Florida Department of

Memorandum **Environmental Protection**

TO: Gloria + Marjorie

FROM: Laxsamee

DATE: 12/8/2011

SUBJECT: County: Volusia

Permit/OGC: SF64-0078767-028

Facility: Tomoka Farms Rd LF I – Closure Permit Renewal

Attachment: Closure Permit Renewal Application.

The attached is being sent to you for:

____ Information only

✓ Review and comments

If review comments are needed, please respond:

✓ By:
(Solid Waste deadline is 12/27/2011 (To Tom))

____ As soon as possible for your schedule.

Comments: The comment must go out by 1/6/2012

Levin, Laxsamee

From: Tulloch, Kris
Sent: Thursday, December 08, 2011 6:38 AM
To: Rush, Kim
Cc: Levin, Laxsamee
Subject: RE: 12-07-11-SW-TOMOKA FARMS RD LF

DEP CENTRAL DISTRICT
PERMIT HISTORY DATA FORM

DATE RECEIVED:	12-07-11		CHECK NUMBER:	593354	
Please select the Appropriate Box Type (X) in Box	Modification		***FEES:***	Correct FEE: $	7500.00
	New			Amount Submitted $	7500.00
	Renewal	X		Amount to Refund: $	
	EXEMPT			Amount Due: $	

SITE # WAFR # AIR# :	SF64-0078767-028	**TYPE CODE:**	SF	**SUBCODE:**	01	**WACS#:**	27540

SITE/WAFR/FACILITY NAME:	TOMOKA FARMS RD LF
PROJECT NAME:	Tomoka LF N & S closure renewal
PROJECT DESCRIPTION:	
PROGRAM PROCESSOR NAME:	L. Levin

DATE	TIME	COMMENTS	INITIALS
12-07-11	**30**	**ENTERED INTO ORACLE**	**KT**

File Copy -

Environmental Consultants

Sun Trust Bank Building
501 North Grandview Avenue
Suite 400
Daytona Beach, FL 32118

386 238-7770
FAX 386 238-7046

SCS ENGINEERS

July 20, 2006
File No. 09204060.03

RECEIVED
JUL 24 2006
Central Dist.-DEP

Thomas Lubozynski, P.E., Waste Program Administrator
Florida Department of Environmental Protection
Central District
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803-3767

Subject: Response to July 5, 2006 Comments
Tomoka Farms Road Landfill Operations Plan
Permit No. SO64-0078767-016

Dear Mr. Lubozynski:

On behalf of Volusia County (County), SCS Engineers (SCS) has prepared this response to the Florida Department of Environmental Protections (FDEP) comments to the Operations Plan provided in your letter of July 5, 2006. For ease of review, the Florida Department of Environmental Protection (FDEP) comments are in bold, followed by the County's response. These responses are also incorporated into the revised Operations Plan which is attached.

1. **Contingency Plan: Pages 2-1 to 2-5**

- The Natural Disasters section of the Contingency Plan is too vague. Please include a detailed hurricane preparedness plan that provides contingency operations in the event of a severe storm or hurricane. At a minimum include the following:
  - Procedures implemented 24-48 hours prior to the storm's expected arrival.
  - Procedures to shut down the facility (for example, who is notified; what cover will be used; etc.).
  - Procedures during the storm.
  - Start up procedures after the storm has passed.
  - Management of extra leachate from the expected heavy rainfall.

Response: The revised plan includes specific procedures to be implemented in the event of a severe storm or hurricane. These include procedures for preparation, shut down, start up and leachate management.

2. **<u>Litter</u>: Pages 7-2 and 11-2 indicates that the perimeter ditch will barricade litter. The Department does not condone the use of a ditch containing water as a means to control litter. The wording should not imply that the ditch is a barricade barrier. The wording can say that during all litter patrols special attention will be made to ensure littler is removed from the perimeter ditch.**

   <u>Response:</u> The references to the perimeter ditches acting as barriers to blowing litter on pages 7-2 and 11-2 have been removed. In addition, a statement that litter policing will include removal of litter from the ditches has been added.

We trust that the enclosed, revised Operations Plan will meet the Department's requirements. Please contact us with any questions or comments regarding this correspondence.

Sincerely,

Michael S. Dae
Project Manager
SCS ENGINEERS

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

MSD/LAP: msd

Attachment

cc: James Bradner - FDEP
Josef Grusauskas – Director Volusia County Solid Waste Division
Patrick McCormack – Volusia County Solid Waste Division
Jennifer Stirk – Volusia County Solid Waste Division

ATTACHMENT A

OPERATIONS PLAN
TOMOKA FARMS ROAD LANDFILL
VOLUSIA COUNTY, FLORIDA

OPERATIONS PLAN
TOMOKA FARMS ROAD LANDFILL
VOLUSIA COUNTY, FLORIDA

Prepared for:

Volusia County Solid Waste Division
3151 East New York Avenue
Deland, Florida 32724

Prepared by:

SCS Engineers
501 North Grandview Avenue, Suite 400
Daytona Beach, Florida 32118
(386) 238-7770

Revised July 20, 2006
File No. 09204060.03

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SECTION 1

EXECUTIVE SUMMARY

The purpose of this document is to provide a consolidated manual of operating procedures for the Tomoka Farms Road Landfill Class I and Class III disposal cells. This document is intended to fulfill the requirement for am Operation Plan as listed in F.A.C. 62-701.500(2). This operations plan supersedes previous operations plans submitted to FDEP for this facility.

This plan has been prepared in accordance with Florida Rule 62-701, Florida Administrative Code (F.A.C.). Part L of FDEP's permit application form for solid waste management facilities (Part L) includes requirements for an operations plan. All information identified in Part L is provided herein, or in referenced documents. This operations plan is organized in accordance with Part L. In addition, Table 1-1 cross-references this document with the requirements of Part L.

Except where specific procedures are required by F.A.C. 62-701, this plan is intended to represent the best management practices and working goals of the Tomoka Farms Road Landfill.

Table 1-1
Cross Reference of FDEP Permit Application, Part L Requirements

Part L **Landfill Operation Requirements** (Rule 62-701.500, F.A.C.)	**Corresponding Section of Operation Plan**
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), F.A.C.)	Section 2.1
2. Provide a landfill operation plan including procedures for: (62-701.500(2), F.A.C.)	
a. Designating responsible operating and maintenance Personnel;	Section 2.2
b. Contingency operations for emergencies;	Section 2.3
c. Controlling types of waste received at the landfill;	Section 2.4
d. Weighing incoming waste;	Section 2.5
e. Vehicle traffic control and unloading;	Section 2.6
f. Method and sequence of filling waste;	Section 2.7
g. Waste compaction and application of cover;	Section 2.8
h. Operations of gas, leachate, and stormwater controls;	Section 2.9
i. Water quality monitoring;	Section 2.10
j. Maintaining and cleaning the leachate collection system.	Section 2.11

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), F.A.C.)	Section 3
4. Describe the waste records that will be compiled monthly And provided to the Department quarterly; (62-701.500(4), F.A.C.)	Section 4
5. Describe methods of access control; (62-701.500(5), F.A.C.)	Section 5
6. Describe load checking program to be implemented at the landfill to discourage disposal of unauthorized wastes at the landfill; (62-701.500(6), F.A.C.)	Section 6
7. Describe procedures for spreading and compacting waste at the landfill that include: (62-701.500(7), F.A.C.)	
a. Waste layer thickness and compaction;	Section 7.1
b. Special considerations for first layer of waste placed above liner and leachate collection system;	Section 7.2
c. Slopes of cell working face and side grades above land surface, planned lift depths during operation;	Section 7.3
d. Maximum width of working face;	Section 7.4
e. Description of type of initial cover to be used at the facility that controls:	
(1) Disease vector breeding/animal attraction	Section 7.5
(2) Fires	Section 7.5
(3) Odors	Section 7.5
(4) Blowing litter	Section 7.5
(5) Moisture infiltration	Section 7.5
f. Procedures for applying initial cover including minimum cover frequencies;	Section 7.5
g. Procedures for applying intermediate cover;	Section 7.6
h. Time frames for applying final cover;	Section 7.7
i. Procedures for controlling scavenging and salvaging;	Section 7.8
j. Description of litter policing methods;	Section 7.9
k. Erosion control procedures.	Section 7.10
8. Describe operational procedures for leachate management including: (62-701.500(8), F.A.C.)	

a. Leachate level monitoring, sampling, analysis and data results submitted to the Department;	Section 8.1 Section 8.2
b. Operation and maintenance of leachate collection and removal system, and treatment as required;	Section 8.3
c. Procedures for managing leachate if it becomes regulated as a hazardous waste;	Section 8.4
d. Agreements for off-sire discharge and treatment of Leachate;	Section 8.6
e. Contingency plan for managing leachate during emergencies or equipment problems;	Section 8.7
f. Procedures for recording quantities of leachate Generated in gal/day and including this in the operating record;	Section 8.8
g. Procedures for comparing precipitation experienced at the landfill with leachate generation rates and including this information in the operating record;	Section 8.9
h. Procedures for water pressure cleaning or video inspecting leachate collection systems.	
9. Describe how the landfill receiving degradable wastes shall implement a gas management system meeting the requirements of rule 62-701.530, F.A.C.; (62-701.500(9), F.A.C.)	Section 9
10. Describe procedures for operating and maintaining the landfill stormwater management system to comply with the requirements of Rue 62-710.400(9); (62-701.500(10), F.A.C.)	Section 10
11. Equipment and operation feature requirements; (62-701.500(11), F.A.C.)	Section 11.1
a. Sufficient equipment for excavating, spreading, compacting and covering waste;	Section 11.2
b. Reserve equipment or arrangements to obtain additional equipment within 24 hours of breakdown;	Section 11.3 Section 11.4
c. Communications equipment;	Section 11.5
d. Dust control methods;	
e. Fire protection capabilities and procedures for notifying local fire department authorities in emergencies;	Section 11.6 Section 11.7
f. litter control devices;	
g. Signs indicating operating authority, traffic flow, hours of operation, disposal restrictions.	Section 12

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), F.A.C.)	Section 13.1
13. Additional record keeping and reporting requirements: (62-701.500(13), F.A.C.)	Section 13.2
a. Records used for developing permit applications and supplemental information maintained for the design period of the landfill;	Section 13.3
b. Monitoring information, calibration and maintenance records, copies of reports required by permit maintained for at least 10 years;	
c. Maintain annual estimates of remaining life of constructed landfills and or other permitted areas not yet constructed and submit this estimate annually to the Department;	Section 13.4
d. procedures for archiving and retrieving records which are more than five years old.	

CURRENT OPERATING CONDITIONS

The Tomoka Farms Road Landfill is owned and operated by the Volusia County Solid Waste Division and is located approximately three miles south of US 92 on Tomoka Farms Road in Section 10, Township 16 South, Range 32 East. The landfill is open for waste acceptance Monday through Friday from 7:00 a.m. until 5:30 p.m. and Saturday and Sunday from 8:00 a.m. until 3:00 p.m. Vehicles access the Tomoka Farms Road Landfill via Tomoka Farms Road. With proposed expansions the landfill is expected to be able to provide disposal of Class I and Class III materials until approximately 2020. A site plan of the Tomoka Farms Road landfill is included as Figure 1-1.

Waste hauling vehicles arriving at the Tomoka Farms Road Landfill travel west along the entrance road to the scale house where loads are weighed. The scale house attendant directs vehicles to the Class I or Class III active areas, or to the Special Waste area where the wastes are unloaded. Any unacceptable waste identified prior to acceptance by the landfill will remain the responsibility of the waste hauler. The various disposal areas will be clearly identified by signs at the locations within the landfill. The landfill does not operate a separated active face for the general public (private vehicles).

Class I waste is directed to the Class I working face where it is spread over the working face area of the landfill, placed in two-foot layers, compacted by a compactor, and covered at the end of the working day. Initial cover is applied at the end of each workday. A 12-inch thick intermediate cover, in addition to the initial cover, is placed on areas where no additional waste

will be placed within 180 days. This intermediate cover may be removed before placing additional waste. The final cover system is installed as areas reach the final permitted elevation.

Class III waste is directed to the Class III working face where it is spread in two to five-foot lifts. Class III waste is covered with an initial cover weekly. A 12-inch thick intermediate cover, in addition to the initial cover, is placed on areas where no additional waste will be placed within 180 days. This intermediate cover may be removed before placing additional waste. The final cover system is installed as areas reach the final permitted elevation.

Leachate generated from the landfill is conveyed to the landfill's leachate system. Leachate management options at the Tomoka Farms Road Landfill include recirculation, evaporation, and transportation to a Publicly Owned Treatment Works (POTW). Recirculation shall be performed only in Class I areas that have received initial cover and can be isolated from the stormwater management system.

Stormwater run-off is directed away from open areas on the active face of the landfill by means of ditches and swales around the landfill. The swales outside the disposal area divert stormwater into the perimeter ditches that are located outside the lined berms and, therefore, isolated from the leachate and solid waste. Within the landfill disposal area, stormwater run-off that has not contacted waste or mixed with leachate is conveyed to the stormwater management system. Stormwater run-off which contacts waste or mixes with leachate is treated as leachate.

SECTION 2

LANDFILL OPERATIONS AND MAINTENANCE (RULE 62-701.500(2), F.A.C.)

TRAINING AND CERTIFICATION OF OPERATORS AND SPOTTERS (RULE 62-701.500(1), F.A.C.)

In accordance with Rule 62-701.500(1), F.A.C., at least one trained operator will be on duty at the Tomoka Farms Road landfill whenever waste is received at the facility. Operator and spotter training will comply with Rule 62-701.320(15), F.A.C., as adopted May 27, 2001. Operators at the Tomoka Farms Road Landfill (landfill) shall participate in at least 24 hours of initial training. Every three years landfill operators shall participate in continuing education courses totaling 16 hours. Operator training will consist of courses conducted by the University of Florida TREEO Center, or other courses presented by other providers that have been approved by the Florida Solid Waste Management Training Committee (SWMTC).

In accordance with Rule 62-701.320.15, F.A.C., Spotters shall participate in 8 hours of initial training that shall include Spotting at Construction and Demolition Sites, Landfills, and Transfer Stations (SWMTC 8 hours) and/or Waste Screening and Identification for Landfill Operators and Spotters (SWMTC 8 hours) conducted by the University of Florida TREEO Center or other SWMTC approved providers. Every three years Spotters shall participate in continuing education courses totaling four hours. The Tomoka Farms Road Landfill will typically use equipment operators/ spotters, trained in accordance with F.A.C. 62-701.320(15), to perform spotter duties at the active disposal area to visually screen incoming waste.

DESIGNATION OF PERSONS RESPONSIBLE FOR OPERATION AND MAINTENANCE (RULE 62-701.500(2)(A), F.A.C.)

The persons directly responsible for major components of the landfill follow:

Component	Responsible Party
Operations	Landfill Supervisor
Repair and Maintenance	Landfill Supervisor
Permitting Requirements	Solid Waste Management Division Director
Water Quality and Leachate Testing	Environmental Specialist III

The Landfill Supervisor has overall responsibility for the operation of the landfill. The Landfill Supervisor is responsible for the day-to-day implementation of the operations plan and, along with the Solid Waste Management Division Director, is responsible for environmentally safe operations in accordance with state and federal regulations.

CONTINGENCY OPERATIONS FOR EMERGENCIES (RULE 62-701.500(2)(B), F.A.C.)

Emergencies that result in disruption of normal operations at the Tomoka Farms Road Landfill

for more than 24 hours and that would result in the landfill being unable to comply with its permit must be reported to the FDEP-Central District Office at (407) 894-7555.

The contingency plan for the facility addresses the following four potential emergencies:

- Equipment failure
- Unusual operating conditions resulting from poor weather conditions
- Accidents
- Fire
- Unavailable landfill capacity

Emergency Assistance

Emergency telephone numbers are listed in Table 2-1. This table will be updated as needed and an up to date version will be posted at the landfill operations office.

TABLE 2-1. EMERGENCY TELEPHONE NUMBERS

Organization		Phone Number
Tomoka Farms Road Landfill On-site Phone:		(386) 947-2952
Primary Emergency Response:		911
Fire Department (County):		(386) 254-4657
Hospital: Halifax Medical Center 303 N. Clyde Morris Blvd. Daytona Beach, FL 32174		(386) 254-4000 (switchboard) (386) 254-4100 (emergency line)
Ambulance: EVAC Ambulance Service		(386) 252-4911
Hazardous Material Contractor: Clean Harbor Environmental Services		(800) 699-8916
Sheriff:		(386) 248-1777
Operation Supervisor: Martin Bey	Cell: Home: Office:	(386) 527-6335 (386) 767-6795 (386) 947-2952
Supervisor IV: Gene Palmatier:	Cell: Home: Office:	(386) 527-6333 (386) 228-3477 (386) 947-2952
Environmental Specialist: Hazmat First Responder Jennifer Stirk	Cell: Home: Office:	(386) 527-6336 (386) 960-6670 (386) 947-2952
Solid Waste Services Director: Josef Grusauskas	Cell: Home: Office:	(386) 527-6337 (386) 304-6940 (386) 943-7889
Florida Department of Environmental Protection: Jim Bradner, P.E.		(407) 894-7555
Poison Control Assistance		(800) 222-1222
State Warning Point		(800) 320-0519

Equipment Failure

In the event of equipment failure at the Tomoka Farms Road Landfill, sufficient backup equipment is available at the landfill site for equipment breakdowns and downtime associated with normal routine equipment maintenance. In the case of major equipment failure the following procedures will be followed:

- Arrangements with other County departments and/or contractors will be made to furnish equipment on a short-term basis.
- Applicable site operations will cease until equipment capacity is restored.
- Contact rental equipment dealers to furnish equipment on short-term notice (within 24 hours)

In the event of equipment failure, the Landfill Supervisor will be notified. Within 24 hours of notification of the Landfill Supervisor, the equipment will be replaced with back-up capability if necessary, or repaired and placed back in operating condition.

Equipment that could require the use of backup or rental equipment for continued, normal operation of the Tomoka Farms Road Landfill may include:

- Landfill Compactor
- Dozer
- Off-Road Dump Truck
- Back-hoe
- Water Truck

All equipment maintenance will either be performed by Volusia County or will be contracted by Volusia County to a maintenance contractor.

Poor Weather Conditions

Unusual operating conditions could result from excessive rainfall and electrical storms. The type and volume of materials to be disposed of after a hurricane or excessive storms differ from normal landfill operations. During extremely high wind conditions or electrical storms, disposal operations will be temporarily suspended to protect the workers. Disposal operations will be suspended immediately before and during a hurricane or tornado.

During rainy weather, access to the working face along on-site roads must be maintained. It may be necessary to grade out ruts more frequently than during normal operations, or it may be necessary to apply additional material to the on-site access roads to counteract the effects of rain.

Natural Disasters

In the event of a natural disaster, such as a hurricane, the Tomoka Farms Road Landfill will continue normal operations until unsafe weather exist. Normal operations will resume after threatening weather conditions subside.

Procedures Prior to Storm --

Prior to the arrival or a severe storm or hurricane, operations at the Tomoka Farms Road Landfill will continue for as long as the Division Director or Operations Supervisor determines that operations can be safely conducted. Beginning 24 – 48 hours prior to the storms arrival, the following will occur:

- Materials and debris that could pose an airborne hazard will be moved to an inside location or secured to the ground.
- Leachate holding ponds and gas system will be inspected to ensure that adequate storage capacity if available. If necessary, leachate will be transported for off-site disposal or recirculated into the active Class I cell to provide adequate capacity.
- A stockpile of soil for use as initial cover will be established in case of sudden shut down.

Landfill Shut-down Procedures --

The following steps will be taken once it is determined that safe landfill operations can no longer continue:

- Notify on-site personnel and Solid Waste Division employees.
- Scalehouse attendants will begin notifying haulers as soon as decision has been made to shut-down the landfill.
- Apply initial soil cover to active face. Alternate daily covers such as tarps or other materials that could be damaged or removed by high winds should not be used.
- Ensure that all personnel have exited the landfill prior to closing and secure the facility.

Procedures During Severe Storms or Hurricanes --

If it has been determined that operations cannot safety continue due to a severe storm or hurricane, the Tomoka Farms Road Landfill will be closed and unattended. No operations will take place during the storm.

Landfill Start-up Procedures --

Following a severe storm or hurricane, the landfill will re-open when the Division Director determines that safe operations can resume. Prior to resuming operations, the following will occur:

- Inspect the landfill for unsafe conditions and remediate as necessary.
- Inspect leachate and gas systems for damage.
- Ensure safe, adequate access to the working face(s).
- If electrical power service is interrupted, utilize generators or other sources of back-up power, as needed, for normal operations.
- If scales are not operational, the volume of incoming waste will be estimated and repairs to the scale system will be initiated.

Management of Excess Leachate --

Severe storms or hurricanes are likely to result in leachate generation rates above those observed during normal weather conditions. Following a severe storm or hurricane the leachate levels in the storage ponds will be observed to ensure that the ponds do not overflow. Leachate recirculation is the first option for managing excessive leachate generation. However, in the unlikely event that leachate must be transported off-site for disposal and no disposal facility is available due to the storm, temporary storage tanks may be used until disposal capacity is available.

Accidents

The following emergency or equipment procedures will be followed for the various types of accidents that may occur at the facility.

Vehicular Accidents --

- Determine if personal injury has occurred. If so, contact the Landfill Supervisor.
- Determine if the vehicle(s) can be safely moved under its own power. If so, move the vehicle(s) out of the way of normal traffic flow.
- If the vehicle(s) cannot move under its own power and is interrupting traffic flow, push the vehicle(s) out of the way with site equipment or reroute traffic if serious injuries are involved.
- Notify landfill and personnel officials of the details of the accident.
- Arrange to have disabled vehicles towed from the site to maintain operations.

- Report incident to the County Risk Management Officer and other appropriate personnel.

Personal Injury --

- Determine the nature and extent of the injuries.
- If qualified, administer emergency first aid techniques.
- Call for outside emergency assistance if necessary.
- Report incident to the Landfill Supervisor and personnel officials.
- If injuries require non-emergency medical attention, arrange to transport victim(s) to a place of professional medical care (e.g., hospital emergency room, doctor's office, clinic) by conventional means in accordance with County Safety Procedures.
- Report incident to the County Risk Management Officer and other appropriate personnel.

Fire

Waste loads that arrive at the landfill on fire will not be deposited at the working face. They will be deposited away from the working face on an area that has previously been covered with daily soil cover. The load will then be extinguished prior to being moved to the working face.

Small fires on the landfill working face will be extinguished with fire extinguishers when possible without endangering human health. If a fire at the landfill working face cannot be extinguished by fire extinguishers, on-site equipment will be used to spread soil over the fire thus decreasing oxygen supply to the fire.

If necessary, a temporary waste unloading area may be located as far away from the fire as possible but still within the limits of the lined disposal area where daily soil cover has previously been placed. Solid waste entering the facility will be placed in the temporary area until the fire is extinguished.

When a landfill fire is observed, the Site Supervisor will be notified immediately and shall determine if the fire can be extinguished using on-site equipment and materials or if the local fire department must be contacted for assistance. If on-site equipment and materials are not sufficient to extinguish the fire, the local fire department will be contacted by calling 911.

The first consideration when dealing with a fire is human safety. If the Site Supervisor determines that a fire cannot be safely controlled while awaiting assistance, the immediate area will be evacuated. Depending on weather and other conditions areas where the fire may potentially spread may also be evacuated.

For any fire at the landfill, a written report will be submitted to the FDEP Central District Office within five days of the fire explaining the cause of the fire, remedial actions takes, and measures to taken to prevent recurrence. If the fire is of such size and/or intensity that smoke can be seen from outside the landfill, the County will make every effort to notify the Department, by phone or e-mail, within 24 hours of the fire.

Unavailable Landfill Capacity

It is unlikely, based on the permitted capacity of the Class I and Class III landfills, that disposal capacity would become unavailable. However, if disposal capacity is temporarily unavailable, waste will not be accepted into the landfill for disposal. Signs will be posted notifying waste haulers that the landfill is closed, identifying alternate disposal facilities, and listing a projected reopening date.

CONTROL/INSPECTION OF INCOMING WASTE (RULE 62-701.500(2)(C), F.A.C.)

All solid waste arriving at the landfill is routed through the scalehouse. Scalehouse attendants screen visible loads for unacceptable materials including recyclables, hazardous waste, and medical waste. Scalehouse attendants at the Tomoka Farms Road Landfill typically receive spotter training in accordance with F.A.C. 62-701.320.(15)(c). From the scalehouse, vehicles are directed to either the Class I disposal, the Class III disposal area or to the Special Waste area. The various areas will be clearly identified by signs within the landfill. If prohibited wastes are discovered, the spotter will direct the vehicle back to the scale house. If the unacceptable waste has not yet been unloaded, the person responsible for shipping the waste will be notified. If the waste has been deposited, the area of the waste load should be blocked from public access until the generator or hauler of the waste cleans up the waste. If the generator or hauler of the waste cannot be identified or is unable to remove the waste, Volusia County will be responsible for cleanup, transportation, and disposal of the waste at an appropriate waste management facility.

WEIGHING OF INCOMING WASTES (RULE 62-701.500(2)(D), F.A.C.)

Weighing of incoming wastes will be performed at the scalehouse. Each customer receives a receipt showing the type of refuse, amount, and fee. These receipts are utilized for financial accountability and to complete the necessary daily, weekly, monthly, and annual activities/materials reports required by the Florida Department of Environmental Protection (FDEP) and Volusia County.

VEHICLE TRAFFIC CONTROL AND UNLOADING (RULE 62-701.500(2)(E), F.A.C.)

All waste hauling vehicles entering the landfill must proceed to the scalehouse. Vehicle are directed to the appropriate unloading areas by the scale house attendant and assisted by signage around the landfill. The attendant will direct the vehicle to the point of unloading area compatible with the waste. Additional traffic directions will be provided, when needed, by equipment operators or spotters.

METHOD AND SEQUENCING OF FILLING WASTES (RULE 62-701.500(2)(F), F.A.C.)

The Tomoka Farms Road Landfill will be operated using the area fill method. Waste delivered to landfill will be directed to the working face area of either the Class I or Class III landfill for unloading.

Class I waste will be spread in layers approximately 2-feet in thickness and compacted. Following this method waste will be placed in 10-foot lifts across the site. Initial cover is applied at the end of each workday. A sequencing diagram for the Class I landfill is included as Figure 2-2.

Class III waste will be spread in layers approximately 2- to 5-feet thick and compacted. Following this method waste will be placed in 20-foot lifts across the site. An initial cover is applied weekly. The Class III landfill will be systematically filled to the elevations shown in the final grading plan included as Figure 2-3.

WASTE COMPACTION AND APPLICATION OF COVER (RULE 62-701.50(2)(G), F.A.C.)

Method of Filling Wastes/Compaction

The procedure for filling and compacting of the initial waste lifts over areas of exposed liner in the Class I landfill will be as follows:

- To protect the integrity of the leachate collection system and liner, driving vehicles directly over the liner will be prohibited.
- The liner will be covered with a minimum of two (2) feet of protective soil at least one week prior to the placement of waste.
- The protective soil layer is carefully placed on the liner using low ground pressure tracked dozer approximately 1 week prior to the placement of waste. The equipment operator is directed by a spotter to ensure that the soil is placed correctly and that the equipment does not come in contact with the liner. The 2-foot minimum in-place thickness of the protective soil layer is verified by the landfill operator.
- The landfill spotter directs equipment away from the side slope liner during normal operations.
- The initial lift of waste will be 4 feet thick and selected for material that will not cause damage to the liner. The initial lift of waste will be spread with equipment that will preserve the integrity of the liner system.

The procedures for filling and compacting all waste will be as follows:

- Waste will be placed against the working face of the previous days waste, so that the first row will act as a means of access and a berm to guide the placement of waste material for the remaining rows.

- Class I waste will be spread and completed in 2-foot lifts and compacted to approximately 1 foot in thickness by a minimum of five passes using a landfill compactor.

- Class III waste will be spread and completed in 2 to 5-foot lifts and compacted by a minimum of fives passes using a landfill compactor or dozer.

Initial and Intermediate Cover

Cover material will be utilized to minimize vector breeding, animal attraction, and fire potential, as well as to prevent blowing litter and control odors. Initial cover will be composed of soil from the on-site stockpile, or synthetic materials such as tarps and geomembranes. Initial cover will be placed and compacted to a minimum thickness of 6 inches or equivalent. The intermediate cover will comprise of local soil which will be placed and compacted to a minimum thickness of 12 inches.

Final Cover

The final cover system for the Class I landfill will be designed in accordance with Rule 62-701.600(5), F.A.C. The final cover will be placed on the intermediate cover as phases of the facility are closed. The conceptual final cover system for landfill closure, from top to bottom includes the following:

- 6-inch layer of top soil material with surface vegetation
- 18-inch soil layer
- Composite drainage net layer (geosynthetic filter fabric with drainage net)
- 40-mil textured geomembrane

A conceptual equivalent final cover system, if approved by the Department, may include:

- Exposed 60 mil HDPE Liner

OPERATION OF GAS, LEACHATE, AND STORMWATER CONTROLS (RULE 62-701.500(2)(H), F.A.C.)

Landfill Gas Controls

An active gas collection system is being installed in the Class I cell.

Passive gas vents will be installed as part of final closure for the Class III cell. If it becomes apparent prior to or at the time of closure that passive vents are not adequate to control odors or

migration of landfill gas from the landfill, an active landfill gas control system will be installed. The operations plan will be updated as necessary to provide for operation and maintenance of the landfill gas controls.

Leachate Controls

Leachate is collected by a leachate collection and transfer system. The leachate is conveyed by gravity to leachate sumps located as shown in the Tomoka Farms Road Landfill Construction Plans. Collected leachate is pumped from the leachate sumps in the landfill to the two leachate storage and evaporation ponds located west of the disposal cell. Additional information is provided in Section 8.0 of this operations plan.

Leachate generation will be minimized by operating a single working face and keeping the working face as small as possible. The County's goal is to operate a working face no larger than approximately 150' by 200' under normal operating conditions. Daily and/or intermediate cover will be placed on slopes to promote stormwater runoff. The mixing of stormwater with leachate will be minimized by grading the daily and/or intermediate cover away from the working face and by using soil berms to direct stormwater run off away. Swales and conveyance ditches will also be used to collect and transport stormwater to stormwater management facilities.

Stormwater Controls

Operation of the existing stormwater system is discussed in Section 10.0 of this operations plan. The stormwater system will be managed as required by Rule 62-701.500(10), F.A.C., to meet applicable standards for Rule 62-302, F.A.C., and Rule 62-330, F.A.C. The system shall minimize stormwater from entering waste filled areas and avoid the mixing of stormwater with leachate. All stormwater conveyances shall be inspected at least weekly to verify adequate performance. Conveyances not performing adequately will be repaired within thee (3) working days. Documentation of all inspections and repairs will be kept on file at the landfill office.

WATER QUALITY MONITORING (RULE 62-701.500(2)(I), F.A.C.)

Groundwater, surface water, and leachate monitoring will be conducted as described in the Tomoka Farms Road Landfill Groundwater and Leachate Monitoring Plan, which is kept in the landfill office.

MAINTAINING AND CLEANING THE LEACHATE COLLECTION SYSTEM (RULE 62-701.500(2)(J), F.A.C.)

The leachate system at the landfill consists of collection, pumping, storage, and disposal facilities. Maintenance of the leachate pumping facilities is performed as specified in the manufacturer's manuals kept on file in the landfill office. Inspection and cleaning of the leachate collection system will be performed every 5 years.

SECTION 3

OPERATING RECORDS
(RULE 62-701.500(3), F.A.C.)

Volusia County will maintain a separate operating record for the Class I and Class III landfills. The operating record will consist of all records, reports, analytical results, and all notifications as required by Rule 62-701, F.A.C. These records are considered an integral part of the operations plan and will be kept at or near the facility. The operating records will be available for inspection at reasonable times upon request by FDEP personnel.

The Volusia County Solid Waste Management Division Director will be responsible for the storage and filing of all operational records. The minimum records to be kept as part of the official operating record include the following:

- Current permits and applications
- Monthly waste disposal records (volume, weight, or truckloads)
- Random load checking records
- Leachate quantities, sampling, and analysis
- On-site rain gauge data
- Monthly leachate operating reports (FDEP monthly facility report)
- Annual estimates of remaining capacity (permitted disposal) in cubic yards
- Regulatory agency inspection reports
- Groundwater, surface water, and leachate sampling plan, including well construction information, sampling locations, and water quality sampling results
- All official notifications to or from FDEP regarding the facility
- Training verifications/certifications
- Landfill operations plan, including all supplementary material incorporated by reference
- Leachate tank inspection records
- Gas monitoring records
- Maintenance summary forms

SECTION 4

WASTE RECORDS
(Rule 62-701.500(4), F.A.C.)

