



**Sarasota County  
Solid Waste Operations**

Dept. Of Environmental Protection

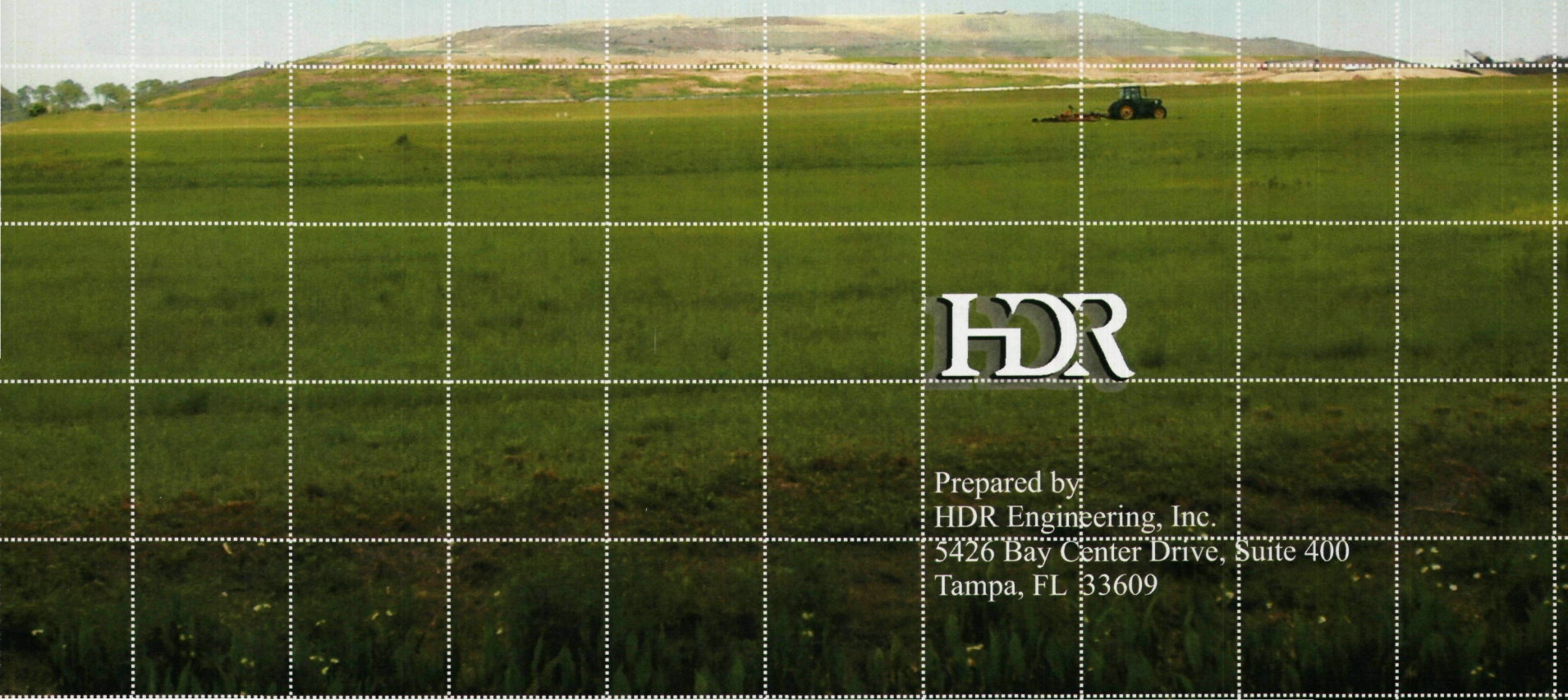
**DEC 13 2012**

Southwest District

**Central County Solid Waste Disposal Complex Class I Landfill  
Minor Modification Permit Application  
Permit No: 130542-007-SO/01**

**December 2012**

**HDR Project Number: 096-185622**



**HDR**

Prepared by  
HDR Engineering, Inc.  
5426 Bay Center Drive, Suite 400  
Tampa, FL 33609



December 13, 2012

Mr. Steve Morgan  
Department of Environmental Protection  
13051 North Telecom Parkway  
Temple Terrace, Florida 33637-0926

Dept. Of Environmental Protection

DEC 13 2012

Southwest District

Subject: Central County Solid Waste Disposal Complex  
Minor Modification Permit Application  
Permit No.: 130542-007-SO/01  
WACS No.: SWD/58/51614

Dear Steve:

On behalf of Sarasota County Solid Waste Operations, HDR Engineering, Inc., is pleased to submit a Minor Modification Permit Application for the Central County Solid Waste Disposal Complex (CCSWDC) to revise the Phase II fill sequence and updates to the current and approved Operations Plan.

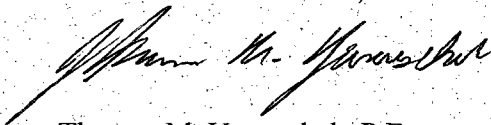
Revisions to the Operations Plan are included on the latest approved Operations Plan dated March 2, 2012, which includes updates based on the Minor Modification submitted to Florida Department of Environmental Protection (FDEP) by SCS Engineers on January 20, 2012, and subsequent response dated March 2, 2012.

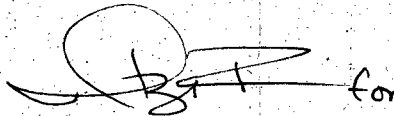
As part of this Minor Modification Permit Application, Sarasota County Solid Waste Operations also requests to modify language for Specific Condition C.8.c(1) and (2) to read "videotape or water pressure cleaned" instead of "videotape or other appropriate assessment" in accordance with Rule 62-701.500, F.A.C.

Enclosed are the permit application documents which include four sets of the Minor Modification Permit Application and supporting documentation. In addition, as required by Rule 62-4.050(4)(s), F.A.C., enclosed is a check for the permit fees in the amount of \$250.00 for a minor modification.

If you have any questions or need clarification regarding the enclosed information, please contact me at (813) 262-2776.

Sincerely,  
**HDR ENGINEERING, INC.**

  
Thomas M. Yanoschak, P.E.  
Senior Project Manager

 for  
Richard A. Siemering  
Solid Waste Section Manager

cc: Lois Rose, Manager, Sarasota County  
Jason Timmons, P.E., Sarasota County

HDR Engineering, Inc.

5426 Bay Center Drive  
Suite 400  
Tampa, FL 33609-3444

Phone: (813) 282-2300  
Fax: (813) 282-2430  
www.hdrinc.com

**CENTRAL COUNTY SOLID WASTE DISPOSAL COMPLEX**  
**PHASE II CLASS I LANDFILL**  
**MINOR MODIFICATION**  
**PERMIT APPLICATION**

*Submitted to:*

**SOUTHWEST DISTRICT**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION**  
13051 N. Telecom Parkway  
Temple Terrace, Florida 33637-0926

Dept. Of Environmental Protection

**DEC 13 2012**

Southwest District

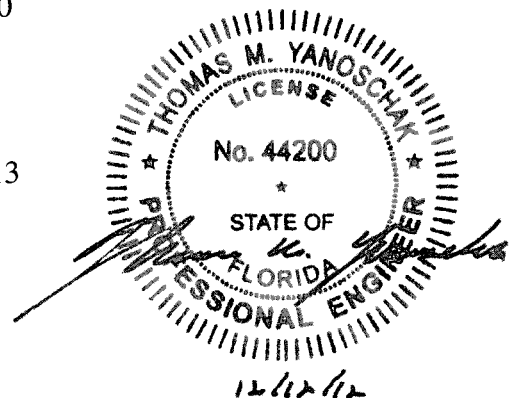
*Submitted for:*

**SARASOTA COUNTY SOLID WASTE OPERATIONS**  
4000 Knights Trail Road  
Nokomis, Florida 34275

*Submitted by:*

**HDR ENGINEERING, INC.**  
5426 Bay Center Drive, Suite 400  
Tampa, Florida 33609-3444

Certificate of Authorization # 4213  
December 2012



Thomas M. Yanoschak, P.E.  
Florida P.E. No. 44200



Sarasota County  
Solid Waste Operations

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Central County Solid Waste Disposal Complex  
Class I Landfill Operations  
Operations Permit No. 130542-007-SO/01  
Minor Modification Permit Application

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December 2012

Prepared for:  
Sarasota County  
Solid Waste Operations  
4000 Knights Trail Road  
Nokomis, Florida 34275

Prepared by:  
HDR Engineering, Inc.  
5426 Bay Center Drive, Suite 400  
Tampa, Florida 33609-3444  
(813) 282-2300

HDR Project No. 096-185622  
Florida Certificate of Authorization No. 00004213



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## APPENDICES

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APPENDIX A UPDATED OPERATIONS PLAN

APPENDIX B REVISED STAGING PLAN AND SECTIONS SHEETS







# Florida Department of Environmental Protection

Bob Martinez Center  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Reset Form

Print Form

DEP Form #: 62-701.900(1), F.A.C.

Form Title: Application to Construct, Operate, Modify, or  
Close a Solid Waste Management Facility

Effective Date: January 6, 2010

Incorporated in Rule: 62-701.330(3), F.A.C.

Dept. Of Environmental Protection

DEC 13 2012

Southwest District

## STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

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

### APPLICATION INSTRUCTIONS AND FORMS

Northwest District  
160 Governmental Center  
Pensacola, FL 32502-5794  
850-595-8360

Northeast District  
7825 Baymeadows Way, Ste. B200  
Jacksonville, FL 32256-7590  
904-807-3300

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

Southwest District  
13051 N. Telecom Pkwy  
Temple Terrace, FL 33637  
813-632-7600

South District  
2295 Victoria Ave., Ste. 364  
Fort Myers, FL 33901-3881  
239-332-6975

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



## INSTRUCTIONS TO APPLY FOR A SOLID WASTE MANAGEMENT FACILITY PERMIT

### I. General

Solid Waste Management Facilities shall be permitted pursuant to Section 403.707, Florida Statutes, (FS) and in accordance with Florida Administrative Code (FAC) Chapter 62-701. A minimum of four copies of the application shall be submitted to the Department's District Office having jurisdiction over the facility. The appropriate fee in accordance with Rule 62-701.315, FAC, shall be submitted with the application by check made payable to the Department of Environmental Protection (DEP).

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

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

- A. Landfills and Ash Monofills - Submit Parts A through S
- B. Asbestos Monofills - Submit Parts A,B,C,D,E,F,I,K,M, O through S
- C. Industrial Solid Waste Disposal Facilities - Submit Parts A through S

**NOTE:** Portions of some Parts may not be applicable.

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

### III. Application Parts Required for Closure Permits

- A. Landfills and Ash Monofills - Submit Parts A,B,L, N through S
- B. Asbestos Monofills - Submit Parts A,B,M, O through S
- C. Industrial Solid Waste Disposal Facilities - Submit Parts A,B, L through S

**NOTE:** Portions of some Parts may not be applicable.

### IV. Permit Renewals

The above information shall be submitted at time of permit renewal in support of the new permit. However, facility information that was submitted to the Department to support the expiring permit, and which is still valid, does not need to be re-submitted for permit renewal. Portions of the application not re-submitted shall be marked "no substantial change" on the application form.

**V. Application Codes**

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

**VI. LISTING OF APPLICATION PARTS**

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



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

Please Type or Print

**PART A. GENERAL INFORMATION**

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

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Class I Landfill | <input type="checkbox"/> Ash Monofill      |
| <input type="checkbox"/> Class III Landfill          | <input type="checkbox"/> Asbestos Monofill |
| <input type="checkbox"/> Industrial Solid Waste      |  |
| <input type="checkbox"/> Other Describe:             |  |

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

2. Type of application:

- ☐ Construction  
☒ Operation  
☐ Construction/Operation  
☐ Closure  
☐ Long-term Care Only

3. Classification of application:

- |                                  |  |
|----------------------------------|--|
| <input type="checkbox"/> New     | <input type="checkbox"/> Substantial Modification      |
| <input type="checkbox"/> Renewal | <input type="checkbox"/> Intermediate Modification     |
|                                  | <input checked="" type="checkbox"/> Minor Modification |

4. Facility name: Central County Solid Waste Disposal Complex

5. DEP ID number: SWD-58-51614 County: Sarasota

6. Facility location (main entrance):  
North end of Knights Trail Road.

7. Location coordinates:

Section: 1-4, 9-16 Township: 38S Range: 19E

Latitude: 27° 12' 10.1 " Longitude: 82° 23' 26.7 "

Datum: WGS 84 Coordinate Method: Web-based Mapping Tool

Collected by: HDR Company/Affiliation: HDR/Engineer

8. Applicant name (operating authority): Sarasota County Solid Waste Operations  
Mailing address: 4000 Knights Trail Road Nokomis FL 34275  
Street or P.O. Box City State Zip  
Contact person: Lois Rose Telephone: (941) 861-1589  
Title: Manager, Solid Waste  
lerose@scgov.net  
E-Mail address (if available)

9. Authorized agent/Consultant: HDR Engineering, Inc.  
Mailing address: 5426 Bay Center Drive, Suite 400 Tampa FL 33609  
Street or P.O. Box City State Zip  
Contact person: Thomas M. Yanoschak Telephone: (919) 232-6618  
Title: Senior Project Manager  
thomas.yanoschak@hdrinc.com  
E-Mail address (if available)

10. Landowner (if different than applicant): same as applicant  
Mailing address: same as applicant  
Street or P.O. Box City State Zip  
Contact person: same as applicant Telephone: (same as applicant) same as applicant  
same as applicant  
E-Mail address (if available)

11. Cities, towns and areas to be served:  
Sarasota County, FL  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

12. Population to be served:  
Current: 482,000 Five-Year Projection: 531,000

13. Date site will be ready to be inspected for completion: \_\_\_\_\_ N/A

14. Expected life of the facility: \_\_\_\_\_ years N/A

15. Estimated costs: N/A

Total Construction: \$ \_\_\_\_\_ Closing Costs: \$ \_\_\_\_\_

16. Anticipated construction starting and completion dates: N/A

From: \_\_\_\_\_ To: \_\_\_\_\_

17. Expected volume or weight of waste to be received: N/A

\_\_\_\_\_ yds<sup>3</sup>/day \_\_\_\_\_ tons/day \_\_\_\_\_ gallons/day



## PART B. DISPOSAL FACILITY GENERAL INFORMATION

8. Types of waste received:
- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Household              | <input checked="" type="checkbox"/> C & D debris       |
| <input checked="" type="checkbox"/> Commercial             | <input checked="" type="checkbox"/> Shredded/cut tires |
| <input type="checkbox"/> Incinerator/WTE ash               | <input checked="" type="checkbox"/> Yard trash         |
| <input checked="" type="checkbox"/> Treated biomedical     | <input type="checkbox"/> Septic tank                   |
| <input checked="" type="checkbox"/> Water treatment sludge | <input checked="" type="checkbox"/> Industrial         |

- ☐ Air treatment sludge  
☒ Agricultural  
☒ Asbestos
- ☒ Industrial sludge  
☒ Domestic sludge  
☐ Other Describe:

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9. Salvaging permitted: ☐ Yes ☒ No

10. Attendant: ☒ Yes ☐ No

Trained operator: ☒ Yes ☐ No

11. Trained spotters: ☒ Yes ☐ No

Number of spotters used: 1

12. Site located in: ☐ Floodplain  
Uplands

☐ Wetlands

☒ Other:

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13. Days of operation: Monday through Saturday

14. Hours of operation: 8:00AM to 5:00PM

15. Days Working Face covered: Monday through Saturday

16. Elevation of water table: 20.5 ft. Datum Used: NGVD 1929

17. Number of monitoring wells: 10

18. Number of surface monitoring points: 2

19. Gas controls used: ☒ Yes ☐ No

Type controls: ☒ Active ☐ Passive

Gas flaring: ☒ Yes ☐ No

Gas recovery: ☒ Yes ☐ No

20. Landfill unit liner type:

☐ Natural soils

☒ Double geomembrane

☐ Single clay liner

☐ Geomembrane & composite

☐ Single geomembrane

☐ Double composite

☒ Single composite

☐ None

☐ Slurry wall

☐ Other Describe:

Single composite liner for Phase I Landfill.

Double geomembrane for Phase II Landfill.

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21. Leachate collection method:

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

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22. Leachate storage method:

- |   |   |
|---|---|
| <input checked="" type="checkbox"/> Tanks | <input type="checkbox"/> Surface impoundments |
| <input type="checkbox"/> Other Describe:  |   |

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23. Leachate treatment method:

- |   |   |
|---|---|
| <input type="checkbox"/> Oxidation        | <input type="checkbox"/> Chemical treatment |
| <input type="checkbox"/> Secondary        | <input type="checkbox"/> Settling           |
| <input type="checkbox"/> Advanced         | <input type="checkbox"/> None               |
| <input checked="" type="checkbox"/> Other |   |
| Off-site treatment.                       |   |

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24. Leachate disposal method:

- |  |  |
|--|--|
| <input type="checkbox"/> Recirculated        | <input checked="" type="checkbox"/> Pumped to WWTP           |
| <input type="checkbox"/> Transported to WWTP | <input type="checkbox"/> Discharged to surface water/wetland |
| <input type="checkbox"/> Injection well      | <input type="checkbox"/> Percolation ponds                   |
| <input type="checkbox"/> Evaporation         | <input type="checkbox"/> Spray Irrigation                    |
| <input type="checkbox"/> Other               |  |

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25. For leachate discharged to surface waters:

Name and Class of receiving water:

N/A

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26. Storm Water:

Collected: ☒ Yes ☐ No

Type of treatment:

Retention Ponds

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Name and Class of receiving water:

Cow Pen Slough, Class III

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27. Environmental Resources Permit (ERP) number or status:

FDEP 58-0272622-001

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**PART C. PROHIBITIONS (62-701.300, FAC)**

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>	
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1. Provide documentation that each of the siting criteria will be satisfied for the facility; (62-701.300(2), FAC)
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	2. If the facility qualifies for any of the exemptions contained in Rules 62-701.300(12) through (18), FAC, then document this qualification(s).
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	3. Provide documentation that the facility will be in compliance with the burning restrictions; (62-701.300(3), FAC)
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	4. Provide documentation that the facility will be in compliance with the hazardous waste restrictions; (62-701.300(4), FAC)
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	5. Provide documentation that the facility will be in compliance with the PCB disposal restrictions; (62-701.300(5), FAC)
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	6. Provide documentation that the facility will be in compliance with the biomedical waste restrictions; (62-701.300(6), FAC)
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	7. Provide documentation that the facility will be in compliance with the Class I surface water restrictions; (62-701.300(7), FAC)
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	8. Provide documentation that the facility will be in compliance with the special waste for landfills restrictions; (62-701.300(8), FAC)
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	9. Provide documentation that the facility will be in compliance with the liquid restrictions; (62-701.300(10), FAC)
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	10. Provide documentation that the facility will be in compliance with the used oil and oily waste restrictions; (62-701.300(11), FAC)

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

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>	
<input checked="" type="checkbox"/>	Part D.1 _____	<input type="checkbox"/>	<input type="checkbox"/>	1. Four copies, at minimum, of the completed application form, all supporting data and reports; (62-701.320(5)(a), FAC)

**S****LOCATION****N/A****N/C****PART D CONTINUED**

- |                                     |                     |                          |                                     |  |
|-------------------------------------|---------------------|--------------------------|-------------------------------------|--|
| <input checked="" type="checkbox"/> | Part D.2            | <input type="checkbox"/> | <input type="checkbox"/>            | 2. Engineering and/or professional certification (signature, date and seal) provided on the applications and all engineering plans, reports and supporting information for the application; (62-701.320(6),FAC)  |
| <input checked="" type="checkbox"/> | Part D.3            | <input type="checkbox"/> | <input type="checkbox"/>            | 3. A letter of transmittal to the Department; (62-701.320(7)(a),FAC)   |
| <input checked="" type="checkbox"/> | Part D.4            | <input type="checkbox"/> | <input type="checkbox"/>            | 4. A completed application form dated and signed by the applicant; (62-701.320(7)(b),FAC)  |
| <input checked="" type="checkbox"/> | Part D.5            | <input type="checkbox"/> | <input type="checkbox"/>            | 5. Permit fee specified in Rule 62-701.315, FAC in check or money order, payable to the Department; (62-701.320(7)(c),FAC)   |
| <input checked="" type="checkbox"/> | Part D.6            | <input type="checkbox"/> | <input type="checkbox"/>            | 6. An engineering report addressing the requirements of this rule and with the following format: a cover sheet, text printed on 8 1/2 inch by 11 inch consecutively numbered pages, a table of contents or index, the body of the report and all appendices including an operation plan, contingency plan, illustrative charts and graphs, records or logs of tests and investigations, engineering calculations; (62-701.320(7)(d),FAC) |
| <input checked="" type="checkbox"/> | Part D.7 and Part K | <input type="checkbox"/> | <input type="checkbox"/>            | 7. Operation Plan and Closure Plan; (62-701.320(7)(e)1,FAC)  |
| <input checked="" type="checkbox"/> | Part K              | <input type="checkbox"/> | <input type="checkbox"/>            | 8. Contingency Plan; (62-701.320(7)(e)2,FAC)   |
| <input checked="" type="checkbox"/> | Part D.9            | <input type="checkbox"/> | <input type="checkbox"/>            | 9. Plans or drawings for the solid waste management facilities in appropriate format (including sheet size restrictions, cover sheet, legends, north arrow, horizontal and vertical scales, elevations referenced to NGVD 1929) showing; (62-701.320(7)(f),FAC)  |
| <input type="checkbox"/>            |                     | <input type="checkbox"/> | <input checked="" type="checkbox"/> | a. A regional map or plan with the project location in relation to major roadways and population centers;  |
| <input type="checkbox"/>            |                     | <input type="checkbox"/> | <input checked="" type="checkbox"/> | b. A vicinity map or aerial photograph no more than 1 year old showing the facility site and relevant surface features located within 1000 feet of the facility;   |
| <input type="checkbox"/>            |                     | <input type="checkbox"/> | <input checked="" type="checkbox"/> | c. A site plan showing all property boundaries certified by a Florida Licensed Professional Surveyor and Mapper; and   |
| <input type="checkbox"/>            |                     | <input type="checkbox"/> | <input checked="" type="checkbox"/> | d. Other necessary details to support the engineering report, including referencing elevations to a consistent, nationally recognized datum and identifying the method used for collecting latitude and longitude data.  |



S      LOCATION      N/A      N/C

**PART D CONTINUED**

- |                          |       |                                     |                                     |   |
|--------------------------|-------|-------------------------------------|-------------------------------------|---|
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 10. Documentation that the applicant either owns the property or has legal authority from the property owner to use the site; (62-701.320(7)(g),FAC)  |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 11. For facilities owned or operated by a county, provide a description of how, if any, the facilities covered in this application will contribute to the county's achievement of the waste reduction and recycling goals contained in Section 403.706,FS; (62-701.320(7)(h),FAC)               |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 12. Provide a history and description of any enforcement actions taken by the Department against the applicant for violations of applicable statutes, rules, orders or permit conditions relating to the operation of any solid waste management facility in this state; (62-701.320(7)(i),FAC) |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | 13. Proof of publication in a newspaper of general circulation of notice of application for a permit to construct or substantially modify a solid waste management facility; (62-702.320(8),FAC)  |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 14. Provide a description of how the requirements for airport safety will be achieved including proof of required notices if applicable. If exempt, explain how the exemption applies; (62-701.320(13),FAC)   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 15. Explain how the operator and spotter training requirements and special criteria will be satisfied for the facility; (62-701.320(15), FAC)   |

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

S      LOCATION      N/A      N/C

- |                          |       |                          |                                     |  |
|--------------------------|-------|--------------------------|-------------------------------------|--|
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 1. Regional map or aerial photograph no more than 5 years old showing all airports that are located within five miles of the proposed landfill; (62-701.330(3)(a),FAC) |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 2. Plot plan with a scale not greater than 200 feet to the inch showing; (62-701.330(3)(b),FAC)  |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | a. Dimensions;   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | b. Locations of proposed and existing water quality monitoring wells;  |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | c. Locations of soil borings;  |

S

LOCATION

N/A

N/C

**PART E CONTINUED**

☐ \_\_\_\_\_ ☐ ☒

d. Proposed plan of trenching or disposal areas;

☐ \_\_\_\_\_ ☐ ☒

e. Cross sections showing original elevations and proposed final contours which shall be included either on the plot plan or on separate sheets;

☐ \_\_\_\_\_ ☐ ☒

f. Any previously filled waste disposal areas;

☐ \_\_\_\_\_ ☐ ☒

g. Fencing or other measures to restrict access.

☐ \_\_\_\_\_ ☐ ☒

3. Topographic maps with a scale not greater than 200 feet to the inch with 5-foot contour intervals showing; (62-701.330(3)(c),FAC):

☐ \_\_\_\_\_ ☐ ☒

a. Proposed fill areas;

☐ \_\_\_\_\_ ☐ ☒

b. Borrow areas;

☐ \_\_\_\_\_ ☐ ☒

c. Access roads;

☐ \_\_\_\_\_ ☐ ☒

d. Grades required for proper drainage;

☐ \_\_\_\_\_ ☐ ☒

e. Cross sections of lifts;

☐ \_\_\_\_\_ ☐ ☒

f. Special drainage devices if necessary;

☐ \_\_\_\_\_ ☐ ☒

g. Fencing;

☐ \_\_\_\_\_ ☐ ☒

h. Equipment facilities.

☐ \_\_\_\_\_ ☐ ☒

4. A report on the landfill describing the following; (62-701.330(3)(d),FAC)

☐ \_\_\_\_\_ ☐ ☒

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

☐ \_\_\_\_\_ ☐ ☒

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

☐ \_\_\_\_\_ ☐ ☒

c. Planned active life of the facility, the final design height of the facility and the maximum height of the facility during its operation;

S      LOCATION      N/A      N/C

**PART E CONTINUED**

- |                          |       |                          |                                     |   |
|--------------------------|-------|--------------------------|-------------------------------------|---|
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | d. The source and type of cover material used for the landfill.   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 5. Provide evidence that an approved laboratory shall conduct water quality monitoring for the facility in accordance with Chapter 62-160, FAC; (62-701.330(3)(g), FAC) |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 6. Provide a statement of how the applicant will demonstrate financial responsibility for the closing and long-term care of the landfill; (62-701.330(3)(h), FAC)       |

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

S      LOCATION      N/A      N/C

- |                          |       |                          |                                     |   |
|--------------------------|-------|--------------------------|-------------------------------------|---|
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 1. Describe (and show on a Federal Insurance Administration flood map, if available) how the landfill or solid waste disposal unit shall not be located in the 100-year floodplain where it will restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the floodplain unless compensating storage is provided, or result in a washout of solid waste; (62-701.340(3)(b), FAC) |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 2. Describe how the minimum horizontal separation between waste deposits in the landfill and the landfill property boundary shall be 100 feet, measured from the toe of the proposed final cover slope; (62-701.340(3)(c), FAC)   |

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

S      LOCATION      N/A      N/C

- |                          |       |                          |                                     |  |
|--------------------------|-------|--------------------------|-------------------------------------|--|
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 1. Describe how the landfill shall be designed so that solid waste disposal units will be constructed and closed at planned intervals throughout the design period of the landfill and shall be designed to achieve a minimum factor of safety of 1.5 using peak strength values to prevent failures of side slopes and deep-seated failures; (62-701.400(2), FAC) |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 2. Landfill liner requirements; (62-701.400(3), FAC)   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | a. General construction requirements; (62-701.400(3)(a), FAC):   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | (1) Provide test information and documentation to ensure the liner will be constructed of materials that have appropriate physical, chemical, and mechanical properties to prevent failure;  |

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LOCATION

N/A

N/C

PART G CONTINUED

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(2) Document foundation is adequate to prevent liner failure;

☐ ☐ ☒

(3) Constructed so bottom liner will not be adversely impacted by fluctuations of the ground water;

☐ ☐ ☒

(4) Designed to resist hydrostatic uplift if bottom liner located below seasonal high ground water table;

☐ ☐ ☒

(5) Installed to cover all surrounding earth which could come into contact with the waste or leachate.

☐ ☒ ☐

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

☐ ☒ ☐

(1) Upper geomembrane thickness and properties;

☐ ☒ ☐

(2) Design leachate head for primary LCRS including leachate recirculation if appropriate;

☐ ☒ ☐

(3) Design thickness in accordance with Table A and number of lifts planned for lower soil component.

☐ ☐ ☒

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

☐ ☐ ☒

(1) Upper and lower geomembrane thicknesses and properties;

☐ ☐ ☒

(2) Design leachate head for primary LCRS to limit the head to one foot above the liner;

☐ ☐ ☒

(3) Lower geomembrane sub-base design;

☐ ☐ ☒

(4) Leak detection and secondary leachate collection system minimum design criteria ( $k \geq 10$  cm/sec, head on lower liner  $\leq 1$  inch, head not to exceed thickness of drainage layer);

☐ ☐ ☒

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

S      LOCATION      N/A      N/C

PART G CONTINUED

- |                          |       |                                     |                                     |     |  |
|--------------------------|-------|-------------------------------------|-------------------------------------|-----|--|
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | (1) | Factory and field seam test methods to ensure all geomembrane seams achieve the minimum specifications;  |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | (2) | Geomembranes to be used shall pass a continuous spark test by the manufacturer;  |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | (3) | Design of 24-inch-thick protective layer above upper geomembrane liner;  |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | (4) | Describe operational plans to protect the liner and leachate collection system when placing the first layer of waste above 24-inch-thick protective layer. |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | (5) | HDPE geomembranes, if used, meet the specifications in GRI GM13 and LLDPE geomembranes, if used, meet the specifications in GRI GM17;                      |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | (6) | PVC geomembranes, if used, meet the specifications in PGI 1104;  |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | (7) | Interface shear strength testing results of the actual components which will be used in the liner system;  |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | (8) | Transmissivity testing results of geonets if they are used in the liner system;  |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | (9) | Hydraulic conductivity testing results of geosynthetic clay liners if they are used in the liner system;   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |     | e. Geosynthetic specification requirements; (62-701.400(3)(e),FAC)   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | (1) | Definition and qualifications of the designer, manufacturer, installer, QA consultant and laboratory, and QA program;                                      |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | (2) | Material specifications for geomembranes, geocomposites, geotextiles, geogrids, and geonets;   |

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LOCATION

N/A

N/C

PART G CONTINUED

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- (3) Manufacturing and fabrication specifications including geomembrane raw material and roll QA, fabrication personnel qualifications, seaming equipment and procedures, overlaps, trial seams, destructive and nondestructive seam testing, seam testing location, frequency, procedure, sample size and geomembrane repairs;

☐ \_\_\_\_\_ ☐ ☒

- (4) Geomembrane installation specifications including earthwork, conformance testing, geomembrane placement, installation personnel qualifications, field seaming and testing, overlapping and repairs, materials in contact with geomembrane and procedures for lining system acceptance;

☐ \_\_\_\_\_ ☐ ☒

- (5) Geotextile and geogrid specifications including handling and placement, conformance testing, seams and overlaps, repair, and placement of soil materials and any overlying materials;

☐ \_\_\_\_\_ ☐ ☒

- (6) Geonet and geocomposite specifications including handling and placement, conformance testing, stacking and joining, repair, and placement of soil materials and any overlying materials;

☐ \_\_\_\_\_ ☐ ☒

- (7) Geosynthetic clay liner specifications including handling and placement, conformance testing, seams and overlaps, repair, and placement of soil material and any overlying materials;

☐ \_\_\_\_\_ ☒ ☐

f. Standards for soil liner components (62-710.400(3)(f),FAC):

☐ \_\_\_\_\_ ☒ ☐

- (1) Description of construction procedures including overexcavation and backfilling to preclude structural inconsistencies and procedures for placing and compacting soil component in layers;

☐ \_\_\_\_\_ ☒ ☐

- (2) Demonstration of compatibility of the soil component with actual or simulated leachate in accordance with EPA Test Method 9100 or an equivalent test method;

☐ \_\_\_\_\_ ☒ ☐

- (3) Procedures for testing in-situ soils to demonstrate they meet the specifications for soil liners;



S      LOCATION      N/A      N/C

**PART G CONTINUED**

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|--------------------------|-------|-------------------------------------|-------------------------------------|---|
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | (4) Specifications for soil component of liner including at a minimum:  |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | (a) Allowable particle size distribution, Atterberg limits, shrinkage limit;  |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | (b) Placement moisture and dry density criteria;  |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | (c) Maximum laboratory-determined saturated hydraulic conductivity using simulated leachate;  |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | (d) Minimum thickness of soil liner;  |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | (e) Lift thickness;   |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | (f) Surface preparation (scarification);  |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | (g) Type and percentage of clay mineral within the soil component;  |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | (5) Procedures for constructing and using a field test section to document the desired saturated hydraulic conductivity and thickness can be achieved in the field. |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | g. If a Class III landfill is to be constructed with a bottom liner system, provide a description of how the minimum requirements for the liner will be achieved.   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 3. Leachate collection and removal system (LCRS); (62-701.400(4),FAC)   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | a. The primary and secondary LCRS requirements; (62-701.400(4)(a),FAC)  |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | (1) Constructed of materials chemically resistant to the waste and leachate;  |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | (2) Have sufficient mechanical properties to prevent collapse under pressure;   |

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LOCATION

N/A

N/C

PART G CONTINUED

- |                          |       |                                     |                                     |  |   |
|--------------------------|-------|-------------------------------------|-------------------------------------|--|---|
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | (3)  | Have granular material or synthetic geotextile to prevent clogging;   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | (4)  | Have method for testing and cleaning clogged pipes or contingent designs for rerouting leachate around failed areas;  |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | b. Other LCERS requirements; (62-701.400(4)(b) and (c),FAC)  |   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | (1)  | Bottom 12 inches having hydraulic conductivity $\geq 1 \times 10^{-3}$ cm/sec;  |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | (2)  | Total thickness of 24 inches of material chemically resistant to the waste and leachate;  |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | (3)  | Bottom slope design to accommodate for predicted settlement and still meet minimum slope requirements;  |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | (4)  | Demonstration that synthetic drainage material, if used, is equivalent or better than granular material in chemical compatibility, flow under load and protection of geomembrane liner. |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | 4. Leachate recirculation; (62-701.400(5),FAC)   |   |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | a. Describe general procedures for recirculating leachate;   |   |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | b. Describe procedures for controlling leachate runoff and minimizing mixing of leachate runoff with storm water;  |   |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | c. Describe procedures for preventing perched water conditions and gas buildup;  |   |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | d. Describe alternate methods for leachate management when it cannot be recirculated due to weather or runoff conditions, surface seeps, wind-blown spray, or elevated levels of leachate head on the liner; |   |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | e. Describe methods of gas management in accordance with Rule 62-701.530, FAC;   |   |

S      LOCATION      N/A      N/C

PART G CONTINUED

<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	f. If leachate irrigation is proposed, describe treatment methods and standards for leachate treatment prior to irrigation over final cover and provide documentation that irrigation does not contribute significantly to leachate generation.
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	5. Leachate storage tanks and leachate surface impoundments; (62-701.400(6), FAC)
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	a. Surface impoundment requirements; (62-701.400(6)(b), FAC)
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	(1) Documentation that the design of the bottom liner will not be adversely impacted by fluctuations of the ground water;
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	(2) Designed in segments to allow for inspection and repair as needed without interruption of service;
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	(3) General design requirements;
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	(a) Double liner system consisting of an upper and lower 60-mil minimum thickness geomembrane;
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	(b) Leak detection and collection system with hydraulic conductivity $\geq 1$ cm/sec;
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	(c) Lower geomembrane placed on subbase $\geq 6$ inches thick with $k \leq 1 \times 10^{-5}$ cm/sec or on an approved geosynthetic clay liner with $k \leq 1 \times 10^{-7}$ cm/sec;
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	(d) Design calculation to predict potential leakage through the upper liner;
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	(e) Daily inspection requirements and notification and corrective action requirements if leakage rates exceed that predicted by design calculations;
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	(4) Description of procedures to prevent uplift, if applicable;
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	(5) Design calculations to demonstrate minimum two feet of freeboard will be maintained;
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	(6) Procedures for controlling vectors and off-site odors.

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LOCATION

N/A

N/C

PART G CONTINUED

☐ \_\_\_\_\_ ☐ ☒

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

☐ \_\_\_\_\_ ☐ ☒

(1) Describe tank materials of construction and ensure foundation is sufficient to support tank;

☐ \_\_\_\_\_ ☐ ☒

(2) Describe procedures for cathodic protection if needed for the tank;

☐ \_\_\_\_\_ ☐ ☒

(3) Describe exterior painting and interior lining of the tank to protect it from the weather and the leachate stored;

☐ \_\_\_\_\_ ☐ ☒

(4) Describe secondary containment design to ensure adequate capacity will be provided and compatibility of materials of construction;

☐ \_\_\_\_\_ ☐ ☒

(5) Describe design to remove and dispose of stormwater from the secondary containment system;

☐ \_\_\_\_\_ ☐ ☒

(6) Describe an overfill prevention system such as level sensors, gauges, alarms and shutoff controls to prevent overfilling;

☐ \_\_\_\_\_ ☐ ☒

(7) Inspections, corrective action and reporting requirements;

☐ \_\_\_\_\_ ☐ ☒

(a) Overfill prevention system weekly;

☐ \_\_\_\_\_ ☐ ☒

(b) Exposed tank exteriors weekly;

☐ \_\_\_\_\_ ☐ ☒

(c) Tank interiors when tank is drained or at least every three years;

☐ \_\_\_\_\_ ☐ ☒

(d) Procedures for immediate corrective action if failures detected;

☐ \_\_\_\_\_ ☐ ☒

(e) Inspection reports available for department review.

☐ \_\_\_\_\_ ☒ ☐

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

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

**PART G CONTINUED**

- |                          |       |                                     |                                     |  |
|--------------------------|-------|-------------------------------------|-------------------------------------|--|
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | (1) Describe materials of construction;  |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | (2) A double-walled tank design system to be used with the following requirements;   |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | (a) Interstitial space monitoring at least weekly;   |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | (b) Corrosion protection provided for primary tank interior and external surface of outer shell;   |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | (c) Interior tank coatings compatible with stored leachate;  |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | (d) Cathodic protection inspected weekly and repaired as needed;   |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | (3) Describe an overfill prevention system such as level sensors, gauges, alarms and shutoff controls to prevent overfilling and provide for weekly inspections; |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | (4) Inspection reports available for department review.  |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | d. Schedule provided for routine maintenance of LCRS; (62-701.400(6)(e), FAC)  |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 6. Liner systems construction quality assurance (CQA); (62-701.400(7), FAC)  |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | a. Provide CQA Plan including:   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | (1) Specifications and construction requirements for liner system;   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | (2) Detailed description of quality control testing procedures and frequencies;  |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | (3) Identification of supervising professional engineer;   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | (4) Identify responsibility and authority of all appropriate organizations and key personnel involved in the construction project;                               |

S      LOCATION      N/A      N/C

PART G CONTINUED

- |                          |       |                                     |                                     |  |
|--------------------------|-------|-------------------------------------|-------------------------------------|--|
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | (5) State qualifications of CQA professional engineer and support personnel;   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | (6) Description of CQA reporting forms and documents;  |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | b. An independent laboratory experienced in the testing of geosynthetics to perform required testing;  |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | 7. Soil Liner CQA (62-701.400(8)FAC)   |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | a. Documentation that an adequate borrow source has been located with test results or description of the field exploration and laboratory testing program to define a suitable borrow source;                                      |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | b. Description of field test section construction and test methods to be implemented prior to liner installation;  |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | c. Description of field test methods including rejection criteria and corrective measures to insure proper liner installation.   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 8. Surface water management systems; (62-701.400(9),FAC)   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | a. Provide a copy of a Department permit for stormwater control or documentation that no such permit is required;  |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | b. Design of surface water management system to isolate surface water from waste filled areas and to control stormwater run-off;   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | c. Details of stormwater control design including retention ponds, detention ponds, and drainage ways;   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 9. Gas control systems; (62-701.400(10),FAC)   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | a. Provide documentation that if the landfill is receiving degradable wastes, it will have a gas control system complying with the requirements of Rule 62-701.530, FAC;   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 10. For landfills designed in ground water, provide documentation that the landfill will provide a degree of protection equivalent to landfills designed with bottom liners not in contact with ground water; (62-701.400(11),FAC) |



**PART H. HYDROGEOLOGICAL INVESTIGATION REQUIREMENTS (62-701.410(1), FAC)**

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>	
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1. Submit a hydrogeological investigation and site report including at least the following information:
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	a. Regional and site specific geology and hydrogeology;
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	b. Direction and rate of ground water and surface water flow including seasonal variations;
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	c. Background quality of ground water and surface water;
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	d. Any on-site hydraulic connections between aquifers;
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	e. Site stratigraphy and aquifer characteristics for confining layers, semi-confining layers, and all aquifers below the landfill site that may be affected by the landfill;
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	f. Description of topography, soil types and surface water drainage systems;
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	g. Inventory of all public and private water wells within a one-mile radius of the landfill including, where available, well top of casing and bottom elevations, name of owner, age and usage of each well, stratigraphic unit screened, well construction technique and static water level;
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	h. Identify and locate any existing contaminated areas on the site;
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	i. Include a map showing the locations of all potable wells within 500 feet of the waste storage and disposal areas;
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	2. Report signed, sealed and dated by PE and/or PG.

**PART I. GEOTECHNICAL INVESTIGATION REQUIREMENTS (62-701.410(2),FAC)**

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

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

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

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

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>	
<input checked="" type="checkbox"/>	Part K.1 and Attachment K-1	<input type="checkbox"/>	<input type="checkbox"/>	1. Provide documentation that landfill will have at least one trained operator during operation and at least one trained spotter at each working face; (62-701.500(1),FAC)
<input checked="" type="checkbox"/>	Part K.2	<input type="checkbox"/>	<input type="checkbox"/>	2. Provide a landfill operation plan including procedures for: (62-701.500(2), FAC)
<input checked="" type="checkbox"/>	Part K.2.a	<input type="checkbox"/>	<input type="checkbox"/>	a. Designating responsible operating and maintenance personnel;
<input checked="" type="checkbox"/>	Part K.2.b	<input type="checkbox"/>	<input type="checkbox"/>	b. Emergency preparedness and response, as required in subsection 62-701.320(16), FAC;
<input checked="" type="checkbox"/>	Part K.2.c	<input type="checkbox"/>	<input type="checkbox"/>	c. Controlling types of waste received at the landfill;
<input checked="" type="checkbox"/>	Part K.2.d	<input type="checkbox"/>	<input type="checkbox"/>	d. Weighing incoming waste;
<input checked="" type="checkbox"/>	Part K.2.e	<input type="checkbox"/>	<input type="checkbox"/>	e. Vehicle traffic control and unloading;
<input checked="" type="checkbox"/>	Part K.2.f	<input type="checkbox"/>	<input type="checkbox"/>	f. Method and sequence of filling waste;
<input checked="" type="checkbox"/>	Part K.2.g	<input type="checkbox"/>	<input type="checkbox"/>	g. Waste compaction and application of cover;
<input checked="" type="checkbox"/>	Part K.2.f, K.2.j, K.2.h	<input type="checkbox"/>	<input type="checkbox"/>	h. Operations of gas, leachate, and stormwater controls;
<input checked="" type="checkbox"/>	Part K.2.i	<input type="checkbox"/>	<input type="checkbox"/>	i. Water quality monitoring.
<input checked="" type="checkbox"/>	Part K.8	<input type="checkbox"/>	<input type="checkbox"/>	j. Maintaining and cleaning the leachate collection system;
<input checked="" type="checkbox"/>	Part K.3	<input type="checkbox"/>	<input type="checkbox"/>	3. Provide a description of the landfill operation record to be used at the landfill; details as to location of where various operational records will be kept (i.e. FDEP permit, engineering drawings, water quality records, etc.) (62-701.500(3),FAC)
<input checked="" type="checkbox"/>	Part K.4	<input type="checkbox"/>	<input type="checkbox"/>	4. Describe the waste records that will be compiled monthly and provided to the Department annually; (62-701.500(4),FAC)
<input checked="" type="checkbox"/>	Part K.5	<input type="checkbox"/>	<input type="checkbox"/>	5. Describe methods of access control; (62-701.500(5),FAC)

S      LOCATION      N/A      N/C

PART K CONTINUED

- |                                     |            |                          |                          |  |
|-------------------------------------|------------|--------------------------|--------------------------|--|
| <input checked="" type="checkbox"/> | Part K.6   | <input type="checkbox"/> | <input type="checkbox"/> | 6. Describe load checking program to be implemented at the landfill to discourage disposal of unauthorized wastes at the landfill; (62-701.500(6),FAC) |
| <input checked="" type="checkbox"/> | Part K.7   | <input type="checkbox"/> | <input type="checkbox"/> | 7. Describe procedures for spreading and compacting waste at the landfill that include: (62-701.500(7),FAC)  |
| <input checked="" type="checkbox"/> | Part K.7.a | <input type="checkbox"/> | <input type="checkbox"/> | a. Waste layer thickness and compaction frequencies;   |
| <input checked="" type="checkbox"/> | Part K.7.b | <input type="checkbox"/> | <input type="checkbox"/> | b. Special considerations for first layer of waste placed above liner and leachate collection system;  |
| <input checked="" type="checkbox"/> | Part K.7.c | <input type="checkbox"/> | <input type="checkbox"/> | c. Slopes of cell working face and side grades above land surface, planned lift depths during operation;   |
| <input checked="" type="checkbox"/> | Part K.7.d | <input type="checkbox"/> | <input type="checkbox"/> | d. Maximum width of working face;  |
| <input checked="" type="checkbox"/> | Part K.7.e | <input type="checkbox"/> | <input type="checkbox"/> | e. Description of type of initial cover to be used at the facility that controls:  |
| <input checked="" type="checkbox"/> | Part K.7.e | <input type="checkbox"/> | <input type="checkbox"/> | (1) Vector breeding/animal attraction  |
| <input checked="" type="checkbox"/> | Part K.7.e | <input type="checkbox"/> | <input type="checkbox"/> | (2) Fires  |
| <input checked="" type="checkbox"/> | Part K.7.e | <input type="checkbox"/> | <input type="checkbox"/> | (3) Odors  |
| <input checked="" type="checkbox"/> | Part K.7.e | <input type="checkbox"/> | <input type="checkbox"/> | (4) Blowing litter   |
| <input checked="" type="checkbox"/> | Part K.7.e | <input type="checkbox"/> | <input type="checkbox"/> | (5) Moisture infiltration  |
| <input checked="" type="checkbox"/> | Part K.7.f | <input type="checkbox"/> | <input type="checkbox"/> | f. Procedures for applying initial cover including minimum cover frequencies;  |
| <input checked="" type="checkbox"/> | Part K.7.g | <input type="checkbox"/> | <input type="checkbox"/> | g. Procedures for applying intermediate cover;   |
| <input checked="" type="checkbox"/> | Part K.7.h | <input type="checkbox"/> | <input type="checkbox"/> | h. Time frames for applying final cover;   |
| <input checked="" type="checkbox"/> | Part K.7.i | <input type="checkbox"/> | <input type="checkbox"/> | i. Procedures for controlling scavenging and salvaging.  |

**S****LOCATION****N/A****N/C****PART K CONTINUED**

- |   |                          |                          |   |
|---|--------------------------|--------------------------|---|
| <input checked="" type="checkbox"/> <u>Part K.7.j</u> | <input type="checkbox"/> | <input type="checkbox"/> | j. Description of litter policing methods;  |
| <input checked="" type="checkbox"/> <u>Part K.7.k</u> | <input type="checkbox"/> | <input type="checkbox"/> | k. Erosion control procedures.  |
| <input checked="" type="checkbox"/> <u>Part K.8</u>   | <input type="checkbox"/> | <input type="checkbox"/> | 8. Describe operational procedures for leachate management including;<br>(62-701.500(8),FAC)  |
| <input checked="" type="checkbox"/> <u>Part K.8.a</u> | <input type="checkbox"/> | <input type="checkbox"/> | a. Leachate level monitoring, sampling, analysis and data results submitted to the Department;  |
| <input checked="" type="checkbox"/> <u>Part K.8.b</u> | <input type="checkbox"/> | <input type="checkbox"/> | b. Operation and maintenance of leachate collection and removal system, and treatment as required;  |
| <input checked="" type="checkbox"/> <u>Part K.8.c</u> | <input type="checkbox"/> | <input type="checkbox"/> | c. Procedures for managing leachate if it becomes regulated as a hazardous waste;   |
| <input checked="" type="checkbox"/> <u>Part K.8.d</u> | <input type="checkbox"/> | <input type="checkbox"/> | d. Identification of treatment or disposal facilities that may be used for off-site discharge and treatment of leachate;  |
| <input checked="" type="checkbox"/> <u>Part K.8.e</u> | <input type="checkbox"/> | <input type="checkbox"/> | e. Contingency plan for managing leachate during emergencies or equipment problems;   |
| <input checked="" type="checkbox"/> <u>Part K.8.f</u> | <input type="checkbox"/> | <input type="checkbox"/> | f. Procedures for recording quantities of leachate generated in gal/day and including this in the operating record;   |
| <input checked="" type="checkbox"/> <u>Part K.8.g</u> | <input type="checkbox"/> | <input type="checkbox"/> | g. Procedures for comparing precipitation experienced at the landfill with leachate generation rates and including this information in the operating record;                |
| <input checked="" type="checkbox"/> <u>Part K.8.h</u> | <input type="checkbox"/> | <input type="checkbox"/> | h. Procedures for water pressure cleaning or video inspecting leachate collection systems.  |
| <input checked="" type="checkbox"/> <u>Part K.9</u>   | <input type="checkbox"/> | <input type="checkbox"/> | 9. Describe how the landfill receiving degradable wastes shall implement a gas management system meeting the requirements of Rule 62-701.530, FAC;<br>(62-701.500(9),FAC)   |
| <input checked="" type="checkbox"/> <u>Part K.10</u>  | <input type="checkbox"/> | <input type="checkbox"/> | 10. Describe procedures for operating and maintaining the landfill stormwater management system to comply with the requirements of Rule 62-701.400(9); (62-701.500(10),FAC) |



<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>	<u>PART K CONTINUED</u>
<input checked="" type="checkbox"/>	Part K.11	<input type="checkbox"/>	<input type="checkbox"/>	11. Equipment and operation feature requirements; (62-701.500(11),FAC)
<input checked="" type="checkbox"/>	Part K.11.a	<input type="checkbox"/>	<input type="checkbox"/>	a. Sufficient equipment for excavating, spreading, compacting and covering waste;
<input checked="" type="checkbox"/>	Part K.11.b	<input type="checkbox"/>	<input type="checkbox"/>	b. Reserve equipment or arrangements to obtain additional equipment within 24 hours of breakdown;
<input checked="" type="checkbox"/>	Part K.11.c	<input type="checkbox"/>	<input type="checkbox"/>	c. Communications equipment;
<input checked="" type="checkbox"/>	Part K.11.d	<input type="checkbox"/>	<input type="checkbox"/>	d. Dust control methods;
<input checked="" type="checkbox"/>	Part K.2.b.1	<input type="checkbox"/>	<input type="checkbox"/>	e. Fire protection capabilities and procedures for notifying local fire department authorities in emergencies;
<input checked="" type="checkbox"/>	Part K.11.e	<input type="checkbox"/>	<input type="checkbox"/>	f. Litter control devices;
<input checked="" type="checkbox"/>	Part K.11.f	<input type="checkbox"/>	<input type="checkbox"/>	g. Signs indicating operating authority, traffic flow, hours of operation, disposal restrictions.
<input checked="" type="checkbox"/>	Part K.12	<input type="checkbox"/>	<input type="checkbox"/>	12. Provide a description of all-weather access road, inside perimeter road and other roads necessary for access which shall be provided at the landfill; (62-701.500(12),FAC)
<input checked="" type="checkbox"/>	Part K.13	<input type="checkbox"/>	<input type="checkbox"/>	13. Additional record keeping and reporting requirements; (62-701.500(13),FAC)
<input checked="" type="checkbox"/>	Part K.13	<input type="checkbox"/>	<input type="checkbox"/>	a. Records used for developing permit applications and supplemental information maintained for the design period of the landfill;
<input checked="" type="checkbox"/>	Part K.13	<input type="checkbox"/>	<input type="checkbox"/>	b. Monitoring information, calibration and maintenance records, copies of reports required by permit maintained for at least 10 years;
<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	c. Maintain annual estimates of the remaining life of constructed landfills and of other permitted areas not yet constructed and submit this estimate annually to the Department;
<input checked="" type="checkbox"/>	Part K.13	<input type="checkbox"/>	<input type="checkbox"/>	d. Procedures for archiving and retrieving records which are more than five year old.

