APPLICATION FOR A MINOR MODIFICATION OF A CLASS I OPERATIONS PERMIT TOMOKA FARMS ROAD LANDFILL VOLUSIA COUNTY, FLORIDA

Response to RAI dated September 4, 2008

Submitted to:

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

Submitted by:

Volusia County
FLORIDA

Volusia County
County Council
123 West Indiana Avenue
DeLand, Florida 32720

Volusia County Public Works
Solid Waste Division
3151 East New York Avenue
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Prepared by:

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COA#7831

October 2008

Tracked Copy of all Text Changes Made

OPERATION PLAN
TOMOKA FARMS ROAD LANDFILL
VOLUSIA COUNTY, FLORIDA

Prepared for:

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

Updated by:

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Revised October~~August 12,~~ 2008

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 an 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/Page No. 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~~8~~
d. Weighing incoming waste;	Section 2.5~~9~~
e. Vehicle traffic control and unloading;	Section 2.6~~9~~
f. Method and sequence of filling waste;	Section 2.7~~9~~
g. Waste compaction and application of cover;	Section 2.8~~10~~
h. Operations of gas, leachate, and stormwater controls;	Section 2.9~~11~~
i. Water quality monitoring;	Section 2.10~~2~~
j. Maintaining and cleaning the leachate collection system.	Section 2.11~~2~~

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~~1~~1
c. Slopes of cell working face and side grades above land surface, planned lift depths during operation;	Section 7.3~~1~~1
d. Maximum width of working face;	Section 7.4~~1~~1
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~~1~~1
g. Procedures for applying intermediate cover;	Section 7.2~~6~~6
h. Time frames for applying final cover;	Section 7.2~~7~~7
i. Procedures for controlling scavenging and salvaging;	Section 7.2~~8~~8
j. Description of litter policing methods;	Section 7.2~~9~~9
k. Erosion control procedures.	Section 7.2~~10~~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
b. Operation and maintenance of leachate collection and removal system, and treatment as required;	Section 8.12
c. Procedures for managing leachate if it becomes regulated as a hazardous waste;	Section 8.23
d. Agreements for off-site discharge and treatment of leachate;	Section 8.24
e. Contingency plan for managing leachate during emergencies or equipment problems;	Section 8.36
f. Procedures for recording quantities of leachate generated in gal/day and including this in the operating record;	Section 8.37
g. Procedures for comparing precipitation experienced at the landfill with leachate generation rates and including this information in the operating record;	Section 8.38
h. Procedures for water pressure cleaning or video inspecting leachate collection systems.	Section 8.39
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.)	
a. Sufficient equipment for excavating, spreading, compacting and covering waste;	Section 11.1
b. Reserve equipment or arrangements to obtain additional equipment within 24 hours of breakdown;	Section 11.12
c. Communications equipment;	Section 11.13
d. Dust control methods;	Section 11.14
e. Fire protection capabilities and procedures for notifying local fire department authorities in emergencies;	Section 11.15
f. litter control devices;	Section 11.26
g. Signs indicating operating authority, traffic flow, hours of operation, disposal restrictions.	Section 11.27

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 12
13. Additional record keeping and reporting requirements: (62-701.500(13), F.A.C.)	
a. Records used for developing permit applications and supplemental information maintained for the design period of the landfill;	Section 13.1
b. Monitoring information, calibration and maintenance records, copies of reports required by permit maintained for at least 10 years;	Section 13.12
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 13.13
d. procedures for archiving and retrieving records which are more than five years old.	Section 13.14

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

Organization	Phone Number
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
Environmental Specialist: Cell: Home: Jennifer Stirk Office:	(386) 527-6336 (386) 960-6670 (386) 947-2952
Solid Waste Services Director: Cell: Leonard Marion Home: Office:	(386) 527-6332 (407) 957-6097 (386) 943-7889
Florida Department of Environmental Protection Main Reception: Solid Waste Section:	(407) 894-7555 (407) 893-3382
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.

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

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, page 2-11.~~8.3~~ of this plan.

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

Scavenging is strictly prohibited at the working face of the landfill. Salvageable materials such as metals, as identified by landfill personnel, will be unloaded at designated locations away from the working face for proper placement by landfill personnel at the end of each working day.

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

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. Once the leachate treatment facility is placed in service, leachate from the pump stations shall be pumped directly to the treatment facility unless conditions warrant temporary storage in the designated leachate storage pond.

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, piping to the leachate storage ponds, and the spray evaporation system within these ponds. The Landfill Supervisor will also oversee the operation of the leachate treatment facility and related components, once the sequencing batch reactor has been placed in service. 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.

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Volusia County Public Works
Solid Waste Division
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Samuel B. Levin, P.E.
Florida Registration No. 34462

10-01-08
Date

Distribution:
3 copies - FDEP
1 electronic copy - FDEP
4 copies - Volusia County
2 copies - S2L, Incorporated

S2Li

October 2, 2008

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

RE: Volusia County – SW
Tomoka Farms Road Landfill, Class I
Leachate Management System – Minor Modification
First Request for Additional Information
Modification of Permit No. SO64-0078767-023
Permit Application No. SO64-0078767-025

Dear Mr. Lubozynski:

This letter and attachments are in response to the Florida Department of Environmental Protection Request for Additional Information dated September 4, 2008, for the permit application for the referenced facility. On behalf of the Volusia County Public Works Solid Waste Division (County), S2L, Incorporated (S2Li) is pleased to submit this response to the Department's request. Enclosed please find three (3) copies of the revised pages and drawings to be inserted into the original permit application. Additionally, we have included one (1) tracked copy of all text changes made.

Comment 1: Cover Letter for the Report, prepared by S2L, Incorporated, on Paragraph No. 3, Lines 2 and 3 indicate that the hydrogeological information necessary to design the monitoring wells for spray fields is being evaluated. Please note that the decision on this minor modification application will be made after the hydrogeological information and the revised MPIS is received and reviewed by the Department.

Response: Acknowledged. Please refer to Attachment 1, which contains the hydrogeological information and recommended amendments to the site's MPIS.

Comment 2: Attachment B, Operation Plan, Section I, Executive Summary, and Page 1-1 thru Page 1-4: Table 1-1, Cross-Reference of FDEP Permit Application, Part L, Requirements, refers to Section Numbers in the Table corresponding to the landfill operation requirements. However, the Table of Content pages i thru iv of the operations plan do not provide section numbers. The section numbers are also missing in the text of the Operation Plan. Provide a revised copy of the Operation Plan with corrected Table of Content and the appropriate Section numbers.

Response: Attachment 2 contains the revised Operation Plan with a corrected Table 1-1. Please note that the Section numbers of the Operation Plan are located on the left side of the Table of Contents, pages i thru iv.

Comment 3: Attachment B, Page 1-4, Current Operating Conditions in the Report, refers to a site plan of the Tomoka Farms Road Landfill included as Figure 1-1 which the Department has not received. The same Figure 1-1 is referred on Pages 5-1 and 12-1. Submit Figure 1-1.

Response: Please refer to the revised Operation Plan in Attachment 2, which includes Figures 1-1, 2-1, 2-2, 2-3, 2-3a and 2-4.

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407-475-9163 Fax 407-475-9169 www.s2li.com

Comment 4: Attachment B, Section 2 (Revised), on Page 2-4, in the Report, under Emergency Telephone Numbers, in addition to the FDEP main reception number 407-894-7555 include the FDEP Solid Waste Section Number 407-893-3328.

Response: **Page 2-4 within Attachment B, Section 2 (Revised), has been amended to include the phone number of the Solid Waste Section. Please refer to Attachment 2.**

Comment 5: Attachment B, Section 2 (Revised), Page 2-9, in the Report, Figures 2-1, 2-2, 2-3 and 2-4 are missing. Submit Figures 2-1, 2-2, 2-3 and 2-4.

Response: **Please refer to Attachment 2.**

Comment 6: Attachment B, Section 6, Page 6-2 in the Report, reference is made to a sample form to document inspection results to Appendix A which is missing. Submit the sample form that is used to document inspection results.

Response: **Please refer to Attachment 3.**

Comment 7: Attachment B, Section 7, Page 7-2 in the Report reference is made for description of Final Cover to Section 2.8.3 which is missing. Submit Section 2.8.3.

Response: **The reference to a description of Final Cover on Page 7-2 in the revised Operation Plan located in Attachment 2 has been corrected to read, "Section 2, Page 2-11."**

Comment 8: Attachment B, Section 8 – Leachate Management, Page 8-1, in the Report, references Construction Plans which the Department has not received. Submit the Construction Plans.

Response: **The reference to the construction plans has been removed from Page 8-1. The portion of the construction plans that were previously cited within Attachment B, Section 8, details sideslope risers and sideslope cleanouts, and are not addressed within the minor modification request. We believe the Department received these plans from those responsible for the design of the landfill cells, during the permitting process for those cells. Construction plans for the leachate treatment facility are under development, and will be completed upon approval of the application submitted to the Department's Industrial Wastewater Section. Preliminary design drawings for the leachate treatment facility may be found at the end of Section 4 of the Preliminary Design Report within Attachment A of the application submitted to the Department on August 12, 2008.**

Please feel free to contact me at 407-475-9163 if you have any questions or require any additional information.

Sincerely,

S2L, Incorporated

10-01-08

Samuel B. Levin, P.E., President
Florida Registration No. 34462

Enclosures

cc: Leonard Marion – Volusia County Public Works Solid Waste Division w/enc.

LIST OF ATTACHMENTS

Attachment 1	Hydrogeological Information and Recommended Amendments to the Site's MPIS
Attachment 2	Revised Operation Plan
Attachment 3	Random Inspection Report

* * * * * *

ATTACHMENT 1

Hydrogeological Information and Recommended Amendments to the Site's MPIS

ENVIRONMENTAL CONSULTING
GEOTECHNICAL ENGINEERING
MATERIALS TESTING
THRESHOLD INSPECTION
DRILLING SERVICES

NODARSE & ASSOCIATES, INC.

Report of Geotechnical Subsurface Exploration and Evaluation
Tomoka Landfill
Proposed Leachate Treatment Plant
Daytona Beach, Florida
N&A Project No. O03-G-001-111A
August 26, 2008

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THRESHOLD INSPECTION
DRILLING SERVICES

NODARSE
& ASSOCIATES, INC.

August 26, 2008
Project No. O03-G-001-111A

Mr. Patrick McCormack
County of Volusia
Public Works Department Solid Waste Division
3151 East New York Avenue
DeLand, Florida 32724

Report of Geotechnical Subsurface Exploration and Evaluation
Tomoka Landfill – Proposed Leachate Treatment Plant
Daytona Beach, Florida

Dear Mr. McCormack:

In accordance with your request, **Nodarse & Associates, Inc. (N&A)** is pleased to submit this geotechnical report for the proposed development at the above referenced project. The purpose of this geotechnical evaluation was to evaluate the shallow ground water table within the landfill's existing sod farm explore and to evaluate the subgrade soil conditions with regard to design for the proposed package treatment plant. Included in this report are the results of the geotechnical exploration and laboratory results required by The Colinas Group **(TCG),** S2LI, and PRW Group, LLC. **At this time, the evaluation of the proposed force main route and Rapid Infiltration Basin site was not conducted due to undetermined locations.** The summary of our findings and conclusions are:

- Together with normal and conventional site preparation including introduction and compaction of fill material within the proposed pump station and building footprints, the existing subgrade is considered suitable to support the anticipated loads on shallow foundations designed for a net allowable soil pressure of 2500 psf.

- Together with normal and conventional site preparation, the existing subsoils within the proposed paved areas are suitable to support a conventional pavement section to include engineered fill to the subgrade level; a stabilized sub-base; a limerock base and an asphaltic wearing surface, provided future pavement grades provide a minimum separation of 18

inches between the estimated seasonal high ground water table and the bottom of the limerock base.

- The shallow groundwater table for the proposed leachate treatment plant and sod farm area was recorded at depths ranging from approximately 3.0 to 6.0 feet below the existing ground surface within the proposed development.

The balance of this report provides appropriate summaries of the work, presents the results of the explorations and offers an evaluation of soil conditions and recommendations for the corresponding proposed development.

SITE AND PROJECT DESCRIPTION

The sod farm site is approximately 17.5 acres located west of the landfill area. The proposed leachate plant area lies just north of the methane plant. The site mainly lies within Sections 8 and 9, Township 16 South, and Range 32 East.

From correspondence with both Mr. Richard Potts, Jr., P.G. of **TCG**, and Mr. Sam Levin, P.E. of **S2LI, Inc.**, and Mr. Rick Wilson of **PRW Group, LLC**, it is our understanding that the construction will consist of a package treatment plant of approximately 3,000 square feet, with two pump stations, and two or three miscellaneous smaller structures. The improvements required an evaluation of the shallow ground water table within the landfill's existing sod farm, where the treated effluent will be sprayed. At this time, no loading conditions were available for review. For the proposed package treatment plant, foundations are assumed to be continuous shallow foundations and column pads.

SCOPE OF SERVICES

The following scope of services was performed for this evaluation:

- Review and consider the general topographic features of the site and its immediate vicinity as published by the United States Geological Survey (USGS) "Daytona Beach, Florida" quadrangle maps as presented on **Figure 1** in the **Appendix**.

- Consideration of near surface soil conditions as mapped by the Soil Conservation Services (SCS) for Volusia County as presented on **Figure 2** in the **Appendix**.

- Staking the boring locations as shown on the provided site plan, as presented on **Figure 3** in the **Appendix**. Coordinate with The Colinas Group on site for the geotechnical exploration for the hydrogeological study.

- Visiting the site to make pertinent observations, anticipate conditions, access limitations and to coordinate the work with field personnel and drilling crew.

- Perform three (3) SPT borings (Boring No.'s TB-1 through TB-3) to a depth of 20 feet below ground surface within the proposed pump station and miscellaneous building structure footprints.

- Perform two (2) SPT borings (Boring No.'s TB-4 and TB-5) to a depth of 15 feet below ground surface within the proposed pump station and miscellaneous building structure footprints.

- Perform sixteen (16) hand auger borings (Boring No.'s HA-1 through HA-16) to a nominal depth of 8 feet within the existing sod farm site for ground water analysis.

- Perform two (2) SPT borings (Boring No.'s SPT-1 and SPT-2) to a depth of 40 feet below ground surface within the sod farm, with collection of four undisturbed permeability samples at depths determined in the field, as directed by **TCG**.

