

Volusia County
Tomoka Farms Rd. LF
3064 C 00071
Permit File

Application to Renew the Operating Permit
for the Tomoka Farms Road Landfill

Volusia County, Florida

July 1, 1996



SCS Engineers
555 West Granada Boulevard, Suite E4
Ormond Beach, Florida

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SCS ENGINEERS

File No. 0995039.02
July 1, 1996

Dan R. Morrical, P.E.
Solid Waste Program Manager
Florida Department of Environmental Protection
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803

Subject: Operating Permit Renewal
Tomoka Farms Road Landfill
Volusia County

Dear Mr. Morrical:

Enclosed are six copies of an application for renewal of the operating permit for Volusia County's Tomoka Farms Road Landfill, along with the permit application fee of \$10,000. We would be pleased to meet with you to discuss any permitting issues or other questions that you may have.

Very truly yours,



Lee A. Powell, P.E.

Project Manager
SCS ENGINEERS

Enclosures

cc: Jim Griffin
Susan Gaze



DEP Form # <u>62-701.900(1)</u>
Form Title <u>Solid Waste Management Facility Permit</u>
Effective Date <u>May 19, 1994</u>
DEP Application No. _____ (Filled by DEP)

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

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SOLID WASTE MANAGEMENT FACILITY PERMIT

APPLICATION INSTRUCTIONS AND FORMS

INSTRUCTIONS TO APPLY FOR A SOLID WASTE MANAGEMENT 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"/> []
Composting	<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 type="checkbox"/> []	Construction/Operation	<input type="checkbox"/> []
Operation	<input checked="" type="checkbox"/> [X]	Closure	<input type="checkbox"/> []

3. Classification of application:

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

4. Facility name: Tomoka Farms Road Landfill

5. DEP ID number: _____ County: Volusia

6. Facility location (main entrance): 1990 Tomoka Farms Road Daytona Beach

7. Location coordinates:

Section: 4 Township: 16S Range: 32E
UTMs: Zone _____ km E _____ km N
Latitude: 29 ° 08 ' 10 " Longitude: 81 ° 06 ' 06 "

8. Applicant name (operating authority): Volusia County Solid Waste Services

Mailing address: 3151 East State Road 44 DeLand FL 32724
Street or P.O. Box City State Zip

Contact person: James L. Griffin Telephone: (904) 943-7889

Title: Director of Solid Waste Services

9. Authorized agent/Consultant: SCS Engineers
Mailing address: 555 West Granada Blvd. Suite F4 Ormond Beach FL 32174
Street or P.O. Box City State Zip
Contact person: Mr. Lee Powell Telephone: (904) 673-6730
Title: Project Manager
10. Landowner (if different than applicant): Same
Mailing address: _____
Street or P.O. Box City State Zip
Contact person: _____ Telephone: (____) _____
11. Cities, towns and areas to be served: Volusia County
12. Population to be served:
Current: 410,855 Five-Year Projection: 450,077
13. Volume of solid waste to be received: 1600 yds³/day tons/day gallons/day
14. Date site will be ready to be inspected for completion: Currently In Service
15. Estimated life of facility: five years
16. Estimated costs:
Total Construction: \$ N/A Closing Costs: \$ 2,530,870
17. Anticipated construction starting and completion dates:
From: N/A To: N/A

B. DISPOSAL FACILITY GENERAL INFORMATION

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

The existing Class I cell is a high rise landfill serving all of Volusia County. The side slopes are 5:1 to 6:1. The facility also includes a household hazardous waste facility, a tire and white goods facility, a yard trash facility, and a construction and demolition debris facility. The County operates a lime stabilization facility at the site to treat municipal sludge.

2. Facility site supervisor: Gene Palmatier

Title: Supervisor 4

Telephone: (904) 947-2952

3. Disposal area: Total 160 acres; Used 100 acres; Available 60 acres

4. Weighing scales used: Yes ☒ No ☐

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

6. Charge for waste received: \$/yds³ 25 \$/ton

7. Surrounding land use, zoning:

Residential ☐
Agricultural ☒
Commercial ☐

Industrial ☐
None ☐
Other ☐

8. Types of waste received:

Residential ☒
Commercial ☒
Incinerator/WTE ash ☒
Treated biohazardous ☐
Water treatment sludge ☒
Air treatment sludge ☐
Agricultural ☒
Asbestos ☒
Other ☐

C & D debris ☒
Shredded/cut tires ☒
Yard trash ☒
Septic tank ☐
Industrial ☒
Industrial sludge ☒ only TCLP
Domestic sludge ☒

9. Salvaging permitted: Yes ☐ No ☒

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

11. Spotters: Yes ☒ No ☐ Number of spotters used: One at each pit

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: seven days per week

15. Hours of operation: M-F 7AM to 5:30 PM, SS 8 AM to 2 PM

16. Days Working Face covered: seven

17. Elevation of water table: 26 Ft. NGVD

18. Number of monitoring wells: 48

19. Number of surface monitoring points: 8

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

21. Leachate control method - liner type:

Natural soils	<input checked="" type="checkbox"/>	Double geomembrane	<input type="checkbox"/>
Single clay liner	<input type="checkbox"/>	Geomembrane & composite	<input type="checkbox"/>
Single geomembrane	<input checked="" 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 type="checkbox"/>	Sand layer	<input type="checkbox"/>
Geonets	<input type="checkbox"/>	Gravel layer	<input type="checkbox"/>
Well points	<input type="checkbox"/>	Interceptor trench	<input checked="" type="checkbox"/>
Perimeter ditch	<input type="checkbox"/>	None	<input type="checkbox"/>
Other	<input type="checkbox"/>		

