when properly maintained and operated, will comply with all applicable statutes of the State of Florida and rules of the Department. It is agreed that the undersigned will provide the applicant with a set of instructions of proper maintenance and operation of the facility.

Signature

David A. Keough, PE, Project Manager

Name and Title (please type)

#33164

Florida Registration Number  
(Please affix seal)

Date:

Jones, Edmunds & Associates, Inc.

730 NE Waldo Road, Building A

Mailing Address

Gainesville, Florida 32641

City, State, Zip

352-377-5821

Telephone Number

SOUTHWEST DISTRICT  
FDEP

Solid Waste Program  
Permitting Application

New Site

Site Name:
Site Address:
County:
Type/Subcode:

Existing Site

Site ID:	21375 - 002
Project Name:	CITRUS LINER REPAIR
Type/Subcode:	SC / 08
Fee Submitted:	1000 <input checked="" type="checkbox"/> correct ( ) incorrect
Fee Refund \$	Fee Request \$

Related Party

Role:	Applicant
Name:	SUSAN METCALFE
Company:	CITRUS COUNTY
Street:	P O BOX 340
City:	LECANTO
Zip Code:	34460
Phone:	(904) 7465000

Distribution Date: \_\_\_\_\_

Fee Checked By: K Ford

Date: 1/17/01

STATE OF FLORIDA  
COUNTY OF CITRUS  
INVERNESS, FLORIDA


# County Warrant

176489

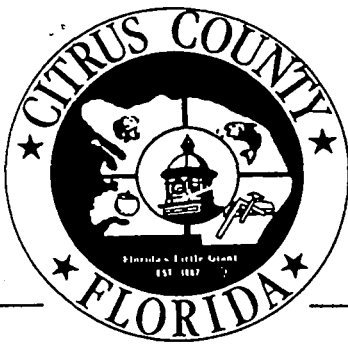
DEPARTMENT	ACCOUNT	PURCH. ORDER	INVOICE NUMBER	AMOUNT	DESCRIPTION
5212	54912		CNSTRCT PERM	1,000.00	CNSTRCT PERM LINER REPAIR

0548.1 DEPT OF ENVIRONMENTAL PROTECTION

PLEASE DETACH  
BEFORE DEPOSITING ↓

STATE OF FLORIDA <b>County Warrant</b> 110 N. APOPKA AVENUE INVERNESS, FLORIDA 34450-4299		CITRUS COUNTY ACCOUNTS PAYABLE <b>SUNTRUST BANK</b> INVERNESS, FLORIDA VOID AFTER 90 DAYS 63-115 631	176489 CHECK 176489 DATE 01/09/01
		AMOUNT	*****1,000.00**
PAY TO THE ORDER OF	ONE THOUSAND DOLLARS & ZERO CENTS  DEPT OF ENVIRONMENTAL PROTECTION RECEIPT SECTION P O BOX 3070 TALLAHASSEE FL 32315-3070		
		 CHAIRMAN BOARD OF COUNTY COMMISSIONERS CLERK AND AUDITOR CITRUS COUNTY	





# Board of County Commissioners

Department of Public Works

Post Office Box 167, Lecanto, Florida 34460

(352) 746-4107

FAX (352) 746-1204

D.E.P.  
JAN 16 2001  
Southwest District Tampa

REPLY TO: SOLID WASTE MANAGEMENT  
P.O. BOX 340  
LECANTO, FL 34460

## LETTER OF TRANSMITTAL

PROJECT NO:

DATE: January 10, 2001

TO: Kim B. Ford PR.  
Solid Waste Section FDEP  
3804 Coconut Palm Dr  
Tampa Florida 33619-8318

RE:

Citrus County Solid Waste  
Linear Repair Permit Application

WE ARE FORWARDING TO YOU:

☐ estimates ☐ proposals ☐ reports  
☐ plans ☒ application fee ☐ under separate cover via:  
☐ drawings ☐ addendum ☐ specifications  
☐ letter ☐ change order ☐ other:

QUANTITY	DESCRIPTION
1	check # 176489 \$1000

THESE ARE TRANSMITTED:

☒ for approval ☐ resubmitted ☐ copies for review  
☐ for your use ☐ submit ☐ copies for  
distribution  
☐ as requested ☐ returned ☐ corrected prints  
☐ for review & comment

PLEASE NOTE:

CC: \_\_\_\_\_

Per: Susan J. McCall

Facilities Maintenance  
Post Office Box 143  
Lecanto, Florida 34460  
(352) 527-0333 Fax 352-746-0656

Fleet Management  
Post Office Box 215  
Lecanto, Florida 34460  
(352) 746-6888 Fax 746-1203

Road Maintenance  
Post Office Box 167  
Lecanto, Florida 34460  
(352) 746-4107 Fax 746-1203

Solid Waste Management  
Post Office Box 340  
Lecanto, Florida, 34460  
(352) 746-5000 Fax 527-1204



STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

APPLICATION FOR PERMIT TO CONSTRUCT, OPERATE, MODIFY OR CLOSE  
A SOLID WASTE MANAGEMENT FACILITY

Please Type or Print

A. GENERAL INFORMATION

1. Type of Facility

Disposal ☒ [ X ]

Class I Landfill	<input checked="" type="checkbox"/> [ X ]	Ash Monofill	<input type="checkbox"/> [ ]
Class II Landfill	<input type="checkbox"/> [ ]	Asbestos Monofill	<input type="checkbox"/> [ ]
Class III Landfill	<input type="checkbox"/> [ ]	Industrial Solid Waste	<input type="checkbox"/> [ ]
Other	<input type="checkbox"/> [ ]		

Volume Reduction ☐ [ ]

Incinerator	<input type="checkbox"/> [ ]	Pulverizer / Shredder	<input type="checkbox"/> [ ]
Composing	<input type="checkbox"/> [ ]	Compactor / Baling Plant	<input type="checkbox"/> [ ]
Materials Recovery	<input type="checkbox"/> [ ]	Energy Recovery	<input type="checkbox"/> [ ]
Other	<input type="checkbox"/> [ ]		

2. Type of Application:

Construction	<input checked="" type="checkbox"/> [ X ]	Construction / Operation	<input checked="" type="checkbox"/> [ X ]
Operation	<input type="checkbox"/> [ ]	Closure	<input type="checkbox"/> [ ]

3. Classification of application:

New	<input checked="" type="checkbox"/> [ X ]	Substantial Modification	<input type="checkbox"/> [ ]
Renewal	<input type="checkbox"/> [ ]	Minor Modification	<input type="checkbox"/> [ ]

4. Facility name: Citrus County Central Landfill

5. DEP ID number: 4009C00086 County: Citrus

6. Facility location (main entrance): State Road 44 between Lecanto and Inverness, Florida

7. Location coordinates:

Section: 1 Township: 19S Range: 18E  
UTMs: Zone            km E            km N             
Latitude: 28 ° 51 ' 08 " Longitude: 82 ° 26 ' 38 "

8. Applicant name (operating authority): Citrus County Board of County Commissioners  
Mailing address: P.O. Box 340 Lecanto FL 34460  
Street or P.O. Box City State Zip  
Contact person: Susan Metcalfe, PG Telephone: ( 904 ) 746-5000  
Title: Solid Waste Management Division Director
9. Authorized agent / Consultant: Jones, Edmunds & Associates, Inc.  
Mailing address: 730 NE Waldo Road, Building A Gainesville FL 32641  
Street or P.O. Box City State Zip  
Contact person: David A. Keough, PE Telephone: ( 352 ) 377-5821  
Title: Project Manager
10. Landowner (if different than applicant): \_\_\_\_\_  
Mailing address: \_\_\_\_\_  
Street or P.O. Box City State Zip  
Contact person: \_\_\_\_\_ Telephone: ( )
11. Cities, towns, and areas to be served: Citrus County
12. Population to be served:  
Current: 117,500 (FY2000) Five-year Projection: 129,500 (FY2005)
13. Volume of solid waste to be received: 90,000 (FY2001 estimated) tons/year
14. Date site will be ready to be inspected for completion: March 2001
15. Estimated life of facility: 3 years years
16. Estimated costs:  
Total Construction: \$ 750,000\* Closing Costs: \$ 2,756,705 (1 & 1A)
17. Anticipated construction starting and completion dates:  
From: February 2001 To: March 2001  
\* Cost of Geomembrane Remediation

CERTIFICATION BY APPLICANT AND ENGINEER OR PUBLIC OFFICER

A. Applicant

The undersigned applicant or authorized representative of Citrus County Board of County Commissioners is aware that statements made in this form and attached information are an application for a Solid Waste Management Facility Permit from the Florida Department of Environmental Regulation and certifies that the information in this application is true, correct and complete to the best of his knowledge and belief. Further, the undersigned agrees to comply with the provisions of Chapter 403, Florida Statutes, and all rules and regulations of the Department. It is understood that the Permit is not transferable, and the Department will be notified prior to the sale or legal transfer of the permitted facility.

\_\_\_\_\_  
Signature of Applicant or Agent

Susan J. Metcalfe, Director, Division of Solid Waste Management

\_\_\_\_\_  
Name and Title

Date: \_\_\_\_\_

Attach letter of authorization if agent is not a governmental official, owner, or corporate officer.

B. Professional Engineer Registered in Florida or Public Officer as required in Section 403.707 and 403.707(5), Florida Statutes.

This is to certify that the engineering features of this solid waste management facility have been designed/examined by me and found to conform to engineering principals applicable to such facilities. In my professional judgement, this facility, when properly maintained and operated, will comply with all applicable statutes of the State of Florida and rules of the Department. It is agreed that the undersigned will provide the applicant with a set of instructions of proper maintenance and operation of the facility.

\_\_\_\_\_  
Signature

David A. Keough, PE, Project Manager

\_\_\_\_\_  
Name and Title (please type)

#33164

\_\_\_\_\_  
Florida Registration Number  
(Please affix seal)

Jones, Edmunds & Associates, Inc.