- Perform eight (8) auger borings (Boring No.'s AB-1 through AB-8) to a depth of 20 feet below ground surface within the sod farm, as directed by **TCG**.

- Install three (3) temporary 2-inch diameter piezometer monitoring wells to a depth of 25 feet below ground surface within the sod farm, as directed by **TCG**.

- Visually classifying the recovered samples from the borings. These were visually examined in our office by a Geotechnical Engineer. Such visual examination is complemented with select soil classification tests, especially on soil samples exhibiting appreciable cohesion or plastic properties. For this project, the tests included water content, percent passing the U.S. No. 200 sieve, Atterberg Limits, and organic contents.

- In addition to the above, the work included the preparation of this report which included:

  – Continual involvement of a Senior Geotechnical Engineer from the planning of the field work to reviewing of findings, to preparing this report.

  – Analyzing the results of the field and laboratory tests and other exhibits as presented on **Figures 4, 5, 6,** and **8** in the **Appendix**.

- Evaluating the subsurface soil conditions in view of the proposed development to form the basis for the recommendations made later in this report.

Standard Penetration Tests were performed continuously in the SPT borings to a depth of 10 feet and at 5 foot intervals thereafter. Each sample was removed from the sampler in the field andwas examined and visually classified by an engineering technician. Representative portions of each sample were packaged and sealed for transportation to our laboratory for further examination and visual classification. Water levels were measured in the boreholes at the time of our field exploration to evaluate the depth to groundwater.

The machine auger borings were performed by hydraulically turning a 4-inch diameter continuous flight auger into the ground in 5-foot increments. Additional flights were added until the desired termination depth was achieved. The auger was then extracted without further rotation and representative soil samples were retrieved from the auger. Samples were visually classified in the field and were then packaged and returned to our soils laboratory for further classification and testing.

The hand auger boring procedure consisted of manually turning a 3-inch diameter, 6-inch long sampler into the soil until it was full. The sampler was then retrieved and the soils in the sampler were visually examined and classified. The procedure was repeated until the desired termination depth was achieved or shallow groundwater levels caused collapse of the borehole. Samples of representative strata were obtained for further visual examination and classification in our laboratory.

TOPOGRAPHIC FEATURES AND SURFACE SOIL

Topographic features of the site and vicinity were reviewed from the quadrangle map shown on **Figure 1** in the **Appendix**. The site is relatively level and the ground surface was approximately between +25 feet NGVD and +30 feet NGVD. The Tomoka River is located to the east, and according to the aerial, there appears to be numerous wetland areas located to the east and west of the proposed site development. Existing features are shown on the quadrangle map.

Based on the USDA/SCS soil survey for Volusia County, the following surficial soil types are reported:

-- **Malabar Fine Sand (31)**
This is a nearly level, poorly drained sandy soil that generally occurs in broad low flats. Slopes are smooth, and the gradient is 0 to 2 percent. The water table is within a depth of 10 inches of the surface for 2 to 6 months and within 40 inches for about 6 months.

-- **Pomona Fine Sand (49)**
This is a nearly level, poorly drained sandy soil that generally occurs in low, broad areas in the flatwoods. Slopes are smooth, and the gradient is 0 to 2 percent. The water table is within a depth of 10 inches of the surface for 1 to 3 months and within 40 inches for about 6 months during most years.

-- **Tomoka Muck (66)**
This very poorly drained organic soil generally occurs in swamps and freshwater marshes. Slopes are concave or smooth, with a gradient of less than 1 percent. The water table is as much as 2 feet above the surface at times during the rainy seasons. It is at or above the surface for 6 to 9 months in most years and is seldom below a depth of 10 inches except during extended dry periods.

SUBSURFACE CONDITIONS

The locations and results of the borings conducted within the sod farm area are presented on **Figures 3** through **6** in the **Appendix**. According to our field exploration and the results of the performed laboratory tests, subsoil conditions encountered within the sod farm area can generally be described as follows:

- Very loose to medium dense fine sand to slightly silty fine sand **(Strata 1 and 2)** was encountered from the existing ground surface to the maximum boring termination depths of 40 feet below existing ground surface. Silty fine sand **(Stratum 4)** was encountered throughout the soil profile at varying depths.

- In several of the borings (Boring No.'s SPT-1, AB-2, HA-1, HA-3, HA-4, HA-6, HA-7, HA-9, HA-12, HA-14, and HA-16), medium dense slightly silty fine sand with organics **(Stratum 3)** to slightly silty fine sand to silty fine sand with organically stained and weakly cemented sand "hardpan" **(Stratum 5)** was encountered at approximate depths ranging from 1 to 6 feet below existing ground surface.

- In Boring No. SPT-2, firm clay **(Stratum 6)** was encountered at approximate depths ranging from 33.5 to 38.5 feet below existing ground surface.

The locations and results of the borings conducted within the proposed package treatment plant area are presented on **Figures 7** and **8** respectively in the **Appendix**. According to our field exploration and the results of the performed laboratory tests, subsoil conditions encountered within the proposed package treatment plant area can be generally described as follows:

- Very loose to dense fine sand to slightly silty fine sand **(Strata 1 and 2)** was encountered from the existing ground surface to an approximate depth of 13.5 feet below existing ground surface. In several of the borings (Boring No.'s TB-3 and TB-5), medium dense fine sand to slightly silty fine sand, trace organics **(Stratum 3)** was encountered at approximate depths ranging from the existing ground surface to 13.5 feet below existing ground surface. In several of the borings (Boring No.'s TB-4 and TB-5) loose to medium dense silty fine sand **(Stratum 4)** was encountered at approximate depths ranging from 3 to 13.5 feet below existing ground surface.

- Very loose to medium dense silty fine sand **(Stratum 4)** was encountered below **Strata 1 and 2** and extended to an approximate depth of 18.5 feet below existing ground surface.

- Loose to medium dense fine sand **(Stratum 1)** was encountered below **Stratum 4** and extended to the boring's maximum termination depths of 20 feet.

- Loose to dense slightly silty fine sand with organics **(Stratum 7)** was encountered from approximate depths ranging from 4 to 6 feet below existing ground surface. If encountered within the depths of excavation during construction, **N&A** should be contacted to evaluate the subsurface conditions to make additional recommendations, if necessary.

While the above represents the dominant soil conditions for the proposed development, some deviations may be expected across the site.

Groundwater was encountered at a depth ranging from approximately 3 to 6 feet below existing ground surface during our field exploration between July 11, 2008 and August 7, 2008. Groundwater levels will fluctuate with the amount of local rainfall and with site development and, therefore, may be different at other times. The seasonal high water table is estimated to be 0.5 to 1.5 feet below the existing ground surface. N&A would be happy to re-evaluate the encountered ground water depths once elevation data becomes available. Based on review of the St. John's River Water Management District (SJRWMD) potentiometric maps of the upper Floridan Aquifer for this project area, the estimated elevation of the artesian head is approximately +10 feet, NGVD, in the area of the project alignment.

LABORATORY TESTING

A laboratory testing program was performed on selected soil samples obtained from the borings. The purpose of this testing was to assist in the classification of the soil samples. Testing included full grain size analyses, single sieve (No. 200) grain size analyses, moisture content tests, and organic content tests and is shown on the boring profiles in **Figures 6** and **8**, and on **Table 1** in the **Appendix**. Testing was performed in general accordance with appropriate Florida methods.

EVALUATIONS AND RECOMMENDATIONS

Package Treatment Plant

General:

The following general evaluations and recommendations are offered:

- For the proposed construction as described earlier, soil conditions within the proposed structure footprints can be characterized to favor the use of a conventional shallow foundation. Soil conditions within the proposed paved roadway and parking areas are generally suitable for the use of a typical pavement section.

- In Boring No. TB-5, slightly silty fine sand with organics **(Stratum 7)** was encountered at depths ranging from 4 to 6 feet below existing ground surface. There may be pockets of organic material not encountered within the borings conducted. Once structural locations are finalized, it is recommended that additional borings be conducted to assess the subgrade conditions within the structure footprint.

- Site preparation would consist of normal clearing, grubbing, and compaction of the near surface soil. The existing upper 6 to 12 inches may contain appreciable grass and fine roots and stripping and loss of this material to its full depth should be anticipated if this material is encountered within the development. Additional stripping may be required in the low lying wet areas.

- The subgrades for the proposed paved areas should be proofrolled according to the recommendations described later in this report. Proofrolling should be observed by a geotechnical engineer to detect areas where unsuitable soils are present. Materials which yield excessively during proofrolling should be undercut and replaced with well compacted structural fill that meets the composition and placement requirements described below.

General Site Preparation:

The following recommendations are offered with regard to site preparation:

- The initial step in site preparation should be the complete removal of all topsoil, major root systems and other deleterious materials from beneath and to 5 feet beyond proposed construction limits. Stripping thicknesses are expected to be less than 12 inches at this site.

- After the initial stripping process, the proposed structure footprints and paved areas should be inspected by a geotechnical engineer or his/her representative.

- Upon approval by the geotechnical engineer or representative, the proposed structure footprints and paved areas should be proofrolled using a large smooth-drum roller or preferably the tires of a heavy loader. We do not recommend the use of vibratory equipment due to the shallow groundwater table and proximity of existing structures.

- Proofrolling of the structure footprint and paved areas should consist of at least ten (10) overlapping passes. Proofrolling should be observed by a geotechnical engineer. The purposes of the proofrolling will be to detect any areas where unsuitable soils are present as well as to densify the near-surface loose soils for support of the shallow foundation and the paved areas.

- Materials which yield excessively during the proofrolling should be undercut and replaced with well-compacted structural fill. The geotechnical engineer, based on observations at the site, can recommend the nature and extent of any remedial work. Based on our exploration, no major remedial work is anticipated at this site.

- Proofrolling of the structure footprints and paved area should continue for the required number of passes and until the soil at a depth of 24 inches below the compaction surface has attained a minimum of 95% of the soil's modified Proctor maximum dry density. Further rolling requirements regarding the paved area can be found later in this report in the Pavement Design Recommendations section.

- In-place density tests should be performed by an experienced geotechnical engineering technician working under the direction of a registered geotechnical engineer to verify the required degree of compaction.

Fill Placement:

After the site has been proofrolled and accepted by the geotechnical engineer, fill required to bring the site to final grade may be placed and properly compacted. The following recommendations are offered with regard to fill placement:

- Optimum Fill should be inorganic, non-plastic, granular soil (clean sands), with 10% or less passing the No. 200 sieve.

- The fill should be placed in level lifts not to exceed 12 inches loose thickness.

- The fill should be compacted to a minimum of 95% of the soil's modified Proctor maximum dry density. See the Pavement Design Recommendations section for further requirements regarding the paved areas.

- In-place density tests should be performed on each lift by an experienced engineering technician working under the direction of a registered geotechnical engineer to verify that the recommended degree of compaction has been achieved.

- This fill should extend a minimum of 5 feet beyond proposed construction and paved areas to reduce the potential for erosion or undermining of the subsoils.

- Minor fill slopes should not exceed 2 horizontal to 1 vertical.

- Fill placed in utility line trenches and adjacent to footings beneath slabs on grade should also be properly placed and compacted to the specifications stated above. However, in restricted working areas, compaction should be accomplished with lightweight, hand-guided compaction equipment and lift thicknesses should be limited to a maximum of 6 inches loose thickness.

Foundation Design:

Based on the subsurface conditions encountered on the site and the information provided for the loading conditions, we offer the following:

- Shallow conventionally designed foundations consisting of spread, strip, or wall footings are feasible.

- We are assuming that fill material will be placed on the site. Foundation loads are expected to be small and should produce ½ to ¾ inch of additional settlement, with less than ½ inch of differential settlement between columns.

- Assuming site preparation is performed in accordance with the above recommendations, a maximum net allowable bearing pressure of 2,500 pounds per square foot is recommended for footings having a minimum of 24 inches of soil cover from adjacent lowest grades to bottom of footings.

- Minimum footing dimensions of 18 inches for strip footings and thickened edges of a monolithic slab and 24 inches for spread footings should be used even though the maximum allowable bearing pressures may not be fully developed in all cases.

- Footing subgrade soils should be approved by the geotechnical engineer prior to placement of concrete and steel.

- As a minimum acceptance criterion, the footing subgrade soils should be compacted to a minimum density of 95% of the soils modified Proctor maximum dry density for a depth of 12 inches.

Pavement Design:

Based on the soil and groundwater conditions encountered during our field exploration, it appears that the soil conditions are suitable for flexible asphaltic concrete pavement following normal site preparation.

Flexible pavement requires either a minimum separation of 18 to 24 inches between the bottom of the limerock base and the seasonal high groundwater table to maintain this separation. The following flexible pavement section is based on minimum requirements for the City of Daytona Beach and Volusia County and is recommended as minimum thicknesses, unless a detailed pavement design is performed.

Section Description		**Minimum Thickness (inches)**
		Heavy Duty
Surface Course	Asphaltic Concrete	2.5
Base Course	Limerock	10
Sub-base	Clean fine sand with less than 10 percent passing No. 200 sieve, with a Limerock Bearing Ratio Test (LBR) of at least 40, compacted to at least 98 percent of the modified Proctor maximum dry density (ASTM D1557)	12
Subgrade	Clean fine sand with less than 10 percent passing No. 200 sieve, compacted to at least 95 percent of the modified Proctor maximum dry density (ASTM D1557)	12

The recommended preparation of the subgrade (natural foundation material underlying the sub-base) and the sub-base (the stabilized portion of the pavement section underlying the base) is as follows:

- After clearing, grubbing and stripping of topsoil, proofroll the stripped subgrade and compact with appropriate static equipment (non-vibratory) to obtain a uniform in-place density of 95 percent of the modified proctor density of the material to a depth of 12 inches below the grubbed surface. The moisture content should be kept within +/- 2% of the optimum moisture content used for obtaining the maximum dry density.

- Fill that may be needed to elevate the subgrade to the bottom of the sub-base can then be placed. It should be fairly clean sand with no more than 10 % passing the No. 200 sieve and should also be compacted to 95 percent modified proctor.

- The sub-base material could consist of on-site clean sand or imported fill but should be stabilized or have a Limerock Bearing Ratio (LBR) of at least 40 and compacted to 98 percent of its modified proctor. Recycled concrete should be permitted for stabilizing admixtures.