23. Leachate storage method:

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

24. Leachate treatment method:

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

25. Leachate disposal method:

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

26. For leachate discharged to surface waters:
 Name and Class of receiving water: Headwaters of the Tomoka River

27. Storm Water:
 Collected: Yes ☒ No ☐ Type of treatment: Detention and natural treatment
 Name and Class of receiving water: Headwaters of the Tomoka River

28. Management and Storage of Surface Waters (MSSW) Permit number or status: MS64-218726

C. MATERIALS RECOVERY / VOLUME REDUCTION FACILITY GENERAL INFORMATION N/A

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

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: _____ yds³/day _____ tons/day _____ gallons/day

12. Maximum processing rate: _____ yds³/day _____ tons/day _____ gallons/day

13. Charge for waste received: _____

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

Incinerator	<input type="checkbox"/>	Composting	<input type="checkbox"/>
Pulverizer/shredder	<input type="checkbox"/>	Materials recovery	<input type="checkbox"/>
Compactor/baling	<input type="checkbox"/>	Energy recovery	<input type="checkbox"/>
Sludge concentration	<input type="checkbox"/>	Pyrolysis	<input type="checkbox"/>
Other	<input type="checkbox"/>		

15. Materials recovered, tons/week:

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

16. Energy recovery, in units shown:

_____ High pressure steam, lb/hr	_____ Chilled water, gal/hr
_____ Low pressure steam, lb/hr	_____ Oil, gal/hr
_____ Electricity, kw/hr	_____ Oil, BTU/hr
_____ Gas, ft ³ /hr	_____ Gas, BTU/hr
_____ Other:	

17. Process water management:
Recycled: Yes ☐ No ☐
Treatment method used: _____
Discharged to: Surface water ☐ Underground ☐ Other ☐
Name and Class of receiving water: _____
18. Storm Water:
Collected: Yes ☐ No ☐ Type of treatment: _____
Name and Class of receiving water: _____
19. MSSW 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>S</u>				1. Six copies, at minimum, of the completed application form, all supporting data and reports; (62-701.320(5) (a), FAC)
<u>S</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>S</u>	<u>Letter</u>			3. A letter of transmittal to the Department; (62-701.320(7) (a), FAC)
<u>S</u>	<u>Application</u>			4. A completed application form dated and signed by the applicant; (62-701.320(7) (b), FAC)
<u>S</u>	<u>Separate Cover</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>S</u>	<u>Report</u>			6. An engineering report addressing the requirements of this rule and with the following format: a cover sheet, text printed on 8 1/2 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>July 91</u>		<u>N/C</u>	7. Operation Plan; (62-701.320(7) (e)1, FAC)
	<u>July 91</u>		<u>N/C</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; (62-701.320(7) (f), FAC)
	<u>Sheet 1/6</u>		<u>N/C</u>	a. A regional map or plan with the project location;
	<u>Sheet 2/14</u>		<u>N/C</u>	b. A vicinity map or aerial photograph no more than 1 year old;
<u>S</u>	<u>Separate Cover</u>			c. A site plan showing all property boundaries certified by a registered Florida land surveyor;
			<u>N/C</u>	d. Other necessary details to support the engineering report.
			<u>N/C</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>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>		
<u>S</u>	<u>Report p1</u>	<u> </u>	<u> </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>S</u>	<u>Report p1</u>	<u> </u>	<u> </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>S</u>	<u>Separate Cover</u>	<u> </u>	<u> </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> </u>	<u>N/A</u>	<u> </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)

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>	
E.	LANDFILL PERMIT GENERAL REQUIREMENTS (62-701.330, FAC)			
	<u>Sheet 2/14</u>		<u>N/C</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>S</u>	<u>Exhibit I</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)
				3. Plot plan with a scale not greater than 200 feet to the inch showing; (62-701.330(4) (c), FAC)
	<u>Sheet 4/6</u>		<u>N/C</u>	a. Dimensions;
	<u>Monitoring Plan</u>		<u>N/C</u>	b. Locations of proposed and existing water quality monitoring wells;
	<u>Gomberg 1992</u>		<u>N/C</u>	c. Locations of soil borings;
	<u>Sheet 4/6</u>		<u>N/C</u>	d. Proposed plan of trenching or disposal areas;
	<u>Sheet 5/6</u>		<u>N/C</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>Sheet 4/6</u>		<u>N/C</u>	f. Any previously filled waste disposal area;
	<u>Sheet 3/14</u>		<u>N/C</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>Sheet 3/6</u>		<u>N/C</u>	a. Proposed fill areas;
	<u>Sheet 4/14</u>		<u>N/C</u>	b. Borrow areas;
	<u>Sheet 4/6</u>		<u>N/C</u>	c. Access roads;
	<u>Sheet 4/6</u>		<u>N/C</u>	d. Grades required for proper drainage;
	<u>Sheet 4/6</u>		<u>N/C</u>	e. Cross sections of lifts;
	<u>Sheet 5/6</u>		<u>N/C</u>	f. Special drainage devices if necessary;
	<u>Sheet 3/14</u>		<u>N/C</u>	g. Fencing;
	<u>Sheet 3/14</u>		<u>N/C</u>	h. Equipment facilities.