Each month, a report of the amount of waste received, in tons, will be compiled. This report will include best estimates of the amounts of the following waste types based on type of hauler and tip fee rates:

- Household waste;
- Commercial waste;
- Ash residue;
- Incinerator by-pass waste;
- Construction and demolition debris;
- Treated biomedical waste;
- Agricultural waste;
- Industrial waste;
- Yard trash;
- Sewage sludge;
- Industrial sludge;
- Water/air treatment sludges;
- Waste tires; and
- Class III waste.

Reports are compiled monthly and submitted, on a quarterly basis, to:

FDEP-Central District Office
Solid Waste Section
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803

SECTION 5

ACCESS CONTROL
(Rule 62-701.500(5), F.A.C.)

The entire Volusia County Landfill facility is fenced, and access is gate controlled at all times. Figure 1-1 is a site plan of the entire landfill and illustrates the landfill access control facilities. The landfill may be operated for up to 24 hours per day, seven days per week.

SECTION 6

WASTE MONITORING
(Rule 62-701.500(6), F.A.C.)

WASTE INSPECTION (RULE 62-701.500(6)(A), F.A.C.)

Volusia County has implemented a load checking program to detect and discourage attempts to dispose of unauthorized wastes at the landfill. This program includes at least three random checks by landfill personnel each week and inspection of suspicious loads, which are vehicles that have previously been determined to have delivered unauthorized waste, or loads that have unusually physical characteristics.

If any regulated hazardous wastes are identified during load checking. Following is a summary of the load inspection program.

1. Scalehouse personnel will direct at least three (3) vehicles per week of Class I waste and at least three (3) vehicles per week of Class III waste to a separate disposal area.

2. The driver of the vehicle will be asked the source of the waste by the inspector. The load will be completely discharged and spread uniformly by a front end loader so tat all waste is visible.

3. The inspector will proceed to inspect the load for unauthorized waste. These shall include, but are not limited to the following:

   - Restricted materials.
   - Regulated hazardous waste.
   - Biomedical waste.
   - Used oil filters.
   - Compressed gas cylinders.
   - PCB wastes.
   - Household hazardous waste.

4. If any unauthorized items are observed the waste will be segregated and, if possible, returned to the hauler for proper disposal.

5. The person responsible for shipping the waste will provide a manifest documenting the proper disposal of the unauthorized waste found during inspection. The manifest must indicate the corresponding identification number assigned to the waste during inspection.

6. If any regulated hazardous waste or biomedical waste is observed, the Landfill Supervisor will segregate the waste, notify FDEP, persons responsible for shipping the wastes, and the generator of the wastes. The waste shall be removed from the

facility and disposed of properly.

7. Landfill personnel or haulers will relocate all special wastes such as tires, appliances, and lawn debris to the proper disposal areas.

8. Copies of all completed inspection reports will be maintained for the life of the landfill.

9. Vehicles that have previously been determined to have delivered unauthorized waste will be considered suspicious and may be subjected to inspection at any time and in the same manner as the random inspections.

HAZARDOUS WASTES AND HANDLING PROCEDURES (RULE 62-701.500(6)(B), F.A.C.)

No hazardous wastes will be accepted at the landfill for disposal. If unauthorized material is transported to the facility, the appropriate supervisory personnel will be notified immediately and appropriate actions taken to remove any unauthorized materials or wastes from the facility. Special wastes that are discovered will be removed from the landfill and placed in the appropriate processing area.

RECORDING INSPECTION RESULTS (RULE 62-701.500(6)(C), F.A.C.)

Results of the load checking inspections described in Section 6.1 of this document will be recorded in writing and retained at the landfill. This information will include date and time of inspection, name of hauling firm, name of driver of the vehicle, vehicle license plate number, source of waste as stated by the driver, and observations made by landfill personnel during the inspection. The inspector will sign the written record. A sample form used to document the inspection results is provided in Appendix A.

SECTION 7

WASTE HANDLING REQUIREMENTS
(Rule 62-701.500(7), F.A.C.)

The following description represents waste handling requirements as required by Rule 62-701.500(7), F.A.C. Volusia County will meet or exceed the requirements at all times to minimize the potential adverse impacts to employees or public health or safety.

WASTE THICKNESS AND COMPACTION FREQUENCIES (RULE 62-701.500(7)(A), F.A.C.)

Class I waste material will be spread in layers of approximately two feet in thickness and compacted to approximately one foot in thickness, or as thin as practical, by a landfill compactor before the next layer is applied.

Class III waste materials will be spread in layers of approximately 2 to 5-foot in thickness and compacted as this as practically by a landfill compactor or dozer before the next layer is applied.

FIRST LAYER OF WASTE (RULE 62-701.500(7)(B), F.A.C.)

The first lift of Class I waste placed above the liner and leachate collection system will be a minimum of four feet in compacted thickness. Waste loads in this first lift will be screened for any large, rigid objects or other materials that would damage the liner or leachate collection system.

SLOPES OF WORKING FACE (RULE 62-701.500(7)(C), F.A.C.)

The working face and side grades above land surface will be sloped at a maximum of 3 feet horizontal to 1 foot vertical rise. The lift depth will typically be a maximum of 10 feet. Lift depths may be deeper than 10 feet depending on specific operations, daily waste volumes, width of the working face, and good safety practices.

WIDTH OF WORKING FACE (RULE 62-701.500(7)(D), F.A.C.)

The working face will be wide enough to safely accommodate vehicles, unloading materials, and compacting equipment. Since the waste requires daily cover, the width of the working face will be minimized. The County's goal is to operate a working face no larger than approximately 150' by 200' under normal operating conditions.

INITIAL/DAILY COVER (RULE 62-701.500(7)(E), F.A.C.)

Initial cover will be placed over the Class I waste at the end of each working day. Initial cover will consist of six inches of compacted soils, synthetic material such as tarps and geomembranes, or other materials as approved by the FDEP.

Initial cover will be placed over the Class III waste weekly. Initial cover will consist of six inches of compacted soils or other materials as approved by the FDEP.

INTERMEDIATE COVER (RULE 62-701.500(7)(F), F.A.C.)

If additional solid waste will not be deposited in a location within 180 days of initial cover placement, a 12-inch intermediate cover will be placed within 7 days of initial cover placement.

FINAL COVER (RULE 62-701.500(7)(G), F.A.C.)

The landfill will receive final cover as portions of the facility are closed. A description of the final cover can be found in Section 2.8.3 of this plan.

SCAVENGING AND SALVAGING CONTROL (RULE 62-701.500(7)(I), F.A.C.)

Scavenging is strictly prohibited at the working face of the landfill. Salvageable materials, as identified by landfill personnel, will be unloaded at designated locations away from the working face.

LITTER POLICING METHODS (RULE 62-701.500(7)(I), F.A.C.)

Initial cover will provide the main litter control. Perimeter fencing will provide a barrier to blowing litter. In addition, portable litter fences will be located adjacent to the working face to prevent litter from being blown away from the working area. Temporary fencing is also mobile and easily relocated around the facility as needed. Litter outside the working area of the landfill will be picked up within 24 hours of the cessation of the event. Litter policing will include the removal of litter from the perimeter ditch.

EROSION CONTROL (RULE 62-701.500(7)(J), F.A.C.)

Soil cover erosion control measures will be integrated into landfill operations to collect and transport stormwater without exposing solid waste and leachate. These measures are identified and discussed as follows:

- Intermediate soil cover configured to collect and transport stormwater
- 4"-5" of mulch soil cover and/or sod to prevent erosion
- Regular inspection of intermediate soil cover
- Benches and lined ditches to transport concentrated volumes of stormwater runoff

Intermediate Soil Cover

Temporary berms to direct stormwater away from solid waste placement and compaction activities will surround the active areas of the landfill. Inactive areas will be covered with intermediate soil cover with a minimum thickness of 1 foot. The intermediate soil cover will be sloped to promote run-off and decrease infiltration of stormwater. Stormwater runoff will

be controlled by using benches placed every 40 feet in vertical height.

Intermediately covered areas subject to erosion will be seeded with grass appropriate to the season as needed to control erosion. Yard waste mulch or sod may also be used to help control erosion.

Down Drains

Stormwater collected in the benches will be directed to the stormwater system located at the toe of slope using downpipes, downchutes, or other conveyances.

Inspections

The intermediate soil cover will be regularly inspected for erosion damage. Repairs to any damage that is discovered will be initiated within 3 days to contain solid waste and leachate and anything that can not be repaired within 7 days will be reported to FDEP.

SECTION 8

LEACHATE MANAGEMENT
(Rule 62-701.500(8), F.A.C.)

Leachate in the Class I landfill is collected in the leachate drainage layer that slopes to collection sumps equipped with leachate pumps. Clean outs are provided to allow access for inspection and cleaning. Leachate is pumped from the pump stations to the leachate storage ponds via force mains that run around the north and west sides of the landfill.

MONITORING, SAMPLING, AND ANALYSIS OF LEACHATE (RULE 62-701.500(8)(A), F.A.C.)

The Division Director is responsible for leachate monitoring, sampling, and analysis, and for providing copies of the leachate analysis to FDEP. Leachate sampling and analysis is addressed in the Tomoka Farms Road Landfill Groundwater Monitoring Plan. Sampling and analysis will be conducted by contractors meeting applicable FDEP requirements.

The leachate pump side slope risers and leachate collection pipe clean out side-slope risers provide a mechanism to observe leachate levels through physical measurements. Complete details of the pumps and side slope risers are provided in the Construction Plans.

OPERATION AND MAINTENANCE OF LEACHATE COLLECTION SYSTEM (RULE 62-701 .500(8)(B), F.A.C.)

The Landfill Supervisor will be responsible for maintenance of the leachate systems, including the piping, pump stations, and piping to the leachate storage ponds, and the spray evaporation system. The equipment manufacturers have provided operation and maintenance manuals for each of the system components. Maintenance of each component will be performed in accordance with manufacturer specifications. Maintenance documentation may also include a video of the cleaning procedures. Operation and maintenance manuals include the following:

- Description of unit and component parts, including normal operating characteristics and limiting conditions.
- Operating procedures.
- Maintenance and overhaul procedures.
- Installation instructions.
- Original manufacturer's parts list, illustrations, and detailed assembly drawings.
- Spare parts ordering instructions.
- Manufacturer's printed operating and maintenance instructions.

Flow will be monitored from the leachate pumps. Facility personnel will record leachate flows. This will allow determination of leachate production as a function of rainfall and provide information to assess the efficiency of leachate and stormwater management practices. Leachate generation/flow records will be kept at the facility as part of the official operation record.

Leachate pump station maintenance will include reading meters and making sure each pump is operational. Pumping rates and electrical draw will be confirmed semiannually. If these tests indicate significantly reduced performance, the pumps will be pulled for inspection and repair. A replacement pump will be installed while the repairs are being made.

If leachate flow volume is noticeably decreased, the leachate collection system will be inspected. Possible reasons for low or no flow are header collapse or header blockage. If pipe blockage is identified, the header pipe will be power jetted to remove sediment buildup. Power jetting or rodding will be done from either or both ends of the header.

LEACHATE HANDLING (IF REGULATED AS HAZARDOUS WASTE) (RULE 62-701 .500(8)(B), F.A.C.)

The Landfill Supervisor is responsible for the operation of the leachate collection and removal system and for maintaining the system as designed for the life of the facility. Leachate will be collected and pumped to the on-site storage and spray evaporation ponds, and disposed of by spray evaporation or by trucking to one of several wastewater treatment plants.

OFF-SITE TREATMENT (RULE 62-701.500(8)(C), F.A.C.)

Leachate that, due to precipitation volumes, cannot be managed through onsite evaporation will be transported to one of several wastewater treatment plants. Volusia County operates local POTWs that provide back-up capacity for leachate disposal. The Tomoka Farms Road will transport leachate for off-site disposal when less than one-foot of freeboard is available in the leachate storage ponds.

ON-SITE TREATMENT (RULE 62-701.500(8)(D), F.A.C.)

Leachate evaporation is performed at the Tomoka Farms Road Landfill.

CONTINGENCY PLAN FOR MANAGING LEACHATE (RULE 62-701.500(8)(E), F.A.C.)

Temporary pumps and emergency power generators are locally available in the event of pump failure or power interruption. Alternate wastewater treatment plants are available for leachate disposal. Therefore, complete interruption of off site disposal capability is not anticipated. As stated above, leachate will be transported off site for disposal when less than one-foot of freeboard is available in the leachate storage ponds. This practice is intended to maintain sufficient storage capacity in the event of a heavy rainfall event.

RECORDING LEACHATE QUANTITIES (RULE 62-701.500(8)(F), F.A.C.)

Quantities of leachate collected and removed for off-site treatment and/or disposal are recorded and those records are maintained at the landfill. These quantities will be recorded in gallons per day.

RECORDING PRECIPITATION (RULE 62-701.500(8)(G), F.A.C.)

A rain gauge has been installed and is operated and maintained by Volusia County personnel to record precipitation at the disposal facility. Precipitation records will be maintained in the facility's operating record and will be compared with leachate generation rates.

INSPECTION AND CLEANING (RULE 62-101.500(8)(H), F.A.C.)

The leachate collection system for future cells will either be pressure cleaned or inspected by video recording after construction but prior to the initial placement of waste. Thereafter, existing leachate collection systems at the Tomoka Farms Road Landfill will pressure cleaned or inspected by video at the time of permit renewal. Results of the cleanings and inspections are kept on file in the landfill office.

SECTION 9

LANDFILL GAS MONITORING
(Rule 62-701 500(9), F.A.C.)

This Landfill Gas Monitoring Plan for the Tomoka Farms Road Landfill has been prepared in accordance with the provision of Rule 62-701.530, F.A.C. This plan includes measures of comprehensive monitoring of landfill gas (LFG) from the landfill.

LANDFILL GAS MONITORING PROBES

Seven locations around the active and closed landfill cells are monitored for the presence of LFG. These monitoring probes are located around the perimeter of the working area of the landfill. Each probe is monitored for the presence of combustible gas on a quarterly basis and the results are submitted to FDEP

GAS PROBE MONITORING

The probes are monitored for concentrations of combustible gas using an instrument calibrated to methane and capable of measuring methane in percent by volume. Combustible gas concentrations will be converted to a percent of the lower explosive limit (LEL). Five percent methane by volume is equal to 100 percent LEL. The gas instrument is calibrated with calibration gas each day before monitoring is performed.

Any problems encountered during monitoring, observations, or other pertinent information that could impact the interpretation of the data are recorded. For example, if a probe is full of groundwater or suspected of being so, the comments should be noted for the monitoring round.

GAS MONITORING IN STRUCTURES

The following gas monitoring will be performed in structures at the facility:

- Enclosed buildings located within 500 feet of disposal are equipped with continuous combustible gas monitors. These monitors are designed to sound an alarm when methane concentrations exceed 25 percent LEL. The signal remains on as long as gas is present, and a red alarm light stays on after an alarm to alert personnel that methane was detected during their absence. These monitors are Macurco, Model GD-21, or similar monitors. These are factory calibrated, plug-in units that require no maintenance or calibration. The units are designed for seven to ten years use and provide an audible beep when they need replacement.

- The inside of enclosed buildings within 500 feet of disposal areas are monitored for methane on a quarterly basis along with the perimeter probes. The sampling hose of the instrument is held above the floor and inserted into any conduit spaces or cracks that could act as conduits for LFG to enter into the structure. All monitoring is reported to the FDEP.

REPORTING

Landfill gas monitoring is reported quarterly to FDEP-Central District office at:

FDEP-Central District Office
Solid Waste Section
3319 Maguire Boulevard, Suit 232
Orlando, Florida 32803

Any odor complaints due to landfill gas at or beyond the property boundary are recorded and maintained on site. If methane gas is measured above 25 percent LEL in the structures, Volusia County will take all necessary steps to ensure protection of human health. Exceedances will be included in the quarterly reports to FDEP. The report will also include a description of the nature and extent of the exceedances and measures implemented in response to the exceedances.

SECTION 10

STORMWATER MANAGEMENT SYSTEM AND MAINTENANCE
(Rule 62-701.500(10), F.A.C.)

The Stormwater Management System will be operated and maintained as necessary to meet the requirements of Rule 62-701.400(9), F.A.C.

STORMWATER BEST MANAGEMENT PRACTICES

The landfill will use the following stormwater best management practices (BMPs):

- Sideswales
- Grass
- Sod
- Downdrains
- Benches
- Dry retention stormwater ponds
- Pumps to transport stormwater
- Ditches

STORMWATER MAINTENANCE PROCEDURES

The stormwater management system operation and maintenance will include the following:

- All stormwater conveyance systems will be inspected periodically or after major storm events.
- Any damaged systems will be repaired.
- Accumulated sediment will be removed as necessary.
- All stormwater pumps will be serviced as specified by the pump manufacturer.

SECTION 11

EQUIPMENT AND OPERATION FEATURES
(Rule 62-701.500(11), F.A.C.)

EQUIPMENT (RULE 62-701.500(11)(A), F.A.C.)

Volusia County owns a diverse mix of equipment to spread, compact, and cover the waste in the landfill. This equipment may include:

- Landfill Compactor
- Dozer
- Off-Road Dump Truck
- Back-hoe
- Water Truck

While the actual equipment at the landfill may vary, sufficient equipment will be maintained at the site to ensure proper operation of the landfill.

Normal equipment maintenance will be performed on site. Major maintenance item repairs (e.g., engine, transmissions, and auxiliary drives) will be handled either at the maintenance facilities or at off-site service facilities.

BACKUP EQUIPMENT (RULE 62-701.500(11)(B), F.A.C.)

There is sufficient equipment available to Volusia County to maintain normal operations during equipment breakdown or during emergency operating conditions. Arrangements will be made with suppliers to obtain reserve equipment within 24 hours of equipment breakdown if sufficient equipment is not available to properly operate the landfill.

COMMUNICATION EQUIPMENT (RULE 62-701.500(11)(C), F.A.C.)

Landfill employees will be able to communicate by two-way radios, and telephones are located at the office and scalehouse.

DUST CONTROL (RULE 62-701.500(11)(D), F.A.C.)

Control of dust will be maintained by wetting roads as necessary.

FIRE PROTECTION AND FIRE FIGHTING CAPABILITIES (RULE 62-701.500(11)(E), F.A.C.)

The initial cover aids in fire prevention at the landfill. The main method of fire extinguishing is to apply soil to the burning waste. Ample soil is stockpiled on site if needed for fire extinguishing purposes.

All key equipment and vehicles at the landfill will be equipped with fire extinguishers, and all personnel will be trained in their use. All extinguishers will be inspected regularly and repaired or replaced as needed.

Emergency services are notified telephonically using 911.

LITTER CONTROL PROGRAM (RULE 62-701.500(11)(F), F.A.C.)

Initial cover will provide the main litter control. Perimeter fencing will provide a barrier to blowing litter. In addition, portable litter fences will be located adjacent to the working face to prevent litter from being blown. Temporary fencing is also mobile and easily relocated around the facility as needed. Litter outside the working area of the landfill will be picked up as soon as possible. Litter policing will include the removal of litter from the perimeter ditch.

SIGNS (RULE 62-701.500 (11)(G), F.A.C.)

Appropriate signs will be utilized and maintained to ensure maximum safety, efficiency, and general information. Signage will include, at a minimum, facility name and operating authority, traffic flow, hours of operation, disposal rates, and restrictions or conditions of disposal.

SECTION 12

ROADS
(Rule 62-701.500(12), F.A.C.)

ALL-WEATHER ROADS (RULE 62-701.500(12)(A), F.A.C.)

All-weather roads, passable and safe under normal operating conditions, will be maintained to prevent dust, rutting or loss of traction. Where possible, select source separated Class III materials such as roofing and concrete will be reused as road base materials. Figure 1-1 shows the locations of the access and perimeter site roads.

PERIMETER AND OTHER ON-SITE ROADS (RULE 62-701.500(12)(B), F.A.C.)

Some perimeter roads and internal roads are paved. Other on-site roads are constructed of limerock and/or stabilized soils. Limerock roads are scraped and smoothed with a road grader or dozer as necessary. When needed, roadways are wetted to control dust and to ensure high visibility. On-site roads are maintained to allow access to monitoring devices and stormwater controls, for landfill inspections and fire fighting.

SECTION 13

RECORDKEEPING
(Rule 62-701.500(13), F.A.C.)

PERMIT APPLICATION DOCUMENTATION (RULE 62 -701 .500(13)(A), F.A.C.)

Records of all information used to develop or support the permit applications and any supplemental information submitted to comply with Rule 62-701, F.A.C., pertaining to construction of the facility will be kept throughout the life of the facility. Records pertaining to the operation of the landfill will be kept for the life of the facility.

MONITORING INFORMATION (RULE 62-701.500(13)(B), F.A.C.)

Records of all monitoring information, including calibration and maintenance records and copies of all reports required by permit, will be retained for at least 10 years. Background water quality records will be kept for the life of the facility.

REMAINING LIFE AND CAPACITY ESTIMATE (RULE 62-701.500(13)(C), F.A.C.)

The County prepares an annual estimate of the remaining life and capacity (in cubic yards) of the existing constructed landfill and the remaining capacity and site life of other permitted areas not yet constructed. The annual estimate is based on scale house records and aerial photomapping of solid waste disposal units. The estimate is reported annually to the FDEP as part of the annual update to the closure and long-term care cost estimates.

ARCHIVED RECORDS (RULE 62-701.500(13)(D), F.A.C.)

The landfill may archive records that are more than five years, if necessary. Archived records will be available for inspection within seven days of the receipt of the request.

SECTION 14

CLOSED CELL INSPECTIONS

Closed cells at the Tomoka Farms Road Landfill are inspected quarterly, at a minimum. These inspections will typically be performed during the landfill gas surface emissions monitoring. Inspections will include observations for cap integrity, differential settlement, ponding, erosion and condition of the vegetation. Corrective actions will be initiated within three working days.

APPENDIX A

SAMPLE LOAD CHECKING INSPECTION FORMS

RANDOM INSPECTION REPORT

DATE: _____

TIME: _____

NAME OF HAULING COMPANY: _____

NAME OF DRIVER: _____

VEHICLE LICENSE PLATE NUMBER: _____

SOURCE OF THE WASTE: (GENERAL LOCATION) _____

OBSERVATIONS MADE BY THE INSPECTOR:

GARDEN:

[ ] HERBICIDES [ ] FERTILIZER [ ]PESTICIDES [ ] POOL CHEMICALS

HOUSEHOLD:

[ ] DRAIN CLEANERS [ ] CHLORINE [ ] FURNITURE POLISH

[ ] SPOT REMOVER [ ] WINDOW CLEANERS, ETC. [ ] HOUSEHOLD GARBAGE ONLY

AUTO:

[ ] MOTOR OIL [ ] BRAKE FLUID [ ] TRANSMISSION FLUID

[ ] ANTI FREEZE [ ] CAR BATTERIES

PAINT:

[ ] ENAMEL OIL BASE [ ] LATEX WATER BASE [ ] THINNERS (OTHERS)

MEDICAL WASTE:

[ ] NEEDLES [ ] MEDICAL SUPPLIES

INSPECTOR'S COMMENTS:

_____

_____

_____

_____

INSPECTOR'S SIGNATURE

_____

File Copy

Environmental Consultants

Sun Trust Bank Building
501 North Grandview Avenue
Suite 400
Daytona Beach, FL 32118

386 238-7770
FAX 386 238-7046

SCS ENGINEERS

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May 24, 2006
File No. 09204060.03

Thomas Lubozynski, P.E., Waste Program Administrator
Florida Department of Environmental Protection
Central District
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803-3767

Subject: Response to Comments
Tomoka Farms Road Landfill Operations Plan
Permit No. SO64-0078767-016

Dear Mr. Lubozynski:

On behalf of Volusia County (County), SCS Engineers (SCS) has prepared this response to the Florida Department of Environmental Protections (FDEP) comments to the Operations Plan provided in your letter of May 10, 2006. For ease of review, the Florida Department of Environmental Protection (FDEP) comments are in bold, followed by the County's response. These responses are also incorporated into the revised Operations Plan which is attached.

1. **According to Rule 62-701.500(2), FAC, each landfill owner/operator (the County) shall have an operational plan that provides written, detailed instructions for the daily operation of the landfill. The plan as submitted often repeats the wording in the rules; it does not give detailed, site specific instructions for the spotters and operators to follow.**

   Response: The revised plan incorporates responses to each of the FDEP individual comments. We trust that this revised plan is sufficient to meet the Department's requirements.

2. **Hours of operation/Signs: The plan does not state hours or days of operation. Please include in the plan.**

   Response: The first paragraph under Current Operating Conditions, page 1-4, has been revised to include the statement: "The landfill is open for waste acceptance Monday through Friday from 7:00 a.m. until 5:30 p.m. and Saturday and Sunday from 8:00 a.m. until 3:00 p.m."

3. **<u>Public Use</u>: Where do the private vehicles unload? Is there a designated area for the public ("mom and pop") to unload? If yes, include this information in the plan. If the area is established each work day, then the Plan should describe how the decision is made to designate the area, such as, how far from the commercial area. How large should the working face be in the public offload area?**

   <u>Response:</u> The second paragraph under Current Operating Conditions, page 1-4, has been revised to include the statement: "The landfill does not operate a separated active face for the general public (private vehicles)".

4. **<u>Section 2, Training</u>: Page 2-1; paragraph 2 states that every 3 years the landfill operators shall participate in continuing education classes totaling 4 hours. This is incorrect; spotters, not operators, require a total of 4 hours every three years. Please correct. Are the equipment operators trained as spotters to perform the duty of a spotter? This paragraph implies they will be used as spotters. Please change so there is no confusion, e.g., "All equipment operators will be trained as spotters." Or "If an equipment operator is not trained as a spotter, he must ensure a spotter is available to visually evaluate each load."**

   <u>Response:</u> The second paragraph of Section 2, page 2-1, has been revised to clarify that spotters, not operators, require a total of four hours or continuing education training every three years. In addition, the second paragraph or Section 2 has been revised the include the statement: "The Tomoka Farms Road Landfill will typically use equipment operators/ spotters, trained in accordance with F.A.C. 62-701.320(15), to perform spotter duties at the active disposal area to visually screen incoming waste." as suggested.

5. **<u>Section 2, Contingency Plan</u>: Pages 2-3 to 2-4, The Contingency Plan does not provide any instructions for notification or reporting to the Department during any emergency that would disrupt normal operations for more than 24 hours or that would cause the facility to not be able to comply with its permit.**

   <u>Response:</u> The first paragraph of Section 2, Contingency Operations for Emergencies, has been revised to include the statement: "Emergencies that result in disruption of normal operations at the Tomoka Farms Road Landfill for more than 24 hours and that would result in the landfill being unable to comply with its permit must be reported to the FDEP-Central District Office at (407) 894-7555."

   - **Equipment failure, which would disrupt normal operations for more than 24 hours. Include a list of equipment. Also, add this information to page 11-1.**

Response: The Equipment Failure section on Page 2-3 has been revised to include a list of equipment that would require the landfill to obtain replacement equipment in order to continue normal operations. This list is also included in Section 11.

- **Poor weather conditions. Please include a detailed hurricane preparedness plan that describes your contingency operations in the event of a severe storm or hurricane. Specifically address procedures that will be implemented 48-24 hours prior to the expected arrival of a hurricane and actions to be taken after the hurricane.**

  Response: A subsection entitled *Natural Disasters* has been added under Contingency Operations for Emergencies, page 2-4, to address preparations when a hurricane or other severe storm is approaching the area. As stated in this subsection, the Tomoka Farms Landfill will continue to operate as long as operations can be safely conducted prior to the storms arrival and will re-open as soon as operations can safely resume following the storm.

- **The fire contingency section does not include provisions for notification to the local fire Department for assistance. How and when the decision is made to ask the local Fore Department for support should be described. What procedures will be implemented in the event of a large uncontrollable fire? Will the Department be notified (by telephone or e-mail) within 24 hours? That is our preference because we often receive media inquiries. The Plan should state that a written report must be submitted to the Department within 5 days (Specific Condition #14 of your permit).**

  Response: The Fire subsection under Contingency Operations for Emergencies on page 2-5 has been revised. The revisions include procedures for determining when the local fire department should be contacted for assistance and the contact number. In addition, notification to the Department has been included in this subsection by including the statement: "A written report will be submitted to the FDEP Central District Office within five days of a fire at the landfill. If the fire is of such size and/or intensity that smoke can be seen from outside the landfill, the County will make every effort to notify the Department within 24 hours of the fire."

6. **Section 4, Waste Records. The FDEP addresses (e-mail or street) should be included. The waste quantity reports should be addressed to James Bradner by e-mail at James.Bradner@dep.state.fl.us or by mail FDEP – Central District, Solid Waste Section, 3319 Maguire Blvd, Suite 232, Orlando, FL 32803.**

   Response: The FDEP-Central District Office street address has been added to Section 4, page 4-1, as recommended.

7. **<u>Section 7, Litter</u>: Pages 7-2 and 11-2 indicates that litter outside the working face will be picked up as soon as possible. What does this mean? Rule 62-701.500(7)(i) states that litter outside of the working face shall be picked up within 24 hours. Hopefully, you will have the litter picked up more often that that.**

   <u>Response:</u> The Litter Control subsection has been revised to include the statement: "Litter outside the working area of the landfill will be picked up within 24 hours of the cessation of the event."

8. **<u>Section 8, Leachate Management</u>**

   a. **Off-Site Treatment. What factors determine when off-site treatment must be used? These factors should be described in the plan.**

      <u>Response:</u> Leachate will only be transported off-site for treatment when precipitation volumes result in insufficient storage capacity in the landfill's leachate storage ponds. As described in the Off-Site Treatment subsection, the landfill will maintain 1-foot of freeboard in the leachate storage ponds.

   b. **<u>Leachate contingency plan:</u> Page 8-2 does not address procedures for management of the leachate in the ponds during heavy rainfall events such as, tropical storms or hurricanes. Address all necessary precautions that would be taken to alleviate the possibility of leachate overflow and what actions would be taken if the ponds do overflow. You could also describe, based on engineering calculations, rain events (for example, rainfall greater than 3 inches in a 24 hour period) that would necessitate special actions.**

      <u>Response:</u> The Contingency Plan for Managing Leachate subsection, page 8-2, has been revised to add the statement: "As stated above, leachate will be transported off site for disposal when less than one-foot of freeboard is available in the leachate storage ponds. This practice is intended to maintain sufficient storage capacity in the event of a heavy rainfall event." This practice will provide between 650,000 and 700,000 gallons of leachate storage at any given time.

   c. **Recording leachate quantities. This section must state that the measurement must be kept in gallons per day. Also, the measurement must include the amount of leachate collected prior to any treatment or disposal.**

Response: The Recording Leachate Quantities subsection, page 8-3, has been revised as follows: "Quantities of leachate collected and removed for off-site treatment and/or disposal are recorded and those records are maintained at the landfill. These quantities will be recorded in gallons per day."

9. **Section 9, Landfill Gas Monitoring. The FDEP address (e-mail or street) should be included. The Plan mentions continuous combustible gas monitors are used within buildings. How are these maintained, especially, what is the calibration procedure and timing?**

Response: The FDEP-Central District Office street address has been added to the Landfill Gas Reporting subsection on page 9-2.

The following text has been added to the Gas Monitoring in Structures subsection regarding the use of continuous combustible gas monitors: "These monitors are Macurco, Model GD-21, or similar monitors. These are factory calibrated, plug-in units that require no maintenance or calibration. The units are designed for seven to ten years use and provide an audible beep when they need replacement." The continuous monitors have been installed as an early warning, safety device and are not intended to replace the ambient monitoring required under F.A.C. 62-701.530(2).

10. **Closed cells inspection: This was not addressed but needs to be in the plan. How often will the final cover be inspected for integrity of the cap, differential settlement, ponding, erosion and condition of vegetation? If found how soon will repairs be initiated? Please address these items and provide instructions for inspection of the closed landfill cells including the south and the north cells.**

Response: Section 14, Closed Cell Inspections, has been added to the plan.

We trust that the enclosed, revised Operations Plan will meet the Department's requirements. Please contact us with any questions or comments regarding this correspondence.