**PART L. WATER QUALITY AND LEACHATE MONITORING REQUIREMENTS (62-701.510, FAC)**

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>	
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1. Water quality and leachate monitoring plan shall be submitted describing the proposed ground water, surface water and leachate monitoring systems and shall meet at least the following requirements;
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	a. Based on the information obtained in the hydrogeological investigation and signed, dated and sealed by the PG or PE who prepared it; (62-701.510(2)(a),FAC)
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	b. All sampling and analysis performed in accordance with Chapter 62-160, FAC; (62-701.510(2)(b),FAC)
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	c. Ground water monitoring requirements; (62-701.510(3),FAC)
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	(1) Detection wells located downgradient from and within 50 feet of disposal units;
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	(2) Downgradient compliance wells as required;
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	(3) Background wells screened in all aquifers below the landfill that may be affected by the landfill;
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	(4) Location information for each monitoring well;
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	(5) Well spacing no greater than 500 feet apart for downgradient wells and no greater than 1500 feet apart for upgradient wells unless site specific conditions justify alternate well spacings;
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	(6) Well screen locations properly selected;
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	(7) Monitoring wells constructed to provide representative ground water samples;
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	(8) Procedures for properly abandoning monitoring wells;
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	(9) Detailed description of detection sensors if proposed.
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	d. Surface water monitoring requirements; (62-701.510(4),FAC)

S      LOCATION      N/A      N/C

PART L CONTINUED

- |                          |       |                          |                                     |   |
|--------------------------|-------|--------------------------|-------------------------------------|---|
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | (1) Location of and justification for all proposed surface water monitoring points;   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | (2) Each monitoring location to be marked and its position determined by a registered Florida land surveyor;  |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | e. Leachate sampling locations proposed; (62-701.510(5),FAC)  |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | f. Initial and routine sampling frequency and requirements; (62-701.510(6),FAC)   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | (1) Initial background ground water and surface water sampling and analysis requirements;   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | (2) Routine leachate sampling and analysis requirements;  |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | (3) Routine monitoring well sampling and analysis requirements;   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | (4) Routine surface water sampling and analysis requirements.   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | g. Describe procedures for implementing evaluation monitoring, prevention measures and corrective action as required; (62-701.510(7),FAC)   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | h. Water quality monitoring report requirements;(62-701.510(9),FAC)   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | (1) Semi-annual report requirements (see paragraphs 62 701.510(6)(c),(d)and (e) for sampling frequencies);  |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | (2) Documentation that the water quality data shall be provided to the Department in an electronic format consistent with requirements for importing into Department databases, unless an alternate form of submittal is specified in the permit. |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | (3) Two and one-half year report requirements, or every five years if in long-term care, signed, dated and sealed by PG or PE.  |

**PART M. SPECIAL WASTE HANDLING REQUIREMENTS (62-701.520, FAC)**

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>	
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1. Describe procedures for managing motor vehicles; (62-701.520(1), FAC)
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	2. Describe procedures for landfilling shredded waste; (62-701.520(2), FAC)
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	3. Describe procedures for asbestos waste disposal; (62-701.520(3), FAC)
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	4. Describe procedures for disposal or management of contaminated soil; (62-701.520(4), FAC)
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	5. Describe procedures for disposal of biological wastes; (62-701.520(5), FAC)

**PART N. GAS MANAGEMENT SYSTEM REQUIREMENTS (62-701.530, FAC)**

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>	
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1. Provide the design for a gas management system that will (62-701.530(1), FAC):
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	a. Be designed to prevent concentrations of combustible gases from exceeding 25% the LEL in structures and 100% the LEL at the property boundary;
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	b. Be designed for site-specific conditions;
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	c. Be designed to reduce gas pressure in the interior of the landfill;
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	d. Be designed to not interfere with the liner, leachate control system or final cover.
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	2. Provide documentation that will describe locations, construction details and procedures for monitoring gas at ambient monitoring points and with soil monitoring probes; (62-701.530(2), FAC):
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	3. Provide documentation describing how the gas remediation plan and odor remediation plan will be implemented; (62-701.530(3), FAC):
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	4. Landfill gas recovery facilities; (62-701.530(5), FAC):

S      LOCATION      N/A      N/C

**PART N CONTINUED**

- |                          |       |                          |                                     |   |
|--------------------------|-------|--------------------------|-------------------------------------|---|
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | a. Information required in Rules 62-701.320(7) and 62-701.330(3), FAC supplied;   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | b. Information required in Rule 62-701.600(4), FAC supplied where relevant and practical;   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | c. Estimate of current and expected gas generation rates and description of condensate disposal methods provided;   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | d. Description of procedures for condensate sampling, analyzing and data reporting provided;  |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | e. Closure plan provided describing methods to control gas after recovery facility ceases operation and any other requirements contained in Rule 62-701.400(10), FAC; |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | f. Performance bond provided to cover closure costs if not already included in other landfill closure costs.  |

**PART O.      LANDFILL FINAL CLOSURE REQUIREMENTS (62-701.600,FAC)**

S      LOCATION      N/A      N/C

- |                          |       |                          |                                     |  |
|--------------------------|-------|--------------------------|-------------------------------------|--|
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 1. Closure permit requirements; (62-701.600(2),FAC)  |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | a. Application submitted to Department at least 90 days prior to final receipt of wastes;            |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | b. Closure plan shall include the following:   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | (1)      Closure design plan;  |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | (2)      Closure operation plan;   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | (3)      Plan for long-term care;  |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | (4)      A demonstration that proof of financial responsibility for long-term care will be provided. |

S      LOCATION      N/A      N/C

PART O CONTINUED

- |                          |       |                          |                                     |  |
|--------------------------|-------|--------------------------|-------------------------------------|--|
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 2. Closure design plan including the following requirements: (62-701.600(3),FAC)   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | a. Plan sheet showing phases of site closing;  |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | b. Drawings showing existing topography and proposed final grades;   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | c. Provisions to close units when they reach approved design dimensions;   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | d. Final elevations before settlement;   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | e. Side slope design including benches, terraces, down slope drainage ways, energy dissipaters and discussion of expected precipitation effects; |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | f. Final cover installation plans including:   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | (1) CQA plan for installing and testing final cover;   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | (2) Schedule for installing final cover after final receipt of waste;  |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | (3) Description of drought-resistant species to be used in the vegetative cover;   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | (4) Top gradient design to maximize runoff and minimize erosion;   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | (5) Provisions for cover material to be used for final cover maintenance.  |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | g. Final cover design requirements:  |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | (1) Protective soil layer design;  |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | (2) Barrier soil layer design;   |

S	LOCATION	N/A	N/C	PART O CONTINUED
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	(3) Erosion control vegetation;
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	(4) Geomembrane barrier layer design;
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	(5) Geosynthetic clay liner design if used;
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	(6) Stability analysis of the cover system and the disposed waste.
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	h. Proposed method of stormwater control;
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	i. Proposed method of access control;
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	j. Description of the proposed or existing gas management system which complies with Rule 62-701.530, FAC.
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	3. Closure operation plan shall include: (62-701.600(4), FAC)
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	a. Detailed description of actions which will be taken to close the landfill;
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	b. Time schedule for completion of closing and long-term care;
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	c. Describe proposed method for demonstrating financial assurance for long-term care;
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	d. Operation of the water quality monitoring plan required in Rule 62-701.510, FAC.
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	e. Development and implementation of gas management system required in Rule 62-701.530, FAC.
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	4. Certification of closure construction completion including: (62-701.600(6), FAC)
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	a. Survey monuments; (62-701.600(6)(a), FAC)
<input type="checkbox"/>	_____	<input type="checkbox"/>	<input checked="" type="checkbox"/>	b. Final survey report; (62-701.600(6)(b), FAC)

S      LOCATION      N/A      N/C

**PART O CONTINUED**

- |                          |       |                                     |                                     |   |
|--------------------------|-------|-------------------------------------|-------------------------------------|---|
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 5. Declaration to the public; (62-701.600(7),FAC)   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 6. Official date of closing; (62-701.600(8),FAC)  |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | 7. Justification for and detailed description of procedures to be followed for temporary closure of the landfill, if desired; (62-701.600(9),FAC) |

**PART P.      OTHER CLOSURE PROCEDURES (62-701.610,FAC)**

S      LOCATION      N/A      N/C

- |                          |       |                                     |                                     |  |
|--------------------------|-------|-------------------------------------|-------------------------------------|--|
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 1. Describe how the requirements for use of closed solid waste disposal areas will be achieved;(62-701.610(1),FAC) |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | 2. Describe how the requirements for relocation of wastes will be achieved; (62-701.610(2), FAC)                   |

**PART Q.      LONG-TERM CARE (62-701.620,FAC)**

S      LOCATION      N/A      N/C

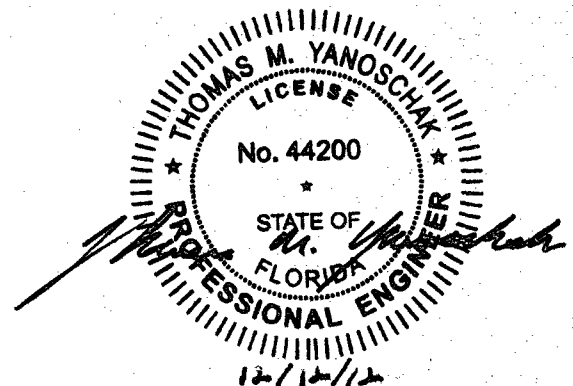
- |                          |       |                          |                                     |  |
|--------------------------|-------|--------------------------|-------------------------------------|--|
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 1. Maintaining the gas collection and monitoring system; (62-701.620(5), FAC)                    |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 2. Stabilization report requirements; (62-701.620(6),FAC)  |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 3. Right of access;(62-701.620(7),FAC)   |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 4. Requirements for replacement of monitoring devices; (62-701.620(8),FAC)                       |
| <input type="checkbox"/> | _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> | 5. Completion of long-term care signed and sealed by professional engineer (62-701.620(9), FAC). |



**PART R. FINANCIAL ASSURANCE (62-701.630,FAC)**

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

- |                          |       |                                     |                                     |  |
|--------------------------|-------|-------------------------------------|-------------------------------------|--|
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 1. Provide cost estimates for closing, long-term care, and corrective action costs estimated by a PE for a third party performing the work, on a per unit basis, with the source of estimates indicated; (62-701.630(3)&(7), FAC). |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 2. Describe procedures for providing annual cost adjustments to the Department based on inflation and changes in the closing, long-term care, and corrective action plans; (62-701.630(4)&(8), FAC).                               |
| <input type="checkbox"/> | _____ | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 3. Describe funding mechanisms for providing proof of financial assurance and include appropriate financial assurance forms; (62-701.630(5),(6),&(9), FAC).  |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | 4. Provide documentation and the appropriate forms for delaying submitting proof of financial assurance for solid waste disposal units that qualify; (62-701.630(2)(c), FAC).  |



**SECTION A**  
**FDEP SOLID WASTE MANAGEMENT FACILITY**  
**PERMIT APPLICATION FORM**

The completed Florida Department of Environmental Protection (FDEP) Application form for a Permit to Construct, Operate, Modify or Close a Solid Waste Management Facility is attached.

**SECTION B**  
**DISPOSAL FACILITY GENERAL INFORMATION**

General information about the Sarasota County Central County Solid Waste Disposal Complex (CCSWDC) is described on pages 6 through 9 of the permit application form included in Section A.

## **SECTION C PROHIBITIONS**

Disposal areas at the facility have been permitted by FDEP and are located within the property boundaries of the CCSWDC. Revisions to the fill sequence on Phase II will not require additional cells (disposal units) at the CCSWDC in order to operate. No changes are proposed to any prohibitions requirements as part of this Minor Modification Permit Application.

**SECTION D**  
**SOLID WASTE MANAGEMENT FACILITY**  
**PERMIT REQUIREMENTS**

**D.1 APPLICATION FORM AND SUPPORTING DOCUMENTS**

Four copies of the application form, supporting data, and reports have been included with this submittal.

**D.2 ENGINEERING CERTIFICATION**

This Permit Application Form and Engineering Design Plans included in this permit application have been signed, dated and sealed by the Registered Professional Engineer in responsible charge of their preparation.

**D.3 TRANSMITTAL LETTER**

A transmittal letter is included at the beginning of this document.

**D.4 APPLICATION FORM**

FDEP Form No. 62-701.900(1) effective 01-06-10, dated and signed by the applicant, is included with this submittal.

**D.5 PERMIT FEE**

Per Rule 62-701.315 FAC, provided with this submittal is a check for the following permit fee:

- \$250 for a Minor Modification.

**D.6 ENGINEERING REPORT**

This report meets the requirements of FAC 62-701.320(7)(d) detailing plans for the revised fill sequence on Phase II and updates to the current and approved Operations Plan.

**D.7 OPERATION AND CLOSURE PLAN**

Revisions to the CCSWDC Operation Plan are presented in Appendix A. Since a closure permit is not being requested with this application, a closure plan is not included in this submittal.

**D.9 DRAWINGS**

Engineering drawings meeting the requirements of FAC 62-701.320(7)(f)(6) are provided in Appendix B, Drawings.

## **SECTION E**

### **LANDFILL PERMIT REQUIREMENTS**

Disposal areas at the facility have been permitted by FDEP and are located within the property boundaries of the CCSWDC. Revisions to the fill sequence on Phase II will not require additional cells (disposal units) at the CCSWDC in order to operate. No changes are proposed to landfill permit requirements as part of this Minor Modification Permit Application.

**SECTION F**  
**GENERAL CRITERIA FOR LANDFILLS**

Disposal areas at the facility have been permitted by FDEP and are located within the property boundaries of the CCSWDC. Revisions to the fill sequence on Phase II will not require additional cells (disposal units) at the CCSWDC in order to operate. No changes are proposed to general criteria for landfills as part of this Minor Modification Permit Application.



**SECTION G**  
**LANDFILL CONSTRUCTION REQUIREMENTS**

Disposal areas at the facility have been permitted by FDEP and are located within the property boundaries of the CCSWDC. Revisions to the fill sequence on Phase II will not require additional cells (disposal units) at the CCSWDC in order to operate. No changes are proposed to landfill construction requirements as part of this Minor Modification Permit Application.

## **SECTION H**

### **HYDROGEOLOGICAL INVESTIGATION REQUIREMENTS**

Disposal areas at the facility have been permitted by FDEP and are located within the property boundaries of the CCSWDC. Revisions to the fill sequence on Phase II will not require additional cells (disposal units) at the CCSWDC in order to operate. No changes are proposed to hydrogeological investigation requirements as part of this Minor Modification Permit Application.

## **SECTION I**

### **GEOTECHNICAL INVESTIGATION REQUIREMENTS**

Disposal areas at the facility have been permitted by FDEP and are located within the property boundaries of the CCSWDC. Revisions to the fill sequence on Phase II will not require additional cells (disposal units) at the CCSWDC in order to operate. No changes are proposed to geotechnical investigation requirements as part of this Minor Modification Permit Application.

**SECTION J**  
**VERTICAL EXPANSION OF LANDFILLS**

Disposal areas at the facility have been permitted by FDEP and are located within the property boundaries of the CCSWDC. Revisions to the fill sequence on Phase II will not require additional cells (disposal units) at the CCSWDC in order to operate. No changes are proposed to vertical expansions as part of this Minor Modification Permit Application.

## **SECTION K**

### **LANDFILL OPERATION REQUIREMENTS**

Disposal areas at the facility have been permitted by FDEP and are located within the property boundaries of the CCSWDC. Revisions to the fill sequence on Phase II will not require additional cells (disposal units) at the CCSWDC in order to operate. Proposed changes to landfill operations as part of this Minor Modification Permit Application are explained in following sections.

#### **K.2 LANDFILL OPERATION PLAN**

##### **K.2.f Method and Sequence of Filling Waste**

Procedures for landfill operations as required by FAC 62-701.500 are provided in the Operations Plan, Section K.2 (Appendix A). The updated operations plan includes revisions to procedures of filling in Phase II. Revised operations plan states that initial lift of solid waste will progress from south to north, then north to south pattern across the entire width of the landfill cell.

## **SECTION L**

### **WATER QUALITY AND LEACHATE MONITORING REQUIREMENTS**

Disposal areas at the facility have been permitted by FDEP and are located within the property boundaries of the CCSWDC. Revisions to the fill sequence on Phase II will not require additional cells (disposal units) at the CCSWDC in order to operate. No changes are proposed to water quality and leachate monitoring requirements as part of this Minor Modification Permit Application.

**SECTION M**  
**SPECIAL WASTE HANDLING REQUIREMENTS**

Disposal areas at the facility have been permitted by FDEP and are located within the property boundaries of the CCSWDC. Revisions to the fill sequence on Phase II will not require additional cells (disposal units) at the CCSWDC in order to operate. No changes are proposed to special waste handling requirements as part of this Minor Modification Permit Application.

**SECTION N**  
**GAS MANAGEMENT SYSTEM**

Disposal areas at the facility have been permitted by FDEP and are located within the property boundaries of the CCSWDC. Revisions to the fill sequence on Phase II will not require additional cells (disposal units) at the CCSWDC in order to operate. No changes are proposed to gas management system requirements as part of this Minor Modification Permit Application.



## **SECTION O**

### **LANDFILL FINAL CLOSURE REQUIREMENTS**

Disposal areas at the facility have been permitted by FDEP and are located within the property boundaries of the CCSWDC. Revisions to the fill sequence on Phase II will not require additional cells (disposal units) at the CCSWDC in order to operate. Phase II of the CCSWDC is not being proposed for closure at this time. A detailed closure design report satisfying the requirements of Rule 62-701.600(4) FAC will be included as part of the closure permit application. No changes are proposed to landfill closure requirements as part of this Minor Modification Permit Application.

**SECTION P**  
**OTHER CLOSURE PROCEDURES**

Disposal areas at the facility have been permitted by FDEP and are located within the property boundaries of the CCSWDC. Revisions to the fill sequence on Phase II will not require additional cells (disposal units) at the CCSWDC in order to operate. Closure of permitted disposal areas at the CCSWDC is not being proposed at this time. No changes are proposed to other closure procedures as part of this Minor Modification Permit Application.

## **SECTION Q**

### **LONG TERM CARE REQUIREMENTS**

Disposal areas at the facility have been permitted by FDEP and are located within the property boundaries of the CCSWDC. Revisions to the fill sequence on Phase II will not require additional cells (disposal units) at the CCSWDC in order to operate. Closure of permitted disposal areas at the CCSWDC is not being proposed at this time. No changes are proposed to long term care requirements as part of this Minor Modification Permit Application.

## **SECTION R**

### **FINANCIAL ASSURANCE**

Disposal areas at the facility have been permitted by FDEP and are located within the property boundaries of the CCSWDC. Revisions to the fill sequence on Phase II will not require additional cells (disposal units) at the CCSWDC in order to operate. No changes are proposed to financial assurance requirements as part of this Minor Modification Permit Application.

Dept. Of Environmental Protection

DEC 13 2012

Southwest District

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**APPENDIX A**  
**UPDATED OPERATIONS PLAN**

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Sarasota County  
Solid Waste Operations

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## Central County Solid Waste Disposal Complex Operations Plan

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March 2012

Revised ~~September~~ December 2012

Prepared by  
HDR Engineering, Inc.  
200 West Forsyth Street, Suite 800  
Jacksonville, Florida 32202  
(904)598-8900

HDR Project No. 39017-87559-195

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## SECTION K OPERATIONS PLAN

### K.1 TRAINING

In accordance with Rule 62-701.500(1), Florida Administrative Code (F.A.C.), key supervisory staff at the Central County Solid Waste Disposal Complex (CCSWDC) have received Landfill Operator Certification training. The training plan can be found in Attachment K-1. Sarasota County staff or a qualified landfill operations contractor will operate the facility CCSWDC. Sarasota County will require the operating entity to provide at least one trained landfill operator certified in accordance with Chapter 62-701.320(15), F.A.C. and at least one trained spotter at each working face during operation when the landfill receives waste to detect unauthorized wastes from each load.

The spotters will be responsible for guiding vehicles and promoting an efficient operation during normal operation hours. The spotters shall also be responsible for enforcing provisions for controlling the waste received. These provisions are described in Section K.2.c.

The facility CCSWDC will be operated in compliance with all applicable regulations governing the operation of solid waste management facilities and surface water management facilities.

In addition, the equipment operators have sufficient training and knowledge to move waste and soil, and to develop the site in accordance with the design plans and operational standards.

Interim spotters, who do not have the formal spotter training, may be employed at the CCSWDC provided that the interim spotter is under the direct supervision of a trained operator or trained spotter. The interim spotter must receive training as an operator or spotter within three months of employment.

An interim operator may be employed at the CCSWDC provided that the interim operator has had at least one year of experience at the facility or a similar facility. An interim operator must receive operator training within one year of employment as interim operator. An interim operator shall serve as the operator for the facility in lieu of a trained operator for no more than three consecutive months.

In the event the spotter is located on heavy equipment spreading waste at the working face, then the equipment operator must be a trained landfill operator or spotter. The equipment operator will remove unauthorized waste from the working face to a temporary area next to the working face for later removal/management or stop operations and notify another operator or ground personnel to assist with removal/management of the unauthorized waste before resuming operations.

### K.2 LANDFILL OPERATIONS PLAN

#### K.2.a Designation of Responsible Persons

The CCSWDC is owned by Sarasota County and operated under the direction of the Sarasota County Solid Waste Operations Unit. ~~Lois Rose, Manager, Solid Waste,~~ The Manager will be the designated responsible person for the operation of the CCSWDC.

A list of the designated landfill positions ~~landfill personnel is given provided~~ below. The Contractor must have an adequate number of positions working to fulfill their contractual obligations which at all times shall include a general manager, a operator and a spotter. The County shall have a minimum of one position at the site when waste is being accepted. Training requirements are also provided for each position, as well as typical training required for each position:

**VEOLIA ENVIRONMENTAL  
SERVICES CONTRACTOR:**

- General Manager (1) (Operator)
- Lead Equipment Operator (1) (Operator)
- Equipment Operator (75)
- Laborer/Spotter (1) (Spotter)
- Laborer (1) (Spotter)
- Mechanic (1)

**SARASOTA COUNTY:**

- Solid Waste Manager (1) (Operator)
- Compliance Specialist (31) (Operator)
- Solid Waste Engineer (1) Operator

**K.2.b Contingency Operations for Emergencies**

**K.2.b.(1) Emergency Provisions**

Emergency conditions at the landfill site may occur as a result of a natural disaster (hurricane, tornado, flooding, etc.) or fire. In the event emergency conditions will interrupt operations at the facility CCSWDC, the following safety and contingency plan will be implemented (see Attachment K-2). In addition, staff shall review and implement the most current version of the Sarasota County Solid Waste Operations Emergency Plan on file at the CCSWDC. Refuse is not normally delivered to the site during emergency conditions; however, should a major storm occur, the following actions shall be taken:

- Daily cover shall be applied to all exposed refuse before a major storm arrives, if possible.
- All landfill equipment shall be parked near any natural wind screens such as earthen mounds and berms.
- All lightweight signs and equipment shall be secured.
- When operation resumes, work shall commence in dry areas only (up from the active working face). Refuse shall not be deposited in standing water.
- Contract agreements with local contractors, equipment suppliers, or cooperative lending agreements with other County departments will be pursued for backup equipment, if necessary.

Small fires on the working face will be controlled by a bulldozer, landfill compactor and a water wagon and ample cover material to extinguish the fire. On-site stockpiles of soil cover material will always be available for suppressing fires. The large stormwater retention basins adjacent to the landfill will serve as the water source for fire fighting purposes.

In the event of a fire or other emergency, the solid waste operations manager or their designee will notify the Florida Department of Environmental Protection (FDEP) within twenty four (24) hours by telephone and within seven (7) days a written report will be submitted describing the

origins of the emergency, actions taken, result of the actions taken, and an analysis of the success or failure of the actions. However, if the fire cannot be extinguished by CCSWDC personnel within ~~one~~ hour, the ~~Department-FDEP~~ and the local government will be notified of the fire and informed of the fire control measures taken at the facility. If the fire cannot be extinguished within 48 hours or Solid Waste Operations determines additional assistance is needed at anytime, the local fire control protection agency will be called.

In addition, the local government and neighbors, which may be impacted by the fire, will be notified.

The Nokomis Fire Department presently maintains a fire station at 111 Pavonia Road in Nokomis, approximately 10.9 miles from the ~~proposed facility~~ CCSWDC. This station has equipment capable of obtaining water from surface sources for fire fighting. In addition, the City of Venice has a fire station located at 5300 Laurel Road in Venice, FL located approximately 7.6 miles from the ~~facility~~ CCSWDC.

Waste will continue to be accepted and disposal operations will continue in the event of a fire. Operations will be moved a safe distance from the fire location so as not to pose a hazard to operating personnel or customers.

A hot load area will be provided within the lined disposal area in a location away from the working face to allow vehicles arriving at the landfill with a fire in their load to dump quickly in an area where the material can be spread out and quickly covered with soil. The location of the hot load area will change from time to time with the changing working face locations. Hot loads will not be dumped on the working face until sufficiently cool to avoid combustion.

As described in Sections K.11.a. and K.11.b, the Contractor will provide adequate equipment on-site to ensure proper operation of the landfill and for excavating, spreading, compacting, and covering waste. As part of an agreement with a maintenance contractor, the Contractor will receive loaner equipment within ~~forty-eight~~ (48) hours of equipment breakdown, if required. These basic emergency procedures should protect the landfill and equipment, and allow reactivation of the operation in an orderly and timely manner. Two mobile electrical generators are maintained on-site to provide power during outages for the administration building, scale house, and maintenance building.

In case of an accidental spill of oil, fuel, leachate, or chemicals, the spill will be minimized by controlling the source immediately (e.g., by closing valve, turning-off switch, or taking any other necessary action). The affected area will be controlled by diverting vehicular traffic. Runoff from the affected area will be controlled by building a berm, plugging drain or ditch, or adding absorbent material. The affected area will be cleaned, and the effectiveness of the cleanup confirmed by sampling, as needed depending on the nature of the spilled material. For spill countermeasures of secondary containment at the Leachate Holding Storage Tank refer to Section K.2.h.2K.8.b, Leachate Management Collection and Removal System. A list of emergency telephone numbers is provided below.

Ambulance Service	911
Police Department	911
Fire Department	911
Lois Rose, Solid Waste Operations Manager	(941) 861-1589 office (941) 650-0722 cell
<u>CCSWDC Administration Building</u>	<u>(941) 861-1573</u>
<u>Main Switchboard Sarasota County Government</u>	<u>(941) 861-5000</u>
Southwest District, Dept. of Environmental Protection	(813) 632-7600

**Remember, if you are calling from a phone, which is connected to the County's switchboard, you must dial 9 then 911 to reach the emergency operator.**

#### **K.2.b.(2) Wet Weather Operations**

Steps to be taken for accommodating wet weather solid waste disposal include: 1) set-aside elevated tipping areas with limestone or shell approaches or other acceptable base material as needed to allow uninhibited vehicular movement; 2) set-aside elevated sandy cover material, and 3) erect containment berms around wet weather tipping areas in accordance with Section K.2.h.3.

In order to avoid an excessive accumulation of standing water in the area of the working face, a small area of daily cover will be removed by grading to allow direct percolation to the underlying refuse and leachate collection system. Pumping equipment is available on-site, if required to remove ponded leachate by pumping it to either a tanker truck for proper treatment and disposal, or to a leachate collection manhole.

#### **K.2.c Controlling the Type of Waste Received at the Site**

The automated accounting system, clerks at the scalehouse, and the site security fence discourage unauthorized entry and disposal of unauthorized waste. A sign located at the entrance states the general regulations including the types of unauthorized solid waste.

A trained spotter at the working face will visually inspect the waste as it is deposited. If unauthorized waste (i.e., lead-acid batteries, used oil, yard trash, white goods, and whole tires) is found at the working face, as part of routine operations, the waste would be segregated and removed for recycling, as described in Attachment K-1312.

White goods and electronic wastes are accepted at the facility CCSWDC for recycling but are not allowed at the working face for disposal. Special wastes not authorized for disposal are accepted for staging at the CCSWDC until they are removed from the site for offsite recycling. These materials shall be stored in the designated white goods and recyclables storage area located near the southeast corner of Phase I as shown on Sheet G-03, Overall Site Plan and Phasing Plan, provided with the previously submitted Phase II Class I Landfill Expansion -Permit Drawings (Revised March 2008).

Electronic products that are discovered at the working face will be removed and stored in a safe area within the active working ~~area-face~~ (bermed area). At the end of the day, at a minimum, these materials will be transported directly to the designated storage area. Undamaged electronic wastes recovered for recycling shall be stored in an undamaged condition and records for all quantities received by each recycler shall be kept along with the receipts with the name and address of each recycler. Recovered electronic wastes that have been damaged and will not be recycled will be removed and stored in a designated 30-foot x 45-foot covered concrete pad area adjacent to the Contractor's maintenance building located as shown on Sheet G-03, Overall Site Plan and Phasing Plan, provided with the previously submitted Phase II Class I Landfill Expansion Permit Drawings. The damaged waste shall be placed inside a watertight container.

White goods will be removed from the working face and taken to the white goods storage area located south of Phase I as shown on Sheet G-03, Overall Site Plan and Phasing Plan, provided in the previously submitted Phase II Class I Landfill Expansion- Permit Drawings. White goods shall be removed from the site at least monthly. Refrigeration units will be stored in an upright position until all liquids, CFCs and Freon are removed.

Other unauthorized waste and small quantity household hazardous waste such as lead-acid batteries, fluorescent tubes, pesticides, solvents, cadmium batteries, and thermometers, which are discovered at the working face, will be removed and stored in the designated 30-foot ~~x~~by 45-foot covered concrete pad adjacent to the maintenance building. This facility-designated storage area is only for temporary storage of material removed from the working face and is not a designated public household hazardous waste disposal facility or transfer station. These wastes will be placed on a 4-drum spill pallet. These pallets will be made up of 100 percent polyethylene with UV inhibitors and have spill reservoirs which meet the uniform fire code capacity requirements. Two pallets will be placed in the designated area. These materials will be collected each month by hazardous materials disposal companies or removed for alternate disposal or recycling. Unauthorized wastes will be removed from the site monthly. The maximum on-site storage for unauthorized wastes will be as follows:

- 1,000 electronic devices on e-waste slab.
- 30 batteries in a secondary containment covered tray.
- 2 - ~~250~~500 gallon containers for used oil with double containment (at the Citizen Convenience Center).
- 20 gallons of used oil placed upright in undamaged container (at the Contractor's maintenance building).
- 1,250 white goods, and lawnmowers, will be placed upright until all liquids, CFCs, and Freon are removed.

Sarasota County will accept contaminated soil for the purpose of landfilling (disposal) at CCSWDC in accordance with the criteria included in Attachment K-4. Waste tires encountered during operations will be placed in a container at the working face that will be removed at the end of the working day and stored in the area designated for waste tire processing within the CCSWDC. The waste tire processing facility is located within the future Phase V landfill area as shown on Sheet G-03, Overall Site Plan and Phasing Plan, provided with the previously submitted Phase II Class I Landfill Expansion Permit Drawings.

At least one trained spotter will be at each working face when wastes are received at the landfill. Normally, one working face will be operating at the landfill. There may be occasions where two or more working faces are required such as when the first lift of waste is placed in a new cell, during high volume periods such as after a storm, or when the size of a working face is limited such as at the corner of a cell. The spotters will be trained in accordance with Rule 62-701.320(15) and in accordance with the training plan described in Attachment K-1 to recognize unauthorized waste. Each load of waste will be visually inspected at ground level by the spotter as well as by the equipment operators spreading the waste. The spotters and equipment operators will look for containers and other indicators of unauthorized waste. Upon detection of unauthorized waste, the spotters will require the hauler to remove the material for disposal at a proper facility. If the hauler has departed, the spotter will remove the material from the working face for temporary storage at the designated 30-foot x by 45-foot covered concrete pad adjacent to the maintenance building and ultimate removal from the site for proper disposal or recycling.

If any hazardous waste is detected in the load, the hauler shall be informed immediately of the violation. In the event of discovery of hazardous materials, the procedures outlined in Items 3, 4, 5, and 6 of Section K.6 will be followed if any unauthorized wastes are discovered.

If unauthorized waste (i.e., hazardous, PCBs, untreated biomedical, or free liquid) are found at the landfill working face, the waste will be isolated and the contractor's general manager or designee would be promptly notified. The contractor's general manager or designee is trained in the proper procedure to follow including notification to the FDEP. Similarly, if suspect waste is found the waste will be isolated, identified if possible, and the County's operation manager or designee will be notified. The County's operation manager or designee will prepare a suspect waste report and ensure that the waste is properly disposed. The waste load inspection form contained in Attachment K-5 is used for this purpose. Hazardous waste will be isolated and restricted from access until it is removed and properly disposed of from the CCSWC Landfill by a licensed hazardous waste contractor. Hazardous wastes will be removed from the site within 48 hours.

Special waste such as asbestos will be accepted and managed in accordance with the requirements of 62-701.520(3), F.A.C. The asbestos waste haulers will be required to notify the County who will notify the landfill contract operator in advance and provide information on the estimated volume and delivery date of the asbestos. All incoming asbestos material will be required to comply with all applicable permit conditions and be wet down and properly wrapped or bagged. The uncompacted asbestos material will be covered with a minimum 6-inch layer of soil upon disposal. If additional asbestos deliveries are scheduled on the same day, the asbestos may remain uncovered until the end of the work day. The disposal location will be recorded in accordance with 40 C.F.R., Part 61.154, and a record of the asbestos location will be maintained.

Waste oil that is collected for the purpose of recycling is accepted at the CCSWDC near the main entrance Citizen's Convenience Center. Waste oil is stored in a secure containers until removed from the site for recycling purposes. Lawn mowers are accepted at the CCSWDC as long as they are drained of all fluids and are managed as white goods. After inspection for fluids, lawn mowers are stored in the white goods area until collected by the scrap metal vendor who collects white goods. Waste oil, lawn mowers, and yard trash will be managed as described in the Landfill Recycling Plan, Attachment K-1312. The yard waste processing facility location is south of Phase I as shown on Sheet G-03, Overall Site Plan and

Phasing Plan, provided with the previously submitted Phase II Class I Landfill Expansion Permit Drawings. The facility is permitted under a separate yard waste processing facility registration.

The Citizen's Convenience Center is located near the CCSWDC entrance of the landfill and consists of spaces for ~~two 20-cubic-yard~~ roll off containers for MSW, scrap metal, and recyclables; ~~Tires, drop-off for electronics,~~ and a household ~~chemical collection center~~ hazardous waste is also collected at this location. The roll off containers and electronics storage areas are located on concrete pads, ~~covered with~~ Three permanent canopies that prevent the accumulation of water in the containers during inclement weather are available at the site. Household chemicals are stored in a pre-manufactured hazardous waste storage unit. The Citizen's Convenience Center has a full-time attendant and is in operation from 8:00 A.M. to 5:00 P.M. six days per week. The attendant meets customers at the entrance, directs them to the appropriate area of the facility, and monitors the waste for unacceptable materials. The roll-off containers of MSW are emptied daily and all tires are also taken to the designated Tire Area on a daily basis.

The electronics drop off at the Citizen's Convenience Center is manned by a full-time attendant who unloads all vehicles that come into the facility. The electronics are from residential curbside collection routes and may include, but are not limited to, televisions, computers, monitors, copiers, etc. The electronics are physically unloaded and placed on pallets or the concrete pad and wrapped in cellophane. Electronics typically will remain at the facility for less than one week but may remain for up to two weeks. Any debris from the operation is swept up and placed in a closed drum for disposal. A vendor will remove the electronics to a recycler by backing semi-trailers up to the slab and loading the pallets onto the truck with pallet jacks or fork lifts.

#### **K.2.d Weighing or Measuring Incoming Wastes**

All waste entering the landfill site will be weighed. ~~A minimum of~~ Three (3) electronic 50-ton scales are installed at the CCSWDC entrance facility. An Information Management System (IMS) is linked to the scales to facilitate accurate data collection and measurement of incoming materials.

#### **K.2.e Vehicle Traffic Control and Unloading**

Directional signs will be placed to safely direct vehicles to the current waste unloading area. These signs will have large legible letters and will be cleaned when necessary. Signs will be strategically placed so that the route is clear to the drivers. Speed limit, safety, and prohibitive practice signs will be placed as necessary to encourage a safe, clean operating area. Unloading will be permitted only at the designated working face. On the fill area, temporary signs, barricades, and flagged stakes will be used to direct vehicles to the proper tipping area. Haulers will be responsible for unloading their own vehicles. Wastes requiring special handling will be coordinated with and unloaded under the direct supervision of landfill contract operation personnel.

#### K.2.f Method and Sequence of Filling Waste

The overall phasing plan for the facilities ~~CCSWDC~~ is depicted on Sheet G-03, Overall Site Plan and Phasing Plan, provided with the previously submitted Phase II Class I Landfill Expansion Permit Drawings. The layout for the five (5) cells (designated disposal units) constructed as part of Phase I is shown in Attachment K-14. Staging plans for the remainder of Phase I as previously approved by FDEP are also provided in Attachment K-14. The layout for the four (4) cells proposed for Phase II of the Class I landfill is shown on Sheet C-01, Basegrade Plan, provided with the Permit Drawings. A detailed staging plan for the fill sequencing within Phase II is provided on Sheets C-07, C-08, and C-09 provided with the Permit Drawings. Phase II will be constructed in stages with Cells 1 and 2 being constructed before Cells 3 and 4. Sheets C-01A, C-02A, and C-03A of the ~~p~~Permit ~~d~~Drawings show Phase II with only Cells 1 and 2 constructed. Sheet C-13A shows the temporary liner termination between Cells 2 and 3. Revisions were made to the staging plan and sections of the permit drawings to accurately reflect the fill sequencing in each cell. The revised staging plan and sections, Sheets C-07, C-08, C-09, C-10, and C-11, and Fill Sequence Sheet 45 are included in Attachment K-13. The typical maximum height for each lift is 10 feet. The temporary roads and swales for access and surface water drainage will be phased in as the Phase II area is filled. The maximum width of the working face will be 200 feet. However, the landfill operations may be conducted with a working face width of less than 200 feet.

#### Temporary Gas Vent Removal

Four temporary gas vents were installed within the bottom liner system during Phase II construction. These gas vents were required when naturally occurring gas within the soil beneath Phase II began to collect beneath the liner and cause the liner system to lift off of the subgrade in several locations. The vents are located near the center of Cells 2 and 3 close to the ridge line between the two cells. Attachment K-15 contains information on the construction and locations of the gas vents.

Prior to the placement of waste within either Cell 2 ~~or~~ and Cell 3, three of the temporary gas vents located in the cell will need to be removed and the liner system repaired. The County will notify the FDEP Southwest District office at least two (2) weeks prior to ~~was notified of the vent removal/liner repair in Cell 2. The vent in Cell 3 is still in place. When the vent in Cell 3 will need to be removed and the liner repaired, prior to placement of waste within the cell, FDEP Southwest District office will be notified at least two (2) weeks prior.~~ Vent removal and liner repair will be performed in accordance with the following procedures:

Remove rain cover in vicinity of vent and excavate protective cover soil near repair area;

Remove protective casing from standpipe;

Remove clamp from primary liner boot, cut primary liner outside of boot weld, and lift boot over standpipe;

Remove clamp from secondary liner boot, cut secondary liner outside of boot weld, and lift boot over standpipe;

Remove any hydrated or damaged geosynthetic clay liner (GCL) as necessary to allow removal of vent pipe;

Remove vent pipe, being careful not to damage in-place liner components or subgrade;



Inspect subgrade, replace any soft soil with material meeting requirements of Phase II project specifications, and provide smooth surface for placement of overlying geosynthetics;

Patch GCL, secondary liner, secondary geocomposite, primary liner, and primary geocomposite in accordance with the requirements of Phase II project specifications and CQA Plan with the exception that no laboratory or field testing beyond vacuum testing of liner welds will be required of the repair materials due to the limited extent of the repairs;

Replace protective cover material over repair; and,

Replace rain cover if needed.

All repairs shall be performed by a company approved by a liner manufacturer to perform liner installation. All repairs shall be observed by a third party inspector who will submit documentation to the FDEP Southwest District office that the repairs were performed in general accordance with the Phase II specifications and CQA Plan.

#### **Filling in New Cell**

The initial lift of solid waste shall be deposited in each new Phase II cell (designated disposal unit) beginning at the south end of the landfill cell.

Waste will be placed within the designated edge of waste shown on the ~~Engineering previously submitted~~ Permit Drawings. The edge of waste will be located by measuring 7 feet inward from the edge of liner markers on the north and west sides of Phase II ~~including the temporary liner termination for Cell 2~~. The edge of waste will be located by measuring 14 feet inward from the edge of liner markers on the south side of Phase II. Periodic inspections will be made to ensure that the markers are in place and the edge of waste is located the required distance from the edge of the liner.

The initial lift of solid waste will progress ~~to the north~~ from south to north, then north to south fill pattern, across the entire width of the landfill cell. The working face will primarily move in an east/west direction across the width of the landfill cell. Selected solid waste loads ~~consisting of solid waste containing no~~ rigid objects will be used for at least the first 4 feet of the first lift, and it will be filled to an elevation of approximately 40 feet NGVD within the Phase II cells which is higher than the cell's lined external containment berms in order to promote stormwater runoff. The lower lift thickness will be placed in the high end (south) of the cells and the greater lift thickness will be placed on the low end (north).

The method of waste disposal for each lift is described as follows. All incoming solid waste will be directed to the working face and placed against the side slope of the previous day's ~~refuse waste~~. The first row of waste in a new lift will be placed against the toe of a containment berm to provide a guide for the placement of ~~refuse waste~~ for the remaining rows. A slope of not more than  $3H$  to  $1V$  will be maintained. The working face shall be less than 200 feet wide. A maneuvering area shall be provided for large private and commercial vehicles. Depending on space limitation within the working face area, a section of the working face may also be designated for smaller loads and vehicles.

Solid waste will be placed at the working face and spread in 2-foot layers then compacted. The spreading of ~~refuse waste~~ will be a continuous operation.

In compliance with 62-701.500(10), F.A.C., the stormwater management systems will be operated and maintained as necessary to meet applicable standards of Chapters 62-701, 62-302, and 62-25, F.A.C. The stormwater management system at the CCSWDC Class I landfill is designed to avoid mixing of stormwater with leachate. Stormwater or other surface water which comes into contact with the landfilled solid waste or mixes with leachate will be considered leachate and subjected to applicable requirements.

~~The filling of the remaining disposal capacity within Phase I will generally follow the FDEP approved staging plans provided in Attachment K-14. The filling of each lined cell within the Phase II area will follow the sequence outlined below: (Refer to revised Sheets C-07 through C-09, Landfill Staging Plans, provided with the Phase II Class I Landfill Expansion Permit Drawings in Attachment K-13).~~

~~The cell area initially will be filled with a minimum 4 foot lift to bring the daily cover grade to an elevation of approximately 40 feet NGVD which is higher than the cell's lined external containment berms in order to promote stormwater runoff. The lower lift thickness will be placed in the high end (south) of the cells and the greater lift thickness will be placed on the low end (north).~~

~~Filling of each cell will generally progress from the south end of the cell to the north end, then from the north end to the south end of the cell while providing a slope on the cover to allow storm water drainage as shown on the revised Staging Plans, Sheets C-07 through C-09, Landfill Staging Plans, provided with the Phase II Class I Landfill Expansion Permit Drawings in Attachment K-13. Only select waste containing no rigid materials will be used within the first 4 feet of the initial lift in a cell.~~

Subsequent waste lifts will be added to a cell in accordance with the landfill staging plans before opening new cells to waste disposal.

The surface runoff from unused portions of cells will be directed away from solid waste by grading and using temporary diversion berms.

Areas on the top and sides of each lift will be adequately covered and stabilized to maximize surface runoff away from the bermed, sloped working area and towards the stormwater drainage areas to minimize leachate generation, as shown on the revised Sheets C-07 through C-09, Landfill Staging Plans, provided with the Phase II Class I Landfill Expansion Permit Drawings in Attachment K-13. Intermediate cover will be applied to internal top and side slopes and completed external slopes within seven (7) days if the area will not receive more waste within 180 days. The top of lifts will be sloped to promote storm water drainage. Intermediate covered areas that will not be landfilled or covered with final cover within six months will be sodded (external slopes) or seeded and mulched (internal and top slopes) to avoid slope erosion. Storm water collected within the bermed working area will be considered leachate and will be collected and disposed as such. Efficient use of these techniques will decrease leachate volumes.

### **K.2.g Waste Compaction and Application of Cover**

Cover material for daily operations of the landfill will be obtained from the designated stockpile area, C&D Site, and/or compost generated from yard waste recycling. Compost used with soil for cover material shall be free of waste. Cover material will be deposited in the stockpile area location shown on Sheet G-03, Overall Site Plan and Phasing Plan, provided with the previously submitted Phase II Class I Landfill Expansion Permit Drawings. The designated stockpile area will have 3H:1V side slopes in order to minimize erosion. Additional soil obtained from offsite borrow areas will be placed within the stockpile area during the operational life of the facility. A silt fence will be installed around the stockpile area and side slopes will be grassed to further reduce and control erosion.

Waste will be spread in layers approximately two feet thick on the working face and compacted to approximately one foot in thickness before application of the next layer. The solid waste will be compacted with a minimum of three to five passes of a compactor. Initial, intermediate and final cover will be applied as detailed in Sections ~~K.2.f~~, K.7.f, K.7.g, and K.7.h., of this Operations Plan.

### **K.2.h Stormwater Controls**

The stormwater management system for ~~this project at the CCSWDC~~ consists of a series of swales, culverts, and detention ponds. The system is designed to comply with all of the requirements of both Chapters 62-25 F.A.C. and 40 D-4 F.A.C. The stormwater management system for CCSWDC was constructed under a permit issued by the Southwest Florida Water Management District in 1993. All components of the system were installed during Phase I construction.

~~All~~ The side slope of each cells within Phase II as well as the Phase I/Phase II overlay liner system were constructed with a rain cover to avoid erosion of the protective cover, limit plant growth, and assist with the management of stormwater until waste is deposited within the cells. The rain cover consists of a 20-mil scrim-reinforced polyethylene liner held in place with sand bags. Specifications for the rain cover installed during Phase II construction are provided in Attachment K-16.

Stormwater collected on the protective sand layer of Phase II cells that have not yet received waste (i.e. in active cell) will flow north to the sump areas within each cell. Any collected stormwater that has not been in contact with solid waste or otherwise contaminated by leachate will be collected in the temporary stormwater inlets installed in Cells 3 and 4 and routed to the leachate collection manhole fitted with temporary stormwater piping that will outfall into the perimeter channel which is part of the permitted stormwater management system. Stormwater may also be pumped over the perimeter berm to the perimeter channel. Any stormwater collected in an open ~~cell~~ that has been in contact with solid waste or ~~which has received discharges~~ will be considered leachate. The leachate will not be allowed to enter the stormwater collection system and will be pumped to the existing ~~lift~~ Phase II pump station north of Cell 2 or to the nearest active ~~cell~~. If it is not clear whether stormwater has been impacted by leachate, the County will collect samples and perform testing of the stormwater management system as ~~contained~~ specified within the current Environmental Resource Permit (ERP) prior to disposal as leachate or stormwater.

~~Stormwater collected from Phase II Cell 2 is directed to the existing metering manhole via the temporary stormwater inlets at the northern end of the Cell, or pumped over the existing northern berm, and into the perimeter channel. If stormwater is collected at the metering manhole the manhole will be modified~~

~~with an 8-inch outfall that directs stormwater to the existing perimeter swale. The pipe from the metering manhole to the sump Phase II pump station will be pluggedincludes an 8-inch plug to prohibit prevent stormwater from entering the leachate collection system. If stormwater is collected at the metering manhole, an 8-inch outfall directs stormwater to the existing perimeter swale by closing the 8-inch plug. If no modifications are made, the stormwater removal will be accomplished with portable pumps that will be positioned placed on the north perimeter berm as needed. The pump discharge will be directed to a portion of the perimeter drainage channel lined with grout filled fabric reventment revetment (GFFR) to avoid erosion of the channel.~~

Stormwater from Phase II Cells 3 and 4 will be collected utilizing the existing leachate collection system. Inlet structures ~~will be~~ installed in line with the existing 8-inch leachate collection pipe at the north end of each cell. Valves will be closed on the pipes from the leachate collection manholes to the leachate Phase II pump station. Stormwater will be directed to the leachate collection manhole. ~~†The collection manhole will be~~ penetrated and an 8-inch outfall pipe ~~will~~ was installed to direct the captured stormwater to the existing perimeter channel. The discharge point into the channel ~~will be~~ lined with GFFR-riprap to avoid erosion of the channel.