Note: Drawings are Briley Wild and Assoc. Operation Permit Application Drawings, P-378 dated 5/28/91, and Tomoka Farms Road Landfill Expansion P-401 dated 8/12/92

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>	
				5. A report on the landfill describing the following; (62-701.330(4) (e), FAC)
<u>S</u>	<u>Report p1</u>	<u> </u>	<u> </u>	a. The current and projected population and area to be served by the proposed site;
<u>S</u>	<u>Report p2</u>	<u> </u>	<u> </u>	b. The anticipated type, annual quantity, and source of solid waste, expressed in tons;
<u>S</u>	<u>Report p2</u>	<u> </u>	<u> </u>	c. The anticipated facility life;
<u>S</u>	<u>Report p2</u>	<u> </u>	<u> </u>	d. The source and type of cover material used for the landfill.
<u>S</u>	<u>Report p2</u>	<u> </u>	<u> </u>	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)
<u> </u>	<u> </u>	<u> </u>	<u>N/C</u>	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)				
<u>S</u>	<u>Exhibit II</u>	<u> </u>	<u> </u>	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)
<u>S</u>	<u>Report p 2</u>	<u> </u>	<u> </u>	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)
<u>S</u>	<u>Report p2</u>	<u> </u>	<u> </u>	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)

S	LOCATION	N/A	N/C
G. LANDFILL CONSTRUCTION REQUIREMENTS (62-701.400, FAC)			
			N/C
			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)
		N/A	(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;
		N/A	(2) Document foundation is adequate to prevent liner failure;
		N/A	(3) Constructed so bottom liner will not be adversely impacted by fluctuations of the ground water;
		N/A	(4) Designed to resist hydrostatic uplift if bottom liner located below seasonal high ground water table;
		N/A	(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)
		N/A	(1) Upper geomembrane thickness and properties;
		N/A	(2) Design leachate head for primary LCRS including leachate recirculation if appropriate;
		N/A	(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)
		N/A	(1) Upper and lower geomembrane thicknesses and properties;
		N/A	(2) Design leachate head for primary LCRS to limit the head to one foot above the liner;
		N/A	(3) Lower geomembrane sub-base design;

S	LOCATION	N/A	N/C
		N/A	
		N/A	
		N/A	
		N/A	
		N/A	
		N/A	
		N/A	
		N/A	
		N/A	

- (4) Leak detection and secondary leachate collection system minimum design criteria ($k \geq 1$ cm/sec, head on lower liner ≤ 1 inch, head not to exceed thickness of drainage layer);
- 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 specifications including handling and placement, conformance testing, stacking and joining, repair, and placement of soil materials;

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- f. Standards for soil components; (62-701.400(3) (f), FAC)
 - (1) Description of construction procedures including overexcavation 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.
- Leachate collection and removal system (LCRS); (62-701.400(4), FAC)
- a. The primary and secondary LCRS requirements; (62-701.400(4) (a), FAC)
 - (1) Constructed of materials chemically resistant to the waste and leachate;
 - (2) Have sufficient mechanical properties to prevent collapse under pressure;

S	LOCATION	N/A	N/C
		N/A	
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		N/A	
		N/A	

- (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 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.

S	LOCATION	N/A	N/C
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		N/A	
		N/A	

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 ≥ 1 cm/sec;
 - (c) Lower geomembrane placed on subbase ≥ 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;

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- (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 overflow prevention system such as level sensors, gauges, alarms and shutoff controls to prevent overfilling;
 - (7) Inspections, corrective action and reporting requirements;
 - (a) Overflow 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 overflow prevention system such as level sensors, gauges, alarms and shutoff controls to prevent overfilling and provide for weekly inspections;

S	LOCATION	N/A	N/C
		N/A	
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		N/A	
		N/A	
		N/A	
S	Report p3		
S	Report p3		

- (4) Inspection reports available for department review.
- d. Schedule provided for routine maintenance of LCRS; (62-701.400(6) (e), FAC)
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;

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S	LOCATION	N/A	N/C
H. HYDROGEOLOGICAL INVESTIGATION REQUIREMENTS (62-701.410, FAC)			
			1. Submit a hydrogeological investigation and site report including at least the following information;
	See Gomberg		a. Regional and site specific geology and hydrogeology;
	May 1992 "Tomoka		b. Direction and rate of ground water and surface water flow including seasonal variations;
	Landfill		c. Background quality of ground water and surface water;
	Hydrogeologic		d. Any on-site hydraulic connections between aquifers;
	Summary and		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;
	Groundwater Mon-		f. Site topography and soil characteristics;
	itoring Plan		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.