- For parking areas for light to moderate axial loads, the base could be 8 inches limerock compacted to 98 percent of its modified proctor, topped with not less than2 inches of Type S asphaltic concrete wearing course. Considering the heavy truck traffic, we recommend a minimum of 10 inches of base and 2.5 inches of asphaltic concrete for main driveways and loading/unloading areas. A minimum of 18 inches is recommended between the estimated seasonal high ground water elevation and the bottom of the limerock base.

Sod Farm Area

Considering the high ground water table, close to the existing ground surface, and at the request of Mr. Richard Potts, Jr., P.G. of **TCG**, the alternate spray field site was explored and evaluated for design purposes.

As previously described, the soils encountered within the proposed alternate spray field site consisted of fine sands to slightly silty fine sands to an approximate depth of 33.5 feet below existing ground surface, with occurrences of silty fine sand and hardpan from the existing ground surface to approximately 6 feet below existing ground surface. Firm clay was encountered in Boring No. SPT-2 at an approximate depth of 33.5 feet to the boring termination depth of 40 feet below existing ground surface.

Groundwater was encountered at depths ranging from approximately 3 to 5 feet below existing ground surface during our field exploration between July 11, 2008 and August 7, 2008. Groundwater levels will fluctuate with the amount of local rainfall and with site development and, therefore, may be different at other times. The seasonal high water table is estimated to be 0.5 to 1.5 feet below the natural ground surface.

The laboratory testing conducted within the alternate spray field site is presented on **Table 1** in the **Appendix.** A summary of the encountered groundwater levels, estimated seasonal high groundwater levels, and laboratory permeability results is presented on **Table 2** in the **Appendix.**

LIMITATIONS OF REPORT

This report has been prepared for the exclusive use of the County of Volusia and their consultants for specific application to the subject project. Our conclusions and recommendations have been prepared using generally accepted standards of geotechnical engineering practice in the area. No other warranty is expressed or implied. Nodarse & Associates, Inc. is not responsible for the conclusions, opinions, or recommendations of others based on these data.

The scope of services for this report did not include any environmental assessments or investigations for the possible presence of hazardous or toxic materials in the soil, groundwater or surface water within or in the general vicinity of the site studied. Any statements made in this report or shown on the test boring logs regarding unusual subsurface conditions and/or subsurface materials are strictly for the information of our client and may or may not be indicative of an environmental problem.

Our conclusions and recommendations are based on the design information furnished to us, data obtained from the previously described subsurface exploration and our past experience. They do not reflect variations in the subsurface conditions that are likely to exist between our borings and in unexplored areas of the site. These variations result from the inherent variability of the subsurface conditions in this geologic region. If such variations become apparent during construction, it will be necessary for us to re-evaluate our conclusions and recommendations based on on-site observation of the conditions.

If the overall design or locations of the proposed structures are changed, the recommendations contained in this report must not be considered valid unless our firm reviews the changes and our recommendations are modified or verified in writing. When the design is finalized, we should be given the opportunity to review the foundation plan and applicable portions of the project specifications. This review will allow us to check whether these documents are consistent with the intent of our recommendations.

CLOSURE

We trust that you will find this report to be responsive to your current needs. Should questions remain or if we may be of further service to assist you in performing testing and inspection services during construction, we would welcome the opportunity.

Sincerely

NODARSE & ASSOCIATES, INC.

Frank Sasso
Project Manager

ANDREW THOMAS SCHMID, PE LICENSE No. 56022 STATE OF FLORIDA PROFESSIONAL ENGINEER 9/23/08

Andrew T. Schmid, P.E.
Area Manager
Florida Registration No. 56022

Jay W. Casper, P.E.
Principal Geotechnical Engineer, VP
Florida Registration No. 36330

cc: Mr. Richard Potts, P.G., The Colinas Group, Inc.
Mr. Sam Levin, P.E., S2LI, Inc.
Rick Wilson, P.E., PRW Group, LLC

Appendix

Tables

TABLE 1
SUMMARY OF LABORATORY TESTING - SOD FARM AREA
TOMOKA LANDFILL - PROPOSED LEACHATE TREATMENT PLANT
VOLUSIA COUNTY, FLORIDA
N&A PROJECT NO. O03-G-001-111A

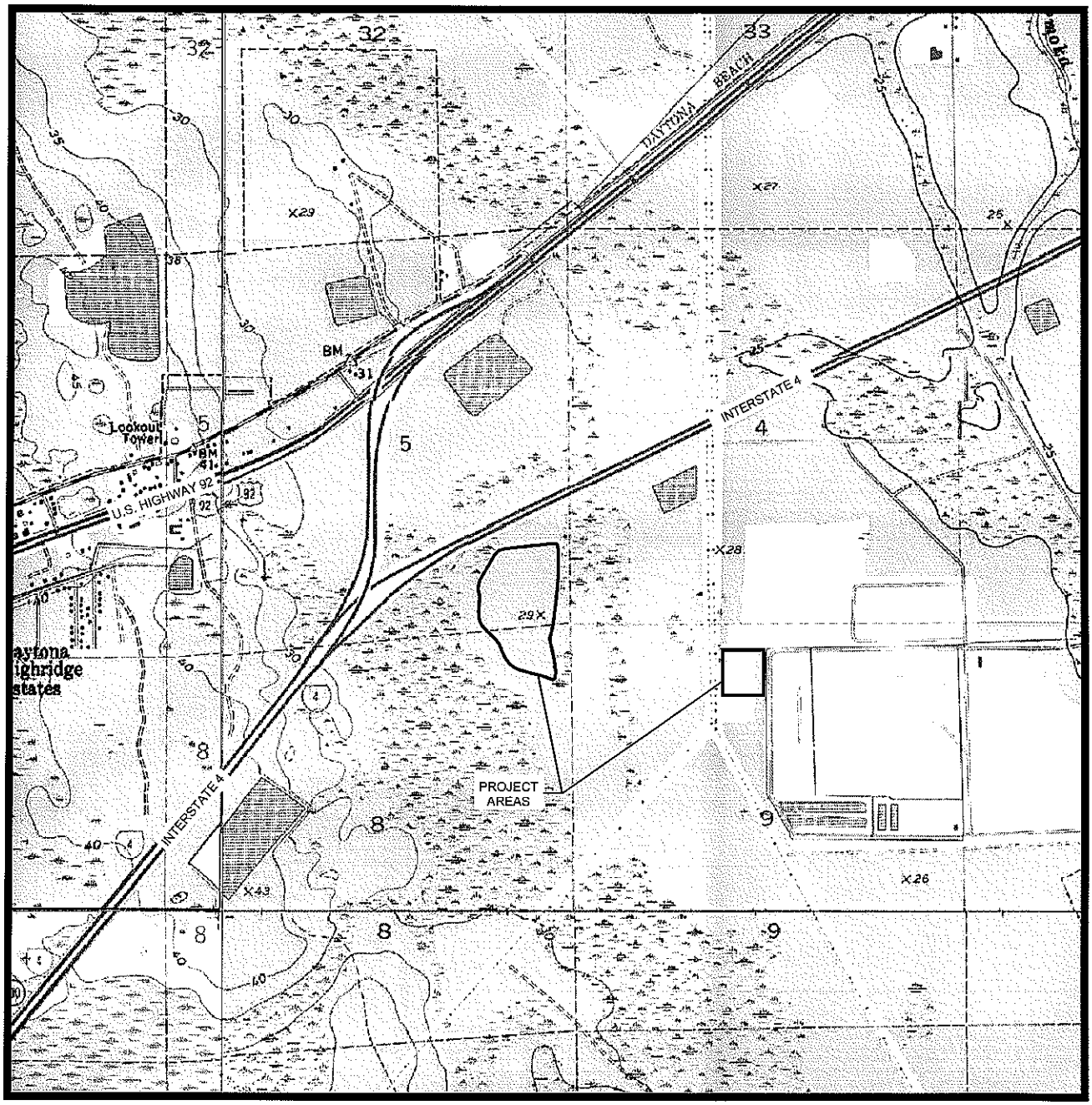
Stratum Number	Boring Number	Sample Depth (ft)	Passing Sieve Number (%) 10	40	60	100	200	Moisture Content (%)	Organic Content (%)	USCS Classification
1	SPT-2	4	100	97	75	21	5	16	-	(SP)
2	SPT-1	5.00	100	96	50	25	6	17	-	(SP-SM)
	SPT-2	13.50	100	100	99	71	6	29	-	(SP-SM)
	AB-1	2.00	100	96	84	27	9	12	-	(SP-SM)
	AB-2	10.00	100	95	82	23	9	24	-	(SP-SM)
	AB-7	8.00	100	96	84	25	9	21	-	(SP-SM)
	HA-2	5.50	-	-	-	-	8	30	-	(SP-SM)
	HA-3	5.00	-	-	-	-	9	16	-	(SP-SM)
3	AB-8	3.00	100	97	87	28	11	15	-	(SP-SM)
	HA-4	2.00	-	-	-	-	6	8	2	(SP-SM)
4	SPT-1	28.50	100	99	99	96	18	32	-	(SM)
	AB-2	0.00	100	96	85	44	27	14	-	(SM)
	AB-4	16.00	100	99	96	48	13	27	-	(SM)
	AB-6	4.00	100	97	86	32	15	21	-	(SM)
	AB-7	1.50	99	95	82	38	17	10		(SM)
	HA-1	6.00	-	-	-	-	13	16	-	(SM)
	HA-9	3.00	-	-	-	-	13	41	-	(SM)
	HA-12	0.50	-	-	-	-	16	9	-	(SM)
	HA-15	3.00	-	-	-	-	14	17	-	(SM)
	HA-16	1.00	-	-	-	-	18	13	-	(SM)
5	HA-7	2.20	-	-	-	-	17	20	10	(SP-SM)(SM)
	HA-14	3.50	-	-	-	-	-	25	10	(SP-SM)(SM)
6	SPT-2	33.50	100	100	100	98	65	58	-	(CH)

TABLE 2
SUMMARY OF GROUNDWATER DATA - SOD FARM AREA
TOMOKA LANDFILL - PROPOSED LEACHATE TREATMENT PLANT
VOLUSIA COUNTY, FLORIDA
N&A PROJECT NO. O03-G-001-111A

Boring No.	Encountered Ground Water Table Below Existing Ground Surface (ft.)	Estimated Seasonal High Ground Water Table Below Existing Ground Surface (ft.)	Measured Lab Permeability, Kv (ft./day)	Depth Tested (ft.)
HA-1	4.0	1.5	-	-
HA-2	4.0	1.5	-	-
HA-3	3.9	1.5	-	-
HA-4	4.0	1.5	-	-
HA-5	3.5	1.0	-	-
HA-6	3.5	1.0	-	-
HA-7	4.0	1.5	-	-
HA-8	3.8	1.0	-	-
HA-9	4.5	1.5	-	-
HA-10	4.0	1.5	-	-
HA-11	4.0	1.5	-	-
HA-12	4.5	1.5	-	-
HA-13	4.0	1.5	-	-
HA-14	4.0	1.5	-	-
HA-15	3.8	1.5	-	-
HA-16	4.0	1.5	-	-
SPT-1	4.4	1.5	-	-
SPT-2	5.0	1.5	-	-
AB-1	4.0	1.5	-	-
AB-2	4.0	1.5	-	-
AB-3	3.4	1.0	21	2.5
AB-4	3.4	1.0	-	-
AB-5	3.0	0.5	6	2.5
AB-6	3.4	1.0	29	3.0
AB-7	4.0	1.5	-	-
AB-8	4.0	1.5	3	2.5

Notes: 1. All encountered and estimated ground water levels are from the top of the natural ground surface. No survey information was available for review at the time of writing.
2. Measured laboratory permeability (Kv) has a factor of safety of 2.

Figures



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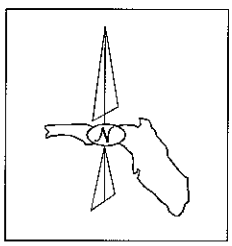
TOWNSHIP: 16 SOUTH
RANGE: 32 EAST
SCALE: 1" = 2000'



U.S.G.S. QUADRANGLE MAP
TOMOKA LANDFILL
PROPOSED LEACHATE TREATMENT PLANT
VOLUSIA COUNTY, FLORIDA

DRAWN: MG	NODARSE & ASSOCIATES, INC.	
CHKD: FS		
SCALE: 1"=2000'		
DATE: 8-1-08	PROJ. NO: 003-G-0001-111A	FIGURE: 1

Aug18, 2008-10:35am R:\Ormond-Office\2003-Projects-Ormond\0036001-111\cad\0036001-111-Figure-1.dwg

REFERENCE: U.S.D.A. VOLUSIA COUNTY, FLORIDA SOIL SURVEY

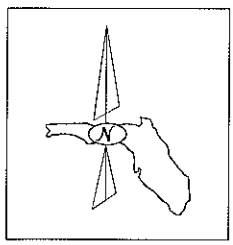
ISSUED: FEBRUARY 1980

SECTIONS: 4, 5 AND 8

TOWNSHIP: 16 SOUTH

RANGE: 32 EAST

SCALE: 1" = 2000'



