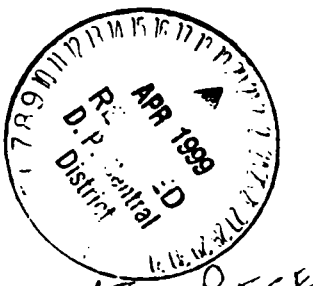
FILE COPY

APPLICATION FOR CONSTRUCTION AND OPERATION PERMIT

TOMOKA FARMS ROAD LANDFILL
CLASS III DISPOSAL FACILITY
VOLUSIA COUNTY, FLORIDA



FEE RECEIVED

Submitted to:

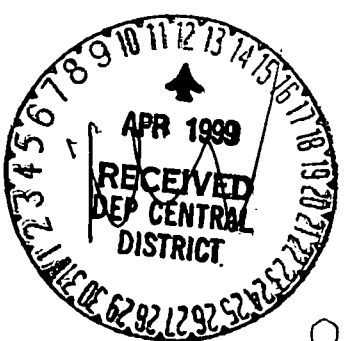
Florida Department of Environmental Protection
Central District
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803

Submitted by:

SCS ENGINEERS
555 West Granada Boulevard., Suite E4
Ormond Beach, Florida 32174
(904) 673-6730

For:

VOLUSIA COUNTY SOLID WASTE SERVICES
3151 East New York Avenue
DeLand, Florida 32724



FEE NOT RECEIVED

April 2, 1999
File No. 0995039.26

Environmental Consultants

555 W. Granada Blvd.
Suite E4
Ormond Beach, FL 32174

904 673-6730
FAX 904 673-9940

SCS ENGINEERS

April 9, 1999
File No. 0995039.26

James B. Bradner, P.E.
Florida Department of Environmental Protection
3319 Maguire Boulevard, Suite 232
Orlando, FL 32803

Subject: Volusia County Tomoka Farms Road Landfill
Class III Landfill Permit Application

Dear Mr. Bradner:

On behalf of Volusia County (County), SCS Engineers (SCS) is pleased to submit the enclosed permit application to construct a Class III disposal facility at the Tomoka Farms Road Landfill site. Enclosed please find four (4) copies of the above referenced application and a check for $6,000.00 for the permit application fee. We understand this application is for construction and will allow for operation of the facility for the duration of the permit.

Based on the classification of this landfill as a Class III landfill and that it will only receive those materials listed in Rule 62-701.340(3)(d), we request exemption from some of the requirements for liners and leachate controls. Based upon the types of waste received and the methods of controlling types of waste disposed of, no significant threat to the environment will result from such exemption. This proposed design is supported by the documentation included with this application.

The proposed permit will allow the conversion of the existing Construction and Demolition Debris facility into a Class III disposal facility. No modification to the existing Environmental Resource Permit (ERP) is required by this project.

If you have any questions regarding this application, please do not hesitate to give us a call.

Sincerely,

Lee A. Powell, P.E.
Project Manager
SCS ENGINEERS

Raymond J. Dever, P.E.
Vice President
SCS ENGINEERS

LAP/RJD:lap

cc: Bill Gilley, Volusia County (w/attachments)
Susan Gaze, Volusia County (w/attachments)

DEP Form # 62.701.900(1)
Form Title Solid Waste Management Facility Permit
Effective Date May 19, 1994

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

VOLUSIA COUNTY
TOMOKA FARMS ROAD LANDFILL

CLASS III FACILITY

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

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	[ ]	Ash Monofill	[ ]
Class II Landfill	[ ]	Asbestos Monofill	[ ]
Class III Landfill	[X]	Industrial Solid Waste	[ ]
Other	[ ]		

Volume Reduction [ ]

Incinerator	[ ]	Pulverizer/Shredder	[ ]
Composting	[ ]	Compactor/Baling Plant	[ ]
Materials Recovery	[ ]	Energy Recovery	[ ]
Other	[ ]		

2. Type of application:

Construction	[ ]	Construction/Operation	[X]
Operation	[ ]	Closure	[ ]

3. Classification of application:

New	[X]	Substantial Modification	[ ]
Renewal	[ ]	Minor Modification	[ ]

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: 10 Township: 16S Range: 32E

UTMs: Zone _____ _____km E _____km N

Latitude: 29 ° 07 ' 53 " Longitude: 81 ° 05 ' 31 "

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: B. W. Gilley Telephone: (904) 943-7889

Title: Director of Solid Waste Services

9. Authorized agent/Consultant: SCS Engineers

Mailing address: 555 West Granada Blvd. Suite E4 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: 434,512 Five-Year Projection: 480,800

13. Volume of solid waste to be received: 250 ~~yds³/day~~ tons/day ~~gallons/day~~

14. Date site will be ready to be inspected for completion: Currently in service as C&D facility

15. Estimated life of facility: Eleven years

16. Estimated costs:

Total Construction: $ N/A Closing Costs: $4,663,000

17. Anticipated construction starting and completion dates:

From: N/A To: Apr, 2010

B. **DISPOSAL FACILITY GENERAL INFORMATION**

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

Modify the existing C&D facility into a Class III facility.

2. Facility site supervisor: Gene Palmatier

Title: Supervisor 4 Telephone: (904) 947-2952

3. Disposal area: Total 81.4 acres; Used 81.4 acres; Available 81.4 acres

4. Weighing scales used: Yes [X] No [ ]

5. Security to prevent unauthorized use: Yes [X] No [ ]

6. Charge for waste received: _____ $/yds^3 30 $/ton

7. Surrounding land use, zoning:

Residential	[ ]	Industrial	[ ]
Agricultural	[X]	None	[ ]
Commercial	[ ]	Other	[ ]___

8. Types of waste received:

Residential	[X]	C & D debris	[X]
Commercial	[X]	Shredded/cut tires	[ ]
Incinerator/WTE ash	[ ]	Yard trash	[X]
Treated biohazardous	[ ]	Septic tank	[ ]
Water treatment sludge	[X]	Industrial	[X]
Air treatment sludge	[ ]	Industrial sludge	[ ]
Agricultural	[X]	Domestic sludge	[ ]
Asbestos	[ ]		
Other	[X] Class III Material Only		

9. Salvaging permitted: Yes [ ] No [X]

10. Attendant: Yes [X] No [ ] Trained operator: Yes [X] No [ ]

11. Spotters: Yes [X] No [ ] Number of spotters used: One at each pit

12. Site located in: Floodplain [ ] Wetlands [ ] Other [X] Upland

13. Property recorded as a Disposal Site in County Land Records: Yes [X] 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: 24 Ft NGVD

18. Number of monitoring wells: 48

19. Number of surface monitoring points: 8

20. Gas controls used: Yes [ ] No [X] Type controls: Active [ ] Passive [X]

Gas flaring: Yes [ ] No [ ] Gas recovery: Yes [ ] No [X]

21 Leachate control method - liner type:

Natural soils	[X]	Double geomembrane	[ ]
Single clay liner	[ ]	Geomembrane & composite	[ ]
Single geomembrane	[ ]	Double composite	[ ]
Single composite	[ ]	None	[ ]
Slurry wall	[ ]		
Other	[X]	Geosynthetic Clay Liner Cap	

22. Leachate collection method:

Collection pipes	[ ]	Sand layer	[ ]
Geonets	[ ]	Gravel layer	[ ]
Well points	[ ]	Interceptor trench	[ ]
Perimeter ditch	[ ]	None	[X]
Other	[ ]		

23. Leachate storage method:

Tanks	[ ]	Surface impoundments	[ ]
Other	[ ]		

24. Leachate treatment method:

Oxidation	[ ]	Chemical treatment	[ ]
Secondary	[ ]	Settling	[ ]
Advanced	[ ]	None	[X]
Other	[ ]		

25. Leachate disposal method:

Recirculated	[ ]	Pumped to WWTP	[ ]
Transported to WWTP	[ ]	Discharged to surface water	[ ]
Injection well	[ ]	Evaporation (ie: Perc Pond)	[ ]
Other	[ ]		

26. For leachate discharged to surface waters:

Name and Class of receiving water: _____

27. Storm Water:

Collected: Yes [X] No [ ] Type of treatment: Sand filtration

Name and Class of receiving water: On-Site Wetland

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: _____ yds^3/day tons/day gallons/day

12. Maximum processing rate: _____ yds^3/day tons/day gallons/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. 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)

S	LOCATION	N/A	N/C		
S				1.	Six copies, at minimum, of the completed application form, all supporting data and reports; (62-701.320(5) (a), FAC)
S				2.	Engineering and/or professional certification (signature, date and seal) provided on the applications and all engineering plans, reports and supporting information for the applicathon; (62-701.320(6), FAC)
S	Letter			3.	A letter of transmittal to the Department; (62-701.320(7) (a), FAC)
S	Application			4.	A completed application form dated and signed by the applicant; (62-701.320(7) (b), FAC)
S	Separate Cover			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)
S	Report			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)
S	Report			7.	Operation Plan; (62-701.320(7) (e)1, FAC)
S	Report			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)
			N/C		a. A regional map or plan with the project location;
			N/C		b. A vicinity map ~~or aerial photograph no more than 1 year old;~~
			N/C		c. A site plan showing all property boundaries certified by a registered Florida land surveyor;
			N/C		d. Other necessary details to support the engineering report.
			N/C	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)

____	_____	____	N/C	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)
____	_____	____	N/C	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)
S	Separate Cover	____	____	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)
____	_____	____	N/C	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)

S	Plans			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)
			N/C	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)
S	Plans				a. Dimensions;
S	Plans				b. Locations of proposed and existing water quality monitoring wells;
S	Plans				c. Locations of soil borings;
S	Plans				d. Proposed plan of trenching or disposal areas;
S	Plans				e. Cross sections showing original elevations and proposed final contours which shall be included either on the plot plan or on separate sheets;
S	Plans				f. Any previously filled waste disposal area;
			N/C		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)
S	Plans				a. Proposed fill areas;
			N/C		b. Borrow areas;
S	Plans				c. Access roads;
S	Plans				d. Grades required for proper drainage;
S	Plans				e. Cross sections of lifts;
S	Plans				f. Special drainage devices if necessary;
			N/C		g. Fencing;
			N/C		h. Equipment facilities.

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

			N/C	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)
S	Section F			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)
S	Section F			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)

S	Section G			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), F@C)
		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;

_____	_____	N/A	_____	(4) Leak detection and secondary leachate collection system minimum design criteria (k ▯ 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)
_____	_____	N/A	_____	(1) Field seam test methods to ensure all field seams are at least 90 percent of the yield strength for the lining material;
_____	_____	N/A	_____	(2) Design of 24-inch-thick protective layer above upper geomembrane liner;
_____	_____	N/A	_____	(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)
_____	_____	N/A	_____	(1) Definition and qualifications of the designer, manufacturer, installer, QA consultant and laboratory, and QA program;
_____	_____	N/A	_____	(2) Material specifications for geomembranes, geotextiles, geogrids, and geonets;
_____	_____	N/A	_____	(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;
_____	_____	N/A	_____	(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;
_____	_____	N/A	_____	(5) Geotextile and geogrid specifications including handling and placement, conformance testing, seams and overlaps, repair, and placement of soil materials;
_____	_____	N/A	_____	(6) Geonet specifications including handling and placement, conformance testing, stacking and joining, repair, and placement of soil materials;

_____	_____	N/A	_____	f. Standards for soil components; (62-701.400(3) (f), FAC)
_____	_____	N/A	_____	(1) Description of construction procedures including overexcavation and backfilling to preclude structural inconsistencies and procedures for placing and compacting soil component in layers;
_____	_____	N/A	_____	(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;
_____	_____	N/A	_____	(3) Procedures for testing in-situ soils to demonstrate they meet the specifications for soil liners;
_____	_____	N/A	_____	(4) Specifications for soil component of liner including at a minimum:
_____	_____	N/A	_____	(a) Allowable particle size distribution, Atterberg limits, shrinkage limit;
_____	_____	N/A	_____	(b) Placement moisture and dry density criteria;
_____	_____	N/A	_____	(c) Maximum laboratory-determined saturated hydraulic conductivity using simulated leachate;
_____	_____	N/A	_____	(d) Minimum thickness of soil liner;
_____	_____	N/A	_____	(e) Lift thickness;
_____	_____	N/A	_____	(f) Surface preparation (scarification);
_____	_____	N/A	_____	(g) Type and percentage of clay mineral within the soil component;
_____	_____	N/A	_____	(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)
_____	_____	N/A	_____	(1) Constructed of materials chemically resistant to the waste and leachate;
_____	_____	N/A	_____	(2) Have sufficient mechanical properties to prevent collapse under pressure;

____	____	N/A	____	(3) Have granular material or synthetic geotextile to prevent clogging;
____	____	N/A	____	(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)
____	____	N/A	____	(1) Bottom 12 inches having hydraulic conductivity ▯ 1 x 10^{-3} cm/sec;
____	____	N/A	____	(2) Total thickness of 24 inches of material chemically resistant to the waste and leachate;
____	____	N/A	____	(3) Bottom design to accommodate for predicted settlement;
____	____	N/A	____	(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)
____	____	N/A	____	a. Describe general procedures for recirculating leachate;
____	____	N/A	____	b. Describe procedures for controlling leachate runoff and minimizing mixing of leachate runoff with storm water;
____	____	N/A	____	c. Describe procedures for preventing perched water conditions and gas buildup;
____	____	N/A	____	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;
____	____	N/A	____	e. Describe methods of gas management to control odors and migration of methane;
____	____	N/A	____	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.