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>	
I. GEOTECHNICAL INVESTIGATION REQUIREMENTS (62-701.420, FAC)				
				1. Submit a geotechnical site investigation report defining the engineering properties of the site including at least the following:
<u>See July 30 1990</u>		<u>N/C</u>		a. Description of subsurface conditions including soil stratigraphy and ground water table conditions;
<u>report by Bectol</u>		<u>N/C</u>		b. Investigate for the presence of muck, previously filled areas, soft ground, lineaments and sink holes;
<u>Engineering and</u>		<u>N/C</u>		c. Estimates of average and maximum high water table across the site;
<u>Testing, included</u>		<u>N/C</u>		d. Foundation analysis including;
<u>with July 1990</u>		<u>N/C</u>		(1) Foundation bearing capacity analysis;
<u>application for a</u>		<u>N/C</u>		(2) Total and differential subgrade settlement analysis;
<u>modification of</u>		<u>N/C</u>		(3) Slope stability analysis;
<u>existing permit to</u>		<u>N/C</u>		e. Description of methods used in the investigation and includes soil boring logs, laboratory results, analytical calculations, cross sections, interpretations and conclusions;
<u>allow vertical ex-</u>		<u>N/C</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>pansion</u>		<u>N/C</u>		2. Report signed, sealed and dated by PE or PG.

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>		
J. VERTICAL EXPANSION OF LANDFILLS (62-701.430, FAC)					
		<u>N/A</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>N/A</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>N/A</u>		3.	Provide foundation and settlement analysis for the vertical expansion;
		<u>N/A</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>N/A</u>		5.	Minimum stability safety factor of 1.5 for the lining system component interface stability and deep stability;
		<u>N/A</u>		6.	Provide documentation to show the surface water management system will not be adversely affected by the vertical expansion;
		<u>N/A</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>S</u>	<u>Report p4</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)
	See July 1991			2.	Provide a landfill operation plan including procedures for: (62-701.500(2), FAC)
	<u>Operation Plan p2</u>		<u>N/C</u>	a.	Designating responsible operating and maintenance personnel;
	<u>P 2</u>		<u>N/C</u>	b.	Contingency operations for emergencies;
	<u>P 2</u>		<u>N/C</u>	c.	Controlling types of waste received at the landfill;
	<u>P3</u>		<u>N/C</u>	d.	Weighing incoming waste;
	<u>P 3</u>		<u>N/C</u>	e.	Vehicle traffic control and unloading;
	<u>P4</u>		<u>N/C</u>	f.	Method and sequence of filling waste;
	<u>P4</u>		<u>N/C</u>	g.	Waste compaction and application of cover;
	<u>P4</u>		<u>N/C</u>	h.	Operations of gas, leachate, and stormwater controls;
	<u>P5</u>		<u>N/C</u>	i.	Water quality monitoring.

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>	
<u>S</u>	<u>Report p4</u>	<u> </u>	<u> </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>S</u>	<u>Report p4</u>	<u> </u>	<u> </u>	4. Describe the waste records that will be compiled monthly and provided to the Department quarterly; (62-701.500(4), FAC)
<u>S</u>	<u>Report p4</u>	<u> </u>	<u> </u>	5. Describe methods of access control; (62-701.500(5), FAC)
<u>S</u>	<u>Report p4</u>	<u> </u>	<u> </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)
<u> </u>	<u> </u>	<u> </u>	<u> </u>	7. Describe procedures for spreading and compacting waste at the landfill that include; (62-701.500(7), FAC)
<u> </u>	<u> </u>	<u> </u>	<u>N/C</u>	a. Waste layer thickness and compaction frequencies;
<u> </u>	<u> </u>	<u>N/A</u>	<u> </u>	b. Special considerations for first layer of waste placed above liner and leachate collection system;
<u> </u>	<u> </u>	<u> </u>	<u>N/C</u>	c. Slopes of cell working face and side grades above land surface, planned lift depths during operation;
<u> </u>	<u> </u>	<u> </u>	<u>N/C</u>	d. Maximum width of working face;
<u> </u>	<u> </u>	<u> </u>	<u>N/C</u>	e. Description of type of initial cover to be used at the facility that controls:
<u> </u>	<u> </u>	<u> </u>	<u>N/C</u>	(1) Disease vector breeding/animal attraction
<u> </u>	<u> </u>	<u> </u>	<u>N/C</u>	(2) Fires
<u> </u>	<u> </u>	<u> </u>	<u>N/C</u>	(3) Odors
<u> </u>	<u> </u>	<u> </u>	<u>N/C</u>	(4) Blowing litter
<u> </u>	<u> </u>	<u> </u>	<u>N/C</u>	(5) Moisture infiltration
<u> </u>	<u> </u>	<u> </u>	<u>N/C</u>	f. Procedures for applying initial cover including minimum cover frequencies;
<u> </u>	<u> </u>	<u> </u>	<u>N/C</u>	g. Procedures for applying intermediate cover;
<u> </u>	<u> </u>	<u> </u>	<u>N/C</u>	h. Time frames for applying final cover;
<u> </u>	<u> </u>	<u> </u>	<u>N/C</u>	i. Description of litter policing methods;
<u> </u>	<u> </u>	<u> </u>	<u>N/C</u>	j. Erosion control procedures.