SOIL LEGEND

31 MALABAR FINE SAND

49 POMONA FINE SAND

U.S.D.A. SOILS MAP

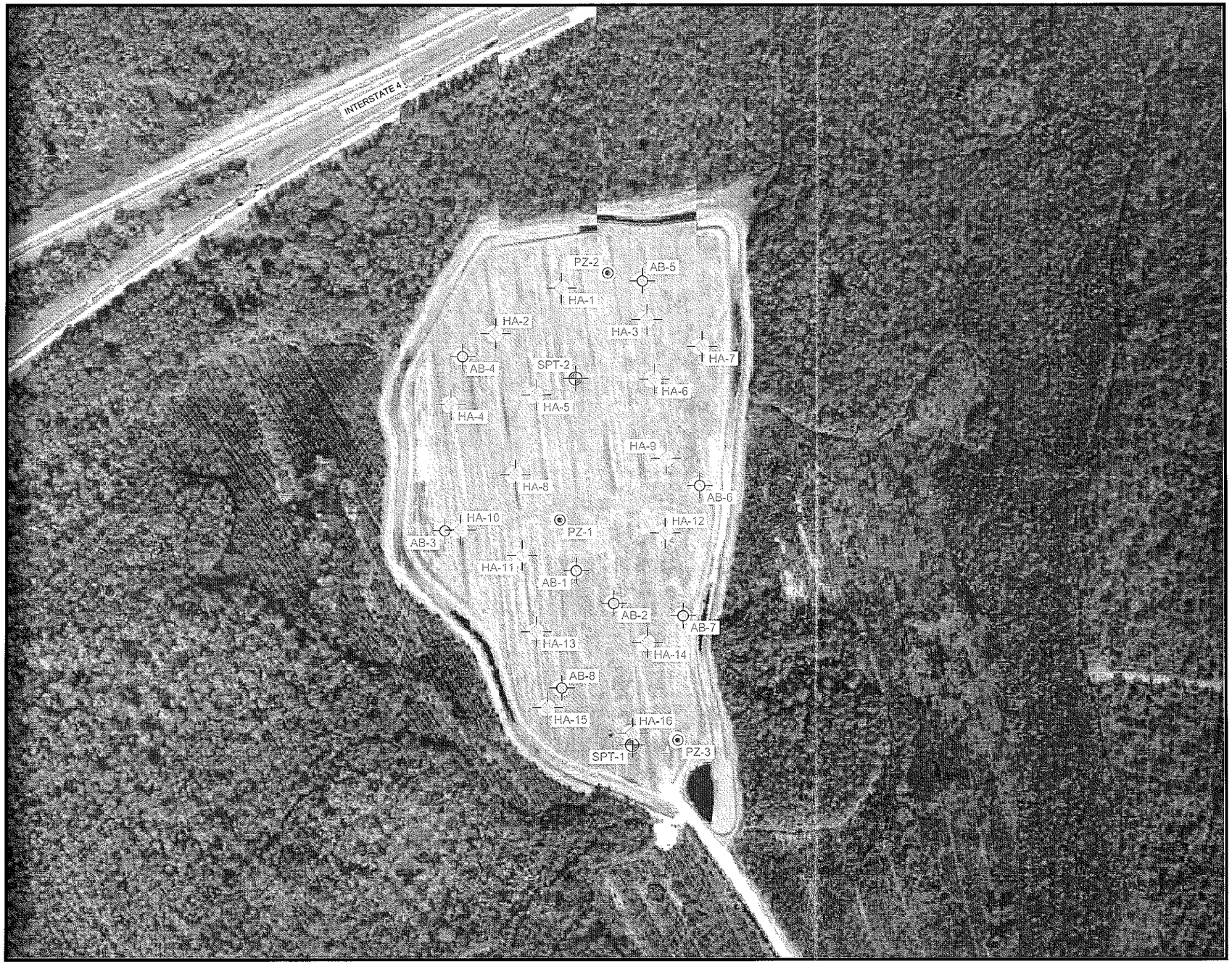
TOMOKA LANDFILL

PROPOSED LEACHATE TREATMENT PLANT

VOLUSIA COUNTY, FLORIDA

DRAWN: MG	NODARSE & ASSOCIATES, INC.	
CHKD: FS		
SCALE: 1"=2000'		
DATE: 8-15-08	PROJ. NO: 003-G-0001-111A	FIGURE: 2

Aug 18, 2008 - 10:35am R:\Ormond-Office\2003-Projects-Ormond\0036001-111\cad\0036001-111-Figure-2.dwg



HORIZONTAL SCALE IN FEET

0 150 300

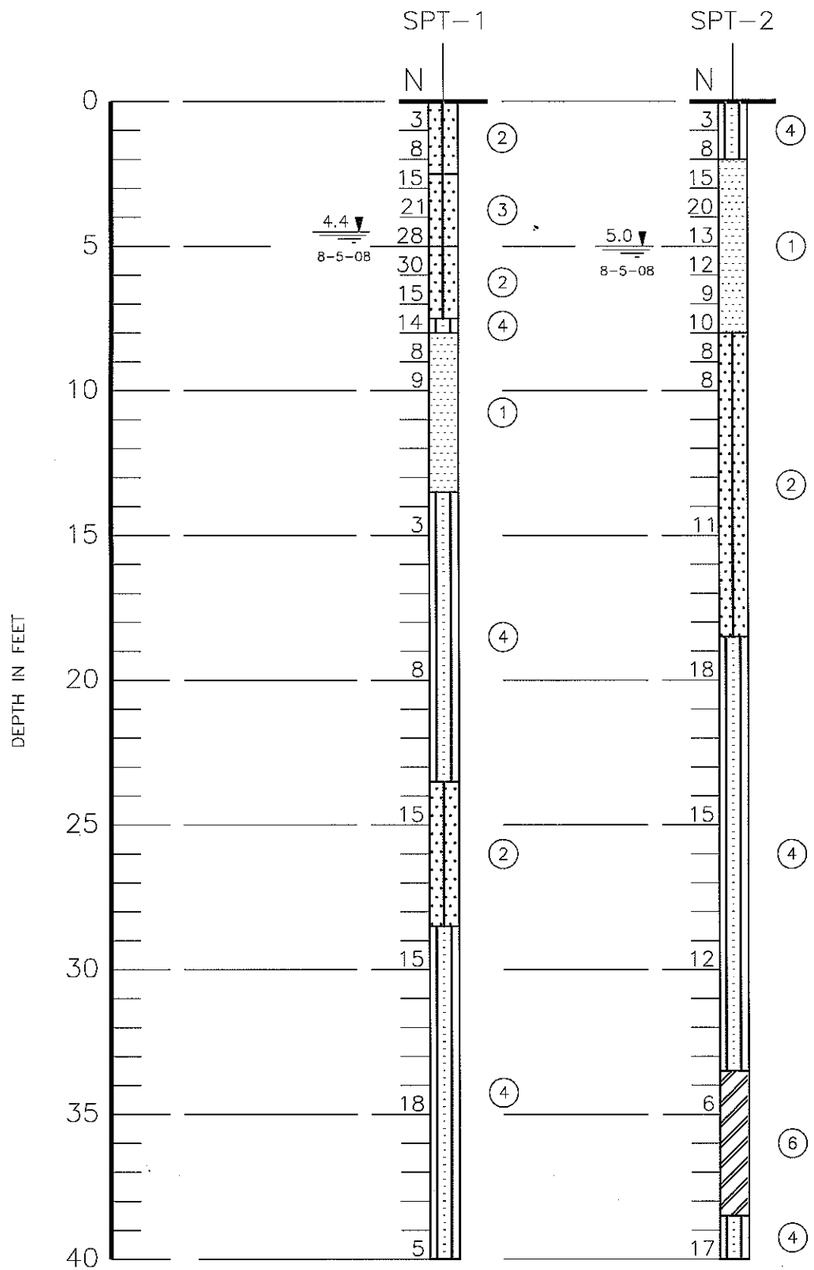
LEGEND

- APPROXIMATE LOCATION OF STANDARD PENETRATION TEST BORING
- APPROXIMATE LOCATION OF MACHINE AUGER BORING
- APPROXIMATE LOCATION OF HAND AUGER BORING
- APPROXIMATE LOCATION OF PIEZOMETER

BORING LOCATION PLAN
TOMOKA LANDFILL
PROPOSED LEACHATE TREATMENT PLANT
VOLUSIA COUNTY, FLORIDA

DRAWN: MG	NODARSE & ASSOCIATES, INC.	
CHKD: FS		
SCALE: NOTED		
DATE: 8-15-08	PROJ. NO: 003-G-001-111A	FIGURE: 3

Aug26, 2008 - 10:02am R:\Ormond-Office\2003-Projects-Ormond\003G001-111\cad\003G001-111-Figure-3.dwg

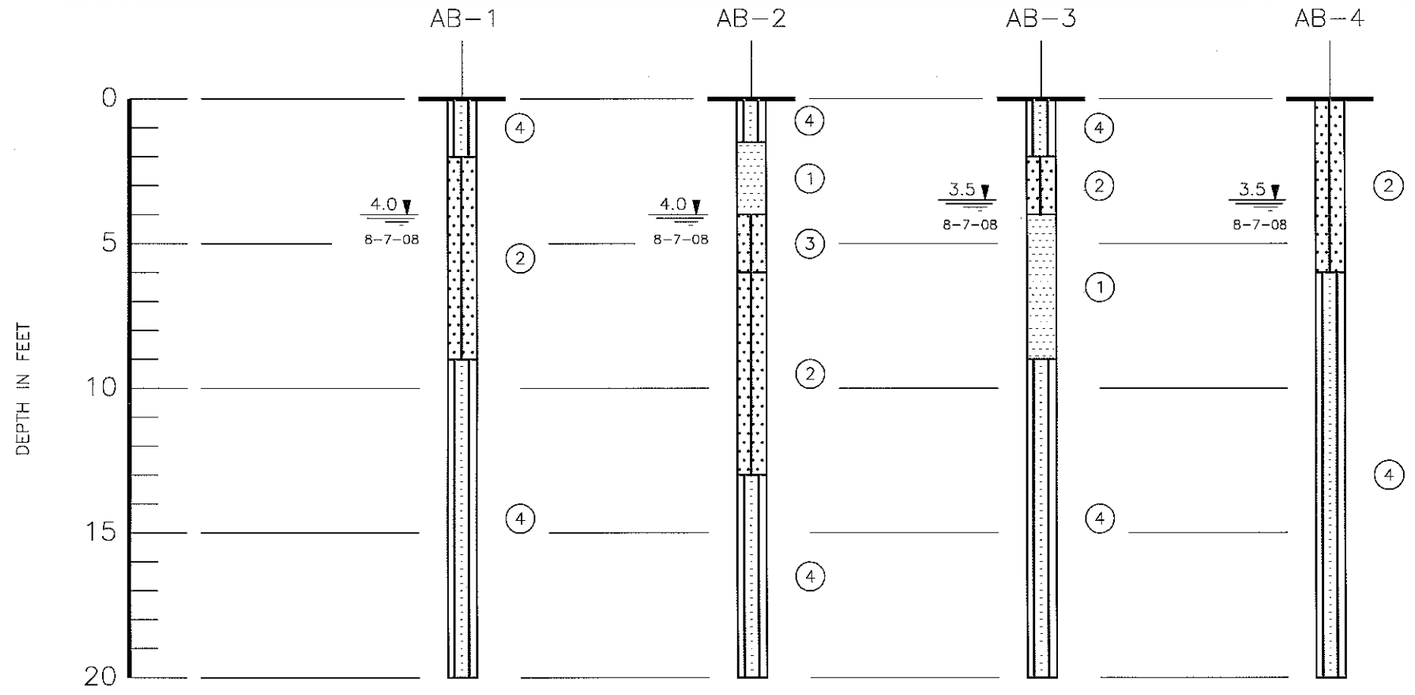


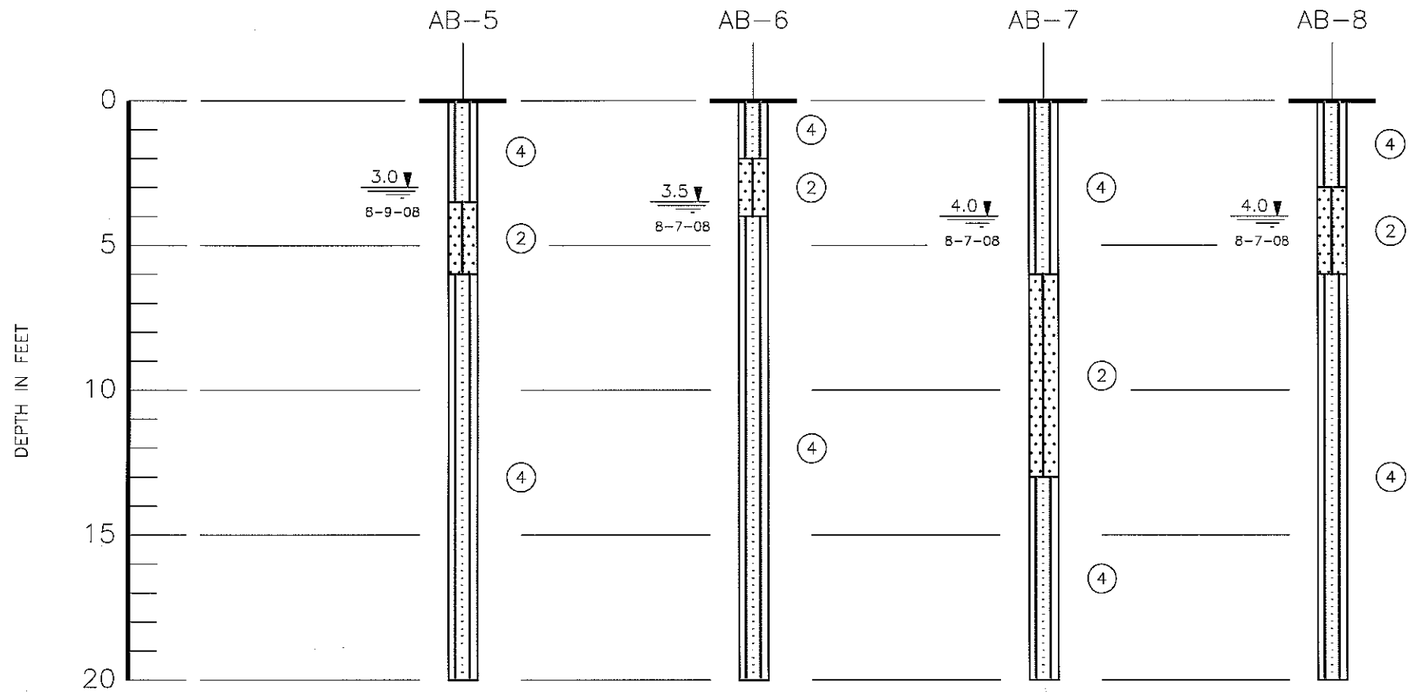
LEGEND

①	LIGHT GRAY TO DARK BROWN FINE SAND, TRACE ORGANICS (SP)
②	LIGHT GRAY TO DARK REDDISH–BROWN FINE SAND TO SLIGHTLY SILTY FINE SAND (SP–SM)
③	GRAY TO DARK BROWN FINE SAND TO SLIGHTLY SILTY FINE SAND, TRACE ORGANICS (SP–SM)
④	VERY LIGHT GRAY TO DARK REDDISH–BROWN SILTY TO SLIGHTLY CLAYEY FINE SAND (SM)
⑤	BROWN TO DARK REDDISH–BROWN SLIGHTLY SILTY FINE SAND TO SILTY FINE SAND WITH ORGANICALLY STAINED AND WEAKLY CEMENTED SAND FRAGMENTS (HARDPAN) (SP–SM)(SM)
⑥	GREENISH–GRAY CLAY (CH)
⑦	DARK BROWN SLIGHTLY SILTY FINE SAND WITH ORGANICS (SP–SM)
(SP)	UNIFIED SOIL CLASSIFICATION GROUP SYMBOL AS DETERMINED BY VISUAL EXAMINATION
6.0 ▼ 7–11–08	DEPTH TO GROUNDWATER LEVEL IN FEET WITH DATE OF READING
N	STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT
W	NATURAL MOISTURE CONTENT (%)
–200	FINES PASSING No. 200 SIEVE (%)
OC	ORGANIC CONTENT (%)
LL	LIQUID LIMIT (%)
PI	PLASTICITY INDEX