One month prior to the acceptance of the waste into each cell (cells 3 and 4), Sarasota County shall notify FDEP that the stormwater diversion modifications ~~will be~~ removed. Sarasota County ~~shall~~ will provide FDEP a schedule of when the inlets are to be removed, the tee ~~shall be~~ capped, the 8-inch outfall pipe from the leachate collection system to the perimeter channel is to be plugged or grout filled, and the downstream valve ~~will be~~ opened. After the work has been completed, ~~Sarasota~~ the County shall provide a construction certification to the FDEP for the decommissioning of the Phase II stormwater system diversion modification. Detailed drawings of Cell 2, 3, and 4 stormwater collection systems diversion modifications are included in Attachment K-1817.

If the rain ~~tarp cover~~ system on the side slopes in Phase II becomes irreparable, Sarasota County may elect to replace the rain ~~tarp cover~~, place a sod layer or simply maintain the protective sand layer cover in each cell. Prior to receiving waste, the 24-inch protective sand layer will be restored to original design and permitted specifications for Cells 2, 3, and 4.

~~If needed †The rain cover or sod will be removed prior to the placement of waste within a cell. The rain cover or sod within a cell may be removed either all at once or in stages depending on how long it is anticipated it will take to place the first lift of waste within the cell. If the rain cover or sod is removed in stages, then stormwater that has not been in contact with waste may be collected and pumped over the top of the berm and into the perimeter drainage channel or inactive adjacent cell. If the rain cover is compromised, storm water will be segregated and pumped directly off the protective sand layer and pumped over the top of the pump berm and into the perimeter channel. Best Management Practices shall be taken to minimize or eliminate particulate matter from entering the stormwater system.~~

All stormwater runoff will be conveyed via perimeter drainage channels to detention facilities. Ditch blocks located in the perimeter channels at strategic locations act as sediment traps and will require periodic maintenance.

The ultimate discharge of the detention facilities will be to Old Cow Pen Slough or isolated wetlands through fixed control weirs and spreader swales.

As the filling of the waste progresses, temporary stormwater letdown structures will be installed to facilitate drainage without erosion. Temporary stormwater diversion berms will be installed around the top perimeter of each lift and connected to the temporary letdown structures. The temporary letdowns will be located in the approximate locations as shown on the revised Sheets C-07 through C-09, Landfill Staging Plans, provided with the ~~Phase II Class I Landfill Expansion Permit Drawings in Attachment K-13~~. Stormwater will be directed to these temporary letdown structures by sloping the top of each lift to promote drainage as shown on the staging plans.

Sediment collection provided by perimeter ditches and ditch blocks will minimize siltation of the main retention areas. In addition, the active ~~fill area~~ working face(s) will be surrounded by berms to capture stormwater that comes in contact with waste and to prevent run-on and mixing with the stormwater from outside the active ~~fill area~~ working face. Stormwater collected within the berms surrounding the active ~~fill area~~ working face(s) is considered to be leachate and will be allowed to percolate into the landfill for collection by the leachate collection system. This leachate may also be pumped to a leachate cleanout pipe or leachate manhole as a means of discharging it to the leachate collection system. This water will be filtered through a screen on the pump intake prior to discharge to a cleanout pipe or manhole.

During normal operations and rainfall events, rain water which becomes leachate at the working face will percolate into the waste to drain the area. However, in order for the operator to limit leachate ponding at the working face during intense rainfall events, the operator may install piping which drains excessive leachate to the toe of the landfill and into the leachate collection system as shown on the drawing sheet ~~Sheet 45 provided in Attachment K-191813~~. At the pipe inlet, tires or sand with silt fence maybe used as a filter medium to limit sediment transport through the pipe, allow leachate to freely drain to the inlet of the pipe, and to prevent objects from blocking the pipe inlet. Leachate may accumulate while the pipe is draining the area; however, the operator will inspect the inlet area periodically to ensure that the pipe inlet is not clogged and is allowing free drainage of water to the pipe to keep the accumulation at the inlet to a minimum. As the working face moves, the piping used to assist in drainage of excessive leachate will be relocated and reinstalled in a location selected by the operator which best drains the area. The general setup and installation of the piping will be as shown on the drawing ~~s~~Sheet 45 provided in Attachment K-~~191813~~.

If tires are used for the inlet and outlet areas, they will be temporary and before final disposal of the tire pieces, they will be reduced in size in accordance with the tire disposal requirements of Rule 62-711, F.A.C.

On areas of the landfill that ~~are~~is covered with intermediate cover, pipes may be used from the top of the landfill to the areas with rain cover on Phase II to shed stormwater off the landfill and reduce erosion. The pipes will be installed as shown on the drawing ~~s~~Sheet 45 provided in Attachment K-~~191813~~.

### ***Operation and Maintenance Procedures***

The stormwater management system for the CCSWDC consists of a variety of treatment and conveyance methods. The treatment system for the main solid waste handling and disposal areas includes seven wet detention basins. Conveyance to these ponds is through a series of letdown structures, perimeter channels and swales, and culverts. Stormwater collection along the entrance road is provided by the roadside swales. All portions of the stormwater system will be visually inspected by ~~Sarasota~~ the County weekly

and immediately following a storm event of 0.5 inch or greater. The inspections will identify buildup of debris, surface sheen, erosion and sedimentation, ~~and overgrown or exotic vegetation~~, and structural problems. Any problems identified by these inspections will be corrected within three (3) days. The wet detention basins will be inspected to estimate quantities of sediment within each pond. If the sediment occupies 30 percent of the volume below the normal pool elevation, the sediment will be removed and disposed of in the landfill. Vegetation in all portions of the conveyance systems will be removed on an as needed basis to prevent blockage.

#### **K.2.i Groundwater Monitoring Plan**

Please refer to the Water Quality Monitoring Plan and ~~addendums~~ addenda for the CCSWDC for information regarding the groundwater monitoring network and well locations.

#### **K.2.j Maintaining Leachate Collection System**

Leachate collection system maintenance will include daily inspection of all leachate pump stations, metering manholes and leak detection manholes. All pump running data as well as leachate level and flow data will be recorded and checked for irregularities. Pumps are pulled and checked for operational parameters at least once every two years. An example leachate pump data form is provided in Attachment K-87. The leachate collection system will be cleaned and inspected as described in part ~~LK.8.h~~ of this Operations Plan.

### **K.3 LANDFILL OPERATION RECORD**

The Administrative office located adjacent to the scale facilities at the entrance of the CCSWDC is shown on Sheet G-03, Overall Site Plan and Phasing Plan of the previously submitted p-Phase II Class I Landfill Expansion Permit dDrawings. The office provides facilities for employees including a training/meeting room, sanitary facilities, and first aid equipment. Similar additional facilities are located at the Equipment Maintenance building. Files are located in the Administrative office ~~and to~~ contain the operating record for the facilities as required by regulatory agencies/permits. Items that will be stored in the operation record include:

- This Operations Plan.
- All permits for the facility.
- All records and drawings used for developing permit applications.
- All monitoring information, calibration and maintenance records, and copies of reports required by permit (maintained for at least 10 years).
- Background water quality records.
- Annual estimates of the remaining life of the constructed landfill and other permitted landfill areas.
- All monthly waste records which shall include tonnages received for Class I, C&D, yard waste and recyclables.
- Asbestos location records.
- All monitoring reports for groundwater, stormwater, leachate and landfill gas.

- Waste tire processing records.
- Copies of all notifications required by 62-701 F.A.C.
- On-site precipitation record.
- FDEP inspection reports.
- Load checking reports.
- Leachate storage tank inspection reports.
- All training verifications.
- All other reports related to the design, operation, monitoring and permitting for the facilities.

#### **K.4 LANDFILL WASTE REPORTS**

Each month, a summary report of waste tonnage received for Class I waste, C&D debris, yard waste, and recyclables will be compiled. Copies of the monthly reports will be submitted to FDEP annually or upon request.

#### **K.5 EFFECTIVE BARRIER/ACCESS CONTROL**

Access control at CCSWDC includes a perimeter fence with a locking access gate at the scalehouse, which is the only entrance/exit for the facility. The access gate normally will be kept open during hours of operations and an attendant will be at the scalehouse during those times. When CCSWDC is not in operation, this access gate normally will be kept closed and locked.

#### **K.6 LOAD CHECKING PROGRAM**

At least three random loads of Class I Municipal Solid Waste (MSW) delivered to the landfill each week will be examined in accordance with the following procedure:

##### **Mechanism for Inspections**

- (1) Specific locations within the active ~~landfill cell~~ working face are to be dedicated to load examination. These areas should be relatively free from extraneous debris and capable of maintaining isolation of the material for one calendar week.
- (2) The inspection of the load shall be controlled by a Contracting Operator employee. Training of contract personnel shall continue on an ongoing basis. In accordance with Rule 62-701.500(6)(a), FAC, a minimum of three random loads will be checked at the active working face(s) each week. The selected driver will be directed to discharge their load at a designated location adjacent to the working face. If any unauthorized –waste (i.e., lead-acid batteries, used oil, yard trash, white goods, and whole tires) is found by the random inspection, or as part of routine operations, the waste will be segregated and removed from the site for recycling as described in Section K.2.c. These unauthorized wastes will be stored as described in Section K.2.c. and removed from the site within 30 days.

- (3) The inspection form (see Attachment K-5) shall be filled out and signed off by the inspector. The inspector will identify and note all unauthorized waste found during random load inspection, estimated quantity, and the action taken. The inspector will sign the inspection form that will be retained at the CCSWDC. It shall be the County's responsibility to file/store/distribute the reports.
- (4) The Sarasota County Solid Waste Operations Unit or the Solid Waste's Hazardous Waste Section will investigate violations found during the inspection process. The Contract Operator will remove or clean-up the disposed materials.
- (5) Violations involving hazardous waste dumping will be handled by the Sarasota County Solid Waste's Hazardous Waste Section. Every attempt will be exhausted to place responsibility on the generator relative to having the hazardous waste in question removed from the landfill at the expense of the generator. In the event that generator responsibility cannot be determined and that the waste appears to be from a commercial source, it will be the Contract Operator's responsibility to segregate and secure the waste and pay all costs relative to safely disposing of said waste.
- (6) A list of offenders will be compiled by the Solid Waste's Hazardous Waste Section and the list will be provided to Sarasota ~~the~~ County with updates on a periodic basis.

#### **K.7 PROCEDURES FOR SPREADING & COMPACTING WASTE AT THE LANDFILL**

The following guidelines will provide an efficient and environmentally sound method of operation for the CCSWDC.

- Portable litter fencing will be placed at the working face where needed to reduce windblown litter.
- Cracks or eroded sections in the surface of any filled and covered area will be repaired and a regular maintenance program will be followed to eliminate pockets or depressions that may develop as waste settles.
- If 12 inches of intermediate cover (free of waste) has been placed over a partially filled area, it will be removed and either reused or stockpiled for later use prior to the placement of a new lift.
- The materials described in Attachment K-~~10~~9 may be used for initial cover. Stormwater runoff will not be allowed from waste filled areas covered with tire chips or tarp. Runoff from outside of the bermed working face area will be considered stormwater only if the flow passes over areas that have no exposed waste and have been adequately covered with at least 6~~six~~ inches of compacted soil (or a mixture of soil/mulch), free of waste and stabilized to control erosion.
- Sufficient cover material will be stockpiled near the working face to provide an adequate supply for initial cover operations. In some areas, daily stockpiling near the working face may not be necessary because of the proximity of the on-site soil stockpile area.



#### **K.7.a Waste Layer Thickness and Compaction Frequencies**

Waste will be spread in layers of approximately two feet thick on the working face and compacted to approximately one foot in thickness before application of the next layer. The solid waste will be compacted with a minimum of three to five passes of a compactor.

#### **K.7.b First Layer of Waste**

Selected solid waste loads consisting of solid waste containing no large rigid objects will be used for at least the first four feet of the first lift of a new cell in order to protect the liner and leachate collection system. The first lift will be a minimum of 4-four feet deep to bring the daily cover grade to an elevation of approximately 40 feet NGVD which is higher than the cell's lined external containment berms in order to promote shedding of stormwater. Waste will be deposited at the inside toe of the cell's lined external containment berm on the south end of the cell and spread to the north. No solid waste will be placed beyond the litter fences. For the initial lift, hauling vehicles will reach the working face by traveling on top of the previously deposited waste and depositing the loads at the top of the working face. The fill will be spread and compacted "down slope" to prevent vehicles from traveling on the protective sand layer. Also see Section K.2.f. in this Operations Plan.

#### **K.7.c Slopes, Side Grades, and Lift Height**

The typical height for each lift is 10 feet. All incoming solid waste will be directed to the working face and placed against the toe of the side slope of the previous day's refuse. The first row of waste in a new lift will be placed against the toe of the containment berm to provide a guide for the placement of refuse for the remaining rows. A maximum slope of 3H: 1V will be maintained on the working face. All top slope areas will be sloped to drain stormwater off of the landfill.

Waste will be placed within the designated edge of waste as shown on the previously submitted Phase II Class I Landfill Expansion Engineering Permit Drawings. The edge of waste will be located by measuring 7-seven feet inward from the edge of liner markers on the north and west sides of Phase II including the temporary liner termination for Cell 2. The edge of waste will be located by measuring 14 feet inward from the edge of liner markers on the south side of Phase II. Periodic inspections will be made to ensure that the markers are in place and the edge of waste is located the required distance from the edge of the liner.

#### **K.7.d Maximum Width of Working Face**

Maximum width of the working face will be 200 feet. This will provide a sufficient area for maneuvering large private and commercial vehicles as well as minimize the exposed area and the unnecessary use of cover material.

#### **K.7.e Initial Cover**

For the Class I landfill, a minimum of six inches of compacted initial cover consisting of native sandy soils, top soil, soil-yard waste compost mixture, shredded tires, or other FDEP approved initial cover will be applied to the top of the lift and to the working face at the end of each day. Attachment K-10-9 provides a description and specification for initial cover materials previously approved for this facility.

A 2-inch layer of shredded yard waste may be applied when needed to the top of the initial cover to minimize erosion during rainy weather and to prevent birds from pecking through the initial cover layer to the garbage. The shredded yard waste layer shall not exceed 12-inches and shall be removed prior to placement of additional waste. The application of initial cover over the landfilled waste will assure control of disease vector breeding/animal attraction, odors, waste combustion (fire), blowing litter, and moisture infiltration.

The initial cover material will be spread over the exposed waste and, with the exception of tarps, compacted by the equipment used to spread the cover (likely a bulldozer or scraper). The initial cover material will not be removed prior to placement of successive lifts of waste, with the exception of tarps, which would be removed prior to placement of successive lifts. To enhance the infiltration of leachate through the waste, the initial cover material may be broken up in place by a dozer blade or equipment traffic immediately prior to the placement of the subsequent lift of waste. Any remaining litter and cleanings from equipment will be placed at the bottom of the completed cell and covered.

Before moving the working face, the area that will remain inactive will be covered with compacted cover soil (free of waste) or a mixture of 50 percent unscreened wood mulch and 50 percent soil, with sufficient thickness (minimum 6-inches) to prevent erosion and the mixing of leachate with stormwater.

#### **K.7.f Application of Initial Cover**

Initial cover will be applied at the end of each working day, except when solid waste will be placed on the working face within 18 hours; ~~a~~ A temporary cover such as a tarpaulin may be used to cover the working face and removed before placement of additional waste. Initial cover alternative materials are listed in Attachment K-109.

#### **K.7.g Intermediate Cover**

Intermediate cover consisting of at least ~~1~~ one foot of compacted native sandy soils or composted yard trash screened through ½-inch mesh mixed with 25 percent soil, by volume, will be applied within 7 seven days if final cover or an additional lift is not to be applied within 180 days. Intermediate covered areas that will not be landfilled or covered with final cover within 6 months will ~~be sodded (external slopes) or seeded and mulched (internal and top slopes) to avoid slope erosion~~ have all external, internal and top slopes greater than 6:1 sodded, and the internal areas either seeded and mulched or mulched only to avoid erosion. If only mulch is utilized, the mulch layer shall not exceed 12-inches in depth and shall be removed along with the interim cover layer prior to the placement of additional waste. Also see Section K.2.f. in this Operation Plan.

To conserve the intermediate cover material, a portion of the intermediate cover will be removed immediately before placement of additional solid waste on top of the lift or before placement of additional waste. The intermediate cover material (free of waste) will be stripped and reused as intermediate cover material. The stripped intermediate cover will be pushed ahead as needed for the perimeter containment berms constructed around the active working face area. The intermediate cover areas will be graded to promote drainage and seeded to prevent erosion.

Components of the landfill gas collection system may be installed in areas that receive intermediate cover. The locations of all underground piping associated with these systems will be marked to avoid damage to them during landfill operation and intermediate cover maintenance activities. Above ground structures

such as well heads, and valves, will be kept readily visible by such measures as clearing vegetation, painting components bright colors, and installing protective posts and flagging. These measures should protect the above ground structures from damage during routine intermediate cover maintenance activities such as mowing, grass repair, and washout repair.

#### **K.7.h Final Cover**

Following the receipt of a closure permit, final cover will be applied to the Class I landfill on the completed portions of ~~Phase I or Phase II of the landfill operation~~. The perimeter sideslopes of all completed cells will have a slope of 3H:-1V.

The cap and final cover will consist of a minimum of 12 inches of intermediate cover soil, a geomembrane layer that complies with ~~Department FDEP~~ rules, a geocomposite drainage layer, and 24 inches of local common soil of which the upper 6 inches will be capable of supporting vegetative cover. Specifications for the local common soil will be provided with the closure permit application.

Components of the landfill gas collection system may be installed in areas that receive final cover. The locations of all underground piping associated with these systems will be marked to avoid damage to them during landfill operation and final cover maintenance activities. Above ground structures such as well heads, and valves, will be kept readily visible by such measures as clearing vegetation, painting components bright colors, and installing protective posts and flagging. Protective posts shall be installed such that they do not damage the final cover system. These measures should protect the above ground structures from damage during routine final cover maintenance activities such as mowing, grass repair, and washout repair.

#### **K.7.i Scavenging and Salvaging Control Devices**

Scavenging and salvaging is not allowed on the working face at CCSWDC. In the event spotters working in this area observe scavenging or salvaging activities on the working face, the landfill manager will be notified.

#### **K.7.j Litter Control Devices**

Litter will be controlled by requiring covered loads, efficient unloading and cover operations, litter fences, perimeter fencing, and ~~by~~ routine clean-up. Litter outside the working area will be picked up within ~~twenty-four~~ (24) hours.

A small litter fence will be placed at the limit of each landfill cell area for the full length of the active working area ~~of the cell face~~.

#### **K.7.k Erosion Control Procedures**

Erosion control procedures at CCSWDC mainly consist of stormwater management for active ~~cell~~ working face areas and in areas surrounding the landfill cells. Stormwater management, for used portions of active cells where initial or intermediate cover over the waste has been placed in accordance with FDEP requirements, is achieved by:

- Grading the waste-in-place with an adequate slope and adequately covering the waste to divert stormwater away from the working face.
- Use of terraces and letdown pipes.

- Maintaining internal and external berms.

The stormwater management system will be of critical importance during the filling sequence. As each lift is constructed, temporary stormwater diversion berms will be constructed.

A containment berm will isolate the working face from the remaining covered areas. Stormwater which accumulates behind the containment berm in the area of the working face is leachate and will be retained and allowed to percolate into the landfill where it will eventually be collected in the leachate collection system.

Other berms will divert stormwater from top slopes to let-down structures and will serve as erosion control to protect recently covered side slopes. These external berms will be sodded to minimize erosion and will be directly connected to the temporary letdown structures to facilitate proper management of stormwater runoff.

Sediments that reach the perimeter channels will collect behind the ditch blocks and will require periodic removal. Within 30 days after applying intermediate cover to side slopes that have reached designed dimensions, sod shall be applied. As filling progresses above the proposed first drainage terrace, the first set of temporary letdown structures will be constructed. This operating procedure will minimize the amount of erosion and sediment accumulation that must periodically be removed from the perimeter ditches.

Areas provided with intermediate cover, or other areas that discharge to the stormwater management system that exhibit significant erosion, will be repaired as follows:

- If greater than 50 percent of the soil cover material has eroded, then the area will be repaired within 7-seven days.
- If waste or liner is exposed, then the area will be repaired by the end of the next working day.

## **K.8 PROCEDURE FOR LEACHATE MANAGEMENT**

### **K.8.a Leachate Monitoring, Sampling, and Analysis**

The sump pumps located in Cells 1 through 5 of Phase I will operate in an automatic mode based on the liquid level in the sump. Figure L-2 in Attachment K-3 shows the operation levels for the sump pumps. The pressure transducer located at the end of the pump housing accurately measures the level of liquid in the sump and provides a digital readout of this level at the control panel mounted on the valve box at the top of each cell's lined external containment berm. As shown on Figure L-2, the high water alarm will result if leachate levels rise to cause 12 inches of head on the liner system adjacent to the sump area.

Two additional pump units ~~will be~~ provided for backup of the Phase I sump pumps. This allows for removal of each pump on a regular scheduled basis to perform preventative maintenance. When a sump pump is removed for schedule maintenance, a spare pump will be reinstalled immediately while the maintenance is being performed. Each pump will receive preventative maintenance in accordance with the manufacturer's recommendations at a frequency based on run time.

Cells 1 through 4 of Phase II will drain by gravity to a duplex leachate pump station located north of Cell 2. The pump station will operate in an automatic mode based on the liquid level within the wet well. Sheet C-17, Leachate Collection System Details, of the previously submitted Phase II Class I Landfill Expansion Permit Drawings shows the operation levels for the pumps. The pressure transducers located at the end of the pump housing accurately measure the level of liquid within the wet well and provide a digital readout of this level at the control panel mounted adjacent to the pump station. As shown on Sheet C-17, Leachate Collection System Details, the duplex pumps will operate on a lead/lag basis.

Additional details on leachate sampling locations, sampling and analysis schedule, and data submission is provided in the Water Quality Monitoring Plan and Addendums.

#### **K.8.b Leachate Collection and Removal System**

##### **Phase I Collection System**

The ~~existing~~ Phase I Class I landfill leachate collection system consists of a geonet drainage layer and perforated collection pipe above the composite liner system to collect and convey leachate. The leachate that is conveyed to sumps will be pumped to an existing 1,800,000 gallon on-site leachate ~~holding-storage~~ tank. A typical detail for the Phase I sumps is provided in Figure L-2 of Attachment K-3. The leachate collection piping system consists of 8-inch diameter perforated HDPE pipe sloped in such a manner that leachate flowing through the solid waste of the landfill will be collected and transported by gravity to a sump and leachate pump. The discharge line from the sump pump connects to a HDPE header line via a valve vault. Provisions for sampling the leachate as well as monitoring flows and pressure are provided in the valve boxes (~~locations shown the Phase I Class I Operation Drawings, included in Attachment K-14).~~

##### **Phase II Collection System**

The ~~proposed~~ Phase II Class I landfill leachate collection system consists of a geonet composite drainage layer and perforated collection pipe above the double synthetic liner system to collect and convey leachate. The leachate that is collected within the Phase II cells will be pumped to the on-site leachate ~~holding-storage~~ tank. The leachate collection piping system consists of 8-inch diameter perforated HDPE pipe sloped in such a manner that leachate flowing through the solid waste of the landfill will be collected and transported by gravity to a metering manhole located on the north perimeter berm of each cell. At the metering manhole, leachate flows from each cell are measured using a Parshall flume and an ultrasonic water level sensor. The ultra-sonic level sensors in the metering manholes were selected based on anticipated normal flow rates. Specifically, the level-sensor was selected for a flow rate of 3 gpm to 194 gpm. The metering manhole was designed to accurately measure flows of 0.6 inches in depth or greater which corresponds to 2.29 gpm and above. Therefore, during periods of low flow below the measurement ability of the ultra-sonic level sensors, flow will not be registered at each cell, but the total leachate collected will be measured by the flow meter at the main Phase II pump stations. Each metering manhole drains by gravity to a duplex leachate pump station located adjacent to Cell No.-2. The discharge from the leachate pump station ~~will be~~ directed through a ~~new~~ HDPE leachate forcemain ~~that will be installed along the north and west sides of Phase II, the west and south sides of future Phase III and the south side of future Phase IV.~~ Provisions for

sampling the Phase II leachate as well as monitoring flows and pressure are provided in the valve vault located adjacent to the leachate pump station as shown on the details provided on Sheet C-17, Leachate Collection System Details, of the previously submitted Phase II Class I Landfill Expansion Permit Drawings. Any stormwater accumulated in an unused cell will be either routed to the leachate collection manholes. The leachate collection manholes are fitted with a temporary stormwater piping that allows discharge of stormwater directly into the perimeter channel. Otherwise, the stormwater can be pumped out from the cell using portable pumps and discharged to the stormwater system perimeter channel. Prior to waste disposal within a cell, ~~the~~ The valve connecting the leachate collection pipe within the cell to the manhole will be in the closed position to prevent stormwater from draining to the leachate pump station. Prior to waste disposal within a cell, the temporary stormwater diversion modifications will be removed. Immediately prior to solid waste being deposited into a new landfill cell, the valve at the manhole will be opened to allow the free flow of leachate to the pump station.

Leachate collected within the geocomposite drainage layer of the leak detection system of Phase II will be drained by gravity to a leak detection manhole located on the north perimeter berm of each cell. The discharge valve at the leak detection manhole will normally be closed to allow the quantity of leakage to be measured. An ultrasonic water level sensor calibrated to the storage volume within the manhole at a given level will be used to measure leakage rate. After the leakage rate has been determined, the leachate within the leak detection manholes will subsequently be drained by gravity to the leachate pump station and the valve closed for another measurement. The leak detection system has been designed such that a leak developing within the most remote part of a cell will flow to the leak detection manhole within ~~twelve~~ 12 hours. A Leakage Action Rate (LAR) of 100 gallons/acre/day has been established for the Phase II cells, which corresponds to the Environmental Protection Agency guidance and FDEP experience with facilities containing similar liner systems. At this rate, the 470 gallon storage volume within the leak detection manhole will be exhausted within 8.75 hours. For leakage rates greater than 100 gallons/acre/day, measures should be initiated to find and repair or minimize leaks within the primary liner system.

The following procedures will be initiated if the LAR of 100 gallons/acre/day is exceeded:

1. Increase monitoring of the leakage quantity from the cell(s) affected. This consists of increasing the frequency of monitoring liquid levels within the leak detection manhole(s) to determine the time required to fill the five-foot storage volume in the manholes. It is anticipated that readings will be made at least daily after the LAR is exceeded and the calculated leakage rates will be recorded.
2. Immediately notify FDEP once it is ascertained that the LAR is being exceeded and provide a plan on how ~~Sarasota~~ the County intends to address the exceedance.
3. Attempt to locate and fix sources of leaks to the extent practical. Measures to locate leaks could include inspecting the leak detection manhole to determine whether groundwater is leaking into it, observing the surface of the cell to determine if there are indications as to where leaks may be located such as large protrusions of waste that may

have penetrated the liner system, and video taping the leak detection pipe to determine where large inflows are occurring. If the location of a leak can be identified and excavation of waste is practical, then the liner will be exposed and repaired.

4. Adjust operational practices as needed to reduce the likelihood of future damage to the liner such as increasing the thickness of the initial layer of select waste on the cell bottom.
5. If leaks cannot be specifically located or if it is not practical to find them, adjust operations to try to reduce the leakage to below the LAR. This could include measures to reduce the generation of leachate such as grading the landfill to promote runoff, installing drains and berms to direct runoff away from the landfill, the installation of additional intermediate or temporary cover, installing temporary geomembrane rain covers, or accelerating the placement of final cover in areas that have reached final elevation.

#### Phase I/Phase II Overlay Liner System

~~An~~ The overlay liner system ~~will be constructed~~ located over the west sideslope of Phase I, prior to the placement of waste against this slope as a result of the construction of Phase II. The purpose of the overlay liner system ~~is was installed in order~~ to reduce the quantity of leachate entering the Phase I leachate collection system from the Phase II expansion areas by directing it to the Phase II leachate collection system. This will be accomplished by hydraulically separating the newer waste above it from the older waste beneath the overlay liner system.

The overlay liner system ~~will consists~~ of (from the top down) ~~2~~two feet of protective cover material, a geonet composite drainage layer, a textured 60-mil HDPE liner, and a minimum of 12 inches of intermediate cover placed over the waste. ~~The protective cover may be installed in stages as required by operations in order to avoid having the material washout during storms. Alternately, the protective cover may be placed all at once if a rain cover is installed over it to prevent washouts.~~ The rain cover would be removed prior to the placement of waste against the overlay liner system.

The rain cover on the overlay liner system includes rain gutters to divert stormwater off the rain cover to temporary ~~down~~drains ~~letdowns~~ that will direct the stormwater to the perimeter drainage channel located north of Phase I. The locations of the rain gutters and temporary ~~down~~drains ~~letdowns~~ are shown on Sheets C-03 and C-3A of the previously submitted Phase II Class I Landfill Expansion Engineering Permit Drawings. Details of these features are included on Sheet C-13B of the previously submitted Phase II Class I Landfill Expansion Engineering Permit Drawings. Calculations demonstrating that the rain gutters and ~~down~~drains ~~letdowns~~ are capable of transmitting the flow generated from the 25-year design storm are included in Attachment H.2 of the Phase II Permit Application Engineering Report.

Leachate percolating through the newer waste located above the overlay liner system will be captured by the liner and directed to the base of the overlay liner system by means of the geonet composite drainage layer. A stone-filled trench drain with an 8-inch diameter perforated HDPE pipe located at the Phase I/Phase II divider berm will collect the leachate and direct it to the low point within Cell 1 of Phase II where it will flow out of the cell with the rest of the leachate

collected within Cell 1. From there, the leachate will flow as previously described for the Phase II collection system.

#### **Leachate Disposal System: General Description**

Leachate that is generated from the landfill cells will be pumped to the existing 1,800,000 1.8 million gallon leachate storage tank. The leachate accumulated in the leachate storage tank will be removed by a leachate pumping station that will pump through a 4-inch PVC force-main to a connection to the Sarasota County wastewater collection system south of the landfill on Knights Trail Road. The Sarasota County wastewater collection system in this area flows to the City of Venice Water Reclamation Facility (WRF) for treatment.

The leachate pumping and force-main system is the primary disposal method for the CCSWDC leachate. Transfer pumps that discharge to tanker trucks for hauling to the Bee Ridge WRF will serve as a secondary emergency disposal location.

The following information provides a description of the above ground leachate storage tank in accordance with the requirements of 62-701.400(6)(c).

The existing leachate storage tank has a total capacity of 1.8 million gallons. The exposed plan area of the secondary containment system surrounding the existing leachate storage tank is 5,419 square feet. This will allow 27,000 gallons of water to accumulate after an 8-inch rainfall event. All liquid accumulating in the secondary containment system will be tested for specific conductance. Specific conductance of the stormwater in the secondary containment shall not be more than 50 percent above the specific conductance of water in the nearest downstream stormwater pond (Stormwater Pond No. 6) or shall not exceed 1,275  $\mu$ mhos/cm, whichever is greater. If the specific conductance is greater than these criteria or if a visible sheen is present, then the stormwater will be pumped directly into the leachate storage tank and managed as leachate.

A log of discharges from the secondary containment system will be maintained. The date, specific conductance measurements, and visual sheen observations shall be recorded.

An electronic water level sensor will automatically determine when the leachate storage tank reaches 90 percent capacity (1.62 million gallons) and a high water alarm will be activated. An electric actuated shutoff valve in the fill line will be activated to prevent overfilling the tank when the capacity reaches 1.8 million gallons in the tank. The electric actuated shutoff valve will be tested by inducing a false signal from the level sensor and confirming proper operation on a weekly schedule. The exposed tank exterior will be inspected weekly by visual observation. The inspection will include looking for leaks, corrosion, or other maintenance deficiencies. This will be accomplished by inspection from platforms at the top of the 20-foot high secondary containment wall, positioned 120 degrees apart around the circumference of the tank. The tank interior will be inspected annually when the tank is empty or at least once every three years. If any failures are detected, the tank construction company shall be contacted immediately and appropriate repairs conducted based on the nature of the problem. Leachate will be managed in accordance with the Contingency Plan (Section K.8.e) when the tank is out of service. Reports of the above inspections will be maintained by Sarasota County ~~(the most recent inspection~~



report is included as Attachment K-7).

The leachate pumping station will have automatic controls with the following set points:

	<u>Elevation</u>
High water alarm	40
Lag pump on	28
Lead pump on	27
Pumps off	26
Tank bottom	22

The set points can be modified by adjusting the pump control system. The duplex pumps will automatically alternate operation each time the pump is stopped by the level control system. The pumping station is equipped with a data logger to record flow, pH, and conductivity on a continuous basis.

#### **K.8.c If Leachate Becomes Regulated as Hazardous Waste**

Sarasota County will evaluate options for pre-treating the leachate and alternate disposal if it becomes regulated as a hazardous waste.

#### **K.8.d Off-Site Treatment of Leachate**

The primary disposal location for CCSWDC leachate and alternate disposal is the City of Venice WWTP. Facility commitment letters are provided in Attachment K-6. A secondary disposal location is the Bee Ridge ~~Water Reclamation facility~~ WRF. CCSWDC may use other secondary facilities for the offsite treatment or disposal of leachate; however, the County will notify FDEP of the change prior to use.

The CCSWDC will dispose of leachate at the primary treatment location provided the leachate meets the disposal quality requirements. Should leachate quality change such that it is no longer acceptable at the primary treatment location, the CCSWDC will dispose of leachate at the secondary facility.

#### **K.8.e Contingency Plan for Leachate Management**

Should one of the following events occur, the leachate contingency management plan shall be implemented.

- Any mechanical failure of the leachate management system that would prevent operation of the landfill leachate collection system pumps or the leachate transfer pumps for more than three (3) consecutive days.
- Liquid accumulation in the ~~holding~~ leachate storage tank leak detection system in amounts greater than expected from rainfall.
- Rise of leachate levels inside the ~~holding~~ leachate storage tank greater than 52.6 feet NGVD (high water alarm elevation represented by 31 foot mark on the external tank gauge).

Implementation of the contingency plan includes the following actions.

- (1) The landfill manager shall notify the FDEP (within ~~twenty-four~~ (24) hours) and leachate disposal facilities of the emergency event.

- (2) If the problem is excess leachate in the detection system of the holding-leachate storage tank, remedial measures shall be taken immediately to eliminate the leak. The detection system of the concrete holding-leachate storage tank consists of a layer of gravel located between the bottom of the holding-leachate storage tank and the top of the secondary containment slab that enables the detection of leaks at the bottom of the holding-leachate storage tank. Additional tractor trailer tanker units and operators shall be called to the site to expedite transport of leachate to the receiving ~~wastewater treatment plant~~ WWTP or additional quantities shall be pumped through the forcemain to the City of Venice lift station. The holding-leachate storage tank shall be emptied completely, if required, to facilitate repairs. Leachate will be pumped to mobile tanks during ~~periods the repairs~~ periods.
- (3) If the problem is excessive levels of leachate in the holding-leachate storage tank (elevation exceeds the high water alarm level), the maximum amount of leachate shall be diverted from the tank by increasing the ~~number of frequency~~ or number of tanker trucks hauling leachate to the primary or secondary WWTPs, pumping additional quantities of leachate through the forcemain to the City of Venice lift station, or storing leachate in mobile tanks.
- (4) Once the problem causing the implementation of the contingency plan has been resolved to an acceptable degree, the landfill manager shall notify FDEP (within three ~~(3)~~ days) that the facility is ready to return to normal operating conditions.
- (5) Inspections and repairs to the leachate storage tank will be scheduled during winter months to the extent possible in order to minimize the quantity of leachate that must be removed. While the leachate storage tank is out of service, leachate will be pumped directly to either tanker trucks, ~~or temporary storage tanks, or through the forcemain to the City of Venice lift station.~~ If the tank will be out of service for an extended period, the temporary tanks will be plumbed to the leachate transfer station to allow direct pumping of the leachate to the WWTP.

#### **K.8.f Recording Quantities of Leachate Generated**

A control panel for each sump pump in Cell Nos. 1 through 5 of Phase I is mounted on the valve box at the top of each cell's lined external containment berm. Each control panel will be equipped with a pump hour meter.

A control panel for the Phase II duplex leachate pump station ~~will be~~ is mounted adjacent to the pump station. The control panel ~~will be~~ is equipped with a flow meter, water level indicator, and a pump hour meter.

The following information will be recorded once per operating day from each pump location.

Cell No. or Phase	_____
Flow Meter Reading	_____
Hour Meter Reading	_____
Sump or Wet Well Liquid Level	_____

The above information is recorded on the form provided in Attachment K-87.

In the event a flow meter is not in operation, Sarasota County may record the run-time hours for the pump and convert time to flow using historical records, until the flow meter is returned to service.

A control panel for the Phase II metering manholes ~~will be~~ mounted adjacent to the manholes. The panel ~~will be~~ equipped with a water level indicator, instantaneous flow meter, and a flow totalizer.

The following information will be recorded once per operating day from each metering manhole location.

Cell No.	_____
Instantaneous Flow	_____
Totalized Flow	_____
Liquid Level	_____

The above information is recorded on the form provided in Attachment K-87.

The leachate pump station information may be recorded visually at each pump station by recording the values directly from the pump station readouts or by the collection of the data via a telemetry system. The telemetry system will upload a minimum of one reading of the leachate pump station parameters per day. The readings can then be viewed by County staff via computer and recorded on the forms provided in Attachment K-8.

#### **K.8.g Precipitation and Leachate Generation Rates**

Rainfall for each 24-hour period measured at an official gauge located on-site will be recorded and entered onto a spreadsheet (format included in Attachment K-~~11~~10) to compare precipitation to leachate generation.

#### **K.8.h Leachate Collection System Inspection and Cleaning**

CCSWDC will water pressure clean or conduct a video inspection of the leachate collection system at least once every five years in accordance with Rule 62-701.500 F.A.C. requirements, ~~and cleaned as necessary.~~ Leachate pumps, metering manholes, and leak detection manholes at CCSWDC will be inspected for operation failures at least daily. Control panels will be inspected and operational data recorded as described in Section K.8.f.

### **K.9 LANDFILL GAS MANAGEMENT AND MONITORING**

#### **K.9.a Landfill Gas Management**

The CCSWDC is located near the center of a 6,000 acre site. The minimum distance from the Class I landfill to the nearest property line is 1,800 feet. This distance represents a substantial buffer to allow for dispersion of odors normally associated with MSW landfill operations. Therefore, it is not anticipated that collection of landfill gas will be necessary for odor control.

In order to comply with air quality requirements, a Non-Methane Organic Compound (NMOC) emission report will be submitted to the implementing authority on an annual basis following the requirements of New Source Performance Standards (NSPS). Within ~~twelve~~(12) months after reporting NMOC emissions greater than or equal to 50 Mg/year (megagram per year), a detailed landfill gas collection and controls system design plan submittal shall be made to the NSPS implementing agency. Within ~~eighteen~~(18) months after this submittal, the installation of the landfill gas collection and control system shall be

completed. Based on current Tier 2 sampling and model projections, the CCSWDC Class I landfill has not exceeded the NMOC threshold at the time of this report and is not expected to exceed the threshold until 2015. Operation of the Landfill Gas System is provided in greater detail in Attachment K-14, LFGCCS Operation and Maintenance Plan.

#### K.9.b Landfill Gas Monitoring Program

A gas monitoring program will be implemented to prevent explosions and fires and to minimize off-site odors and damage to vegetation. The landfill gas monitoring program for CCSWDC will include monitoring of the landfill perimeter and enclosed on-site structures at the monitoring locations shown on Figure 1 in Attachment K-3. Monitoring will be conducted on a quarterly basis and a report submitted to FDEP within 15 days after the end of the quarter in which monitoring occurred. The outside monitoring locations, as shown on Figure 1 provided in Attachment K-3, (gas monitoring probes) will consist of a gas monitoring probes as shown on Figure L-3 in Attachment K-3. All gas probes will be clearly labeled and easily visible at all times.

The CCSWDC gas monitoring locations include four (4) gas monitoring probes as described above and numbered GP-2, GP-3, GP-7, and GP-9 and six (6) gas monitoring locations GM-1, GM-2, GM-3, GM-4, GM-5, and GM-7 in structures as shown on Figure 1 provided in Attachment K-3.

These locations are summarized in the table below:

CCSWDC Landfill Gas Monitoring Points

MONITORING POINT	TYPE OF MONITORING	LOCATION
GP-2	Probe	North of Phase I
GP-3	Probe	East of Phase I
GP-7	Probe	North of C&D Processing Area
GP-9	Probe	West of Cell 4, Phase II
GM-1	Monitoring Location	Contractor's Maintenance Bldg.
GM-2	Monitoring Location	C&D Processing Area
GM-3	Monitoring Location	County Maintenance Bldg.
GM-4	Monitoring Location	Administrative Bldg.
GM-5	Monitoring Location	Scale House
GM-7	Monitoring Location	Control Panel at Leachate Storage Tank

Low areas; base boards, floor drains, and floor mounted cabinets shall be monitored inside the structures. Other structures on the site are not monitored because their great distance from the landfill (over 3,400 feet) and the shallow groundwater table (5 to 7 feet below surface) at the site would cause any migrating gas, if it existed, to purge to the atmosphere before it would travel to these structures through the ground. Also, there are no connections via conduit pipes, etc. between these structures and the landfill area.

Please note that gas monitoring probes north of Phase II are not necessary due to the presence of Stormwater Pond No. 1 that will effectively cut off the migration route of landfill gas in that direction. Also, gas monitoring probes south of Phase II are not necessary due to the long distance between the edge of waste and the property line and structures that can be adversely affected by migrating landfill gas. The high water table at the site also makes it unlikely that gas will migrate significant distances.

The landfill gas probes and monitoring locations shown on Figure 1 will be sampled at least quarterly for concentrations of combustible gases determined as a percent of the lower explosive limit (LEL) calibrated to methane as described in FAC 62-701.530.(2).

A methane/combustible gas detector (meter) will be used to measure the LEL at the monitoring locations. No purging of the probe will be allowed. Once the meter is connected to the sampling port, the valve will be opened and the meter pump will be engaged and meter reading observed. The highest value observed is recorded as well as the steady state value observed.

If the results of gas monitoring show that combustible gas concentrations exceed 25 percent of the LEL calibrated to methane in structures or 100 percent of the LEL calibrated to methane at the property boundary, Sarasota County will immediately take all necessary steps to ensure protection of human health and notify FDEP. Within ~~7~~seven days of detection, a gas remediation plan detailing the nature and extent of the problem and the proposed remedy will be submitted to FDEP for approval. The remedy will be completed within 60 days of detection unless otherwise approved by FDEP.

#### **K.9.c Odor Reporting Procedures**

The CCSWDC shall be operated to control objectionable odors in accordance with Rule 62-296.320(2), F.A.C. After being notified by the ~~Department~~FDEP that objectionable odors have been confirmed beyond the landfill property boundary, the CCSWDC shall:

- (1) Immediately take steps to reduce the objectionable odors. Such steps may include applying or increasing initial cover, reducing the size of the working face, and ceasing operations in the areas where odors have been detected;
- (2) Submit to the ~~Department~~FDEP for approval an odor remediation plan for the gas releases. The plan shall describe the nature and extent of the problem and the proposed long-term remedy. The remedy shall be initiated within 30 days of approval;
- (3) Implement a routine odor monitoring program to determine the timing and extent of any off-site odors, and to evaluate the effectiveness of the odor remediation plan.

#### **K.10 STORMWATER MANAGEMENT SYSTEM**

The landfill stormwater management system for CCSWDC is discussed in Section K.2.h-(3) - Stormwater System.

## **K.11 EQUIPMENT AND OPERATION FEATURE REQUIREMENTS**

### **K.11.a Adequate In-Service Equipment**

Equipment proposed for the CCSWDC will include the equipment listed in Table K-1 (on the next page). The exact equipment complement may vary from time to time and additional equipment will be acquired if needed. One roll-off container will be placed at the Class I landfill area.

Emergency Electrical Generation Equipment is of adequate size to assure complete operation of the Leachate Disposal and Collection Systems.

### **K.11.b Reserve Equipment**

Cooperative lending agreements with the Contract Operator's company and standing agreements with local equipment suppliers will provide a means for procuring additional back-up equipment within 2424 hours of a need being identified.

### **K.11.c Communication Facilities**

Radios and cell phones will be the primary communications devices to provide safe conditions for landfill personnel.

### **K.11.d Dust Control Methods**

Dust from unpaved haul roads and construction areas within the Class I landfill area will be controlled through the use of a water spray truck. An alternate dust control measure that may be used in active cells of the Class I landfill area is leachate reuse (see Attachment K-12-11 for FDEP approval letter). The reuse of leachate involves spraying small quantities of leachate from a spray bar mounted on the rear of a tank

**TABLE K-1. EQUIPMENT USED AT THE CCSWDC**

NUMBER	EQUIPMENT
2	Bulldozer
2	Compactors
2	Dump Truck
1	Front-end Loader
1	Grader
1	Hydraulic Excavator
1	Water Truck
1	Fuel Truck
2	Pick-up Trucks
2	UD Gators
1	Roll-off Truck
1	Compressor
1	Pressure Washer
1	Welder

truck onto active fill areas of the landfill. The landfill operation crew will monitor the rate of leachate application, soil moisture conditions, and the specific landfill areas used to prevent the generation of leachate runoff. Leachate will only be applied under the following conditions:

- Leachate may only be sprayed on active, bermed fill areas, including the working face, and areas with the required six (6)-inches of initial cover.
- Leachate may not be sprayed on areas with intermediate or final cover.
- The maximum grade leachate will be sprayed on is a 10H:1V slope. Areas within 150 feet of a 4H:1V or steeper side slope will not be sprayed on. At all times areas receiving leachate must be controlled to prevent run-off from entering the stormwater system
- Leachate will not be sprayed during a rainfall event, and when the application area is in a saturated condition.
- The application rate of leachate should be such that leachate does not accumulate on the landfill surface, and infiltrates quickly into the covered refuse.
- Leachate will not be sprayed at the end of the day on the initial cover of the active working face or other areas. Spraying should be done early in the morning after any dew evaporates and continue until early afternoon or until all available areas have been used.

~~The Site Manager will record d~~Daily the gallons volume of leachate sprayed (gallons) per this method, will be recorded.

If needed, dust masks will be available to personnel working in excessively dusty areas.

In general the ~~facility CCSWDC~~ will employ multiple methods for dust control as described above; in addition, many of the ~~facility's CCSWDC's~~ roads are paved for all-weather conditions, as described in Section K.12 below.

Reasonable dust control precautions may include, but are not limited to, the following:

- Paving and maintenance of roads, parking areas and yards.
- Application of water to control emissions from such activities as demolition of buildings, grading roads, construction, and land clearing.
- Application of asphalt, water, or other ~~Department~~FDEP-approved dust suppressants to unpaved roads, yards, open stock piles and similar activities.
- Removal of particulate matter from roads and other paved areas under the control of the owner or operator of the facility to prevent re-entrainment, and from buildings or work areas to prevent particulate from becoming airborne.
- Landscaping or planting of vegetation.
- Use of hoods, fans, filters, and similar equipment to contain, capture and/or vent particulate matter.
- Confining abrasive blasting where possible.
- Enclosure or covering of conveyor systems.

#### **K.11.e Litter Control Devices**

See Section K.7.j. in this Operations Plan.

#### **K.11.f Signs Indicating Name of Operating Authority, Traffic Flow, Hours of Operations, and Charges for Disposal**

~~There is a P~~permanent signs at the south property line along the access road and at te the facility identifying the Sarasota County Central County Solid Waste Disposal Facility and indicateing hours of operation and charges for different types of loads. The sign indicates materials that are not accepted for disposal in the landfill. Signs indicating approach and exit routes and one-way roads are strategically placed so traffic at the landfill will move smoothly and efficiently to and from the working face area.

#### **K.12 ALL WEATHER ACCESS ROADS**

A paved entrance from Knights Trail Road terminates at the landfill perimeter roadway. In addition, paved perimeter roads around the landfill areas are shown on Sheet G-03, Overall Site Plan and Phasing Plan of the previously submitted Phase II Class I Landfill Expansion pPermit ~~d~~Drawings. All weather access roads will be constructed within the Class I area to route traffic to the active working face. The all weather access roads will be constructed of earth, ground shingles, crushed rock, shell or any other stabilizing material, as appropriate.

#### **K.13 ADDITIONAL RECORD KEEPING AND REPORTING**

See Section K.3 of this Operations Plan for records and documents retained. Documents used for development, operations, construction, background water quality, and permitting of the CCSWDC will be kept for the design life of the CCSWDC. Weigh tickets shall be kept for five5 years. All monitoring information, including calibration and maintenance records, chart recordings, and all reports required by permit shall be kept for 10 years.

Records that are more than five years old may be archived at an off-site storage location. The archived records will be stored in a secure place where they will be protected from damage. Provisions will be made to retrieve records from storage as required within seven7 days.



**ATTACHMENT K-1**  
**TRAINING PLAN**

## ATTACHMENT K-1

### TRAINING PLAN

As stated in 62-701.500(1), F.A.C., all landfills shall have at least one trained operator at the landfill during all times when the landfill receives waste. The operator training includes a 24-hour initial course and 16 hours of continuing education every 3 years. Spotter training includes an 8-hour initial course and 4 hours of continuing education every 3 years.

In accordance with Rule 62-701.320(15), the owner or operator of a landfill, or other solid waste management facility required by this chapter to have trained operators or spotters, shall not employ a person to perform, nor may any person perform, the duties of an operator or spotter at such a facility unless that person is a trained operator or trained spotter. Interim spotters, who do not have the formal spotter training, maybe employed at the CCSWDC provided that the interim spotter is under the direct supervision of a trained operator or trained spotter. The interim spotter must receive training as an operator or spotter within 3 months of employment. An interim operator may be employed at the facility provided that it is for a period of no longer than 3 months from employment or if supervised by a trained operator, the interim operator must receive training within one year of employment.