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>	
				8. Describe operational procedures for leachate management including; (62-701.500(8), FAC)
		<u>N/A</u>		a. Leachate level monitoring, sampling, analysis and data results submitted to the Department;
		<u>N/A</u>		b. Operation and maintenance of leachate collection and removal system, and treatment as required;
		<u>N/A</u>		c. Procedures for managing leachate if it becomes regulated as a hazardous waste;
		<u>N/A</u>		d. Agreements for off-site discharge and treatment of leachate;
		<u>N/A</u>		e. Contingency plan for managing leachate during emergencies or equipment problems;
		<u>N/A</u>		f. Procedures for recording quantities of leachate generated in gal/day;
		<u>N/A</u>		g. Procedures for comparing precipitation experienced at the landfill with leachate generation rates.
<u>S</u>	<u>Report p4</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>S</u>	<u>Report p4</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>S</u>	<u>Report P5</u>			a. Sufficient equipment for excavating, spreading, compacting and covering waste;
<u>S</u>	<u>Report p5</u>			b. Reserve equipment or arrangements to obtain additional equipment within 24 hours of breakdown;
<u>S</u>	<u>Report p5</u>			c. Communications equipment;
<u>S</u>	<u>Report p5</u>			d. Personnel shelter and sanitary facilities, first aid equipment;
			<u>N/C</u>	e. Dust control methods;
			<u>N/C</u>	f. Fire protection capabilities and procedures for notifying local fire department authorities in emergencies;
			<u>N/C</u>	g. Litter control devices;
			<u>N/C</u>	h. Signs indicating operating authority, traffic flow, hours of operation, disposal restrictions.

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>		
<u>S</u>	<u>Report p5</u>	<u> </u>	<u> </u>	12.	Provide a description 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>S</u>	<u>Report p5</u>	<u> </u>	<u> </u>	a.	Records used for developing permit applications and supplemental information maintained for the design period of the landfill;
<u>S</u>	<u>Report p5</u>	<u> </u>	<u> </u>	b.	Monitoring information, calibration and maintenance records, copies of reports required by permit maintained for at least 10 years;
<u>S</u>	<u>Report p5</u>	<u> </u>	<u> </u>	c.	Background water quality records shall be maintained for the design period of the landfill;
<u>S</u>	<u>Report p5</u>	<u> </u>	<u> </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.

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>	
L.	WATER QUALITY AND LEACHATE MONITORING REQUIREMENTS (62-701.510, FAC)			
			<u>N/C</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>N/C</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>N/C</u>	b. All sampling and analysis performed by organizations having Department approved Comprehensive Quality Assurance Plans; (62-701.510(2) (b), FAC)
				c. Ground water monitoring requirements; (62-701.510(3), FAC)
			<u>N/C</u>	(1) Detection wells located downgradient from and within 50 feet of disposal units;
			<u>N/C</u>	(2) Downgradient compliance wells as required;
			<u>N/C</u>	(3) Background wells screened in all aquifers below the landfill that may be affected by the landfill;
			<u>N/C</u>	(4) Location information for each monitoring well;
			<u>N/C</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>N/C</u>	(6) Well screen locations properly selected;
			<u>N/C</u>	(7) Procedures for properly abandoning monitoring wells;
			<u>N/C</u>	(8) Detailed description of detection sensors if proposed.
				d. Surface water monitoring requirements; (62-701.510(4), FAC)
			<u>N/C</u>	(1) Location of and justification for all proposed surface water monitoring points;
			<u>N/C</u>	(2) Each monitoring location to be marked and its position determined by a registered Florida land surveyor;
			<u>N/C</u>	e. Leachate sampling locations proposed; (62-701.510(5), FAC)

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>
<u> </u>	<u> </u>	<u> </u>	<u>N/C</u>
<u> </u>	<u> </u>	<u> </u>	<u>N/C</u>
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<u> </u>	<u> </u>	<u> </u>	<u>N/C</u>
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<u> </u>	<u> </u>	<u> </u>	<u>N/C</u>
<u> </u>	<u> </u>	<u> </u>	<u>N/C</u>
<u> </u>	<u> </u>	<u> </u>	<u>N/C</u>
<u> </u>	<u> </u>	<u> </u>	<u>N/C</u>

- 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 as 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.

S	LOCATION	N/A	N/C
M. SPECIAL WASTE HANDLING REQUIREMENTS (62-701.520, FAC)			
		N/A	1. Describe procedures for managing motor vehicles; (62-701.520(1), FAC)
		N/A	2. Describe procedures for landfilling shredded waste; (62-701.520(3), FAC)
S	Report p5		3. Describe procedures for asbestos waste disposal; (62-701.520(4), FAC)
S	Report p5		4. Describe procedures for contaminated soil disposal; (62-701.520(5), FAC)
N. LANDFILL FINAL CLOSURE REQUIREMENTS (62-701.600, FAC)			
		N/A	1. Closure schedule requirements; (62-701.600(2), FAC)
		N/A	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;
		N/A	b. Notice to user requirements within 120 days of final receipt of wastes;
		N/A	c. Notice to public requirements within 10 days of final receipt of wastes.
			2. Closure permit general requirements; (62-701.600(3), FAC)
S	Report p6		a. Application submitted to Department at least 90 days prior to final receipt of wastes;
			b. Closure plan shall include the following;
		N/A	(1) Closure report;
		N/A	(2) Closure design plan;
		N/A	(3) Closure operation plan;
		N/A	(4) Closure procedures;
		N/A	(5) Plan for long term care;
		N/A	(6) A demonstration that proof of financial responsibility for long term care will be provided.