730 NE Waldo Road, Building A

\_\_\_\_\_  
Mailing Address

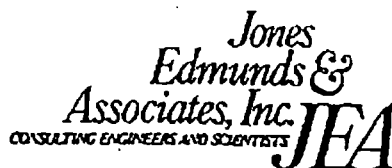
Gainesville, Florida 32641

\_\_\_\_\_  
City, State, Zip

352-377-5821

\_\_\_\_\_  
Telephone Number

Date: \_\_\_\_\_



## FAX TRANSMITTAL SHEET

DATE	1-17-01
PROJECT NUMBER	03860-004-01-1000
NUMBER OF PAGES (including cover sheet)	2
TO	KIM FORD
FAX NUMBER	813-744-6125
FROM	JUDY DEVITA

## COMMENTS:

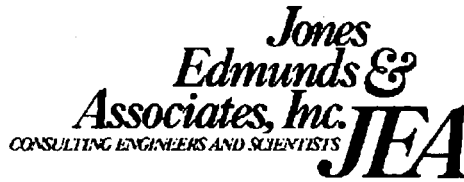
SEE ATTACHED

This message is intended only for the use of the individual or entity to which it is addressed and may contain information that is privileged, confidential, and exempt from disclosure under applicable law. If the reader of this message is not the intended recipient, or the employee or agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone and return the original message to us at the return address listed below via the U.S. Postal Service. Thank you.

If you do not receive all pages, please contact JUDY DEVITA at 352/377-5821, ext. 1247.

Original to Follow by Mail: X

Fax Copy Only:



January 17, 2001

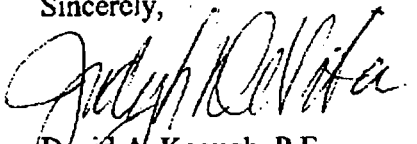
Mr Kim B. Ford, P.E.  
Florida Department of Environmental Protection  
Southwest District  
Solid Waste Section  
3804 Coconut Palm Drive  
Tampa, FL 33619-8318

RE: Citrus County Central Landfill  
Class I Landfill Geomembrane Remediation  
Permit No. SO09-247381  
JEA Project No.: 03860-003-01-1000

Dear Mr. Ford:

Please consider the permit application and supporting information forwarded to your office on December 29, 2000 not as a draft, but as the final document. If you have any questions, please call Judy DeVita or me at 352/377-5821.

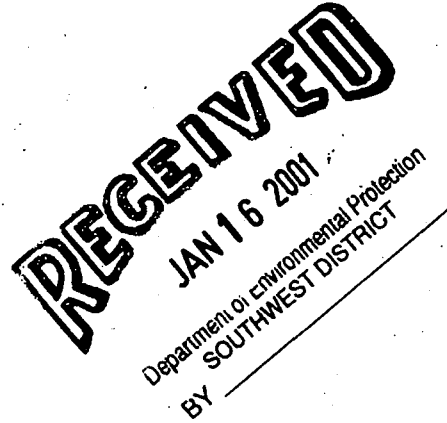
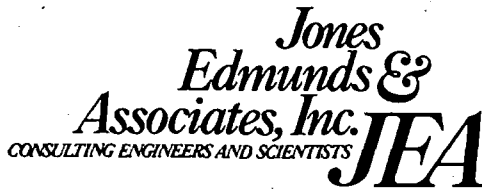
Sincerely,

  
for David A. Keough, P.E.  
Vice President

H:\JDeVita\CitrusCo\Liner\_remediation\DEP\_remed\_app\_final.wpd

Enclosures

XC: Susan Metcalfe, Citrus Co.  
Judy DeVita, JEA



December 29, 2000

Mr Kim B. Ford, P.E.  
Florida Department of Environmental Protection  
Southwest District  
Solid Waste Section  
3804 Coconut Palm Drive  
Tampa, FL 33619-8318

RE: Citrus County Central Landfill  
Class I Landfill Geomembrane Remediation  
Permit No. SO09-247381  
JEA Project No.: 03860-003-01-1000

Dear Mr. Ford:

Enclosed please find a draft permit application and supporting information for your review. We hope to address any comments you may have and submit a final application package, along with the required fee, as soon as possible.

If you have any questions, please call Judy DeVita or me at 352/377-5821.

Sincerely,

David A. Keough, P.E.  
Project Manager

H:\JDeVita\CitrusCo\Liner\_remediation\DEP\_remed\_app.wpd

Enclosures

XC: Susan Metcalfe, Citrus Co.  
Judy DeVita, JEA

**Ford, Kim**

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**From:** Susan Metcalfe [Susan.Metcalfe@bocc.citrus.fl.us]  
**Sent:** Thursday, January 11, 2001 5:09 PM  
**To:** Kim Ford <kim.ford@dep.state.fl.us>  
**Subject:** Liner repair permit

The fee was mailed on 01/10/01. Please confirm receipt of a complete application.

Do you want to meet with us, or do a phone conference or just do written comments? We are hoping to do installation during the early spring, not later when the (wishful thinking) threat of rain would interfere.