_____	_____	N/A	_____
_____	_____	N/A	_____
_____	_____	N/A	_____
_____	_____	N/A	_____
_____	_____	N/A	_____
_____	_____	N/A	_____
_____	_____	N/A	_____
_____	_____	N/A	_____
_____	_____	N/A	_____
_____	_____	N/A	_____
_____	_____	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 ▯ $1x10^{-5}$ 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;

_____	_____	N/A	_____
_____	_____	N/A	_____
_____	_____	N/A	_____
_____	_____	N/A	_____
_____	_____	N/A	_____
_____	_____	N/A	_____
_____	_____	N/A	_____
_____	_____	N/A	_____
_____	_____	N/A	_____
_____	_____	N/A	_____
_____	_____	N/A	_____
_____	_____	N/A	_____
_____	_____	N/A	_____
_____	_____	N/A	_____

(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;

____	____	N/A	____	(4) Inspection reports available for department review.
____	____	N/A	____	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)
____	____	N/A	____	a. Provide CQA Plan including;
____	____	N/A	____	(1) Specifications and construction requirements for liner system;
____	____	N/A	____	(2) Detailed description of quality control testing procedures and frequencies;
____	____	N/A	____	(3) Identification of supervising professional engineer;
____	____	N/A	____	(4) Identify responsibility and authority of all appropriate organizations and key personnel involved in the construction project;
____	____	N/A	____	(5) State qualifications of CQA professional engineer and support personnel;
____	____	N/A	____	(6) Description of CQA reporting forms and documents;
____	____	N/A	____	b. An independents laboratory experienced in the testing of geosynthetics to perform required testing;
				7. Soil Liner CQA (62-701.400(8) FAC)
____	____	N/A	____	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;
____	____	N/A	____	b. Description of field test section construction and test methods to be implemented prior to liner installation;
____	____	N/A	____	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)
S	Section G	____	____	a. Design of surface water management system to isolate surface water from waste filled areas and to control stormwater run-off;
S	Section G	____	____	b. Details of stormwater control design including retention ponds, detention ponds, and drainage ways;

				9.	Gas control systems; (62-701.400(10), FAC)
____	____	N/A	____		a. Design details for gas control system including collection pipes and vents, and passive venting or vacuum extraction details;
____	____	N/A	____		b. Documentation that the gas control system will not impact the liner or leachate control system;
____	____	N/A	____		c. Proposed methods of odor control including flaring designs in accordance with Chapter 62-210, FAC;
____	____	N/A	____		d. Description of a routine gas monitoring program to ensure gas control system is operating properly including:
____	____	N/A	____		(1) Location of monitoring points;
____	____	N/A	____		(2) Requirements for quarterly sampling of all monitoring points;
____	____	N/A	____		(3) Description of corrective measures to be completed within 60 days of detection of elevated levels of explosive gases;
____	____	N/A	____		e. Description of condensate collection and disposal methods.
				10.	Landfill gas recovery facilities; (62-701.400(11), FAC)
____	____	N/A	____		a. Information required in Rules 62-701.320(7) and 62-701.330(4), FAC supplied;
____	____	N/A	____		b. Information required in Rule 62-701.600(4), FAC supplied where relevant and practical;
____	____	N/A	____		c. Estimate of current and expected gas generation rates and description of condensate disposal methods provided;
____	____	N/A	____		d. Description of procedures for condensate sampling, analyzing and data reporting provided;
____	____	N/A	____		e. Closure plan provided describing methods to control gas after recovery facility ceases operation;
____	____	N/A	____		f. Performance bond provided to cover closure costs if not already included in other landfill closure costs.
____	____	N/A	____	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)

				1.	Submit a hydrogeological investigation and site report including at least the following information;
_____	_____	_____	N/C		a. Regional and site specific geology and hydrogeology;
_____	_____	_____	N/C		b. Direction and rate of ground water and surface water flow including seasonal variations;
_____	_____	_____	N/C		c. Background quality of ground water and surface water;
_____	_____	_____	N/C		d. Any on-site hydraulic connections between aquifers;
_____	_____	_____	N/C		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;
_____	_____	_____	N/C		f. Site topography and soil characteristics;
_____	_____	_____	N/C		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;
_____	_____	_____	N/C		h. Description of topography, soil types, and surface water drainage systems;
_____	_____	_____	N/C		I. An inventory of all public and private water wells within one mile of the landfill.
_____	_____	_____	N/C		j. Existing contaminated areas on landfill site.
_____	_____	_____	N/C	2.	Report signed, sealed and dated by PE or PG.

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:
_____	_____	_____	N/C		a. Description of subsurface conditions including soil stratigraphy and ground water table conditions;
_____	_____	_____	N/C		b. Investigate for the presence of muck, previously filled areas, soft ground, lineaments and sink holes;
_____	_____	_____	N/C		c. Estimates of average and maximum high water table across the site;
_____	_____	_____	N/C		d. Foundation analysis including;
_____	_____	_____	N/C		(1) Foundation bearing capacity analysis;
_____	_____	_____	N/C		(2) Total and differential subgrade settlement analysis;
_____	_____	_____	N/C		(3) Slope stability analysis;
_____	_____	_____	N/C		e. Description of methods used in the investigation and includes soil boring logs, laboratory results, analytical calculations, cross sections, interpretations and conclusions;
_____	_____	_____	N/C		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.
_____	_____	_____	N/C	2.	Report signed, sealed and dated by PE or PG.

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

____	____	N/A	____	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;
____	____	N/A	____	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;
____	____	N/A	____	3.	Provide foundation and settlement analysis for the vertical expansion;
____	____	N/A	____	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.
____	____	N/A	____	5.	Minimum stability safety factor of 1.5 for the lining system component interface stability and deep stability;
____	____	N/A	____	6.	Provide documentation to show the surface water management system will not be adversely affected by the vertical expansion;
____	____	N/A	____	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)

S	Section K	____	____	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)
S	Operation Plan	____	____		a. Designating responsible operating and maintenance personnel;
S	Operation Plan	____	____		b. Contingency operations for emergencies;
S	Operation Plan	____	____		c. Controlling types of waste received at the landfill;
S	Operation Plan	____	____		d. Weighing incoming waste;
S	Operation Plan	____	____		e. Vehicle traffic control and unloading;
S	Operation Plan	____	____		f. Method and sequence of filling waste;
S	Operation Plan	____	____		g. Waste compaction and application of cover;
S	Operation Plan	____	____		h. Operations of gas, leachate, and stormwater controls;
S	Operation Plan	____	____		i. Water quality monitoring.

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

				8.	Describe operational procedures for leachate management including; (62-701.500(8), FAC)
____	____	N/A	____		a. Leachate level monitoring, sampling, analysis and data results submitted to the Department;
____	____	N/A	____		b. Operation and maintenance of leachate collection and removal system, and treatment as required;
____	____	N/A	____		c. Procedures for managing leachate if it becomes regulated as a hazardous waste;
____	____	N/A	____		d. Agreements for off-site discharge and treatment of leachate;
____	____	N/A	____		e. Contingency plan for managing leachate during emergencies or equipment problems;
____	____	N/A	____		f. Procedures for recording quantities of leachate generated in gal/day;
____	____	N/A	____		g. Procedures for comparing precipitation experienced at the landfill with leachate generation rates.
S	Section K	____	____	9.	Describe routine gas monitoring program for the landfill as required by Rule 62-701.400(10), FAC; (62-701.500(9), FAC)
S	Section K	____	____	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)
S	Section K	____	____		a. Sufficient equipment for excavating, spreading, compacting and covering waste;
S	Section K	____	____		b. Reserve equipment or arrangements to obtain additional equipment within 24 hours of breakdown;
S	Section K	____	____		c. Communications equipment;
S	Section K	____	____		d. Personnel shelter and sanitary facilities, first aid equipment;
S	Section K	____	____		e. Dust control methods;
S	Section K	____	____		f. Fire protection capabilities and procedures for notifying local fire department authorities in emergencies;
S	Section K	____	____		g. Litter control devices;
S	Section K	____	____		h. Signs indicating operating authority, traffic flow, hours of operation, disposal restrictions.

S ____ Section K _____ _____ _____ 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)

S ____ Section K _____ _____ _____ 13. Additional record keeping and reporting requirements;
(62-701.500(13), FAC)

S ____ Section K _____ _____ _____ a. Records used for developing permit applications and supplemental information maintained for the design period of the landfill;

S ____ Section K _____ _____ _____ b. Monitoring information, calibration and maintenance records, copies of reports required by permit maintained for at least 10 years;

S ____ Section K _____ _____ _____ c. Background water quality records shall be maintained for the design period of the landfill;

S ____ Section K _____ _____ _____ 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)

____	_____	____	N/C	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;
____	_____	____	N/C		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)
____	_____	____	N/C		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)
____	_____	____	N/C		(1) Detection wells located downgradient from and within 50 feet of disposal units;
____	_____	____	N/C		(2) Downgradient compliance wells as required;
____	_____	____	N/C		(3) Background wells screened in all aquifers below the landfill that may be affected by the landfill;
____	_____	____	N/C		(4) Location information for each monitoring well;
____	_____	____	N/C		(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;
____	_____	____	N/C		(6) Well screen locations properly selected;
____	_____	____	N/C		(7) Procedures for properly abandoning monitoring wells;
____	_____	____	N/C		(8) Detailed description of detection sensors if proposed.
					d. Surface water monitoring requirements; (62-701.510(4), FAC)
____	_____	____	N/C		(1) Location of and justification for all proposed surface water monitoring points;
____	_____	____	N/C		(2) Each monitoring location to be marked and its position determined by a registered Florida land surveyor;
____	_____	N/A	____		e. Leachate sampling locations proposed; (62-701.510(5), FAC)

_____	_____	N/A	_____	f. Routine sampling frequency and requirements; (62-701.510(6), FAC)
_____	_____	N/A	_____	(1) Background ground water and surface water sampling and analysis requirements;
_____	_____	N/A	_____	(2) Leachate semi-annual and annual sampling and analysis requirements;
_____	_____	N/A	_____	(3) Detection well semi-annual sampling and analysis requirements;
_____	_____	N/A	_____	(4) Compliance well sampling and analysis as requirements;
_____	_____	N/A	_____	(5) Surface water sampling and analysis requirements;
_____	_____	N/A	_____	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)
_____	_____	_____	N/C	(1) Semi-annual report requirements;
_____	_____	_____	N/C	(2) Bi-annual report requirements signed, dated and sealed by PG or PE.

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)
_____	_____	N/A	_____	3.	Describe procedures for asbestos waste disposal; (62-701.520(4), FAC)
_____	_____	N/A	_____	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)
_____	_____	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)
_____	_____	N/A	_____		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.

3. Closure report requirements; (62-701.600(4), FAC)

_____	_____	N/A	_____	a. General information requirements;
_____	_____	N/A	_____	(1) Identification of landfill;
_____	_____	N/A	_____	(2) Location, description and vicinity map;
_____	_____	N/A	_____	(3) Total acres of disposal areas and landfill property;
_____	_____	N/A	_____	(4) Legal property description;
_____	_____	N/A	_____	(5) History of landfill;
_____	_____	N/A	_____	(6) Identification of types of waste disposed of at the landfill.
_____	_____	N/A	_____	b. Geotechnical investigation report and water quality monitoring plan required by Rule 62-701.330(4), FAC;
_____	_____	N/A	_____	c. Land use information report indicating: identification of adjacent landowners; zoning; present land uses; and roads, highways right-of-way, or easements.
_____	_____	N/A	_____	d. Report on actual or potential gas migration at landfills containing biodegradable wastes including detailed description of test and investigation methods used;
_____	_____	N/A	_____	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: (62-701.600(5), FAC)

_____	_____	N/A	_____	a. Plan sheet showing phases of site closing;
_____	_____	N/A	_____	b. Drawings showing existing topography and proposed final grades;
_____	_____	N/A	_____	c. Provisions to close units when they reach approved design dimensions;
_____	_____	N/A	_____	d. Final elevations before settlement;
_____	_____	N/A	_____	e. Side slope design including benches, terraces, down slope drainage ways, energy dissipators and discussion of expected precipitation effects;

____	____	N/A	____		f. Final cover installation plans including;
____	____	N/A	____		(1) CQA plan for installing and testing final cover;
____	____	N/A	____		(2) Schedule for installing final cover after final receipt of waste;
____	____	N/A	____		(3) Description of drought-resistant species to be used in the vegetative cover;
____	____	N/A	____		(4) Top gradient design to maximize runoff and minimize erosion;
____	____	N/A	____		(5) Provisions for cover material to be used for final cover maintenance.
					g. Final cover design requirements:
____	____	N/A	____		(1) Protective soil layer design;
____	____	N/A	____		(2) Barrier soil layer design;
____	____	N/A	____		(3) Erosion control vegetation;
____	____	N/A	____		(4) Geomembrane barrier layer design.
____	____	N/A	____		h. Proposed method of stormwater control;
____	____	N/A	____		i. Proposed method of access control;
____	____	N/A	____		j. Description of proposed final use of the closed landfill, if any;
				5.	Closure operation plan shall include: (62-701.600(6), FAC)
____	____	N/A	____		a. Detailed description of actions which will be taken to close the landfill;
____	____	N/A	____		b. Time schedule for completion of closing and long term care;
____	____	N/A	____		c. Describe proposed method for demonstrating financial responsibility;
____	____	N/A	____		d. Indicate any additional equipment and personnel needed to complete closure.
____	____	N/A	____		e. Development and implementation of the water quality monitoring plan required in Rule 62-701.510, FAC.
____	____	N/A	____		f. Development and implementation of routine gas monitoring program required in Rule 62-701.400(10)(c), FAC.
____	____	N/A	____	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)

____	____	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)

S	Section P	____	____	1.	Right of property access requirements; (62-701.620(4), FAC)
S	Section P	____	____	2.	Successors of interest requirements; (62-701.620(5), FAC)
S	Section P	____	____	3.	Requirements for replacement of monitoring devices; (62-701.620(4), FAC)

Q. FINANCIAL RESPONSIBILITY REQUIREMENTS (62-701.630, FAC)

S	Section Q	____	____	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)
S	Section Q	____	____	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)
S	Section Q	____	____	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.