S	LOCATION	N/A	N/C	
O. CLOSURE PROCEDURES (62-701.610, FAC)				
		N/A		1. Survey monuments; (62-701.610(2), FAC)
		N/A		2. Final survey report; (62-701.610(3), FAC)
		N/A		3. Certification of closure construction completion; (62-701.610(4), FAC)
		N/A		4. Declaration to the public; (62-701.610(5), FAC)
		N/A		5. Official date of closing; (62-701.610(6), FAC)
		N/A		6. Use of closed landfill areas; (62-701.610(7), FAC)
P. LONG TERM CARE REQUIREMENTS (62-701.620, FAC)				
			N/C	1. Right of property access requirements; (62-701.620(4), FAC)
			N/C	2. Successors of interest requirements; (62-701.620(5), FAC)
			N/C	3. Requirements for replacement of monitoring devices; (62-701.620(4), FAC)
Q. FINANCIAL RESPONSIBILITY REQUIREMENTS (62-701.630, FAC)				
			N/C	1. Provide cost estimates for closure costs and long term care 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), FAC)
			N/C	2. Describe procedures for providing annual cost adjustments to the Department based on inflation and changes in the closure and long-term care plans; (62-701.630(4), FAC)
			N/C	3. Describe funding mechanisms for providing proof of financial responsibility and include appropriate financial responsibility forms; (62-701.630(5)&(6), FAC)
R. CLOSURE OF EXISTING LANDFILLS (62-701.640, FAC)				
		N/A		1. Demonstrate that facility does not pose a bird hazard to aircraft as specified in Rule 62-701.320(12)(b), FAC.
		N/A		2. Demonstrate 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.

S	LOCATION	N/A	N/C	
		N/A		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.
		N/A		4. Request for extension of closure criteria as specified in Rule 62-701.420(1)(c), FAC.
		N/A		a. Demonstration of no alternative disposal capacity.
		N/A		b. Demonstration of no threat to human health or the environment.
S. MATERIALS RECOVERY FACILITY REQUIREMENTS (62-701.700, FAC)				
		N/A		1. Proof of posting a performance bond payable to the Department to cover closing costs, if required; (62-701.700(4), FAC)
		N/A		2. Materials recovery facility requirements; (62-701.700, FAC)
		N/A		a. Submit information required in Rule 62-701.320, FAC
		N/A		b. Submit an engineering report including the following:
		N/A		(1) Description of the solid waste proposed to be collected, stored, processed or disposed;
		N/A		(2) Projection with assumptions for waste types and quantities expected in future years;
		N/A		(3) Description of operation and functions of all processing equipment with design criteria and expected performance;
		N/A		(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;
		N/A		(5) Description of loading, unloading, and processing areas;
		N/A		(6) Identification and capacity of temporary on-site storage areas for materials handled and provisions for solid waste and leachate containment;
		N/A		(7) Identification of potential ground water and surface water contamination;

S	LOCATION	N/A	N/C
		N/A	
		N/A	
		N/A	
		N/A	
		N/A	
		N/A	
		N/A	
		N/A	

- (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 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 Volusia County is aware that statements made in this form and attached information are an application for an Operating Permit from the Florida Department of Environmental Protection 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

James L. Griffin Director of Solid Waste Services
Name and Title

Date: 7-1-96

Attach a 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

Lee A. Powell
Name and Title (please type)

35992
Florida Registration Number
(please affix seal)

SCS Engineers, 555 West Granada Boulevard, Suite E4
Mailing Address

Ormond Beach, FL 32174
City, State, Zip Code

(904) 673 - 6730
Telephone Number

Date: July 96

APPLICATION REPORT

A. GENERAL INFORMATION

Provided on the application form.

B. DISPOSAL FACILITY GENERAL INFORMATION

Provided on the application form.

C. MATERIALS RECOVERY/VOLUME REDUCTION FACILITY GENERAL INFORMATION

Not Applicable

D. SOLID WASTE MANAGEMENT FACILITY PERMIT GENERAL REQUIREMENTS

The Tomoka Farms Road Landfill plays a major part in Volusia County's (County) achievement of its recycling goals. The white goods facility, the tire facility, the construction and demolition debris facility, the yard waste processing facility, and the household hazardous waste facility all reduce the quantity of material placed in the Class I landfill. The municipal sludge lime stabilization facility also reduces the quantity of material being landfilled. The site is also used for educational tours, which further encourage recycling.