Operator and spotter training courses are available at the University of Florida Center for Training, Research and Education for Environmental Occupations (UF/TREEO) and through other sources. A listing of the current year training courses available through TREEO can be found at the following website: <http://www.treeo.ufl.edu/sw/>. A listing of the County's currently trained operators is provided below. Positions requiring training is provided in Section K.2.a.

#### Sarasota County Trained Operators

Gary Bennett

Lois Rose (certification pending)

Dan McAllister

Ed Russ

James Szala

In addition, the following contract personnel are trained as operators or spotters:

Willard Bennett (Operator)

Tim Ferris (Operator)

Ryan Davidson (Operator)

Drew Trainer (Operator)

Luis Herrera Barrero (Spotter)

Joseph Nichols (Spotter)

Brad Jones (Spotter)

Ian Trainer (Spotter)

**ATTACHMENT K-2**

**SAFETY AND CONTINGENCY PLAN**

## ATTACHMENT K-2

### CONTINGENCY PLAN

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# **SOLID WASTE OPERATIONS**

## **CENTRAL COUNTY SOLID WASTE DISPOSAL COMPLEX**

### **SAFETY PLAN**

## SAFETY

The program shall consist of the following parts:

### I. Training

A. General and safety training of all employees-landfill and contractor personnel will be required, to develop the skills of emergency first aid and CPR. General training includes:

A.B. Safety topics Safety topics may include, but not be limited to the following: CPR, First Aid, Site Safety, Personal Protection Equipment (PPE), Lock Out / Tag Out, Weather Hazards, Heat Stress, and Fire Extinguisher training.

- ~~• Red Cross Multimedia certification is required initially upon employment and subsequently re-certification on a three-year schedule is required.~~
- ~~• Red Cross Cardiopulmonary Resuscitation Basic Life Support Course certification initially upon employment and subsequently on an annual basis thereafter is required.~~
- ~~• Annual Fire Extinguisher training.~~

B.C. All employees-staff shall receive training be trained in on the job-specific aspects of their position. This training will be provided by, and is the responsibility of, the employee's immediate supervisor, or their designee.

C.D. Special training shall be required for each employee on a job-specific basis. Each operator of a piece of equipment shall be trained in the operation of that piece of equipment by the his immediate supervisor, or their designee. This training shall be given in accordance with the manufacturer's recommendations and operating manuals. This training will be provided by, and is the responsibility of, the immediate supervisor in charge of the employee, or their designee.

### II. EquipmentPPE

~~This section outlines the basic safety equipment to be provided to the employees of this Division.~~

~~D. Uniforms shall be furnished for, and shall be worn by, all employees except office personnel. Special exemption from this requirement may be granted by the Director of Solid Waste Operations Division on a case by case basis.~~

A. Special safety equipment such as rain gear including rubber boots, boots having steel toes and stainless steel-puncture resistant soles, work gloves, goggles, dust masks, protective eye glasses, rubber gloves, face guards, hearing protection, and rubber aprons shall be utilized as part of the day-to-day operational procedures where applicable of this Division. It shall be the responsibility of each individual employee and the immediate supervisor to assure that proper safety equipment is in use. Standard operating procedures will be developed and included as a part of this program. Development of these procedures will be the responsibility of all supervisory personnel.

~~B.A. All employees will be required to wear safety shoes or boots when working in an environment dictating the need for such equipment. Generally, safety shoes will be required except when working in the scalehouse or office. Safety shoes will be issued to all employees whose duties require the wearing of safety shoes.~~

~~III. Special Procedures~~

~~IV. Special procedures shall consist of operational plans, which shall be prepared by the supervisor in charge of each separate operation within the Solid Waste Operations Division. Operational plans shall be prepared for the following separate functions within the Solid Waste Operations Division — office, landfill, transfer station, hazardous wastes and infectious wastes.~~

~~V.III. Safety Meetings~~

- ~~A. Safety issues and topics shall be addressed during the scheduled staff meetings or as deemed necessary by the Solid Waste Operations Division Safety Officer. Safety meetings shall be held periodically but no less than one meeting shall be held every month.~~
- ~~B. Safety meetings shall be the responsibility of the Solid Waste Operations Division Safety Officer. Manager and all on-site contractors for their respectively personnel.~~
- ~~C. Safety meeting topics shall include a discussion of all incidents, which have occurred within the Division since the last safety meeting was held, along with topics of current importance and interest.~~

~~VI.IV. Safety Officer~~

- ~~A. The manager of the Solid Waste Operations Division Safety Officer shall be appointed by the Manager of the Solid Waste Operations Division Safety Officer. The Solid Waste Operations Division Safety Officer is Brian Usher. The Solid Waste Operations Division Manager is Lois Rose.~~
- ~~B. The position of Solid Waste Operations Division Safety Officer shall be held in conjunction with the regular duties of the position for which the person was hired. However, the Solid Waste Operations Division Safety Officer shall be given time during the regular working hours to perform the duties of the Solid Waste Operations Division Safety Officer.~~

~~EMERGENCY AND FIRE SAFETY~~ V. Emergency & Fire Safety

This section provides the standard operating procedures for all personnel in the event of an emergency or fire of any nature that may take place within the boundaries of landfill or transfer station.

A. Notification: CALL 911. As in any emergency, the first thing to do is to immediately notify the proper emergency response team. In the case of FIRE, immediately notify the Fire Department through the emergency phone number 911. Remember, if you are calling from a phone, ~~which that is connected to the County's switchboard, phone system~~ you must dial 9- then 911 to reach the emergency operator.

~~B.~~ Be sure to SPEAK SLOWLY, DISTINCTLY, DELIBERATELY, and remain as calm as possible. Briefly tell the person to whom you are reporting the emergency the following: the nature of the emergency, any injuries or persons involved, and where the emergency is located.

~~B.~~

~~C.~~ The nature of the emergency;

~~D.~~ Any injuries or persons involved; and

~~E.~~ Where the emergency is located.

~~C.~~ If there are injuries, you should render whatever assistance you can without endangering yourself. Use the First Aid and/or CPR training you have learned to assist where necessary. If possible, evacuate any person or equipment that may be endangered. An Automatic Defibrillator (AED) for CPR emergencies is located in the Landfill Administration Office.

~~F.D.~~ If possible, evacuate any personnel or equipment that may be endangered.

~~G.E.~~ In the event of small fires, the use of a fire extinguisher may be sufficient to contain the fire until the arrival of the Emergency Responders. Fire extinguishers are can be found in every Solid Waste Operations Division vehicle, and on every machinepiece of heavy equipment, and in buildings located throughout the landfill site. ~~In the event of larger fires, a 4000-gallon water tanker and the pressure washer trailer is available for fighting fires.~~

~~H.F.~~ Upon arrival of the Emergency Responders, you should take whatever steps necessary to assist.

~~VI.~~ In the event of fire in the landfill, it may be necessary to smother the fire using available dirt from the dirt stockpiles located at the landfill. In this case, the Manager of the landfill shall make immediate provisions to provide that earth cover. Also, the procedures described in Section K.11.e of the Operations Plan shall be followed.

#### ~~VII.~~ VI. Used Tire Storage Area Special Rules

In the event there is a fire or other emergency in the used tire storage area, the following special rules shall apply:

A. After following the emergency procedure outline above, ~~the Managerpersonnel~~ shall insure ensure that the dike around the waste tire pile is intact and that the valve of the drainpipe through the berm is closed. This shall be accomplished by patrolling the exterior of the dike and by adding earth to the dike wherever necessary a berm is placed to the west of the



waste tire pile area and the drain to the east of is diked-off to assure that no oily material generated by the combustion of the tires escapes the immediate designated Waste Tire area.

- B. The State of Florida, Department of Environmental Protection (FDEP), shall be immediately notified by calling the Tampa office at (813) 632-7600, ~~if fire, or another emergency, poses an unanticipated threat to the public health or environment.~~ Within ~~two weeks~~ seven days of any emergency involving potential ~~impacts to the off-site impact,~~ the Solid Waste Operations Manager shall submit to the Department a written report ~~shall be submitted to the FDEP including information on the emergency, the results of the action taken, and an analysis of the success or failure of the actions~~ action plan to mitigate future occurrences.
- C. In addition, any special conditions, as set forth by the Sarasota County jurisdictional Fire Department shall be met.

~~VIII.~~ VII. List of Emergency Response Equipment

- A. In the event of a fire emergency, the following equipment ~~is~~ may be available at the landfill and may be used as the situation dictates in the evolution of responding to a fire emergency, such as ~~repair of dikes~~ making berms, smothering with earth and materials, and then use of water in extinguishing fires:

- Front End Loaders.
- Tractors.
- Water Truck.
- Water Pumps.

D-6N BULLDOZER	4,000 GALLON
(3)	WATER
	TANKER

623-B Excavator	322 Excavator
-----------------	---------------

950 Front End Loader  
(2)

Pressure washer  
trailer

- A-B. It should be noted that from time to time the equipment available for fire emergency use may be changed, and it should be the responsibility of the persons in charge at the facility to be aware of those changes and respond accordingly with the appropriate equipment in the event of a fire emergency.
- B. Dry hydrant connections are available ~~at the site~~ as shown on the drawings for the purpose of supplying water in the event of a fire or other emergency.

C. Also available at the site is a pump with hose and discharge pipe to be used for filling the 4000-gallon tanker. Upon arrival of the fire department, this pump and water supply will be used under the direction of the officer in charge from the fire department.

IX. ~~Fire extinguishers are available in every vehicle and piece of equipment on the site. Although fire extinguishers are very ineffective against a large fire, it may be possible through their use to control the fire until larger equipment is brought to fight the fire.~~

X. List of Emergency Response Persons

XI. Ambulance Service 911

XII. Police Department 911

XIII. Fire Department 911

XIV. Solid Waste Operations Manager (941) 861-1589

XV. Lois Rose cell (941) 650-0722

XVI. Ed Russ cell 941-650-9364

XVII. James Szala cell 941-650-9367

XVIII. Dept. of Environmental Protection  
(813) 632-7600

XIX. Southwest District

XX. Remember, if you are calling from a phone, which is connected to the County's switchboard, you must dial 9 then 911 to reach the emergency operator.

XXI. VIII. Procedure to be Followed for Cleanup

Any residual from a fire ~~shall be addressed as follows: at the tire storage area shall be removed for proper disposal by County personnel. The County will provide all cleanup services and equipment required. All debris and contaminated soil will be placed in the landfill and all liquids will be pumped into a truck for proper disposal.~~

A. The County will conduct soil sampling as applicable of the area to confirm the absence or presence of contaminants.

B. If contaminants are found that exceed established clean-up target levels, then remedial actions may be taken that can include removal of soil.

## CONTINGENCY PLAN

In the event an emergency should occur that would interrupt operations at the landfill, the emergency provisions of Section K.2.b.1 of the Operations Plan shall be followed and the following procedures shall be implemented:

The waste collection entities operating within the County shall be notified of the operational interruption and approximate time when operations will be restored.

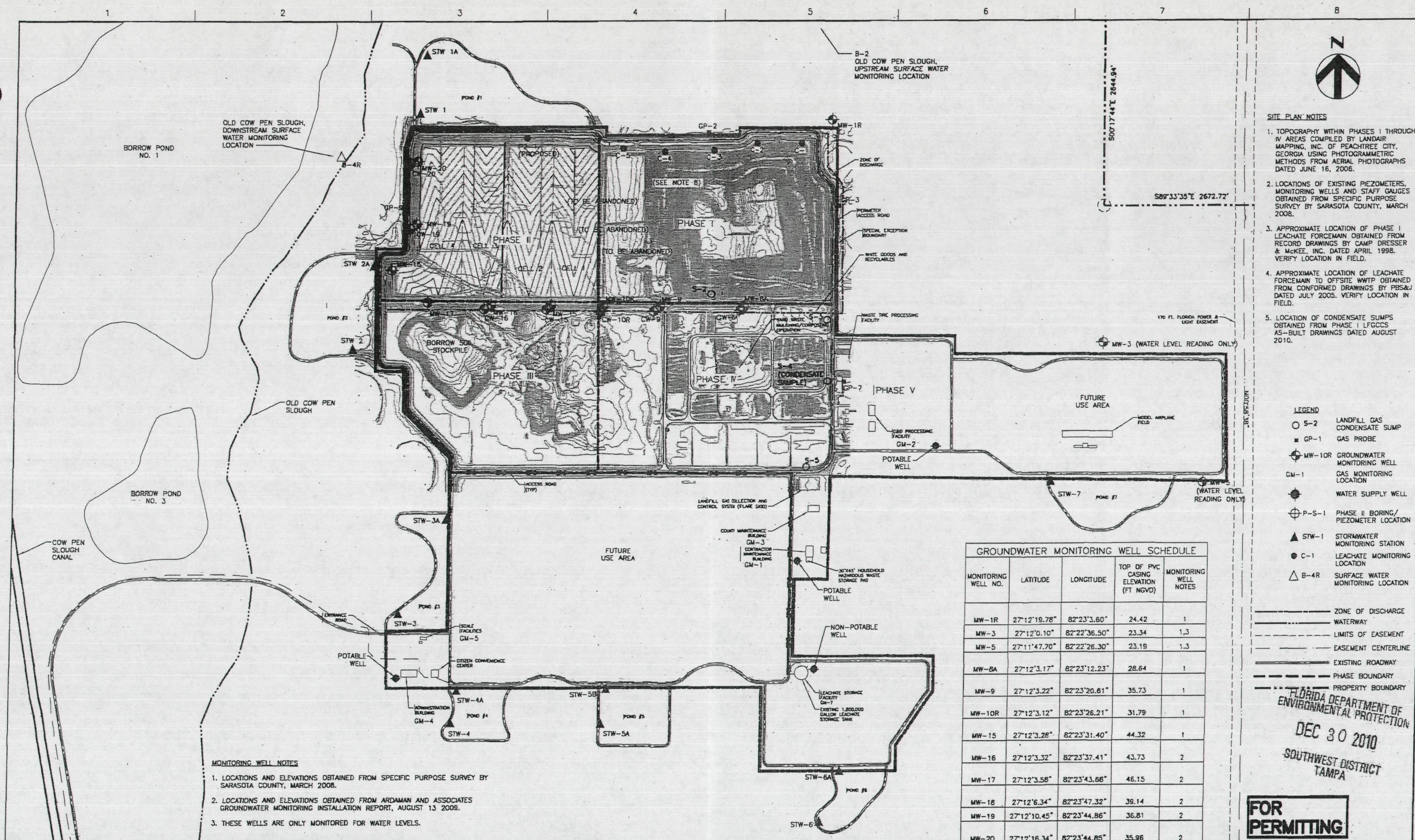
If it is anticipated that the interruption of operations will be no longer than 48 hours, an alternate disposal site shall be determined. The following alternate disposal sites are available and listed in order of preference. Should one facility also not be available the next facility on the list shall be contacted.

- Manatee County Lena Road Landfill
- Charlotte County Zemel Road Landfill
- Waste Management Landfill in Okeechobee County

## **ATTACHMENT K-3**

### **FIGURES**





- SITE PLAN NOTES**
1. TOPOGRAPHY WITHIN PHASES I THROUGH IV AREAS COMPILED BY LANDAIR MAPPING, INC. OF PEACHTREE CITY, GEORGIA USING PHOTOGRAMMETRIC METHODS FROM AERIAL PHOTOGRAPHS DATED JUNE 16, 2006.
  2. LOCATIONS OF EXISTING PIEZOMETERS, MONITORING WELLS AND STAFF GAUGES OBTAINED FROM SPECIFIC PURPOSE SURVEY BY SARASOTA COUNTY, MARCH 2008.
  3. APPROXIMATE LOCATION OF PHASE I LEACHATE FORCEMAIN OBTAINED FROM RECORD DRAWINGS BY CAMP DRESSER & MCKEE, INC. DATED APRIL 1998. VERIFY LOCATION IN FIELD.
  4. APPROXIMATE LOCATION OF LEACHATE FORCEMAIN TO OFFSITE WWTP OBTAINED FROM CONFORMED DRAWINGS BY PBS&J DATED JULY 2005. VERIFY LOCATION IN FIELD.
  5. LOCATION OF CONDENSATE SUMPS OBTAINED FROM PHASE I LFGCS AS-BUILT DRAWINGS DATED AUGUST 2010.

- LEGEND**
- S-2 LANDFILL GAS CONDENSATE SUMP
  - GP-1 GAS PROBE
  - ⊕ MW-10R GROUNDWATER MONITORING WELL
  - ⊕ GM-1 GAS MONITORING LOCATION
  - ⊕ WATER SUPPLY WELL
  - ⊕ P-S-1 PHASE II BORING/PIEZOMETER LOCATION
  - ▲ STW-1 STORMWATER MONITORING STATION
  - C-1 LEACHATE MONITORING LOCATION
  - △ B-4R SURFACE WATER MONITORING LOCATION

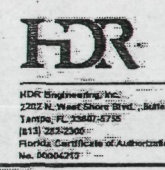
- ZONE OF DISCHARGE
- WATERWAY
- LIMITS OF EASEMENT
- EASEMENT CENTERLINE
- EXISTING ROADWAY
- PHASE BOUNDARY
- PROPERTY BOUNDARY

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION  
 DEC 30 2010  
 SOUTHWEST DISTRICT TAMPA

**FOR PERMITTING**

GROUNDWATER MONITORING WELL SCHEDULE				
MONITORING WELL NO.	LATITUDE	LONGITUDE	TOP OF PVC CASING ELEVATION (FT NGVD)	MONITORING WELL NOTES
MW-1R	27°12'19.78"	82°23'3.60"	24.42	1
MW-3	27°12'0.10"	82°22'36.50"	23.34	1,3
MW-5	27°11'47.70"	82°22'26.30"	23.19	1,3
MW-6A	27°12'3.17"	82°23'12.23"	28.64	1
MW-9	27°12'3.22"	82°23'20.61"	35.73	1
MW-10R	27°12'3.12"	82°23'26.21"	31.79	1
MW-15	27°12'3.28"	82°23'31.40"	44.32	1
MW-16	27°12'3.32"	82°23'37.41"	43.73	2
MW-17	27°12'3.58"	82°23'43.68"	46.15	2
MW-18	27°12'6.34"	82°23'47.32"	39.14	2
MW-19	27°12'10.45"	82°23'44.86"	36.81	2
MW-20	27°12'16.34"	82°23'44.85"	35.96	2

- MONITORING WELL NOTES**
1. LOCATIONS AND ELEVATIONS OBTAINED FROM SPECIFIC PURPOSE SURVEY BY SARASOTA COUNTY, MARCH 2008.
  2. LOCATIONS AND ELEVATIONS OBTAINED FROM ARDAMAN AND ASSOCIATES GROUNDWATER MONITORING INSTALLATION REPORT, AUGUST 13 2009.
  3. THESE WELLS ARE ONLY MONITORED FOR WATER LEVELS.



ISSUE	DATE	DESCRIPTION
G	12/2010	ADD CONDENSATE SUMPS, UPDATE WELLS
F	04/2009	REVISED PER MINOR PERMIT MODIFICATION
E	03/2008	REVISED PER RAL #4
D	01/2008	REVISED PER RAL #3
C	09/2007	REVISED PER RAL #2
B	06/2007	REVISED PER RAL #1
A	02/2007	ISSUED FOR APPROVAL

PROJECT MANAGER	R. SIEMERING
REVIEWED BY	J. TIMMONS
DRAWN BY	B. JOHNSON
PROJECT NUMBER	0096-11883-01



**Central County Solid Waste Disposal Complex**  
**PHASE II CLASS I LANDFILL EXPANSION**  
**PERMIT DRAWINGS**

WATER QUALITY MONITORING PLAN

FILENAME figure1.dwg  
 SCALE 1"=400'  
 SHEET  
**FIGURE 1**



G:\PROJECTS\Sarasota\092010\10.dwg 04-07-2003 - 8:54am Layout Name: 10.plt By: 1916am

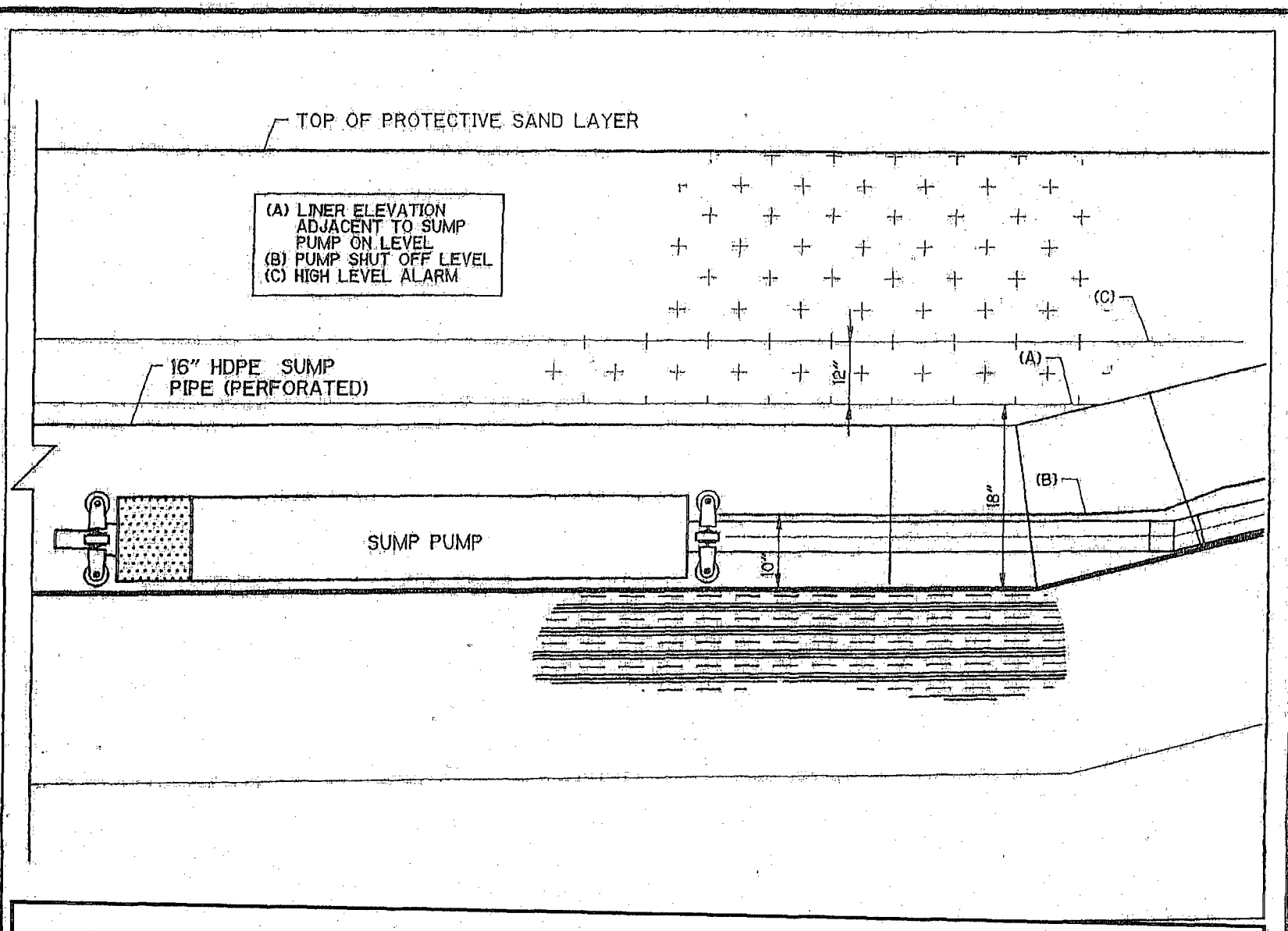
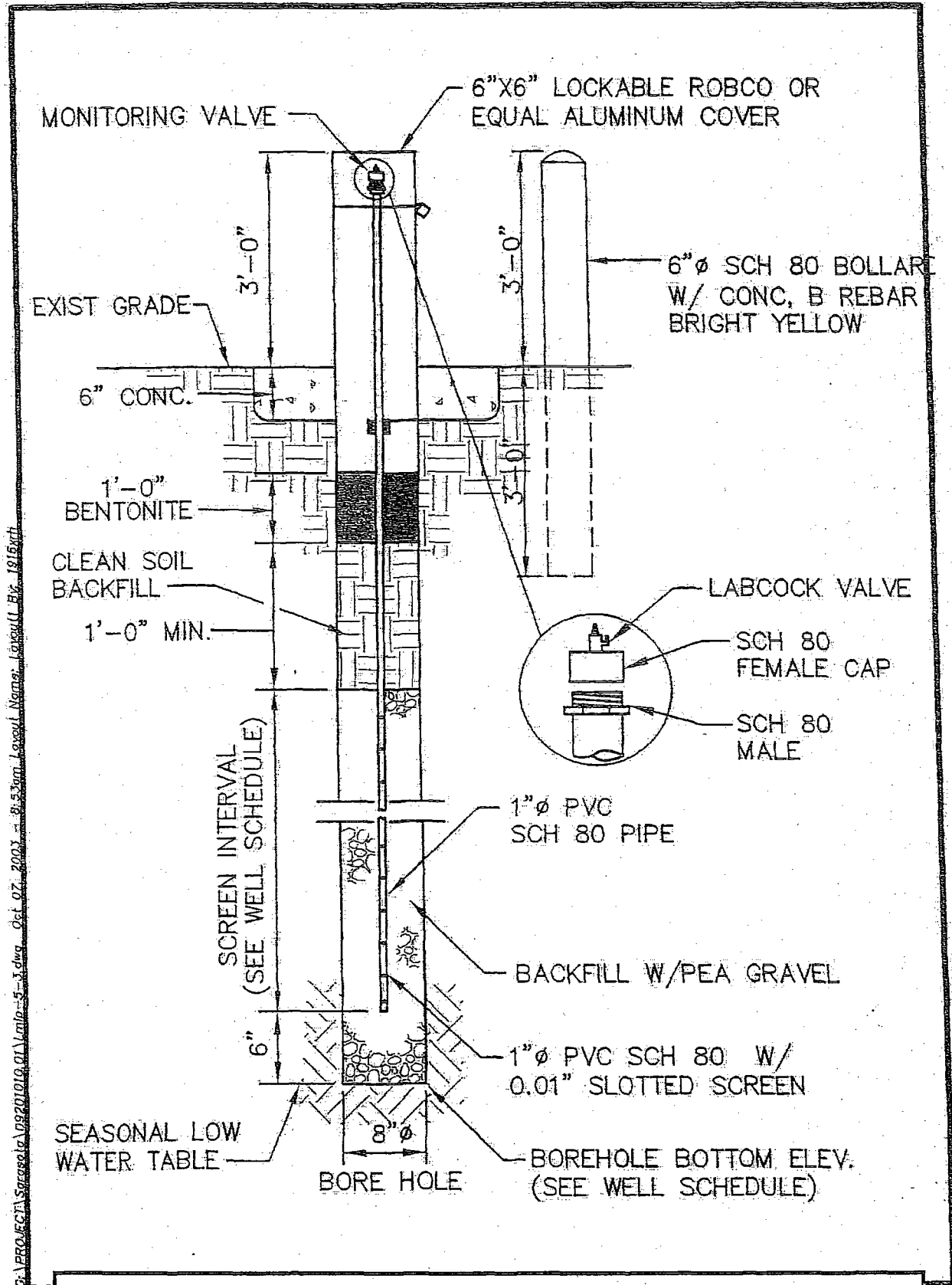


Figure L-2 Operating Levels, Central County Solid Waste Complex, Sarasota County, Florida



## **ATTACHMENT K-4**

### **CONTAMINATED SOIL ACCEPTANCE CRITERIA**



## ATTACHMENT K-4

### CONTAMINATED SOIL ACCEPTANCE CRITERIA

According to the Hazardous Waste Division of Sarasota County, there are no standard contaminated soil acceptance criteria for the CCSWDC. Acceptance of contaminated soil at CCSWDC is only conducted on a case-by-case basis whereby soils must be tested for the toxicity characteristic leaching procedure (TCLP) and the paint filter test. The Hazardous Waste Division evaluates results from these tests to determine whether the soil will be accepted at the landfill. In any case, contaminated soil accepted at CCSWDC would be placed directly into the lined active landfill cell and not stockpiled at the site unless authorized in writing by the ~~Department~~ FDEP.

**ATTACHMENT K-5**

**WASTE LOAD INSPECTION AND REPORTING FORM**

**SARASOTA COUNTY SOLID WASTE DEPARTMENT  
SOLID WASTE LOAD INSPECTION FORM**

Florida Administrative Code 62-701 requires landfills to periodically inspect loads presented for disposal. If unauthorized wastes are found, the responsible party shall be required to cause removal of said waste and the Florida Department of Environmental Protection shall be notified. Inspection records shall be maintained for a period of three years.

Inspection Location \_\_\_\_\_

Date \_\_\_\_\_ Time \_\_\_\_\_ Truck No. \_\_\_\_\_

Hauler \_\_\_\_\_ Vehicle License Plate No. \_\_\_\_\_

Source of Waste \_\_\_\_\_

Driver (print name) \_\_\_\_\_

Driver (signature) \_\_\_\_\_

Inspector/Title \_\_\_\_\_

Waste Observed \_\_\_\_\_

Unauthorized Waste \_\_\_\_\_

FDEP Contacted \_\_\_\_\_ Name of Contact \_\_\_\_\_

What action was taken to properly dispose of the unauthorized waste?


(Use attachments if necessary)

**ATTACHMENT K-6**

**LEACHATE DISPOSAL COMMITMENT LETTER**



**SARASOTA COUNTY**  
"Dedicated to Quality Service"

**COPY**

December 3, 2001

Kim Ford, P.E.  
Florida Department of Environmental Protection  
3804 Coconut Drive  
Tampa, Florida 33619

Subject: Central County Solid Waste Operations  
Leachate Disposal  
FDEP - Permit No. S058-299180

Dear Mr. Ford:

I have been requested to provide confirmation regarding the acceptance and disposal of leachate from the closed Bee Ridge Landfill Site, and the Central County Solid Waste Disposal Complex.

The leachate is normally accepted at our Bee Ridge Water Reclamation Facility, with a general maximum leachate input of 500,000 gallons per day.

An alternative disposal site is through our Central County Utilities Facility, with a general maximum leachate input of 250,000 gallons per day.

Please contact my office, should you require additional information.

Sincerely,

Warren Wagner  
General Manager

c: Gary Bennett, Solid Waste Operations Manager, Solid Waste Operations  
Paul Wingler, P.E. Solid Waste Operations  
Robert J. Butera, P.E. III, FDEP - Tampa

I:\USER\wagner\projects\Central County Solid Waste Disposal Complex\leachate\Correspondence\Kim Ford - leachate Disposal (Author Warren Wagner) - 11-21-01.doc



# Florida Department of Environmental Protection

Twin Towers Office Bldg., 2600 Blair Stone Road, Tallahassee, Florida 32399-2400

## NOTIFICATION/APPLICATION FOR CONSTRUCTING A DOMESTIC WASTEWATER COLLECTION/TRANSMISSION SYSTEM

### PART I - GENERAL

#### Subpart A: Permit Application Type

Permit Application Type (mark one only)	EDUs Served	Application Fee*	"X"
Are you applying for an individual permit for a domestic wastewater collection/transmission system? Note: an EDU is equal to 3.5 persons. Criteria for an individual permit are contained in Rule 62-604.600(7), F.A.C.	$\geq 10$	\$500	<input checked="" type="checkbox"/>
	$< 10$	\$300	<input type="checkbox"/>
Is this a Notice of Intent to use the general permit for wastewater collection/transmission systems? Criteria for qualifying for a general permit are contained in Rule 62-604.600(6), F.A.C. Projects not meeting the criteria in Rule 62-604.600(6), F.A.C., must apply for an individual permit.	N/A	\$250	<input type="checkbox"/>

\*Note: Each non-contiguous project (i.e., projects that are not interconnected or are not located on adjacent streets or in the same neighborhood) requires a separate application and fee.

#### Subpart B: Instructions

- This form shall be completed for all domestic wastewater collection/transmission system construction projects as follows:
  - If this is a Notice of Intent to use the general permit, this notification shall be submitted to the Department at least 30 days prior to initiating construction.
  - If this is an application for an individual permit, the permit must be obtained prior to initiating construction.
- One copy of the completed form shall be submitted to the appropriate DEP district office or delegated local program along with the appropriate fee, and one copy of the following supporting documents. Checks should be made payable to the Florida Department of Environmental Protection, or the name of the appropriate delegated local program.
  - If this is a Notice of Intent to use the general permit, attach a site plan or sketch showing the size and approximate location of new or altered gravity sewers, pump stations and force mains; showing the approximate location of manholes and isolation valves; and showing how the proposed project ties into the existing or proposed wastewater facilities. The site plan or sketch shall be signed and sealed by a professional engineer registered in Florida.
  - If this is an application for an individual permit, one set of plans and specifications shall be submitted with this application, or alternatively, an engineering report shall be submitted. Plans and specifications and engineering reports shall be prepared in accordance with the applicable provisions of Chapters 10 and 20 of *Recommended Standards for Wastewater Facilities*. The plans and specifications or engineering report shall be signed and sealed by a Professional Engineer registered in Florida.
- All information shall be typed or printed in ink. Where attached sheets (or other technical documentation) are utilized in lieu of the blank spaces provided, indicate appropriate cross-references on the form. For Items (1) through (4) of Part II of this application form, if an item is not applicable to your project, indicate "NA" in the appropriate space provided.

## PART II - PROJECT DOCUMENTATION

### (1) Collection/Transmission System Permittee

Name Frank Coggins Title Manager - Solid Waste Operations  
Company Name Sarasota County - Solid Waste Department  
Address 4000 Knights Trail Road  
City Nokomis State Florida Zip 34275  
Telephone 941-861-1578 Fax 941-486-2620 Email fcoggins@scgov.net

### (2) General Project Information

Project Name Central County Landfill - Leachate Force Main and Pump Station  
Location: County Sarasota City Nokomis Section 20/29/33 Township 38 Range 19  
Project Description and Purpose (including pipe length, range of pipe diameter, total number of manholes, and total number of pump stations) Proposed to construct a pump station and a 5.2 mile 4" diameter force main to pump leachate from the Central County Landfill to Lift Station 376-0527 on Knights Trail Road Just North of Laurel Road.

Estimated date for: Start of construction January 2006 Completion of construction January 2007  
Connections to existing system or treatment plant Connect to Lift Station 376-0527

### (3) Project Capacity

A = Type of Unit	B = Number of Units	C = Population Unit	D = Total Population (Columns B x C)	E = Per Cap Flow	F = Total Average Daily Flow (Columns D x E)	G = Peak hour flow
Single-Family Home	N/A	N/A	N/A	N/A	N/A	N/A
Mobile Home	N/A	N/A	N/A	N/A	N/A	N/A
Apartment	N/A	N/A	N/A	N/A	N/A	N/A
Commercial, Institutional, or Industrial Facility*	117EDU	1	117EDU	175 GPD/ED	20,550GPD	40GPM
Total			117EDU		20,550GPD	40GPM

\* Description of commercial, institutional, and industrial facilities and explanation of method used to estimate per capita flow for these facilities:

The landfill creates 7.5 MG of leachate per year. 7.5 MG divided by 365 days per year equals 20,550GPD.  
Using 175GPD/EDU, this equates to 117EDU'S. The maximum pumping rate for the proposed pumping station is 40GPM.  
The pump station has a 1.0MG storage tank to attenuate flows.

### (4) Pump Station Data (attached additional sheets as necessary)

Location	Type	Estimated Flow to the Station (GPD)			Operating Conditions [GPD @ FT (TDH)]
		Maximum	Average	Minimum	
Landfill			20,550		40@46

### (5) Collection/Transmission System Design Information

- A. This information must be completed for all projects by the applicant's professional engineer, and if applicable, those professional engineers in other disciplines who assisted with the design of the project.

If this project has been designed to comply with the standards and criteria listed below, the engineer shall initial in ink before the standards or criteria. If any of the standards or criteria do not apply to this project or if this project has not been designed to comply with the standards or criteria, mark "X" before the appropriate standard or criteria and provide an explanation, including any applicable rule references, in (5)B. below.

allow for another alternative that will result in an equivalent level of reliability and public health protection, the project can be constructed using the general permit.

#### General Requirements

- X 1. The project is designed based on an average daily flow of 100 gallons per capita plus wastewater flow from industrial plants and major institutional and commercial facilities unless water use data or other justification is used to better estimate the flow. The design includes an appropriate peaking factor, which covers I/I contributions and non-wastewater connections to those service lines. [RSWF 11.243]
- JME 2. Procedures are specified for operation of the collection/transmission system during construction. [RSWF 20.15]
- JME 3. The project is designed to be located on public right-of-ways, land owned by the permittee, or easements and to be located no closer than 100 feet from a public drinking water supply well and no closer than 75 feet from a private drinking water supply well; or documentation is provided in Part II.(5)B., showing that another alternative will result in an equivalent level of reliability and public health protection. [62-604.400(1)(b) and (c), F.A.C.]
- JME 4. The project is designed with no physical connections between a public or private potable water supply system and a sewer or force main and with no water pipes passing through or coming into contact with any part of a sewer manhole. [RSFW 38.1 and 48.5]
- JME 5. The project is designed to preclude the deliberate introduction of storm water, surface water, groundwater, roof runoff, subsurface drainage, swimming pool drainage, air conditioning system condensate water, noncontact cooling water except as provided by Rule 62-610.668(1), F.A.C., and sources of uncontaminated wastewater, except to augment the supply of reclaimed water in accordance with Rule 62-610.472(3)(c), F.A.C. [62-604.400(1)(d), F.A.C.]
- JME 6. The project is designed so that all new or relocated, buried sewers and force mains, are located in accordance with the separation requirements from water mains and reclaimed water lines of Rules 62-604.400(2)(g)(h) and (i) and (3), F.A.C. Note, if the criteria of Rules 62-604.400(2)(g) 4. or (2)(i) 3., F.A.C., are used, describe in Part II.C. alternative construction features that will be provided to afford a similar level of reliability and public health protection. [62-604.400(2)(g), (h), and (i) and (3), F.A.C.]

#### Gravity Sewers

- X 7. The project is designed with no public gravity sewer conveying raw wastewater less than 8 inches in diameter. [RSWF 33.1]
- X 8. The design considers buoyancy of sewers, and appropriate construction techniques are specified to prevent flotation of the pipe where high groundwater conditions are anticipated. [RSWF 33.3]
- X 9. All sewers are designed with slopes to give mean velocities, when flowing full, of not less than 2.0 feet per second based on Manning's formula using an "n" value of 0.013; or if it is not practicable to maintain these minimum slopes and the depth of flow will be 0.3 of the diameter or greater for design average flow, the owner of the system has been notified that additional sewer maintenance will be required. The pipe diameter and slope are selected to obtain the greatest practical velocities to minimize solids deposition problems. Oversized sewers are not specified to justify flatter slopes. [RSWF 33.41, 33.42, and 33.43]
- X 10. Sewers are designed with uniform slope between manholes. [RWSF 33.44]
- X 11. Where velocities greater than 15 fps are designed, provisions to protect against displacement by erosion and impact are specified. [RSWF 33.45]
- X 12. Sewers on 20% slopes or greater are designed to be anchored securely with concrete, or equal, anchors spaced as follows: not over 36 feet center to center on grades 20% and up to 35%; not over 24 feet center to center on grades 35% and up to 50%; and not over 16 feet center to center on grades 50% and over. [RSWF 33.46]
- X 13. Sewers 24 inches or less are designed with straight alignment between manholes. Where curvilinear sewers are proposed for sewers greater than 24 inches, the design specifies compression joints; ASTM or specific pipe manufacturer's maximum allowable pipe joint deflection limits are not exceeded; and curvilinear sewers are limited to simple curves which start and end at manholes. [RSWF 33.5]



- X 14. Suitable couplings complying with ASTM specifications are required for joining dissimilar materials. [RSWF 33.7]
- X 15. Sewers are designed to prevent damage from superimposed loads. [RSWF 33.7]
- X 16. Appropriate specifications for the pipe and methods of bedding and backfilling are provided so as not to damage the pipe or its joints, impede cleaning operations and future tapping, nor create excessive side fill pressures and ovalation of the pipe, nor seriously impair flow capacity. [RSWF 33.81]
- X 17. Appropriate deflection tests are specified for all flexible pipe. Testing is required after the final backfill has been in place at least 30 days to permit stabilization of the soil-pipe system. Testing requirements specify: 1) no pipe shall exceed a deflection of 5%; 2) using a rigid ball or mandrel for the deflection test with a diameter not less than 95% of the base inside diameter or average inside diameter of the pipe, depending on which is specified in the ASTM specification, including the appendix, to which the pipe is manufactured; and 3) performing the test without mechanical pulling devices. [RSWF 33.85]
- X 18. Leakage tests are specified requiring that: 1) the leakage exfiltration or infiltration does not exceed 200 gallons per inch of pipe diameter per mile per day for any section of the system; 2) exfiltration or infiltration tests be performed with a minimum positive head of 2 feet; and 3) air tests, as a minimum, conform to the test procedure described in ASTM G 828 for clay pipe, ASTM C 924 for concrete pipe, ASTM F-1417 for plastic pipe, and for other materials appropriate test procedures. [RSWF 33.93, 33.94, and 33.95]
- X 19. If an inverted siphon is proposed, documentation of its need is provided in Part II.C. Inverted siphons are designed with: 1) at least two barrels; 2) a minimum pipe size of 6 inches; 3) necessary appurtenances for maintenance, convenient flushing, and cleaning equipment; and 4) inlet and discharge structures having adequate clearances for cleaning equipment, inspection, and flushing. Design provides sufficient head and appropriate pipe sizes to secure velocities of at least 3.0 fps for design average flows. The inlet and outlet are designed so that the design average flow may be diverted to one barrel, and that either barrel may be cut out of service for cleaning. [RSWF 35]

#### Manholes

- X 20. The project is designed with manholes at the end of each line; at all changes in grade, size, or alignment; at all intersections; and at distances not greater than 400 feet for sewers 15 inches or less and 500 feet for sewers 18 inches to 30 inches, except in the case where adequate modern cleaning equipment is available at distances not greater than 600 feet. [RSWF 34.1]
- X 21. Design requires drop pipes to be provided for sewers entering manholes at elevations of 24 inches or more above the manhole invert. Where the difference in elevation between the incoming sewer and the manhole invert is less than 24 inches, the invert is designed with a fillet to prevent solids deposition. Inside drop connections (whennecessary) are designed to be secured to the interior wall of the manhole and provide access for cleaning. Design requires the entire outside drop connection be encased in concrete. [RSWF 34.2]
- X 22. Manholes are designed with a minimum diameter of 48 inches and a minimum access diameter of 22 inches. [RSWF 34.3]
- X 23. Design requires that a bench be provided on each side of any manhole channel when the pipe diameter(s) are less than the manhole diameter and that no lateral sewer, service connection, or drop manhole pipe discharges onto the surface of the bench. [RSWF 34.5]
- X 24. Design requires: 1) manhole lift holes and grade adjustment rings be sealed with non-shrinking mortar or other appropriate material; 2) inlet and outlet pipes be joined to the manhole with a gasketed flexible watertight connection or another watertight connection arrangement that allows differential settlement of the pipe and manhole wall; and 3) watertight manhole covers be used wherever the manhole tops may be flooded by street runoff or high water. [RSWF 34.6]
- X 25. Manhole inspection and testing for watertightness or damage prior to placing into service are specified. Air testing, if specified for concrete sewer manholes, conforms to the test procedures described in ASTM G-1244. [RSWF 34.7]
- X 26. Electrical equipment specified for use in manholes is consistent with Item 46 of this checklist. [RSWF 34.9]

#### Stream Crossings

- X 27. Sewers and force mains entering or crossing streams are designed to be constructed of ductile iron pipe with mechanical joints or so they will remain watertight and free from changes in alignment or grade. Appropriate materials which will not readily erode, cause siltation, damage pipe during placement, or corrode the pipe are specified to backfill the trench. [RSWF 36.21 and 48.5]
- X 28. Stream crossings are designed to incorporate valves or other flow regulating devices (which may include pump stations) on the shoreline or at such distances from the shoreline to prevent discharge in the event the line is damaged. [62-604.400(2)(k)5., F.A.C.]
- X 29. Sewers and force mains entering or crossing streams are designed at a sufficient depth below the natural bottom of the stream bed to protect the line. At a minimum, the project is designed with subaqueous lines to be buried at least three feet below the design or actual bottom, whichever is deeper, of a canal and other dredged waterway or the natural bottom of streams, rivers, estuaries, bays, and other natural water bodies; or if it is not practicable to design the project with less than three-foot minimum cover, alternative construction features (e.g. a concrete cap, sleeve, or some other properly engineered device to insure adequate protection of the line) are described in Part II.C. [62-604.400(2)(k)1., F.A.C., and RSWF 36.11]
- X 30. Specifications require permanent warning signs be placed on the banks of canals, streams, and rivers clearly identifying the nature and location (including depths below design or natural bottom) of subaqueous crossings and suitably fixed signs be placed at the shore, for subaqueous crossings of lakes, bays, and other large bodies of water, and in any area where anchoring is normally expected. [62-604.400(2)(k)2., F.A.C.]
- X 31. Provisions for testing the integrity of subaqueous lines are specified. [62-604.400(2)(k)4., F.A.C.]
- X 32. Supports are designed for all joints in pipes utilized for aerial crossings and to prevent overturning and settlement. Expansion jointing is specified between above ground and below ground sewers and force mains. The design considers the impact of floodwaters and debris. [RSWF 37 and 48.5]
- X 33. Aerial crossings are designed to maintain existing or required navigational capabilities within the waterway and to reserve riparian rights of adjacent property owners. [62-604.400(2)(k)3., F.A.C.]

#### Pump Stations

- SWW 34. In areas with high water tables, pump stations are designed to withstand flotation forces when empty. When siting the pump station, the design considers the potential for damage or interruption of operation because of flooding. Pump station structures and electrical and mechanical equipment are designed to be protected from physical damage by the 100-year flood. Pump stations are designed to remain fully operational and accessible during the 25-year flood unless lesser flood levels are appropriate based on local considerations, but not less than the 10-year flood. [62-604.400(2)(e), F.A.C.]
- SWW 35. Pump stations are designed to be readily accessible by maintenance vehicles during all weather conditions. [RSWF 41.2]
- SWW 36. Wet well and pump station piping is designed to avoid operational problems from the accumulation of grit. [RSWF 41.3]
- X 37. Dry wells, including their superstructure, are designed to be completely separated from the wet well. Common walls are designed to be gas tight. [RSWF 42.21]
- SWW 38. The design includes provisions to facilitate removing pumps, motors, and other mechanical and electrical equipment. [RSWF 42.22]

- X 39. The design includes provisions for: 1) suitable and safe means of access for persons wearing self-contained breathing apparatus are provided to dry wells, and to wet wells; 2) stairway access to wet wells more than 4 feet deep containing either bar screens or mechanical equipment requiring inspection or maintenance; 3) for built-in-place pump stations, a stairway to the dry well with rest landings at vertical intervals not to exceed 12 feet; 4) for factory-built pump stations over 15 feet deep, a rigidly fixed landing at vertical intervals not to exceed 10 feet unless a manlift or elevator is provided; and 5) where a landing is used, a suitable and rigidly fixed barrier to prevent an individual from falling past the intermediate landing to a lower level. If a manlift or elevator is provided, emergency access is included in the design. [RSWF 42.23]
- SW 40. Specified construction materials are appropriate under conditions of exposure to hydrogen sulfide and other corrosive gases, greases, oils, and other constituents frequently present in wastewater. [RSWF 42.25]
- SW 41. Except for low-pressure grinder or STEP systems, multiple pumps are specified, and each pump has an individual intake. Where only two units are specified, they are of the same size. Specified units have capacity such that, with any unit out of service, the remaining units will have capacity to handle the design peak hourly flow. [RSWF 42.31 and 42.36]
- X 42. Bar racks are specified for pumps handling wastewater from 30 inch or larger diameter sewers. Where a bar rack is specified, a mechanical hoist is also provided. The design includes provisions for appropriate protection from clogging for small pump stations. [RSWF 42.322]
- X 43. Pumps handling raw wastewater are designed to pass spheres of at least 3 inches in diameter. Pump suction and discharge openings are designed to be at least 4 inches in diameter. [RSWF 42.33] (Note, this provision is not applicable to grinder pumps.)
- SW 44. The design requires pumps be placed such that under normal operating conditions they will operate under a positive suction head, unless pumps are suction-lift pumps. [RSWF 42.34]
- SW 45. The design requires: 1) pump stations be protected from lightning and transient voltage surges; and 2) pump stations be equipped with lightning arrestors, surge capacitors, or other similar protection devices and phase protection. Note, pump stations serving a single building are not required to provide surge protection devices if not necessary to protect the pump station. [62-604.400(2)(b), F.A.C.]
- SW 46. The design requires 1) electrical systems and components (e.g., motors, lights, cables, conduits, switch boxes, control circuits, etc.) in raw wastewater wet wells, or in enclosed or partially enclosed spaces where hazardous concentrations of flammable gases or vapors may be present, comply with the National Electrical Code requirements for Class I Group D, Division 1 locations; 2) electrical equipment located in wet wells be suitable for use under corrosive conditions; 3) each flexible cable be provided with a watertight seal and separate strain relief; 4) a fused disconnect switch located above ground be provided for the main power feed for all pump stations; 5) electrical equipment exposed to weather to meet the requirements of weatherproof equipment NEMA 3R or 4; 6) a 110 volt power receptacle to facilitate maintenance be provided inside the control panel for pump stations that have control panels outdoors; and 7) ground fault interruption protection be provided for all outdoor outlets. [RSWF 42.35]
- X 47. The design requires a sump pump equipped with dual check valves be provided in dry wells to remove leakage or drainage with discharge above the maximum high water level of the wet well. [RSWF 42.37]
- X 48. Pump station design capacities are based on the peak hourly flow and are adequate to maintain a minimum velocity of 2 feet per second in the force main. [RSWF 42.38]
- SW 49. The design includes provisions to automatically alternate the pumps in use. [RSWF 42.4]
- SW 50. The design requires: 1) suitable shutoff valves be placed on the suction line of dry pit pumps; 2) suitable shutoff and check valves be placed on the discharge line of each pump (except on screw pumps); 3) a check valve be located between the shutoff valve and the pump; 4) check valves be suitable for the material being handled; 5) check valves be placed on the horizontal portion of discharge piping (except for ball checks, which may be placed in the vertical run); 6) all valves be capable of withstanding normal pressure and water hammer; and 7) all shutoff and check valves be operable from the floor level and accessible for maintenance. [RSWF 42.5]
- SW 51. The effective volume of wet wells is based on design average flows and a filling time not to exceed 30 minutes unless the facility is designed to provide flow equalization. The pump manufacturer's duty cycle recommendations were utilized in selecting the minimum cycle time. [RSWF 42.62]
- X 52. The design requires wet well floors have a minimum slope of 1 to 1 to the hopper bottom and the horizontal area of hopper bottoms be no greater than necessary for proper installation and function of the inlet. [RSWF 42.63]

- X 53. For covered wet wells, the design provides for air displacement to the atmosphere, such as an inverted "j" tube or other means. [RSWF 42.64]
- X 54. The design provides for adequate ventilation all pump stations; mechanical ventilation where the dry well is below the ground surface; permanently installed ventilation if screens or mechanical equipment requiring maintenance or inspection are located in the wet well. Pump stations are designed with no interconnection between the wet well and dry well ventilation systems. [RSWF 42.71]
- X 55. The design requires all intermittently operated ventilation equipment to be interconnected with the respective pit lighting system and the manual lighting/ventilation switch to override the automatic controls. [RSWF 42.73]
- X 56. The design requires the fan wheels of ventilation systems be fabricated from non-sparking material and automatic heating and dehumidification equipment be provided in all dry wells. [RSWF 42.74]
- X 57. If wet well ventilation is continuous, design provides for at least 12 complete 100% fresh air changes per hour; if wet well ventilation is intermittent, design provides for at least 30 complete 100% fresh air changes per hour; and design requires air to be forced into wet wells by mechanical means rather than solely exhausted from the wet well. [RSWF 42.75]
- X 58. If dry well ventilation is continuous, design provides at least 6 complete 100% fresh air changes per hour; and dry well ventilation is intermittent, design provides for at least 30 complete 100% fresh air changes per hour, unless a system of two speed ventilation with an initial ventilation rate of 30 changes per hour for 10 minutes and automatic switch over to 6 changes per hour is used to conserve heat. [RSWF 42.76]
- EW 59. Pump stations are designed and located on the site to minimize adverse effects from odors, noise, and lighting. [62-604.400(2)(c), F.A.C.]
- EW 60. The design requires pump stations be enclosed with a fence or otherwise designed with appropriate features to discourage the entry of animals and unauthorized persons. Posting of an unobstructed sign made of durable weather resistant material at a location visible to the public with a telephone number for a point of contact in case of emergency is specified. [62-604.400(2)(d), F.A.C.]
- EW 61. The design requires suitable devices for measuring wastewater flow at all pump stations. Indicating, totalizing, and recording flow measurement are specified for pump stations with a 1200 gpm or greater design peak flow. [RSWF 42.8]
- EW 62. The project is designed with no physical connections between any potable water supplies and pump stations. If a potable water supply is brought to a station, reduced-pressure principle backflow-prevention assemblies are specified. [RSWF 42.9 and 62-555.30(4), F.A.C.]