_____	_____	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;

_____	_____	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 a Construction and 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

B. W. Gilley Director of Solid Waste Services
Name and Title

Date: 4/9/99

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

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

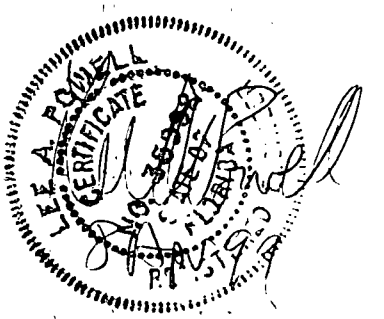
Lee A. Powell
Name and Title (please type)

Ormond Beach, FL 32174
City, State, Zip Code

35992
Florida Registration Number
(please affix seal)

(904) 673 - 6730
Telephone Number

Date: 8 Apr 99



CONTENTS

CONTENTS (continued)

CONTENTS (continued)

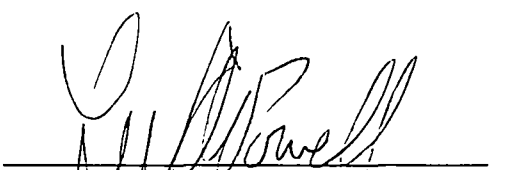
Attachments

TOMOKA FARMS ROAD LANDFILL CLASS III DISPOSAL FACILITY
CONSTRUCTION AND OPERATION PERMIT APPLICATION

This is to certify 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.

Contents of Engineering Report:

D	SOLID WASTE MANAGEMENT FACILITY GENERAL REQUIREMENTS
E	LANDFILL PERMIT GENERAL REQUIREMENTS
F	GENERAL CREITERIA FOR LANDFILLS
G	LANDFILL CONSTRUCTION REQUIREMENTS
H	HYDROGEOLOGICAL INVESTIGATION
I	SITE INVESTIGATION
J	VERTICAL EXPANSION OF LANDFILLS
K	LANDFILL OPERATIONS REQUIREMENTS
L	WATER QUALITY AND LEACHATE MONITORING REQUIREMENTS
M	SPECIAL WASTE HANDLING REQUIREMENTS
N	LANDFILL FINAL CLOSURE REQUIREMENTS
Q	FINANCIAL RESPONSIBILITY REQUIREMENTS
T	CERTIFICATION BY APPLICANT AND ENGINEER OR PUBLIC OFFICER



Lee A. Powell, P.E.
Florida Registration No. 35992

PART D

SOLID WASTE MANAGEMENT FACILITY GENERAL REQUIREMENTS

D.1 PERMIT PACKAGE

The permit package consists of:

- Transmittal Letter.
- Application Form.
- Engineers Certification Sheet.
- Engineering Report (containing supporting data, reports, and attachments).
- Review Fee Check.

Six copies of the completed permit package are being submitted to the Florida Department of Environmental Protection (FDEP).

D.2 ENGINEERS CERTIFICATION

The last page of the permit application form has been signed and sealed by the Engineer of Record. Also, a one page certification sheet has been signed and sealed by the Engineer of Record and is submitted as part of the permit package. The certification sheet outlines the contents of the engineering report.

D.3 TRANSMITTAL LETTER

The letter of transmittal is submitted as part of the permit package.

D.4 APPLICATION FORM

A completed application form is submitted as part of the permit package.

D.5 PERMIT REVIEW FEE

The permit fee, in accordance with Florida Administrative Code (F.A.C.) Section 62-4.050(4)(i), is enclosed as part of the permit package.

D.6 ENGINEERING REPORT

The engineering report is comprised of responses to the permit application form, and includes engineering plans, reports, supporting documents, and attachments.

D.7 OPERATIONS PLAN

Please see Part K.

D.8 CONTINGENCY PLAN

Please see Part K.

D.9 DRAWINGS

The Drawings are presented in Attachment D-1, including:

Sheet 1	Cover Sheet
Sheet 2	Land Use and Zoning Delineation
Sheet 3	Aerial Photo
Sheet 4	Existing Conditions Site Plan
Sheet 5	Final Grading Plan
Sheet 6	Sections
Sheet 7	Details

D.10 PROPERTY OWNERSHIP

Presented in Attachment D-2 is a document verifying property ownership.

D.11 RECYCLING GOALS

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 (C&D) 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.

During the 12-month period from July 1, 1994 to June 30, 1995, the Tomoka Farms Road Landfill facility recycled 4,032 tons of used tires, 33,481.17 tons of yard waste, 1,945.19 tons of roofing shingles, 883.74 tons of appliances, and 295.74 tons of scrap metal. The paint exchange program, conducted by the County at the landfill site, also assists by diverting paint from the waste stream and allowing it to be beneficially used.

D.12 ENFORCEMENT ACTION

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.

D.13 PROOF OF PUBLICATION

Once the FDEP deems the construction permit application complete, the County will advertise in a newspaper of general circulation. Proof of publication for the advertisement will be submitted to the FDEP upon advertisement.

D.14 AIRPORT SAFETY

Not applicable.

PART E

LANDFILL PERMIT GENERAL REQUIREMENTS

E.1 AERIAL MAP

The project drawings include an aerial photograph showing the area within one mile of the landfill. Land use and zoning within this area is also shown on the project drawings. There have been no significant changes to the site since the aerial was flown.

E.2 AIRPORT LOCATION MAP

A vicinity map showing airports within five miles of the landfill was attached as Exhibit 1 to the County's 1996 application for an operating permit for the Class I landfill. Two airports are within this range: Daytona Beach and Spruce Creek private runway.

E.3 PLOT PLAN

A plot plan and for the Facility site is presented in Attachment D-1. The property limit is approximately 3500 acres, and the Class III disposal area will be approximately 81.4 acres.

The plot plan includes the location of existing structures (i.e., groundwater monitoring wells, buildings, power poles, fences, etc.), and areas for disposal.

E.4 TOPOGRAPHIC MAP

An aerial topographic survey of the Facility site is provided in Attachment D-1, Sheet 4. Since the time the topographic survey was conducted, there have been no significant changes to the contours. The proposed final topography of the landfill is presented in Attachment D-1, Sheet 5. The final side slopes are designed not to exceed a 25 percent grade and the final top slopes are designed not to be less than a 5 percent.

E.5 LANDFILL REPORT

The Facility is located on an existing C&D landfill located at the County's Tomoka Farms Road Landfill site.

E.5.a Current and Projected Population

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 1999 population and the year 2004 population projections are 434,512 and 473,119, respectively.

E.5.b Type and Quantity of Solid Waste

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 Inventory Updates for 1997 and the above population estimates and projections, the anticipated quantities of solid waste are shown in Table E-1.

TABLE E-1. ANTICIPATED CLASS III WASTE LOADING

Type of Waste	Tons/Year 1999	Cu.Yd./Yr. 1999 *	Tons/Year 2004	Cu.Yd./Yr. 2004 *
Demolition	33,273	66,546	36,229	72,458
Inert	7,466	5,741	8,129	6,251
Land Clearing	1,478	6,718	1,609	7,313
Mixed (Mostly Yard Trash)	1,042	4,736	1,134	5,154
Yard Trash	44,285	201,275	48,220	219,160
Total Class III	87,543	285,016	95,322	310,336

*Based on 1000lb/CY for demolition, 2600lb/CY for inert, and 440lb/CY for remainder.

E.5.c Facility Life

The life for the Facility will be influenced by various factors, which include the actual disposal rates, types of materials disposed, amounts of cover material, in-place densities achieved at the landfill, and the actual final grades. At the projected loading rates, the landfill has an anticipated life of approximately eleven years.

E.5.d Cover Material

The soil used for intermediate and final cover systems will be taken from on-site borrow pits. This material is classified as a silty-sand

E.6 TESTING LABORATORY

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

E.7 FINANCIAL ASSURANCE

Part Q of this report contains a discussion on financial assurance.

PART F

GENERAL CRITERIA FOR LANDFILLS

F.1 FLOODPLAIN

Flood Insurance Rate Map Panel 125155 0289E, revised June 4, 1990, shows the project area in Zone C, an area of minimal flooding. The edge of Zone A, the area of the 100-year flood, is along the line identified on the project drawings as the edge of the wetland east of the project area. The proposed Class III landfill will be constructed no closer than 200 feet from the edge of the wetland, and will therefore be out of the zone of potential flooding.

F.2 PROPERTY BOUNDARY OFFSET

The distance from the toe of slope to the nearest property line is 1,000 feet, measured from the northeast corner of the landfill.

F.3 SCREENING

The Class III landfill is located on 3,500 acres, and is well screened from public view. The landfill is located almost a mile from I-4 and approximately three-fourths of a mile from Tomoka Farms Road.

PART G

LANDFILL CONSTRUCTION REQUIREMENTS

G.1 FILLING SEQUENCE

The landfill is designed with terraces after every 20 feet of vertical rise. The County will construct the terraces and install final cover including a rolled sod vegetative cover on areas that reach final grade.

G.2 BOTTOM LINER DESIGN

Based on the classification of this landfill as a Class III landfill, and that it will only receive those materials listed in Rule 62-701.340(3)(d), the County has requested exemption from the requirements of bottom liners and leachate controls.

G.3 LEACHATE COLLECTION AND REMOVAL SYSTEM

Not Applicable.

G.4 LEACHATE RECIRCULATION

Not Applicable.

G.5 LEACHATE SURFACE IMPOUNDMENT

Not applicable.

G.6 GEOMEMBRANE CONSTRUCTION QUALITY ASSURANCE PLAN

Not applicable.

G.7 SOIL CONSTRUCTION QUALITY ASSURANCE PLAN

Not applicable.

G.8 SURFACE WATER MANAGEMENT SYSTEM

The currently permitted C&D landfill does not generate a point discharge for stormwater runoff. Runoff from the site drains to the wetland area east of the landfill. The ditches along the entrance road to the south and west of the landfill also receive runoff from the site. This drainage pattern is maintained in the proposed Class III landfill. On the side slopes, terraces are constructed after every 20 feet of vertical rise. Each terrace receives runoff from the side slope area immediately above the terrace. The terrace has a 20-foot wide sand filter underlain by a triplanar geocomposite drainage net. The terrace drains at a

four per cent slope toward 8-inch diameter downpipes located every 200 feet along the side slope. Surface runoff from the side slope percolates through the sand filter to the drainage net, drains to the downpipe, and is discharged at one of 34 discharge points on the perimeter of the landfill.

The upper portion of the landfill above the upper terrace drains at a 5 per cent slope toward the upper terrace. This portion of the landfill has a biplanar geocomposite drainage net on top of the GCL. The purpose of the geonet is to keep the two feet of cover soil from becoming saturated. With the geonet under the two feet of soil cover, most precipitation percolates into the cover soil and drains through the geonet to the upper terrace, minimizing runoff from this area.

The design calculations for the Facility's surface water management system are presented in Attachment G-1.

G.9 LANDFILL GAS CONTROL SYSTEM

At the present time, any gas generated in the underlying closed landfill or in the existing C&D landfill escapes through the cover soil and through the working face. The Class III facility will not be lined, and gas will continue to vent to atmosphere. Gas will be monitored at the Class III facility along with the adjacent Class I facility. If gas is found to cause problems, a passive gas venting system will be designed and installed.

G.10 LANDFILL GAS RECOVERY FACILITIES

There are no landfill gas recovery facilities planned for the Class III area. In general, Class III material has a low landfill gas generation rate, and gas is not anticipated to be a problem at the Class III facility.

G.11 CONSTRUCTION IN THE WATER TABLE

The Class III landfill will be constructed above the water table.

PART H

HYDROGEOLOGIC INVESTIGATION

H.1 HYDROGEOLOGICAL INVESTIGATION

The Class III landfill is located at Volusia County's Tomoka Farms Road Landfill, immediately east of the active Class I landfill area. The approved ground water monitoring plan for the Class I facility includes 22 monitoring wells located along the north, east, and south sides of the Class III facility, with a maximum well spacing of 500 feet. These wells were shown in Figure 1 in the County's 1998 application for a Construction and Demolition Debris facility permit, and are described in Table H-1.

In addition to the above wells, there are 26 additional wells at the Tomoka Landfill site which provide ground water information. These wells are monitored in accordance with the Monitoring Plan Implementation Schedule included in the Tomoka Landfill operating permit SO64-291432, issued September 9, 1997.

TABLE H-1. CLASS III FACILITY MONITOR WELLS

Well	Screened or Open Hole Depth, Feet below Land Surface	When Constructed
B1-B	28-33	3/87
B5-B	18-23	3/91
B36	23-33	8/94
B37-1	27-37	8/94
B37-2	5-15	8/94
B38-1	27-37	8/94
B38-2	5-15	8/94
B39	5-15	8/94
B40-1	18-28	8/94
B40-2	5-15	8/94
B41-1	27-37	8/94
B41-2	5-15	8/94
B42-1	20-30	8/94
B42-2	5-15	8/94
B43-1	17-27	8/94

B43-2	5-12	8/94
B44	5-12	8/94
B45-1	25-35	8/94
B45-2	5-15	8/94
B64	5-12	8/94
B65	5-15	8/94
M05-B	27-32	3/87

Source: Tomoka Landfill: Summary and Evaluation of 1992-1996 Monitoring

PART I

GEOTECHNICAL INVESTIGATION

The site was previously excavated to approximately elevation 15.0 National Geodetic Vertical Datum (NGVD), filled to grade (approximately 28.0 NGVD), and covered with two feet of cover soil. The geotechnical report prepared by Bechtol Engineering and Testing that was submitted with the application for the existing C&D permit addressed subsurface conditions, bearing capacity, consolidation and settlement, and slope stability. That report concluded that there was essentially no risk of shear failure or bearing capacity failure due to the existing or proposed refuse embankment up to an elevation of 134.0 NGVD. The estimated consolidation of one to two feet in the soils below the Class III fill would not pose a problem for landfill construction or operation. The existing facility has been constructed with 4H:1V side slopes. These slopes have been proven to be stable and no change is proposed for the continued construction of the C&D facility.

PART J

VERTICAL EXPANSION OF LANDFILLS

J.1 LEACHATE LEAKAGE

No new waste will be placed within 200 feet of the boundary of the former closed landfill. It is not anticipated that any additional leachate movement will be observable beyond the boundary of the previously closed landfill.

J.2. LANDFILL CONSTRUCTION REQUIREMENTS

Liners are not required for the existing C&D landfill or for the proposed Class III landfill.

J.3 FOUNDATION ANALYSIS

See Section I, Geotechnical Investigation Requirements.

J.4 LANDFILL SETTLEMENT

See Section I, Geotechnical Investigation Requirements.

J.5 LINER INTERFACE STABILITY

No liner system will be installed between the existing C&D landfill and the Class III expansion.