SOIL BORING PROFILES
TOMOKA LANDFILL
PROPOSED LEACHATE TREATMENT PLANT
VOLUSIA COUNTY, FLORIDA

DRAWN: MG	NODARSE & ASSOCIATES, INC.	
CHKD: FS		
SCALE: NOTED		
DATE: 8–15–08	PROJ. NO: 003–G–001–111A	FIGURE: 4





LEGEND

(1)	LIGHT GRAY TO DARK BROWN FINE SAND, TRACE ORGANICS (SP)
(2)	LIGHT GRAY TO DARK REDDISH-BROWN FINE SAND TO SLIGHTLY SILTY FINE SAND (SP-SM)
(3)	GRAY TO DARK BROWN FINE SAND TO SLIGHTLY SILTY FINE SAND, TRACE ORGANICS (SP-SM)
(4)	VERY LIGHT GRAY TO DARK REDDISH-BROWN SILTY TO SLIGHTLY CLAYEY FINE SAND (SM)
(5)	BROWN TO DARK REDDISH-BROWN SLIGHTLY SILTY FINE SAND TO SILTY FINE SAND WITH ORGANICALLY STAINED AND WEAKLY CEMENTED SAND FRAGMENTS (HARDPAN) (SP-SM)(SM)
(6)	GREENISH-GRAY CLAY (CH)
(7)	DARK BROWN SLIGHTLY SILTY FINE SAND WITH ORGANICS (SP-SM)
(SP)	UNIFIED SOIL CLASSIFICATION GROUP SYMBOL AS DETERMINED BY VISUAL EXAMINATION
6.0 ▼ 7-11-08	DEPTH TO GROUNDWATER LEVEL IN FEET WITH DATE OF READING
N	STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT
W	NATURAL MOISTURE CONTENT (%)
-200	FINES PASSING No. 200 SIEVE (%)
OC	ORGANIC CONTENT (%)
LL	LIQUID LIMIT (%)
PI	PLASTICITY INDEX

SOIL BORING PROFILES
TOMOKA LANDFILL
PROPOSED LEACHATE TREATMENT PLANT
VOLUSIA COUNTY, FLORIDA

DRAWN: MG	NODARSE & ASSOCIATES, INC.	
CHKD: FS		
SCALE: NOTED		
DATE: 8-15-08	PROJ. NO: 003-G-001-111A	FIGURE: 5

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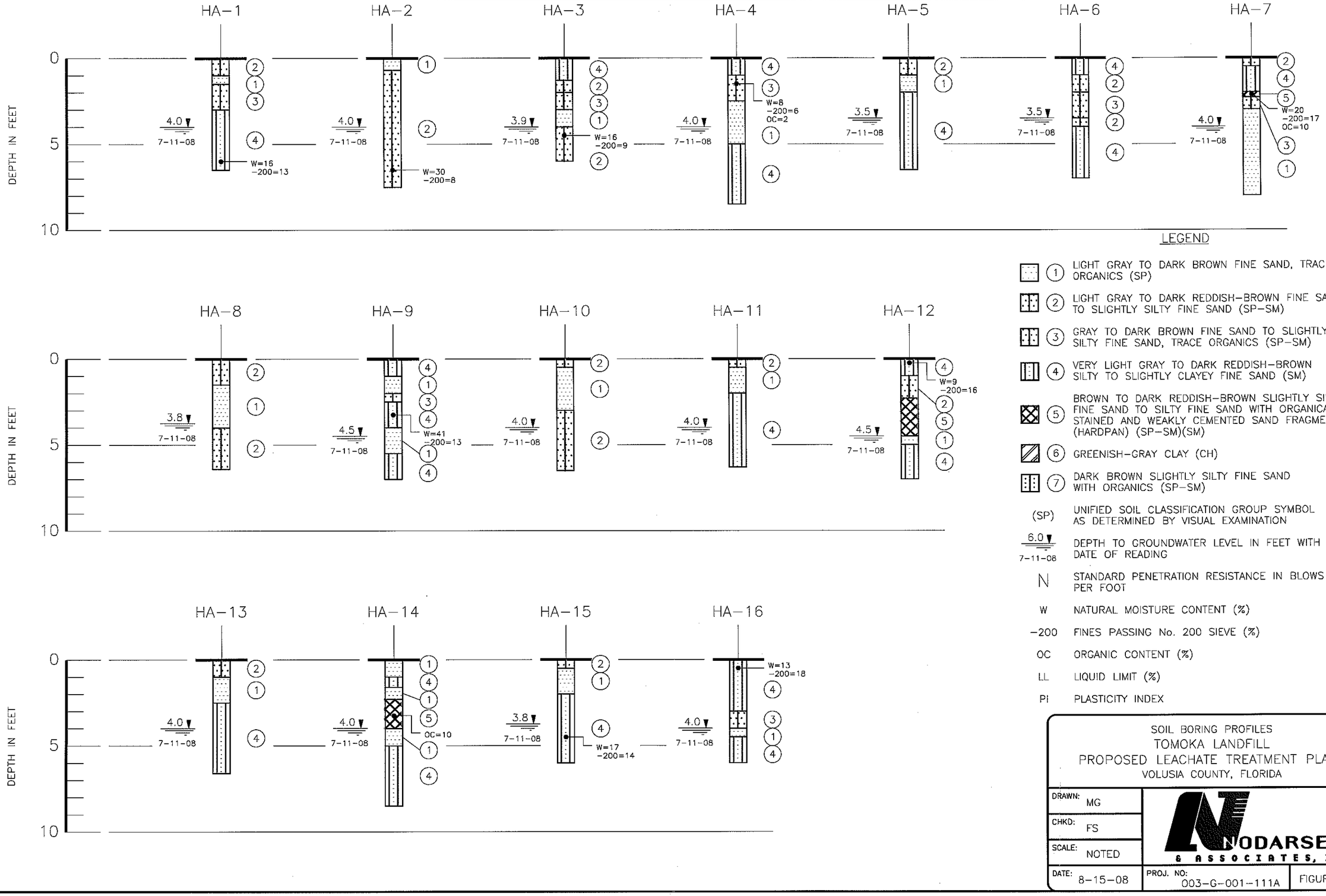

LEGEND

1. LIGHT GRAY TO DARK BROWN FINE SAND, TRACE ORGANICS (SP)
2. LIGHT GRAY TO DARK REDDISH-BROWN FINE SAND TO SLIGHTLY SILTY FINE SAND (SP-SM)
3. GRAY TO DARK BROWN FINE SAND TO SLIGHTLY SILTY FINE SAND, TRACE ORGANICS (SP-SM)
4. VERY LIGHT GRAY TO DARK REDDISH-BROWN SILTY TO SLIGHTLY CLAYEY FINE SAND (SM)
5. BROWN TO DARK REDDISH-BROWN SLIGHTLY SILTY FINE SAND TO SILTY FINE SAND WITH ORGANICALLY STAINED AND WEAKLY CEMENTED SAND FRAGMENTS (HARDPAN) (SP-SM)(SM)
6. GREENISH-GRAY CLAY (CH)
7. DARK BROWN SLIGHTLY SILTY FINE SAND WITH ORGANICS (SP-SM)

(SP) UNIFIED SOIL CLASSIFICATION GROUP SYMBOL AS DETERMINED BY VISUAL EXAMINATION

6.0 / 7-11-08 DEPTH TO GROUNDWATER LEVEL IN FEET WITH DATE OF READING

N STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT

W NATURAL MOISTURE CONTENT (%)

-200 FINES PASSING No. 200 SIEVE (%)

OC ORGANIC CONTENT (%)

LL LIQUID LIMIT (%)

PI PLASTICITY INDEX

SOIL BORING PROFILES
TOMOKA LANDFILL
PROPOSED LEACHATE TREATMENT PLANT
VOLUSIA COUNTY, FLORIDA

DRAWN: MG	NODARSE & ASSOCIATES, INC.	
CHKD: FS		
SCALE: NOTED		
DATE: 8-15-08	PROJ. NO: 003-G-001-111A	FIGURE: 6

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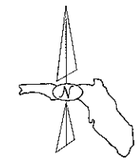

HORIZONTAL SCALE IN FEET

0 100 200

LEGEND

APPROXIMATE LOCATION OF STANDARD PENETRATION TEST BORING

BORING LOCATION PLAN
TOMOKA LANDFILL
PROPOSED LEACHATE TREATMENT PLANT
VOLUSIA COUNTY, FLORIDA

DRAWN: MG	NODARSE & ASSOCIATES, INC.	
CHKD: FS		
SCALE: NOTED		
DATE: 8-15-08	PROJ. NO: 003-G-001-111A	FIGURE: 7

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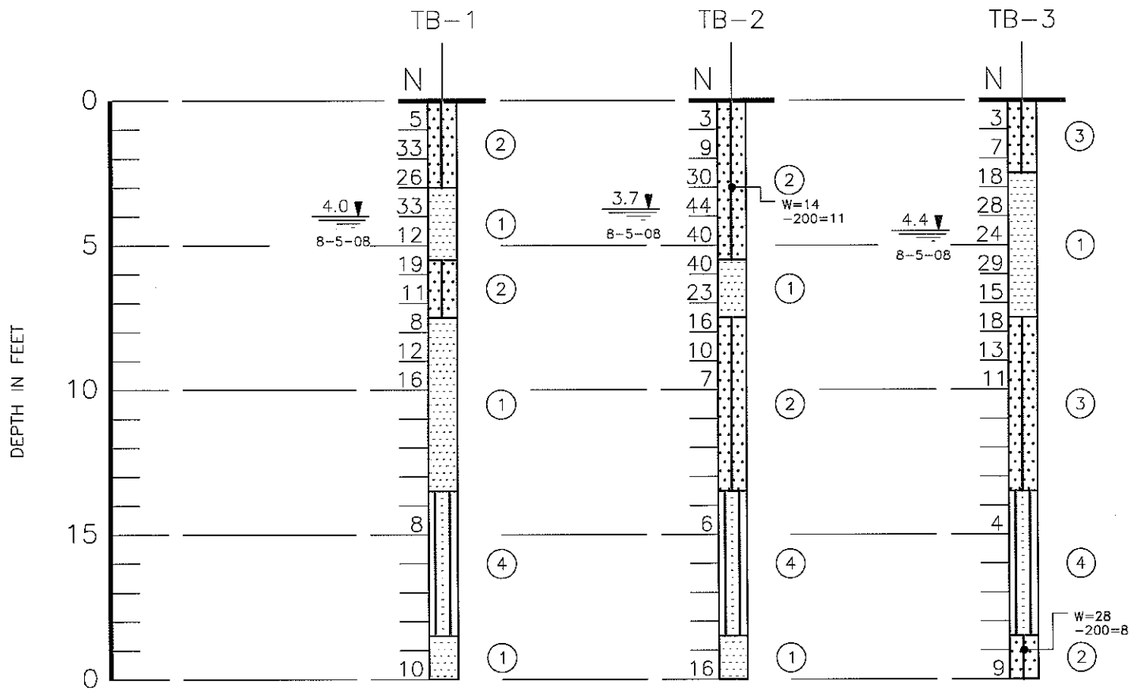

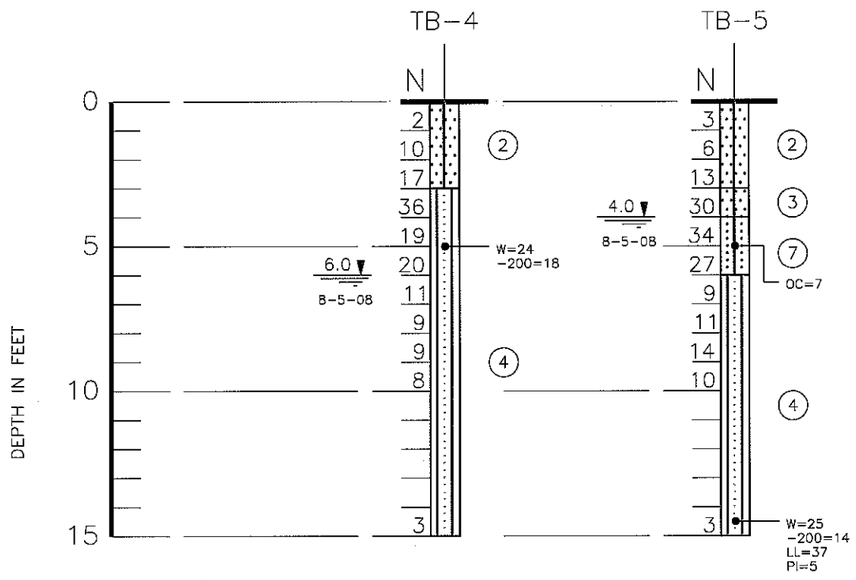

LEGEND

①	LIGHT GRAY TO DARK BROWN FINE SAND, TRACE ORGANICS (SP)
②	LIGHT GRAY TO DARK REDDISH-BROWN FINE SAND TO SLIGHTLY SILTY FINE SAND (SP-SM)
③	GRAY TO DARK BROWN FINE SAND TO SLIGHTLY SILTY FINE SAND, TRACE ORGANICS (SP-SM)
④	VERY LIGHT GRAY TO DARK REDDISH-BROWN SILTY TO SLIGHTLY CLAYEY FINE SAND (SM)
⑤	BROWN TO DARK REDDISH-BROWN SLIGHTLY SILTY FINE SAND TO SILTY FINE SAND WITH ORGANICALLY STAINED AND WEAKLY CEMENTED SAND FRAGMENTS (HARDPAN) (SP-SM)(SM)
⑥	GREENISH-GRAY CLAY (CH)
⑦	DARK BROWN SLIGHTLY SILTY FINE SAND WITH ORGANICS (SP-SM)
(SP)	UNIFIED SOIL CLASSIFICATION GROUP SYMBOL AS DETERMINED BY VISUAL EXAMINATION
6.0 ▼ 7-11-08	DEPTH TO GROUNDWATER LEVEL IN FEET WITH DATE OF READING
N	STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT
W	NATURAL MOISTURE CONTENT (%)
-200	FINES PASSING No. 200 SIEVE (%)
OC	ORGANIC CONTENT (%)
LL	LIQUID LIMIT (%)
PI	PLASTICITY INDEX

SOIL BORING PROFILES
TOMOKA LANDFILL
PROPOSED LEACHATE TREATMENT PLANT
VOLUSIA COUNTY, FLORIDA

DRAWN: MG	NODARSE & ASSOCIATES, INC.	
CHKD: FS		
SCALE: NOTED		
DATE: 8-15-08	PROJ. NO: 003-G-001-111A	FIGURE: 8

RECOMMENDED GROUNDWATER MONITORING PLAN
VOLUSIA COUNTY TOMOKA FARMS ROAD SWMF
SOD FARM SPRAYFIELD

The groundwater monitoring plan (GWMP) recommended for the Volusia County Tomoka Farms Road Solid Waste Management Facility (TFRSWMF) treated leachate sprayfield is developed based on results of exploratory test borings drilled within the sprayfield application area, apparent hydrogeologic conditions derived from these data and measurement of groundwater heads and apparent flow direction within the site boundaries. The GWMP includes:

1. Provisions for installation of monitoring wells to selected depths to account for potential vertical and horizontal movement of applied effluent beneath the sprayfield;

2. Specific location and design characteristics of monitoring wells;

3. List of field and laboratory analytical monitoring parameters; and,

4. Facility sampling and reporting frequency.

Groundwater Monitoring Wells

The locations of proposed monitoring wells comprising the GWMP for the sprayfield are shown on Figure 1. A total of six (6) wells are recommended.