There are no enforcement actions against the County for operations at the Tomoka Farms Road Landfill. The County is working with the Florida Department of Environmental Protection (FDEP) on the investigation of vinyl chloride reported in monitor wells in the southwest corner of the old landfill. The County is implementing an approved Remedial Action Plan in response to reported nitrate in the ground water at the County's Plymouth Avenue Landfill in DeLand, Florida.

E. LANDFILL PERMIT GENERAL REQUIREMENTS

E1. Sheet 2/6 of the drawings submitted in 1991 for the previous operating permit is a regional map showing zoning and land use within one mile of the landfill. Land use and zoning have not changed significantly since that drawing was prepared.

E2. A vicinity map showing airports within five miles of the landfill is attached as Exhibit I. Two airports are within this range: Daytona Beach and Spruce Creek private runway.

E3. There is no change to the permit application drawings dated May 28, 1991.

E4. There is no change to the permit application drawings dated May 28, 1991.

E5. The 1995 population of Volusia County, according to the Bureau of Economic and Business Research, was 402,970. Their projections for the years 2000 and 2005 are



442,397 and 480,800, respectively. From these numbers, the 1996 population and the year 2001 population projections are 410,855 and 450,077, respectively. In addition, the County also accepts waste from Flagler County.

The waste loading to the landfill is based on the service area population, the economic conditions, and the amount of waste reduction, waste diversion, and recycling that takes place. Using the County's January 1996 Inventory Update and the above population estimates and projections, the following quantities of solid waste are anticipated:

Type of Waste	Tons/Year 1996	Tons/Year 2001
Asbestos	35	39
Demolition	47,511	52,047
Garbage	296,049	324,311
Inert	74,723	81,856
Land Clearing	17	18
Sludge	32,160	35,230
Tires	1,547	1,695
Yard Trash	34,427	37,714
Special Waste	2,633	2,884
Total	489,102	535,794

At the present loading rate, the landfill has an anticipated life of approximately two years. When the new lined cell is opened, selected waste will be placed in the new landfill for the first lift to protect the liner. With the reduced loading to the existing landfill, the anticipated life of the current landfill area is extended to five years.

Cover material for the landfill is taken from on-site borrow pits.

E6. The County has contracted with Karr Environmental to provide sampling and analysis of ground and surface water at the Tomoka Landfill. Karr is certified for environmental analysis and drinking water analysis. They also have an approved quality assurance plan, #82472.

E7. Financial assurance for closure and long term care is submitted annually to the FDEP for review.

F. GENERAL CRITERIA FOR LANDFILLS

F1. As shown on Exhibit II, Flood Insurance Rate Map Panel 125155 0288E, revised June 4, 1990, shows that the landfill is outside the 100-year flood plain.

F2. The distance from the toe of slope to the nearest property line is 2,250 feet, measured from the northeast corner of the landfill.

F3. The landfill is located on 3,500 acres, and is well screened from public view. The

landfill is visible from I-4 where the power line easement crosses the highway, but trees have been planted to help screen the landfill from the view of passing motorists. The landfill is located half a mile from I-4 and more than a mile from Tomoka Farms Road.

G. LANDFILL CONSTRUCTION REQUIREMENTS

G1. The landfill is designed with terraces after every 20 feet of vertical rise. The County is constructing the terraces and installing final cover including a low permeability barrier layer on areas that reach final grade.

G2. The landfill has been constructed under previous permits and no change is proposed.

G3. The landfill has been constructed under previous permits and no change is proposed.

G4. There is no separate leachate collection or leachate recirculation.

G5. There are no leachate storage tanks.

G6. The landfill has been constructed under previous permits and no change is proposed.

G7. The landfill has been constructed under previous permits and no change is proposed.

G8. The surface water management system was constructed under permit number MS64-218726, issued March 11, 1993 and expiring February 5, 1998. No changes are proposed.

G9. At the present time, gas escapes through the daily and intermediate cover and from the working face. Two gas flares also assist in venting gas from the landfill. The County has proposed constructing an active gas recovery system at the landfill. The design of this system was submitted to the FDEP on June 25, 1996.

G10. Information on the proposed landfill gas recovery facilities was submitted to the FDEP on June 25, 1996.

G11. The landfill has been constructed under previous permits and no change is proposed.

H. HYDROGEOLOGICAL INVESTIGATION REQUIREMENTS

The landfill hydrogeology is described in Dr. David Gomberg's "Tomoka Landfill Hydrogeologic Summary and Groundwater Monitoring Plan", dated May 1992. The only known contamination on the site is the area adjacent to the southwest corner of the old landfill where vinyl chloride has been reported in monitoring well B-5.

I. GEOTECHNICAL INVESTIGATION REQUIREMENTS

A geotechnical report was prepared by Bechtol Engineering and Testing in July, 1990. This report was submitted to the FDEP with the Application for Modification of Existing Permit to Allow Vertical Expansion in July, 1990.

J. VERTICAL EXPANSION OF LANDFILLS

No vertical expansion is proposed.