Additional Items to be Completed for Suction-Lift Pump Stations

- X 63. The design requires all suction-lift pumps to be either self-priming or vacuum-priming and the combined total of dynamic suction-lift at the "pump off" elevation and required net positive suction head at design operating conditions not to exceed 22 feet. For self-priming pumps, the design requires: 1) pumps be capable of rapid priming and repriming at the "lead pump on" elevation with self-priming and repriming accomplished automatically under design operating conditions; 2) suction piping not to exceed the size of the pump suction or 25 feet in total length; and 3) priming lift at the "lead pump on" elevation to include a safety factor of at least 4 feet from the maximum allowable priming lift for the specific equipment at design operating conditions. For vacuum-priming pump stations, the design requires dual vacuum pumps capable of automatically and completely removing air from the suction lift pumps and the vacuum pumps be adequately protected from damage due to wastewater. [RSWF 43.1]
- X 64. The design requires: 1) suction-lift pump equipment compartments to be above grade or offset and to be effectively isolated from the wet well to prevent a hazardous and corrosive sewer atmosphere from entering the equipment compartment; 2) wet well access not to be through the equipment compartment and to be at least 24 inches in diameter; 3) gasketed replacement plates be provided to cover the opening to the wet well for pump units to be removed for service; and 4) no valving be located in the wet well. [RSWF 43.2]

Additional Items to be Completed for Submersible Pump Stations

- X 65. Submersible pumps and motors are designed specifically for raw wastewater use, including totally submerged operation during a portion of each pump cycle and to meet the requirements of the National Electrical Code for such units. Provisions for detecting shaft seal failure or potential seal failure are included in the design. [RSWF 44.1]
- X 66. The design requires submersible pumps be readily removable and replaceable without dewatering the wet well or disconnecting any piping in the wet well. [RSWF 44.2]
- X 67. In submersible pump stations, electrical supply, control, and alarm circuits are designed to provide strain relief; to allow disconnection from outside the wet well; and to protect terminals and connectors from corrosion by location outside the wet well or through use of watertight seals. [RSWF 44.31]
- X 68. In submersible pump stations, the design requires the motor control center to be located outside the wet well, readily accessible, and protected by a conduit seal or other appropriate measures meeting the requirements of the National Electrical Code, to prevent the atmosphere of the wet well from gaining access to the control center. If a seal is specified, the motor can be removed and electrically disconnected without disturbing the seal. The design requires control equipment exposed to weather to meet the requirements of weatherproof equipment NEMA 3R or 4. [RSWF 44.32]
- X 69. In submersible pump stations, the design requires: 1) pump motor power cords be flexible and serviceable under conditions of extra hard usage and to meet the requirements of the National Electrical Code standards for flexible cords in wastewater pump stations; 2) ground fault interruption protection be used to deenergize the circuit in the event of any failure in the electrical integrity of the cable; and 3) power cord terminal fittings be corrosion-resistant and constructed in a manner to prevent the entry of moisture into the cable, provided with strain relief appurtenances, and designed to facilitate field connecting. [RSWF 44.33]
- X 70. In submersible pump stations, the design requires all shut-off and check valves be located in a separate valve pit. Provisions to remove or drain accumulated water from the valve pit are included in the design. [RSWF 44.4]

Emergency Operations for Pump Stations

71. Pump stations are designed with an alarm system which activates in cases of power failure, sump pump failure, pump failure, unauthorized entry, or any cause of pump station malfunction. Pump station alarms are designed to be telemetered to a facility that is manned 24 hours a day. If such a facility is not available and a 24-hour holding capacity is not provided, the alarm is designed to be telemetered to utility offices during normal waking hours and to the home of the responsible person(s) in charge of the lift station during off-duty hours. Note, if an audio-visual alarm system with a self-contained power supply is provided in lieu of a telemetered system, documentation is provided in Part II.C. showing an equivalent level of reliability and public health protection. [RSWF 45]
72. The design requires emergency pumping capability be provided for all pump stations. For pump stations that receive flow from one or more pump stations through a force main or pump stations discharging through pipes 12 inches or larger, the design requires uninterrupted pumping capability be provided, including an in-place emergency generator. Where portable pumping and/or generating equipment or manual transfer is used, the design includes sufficient storage capacity with an alarm system to allow time for detection of pump station failure and transportation and connection of emergency equipment. [62-604.400(2)(a)1. and 2., F.A.C., and RSWF 46.423 and 46.433]
73. The design requires: 1) emergency standby systems to have sufficient capacity to start up and maintain the total rated running capacity of the station, including lighting, ventilation, and other auxiliary equipment necessary for safety and proper operation; 2) special sequencing controls be provided to start pump motors unless the generating equipment has capacity to start all pumps simultaneously with auxiliary equipment operating; 3) a riser from the force main with rapid connection capabilities and appropriate valving be provided for all pump stations to hook up portable pumps; and 4) all pump station reliability design features be compatible with the available temporary service power generating and pumping equipment of the authority responsible for operation and maintenance of the collection/transmission system. [62-604.400(2)(a)3., F.A.C., and RSWF 46.431]
74. The design provides for emergency equipment to be protected from operation conditions that would result in damage to the equipment and from damage at the restoration of regular electrical power. [RSWF 46.411, 46.417, and 46.432]

- X 75. For permanently-installed internal combustion engines, underground fuel storage and piping facilities are designed in accordance with applicable state and federal regulations; and the design requires engines to be located above grade with adequate ventilation of fuel vapors and exhaust gases. [RSWF 46.414 and 46.415]
- X 76. For permanently-installed or portable engine-driven pumps are used, the design includes provisions for manual start-up. [RSWF 46.422]
- X 77. Where independent substations are used for emergency power, each separate substation and its associated transmission line is designed to be capable of starting and operating the pump station at its rated capacity. [RSWF 46.44]

#### Force Mains

- X 78. Force mains are designed to maintain, at design pumping rates, a cleansing velocity of at least 2 feet per second. The minimum force main diameter specified for raw wastewater is not less than 4 inches. [RSWF 48.1]
- QME 79. The design requires: 1) branches of intersecting force mains be provided with appropriate valves such that one branch may shut down for maintenance and repair without interrupting the flow of other branches; and 2) stubouts on force mains, placed in anticipation of future connections, be equipped with a valve to allow such connection without interruption of service. [62-604.400(2)(f), F.A.C.]
- QME 80. The design requires air relief valves be placed at high points in the force main to prevent air locking. [RSWF 48.2]
- QME 81. Specified force main pipe and joints are equal to water main strength materials suitable for design conditions. The force main, reaction blocking, and station piping are designed to withstand water hammer pressures and stresses associated with cycling of wastewater pump stations. [RSWF 48.4]
- QME 82. When the Hazen and Williams formula is used to calculate friction losses through force mains, the value for "C" is 100 for unlined iron or steel pipe for design. For other smooth pipe materials, such as PVC, polyethylene, lined ductile iron, the value for C does not exceed 120 for design. [RSWF 48.61]
- QME 83. Where force mains are constructed of material, which might cause the force main to be confused with potable water mains, specifications require the force main to be clearly identified. [RSWF 48.7]
- QME 84. Leakage tests for force mains are specified including testing methods and leakage limits. [RSWF 48.8]

\*RSWF = Recommended Standards for Wastewater Facilities (1997) as adopted by rule 62-604.300(5)(c), F.A.C.

B. Explanation for Requirements or Standards Marked "X" in II(5)A. Above (Attach additional sheets if necessary):

The proposed system consists of an above ground pump station pumping at 40GPM through a 4" force main. There are no manholes.

The proposed pipe does not cross any streams.

The proposed system is pumping filtered water with no solids, therefore 2FPS cleaning velocity is not needed.

### PART III - CERTIFICATIONS

#### (1) Collection/Transmission System Permittee

I, the undersigned owner or authorized representative\* of PBS&J am fully aware that the statements made in this application for a construction permit are true, correct and complete to the best of my knowledge and belief. I agree to retain the design engineer or another professional engineer registered in Florida, to conduct on-site observation of construction, prepare a certification of completion of construction, and to review record drawings for adequacy. Further, I agree to provide an appropriate operation and maintenance manual for the facilities pursuant to Rule 62-604.500(4), F.A.C., and to retain a professional engineer registered in Florida to examine (or to prepare if desired) the manual. I am fully aware that Department approval must be obtained before this project is placed into service for any purpose other than testing for leaks and testing equipment operation.

Signed

Name Frank Coggins

Date

Title

Project Manager

\*Attach a letter of authorization.

(2) Owner of Collection/Transmission System

I, the undersigned owner or authorized representative\* of Sarasota County Utilities certify that we will be the Owner of this project after it is placed into service. I agree that we will operate and maintain this project in a manner that will comply with applicable Department rules. Also I agree that we will promptly notify the Department if we sell or legally transfer ownership of this project.

Signed \_\_\_\_\_ Date \_\_\_\_\_  
Name MIKE MEHAN, PE Title General Manager- Sarasota County Utilities  
Company Name Sarasota County  
Address 1301 CATTLEMEN ROAD  
City Sarasota State Florida Zip 34232  
Telephone 941-650-2050 Fax \_\_\_\_\_ Email MMEHAN@SCGOV.NET

\* Attach a letter of authorization.

(3) Wastewater Facility Serving Collection/Transmission System\*\*

If this is a Notice of Intent to use a general permit, check here:

- ☒ The undersigned owner or authorized representative\* of the CITY OF VENICE WWTTP wastewater facility hereby certifies that the above referenced facility has the capacity to receive the wastewater generated by the proposed collection system; is in compliance with the capacity analysis report requirements of Rule 62-600.405, F.A.C.; is not under a Department order associated with effluent violations or the ability to treat wastewater adequately; and will provide the necessary treatment and disposal as required by Chapter 403, F.S., and applicable Department rules.

If this is an application for an individual permit, check one:

- ☐ The undersigned owner or authorized representative\* of the \_\_\_\_\_ wastewater facility hereby certifies that the above referenced facility has and will have adequate reserve capacity to accept the flow from this project and will provide the necessary treatment and disposal as required by Chapter 403, F.S., and applicable Department rules.
- ☐ The undersigned owner or authorized representative\* of the \_\_\_\_\_ wastewater facility hereby certifies that the above referenced facility currently does not have, but will have prior to placing the proposed project into operation, adequate reserve capacity to accept the flow from this project and will provide the necessary treatment and disposal as required by Chapter 403, F.S., and applicable Department rules.

Name of Treatment Plant Serving Project		<u>City of Venice Wastewater Treatment Plant</u>	
County	<u>Sarasota</u>	City	<u>Venice</u>
DEP permit number	<u>FL 0041441</u>	Expiration Date	<u>4/24/05 Extended</u>
Maximum monthly average daily flow over the last 12 month period	<u>3.590</u> MGD	Month(s) used	<u>feb-05</u>
Maximum three-month average daily flow over the last 12 month period	<u>3.259</u> MGD	Month(s) used	<u>Dec. 04, Jan 05</u>
Current permitted capacity	<u>6MGD</u> MGD	<input type="checkbox"/> AADF <input type="checkbox"/> MADF <input checked="" type="checkbox"/> TMADF	
Current outstanding flow commitments (including this project) against treatment plant capacity:		<u>Unknown</u>	

Signed R. Christopher Sharek Date 7/5/05  
Name R Christopher Sharek PE Title Utilities Manager  
Address 200 N. Warfield Avenue  
City Venice State Florida Zip 34292  
Telephone 941480-3333 ext 224 Fax 941486-2084 Email csharek@ci.venicefl.us

\* Attach a letter of authorization.

\*\* If there is an intermediate collection system, a letter shall be attached certifying that the intermediate downstream collection system has adequate reserve capacity to accept the flow from this project.

(4) Professional Engineer Registered in Florida

I, the undersigned professional engineer registered in Florida, certify that I am in responsible charge of the preparation and production of engineering documents for this project; that plans and specifications for this project have been completed; that I have expertise in the design of wastewater collection/transmission systems; and that, to the best of my knowledge and belief, the engineering design for this project complies with the requirements of Chapter 62-604, F.A.C.

(Affix Seal)

Signed

Date

Name John M. Eash, P.E. Florida Registration No. 46235  
Company Name PBS&J  
Address 2803 Fruitville Road, Suite 130  
City Sarasota State Florida Zip 34237  
Telephone 954-4036 Fax 951-1477 Email jmeash@pbsj.com  
Portion of Project for Which Responsible Pipe Layout

Signed

Date

Name Dave A. Weber, P.E. Florida Registration No. 29323  
Company Name PBS&J  
Address 2803 Fruitville Road, Suite 130  
City Sarasota State Florida Zip 34237  
Telephone 954-4036 Fax 951-1477 Email DAWeber@pbsj.com  
Portion of Project for Which Responsible Pump Station

(Affix Seal)

Signed

Date

Name \_\_\_\_\_ Florida Registration No. \_\_\_\_\_  
Company Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
Telephone \_\_\_\_\_ Fax \_\_\_\_\_ Email \_\_\_\_\_  
Portion of Project for Which Responsible \_\_\_\_\_



**~~ATTACHMENT K-7~~**

**~~LEACHATE TANK INSPECTION REPORT~~**

**ATTACHMENT K-87**

**LEACHATE PUMP DATA FORM**

**AND**

**METERING MANHOLE DATA FORM**

CENTRAL COUNTY SOLID WASTE DISPOSAL COMPLEX  
 PHASE I LEACHATE COLLECTION  
**DAILY PUMP METER LOG**

DATE	TIME	CELL NO. 1			CELL NO. 2			CELL NO. 3			CELL NO. 4			CELL NO. 5		
		Level	Flowmeter	Hours	Level	Flowmeter	Hours	Level	Flowmeter	Hours	Level	Flowmeter	Hours	Level	Flowmeter	Hours
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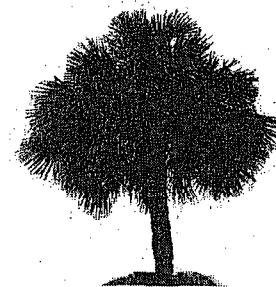
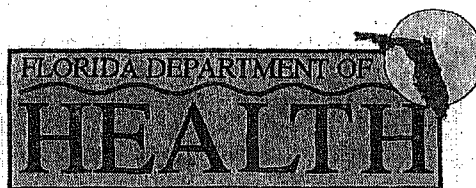
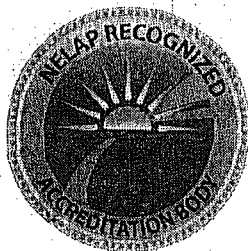
CENTRAL COUNTY SOLID WASTE DISPOSAL COMPLEX  
 PHASE II LEACHATE COLLECTION  
**DAILY PUMP METER LOG**

DATE	TIME	PUMP STATION PUMP NO. 1			PUMP STATION PUMP NO. 2			RECIRCULATION PUMP NO. 1		
		LEVEL	FLOWMETER	HOURS	LEVEL	FLOWMETER	HOURS	LEVEL	FLOWMETER	HOURS
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CENTRAL COUNTY SOLID WASTE DISPOSAL COMPLEX  
 PHASE II LEACHATE COLLECTION  
**METERING MANHOLE LOG**

DATE	TIME	CELL NO. 1			CELL NO. 2			CELL NO. 3			CELL NO. 4		
		Level	Instantaneous Flow	Totalized Flow	Level	Instantaneous Flow	Totalized Flow	Level	Instantaneous Flow	Totalized Flow	Level	Instantaneous Flow	Totalized Flow
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**ATTACHMENT K-98**  
**LABORATORY CERTIFICATION**



State of Florida  
Department of Health, Bureau of Laboratories  
This is to certify that  
E83079

PACE ANALYTICAL SERVICES-FLORIDA  
8 EAST TOWER CIRCLE  
ORMOND BEACH, FL 32174

has complied with Florida Administrative Code 64E-1,  
for the examination of Environmental samples in the following categories

DRINKING WATER - GROUP I UNREGULATED CONTAMINANTS, DRINKING WATER - GROUP II UNREGULATED CONTAMINANTS, DRINKING WATER - OTHER REGULATED CONTAMINANTS, DRINKING WATER - GROUP III UNREGULATED CONTAMINANTS, DRINKING WATER - MICROBIOLOGY, DRINKING WATER - PRIMARY INORGANIC CONTAMINANTS, DRINKING WATER - SECONDARY INORGANIC CONTAMINANTS, DRINKING WATER - SYNTHETIC ORGANIC CONTAMINANTS, NON-POTABLE WATER - EXTRACTABLE ORGANICS, NON-POTABLE WATER - GENERAL CHEMISTRY, NON-POTABLE WATER - METALS, NON-POTABLE WATER - MICROBIOLOGY, NON-POTABLE WATER - PESTICIDES-HERBICIDES-PCB'S, NON-POTABLE WATER - VOLATILE ORGANICS, SOLID AND CHEMICAL MATERIALS - EXTRACTABLE ORGANICS, SOLID AND CHEMICAL MATERIALS - GENERAL CHEMISTRY, SOLID AND CHEMICAL MATERIALS - METALS, SOLID AND CHEMICAL MATERIALS - MICROBIOLOGY, SOLID AND CHEMICAL MATERIALS - PESTICIDES-HERBICIDES-PCB'S, SOLID AND CHEMICAL MATERIALS - VOLATILE ORGANICS

Continued certification is contingent upon successful on-going compliance with the NELAC Standards and FAC Rule 64E-1 regulations. Specific methods and analytes certified are cited on the Laboratory Scope of Accreditation for this laboratory and are on file at the Bureau of Laboratories, P. O. Box 210, Jacksonville, Florida 32231. Clients and customers are urged to verify with this agency the laboratory's certification status in Florida for particular methods and analytes.

Date Issued: July 01, 2012      Expiration Date: June 30, 2013

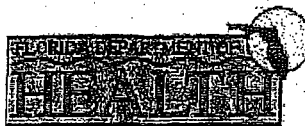


A handwritten signature in black ink.

Max Salfinger, M.D.  
Chief, Bureau of Laboratories  
Florida Department of Health  
DH Form 1697, 7/04

NON-TRANSFERABLE E83079-40-07/01/2012  
Supersedes all previously issued certificates

Rick Scott  
Governor



John H. Armstrong, MD  
State Surgeon General  
Page 1 of 34

### Laboratory Scope of Accreditation

Attachment to Certificate #: E83079-40, expiration date June 30, 2013. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: E83079

EPA Lab Code: FL01264

(386) 672-5668

E83079

Pace Analytical Services-Florida  
8 East Tower Circle  
Ormond Beach, FL 32174

Matrix: Drinking Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
1,1,1,2-Tetrachloroethane	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/8/2002
1,1,1-Trichloroethane	EPA 524.2	Other Regulated Contaminants	NELAP	1/8/2002
1,1,2,2-Tetrachloroethane	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/8/2002
1,1,2-Trichloroethane	EPA 524.2	Other Regulated Contaminants	NELAP	1/8/2002
1,1-Dichloroethane	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/8/2002
1,1-Dichloroethylene	EPA 524.2	Other Regulated Contaminants	NELAP	1/8/2002
1,1-Dichloropropene	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/8/2002
1,2,3-Trichlorobenzene	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/8/2002
1,2,3-Trichloropropane	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/8/2002
1,2,4-Trichlorobenzene	EPA 524.2	Other Regulated Contaminants	NELAP	1/8/2002
1,2,4-Trimethylbenzene	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/8/2002
1,2-Dibromo-3-chloropropane (DBCP)	EPA 504.1	Synthetic Organic Contaminants	NELAP	1/8/2002
1,2-Dibromoethane (EDB, Ethylene dibromide)	EPA 504.1	Synthetic Organic Contaminants	NELAP	1/8/2002
1,2-Dichlorobenzene	EPA 524.2	Other Regulated Contaminants	NELAP	1/8/2002
1,2-Dichloroethane	EPA 524.2	Other Regulated Contaminants	NELAP	1/8/2002
1,2-Dichloropropane	EPA 524.2	Other Regulated Contaminants	NELAP	1/8/2002
1,3,5-Trimethylbenzene	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/8/2002
1,3-Dichlorobenzene	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/8/2002
1,3-Dichloropropane	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/8/2002
1,4-Dichlorobenzene	EPA 524.2	Other Regulated Contaminants	NELAP	1/8/2002
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (BZ 201)	EPA 525.2	Group I Unregulated Contaminants	NELAP	1/8/2002
2,2',3',4,6-Pentachlorobiphenyl (525.2 typo for 2,2',3,4',6'-Pentachlorobiphenyl)	EPA 525.2	Group I Unregulated Contaminants	NELAP	1/8/2002
2,2',4,4'-Tetrachlorobiphenyl (BZ 47)	EPA 525.2	Group I Unregulated Contaminants	NELAP	1/8/2002
2,2-Dichloropropane	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/8/2002
2,4,5-T	EPA 515.3	Synthetic Organic Contaminants	NELAP	10/14/2004
2,4-D	EPA 515.3	Synthetic Organic Contaminants	NELAP	5/11/2004
2,4-DB	EPA 515.3	Synthetic Organic Contaminants	NELAP	10/14/2004
2-Chlorobiphenyl (BZ 1)	EPA 525.2	Group I Unregulated Contaminants	NELAP	1/8/2002
2-Chlorotoluene	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/8/2002
3-Hydroxycarbofuran	EPA 531.1	Group I Unregulated Contaminants	NELAP	1/8/2002
4-Chlorotoluene	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/8/2002
4-Isopropyltoluene	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/8/2002
Acetone	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/3/2012
Acifluorfen	EPA 515.3	Group I Unregulated Contaminants	NELAP	5/11/2004
Alachlor	EPA 508.1	Synthetic Organic Contaminants	NELAP	1/8/2002
Aldicarb (Temik)	EPA 531.1	Group I Unregulated Contaminants	NELAP	1/8/2002

Clients and Customers are urged to verify the laboratory's current certification status with the Environmental Laboratory Certification Program.

Issue Date: 7/1/2012

Expiration Date: 6/30/2013



Rick Scott  
Governor



John H. Armstrong, MD  
State Surgeon General  
Page 2 of 34

### Laboratory Scope of Accreditation

Attachment to Certificate #: E83079-40, expiration date June 30, 2013. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: E83079

EPA Lab Code: FL01264

(386) 672-5668

E83079

Pace Analytical Services-Florida  
8 East Tower Circle  
Ormond Beach, FL 32174

Matrix: Drinking Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
Aldicarb sulfone	EPA 531.1	Group I Unregulated Contaminants	NELAP	1/8/2002
Aldicarb sulfoxide	EPA 531.1	Group I Unregulated Contaminants	NELAP	1/8/2002
Aldrin	EPA 525.2	Group I Unregulated Contaminants	NELAP	1/8/2002
Alkalinity as CaCO <sub>3</sub>	SM 2320 B	Primary Inorganic Contaminants	NELAP	1/8/2002
Aluminum	EPA 200.7	Secondary Inorganic Contaminants	NELAP	1/8/2002
Aluminum	EPA 200.8	Secondary Inorganic Contaminants	NELAP	5/11/2004
Antimony	EPA 200.8	Primary Inorganic Contaminants	NELAP	5/11/2004
Aroclor-1016 (PCB-1016)	EPA 508.1	Synthetic Organic Contaminants	NELAP	3/10/2010
Aroclor-1221 (PCB-1221)	EPA 508.1	Synthetic Organic Contaminants	NELAP	3/10/2010
Aroclor-1232 (PCB-1232)	EPA 508.1	Synthetic Organic Contaminants	NELAP	3/10/2010
Aroclor-1242 (PCB-1242)	EPA 508.1	Synthetic Organic Contaminants	NELAP	3/10/2010
Aroclor-1248 (PCB-1248)	EPA 508.1	Synthetic Organic Contaminants	NELAP	3/10/2010
Aroclor-1254 (PCB-1254)	EPA 508.1	Synthetic Organic Contaminants	NELAP	3/10/2010
Aroclor-1260 (PCB-1260)	EPA 508.1	Synthetic Organic Contaminants	NELAP	3/10/2010
Arsenic	EPA 200.7	Primary Inorganic Contaminants	NELAP	1/8/2002
Arsenic	EPA 200.8	Primary Inorganic Contaminants	NELAP	5/11/2004
Atrazine	EPA 508.1	Synthetic Organic Contaminants	NELAP	1/8/2002
Barium	EPA 200.7	Primary Inorganic Contaminants	NELAP	1/8/2002
Barium	EPA 200.8	Primary Inorganic Contaminants	NELAP	5/11/2004
Bentazon	EPA 515.3	Synthetic Organic Contaminants	NELAP	10/14/2004
Benzene	EPA 524.2	Other Regulated Contaminants	NELAP	1/8/2002
Benzo(a)pyrene	EPA 525.2	Synthetic Organic Contaminants	NELAP	1/8/2002
Beryllium	EPA 200.7	Primary Inorganic Contaminants	NELAP	1/8/2002
Beryllium	EPA 200.8	Primary Inorganic Contaminants	NELAP	5/11/2004
bis(2-Ethylhexyl) phthalate (DEHP)	EPA 525.2	Synthetic Organic Contaminants	NELAP	1/8/2002
Bromate	EPA 300.1	Primary Inorganic Contaminants	NELAP	5/11/2004
Bromide	EPA 300.0	Primary Inorganic Contaminants	NELAP	1/8/2002
Bromide	EPA 300.1	Primary Inorganic Contaminants	NELAP	5/11/2004
Bromoacetic acid	EPA 552.2	Group I Unregulated Contaminants	NELAP	8/14/2006
Bromobenzene	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/8/2002
Bromochloroacetic acid	EPA 552.2	Group I Unregulated Contaminants	NELAP	9/14/2010
Bromochloromethane	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/8/2002
Bromodichloromethane	EPA 524.2	Group II Unregulated Contaminants, Other Regulated Contaminants	NELAP	1/8/2002
Bromoform	EPA 524.2	Group II Unregulated Contaminants, Other Regulated Contaminants	NELAP	1/8/2002

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Issue Date: 7/1/2012

Expiration Date: 6/30/2013

Rick Scott  
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### Laboratory Scope of Accreditation

Attachment to Certificate #: E83079-40, expiration date June 30, 2013. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: E83079

EPA Lab Code: FL01264

(386) 672-5668

E83079

Pace Analytical Services-Florida

8 East Tower Circle

Ormond Beach, FL 32174

Matrix: Drinking Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
Butachlor	EPA 508.1	Group I Unregulated Contaminants	NELAP	1/8/2002
Butachlor	EPA 525.2	Group I Unregulated Contaminants	NELAP	1/8/2002
Butyl benzyl phthalate	EPA 525.2	Group III Unregulated Contaminants	NELAP	1/8/2002
Cadmium	EPA 200.7	Primary Inorganic Contaminants	NELAP	1/8/2002
Cadmium	EPA 200.8	Primary Inorganic Contaminants	NELAP	5/11/2004
Calcium	EPA 200.7	Primary Inorganic Contaminants	NELAP	1/8/2002
Carbaryl (Sevin)	EPA 531.1	Group I Unregulated Contaminants	NELAP	1/8/2002
Carbofuran (Furadan)	EPA 531.1	Synthetic Organic Contaminants	NELAP	1/8/2002
Carbon tetrachloride	EPA 524.2	Other Regulated Contaminants	NELAP	1/8/2002
Chlorate	EPA 300.1	Primary Inorganic Contaminants	NELAP	5/11/2004
Chlordane (tech.)	EPA 508.1	Synthetic Organic Contaminants	NELAP	1/8/2002
Chloride	EPA 300.0	Secondary Inorganic Contaminants	NELAP	1/8/2002
Chlorine	SM 4500-Cl D	Primary Inorganic Contaminants	NELAP	1/8/2002
Chlorine dioxide, res. disinfectant	SM 4500-ClO2 D	Primary Inorganic Contaminants	NELAP	10/14/2004
Chlorite	EPA 300.1	Primary Inorganic Contaminants	NELAP	5/11/2004
Chloroacetic acid	EPA 552.2	Group I Unregulated Contaminants	NELAP	8/14/2006
Chlorobenzene	EPA 524.2	Other Regulated Contaminants	NELAP	1/8/2002
Chloroethane	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/8/2002
Chloroform	EPA 524.2	Other Regulated Contaminants, Group II Unregulated Contaminants	NELAP	1/8/2002
Chromium	EPA 200.7	Primary Inorganic Contaminants	NELAP	1/8/2002
Chromium	EPA 200.8	Primary Inorganic Contaminants	NELAP	5/11/2004
cis-1,2-Dichloroethylene	EPA 524.2	Other Regulated Contaminants	NELAP	1/8/2002
cis-1,3-Dichloropropene	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/8/2002
Color	SM 2120 B	Secondary Inorganic Contaminants	NELAP	1/8/2002
Conductivity	SM 2510 B	Primary Inorganic Contaminants	NELAP	1/8/2002
Copper	EPA 200.7	Primary Inorganic Contaminants, Secondary Inorganic Contaminants	NELAP	1/8/2002
Copper	EPA 200.8	Primary Inorganic Contaminants, Secondary Inorganic Contaminants	NELAP	5/11/2004
Corrosivity (langlier index)	SM 2330 B	Secondary Inorganic Contaminants	NELAP	1/8/2002
Cyanide	EPA 335.4	Primary Inorganic Contaminants	NELAP	1/8/2002
Dalapon	EPA 515.3	Synthetic Organic Contaminants	NELAP	5/11/2004
Dalapon	EPA 552.2	Synthetic Organic Contaminants	NELAP	9/14/2010
Di(2-ethylhexyl)adipate	EPA 525.2	Synthetic Organic Contaminants	NELAP	1/8/2002
Dibromoacetic acid	EPA 552.2	Group I Unregulated Contaminants	NELAP	8/14/2006

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Pace Analytical Services-Florida  
8 East Tower Circle  
Ormond Beach, FL 32174

Matrix: Drinking Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
Dibromochloromethane	EPA 524.2	Other Regulated Contaminants, Group II Unregulated Contaminants	NELAP	1/8/2002
Dibromomethane	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/8/2002
Dicamba	EPA 515.3	Group I Unregulated Contaminants	NELAP	5/11/2004
Dichloroacetic acid	EPA 552.2	Group I Unregulated Contaminants	NELAP	8/14/2006
Dichlorodifluoromethane	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/8/2002
Dichloromethane (DCM, Methylene chloride)	EPA 524.2	Other Regulated Contaminants	NELAP	1/8/2002
Dichloroprop (Dichlorprop)	EPA 515.3	Synthetic Organic Contaminants	NELAP	10/14/2004
Dieldrin	EPA 508.1	Group I Unregulated Contaminants	NELAP	1/8/2002
Dieldrin	EPA 525.2	Group I Unregulated Contaminants	NELAP	1/8/2002
Diethyl phthalate	EPA 525.2	Group III Unregulated Contaminants	NELAP	1/8/2002
Dimethyl phthalate	EPA 525.2	Group III Unregulated Contaminants	NELAP	1/8/2002
Di-n-butyl phthalate	EPA 525.2	Group III Unregulated Contaminants	NELAP	1/8/2002
Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)	EPA 515.3	Synthetic Organic Contaminants	NELAP	5/11/2004
Diquat	EPA 549.2	Synthetic Organic Contaminants	NELAP	1/8/2002
Dissolved organic carbon (DOC)	SM 5310 B	Primary Inorganic Contaminants	NELAP	1/3/2012
Endothall	EPA 548.1	Synthetic Organic Contaminants	NELAP	1/8/2002
Endrin	EPA 508.1	Synthetic Organic Contaminants	NELAP	1/8/2002
Escherichia coli	COLISURE	Microbiology	NELAP	11/1/2011
Escherichia coli	SM 9223 B	Microbiology	NELAP	11/1/2011
Ethylbenzene	EPA 524.2	Other Regulated Contaminants	NELAP	1/8/2002
Fluorene	EPA 525.2	Group III Unregulated Contaminants	NELAP	1/8/2002
Fluoride	EPA 300.0	Primary Inorganic Contaminants, Secondary Inorganic Contaminants	NELAP	1/8/2002
gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)	EPA 508.1	Synthetic Organic Contaminants	NELAP	1/8/2002
Glyphosate	EPA 547	Synthetic Organic Contaminants	NELAP	1/8/2002
Hardness	SM 2340 B	Secondary Inorganic Contaminants	NELAP	8/14/2006
Hardness (calc.)	EPA 200.7	Secondary Inorganic Contaminants	NELAP	8/14/2006
Heptachlor	EPA 508.1	Synthetic Organic Contaminants	NELAP	1/8/2002
Heptachlor epoxide	EPA 508.1	Synthetic Organic Contaminants	NELAP	1/8/2002
Heterotrophic plate count	SM 9215 B	Microbiology	NELAP	1/8/2002
Hexachlorobenzene	EPA 508.1	Synthetic Organic Contaminants	NELAP	1/8/2002
Hexachlorobutadiene	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/8/2002
Hexachlorocyclopentadiene	EPA 508.1	Synthetic Organic Contaminants	NELAP	1/8/2002
Indeno(1,2,3-cd)pyrene	EPA 525.2	Group III Unregulated Contaminants	NELAP	1/8/2002

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E83079

Pace Analytical Services-Florida  
8 East Tower Circle  
Ormond Beach, FL 32174

Matrix: Drinking Water

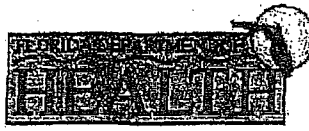
Analyte	Method/Tech	Category	Certification Type	Effective Date
Iron	EPA 200.7	Secondary Inorganic Contaminants	NELAP	1/8/2002
Isopropylbenzene	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/8/2002
Lead	EPA 200.8	Primary Inorganic Contaminants	NELAP	5/11/2004
m/p-Xylenes	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/3/2012
Magnesium	EPA 200.7	Primary Inorganic Contaminants	NELAP	1/8/2002
Manganese	EPA 200.7	Secondary Inorganic Contaminants	NELAP	1/8/2002
Manganese	EPA 200.8	Secondary Inorganic Contaminants	NELAP	5/11/2004
Mercury	EPA 200.8	Primary Inorganic Contaminants	NELAP	1/3/2012
Mercury	EPA 245.1	Primary Inorganic Contaminants	NELAP	1/8/2002
Methiocarb (Mesurol)	EPA 531.1	Group I Unregulated Contaminants	NELAP	1/8/2002
Methomyl (Lannate)	EPA 531.1	Group I Unregulated Contaminants	NELAP	1/8/2002
Methoxychlor	EPA 508.1	Synthetic Organic Contaminants	NELAP	1/8/2002
Methyl bromide (Bromomethane)	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/8/2002
Methyl chloride (Chloromethane)	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/8/2002
Methyl tert-butyl ether (MTBE)	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/8/2002
Metolachlor	EPA 508.1	Group I Unregulated Contaminants	NELAP	1/8/2002
Metolachlor	EPA 525.2	Group I Unregulated Contaminants	NELAP	1/8/2002
Metribuzin	EPA 508.1	Group I Unregulated Contaminants	NELAP	1/8/2002
Metribuzin	EPA 525.2	Group I Unregulated Contaminants	NELAP	1/8/2002
Naphthalene	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/8/2002
n-Butylbenzene	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/8/2002
Nickel	EPA 200.7	Primary Inorganic Contaminants	NELAP	1/8/2002
Nickel	EPA 200.8	Primary Inorganic Contaminants	NELAP	5/11/2004
Nitrate	EPA 300.0	Primary Inorganic Contaminants	NELAP	1/8/2002
Nitrate	EPA 353.2	Primary Inorganic Contaminants	NELAP	1/8/2002
Nitrite	EPA 300.0	Primary Inorganic Contaminants	NELAP	1/8/2002
Nitrite	EPA 353.2	Primary Inorganic Contaminants	NELAP	1/8/2002
n-Propylbenzene	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/8/2002
Odor	SM 2150 B	Secondary Inorganic Contaminants	NELAP	1/8/2002
Orthophosphate as P	EPA 300.0	Primary Inorganic Contaminants	NELAP	1/8/2002
Orthophosphate as P	EPA 365.1	Primary Inorganic Contaminants	NELAP	1/8/2002
Oxamyl	EPA 531.1	Synthetic Organic Contaminants	NELAP	1/8/2002
o-Xylene	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/3/2012
Paraquat	EPA 549.2	Synthetic Organic Contaminants	NELAP	3/10/2010
PCBs	EPA 508.1	Synthetic Organic Contaminants	NELAP	1/8/2002
Pentachlorophenol	EPA 515.3	Synthetic Organic Contaminants	NELAP	5/11/2004

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### Laboratory Scope of Accreditation

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State Laboratory ID: E83079

EPA Lab Code: FL01264

(386) 672-5668

E83079

Pace Analytical Services-Florida  
8 East Tower Circle  
Ormond Beach, FL 32174

Matrix: Drinking Water

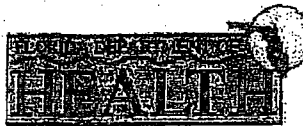
Analyte	Method/Tech	Category	Certification Type	Effective Date
Perchlorate	EPA 314.0	Secondary Inorganic Contaminants	NELAP	1/8/2002
pH	SM 4500-H <sup>+</sup> -B	Secondary Inorganic Contaminants	NELAP	2/19/2008
Picloram	EPA 515.3	Synthetic Organic Contaminants	NELAP	5/11/2004
Potassium	EPA 200.7	Secondary Inorganic Contaminants	NELAP	10/18/2004
Propachlor (Ramrod)	EPA 508.1	Group I Unregulated Contaminants	NELAP	1/8/2002
Propachlor (Ramrod)	EPA 525.2	Group I Unregulated Contaminants	NELAP	1/8/2002
Pyrene	EPA 525.2	Group III Unregulated Contaminants	NELAP	1/8/2002
sec-Butylbenzene	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/8/2002
Selenium	EPA 200.8	Primary Inorganic Contaminants	NELAP	5/11/2004
Silica as SiO <sub>2</sub>	SM 4500-Si D (18th/19th Ed.)/UV-VIS	Primary Inorganic Contaminants	NELAP	1/8/2002
Silica as SiO <sub>2</sub>	SM 4500-SiO <sub>2</sub> F (20th/21st Ed.)	Primary Inorganic Contaminants	NELAP	3/10/2010
Silver	EPA 200.7	Secondary Inorganic Contaminants	NELAP	1/8/2002
Silver	EPA 200.8	Secondary Inorganic Contaminants	NELAP	5/11/2004
Silvex (2,4,5-TP)	EPA 515.3	Synthetic Organic Contaminants	NELAP	5/11/2004
Simazine	EPA 508.1	Synthetic Organic Contaminants	NELAP	1/8/2002
Sodium	EPA 200.7	Primary Inorganic Contaminants	NELAP	1/8/2002
Styrene	EPA 524.2	Other Regulated Contaminants	NELAP	1/8/2002
Sulfate	EPA 300.0	Primary Inorganic Contaminants, Secondary Inorganic Contaminants	NELAP	1/8/2002
Surfactants - MBAS	SM 5540 C	Secondary Inorganic Contaminants	NELAP	1/8/2002
tert-Butylbenzene	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/8/2002
Tetrachloroethylene (Perchloroethylene)	EPA 524.2	Other Regulated Contaminants	NELAP	1/8/2002
Thallium	EPA 200.8	Primary Inorganic Contaminants	NELAP	5/11/2004
Toluene	EPA 524.2	Other Regulated Contaminants	NELAP	1/8/2002
Total coliforms	COLISURE	Microbiology	NELAP	11/1/2011
Total coliforms	SM 9223 B	Microbiology	NELAP	11/1/2011
Total dissolved solids	SM 2540 C	Secondary Inorganic Contaminants	NELAP	1/8/2002
Total haloacetic acids (HAA5)	EPA 552.2	Synthetic Organic Contaminants	NELAP	8/14/2006
Total nitrate-nitrite	EPA 300.0	Primary Inorganic Contaminants	NELAP	1/8/2002
Total nitrate-nitrite	EPA 353.2	Primary Inorganic Contaminants	NELAP	1/8/2002
Total organic carbon	SM 5310-B	Primary Inorganic Contaminants	NELAP	1/8/2002
Total trihalomethanes	EPA 524.2	Other Regulated Contaminants	NELAP	1/8/2002
Toxaphene (Chlorinated camphene)	EPA 508.1	Synthetic Organic Contaminants	NELAP	1/8/2002
trans-1,2-Dichloroethylene	EPA 524.2	Other Regulated Contaminants	NELAP	1/8/2002
trans-1,3-Dichloropropene	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/8/2002

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State Surgeon General  
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**Laboratory Scope of Accreditation**

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State Laboratory ID: E83079

EPA Lab Code: FL01264

(386) 672-5668

E83079

Pace Analytical Services-Florida  
8 East Tower Circle  
Ormond Beach, FL 32174

Matrix: Drinking Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
Trichloroacetic acid	EPA 552.2	Group I Unregulated Contaminants	NELAP	8/14/2006
Trichloroethene (Trichloroethylene)	EPA 524.2	Other Regulated Contaminants	NELAP	1/8/2002
Trichlorofluoromethane	EPA 524.2	Group II Unregulated Contaminants	NELAP	1/8/2002
Turbidity	EPA 180.1	Secondary Inorganic Contaminants	NELAP	1/8/2002
Turbidity	SM 2130 B	Secondary Inorganic Contaminants	NELAP	1/3/2012
UV 254	SM 5910 B	Primary Inorganic Contaminants	NELAP	1/8/2002
Vinyl chloride	EPA 524.2	Other Regulated Contaminants	NELAP	1/8/2002
Xylene (total)	EPA 524.2	Other Regulated Contaminants	NELAP	1/8/2002
Zinc	EPA 200.7	Secondary Inorganic Contaminants	NELAP	1/8/2002
Zinc	EPA 200.8	Secondary Inorganic Contaminants	NELAP	5/11/2004

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E83079

Pace Analytical Services-Florida  
8 East Tower Circle  
Ormond Beach, FL 32174

Matrix: Non-Potable Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
1,1,1,2-Tetrachloroethane	EPA 8260	Volatile Organics	NELAP	7/1/2003
1,1,1-Trichloroethane	EPA 624	Volatile Organics	NELAP	1/8/2002
1,1,1-Trichloroethane	EPA 8260	Volatile Organics	NELAP	7/1/2003
1,1,2,2-Tetrachloroethane	EPA 624	Volatile Organics	NELAP	1/8/2002
1,1,2,2-Tetrachloroethane	EPA 8260	Volatile Organics	NELAP	7/1/2003
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	EPA 8260	Volatile Organics	NELAP	1/3/2012
1,1,2-Trichloroethane	EPA 624	Volatile Organics	NELAP	1/8/2002
1,1,2-Trichloroethane	EPA 8260	Volatile Organics	NELAP	7/1/2003
1,1-Dichloroethane	EPA 624	Volatile Organics	NELAP	1/8/2002
1,1-Dichloroethane	EPA 8260	Volatile Organics	NELAP	7/1/2003
1,1-Dichloroethylene	EPA 624	Volatile Organics	NELAP	1/8/2002
1,1-Dichloroethylene	EPA 8260	Volatile Organics	NELAP	7/1/2003
1,1-Dichloropropene	EPA 8260	Volatile Organics	NELAP	7/1/2003
1,2,3-Trichlorobenzene	EPA 8260	Volatile Organics	NELAP	7/1/2003
1,2,3-Trichloropropane	EPA 8260	Volatile Organics	NELAP	7/1/2003
1,2,4,5-Tetrachlorobenzene	EPA 8270	Extractable Organics	NELAP	7/1/2003
1,2,4-Trichlorobenzene	EPA 625	Extractable Organics	NELAP	1/8/2002
1,2,4-Trichlorobenzene	EPA 8260	Volatile Organics	NELAP	7/1/2003
1,2,4-Trichlorobenzene	EPA 8270	Extractable Organics	NELAP	7/1/2003
1,2,4-Trimethylbenzene	EPA 8260	Volatile Organics	NELAP	7/1/2003
1,2-Dibromo-3-chloropropane (DBCP)	EPA 504.1	Volatile Organics	NELAP	1/3/2012
1,2-Dibromo-3-chloropropane (DBCP)	EPA 8011	Volatile Organics	NELAP	7/1/2003
1,2-Dibromo-3-chloropropane (DBCP)	EPA 8260	Volatile Organics	NELAP	7/1/2003
1,2-Dibromoethane (EDB, Ethylene dibromide)	EPA 504.1	Volatile Organics	NELAP	1/3/2012
1,2-Dibromoethane (EDB, Ethylene dibromide)	EPA 8011	Volatile Organics	NELAP	7/1/2003
1,2-Dibromoethane (EDB, Ethylene dibromide)	EPA 8260	Volatile Organics	NELAP	7/1/2003
1,2-Dichlorobenzene	EPA 624	Volatile Organics	NELAP	1/8/2002
1,2-Dichlorobenzene	EPA 625	Extractable Organics	NELAP	1/8/2002
1,2-Dichlorobenzene	EPA 8260	Volatile Organics	NELAP	7/1/2003
1,2-Dichlorobenzene	EPA 8270	Extractable Organics	NELAP	7/1/2003
1,2-Dichloroethane	EPA 624	Volatile Organics	NELAP	1/8/2002
1,2-Dichloroethane	EPA 8260	Volatile Organics	NELAP	7/1/2003
1,2-Dichloropropane	EPA 624	Volatile Organics	NELAP	1/8/2002
1,2-Dichloropropane	EPA 8260	Volatile Organics	NELAP	7/1/2003
1,2-Dinitrobenzene	EPA 8270	Extractable Organics	NELAP	7/1/2003
1,2-Diphenylhydrazine	EPA 8270	Extractable Organics	NELAP	7/1/2003

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8 East Tower Circle  
Ormond Beach, FL 32174

Matrix: Non-Potable Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
1,3,5-Trimethylbenzene	EPA 8260	Volatile Organics	NELAP	7/1/2003
1,3,5-Trinitrobenzene (1,3,5-TNB)	EPA 8270	Extractable Organics	NELAP	9/2/2008
1,3-Dichlorobenzene	EPA 624	Volatile Organics	NELAP	1/8/2002
1,3-Dichlorobenzene	EPA 625	Extractable Organics	NELAP	1/8/2002
1,3-Dichlorobenzene	EPA 8260	Volatile Organics	NELAP	7/1/2003
1,3-Dichlorobenzene	EPA 8270	Extractable Organics	NELAP	7/1/2003
1,3-Dichloropropane	EPA 8260	Volatile Organics	NELAP	7/1/2003
1,3-Dinitrobenzene (1,3-DNB)	EPA 8270	Extractable Organics	NELAP	9/2/2008
1,4-Dichlorobenzene	EPA 624	Volatile Organics	NELAP	1/8/2002
1,4-Dichlorobenzene	EPA 625	Extractable Organics	NELAP	1/8/2002
1,4-Dichlorobenzene	EPA 8260	Volatile Organics	NELAP	7/1/2003
1,4-Dichlorobenzene	EPA 8270	Extractable Organics	NELAP	7/1/2003
1,4-Dioxane (1,4-Diethyleneoxide)	EPA 8260	Volatile Organics	NELAP	7/1/2003
1,4-Naphthoquinone	EPA 8270	Extractable Organics	NELAP	8/14/2006
1,4-Phenylenediamine	EPA 8270	Extractable Organics	NELAP	7/1/2003
1-Chlorohexane	EPA 8260	Volatile Organics	NELAP	1/3/2012
1-Methylnaphthalene	EPA 8270	Extractable Organics	NELAP	1/3/2012
1-Naphthylamine	EPA 8270	Extractable Organics	NELAP	7/1/2003
2,2-Dichloropropane	EPA 8260	Volatile Organics	NELAP	7/1/2003
2,3,4,6-Tetrachlorophenol	EPA 8270	Extractable Organics	NELAP	7/1/2003
2,3-Dichloroaniline	EPA 625	Pesticides-Herbicides-PCB's	NELAP	5/11/2004
2,4,5-T	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
2,4,5-Trichlorophenol	EPA 8270	Extractable Organics	NELAP	7/1/2003
2,4,6-Trichlorophenol	EPA 625	Extractable Organics	NELAP	1/8/2002
2,4,6-Trichlorophenol	EPA 8270	Extractable Organics	NELAP	7/1/2003
2,4-D	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
2,4-DB	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
2,4-Dichlorophenol	EPA 625	Extractable Organics	NELAP	1/8/2002
2,4-Dichlorophenol	EPA 8270	Extractable Organics	NELAP	7/1/2003
2,4-Dimethylphenol	EPA 625	Extractable Organics	NELAP	1/8/2002
2,4-Dimethylphenol	EPA 8270	Extractable Organics	NELAP	7/1/2003
2,4-Dinitrophenol	EPA 625	Extractable Organics	NELAP	1/8/2002
2,4-Dinitrophenol	EPA 8270	Extractable Organics	NELAP	7/1/2003
2,4-Dinitrotoluene (2,4-DNT)	EPA 625	Extractable Organics	NELAP	1/8/2002
2,4-Dinitrotoluene (2,4-DNT)	EPA 8270	Extractable Organics	NELAP	7/1/2003
2,6-Dichlorophenol	EPA 8270	Extractable Organics	NELAP	7/1/2003