Sincerely,

Michael S. Dao
Project Manager
SCS ENGINEERS

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

MSD/LAP: msd

Attachment

cc: James Bradner - FDEP
Josef Grusauskas – Director Volusia County Solid Waste Division
Patrick McCormack – Volusia County Solid Waste Division
Jennifer Stirk – Volusia County Solid Waste Division

ATTACHMENT A

OPERATIONS PLAN
TOMOKA FARMS ROAD LANDFILL
VOLUSIA COUNTY, FLORIDA

OPERATIONS PLAN
TOMOKA FARMS ROAD LANDFILL
VOLUSIA COUNTY, FLORIDA

Prepared for:

Volusia County Solid Waste Division
3151 East New York Avenue
Deland, Florida 32724

Prepared by:

SCS Engineers
501 North Grandview Avenue, Suite 400
Daytona Beach, Florida 32118
(386) 238-7770

Revised May 24, 2006
File No. 09204060.03

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APPENDICES

TABLES

FIGURES

SECTION 1

EXECUTIVE SUMMARY

The purpose of this document is to provide a consolidated manual of operating procedures for the Tomoka Farms Road Landfill Class I and Class III disposal cells. This document is intended to fulfill the requirement for am Operation Plan as listed in F.A.C. 62-701.500(2). This operations plan supersedes previous operations plans submitted to FDEP for this facility.

This plan has been prepared in accordance with Florida Rule 62-701, Florida Administrative Code (F.A.C.). Part L of FDEP's permit application form for solid waste management facilities (Part L) includes requirements for an operations plan. All information identified in Part L is provided herein, or in referenced documents. This operations plan is organized in accordance with Part L. In addition, Table 1-1 cross-references this document with the requirements of Part L.

Except where specific procedures are required by F.A.C. 62-701, this plan is intended to represent the best management practices and working goals of the Tomoka Farms Road Landfill.

Table 1-1
Cross Reference of FDEP Permit Application, Part L Requirements

Part L **Landfill Operation Requirements** (Rule 62-701.500, F.A.C.)	**Corresponding Section of Operation Plan**
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), F.A.C.)	Section 2.1
2. Provide a landfill operation plan including procedures for: (62-701.500(2), F.A.C.)	
a. Designating responsible operating and maintenance Personnel;	Section 2.2
b. Contingency operations for emergencies;	Section 2.3
c. Controlling types of waste received at the landfill;	Section 2.4
d. Weighing incoming waste;	Section 2.5
e. Vehicle traffic control and unloading;	Section 2.6
f. Method and sequence of filling waste;	Section 2.7
g. Waste compaction and application of cover;	Section 2.8
h. Operations of gas, leachate, and stormwater controls;	Section 2.9
i. Water quality monitoring;	Section 2.10
j. Maintaining and cleaning the leachate collection system.	Section 2.11

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), F.A.C.)	Section 3
4. Describe the waste records that will be compiled monthly And provided to the Department quarterly; (62-701.500(4), F.A.C.)	Section 4
5. Describe methods of access control; (62-701.500(5), F.A.C.)	Section 5
6. Describe load checking program to be implemented at the landfill to discourage disposal of unauthorized wastes at the landfill; (62-701.500(6), F.A.C.)	Section 6
7. Describe procedures for spreading and compacting waste at the landfill that include: (62-701.500(7), F.A.C.)	
a. Waste layer thickness and compaction;	Section 7.1
b. Special considerations for first layer of waste placed above liner and leachate collection system;	Section 7.2
c. Slopes of cell working face and side grades above land surface, planned lift depths during operation;	Section 7.3
d. Maximum width of working face;	Section 7.4
e. Description of type of initial cover to be used at the facility that controls:	
(1) Disease vector breeding/animal attraction	Section 7.5
(2) Fires	Section 7.5
(3) Odors	Section 7.5
(4) Blowing litter	Section 7.5
(5) Moisture infiltration	Section 7.5
f. Procedures for applying initial cover including minimum cover frequencies;	Section 7.5
g. Procedures for applying intermediate cover;	Section 7.6
h. Time frames for applying final cover;	Section 7.7
i. Procedures for controlling scavenging and salvaging;	Section 7.8
j. Description of litter policing methods;	Section 7.9
k. Erosion control procedures.	Section 7.10
8. Describe operational procedures for leachate management including: (62-701.500(8), F.A.C.)	

a. Leachate level monitoring, sampling, analysis and data results submitted to the Department;	Section 8.1 Section 8.2
b. Operation and maintenance of leachate collection and removal system, and treatment as required;	Section 8.3
c. Procedures for managing leachate if it becomes regulated as a hazardous waste;	Section 8.4
d. Agreements for off-sire discharge and treatment of Leachate;	Section 8.6
e. Contingency plan for managing leachate during emergencies or equipment problems;	Section 8.7
f. Procedures for recording quantities of leachate Generated in gal/day and including this in the operating record;	Section 8.8
g. Procedures for comparing precipitation experienced at the landfill with leachate generation rates and including this information in the operating record;	Section 8.9
h. Procedures for water pressure cleaning or video inspecting leachate collection systems.	
9. Describe how the landfill receiving degradable wastes shall implement a gas management system meeting the requirements of rule 62-701.530, F.A.C.; (62-701.500(9), F.A.C.)	Section 9
10. Describe procedures for operating and maintaining the landfill stormwater management system to comply with the requirements of Rue 62-710.400(9); (62-701.500(10), F.A.C.)	Section 10
11. Equipment and operation feature requirements; (62-701.500(11), F.A.C.)	Section 11.1
a. Sufficient equipment for excavating, spreading, compacting and covering waste;	Section 11.2
b. Reserve equipment or arrangements to obtain additional equipment within 24 hours of breakdown;	Section 11.3 Section 11.4
c. Communications equipment;	Section 11.5
d. Dust control methods;	
e. Fire protection capabilities and procedures for notifying local fire department authorities in emergencies;	Section 11.6 Section 11.7
f. litter control devices;	
g. Signs indicating operating authority, traffic flow, hours of operation, disposal restrictions.	Section 12

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), F.A.C.)	Section 13.1
13. Additional record keeping and reporting requirements: (62-701.500(13), F.A.C.)	Section 13.2
a. Records used for developing permit applications and supplemental information maintained for the design period of the landfill;	Section 13.3
b. Monitoring information, calibration and maintenance records, copies of reports required by permit maintained for at least 10 years;	
c. Maintain annual estimates of remaining life of constructed landfills and or other permitted areas not yet constructed and submit this estimate annually to the Department;	Section 13.4
d. procedures for archiving and retrieving records which are more than five years old.	

CURRENT OPERATING CONDITIONS

The Tomoka Farms Road Landfill is owned and operated by the Volusia County Solid Waste Division and is located approximately three miles south of US 92 on Tomoka Farms Road in Section 10, Township 16 South, Range 32 East. The landfill is open for waste acceptance Monday through Friday from 7:00 a.m. until 5:30 p.m. and Saturday and Sunday from 8:00 a.m. until 3:00 p.m. Vehicles access the Tomoka Farms Road Landfill via Tomoka Farms Road. With proposed expansions the landfill is expected to be able to provide disposal of Class I and Class III materials until approximately 2020. A site plan of the Tomoka Farms Road landfill is included as Figure 1-1.

Waste hauling vehicles arriving at the Tomoka Farms Road Landfill travel west along the entrance road to the scale house where loads are weighed. The scale house attendant directs vehicles to the Class I or Class III active areas, or to the Special Waste area where the wastes are unloaded. Any unacceptable waste identified prior to acceptance by the landfill will remain the responsibility of the waste hauler. The various disposal areas will be clearly identified by signs at the locations within the landfill. The landfill does not operate a separated active face for the general public (private vehicles).

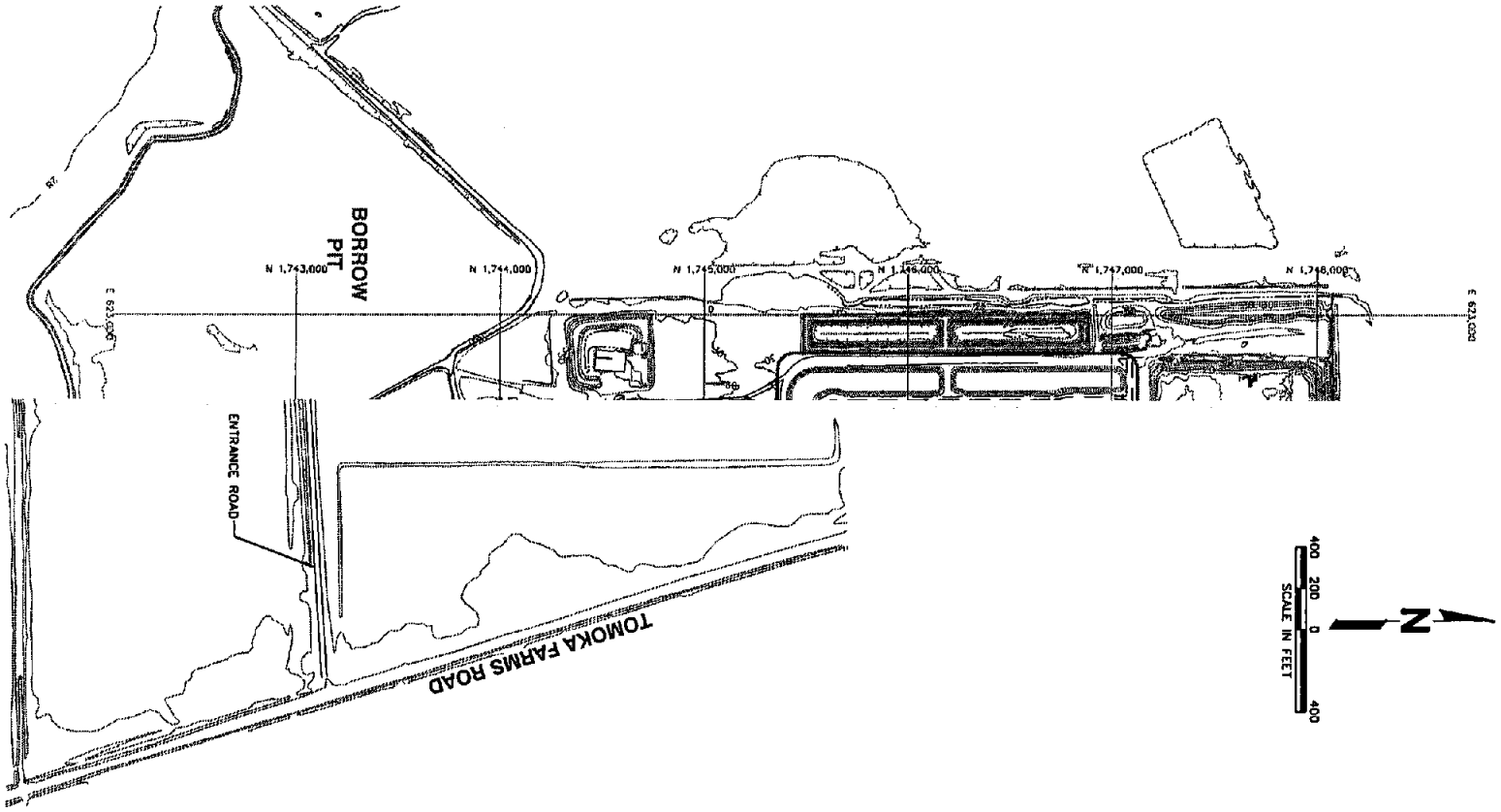
Class I waste is directed to the Class I working face where it is spread over the working face area of the landfill, placed in two-foot layers, compacted by a compactor, and covered at the end of the working day. Initial cover is applied at the end of each workday. A 12-inch thick intermediate cover, in addition to the initial cover, is placed on areas where no additional waste

will be placed within 180 days. This intermediate cover may be removed before placing additional waste. The final cover system is installed as areas reach the final permitted elevation.

Class III waste is directed to the Class III working face where it is spread in two to five-foot lifts. Class III waste is covered with an initial cover weekly. A 12-inch thick intermediate cover, in addition to the initial cover, is placed on areas where no additional waste will be placed within 180 days. This intermediate cover may be removed before placing additional waste. The final cover system is installed as areas reach the final permitted elevation.

Leachate generated from the landfill is conveyed to the landfill's leachate system. Leachate management options at the Tomoka Farms Road Landfill include recirculation, evaporation, and transportation to a Publicly Owned Treatment Works (POTW). Recirculation shall be performed only in Class I areas that have received initial cover and can be isolated from the stormwater management system.

Stormwater run-off is directed away from open areas on the active face of the landfill by means of ditches and swales around the landfill. The swales outside the disposal area divert stormwater into the perimeter ditches that are located outside the lined berms and, therefore, isolated from the leachate and solid waste. Within the landfill disposal area, stormwater run-off that has not contacted waste or mixed with leachate is conveyed to the stormwater management system. Stormwater run-off which contacts waste or mixes with leachate is treated as leachate.



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Additions or deletions to this map or to the report accompanying this map by other than the signing party or parties is prohibited without written consent of the signing party or parties.

RECORD DRAWING

DATE: NOVEMBER 2005

SCS ENGINEERS STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS 3012 U.S. HWY. 301 NORTH, SUITE 700, TAMPA, FL 33619 PH (813) 621-9060 FAX NO. (813) 623-6757	CLIENT VOLUSIA COUNTY DEPARTMENT OF PUBLIC WORKS SOLID WASTE DIVISION DELAND, FLORIDA	DRAWING TITLE OVERALL SITE PLAN PROJECT TITLE TOMOKA FARMS ROAD LANDFILL EAST CELL EXAPANSION	REV.	DATE	DESCRIPTION	CK. BY
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DATE: JANUARY 2002						
SCALE: AS SHOWN						
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DSN. BY: LAP	CHK. BY: LAP	APP. BY: RBC

SECTION 2

LANDFILL OPERATIONS AND MAINTENANCE (RULE 62-701.500(2), F.A.C.)

TRAINING AND CERTIFICATION OF OPERATORS AND SPOTTERS (RULE 62-701.500(1), F.A.C.)

In accordance with Rule 62-701.500(1), F.A.C., at least one trained operator will be on duty at the Tomoka Farms Road landfill whenever waste is received at the facility. Operator and spotter training will comply with Rule 62-701.320(15), F.A.C., as adopted May 27, 2001. Operators at the Tomoka Farms Road Landfill (landfill) shall participate in at least 24 hours of initial training. Every three years landfill operators shall participate in continuing education courses totaling 16 hours. Operator training will consist of courses conducted by the University of Florida TREEO Center, or other courses presented by other providers that have been approved by the Florida Solid Waste Management Training Committee (SWMTC).

In accordance with Rule 62-701.320.15, F.A.C., Spotters shall participate in 8 hours of initial training that shall include Spotting at Construction and Demolition Sites, Landfills, and Transfer Stations (SWMTC 8 hours) and/or Waste Screening and Identification for Landfill Operators and Spotters (SWMTC 8 hours) conducted by the University of Florida TREEO Center or other SWMTC approved providers. Every three years Spotters shall participate in continuing education courses totaling four hours. The Tomoka Farms Road Landfill will typically use equipment operators/ spotters, trained in accordance with F.A.C. 62-701.320(15), to perform spotter duties at the active disposal area to visually screen incoming waste.

DESIGNATION OF PERSONS RESPONSIBLE FOR OPERATION AND MAINTENANCE (RULE 62-701.500(2)(A), F.A.C.)

The persons directly responsible for major components of the landfill follow:

Component	Responsible Party
Operations	Landfill Supervisor
Repair and Maintenance	Landfill Supervisor
Permitting Requirements	Solid Waste Management Division Director
Water Quality and Leachate Testing	Environmental Specialist III

The Landfill Supervisor has overall responsibility for the operation of the landfill. The Landfill Supervisor is responsible for the day-to-day implementation of the operations plan and, along with the Solid Waste Management Division Director, is responsible for environmentally safe operations in accordance with state and federal regulations.

CONTINGENCY OPERATIONS FOR EMERGENCIES (RULE 62-701.500(2)(B), F.A.C.)

Emergencies that result in disruption of normal operations at the Tomoka Farms Road Landfill

for more than 24 hours and that would result in the landfill being unable to comply with its permit must be reported to the FDEP-Central District Office at (407) 894-7555.

The contingency plan for the facility addresses the following four potential emergencies:

- Equipment failure
- Unusual operating conditions resulting from poor weather conditions
- Accidents
- Fire
- Unavailable landfill capacity

Emergency Assistance

Emergency telephone numbers are listed in Table 2-1. This table will be updated as needed and an up to date version will be posted at the landfill operations office.

TABLE 2-1. EMERGENCY TELEPHONE NUMBERS

Organization	Phone Number
Tomoka Farms Road Landfill On-site Phone:	(386) 947-2952
Primary Emergency Response:	911
Fire Department (County):	(386) 254-4657
Hospital: Halifax Medical Center 303 N. Clyde Morris Blvd. Daytona Beach, FL 32174	(386) 254-4000 (switchboard) (386) 254-4100 (emergency line)
Ambulance: EVAC Ambulance Service	(386) 252-4911
Hazardous Material Contractor: Clean Harbor Environmental Services	(800) 699-8916
Sheriff:	(386) 248-1777
Operation Supervisor: Martin Bey Cell: Home: Office:	(386) 527-6335 (386) 767-6795 (386) 947-2952
Supervisor IV: Gene Palmatier: Cell: Home: Office:	(386) 527-6333 (386) 228-3477 (386) 947-2952
Environmental Specialist: Cell: Hazmat First Responder Home: Jennifer Stirk Office:	(386) 527-6336 (386) 960-6670 (386) 947-2952
Solid Waste Services Director: Josef Grusauskas Cell: Home: Office:	 (386) 527-6337 (386) 304-6940 (386) 943-7889
Florida Department of Environmental Protection: Jim Bradner, P.E.	(407) 894-7555
Poison Control Assistance	(800) 222-1222
State Warning Point	(800) 320-0519

Equipment Failure

In the event of equipment failure at the Tomoka Farms Road Landfill, sufficient backup equipment is available at the landfill site for equipment breakdowns and downtime associated with normal routine equipment maintenance. In the case of major equipment failure the following procedures will be followed:

- Arrangements with other County departments and/or contractors will be made to furnish equipment on a short-term basis.
- Applicable site operations will cease until equipment capacity is restored.
- Contact rental equipment dealers to furnish equipment on short-term notice (within 24 hours)

In the event of equipment failure, the Landfill Supervisor will be notified. Within 24 hours of notification of the Landfill Supervisor, the equipment will be replaced with back-up capability if necessary, or repaired and placed back in operating condition.

Equipment that could require the use of backup or rental equipment for continued, normal operation of the Tomoka Farms Road Landfill may include:

- Landfill Compactor
- Dozer
- Off-Road Dump Truck
- Back-hoe
- Water Truck

All equipment maintenance will either be performed by Volusia County or will be contracted by Volusia County to a maintenance contractor.

Poor Weather Conditions

Unusual operating conditions could result from excessive rainfall and electrical storms. The type and volume of materials to be disposed of after a hurricane or excessive storms differ from normal landfill operations. During extremely high wind conditions or electrical storms, disposal operations will be temporarily suspended to protect the workers. Disposal operations will be suspended immediately before and during a hurricane or tornado.

During rainy weather, access to the working face along on-site roads must be maintained. It may be necessary to grade out ruts more frequently than during normal operations, or it may be necessary to apply additional material to the on-site access roads to counteract the effects of rain.

Natural Disasters

In the event of a natural disaster, such as a hurricane, the Tomoka Farms Road Landfill will continue normal operations until unsafe weather exist. Normal operations will resume after threatening weather conditions subside.

Accidents

The following emergency or equipment procedures will be followed for the various types of accidents that may occur at the facility.

Vehicular Accidents --

- Determine if personal injury has occurred. If so, contact the Landfill Supervisor.
- Determine if the vehicle(s) can be safely moved under its own power. If so, move the vehicle(s) out of the way of normal traffic flow.
- If the vehicle(s) cannot move under its own power and is interrupting traffic flow, push the vehicle(s) out of the way with site equipment or reroute traffic if serious injuries are involved.
- Notify landfill and personnel officials of the details of the accident.
- Arrange to have disabled vehicles towed from the site to maintain operations.
- Report incident to the County Risk Management Officer and other appropriate personnel.

Personal Injury --

- Determine the nature and extent of the injuries.
- If qualified, administer emergency first aid techniques.
- Call for outside emergency assistance if necessary.
- Report incident to the Landfill Supervisor and personnel officials.
- If injuries require non-emergency medical attention, arrange to transport victim(s) to a place of professional medical care (e.g., hospital emergency room, doctor's office, clinic) by conventional means in accordance with County Safety Procedures.
- Report incident to the County Risk Management Officer and other appropriate personnel.

Fire

Waste loads that arrive at the landfill on fire will not be deposited at the working face. They will be deposited away from the working face on an area that has previously been covered with daily soil cover. The load will then be extinguished prior to being moved to the working face.

Small fires on the landfill working face will be extinguished with fire extinguishers when possible without endangering human health. If a fire at the landfill working face cannot be extinguished by fire extinguishers, on-site equipment will be used to spread soil over the fire thus decreasing oxygen supply to the fire.

If necessary, a temporary waste unloading area may be located as far away from the fire as possible but still within the limits of the lined disposal area where daily soil cover has previously been placed. Solid waste entering the facility will be placed in the temporary area until the fire is extinguished.

When a landfill fire is observed, the Site Supervisor will be notified immediately and shall determine if the fire can be extinguished using on-site equipment and materials or if the local fire department must be contacted for assistance. If on-site equipment and materials are not sufficient to extinguish the fire, the local fire department will be contacted by calling 911.

The first consideration when dealing with a fire is human safety. If the Site Supervisor determines that a fire cannot be safely controlled while awaiting assistance, the immediate area will be evacuated. Depending on weather and other conditions areas where the fire may potentially spread may also be evacuated.

A written report will be submitted to the FDEP Central District Office within five days of a fire at the landfill. If the fire is of such size and/or intensity that smoke can be seen from outside the landfill, the County will make every effort to notify the Department within 24 hours of the fire.

Unavailable Landfill Capacity

It is unlikely, based on the permitted capacity of the Class I and Class III landfills, that disposal capacity would become unavailable. However, if disposal capacity is temporarily unavailable, waste will not be accepted into the landfill for disposal. Signs will be posted notifying waste haulers that the landfill is closed, identifying alternate disposal facilities, and listing a projected reopening date.

CONTROL/INSPECTION OF INCOMING WASTE (RULE 62-701.500(2)(C), F.A.C.)

All solid waste arriving at the landfill is routed through the scalehouse. Scalehouse attendants screen visible loads for unacceptable materials including recyclables, hazardous waste, and medical waste. Scalehouse attendants at the Tomoka Farms Road Landfill typically receive spotter training in accordance with F.A.C. 62-701.320.(15)(c). From the scalehouse, vehicles are directed to either the Class I disposal, the Class III disposal area or to the Special Waste area. The various areas will be clearly identified by signs within the landfill. If prohibited

wastes are discovered, the spotter will direct the vehicle back to the scale house. If the unacceptable waste has not yet been unloaded, the person responsible for shipping the waste will be notified. If the waste has been deposited, the area of the waste load should be blocked from public access until the generator or hauler of the waste cleans up the waste. If the generator or hauler of the waste cannot be identified or is unable to remove the waste, Volusia County will be responsible for cleanup, transportation, and disposal of the waste at an appropriate waste management facility.

WEIGHING OF INCOMING WASTES (RULE 62-701.500(2)(D), F.A.C.)

Weighing of incoming wastes will be performed at the scalehouse. Each customer receives a receipt showing the type of refuse, amount, and fee. These receipts are utilized for financial accountability and to complete the necessary daily, weekly, monthly, and annual activities/materials reports required by the Florida Department of Environmental Protection (FDEP) and Volusia County.

VEHICLE TRAFFIC CONTROL AND UNLOADING (RULE 62-701.500(2)(E), F.A.C.)

All waste hauling vehicles entering the landfill must proceed to the scalehouse. Vehicle are directed to the appropriate unloading areas by the scale house attendant and assisted by signage around the landfill. The attendant will direct the vehicle to the point of unloading area compatible with the waste. Additional traffic directions will be provided, when needed, by equipment operators or spotters.

METHOD AND SEQUENCING OF FILLING WASTES (RULE 62-701.500(2)(F), F.A.C.)

The Tomoka Farms Road Landfill will be operated using the area fill method. Waste delivered to landfill will be directed to the working face area of either the Class I or Class III landfill for unloading.

Class I waste will be spread in layers approximately 2-feet in thickness and compacted. Following this method waste will be placed in 10-foot lifts across the site. Initial cover is applied at the end of each workday. A sequencing diagram for the Class I landfill is included as Figure 2-2.

Class III waste will be spread in layers approximately 2- to 5-feet thick and compacted. Following this method waste will be placed in 20-foot lifts across the site. An initial cover is applied weekly. The Class III landfill will be systematically filled to the elevations shown in the final grading plan included as Figure 2-3.

WASTE COMPACTION AND APPLICATION OF COVER (RULE 62-701.50(2)(G), F.A.C.)

Method of Filling Wastes/Compaction

The procedure for filling and compacting of the initial waste lifts over areas of exposed liner in

the Class I landfill will be as follows:

- To protect the integrity of the leachate collection system and liner, driving vehicles directly over the liner will be prohibited.
- The liner will be covered with a minimum of two (2) feet of protective soil at least one week prior to the placement of waste.
- The protective soil layer is carefully placed on the liner using low ground pressure tracked dozer approximately 1 week prior to the placement of waste. The equipment operator is directed by a spotter to ensure that the soil is placed correctly and that the equipment does not come in contact with the liner. The 2-foot minimum in-place thickness of the protective soil layer is verified by the landfill operator.
- The landfill spotter directs equipment away from the side slope liner during normal operations.
- The initial lift of waste will be 4 feet thick and selected for material that will not cause damage to the liner. The initial lift of waste will be spread with equipment that will preserve the integrity of the liner system.

The procedures for filling and compacting all waste will be as follows:

- Waste will be placed against the working face of the previous days waste, so that the first row will act as a means of access and a berm to guide the placement of waste material for the remaining rows.
- Class I waste will be spread and completed in 2-foot lifts and compacted to approximately 1 foot in thickness by a minimum of five passes using a landfill compactor.
- Class III waste will be spread and completed in 2 to 5-foot lifts and compacted by a minimum of fives passes using a landfill compactor or dozer.

Initial and Intermediate Cover

Cover material will be utilized to minimize vector breeding, animal attraction, and fire potential, as well as to prevent blowing litter and control odors. Initial cover will be composed of soil from the on-site stockpile, or synthetic materials such as tarps and geomembranes. Initial cover will be placed and compacted to a minimum thickness of 6 inches or equivalent. The intermediate cover will comprise of local soil which will be placed and compacted to a minimum thickness of 12 inches.

Final Cover

The final cover system for the Class I landfill will be designed in accordance with Rule 62-

701.600(5), F.A.C. The final cover will be placed on the intermediate cover as phases of the facility are closed. The conceptual final cover system for landfill closure, from top to bottom includes the following:

- 6-inch layer of top soil material with surface vegetation
- 18-inch soil layer
- Composite drainage net layer (geosynthetic filter fabric with drainage net)
- 40-mil textured geomembrane

A conceptual equivalent final cover system, if approved by the Department, may include:

- Exposed 60 mil HDPE Liner

OPERATION OF GAS, LEACHATE, AND STORMWATER CONTROLS (RULE 62-701.500(2)(H), F.A.C.)

Landfill Gas Controls

An active gas collection system is being installed in the Class I cell.

Passive gas vents will be installed as part of final closure for the Class III cell. If it becomes apparent prior to or at the time of closure that passive vents are not adequate to control odors or migration of landfill gas from the landfill, an active landfill gas control system will be installed. The operations plan will be updated as necessary to provide for operation and maintenance of the landfill gas controls.

Leachate Controls

Leachate is collected by a leachate collection and transfer system. The leachate is conveyed by gravity to leachate sumps located as shown in the Tomoka Farms Road Landfill Construction Plans. Collected leachate is pumped from the leachate sumps in the landfill to the two leachate storage and evaporation ponds located west of the disposal cell. Additional information is provided in Section 8.0 of this operations plan.

Leachate generation will be minimized by operating a single working face and keeping the working face as small as possible. The County's goal is to operate a working face no larger than approximately 150' by 200' under normal operating conditions. Daily and/or intermediate cover will be placed on slopes to promote stormwater runoff. The mixing of stormwater with leachate will be minimized by grading the daily and/or intermediate cover away from the working face and by using soil berms to direct stormwater run off away. Swales and conveyance ditches will also be used to collect and transport stormwater to stormwater management facilities.

Stormwater Controls

Operation of the existing stormwater system is discussed in Section 10.0 of this operations plan. The stormwater system will be managed as required by Rule 62-701.500(10), F.A.C., to meet applicable standards for Rule 62-302, F.A.C., and Rule 62-330, F.A.C. The system shall minimize stormwater from entering waste filled areas and avoid the mixing of stormwater with leachate. All stormwater conveyances shall be inspected at least weekly to verify adequate performance. Conveyances not performing adequately will be repaired within thee (3) working days. Documentation of all inspections and repairs will be kept on file at the landfill office.

WATER QUALITY MONITORING (RULE 62-701.500(2)(I), F.A.C.)

Groundwater, surface water, and leachate monitoring will be conducted as described in the Tomoka Farms Road Landfill Groundwater and Leachate Monitoring Plan, which is kept in the landfill office.

MAINTAINING AND CLEANING THE LEACHATE COLLECTION SYSTEM (RULE 62-701.500(2)(J), F.A.C.)

The leachate system at the landfill consists of collection, pumping, storage, and disposal facilities. Maintenance of the leachate pumping facilities is performed as specified in the manufacturer's manuals kept on file in the landfill office. Inspection and cleaning of the leachate collection system will be performed every 5 years.

SECTION 3

OPERATING RECORDS
(RULE 62-701.500(3), F.A.C.)

Volusia County will maintain a separate operating record for the Class I and Class III landfills. The operating record will consist of all records, reports, analytical results, and all notifications as required by Rule 62-701, F.A.C. These records are considered an integral part of the operations plan and will be kept at or near the facility. The operating records will be available for inspection at reasonable times upon request by FDEP personnel.

The Volusia County Solid Waste Management Division Director will be responsible for the storage and filing of all operational records. The minimum records to be kept as part of the official operating record include the following:

- Current permits and applications
- Monthly waste disposal records (volume, weight, or truckloads)
- Random load checking records
- Leachate quantities, sampling, and analysis
- On-site rain gauge data
- Monthly leachate operating reports (FDEP monthly facility report)
- Annual estimates of remaining capacity (permitted disposal) in cubic yards
- Regulatory agency inspection reports
- Groundwater, surface water, and leachate sampling plan, including well construction information, sampling locations, and water quality sampling results
- All official notifications to or from FDEP regarding the facility
- Training verifications/certifications
- Landfill operations plan, including all supplementary material incorporated by reference
- Leachate tank inspection records
- Gas monitoring records
- Maintenance summary forms

SECTION 4

WASTE RECORDS
(Rule 62-701.500(4), F.A.C.)

Each month, a report of the amount of waste received, in tons, will be compiled. This report will include best estimates of the amounts of the following waste types based on type of hauler and tip fee rates:

- Household waste;
- Commercial waste;
- Ash residue;
- Incinerator by-pass waste;
- Construction and demolition debris;
- Treated biomedical waste;
- Agricultural waste;
- Industrial waste;
- Yard trash;
- Sewage sludge;
- Industrial sludge;
- Water/air treatment sludges;
- Waste tires; and
- Class III waste.

Reports are compiled monthly and submitted, on a quarterly basis, to:

FDEP-Central District Office
Solid Waste Section
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803

SECTION 5

ACCESS CONTROL
(Rule 62-701.500(5), F.A.C.)

The entire Volusia County Landfill facility is fenced, and access is gate controlled at all times. Figure 1-1 is a site plan of the entire landfill and illustrates the landfill access control facilities. The landfill may be operated for up to 24 hours per day, seven days per week.

SECTION 6

WASTE MONITORING
(Rule 62-701.500(6), F.A.C.)

WASTE INSPECTION (RULE 62-701.500(6)(A), F.A.C.)

Volusia County has implemented a load checking program to detect and discourage attempts to dispose of unauthorized wastes at the landfill. This program includes at least three random checks by landfill personnel each week and inspection of suspicious loads, which are vehicles that have previously been determined to have delivered unauthorized waste, or loads that have unusually physical characteristics.

If any regulated hazardous wastes are identified during load checking. Following is a summary of the load inspection program.

1. Scalehouse personnel will direct at least three (3) vehicles per week of Class I waste and at least three (3) vehicles per week of Class III waste to a separate disposal area.

2. The driver of the vehicle will be asked the source of the waste by the inspector. The load will be completely discharged and spread uniformly by a front end loader so tat all waste is visible.

3. The inspector will proceed to inspect the load for unauthorized waste. These shall include, but are not limited to the following:

   - Restricted materials.
   - Regulated hazardous waste.
   - Biomedical waste.
   - Used oil filters.
   - Compressed gas cylinders.
   - PCB wastes.
   - Household hazardous waste.

4. If any unauthorized items are observed the waste will be segregated and, if possible, returned to the hauler for proper disposal.