K. LANDFILL OPERATION REQUIREMENTS

K1. The County always has at least one trained operator on the site when the landfill is open. The following County operators have completed the Solid Waste Landfill Operators Short School and meet the requirements of a certified landfill operator:

Gene Palmatier
Paul Ramias
Billy Bishop
Chuck Quinn
David Kelly
Chris Ellis
Hamp Arnold
Eric Hill
Greg Powers

K2. An Operation Plan dated July 1991 was submitted to the FDEP with the previous operating permit.

K3. All operations records are kept at the landfill site in the administration building in the office of the Environmental Specialist.

K4. The County submits an Inventory Update to the FDEP every six months. The Inventory Update provides information on the quantity and type of waste received at the site during the previous six months, along with other information about site operations.

K5. The site is surrounded by a security fence. Security personnel provide 24-hour security to prevent unauthorized access.

K6. Each day, the County randomly selects three incoming trucks for load checking. The selected trucks are directed to unload at a secure location near the working face. County personnel check the load for inappropriate material such as yard waste. When unauthorized material is found, the vehicle's owner is fined and a warning letter is issued.

K7. Site operations are described in the Operations Plan submitted with the previous operating permit application. The County uses on-site soil for daily cover. The County also uses "Black Magic", a proprietary bituminous mixture, for alternative daily cover. In the past, the County used prison inmates for collection of wind-blown litter. The County is currently using labor force personnel for this purpose.

K8. There is no separate leachate system at the landfill.

K9. The County monitors for landfill gas annually.

K10. The permitted stormwater system consists of vegetated sideslopes, terraces, collection manholes, downpipes, ditches, retention ponds and pumps. The County uses water from the retention ponds to irrigate the side slopes and terraces. This helps restore the capacity of the retention ponds and keeps the sideslope vegetation healthy. The County routinely inspects the manholes, pipes and pumps to assure that they are functioning properly.

K11. The County has adequate equipment to operate the landfill. The landfill has five landfill compactors, three excavators, twelve dozers, two graders, six wheel loaders, two draglines, ten dump trucks, one pan, one roller, one waterwagon, and numerous small vehicles. Additional equipment is available through other County agencies and from private contractors. Telephones are available at the scale house, the administration building, and at the maintenance building. The site foremen have cellular telephones in their trucks. This allows for good communication from the working face to the administration building. The spotters also have radios at the working face. Temporary shelter is provided at the working face for the spotters. Personnel and sanitary facilities are available at the maintenance building and at the administration building.

K12. The access road is paved to the toe of slope of the landfill. The paved road also serves the tire and white goods facility and the household hazardous waste facility. The County maintains all-weather access roads from the landfill toe of slope to the working face, and to the monitor wells, borrow areas, and other on-site facilities.

K13. The additional records described in 62-701.500(13), FAC are kept at the administration building and are available for FDEP review. An estimate of the remaining life of the facility is prepared every six months and is submitted to the FDEP with the Inventory Update.

L. WATER QUALITY AND LEACHATE MONITORING REQUIREMENTS

The Tomoka Farms Road Landfill Class I Ground Water Surface Water and Leachate Monitoring Plan Implementation Schedule, Modification to Permit SO64-198377 was approved by the FDEP on October 26, 1994. No changes are proposed.

M. SPECIAL WASTE HANDLING REQUIREMENTS

M1. Motor vehicles are not accepted for disposal at the Tomoka Farms Road Landfill.

M2. Waste is not shredded at the Tomoka Farms Road Landfill.

M3. Anyone wishing to dispose of asbestos at the Tomoka Farms Road Landfill must call 24 hours in advance to make arrangements. They must be an approved asbestos abatement firm, with a completed chain of custody. The firm delivering the asbestos is responsible for unloading the truck. The asbestos is placed by hand in a hole located near the working face and covered the same day. Protective clothing is worn by personnel handling asbestos. The County charges \$200 per ton for asbestos disposal.

M4. No contaminated soil is accepted for disposal at the Tomoka Farms Road Landfill unless it passes a Toxic Characteristic Leaching Procedure. Acceptable soils are used as daily cover.

N. LANDFILL FINAL CLOSURE REQUIREMENTS

The revised closure plan was submitted on August 23, 1991. This was modified on January 1, 1995 to include a geosynthetic clay liner as the low permeability barrier layer. No change is proposed. A closure permit application will be submitted at least 90 days prior to final receipt of wastes.

O. CLOSURE PROCEDURES

Closure procedures, including the final survey report, will be described in the closure permit application, to be submitted to the FDEP at least 90 days before waste is no longer accepted at the facility.

P. LONG TERM CARE REQUIREMENTS

Long term care requirements have been described in the annual cost estimate submitted to the FDEP. Long term care will be more fully described in the closure permit application, which will be submitted at least 90 days prior to final receipt of wastes.

Q. FINANCIAL RESPONSIBILITY REQUIREMENTS

No change is proposed.

R. CLOSURE OF EXISTING LANDFILLS

Not applicable.

S. MATERIALS RECOVERY FACILITY REQUIREMENTS

Not applicable.

ZONE C

Existing Class I Landfill

North



Scale: 1" = 500'

ZONE C

EXHIBIT II FLOOD INSURANCE RATE MAP
from Panel Number 125155 0288E
Federal Emergency Management Agency

Tomoka Farms Road Landfill Operating Permit Renewal Application