J.6 SURFACE WATER MANAGEMENT SYSTEM

The proposed expansion is designed with 4:1 side slopes with 27-foot wide terraces after every 20 feet of vertical rise. Surface runoff is collected in each terrace in a 20-foot wide, 2-foot deep sand drainage trench. The runoff water percolates through the two-foot deep sand filter before being collected in a tri-planar geocomposite drainage net and a four-inch diameter HDPE drainage pipe. The treated stormwater is collected and discharged through 8-inch diameter HDPE downpipes, located approximately 200 feet apart along each terrace. Each discharge pipe discharges 0.15 cubic feet per second during the 25-year, 24-hour storm event of 9 inches. All stormwater from the 25-year, 24-hour storm event is treated before discharge. The multiple, small-flow discharges represent a drainage pattern similar to the drainage pattern existing before construction of the Class III landfill.

J.7 GAS CONTROL

The Class III facility does not have a liner.

PART K

LANDFILL OPERATION REQUIREMENTS

K.1 LANDFILL OPERATIONS STAFF

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

K.2 LANDFILL OPERATION PLAN

An Operation Plan for the proposed Class III facility is included in Attachment K-1.

K.3 OPERATIONS RECORDS

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

K.4 MONTHLY RECORDS

The County will compile waste records on the quantity and type of waste received at the site monthly and submit them to the FDEP on a quarterly basis.

K.5 ACCESS CONTROL AND SITE SECURITY

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

K.6 LOAD CHECKING

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.

K.7 SPREADING AND COMPACTING WASTE

Site operations are described in the Operations Plan, included with this application.

The County uses soil from an on-site borrow pit for cover. This material is classified as a silty sand. 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.

K.8 LEACHATE MANAGEMENT

There is no separate leachate collection system at the landfill.

K.9 GAS MONITORING

The County monitors for landfill gas on a quarterly basis.

K.10 STORMWATER MANAGEMENT SYSTEM OPERATION

The permitted stormwater system consists of vegetated sideslopes, terraces, sand filter trenches, and downpipes. It will be necessary to keep the surface of the sand filter trench clear of silt and debris that would interfere with percolation through the sand. The downpipes may need to be flushed out if they become blocked with debris or animal nests.

K.11 EQUIPMENT AND OPERATION REQUIREMENTS

The County has adequate equipment to operate the landfill. The landfill has five landfill compactors, three excavators, twelve bulldozers, 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 portable radios. 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.

K.12 ON-SITE ROADS

The access road is paved to the toe of slope of the landfill. The paved road also serves the Class I landfill, 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.

K.13 ADDITIONAL RECORD KEEPING

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.

PART L

WATER QUALITY MONITORING PLAN

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.

PART M

SPECIAL WASTE HANDLING REQUIREMENTS

M.1 MOTOR VEHICLES

Motor vehicle bodies are not accepted for disposal in the Class III facility.

M.2 SHREDDED WASTE

The Class III facility does not accept shredded tires or shredder fluff.

M.3 ASBESTOS

Asbestos waste is not accepted at the Class III facility.

M.4 CONTAMINATED SOIL

Contaminated soils will not be accepted for disposal at this Class III facility

PART N

LANDFILL FINAL CLOSURE REQUIREMENTS

N.1 CLOSURE SCHEDULE

The County will notify the FDEP in writing at least one year prior to final receipt of waste. This notice will include a schedule for completion of the required closure tasks. Users of the facility will be notified of the planned closure within 120 days of final receipt of wastes, and the general public will be notified of the planned closure within 10 days of final receipt of wastes.

N.2 CLOSURE GENERAL REQUIREMENTS

The County understands that a closure plan must be submitted to the FDEP at least 90 days prior to the date when waste will no longer be accepted. Within 30 days of closing the facility, The County will submit a certification of closure construction completion. A final survey will also be performed and a survey report will be submitted to the FDEP showing the final contours and grades.

Proposed final contours and details are shown in Attachment D-1, Sheets 5 and 7. The proposed final cover, from bottom to top, consists of 12 inches of soil cover, a geosynthetic clay liner (GCL), 18 inches of soil, six inches of soil capable of supporting vegetative growth, and a rolled sod vegetative cover. The final cover for the thirty acres above elevation 110 includes a biplanar geocomposite drainage layer immediately above the GCL. The site will be graded to promote drainage, minimize erosion, and prevent ponding. The County has been constructing the final soil cover on the existing C&D site using landfill personnel and equipment as areas of the site reach the proposed final grade. Rolled sod has been used to provide the vegetative cover. The County intends to continue constructing the final cover as a part of on-going landfill operation in the manner described above.

N.3 CLOSURE REPORT

A closure plan will be submitted to the FDEP at least 90 days prior to final receipt of waste. A closure report will be included with that plan.

N.4 CLOSURE DESIGN

A closure design plan will be submitted to the FDEP at least 90 days prior to final receipt of waste.

N.5 CLOSURE OPERATIONS

A closure operation plan will be submitted to the FDEP at least 90 days prior to final receipt of waste.

PART O

CLOSURE PROCEDURES

Closure procedures will be described in the closure permit application, to be submitted to the FDEP at least 90 days prior to final receipt of wastes.

PART P

LONG TERM CARE REQUIREMENTS

P.1 PROPERTY ACCESS

The County will continue to make the site available for inspection by the FDEP after closure.

P.2 SUCCESSORS

The County recognizes that any future property owner would be required to abide by permit and other regulatory requirements. Currently, there are no plans for selling the property.

P.3 MONITORING DEVICES

After the FDEP acknowledges that the facility has been closed, The County will continue to monitor and maintain the facility for at least 30 years or for the period of time as may be amended by the Department. Monitoring activities will include inspection of the side slopes and soil cover, monitoring for evidence of gas formation, and checking for unauthorized use of the site for debris disposal. Ground water monitoring will be conducted under the requirements of the closure permit. The Class III facility is part of the overall Tomoka Farms Road Landfill site which is protected by the site fencing and security procedures in place at that facility.

Long-term maintenance consists of periodic inspection, repairing erosion damage to the side slopes, maintaining and re-establishing the vegetative cover, mowing, repair and replacement of groundwater monitor wells, and cleaning and maintenance of the stormwater control structures. The County will conduct these activities in conjunction with the maintenance and repair activities required at the adjacent Class I facility.

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.

PART Q

FINANCIAL RESPONSIBILITY REQUIREMENTS

Q.1 CLOSURE COST ESTIMATE

Cost estimates for the closure and the long term maintenance of the Facility are presented in Attachment Q-1.

The County intends to complete the required closure activities with County forces as a part of normal site operation. At the time of closure, required activities would include only a very small area of final cover, the final survey, and certification of closure construction. If the site were to be closed prior to reaching final grade, additional grading and soil cover would be required. Attachment Q-1 presents the estimate of probable closure cost based on the site closing on April 1, 1999, and an outside contractor being brought in to complete the required closure. The estimate assumes that sufficient cover soil and topsoil is available on-site, and that the County will have this material stockpiled for use by the closure contractor.

The estimate of the probable post-closure annual cost is presented in Attachment Q-1.

The cost estimates presented in Attachment Q-1 are budgetary estimates. The actual costs of the construction and post-closure activities will depend on true labor and material costs, actual site conditions, competitive market conditions, final scope of the project, the implementation schedule, and other variable factors.

Q.2 ANNUAL COST ADJUSTMENTS

The County will update the Closure and Long-term Care Cost Estimates as required by Section 62-701.630(4), F.A.C., and certified copies will be submitted to FDEP on an annual basis for review and approval in accordance with regulatory requirements.

Q.3 PROOF OF FINANCIAL RESPONSIBILITY FUNDING MECHANISMS

A letter regarding the County's proof of financial responsibility will be submitted to the FDEP.

ATTACHMENT D-1

DRAWINGS

ATTACHMENT D-2

PROPERTY OWNERSHIP DOCUMENTATION

2055 1435

BOOK PAGE PERSONAL REPRESENTATIVES' DEED 1026/AC

THIS INDENTURE, executed the 13th day of OCTOBER, 1978, between HELEN M. HOGAN, CATHERINE YOUNGS THOMPSON and SAMUEL E. JORDAN, as Personal Representatives of the Estate of THOMAS F. COUSINS, DECEASED, Parties of the First Part, and VOLUSIA COUNTY, FLORIDA, a political subdivision, Party of the Second Part, whose address is: Post Office Box 429, DeLand, Florida 32720;

WITNESSETH: The Parties of the First Part, pursuant to the Last Will and Testament of THOMAS F. COUSINS, Deceased, filed with the Probate Division of the Circuit Court, Orange County, Florida, in Case No. PR 76-283, grant, sell, alien, remise, release, convey and confirm to the Party of the Second Part, its successors and assigns forever, the real property in Volusia County, Florida, as described as:

(See attached Schedule "A")

TOGETHER with all and singular the tenements, hereditaments and appurtenances belonging or in anywise appertaining to that real property. This conveyance is subject to the lien of a purchase money mortgage in the amount of $452,800.00 which will presently be recorded.

TO HAVE AND TO HOLD the same to the Party of the Second Part, its successors and assigns, in fee simple forever.

AND the Parties of the First Part do covenant to and with the Party of the Second Part, its successors and assigns, that in all things preliminary to and in and about this conveyance the orders of the above named Court and the laws of Florida have been followed and complied with in all respects.

IN WITNESS WHEREOF, the Parties of the First Part, as Personal Representatives of the Estate of THOMAS F. COUSINS, Deceased, have set their hands and seals on the day and year first above written.

Signed, sealed and delivered
in the presence of:

Helen M. Hogan (SEAL)
Helen M. Hogan

Samuel E. Jordan (SEAL)
Samuel E. Jordan

Catherine Youngs Thompson (SEAL)
Catherine Youngs Thompson

As Personal Representatives of
the Estate of Thomas F. Cousins,
Deceased.

[redacted]

[redacted]

STATE OF FLORIDA
COUNTY OF ORANGE

Before me, an officer authorized to take acknowledgments, personally appeared HELEN M. HOGAN as Personal Representative of the Estate of THOMAS F. COUSINS, Deceased, well known to me, and known to me to be one of the individuals who signed the foregoing deed as said Personal Representative of said estate, and she acknowledged before me that she executed the foregoing deed in the capacity as set forth herein.

WITNESS my hand and official seal this 13 day of October, 1978.

J. Sam Owen, Jr.
Notary Public
My Commission Expires: _____

Notary Public, State of Florida at Large
My Commission Expires ...
Bonded by Agents Ins. Co. of Georgia

STATE OF FLORIDA
COUNTY OF ORANGE

Before me, an officer authorized to take acknowledgments, personally appeared SAMUEL E. JORDAN as Personal Representative of the Estate of THOMAS F. COUSINS, Deceased, well known to me, and known to me to be one of the individuals who signed the foregoing deed as said Personal Representative of said estate, and he acknowledged before me that he executed the foregoing deed in the capacity as set forth herein.

WITNESS my hand and official seal this 13 day of October, 1978.

J. Sam Owen, Jr.
Notary Public
My Commission Expires: _____

Notary Public, State of Florida at Large
My Commission Expires ...
Bonded by Agents Ins. Co. of Georgia

STATE OF FLORIDA
COUNTY OF ORANGE

Before me, an officer authorized to take acknowledgments, personally appeared CATHERINE YOUNGS THOMPSON as Personal Representative of the Estate of THOMAS F. COUSINS, Deceased, well known to me, and known to me to be one of the individuals who signed the foregoing deed as said Personal Representative of said estate, and she acknowledged before me that she executed the foregoing deed in the capacity as set forth herein.

WITNESS my hand and official seal this 13 day of October, 1978.

J. Sam Owen, Jr.
Notary Public
My Commission Expires: _____

Notary Public, State of Florida at Large
My Commission Expires ...
Bonded by Agents Ins. Co. of Georgia

SCHEDULE "A"

N 1/2 of Section 10; and all of the NE 1/4 of Section 9; and that part of the NW 1/4 of said Section 9, lying East of the Florida Power and Light Company power line right of way; and that part of the S 1/2 of Section 4, lying East of the said Florida Power and Light Company power line right of way; and that part of Section 3, lying West of a straight line drawn between the Southeast corner of the SW 1/4 of said Section 3 (being also the Northwest corner of the NE 1/4 of Section 10) and running Northwesterly to the point of intersection of the West line of said Section 3 with the Southeasterly right of way line of Interstate Highway #4 (S.R. 400); and the South 200 feet of the NW 1/4 of Section 11, lying West of the centerline of Tomoka Farms Road as now used.

All the foregoing being in Township 16 South, Range 32 East, Volusia County, Florida, and being more particularly described as:

Commencing at the concrete monument (Moody) marking the Northeast corner of Section 4, Township 16 South, Range 32 East, thence S 00°51'40" E, along the East line of said Section 4, a distance of 1076.35 feet to a point on the Southeasterly right of way line of Interstate Highway #4 (S.R. #400), said point being POINT OF BEGINNING; run thence continuing S 00°51'40" E, along said East line of Section 4, a distance of 1631.43 feet to the Northeast corner of the S 1/2 of said Section 4; thence S 88°52'54" W, along the North line of said S 1/2 of Section 4, a distance of 3190.12 feet to its intersection with the East right of way line of a 305 foot wide Florida Power and Light Company Easement (Official Records Book 678, page 605 also see Official Records Book 308, page 332); thence S 00°34'18" E, along said East right of way line of the Florida Power and Light Company Easement, a distance of 2671.94 feet to a point in the South line of said Section 4 that is S 89°17'43" W, a distance of 548.16 feet, from the concrete monument (Moody) marking the Southeast corner of the SW 1/4 of said Section 4; thence continuing S 00°34'18" E, along the said East line of the power line easement, a distance of 1111.44 feet to an intersection with the Easterly right of way line of a 170 foot wide Florida Power and Light Company Easement (Official Records Book 756, page 67); thence S 29°15'33" E, along the Easterly line of said Florida Power and Light Company Easement, a distance of 1160.31 feet, to its intersection with the West line of the NE 1/4 of Section 9, Township 16 South, Range 32 East; thence S 00°48'32" E, along said West line of the NE 1/4 of Section 9, a distance of 581.07 feet to a one inch iron pipe marking the center of said Section 9, being also the Southwest corner of the NE 1/4 of said Section 9; thence N 89°56'54" E, along the South line of said NE 1/4 of Section 9, a distance of 2633.40 feet to a concrete monument (Moody) marking the Southeast corner of said NE 1/4 of Section 9; thence N 86°26'59" E, along the South line of the N 1/2 of Section 10, Township 16 South, Range 32 East, a distance of 2659.75 feet to a half inch iron pipe; thence N 86°26'23" E, continuing along the South line of the N 1/2 of said Section 10, a distance of 2639.74 feet to the Southeast corner thereof; thence N 89°27'20" E, along the South line of the NW 1/4 of Section 11, Township 16 South, Range 32 East, a distance of 1135.08 feet to an intersection with the centerline of Tomoka Farms Road, as now laid out and used; thence N 17°23'11" W, along said centerline of Tomoka Farms Road, a distance of 208.96 feet to an intersection with a line that is 200 feet Northerly of, and parallel with, the said South line of the NW 1/4 of Section 11; thence S 89°27'20" W, along said last described line, a distance of 1074.06 feet to an intersection with the East line of the NE 1/4 of Section 10, Township 16 South, Range 32 East; thence N 00°24'26" W, along the said East line of the NE 1/4 of Section 10, a distance of 2440.79 feet to a two and one-half inch iron pipe marking the Northeast corner thereof; thence S 87°24'59" W, along the North line of said NE 1/4 of Section 10, a distance of 2643.84 feet to a six inch cypress post marking the Northwest corner thereof; thence N 32°43'54" W, a distance of 5013.52 feet, more or less, (through the W 1/2 of Section 3, Township 16 South, Range 32 East) to the POINT OF BEGINNING.