5. The person responsible for shipping the waste will provide a manifest documenting the proper disposal of the unauthorized waste found during inspection. The manifest must indicate the corresponding identification number assigned to the waste during inspection.

6. If any regulated hazardous waste or biomedical waste is observed, the Landfill Supervisor will segregate the waste, notify FDEP, persons responsible for shipping the wastes, and the generator of the wastes. The waste shall be removed from the

facility and disposed of properly.

7. Landfill personnel or haulers will relocate all special wastes such as tires, appliances, and lawn debris to the proper disposal areas.

8. Copies of all completed inspection reports will be maintained for the life of the landfill.

9. Vehicles that have previously been determined to have delivered unauthorized waste will be considered suspicious and may be subjected to inspection at any time and in the same manner as the random inspections.

HAZARDOUS WASTES AND HANDLING PROCEDURES (RULE 62-701.500(6)(B), F.A.C.)

No hazardous wastes will be accepted at the landfill for disposal. If unauthorized material is transported to the facility, the appropriate supervisory personnel will be notified immediately and appropriate actions taken to remove any unauthorized materials or wastes from the facility. Special wastes that are discovered will be removed from the landfill and placed in the appropriate processing area.

RECORDING INSPECTION RESULTS (RULE 62-701.500(6)(C), F.A.C.)

Results of the load checking inspections described in Section 6.1 of this document will be recorded in writing and retained at the landfill. This information will include date and time of inspection, name of hauling firm, name of driver of the vehicle, vehicle license plate number, source of waste as stated by the driver, and observations made by landfill personnel during the inspection. The inspector will sign the written record. A sample form used to document the inspection results is provided in Appendix A.

SECTION 7

WASTE HANDLING REQUIREMENTS
(Rule 62-701.500(7), F.A.C.)

The following description represents waste handling requirements as required by Rule 62-701.500(7), F.A.C. Volusia County will meet or exceed the requirements at all times to minimize the potential adverse impacts to employees or public health or safety.

WASTE THICKNESS AND COMPACTION FREQUENCIES (RULE 62-701.500(7)(A), F.A.C.)

Class I waste material will be spread in layers of approximately two feet in thickness and compacted to approximately one foot in thickness, or as thin as practical, by a landfill compactor before the next layer is applied.

Class III waste materials will be spread in layers of approximately 2 to 5-foot in thickness and compacted as this as practically by a landfill compactor or dozer before the next layer is applied.

FIRST LAYER OF WASTE (RULE 62-701.500(7)(B), F.A.C.)

The first lift of Class I waste placed above the liner and leachate collection system will be a minimum of four feet in compacted thickness. Waste loads in this first lift will be screened for any large, rigid objects or other materials that would damage the liner or leachate collection system.

SLOPES OF WORKING FACE (RULE 62-701.500(7)(C), F.A.C.)

The working face and side grades above land surface will be sloped at a maximum of 3 feet horizontal to 1 foot vertical rise. The lift depth will typically be a maximum of 10 feet. Lift depths may be deeper than 10 feet depending on specific operations, daily waste volumes, width of the working face, and good safety practices.

WIDTH OF WORKING FACE (RULE 62-701.500(7)(D), F.A.C.)

The working face will be wide enough to safely accommodate vehicles, unloading materials, and compacting equipment. Since the waste requires daily cover, the width of the working face will be minimized. The County's goal is to operate a working face no larger than approximately 150' by 200' under normal operating conditions.

INITIAL/DAILY COVER (RULE 62-701.500(7)(E), F.A.C.)

Initial cover will be placed over the Class I waste at the end of each working day. Initial cover will consist of six inches of compacted soils, synthetic material such as tarps and geomembranes, or other materials as approved by the FDEP.

Initial cover will be placed over the Class III waste weekly. Initial cover will consist of six inches of compacted soils or other materials as approved by the FDEP.

INTERMEDIATE COVER (RULE 62-701.500(7)(F), F.A.C.)

If additional solid waste will not be deposited in a location within 180 days of initial cover placement, a 12-inch intermediate cover will be placed within 7 days of initial cover placement.

FINAL COVER (RULE 62-701.500(7)(G), F.A.C.)

The landfill will receive final cover as portions of the facility are closed. A description of the final cover can be found in Section 2.8.3 of this plan.

SCAVENGING AND SALVAGING CONTROL (RULE 62-701.500(7)(I), F.A.C.)

Scavenging is strictly prohibited at the working face of the landfill. Salvageable materials, as identified by landfill personnel, will be unloaded at designated locations away from the working face.

LITTER POLICING METHODS (RULE 62-701.500(7)(I), F.A.C.)

Initial cover will provide the main litter control. A perimeter ditch and fence will provide a barrier to blowing litter. In addition, portable litter fences will be located adjacent to the working face to prevent litter from being blown away from the working area. Temporary fencing is also mobile and easily relocated around the facility as needed. Litter outside the working area of the landfill will be picked up within 24 hours of the cessation of the event.

EROSION CONTROL (RULE 62-701.500(7)(J), F.A.C.)

Soil cover erosion control measures will be integrated into landfill operations to collect and transport stormwater without exposing solid waste and leachate. These measures are identified and discussed as follows:

- Intermediate soil cover configured to collect and transport stormwater
- 4"-5" of mulch soil cover and/or sod to prevent erosion
- Regular inspection of intermediate soil cover
- Benches and lined ditches to transport concentrated volumes of stormwater runoff

<u>Intermediate Soil Cover</u>

Temporary berms to direct stormwater away from solid waste placement and compaction activities will surround the active areas of the landfill. Inactive areas will be covered with intermediate soil cover with a minimum thickness of 1 foot. The intermediate soil cover will be sloped to promote run-off and decrease infiltration of stormwater. Stormwater runoff will be controlled by using benches placed every 40 feet in vertical height.

Intermediately covered areas subject to erosion will be seeded with grass appropriate to the season as needed to control erosion. Yard waste mulch or sod may also be used to help control erosion.

Down Drains

Stormwater collected in the benches will be directed to the stormwater system located at the toe of slope using downpipes, downchutes, or other conveyances.

Inspections

The intermediate soil cover will be regularly inspected for erosion damage. Repairs to any damage that is discovered will be initiated within 3 days to contain solid waste and leachate and anything that can not be repaired within 7 days will be reported to FDEP.

SECTION 8

LEACHATE MANAGEMENT
(Rule 62-701.500(8), F.A.C.)

Leachate in the Class I landfill is collected in the leachate drainage layer that slopes to collection sumps equipped with leachate pumps. Clean outs are provided to allow access for inspection and cleaning. Leachate is pumped from the pump stations to the leachate storage ponds via force mains that run around the north and west sides of the landfill.

MONITORING, SAMPLING, AND ANALYSIS OF LEACHATE (RULE 62-701.500(8)(A), F.A.C.)

The Division Director is responsible for leachate monitoring, sampling, and analysis, and for providing copies of the leachate analysis to FDEP. Leachate sampling and analysis is addressed in the Tomoka Farms Road Landfill Groundwater Monitoring Plan. Sampling and analysis will be conducted by contractors meeting applicable FDEP requirements.

The leachate pump side slope risers and leachate collection pipe clean out side-slope risers provide a mechanism to observe leachate levels through physical measurements. Complete details of the pumps and side slope risers are provided in the Construction Plans.

OPERATION AND MAINTENANCE OF LEACHATE COLLECTION SYSTEM (RULE 62-701 .500(8)(B), F.A.C.)

The Landfill Supervisor will be responsible for maintenance of the leachate systems, including the piping, pump stations, and piping to the leachate storage ponds, and the spray evaporation system. The equipment manufacturers have provided operation and maintenance manuals for each of the system components. Maintenance of each component will be performed in accordance with manufacturer specifications. Maintenance documentation may also include a video of the cleaning procedures. Operation and maintenance manuals include the following:

- Description of unit and component parts, including normal operating characteristics and limiting conditions.
- Operating procedures.
- Maintenance and overhaul procedures.
- Installation instructions.
- Original manufacturer's parts list, illustrations, and detailed assembly drawings.
- Spare parts ordering instructions.
- Manufacturer's printed operating and maintenance instructions.

Flow will be monitored from the leachate pumps. Facility personnel will record leachate flows. This will allow determination of leachate production as a function of rainfall and provide information to assess the efficiency of leachate and stormwater management practices. Leachate generation/flow records will be kept at the facility as part of the official operation record.

Leachate pump station maintenance will include reading meters and making sure each pump is operational. Pumping rates and electrical draw will be confirmed semiannually. If these tests indicate significantly reduced performance, the pumps will be pulled for inspection and repair. A replacement pump will be installed while the repairs are being made.

If leachate flow volume is noticeably decreased, the leachate collection system will be inspected. Possible reasons for low or no flow are header collapse or header blockage. If pipe blockage is identified, the header pipe will be power jetted to remove sediment buildup. Power jetting or rodding will be done from either or both ends of the header.

LEACHATE HANDLING (IF REGULATED AS HAZARDOUS WASTE) (RULE 62-701 .500(8)(B), F.A.C.)

The Landfill Supervisor is responsible for the operation of the leachate collection and removal system and for maintaining the system as designed for the life of the facility. Leachate will be collected and pumped to the on-site storage and spray evaporation ponds, and disposed of by spray evaporation or by trucking to one of several wastewater treatment plants.

OFF-SITE TREATMENT (RULE 62-701.500(8)(C), F.A.C.)

Leachate that, due to precipitation volumes, cannot be managed through onsite evaporation will be transported to one of several wastewater treatment plants. Volusia County operates local POTWs that provide back-up capacity for leachate disposal. The Tomoka Farms Road will transport leachate for off-site disposal when less than one-foot of freeboard is available in the leachate storage ponds.

ON-SITE TREATMENT (RULE 62-701.500(8)(D), F.A.C.)

Leachate evaporation is performed at the Tomoka Farms Road Landfill.

CONTINGENCY PLAN FOR MANAGING LEACHATE (RULE 62-701.500(8)(E), F.A.C.)

Temporary pumps and emergency power generators are locally available in the event of pump failure or power interruption. Alternate wastewater treatment plants are available for leachate disposal. Therefore, complete interruption of off site disposal capability is not anticipated. As stated above, leachate will be transported off site for disposal when less than one-foot of freeboard is available in the leachate storage ponds. This practice is intended to maintain sufficient storage capacity in the event of a heavy rainfall event.

RECORDING LEACHATE QUANTITIES (RULE 62-701.500(8)(F), F.A.C.)

Quantities of leachate collected and removed for off-site treatment and/or disposal are recorded and those records are maintained at the landfill. These quantities will be recorded in gallons per day.

RECORDING PRECIPITATION (RULE 62-701.500(8)(G), F.A.C.)

A rain gauge has been installed and is operated and maintained by Volusia County personnel to record precipitation at the disposal facility. Precipitation records will be maintained in the facility's operating record and will be compared with leachate generation rates.

INSPECTION AND CLEANING (RULE 62-101.500(8)(H), F.A.C.)

The leachate collection system for future cells will either be pressure cleaned or inspected by video recording after construction but prior to the initial placement of waste. Thereafter, existing leachate collection systems at the Tomoka Farms Road Landfill will pressure cleaned or inspected by video at the time of permit renewal. Results of the cleanings and inspections are kept on file in the landfill office.

SECTION 9

LANDFILL GAS MONITORING
(Rule 62-701 500(9), F.A.C.)

This Landfill Gas Monitoring Plan for the Tomoka Farms Road Landfill has been prepared in accordance with the provision of Rule 62-701.530, F.A.C. This plan includes measures of comprehensive monitoring of landfill gas (LFG) from the landfill.

LANDFILL GAS MONITORING PROBES

Seven locations around the active and closed landfill cells are monitored for the presence of LFG. These monitoring probes are located around the perimeter of the working area of the landfill. Each probe is monitored for the presence of combustible gas on a quarterly basis and the results are submitted to FDEP

GAS PROBE MONITORING

The probes are monitored for concentrations of combustible gas using an instrument calibrated to methane and capable of measuring methane in percent by volume. Combustible gas concentrations will be converted to a percent of the lower explosive limit (LEL). Five percent methane by volume is equal to 100 percent LEL. The gas instrument is calibrated with calibration gas each day before monitoring is performed.

Any problems encountered during monitoring, observations, or other pertinent information that could impact the interpretation of the data are recorded. For example, if a probe is full of groundwater or suspected of being so, the comments should be noted for the monitoring round.

GAS MONITORING IN STRUCTURES

The following gas monitoring will be performed in structures at the facility:

- Enclosed buildings located within 500 feet of disposal are equipped with continuous combustible gas monitors. These monitors are designed to sound an alarm when methane concentrations exceed 25 percent LEL. The signal remains on as long as gas is present, and a red alarm light stays on after an alarm to alert personnel that methane was detected during their absence. These monitors are Macurco, Model GD-21, or similar monitors. These are factory calibrated, plug-in units that require no maintenance or calibration. The units are designed for seven to ten years use and provide an audible beep when they need replacement.

- The inside of enclosed buildings within 500 feet of disposal areas are monitored for methane on a quarterly basis along with the perimeter probes. The sampling hose of the instrument is held above the floor and inserted into any conduit spaces or cracks that could act as conduits for LFG to enter into the structure. All monitoring is reported to the FDEP.

REPORTING

Landfill gas monitoring is reported quarterly to FDEP-Central District office at:

FDEP-Central District Office
Solid Waste Section
3319 Maguire Boulevard, Suit 232
Orlando, Florida 32803

Any odor complaints due to landfill gas at or beyond the property boundary are recorded and maintained on site. If methane gas is measured above 25 percent LEL in the structures, Volusia County will take all necessary steps to ensure protection of human health. Exceedances will be included in the quarterly reports to FDEP. The report will also include a description of the nature and extent of the exceedances and measures implemented in response to the exceedances.

SECTION 10

STORMWATER MANAGEMENT SYSTEM AND MAINTENANCE (Rule 62-701.500(10), F.A.C.)

The Stormwater Management System will be operated and maintained as necessary to meet the requirements of Rule 62-701.400(9), F.A.C.

STORMWATER BEST MANAGEMENT PRACTICES

The landfill will use the following stormwater best management practices (BMPs):

- Sideswales
- Grass
- Sod
- Downdrains
- Benches
- Dry retention stormwater ponds
- Pumps to transport stormwater
- Ditches

STORMWATER MAINTENANCE PROCEDURES

The stormwater management system operation and maintenance will include the following:

- All stormwater conveyance systems will be inspected periodically or after major storm events.
- Any damaged systems will be repaired.
- Accumulated sediment will be removed as necessary.
- All stormwater pumps will be serviced as specified by the pump manufacturer.

SECTION 11

EQUIPMENT AND OPERATION FEATURES
(Rule 62-701.500(11), F.A.C.)

EQUIPMENT (RULE 62-701.500(11)(A), F.A.C.)

Volusia County owns a diverse mix of equipment to spread, compact, and cover the waste in the landfill. This equipment may include:

- Landfill Compactor
- Dozer
- Off-Road Dump Truck
- Back-hoe
- Water Truck

While the actual equipment at the landfill may vary, sufficient equipment will be maintained at the site to ensure proper operation of the landfill.

Normal equipment maintenance will be performed on site. Major maintenance item repairs (e.g., engine, transmissions, and auxiliary drives) will be handled either at the maintenance facilities or at off-site service facilities.

BACKUP EQUIPMENT (RULE 62-701.500(11)(B), F.A.C.)

There is sufficient equipment available to Volusia County to maintain normal operations during equipment breakdown or during emergency operating conditions. Arrangements will be made with suppliers to obtain reserve equipment within 24 hours of equipment breakdown if sufficient equipment is not available to properly operate the landfill.

COMMUNICATION EQUIPMENT (RULE 62-701.500(11)(C), F.A.C.)

Landfill employees will be able to communicate by two-way radios, and telephones are located at the office and scalehouse.

DUST CONTROL (RULE 62-701.500(11)(D), F.A.C.)

Control of dust will be maintained by wetting roads as necessary.

FIRE PROTECTION AND FIRE FIGHTING CAPABILITIES (RULE 62-701.500(11)(E), F.A.C.)

The initial cover aids in fire prevention at the landfill. The main method of fire extinguishing is to apply soil to the burning waste. Ample soil is stockpiled on site if needed for fire extinguishing purposes.

All key equipment and vehicles at the landfill will be equipped with fire extinguishers, and all personnel will be trained in their use. All extinguishers will be inspected regularly and repaired or replaced as needed.

Emergency services are notified telephonically using 911.

LITTER CONTROL PROGRAM (RULE 62-701.500(11)(F), F.A.C.)

Initial cover will provide the main litter control. A perimeter ditch/swale and fence will provide a barrier to blowing litter. In addition, portable litter fences will be located adjacent to the working face to prevent litter from being blown. Temporary fencing is also mobile and easily relocated around the facility as needed. Litter outside the working area of the landfill will be picked up as soon as possible.

SIGNS (RULE 62-701.500 (11)(G), F.A.C.)

Appropriate signs will be utilized and maintained to ensure maximum safety, efficiency, and general information. Signage will include, at a minimum, facility name and operating authority, traffic flow, hours of operation, disposal rates, and restrictions or conditions of disposal.

SECTION 12

ROADS
(Rule 62-701.500(12), F.A.C.)

ALL-WEATHER ROADS (RULE 62-701.500(12)(A), F.A.C.)

All-weather roads, passable and safe under normal operating conditions, will be maintained to prevent dust, rutting or loss of traction. Figure 1-1 shows the locations of the access and perimeter site roads.

PERIMETER AND OTHER ON-SITE ROADS (RULE 62-701.500(12)(B), F.A.C.)

Some perimeter roads and internal roads are paved. Other on-site roads are constructed of limerock and/or stabilized soils. Limerock roads are scraped and smoothed with a road grader or dozer as necessary. When needed, roadways are wetted to control dust and to ensure high visibility. On-site roads are maintained to allow access to monitoring devices and stormwater controls, for landfill inspections and fire fighting.

SECTION 13

RECORDKEEPING
(Rule 62-701.500(13), F.A.C.)

PERMIT APPLICATION DOCUMENTATION (RULE 62 -701 .500(13)(A), F.A.C.)

Records of all information used to develop or support the permit applications and any supplemental information submitted to comply with Rule 62-701, F.A.C., pertaining to construction of the facility will be kept throughout the life of the facility. Records pertaining to the operation of the landfill will be kept for the life of the facility.

MONITORING INFORMATION (RULE 62-701.500(13)(B), F.A.C.)

Records of all monitoring information, including calibration and maintenance records and copies of all reports required by permit, will be retained for at least 10 years. Background water quality records will be kept for the life of the facility.

REMAINING LIFE AND CAPACITY ESTIMATE (RULE 62-701.500(13)(C), F.A.C.)

The County prepares an annual estimate of the remaining life and capacity (in cubic yards) of the existing constructed landfill and the remaining capacity and site life of other permitted areas not yet constructed. The annual estimate is based on scale house records and aerial photomapping of solid waste disposal units. The estimate is reported annually to the FDEP as part of the annual update to the closure and long-term care cost estimates.

ARCHIVED RECORDS (RULE 62-701.500(13)(D), F.A.C.)

The landfill may archive records that are more than five years, if necessary. Archived records will be available for inspection within seven days of the receipt of the request.

SECTION 14

CLOSED CELL INSPECTIONS

Closed cells at the Tomoka Farms Road Landfill are inspected quarterly, at a minimum. These inspections will typically be performed during the landfill gas surface emissions monitoring. Inspections will include observations for cap integrity, differential settlement, ponding, erosion and condition of the vegetation. Corrective actions will be initiated within three working days.

Environmental Consultants

3012 U.S. Highway 301 North
Suite 700
Tampa, FL 33619-2242

813 621-0080
FAX 813 623-6757

File Copy

SCS ENGINEERS

March 30, 2006
File No. 09204060.03

Mr. Jim Bradner, P.E.
Solid Waste Program Manager
Florida Department of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, Florida 32803-3767

RECEIVED
MAR 31 2006
Central Dist.-DEP

Subject: Revised Operations Plan
Tomoka Farms Road Landfill
Volusia County, Florida

Dear Mr. Bradner:

On behalf of Volusia County, SCS Engineers has prepared the attached Operations Plan for the Tomoka Road Landfill. As previously discussed with the County, this updated Operations Plan is intended to comply with the requirement of F.A.C. 62-700.500(2) and to reflect current operating practices at the Class I and Class III landfills.

If you have any questions or comments regarding the attached Operations Plan, please contact us.

Sincerely,

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

for Michael S. Dae
Project Manager
SCS ENGINEERS

Cc: Josef Grusauskas, Volusia County
Jennifer Stirk, Volusia County

Attachments

OPERATIONS PLAN
TOMOKA FARMS ROAD LANDFILL
VOLUSIA COUNTY, FLORIDA

Prepared for:

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

Prepared by:

SCS Engineers
501 North Grandview Avenue, Suite 400
Daytona Beach, Florida 32118
(386) 238-7770

Revised March 30, 2006
File No. 09204060.03

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SECTION 1

EXECUTIVE SUMMARY

The purpose of this document is to provide a consolidated manual of operating procedures for the Tomoka Farms Road Landfill Class I and Class III disposal cells. This document is intended to fulfill the requirement for am Operation Plan as listed in F.A.C. 62-701.500(2). This operations plan supersedes previous operations plans submitted to the Florida Department of Environmental Protection (FDEP) for this facility.

This plan has been prepared in accordance with Florida Rule 62-701, Florida Administrative Code (F.A.C.). Part L of FDEP's permit application form for solid waste management facilities (Part L) includes requirements for an operations plan. All information identified in Part L is provided herein, or in referenced documents. This operations plan is organized in accordance with Part L. In addition, Table 1-1 cross-references this document with the requirements of Part L.

Except where specific procedures are required by F.A.C. 62-701, this plan is intended to represent the best management practices and working goals of the Tomoka Farms Road Landfill.

Table 1-1
Cross Reference of FDEP Permit Application, Part L Requirements

Part L **Landfill Operation Requirements** (Rule 62-701.500, F.A.C.)	**Corresponding Section of Operation Plan**
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), F.A.C.)	Section 2.1
2. Provide a landfill operation plan including procedures for: (62-701.500(2), F.A.C.)	
a. Designating responsible operating and maintenance Personnel;	Section 2.2
b. Contingency operations for emergencies;	Section 2.3
c. Controlling types of waste received at the landfill;	Section 2.4
d. Weighing incoming waste;	Section 2.5
e. Vehicle traffic control and unloading;	Section 2.6
f. Method and sequence of filling waste;	Section 2.7
g. Waste compaction and application of cover;	Section 2.8
h. Operations of gas, leachate, and stormwater controls;	Section 2.9
i. Water quality monitoring;	Section 2.10
j. Maintaining and cleaning the leachate collection system.	Section 2.11

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), F.A.C.)	Section 3
4. Describe the waste records that will be compiled monthly And provided to the Department quarterly; (62-701.500(4), F.A.C.)	Section 4
5. Describe methods of access control; (62-701.500(5), F.A.C.)	Section 5
6. Describe load checking program to be implemented at the landfill to discourage disposal of unauthorized wastes at the landfill; (62-701.500(6), F.A.C.)	Section 6
7. Describe procedures for spreading and compacting waste at the landfill that include: (62-701.500(7), F.A.C.)	
a. Waste layer thickness and compaction;	Section 7.1
b. Special considerations for first layer of waste placed above liner and leachate collection system;	Section 7.2
c. Slopes of cell working face and side grades above land surface, planned lift depths during operation;	Section 7.3
d. Maximum width of working face;	Section 7.4
e. Description of type of initial cover to be used at the facility that controls:	
(1) Disease vector breeding/animal attraction	Section 7.5
(2) Fires	Section 7.5
(3) Odors	Section 7.5
(4) Blowing litter	Section 7.5
(5) Moisture infiltration	Section 7.5
f. Procedures for applying initial cover including minimum cover frequencies;	Section 7.5
g. Procedures for applying intermediate cover;	Section 7.6
h. Time frames for applying final cover;	Section 7.7
i. Procedures for controlling scavenging and salvaging;	Section 7.8
j. Description of litter policing methods;	Section 7.9
k. Erosion control procedures.	Section 7.10
8. Describe operational procedures for leachate management	

including: (62-701.500(8), F.A.C.)	
a. Leachate level monitoring, sampling, analysis and data results submitted to the Department;	Section 8.1 Section 8.2
b. Operation and maintenance of leachate collection and removal system, and treatment as required;	Section 8.3
c. Procedures for managing leachate if it becomes regulated as a hazardous waste;	Section 8.4
d. Agreements for off-sire discharge and treatment of Leachate;	Section 8.6
e. Contingency plan for managing leachate during emergencies or equipment problems;	Section 8.7
f. Procedures for recording quantities of leachate Generated in gal/day and including this in the operating record;	Section 8.8
g. Procedures for comparing precipitation experienced at the landfill with leachate generation rates and including this information in the operating record;	Section 8.9
h. Procedures for water pressure cleaning or video inspecting leachate collection systems.	
9. Describe how the landfill receiving degradable wastes shall implement a gas management system meeting the requirements of rule 62-701.530, F.A.C.; (62-701.500(9), F.A.C.)	Section 9
10. Describe procedures for operating and maintaining the landfill stormwater management system to comply with the requirements of Rule 62-710.400(9); (62-701.500(10), F.A.C.)	Section 10
11. Equipment and operation feature requirements; (62-701.500(11), F.A.C.)	Section 11.1
a. Sufficient equipment for excavating, spreading, compacting and covering waste;	Section 11.2
b. Reserve equipment or arrangements to obtain additional equipment within 24 hours of breakdown;	Section 11.3 Section 11.4
c. Communications equipment;	Section 11.5
d. Dust control methods;	
e. Fire protection capabilities and procedures for notifying local fire department authorities in emergencies;	Section 11.6 Section 11.7
f. litter control devices;	
g. Signs indicating operating authority, traffic flow, hours	

of operation, disposal restrictions.	Section 12
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), F.A.C.)	Section 13.1
13. Additional record keeping and reporting requirements: (62-701.500(13), F.A.C.)	Section 13.2
a. Records used for developing permit applications and supplemental information maintained for the design period of the landfill;	Section 13.3
b. Monitoring information, calibration and maintenance records, copies of reports required by permit maintained for at least 10 years;	
c. Maintain annual estimates of remaining life of constructed landfills and or other permitted areas not yet constructed and submit this estimate annually to the Department;	Section 13.4
d. procedures for archiving and retrieving records which are more than five years old.	

CURRENT OPERATING CONDITIONS

The Tomoka Farms Road Landfill is owned and operated by the Volusia County Solid Waste Division and is located approximately three miles south of US 92 on Tomoka Farms Road in Section 10, Township 16 South, Range 32 East. Vehicles access the Tomoka Farms Road Landfill via Tomoka Farms Road. With proposed expansions the landfill is expected to be able to provide disposal of Class I and Class III materials until approximately 2020. A site plan of the Tomoka Farms Road landfill is included as Figure 1-1.

Waste hauling vehicles arriving at the Tomoka Farms Road Landfill travel west along the entrance road to the scale house where loads are weighed. The scale house attendant directs vehicles to the Class I or Class III active areas, or to the Special Waste area where the wastes are unloaded. Any unacceptable waste identified prior to acceptance by the landfill will remain the responsibility of the waste hauler. The various disposal areas will be clearly identified by signs at the locations within the landfill.

Class I waste is directed to the Class I working face where it is spread over the working face area of the landfill, placed in two-foot layers, compacted by a compactor, and covered at the end of the working day. Initial cover is applied at the end of each workday. A 12-inch thick intermediate cover, in addition to the initial cover, is placed on areas where no additional waste will be placed within 180 days. This intermediate cover may be removed before placing

additional waste. The final cover system is installed as areas reach the final permitted elevation.

Class III waste is directed to the Class III working face where it is spread in two to five-foot lifts. Class III waste is covered with an initial cover weekly. A 12-inch thick intermediate cover, in addition to the initial cover, is placed on areas where no additional waste will be placed within 180 days. This intermediate cover may be removed before placing additional waste. The final cover system is installed as areas reach the final permitted elevation.

Leachate generated from the landfill is conveyed to the landfill's leachate system. Leachate management options at the Tomoka Farms Road Landfill include recirculation, evaporation, and transportation to a Publicly Owned Treatment Works (POTW). Recirculation shall be performed only in Class I areas that have received initial cover and can be isolated from the stormwater management system.

Stormwater run-off is directed away from open areas on the active face of the landfill by means of ditches and swales around the landfill. The swales outside the disposal area divert stormwater into the perimeter ditches that are located outside the lined berms and, therefore, isolated from the leachate and solid waste. Within the landfill disposal area, stormwater run-off that has not contacted waste or mixed with leachate is conveyed to the stormwater management system. Stormwater run-off which contacts waste or mixes with leachate is treated as leachate.

REV.	DATE	DESCRIPTION	CK. BY

DRAWING TITLE
OVERALL SITE PLAN

PROJECT TITLE
TOMOKA FARMS ROAD LANDFILL
EAST CELL EXAPANSION

CLIENT
VOLUSIA COUNTY
DEPARTMENT OF PUBLIC WORKS
SOLID WASTE DIVISION
DELAND, FLORIDA

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT
CONSULTING ENGINEERS
2012 U.S. HWY. 301 NORTH, SUITE 700, TAMPA, FL 33619
PH (813) 621-0080 FAX NO. (813) 623-6757

PROJ. NO. 091980052.02 | DWN. BY: DB | Q/A REVIEW BY: RJD
CSK. BY: LAP | CK. BY: LAP | APP. BY: RBG

CADD FILE: SITE-E1

DATE: JANUARY 2002

SCALE: AS SHOWN

DRAWING NO. 2 of 14

either
eport which
is not
original

RECORD DRAWING

DATE: NOVEMBER 2005

SECTION 2

LANDFILL OPERATIONS AND MAINTENANCE (RULE 62-701.500(2), F.A.C.)

TRAINING AND CERTIFICATION OF OPERATORS AND SPOTTERS (RULE 62-701.500(1), F.A.C.)

In accordance with Rule 62-701.500(1), F.A.C., at least one trained operator will be on duty at the Tomoka Farms Road landfill whenever waste is received at the facility. In addition, at least one trained spotter will be present at each landfill active face when waste is received. Operator and spotter training will comply with Rule 62-701.320(15), F.A.C., as adopted May 27, 2001. Operators at the Tomoka Farms Road Landfill (landfill) shall participate in at least 24 hours of initial training. Every three years landfill operators shall participate in continuing education courses totaling 16 hours. All Operator training will consist of courses conducted by the University of Florida TREEO Center, or other courses presented by other providers that have been approved by the Florida Solid Waste Management Training Committee (SWMTC).

In accordance with Rule 62-701.320.15, F.A.C., Spotters shall participate in 8 hours of initial training that shall include Spotting at Construction and Demolition Sites, Landfills, and Transfer Stations (SWMTC 8 hours) and/or Waste Screening and Identification for Landfill Operators and Spotters (SWMTC 8 hours) conducted by the University of Florida TREEO Center or other SWMTC approved providers. Every three years landfill operators shall participate in continuing education courses totaling four hours. The equipment operator will be responsible for evaluating each load visually as it is dumped and may serve as the spotter at the working face of the facility.

DESIGNATION OF PERSONS RESPONSIBLE FOR OPERATION AND MAINTENANCE (RULE 62-701.500(2)(A), F.A.C.)

The persons directly responsible for major components of the landfill follow:

Component	Responsible Party
Operations	Landfill Supervisor
Repair and Maintenance	Landfill Supervisor
Permitting Requirements	Solid Waste Management Division Director
Water Quality and Leachate Testing	Environmental Specialist III

The Landfill Supervisor has overall responsibility for the operation of the landfill. The Landfill Supervisor is responsible for the day-to-day implementation of the operations plan and, along with the Solid Waste Management Division Director, is responsible for environmentally safe operations in accordance with state and federal regulations.

CONTINGENCY OPERATIONS FOR EMERGENCIES (RULE 62-701.500(2)(B), F.A.C.)

The contingency plan for the facility addresses the following four potential emergencies:

- Equipment failure
- Unusual operating conditions resulting from poor weather conditions
- Accidents
- Fire
- Unavailable landfill capacity

Emergency Assistance

Emergency telephone numbers are listed in Table 2-1. This table will be updated as needed and an up to date version will be posted at the landfill operations office.