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Issue Date: 7/1/2012

Expiration Date: 6/30/2013



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### Laboratory Scope of Accreditation

Attachment to Certificate #: E83079-40, expiration date June 30, 2013. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: E83079

EPA Lab Code: FL01264

(386) 672-5668

E83079

Pace Analytical Services-Florida

8 East Tower Circle

Ormond Beach, FL 32174

Matrix: Non-Potable Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
2,6-Dinitrotoluene (2,6-DNT)	EPA 625	Extractable Organics	NELAP	1/8/2002
2,6-Dinitrotoluene (2,6-DNT)	EPA 8270	Extractable Organics	NELAP	7/1/2003
2-Acetylaminofluorene	EPA 8270	Extractable Organics	NELAP	7/1/2003
2-Butanone (Methyl ethyl ketone, MEK)	EPA 8260	Volatile Organics	NELAP	7/1/2003
2-Chloroethyl vinyl ether	EPA 624	Volatile Organics	NELAP	1/8/2002
2-Chloroethyl vinyl ether	EPA 8260	Volatile Organics	NELAP	1/3/2012
2-Chloronaphthalene	EPA 625	Extractable Organics	NELAP	1/8/2002
2-Chloronaphthalene	EPA 8270	Extractable Organics	NELAP	7/1/2003
2-Chlorophenol	EPA 625	Extractable Organics	NELAP	1/8/2002
2-Chlorophenol	EPA 8270	Extractable Organics	NELAP	7/1/2003
2-Chlorotoluene	EPA 8260	Volatile Organics	NELAP	7/1/2003
2-Hexanone	EPA 8260	Volatile Organics	NELAP	7/1/2003
2-Methyl-4,6-dinitrophenol	EPA 625	Extractable Organics	NELAP	1/8/2002
2-Methyl-4,6-dinitrophenol	EPA 8270	Extractable Organics	NELAP	7/1/2003
2-Methylnaphthalene	EPA 8270	Extractable Organics	NELAP	7/1/2003
2-Methylphenol (o-Cresol)	EPA 8270	Extractable Organics	NELAP	7/1/2003
2-Naphthylamine	EPA 8270	Extractable Organics	NELAP	7/1/2003
2-Nitroaniline	EPA 8270	Extractable Organics	NELAP	7/1/2003
2-Nitrophenol	EPA 625	Extractable Organics	NELAP	1/8/2002
2-Nitrophenol	EPA 8270	Extractable Organics	NELAP	7/1/2003
2-Picoline (2-Methylpyridine)	EPA 8270	Extractable Organics	NELAP	7/1/2003
3,3'-Dichlorobenzidine	EPA 625	Extractable Organics	NELAP	1/8/2002
3,3'-Dichlorobenzidine	EPA 8270	Extractable Organics	NELAP	7/1/2003
3,3-Dimethyl-1-butanol	PACE SOP S-FL-O-037/GC-MS	Volatile Organics	NELAP	1/3/2012
3,3'-Dimethylbenzidine	EPA 8270	Extractable Organics	NELAP	7/1/2003
3/4-Methylphenols (m/p-Cresols)	EPA 8270	Extractable Organics	NELAP	1/2/2008
3-Methylcholanthrene	EPA 8270	Extractable Organics	NELAP	7/1/2003
3-Nitroaniline	EPA 8270	Extractable Organics	NELAP	7/1/2003
4,4'-DDD	EPA 608	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
4,4'-DDD	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
4,4'-DDE	EPA 608	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
4,4'-DDE	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
4,4'-DDT	EPA 608	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
4,4'-DDT	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
4-Aminobiphenyl	EPA 8270	Extractable Organics	NELAP	7/1/2003
4-Bromophenyl phenyl ether	EPA 625	Extractable Organics	NELAP	1/8/2002

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### Laboratory Scope of Accreditation

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EPA Lab Code: FL01264

(386) 672-5668

E83079

Pace Analytical Services-Florida  
8 East Tower Circle  
Ormond Beach, FL 32174

Matrix: Non-Potable Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
4-Bromophenyl phenyl ether	EPA 8270	Extractable Organics	NELAP	7/1/2003
4-Chloro-3-methylphenol	EPA 625	Extractable Organics	NELAP	1/8/2002
4-Chloro-3-methylphenol	EPA 8270	Extractable Organics	NELAP	7/1/2003
4-Chloroaniline	EPA 8270	Extractable Organics	NELAP	7/1/2003
4-Chlorophenyl phenylether	EPA 625	Extractable Organics	NELAP	1/8/2002
4-Chlorophenyl phenylether	EPA 8270	Extractable Organics	NELAP	7/1/2003
4-Chlorotoluene	EPA 8260	Volatile Organics	NELAP	7/1/2003
4-Dimethyl aminoazobenzene	EPA 8270	Extractable Organics	NELAP	7/1/2003
4-Methyl-2-pentanone (MIBK)	EPA 8260	Volatile Organics	NELAP	7/1/2003
4-Nitroaniline	EPA 8270	Extractable Organics	NELAP	7/1/2003
4-Nitrophenol	EPA 625	Extractable Organics	NELAP	1/8/2002
4-Nitrophenol	EPA 8270	Extractable Organics	NELAP	7/1/2003
5-Nitro-o-toluidine	EPA 8270	Extractable Organics	NELAP	7/1/2003
7,12-Dimethylbenz(a) anthracene	EPA 8270	Extractable Organics	NELAP	7/1/2003
a,a-Dimethylphenethylamine	EPA 8270	Extractable Organics	NELAP	7/1/2003
Acenaphthene	EPA 625	Extractable Organics	NELAP	1/8/2002
Acenaphthene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Acenaphthylene	EPA 625	Extractable Organics	NELAP	1/8/2002
Acenaphthylene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Acetone	EPA 8260	Volatile Organics	NELAP	7/1/2003
Acetonitrile	EPA 8260	Volatile Organics	NELAP	7/1/2003
Acetophenone	EPA 625	Pesticides-Herbicides-PCB's	NELAP	5/1/2004
Acetophenone	EPA 8270	Extractable Organics	NELAP	7/1/2003
Acrolein (Propenal)	EPA 624	Volatile Organics	NELAP	1/8/2002
Acrolein (Propenal)	EPA 8260	Volatile Organics	NELAP	7/1/2003
Acrylonitrile	EPA 624	Volatile Organics	NELAP	1/8/2002
Acrylonitrile	EPA 8260	Volatile Organics	NELAP	7/1/2003
Alachlor	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	1/3/2012
Aldrin	EPA 608	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Aldrin	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Alkalinity as CaCO3	SM 2320 B	General Chemistry	NELAP	1/8/2002
Allyl chloride (3-Chloropropene)	EPA 8260	Volatile Organics	NELAP	7/1/2003
alpha-BHC (alpha-Hexachlorocyclohexane)	EPA 608	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
alpha-BHC (alpha-Hexachlorocyclohexane)	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
alpha-Chlordane	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Aluminum	EPA 200.7	Metals	NELAP	1/8/2002

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State Laboratory ID: E83079

EPA Lab Code: FL01264

(386) 672-5668

E83079

Pace Analytical Services-Florida  
8 East Tower Circle  
Ormond Beach, FL 32174

Matrix: Non-Potable Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
Aluminum	EPA 200.8	Metals	NELAP	5/11/2004
Aluminum	EPA 6010	Metals	NELAP	7/1/2003
Aluminum	EPA 6020	Metals	NELAP	5/11/2004
Ammonia as N	EPA 350.1	General Chemistry	NELAP	1/8/2002
Aniline	EPA 8270	Extractable Organics	NELAP	7/1/2003
Anthracene	EPA 625	Extractable Organics	NELAP	1/8/2002
Anthracene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Antimony	EPA 200.7	Metals	NELAP	1/8/2002
Antimony	EPA 200.8	Metals	NELAP	5/11/2004
Antimony	EPA 6010	Metals	NELAP	7/1/2003
Antimony	EPA 6020	Metals	NELAP	5/11/2004
Aramite	EPA 8270	Extractable Organics	NELAP	7/1/2003
Aroclor-1016 (PCB-1016)	EPA 608	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Aroclor-1016 (PCB-1016)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Aroclor-1221 (PCB-1221)	EPA 608	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Aroclor-1221 (PCB-1221)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Aroclor-1232 (PCB-1232)	EPA 608	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Aroclor-1232 (PCB-1232)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Aroclor-1242 (PCB-1242)	EPA 608	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Aroclor-1242 (PCB-1242)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Aroclor-1248 (PCB-1248)	EPA 608	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Aroclor-1248 (PCB-1248)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Aroclor-1254 (PCB-1254)	EPA 608	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Aroclor-1254 (PCB-1254)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Aroclor-1260 (PCB-1260)	EPA 608	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Aroclor-1260 (PCB-1260)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Arsenic	EPA 200.7	Metals	NELAP	1/8/2002
Arsenic	EPA 200.8	Metals	NELAP	5/11/2004
Arsenic	EPA 6010	Metals	NELAP	1/8/2002
Arsenic	EPA 6020	Metals	NELAP	5/11/2004
Aspon	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/3/2012
Atrazine	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Azinphos-ethyl (Ethyl guthion)	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Azinphos-methyl (Guthion)	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Barium	EPA 200.7	Metals	NELAP	1/8/2002
Barium	EPA 200.8	Metals	NELAP	5/11/2004

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State Laboratory ID: E83079

EPA Lab Code: FL01264

(386) 672-5668

E83079

Pace Analytical Services-Florida  
8 East Tower Circle  
Ormond Beach, FL 32174

Matrix: Non-Potable Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
Barium	EPA 6010	Metals	NELAP	7/1/2003
Barium	EPA 6020	Metals	NELAP	5/11/2004
Bentazon	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Benzene	EPA 624	Volatile Organics	NELAP	1/8/2002
Benzene	EPA 8260	Volatile Organics	NELAP	7/1/2003
Benzidine	EPA 625	Extractable Organics	NELAP	1/8/2002
Benzidine	EPA 8270	Extractable Organics	NELAP	7/1/2003
Benzo(a)anthracene	EPA 625	Extractable Organics	NELAP	1/8/2002
Benzo(a)anthracene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Benzo(a)pyrene	EPA 625	Extractable Organics	NELAP	1/8/2002
Benzo(a)pyrene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Benzo(b)fluoranthene	EPA 625	Extractable Organics	NELAP	1/8/2002
Benzo(b)fluoranthene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Benzo(g,h,i)perylene	EPA 625	Extractable Organics	NELAP	1/8/2002
Benzo(g,h,i)perylene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Benzo(k)fluoranthene	EPA 625	Extractable Organics	NELAP	1/8/2002
Benzo(k)fluoranthene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Benzoic acid	EPA 8270	Extractable Organics	NELAP	1/3/2012
Benzyl alcohol	EPA 8270	Extractable Organics	NELAP	1/2/2008
Beryllium	EPA 200.7	Metals	NELAP	1/8/2002
Beryllium	EPA 200.8	Metals	NELAP	5/11/2004
Beryllium	EPA 6010	Metals	NELAP	7/1/2003
Beryllium	EPA 6020	Metals	NELAP	5/11/2004
beta-BHC (beta-Hexachlorocyclohexane)	EPA 608	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
beta-BHC (beta-Hexachlorocyclohexane)	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Biochemical oxygen demand	SM 5210 B	General Chemistry	NELAP	10/3/2007
bis(2-Chloroethoxy)methane	EPA 625	Extractable Organics	NELAP	1/8/2002
bis(2-Chloroethoxy)methane	EPA 8270	Extractable Organics	NELAP	7/1/2003
bis(2-Chloroethyl) ether	EPA 625	Extractable Organics	NELAP	1/8/2002
bis(2-Chloroethyl) ether	EPA 8270	Extractable Organics	NELAP	7/1/2003
bis(2-Chloroisopropyl) ether (2,2'-Oxybis(1-chloropropane))	EPA 625	Extractable Organics	NELAP	1/8/2002
bis(2-Chloroisopropyl) ether (2,2'-Oxybis(1-chloropropane))	EPA 8270	Extractable Organics	NELAP	7/1/2003
bis(2-Ethylhexyl) phthalate (DEHP)	EPA 625	Extractable Organics	NELAP	1/8/2002
bis(2-Ethylhexyl) phthalate (DEHP)	EPA 8270	Extractable Organics	NELAP	7/1/2003
Bolstar (Sulprofos)	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	7/1/2003

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### Laboratory Scope of Accreditation

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E83079

Pace Analytical Services-Florida  
8 East Tower Circle  
Ormond Beach, FL 32174

Matrix: Non-Potable Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
Boron	EPA 200.7	Metals	NELAP	1/8/2002
Boron	EPA 6010	Metals	NELAP	7/1/2003
Bromide	EPA 300.0	General Chemistry	NELAP	1/8/2002
Bromide	EPA 9056	General Chemistry	NELAP	7/1/2003
Bromobenzene	EPA 8260	Volatile Organics	NELAP	7/1/2003
Bromochloromethane	EPA 8260	Volatile Organics	NELAP	7/1/2003
Bromodichloromethane	EPA 624	Volatile Organics	NELAP	1/8/2002
Bromodichloromethane	EPA 8260	Volatile Organics	NELAP	7/1/2003
Bromoform	EPA 624	Volatile Organics	NELAP	1/8/2002
Bromoform	EPA 8260	Volatile Organics	NELAP	7/1/2003
Butyl benzyl phthalate	EPA 625	Extractable Organics	NELAP	1/8/2002
Butyl benzyl phthalate	EPA 8270	Extractable Organics	NELAP	7/1/2003
Cadmium	EPA 200.7	Metals	NELAP	1/8/2002
Cadmium	EPA 200.8	Metals	NELAP	5/11/2004
Cadmium	EPA 6010	Metals	NELAP	1/8/2002
Cadmium	EPA 6020	Metals	NELAP	5/11/2004
Calcium	EPA 200.7	Metals	NELAP	1/8/2002
Calcium	EPA 6010	Metals	NELAP	7/1/2003
Carbazole	EPA 625	Pesticides-Herbicides-PCB's	NELAP	5/11/2004
Carbazole	EPA 8270	Extractable Organics	NELAP	1/3/2012
Carbon disulfide	EPA 8260	Volatile Organics	NELAP	7/1/2003
Carbon tetrachloride	EPA 624	Volatile Organics	NELAP	1/8/2002
Carbon tetrachloride	EPA 8260	Volatile Organics	NELAP	7/1/2003
Carbonaceous BOD (CBOD)	SM 5210 B	General Chemistry	NELAP	1/8/2002
Carbophenothion	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Chemical oxygen demand	EPA 410.4	General Chemistry	NELAP	1/8/2002
Chlordane (tech.)	EPA 608	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Chlordane (tech.)	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Chlorfenvinphos	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Chloride	EPA 300.0	General Chemistry	NELAP	1/8/2002
Chloride	EPA 9056	General Chemistry	NELAP	7/1/2003
Chlorobenzene	EPA 624	Volatile Organics	NELAP	1/8/2002
Chlorobenzene	EPA 8260	Volatile Organics	NELAP	7/1/2003
Chlorobenzilate	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Chloroethane	EPA 624	Volatile Organics	NELAP	1/8/2002
Chloroethane	EPA 8260	Volatile Organics	NELAP	7/1/2003

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Ormond Beach, FL 32174

Matrix: Non-Potable Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
Chloroform	EPA 624	Volatile Organics	NELAP	1/8/2002
Chloroform	EPA 8260	Volatile Organics	NELAP	7/1/2003
Chlorophylls	SM 10200 H	General Chemistry	NELAP	1/8/2002
Chloroprene	EPA 8260	Volatile Organics	NELAP	7/1/2003
Chlorpyrifos	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Chlorpyrifos methyl	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/3/2012
Chromium	EPA 200.7	Metals	NELAP	1/8/2002
Chromium	EPA 200.8	Metals	NELAP	5/11/2004
Chromium	EPA 6010	Metals	NELAP	7/1/2003
Chromium	EPA 6020	Metals	NELAP	5/11/2004
Chromium VI	SM 3500-Cr B (20th/21st Ed.)UV-VIS	General Chemistry	NELAP	3/10/2010
Chrysene	EPA 625	Extractable Organics	NELAP	1/8/2002
Chrysene	EPA 8270	Extractable Organics	NELAP	7/1/2003
cis-1,2-Dichloroethylene	EPA 8260	Volatile Organics	NELAP	7/1/2003
cis-1,3-Dichloropropene	EPA 624	Volatile Organics	NELAP	1/8/2002
cis-1,3-Dichloropropene	EPA 8260	Volatile Organics	NELAP	7/1/2003
cis-1,4-Dichloro-2-butene	EPA 8260	Volatile Organics	NELAP	1/3/2012
Cobalt	EPA 200.7	Metals	NELAP	1/8/2002
Cobalt	EPA 200.8	Metals	NELAP	5/11/2004
Cobalt	EPA 6010	Metals	NELAP	7/1/2003
Cobalt	EPA 6020	Metals	NELAP	5/11/2004
Color	SM 2120 B	General Chemistry	NELAP	10/3/2007
Conductivity	EPA 120.1	General Chemistry	NELAP	1/8/2002
Conductivity	EPA 9050	General Chemistry	NELAP	7/1/2003
Conductivity	SM 2510 B	General Chemistry	NELAP	1/3/2012
Copper	EPA 200.7	Metals	NELAP	1/8/2002
Copper	EPA 200.8	Metals	NELAP	5/11/2004
Copper	EPA 6010	Metals	NELAP	1/8/2002
Copper	EPA 6020	Metals	NELAP	5/11/2004
Corrosivity (langier index)	SM 2330 B	General Chemistry	NELAP	1/8/2002
Coumaphos	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Crotoxypfos	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/3/2012
Cyanide	EPA 335.4	General Chemistry	NELAP	1/8/2002
Cyclohexane	EPA 8260	Volatile Organics	NELAP	1/3/2012
Dalapon	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
delta-BHC	EPA 608	Pesticides-Herbicides-PCB's	NELAP	1/8/2002

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Issue Date: 7/1/2012

Expiration Date: 6/30/2013

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### Laboratory Scope of Accreditation

Attachment to Certificate #: E83079-40, expiration date June 30, 2013. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: E83079

EPA Lab Code: FL01264

(386) 672-5668

E83079

Pace Analytical Services-Florida  
8 East Tower Circle  
Ormond Beach, FL 32174

Matrix: Non-Potable Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
delta-BHC	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Demeton-o	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Demeton-s	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Diallate	EPA 8270	Pesticides-Herbicides-PCB's	NELAP	8/14/2006
Diazinon	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Dibenz(a,h)anthracene	EPA 625	Extractable Organics	NELAP	1/8/2002
Dibenz(a,h)anthracene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Dibenzofuran	EPA 8270	Extractable Organics	NELAP	7/1/2003
Dibromochloromethane	EPA 624	Volatile Organics	NELAP	1/8/2002
Dibromochloromethane	EPA 8260	Volatile Organics	NELAP	7/1/2003
Dibromomethane	EPA 8260	Volatile Organics	NELAP	7/1/2003
Dicamba	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Dichlorodifluoromethane	EPA 8260	Volatile Organics	NELAP	7/1/2003
Dichlorofenthion	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/3/2012
Dichloroprop (Dichloroprop)	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	3/10/2010
Dichlorovos (DDVP, Dichlorvos)	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Dicrotophos	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/3/2012
Dieldrin	EPA 608	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Dieldrin	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Diethyl ether	EPA 8260	Volatile Organics	NELAP	1/3/2012
Diethyl phthalate	EPA 625	Extractable Organics	NELAP	1/8/2002
Diethyl phthalate	EPA 8270	Extractable Organics	NELAP	7/1/2003
Di-isopropylether (DIPE)	EPA 8260	Volatile Organics	NELAP	1/3/2012
Dimethoate	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Dimethyl phthalate	EPA 625	Extractable Organics	NELAP	1/8/2002
Dimethyl phthalate	EPA 8270	Extractable Organics	NELAP	7/1/2003
Di-n-butyl phthalate	EPA 625	Extractable Organics	NELAP	1/8/2002
Di-n-butyl phthalate	EPA 8270	Extractable Organics	NELAP	7/1/2003
Di-n-octyl phthalate	EPA 625	Extractable Organics	NELAP	1/8/2002
Di-n-octyl phthalate	EPA 8270	Extractable Organics	NELAP	7/1/2003
Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)	EPA 8270	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Dioxathion	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/3/2012
Disulfoton	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/2/2008
Endosulfan I	EPA 608	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Endosulfan I	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003

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State Laboratory ID: E83079

EPA Lab Code: FL01264

(386) 672-5668

E83079

Pace Analytical Services-Florida  
8 East Tower Circle  
Ormond Beach, FL 32174

Matrix: Non-Potable Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
Endosulfan II	EPA 608	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Endosulfan II	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Endosulfan sulfate	EPA 608	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Endosulfan sulfate	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Endrin	EPA 608	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Endrin	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Endrin aldehyde	EPA 608	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Endrin aldehyde	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Endrin ketone	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
EPN	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Ethanol	EPA 8260	Volatile Organics	NELAP	7/1/2003
Ethion	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Ethoprop	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Ethyl acetate	EPA 8260	Volatile Organics	NELAP	1/3/2012
Ethyl methacrylate	EPA 8260	Volatile Organics	NELAP	7/1/2003
Ethyl methanesulfonate	EPA 8270	Extractable Organics	NELAP	7/1/2003
Ethylbenzene	EPA 624	Volatile Organics	NELAP	1/8/2002
Ethylbenzene	EPA 8260	Volatile Organics	NELAP	7/1/2003
Ethyl-t-butylether (ETBE)	EPA 8260	Volatile Organics	NELAP	1/3/2012
Famphur	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Fecal coliforms	SM 9222 D	Microbiology	NELAP	1/8/2002
Fenitrothion	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/3/2012
Fensulfothion	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Fenthion	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Fluoranthene	EPA 625	Extractable Organics	NELAP	1/8/2002
Fluoranthene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Fluorene	EPA 625	Extractable Organics	NELAP	1/8/2002
Fluorene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Fluoride	EPA 300.0	General Chemistry	NELAP	1/8/2002
Fluoride	EPA 9056	General Chemistry	NELAP	7/1/2003
Fonophos	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/3/2012
gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)	EPA 608	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
gamma-Chlordane	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Heptachlor	EPA 608	Pesticides-Herbicides-PCB's	NELAP	1/8/2002

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Pace Analytical Services-Florida  
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Ormond Beach, FL 32174

Matrix: Non-Potable Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
Heptachlor	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Heptachlor epoxide	EPA 608	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Heptachlor epoxide	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Hexachlorobenzene	EPA 625	Extractable Organics	NELAP	1/8/2002
Hexachlorobenzene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Hexachlorobutadiene	EPA 625	Extractable Organics	NELAP	1/8/2002
Hexachlorobutadiene	EPA 8260	Volatile Organics	NELAP	7/1/2003
Hexachlorobutadiene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Hexachlorocyclopentadiene	EPA 625	Extractable Organics	NELAP	1/8/2002
Hexachlorocyclopentadiene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Hexachloroethane	EPA 625	Extractable Organics	NELAP	1/8/2002
Hexachloroethane	EPA 8270	Extractable Organics	NELAP	7/1/2003
Hexachloropropene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Ignitability	EPA 1010	General Chemistry	NELAP	7/1/2003
Indeno(1,2,3-cd)pyrene	EPA 625	Extractable Organics	NELAP	1/8/2002
Indeno(1,2,3-cd)pyrene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Iodomethane (Methyl iodide)	EPA 8260	Volatile Organics	NELAP	7/1/2003
Iron	EPA 200.7	Metals	NELAP	1/8/2002
Iron	EPA 6010	Metals	NELAP	7/1/2003
Iron	EPA 6020	Metals	NELAP	1/3/2012
Isobutyl alcohol (2-Methyl-1-propanol)	EPA 8260	Volatile Organics	NELAP	7/1/2003
Isodrin	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	1/3/2012
Isodrin	EPA 8270	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Isophorone	EPA 625	Extractable Organics	NELAP	1/8/2002
Isophorone	EPA 8270	Extractable Organics	NELAP	7/1/2003
Isopropylbenzene	EPA 8260	Volatile Organics	NELAP	7/1/2003
Isosafrole	EPA 8270	Extractable Organics	NELAP	7/1/2003
Kepone	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	1/3/2012
Kepone	EPA 8270	Pesticides-Herbicides-PCB's	NELAP	8/14/2006
Kjeldahl nitrogen - total	EPA 351.2	General Chemistry	NELAP	1/8/2002
Lead	EPA 200.7	Metals	NELAP	1/8/2002
Lead	EPA 200.8	Metals	NELAP	5/11/2004
Lead	EPA 6010	Metals	NELAP	1/8/2002
Lead	EPA 6020	Metals	NELAP	5/11/2004
Leptophos	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
m/p-Xylenes	EPA 8260	Volatile Organics	NELAP	1/3/2012

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Pace Analytical Services-Florida  
8 East Tower Circle  
Ormond Beach, FL 32174

Matrix: Non-Potable Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
m+p-Xylenes	EPA 624	Volatile Organics	NELAP	1/3/2012
Magnesium	EPA 200.7	Metals	NELAP	1/8/2002
Magnesium	EPA 6010	Metals	NELAP	7/1/2003
Malathion	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Manganese	EPA 200.7	Metals	NELAP	1/8/2002
Manganese	EPA 200.8	Metals	NELAP	5/11/2004
Manganese	EPA 6010	Metals	NELAP	7/1/2003
Manganese	EPA 6020	Metals	NELAP	5/11/2004
MCPA	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	1/3/2012
MCPP	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	1/3/2012
Mercury	EPA 200.8	Metals	NELAP	1/3/2012
Mercury	EPA 245.1	Metals	NELAP	1/8/2002
Mercury	EPA 6020	Metals	NELAP	1/3/2012
Mercury	EPA 7470	Metals	NELAP	1/8/2002
Mephos	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Methacrylonitrile	EPA 8260	Volatile Organics	NELAP	7/1/2003
Methapyrilene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Methoxychlor	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Methyl acetate	EPA 8260	Volatile Organics	NELAP	1/3/2012
Methyl bromide (Bromomethane)	EPA 624	Volatile Organics	NELAP	1/8/2002
Methyl bromide (Bromomethane)	EPA 8260	Volatile Organics	NELAP	7/1/2003
Methyl chloride (Chloromethane)	EPA 624	Volatile Organics	NELAP	1/8/2002
Methyl chloride (Chloromethane)	EPA 8260	Volatile Organics	NELAP	7/1/2003
Methyl methacrylate	EPA 8260	Volatile Organics	NELAP	7/1/2003
Methyl methanesulfonate	EPA 8270	Extractable Organics	NELAP	7/1/2003
Methyl parathion (Parathion, methyl)	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Methyl tert-butyl ether (MTBE)	EPA 624	Volatile Organics	NELAP	1/3/2012
Methyl tert-butyl ether (MTBE)	EPA 8260	Volatile Organics	NELAP	10/21/2003
Methylcyclohexane	EPA 8260	Volatile Organics	NELAP	1/3/2012
Methylene chloride	EPA 624	Volatile Organics	NELAP	1/8/2002
Methylene chloride	EPA 8260	Volatile Organics	NELAP	7/1/2003
Mevinphos	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Mirex	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	1/3/2012
Molybdenum	EPA 200.7	Metals	NELAP	1/8/2002
Molybdenum	EPA 200.8	Metals	NELAP	5/11/2004
Molybdenum	EPA 6010	Metals	NELAP	1/8/2002

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### Laboratory Scope of Accreditation

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8 East Tower Circle  
Ormond Beach, FL 32174

Matrix: Non-Potable Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
Molybdenum	EPA 6020	Metals	NELAP	1/3/2012
Monocrotophos	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Naled	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Naphthalene	EPA 625	Extractable Organics	NELAP	1/8/2002
Naphthalene	EPA 8260	Volatile Organics	NELAP	7/1/2003
Naphthalene	EPA 8270	Extractable Organics	NELAP	7/1/2003
n-Butyl alcohol	EPA 8260	Volatile Organics	NELAP	1/3/2012
n-Butylbenzene	EPA 8260	Volatile Organics	NELAP	7/1/2003
n-Decane	EPA 625	Pesticides-Herbicides-PCB's	NELAP	5/11/2004
n-Hexane	PACE SOP S-FL-O-037/GC-MS	Volatile Organics	NELAP	1/3/2012
Nickel	EPA 200.7	Metals	NELAP	1/8/2002
Nickel	EPA 200.8	Metals	NELAP	5/11/2004
Nickel	EPA 6010	Metals	NELAP	1/8/2002
Nickel	EPA 6020	Metals	NELAP	5/11/2004
Nitrate	EPA 9056	General Chemistry	NELAP	7/1/2003
Nitrate as N	EPA 300.0	General Chemistry	NELAP	1/8/2002
Nitrate as N	EPA 353.2	General Chemistry	NELAP	1/8/2002
Nitrate-nitrite	EPA 300.0	General Chemistry	NELAP	1/8/2002
Nitrate-nitrite	EPA 353.2	General Chemistry	NELAP	1/8/2002
Nitrite	EPA 9056	General Chemistry	NELAP	7/1/2003
Nitrite as N	EPA 300.0	General Chemistry	NELAP	1/8/2002
Nitrite as N	EPA 353.2	General Chemistry	NELAP	1/8/2002
Nitrobenzene	EPA 625	Extractable Organics	NELAP	1/8/2002
Nitrobenzene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Nitroquinoline-1-oxide	EPA 8270	Extractable Organics	NELAP	7/1/2003
n-Nitrosodiethylamine	EPA 8270	Extractable Organics	NELAP	7/1/2003
n-Nitrosodimethylamine	EPA 625	Extractable Organics	NELAP	1/8/2002
n-Nitrosodimethylamine	EPA 8270	Extractable Organics	NELAP	7/1/2003
n-Nitroso-di-n-butylamine	EPA 8270	Extractable Organics	NELAP	7/1/2003
n-Nitrosodi-n-propylamine	EPA 625	Extractable Organics	NELAP	1/8/2002
n-Nitrosodi-n-propylamine	EPA 8270	Extractable Organics	NELAP	7/1/2003
n-Nitrosodiphenylamine	EPA 625	Extractable Organics	NELAP	1/8/2002
n-Nitrosodiphenylamine	EPA 8270	Extractable Organics	NELAP	7/1/2003
n-Nitrosomethylethylamine	EPA 8270	Extractable Organics	NELAP	7/1/2003
n-Nitrosomorpholine	EPA 8270	Extractable Organics	NELAP	10/14/2004
n-Nitrosopiperidine	EPA 8270	Extractable Organics	NELAP	7/1/2003

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Matrix: Non-Potable Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
n-Nitrosopyrrolidine	EPA 8270	Extractable Organics	NELAP	7/1/2003
n-Octadecane	EPA 625	Pesticides-Herbicides-PCB's	NELAP	5/11/2004
n-Propylbenzene	EPA 8260	Volatile Organics	NELAP	7/1/2003
o,o,o-Triethyl phosphorothioate	EPA 8270	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Oil & Grease	EPA 1664A	General Chemistry	NELAP	1/8/2002
Organic nitrogen	TKN minus AMMONIA	General Chemistry	NELAP	1/3/2012
Orthophosphate as P	EPA 300.0	General Chemistry	NELAP	1/8/2002
Orthophosphate as P	EPA 365.1	General Chemistry	NELAP	1/8/2002
Orthophosphate as P	EPA 9056	General Chemistry	NELAP	7/1/2003
o-Toluidine	EPA 8270	Extractable Organics	NELAP	7/1/2003
o-Xylene	EPA 624	Volatile Organics	NELAP	1/3/2012
o-Xylene	EPA 8260	Volatile Organics	NELAP	1/3/2012
Parathion, ethyl	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Pentachlorobenzene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Pentachloroethane	EPA 8260	Volatile Organics	NELAP	7/1/2003
Pentachloronitrobenzene (Quintozene)	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	1/2/2008
Pentachlorophenol	EPA 625	Extractable Organics	NELAP	1/8/2002
Pentachlorophenol	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	9/4/2008
Pentachlorophenol	EPA 8270	Extractable Organics	NELAP	7/1/2003
pH	EPA 9040	General Chemistry	NELAP	7/1/2003
pH	SM 4500-H+-B	General Chemistry	NELAP	10/3/2007
Phenacetin	EPA 8270	Extractable Organics	NELAP	7/1/2003
Phenanthrene	EPA 625	Extractable Organics	NELAP	1/8/2002
Phenanthrene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Phenol	EPA 625	Extractable Organics	NELAP	1/8/2002
Phenol	EPA 8270	Extractable Organics	NELAP	7/1/2003
Phorate	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Phosmet (Imidan)	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Phosphamidon	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Phosphorus, total	EPA 365.3	General Chemistry	NELAP	12/4/2007
Phosphorus, total	EPA 365.4	General Chemistry	NELAP	1/8/2002
Picloram	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
p-Isopropyltoluene	EPA 8260	Volatile Organics	NELAP	7/1/2003
Potassium	EPA 200.7	Metals	NELAP	1/8/2002
Potassium	EPA 6010	Metals	NELAP	7/1/2003
Pronamide (Kerb)	EPA 8270	Extractable Organics	NELAP	7/1/2003

Clients and Customers are urged to verify the laboratory's current certification status with the Environmental Laboratory Certification Program.

Issue Date: 7/1/2012

Expiration Date: 6/30/2013

Rick Scott  
Governor



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State Surgeon General  
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### Laboratory Scope of Accreditation

Attachment to Certificate #: E83079-40, expiration date June 30, 2013. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: E83079

EPA Lab Code: FL01264

(386) 672-5668

E83079

Pace Analytical Services-Florida  
8 East Tower Circle  
Ormond Beach, FL 32174

Matrix: Non-Potable Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
Propionitrile (Ethyl cyanide)	EPA 8260	Volatile Organics	NELAP	7/1/2003
Pyrene	EPA 625	Extractable Organics	NELAP	1/8/2002
Pyrene	EPA 8270	Extractable Organics	NELAP	7/1/2003
Pyridine	EPA 8270	Extractable Organics	NELAP	7/1/2003
Residual free chlorine	SM 4500-Cl D	General Chemistry	NELAP	1/8/2002
Residue-filterable (TDS)	SM 2540 C	General Chemistry	NELAP	10/3/2007
Residue-nonfilterable (TSS)	SM 2540 D	General Chemistry	NELAP	10/3/2007
Residue-total	SM 2540 B	General Chemistry	NELAP	10/3/2007
Residue-volatile	EPA 160.4	General Chemistry	NELAP	1/8/2002
Ronnel	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Safrole	EPA 8270	Extractable Organics	NELAP	7/1/2003
sec-Butylbenzene	EPA 8260	Volatile Organics	NELAP	7/1/2003
Selenium	EPA 200.7	Metals	NELAP	1/8/2002
Selenium	EPA 200.8	Metals	NELAP	5/11/2004
Selenium	EPA 6010	Metals	NELAP	1/8/2002
Selenium	EPA 6020	Metals	NELAP	1/3/2012
Silica as SiO2	EPA 200.7	Metals	NELAP	1/3/2012
Silica as SiO2	EPA 6010	Metals	NELAP	1/3/2012
Silica as SiO2	SM 4500-SiO2 F (20th/21st Ed.)	General Chemistry	NELAP	3/10/2010
Silica-dissolved	SM 4500-Si D (18th/19th Ed.) / UV-VIS	General Chemistry	NELAP	5/11/2004
Silicon	EPA 200.7	Metals	NELAP	1/3/2012
Silicon	EPA 6010	Metals	NELAP	1/3/2012
Silver	EPA 200.7	Metals	NELAP	1/8/2002
Silver	EPA 200.8	Metals	NELAP	5/11/2004
Silver	EPA 6010	Metals	NELAP	7/1/2003
Silver	EPA 6020	Metals	NELAP	5/11/2004
Silvex (2,4,5-TP)	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Simazine	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/3/2012
Sodium	EPA 200.7	Metals	NELAP	1/8/2002
Sodium	EPA 6010	Metals	NELAP	7/1/2003
Stirofos	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Strontium	EPA 200.7	Metals	NELAP	10/14/2004
Strontium	EPA 6010	Metals	NELAP	7/1/2003
Styrene	EPA 8260	Volatile Organics	NELAP	7/1/2003
Sulfate	EPA 300.0	General Chemistry	NELAP	1/8/2002

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Issue Date: 7/1/2012

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### Laboratory Scope of Accreditation

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State Laboratory ID: E83079

EPA Lab Code: FL01264

(386) 672-5668

E83079

Pace Analytical Services-Florida  
8 East Tower Circle  
Ormond Beach, FL 32174

Matrix: Non-Potable Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
Sulfate	EPA 9056	General Chemistry	NELAP	7/1/2003
Sulfide	EPA 9030/9034	General Chemistry	NELAP	7/1/2003
Sulfide	SM 4500-S F	General Chemistry	NELAP	1/3/2012
Sulfotep	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Surfactants - MBAS	SM 5540 C	General Chemistry	NELAP	10/3/2007
T-amylmethylether (TAME)	EPA 8260	Volatile Organics	NELAP	1/3/2012
Terbufos	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
tert-Amyl alcohol (2-methyl-2-butanol)	PACE SOP S-FL-O-037/GC-MS	Volatile Organics	NELAP	1/3/2012
tert-Butyl alcohol	EPA 8260	Volatile Organics	NELAP	1/3/2012
tert-Butyl formate	PACE SOP S-FL-O-037/GC-MS	Volatile Organics	NELAP	1/3/2012
tert-Butylbenzene	EPA 8260	Volatile Organics	NELAP	7/1/2003
Tetrachloroethylene (Perchloroethylene)	EPA 624	Volatile Organics	NELAP	1/8/2002
Tetrachloroethylene (Perchloroethylene)	EPA 8260	Volatile Organics	NELAP	7/1/2003
Tetraethyl pyrophosphate (TEPP)	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Tetrahydrofuran (THF)	PACE SOP S-FL-O-037/GC-MS	Volatile Organics	NELAP	1/3/2012
Thallium	EPA 200.7	Metals	NELAP	1/8/2002
Thallium	EPA 200.8	Metals	NELAP	5/11/2004
Thallium	EPA 6010	Metals	NELAP	7/1/2003
Thallium	EPA 6020	Metals	NELAP	5/11/2004
Thionazin (Zinophos)	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/3/2012
Thionazin (Zinophos)	EPA 8270	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Tin	EPA 200.7	Metals	NELAP	1/8/2002
Tin	EPA 6010	Metals	NELAP	7/1/2003
Titanium	EPA 200.7	Metals	NELAP	1/3/2012
Titanium	EPA 6010	Metals	NELAP	1/3/2012
Tokuthion (Prothiophos)	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Toluene	EPA 624	Volatile Organics	NELAP	1/8/2002
Toluene	EPA 8260	Volatile Organics	NELAP	7/1/2003
Total coliforms	SM 9222 B	Microbiology	NELAP	1/8/2002
Total cyanide	EPA 9012	General Chemistry	NELAP	7/1/2003
Total hardness as CaCO <sub>3</sub>	EPA 200.7	Metals	NELAP	1/8/2002
Total hardness as CaCO <sub>3</sub>	SM 2340 B	Metals	NELAP	1/8/2002
Total nitrate-nitrite	EPA 9056	General Chemistry	NELAP	7/1/2003
Total nitrogen	TKN + Total nitrate-nitrite	General Chemistry	NELAP	1/3/2012
Total organic carbon	SM 5310 B	General Chemistry	NELAP	2/21/2008

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### Laboratory Scope of Accreditation

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State Laboratory ID: E83079

EPA Lab Code: FL01264

(386) 672-5668

E83079

Pace Analytical Services-Florida  
8 East Tower Circle  
Ormond Beach, FL 32174

Matrix: Non-Potable Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
Total Petroleum Hydrocarbons (TPH)	EPA 1664A	General Chemistry	NELAP	8/14/2008
Total Petroleum Hydrocarbons (TPH)	FL-PRO	Extractable Organics	NELAP	7/1/2003
Total phenolics	EPA 420.4	General Chemistry	NELAP	1/8/2002
Total phenolics	EPA 9066	General Chemistry	NELAP	7/1/2003
Toxaphene (Chlorinated camphene)	EPA 608	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Toxaphene (Chlorinated camphene)	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
trans-1,2-Dichloroethylene	EPA 624	Volatile Organics	NELAP	1/8/2002
trans-1,2-Dichloroethylene	EPA 8260	Volatile Organics	NELAP	7/1/2003
trans-1,3-Dichloropropene	EPA 624	Volatile Organics	NELAP	1/8/2002
trans-1,3-Dichloropropene	EPA 8260	Volatile Organics	NELAP	7/1/2003
trans-1,4-Dichloro-2-butene	EPA 8260	Volatile Organics	NELAP	7/1/2003
Trichlorfon	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/3/2012
Trichloroethene (Trichloroethylene)	EPA 624	Volatile Organics	NELAP	1/8/2002
Trichloroethene (Trichloroethylene)	EPA 8260	Volatile Organics	NELAP	7/1/2003
Trichlorofluoromethane	EPA 624	Volatile Organics	NELAP	1/8/2002
Trichlorofluoromethane	EPA 8260	Volatile Organics	NELAP	7/1/2003
Trichloronate	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	7/1/2003
Turbidity	EPA 180.1	General Chemistry	NELAP	1/8/2002
Turbidity	SM 2130 B	General Chemistry	NELAP	1/3/2012
Un-ionized Ammonia	DEP SOP 10/03/83	General Chemistry	NELAP	1/8/2002
Uranium	EPA 200.8	Metals	NELAP	3/10/2010
Vanadium	EPA 200.7	Metals	NELAP	1/8/2002
Vanadium	EPA 200.8	Metals	NELAP	5/11/2004
Vanadium	EPA 6010	Metals	NELAP	7/1/2003
Vanadium	EPA 6020	Metals	NELAP	1/3/2012
Vinyl acetate	EPA 8260	Volatile Organics	NELAP	7/1/2003
Vinyl chloride	EPA 624	Volatile Organics	NELAP	1/8/2002
Vinyl chloride	EPA 8260	Volatile Organics	NELAP	7/1/2003
Xylene (total)	EPA 624	Volatile Organics	NELAP	1/8/2002
Xylene (total)	EPA 8260	Volatile Organics	NELAP	7/1/2003
Zinc	EPA 200.7	Metals	NELAP	1/8/2002
Zinc	EPA 200.8	Metals	NELAP	5/11/2004
Zinc	EPA 6010	Metals	NELAP	1/8/2002
Zinc	EPA 6020	Metals	NELAP	5/11/2004

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Issue Date: 7/1/2012

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### Laboratory Scope of Accreditation

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State Laboratory ID: E83079

EPA Lab Code: FL01264

(386) 672-5668

E83079

Pace Analytical Services-Florida  
8 East Tower Circle  
Ormond Beach, FL 32174

Matrix: Solid and Chemical Materials

Analyte	Method/Tech	Category	Certification Type	Effective Date
1,1,1,2-Tetrachloroethane	EPA 8260	Volatile Organics	NELAP	1/8/2002
1,1,1-Trichloroethane	EPA 8260	Volatile Organics	NELAP	1/8/2002
1,1,2,2-Tetrachloroethane	EPA 8260	Volatile Organics	NELAP	1/8/2002
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	EPA 8260	Volatile Organics	NELAP	1/3/2012
1,1,2-Trichloroethane	EPA 8260	Volatile Organics	NELAP	1/8/2002
1,1-Dichloroethane	EPA 8260	Volatile Organics	NELAP	1/8/2002
1,1-Dichloroethylene	EPA 8260	Volatile Organics	NELAP	1/8/2002
1,1-Dichloropropene	EPA 8260	Volatile Organics	NELAP	1/8/2002
1,2,3-Trichlorobenzene	EPA 8260	Volatile Organics	NELAP	1/8/2002
1,2,3-Trichloropropane	EPA 8260	Volatile Organics	NELAP	1/8/2002
1,2,4-Trichlorobenzene	EPA 8260	Volatile Organics	NELAP	1/8/2002
1,2,4-Trichlorobenzene	EPA 8270	Extractable Organics	NELAP	1/8/2002
1,2,4-Trimethylbenzene	EPA 8260	Volatile Organics	NELAP	1/8/2002
1,2-Dibromo-3-chloropropane (DBCP)	EPA 8260	Volatile Organics	NELAP	1/8/2002
1,2-Dibromoethane (EDB, Ethylene dibromide)	EPA 8260	Volatile Organics	NELAP	1/8/2002
1,2-Dichlorobenzene	EPA 8260	Volatile Organics	NELAP	1/8/2002
1,2-Dichlorobenzene	EPA 8270	Extractable Organics	NELAP	1/8/2002
1,2-Dichloroethane	EPA 8260	Volatile Organics	NELAP	1/8/2002
1,2-Dichloropropane	EPA 8260	Volatile Organics	NELAP	1/8/2002
1,2-Diphenylhydrazine	EPA 8270	Extractable Organics	NELAP	1/8/2002
1,3,5-Trimethylbenzene	EPA 8260	Volatile Organics	NELAP	1/8/2002
1,3-Dichlorobenzene	EPA 8260	Volatile Organics	NELAP	1/8/2002
1,3-Dichlorobenzene	EPA 8270	Extractable Organics	NELAP	1/8/2002
1,3-Dichloropropane	EPA 8260	Volatile Organics	NELAP	1/8/2002
1,4-Dichlorobenzene	EPA 8260	Volatile Organics	NELAP	1/8/2002
1,4-Dichlorobenzene	EPA 8270	Extractable Organics	NELAP	1/8/2002
1-Chlorohexane	EPA 8260	Volatile Organics	NELAP	1/3/2012
1-Methylnaphthalene	EPA 8270	Extractable Organics	NELAP	1/3/2012
2,2-Dichloropropane	EPA 8260	Volatile Organics	NELAP	1/8/2002
2,3,4,6-Tetrachlorophenol	EPA 8270	Extractable Organics	NELAP	1/8/2002
2,4,5-T	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
2,4,5-Trichlorophenol	EPA 8270	Extractable Organics	NELAP	1/8/2002
2,4,6-Trichlorophenol	EPA 8270	Extractable Organics	NELAP	1/8/2002
2,4-D	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
2,4-DB	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
2,4-Dichlorophenol	EPA 8270	Extractable Organics	NELAP	1/8/2002

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Issue Date: 7/1/2012

Expiration Date: 6/30/2013



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State Surgeon General  
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### Laboratory Scope of Accreditation

Attachment to Certificate #: E83079-40, expiration date June 30, 2013. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: E83079

EPA Lab Code: FL01264

(386) 672-5668

E83079

Pace Analytical Services-Florida  
8 East Tower Circle  
Ormond Beach, FL 32174

Matrix: Solid and Chemical Materials

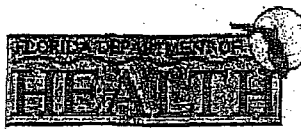
Analyte	Method/Tech	Category	Certification Type	Effective Date
2,4-Dimethylphenol	EPA 8270	Extractable Organics	NELAP	1/8/2002
2,4-Dinitrophenol	EPA 8270	Extractable Organics	NELAP	1/8/2002
2,4-Dinitrotoluene (2,4-DNT)	EPA 8270	Extractable Organics	NELAP	1/8/2002
2,6-Dinitrotoluene (2,6-DNT)	EPA 8270	Extractable Organics	NELAP	1/8/2002
2-Butanone (Methyl ethyl ketone, MEK)	EPA 8260	Volatile Organics	NELAP	1/8/2002
2-Chloroethyl vinyl ether	EPA 8260	Volatile Organics	NELAP	1/3/2012
2-Chloronaphthalene	EPA 8270	Extractable Organics	NELAP	1/8/2002
2-Chlorophenol	EPA 8270	Extractable Organics	NELAP	1/8/2002
2-Chlorotoluene	EPA 8260	Volatile Organics	NELAP	1/8/2002
2-Hexanone	EPA 8260	Volatile Organics	NELAP	1/8/2002
2-Methyl-4,6-dinitrophenol	EPA 8270	Extractable Organics	NELAP	1/8/2002
2-Methylnaphthalene	EPA 8270	Extractable Organics	NELAP	1/8/2002
2-Methylphenol (o-Cresol)	EPA 8270	Extractable Organics	NELAP	1/8/2002
2-Naphthylamine	EPA 8270	Extractable Organics	NELAP	1/2/2008
2-Nitroaniline	EPA 8270	Extractable Organics	NELAP	1/8/2002
2-Nitrophenol	EPA 8270	Extractable Organics	NELAP	1/8/2002
3,3'-Dichlorobenzidine	EPA 8270	Extractable Organics	NELAP	1/8/2002
3,3-Dimethyl-1-butanol	PACE SOP S-FL-O-037/GC-MS	Volatile Organics	NELAP	1/3/2012
3/4-Methylphenols (m/p-Cresols)	EPA 8270	Extractable Organics	NELAP	1/2/2008
3-Nitroaniline	EPA 8270	Extractable Organics	NELAP	1/8/2002
4,4'-DDD	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
4,4'-DDE	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
4,4'-DDT	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
4-Bromophenyl phenyl ether	EPA 8270	Extractable Organics	NELAP	1/8/2002
4-Chloro-3-methylphenol	EPA 8270	Extractable Organics	NELAP	1/8/2002
4-Chloroaniline	EPA 8270	Extractable Organics	NELAP	1/8/2002
4-Chlorophenyl phenylether	EPA 8270	Extractable Organics	NELAP	1/8/2002
4-Chlorotoluene	EPA 8260	Volatile Organics	NELAP	1/8/2002
4-Methyl-2-pentanone (MIBK)	EPA 8260	Volatile Organics	NELAP	1/8/2002
4-Nitroaniline	EPA 8270	Extractable Organics	NELAP	1/8/2002
4-Nitrophenol	EPA 8270	Extractable Organics	NELAP	1/8/2002
Acenaphthene	EPA 8270	Extractable Organics	NELAP	1/8/2002
Acenaphthylene	EPA 8270	Extractable Organics	NELAP	1/8/2002
Acetone	EPA 8260	Volatile Organics	NELAP	1/8/2002
Acetonitrile	EPA 8260	Volatile Organics	NELAP	1/8/2002
Acetophenone	EPA 8270	Extractable Organics	NELAP	1/8/2002