(846.01± Acres)

Catherine Y. Thompson, Notary Public, State of Florida at Large
My Commission Expires: [illegible]
Thomas E. [illegible], Notary Public, State of Florida at Large

015511

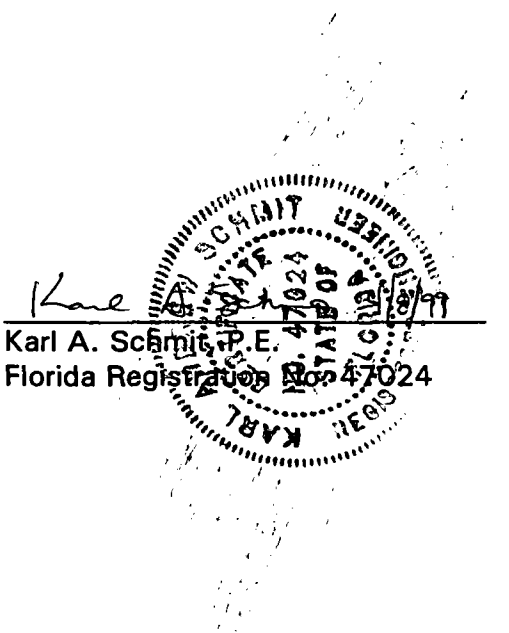
ATTACHMENT G-1

STORMWATER MANAGEMENT SYSTEM DESIGN CALCULATIONS

TOMOKA FARMS ROAD CLASS III LANDFILL
STORMWATER MANAGEMENT SYSTEM CALCULATIONS

This is to certify the engineering features of this stormwater 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.

Sheets	Contents
1	Summary Report
2-5	Pre-Development Calculation
6-8	Post-Development Calculation
9-12	Top Cap Design
13-16	Typical Sideslope Terrace Design



Karl A. Schmit, P.E.
Florida Registration No. 47024

TOMOKA FARMS ROAD CLASS III LANDFILL

STORMWATER MANAGEMENT SYSTEM SUMMARY REPORT

The stormwater management system for the Class III Landfill at the Tomoka Farms Road Landfill in Volusia County was designed to accommodate the configuration of the landfill with respect to the close proximity of the surrounding property. Typical detention ponds were not desirable due to the limited property available. Stormwater treatment is design to occur in each terrace after the runoff percolates through a layer of sand a minimum of two feet thick. Treated stormwater is conveyed off the landfill through down-let pipes.

The stormwater management system was designed in multiple steps, starting with the top cap area and proceeding to each sideslope terrace.

The stormwater management system design begins at the top area of the Class III Landfill, where the slope is 5 percent. The cap area above elevation 110 is approximately 29.5 acres, and drains into the top terrace. The exterior terrace berm forms a narrow basin around the perimeter of the cap, and retains the stormwater runoff for a sufficient time to percolate through the sand filter. A 4-inch diameter pipe is included in the terrace to function as a standpipe to alleviate the accumulated runoff. This system is design to provide treatment to the entire storm event volume (25 year-24 hour).

The stormwater calculations were conducted using a computer program called Interconnected Pond Routing (ICPR). The results of the program are attached, and they indicate that the water will accumulate to a depth of 0.3 feet above the elevation of the terrace. The terrace depth is achieved by a berm measuring 1.0 feet deep. Therefore, the terrace design is adequate.

The sideslopes terraces were designed using a unit width approach, starting with the largest area that contributes flow into a terrace. The spacing of the pipes were determined based upon the largest contributing area that would maintain treatment by not allowing the stormwater to breach the terrace berm. The attached calculations indicate how a typical one foot exterior berm is sufficient to retain the stormwater runoff. Treatment is provided in a similar manner as the top terrace design, which is to percolate the entire storm event volume.

Upon concluding the post-development landfill calculations, the discharge can be compared to that of the pre-developed site. Attached are calculations that indicate the pre-developed site does not discharge stormwater at a rate beyond the pre-developed site.

CLIENT	PROJECT	JOB NO.
SUBJECT: CLASS III STORMWATER CALCS	BY: KAS	DATE: 1-6-99
	CHECKED	DATE

PRE-DEVELOPMENT VS. POST DEVELOPMENT

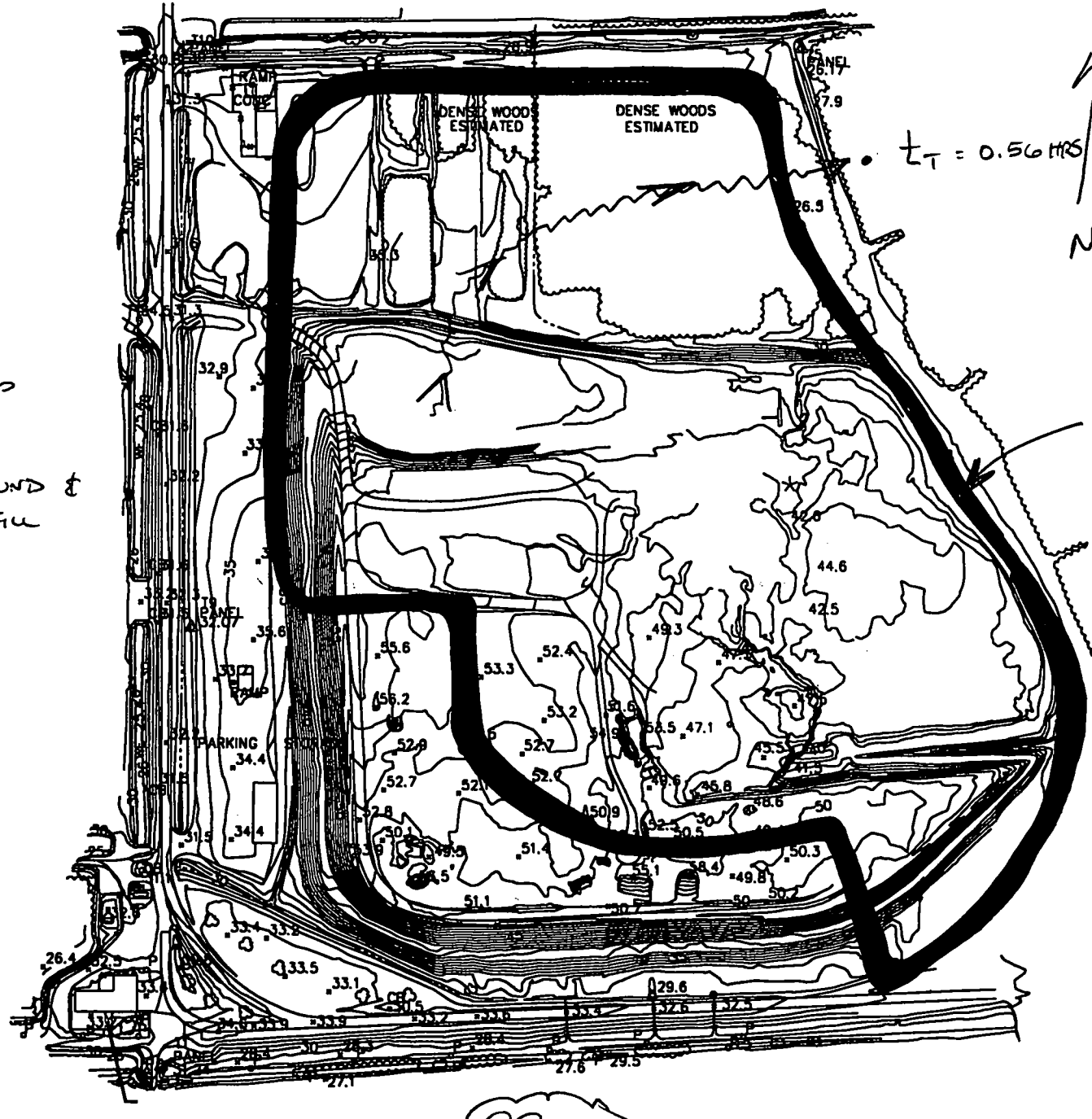
OBJECTIVE: DEMONSTRATE THAT THE POST-DEVELOPMENT CONDITIONS DO NOT CAUSE STORMWATER RUNOFF TO EXCEED PRE-DEVELOPMENTAL RATES

PRE-DEVELOPMENT DEFINED AS EXISTING CONDITIONS AT SITE, PRIOR TO ADDING WASTE OR COVER SYSTEM.

POST-DEVELOPMENT DEFINED AS THE COMPLETED LANDFILL WITH COVER SYSTEM & STORMWATER MANAGEMENT TERRACES AND PIPES.

	AREA	CN	T_T	Q	TIME
PRE	68.5 AC	65	0.56 HRS	208 CFS	12.8 HRS
POST	61.2 AC	85	3 HRS	124 CFS	16.5 HRS

CONCLUSION: PEAK FLOW FOR DEVELOPED SITE IS BELOW THE PRE-DEVELOPED CONDITIONS. IN ADDITION, PEAK OCCURS 4 HOURS LATER WHICH FURTHER ATTENUATES THE FLOW.


DENSE WOODS ESTIMATED
DENSE WOODS ESTIMATED
RAMP
PARKING
PANEL
N
t_T = 0.56 HRS
N.T.S.
APPROX. AREA OF PRE-DEVELOPMENT WHICH FLOWS EASTWARD INTO WETLANDS.
≈ 68.5 Ac
SLOPES GRASSED
DENSE WOOD
MOSTLY BARE GROUND & DISTURBED FILL
PRE

3-1

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Class III Cell
Path through Woods

Tt COMPUTATIONS FOR:

SHEET FLOW (Applicable to Tc only)

Segment ID			
Surface description		Landfill	
Manning's roughness coeff., n		0.0600	
Flow length, L (total < or = 300)	ft	300.0	
Two-yr 24-hr rainfall, P2	in	5.000	
Land slope, s	ft/ft	0.0100	
$T = \frac{.007 * (n*L)^{0.8}}{P2^{0.5} * s^{0.4}}$	hrs	0.20	= 0.20

SHALLOW CONCENTRATED FLOW

Segment ID		woods	
Surface (paved or unpaved)?		Unpaved	
Flow length, L	ft	1500.0	
Watercourse slope, s	ft/ft	0.0050	
$Avg.V = Csf * (s)^{0.5}$	ft/s	1.1409	
where: Unpaved Csf = 16.1345			
Paved Csf = 20.3282			
T = L / (3600*V)	hrs	0.37	= 0.37

CHANNEL FLOW

Segment ID			
Cross Sectional Flow Area, a	sq.ft	0.00	
Wetted perimeter, Pw	ft	0.00	
Hydraulic radius, r = a/Pw	ft	0.000	
Channel slope, s	ft/ft	0.0000	
Manning's roughness coeff., n		0.0000	
$V = \frac{1.49 * r^{2/3} * s^{1/2}}{n}$	ft/s	0.0000	
Flow length, L	ft	0	
T = L / (3600*V)	hrs	0.00	= 0.00

TOTAL TIME (hrs) 0.56

PRE

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 01-04-1999 11:28:02
Watershed file: --> c:\pondpack\C3PRE .WSD
Hydrograph file: --> c:\pondpack\C3PRE .HYD

>>>> Input Parameters Used to Compute Hydrograph <<<<

Subarea Description	AREA (acres)	CN	Tc (hrs)	* Tt (hrs)	Precip. (in)	Runoff (in)	Ia/p input	Ia/p used
Landfill	68.50	65.0	0.50	0.50	9.00	4.72	.12	.10

* Travel time from subarea outfall to composite watershed outfall point.
Total area = 68.50 acres or ~~0.10703~~ sq.mi
Peak discharge = 208 cfs