TABLE 2-1. EMERGENCY TELEPHONE NUMBERS

Organization	Phone Number
Tomoka Farms Road Landfill On-site Phone:	(386) 947-2952
Primary Emergency Response:	911
Fire Department (County):	(386) 254-4657
Hospital: Halifax Medical Center 303 N. Clyde Morris Blvd. Daytona Beach, FL 32174	(386) 254-4000 (switchboard) (386) 254-4100 (emergency line)
Ambulance: EVAC Ambulance Service	(386) 252-4911
Hazardous Material Contractor: Clean Harbor Environmental Services	(800) 699-8916
Sheriff:	(386) 248-1777
Operation Supervisor: Martin Bey Cell: Home: Office:	(386) 527-6335 (386) 767-6795 (386) 947-2952
Supervisor IV: Gene Palmatier: Cell: Home: Office:	(386) 527-6333 (386) 228-3477 (386) 947-2952
Environmental Specialist: Cell: Hazmat First Responder Home: Jennifer Stirk Office:	(386) 527-6336 (386) 960-6670 (386) 947-2952
Solid Waste Services Director: Josef Grusauskas Cell: Home: Office:	 (386) 527-6337 (386) 304-6940 (386) 943-7889
Florida Department of Environmental Protection: Jim Bradner, P.E.	(407) 894-7555
Poison Control Assistance	(800) 222-1222

Organization	Phone Number
State Warning Point	(800) 320-0519

Equipment Failure

In the event of equipment failure at the Tomoka Farms Road Landfill, sufficient backup equipment is available at the landfill site for equipment breakdowns and downtime associated with normal routine equipment maintenance. In the case of major equipment failure the following procedures will be followed:

- Arrangements with other County departments and/or contractors will be made to furnish equipment on a short-term basis.
- Applicable site operations will cease until equipment capacity is restored.
- Contact rental equipment dealers to furnish equipment on short-term notice (within 24 hours)

In the event of equipment failure, the Landfill Supervisor will be notified. Within 24 hours of notification of the Landfill Supervisor, the equipment will be replaced with back-up capability if necessary, or repaired and placed back in operating condition.

All equipment maintenance will either be performed by Volusia County or will be contracted by Volusia County to a maintenance contractor.

Poor Weather Conditions

Unusual operating conditions could result from excessive rainfall and electrical storms. The type and volume of materials to be disposed of after a hurricane or excessive storms differ from normal landfill operations. During extremely high wind conditions or electrical storms, disposal operations will be temporarily suspended to protect the workers. Disposal operations will be suspended immediately before and during a hurricane or tornado.

During rainy weather, access to the working face along on-site roads must be maintained. It may be necessary to grade out ruts more frequently than during normal operations, or it may be necessary to apply additional material to the on-site access roads to counteract the effects of rain.

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.

Accidents

The following emergency or equipment procedures will be followed for the various types of accidents that may occur at the facility.

Vehicular Accidents --

A. Determine if personal injury has occurred. If so, contact the Landfill Supervisor.

B. Determine if the vehicle(s) can be safely moved under its own power. If so, move the vehicle(s) out of the way of normal traffic flow.

C. If the vehicle(s) cannot move under its own power and is interrupting traffic flow, push the vehicle(s) out of the way with site equipment or reroute traffic if serious injuries are involved.

D. Notify landfill and personnel officials of the details of the accident.

E. Arrange to have disabled vehicles towed from the site to maintain operations.

F. Report incident to the County Risk Management Officer and other appropriate personnel.

Personal Injury --

A. Determine the nature and extent of the injuries.

B. If qualified, administer emergency first aid techniques.

C. Call for outside emergency assistance if necessary.

D. Report incident to the Landfill Supervisor and personnel officials.

E. If injuries require non-emergency medical attention, arrange to transport victim(s) to a place of professional medical care (e.g., hospital emergency room, doctor's office, clinic) by conventional means in accordance with County Safety Procedures.

F. Report incident to the County Risk Management Officer and other appropriate personnel.

Fire

Waste loads that arrive at the landfill on fire will not be deposited at the working face. They will be deposited away from the working face on an area that has previously been covered with daily soil cover. The load will then be extinguished prior to being moved to the working face.

Small fires on the landfill working face will be extinguished with fire extinguishers when possible without endangering human health. If a fire at the landfill working face cannot be extinguished by fire extinguishers, on-site equipment will be used to spread soil over the fire thus decreasing oxygen supply to the fire.

If necessary, a temporary waste unloading area may be located as far away from the fire as possible but still within the limits of the lined disposal area where daily soil cover has previously been placed. Solid waste entering the facility will be placed in the temporary area until the fire is extinguished.

Unavailable Landfill Capacity

It is unlikely, based on the permitted capacity of the Class I and Class III landfills, that disposal capacity would become unavailable. However, if disposal capacity is temporarily unavailable, waste will not be accepted into the landfill for disposal. Signs will be posted notifying waste haulers that the landfill is closed, identifying alternate disposal facilities, and listing a projected reopening date.

CONTROL/INSPECTION OF INCOMING WASTE (RULE 62-701.500(2)(C), F.A.C.)

All solid waste arriving at the landfill is routed through the scalehouse. Scalehouse attendants screen visible loads for unacceptable materials including recyclables, hazardous waste, and medical waste. Scalehouse attendants at the Tomoka Farms Road Landfill typically receive spotter training in accordance with F.A.C. 62-701.320.(15)(c). From the scalehouse, vehicles are directed to either the Class I disposal, the Class III disposal area or to the Special Waste area. The various areas will be clearly identified by signs within the landfill. If prohibited wastes are discovered, the spotter will direct the vehicle back to the scale house. If the unacceptable waste has not yet been unloaded, the person responsible for shipping the waste will be notified. If the waste has been deposited, the area of the waste load should be blocked from public access until the generator or hauler of the waste cleans up the waste. If the generator or hauler of the waste cannot be identified or is unable to remove the waste, Volusia County will be responsible for cleanup, transportation, and disposal of the waste at an appropriate waste management facility.

WEIGHING OF INCOMING WASTES (RULE 62-701.500(2)(D), F.A.C.)

Weighing of incoming wastes will be performed at the scalehouse. Each customer receives a receipt showing the type of refuse, amount, and fee. These receipts are utilized for financial accountability and to complete the necessary daily, weekly, monthly, and annual activities/materials reports required by the Florida Department of Environmental Protection (FDEP) and Volusia County.

VEHICLE TRAFFIC CONTROL AND UNLOADING (RULE 62-701.500(2)(E), F.A.C.)

All waste hauling vehicles entering the landfill must proceed to the scalehouse. Vehicle are directed to the appropriate unloading areas by the scale house attendant and assisted by signage around the landfill. The attendant will direct the vehicle to the point of unloading area compatible with the waste. Additional traffic directions will be provided, when needed, by equipment operators or spotters.

METHOD AND SEQUENCING OF FILLING WASTES (RULE 62-701.500(2)(F), F.A.C.)

The Tomoka Farms Road Landfill will be operated using the area fill method. Waste delivered to landfill will be directed to the working face area of either the Class I or Class III landfill for unloading.

Class I waste will be spread in layers approximately 2-feet in thickness and compacted. Following this method waste will be placed in 10-foot lifts across the site. Initial cover is applied at the end of each workday. A sequencing diagram for the Class I landfill is included as Figure 2-2.

Class III waste will be spread in layers approximately 2- to 5-feet thick and compacted. Following this method waste will be placed in 20-foot lifts across the site. An initial cover is applied weekly. The Class III landfill will be systematically filled to the elevations shown in the final grading plan included as Figure 2-3.

WASTE COMPACTION AND APPLICATION OF COVER (RULE 62-701.50(2)(G), F.A.C.)

Method of Filling Wastes/Compaction

The procedure for filling and compacting of the initial waste lifts over areas of exposed liner in the Class I landfill will be as follows:

- To protect the integrity of the leachate collection system and liner, driving vehicles directly over the liner will be prohibited.
- The liner will be covered with a minimum of two (2) feet of protective soil at least one week prior to the placement of waste.
- The protective soil layer is carefully placed on the liner using low ground pressure tracked dozer approximately 1 week prior to the placement of waste. The equipment operator is directed by a spotter to ensure that the soil is placed correctly and that the equipment does not come in contact with the liner. The 2-foot minimum in-place thickness of the protective soil layer is verified by the landfill operator.
- The landfill spotter directs equipment away from the side slope liner during normal operations.
- The initial lift of waste will be 4 feet thick and selected for material that will not cause damage to the liner. The initial lift of waste will be spread with equipment that will preserve the integrity of the liner system.

The procedures for filling and compacting all waste will be as follows:

- Waste will be placed against the working face of the previous days waste, so that the first row will act as a means of access and a berm to guide the placement of waste material for the remaining rows.

- Class I waste will be spread and completed in 2-foot lifts and compacted to approximately 1 foot in thickness by a minimum of five passes using a landfill compactor.

- Class III waste will be spread and completed in 2 to 5-foot lifts and compacted by a minimum of fives passes using a landfill compactor or dozer.

Initial and Intermediate Cover

Cover material will be utilized to minimize vector breeding, animal attraction, and fire potential, as well as to prevent blowing litter and control odors. Initial cover will be composed of soil from the on-site stockpile, or synthetic materials such as tarps and geomembranes. Initial cover will be placed and compacted to a minimum thickness of 6 inches or equivalent . The intermediate cover will comprise of local soil which will be placed and compacted to a minimum thickness of 12 inches.

Final Cover

The final cover system for the Class I landfill will be designed in accordance with Rule 62-701.600(5), F.A.C. The final cover will be placed on the intermediate cover as phases of the facility are closed. The conceptual final cover system for landfill closure, from top to bottom includes the following:

- 6-inch layer of top soil material with surface vegetation
- 18-inch soil layer
- Composite drainage net layer (geosynthetic filter fabric with drainage net)
- 40-mil textured geomembrane

A conceptual equivalent final cover system, if approved by the Department, may include:

- Exposed 60 mil HDPE Liner

OPERATION OF GAS, LEACHATE, AND STORMWATER CONTROLS (RULE 62-701.500(2)(H), F.A.C.)

Landfill Gas Controls

An active gas collection system is being installed in the Class I cell.

Passive gas vents will be installed as part of final closure for the Class III cell. If it becomes apparent prior to or at the time of closure that passive vents are not adequate to control odors or migration of landfill gas from the landfill, an active landfill gas control system will be installed. The operations plan will be updated as necessary to provide for operation and maintenance of the landfill gas controls.

Leachate Controls

Leachate is collected by a leachate collection and transfer system. The leachate is conveyed by gravity to leachate sumps located as shown in the Tomoka Farms Road Landfill Construction Plans. Collected leachate is pumped from the leachate sumps in the landfill to the two leachate storage and evaporation ponds located west of the disposal cell. Additional information is provided in Section 8.0 of this operations plan.

Leachate generation will be minimized by operating a single working face and keeping the working face as small as possible. The County's goal is to operate a working face no larger than approximately 150' by 200' under normal operating conditions. Daily and/or intermediate cover will be placed on slopes to promote stormwater runoff. The mixing of stormwater with leachate will be minimized by grading the daily and/or intermediate cover away from the working face and by using soil berms to direct stormwater run off away. Swales and conveyance ditches will also be used to collect and transport stormwater to stormwater management facilities.

Stormwater Controls

Operation of the existing stormwater system is discussed in Section 10.0 of this operations plan. The stormwater system will be managed as required by Rule 62-701.500(10), F.A.C., to meet applicable standards for Rule 62-302, F.A.C., and Rule 62-330, F.A.C. The system shall minimize stormwater from entering waste filled areas and avoid the mixing of stormwater with leachate. All stormwater conveyances shall be inspected at least weekly to verify adequate performance. Conveyances not performing adequately will be repaired within thee (3) working days. Documentation of all inspections and repairs will be kept on file at the landfill office.

WATER QUALITY MONITORING (RULE 62-701.500(2)(I), F.A.C.)

Groundwater, surface water, and leachate monitoring will be conducted as described in the Tomoka Farms Road Landfill Groundwater and Leachate Monitoring Plan, which is kept in the landfill office.

MAINTAINING AND CLEANING THE LEACHATE COLLECTION SYSTEM (RULE 62-701.500(2)(J), F.A.C.)

The leachate system at the landfill consists of collection, pumping, storage, and disposal facilities. Maintenance of the leachate pumping facilities is performed as specified in the manufacturer's manuals kept on file in the landfill office. Inspection and cleaning of the leachate collection system will be performed every 5 years.

SECTION 3

OPERATING RECORDS
(RULE 62-701.500(3), F.A.C.)

Volusia County will maintain a separate operating record for the Class I and Class III landfills. The operating record will consist of all records, reports, analytical results, and all notifications as required by Rule 62-701, F.A.C. These records are considered an integral part of the operations plan and will be kept at or near the facility. The operating records will be available for inspection at reasonable times upon request by FDEP personnel.

The Volusia County Solid Waste Management Division Director will be responsible for the storage and filing of all operational records. The minimum records to be kept as part of the official operating record include the following:

- Current permits and applications
- Monthly waste disposal records (volume, weight, or truckloads)
- Random load checking records
- Leachate quantities, sampling, and analysis
- On-site rain gauge data
- Monthly leachate operating reports (FDEP monthly facility report)
- Annual estimates of remaining capacity (permitted disposal) in cubic yards
- Regulatory agency inspection reports
- Groundwater, surface water, and leachate sampling plan, including well construction information, sampling locations, and water quality sampling results
- All official notifications to or from FDEP regarding the facility
- Training verifications/certifications
- Landfill operations plan, including all supplementary material incorporated by reference
- Leachate tank inspection records
- Gas monitoring records
- Maintenance summary forms

SECTION 4

WASTE RECORDS
(RULE 62-701.500(4), F.A.C.)

Each month, a report of the amount of waste received, in tons, will be compiled. This report will include best estimates of the amounts of the following waste types based on type of hauler and tip fee rates:

- Household waste;
- Commercial waste;
- Ash residue;
- Incinerator by-pass waste;
- Construction and demolition debris;
- Treated biomedical waste;
- Agricultural waste;
- Industrial waste;
- Yard trash;
- Sewage sludge;
- Industrial sludge;
- Water/air treatment sludges;
- Waste tires; and
- Class III waste.

Reports are compiled monthly and submitted to FDEP on a quarterly basis.

SECTION 5

ACCESS CONTROL
(RULE 62-701.500(5), F.A.C.)

The entire Volusia County Landfill facility is fenced, and access is gate controlled at all times. Figure 1-1 is a site plan of the entire landfill and illustrates the landfill access control facilities. The landfill may be operated for up to 24 hours per day, seven days per week.

SECTION 6

WASTE MONITORING
(RULE 62-701.500(6), F.A.C.)

WASTE INSPECTION (RULE 62-701.500(6)(A), F.A.C.)

Volusia County has implemented a load checking program to detect and discourage attempts to dispose of unauthorized wastes at the landfill. This program includes at least three random checks by landfill personnel each week and inspection of suspicious loads, which are vehicles that have previously been determined to have delivered unauthorized waste, or loads that have unusually physical characteristics.

Following is a summary of the load inspection program.

1. Landfill/Equipment Operators will randomly inspect at least three (3) vehicles per week of Class I waste and at least three (3) vehicles per week of Class III waste.

2. The driver of the vehicle will be asked the source of the waste by the inspector. The load will be completely discharged and spread uniformly by a front end loader so that all waste is visible.

3. The inspector will proceed to inspect the load for unauthorized waste. These shall include, but are not limited to the following:

   - Restricted materials.
   - Regulated hazardous waste.
   - Untreated biomedical waste.
   - Used oil filters.
   - Compressed gas cylinders.
   - PCB wastes.
   - Household hazardous waste.

4. If any unauthorized items are observed the waste will be segregated and, if possible, returned to the hauler for proper disposal.

5. The person responsible for shipping the waste will provide a manifest documenting the proper disposal of the unauthorized waste found during inspection. The manifest must indicate the corresponding identification number assigned to the waste during inspection.

6. If any regulated hazardous waste or biomedical waste is observed, the Landfill Supervisor will segregate the waste, notify FDEP, persons responsible for shipping the wastes, and the generator of the wastes. The waste shall be removed from the facility and disposed of properly.

7. Landfill personnel or haulers will relocate all special wastes such as tires, appliances, and lawn debris to the proper disposal areas.

8. Copies of all completed inspection reports will be maintained for the life of the landfill.

9. Vehicles that have previously been determined to have delivered unauthorized waste will be considered suspicious and may be subjected to inspection at any time and in the same manner as the random inspections.

HAZARDOUS WASTES AND HANDLING PROCEDURES (RULE 62-701.500(6)(B), F.A.C.)

No hazardous wastes will be accepted at the landfill for disposal. If unauthorized material is transported to the facility, the appropriate supervisory personnel will be notified immediately and appropriate actions will be taken to remove any unauthorized materials or wastes from the facility. Special wastes that are discovered will be removed from the landfill and placed in the appropriate processing area.

RECORDING INSPECTION RESULTS (RULE 62-701.500(6)(C), F.A.C.)

Results of the load checking inspections described in Section 6.1 of this document will be recorded in writing and retained at the landfill. This information will include date and time of inspection, name of hauling firm, name of driver of the vehicle, vehicle license plate number, source of waste as stated by the driver, and observations made by landfill personnel during the inspection. The inspector will sign the written record. A sample form used to document the inspection results is provided in Appendix A.

SECTION 7

WASTE HANDLING REQUIREMENTS (RULE 62-701.500(7), F.A.C.)

The following description represents waste handling requirements as required by Rule 62-701.500(7), F.A.C. Volusia County will meet or exceed the requirements at all times to minimize the potential adverse impacts to employees or public health or safety.

WASTE THICKNESS AND COMPACTION FREQUENCIES (RULE 62-701.500(7)(A), F.A.C.)

Class I waste material will be spread in layers of approximately two feet in thickness and compacted to approximately one foot in thickness, or as thin as practical, by a landfill compactor before the next layer is applied.

Class III waste materials will be spread in layers of approximately 2 to 5-foot in thickness and compacted by a landfill compactor or dozer before the next layer is applied.

FIRST LAYER OF WASTE (RULE 62-701.500(7)(B), F.A.C.)

The first lift of Class I waste placed above the liner and leachate collection system will be a minimum of four feet in compacted thickness. Waste loads in this first lift will be screened for any large, rigid objects or other materials that would damage the liner or leachate collection system.

SLOPES OF WORKING FACE (RULE 62-701.500(7)(C), F.A.C.)

The working face and side grades above land surface will be sloped at a maximum of 3 feet horizontal to 1 foot vertical rise. The lift depth will typically be a maximum of 10 feet. Lift depths may be deeper than 10 feet depending on specific operations, daily waste volumes, width of the working face, and good safety practices.

WIDTH OF WORKING FACE (RULE 62-701.500(7)(D), F.A.C.)

The working face will be wide enough to safely accommodate vehicles, unloading materials, and compacting equipment. Since the waste requires daily cover, the width of the working face will be minimized. The County's goal is to operate a working face no larger than approximately 150' by 200' under normal operating conditions.

INITIAL/DAILY COVER (RULE 62-701.500(7)(E), F.A.C.)

Initial cover will be placed over the Class I waste at the end of each working day. Initial cover will consist of six inches of compacted soils, synthetic material such as tarps and geomembranes, or other materials as approved by the FDEP.

Initial cover will be placed over the Class III waste weekly. Initial cover will consist of six inches of compacted soils or other materials as approved by the FDEP.

INTERMEDIATE COVER (RULE 62-701.500(7)(F), F.A.C.)

If additional solid waste will not be deposited in a location within 180 days of initial cover placement, a 12-inch intermediate cover will be placed within 7 days of initial cover placement.

FINAL COVER (RULE 62-701.500(7)(G), F.A.C.)

The landfill will receive final cover as portions of the facility are closed. A description of the final cover can be found in Section 2.8.3 of this plan.

SCAVENGING AND SALVAGING CONTROL (RULE 62-701.500(7)(I), F.A.C.)

Scavenging is strictly prohibited at the working face of the landfill. Salvageable materials, as identified by landfill personnel, will be unloaded at designated locations away from the working face.

LITTER POLICING METHODS (RULE 62-701.500(7)(I), F.A.C.)

Initial cover will provide the main litter control. A perimeter ditch and fence will provide a barrier to blowing litter. In addition, portable litter fences will be located adjacent to the working face to prevent litter from being blown away from the working area. Temporary fencing is also mobile and easily relocated around the facility as needed. Litter outside the working area of the landfill will be picked up as soon as possible.

EROSION CONTROL (RULE 62-701.500(7)(J), F.A.C.)

Soil cover erosion control measures will be integrated into landfill operations to collect and transport stormwater without exposing solid waste and leachate. These measures are identified and discussed as follows:

- Intermediate soil cover configured to collect and transport stormwater
- 4"-5" of mulch soil cover and/or sod to prevent erosion
- Regular inspection of intermediate soil cover
- Benches and lined ditches to transport concentrated volumes of stormwater runoff

<u>Intermediate Soil Cover</u>

Temporary berms to direct stormwater away from solid waste placement and compaction activities will surround the active areas of the landfill. Inactive areas will be covered with intermediate soil cover with a minimum thickness of 1 foot. The intermediate soil cover will be sloped to promote run-off and decrease infiltration of stormwater. Stormwater runoff will be controlled by using benches placed every 40 feet in vertical height.

Intermediately covered areas subject to erosion will be seeded with grass appropriate to the season as needed to control erosion. Yard waste mulch or sod may also be used to help control erosion.

Down Drains

Stormwater collected in the benches will be directed to the stormwater system located at the toe of slope using downpipes, downchutes, or other conveyances.

Inspections

The intermediate soil cover will be regularly inspected for erosion damage. Repairs to any damage that is discovered will be initiated within 3 days to contain solid waste and leachate and anything that can not be repaired within 7 days will be reported to FDEP.

SECTION 8

LEACHATE MANAGEMENT
(RULE 62-701.500(8), F.A.C.)

Leachate in the Class I landfill is collected in the leachate drainage layer that slopes to collection sumps equipped with leachate pumps. Clean outs are provided to allow access for inspection and cleaning. Leachate is pumped from the pump stations to the leachate storage ponds via force mains that run around the north and west sides of the landfill.

MONITORING, SAMPLING, AND ANALYSIS OF LEACHATE (RULE 62-701.500(8)(A), F.A.C.)

The Division Director is responsible for leachate monitoring, sampling, and analysis, and for providing copies of the leachate analysis to FDEP. Leachate sampling and analysis is addressed in the Tomoka Farms Road Landfill Groundwater Monitoring Plan. Sampling and analysis will be conducted by contractors meeting applicable FDEP requirements.

The leachate pump side slope risers and leachate collection pipe clean out side-slope risers provide a mechanism to observe leachate levels through physical measurements. Complete details of the pumps and side slope risers are provided in the Construction Plans.

OPERATION AND MAINTENANCE OF LEACHATE COLLECTION SYSTEM (RULE 62-701 .500(8)(B), F.A.C.)

The Landfill Supervisor will be responsible for maintenance of the leachate systems, including the piping, pump stations, and piping to the leachate storage ponds, and the spray evaporation system. The equipment manufacturers have provided operation and maintenance manuals for each of the system components. Maintenance of each component will be performed in accordance with manufacturer specifications. Maintenance documentation may also include a video of the cleaning procedures. Operation and maintenance manuals include the following:

- Description of unit and component parts, including normal operating characteristics and limiting conditions.
- Operating procedures.
- Maintenance and overhaul procedures.
- Installation instructions.
- Original manufacturer's parts list, illustrations, and detailed assembly drawings.
- Spare parts ordering instructions.
- Manufacturer's printed operating and maintenance instructions.

Flow will be monitored from the leachate pumps. Facility personnel will record leachate flows. This will allow determination of leachate production as a function of rainfall and provide information to assess the efficiency of leachate and stormwater management practices. Leachate generation/flow records will be kept at the facility as part of the official operation record.

Leachate pump station maintenance will include reading meters and making sure each pump is operational. Pumping rates and electrical draw will be confirmed semiannually. If these tests indicate significantly reduced performance, the pumps will be pulled for inspection and repair. A replacement pump will be installed while the repairs are being made.

If leachate flow volume is noticeably decreased, the leachate collection system will be inspected. Possible reasons for low or no flow are header collapse or header blockage. If pipe blockage is identified, the header pipe will be power jetted to remove sediment buildup. Power jetting or rodding will be done from either or both ends of the header.

LEACHATE HANDLING (IF REGULATED AS HAZARDOUS WASTE) (RULE 62-701 .500(8)(B), F.A.C.)

The Landfill Supervisor is responsible for the operation of the leachate collection and removal system and for maintaining the system as designed for the life of the facility. Leachate will be collected and pumped to the on-site storage and spray evaporation ponds, and disposed of by spray evaporation or by trucking to one of several wastewater treatment plants.

OFF-SITE TREATMENT (RULE 62-701.500(8)(C), F.A.C.)

Leachate that cannot be managed through onsite evaporation will be transported to one of several wastewater treatment plants. Volusia County operates local POTWs that provide back-up capacity for leachate disposal.

ON-SITE TREATMENT (RULE 62-701.500(8)(D), F.A.C.)

Leachate evaporation is performed at the Tomoka Farms Road Landfill.

CONTINGENCY PLAN FOR MANAGING LEACHATE (RULE 62-701.500(8)(E), F.A.C.)

Temporary pumps and emergency power generators are locally available in the event of pump failure or power interruption. Alternate wastewater treatment plants are available for leachate disposal. Therefore, complete interruption of off site disposal capability is not anticipated.

RECORDING LEACHATE QUANTITIES (RULE 62-701.500(8)(F), F.A.C.)

Quantities of leachate removed for off-site treatment and/or disposal are recorded and those records are maintained at the landfill.

RECORDING PRECIPITATION (RULE 62-701.500(8)(G), F.A.C.)

A rain gauge has been installed and is operated and maintained by Volusia County personnel to record precipitation at the disposal facility. Precipitation records will be maintained in the facility's operating record and will be compared with leachate generation rates.

INSPECTION AND CLEANING (RULE 62-101.500(8)(H), F.A.C.)

The leachate collection system for future cells will either be pressure cleaned or inspected by video recording after construction but prior to the initial placement of waste. Thereafter, existing leachate collection systems at the Tomoka Farms Road Landfill will pressure cleaned or inspected by video at the time of permit renewal. Results of the cleanings and inspections are kept on file in the landfill office.

SECTION 9

LANDFILL GAS MONITORING
(RULE 62-701 500(9), F.A.C.)

This Landfill Gas Monitoring Plan for the Tomoka Farms Road Landfill has been prepared in accordance with the provision of Rule 62-701.530, F.A.C. This plan includes measures of comprehensive monitoring of landfill gas (LFG) from the landfill.

LANDFILL GAS MONITORING PROBES

Seven locations around the active and closed landfill cells are monitored for the presence of LFG. These monitoring probes are located around the perimeter of the working area of the landfill. Each probe is monitored for the presence of combustible gas on a quarterly basis and the results are submitted to FDEP

GAS PROBE MONITORING

The probes are monitored for concentrations of combustible gas using an instrument calibrated to methane and capable of measuring methane in percent by volume. Combustible gas concentrations will be converted to a percent of the lower explosive limit (LEL). Five percent methane by volume is equal to 100 percent LEL. The gas instrument is calibrated with calibration gas each day before monitoring is performed.

Any problems encountered during monitoring, observations, or other pertinent information that could impact the interpretation of the data are recorded. For example, if a probe is full of groundwater or suspected of being so, the comments should be noted for the monitoring round.

GAS MONITORING IN STRUCTURES

The following gas monitoring will be performed in structures at the facility:

- Enclosed buildings located within 500 feet of disposal are equipped with continuous combustible gas monitors. These monitors are designed to sound an alarm when methane concentrations exceed 25 percent LEL. The signal remains on as long as gas is present, and a red alarm light stays on after an alarm to alert personnel that methane was detected during their absence.

- The inside of enclosed buildings within 500 feet of disposal areas are monitored for methane on a quarterly basis along with the perimeter probes. The sampling hose of the instrument is held above the floor and inserted into any conduit spaces or cracks that could act as conduits for LFG to enter into the structure. All monitoring is reported to the FDEP.

REPORTING

All monitoring is reported quarterly to FDEP. Any odor complaints due to landfill gas at or

beyond the property boundary are recorded and maintained on site. If methane gas is measured above 25 percent LEL in the structures, Volusia County will take all necessary steps to ensure protection of human health. Exceedances will be included in the quarterly reports to FDEP. The report will also include a description of the nature and extent of the exceedances and measures implemented in response to the exceedances.

SECTION 10

STORMWATER MANAGEMENT SYSTEM AND MAINTENANCE (RULE 62-701.500(10), F.A.C.)

The Stormwater Management System will be operated and maintained as necessary to meet the requirements of Rule 62-701.400(9), F.A.C.

STORMWATER BEST MANAGEMENT PRACTICES

The landfill will use the following stormwater best management practices (BMPs):

- Sideswales
- Grass
- Sod
- Downdrains
- Benches
- Dry retention stormwater ponds
- Pumps to transport stormwater
- Ditches

STORMWATER MAINTENANCE PROCEDURES

The stormwater management system operation and maintenance will include the following:

- All stormwater conveyance systems will be inspected periodically or after major storm events.
- Any damaged systems will be repaired.
- Accumulated sediment will be removed as necessary.
- All stormwater pumps will be serviced as specified by the pump manufacturer.

SECTION 11

EQUIPMENT AND OPERATION FEATURES (RULE 62-701.500(11), F.A.C.)

EQUIPMENT (RULE 62-701.500(11)(A), F.A.C.)

Volusia County owns a diverse mix of equipment to spread, compact, and cover the waste in the landfill. While the actual equipment at the landfill may vary, sufficient equipment will be maintained at the site to ensure proper operation of the landfill

Normal equipment maintenance will be performed on site. Major maintenance item repairs (e.g., engine, transmissions, and auxiliary drives) will be handled either at the maintenance facilities or at off-site service facilities.

BACKUP EQUIPMENT (RULE 62-701.500(11)(B), F.A.C.)

There is sufficient equipment available to Volusia County to maintain normal operations during equipment breakdown or during emergency operating conditions. Arrangements will be made with suppliers to obtain reserve equipment within 24 hours of equipment breakdown if sufficient equipment is not available to properly operate the landfill.

COMMUNICATION EQUIPMENT (RULE 62-701.500(11)(C), F.A.C.)

Landfill employees will be able to communicate by two-way radios, and telephones are located at the office and scalehouse.

DUST CONTROL (RULE 62-701.500(11)(D), F.A.C.)

Control of dust will be maintained by wetting roads as necessary.

FIRE PROTECTION AND FIRE FIGHTING CAPABILITIES (RULE 62-701.500(11)(E), F.A.C.)

The initial cover aids in fire prevention at the landfill. The main method of fire extinguishing is to apply soil to the burning waste. Ample soil is stockpiled on site if needed for fire extinguishing purposes.

All key equipment and vehicles at the landfill will be equipped with fire extinguishers, and all personnel will be trained in their use. All extinguishers will be inspected regularly and repaired or replaced as needed.

Emergency services are notified telephonically using 911.

LITTER CONTROL PROGRAM (RULE 62-701.500(11)(F), F.A.C.)

Initial cover will provide the main litter control. A perimeter ditch/swale and fence will

provide a barrier to blowing litter. In addition, portable litter fences will be located adjacent to the working face to prevent litter from being blown. Temporary fencing is also mobile and easily relocated around the facility as needed. Litter outside the working area of the landfill will be picked up as soon as possible.

SIGNS (RULE 62-701.500 (11)(G), F.A.C.)

Appropriate signs will be utilized and maintained to ensure maximum safety, efficiency, and general information. Signage will include, at a minimum, facility name and operating authority, traffic flow, hours of operation, disposal rates, and restrictions or conditions of disposal.

SECTION 12

ROADS
(RULE 62-701.500(12), F.A.C.)

ALL-WEATHER ROADS (RULE 62-701.500(12)(A), F.A.C.)

All-weather roads, passable and safe under normal operating conditions, will be maintained to prevent dust, rutting or loss of traction. Figure 1-1 shows the locations of the access and perimeter site roads.

PERIMETER AND OTHER ON-SITE ROADS (RULE 62-701.500(12)(B), F.A.C.)

Some perimeter roads and internal roads are paved. Other on-site roads are constructed of limerock and/or stabilized soils. Limerock roads are scraped and smoothed with a road grader or dozer as necessary. When needed, roadways are wetted to control dust and to ensure high visibility. On-site roads are maintained to allow access to monitoring devices and stormwater controls, for landfill inspections and fire fighting.

SECTION 13

RECORDKEEPING
(RULE 62-701.500(13), F.A.C.)

PERMIT APPLICATION DOCUMENTATION (RULE 62 -701 .500(13)(A), F.A.C.)

Records of all information used to develop or support the permit applications and any supplemental information submitted to comply with Rule 62-701, F.A.C., pertaining to construction of the facility will be kept throughout the life of the facility. Records pertaining to the operation of the landfill will be kept for the life of the facility.

MONITORING INFORMATION (RULE 62-701.500(13)(B), F.A.C.)