Monitoring wells are divided into two classes: One set of three (3) wells is designed to intercept and monitor groundwater in the uppermost portion of the water table (surficial) aquifer occurring in the vicinity of the site. These wells are designated as SFU (Sod Farm Upper Zone) on Figure 1. Three (3) deeper wells are to be paired with the upper zone wells, indicated on Figure 1 as SFL-series wells.

Upper-zone monitoring wells will be screened from 3 to 13 feet below land surface (bls) to intercept groundwater in the uppermost portion of the receiving aquifer and to allow for sampling at and near the water table surface throughout wet and dry seasons of the average year. Lower-zone wells will be screened from 20 to 30 feet bls to intercept groundwater in the lower portion of the receiving aquifer, accounting for the potential density differences between applied effluent and native groundwater.

ATTACHMENT 2

Revised Operation Plan

OPERATION PLAN
TOMOKA FARMS ROAD LANDFILL
VOLUSIA COUNTY, FLORIDA

Prepared for:

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

Updated by:

S2L, Incorporated
531 Versailles Drive, Suite 202
Maitland, Florida 32751
407-475-9163

Revised October 2008

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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 an 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/Page No. 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 2.8
d. Weighing incoming waste;	Section 2.9
e. Vehicle traffic control and unloading;	Section 2.9
f. Method and sequence of filling waste;	Section 2.9
g. Waste compaction and application of cover;	Section 2.10
h. Operations of gas, leachate, and stormwater controls;	Section 2.11
i. Water quality monitoring;	Section 2.12
j. Maintaining and cleaning the leachate collection system.	Section 2.12

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 7.1
c. Slopes of cell working face and side grades above land surface, planned lift depths during operation;	Section 7.1
d. Maximum width of working face;	Section 7.1
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 7.1
g. Procedures for applying intermediate cover;	Section 7.2
h. Time frames for applying final cover;	Section 7.2
i. Procedures for controlling scavenging and salvaging;	Section 7.2
j. Description of litter policing methods;	Section 7.2
k. Erosion control procedures.	Section 7.2
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
b. Operation and maintenance of leachate collection and removal system, and treatment as required;	Section 8.1
c. Procedures for managing leachate if it becomes regulated as a hazardous waste;	Section 8.2
d. Agreements for off-site discharge and treatment of leachate;	Section 8.2
e. Contingency plan for managing leachate during emergencies or equipment problems;	Section 8.3
f. Procedures for recording quantities of leachate generated in gal/day and including this in the operating record;	Section 8.3
g. Procedures for comparing precipitation experienced at the landfill with leachate generation rates and including this information in the operating record;	Section 8.3
h. Procedures for water pressure cleaning or video inspecting leachate collection systems.	Section 8.3
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.)	
a. Sufficient equipment for excavating, spreading, compacting and covering waste;	Section 11.1
b. Reserve equipment or arrangements to obtain additional equipment within 24 hours of breakdown;	Section 11.1
c. Communications equipment;	Section 11.1
d. Dust control methods;	Section 11.1
e. Fire protection capabilities and procedures for notifying local fire department authorities in emergencies;	Section 11.1
f. litter control devices;	Section 11.2
g. Signs indicating operating authority, traffic flow, hours of operation, disposal restrictions.	Section 11.2

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 12
13. Additional record keeping and reporting requirements: (62-701.500(13), F.A.C.)	
a. Records used for developing permit applications and supplemental information maintained for the design period of the landfill;	Section 13.1
b. Monitoring information, calibration and maintenance records, copies of reports required by permit maintained for at least 10 years;	Section 13.1
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 13.1
d. procedures for archiving and retrieving records which are more than five years old.	Section 13.1

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 currently include recirculation, evaporation, and transportation to a Publicly Owned Treatment Works (POTW). Upon initiation of operations of the TFRL leachate treatment facility, leachate shall be treated on site. Treated effluent will be delivered to either of two dedicated spray fields, or used for dust control and/or side slope irrigation. Recirculation of untreated leachate 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.

FIGURE 1-1 TOMOKA FARMS ROAD LANDFILL SITE PLAN

SECTION 2 (REVISED)

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.)

Training Program

Volusia County Solid Waste Division trains employees who are landfill operators and spotters by requiring them to attend a pre-paid training course conducted by the University of Florida TREEO Center who are certified by the State of Florida to be a qualified third party continuing education institution.

Operators at the Tomoka Farms Road Landfill participate in at least 24 hours of initial training. Every three (3) years landfill operators participate in continuing education courses totaling 16 hours. Operator training will consist of courses conducted by the University of Florida TREEO Center. 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. The Operators who attend the continuing education courses at the TREEO or other approved providers receive a Certificate of Completion.

In addition, spotters participate in 8 hours of initial training that include spotting at Construction and Demolition Sites, Landfills, and transfer Stations and/or Waste Screening and Identification for Landfill Operators and Spotters conducted by the University of Florida TREEO Center. Every three (3) years Spotters participate in continuing education courses totaling four hours. The spotters who attend the training courses at TREEO or other approved providers receive a Certificate of Completion.

The County typically uses 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.

Training Administration

The County's Environmental Compliance Coordinator (Environmental Specialist III) has been designated as the person in charge of the administrating the training program to ensure the operators and spotters are registered for the training courses and obtaining their certifications and renewals prior to expiration.

It is acknowledged that all training courses for the County Operators ad Spotters, whether public or in-house, shall be approved by the Department in accordance with Section 403.716, F.S., and that a third party must administer any examination required by this sub-section for an in-house operator-training program.

It is acknowledged that any other in-house operator-training program must be administered by a trained operator, and that the Training Plan, along with records documenting how the Training Plan is being implemented, shall be kept at the Facility at all times and be made available for inspection by Department staff.

Certified Operators and Spotters

The following list provides the current landfill personnel whom are certified for landfill operations and spotters. This list is continuously updated by the Environmental Compliance Coordinator.

CERTIFICATION INFORMATION

VOLUSIA COUNTY SOLID WASTE DIVISION

NAME	POSITION	ASSIGNED TO	TRACK	EXP Date	Con Ed Hours			
					Have	Bal Need	Req'd	Have for next period
			LANDFILL OPERATOR	02/06/09	47	0	16	0
			TRANSFER STA OPER	02/28/09	16	0	16	0
			SPOTTER	EXPIRED	0	0	4	0
BEY, MARTIN	LANDFILL SUPERVISOR	TOMOKA	C&D LANDFILL OPER	02/06/09	0	16	16	0
			STANDARD LANDFILL	11/17/08	0	16	16	0
CORBIN, MICHAEL	EO II	TOMOKA	C&D LANDFILL OPER	11/17/08	0	16	16	0
			STANDARD LANDFILL	12/07/09	0	16	16	0
CERNAI, MICHEL	EO II	TOMOKA	SPOTTER	08/06/09	0	4	4	0
DANIELS, DUANE	EO III	TOMOKA	SPOTTER	08/06/09	0	4	4	0
DAUGHERTY, MERRELL	EO III	TOMOKA	SPOTTER	03/20/08	0	4	4	0
DOUGLAS, RICHARD WAYNE	EO III	TOMOKA	SPOTTER	08/05/09	0	4	4	0
DYKES, BARBARA	LANDFILL ATTENDANT	TOMOKA	SPOTTER	11/17/08		4	4	0
			STANDARD LANDFILL	11/18/08				
ELLIS, CHRIS	SUPERVISOR III	TOMOKA	C&D LANDFILL OPER	11/18/08		16	16	0
FAIRCLOTH, JEFFERY	EO III	TOMOKA	SPOTTER	08/06/09	0	4	4	0
GUILLO, THOMAS	EO II	TOMOKA	SPOTTER	11/17/08	0	0	4	0
HARGREAVE, JOSEPH	EO III	TOMOKA	SPOTTER	11/17/08	0	0	4	0
HELFRICH, JEFFREY	EO III	TOMOKA	SPOTTER	08/05/09	0	4	4	0
			SPOTTER	11/17/11	0	4	4	0
HUBBARD, RANDY	EO III	TOMOKA	STANDARD LANDFILL	11/18/09	0	16	16	0
			TRANSFER STA OPER	11/18/06	4	4	8	4
JONES, JEFFREY S.	EO III	TOMOKA	MRF OPER	11/18/06	4	4	8	4
KELLIHER, BRUCE	EO III	TOMOKA	SPOTTER	08/06/09	0	4	4	
LOPEZ NIEVES, VICTOR M	EO III	TOMOKA	SPOTTER	08/06/09	0	4	4	
MCCONNELL, MICHAEL	EO III	TOMOKA	SPOTTER	03/20/08	8	0	4	
PALMATIER, RONNEY GENE	SUPERVISOR IV	TOMOKA	STANDARD LANDFILL	11/17/08			16	
PALMER, VICTOR LOUIE	EO III	TOMOKA	SPOTTER	08/05/06	0	4	4	
POWERS, GREGORY	EO III	TOMOKA	STANDARD LANDFILL	05/18/07	4	12	16	
			STANDARD LANDFILL	11/16/07	0	16	16	
QUINN, CHARLES	ENVIRONMENTAL TECH	TOMOKA	TRANSFER STA OPER	07/21/09	0	8	8	
SOUSA, MICHAEL	EO III	TOMOKA	SPOTTER	03/20/08	0	4	4	
STIRK, JENNIFER	ENVIRONMENTAL SPEC III	TOMOKA	STANDARD LANDFILL	11/17/08			16	
STONE, PETER J	EO III	TOMOKA	SPOTTER	08/05/06	4	0	4	
WILLIAMS, DENNIS	EO III	TOMOKA	SPOTTER	08/06/06	4	0	4	
WOULARD, KORY	EO III	TOMOKA	SPOTTER	08/06/09	0	4	4	

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
Overall County Solid Waste Operations Responsibility	Solid Waste Division Director
Landfill Operations and Maintenance	Landfill Supervisor
Permitting Requirements	Environmental Compliance Director
Water Quality and Leachate Testing	Environmental Compliance Director

The Landfill Supervisor has overall responsibility for the operation and maintenance of the landfill solid waste receiving, processing, and disposal activities. The Landfill Supervisor is responsible for the day-to-day implementation of the operations plan and, along with the Solid Waste Division Director, is responsible for environmentally safe operations in accordance with the state and federal regulations. The Environmental Specialist III is responsible for compliance with permit conditions and reporting requirements.

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 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 below. This table will be updated as needed and an up-to-date version will be posted at the landfill operations office.

EMERGENCY TELEPHONE NUMBERS

Organization	Phone Number
Tomoka Farms Road Landfill On-site Phone:	(386) 947-2952
Primary Emergency Response:	911

Organization	Phone Number
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
Environmental Specialist: Cell: Home: Jennifer Stirk Office:	(386) 527-6336 (386) 960-6670 (386) 947-2952
Solid Waste Services Director: Cell: Leonard Marion Home: Office:	(386) 527-6332 (407) 957-6097 (386) 943-7889
Florida Department of Environmental Protection Main Reception: Solid Waste Section:	(407) 894-7555 (407) 893-3382
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.

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 of 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, tankage within the leachate treatment facility (once the facility is placed in service), and the gas system will be inspected to ensure that adequate storage capacity is 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 the 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 (and tankage within the leachate treatment system, once it

is placed in service) 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 (5) days of the fire explaining the cause of the fire, remedial actions taken, and measures 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. Vehicles 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. Sequencing diagrams for the Class I landfill are included as Figure 2-1, 2-2, and 2-3.

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 2-4.

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 a 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 day's 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 five 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 topsoil material with surface vegetation
- 18-inch soil layer
- Composite drainage net layer (geosynthetic filter fabric with drainage net)
- 40-mil textured geomembrane

An interim barrier layer cover system, approved by the Department includes installation of 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 currently pumped from the leachate sumps in the landfill to the two leachate storage and evaporation ponds located west of the disposal cell. In the future, leachate will be pumped to the leachate treatment facility. Once the leachate treatment facility has been placed in service, the function of the existing leachate storage ponds will change. One of the two leachate storage ponds will be used to provide additional raw leachate storage capacity, should the quantities of leachate delivered by the leachate collection system temporarily exceed plant capacity. The second leachate storage pond shall be used for the storage of leachate treatment plant effluent, should the effluent quantities temporarily exceed the capacity of the spray fields, in conjunction with requirements for dust control and sideslope irrigation. Please refer to Chapter 4 of the Preliminary Design Report (PDR), provided with the minor permit modification application for the leachate treatment facility submitted to FDEP in

August, 2008, for a process flow diagram that details the future management of leachate flows. Additional information is also 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 runoff 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 three (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. A sequencing batch reactor (SBR) to be placed in service in 2010 will provide on-site leachate treatment in the future.