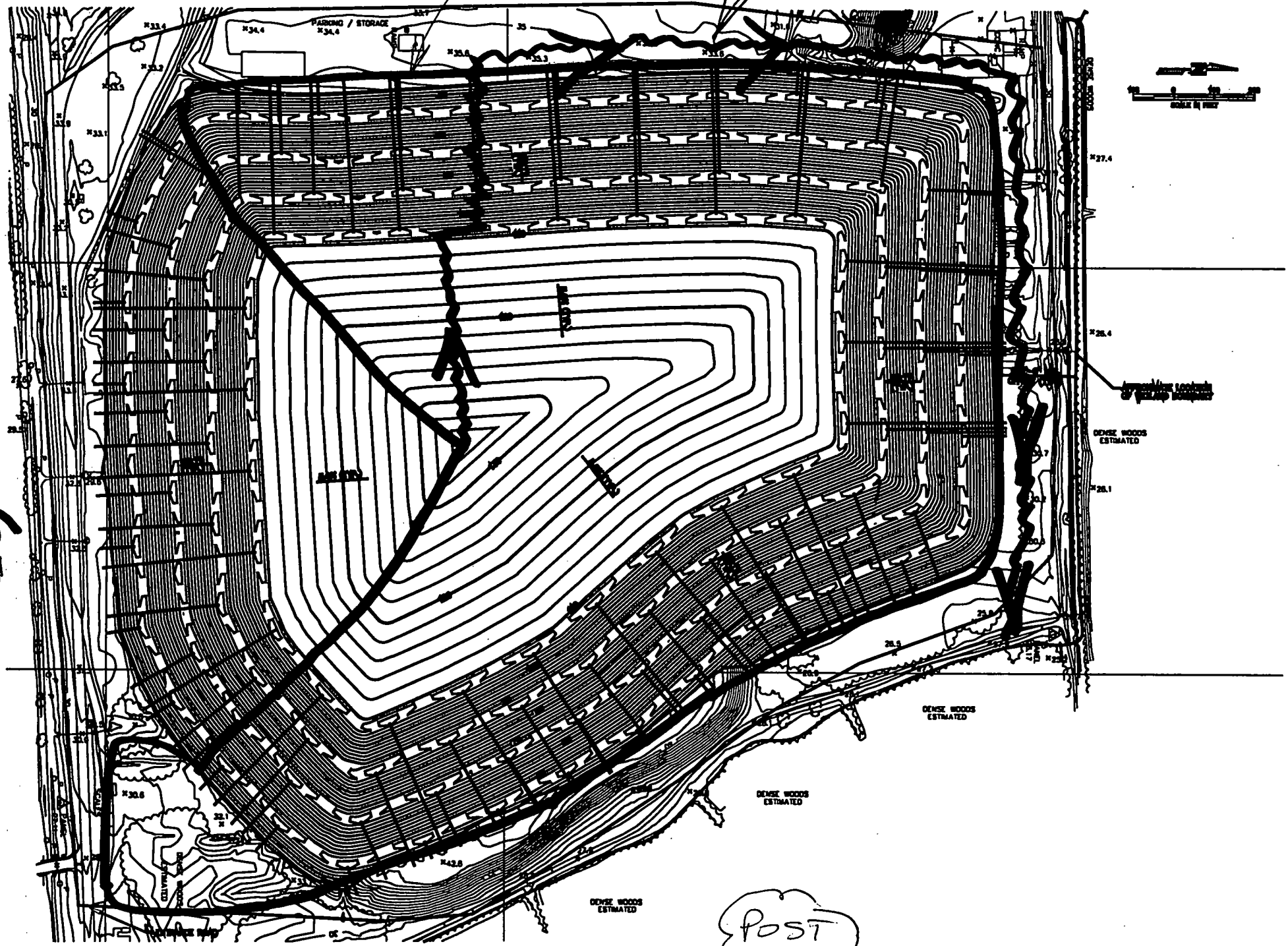
>>>> Computer Modifications of Input Parameters <<<<<

Subarea Description	Input Values Tc (hr)	Input Values * Tt (hr)	Rounded Values Tc (hr)	Rounded Values * Tt (hr)	Ia/p Interpolated (Yes/No)	Ia/p Messages
Landfill	0.56	0.56	0.50	0.50	No	--

* Travel time from subarea outfall to composite watershed outfall point.

AREA = 61.2 AC

T_T = 3 HOURS



POST

-9-

Quick TR-55 Ver.5.46 S/N:1803000009
Executed: 11:27:07 01-04-1999 c:\pondpack\C3POST.TCT

? COMPUTATIONS FOR:

SHEET FLOW (Applicable to Tc only)

Segment ID			
Surface description			
Manning's roughness coeff., n		0.1200	
Flow length, L (total < or = 300)	ft	300.0	
Two-yr 24-hr rainfall, P2	in	5.000	
Land slope, s	ft/ft	0.0500	
$T = \frac{.007 * (n*L)^{0.8}}{P2^{0.5} * s^{0.4}}$	hrs	0.18	= 0.18

SHALLOW CONCENTRATED FLOW

Segment ID			
Surface (paved or unpaved)?		Unpaved	
Flow length, L	ft	200.0	
Watercourse slope, s	ft/ft	0.0500	
$Avg.V = Csf * (s)^{0.5}$	ft/s	3.6078	
where: Unpaved Csf = 16.1345			
Paved Csf = 20.3282			
T = L / (3600*V)	hrs	0.02	= 0.02

CHANNEL FLOW

Segment ID			
Cross Sectional Flow Area, a	sq.ft	1.00	
Wetted perimeter, Pw	ft	1.00	
Hydraulic radius, r = a/Pw	ft	1.000	
Channel slope, s	ft/ft	1.0000	
Manning's roughness coeff., n		0.3730	
$V = \frac{1.49 * r^{2/3} * s^{1/2}}{n}$	ft/s	3.9946	
Flow length, L	ft	3200	
T = L / (3600*V)	hrs	0.22	= 0.22

::

TOTAL TIME (hrs) 0.42

POST

0.42 HOURS + TIME FOR RUNOFF TO ENTER INTO PIPE SYSTEM. ⟶ USE MAXIMUM COMPUTER ALLOWS OF 3 HOURS, BASED ON TAKING 17 HOURS TO PASS THROUGH SAND IN TERRACE ∴ CONSERVATIVE. (2' SAND OF 1×10^{-3} CM/SEC = 16.9 HOURS).

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

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Watershed file: --> c:\pondpack\C3POST .WSD
Hydrograph file: --> c:\pondpack\C3POST .HYD

Using Maximum Travel Times

POST

>>>> Input Parameters Used to Compute Hydrograph <<<<

Subarea Description	AREA (acres)	CN	Tc (hrs)	* Tt (hrs)	Precip. (in)	Runoff (in)	Ia/p input/used
Developed	61.20	85.0	2.00	3.00	9.00	7.18	.04 .10

* Travel time from subarea outfall to composite watershed outfall point.
Total area = 61.20 acres or 0.09562 sq.mi
Peak discharge = 124 cfs < 208 ∴ OK 2

>>>> Computer Modifications of Input Parameters <<<<<

Subarea Description	Input Values Tc (hr)	* Tt (hr)	Rounded Values Tc (hr)	* Tt (hr)	Ia/p Interpolated (Yes/No)	Ia/p Messages
Developed	2.00	3.00	**	**	No	Computed Ia/p < .1

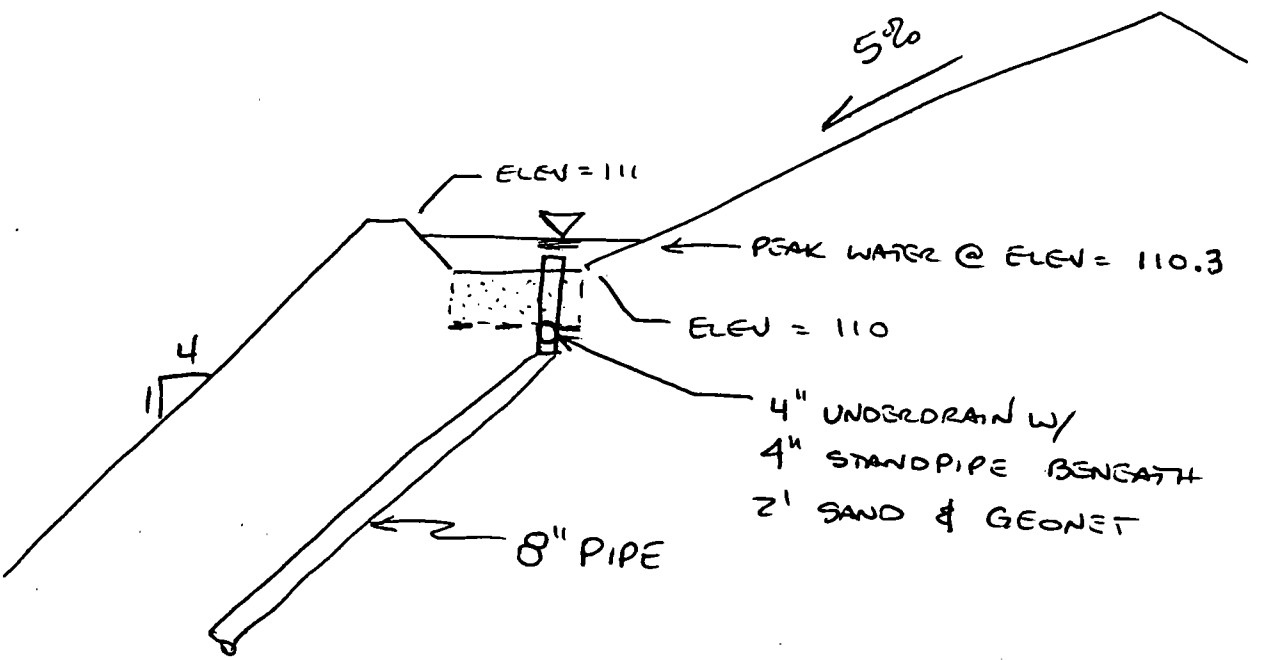
* Travel time from subarea outfall to composite watershed outfall point.
** Tc & Tt are available in the hydrograph tables.

Class III Landfill
Top Cap Design
Geonet Option

********** Basin Summary - CAP **********

***

Basin Name:	RUNOFF
Group Name:	BASE
Node Name:	POND
Hydrograph Type:	UH
Unit Hydrograph:	UH484
Peaking Factor:	484.00
Spec Time Inc (min):	4.00
Comp Time Inc (min):	4.00
Rainfall File:	FLMOD
Rainfall Amount (in):	9.00
Storm Duration (hr):	24.00
Status:	ONSITE
Time of Conc. (min):	30.00
Lag Time (hr):	0.00
Area (acres):	29.50
Vol of Unit Hyd (in):	1.00
Curve Number:	39.00
DCIA (%):	0.00
Time Max (hrs):	12.33
Flow Max (cfs):	23.79
Runoff Volume (in):	1.60
Runoff Volume (cf):	171392



Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.11) [1]

Class III Landfill
Top Cap Design
Geonet Option

********** Input Report **********

--------Class: Node----------

Name: BNDRY Base Flow(cfs): 0 Init Stage(ft): 25
Group: BASE Length(ft): 0 Warn Stage(ft): 26
Comment:

Time(hrs)	Stage(ft)
0	25
96	26

--------Class: Node----------

Name: POND Base Flow(cfs): 0 Init Stage(ft): 110
Group: BASE Length(ft): 0 Warn Stage(ft): 112
Comment:

Stage(ft)	Area(ac)
110	3
111	4
112	5.1

--------Class: Operating Table----------

Name: SAND Type: Rating Curve
Comment: Sand Layer

U/S Stage(ft)	Discharge(cfs)
109	2
112	7

$Q = KIA$
$= 7.3$ cfs

$K = 1 \times 10^{-3}$ cm/sec
$= 2.83$ FT/DAY
$I = 1.0$
A @ ELEV $= 112 = 222{,}156$ SF

--------Class: Basin----------

Basin: RUNOFF Node: POND Status: On Site Type: SCS Unit Hyd
Group: BASE
Unit Hydrograph: UH484 Peak Factor: 484
Rainfall File: FLMOD Storm Duration(hrs): 0
Rainfall Amount(in): 0
Area(ac): 29.5 Concentration Time(min): 30
Curve #: 39 Lag Time(hrs): 0
DCIA(%): 0

Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.11) [2]

Class III Landfill
Top Cap Design
Geonet Option

********** Input Report **********

--------Class: Drop Structure----------

Name: PIPE	From Node: POND	Length(ft): 250	
Group: BASE	To Node: BNDRY	Count: 16	

Outlet Cntrl Spec: Use dc or tw Inlet Cntrl Spec: Use dn
Upstream Geometry: Circular Downstream Geometry: Circular

	UPSTREAM	DOWNSTREAM
Span(in):	8	8
Rise(in):	8	8
Invert(ft):	110	30
Manning's N:	0.1	0.1
Top Clip(in):	0	0
Bottom Clip(in):	0	0

No. of 8" DOWN-LET PIPES IN TOP TERRACE

Entrance Loss Coef: 0.1 Flow: Both
Exit Loss Coef: 0.1 Equation: Aver Conveyance

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall 1 1
Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall 1 1

*** Weir 1 of 1 for Drop Structure PIPE *** [TABLE]

Count:	16	Bottom Clip(in):	0
Type:	Horiz	Top Clip(in):	0
Flow:	Both	Weir Discharge Coef:	2.6
Geometry:	Circular	Orifice Discharge Coef:	0.6
Span(in):	12	Invert(ft):	110
Rise(in):	12	Control Elev(ft):	110

--------Class: Rating Curve----------

Name: SAND	Count: 1	From Node: POND	
Group: BASE	Flow: Both	To Node: BNDRY	

	NAME	ELEV ON(ft)	ELEV OFF(ft)
#1:	SAND	110	0
#2:		0	0
#3:		0	0
#4:		0	0

Class III Landfill
Top Cap Design
Geonet Option

********** Node Maximum Conditions - CAP **********

(Time units - hours)