Records of all monitoring information, including calibration and maintenance records and copies of all reports required by permit, will be retained for at least 10 years. Background water quality records will be kept for the life of the facility.

REMAINING LIFE AND CAPACITY ESTIMATE (RULE 62-701.500(13)(C), F.A.C.)

The County prepares an annual estimate of the remaining life and capacity (in cubic yards) of the existing constructed landfill and the remaining capacity and site life of other permitted areas not yet constructed. The annual estimate is based on scale house records and aerial photomapping of solid waste disposal units. The estimate is reported annually to the FDEP as part of the annual update to the closure and long-term care cost estimates.

ARCHIVED RECORDS (RULE 62-701.500(13)(D), F.A.C.)

The landfill may archive records that are more than five years, if necessary. Archived records will be available for inspection within seven days of the receipt of the request.

APPENDIX A

SAMPLE LOAD CHECKING INSPECTION FORMS

RANDOM INSPECTION REPORT

DATE: _____

TIME: _____

NAME OF HAULING COMPANY: _____

NAME OF DRIVER: _____

VEHICLE LICENSE PLATE NUMBER: _____

SOURCE OF THE WASTE: (GENERAL LOCATION) _____

OBSERVATIONS MADE BY THE INSPECTOR:

GARDEN:

[ ] HERBICIDES [ ] FERTILIZER [ ] PESTICIDES [ ] POOL CHEMICALS

HOUSEHOLD:

[ ] DRAIN CLEANERS [ ] CHLORINE [ ] FURNITURE POLISH

[ ] SPOT REMOVER [ ] WINDOW CLEANERS, ETC. [ ] HOUSEHOLD GARBAGE ONLY

AUTO:

[ ] MOTOR OIL [ ] BRAKE FLUID [ ] TRANSMISSION FLUID

[ ] ANTI FREEZE [ ] CAR BATTERIES

PAINT:

[ ] ENAMEL OIL BASE [ ] LATEX WATER BASE [ ] THINNERS (OTHERS)

MEDICAL WASTE:

[ ] NEEDLES [ ] MEDICAL SUPPLIES

INSPECTOR'S COMMENTS:

_____

_____

_____

_____

INSPECTOR'S SIGNATURE

_____

EXHIBIT I

TOMOKA FARMS ROAD LANDFILL

WACS #: 64-00027540

GROUND WATER MONITORING PLAN IMPLEMENTATION SCHEDULE

GENERAL

1. The permittee must initiate implementation of this Monitoring Plan within sixty (60) days from the date of permit issuance.

2. The field testing, sample collection and preservation and laboratory testing, including quality control procedures, shall be in accordance with **Chapter 62-160 Florida Administrative Code (F.A.C.)**. Approved methods as published by the Department or as published in Standard Methods, ASTM, or EPA Methods shall be used.

3. The organization collecting samples at this site must have or obtain a Comprehensive Quality Assurance Plan approved by the Department's Quality Assurance Section (Tallahassee). A copy of this plan and the approved annual plan updates shall be provided to the Department. This plan or its equivalent must be followed for the collection, preservation and transport of water samples for this facility under this permit. Any equivalent plan must be approved by the Department prior to sample collection. Sampling personnel must have a copy of the quality assurance plan for purging and sampling in the field when sampling and must be knowledgeable of its contents, procedures, and forms. The laboratory designated to conduct the chemical analyses must have or obtain a Comprehensive Quality Assurance Plan approved by the Department's Quality Assurance Section (Tallahassee) for the parameters included in this monitoring plan.

4. If, at any time, analyses show that ground water standards are exceeded at the edge of the Zone of Discharge, the Permittee shall resample the wells within fifteen (15) days after the sampling data are received, to confirm the data. Should the permittee choose not to resample, the Department will consider the water quality analysis as representative of current ground water conditions at the facility. If the data are confirmed, or if the permittee chooses not to resample, the permittee shall notify the Department in writing within 14 days of this finding. Upon notification by the Department, the permittee shall initiate assessment monitoring in accordance with Rule 62-701.510(7) F.A.C.

EXHIBIT I

TOMOKA FARMS ROAD LANDFILL

WACS #: 64-00027540

GROUND WATER MONITORING PLAN IMPLEMENTATION SCHEDULE

GENERAL

1. The permittee must initiate implementation of this Monitoring Plan within sixty (60) days from the date of permit issuance.

2. The field testing, sample collection and preservation and laboratory testing, including quality control procedures, shall be in accordance with **Chapter 62-160 Florida Administrative Code (F.A.C.)**. Approved methods as published by the Department or as published in Standard Methods, ASTM, or EPA Methods shall be used.

3. The organization collecting samples at this site must have or obtain a Comprehensive Quality Assurance Plan approved by the Department's Quality Assurance Section (Tallahassee). A copy of this plan and the approved annual plan updates shall be provided to the Department. This plan or its equivalent must be followed for the collection, preservation and transport of water samples for this facility under this permit. Any equivalent plan must be approved by the Department prior to sample collection. Sampling personnel must have a copy of the quality assurance plan for purging and sampling in the field when sampling and must be knowledgeable of its contents, procedures, and forms. The laboratory designated to conduct the chemical analyses must have or obtain a Comprehensive Quality Assurance Plan approved by the Department's Quality Assurance Section (Tallahassee) for the parameters included in this monitoring plan.

4. If, at any time, analyses show that ground water standards are exceeded at the edge of the Zone of Discharge, the Permittee shall resample the wells within fifteen (15) days after the sampling data are received, to confirm the data. Should the permittee choose not to resample, the Department will consider the water quality analysis as representative of current ground water conditions at the facility. If the data are confirmed, or if the permittee chooses not to resample, the permittee shall notify the Department in writing within 14 days of this finding. Upon notification by the Department, the permittee shall initiate assessment monitoring in accordance with Rule 62-701.510(7) F.A.C.

5. The Department must be notified in writing at least fourteen (14) days prior to the installation and/or sampling of any monitoring well(s).

GROUND WATER QUALITY MONITORING

6. The forty-eight (48) ground water monitoring wells designated for water quality testing are listed on Attachment A and are shown on Attachment B. The forty-eight (48) ground water monitoring wells and piezometers B3-B, B4, B6, B7, B9, B10, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56 and 57 to be used for water level measurements are shown on Attachment B.

The monitor wells and piezometers noted in **Attachments A and B and C** incorporate monitor wells and piezometers from the Tomoka Farms Road Landfill Facility -- Class I and Class III. Groundwater monitoring will be jointly performed for these contiguous facilities owned and operated by Volusia County.

NOTE: Unless otherwise approved by the Department, wells with high turbidities must be remediated or reinstalled to reduce the turbidity value to less than 20 NTU's prior to sample collection. Should any ground water sample exhibit dissolved oxygen concentrations greater than 20% of oxygen saturation at the field measured temperature, the sampled well must be repurged then resampled as soon as an acceptable dissolved oxygen value has been attained unless it can be demonstrated that insitu ground water contains higher levels of dissolved oxygen. All water quality analyses will be performed on unfiltered samples unless approved by the Department.

7. Samples from the forty-eight (48) ground water monitoring wells shall be collected semi-annually and analyzed as follows: pH (field), specific conductance (field), turbidity (field), dissolved oxygen (field), temperature (field), total ammonia as N, chlorides, iron, mercury, nitrate, sodium, total dissolved solids and the EPA 40 CFR, Part 258, Appendix I parameters. In addition, the following monitoring wells shall be sampled and analyzed semi-annually for aluminum, sulfate, and phenols: B44, B43-1, B43-2, MO5-B, B42-1, B42-2, B-1B, B41-1, B41-2, B65, B40-1, and B40-2. **All analyses must use detection limits at or below state standards and/or minimum criteria for ground water quality** unless dilution of the sample is necessary due to high contaminant concentrations or the Method Detection Limit using the most sensitive and currently available technology is higher

than a specific criterion, in which case the practical quantitation limit must be used.

8. Ground water levels in all wells, whether sampled or not, and all piezometers must be measured to the nearest 0.01 foot and reported semiannually unless required more frequently by permit condition. All water level measurements must be made within a one day period. These measurements must be referenced to the National Geodetic Vertical Datum of 1929 (NGVD).

SURFACE WATER MONITORING

9. The eight (8) surface water sites included in this monitoring plan are SW-1, SW-2, SW-3, SW-4, SW-5, SW-6, SW-9 and SW-10. They are listed on Attachment A and shown on Attachment B.

10. Samples from the eight (8) surface water monitoring sites shall be collected semi-annually and analyzed as follows: dissolved oxygen (field), pH (field), specific conductance (field), temperature (field), turbidity (field), unionized ammonia (NH_3), biochemical oxygen demand (5 day), chemical oxygen demand, chlorophyll A, iron, mercury, nitrate as N, total dissolved solids, total hardness as $CaCO_3$, total organic carbon, total nitrogen as N, total phosphates as P, total suspended solids and the EPA 40 CFR, Part 258, Appendix I parameters. **All analyses must use detection limits at or below state standards and/or minimum criteria** unless dilution of the sample is necessary due to high contaminant concentrations or the Method Detection Limit using the most sensitive and currently available technology is higher than a specific criterion, in which case the practical quantitation limit must be used

11. Surface water elevations at sampling locations SW-1, SW-2, SW-3, SW-4, SW-5, SW-6, SW-9 and SW-10 must be measured to the nearest 0.01 foot on the same day as the ground water levels in the wells and piezometers and reported semiannually unless required more frequently by permit condition. All water level measurements must be made within a one day period. These measurements must be referenced to NGVD.

LEACHATE QUALITY MONITORING

12. The site designated for leachate quality testing is L-1. The leachate sample is obtained from the 8-inch HDPE outfall, prior to it being aerated and discharged to the leachate ponds.

The site is listed on Attachment A, and shown on Attachment B and Attachment C.

13. Samples from the leachate monitoring site shall be analyzed as follows:

SEMI-ANNUAL - pH (field), specific conductance (field), temperature (field), dissolved oxygen (field), bicarbonate as HCO_3, chlorides, iron, mercury, sodium, nitrate as N, total ammonia as N, total dissolved solids and the EPA 40 CFR, Part 258, Appendix I parameters. **All analyses must use detection limits at or below Code of Federal Regulations (CFR) chapter 261.24 standards;**

ANNUALLY - In addition to the semi-annual analyses, the EPA 40 CFR, Part 258, Appendix II parameters. **All analyses must use detection limits at or below chapter 261.24 CFR standards;**

MONITORING WELL REQUIREMENTS

14. If a monitoring well becomes damaged or inoperable, the Permittee shall notify the Department in writing within seven (7) days. The written report shall describe what problem has occurred and the remedial measures that have been taken to prevent a recurrence. The Department can require the replacement of inoperable monitoring wells.

15. New or replacement monitoring well design or placement must be approved by the Department. Proposed well construction details based on site specific borings must be submitted with all supporting data (grain size analyses, in-situ hydraulic conductivity testing, depth to water, etc.) for Department approval prior to well installation. Use of hollow stem auger equipment is recommended. Other drilling methods must be approved by the Department prior to well installation.

16. All wells shall be clearly and permanently labeled and the well site maintained so that the well is visible at all times. Protective barriers must be installed at all wells which may be subject to damage by heavy equipment or traffic.

17. An abandonment plan for abandoning any well which is unsuitable for ground water monitoring must be approved by the Department prior to abandonment.

REPORTING REQUIREMENTS

GENERAL

18. Well completion reports for new monitor well(s) must be submitted to the Department on the attached Ground Water Completion Report Form thirty (30) days after installation. Note that the latitude and longitude in degrees, minutes and seconds of each well must be provided on the form. In addition, as-built well construction diagrams and soil boring logs that cover the entire depth of the monitoring wells must be submitted to the Department

19. A survey drawing must be submitted within sixty (60) days following monitor well installation showing the location of all monitor wells (active and abandoned), water bodies and waste filled areas. The location of features on the survey drawing must be horizontally located by standard surveying techniques. The survey drawing shall include the monitor well name and identification number as well as the location and elevation, referenced to NGVD, of all wells, permanent benchmark(s) and/or corner monument marker(s) at the site. The survey shall be conducted and certified by a Florida Registered Surveyor.

SEMI-ANNUALLY

20. Ground water, surface water and leachate quality analyses shall include the parameters described above. Parameter Report Forms (FDEP Form 62-522.900(2)) are attached for reporting semi-annual analyses. In order to facilitate entry of this data into the State computer system, these forms or exact replicas must be used and must not be altered as to content. **If these forms are computerized, the completed forms should be submitted on an IBM formatted diskette along with the hardcopy.** The original copies of the forms should be retained so that the necessary information is available to properly complete future reports. The laboratory sheets shall be submitted for all analyses. The semi-annual submittal shall also include a summary of any water quality standards and/or minimum criteria that are exceeded. Monitoring test results must be submitted to the Department within fourteen (14) days of receipt from the laboratory.

21. Water levels in all monitoring wells, whether sampled or not, all piezometers and all surface water sites must be measured to the nearest 0.01 foot and reported semi-annually unless required more frequently by permit condition. All water level measurements must be made within a one day period. These measurements should be reported in a table that includes well or surface water point name, date water level measured, measuring point elevation referenced to NGVD, depth to water and calculated water level elevation referenced to NGVD.

22. A ground water elevation contour map for each monitored aquifer zone must be submitted semi-annually to the Department. Ground water elevation contour map(s) should include monitoring well and piezometer locations, ground water elevation at each monitoring well location referenced to NGVD, a bar scale, ground water contour interval, date of measurement and ground water flow direction. The map(s) must incorporate adjacent and on-site surface water elevations where appropriate.

BIENNIALLY

23. A total depth measurement must be made on all wells biennially, beginning with the initial monitoring. This measurement is to be reported as total apparent depth below ground surface and should be compared to the original total depth of the well.

24. A technical report shall be submitted to the Department every two years, and shall be updated at the time of permit renewal. The report shall summarize and interpret the water quality data and water level measurements collected during the past four years. The report shall contain, at a minimum, the following:

a. Tabular and graphical displays of any data which shows that a monitoring parameter has been detected, including hydrographs for all monitor wells.
b. Trend analyses of any monitoring parameters detected.
c. Comparisons among shallow, middle, and deep zone wells.
d. Comparisons between upgradient and downgradient wells.
e. Correlations between related parameters such as total dissolved solids and specific conductance.
f. Discussion of erratic and/or poorly correlated data.
g. An interpretation of the ground water contour maps, including an evaluation of ground water flow rates.
h. An evaluation of the adequacy of the water quality monitoring frequency and sampling locations based upon site conditions.

This report must be signed and sealed pursuant to Florida Statutes (F.S.) Chapters 471 and 492 which require that documents requiring the practice of professional engineering or professional geology, as described in Chapter 471 or 492, F.S., be signed and sealed by the professional(s) who prepared or approved them. This certification must be made by a registered professional who is able to demonstrate competence in the subject area(s) addressed within the sealed document.

ATTACHMENT A

TOMOKA FARMS ROAD LANDFILL

WACS # 64-00027540

MONITORING SITES

SEM 6W

SAMPLING POINT	NUMBER	TYPE	ZONE/LOCATION MONITORED
GROUND WATER			
B1-B	15636	C	ZONE 1-2
B-2	15402	B	ZONE 4
B5	15403	C	ZONE 1-2
B8	15642	I	ZONE 1-2
B8-2	15790	I	ZONE 4
B11-B	15679	B	ZONE 1-2
B-32	15791	B	ZONE 4
B33-1	15792	B	ZONE 4
B33-2	15793	B	ZONE 1-2
B34-1	15794	B	ZONE 4
B34-2	15795	B	ZONE 1-2
B35-1	15796	B	ZONE 4
B35-2	15797	B	ZONE 1-2
B36	15798	C	ZONE 4
B37-1	15799	C	ZONE 4
B37-2	15800	C	ZONE 1-2
B38-1	15801	C	ZONE 4
B38-2	15802	C	ZONE 1-2
B-39	15803	C	ZONE 1-2
B40-1	15804	C	ZONE 4

ATTACHMENT A

TOMOKA FARMS ROAD LANDFILL

WACS # 64-00027540

MONITORING SITES

SAMPLING POINT	NUMBER	TYPE	ZONE/LOCATION MONITORED
B40-2	15805	C	ZONE 1-2
B41-1	15806	C	ZONE 4
B41-2	15807	C	ZONE 1-2
B42-1	15808	C	ZONE 4
B42-2	15809	C	ZONE 1-2
B43-1	15810	C	ZONE 3-4
B43-2	15811	C	ZONE 1-2
B44	15812	C	ZONE 1-2
B45-1	15813	C	ZONE 4
B45-2	15814	C	ZONE 1-2
B58-1	15815	C	ZONE 4
B58-2	15816	C	ZONE 1-2
B59-1	15817	C	ZONE 4
B59-2	15818	C	ZONE 1-2
B60	15819	C	ZONE 4
B61	15820	C	ZONE 1-2
B62-1	15821	C	ZONE 4
B62-2	15822	C	ZONE 1-2
B63-1	15823	C	ZONE 4
B63-2	15824	C	ZONE 1-2
B64	15825	C	ZONE 1-2
B65	15826	C	ZONE 1-2

ATTACHMENT A

TOMOKA FARMS ROAD LANDFILL

WACS # 64-00027540

MONITORING SITES

SAMPLING POINT	NUMBER	TYPE	ZONE/LOCATION MONITORED
B66	15827	C	ZONE 1-2
B67	15828	C	ZONE 4
B68	15829	C	ZONE 4
FA-1B	15639	B	FLORIDAN
FA-2C	15638	C	FLORIDAN
MO5-B	15635	C	ZONE 1-2
SURFACE WATER			LFSW.
SW-1	15830	C	BACKGROUND
SW-2	15831	C	OUTFALL OF EXTERNAL DITCH
SW-3	15832	C	OUTFALL FROM LANDFILL
SW-4	15833	C	OUTFALL OF RETENTION PONDS
SW-5	15638	C	OUTFALL OF INTERNAL DITCH
SW-6	15789	C	OUTFALL OF DETENTION POND
SW-9	15834	C	STORMWATER MANAGEMENT DITCH
SW-10	15835	C	OUTFALL OF BORROW AREA
LEACHATE			
L-1	15844	C	DISCHARGE PIPE INTO PONDS

A T T A C H M E N T B

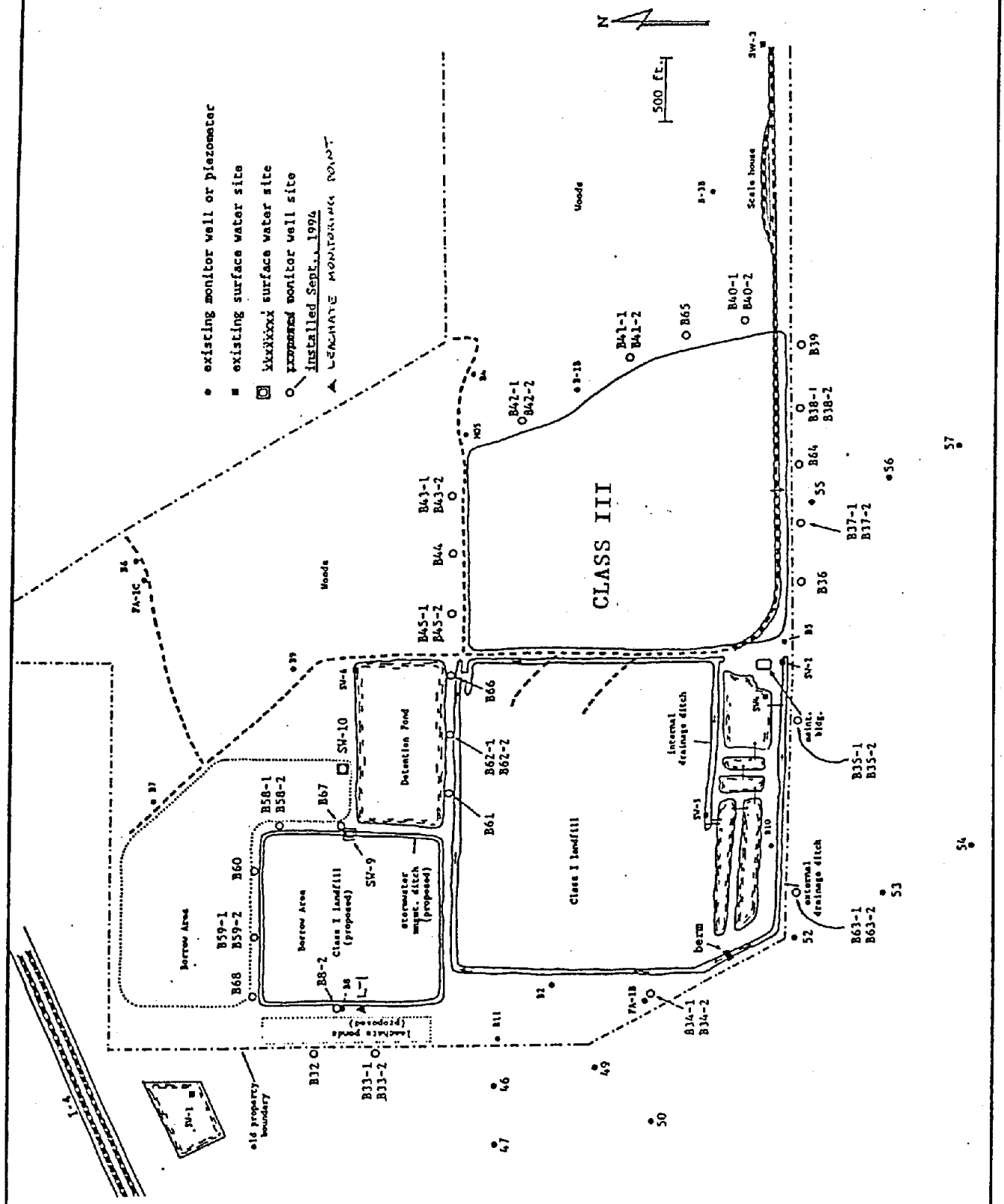
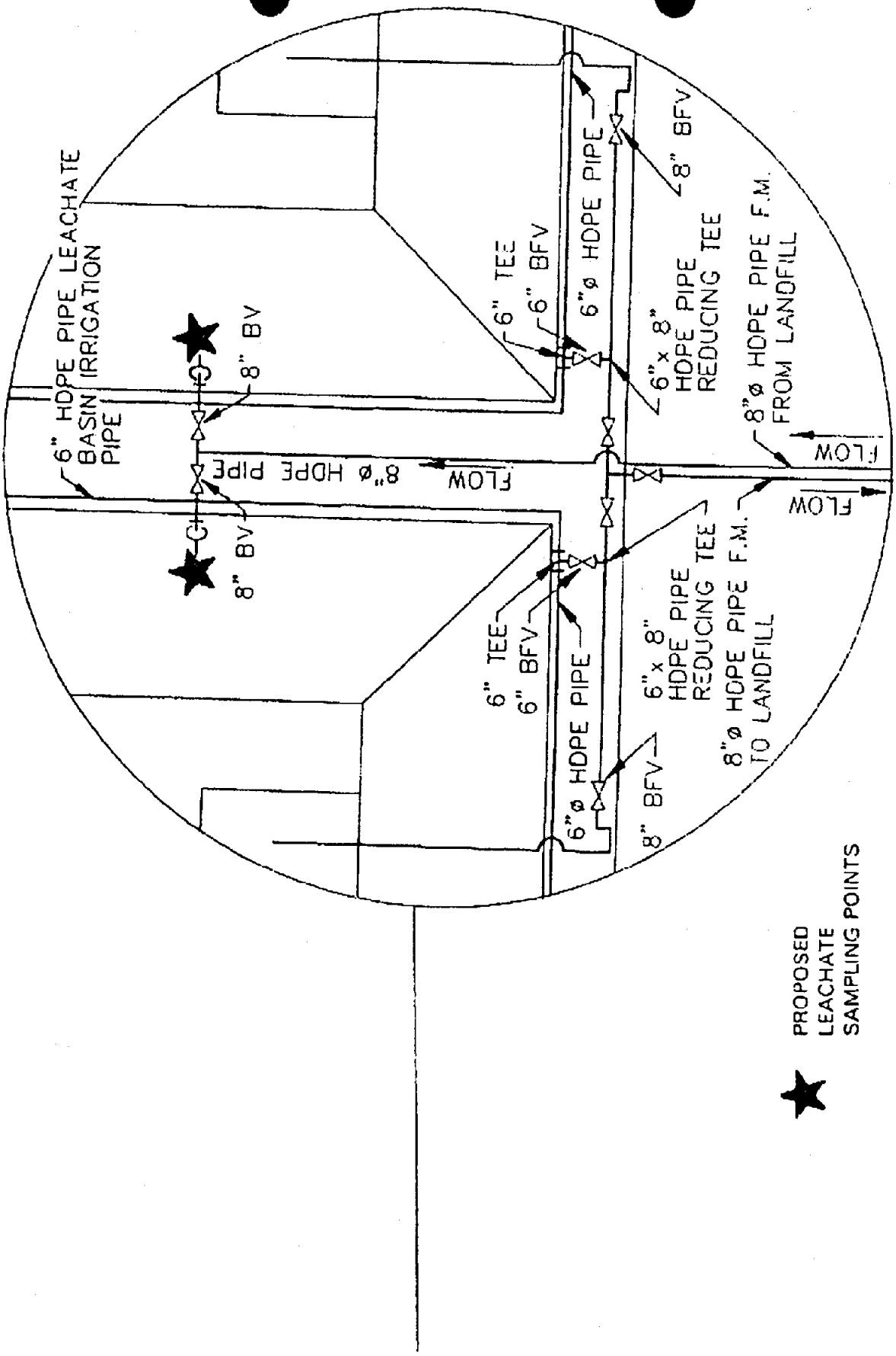


Figure 1. Location of Monitor Wells (from Tomoka Landfill: Summary and Evaluation of 1992-1996 Monitoring Data, Gomberg, 1997

ATTACHMENT C



Florida Department of Environmental Protection

Suite 232 3319 Maguire Boulevard Orlando, Florida 32803

GROUND WATER MONITORING REPORT
Rule 62-522.600(11)

PART I GENERAL INFORMATION

(1) Facility Name _____

Address _____

City _____ Zip _____ County _____

Telephone Number ( ) _____

(2) Facility WACS Number 64-00027540

(3) DEP Permit Number SO64-0078767-008

(4) Authorized Representative's Name _____ Title _____

Address _____

City _____ Zip _____ County _____

Telephone Number ( ) _____

(5) Type of Discharge _____

(6) Method of Discharge _____

CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submission of false information including the possibility of fine and imprisonment.

_____ _____

Date Owner or Authorized Representative's Signature

PART II QUALITY ASSURANCE REQUIREMENTS

Sampling Organization Comp QAP # _____

Analytical Lab Comp QAP #/ HRS Certification _____

Lab Name _____

Address _____

Phone Number ( ) _____

TOMOKA FARMS ROAD LANDFILL

PARAMETER MONITORING REPORT
(Rule 62-520.400, 62-520.420, 62-520.460)

Semi-Annual Ground Water Monitoring (Page 1 of 4)

FACILITY WACS# 64-00027540 SAMPLE DATE _____

MONITORING WELL WACS# _____ ANALYSIS DATE _____

WELL NAME _____ WELL TYPE:_____ (B) Background (D) Detection (C) Compliance (O) Other

CLASSIFICATION OF GROUNDWATER G-II

Well Purged* prior to Sample Collection (Yes/No)_____ Ground Water Elevation (NGVD)_____ Ft

STORET CODE	PARAMETER MONITORED	SAMPLING METHOD	FIELD FILTERED	ANALYSIS METHOD	ANALYSIS RESULT	UNITS
00010	Temperature (field)					°C
00299	Dissolved Oxygen (field by probe)					mg/L
00406	pH (field)					STD
00094	Spec. Conductance (field)					umhos/cm
82078	Turbidity (field)					NTU's
00610	Total Ammonia as N					mg/L
00940	Chlorides					mg/L
00620	Nitrate as N					mg/L
70300	Total Dissolved Solids					mg/L
46000	Phenols					mg/L
00945	Sulfate					mg/L
	METALS					
01105	Aluminum					ug/L
01097	Antimony					ug/L
01002	Arsenic					ug/L
01007	Barium					ug/L
01012	Beryllium					ug/L
01027	Cadmium					ug/L
01034	Chromium					ug/L
01037	Cobalt					ug/L
01042	Copper					ug/L

*Well Purging is the process of pumping the well prior to sampling in order to obtain a representative ground water sample.

TOMOKA FARMS ROAD LANDFILL

PARAMETER MONITORING REPORT
(Rule 62-520.400, 62-520.420, 62-520.460)

Semi-Annual Ground Water Monitoring (Page 2 of 4)

FACILITY WACS# 64-00027540 SAMPLE DATE _____

MONITORING WELL WACS# _____ ANALYSIS DATE _____

WELL NAME _____ WELL TYPE:_____ (B) Background (D) Detection (C) Compliance (O) Other

CLASSIFICATION OF GROUNDWATER G-II

Well Purged* prior to Sample Collection (Yes/No)_____ Ground Water Elevation (NGVD)_____ Ft

STORET CODE	PARAMETER MONITORED	SAMPLING METHOD	FIELD FILTERED	ANALYSIS METHOD	ANALYSIS RESULT	UNITS
01045	Iron					ug/L
01051	Lead					ug/L
71900	Mercury					ug/l
01067	Nickel					ug/L
01147	Selenium					ug/L
01077	Silver					ug/L
00929	Sodium					mg/L
01059	Thallium					ug/L
01087	Vanadium					ug/L
01092	Zinc					ug/L
	ORGANIC CONSTITUENTS					
81552	Acetone					ug/L
34215	Acrylonitrile					ug/L
34030	Benzene					ug/L
73085	Bromochloromethane					ug/L
32101	Bromodichloromethane					ug/L
34413	Bromomethane					ug/L
32104	Bromoform					ug/L
77041	Carbon Disulfide					ug/L
32102	Carbon Tetrachloride					ug/L
34301	Chlorobenzene					ug/L

*Well Purging is the process of pumping the well prior to sampling in order to obtain a representative ground water sample.

TOMOKA FARMS ROAD LANDFILL

PARAMETER MONITORING REPORT
(Rule 62-520.400, 62-520.420, 62-520.460)

Semi-Annual Ground Water Monitoring (Page 3 of 4)

FACILITY WACS# 64-00027540 SAMPLE DATE _____

MONITORING WELL WACS# _____ ANALYSIS DATE _____

WELL NAME _____ WELL TYPE:_____ (B) Background (D) Detection (C) Compliance (O) Other

CLASSIFICATION OF GROUNDWATER G-II

Well Purged* prior to Sample Collection (Yes/No)_____ Ground Water Elevation (NGVD)_____ Ft

STORET CODE	PARAMETER MONITORED	SAMPLING METHOD	FIELD FILTERED	ANALYSIS METHOD	ANALYSIS RESULT	UNITS
34311	Chloroethane					ug/L
32106	Chloroform					ug/L
34418	Chloromethane					ug/L
32105	Dibromochloromethane					ug/L
49146	1,2-Dibromo-3-chloropropane					ug/L
77651	1,2-Dibromoethane					ug/L
77596	Dibromomethane					ug/L
34536	1,2-Dichlorobenzene					ug/L
34571	1,4-Dichlorobenzene					ug/L
77268	trans-1,4-Dichloro-2-butene					ug/L
34496	1,1-Dichloroethane					ug/L
34531	1,2-Dichloroethane					ug/L
34501	1,1-Dichloroethene					ug/L
77093	cis-1,2-Dichloroethene					ug/L
34546	trans-1,2-Dichloroethene					ug/L
34541	1,2-Dichloropropane					ug/L
34704	cis-1,3-Dichloropropene					ug/L
34699	trans-1,3-Dichloropropene					ug/L
34371	Ethylbenzene					ug/L
77103	Methyl butly ketone					ug/L
81595	Methyl ethyl ketone					ug/L

*Well Purging is the process of pumping the well prior to sampling in order to obtain a representative ground water sample.