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.

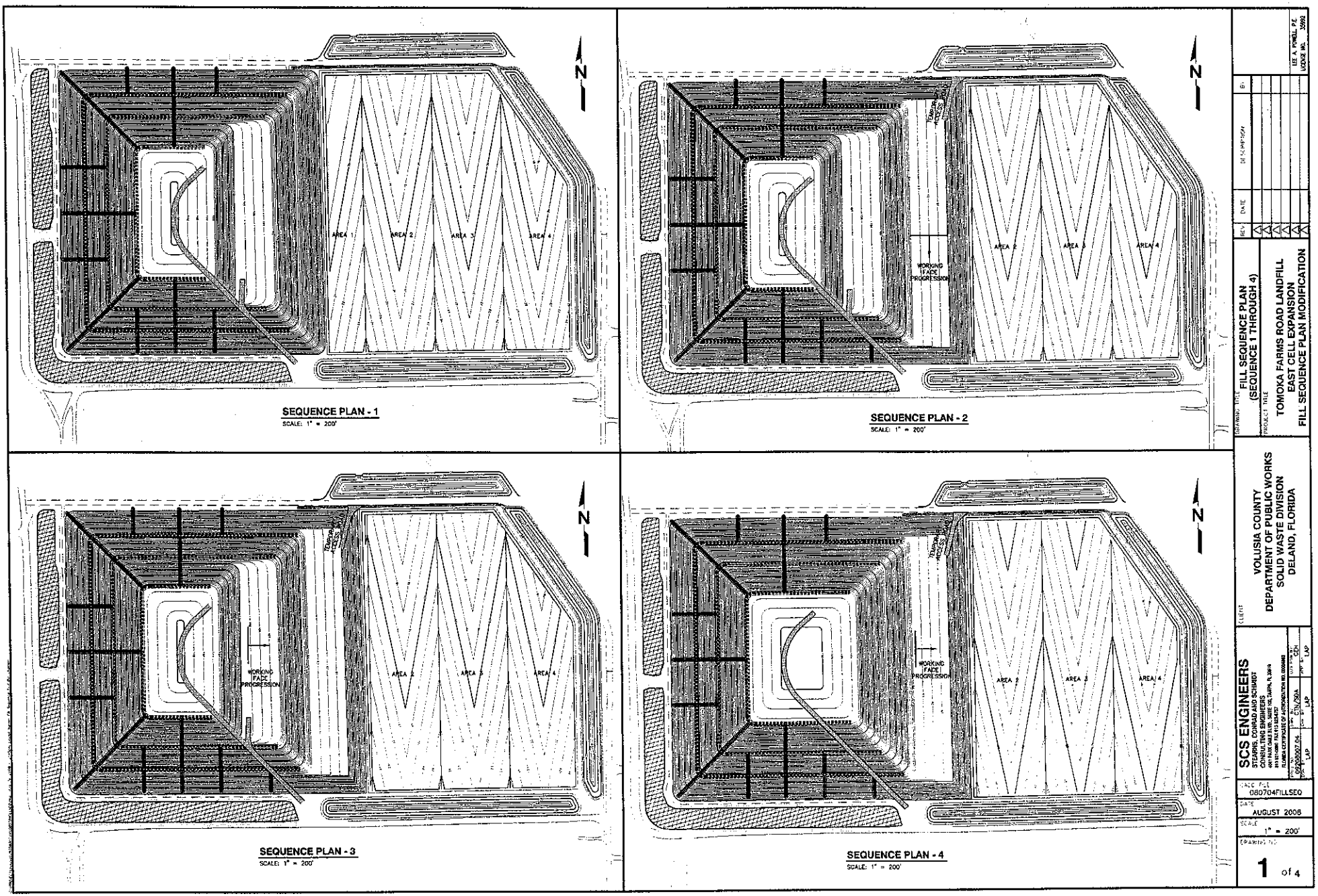

N
AREA 1
AREA 2
AREA 3
AREA 4
WORKING FACE PROGRESSION
SEQUENCE PLAN - 1
SCALE: 1" = 200'
SEQUENCE PLAN - 2
SCALE: 1" = 200'
SEQUENCE PLAN - 3
SCALE: 1" = 200'
SEQUENCE PLAN - 4
SCALE: 1" = 200'
DRAWING TITLE
FILL SEQUENCE PLAN
(SEQUENCE 1 THROUGH 4)
PROJECT TITLE
TOMOKA FARMS ROAD LANDFILL
EAST CELL EXPANSION
FILL SEQUENCE PLAN MODIFICATION
REV
DATE
BY
CK
LEE A. POWELL, P.E.
LICENSE NO. 35992
CLIENT
VOLUSIA COUNTY
DEPARTMENT OF PUBLIC WORKS
SOLID WASTE DIVISION
DELAND, FLORIDA
SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT
CAD FILE
080704FILLSEQ
DATE
AUGUST 2008
SCALE
1" = 200'
DRAWING NO.
1 of 4

Figure 2-1

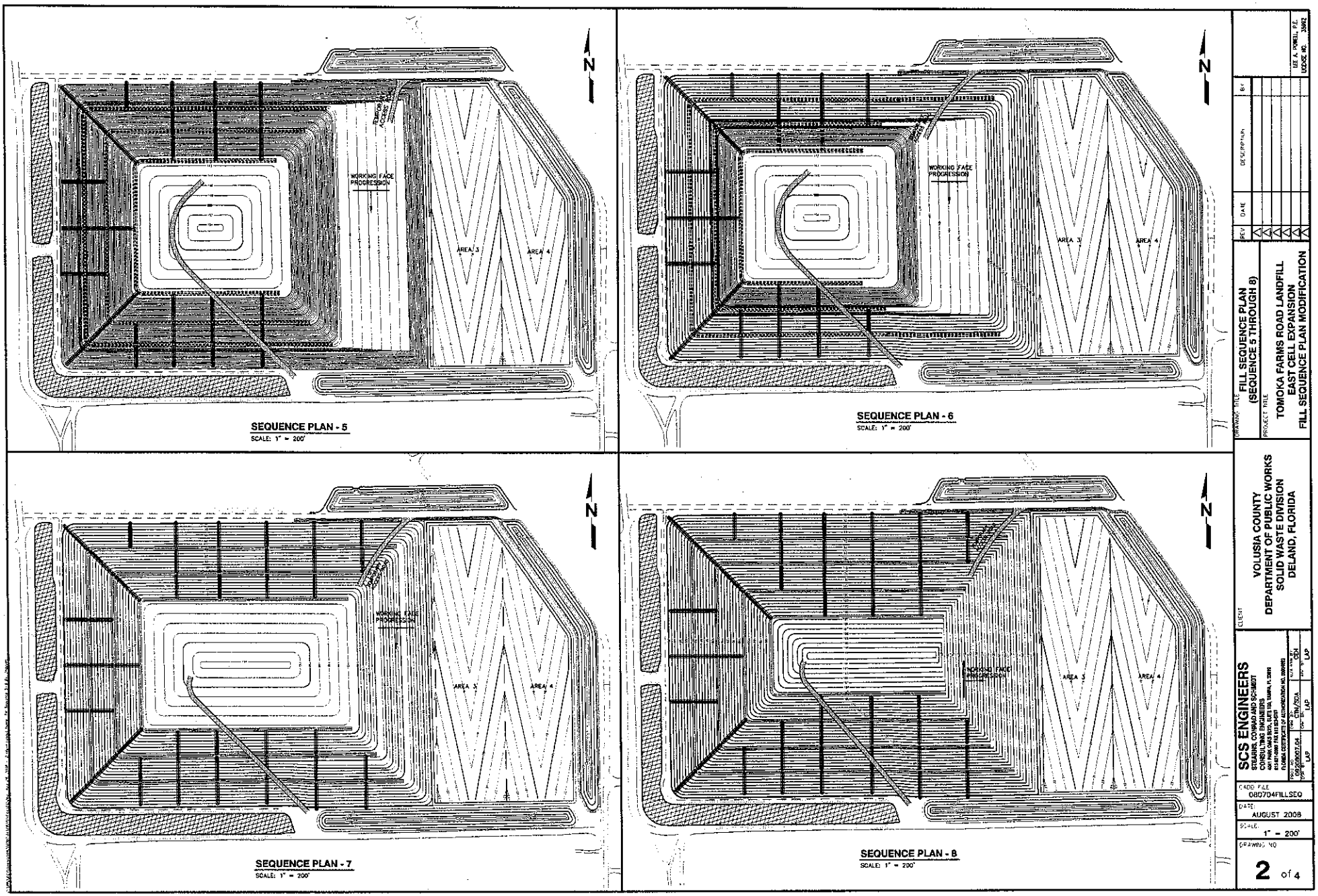

N
WORKING FACE PROGRESSION
AREA 3
AREA 4
SEQUENCE PLAN - 5
SCALE: 1" = 200'
SEQUENCE PLAN - 6
SCALE: 1" = 200'
SEQUENCE PLAN - 7
SCALE: 1" = 200'
SEQUENCE PLAN - 8
SCALE: 1" = 200'
DRAWING TITLE
FILL SEQUENCE PLAN
(SEQUENCE 5 THROUGH 8)
PROJECT TITLE
TOMOKA FARMS ROAD LANDFILL
EAST CELL EXPANSION
FILL SEQUENCE PLAN MODIFICATION
REV
DATE
DESCRIPTION
BY
LEE A. POWELL, P.E.
LICENSE NO. 39962
CLIENT
VOLUSIA COUNTY
DEPARTMENT OF PUBLIC WORKS
SOLID WASTE DIVISION
DELAND, FLORIDA
SCS ENGINEERS
CADD FILE
080704FILLSEQ
DATE
AUGUST 2008
SCALE
1" = 200'
DRAWING NO
2 of 4

Figure 2-2

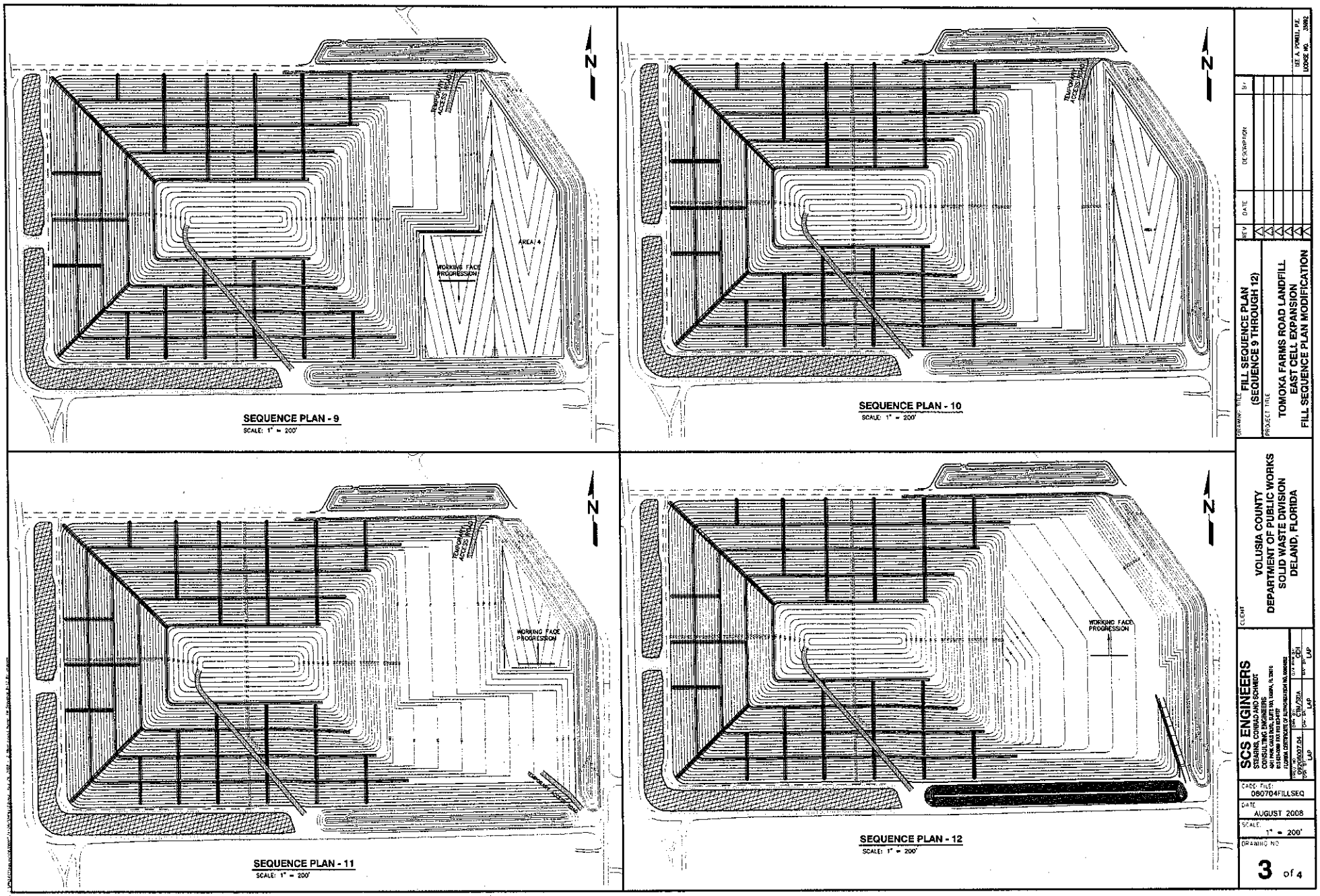
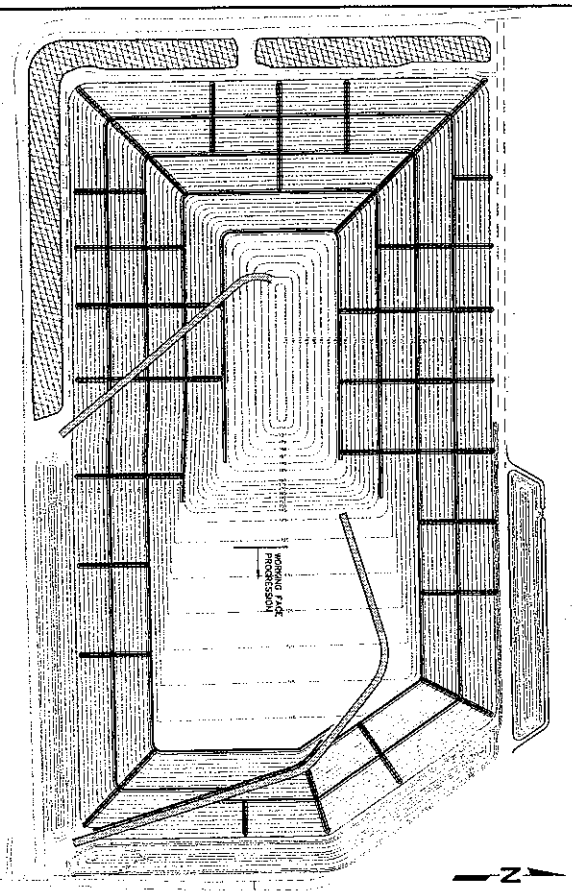