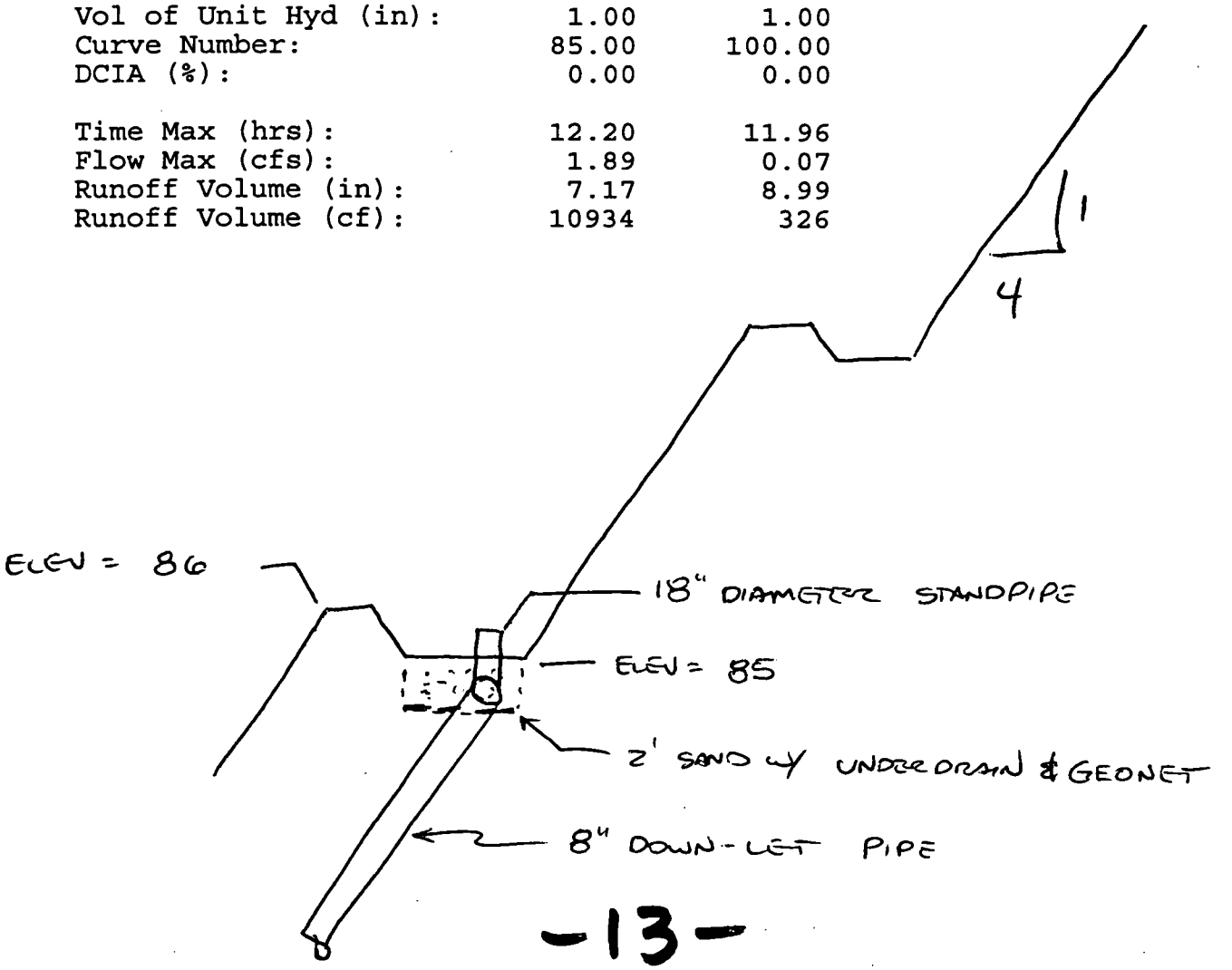
Node Name	Group Name	Max Time Conditions	Max Stage (ft)	Warning Stage (ft)	Max Delta Stage (ft)	Max Su Area
BNDRY	BASE	35.98	25.37	26.00	0.0009	
POND	BASE	12.98	110.30	112.00	0.0385	1437

BELOW ELEV = 111 ∴ OK

Class III Landfill
Typical Sideslope Terrace Design

********** Basin Summary - TERRACE **********

***		
Basin Name:	SLOPE	TERRACE
Group Name:	BASE	BASE
Node Name:	BENCH	BENCH
Hydrograph Type:	UH	UH
Unit Hydrograph:	UH484	UH484
Peaking Factor:	484.00	484.00
Spec Time Inc (min):	4.00	0.13
Comp Time Inc (min):	4.00	0.13
Rainfall File:	FLMOD	FLMOD
Rainfall Amount (in):	9.00	9.00
Storm Duration (hr):	24.00	24.00
Status:	ONSITE	ONSITE
Time of Conc. (min):	30.00	1.00
Lag Time (hr):	0.00	0.00
Area (acres):	0.42	0.01
Vol of Unit Hyd (in):	1.00	1.00
Curve Number:	85.00	100.00
DCIA (%):	0.00	0.00
Time Max (hrs):	12.20	11.96
Flow Max (cfs):	1.89	0.07
Runoff Volume (in):	7.17	8.99
Runoff Volume (cf):	10934	326



Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.11) [1]

Class III Landfill
Typical Sideslope Terrace Design

********** Input Report **********

--------Class: Node----------

Name: BENCH Base Flow(cfs): 0 Init Stage(ft): 85
Group: BASE Length(ft): 0 Warn Stage(ft): 86
Comment:

Stage(ft)	Area(ac)
85	0.0913
86	0.1194 ← 26'x200'

--------Class: Node----------

Name: BNDRY Base Flow(cfs): 0 Init Stage(ft): 0
Group: BASE Length(ft): 0 Warn Stage(ft): 0
Comment:

Stage(ft)	Area(ac)
0	500
1	1500

--------Class: Operating Table----------

Name: SAND Type: Rating Curve
Comment: Sand Layer

K = 0.001 cm/sec
A = 20'x(100'x2)
Q = KIA

U/S Stage(ft)	Discharge(cfs)
85	0.13
86	0.13

--------Class: Basin----------

Basin: SLOPE Node: BENCH Status: On Site Type: SCS Unit Hyd
Group: BASE
Unit Hydrograph: UH484 Peak Factor: 484
Rainfall File: FLMOD Storm Duration(hrs): 24
Rainfall Amount(in): 9
Area(ac): 0.42 Concentration Time(min): 30
Curve #: 85 Lag Time(hrs): 0
DCIA(%): 0

--------Class: Basin----------

Basin: TERRACE Node: BENCH Status: On Site Type: SCS Unit Hyd
Group: BASE
Unit Hydrograph: UH484 Peak Factor: 484
Rainfall File: FLMOD Storm Duration(hrs): 24
Rainfall Amount(in): 9
Area(ac): 0.01 Concentration Time(min): 1
Curve #: 100 Lag Time(hrs): 0
DCIA(%): 0

Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.11) [2]

Class III Landfill
Typical Sideslope Terrace Design

********** Input Report **********

--------Class: Drop Structure----------

Name: PIPE | From Node: BENCH | Length(ft): 250
Group: BASE | To Node: BNDRY | Count: 1

Outlet Cntrl Spec: Use dc or tw | Inlet Cntrl Spec: Use dn
Upstream Geometry: Circular | Downstream Geometry: Circular

	UPSTREAM	DOWNSTREAM
Span(in):	8 } - DOWN-LOT PIPE	8
Rise(in):	8 }	8
Invert(ft):	82	30
Manning's N:	0.01	0.01
Top Clip(in):	0	0
Bottom Clip(in):	0	0

Entrance Loss Coef: 0.1 | Flow: Both
Exit Loss Coef: 0.1 | Equation: Aver Conveyance

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall 1 1
Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall 1 1

*** Weir 1 of 1 for Drop Structure PIPE *** [TABLE]

Count: 1 | Bottom Clip(in): 0
Type: Horiz | Top Clip(in): 0
Flow: Both | Weir Discharge Coef: 2.6
Geometry: Circular | Orifice Discharge Coef: 0.6

Span(in): 18 } STANDPIPE | Invert(ft): 85.5
Rise(in): 18 } | Control Elev(ft): 86

--------Class: Rating Curve----------

Name: SAND | Count: 1 | From Node: BENCH
Group: BASE | Flow: Both | To Node: BNDRY

	NAME	ELEV ON(ft)	ELEV OFF(ft)
#1:	SAND	85	86
#2:		0	0
#3:		0	0
#4:		0	0

Class III Landfill
Typical Sideslope Terrace Design

********** Node Maximum Conditions - TERRACE **********

(Time units - hours)

Node Name	Group Name	Max Time Conditions	Max Stage (ft)	Warning Stage (ft)	Max Delta Stage (ft)	Max Su Area
BENCH	BASE	12.32	86.04	86.00	0.0498	52
BNDRY	BASE	28.00	0.00	0.00	0.0000	218011

ROUNDS OFF TO
ELEV = 86 ∴ OK

ATTACHMENT K-1

OPERATION PLAN

OPERATIONS PLAN
TOMOKA FARMS ROAD LANDFILL
CLASS III LANDFILL
VOLUSIA COUNTY, FLORIDA

Prepared for:

Volusia County Solid Waste Services
3151 East New York Avenue
DeLand, Florida 32724

Prepared by:

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February 25, 1999
File No. 0995039.26

CONTENTS

CONTENTS (Continued)

SECTION 1
GENERAL

1.1 PURPOSE

The purpose of this manual is to describe the operations and maintenance, equipment, emergency and contingency procedures, and training procedures for the Volusia County (County) Tomoka Farms Road Landfill Class III Landfill located near Daytona Beach, Florida. This plan is intended to meet the requirements of Chapter 62-701.730(7)(a), Florida Administrative Code (F.A.C.).

1.2 FACILITY CHARACTERISTICS

The Class III landfill is owned and operated by Volusia County and is located within the County's Tomoka Farms Road Landfill property, approximately three miles south of US 92 on Tomoka Farms Road in Section 10, Township 16 South, Range 32 East. The facility was developed over a portion of the property that had previously been used as a landfill. It has been operating as a construction and demolition debris (C&D) landfill since 1988 and is open to the public. It is anticipated to operate until approximately 2020. The County is applying for a permit to convert the C&D facility into a Class III landfill to allow the County to accept land clearing debris for disposal along with the C&D material currently accepted. Operation of the proposed Class III facility will be essentially the same as for the existing C&D facility.

The existing C&D facility covers approximately 75.6 acres east of the existing Class I area. The facility operates as part of the overall Tomoka Farms Road Landfill. Major features of the overall facility shared with the existing C&D facility include site fencing and security, a scale house, a household hazardous waste facility, a tire and white goods facility, a Class I landfill, equipment maintenance facilities, ground water monitoring, borrow pits, and administration facilities. A groundwater monitoring network is currently in place at the landfill.

SECTION 2
OPERATIONS

2.1 OPERATIONS OVERVIEW

Incoming vehicles enter the landfill site from Tomoka Farms Road. They travel west along the entrance road to the scale house. From the scale house the vehicles continue west along the entrance road to the maintenance building and then north along the entrance road to the facility entrance. Vehicles are directed to the working face of the landfill where they are observed by a spotter for unacceptable materials. If no unacceptable materials are observed, the vehicles are unloaded and the materials spread across the working face (100 feet by 200 feet) in 3- to 5-foot lifts. Materials are handled by a Caterpillar D-6 bulldozer. Intermediate cover material is placed on lifts as needed to fill voids and cover objects which threaten tires. A minimum of one foot of final soil cover, which is obtained from the on-site borrow area, is placed on top of the filled area prior to construction the landfill cap. The soil top cover is placed as the lifts are completed.

Wastes entering the facility are observed by a full-time spotter at the working face of the landfill cell to exclude unacceptable materials from the cell. If unacceptable materials are observed by the spotter prior to unloading, the driver is directed to the portion of the landfill facility which is permitted to handle the type of material rejected. Materials other than Class III materials found following unloading of vehicles are sorted for Class I wastes, tires, and other unacceptable materials (e.g., oil, paint, chemicals, etc.). Typical types of unacceptable materials are listed below:

- Oils.
- Tires.
- Paints.
- Batteries.
- Chemicals.

- Food wastes.
- White goods and asbestos.
- Infectious and hazardous waste.

Clean debris, including roofing shingles and concrete rubble, are separated from other materials and stockpiled for use in constructing on-site roads.

2.2 MANAGEMENT AND OPERATIONS PERSONNEL

Personnel trained for handling, processing, and disposing of Class III material are designated to operate the facility. Volusia County has six certified landfill operators on the Tomoka Landfill staff. Overall management of the facility and general direction of the facility operations are the responsibility of the facility Site Supervisor, whose office is located in the administration building near the scale house. The Site Supervisor's responsibilities include:

- Managing environmental compliance for the facility.
- Managing personnel requirements for the facility, including hiring of supervisory and operating personnel, and providing for their training and orientation.
- Ascertaining the operation and maintenance needs for the facility.
- Implementation of the Operations Plan for the facility.

Support staff, such as administrative personnel, equipment operators, and maintenance personnel are employed to facilitate operations at the facility.

2.3 WASTE-TYPE CONTROL

A sign will be located near the entrance to the facility that will indicate that only Class III material is accepted for disposal. A spotter will be located at the entrance to the Class III facility to screen the waste and explain what materials are allowed and what

materials are not allowed. A second spotter at the working face will visually screen, to the maximum extent practical, each load of waste arriving at the working face.

In the event waste not suitable for processing at the Class III site is observed by any spotter or equipment operator, the spotter or equipment operator will be responsible for isolating the suspect waste. If the truck that delivered the waste is still on-site, the truck driver will be directed to reload the unauthorized waste, and remove the waste from the facility. In the event that the delivery vehicle has left the facility, the rejected waste will be transported by the County to the proper area of the Tomoka Landfill site for disposal.

Reasonable effort will be made to prevent the delivery of hazardous waste to the facility. In the event hazardous waste is delivered to the facility, it will be handled in accordance with applicable laws and transported to the on-site hazardous waste facility.

2.4 VEHICLE TRAFFIC CONTROL AND UNLOADING

The entrance/exit road for the facility is located on the east side of the County property on Tomoka Farms Road. The entrance road is accessible in all weather conditions. Access to the site is controlled by a lockable gate.

County personnel and signage direct incoming truck traffic to expedite safe movement of vehicles within the facility. The scale house is located 2,500 feet from Tomoka Farms Road to assure that no back-up of in-bound vehicles will take place on the public right-of-way.

Signs clearly indicating truck traffic routes are erected at all necessary points along the road, and are maintained by County personnel. The signage describes the types of waste suitable for disposal at the facility, the location of applicable processing areas, and other general information.

2.5 GRADING AND COMPACTION

Grading and compaction will be accomplished as the working face is constructed. Materials will be placed along the working face in lifts of 3 to 5 feet using a D-6 Caterpillar bulldozer. The bulldozer will spread and compact the material. Intermediate cover material, when needed, will be obtained from the incoming materials and from on-site borrow areas.

Final grading will be accomplished as lifts are completed. Grading is designed to continue to direct stormwater flow away from the landfill.