TOMOKA FARMS ROAD LANDFILL

PARAMETER MONITORING REPORT
(Rule 62-520.400, 62-520.420, 62-520.460)

Semi-Annual Ground Water Monitoring (Page 4 of 4)

FACILITY WACS# 64-00027540 SAMPLE DATE _____

MONITORING WELL WACS# _____ ANALYSIS DATE _____

WELL NAME _____ WELL TYPE:_____ (B) Background (D) Detection (C) Compliance (O) Other

CLASSIFICATION OF GROUNDWATER G-II

Well Purged* prior to Sample Collection (Yes/No)_____ Ground Water Elevation (NGVD)_____ Ft

STORET CODE	PARAMETER MONITORED	SAMPLING METHOD	FIELD FILTERED	ANALYSIS METHOD	ANALYSIS RESULT	UNITS
77424	Methyl iodide					ug/L
34423	Methylene Chloride					ug/L
81596	Methyl isobutyl ketone					ug/L
77128	Styrene					ug/L
77562	1,1,1,2-Tetrachloroethane					ug/l
34516	1,1,2,2-Tetrachloroethane					ug/L
34475	Tetrachloroethene					ug/L
34010	Toluene					ug/L
34506	1,1,1-Trichloroethane					ug/L
34511	1,1,2-Trichloroethane					ug/L
39180	Trichloroethene					ug/L
34488	Trichlorofluoromethane					ug/L
77443	1,2,3-Trichloropropane					ug/L
77057	Vinyl Acetate					ug/L
39175	Vinyl Chloride					ug/L
34020	Xylenes					ug/L

*Well Purging is the process of pumping the well prior to sampling in order to obtain a representative ground water sample.

TOMOKA FARMS ROAD LANDFILL

PARAMETER MONITORING REPORT
(Rule 62-302.500, 62-302.510, 62-302.530)

Semi-Annual Surface Water Monitoring (Page 1 of 4)

FACILITY WACS# 64-00027540 SAMPLE DATE _____

SAMPLING POINT WACS# _____ ANALYSIS DATE _____

SAMPING POINT NAME _____ Surface Water Elevation (NGVD)_____ Ft

STORET CODE	PARAMETER MONITORED	SAMPLING METHOD	FIELD FILTERED	ANALYSIS METHOD	ANALYSIS RESULT	UNITS	DETECTION LIMITS/ UNITS
00010	Temperature (field)					°C	
00299	Dissolved Oxygen (field by probe)					mg/L	
00406	pH (field)					STD	
00094	Spec. Conductance (field)					umhos/cm	
82078	Turbidity (field)					NTU's	
00612	Unionized Ammonia as N					mg/L	
00900	Total Hardness as $CaCO_3$					mg/L	
00680	Total Organic Carbon					mg/L	
70300	Total Dissolved Solids					mg/L	
00530	Total Suspended Solids					mg/L	
00310	BOD (5 Day) @ 20 °C					mg/L	
00340	Chemical Oxygen Demand					mg/L	
00600	Total Nitrogen as N					mg/L	
00620	Nitrate as N					mg/L	
00665	Total Phosphates as P					mg/L	
32211	Chlorophyll A					ug/L	
	METALS						
01097	Antimony					ug/L	
01002	Arsenic					ug/L	
01007	Barium					ug/L	
01012	Beryllium					ug/L	
01027	Cadmium					ug/L	
01034	Chromium					ug/L	
00137	Cobalt					ug/L	
01042	Copper					ug/L	

TOMOKA FARMS ROAD LANDFILL

PARAMETER MONITORING REPORT
(Rule 62-302.500, 62-302.510, 62-302.530)

Semi-Annual Surface Water Monitoring (Page 2 of 4)

FACILITY WACS# 64-00027540 SAMPLE DATE _____

SAMPLING POINT WACS# _____ ANALYSIS DATE _____

SAMPING POINT NAME _____ Surface Water Elevation (NGVD)_____ Ft

STORET CODE	PARAMETER MONITORED	SAMPLING METHOD	FIELD FILTERED	ANALYSIS METHOD	ANALYSIS RESULT	UNITS	DETECTION LIMITS/ UNITS
01045	Iron					ug/L	
01051	Lead					ug/L	
71900	Mercury					ug/l	
01067	Nickel					ug/L	
01147	Selenium					ug/L	
01077	Silver					ug/L	
01059	Thallium					ug/L	
01087	Vanadium					ug/L	
01092	Zinc					ug/L	
	ORGANIC CONSTITUENTS						
81552	Acetone					ug/L	
34215	Acrylonitrile					ug/L	
34030	Benzene					ug/L	
73085	Bromochloromethane					ug/L	
32101	Bromodichloromethane					ug/L	
34413	Bromomethane					ug/L	
32104	Bromoform					ug/L	
46372	Carbon Disulfide					ug/L	
32102	Carbon Tetrachloride					ug/L	
34301	Chlorobenzene					ug/L	
34311	Chloroethane					ug/L	
32106	Chloroform					ug/L	
34418	Chloromethane					ug/L	
32105	Dibromochloromethane					ug/L	

TOMOKA FARMS ROAD LANDFILL

PARAMETER MONITORING REPORT
(Rule 62-302.500, 62-302.510, 62-302.530)

Semi-Annual Surface Water Monitoring (Page 3 of 4)

FACILITY WACS# 64-00027540 SAMPLE DATE _____

SAMPLING POINT WACS# _____ ANALYSIS DATE _____

SAMPING POINT NAME _____ Surface Water Elevation (NGVD)_____ Ft

STORET CODE	PARAMETER MONITORED	SAMPLING METHOD	FIELD FILTERED	ANALYSIS METHOD	ANALYSIS RESULT	UNITS	DETECTION LIMITS/ UNITS
37860	1,2-Dibromo-3-chloropropane					ug/L	
46369	1,2-Dibromoethane					ug/L	
46361	Dibromomethane					ug/L	
34536	1,2-Dichlorobenzene					ug/L	
34571	1,4-Dichlorobenzene					ug/L	
77268	trans-1,4-Dichloro-2-butene					ug/L	
34496	1,1-Dichloroethane					ug/L	
34531	1,2-Dichloroethane					ug/L	
34501	1,1-Dichloroethene					ug/L	
77093	cis-1,2-Dichloroethene					ug/L	
34546	trans-1,2-Dichloroethene					ug/L	
34541	1,2-Dichloropropane					ug/L	
34704	cis-1,3-Dichloropropene					ug/L	
34699	trans-1,3-Dichloropropene					ug/L	
34371	Ethylbenzene					ug/L	
77103	Methyl butly ketone					ug/L	
81595	Methyl ethyl ketone					ug/L	
77424	Methyl iodide					ug/L	
34423	Methylene Chloride					ug/L	
78133	Methyl isobutyl ketone					ug/L	
77128	Styrene					ug/L	
77562	1,1,1,2-Tetrachloroethane					ug/l	
34516	1,1,2,2-Tetrachloroethane					ug/L	
34475	Tetrachloroethene					ug/L	
34010	Toluene					ug/L	

TOMOKA FARMS ROAD LANDFILL

PARAMETER MONITORING REPORT
(Rule 62-302.500, 62-302.510, 62-302.530)

Semi-Annual Surface Water Monitoring (Page 4 of 4)

FACILITY WACS# 64-00027540 SAMPLE DATE _____

SAMPLING POINT WACS# _____ ANALYSIS DATE _____

SAMPING POINT NAME _____ Surface Water Elevation (NGVD)_____ Ft

STORET CODE	PARAMETER MONITORED	SAMPLING METHOD	FIELD FILTERED	ANALYSIS METHOD	ANALYSIS RESULT	UNITS	DETECTION LIMITS/ UNITS
34506	1,1,1-Trichloroethane					ug/L	
34511	1,1,2-Trichloroethane					ug/L	
39180	Trichloroethene					ug/L	
34488	Trichlorofluoromethane					ug/L	
77443	1,2,3-Trichloropropane					ug/L	
77057	Vinyl Acetate					ug/L	
39175	Vinyl Chloride					ug/L	
34020	Xylenes					ug/L	

TOMOKA FARMS ROAD LANDFILL

PARAMETER MONITORING REPORT
(Rule 62-701.510)

Semi-Annual Leachate Monitoring (Page 1 of 3)

FACILITY WACS# 64-00027540 SAMPLE DATE _____

SAMPLING POINT WACS# 15844 ANALYSIS DATE _____

SAMPLING POINT NAME L-1

STORET CODE	PARAMETER MONITORED	SAMPLING METHOD	FIELD FILTERED	ANALYSIS METHOD	ANALYSIS RESULT	UNITS
00010	Temperature (field)					°C
00299	Dissolved Oxygen (field by probe)					mg/L
00406	pH (field)					STD
00094	Spec. Conductance (field)					umhos/cm
00610	Total Ammonia as N					mg/L
00940	Chlorides					mg/L
00620	Nitrate as N					mg/L
70300	Total Dissolved Solids					mg/L
00440	Bicarbonate as HCO_3					mg/L
	METALS					
01097	Antimony					ug/L
01002	Arsenic					ug/L
01007	Barium					ug/L
01012	Beryllium					ug/L
01027	Cadmium					ug/L
01034	Chromium					ug/L
01037	Cobalt					ug/L
01042	Copper					ug/L
01045	Iron					ug/L
01051	Lead					ug/L
71900	Mercury					ug/L
01067	Nickel					ug/L
01147	Selenium					ug/L
01077	Silver					ug/L
00929	Sodium					mg/L
01059	Thallium					ug/L

TOMOKA FARMS ROAD LANDFILL

PARAMETER MONITORING REPORT
(Rule 62-701.510)

Semi-Annual Leachate Monitoring (Page 2 of 3)

FACILITY WACS# 64-00027540 SAMPLE DATE _____

SAMPLING POINT WACS# 15844 ANALYSIS DATE _____

SAMPLING POINT NAME L-1

STORET CODE	PARAMETER MONITORED	SAMPLING METHOD	FIELD FILTERED	ANALYSIS METHOD	ANALYSIS RESULT	UNITS
01087	Vanadium					ug/L
01092	Zinc					ug/L
	ORGANIC CONSTITUENTS					
81552	Acetone					ug/L
34215	Acrylonitrile					ug/L
34030	Benzene					ug/L
73085	Bromochloromethane					ug/L
32101	Bromodichloromethane					ug/L
34413	Bromomethane					ug/L
32104	Bromoform					ug/L
77041	Carbon Disulfide					ug/L
32102	Carbon Tetrachloride					ug/L
34301	Chlorobenzene					ug/L
34311	Chloroethane					ug/L
32106	Chloroform					ug/L
34418	Chloromethane					ug/L
32105	Dibromochloromethane					ug/L
49146	1,2-Dibromo-3-chloropropane					ug/L
77651	1,2-Dibromoethane					ug/L
77596	Dibromomethane					ug/L
34536	1,2-Dichlorobenzene					ug/L
34571	1,4-Dichlorobenzene					ug/L
77268	trans-1,4-Dichloro-2-butene					ug/L
34496	1,1-Dichloroethane					ug/L
34531	1,2-Dichloroethane					ug/L
34501	1,1-Dichloroethene					ug/L

TOMOKA FARMS ROAD LANDFILL

PARAMETER MONITORING REPORT
(Rule 62-701.510)

Semi-Annual Leachate Monitoring (Page 3 of 3)

FACILITY WACS# 64-00027540 SAMPLE DATE _____

SAMPLING POINT WACS# 15844 ANALYSIS DATE _____

SAMPLING POINT NAME L-1

STORET CODE	PARAMETER MONITORED	SAMPLING METHOD	FIELD FILTERED	ANALYSIS METHOD	ANALYSIS RESULT	UNITS
77093	cis-1,2-Dichloroethene					ug/L
34546	trans-1,2-Dichloroethene					ug/L
34541	1,2-Dichloropropane					ug/L
34704	cis-1,3-Dichloropropene					ug/L
34699	trans-1,3-Dichloropropene					ug/L
34371	Ethylbenzene					ug/L
77103	Methyl butly ketone					ug/L
81595	Methyl ethyl ketone					ug/L
77424	Methyl iodide					ug/L
34423	Methylene Chloride					ug/L
81596	Methyl isobutyl ketone					ug/L
77128	Styrene					ug/L
77562	1,1,1,2-Tetrachloroethane					ug/l
34516	1,1,2,2-Tetrachloroethane					ug/L
34475	Tetrachloroethene					ug/L
34010	Toluene					ug/L
34506	1,1,1-Trichloroethane					ug/L
34511	1,1,2-Trichloroethane					ug/L
39180	Trichloroethene					ug/L
34488	Trichlorofluoromethane					ug/L
77443	1,2,3-Trichloropropane					ug/L
77057	Vinyl Acetate					ug/L
39175	Vinyl Chloride					ug/L
34020	Xylenes					ug/L

TOMOKA FARMS ROAD LANDFILL

PARAMETER MONITORING REPORT
(Rule 62-701.510)

Annual Leachate Monitoring (Page 1 of 9)

FACILITY WACS# 64-00027540 SAMPLE DATE _____

SAMPLING POINT WACS# 15844 ANALYSIS DATE _____

SAMPLING POINT NAME L-1

STORET CODE	PARAMETER MONITORED	SAMPLING METHOD	FIELD FILTERED	ANALYSIS METHOD	ANALYSIS RESULT	UNITS	DETECTION LIMITS/ UNITS
00010	Temperature (field)					°C	
00299	Dissolved Oxygen (field by probe)					mg/L	
00406	pH (field)					STD	
00094	Spec. Conductance (field)					umhos/cm	
00610	Total Ammonia as N					mg/L	
00940	Chlorides					mg/L	
00620	Nitrate as N					mg/L	
70300	Total Dissolved Solids					mg/L	
00440	Bicarbonate as HCO_3					mg/L	
	METALS						
01097	Antimony					ug/L	
01002	Arsenic					ug/L	
01007	Barium					ug/L	
01012	Beryllium					ug/L	
01027	Cadmium					ug/L	
01034	Chromium					ug/L	
01037	Cobalt					ug/L	
01042	Copper					ug/L	
01045	Iron					ug/L	
01051	Lead					ug/L	
71900	Mercury					ug/L	
01067	Nickel					ug/L	
01147	Selenium					ug/L	
01077	Silver					ug/L	
00929	Sodium					mg/L	
01059	Thallium					ug/L	

TOMOKA FARMS ROAD LANDFILL

PARAMETER MONITORING REPORT
(Rule 62-701.510)

Annual Leachate Monitoring (Page 2 of 9)

FACILITY WACS# 64-00027540 SAMPLE DATE _____

SAMPLING POINT WACS# 15844 ANALYSIS DATE _____

SAMPLING POINT NAME L-1

STORET CODE	PARAMETER MONITORED	SAMPLING METHOD	FIELD FILTERED	ANALYSIS METHOD	ANALYSIS RESULT	UNITS	DETECTION LIMITS/ UNITS
01102	Tin					ug/L	
01087	Vanadium					ug/L	
01092	Zinc					ug/L	
	ORGANIC CONSTITUENTS						
34205	Acenaphthene					ug/l	
34200	Acenaphthylene					ug/l	
81552	Acetone					ug/L	
76997	Acetonitrile; Methyl cyanide					ug/L	
81553	Acetophenone					ug/L	
82204	2-Acetylaminofluorene; 2-AAF					ug/L	
34210	Acrolein					ug/L	
34215	Acrylonitrile					ug/L	
39330	Aldrin					ug/L	
78109	Allyl chloride					ug/L	
77581	4-Aminobiphenyl					ug/L	
34220	Anthracene					ug/l	
34030	Benzene					ug/L	
34526	Benzo(a)anthracene					ug/l	
34230	Benzo(b)fluoranthene					ug/L	
34242	Benzo(k)fluoranthene					ug/l	
34247	Benzo(a)pyrene					ug/l	
34521	Benzo(g,h,i)perylene					ug/l	
77147	Benzyl alcohol					ug/l	
39337	alpha-BHC					ug/L	
39338	beta-BHC					ug/L	
46323	delta-BHC					ug/L	

TOMOKA FARMS ROAD LANDFILL

PARAMETER MONITORING REPORT
(Rule 62-701.510)

Annual Leachate Monitoring (Page 3 of 9)

FACILITY WACS# 64-00027540 SAMPLE DATE _____

SAMPLING POINT WACS# 15844 ANALYSIS DATE _____

SAMPLING POINT NAME L-1

STORET CODE	PARAMETER MONITORED	SAMPLING METHOD	FIELD FILTERED	ANALYSIS METHOD	ANALYSIS RESULT	UNITS	DETECTION LIMITS/ UNITS
39340	gamma-BHC; Lindane					ug/L	
34273	Bis(2-chloroethyl)ether					ug/l	
34278	Bis(2-chloroethoxy)methane					ug/l	
73522	Bis (2-chloro-1-methylethyl) ether					ug/L	
39100	Bis(2-ethylhexyl)phthalate					ug/l	
73085	Bromochloromethane					ug/L	
32101	Bromodichloromethane					ug/L	
32104	Bromoform					ug/L	
34636	4-Bromophenyl phenyl ether					ug/l	
34292	Butyl benzyl phthalate					ug/L	
77041	Carbon Disulfide					ug/L	
32102	Carbon Tetrachloride					ug/L	
39350	Chlordane					ug/L	
73529	p-Chloroaniline					ug/L	
34301	Chlorobenzene					ug/L	
39460	Chlorobenzilate					ug/L	
34452	p-chloro-m-cresol					ug/l	
34311	Chloroethane					ug/L	
32106	Chloroform					ug/L	
34581	2-Chloronaphthalene					ug/l	
34586	2-Chlorophenol					ug/l	
34641	4-Chlorophenyphenyl ether					ug/l	
81520	Chloroprene					ug/L	
34320	Chrysene					ug/L	
77151	m-Cresol					ug/L	
77152	o-Cresol					ug/L	

TOMOKA FARMS ROAD LANDFILL

PARAMETER MONITORING REPORT
(Rule 62-701.510)

Annual Leachate Monitoring (Page 4 of 9)

FACILITY WACS# 64-00027540 SAMPLE DATE _____

SAMPLING POINT WACS# 15844 ANALYSIS DATE _____

SAMPLING POINT NAME L-1

STORET CODE	PARAMETER MONITORED	SAMPLING METHOD	FIELD FILTERED	ANALYSIS METHOD	ANALYSIS RESULT	UNITS	DETECTION LIMITS/ UNITS
77146	p-Cresol					ug/L	
00720	Cyanide					mg/l	
39730	2,4-D; 2,4-Dichlorophenoxyacetic					ug/L	
39360	4,4-DDD					ug/L	
39365	4,4-DDE					ug/L	
39370	4,4-DDT					ug/L	
73540	Dialiate					ug/L	
34556	Dibenz(a,h)anthracene					ug/L	
81302	Dibenzofuran					ug/L	
32105	Dibromochloromethane					ug/L	
49146	1,2-Dibromo-3-chloropropane					ug/L	
77651	1,2-Dibromoethane					ug/L	
39110	Di-n-butylphthalate					ug/l	
34536	1,2-Dichlorobenzene					ug/L	
34566	1,3-Dichlorobenzene					ug/l	
34571	1,4-Dichlorobenzene					ug/L	
34631	3,3-Dichlorobenzidine					ug/l	
77268	trans-1,4-Dichloro-2-butene					ug/L	
34668	Dichlorodifluoromethane					ug/L	
34496	1,1-Dichloroethane					ug/L	
34531	1,2-Dichloroethane					ug/L	
34501	1,1-Dichloroethene					ug/L	
77093	cis-1,2-Dichloroethene					ug/L	
34546	trans-1,2-Dichloroethene					ug/L	
34601	2,4-Dichlorophenol					ug/l	
77541	2,6-Dichlorophenol					ug/L	

TOMOKA FARMS ROAD LANDFILL

PARAMETER MONITORING REPORT
(Rule 62-701.510)

Annual Leachate Monitoring (Page 5 of 9)

FACILITY WACS# 64-00027540 SAMPLE DATE _____

SAMPLING POINT WACS# 15844 ANALYSIS DATE _____

SAMPLING POINT NAME L-1

STORET CODE	PARAMETER MONITORED	SAMPLING METHOD	FIELD FILTERED	ANALYSIS METHOD	ANALYSIS RESULT	UNITS	DETECTION LIMITS/ UNITS
34541	1,2-Dichloropropane					ug/L	
77173	1,3-Dichloropropane					ug/L	
77170	2,2-Dichloropropane					ug/L	
77168	1,1-Dichloropropene					ug/L	
34704	cis-1,3-Dichloropropene					ug/L	
34699	trans-1,3-Dichloropropene					ug/L	
39380	Dieldrin					ug/L	
34366	Diethyl phthalate					ug/l	
73553	Thionazin					ug/L	
46314	Dimethoate					ug/L	
73558	p-(Dimethylamino)azobenzene					ug/L	
73559	7,12-Dimethylbenz(a)anthracene					ug/L	
73560	3,3-Dimethylbenzidine					ug/L	
34606	2,4-Dimethylphenol					ug/l	
34341	Dimethyl phthalate					ug/l	
45622	m-Dinitrobenzene					ug/L	
34657	2-Methyl-4,6-dinitrophenol					ug/l	
34616	2,4-Dinitrophenol					ug/l	
34611	2,4-Dinitrotoluene					ug/l	
34626	2,6-Dinitroltoluene					ug/l	
81287	DNBP					ug/L	
34596	Di-n-octyl phthalate					ug/l	
77579	Diphenylamine					ug/L	
81888	Disulfoton					ug/L	
34361	Endosulfan I					ug/L	

TOMOKA FARMS ROAD LANDFILL

PARAMETER MONITORING REPORT
(Rule 62-701.510)

Annual Leachate Monitoring (Page 6 of 9)

FACILITY WACS# 64-00027540 SAMPLE DATE _____

SAMPLING POINT WACS# 15844 ANALYSIS DATE _____

SAMPLING POINT NAME L-1

STORET CODE	PARAMETER MONITORED	SAMPLING METHOD	FIELD FILTERED	ANALYSIS METHOD	ANALYSIS RESULT	UNITS	DETECTION LIMITS/ UNITS
34356	Endosulfan II					ug/L	
34351	Endosulfan sulfate					ug/L	
39390	Endrin					ug/L	
34366	Endrin aldehyde					ug/L	
34371	Ethylbenzene					ug/L	
73570	Ethyl methacrylate					ug/L	
73571	Ethyl methanesulfonate					ug/L	
38462	Famphur					ug/L	
34376	Fluoranthene					ug/l	
34381	Fluorene					ug/l	
39410	Heptachlor					ug/L	
39420	Heptachlor epoxide					ug/L	
39700	Hexachlorobenzene					ug/l	
34391	Hexachlorobutadiene					ug/l	
34386	Hexachlorocyclopentadiene					ug/L	
34396	Hexachloroethane					ug/l	
73576	Hexachloropropene					ug/L	
34403	Indeno (1,2,3-c,d) pyrene					ug/l	
77033	Isobutyl alcohol					ug/L	
39430	Isodrin					ug/L	
34408	Isophorone					ug/l	
73582	Isosafrole					ug/L	
81281	Kepone					ug/L	
81593	Methacrylonitrile					ug/L	
73589	Methapyrilene					ug/L	

TOMOKA FARMS ROAD LANDFILL

PARAMETER MONITORING REPORT
(Rule 62-701.510)

Annual Leachate Monitoring (Page 7 of 9)

FACILITY WACS# 64-00027540 SAMPLE DATE _____

SAMPLING POINT WACS# 15844 ANALYSIS DATE _____

SAMPLING POINT NAME L-1

STORET CODE	PARAMETER MONITORED	SAMPLING METHOD	FIELD FILTERED	ANALYSIS METHOD	ANALYSIS RESULT	UNITS	DETECTION LIMITS/ UNITS
39480	Methoxychlor					ug/L	
34413	Methyl bromide					ug/L	
77103	Methyl butly ketone					ug/L	
34418	Methyl chloride					ug/L	
73591	3-Methylcholanthrene					ug/L	
81595	Methyl ethyl ketone					ug/L	
77424	Methyl iodide					ug/L	
81597	Methyl methacrylate					ug/L	
73595	Methyl methanesulfonate					ug/L	
77416	2-Methylnaphthalene					ug/L	
39600	Methyl Parathion					ug/L	
77596	Methylene Bromide					ug/L	
34423	Methylene Chloride					ug/L	
81596	Methyl isobutyl ketone					ug/L	
34696	Naphthalene					ug/l	
73599	1,4-Naphthoquinone					ug/L	
73600	1-Naphthylamine					ug/L	
73601	2-Naphthylamine					ug/L	
78142	o-Nitroaniline					ug/L	
78300	m-Nitroaniline					ug/L	
73605	p-Nitroaniline					ug/L	
34447	Nitrobenzene					ug/l	
34591	2-Nitrophenol					ug/l	
34646	4-Nitrophenol					ug/l	
73609	N-Nitrosodi-n-butylamine					ug/L	

TOMOKA FARMS ROAD LANDFILL

PARAMETER MONITORING REPORT
(Rule 62-701.510)

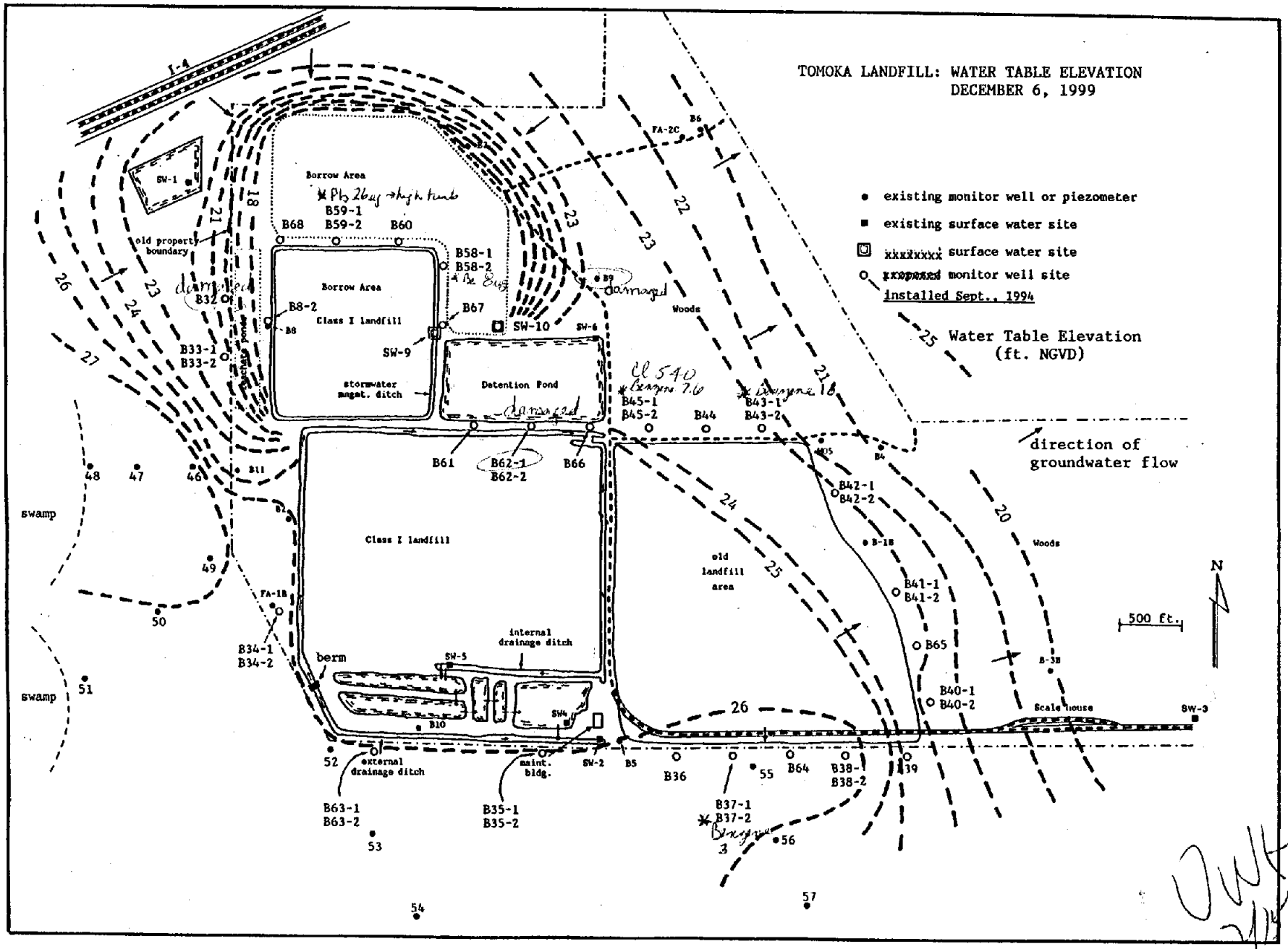
Annual Leachate Monitoring (Page 8 of 9)

FACILITY WACS# 64-00027540 SAMPLE DATE _____

SAMPLING POINT WACS# 15844 ANALYSIS DATE _____

SAMPLING POINT NAME L-1

STORET CODE	PARAMETER MONITORED	SAMPLING METHOD	FIELD FILTERED	ANALYSIS METHOD	ANALYSIS RESULT	UNITS	DETECTION LIMITS/ UNITS
73611	N-Nitrosodiethylamine					ug/L	
34438	N-Nitrosodimethylamine					ug/l	
34428	N-Nitrosodipropylamine					ug/l	
34433	N-Nitrosodiphenylamine					ug/l	
73613	N-Nitrosomethylethalamine					ug/L	
73619	N-Nitrosopiperidine					ug/L	
78206	N-Nitrosopyrrolidine					ug/L	
73622	5-Nitro-o-toluidine					ug/L	
39540	Parathion					ug/L	
77793	Pentachlorobenzene					ug/L	
81316	Pentachloronitrobenzene					ug/L	
39032	Pentachlorophenol					ug/l	
73626	Phenacetin					ug/L	
34461	Phenanthrene					ug/l	
34694	Phenol					ug/l	
73628	p-Phenylenediamine					ug/L	
46313	Phorate					ug/L	
39516	Polychlorinated biphenyls					ug/L	
39080	Pronamide					ug/L	
77007	Propionitrile					ug/L	
34469	Pyrene					ug/l	
77545	Safrole					ug/L	
39760	Silvex; 2,4,5-TP					ug/L	
77128	Styrene					ug/L	
00745	Sulfide					ug/L	


TOMOKA LANDFILL: WATER TABLE ELEVATION
DECEMBER 6, 1999
existing monitor well or piezometer
existing surface water site
surface water site
monitor well site
installed Sept., 1994
Water Table Elevation
(ft. NGVD)
direction of
groundwater flow
500 ft.
N
I-4
SW-1
old property boundary
Borrow Area
Borrow Area
Class I landfill
stormwater mngmt. ditch
Detention Pond
Class I landfill
old landfill area
internal drainage ditch
external drainage ditch
maint. bldg.
Scale house
Woods
Woods
swamp
swamp
berm
B68
B59-1
B59-2
B60
B58-1
B58-2
B67
B8-2
B8
B32
B33-1
B33-2
SW-9
SW-10
SW-6
B61
B62-1
B62-2
B66
B45-1
B45-2
B44
B43-1
B43-2
B42-1
B42-2
B41-1
B41-2
B65
B40-1
B40-2
B38-
B38-2
B64
B36
B37-1
B37-2
B35-1
B35-2
B63-1
B63-2
B34-1
B34-2
B11
B10
B5
SW-2
SW-4
SW-5
SW-3
FA-1B
FA-2C
B6
B9
B4
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B39
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FDEP Central District
Monitoring Checklist for Active Landfills

Facility name Tomoka GMS# - Issuance date _____
Ground water Surface water Landfill Gas Leachate

Receipt date 11/99 Sampling date 6/99 Analysis within required time yes (no)

Field sampler _____ Laboratory ELAB

Total ground water monitoring wells _____ Wells sampled _____

Total gas monitoring wells _____ Wells monitored _____

property boundary _____ in-structure checked _____

Field DO temperature turbidity specific conductance pH

Indicators Na Cl^- Fe NO_3 SO_4 NH_3 TDS TOC

Metals Al, As, Be, Cd, Cr, Pb, Mn, Hg, Ni, Se, Th, Sb

Organic compounds 624 625 608 610 614 615

Water elevation _____ Contour map _____ Total well depth _____

Background well yes / no Bkgr.well(s) remain upgradient yes / no

Summary of exceedance ✓ Lab/Field sheets ✓ Chain of Custody ✓

Lab prints PMR's.