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Issue Date: 7/1/2012

Expiration Date: 6/30/2013

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Governor



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### Laboratory Scope of Accreditation

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EPA Lab Code: FL01264

(386) 672-5668

E83079

Pace Analytical Services-Florida  
8 East Tower Circle  
Ormond Beach, FL 32174

Matrix: Solid and Chemical Materials

Analyte	Method/Tech	Category	Certification Type	Effective Date
Acrolein (Propenal)	EPA 8260	Volatile Organics	NELAP	1/8/2002
Acrylonitrile	EPA 8260	Volatile Organics	NELAP	1/8/2002
Alachlor	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	1/3/2012
Aldrin	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Allyl chloride (3-Chloropropene)	EPA 8260	Volatile Organics	NELAP	1/8/2002
alpha-BHC (alpha-Hexachlorocyclohexane)	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
alpha-Chlordane	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Aluminum	EPA 6010	Metals	NELAP	1/8/2002
Ammonia as N	EPA 350.1	General Chemistry	NELAP	8/14/2008
Aniline	EPA 8270	Extractable Organics	NELAP	1/3/2012
Anthracene	EPA 8270	Extractable Organics	NELAP	1/8/2002
Antimony	EPA 6010	Metals	NELAP	1/8/2002
Aroclor-1016 (PCB-1016)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Aroclor-1221 (PCB-1221)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Aroclor-1232 (PCB-1232)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Aroclor-1242 (PCB-1242)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Aroclor-1248 (PCB-1248)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Aroclor-1254 (PCB-1254)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Aroclor-1260 (PCB-1260)	EPA 8082	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Arsenic	EPA 6010	Metals	NELAP	1/8/2002
Arsenic	EPA 6020	Metals	NELAP	1/3/2012
Aspon	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/3/2012
Atrazine	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Azinphos-ethyl (Ethyl guthion)	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Azinphos-methyl (Guthion)	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Barium	EPA 6010	Metals	NELAP	1/8/2002
Barium	EPA 6020	Metals	NELAP	1/3/2012
Bentazon	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Benzene	EPA 8260	Volatile Organics	NELAP	1/8/2002
Benzidine	EPA 8270	Extractable Organics	NELAP	1/8/2002
Benzo(a)anthracene	EPA 8270	Extractable Organics	NELAP	1/8/2002
Benzo(a)pyrene	EPA 8270	Extractable Organics	NELAP	1/8/2002
Benzo(b)fluoranthene	EPA 8270	Extractable Organics	NELAP	1/8/2002
Benzo(g,h,i)perylene	EPA 8270	Extractable Organics	NELAP	1/8/2002
Benzo(k)fluoranthene	EPA 8270	Extractable Organics	NELAP	1/8/2002
Benzoic acid	EPA 8270	Extractable Organics	NELAP	1/3/2012

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Issue Date: 7/1/2012

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### Laboratory Scope of Accreditation

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EPA Lab Code: FL01264

(386) 672-5668

E83079

Pace Analytical Services-Florida  
8 East Tower Circle  
Ormond Beach, FL 32174

Matrix: Solid and Chemical Materials

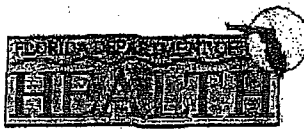
Analyte	Method/Tech	Category	Certification Type	Effective Date
Benzyl alcohol	EPA 8270	Extractable Organics	NELAP	1/3/2012
Beryllium	EPA 6010	Metals	NELAP	1/8/2002
Beryllium	EPA 6020	Metals	NELAP	1/3/2012
beta-BHC (beta-Hexachlorocyclohexane)	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
bis(2-Chloroethoxy)methane	EPA 8270	Extractable Organics	NELAP	1/8/2002
bis(2-Chloroethyl) ether	EPA 8270	Extractable Organics	NELAP	8/4/2008
bis(2-Chloroisopropyl) ether (2,2'-Oxybis(1-chloropropane))	EPA 8270	Extractable Organics	NELAP	1/8/2002
bis(2-Ethylhexyl) phthalate (DEHP)	EPA 8270	Extractable Organics	NELAP	1/8/2002
Bolstar (Sulprofos)	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Boron	EPA 6010	Metals	NELAP	1/8/2002
Bromide	EPA 9056	General Chemistry	NELAP	8/14/2008
Bromobenzene	EPA 8260	Volatile Organics	NELAP	1/8/2002
Bromochloromethane	EPA 8260	Volatile Organics	NELAP	1/8/2002
Bromodichloromethane	EPA 8260	Volatile Organics	NELAP	1/8/2002
Bromoform	EPA 8260	Volatile Organics	NELAP	1/8/2002
Butyl benzyl phthalate	EPA 8270	Extractable Organics	NELAP	1/8/2002
Cadmium	EPA 6010	Metals	NELAP	1/8/2002
Cadmium	EPA 6020	Metals	NELAP	1/3/2012
Calcium	EPA 6010	Metals	NELAP	1/8/2002
Carbazole	EPA 8270	Extractable Organics	NELAP	1/3/2012
Carbon disulfide	EPA 8260	Volatile Organics	NELAP	1/8/2002
Carbon tetrachloride	EPA 8260	Volatile Organics	NELAP	1/8/2002
Carbophenothion	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Chlordane (tech.)	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Chlorfenvinphos	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Chloride	EPA 9056	General Chemistry	NELAP	8/14/2008
Chlorobenzene	EPA 8260	Volatile Organics	NELAP	1/8/2002
Chloroethane	EPA 8260	Volatile Organics	NELAP	1/8/2002
Chloroform	EPA 8260	Volatile Organics	NELAP	1/8/2002
Chloroprene	EPA 8260	Volatile Organics	NELAP	1/8/2002
Chlorpyrifos	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Chlorpyrifos methyl	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/3/2012
Chromium	EPA 6010	Metals	NELAP	1/8/2002
Chromium	EPA 6020	Metals	NELAP	1/3/2012
Chrysene	EPA 8270	Extractable Organics	NELAP	1/8/2002
cis-1,2-Dichloroethylene	EPA 8260	Volatile Organics	NELAP	1/8/2002

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Issue Date: 7/1/2012

Expiration Date: 6/30/2013

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### Laboratory Scope of Accreditation

Attachment to Certificate #: E83079-40, expiration date June 30, 2013. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: E83079

EPA Lab Code: FL01264

(386) 672-5668

E83079

Pace Analytical Services-Florida  
8 East Tower Circle  
Ormond Beach, FL 32174

Matrix: Solid and Chemical Materials

Analyte	Method/Tech	Category	Certification Type	Effective Date
cis-1,3-Dichloropropene	EPA 8260	Volatile Organics	NELAP	1/8/2002
cis-1,4-Dichloro-2-butene	EPA 8260	Volatile Organics	NELAP	1/3/2012
Cobalt	EPA 6010	Metals	NELAP	1/8/2002
Cobalt	EPA 6020	Metals	NELAP	1/3/2012
Copper	EPA 6010	Metals	NELAP	1/8/2002
Copper	EPA 6020	Metals	NELAP	1/3/2012
Coumaphos	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Crotoxypfos	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/3/2012
Cyclohexane	EPA 8260	Volatile Organics	NELAP	1/3/2012
Dalapon	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
delta-BHC	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Demeton-o	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Demeton-s	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Diazinon	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Dibenz(a,h)anthracene	EPA 8270	Extractable Organics	NELAP	1/8/2002
Dibenzofuran	EPA 8270	Extractable Organics	NELAP	1/8/2002
Dibromochloromethane	EPA 8260	Volatile Organics	NELAP	1/8/2002
Dibromomethane	EPA 8260	Volatile Organics	NELAP	1/8/2002
Dicamba	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Dichlorodifluoromethane	EPA 8260	Volatile Organics	NELAP	1/8/2002
Dichlorofenthion	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/3/2012
Dichloroprop (Dichlorprop)	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	3/10/2010
Dichlorovos (DDVP, Dichlorvos)	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Dicrotophos	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/3/2012
Dieldrin	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Diethyl ether	EPA 8260	Volatile Organics	NELAP	1/3/2012
Diethyl phthalate	EPA 8270	Extractable Organics	NELAP	1/8/2002
Di-isopropylether (DIPE)	EPA 8260	Volatile Organics	NELAP	1/3/2012
Dimethoate	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Dimethyl phthalate	EPA 8270	Extractable Organics	NELAP	1/8/2002
Di-n-butyl phthalate	EPA 8270	Extractable Organics	NELAP	1/8/2002
Di-n-octyl phthalate	EPA 8270	Extractable Organics	NELAP	1/8/2002
Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Disulfoton	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/2/2008
Endosulfan I	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Endosulfan II	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	1/8/2002

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State Laboratory ID: E83079

EPA Lab Code: FL01264

(386) 672-5668

E83079

Pace Analytical Services-Florida  
8 East Tower Circle  
Ormond Beach, FL 32174

Matrix: Solid and Chemical Materials

Analyte	Method/Tech	Category	Certification Type	Effective Date
Endosulfan sulfate	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Endrin	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Endrin aldehyde	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Endrin ketone	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
EPN	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Ethanol	EPA 8260	Volatile Organics	NELAP	1/8/2002
Ethion	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Ethoprop	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Ethyl acetate	EPA 8260	Volatile Organics	NELAP	1/3/2012
Ethyl methacrylate	EPA 8260	Volatile Organics	NELAP	1/8/2002
Ethylbenzene	EPA 8260	Volatile Organics	NELAP	1/8/2002
Ethyl-t-butylether (ETBE)	EPA 8260	Volatile Organics	NELAP	1/3/2012
Famphur	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Fecal coliforms	SM 9221 E	Microbiology	NELAP	8/14/2006
Fenitrothion	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/3/2012
Fensulfthion	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Fenthion	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Fluoranthene	EPA 8270	Extractable Organics	NELAP	1/8/2002
Fluorene	EPA 8270	Extractable Organics	NELAP	1/8/2002
Fluoride	EPA 9056	General Chemistry	NELAP	8/14/2008
Fonophos	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/3/2012
gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
gamma-Chlordane	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Heptachlor	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Heptachlor epoxide	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Hexachlorobenzene	EPA 8270	Extractable Organics	NELAP	1/8/2002
Hexachlorobutadiene	EPA 8260	Volatile Organics	NELAP	1/8/2002
Hexachlorobutadiene	EPA 8270	Extractable Organics	NELAP	1/8/2002
Hexachlorocyclopentadiene	EPA 8270	Extractable Organics	NELAP	1/8/2002
Hexachloroethane	EPA 8270	Extractable Organics	NELAP	1/8/2002
Ignitability	EPA 1010	General Chemistry	NELAP	1/8/2002
Ignitability	EPA 1030	General Chemistry	NELAP	1/8/2002
Indeno(1,2,3-cd)pyrene	EPA 8270	Extractable Organics	NELAP	1/8/2002
Iodomethane (Methyl iodide)	EPA 8260	Volatile Organics	NELAP	1/8/2002
Iron	EPA 6010	Metals	NELAP	1/8/2002
Isobutyl alcohol (2-Methyl-1-propanol)	EPA 8260	Volatile Organics	NELAP	1/8/2002

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State Laboratory ID: E83079

EPA Lab Code: FL01264

(386) 672-5668

E83079

Pace Analytical Services-Florida  
8 East Tower Circle  
Ormond Beach, FL 32174

Matrix: Solid and Chemical Materials

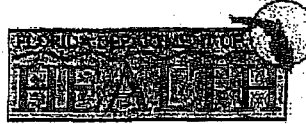
Analyte	Method/Tech	Category	Certification Type	Effective Date
Isodrin	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	1/3/2012
Isophorone	EPA 8270	Extractable Organics	NELAP	1/8/2002
Isopropylbenzene	EPA 8260	Volatile Organics	NELAP	1/8/2002
Kjeldahl nitrogen - total	EPA 351.2	General Chemistry	NELAP	8/14/2008
Lead	EPA 6010	Metals	NELAP	1/8/2002
Lead	EPA 6020	Metals	NELAP	1/3/2012
Leptophos	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
m/p-Xylenes	EPA 8260	Volatile Organics	NELAP	1/3/2012
Magnesium	EPA 6010	Metals	NELAP	1/8/2002
Malathion	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Manganese	EPA 6010	Metals	NELAP	1/8/2002
Manganese	EPA 6020	Metals	NELAP	1/3/2012
MCPA	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
MCCP	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Mercury	EPA 7471	Metals	NELAP	1/8/2002
Merphos	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Methacrylonitrile	EPA 8260	Volatile Organics	NELAP	1/8/2002
Methoxychlor	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Methyl acetate	EPA 8260	Volatile Organics	NELAP	1/3/2012
Methyl bromide (Bromomethane)	EPA 8260	Volatile Organics	NELAP	1/8/2002
Methyl chloride (Chloromethane)	EPA 8260	Volatile Organics	NELAP	1/8/2002
Methyl methacrylate	EPA 8260	Volatile Organics	NELAP	1/8/2002
Methyl parathion (Parathion, methyl)	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Methyl tert-butyl ether (MTBE)	EPA 8260	Volatile Organics	NELAP	1/8/2002
Methylcyclohexane	EPA 8260	Volatile Organics	NELAP	1/3/2012
Methylene chloride	EPA 8260	Volatile Organics	NELAP	1/8/2002
Mevinphos	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Mirex	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	1/3/2012
Molybdenum	EPA 6010	Metals	NELAP	1/8/2002
Monocrotophos	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Naled	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Naphthalene	EPA 8260	Volatile Organics	NELAP	1/8/2002
Naphthalene	EPA 8270	Extractable Organics	NELAP	1/8/2002
n-Butyl alcohol	EPA 8260	Volatile Organics	NELAP	1/3/2012
n-Butylbenzene	EPA 8260	Volatile Organics	NELAP	1/8/2002
n-Hexane	PACE SOP S-FL-O-037/GC-MS	Volatile Organics	NELAP	1/3/2012

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Issue Date: 7/1/2012

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State Laboratory ID: E83079

EPA Lab Code: FL01264

(386) 672-5668

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Pace Analytical Services-Florida  
8 East Tower Circle  
Ormond Beach, FL 32174

Matrix: Solid and Chemical Materials

Analyte	Method/Tech	Category	Certification Type	Effective Date
Nickel	EPA 6010	Metals	NELAP	1/8/2002
Nickel	EPA 6020	Metals	NELAP	1/3/2012
Nitrate	EPA 9056	General Chemistry	NELAP	8/14/2008
Nitrate as N	EPA 353.2	General Chemistry	NELAP	7/1/2003
Nitrite	EPA 9056	General Chemistry	NELAP	1/8/2002
Nitrite as N	EPA 353.2	General Chemistry	NELAP	7/1/2003
Nitrobenzene	EPA 8270	Extractable Organics	NELAP	1/8/2002
n-Nitrosodimethylamine	EPA 8270	Extractable Organics	NELAP	1/8/2002
n-Nitrosodi-n-propylamine	EPA 8270	Extractable Organics	NELAP	1/8/2002
n-Nitrosodiphenylamine	EPA 8270	Extractable Organics	NELAP	1/8/2002
n-Propylbenzene	EPA 8260	Volatile Organics	NELAP	1/8/2002
Organic nitrogen	TKN minus AMMONIA	General Chemistry	NELAP	1/3/2012
Orthophosphate as P	EPA 9056	General Chemistry	NELAP	8/14/2008
o-Xylene	EPA 8260	Volatile Organics	NELAP	1/3/2012
Paint Filter Liquids Test	EPA 9095	General Chemistry	NELAP	1/8/2002
Parathion, ethyl	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
p-Dioxane	EPA 8260	Volatile Organics	NELAP	1/8/2002
Pentachloroethane	EPA 8260	Volatile Organics	NELAP	1/8/2002
Pentachlorophenol	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Pentachlorophenol	EPA 8270	Extractable Organics	NELAP	1/8/2002
pH	EPA 9040	General Chemistry	NELAP	1/8/2002
pH	EPA 9045	General Chemistry	NELAP	1/8/2002
Phenanthrene	EPA 8270	Extractable Organics	NELAP	1/8/2002
Phenol	EPA 8270	Extractable Organics	NELAP	1/8/2002
Phorate	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Phosmet (Imidan)	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Phosphamidon	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Phosphorus, total	EPA 365.4	General Chemistry	NELAP	8/14/2008
Picloram	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
p-Isopropyltoluene	EPA 8260	Volatile Organics	NELAP	1/8/2002
Potassium	EPA 6010	Metals	NELAP	1/8/2002
Propionitrile (Ethyl cyanide)	EPA 8260	Volatile Organics	NELAP	1/8/2002
Pyrene	EPA 8270	Extractable Organics	NELAP	1/8/2002
Pyridine	EPA 8270	Extractable Organics	NELAP	1/8/2002
Residue-total	SM 2540 G	General Chemistry	NELAP	5/11/2004
Ronnel	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/3/2012

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### Laboratory Scope of Accreditation

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Ormond Beach, FL 32174

Matrix: Solid and Chemical Materials

Analyte	Method/Tech	Category	Certification Type	Effective Date
sec-Butylbenzene	EPA 8260	Volatile Organics	NELAP	1/8/2002
Selenium	EPA 6010	Metals	NELAP	1/8/2002
Selenium	EPA 6020	Metals	NELAP	1/3/2012
Silver	EPA 6010	Metals	NELAP	1/8/2002
Silvex (2,4,5-TP)	EPA 8151	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Simazine	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/3/2012
Sodium	EPA 6010	Metals	NELAP	1/8/2002
Stirofos	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/3/2012
Strontium	EPA 6010	Metals	NELAP	1/8/2002
Styrene	EPA 8260	Volatile Organics	NELAP	1/8/2002
Sulfate	EPA 9056	General Chemistry	NELAP	8/14/2008
Sulfide	EPA 9030/9034	General Chemistry	NELAP	1/8/2002
Sulfotep	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Synthetic Precipitation Leaching Procedure	EPA 1312	General Chemistry	NELAP	1/8/2002
T-amylmethylether (TAME)	EPA 8260	Volatile Organics	NELAP	1/3/2012
Terbufos	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
tert-Amyl alcohol (2-methyl-2-butanol)	PACE SOP S-FL-O-037/GC-MS	Volatile Organics	NELAP	1/3/2012
tert-Butyl alcohol	EPA 8260	Volatile Organics	NELAP	1/3/2012
tert-Butyl formate	PACE SOP S-FL-O-037/GC-MS	Volatile Organics	NELAP	1/3/2012
tert-Butylbenzene	EPA 8260	Volatile Organics	NELAP	1/8/2002
Tetrachloroethylene (Perchloroethylene)	EPA 8260	Volatile Organics	NELAP	1/8/2002
Tetraethyl pyrophosphate (TEPP)	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Tetrahydrofuran (THF)	EPA 8260	Volatile Organics	NELAP	1/3/2012
Tetrahydrofuran (THF)	PACE SOP S-FL-O-037/GC-MS	Volatile Organics	NELAP	1/3/2012
Thallium	EPA 6010	Metals	NELAP	1/8/2002
Thallium	EPA 6020	Metals	NELAP	1/3/2012
Thionazin (Zinophos)	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/3/2012
Tin	EPA 6010	Metals	NELAP	1/8/2002
Tokuthion (Prothiophos)	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Toluene	EPA 8260	Volatile Organics	NELAP	1/8/2002
Total cyanide	EPA 9012	General Chemistry	NELAP	1/8/2002
Total nitrate-nitrite	EPA 353.2	General Chemistry	NELAP	7/1/2003
Total nitrate-nitrite	EPA 9056	General Chemistry	NELAP	1/8/2002
Total nitrogen	TKN + Total nitrate-nitrite	General Chemistry	NELAP	1/3/2012
Total Petroleum Hydrocarbons (TPH)	FL-PRO	Extractable Organics	NELAP	1/8/2002

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**Laboratory Scope of Accreditation**

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E83079

Pace Analytical Services-Florida  
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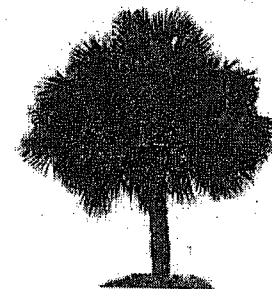
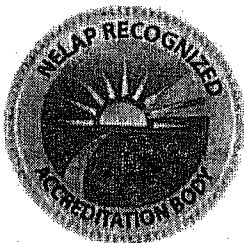
Matrix: Solid and Chemical Materials

Analyte	Method/Tech	Category	Certification Type	Effective Date
Total phenolics	EPA 9066	General Chemistry	NELAP	1/8/2002
Toxaphene (Chlorinated camphene)	EPA 8081	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Toxicity Characteristic Leaching Procedure	EPA 1311	General Chemistry	NELAP	1/8/2002
trans-1,2-Dichloroethylene	EPA 8260	Volatile Organics	NELAP	1/8/2002
trans-1,3-Dichloropropene	EPA 8260	Volatile Organics	NELAP	1/8/2002
trans-1,4-Dichloro-2-butene	EPA 8260	Volatile Organics	NELAP	1/8/2002
Trichlorfon	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/3/2012
Trichloroethene (Trichloroethylene)	EPA 8260	Volatile Organics	NELAP	12/22/2010
Trichlorofluoromethane	EPA 8260	Volatile Organics	NELAP	1/8/2002
Trichloronate	EPA 8141	Pesticides-Herbicides-PCB's	NELAP	1/8/2002
Vanadium	EPA 6010	Metals	NELAP	1/8/2002
Vanadium	EPA 6020	Metals	NELAP	1/3/2012
Vinyl acetate	EPA 8260	Volatile Organics	NELAP	1/8/2002
Vinyl chloride	EPA 8260	Volatile Organics	NELAP	1/8/2002
Xylene (total)	EPA 8260	Volatile Organics	NELAP	1/8/2002
Zinc	EPA 6010	Metals	NELAP	1/8/2002
Zinc	EPA 6020	Metals	NELAP	1/3/2012

Clients and Customers are urged to verify the laboratory's current certification status with the Environmental Laboratory Certification Program.

Issue Date: 7/1/2012

Expiration Date: 6/30/2013



State of Florida  
Department of Health, Bureau of Laboratories  
This is to certify that  
E84973

PAGE ANALYTICAL SERVICES-TAMPA  
1209 TECH BLVD. SUITE 207  
TAMPA, FL 33619

has complied with Florida Administrative Code 64E-1,  
for the examination of Environmental samples in the following categories

DRINKING WATER - MICROBIOLOGY, DRINKING WATER - PRIMARY INORGANIC CONTAMINANTS, DRINKING WATER - SECONDARY INORGANIC  
CONTAMINANTS, NON-POTABLE WATER - GENERAL CHEMISTRY, NON-POTABLE WATER - MICROBIOLOGY

Continued certification is contingent upon successful on-going compliance with the NELAC Standards and FAC Rule 64E-1 regulations. Specific methods and analytes certified are cited on the Laboratory Scope of Accreditation for this laboratory and are on file at the Bureau of Laboratories, P. O. Box 210, Jacksonville, Florida 32231. Clients and customers are urged to verify with this agency the laboratory's certification status in Florida for particular methods and analytes.

Date Issued: July 01, 2012      Expiration Date: June 30, 2013



Max Salfinger, M.D.  
Chief, Bureau of Laboratories  
Florida Department of Health  
DH Form 1697, 7/04

NON-TRANSFERABLE E84973-18-07/01/2012  
Supersedes all previously issued certificates

Rick Scott  
Governor



John H. Armstrong, MD  
State Surgeon General  
Page 1 of 2

*Laboratory Scope of Accreditation*

Attachment to Certificate #: E84973-18, expiration date June 30, 2013. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: E84973

EPA Lab Code:

FL01265

(386) 672-5668

E84973

Pace Analytical Services-Tampa

1209 Tech Blvd.

Suite 207

Tampa, FL 33619

Matrix: Drinking Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
Color	SM 2120 B	Secondary Inorganic Contaminants	NELAP	9/2/2011
Conductivity	SM 2510 B	Primary Inorganic Contaminants	NELAP	3/22/2006
Escherichia coli	COLISURE	Microbiology	NELAP	9/2/2011
Escherichia coli	SM 9223 B	Microbiology	NELAP	3/22/2006
Heterotrophic plate count	SM 9215 B	Microbiology	NELAP	3/22/2006
Odor	SM 2150 B	Secondary Inorganic Contaminants	NELAP	3/22/2006
Orthophosphate as P	SM 4500-P E	Primary Inorganic Contaminants	NELAP	3/22/2006
pH	SM 4500-H <sub>+</sub> -B	Primary Inorganic Contaminants	NELAP	9/2/2011
Total coliforms	COLISURE	Microbiology	NELAP	9/2/2011
Total coliforms	SM 9222 B	Microbiology	NELAP	2/9/2012
Total coliforms	SM 9223 B	Microbiology	NELAP	3/22/2006
Turbidity	EPA 180.1	Secondary Inorganic Contaminants	NELAP	3/22/2006
Turbidity	SM 2130 B	Secondary Inorganic Contaminants	NELAP	3/22/2006

Clients and Customers are urged to verify the laboratory's current certification status with the Environmental Laboratory Certification Program.

Issue Date: 7/1/2012

Expiration Date: 6/30/2013

Rick Scott  
Governor



John H. Armstrong, MD  
State Surgeon General  
Page 2 of 2

### Laboratory Scope of Accreditation

Attachment to Certificate #: E84973-18; expiration date June 30, 2013. This listing of accredited analytes should be used only when associated with a valid certificate.

State Laboratory ID: E84973

EPA Lab Code: FL01265

(386) 672-5668

E84973

Pace Analytical Services-Tampa

1209 Tech Blvd.

Suite 207

Tampa, FL 33619

Matrix: Non-Potable Water

Analyte	Method/Tech	Category	Certification Type	Effective Date
Chromium VI	SM 3500-Cr B (20th/21st Ed.)/UV-VIS	General Chemistry	NELAP	9/2/2011
Color	SM 2120 B	General Chemistry	NELAP	2/17/2011
Conductivity	SM 2510 B	General Chemistry	NELAP	3/22/2006
Fecal coliforms	SM 9222 D	Microbiology	NELAP	3/22/2006
Heterotrophic plate count	SM 9215 B	Microbiology	NELAP	7/30/2007
Orthophosphate as P	SM 4500-P E	General Chemistry	NELAP	3/22/2006
pH	SM 4500-H+ B	General Chemistry	NELAP	10/3/2007
Total coliforms	SM 9222 B	Microbiology	NELAP	3/22/2006
Turbidity	EPA 180.1	General Chemistry	NELAP	7/30/2007
Turbidity	SM 2130 B	General Chemistry	NELAP	9/2/2011

Clients and Customers are urged to verify the laboratory's current certification status with the Environmental Laboratory Certification Program.

Issue Date: 7/1/2012

Expiration Date: 6/30/2013

**ATTACHMENT K-109**  
**INITIAL COVER SPECIFICATIONS**

## ATTACHMENT K-409

### INITIAL COVER SPECIFICATIONS

Materials approved for use as initial cover shall include soils as well as the following:

- Waste tires that have been cut into sufficiently small parts, which means that 70 percent of the waste tire materials cut into pieces of 4 square inches or less and 100 percent of the waste tire material is 32 square inches or less, and applied in a six (6) inch compacted layer, may be used as initial cover within the bermed working area.
- Composted yard trash, unscreened, and then mixed in the ratio of 50 percent unscreened compost to 50 percent soil, and applied in a six (6) inch compacted layer may be used as initial cover within the bermed working area. Ninety percent of the unscreened compost shall pass through a 3/4 inch screen prior to mixing with soil.
- Shredded asphalt roofing shingles, screened through a 1 inch mesh, and then mixed in the ratio of 50 percent shredded shingles to 50 percent soil, and applied in a six (6) inch compacted layer may be used as initial cover within the bermed working area.
- Ground-up construction and demolition debris, unscreened, and applied in a six (6) inch compacted layer, may be used as initial cover within the bermed working area. Ninety percent of the unscreened ground-up debris shall pass a 2 inch screen and 50 percent shall pass a 1/4 inch screen.
- Composted yard trash, screened through 1/2 inch mesh, and then mixed in the ratio of 75 percent screened compost to 25 percent soil, and applied in a six (6) inch compacted layer may be used as initial cover, or applied in a one (1) foot compacted layer in addition to the six (6) inch initial cover may be used as intermediate cover.
- A mixture of yard trash mulch and soil such that the mixture will achieve the following: 100 percent passes 2 inch screen, 85 percent passes a 3/4 inch screen, and 70 percent passes a 1/4 inch screen. The mixture shall be applied in a 6-inch compacted layer.
- Street sweeping which is material consisting primarily of soil, rocks, asphalt, leaves and other vegetative matter generated during routine cleaning of roads and is not mixed with any Class I waste. It does not include material generated during the clean up of an oil or hazardous chemical spill or material that is believed to be contaminated.

**ATTACHMENT K-110**  
**LEACHATE REPORT FORM**  
**AND**  
**LCRS INSPECTION REPORT**

CENTRAL COUNTY SOLID WASTE DISPOSAL COMPLEX  
PHASE II LEACHATE COLLECTION

MONTH      YEAR

Rainfall	Day	Time	Cell 1			Cell 2			PHASE II MAIN PUMP STATION		
			Totalized Flowmeter Reading	Leak Detection Manhole Level (feet)	Leak Detection Conversion (gallons)	Totalized Flowmeter Reading	Leak Detection Manhole Level (feet)	Leak Detection Conversion (gallons)	Totalized Flowmeter Reading (gallons)	Pump 1 Total Hour Meter Reading (hours)	Pump 2 Total Hour Meter Reading (hours)
0	1				0.00			0.00			
0	2				0.00			0.00			
0	3				0.00			0.00			
0	4				0.00			0.00			
0	5				0.00			0.00			
0	6				0.00			0.00			
0	7				0.00			0.00			
0	8				0.00			0.00			
0	9				0.00			0.00			
0	10				0.00			0.00			
0	11				0.00			0.00			
0	12				0.00			0.00			
0	13				0.00			0.00			
0	14				0.00			0.00			
0	15				0.00			0.00			
0	16				0.00			0.00			
0	17				0.00			0.00			
0	18				-0.00			0.00			
0	19				0.00			0.00			
0	20				0.00			0.00			
0	21				0.00			0.00			
0	22				0.00			0.00			
0	23				0.00			0.00			
0	24				0.00			0.00			
0	25				0.00			0.00			
0	26				0.00			0.00			
0	27				0.00			0.00			
0	28				0.00			0.00			
0	29				0.00			0.00			
0	30				0.00			0.00			
0	31				0.00			0.00			
Sub-Total Leachate Generated (gallons)			0		0.00			0.00			

Sub-Total Leachate Generated (gallons)

Total Rainfall (inches) 0.00

Total Leachate Collected (g) 0.00

Total Acres Open 0.00

Total Acres Intermediate 0.00

Total Acres Closed 0.00

Total Leachate Stored - see Phase I corresponding monthly report

Total Leachate Hauled Offsite - see Phase I corresponding monthly report



SARASOTA COUNTY CENTRAL COUNTY SOLID WASTE DISPOSAL COMPLEX  
PHASE I - MONTH, YEAR  
DAILY PRECIPITATION DATA AND LEACHATE GENERATION REPORT

DATE	LANDFILL AREA	LANDFILL RAINFALL	RAINFALL IN STORAGE TANK <sup>2</sup>	LEACHATE LEVEL PIEZOMETER 1	LEACHATE PUMPED <sup>3</sup>	LEACHATE LEVEL PIEZOMETER 2	LEACHATE PUMPED <sup>3</sup>	LEACHATE LEVEL PIEZOMETER 3	LEACHATE PUMPED <sup>3</sup>	LEACHATE LEVEL PIEZOMETER 4	LEACHATE PUMPED <sup>3</sup>	LEACHATE LEVEL PIEZOMETER 5	LEACHATE PUMPED <sup>3</sup>	LEACHATE MRF	TOTAL LEACHATE COLLECTED <sup>4</sup>	TOTAL LEACHATE REMOVED <sup>5</sup>	TOTAL LEACHATE REUSE <sup>6</sup>	TOTAL LEACHATE BALANCE <sup>7</sup>	TANK LEVEL	LEACHATE DAILY STORAGE <sup>8</sup>
	(acres)	(inches)	(gallons)	ELEVATION (inches)	CELL 1 (gallons)	ELEVATION (inches)	CELL 2 (gallons)	ELEVATION (inches)	CELL 3 (gallons)	ELEVATION (inches)	CELL 4 (gallons)	ELEVATION (inches)	CELL 5 (gallons)	(gallons)	(gallons)	(gallons)	(gallons)	(gallons)	(feet)	(gallons)
1			0.00		0		0		0		0		0	0	0	0	0	0		0
2			0.00		0		0		0		0		0	0	0	0	0	0		0
3			0.00		0		0		0		0		0	0	0	0	0	0		0
4			0.00		0		0		0		0		0	0	0	0	0	0		0
5			0.00		0		0		0		0		0	0	0	0	0	0		0
6			0.00		0		0		0		0		0	0	0	0	0	0		0
7			0.00		0		0		0		0		0	0	0	0	0	0		0
8			0.00		0		0		0		0		0	0	0	0	0	0		0
9			0.00		0		0		0		0		0	0	0	0	0	0		0
10			0.00		0		0		0		0		0	0	0	0	0	0		0
11			0.00		0		0		0		0		0	0	0	0	0	0		0
12			0.00		0		0		0		0		0	0	0	0	0	0		0
13			0.00		0		0		0		0		0	0	0	0	0	0		0
14			0.00		0		0		0		0		0	0	0	0	0	0		0
15			0.00		0		0		0		0		0	0	0	0	0	0		0
16			0.00		0		0		0		0		0	0	0	0	0	0		0
17			0.00		0		0		0		0		0	0	0	0	0	0		0
18			0.00		0		0		0		0		0	0	0	0	0	0		0
19			0.00		0		0		0		0		0	0	0	0	0	0		0
20			0.00		0		0		0		0		0	0	0	0	0	0		0
21			0.00		0		0		0		0		0	0	0	0	0	0		0
22			0.00		0		0		0		0		0	0	0	0	0	0		0
23			0.00		0		0		0		0		0	0	0	0	0	0		0
24			0.00		0		0		0		0		0	0	0	0	0	0		0
25			0.00		0		0		0		0		0	0	0	0	0	0		0
26			0.00		0		0		0		0		0	0	0	0	0	0		0
27			0.00		0		0		0		0		0	0	0	0	0	0		0
28			0.00		0		0		0		0		0	0	0	0	0	0		0
29			0.00		0		0		0		0		0	0	0	0	0	0		0
30			0.00		0		0		0		0		0	0	0	0	0	0		0
31			0.00		0		0		0		0		0	0	0	0	0	0		0
TOTALS		0.00	0		0		0		0		0		0	0	0	0	0	0		0

Number of Acres Open =  
Number of Acres Intermediate =  
Number of Acres Closed =

Notes:

1. Precipitation recorded at the CCSWDC weather station.
2. Rainfall falling into the leachate storage tank (13,275 square feet area) which is classified as leachate.
3. Based on flowmeter data, the amount of leachate pumped from the Class I landfill area to the storage tank.
4. Sum of rainfall into the storage tank and the leachate pumped from the Class I landfill & MRF.
5. Quantity of leachate pumped to WWTP based on the flowmeter at the leachate storage tank plus what is used for reuse.
6. Total leachate added to the storage tank minus the quantity pumped during a day (daily increase or decrease).
7. Quantity of leachate stored in the tank.
8. Leachate reused for dust control in landfill.
9. NR = No reading



January 14, 2010

Susan J. Pelz, P.E.  
Solid Waste Program Manager  
Southwest District  
13051 N. Telecom Parkway  
Temple Terrace, FL 33637

Subject: Sarasota County, Central County Solid Waste Disposal Complex, Phase I  
DEP Permit No. 130542-007-SO/01  
Leachate Collection System Inspection Report

Dear Susan:

Included is the subject report as required under DEP Permit No. 130542-007-SO/01.

Should you have any questions, please call me at (941) 915-3421.

Sincerely,

A handwritten signature in black ink, appearing to read "Spencer Anderson", written over a horizontal line.

Spencer Anderson, P.E.

cc: Project File  
Gary Bennett, General Manager, Solid Waste  
Lois Rose, Operations Manager, Solid Waste

Sarasota County  
Central County Solid Waste  
Disposal Complex, Phase I

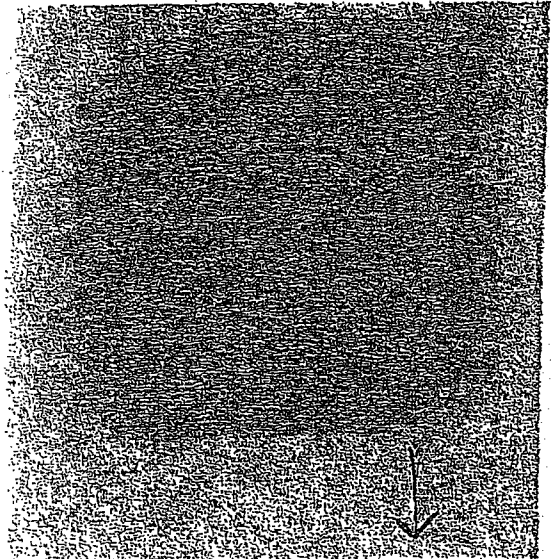
DEP Permit No. 130542-007-SO/01

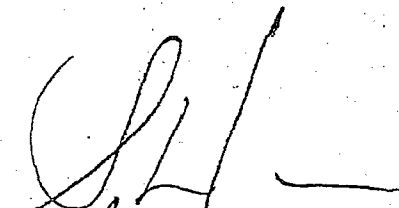
Leachate Collection System  
Inspection Report

Date: January 14, 2010



Sarasota County Solid Waste  
4000 Knights Trail Road  
Nokomis, FL 34241



  
Spencer L. Anderson, P.E.  
Certification No. 64012

**ATTACHMENT K-4211**

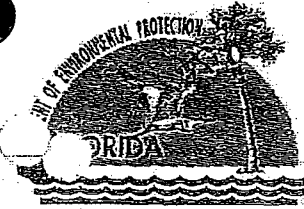
**FDEP APPROVAL LETTER FOR LEACHATE REUSE**

FILE COPY

SOLID WASTE OPERATIONS

JAN 20 2000

RECEIVED



Jeb Bush  
Governor

# Department of Environmental Protection

Southwest District  
3804 Coconut Palm Drive  
Tampa, Florida 33619

David B. Struhs  
Secretary

January 18, 2000

Mr. Gary Bennett  
Sarasota County  
Solid Waste Operations  
4000 Knights Trail Road  
Nokomis, FL 34275

Re: Leachate Reuse at SCSWDC  
Permit #S058-299180, Sarasota County

Dear Mr. Bennett:

The Department has no objection to the reuse of leachate for dust control (not re-circulation) on active areas as described in your January 12, 2000 letter and operations plan for leachate reuse via truck mounted spraying (attached), subject to the conditions in these referenced letters and attachments. The reuse of leachate for dust control at SCSWDC is considered experimental and over-application should be avoided.

If any inspections disclose problems with this leachate reuse, such as failure to maintain normal operation and prevent ponding and leachate discharge outside the active disposal area, approval may be discontinued. If you have any questions you may call me at (813) 744-6100, extension 382.

Sincerely,

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

KBF/ab  
Attachments

cc: Paul Wingler, P.E., Sarasota County  
Robert Butera, P.E., FDEP Tampa  
Steve Morgan, FDEP Tampa



**SARASOTA COUNTY**  
"Dedicated to Quality Service"

SOLID WASTE OPERATIONS

JAN 20 2000

RECEIVED

**D.E.P.**  
JAN 14 2000  
Southwest District Tampa

January 12, 2000

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

Re: Central County Solid Waste Disposal Complex  
Leachate Reuse

Dear Mr. Ford:

Our Contract Landfill Operator, Waste Management has requested leachate reuse as a dust control agent. They have submitted the attached "Operations Plan for Leachate Reuse via Truck Mounted Spraying" which outlines their proposed activity.

We would require the following additional conditions if the proposed activity is acceptable to the Department.

- a) Leachate reuse is subject to the acceptance of the Sarasota County Solid Waste Operations Manager or his designee and will be suspended or terminated at his discretion.
- b) The leachate reuse management system will operate to prevent the exposure of leachate to the stormwater control network.
- c) The truck used for leachate hauling must be thoroughly cleaned before being used for any other watering purpose.
- d) The truck tank must be free of leaks. If a leak is discovered the truck must be decommissioned for the purpose of repair.
- e) Use of the leachate for dust control must not result in ponding within the authorized operation area of the landfill cell(s).

Sincerely,

Gerald L. Bennett  
Solid Waste Operations Manager

GLB:lh

Attachment

- c: Anita Largent, General Manager, Solid Waste  
Stephen Barton, WM/Englewood Disposal Company  
Robert J. Butera, P.E., Florida Department of Environmental Protection, Tampa  
Ed Norris, Sarasota Landfill Management

\\CCSWDAVOL1\USER\shared\project\Central County Solid Waste Disposal Complex\Landfill Operator\Correspondence\FDEP K. Ford - Leachate Reuse.doc

SOLID WASTE OPERATIONS

JAN 20 2000

RECEIVED

Sarasota County Central Solid Waste Disposal Complex  
Procedures for Leachate Reuse  
Operator: Sarasota Landfill Management

December 6, 1999

SOLID WASTE OPERATIONS

JAN - 4 2000

RECEIVED

Operations Plan for Leachate Reuse via Truck Mounted Spraying

Leachate reuse will be employed for dust control and as a supplemental method to manage leachate. The reuse of leachate involves spraying small quantities of leachate from a spray bar mounted on the rear of a tank-truck onto active fill areas of the landfill. This approach has been used successfully at numerous Class I landfills in Florida. The advantages of this method are the reduction of leachate by evaporation, the promotion of the decomposition of organic matter in the landfilled refuse and dust control.

The landfill operation crew will monitor the rate of leachate application, soil moisture conditions and the specific landfill areas used so that leachate application does not generate run-off. This form of leachate reuse should be acceptable as a supplementary means of leachate management. Leachate may be applied under the following conditions:

- Leachate may only be sprayed on active, bermed fill areas, including the working face, and areas with the required six (6) inches of initial cover.
- Leachate may not be sprayed on areas with intermediate or final cover.
- At all times areas receiving leachate must be controlled to prevent run-off from entering the stormwater system.
- Leachate may not be sprayed when the application area is in a saturated condition.
- The application rate of leachate should be such that leachate does not accumulate on the landfill surface, nor infiltrate quickly into the covered refuse.
- Leachate should not be sprayed at the end of the day on the initial cover of the working face or other areas. Spraying should be done early in the morning after any dew evaporates and continue until early afternoon or until all available areas have been utilized.

The Site Manager will record daily the gallons of leachate sprayed per this method and provide this information to the County on a weekly basis. Leachate reuse will be conducted in strict compliance with these procedures.

**ATTACHMENT K-1312**

**LANDFILL RECYCLING PLAN**



## **ATTACHMENT K-1312**

### **LANDFILL RECYCLING PLAN**

Sarasota County Solid Waste Operations (SWO) segregates the following materials at the Central County Solid Waste Disposal Complex (CCSWDC) for the purpose of recycling these materials:

- Yard Wastes
- White Goods (i.e., household appliances)
- Waste Tires
- Construction and Demolition Wastes
- Batteries
- Waste Oil
- Lawn Mowers
- Electronic Devices

The procedures for managing each of these materials are presented below:

#### **YARD WASTES**

Yard wastes are brought to the CCSWDC as segregated loads, either from residential collection vehicles or commercial landscaping contractors. Yard waste loads are directed to the yard waste composting area located south of the Phase I Class I Landfill Area. New yard waste loads are deposited in a designated area of this site.

Bagged yard waste shall not be mulched at the site unless the bags are removed prior to mulching.

The incoming yard waste is stored in a pile until such time that enough material is accumulated to begin processing. Yard waste processing includes size reduction via a tub grinder and screening of the size reduced materials.

Once processing is completed, the resulting yard waste mulch is either placed into windrows for composting or is used by the landfill operations as erosion control and road stabilizing material. The composted material is used on site as a replacement for soil.

Any unprocessed yard trash will be removed from the facility within six months, or within the period required to accumulate 3,000 tons or 12,000 cubic yards, whichever comes first. Processed yard trash will be removed or marketed within 18 months. Yard waste shall be managed in accordance with the facility's yard waste processing facility registration and Rule 62-709.320, F.A.C.

## WHITE GOODS

White goods are separated from the waste stream at the point of collection or at the working face of the landfill. White goods are stored in the northeast corner of the yard waste composting area. White goods containing fluids are stored in an upright position until the fluids are removed or the item is picked up for removal from the site. Refrigerants are removed from the items on-site by a contractor licensed to perform this function. White goods that have had fluids and/or refrigerant removed from them will be clearly marked.

The white goods are periodically collected by a steel recycler who transports the materials to a facility that recycles the materials into new steel products.

A maximum of 1,250 (total) white goods and lawn mowers may be stored at the site at any time. The white goods shall be removed from the site at least monthly (every 30 days).

## WASTE TIRES

Waste tires are delivered to the CCSWDC in segregated loads. In addition, waste tires are pulled from the working face of the landfill. The waste tires are stored at the Waste Tire Processing Facility located east of the Yard Waste Composting Area. The Waste Tire Processing Facility is permitted by FDEP for storage and processing of waste tires.

Currently the contracted landfill operator is ~~removing processing waste tires from at the site for processing off-site disposal~~. ~~The tires are shredded and then processed for use in new products.~~ Waste tires ~~may also be~~ are processed ~~on site~~ to produce tire chips for use as an alternate daily cover material or as a drainage media for the ~~proposed Phase II~~ leachate recirculation trenches.

Waste tire shall be managed in accordance with Permit NO. 126775-002003-WT/02.

## CONSTRUCTION AND DEMOLITION WASTE

Construction and Demolition (C&D) wastes are delivered to the CCSWDC in segregated loads. A specialized contractor operates a permitted C&D waste processing facility located at the CCSWDC, south of the Waste Tire Processing Facility. The contractor screens and sorts C&D waste and resells lumber, cardboard, concrete, and roofing shingles to various users or distributors of these materials.

The maximum quantities of C&D wastes that may be stored at the site, and the schedule for removal from the site, shall be as required under Waste Processing Facility Permit No. 134912-004-SO/31.

## BATTERIES

Waste lead-acid batteries are removed from the working face of the landfill and temporarily stored at the Maintenance building on spill containment pallets. The storage area is under a roof and protected from rainfall.

Periodically the waste batteries are collected by a battery recycling company and the various components, mainly lead, are recovered for use in new products.

A maximum of 30 lead acid batteries may be stored on-site at any time. Lead acid batteries shall be removed from the site at least monthly (every 30 days).

#### **WASTE OIL**

Waste oil is collected by the solid waste franchise hauler and delivered to the CCSWDC for temporary storage until collected by a waste oil recycler. The waste oil is stored at the Citizens Convenience Center until collected by the recycler.

Two 250-500 gallon containers are provided for storage of waste oil at the Citizens Convenience Center. Waste oil shall be removed from the site at least monthly (every 30 days).

#### **LAWN MOWERS**

Lawn mowers are accepted at the CCSWDC provided that all fluids have been drained. Lawn mowers are managed as white goods. After inspection for fluids, mowers are stored in the white goods area until collected by the white goods recycling contractor.

#### **ELECTRONIC DEVICES**

Undamaged television sets, computer and monitors are collected for recycling and stored on a concrete pad until collected and removed from the site by a recycling contractor.

A maximum of 1,000 electronic devices may be stored at the site at any time. Electronics, either damaged or undamaged, shall be removed from the site at least monthly (every 30 days).

**ATTACHMENT K-4413**

**PHASE I OPERATION DRAWINGS**

**REVISED STAGING PLAN AND SECTIONS SHEETS**

**(SHEETS C-07 THROUGH C-11 AND FILL SEQUENCING SHEET 45)**

**(Under Separate Cover)**

**ATTACHMENT K-4514**

**LFGCCS OPERATION AND MAINTENANCE PLAN**



Sarasota County  
Solid Waste Operations

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## Central County Solid Waste Disposal Complex LFGCCS Operations and Maintenance Plan

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**OPERATIONS AND MAINTENANCE PLAN  
LANDFILL GAS COLLECTION AND CONTROL SYSTEM  
SARASOTA COUNTY CCSWDC**

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**1 INTRODUCTION**

This Operations and Maintenance Plan (O&M Plan) has been prepared to summarize steps necessary to operate and maintain the Gas Collection and Control System (gas system) at the Central County Solid Waste Disposal Complex (CCSWDC) in Sarasota County, Florida. This O&M Plan is an integral part of the development and successful operation of the gas system. Therefore, a copy of this plan must be maintained with the CCSWDC records. This document is to be an attachment to the existing Operations Plan for the site.



**OPERATIONS AND MAINTENANCE PLAN  
LANDFILL GAS COLLECTION AND CONTROL SYSTEM  
SARASOTA COUNTY CCSWDC**

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## **2 FACILITY DESCRIPTION**

### **2.1 Location and Description**

The CCSWDC is a multi-function solid waste management facility which includes Class I waste disposal, construction and demolition (C&D) waste processing facility, yard waste mulching, household hazardous waste storage and processing, and storage of tires, white goods and other bulky waste materials for processing off-site by private firms. The CCSWDC was opened in 1998 and has been owned by Sarasota County and operated under the direction of the Sarasota County Solid Waste Operations Unit. The majority of waste received at the CCSWDC is mixed garbage and trash, which requires disposal in a permitted Class I waste disposal facility.