N
TEMPORARY ACCESS ROAD
AREA 4
WORKING FACE PROGRESSION
SEQUENCE PLAN - 9
SCALE: 1" = 200'
SEQUENCE PLAN - 10
SCALE: 1" = 200'
SEQUENCE PLAN - 11
SCALE: 1" = 200'
SEQUENCE PLAN - 12
SCALE: 1" = 200'
DRAWING TITLE
FILL SEQUENCE PLAN
(SEQUENCE 9 THROUGH 12)
PROJECT TITLE
TOMOKA FARMS ROAD LANDFILL
EAST CELL EXPANSION
FILL SEQUENCE PLAN MODIFICATION
REV
DATE
DESCRIPTION
BY
LEE A. POWELL, P.E.
LICENSE NO. 33592
CLIENT
VOLUSIA COUNTY
DEPARTMENT OF PUBLIC WORKS
SOLID WASTE DIVISION
DELAND, FLORIDA
SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT
CONSULTING ENGINEERS
CAD FILE: 060704FILLSEQ
DATE
AUGUST 2008
SCALE:
1" = 200'
DRAWING NO.
3 of 4

Figure 2-3



SEQUENCE PLAN - 13
SCALE: 1" = 200'

SHEET NO. 4 of 4	SCALE 1" = 200'	DATE AUGUST 2008	JOB/FILE NO. 080704FILLSEQ

SCS ENGINEERS
STEARNS, CONRAD AND SCHMIDT CONSULTING ENGINEERS
4041 PARK OAKS BLVD., SUITE 100, TAMPA, FL 33610
813 621-0080 FAX 813 623-4757
FLORIDA CERTIFICATE OF AUTHORIZATION NO. 00004892

PROJECT NO.	DWN. BY	CHK. BY
09208007.04	CTN/SDA	CEH
APP. BY	APP. BY	APP. BY
LAP	LAP	LAP

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

DRAWING TITLE
FILL SEQUENCE PLAN
(SEQUENCE 13)

PROJECT TITLE
TOMOKA FARMS ROAD LANDFILL
EAST CELL EXPANSION
FILL SEQUENCE PLAN MODIFICATION

REV.	DATE	DESCRIPTION	BY
1			
2			
3			
4			
5			

LEE A. POWELL, P.E.
LICENSE NO. 35992

Figure 2-3a

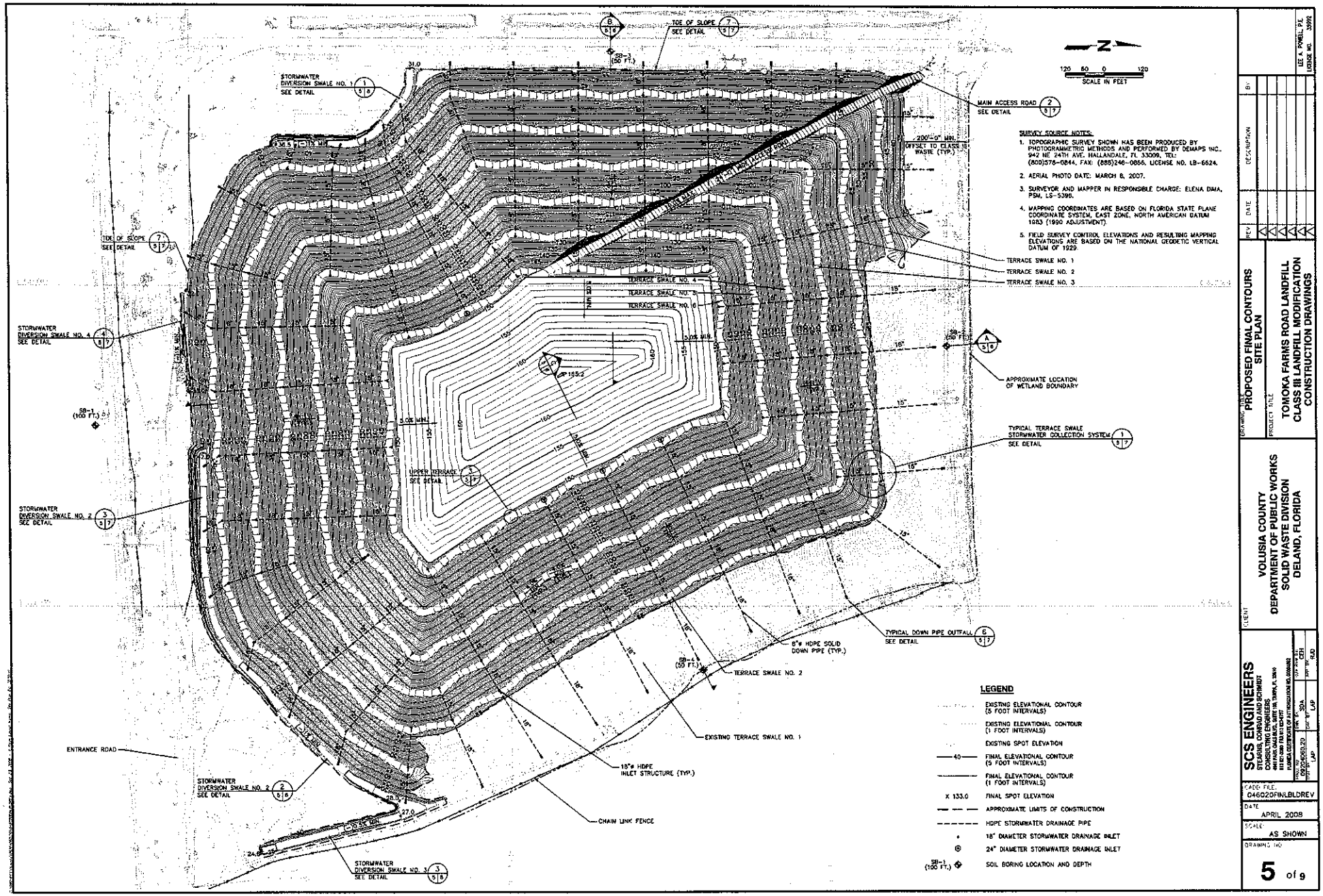

PROPOSED FINAL CONTOURS
SITE PLAN
TOMOKA FARMS ROAD LANDFILL
CLASS III LANDFILL MODIFICATION
CONSTRUCTION DRAWINGS
VOLUSIA COUNTY
DEPARTMENT OF PUBLIC WORKS
SOLID WASTE DIVISION
DELAND, FLORIDA
SCS ENGINEERS
CONSULTING ENGINEERS
APRIL 2008
AS SHOWN
5 of 9
TOE OF SLOPE
STORMWATER DIVERSION SWALE NO. 1
MAIN ACCESS ROAD
TERRACE SWALE NO. 1
TERRACE SWALE NO. 2
TERRACE SWALE NO. 3
TERRACE SWALE NO. 4
TERRACE SWALE NO. 5
TERRACE SWALE NO. 6
STORMWATER DIVERSION SWALE NO. 4
STORMWATER DIVERSION SWALE NO. 2
STORMWATER DIVERSION SWALE NO. 3
APPROXIMATE LOCATION OF WETLAND BOUNDARY
TYPICAL TERRACE SWALE STORMWATER COLLECTION SYSTEM
UPPER TERRACE
TYPICAL DOWN PIPE OUTFALL
8" HDPE SOLID DOWN PIPE (TYP.)
EXISTING TERRACE SWALE NO. 1
18" HDPE INLET STRUCTURE (TYP.)
ENTRANCE ROAD
CHAIN LINK FENCE
LEGEND
EXISTING ELEVATIONAL CONTOUR (5 FOOT INTERVALS)
EXISTING ELEVATIONAL CONTOUR (1 FOOT INTERVALS)
EXISTING SPOT ELEVATION
FINAL ELEVATIONAL CONTOUR (5 FOOT INTERVALS)
FINAL ELEVATIONAL CONTOUR (1 FOOT INTERVALS)
FINAL SPOT ELEVATION
APPROXIMATE LIMITS OF CONSTRUCTION
HDPE STORMWATER DRAINAGE PIPE
18" DIAMETER STORMWATER DRAINAGE INLET
24" DIAMETER STORMWATER DRAINAGE INLET
SOIL BORING LOCATION AND DEPTH
SURVEY SOURCE NOTES:
1. TOPOGRAPHIC SURVEY SHOWN HAS BEEN PRODUCED BY PHOTOGRAMMETRIC METHODS AND PERFORMED BY DEMAPS INC., 942 NE 24TH AVE. HALLANDALE, FL 33009, TEL: (800)376-0844, FAX: (888)246-0866, LICENSE NO. LB-6624.
2. AERIAL PHOTO DATE: MARCH 8, 2007.
3. SURVEYOR AND MAPPER IN RESPONSIBLE CHARGE: ELENA DIMA, PSM, LS-5295.
4. MAPPING COORDINATES ARE BASED ON FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE, NORTH AMERICAN DATUM 1983 (1990 ADJUSTMENT).
5. FIELD SURVEY CONTROL ELEVATIONS AND RESULTING MAPPING ELEVATIONS ARE BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929.
120 60 0 120
SCALE IN FEET

Figure 2-4

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)
- Leachate Treatment Facility Operations Reports (once the facility has been placed in service)
- 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 (3) 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 unusual physical characteristics.

If any regulated hazardous wastes are identified during load checking, the 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 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.
    - 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 waste, and the generator of the waste. 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 material will be spread in layers of approximately 2 to 5-foot in thickness and compacted as thin as practical 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, page 2-11 of this plan.

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

Scavenging is strictly prohibited at the working face of the landfill. Salvageable materials such as metals, as identified by landfill personnel, will be unloaded at designated locations away from the working face for proper placement by landfill personnel at the end of each working day.

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 the 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 cannot 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. Once the leachate treatment facility is placed in service, leachate from the pump stations shall be pumped directly to the treatment facility unless conditions warrant temporary storage in the designated leachate storage pond.

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.

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, piping to the leachate storage ponds, and the spray evaporation system within these ponds. The Landfill Supervisor will also oversee the operation of the leachate treatment facility and related components, once the sequencing batch reactor has been placed in service. 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. Once the leachate treatment facility is placed in service, leachate shall be treated on site, with effluent sent to a dedicated spray field or used for dust control and/or side slope irrigation.

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

At the present time, leachate that, due to precipitation volumes, cannot be managed through on-site evaporation will be transported off-site by county contractor to an Industrial Wastewater Facility for treatment. The Tomoka Farms Road Landfill will transport leachate for off-site disposal when less than one-foot of freeboard is available in the leachate storage ponds. In the future, once the treatment plant has been placed in service, the current leachate storage ponds will be used to provide supplemental storage. One pond shall be used for the storage of raw leachate that is collected from the landfill, but temporarily exceeds the capacity of the leachate treatment plant. The other pond will be dedicated to the storage of excess treated effluent, when the generation of effluent exceeds the capacity of both spray fields and the need for dust control and sideslope irrigation.

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

Currently, leachate evaporation is performed at the Tomoka Farms Road Landfill. Once placed in service, a SBR will provide leachate treatment. The design of the SBR is based on actual leachate quality data obtained from the TFRL, and includes provisions for plant modification as necessary to respond to changing leachate quality or quantity in future years, in accordance with Rule 62-701.500(8)(d), F.A.C.

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.

Under current operations, leachate will be recirculated, or transported off-site for disposal, when less than one foot of freeboard is available in the leachate storage ponds. In the future, after the SBR has been placed in service, excess raw leachate will be pumped to one of the two storage ponds should the level within the tanks exceed design levels. This current and future 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 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 be 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 of 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, Suite 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 old, 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.

ATTACHMENT 3

Random Inspection Report

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

_____

S2L, INCORPORATED
531 Versailles Drive, Suite 202
Maitland, Florida 32751
407-475-9163 Fax 407-475-9169

Letter of Transmittal

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

Date: 10-2-08	**Project No:** 08-279
From: Samuel B. Levin, P.E.	
RE: Application for a Minor Modification of Operations Permit Tomoka Farms Road Landfill Volusia County, Florida Response to RAI dated Sept. 4, 2008	

Qty	Contents
3 ccs	Application for a Minor Modification of a Class I Operations Permit - Tomoka Farms Road Landfill, Volusia County, Florida – Response to RAI dated September 4, 2008
1	CD containing pdf file of Response to RAI dated September 4, 2008
1	Tracked copy of all text changes

RECEIVED
OCT 03 2008
DEP Central Dist.

cc: Leonard Marion - Volusia County Solid Waste Division w/4 ccs of RAI Response, 1 cc of tracked text changes, 1 CD

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

S2L, INCORPORATED
531 Versailles Drive, Suite 202
Maitland, Florida 32751-7301
407-475-9163 Fax 407-475-9169

RECEIVED
OCT 03 2008
DEP Central Dist.

Letter of Transmittal

To: Mr. Lenny Marion, Director
Solid Waste Division
Volusia County Public Works Department
3151 East New York Avenue
DeLand, Florida 32724

Date: October 2, 2008	**Project No:** 08-279
From: Samuel B. Levin, P.E.	
RE: Application for a Minor Modification of Operations Permit	
Tomoka Farms Road Landfill	
Volusia County, Florida	
Response to RAI dated Sept. 4, 2008	
Hand-delivered	

County Copies	FDEP Copies	Contents
4	3	Application for a Minor Modification of a Class I Operations Permit - Tomoka Farms
		Road Landfill, Volusia County, Florida – Response to RAI dated September 4, 2008

Remarks:

cc: M. HEPDORN, P.G.
G. D. FRADINE
S. JANWADKAR

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