Field QA/QC _____ Trip blnk _____ Equipment blnk _____ Duplicate _____

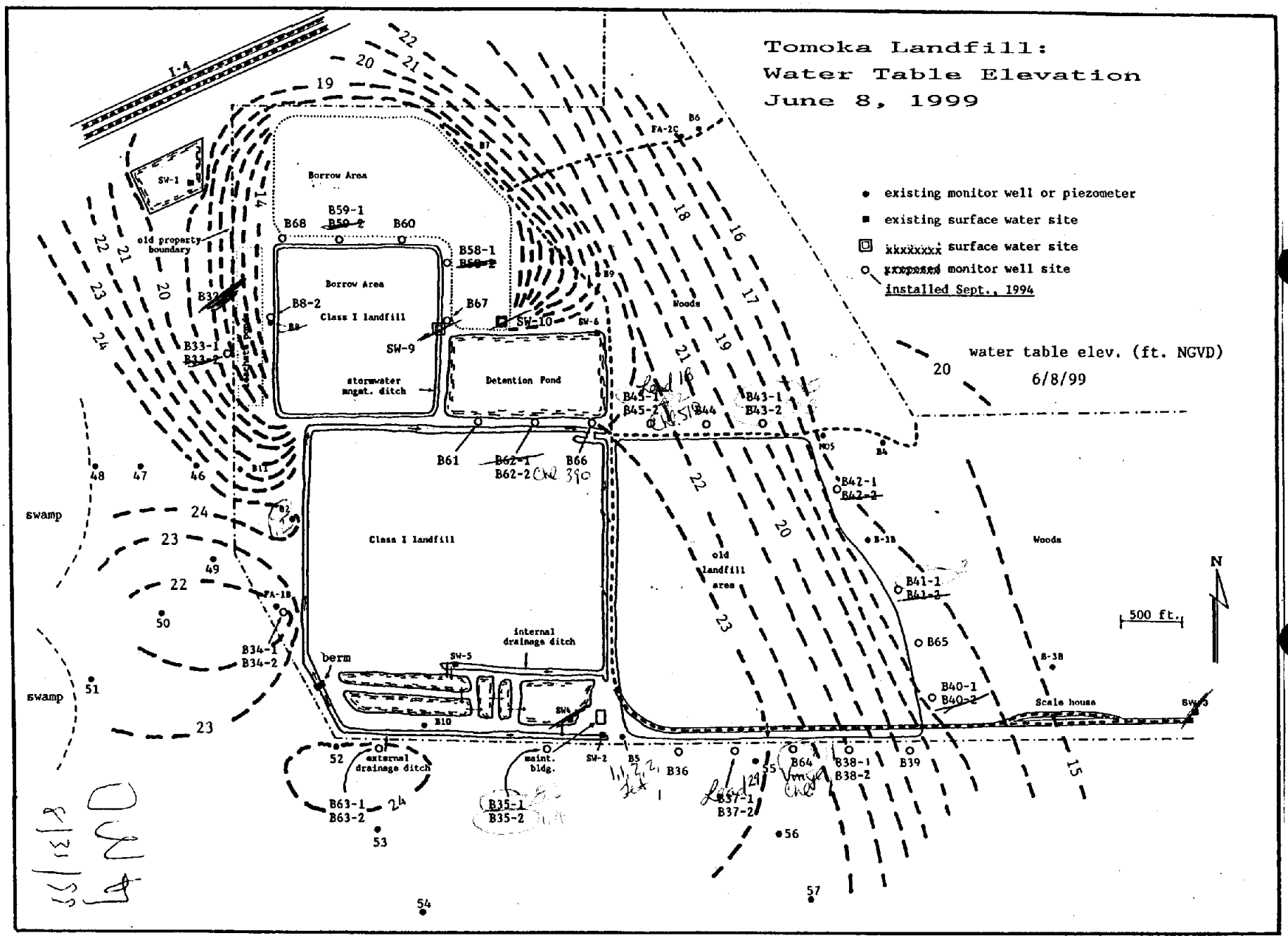
Technical report _____ Notification date _____ Anticipated sampling date _____

Note:

Benzene: B2 1.2 ug/L
B35-1 8.3
B35-2 1.4
B45-1 4.2, 2 - 510 ug/L
B43-1 5
B43-2 3
B4-1 3
B64 1

7/22/98

Vinyl Cl - 60A ug/L
Lead B37-1 27 ug/L


Tomoka Landfill:
Water Table Elevation
June 8, 1999
existing monitor well or piezometer
existing surface water site
surface water site
monitor well site
installed Sept., 1994
water table elev. (ft. NGVD)
6/8/99
500 ft.
N
I-4
Borrow Area
Borrow Area
Class I landfill
Class I landfill
Detention Pond
stormwater mngmt. ditch
old property boundary
Woods
Woods
old landfill area
internal drainage ditch
external drainage ditch
maint. bldg.
Scale house
swamp
swamp
berm
SW-1
SW-2
SW-5
SW-6
SW-9
SW-10
B59-1
B68
B60
B58-1
B67
B8-2
B33-1
B61
B62-1
B62-2
B66
B45-1
B45-2
B44
B43-1
B43-2
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B41-2
B65
B40-1
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B63-1
B63-2
B35-1
B35-2
B36
B37-1
B37-2
B64
B38-1
B38-2
B39
FA-2C
FA-1B
B-1B
B-3B
B-5B
B4
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B6
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B32
MOS
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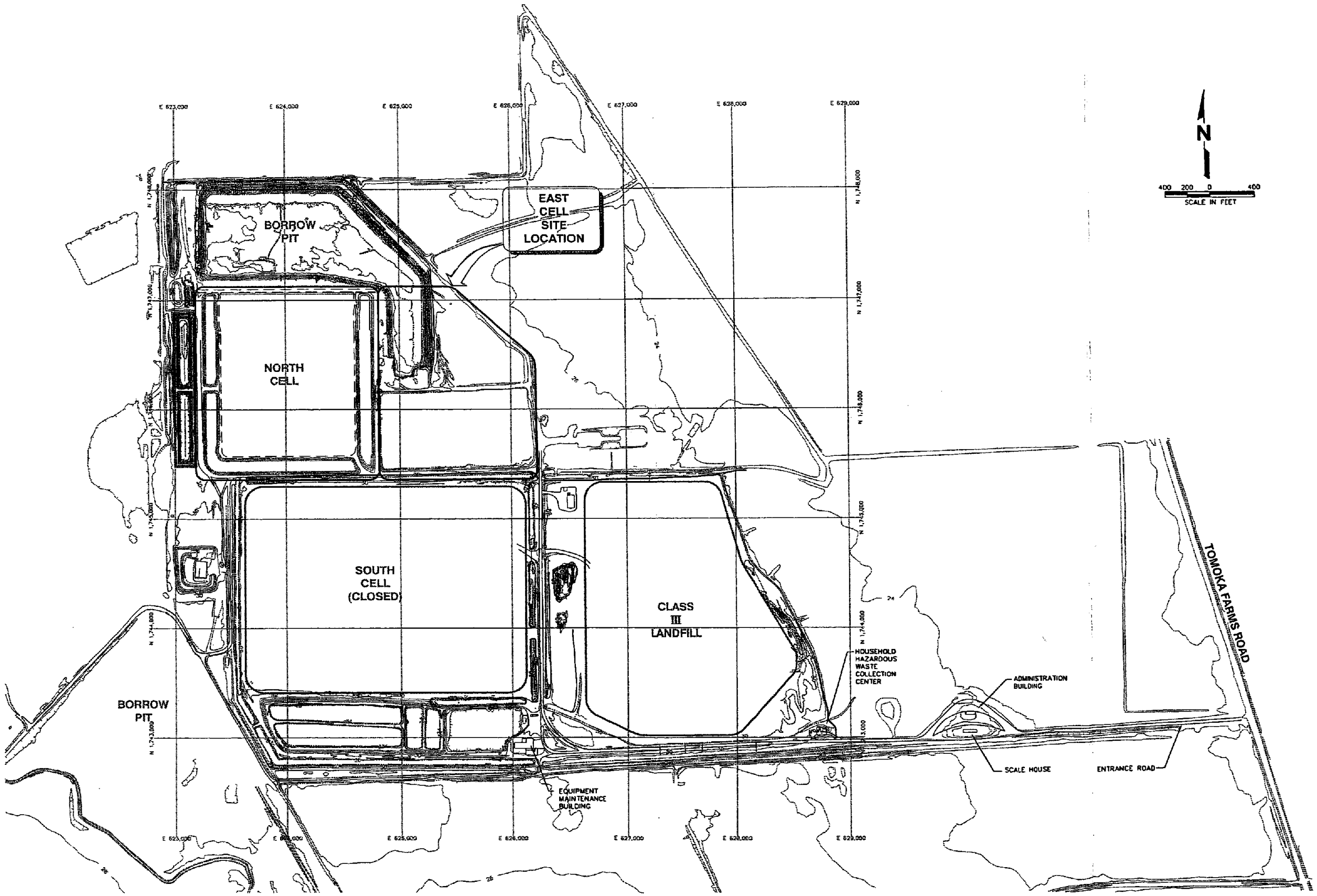

NOTES:

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Additions or deletions to this map or to the report accompanying this map by other than the signing party or parties is prohibited without written consent of the signing party or parties.

RECORD DRAWING

DATE: NOVEMBER 2005

REV.	DATE	DESCRIPTION	CK. BY

DRAWING TITLE: OVERALL SITE PLAN

PROJECT TITLE: TOMOKA FARMS ROAD LANDFILL EAST CELL EXAPANSION

CLIENT: VOLUSIA COUNTY DEPARTMENT OF PUBLIC WORKS SOLID WASTE DIVISION DELAND, FLORIDA

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS
3010 U.S. HWY 301 NORTH, SUITE 700, TAMPA, FL 33619
PH (813) 621-9691 FAX NO. (813) 623-6757

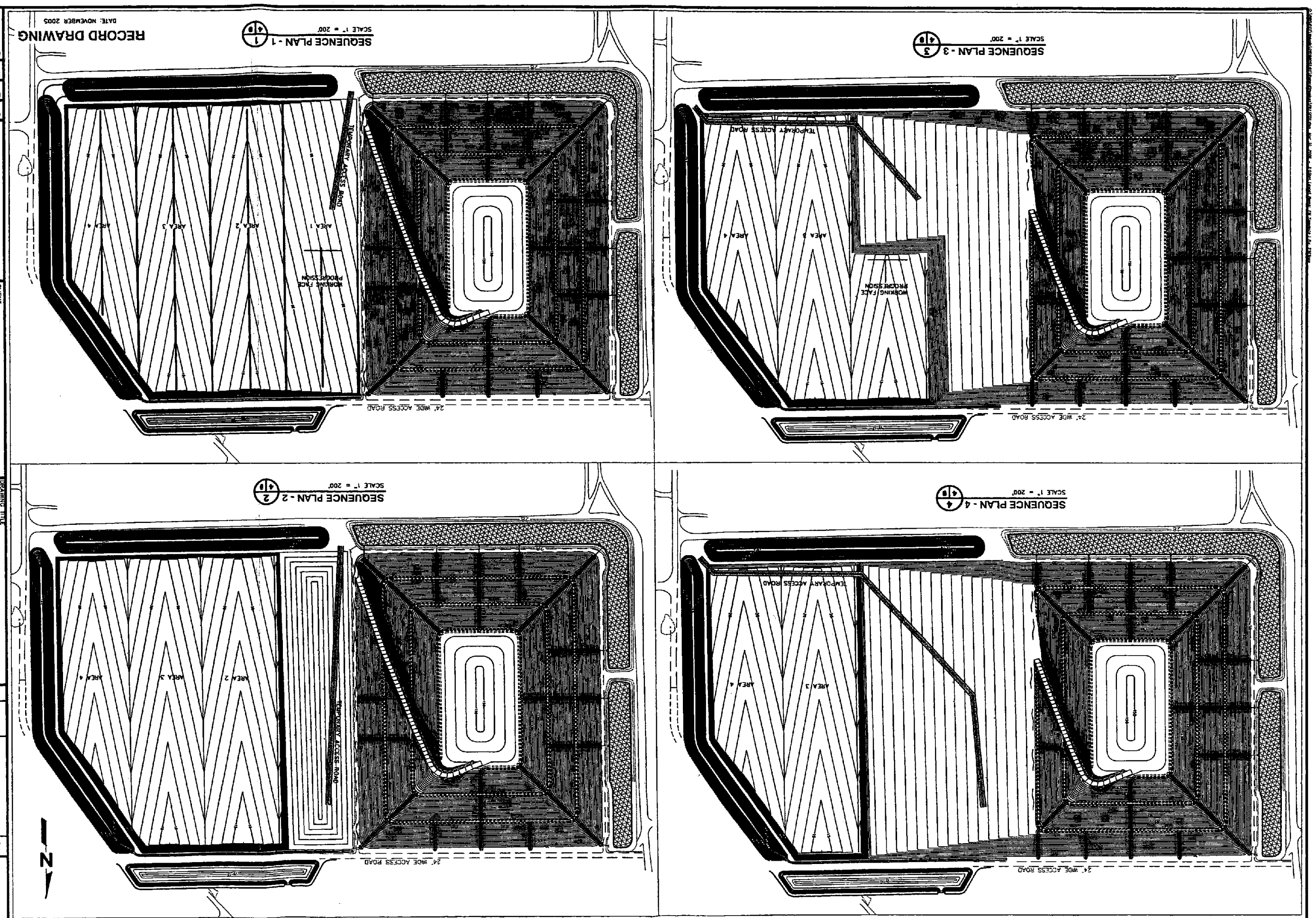
PROJ. NO. 05053.02 | DWG. BY: DB | D/A PROJ. MGR: RJB
DSK. NO. L-AP | CHK. BY: L-AP | APP. BY: RBC

CADD FILE: SITE-E1

DATE: JANUARY 2002

SCALE: AS SHOWN

DRAWING NO. 2 of 14



RECORD DRAWING
DATE: NOVEMBER 2005

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT
CONSULTING ENGINEERS
3825 N.A. HWY. 301 NORTH, SUITE 106, TAMPA, FL 33618
PH (813) 651-0080 FAX NO. (813) 653-4797

PROJ. NO. 0241-05-0001	DWN. BY FDB	CHK. BY LAP	APV. BY RBC
FDB	07/25/05		

CADD FILE: FILLSEQ1
DATE: JANUARY 2002
SCALE: 1"=200'
DRAWING NO. 9 of 14

CLIENT
VOLUSIA COUNTY
DEPARTMENT OF PUBLIC WORKS
SOLID WASTE DIVISION
DELAND, FLORIDA

DRAWING TITLE
FILL SEQUENCE I

PROJECT TITLE
TOMOKA FARMS ROAD LANDFILL
EAST CELL EXPANSION

REV	DATE	DESCRIPTION	BY
	11/05	REVISED FOR THE RECORD	LAP

STORMWATER DIVERSION SWALE NO. 1 (3/8 7) SEE DETAIL

PARKING / STORAGE

12'-0" WIDE ACCESS ROAD

STORMWATER DIVERSION SWALE NO. 2 (4/8 7) SEE DETAIL

(A 8/8) (B 8/8)

11.5% MAX.

TERRACE SWALE NO. 4

TERRACE SWALE NO. 2

MAIN ACCESS ROAD (2/8 7) SEE DETAIL

200'-0" MIN. OFFSET (TYP.)

APPROXIMATE LOCATION OF WETLAND BOUNDARY

(C 8/8)

DENSE WOODS ESTIMATED

TYPICAL TERRACE SWALE STORMWATER COLLECTION SYSTEM (1/8 7) SEE DETAIL

TERRACE SWALE NO. 3

TYPICAL DOWN PIPE OUTFALL (6/8 7) SEE DETAIL

8"ø HDPE SOLID DOWN PIPE (TYP.)

TERRACE SWALE NO. 1

18"ø HDPE INLET STRUCTURE (TYP.)

ENTRANCE ROAD

DENSE WOODS ESTIMATED

N

100 0 100 200

SCALE IN FEET

THIS TOPOGRAPHIC SURVEY AND AERIAL HAS BEEN PRODUCED BY PHOTOGRAMMETRIC METHODS BY: PHOTOGRAMMETRIC DATA SERVICES, INC. DATED JULY 18, 1998, LICENSE NO. LB 6757

327 RIDGEWOOD AVE., HOLLY HILL, FL 32117
(904)238-7500 FAX: (904)238-1466

JOHN R. BANTA, LS 5405, SURVEYOR AND MAPPER IN RESPONSIBLE CHARGE.

LEGEND

—35—	EXISTING ELEVATIONAL CONTOUR (5 FOOT INTERVALS)
———	EXISTING ELEVATIONAL CONTOUR (1 FOOT INTERVALS)
×26.8	EXISTING SPOT ELEVATION
—40—	FINAL ELEVATIONAL CONTOUR (10 FOOT INTERVALS)
———	FINAL ELEVATIONAL CONTOUR (2 FOOT INTERVALS)
X 133.0	FINAL SPOT ELEVATION
—·—·—	LIMITS OF CONSTRUCTION
▨	LIMITS OF BIPLANAR DRAINAGE NET

REV.	DATE	DESCRIPTION	CK. BY

DRAWING TITLE: FINAL GRADING PLAN

PROJECT TITLE: TOMOKA FARMS ROAD CLASS III LANDFILL PERMIT APPLICATION

CLIENT: VOLUSIA COUNTY DEPARTMENT OF SOLID WASTE SERVICES DELAND, FLORIDA

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS
3012 U.S. HWY. 301 NORTH, SUITE 700, TAMPA, FL 33619
PH (813) 621-0690 FAX NO. (813) 623-6757

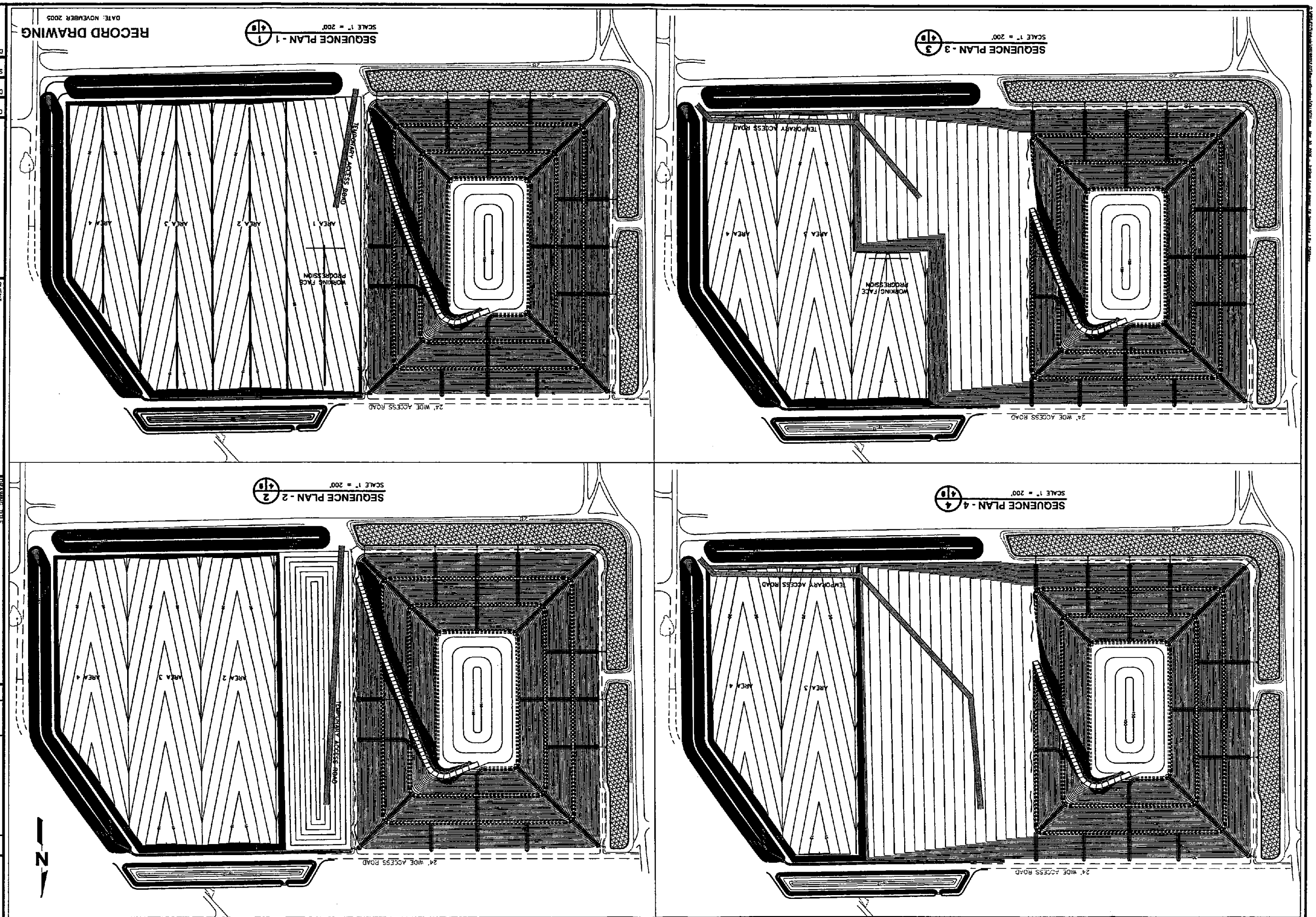
PROJ. NO. 0395039.26	DWN. BY: GRD/LAP	CHK. BY: LAP/RJD	D/A PKG BY: LAP/RJD
			APR. BY: LAP

CADD FILE: SITE2

DATE: FEBRUARY 17, 1999

SCALE: 1"=100'

DRAWING NO. 5 of 7



RECORD DRAWING

DATE: NOVEMBER 2005

SCS ENGINEERS

STEARNS, CONRAD AND SCHMIDT
CONSULTING ENGINEERS
3825 U.S. HWY. 301 NORTH, SUITE 700, TAMPA, FL 33619
PH (813) 621-0080 FAX NO. (813) 623-6757

PROJ. NO. 01J188052.02
DSN. BY FDB
DWN. BY FDB
CHK. BY LAP
D/A. REV. BY R.D.
APV. BY RBG

CADD FILE: FILLSEQ1
DATE: JANUARY 2002
SCALE: 1"=200'
DRAWING NO. 9 Of 14

CLIENT
VOLUSIA COUNTY
DEPARTMENT OF PUBLIC WORKS
SOLID WASTE DIVISION
DELAND, FLORIDA

DRAWING TITLE
FILL SEQUENCE I

PROJECT TITLE
TOMOKA FARMS ROAD LANDFILL
EAST CELL EXPANSION

REV	DATE	DESCRIPTION	BY
	11/05	REVISED FOR THE RECORD	LAP

STORMWATER DIVERSION SWALE NO. 1 (3 | 5 | 7) SEE DETAIL

PARKING / STORAGE

12'-0" WIDE ACCESS ROAD

STORMWATER DIVERSION SWALE NO. 2 (4 | 5 | 7) SEE DETAIL

(-11.5% MIN.)

TERRACE SWALE NO. 4

TERRACE SWALE NO. 2

MAIN ACCESS ROAD (2 | 5 | 7) SEE DETAIL

24'-0" WIDE ACCESS ROAD

200'-0" MIN. OFFSET (TYP.)

APPROXIMATE LOCATION OF WETLAND BOUNDARY

DENSE WOODS ESTIMATED

TYPICAL TERRACE SWALE STORMWATER COLLECTION SYSTEM (1 | 5 | 7) SEE DETAIL

TERRACE SWALE NO. 3

TYPICAL DOWN PIPE OUTFALL (6 | 5 | 7) SEE DETAIL

8"ø HDPE SOLID DOWN PIPE (TYP.)

TERRACE SWALE NO. 1

18"ø HDPE INLET STRUCTURE (TYP.)

ENTRANCE ROAD

N

100 0 100 200

SCALE IN FEET

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LEGEND

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X 133.0	FINAL SPOT ELEVATION
—·—·—	LIMITS OF CONSTRUCTION
▨	LIMITS OF BIPLANAR DRAINAGE NET

REV	DATE	DESCRIPTION	CK. BY

DRAWING TITLE: FINAL GRADING PLAN

PROJECT TITLE: TOMOKA FARMS ROAD CLASS III LANDFILL PERMIT APPLICATION

CLIENT: VOLUSIA COUNTY DEPARTMENT OF SOLID WASTE SERVICES DELAND, FLORIDA

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS
4830 W. KENNEDY BLVD., SUITE 701, TAMPA, FL 33609
PH: (813) 287-1717 FAX: NO. (813) 483-9373

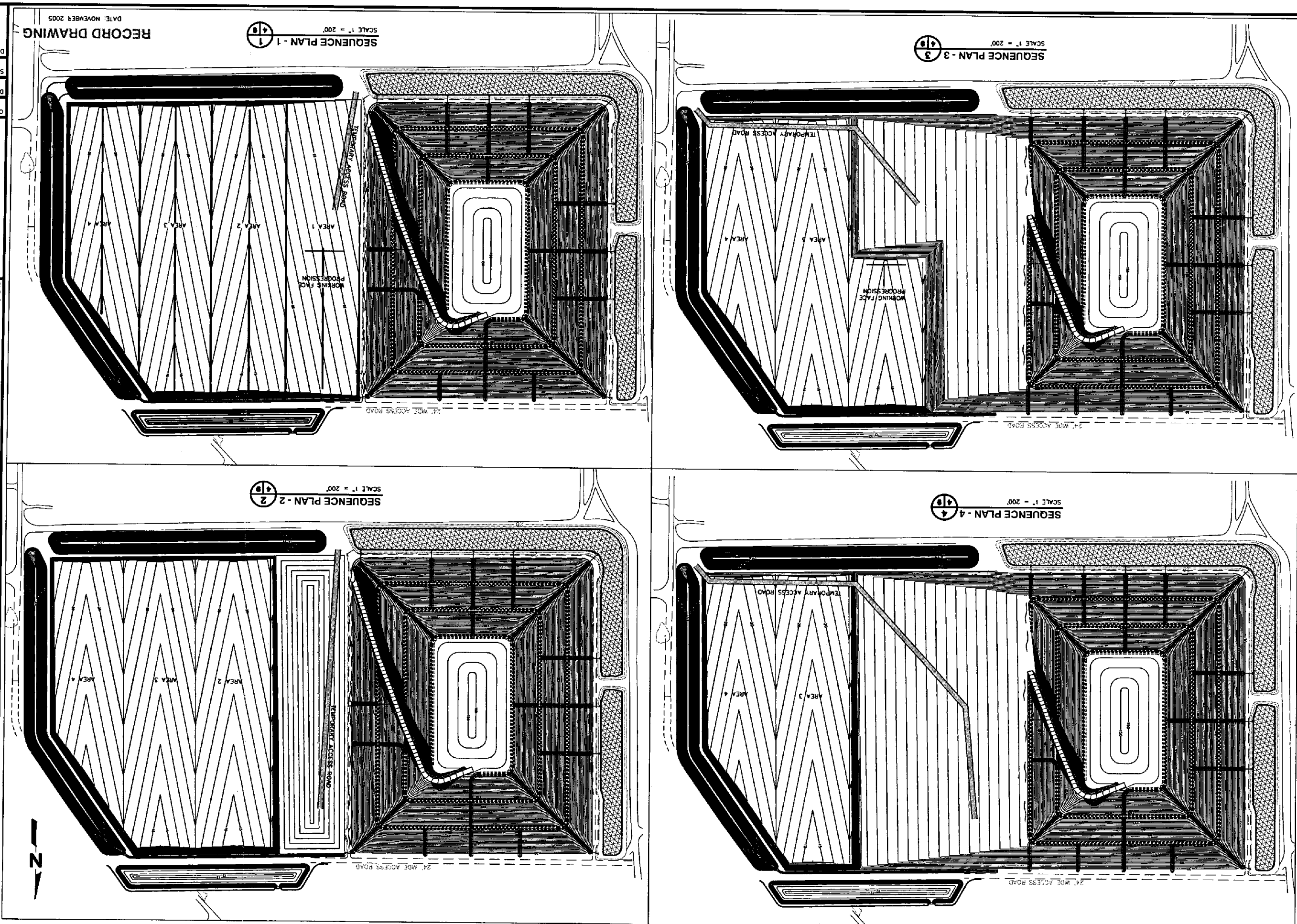
PROJ. NO. 01-2500139.26 | DWN. BY: GRD | CHK. BY: LAP/RJD | APP. BY: LAP

CADD FILE: SITE2

DATE: FEBRUARY 17, 1999

SCALE: 1"=100'

DRAWING NO. 5 of 7



RECORD DRAWING

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CONSULTING ENGINEERS
3012 U.S. HWY. 301 NORTH, SUITE 700, TAMPA, FL 33619
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PROJ. NO. 09138052.02 | DWN. BY: FDB | CHK. BY: LAP | DSN. BY: FDB | CHK. BY: RBG | PRAC. BY: FDB | R/A REV. BY: RJD

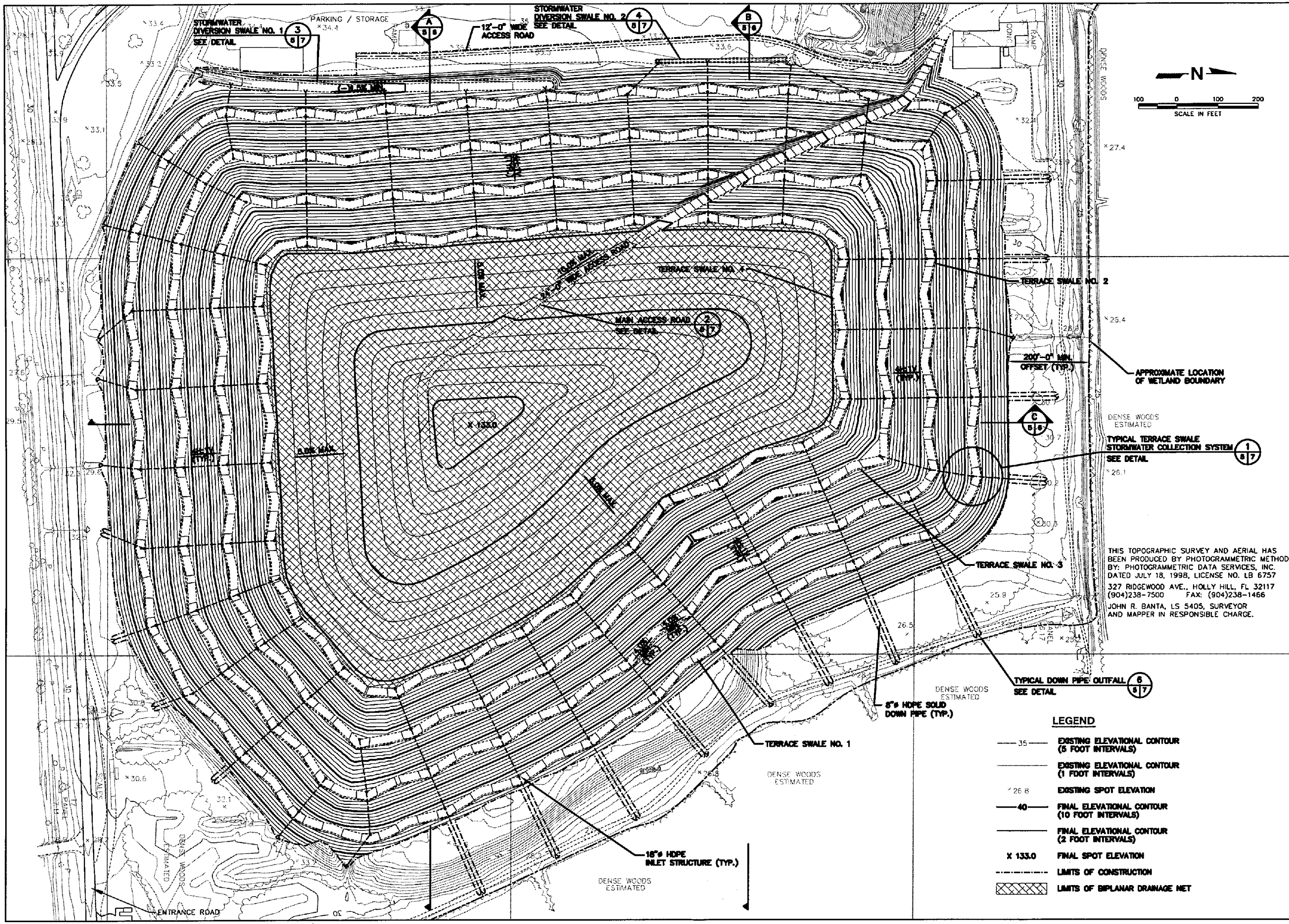
CADD FILE: FILLSEQ01
DATE: JANUARY 2002
SCALE: 1"=200'
DRAWING NO. 9 of 14

CLIENT
VOLUSIA COUNTY
DEPARTMENT OF PUBLIC WORKS
SOLID WASTE DIVISION
DELAND, FLORIDA

DRAWING TITLE
FILL SEQUENCE I

PROJECT TITLE
TOMOKA FARMS ROAD LANDFILL
EAST CELL EXPANSION

REV	DATE	DESCRIPTION	BY
	11/05	REVISED FOR THE RECORD	LAP



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STEARNS, CONRAD AND SCHMIDT
CONSULTING ENGINEERS
3950 RCA BOULEVARD, SUITE 5006, TAMPA, FL 33619
PH (813) 621-0080 FAX NO. (813) 623-0707

PROJ. NO. 01-0039.26 | DWN. BY GRD III | Q/A RVW BY LAP/RJD
DSN. BY GRD/LAP | CHK. BY LAP/RJD | APP. BY LAP

CADD FILE: SITE2

DATE: FEBRUARY 17, 1999

SCALE: 1"=100'

DRAWING NO. 5 of 7