### **2.2 Gas Extraction and Control System Description**

The gas system is designed to collect landfill gas generated within the existing Landfill at the CCSWDC as the waste decomposes. The landfill gas is collected at a proposed on-site landfill gas control facility where it will be flared.

In the absence of active control measures, positive gas pressure builds up within the landfill through the anaerobic decomposition of the waste materials, which produces primarily methane (typically 40-50%) and carbon dioxide (typically 50-60%). If not relieved, pressure within the landfill can force these gases to move laterally below the ground and eventually into the atmosphere, potentially causing hazardous conditions to develop in underground and/or above ground structures on and off the CCSWDC site. The gas system helps relieve the positive pressure by applying a vacuum throughout the landfill. The gas is then conveyed to a control unit, located near the southeast corner of the Landfill.

The vertical gas extraction wells are drilled into the landfill to a depth equivalent to two-thirds of the waste depth and leaving a minimum 15 foot buffer between the base liner and the bottom of the well. The wells are designed to be perforated below grade to extract gas from each level of the landfill, and include a slip-coupling to help negate the effects of settlement on the extraction wells. Additional detailed information on the gas wells and the rest of the gas system design is available in the Engineering Report submitted with the FDEP application document.

The active gas system incorporates strategically placed valves and cross lateral pipelines to provide a degree of flexibility and control in the application of vacuum at the extraction wells. Therefore, the vacuum can be selectively applied based upon actual gas generation at specific gas extraction points. The placement of the valves in the network of collection pipelines allows for sections of the gas system to be segregated for maintenance while the remainder of the system is operated.

While the gas system is operating, the change in temperature of the landfill gas results in the precipitation of moisture, which produces condensate within the gas system pipelines. The condensate from the gas system flows by gravity through the gas collection pipelines into condensate sumps and knock-out pots

where the moisture is allowed to drop out from the gas. From the sumps and knock-out pots, the condensate flows by gravity or is pumped to the existing leachate management system for removal from the site.

# **OPERATIONS AND MAINTENANCE PLAN LANDFILL GAS COLLECTION AND CONTROL SYSTEM SARASOTA COUNTY CCSWDC**

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## **3 Operation Procedures**

### **3.1 General**

In general, a constant vacuum is applied from the gas control unit to collect the landfill gas from the landfill. The vacuum can be adjusted at each extraction location to either collect more or less gas, based on the quality of the gas collected. At each gas collection location (i.e. wells), methane, carbon dioxide, and oxygen concentrations are measured on a regular basis. As the concentrations of these parameters change due to landfill and environmental conditions at the site (i.e. age of waste, moisture content, cover material, etc.), the vacuum is adjusted to ensure concentrations stay within permitted ranges. The initial vacuum values indicated in this report are rules of thumb, and should only be used as a starting point. The only way to accurately determine the vacuum needed for any given well is to take readings at each well and adjust the vacuum accordingly. These procedures are further described in this O&M Report.

Vacuum adjustments throughout the gas system can be made by adjusting the valves at each wellhead and at various locations on the pipeline. By adjusting the valves to increase or decrease the applied vacuum, the gas system can be balanced and the maximum amount of gas can be collected without pulling air into the waste, which would diminish anaerobic decomposition and increase the potential for landfill fires. To assist with system balancing and verify efficient operation of the gas extraction system, the following will be measured and recorded:

- Gas flow rates at each wellhead and to the gas control unit;
- Methane, carbon dioxide, oxygen, and balance gas concentrations at each wellhead and at the gas control unit;
- Vacuum at each wellhead; and
- Gas temperature at each wellhead

Initially, to balance the gas system, daily measurements will be necessary. As the system begins to stabilize and the built up gas stored in the landfill is removed, measurements may be taken less frequently. To maintain a balanced system once the system is stabilized, weekly well measurements of the vacuum, the gas temperature, and the methane, carbon dioxide, oxygen, and balance gas concentrations should be performed. Periodic gas flow rates at the wells must be recorded so that the correlation between the vacuum applied and the gas flow rate can be established for each well.

The amount of vacuum applied at each well will vary through time and is influenced by many factors, including the type of landfill cover. The typical values indicated below are used in the landfill gas industry and are suggested as a starting point in conjunction with validation or adjustment of this vacuum based on readings at each well for oxygen and methane concentrations. Typically, the vacuum applied at exterior gas extraction wells should be approximately 1 to 3 inches of water column to provide adequate gas control and avoid excessive air infiltration along the landfill slope. The vacuum that can typically be

applied to interior gas extraction wells is 3 to 7 inches of water column without producing excessive air infiltration. Some experimentation will be required to find the proper vacuum to apply to these wellheads.

As a starting point, the valves should be nearly closed at the wellheads and opened slightly until the gas readings are within the required ranges. In this way, excessive air infiltration into the gas system can be avoided. The required ranges for each constituent of the landfill gas are discussed in the following sections.

### **3.2 Gas Readings**

Gas readings for oxygen, carbon dioxide, and methane are commonly measured at wells using instruments such as the Landtec GEM500 and GEM2000. These instruments only measure percentages of methane, oxygen and carbon dioxide. The remaining percentage of gas is the "balance gas". Typically the balance gas is nearly all nitrogen, and the terms balance gas and nitrogen, are sometimes used interchangeably when talking about landfill gas.

The concentration of these various gases at each wellhead is the primary indicator of how much vacuum should be applied at each gas collection location. Landfill gas typically contains approximately 40%-50% methane and 50%-60% carbon dioxide, with trace amounts of other non-methane organic compounds (NMOCs).

- If the concentration of methane is high at a particular wellhead (>50%), then the volume of gas at that location may be greater than what is currently being collected, and the vacuum applied should be increased.
- If the concentration of methane is less than 45%, the concentration of oxygen is above 1%, or the balance gas concentration is above 12%, excessive air may be entering the landfill. The vacuum should be decreased and the location should be monitored again later that same day. If the conditions have not changed, or have gotten worse, the vacuum will be shut off at that gas collection point until an evaluation of the cause of the variance can be performed, and the issue corrected, as necessary.

### **3.3 Vacuum Readings**

The vacuum readings are used to develop an understanding of the relationship between the flow rate and the vacuum applied. By measuring and recording the gas flows and vacuums at each well during various weather conditions, some trends related to the gas collection on the landfill can be observed. Drastic changes in these trends, such as reduced flow or a sudden spike in oxygen or balance gas, could be an indicator that there is a problem with the gas collection system (i.e. leak or blockage in a header pipe, water in the out well, etc.) or an issue with the landfill itself (i.e. air filtration, landfill fire, diminishing gas production, etc.). Closer evaluation of the operation of the gas system is warranted if drastic changes occur in the operational trends of the system.

### **3.4 Temperature Readings**

The temperature of the landfill gas at each wellhead can be an indicator of the amount of air infiltrating into the landfill. The temperature at a wellhead should remain relatively constant. If the temperature at a well increase sharply or exceeds 130° degrees Fahrenheit, excessive air may have infiltrated into the landfill, especially if the concentration of methane has decreased and/or balance gas has increased. An

elevated temperature reading at a well requires immediate attention, since over time this situation increases the possibility of a landfill fire. The well should be shut down and an evaluation of the condition around the well should be performed as soon as practical after the elevated temperature reading is recorded. Corrective actions should be performed based on the results of the evaluation.

### **3.5 Isolation Valves**

Valves are located at several locations throughout the header system to provide the ability to isolate portions of the gas system for maintenance or repair. Through the use of these valves, portions of the gas system can be shut down while other portions remain in operation. When portions of the system are isolated, the balance of vacuum to the wells can be affected, and must be monitored closely to ensure that excessive vacuum is not applied to the individual wells.

Additionally, individual wells can be shut down by closing the valve on the wellhead. This can be useful when conducting preventative maintenance or making repairs to individual wells.

### **3.6 Condensate Collection**

Condensate is a by-product of the extraction of gases from the landfill. At the pressure and temperature inside the body of the landfill, gases are typically saturated with moisture. Once released or extracted, these gases are subject to different environmental conditions (i.e. lower temperature and pressure) that result in condensation within the gas collection system.

If not properly managed, condensate can accumulate to the extent where it disrupts the flow of landfill gas from the landfill by blocking pipes. To avoid this problem, all gas collection header pipelines are designed to allow the condensate to flow to the condensate collection structures prior to entering the gas control unit. Condensate forming in the wells is pumped in to condensate return lines installed with the header and lateral pipes. The condensate return lines then pump or gravity drain condensate to the leachate collection system or to condensate drop-out structures which then gravity drain or pump condensate to the leachate collection system.

Pipelines off of the landfill are designed to have a minimum one percent (1%) slope and pipelines on the landfill are designed with a minimum five percent (5%) slope, to allow for settlement. Pipes will be installed at a slope greater than these minimum requirements wherever possible to allow easier transmission of the condensate. Additionally, the pipes have been sized to allow the condensate to flow without affecting the gas flow capacity of the pipelines.

At the peak gas flow and maximum temperature change, it is estimated that less than a maximum of about 7,962 gallons per day (gpd) of condensate could be generated in the gas system (see the Engineering Report of the FDEP permit application document). The actual amount of condensate generated by the gas system will be dependent on system operations and seasonal temperatures, but should be less than 7,962 gpd. The condensate collected at the gas control unit is designed to drain into condensate collection structures which then drain or pump the condensate to the existing leachate collection system.

### **3.7 System Start-Up**

The gas system start-up must be conducted carefully to maximize gas flow and prevent excessive vacuum at the gas extraction points. The system must be gradually balanced by adjusting the valves at the

wellheads. Initially, the wellhead valves should be adjusted according to their distance from the gas control unit. Greater vacuum will be available at the wells nearer to the facility, and the valves on these wells should be opened less than the valves further away on the opposite side of the hill. In all cases, the wells should only be opened slightly at first, and should be monitored and adjusted daily until the readings stabilize on the landfill.

The monitoring of the wells will include measurements of methane, carbon dioxide, oxygen, balance gas, pressure, temperature, and flow rate. These readings will be utilized to make vacuum adjustments at the wellheads to balance the system.

### **3.8 System Performance Testing**

Once the gas system is operational and has been balanced to a steady state of gas collection, performance testing is necessary to ensure the proper operation of the system and to troubleshoot potential problems. Performance testing is an essential component in the efficient and safe operation of the gas system. Performance testing must be conducted routinely, and the results recorded in a permanent logbook and digitally in a spreadsheet or similar program. Weekly measurements of the following parameters should be made at the wellheads:

- Temperature
- Vacuum
- Methane concentration
- Carbon dioxide concentration
- Oxygen concentration
- Balance gas concentration

Weekly measurements of the following parameters should be made at the inlet of the gas control unit:

- Gas flow rate
- Temperature at the knockout pot
- Methane concentration
- Carbon dioxide concentration
- Oxygen concentration
- Balance gas concentration

The following sections describe performance testing in more detail.

### **3.9 Gas Component Measurements**

The measurements of the following gas components at the wellheads are the principal parameters used to balance the gas system:

- Methane concentration
- Carbon dioxide concentration
- Oxygen concentration
- Balance gas concentration

Measurements of these components at the wellheads should be conducted at least weekly and as often as daily during initial system start-up and balancing. The concentrations of these gases should also be determined at the following locations at the gas control unit:

- The knockout pot inlet
- The blower inlet
- The control equipment

The methane production at each gas extraction point (i.e. wellhead) will change over time, requiring periodic adjustments in the vacuum applied to maintain optimal system efficiency.

Landfill gas typically contains approximately 40%-50% methane and 50%-60% carbon dioxide. If the concentration of methane is high at a particular point, then the volume of gas at that location may be greater than the gas being collected and the vacuum applied should be increased by slightly increasing the valve opening. If the concentration of methane is 45% or less, excessive air may be entering the landfill and the vacuum should be decreased at that wellhead by slightly closing the valve, while monitoring the gas flow rate. The gas quality will not change immediately after opening or closing the valve and must be measured the next day to assure accurate methane concentrations.

The oxygen concentrations should be less than 1% at the wellheads, while the balance gas should remain below 12%. Oxygen greater than 1% and/or balance gas levels above 12% may indicate air leaks in the wellfield components or excessive vacuum on extraction wells. If the data indicates that atmospheric air is entering the system, the cause must be evaluated by performing diagnostic readings and observations at the wellheads and access ports to determine the likely source. A diagnostic approach includes measuring and comparing gas component concentrations at the wellhead, lateral, and the main header line.

Visual, auditory, touch, and olfactory senses may be helpful in isolating wellfield air leaks. Leaks can sometimes be heard (hissing) or smelled ("the rotten egg" smell associated with hydrogen sulfide). However, smelling or hearing gas leaks does not replace regular gas monitoring as a way to determine if there are leaks in the gas system. Air leaks in a gas collection system are typically first noticed when a sudden spike in oxygen or balance gas is observed in the gas monitoring results.

### **3.10 Temperature Measurements**

Weekly measurements of temperature must be used in conjunction with the gas component measurements to determine the positioning of the wellhead valves. The temperature of the landfill gas at each collection point can be used as an indication of air infiltration into the landfill. The temperature at a wellhead should remain relatively constant and in no case reach 130° degrees Fahrenheit. If the temperature at a wellhead increases sharply, excessive air may have infiltrated into the landfill, especially if the concentration of methane has decreased. This situation indicates an increased possibility of a landfill fire and requires immediate attention.

If elevated temperatures are observed at any well, it should be shut down and monitored for carbon monoxide, a common by-product of combustion activities such as landfill fires. Nearby wells should also be monitored for carbon monoxide to ascertain if subsurface activities are occurring in the area. A carbon monoxide concentration of 100 parts per million (ppm) is generally a good indication that a subsurface

oxidation event (i.e. landfill fire) is occurring. Wells with elevated carbon monoxide readings should be shut down and monitored regularly until the readings are reduced.

In the event that carbon monoxide readings do not decrease, or increase and spread to other wells, the proper authorities, as listed in Section 6.0, will be notified of a potential landfill fire. Other signs of landfill fires are visible smoke, open flames, burning odors, wells that have melted, or subsidence of the landfill in localized areas. Excavation around the problem area should NOT be performed, since this would introduce additional fuel (oxygen) to the fire.

### **3.11 Vacuum Measurements**

Vacuum (negative pressure) measurements indicate the amount of vacuum being applied at each gas collection point. Weekly measurements (in inches of water column) should be taken during system balancing at the wellheads, the inlet to the knockout pots, and the blower inlet and outlet. The results of the vacuum measurements could indicate possible problem conditions at these locations. Reduced wellhead vacuum may be indicative of a blocked lateral pipe or of a blocked or broken header pipe if the decreased vacuum occurs at two or more well locations. Isolated low vacuum conditions may be alleviated by repeatedly closing and opening the valve, thus surging the well. In many cases, a minor blockage can be alleviated by surging, followed by re-adjusting the flow to the established optimal performance level.

### **3.12 Flow Rate Measurements**

The flow rates measured in the gas system are used to determine individual well performance, and overall system performance. During initial system balancing, the flow rate must be measured weekly and more often when valve positions are changed. Typical well performance will be evident over time at each location. If the flow rate drops at a particular collection point, a blockage in the well or lateral line may exist.

Due to a build up of gases within the landfill, the flow rates of the system will be greater when the system is first operated or turned on after a system shut down. Once this positive pressure is eliminated and the system is balanced, the gas collection will equalize and remain relatively constant. Once the system is stabilized, flow rate measurements can be performed on a monthly basis, instead of weekly.

### **3.13 Water Level/Well Depth Measurements**

In some cases, perched water within a landfill can cause an extraction well to clog with water. This is not expected to occur at this site since the cover soil materials used in the past have been fairly permeable and each well is installed with a pneumatic pump. However, if blockage of an extraction well is suspected for any reason, a water level measurement should be taken to make sure that the well is not filled with water.

In cases where the performance of an extraction well deteriorates over time, water level measurements can be used to determine if water within a well is covering the perforate section of the well screen and inhibiting the free flow of gas to the well. An electronic water level indicator will be used for this purpose. Well depth measurements will be used to check for well blockages due to sediments from the waste. Even partial blockages of a well can affect its ability to effectively extract gases. Water level and depth measurements should be performed promptly at wells where a blockage due to liquid or sediments is suspected.



The following procedure will be followed to measure the water level and total depth at the gas extraction wells.

1. Close the valve on the wellhead of the well being measured.
2. Remove the well cap or wellhead as necessary.
3. Turn on the water level indicator and lower the probe down the well until the instrument signals.
4. Determine the top of the water by slowly raising and lower the probe and observing the point at which the instrument signals relative to the well measuring point. Read the graduated scale on the instrument cable to the nearest 0.1 feet and record the reading in the logbook.
5. Determine the total well depth by slowly lowering the water level probe (turned to off) to the well bottom. Record the depth at which the probe can no longer be lowered.
6. Determine the length of perforated well pipe collecting gas by performing the following calculations: Subtract the depth to water from the total depth of the well to obtain the height of water within the well. Subtract the height of water within the well from the as-built total length of the perforate pipe to obtain the length of perforated pipe collecting gas.

Remedial actions for blockages in extraction wells due to excessive liquids or sediments will be determined on a case by case basis and can range from no action to installation of a permanent pump in the well. The decision on whether remedial action is necessary will be based on various factors, such as the location and past productivity of the well, and proximity of the well to gas migration pathways from the landfill.

### **3.14 Blower Maintenance**

The blower system provides the vacuum that draws the landfill gas from the extraction wells, through the header piping, and through the condensate collection equipment. The blower system also pushes the gas into the engine. Therefore, it is essential to the overall system performance that the blower system is functioning properly. Some of the more common maintenance items are listed below.

1. Bearing and motor lubrication.
2. Valve operation.
3. Pipe and valve leak detection
4. Tightness of connectors that could vibrate loose.
5. Electrical connections.

### **3.15 Condensate System Maintenance**

The condensate drop-out structures act as moisture separators and allow any condensate that collects in the gas collection pipeline to fall out from the gas and be collected separately. As the gas enters the drop-out structure or knockout pot, it slows down and allows moisture to drop out and/or collect on baffles or mesh screens. The condensate then flows by gravity or is pumped to the existing leachate management system.

The condensate drop-out structures preceding the knockout pot prior the blower at the gas processing unit allows a majority of the condensate to drop out of the gas collection system before it reaches the gas control unit. The condensate then flows through a vacuum trap/sump to avoid applying a vacuum to the existing leachate collection system. As condensate builds up in the trap/sump, it will reach the outlet

elevation and drain to the leachate collection system. The drop-out structures are also designed for the temporary storage of condensate. This storage allows the gas system to continue to operate if the condensate flow to the leachate management system is interrupted for a short period of time.

Knockout pots typically incorporate a sight glass that allows observation of the level of condensate within the structure. Condensate should not build up within the knockout pot during normal operations. If condensate accumulates in the knockout pot, then the outlet of the knockout pot must be cleaned. If the vacuum required to pull the gas through the knockout pot increases over time, then the baffles within the knockout pot should be cleaned. An increase in the vacuum required to draw the landfill gas through the knockout pot is a good indicator that maintenance is required.

### **3.16 Gas Extraction Wellhead Maintenance**

During the routine performance monitoring, the following will be conducted at each wellhead in addition to the monitoring previously described:

1. Check valve operation.
2. Observe piping, valves, and fittings for leakage.
3. Check the well and pipelines for accumulated liquid and repair, as necessary.
4. Check borehole seal and the condition of the landfill surface around the well.

The wellheads shall be operated and maintained in accordance with the manufacturer's specifications and operational instructions. If any problems are found at the wellheads, wells, or nearby pipeline, repairs shall be initiated at that time, if possible. If the repairs require the use of additional materials, equipment, or labor, the Solid Waste Operations Manager shall be notified and the materials, equipment, and/or labor shall be made available to perform the repairs. In any case, all repair activities shall be recorded in a logbook and on the well data spreadsheet prepared by the wellfield operator.

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LANDFILL GAS COLLECTION AND CONTROL SYSTEM  
SARASOTA COUNTY CCSWDC**

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**4 CONDENSATE MANAGEMENT PLAN**

Condensate will be conveyed through the gas collection system and collected at condensate drop-out structures located through out the gas collection system and also at the knockout pot prior to the blower at the gas control unit. The condensate will be drained from the condensate collection trap/sump and gas control unit into the existing leachate collection system for disposal. Condensate will be collected for sampling from the condensate drop out structure located just prior to the knock out pot at the Landfill Gas Control Unit.

According to calculations performed for this site, about 7,962 gallons per day of condensate is expected to be collected from the gas system during peak gas generation (year 2054). This equates to only about 5.5 gallons per minute from the entire gas collection system. This minimal amount of condensate from the gas system will not significantly impact the operations of the leachate collection and storage system, even at peak discharge.

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**5 STAFFING PLAN**

The gas system will require only routine maintenance once it is operating and balanced. Personnel assigned to the gas system will be principally concerned with routine system performance monitoring and maintenance. One technician should be devoted for approximately 8 hours per week to these duties. Additional manpower may be necessary for the initial balancing of the system. The startup, operation, and maintenance work associated with the gas system will be managed and directed by Sarasota County Solid Waste Operations Unit. Operational data and results of monitoring will be compiled on a monthly basis, and more often for non-routine issues, as necessary. Any modifications, major repairs, or operational problems prior to performing any activities on the landfill shall be reported to the Solid Waste Operations Manager.

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LANDFILL GAS COLLECTION AND CONTROL SYSTEM  
SARASOTA COUNTY CCSWDC**

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## **6 CONTINGENCY PLAN**

### **6.1 Fire Control**

**Please refer to the Attachment K2 of the Operations Plan for the Landfill, as this attachment pertains solely for the Operations and Maintenance of the Landfill Gas Collection and Control System.**

As with any emergency, the first thing to do is to immediately notify the proper emergency response team. In case of FIRE, immediately notify the Fire Department through the emergency phone number 991. Remember, if you are calling from a phone, ~~which that~~ is connected to the County's switchboard, phone system you must dial 49-911 to reach the emergency operator.

If the office or one of the scale houses is open, you can contact them by radio for your emergency, and they will be able to place the necessary phone call.

Be sure to SPEAK SLOWLY, DISTINCTLY, DELIBERATELY, and remain as calm as possible. Briefly tell the person to whom you are reporting the emergency the following:

- The nature of the emergency;
- Any injuries or persons involved; and
- Where the emergency is located.

If there are injuries, you should render whatever assistance you can without endangering yourself. ~~Use the First Aid and/or CPR training you have learned to assist where necessary. If possible, evacuate any person or equipment that may be endangered.~~ An Automatic Defibrillator (AED) for CPR emergencies is located in the Landfill Administration Office.

The gas collection and control system will be shut down in the event of a fire at the gas control unit or on the landfill.

In the event of small fires, the use of a fire extinguisher may be sufficient to contain the fire until the arrival of the Emergency Responders. Fire extinguishers ~~are~~ can be found in every Solid Waste Operations Division vehicle, and on every machinepiece of heavy equipment, and in buildings located throughout the landfill site. ~~In the event of larger fires, a 4000-gallon water tanker and the pressure washer trailer is available for fighting fires.~~ Landfill fires can be very dangerous due to the presence of methane, a combustible gas. Fire fighting by onsite personnel should only be attempted against relatively small and controllable fires.

Upon arrival of the Emergency Responders, you should take whatever steps necessary to assist.

In the event of fire in the landfill, it may be necessary to smother the fire using available dirt from the dirt stockpiles located at the landfill. In this case, the Manager of the landfill shall make immediate provisions

to provide that earth cover. Also, the procedures described in Section K.11.e of the Operations Plan shall be followed.

Procedures for handling fires must be posted at an appropriate location on-site and must include names and telephone numbers of authorities to be called during an emergency. The FDEP's Southwest District, Solid Waste Section, and local police and fire departments must be notified whenever and fire, smoldering, or smoking materials are discovered at the site. Any activities shall be suspended in the vicinity of smoldering, smoking, or burning areas. Any disruption of the finished grade or covered surface as a result of fire-fighting activities must be repaired or replaced immediately upon termination of the fire-fighting activities.

## **6.2 Wellfield Repairs**

Over time, damage to the wellfield components of the gas collection system will occur due to aging equipment, accidental damage during landfill operations, or due to weather conditions. Damage to the wellheads or collection pipelines will usually result in fluctuations of the gas readings at the wellheads and/or at the gas control unit. Based on the gas monitoring results from the wellfield, the problem areas will be identified and repaired as quickly as possible after the problem is observed. Under normal conditions, broken seals or disconnected wellheads will not cause enough disruption to the gas concentrations to require the engines and collection system to shut down. The valve on the wellhead can be shut off to minimize air infiltration into the gas system. Then, repairs can be made at the well while the collection system continues to operate.

However, if the damage to the collection system is substantial enough to make the gas from the landfill unusable in the flare (due to high oxygen or low methane concentrations), the gas control unit will be shut down until repairs can be made. When the gas control unit is shut down, gas will not be allowed to vent to the atmosphere through the gas collection system where the final cover system has been installed. In the event that the gas control unit is shut down for an extended period of time, the kanaflex hose at each well head will be disconnected. The control valve for each well head will also be fully turned to the open position. In areas where the final cover system has not been installed, landfill gas will vent to the atmosphere. Prior to bring the gas control unit online the kanaflex hose should be reconnected at each well head. Once gas control unit is brought back online, the gas system will need to be balanced as provided Section 3.2.

The main valve at the gas processing unit, located prior to the blowers, will automatically close if the gas control unit is shut down for any reason (maintenance, power outage, severe weather, engine malfunction, etc.). This is the only valve that will be closed during shutdowns. Shutting the main valve effectively contains the gas in the collection system, since the system is closed off from the atmosphere. Gas can and will build up in the gas collection system on the landfill side of the closed valves, as well as in the landfill. Excess gas will vent to the atmosphere through the landfill and well field as it does today without the gas system in place, until the system is brought back online.

The gas system has been designed with a loop system to allow the collection of gas from a majority of the landfill, even when one section is isolated and closed for repairs. This is accomplished by shutting off valves on the main headers and laterals to isolate sections of pipeline from the vacuum applied to the system. If sections of pipe are to be isolated in this way for an extended period of time, such as a day or

more, gas readings should be taken at each well and the wellheads adjusted accordingly, since the vacuum will be distributed differently through the collection system.

### **6.3 Condensate Collection**

A condensate drop-out structure located prior to the gas control unit has been designed into the system to collect as much condensate as possible before the gas enters the gas control unit. The condensate drop-out is designed to hold as much as 200 gallons of condensate as a contingency, in case blockages or other problems occur in the condensate drainage system.

### **6.4 Natural Disasters**

The County's Hurricane Preparedness manual will serve as the emergency procedures for hurricanes and other natural disasters. Additionally, in the event that the site is evacuated, the gas collection and processing systems will be shut down and the area will be secured. Any items that could become windborne and cause damage to structures, equipment, or emergency personnel will be secured.

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SARASOTA COUNTY CCSWDC**

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## **7 CONSTRUCTION PLAN**

### **7.1 Documentation**

During construction, careful documentation must be maintained by the contractor and verified by an experienced construction inspector. The information to be gathered as the system is constructed includes the following:

- Extraction well locations and construction details, including borehole logs and well construction diagrams for all gas extraction wells (existing and proposed);
- Pipe sizes and types;
- As-built pipe and appurtenance locations, elevations, and slope verifications;
- Pressure testing of installed solid pipes at 10 psi for one hour (no drop in pressure allowed);
- Documentation of installation, operation, and maintenance procedures for all items supplied by the contractor; and
- As-built drawings for all materials installed.

At the completion of the construction phase of the project, a professional engineer's certification must be submitted to the FDEP in accordance with F.A.C. 62-701.310(9)(a).

### **7.2 Construction Contingency Plan**

### **7.3 Health and Safety**

Performing construction work on and around a landfill requires adherence to certain precautionary measures to ensure the safety of all workers. The contractor must develop and maintain a Health and Safety Plan that meets or exceeds minimum regulatory requirements and procedures. The contractor must have supervisory personnel on-site to monitor construction activities and to assess the environmental condition of the workspace. The personnel will be responsible for establishing the hazard level of the workspace and establishing hazard level classifications for different areas of the site for the contractor.

Since the project involves excavation of landfill cover materials and previously deposited solid wastes, the progress of the work should be observed to provide an indication of potential problems. The excavations should be limited to a depth necessary to install the structures and provide the desired slope on the piping systems.

Workers must undertake all necessary safety precautions and comply with all provisions of federal, state, and local safety laws, regulations, and codes to prevent accidents and injury to personnel in the vicinity of the work area.



The contractor must inform his personnel that the construction site is a landfill and that inherent dangers exist. Workers must be required to utilize appropriate personnel protective devices and to observe safe working practices. Smoking is strictly prohibited at the work site.

Workers must be advised of the hazards associated with the work to be accomplished. Of particular concern are physical hazards associated with heavy equipment and excavations, and hazards of landfill gasses including methane, carbon dioxide, hydrogen sulfide, volatile organics, and any other known or suspected gas or vapor which may be encountered. Precautions must be taken based upon known or suspected hazards.

The contractor must designate a Site Health and Safety Officer. The Health and Safety Officer should be trained in the use of gas detection instruments, safety equipment, and health and safety procedures associated with the work conducted. The Health and Safety Officer should be present at all times when construction work is being conducted and periodically monitor the atmosphere within the breathing zone of the workers. At a minimum, the Health and Safety Officer should monitor the concentration of oxygen, the percent of the lower explosive limit for methane, and hydrogen sulfide.

Welding will not be permitted in trenches or other enclosed spaces unless properly performed over ground mats and approved by the Health and Safety Officer.

As construction progresses, valves, pipe, and other openings must be closed as soon as possible after installation to prevent gas migration through the pipeline network and to prevent foreign material from entering.

Excavation and boreholes greater than two feet in depth may not be left unattended unless covered. Storm water must be prevented from entering excavation and boreholes. Extreme caution must be exercised if manholes or other types of vaults must be entered. Confined space entry procedures must be strictly adhered to. Fire extinguishers rated at least A, B, and/or C should be readily available at the work area.

Construction equipment should be equipped with vertical exhaust and spark arrestors. Spark arrestors may not be required if motors are powered by diesel fuel. Motors used in excavated areas should be explosion proof. Start up and shut down of equipment should be conducted outside of excavations. Soil stockpiles should be situated in the vicinity of work areas for fire fighting purposes. Refuse excavated during construction will be containerized or disposed of at the active landfill face and covered by the end of the day with at least six inches of soil.

The Contractor shall comply with Safety and Health Regulations for Construction, promulgated by the Secretary of Labor under Section 107 of the Contract Work Hours and Safety Standards Act, as set forth in Title 29, C.F.R. Copies of these regulations may be obtained from Labor Building, 14<sup>th</sup> and Constitution Avenue N.W., Washington, DC 20013.

The Contractor shall also comply with the provisions of the Federal Occupational Safety and Health Act, as amended.

#### **7.4 Spoils Disposal and Handling**

Spoils from excavation areas below the final cover and in areas where final cover has not been installed must be treated and handled as solid waste. This means all special handling procedures associated with

normal landfill operations must be adhered to and all necessary protective clothing (hard hats, coveralls, gloves, etc.) should be worn by working personnel.

The spoils must be inspected as they are removed from the excavation to assess workspace conditions and to assure proper management of the spoils. Spoils that are deemed inappropriate for disposal at the active face of the landfill must be segregated and containerized. The FDEP and local fire department must be notified upon the discovery of suspected hazardous materials prior to arranging for proper off-site disposal.

Spoils from the construction activities on the landfill which are comprised of municipal solid wastes must be taken from the working area to the active face of the landfill, on an as needed basis, but at least daily. During well drilling activities, spoils will be brought to the active face frequently and mixed with new waste materials. This is done to help minimize the affects of odors associated with the older waste.

### 7.5 Emergency Situations

All personnel working on the landfill must be informed of the location of the closest medical facility and the telephone numbers for the local police and fire departments, and the local ambulance service. A list of emergency telephone numbers is provided below.

Ambulance Service	911
Police Department	911
Fire Department	911
Solid Waste Operations Manager	(941) 861-1589
Lois Rose	cell (941) 650-0722
CCSWDC Administration Building	(941) 861-1573
Main Switchboard Sarasota County Government	(941) 861-5000
Dept. of Environmental Protection Southwest District	(813) 632-7600

**Remember, if you are calling from a phone, which is connected to the County's switchboard, you must dial 9 then 911 to reach the emergency operator.**

### 7.6 System Decommissioning

The gas system can be relatively easily decommissioned if the system sustains irreparable damage or the gas system is no longer needed to manage gases from the landfill. To safely and properly decommission the gas system, the following tasks will be performed.

1. Shut down the gas control unit and appurtenant equipment.
2. Open the in-line control valve at each gas well to allow gases still in the gas system to passively vent to the atmosphere and relieve residual pressure in the system.
3. Locate the inlet pipe to the blower. Once located, this pipe will be cut and sealed.
4. Measurements will be taken to be sure the location can be re-established in the future.
5. Disassemble and remove the gas processing equipment.

6. Disassemble yard piping at the gas control unit. Remove the gas processing equipment from the support base as needed for salvage or disposal.
7. Remove the disassembled equipment from site for salvage or disposal.
8. If gas collection is no longer necessary, reconstruct gas wellhead assemblies to allow passive venting.

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## **8 ENVIRONMENTAL MONITORING**

### **8.1 Landfill Gas Sampling and Testing**

Additional source testing may be performed after the gas system is operational, to characterize the quality of the gas generated by the landfill. This testing is different than the routine monitoring of the wellheads and the inlet of the gas control unit discussed in Section 3.3, which includes taking readings for temperature, methane, oxygen, carbon dioxide and balance gas. The objective of this testing is to monitor the constituents and combustibility of the landfill gas at the inlet to the gas control unit. Testing could include measuring the concentration of volatile organic compounds, nitrogen, hydrogen sulfide, other sulfides, siloxanes, and other parameters, as necessary.

### **8.2 Condensate Sampling and Testing**

Condensate samples will be taken at the locations and frequencies specified in the CCSWDC Operations Permit. The samples will be analyzed by a Florida certified laboratory for the parameters specified in the permit.

**ATTACHMENT K-4615**

**TEMPORARY GAS VENT INFORMATION**



ONE COMPANY | Many Solutions<sup>SM</sup>

September 16, 2009

Mr. Steve Morgan  
Florida Department of Environmental Protection  
Southwest District  
13051 N. Telecom Parkway  
Temple Terrace, FL 33637

**Re: Central County Solid Waste Disposal Complex (CCSWDC)  
Phase II Expansion  
Permit No.: 130542-006-SC/01  
Bottom Liner Temporary Gas Vent Installation**

Dear Steve:

As requested during our phone conversation earlier today, this letter discusses the proposed installation of temporary gas vents within a portion of the Phase II landfill expansion area. Areas near the Cell 2/Cell 3 interface of Phase II have exhibited gas bubbles accumulating beneath the recently installed bottom liner system. The gas pressure has led to visible lifting of portions of the protective cover over the liner system. Several of the locations have been already been vented and repaired, however, the gas generally accumulates again after the repairs are made. Analysis of the gas indicates it is naturally occurring methane and not landfill gas.

The attached sketch illustrates the proposed temporary vent design and installation instructions. The vents consist of short lengths of perforated 4-inch diameter polyethylene pipe inserted beneath the liner system and connected to a riser pipe with a tee. The riser pipe will extend 2 feet above the protective cover soil and will be perforated above the protective cover soil to allow the gas to escape. An 18-inch diameter section of open-ended polyethylene pipe will be centered over the vent to protect it. Currently we estimate a maximum of approximately 6 vents will be installed although we hope this number can be reduced based on field observations after the initial vents are installed.

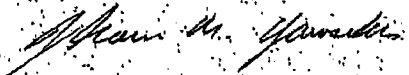
The vents will be removed prior to the placement of waste in the area. CQA will be provided during vent removal to verify that all pipes are removed, all geosynthetic layers are properly patched, and that a minimum of 2-feet of protective cover soil is placed over the patched area.

We understand that you will require a minor modification for the temporary gas vent installation. Since the geosynthetics installer is going to be demobilizing from the site very soon, we would appreciate your expedited review of this proposal so the County can install the vents without incurring a remobilization charge.

Please do not hesitate to contact us if you have any questions during your review.

Sincerely,

HDR Engineering, Inc.

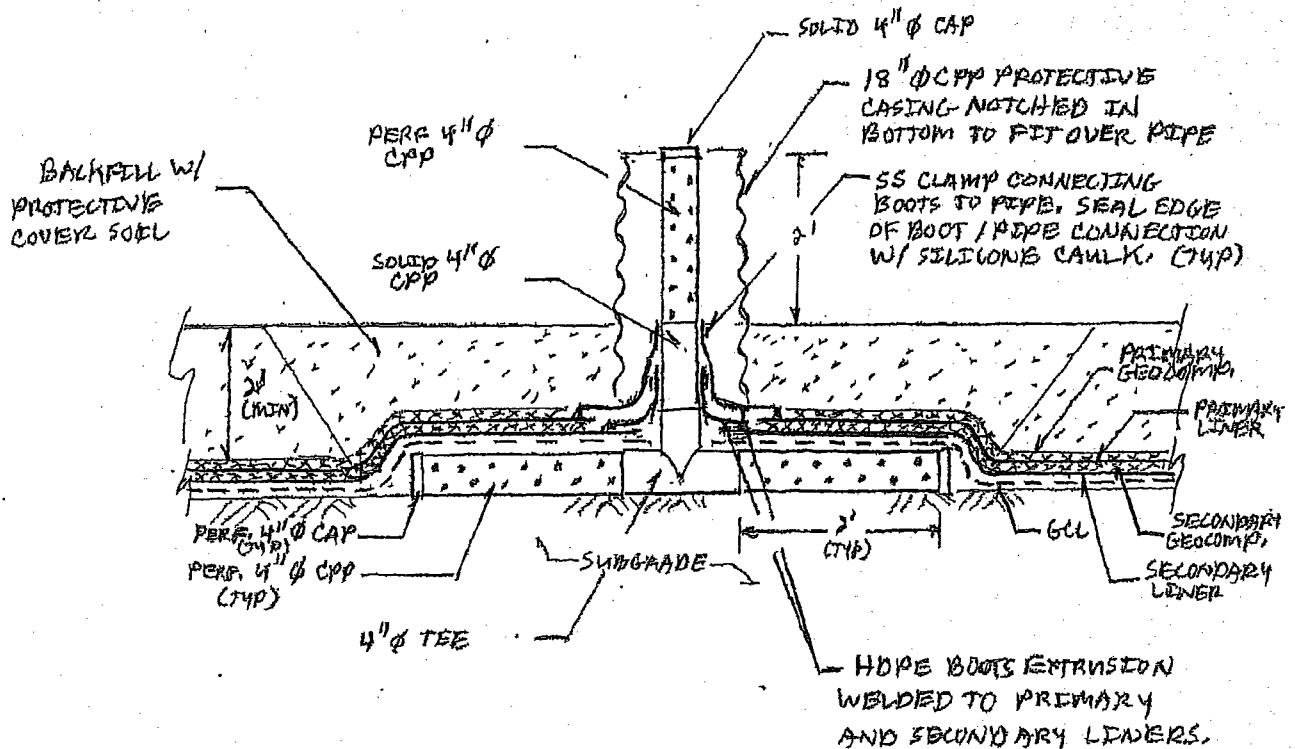


Thomas M. Yanoschak, PE, BCEE  
Senior Project Manager

Enclosures as noted.

cc: Gary Bennett, Sarasota County  
Frank Coggins, Sarasota County  
Spencer Anderson, Sarasota County  
Jack Gibson, Sarasota County  
Rich Stiemering, HDR  
Joe Readling, HDR

Project:	CCSWDC	Computed:	THY	Date:	9/10/09
Subject:	Phase II	Checked:		Date:	
Task:	Gas Vent	Page:	1	of:	2
Job #:		No:			



### TEMPORARY GAS VENT DETAIL

NTS.

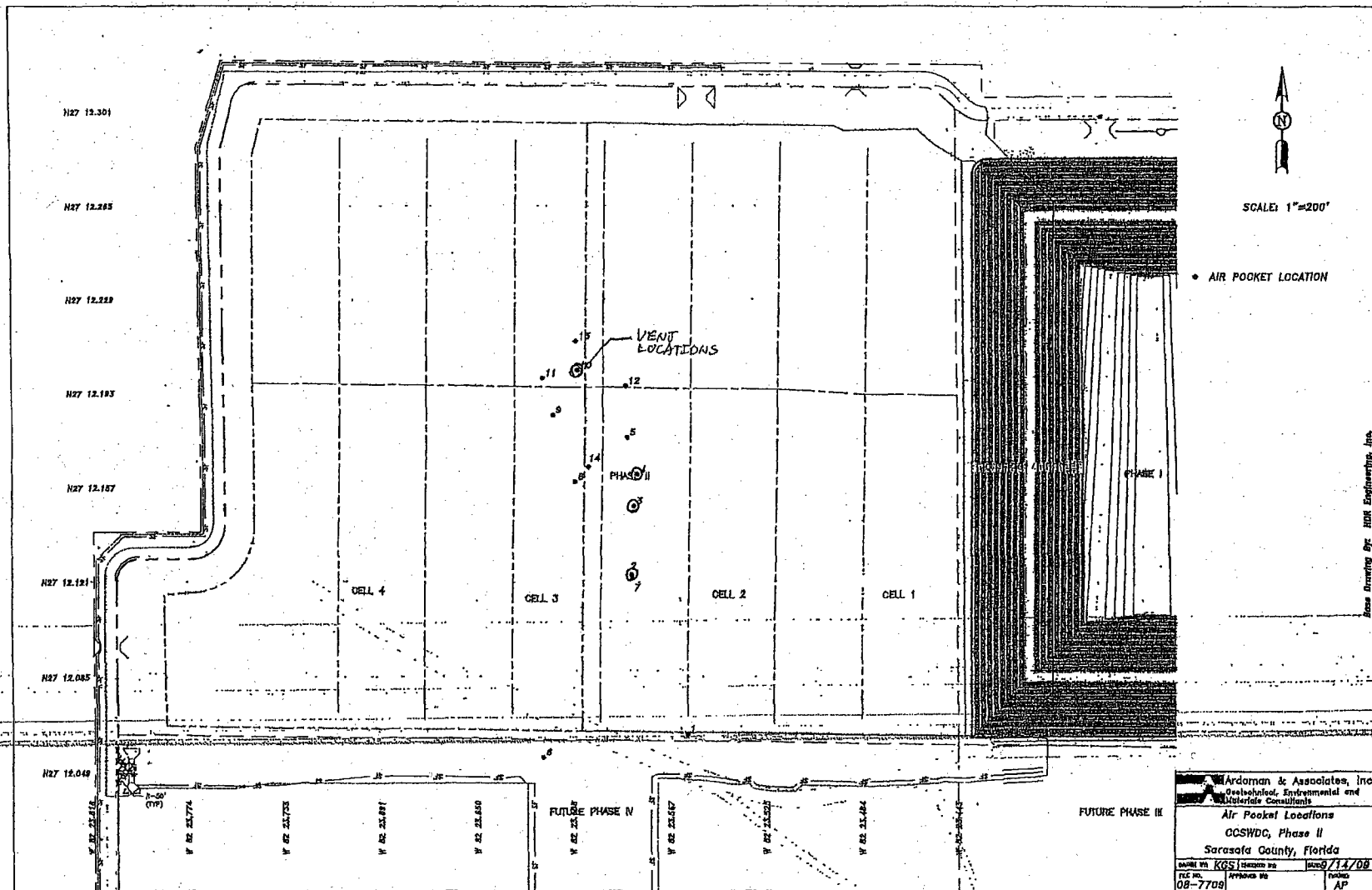
NOTE: ALL PIPE AND BOOTS TO BE REMOVED, GEOSYNTHETICS REPAIRED, AND MIN. 2' PROTECTIVE COVER SOIL REPLACED PRIOR TO THE PLACEMENT OF WASTE WITHIN OR NEAR THE VENT AREA.



Project:	Computed:	Date:
Subject:	Checked:	Date:
Task:	Page: 2	of: 2
Job #:	No:	

TEMPORARY GAS VENT CONSTRUCTION SEQUENCE

- ①. EXCAVATE PROTECTIVE COVER SOIL TO EXPOSE MIN. 2' X 5' OF PRIMARY GEOCOMPOSITE OVER GAS BUBBLE.
- ②. CUT APPROX. 12" Ø HOLE THROUGH EACH LAYER OF GEOSYNTHETICS AT CENTER OF EXPOSED AREA.
- ③. INSERT 2-2' LENGTHS OF PERFORATED 4" Ø CPP W/ CAPS ON FAR ENDS BETWEEN GCL AND SUBGRADE PER DETAIL.
- ④. INSERT 4" Ø CPP TEE THROUGH HOLE IN GEOSYNTHETICS AND CONNECT PERFORATED PIPE TO TEE PER DETAIL. ORIENT SIDE-OUT OF TEE VERTICAL.
- ⑤. CONNECT APPROX. 1.5' LENGTH OF SOLID 4" Ø CPP TO SIDE-OUT OF TEE.
- ⑥. FABRICATE BOOT EXTRUSION WELDED TO SECONDARY HDPE LINER AND CONNECTED TO VERTICAL PIPE W/ SS CLAMP AND SEALED W/ SILICONE CAULK.
- ⑦. FABRICATE BOOT EXTRUSION WELDED TO PRIMARY HDPE LINER AND CONNECTED TO VERTICAL PIPE SAME AS ABOVE.
- ⑧. CONNECT PERFORATED 4" Ø CPP TO VERTICAL SOLID PIPE TO EXTEND APPROX. 2' ABOVE PROTECTIVE COVER SOIL. ATTACH SOLID CAP TO END OF PIPE.
- ⑨. CENTER 18" Ø CPP PROTECTIVE CASING OVER VERTICAL PIPE. NOTCH OUT BOTTOM OF CASING TO FIT OVER BOOTS/PIPE.
- ⑩. BACKFILL OVER PIPE AND AROUND PROTECTIVE CASING W/ MIN. 2' OF PROTECTIVE COVER SOIL.



**ATTACHMENT K-1716**  
**RAIN COVER SPECIFICATION**

1  
2

**SECTION 02780**  
**GEOSYNTHETIC RAIN COVER**

3 **PART 1 - GENERAL**

4 **1.1 DESCRIPTION**

- 5 A. Furnish all labor, materials, tools, and equipment, and perform all work and services necessary  
6 for or incidental to the furnishing and installation, complete, of an impermeable, geosynthetic  
7 rain cover as shown on Drawings and specified in accordance with provisions of the Contract  
8 Documents.
- 9 B. Related Sections include but are not necessarily limited to:  
10 1. Section 02220 - Earthwork.  
11 2. Section 02221 - Trenching, Backfilling, and Compacting for Utilities.

12 **1.2 QUALITY ASSURANCE**

- 13 A. Refer to the following standard references or specifications as applicable to this section of  
14 technical specifications:  
15 1. American Society for Testing and Materials (ASTM).  
16 a. ASTM D751 - Standard Test Method for Coated Fabrics.  
17 b. ASTM D4533 - Standard Test Method for Trapezoid Tearing Strength of Geotextiles  
18 c. ASTM D5199 - Test Method for Measuring Nominal Thickness of Geotextiles and  
19 Geomembranes.  
20 d. ASTM D7003 - Standard Test Method for Strip Tensile Properties of Reinforced  
21 Geomembranes.  
22 e. ASTM D7004 - Standard Test Method for Grab Tensile Properties of Reinforced  
23 Geomembranes.  
24 f. ASTM E96 - Standard Test Methods for Water Vapor Transmission of Materials.

25 **1.3 SUBMITTALS**

- 26 A. The Contractor must provide installation instructions.  
27 B. The Contractor must certify that the rain cover resin is first use; top grade quality only.

28 **PART 2 - PRODUCTS**

29 **2.1 MATERIALS**

- 30 A. 20-mil Scrim Reinforced Polyethylene Rain Cover  
31 1. The 20-mil scrim reinforced polyethylene rain cover shall consist of two sheets of high-  
32 strength polyethylene film laminated together with a third layer of molten polyethylene. A  
33 heavy scrim reinforcement shall be placed between these plies to enhance tear resistance  
34 and increase service life.  
35 2. Contractor must supply (in the Bid price) a high strength adhesive tape or equal for  
36 waterproofing and sealing the field seams and for performing repair work to the rain cover.  
37 Contractor shall minimize field seams.  
38 3. The scrim reinforced rain cover must meet the following specifications or approved equal,  
39 as determined by the Engineer.  
40  
41  
42  
43

<u>PROPERTY</u>	<u>TEST METHOD</u>	<u>SCRIM-REINFORCED TEST VALUE</u>
a. Thickness, nominal	ASTM D5199	20 mil
b. Weight		11.2 oz/yd <sup>2</sup>
c. 1" Tensile Strength	ASTM D7003	75 lbf
d. Elongation at Break	ASTM D7003	750%
e. Grab Tensile Strength	ASTM D7004	102.9 lbf
f. Trapezoidal Tear Strength	ASTM D4533	102 lbf
g. Hydrostatic Resistance	ASTM D751	136 psi
h. Perm Rating	ASTM E96 Method A	0.053 U.S.Perm
i. Water Vapor Transmission	ASTM E96 Method A	0.052 U.S. Perms

B. General Requirements

1. The rain cover must perform as specified for at least 3 years and a warranty must be supplied for at least 3 years.
2. The material must be able to be moved by site personnel as needed. The material must be resilient to damage when moved and/or relocated by site personnel. If necessary, the material may be cut for removal/relocation; however, in this case, must be able to be easily resealed by site personnel.
3. Factory seams must utilize methods that will eliminate excess overlap.
4. The rain cover must be impermeable, capable of repelling water with no absorption.
5. The material must be anchored, when installed, through a system so as to preclude wind damage, traffic damage, and weather.

### PART 3 - EXECUTION

#### 3.1 METHODS

- A. The Contractor shall deploy the GRC in a manner consistent with the manufacturer's specifications.
- B. Anchoring methods shall be as per the manufacturer's specifications or as approved otherwise by the Engineer.
- C. Any damage to the GRC during installation will be the Contractor's responsibility to repair/replace at no cost to the Owner.
- D. Field seams shall be of the strongest available method for the approved material except as required for patches or similar limited area applications.

END OF SECTION

**ATTACHMENT K-1817**

**CELLS 2, 3 AND 4 STORMWATER COLLECTION SYSTEM**

**ATTACHMENT K-1918**

**FILL SEQUENCE SHEET 45 DETAILS FOR WORKING FACE  
AND INTERMEDIATE COVER STORMWATER PIPING**