2.6 STORMWATER CONTROL

Stormwater is captured on the side slope terraces and directed to downpipes. It will be necessary to maintain the terraces free of siltation and erosion damage to ensure their proper functioning. The downpipes discharge onto energy dissipation structures located at the base of the landfill. It will be necessary to inspect these structures for siltation, erosion damage, and animal nesting.

2.7 GROUNDWATER MONITORING

The Class III facility is included in the ground water monitoring plan for the entire Tomoka Farms Road Landfill, which meets the requirements of Chapter 62-701.510(8)(9), F.A.C.

2.8 HOURS OF OPERATION

The Class III facility is open to the public and solid waste operations and related equipment are operated Monday through Friday from 7:00 a.m. to 5:30 p.m. and on Saturday and Sunday from 8:00 a.m. to 2:30 p.m. The facility is open every day of the year except Christmas Day.

2.9 ACCESS CONTROL AND SECURITY

Access to the landfill site is controlled by a perimeter fence which surrounds the site. Security is maintained by locking the entrance gate during the times the landfill site is not operating. Semi-annual inspections of the fence are conducted to identify locations in need of repair. "NO TRESPASSING" signs are placed along the property boundary.

2.10 INSPECTIONS

The Class III facility will be inspected on a daily basis by the County.

Inspections include the disposal facility side slopes and side slope drainage features, cover status, and stockpiles. Depressions in the disposal facility surface will be filled with cover material, compacted and immediately revegetated (final cover areas only). If standing water develops, the area will be filled, compacted, and graded to provide positive drainage. Where this problem cannot be corrected by proper grading, temporary drainage ditches will be constructed to drain off the standing water. All vegetative growth is mowed on an as-needed basis.

2.11 REGULATORY COMPLIANCE

The landfill Site Supervisor will provide immediate notice to FDEP in the event a non-compliance notice is received regarding any permits or approvals relating to the operation and use of this facility. Notices will be immediately addressed in accordance with best engineering practices and regulatory requirements.

2.12 REPORTS

The County will submit quarterly reports to the FDEP, as provided in Chapter 62-701.500(4).

2.13 CLOSURE PLANNING

Final cover and seeding/planting of a grass cover will occur within 180 days after the last wastes are received. The final cover will consist of 2 feet of soil with the upper 6 inches capable of supporting the grass and will be graded to meet the final grading plan. After closure, it is anticipated the area will be addressed to revert to a pasture land.

SECTION 3
MAINTENANCE

3.1 ACCESS ROAD

The access road is maintained using asphalt roofing shingles derived from C&D wastes along with materials from the on-site borrow area. A 14 G Caterpillar grader is used for road maintenance.

3.2 EROSION CONTROL

Erosion control is provided by sodding the side slopes as final grade is reached.

3.3 ODOR

Action shall be taken to prevent fugitive odors and particulates from creating nuisance conditions. These steps include the following:

- Rejection of unacceptable waste that would create odors.
- Removal from the site of putrescible or other rejected waste that could cause odor problems.
- Active management of recycled materials.
- Maintaining as small a working face as practical.
- Application of soil cover over buried waste.

If odor problems develop, appropriate responses will be taken, including the following:

- More aggressive cover management.
- Adjust the size of the working face of the disposal facility.
- Enhance the diversion of stormwater offsite.
- Deodorizing methods such as masking agents, misting, and blowers may be used as temporary measures.

3.4 DUST

The following steps will be taken to minimize fugitive dust emissions at the Facility.

- Sprinkling roadways, stockpile areas, and processing areas with water as necessary. The County uses a 5,000-gallon water wagon filled from the landfill perimeter canal for this purpose.
- Stabilizing roadways with asphaltic materials.
- Developing vegetation on inactive areas of the disposal facility.
- Grassing disposal facility sideslopes when final grade is reached.

3.5 LITTER

The County employs litter fencing at the Class III site to control blowing litter. A litter removal crew works five days a week collecting and removing litter from the landfill site, including the Class III area.

3.6 VECTOR CONTROL

The following steps are taken to minimize vectors (e.g., rodents and birds) at the site:

- Unacceptable wastes are not disposed at the Class III facility.
- Unacceptable wastes are promptly removed and disposed at an appropriate disposal facility.
- Non-active portions of the site are kept mowed and free from debris accumulation.
- If needed, pesticides will be used in accordance with Florida Department of Agriculture rules and standards.

3.7 VEHICLES

Vehicle maintenance facilities are located at the landfill adjacent to the Class III facility. Vehicle maintenance is accomplished as necessary to conduct preventative maintenance and repairs.

3.8 FUELS, SOLVENTS, LUBRICANTS

Fuels, solvents, lubricants and other chemicals or materials are properly stored at the landfill maintenance facility. No such materials are stored at the Class III facility.

SECTION 4
EMERGENCY AND CONTINGENCY PLANS

4.1 GENERAL GUIDANCE

No evacuation plan has been prepared for the site.

Incidents which might require the assistance of outside emergency response agencies shall be directed to appropriate agencies and/or individuals listed in Table 4-1. In the event of a natural disaster, operations at the facility shall cease until the landfill Site Supervisor has deemed the area safe for contingency operations or resumption of normal operations.

In the event of inclement weather, accidents, fires, receipt of unauthorized waste, and equipment breakdowns, the appropriate provision of this plan will be implemented immediately. Amendments shall be made to this plan if the facility design, operations or maintenance procedures change.

4.2 EMERGENCY PLANS

4.2.1 Emergency Assistance

Emergency telephone numbers are listed in Table 4-1.

TABLE 4-1 EMERGENCY TELEPHONE NUMBERS

Organization	Phone Number
Tomoka Farms Road Landfill On-site Phone:	(904) 947-2952
Primary Emergency Response:	911
Fire Department (County):	(904) 254-4657
Hospital: Halifax Medical Center 303 N. Clyde Morris Blvd. Daytona Beach, FL 32174	(904) 254-4000 (switchboard) (904) 254-4100 (emergency line)
Ambulance: EVAC Ambulance Service	(904) 252-4911
Hazardous Material Contractor: Laidlaw Environmental Services	(800) 699-8916
Sheriff: Bob Vogel	(904) 248-1777
Facility Site Supervisor: Paul Ramias Home: Office:	 (904) 423-3991 (904) 947-2952
Supervisor IV: Gene Palmetier: Home: Office: Environmental Specialist: Susan Gaze Home: Office: Solid Waste Services Director: Bill Gilley Home: Office:	 (904) 228-3477 (904) 943-7889 (904) 426-2231 (904) 947-2952 (904) 947-2952 (904) 943-7889

Florida Department of Environmental Protection: Jim Bradner	(407) 894-7555

4.2.2 Personal Injury Accidents

In the event of a personal injury at the facility, on-site personnel will assess the nature and extent of the injury to the extent possible and appropriately trained personnel will administer emergency first aid techniques as necessary. If the injury appears to require professional medical attention, emergency assistance will be summoned. In all cases, the landfill Site Supervisor will be notified.

4.2.3 Vehicular Accidents

In the event of a vehicular accident at the site, a determination will be made regarding the feasibility of safely moving the vehicle(s) under their own power. If possible, the vehicles will be moved out of the way of normal traffic flow. If the vehicles cannot move under their own power and the vehicles are interrupting traffic flow, the vehicles will be pushed out of the way using on-site equipment. The Site Supervisor will be notified and arrangements to have the disabled vehicles removed will be made in accordance with the directions of the Site Supervisor.

4.2.4 Fire

Fires will be smothered with soil to remove the oxygen fueling the point of combustion. This will be accomplished by using on-site equipment to excavate soil and transport it to the edge of the fire. The soil will spread onto the fire by working from the sides of the fire towards the center. A bulldozer will compact the soil to increase its density thus decreasing air circulation to fuel the fire.

During a fire, all placement of combustible waste in the immediate area of the fire will be suspended. Placement of combustible waste in the area of the fire will resume only after a thorough inspection by the Site Supervisor.

In the event of a fire in or on disposal facility equipment, the following procedures will be used by the equipment operator or other nearby disposal facility personnel:

- Use vehicle fire extinguishers to control the fire.
- If possible, move equipment away from the disposal area to solid ground, shut off the engine, and place the equipment's blades or buckets on the ground.
- Make other operators in the immediate area of the fire aware of the problem.
- Extinguish any reoccurring fires with fire extinguishers or other fire suppression materials.

Charged and tested fire extinguishers are located on all motorized equipment. In addition, each spotter has a fire extinguisher available at his or her position.

There is no open burning at the facility. All fires will be promptly reported to the fire station listed in Table 1 and to the Site Supervisor.

4.2.5 Spills

No hazardous wastes are accepted at the facility. The spotters are responsible for identifying concealed drums, or other suspect wastes. In the event waste materials of a questionable nature are unloaded before they are spotted by County personnel, the hauler will be detained (if possible), and the Site Supervisor notified immediately to determine the appropriate action. In the event the hauler has left the site, the Site Supervisor shall be immediately notified, and if possible, the hauler identified via available records.

Despite these precautions, if unauthorized hazardous waste, fuel, or oil is spilled at the site, the spill area will be bermed or absorbent material placed to contain the spill. The Site Supervisor and Environmental Specialist will be notified immediately in the event a spill occurs. The County hazardous waste response team will also be notified. In case of a spill, the following spill contingency plan will be implemented.

1. In case of, or as soon as any spill is observed, the source of the spill will be located and actions taken to prevent further spillage, if possible.
2. Potential ignition sources will be removed from and restricted from entering the area of the spill, if the material is flammable.
3. A temporary dike will be constructed to contain the spill.
4. Absorbent socks/booms will be used where appropriate. The fire station and hazard response contacts listed in Table 1 will be immediately advised of the nature and location of the spill.
5. All absorbed material or contained liquid will be removed and packaged in Florida Department of Transportation (FDOT) approved containers. Used absorbent materials should be packaged separately from liquids.
6. All containers used for the disposal of spill response debris will be labeled with the type of waste and the start date of accumulation and disposed in accordance with Federal and State environmental regulations.

4.3 CONTINGENCY PLANS

4.3.1 Inclement Weather

During rainy weather, care will be taken to maintain access to the working face of the disposal facility along on-site roads. Minor regrading and/or filling may be required from time to time to smooth out ruts in site access roads and processing areas. A stockpile of material for use in maintaining passable access roads during wet weather is kept available at the site.

4.3.2 Hot Loads

Any hot material that is found will be deposited on an unfilled area away from the active disposal area. The load will immediately be covered with earth if a fire is imminent. The waste will not be incorporated into the disposal facility until it has cooled completely, and the fire hazard has been mitigated.

4.3.3 Equipment Failure

Sufficient backup equipment is available at the landfill site for equipment breakdowns and downtime for normal routine equipment maintenance. In the case of major equipment failure the following procedures will be followed:

1. Applicable site operations will cease until equipment capacity is retained.
2. Arrangements with other County departments and rental equipment dealers will be made to furnish equipment on a short-term basis.

SECTION 5
TRAINING

5.1 PURPOSE

In-house and publicly available training will be obtained to ensure that operators and spotters are properly trained to operate the facility and identify and manage unacceptable materials entering the facility.

5.2 TRAINING CLASSES AND SCHEDULES

In-house training is provided on an as-needed basis, generally when new operators and spotters are hired. Publicly-available training is provided on a schedule that complies with Chapter 62-701.500(1). This will include 20 hours of operator training and 8 hours of spotter training to instruct in the proper operation of the facility and provide instruction in identifying unacceptable materials, especially materials that qualify as a hazardous waste. Once every three years, each operator and spotter will complete 15 hours of additional course work as a refresher to the initial training and to learn new operation procedures and information related to waste identification. The course work will be selected from courses available through the University of Florida TREEO Center that meet the needs of the facility. These may include "The Solid Waste Landfill Operator Short School" and the "Waste Screening and Identification for Landfill Operators and Spotters" course, as well as other specifically designed courses for landfill operators which the FDEP and TREEO may develop.

5.3 RECORD KEEPING

Waste reports shall be compiled monthly and submitted to the FDEP quarterly. The reports will include the amount of waste received in tons per day, and an estimate of each of the following types of waste:

- Residential waste (non-putrescible)

- Commercial waste (non-putrescible)
- Construction and demolition debris
- Yard Trash

Other operating records, including training records, permits, reports, and other documents are kept at the landfill administration building and are available for inspection by personnel from the FDEP.

ATTACHMENT Q-1

ESTIMATE OF PROBABLE CLOSURE COSTS

TABLE Q-1 TOMOKA FARMS ROAD CLASS III LANDFILL ESTIMATE OF PROBABLE CLOSURE COST

Item	Units	Total Quantity	Unit Price	Total Cost
1. Soil Cover	CY	394,000	$ 2.25	$ 886,500
2. GCL	AC	81.4	$ 23,870	$1,943,018
3. Seed and Mulch	AC	81.4	$ 2,000	$ 162,800
4. Biplanar Geonet	AC	29.6	$ 17,428	$ 515,869
5. Triplanar Geonet	AC	11.2	$ 26,136	$ 292,723
6. 4-inch HDPE Pipe	LF	24,400	$ 0.75	$ 18,300
7. 8-inch HDPE Pipe	LF	14,350	$ 3.30	$ 47,355
8. Drain Basins	EA	122	$ 540	$ 65,880
9. Engineering and Surveying	LS			$ 81,400
10. Miscellaneous Closure Costs	LS			$ 40,600
Subtotal				$4,054,445
Contingency (15%)				$ 608,555
Total				$4,663,000

TABLE Q-2 TOMOKA FARMS ROAD CLASS III LANDFILL ESTIMATE OF PROBABLE POST CLOSURE ANNUAL COST

Item	Units	Total Quantity	Unit Price	Total Cost
1. Ground and Surface Water Monitoring				*
2. Inspection	EA	4	$ 1,000	$ 4,000
3. Final Cover Repair	AC	1	$ 10,000	$ 10,000
4. Reseeding	AC	4	$ 2,000	$ 8,000
5. Mowing and Groundskeeping	AC	81.4	$ 300	$ 24,420
6. Stormwater System Maint.	LS		$ 10,000	$ 10,000
Total Annual Cost				$ 56,420

* The groundwater monitor wells for the Class III facility are included in the Tomoka Class I monitoring program. The post-closure cost of monitoring these wells is included in the Class I post-closure costs.