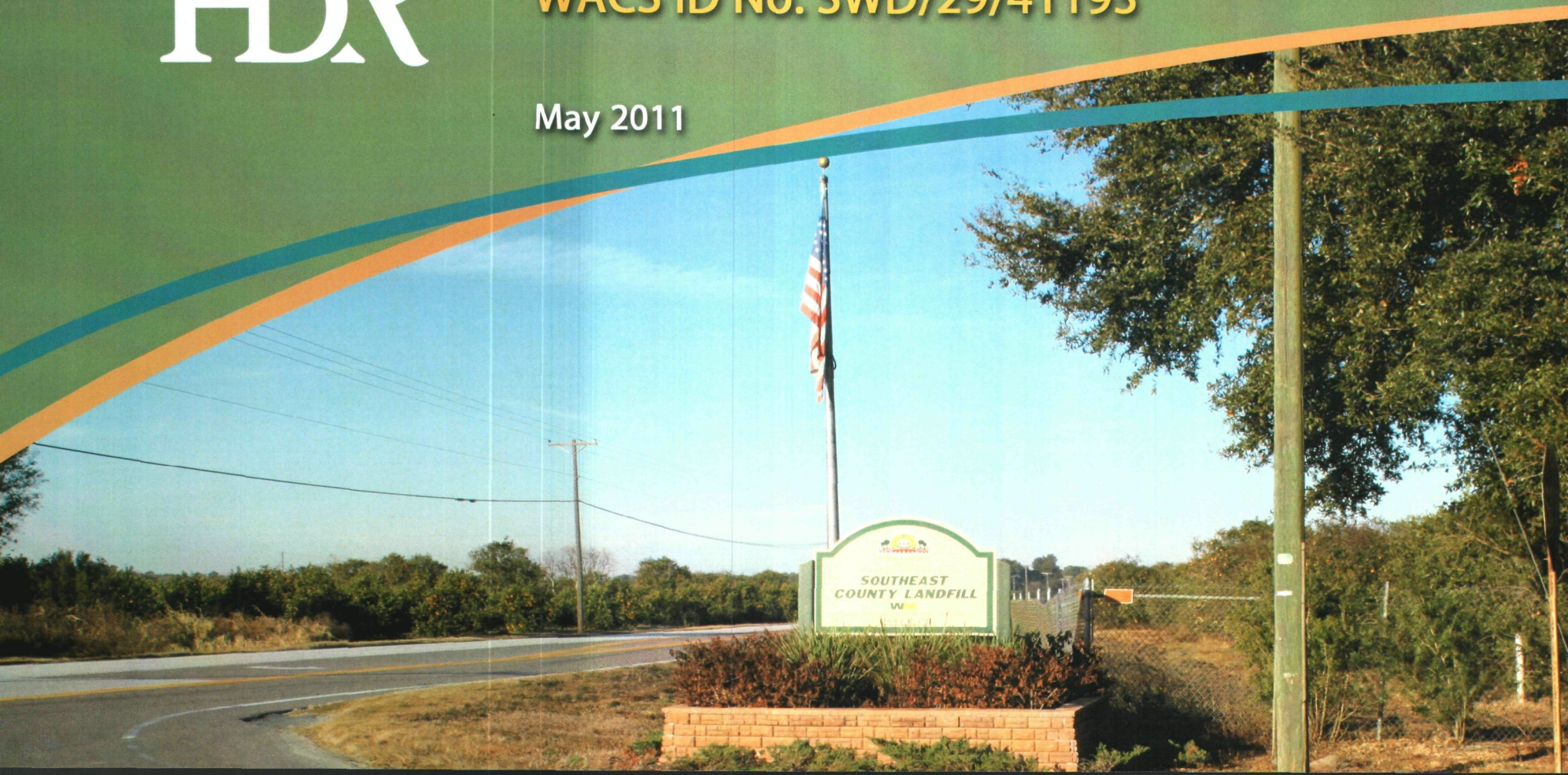


HDR

Hillsborough County Southeast County Landfill

Minor Modification Permit Application
Permit No. 35435-014-01/SO
WACS ID No. SWD/29/41193

May 2011



May 27, 2011

Ms. Susan J. Pelz, P.E.
Florida Department of Environmental Protection
Southwest District
13051 Telecom Parkway
Temple Terrace, FL 33637-0926

Subject: Southeast County Landfill
Hillsborough County, Florida
Minor Modification Permit Application
Wastewater Treatment Biosolids Disposal
Permit No.: 35435-014-01/SO
WACS No.: SWD/29/41193

Dear Ms. Pelz:

On behalf of the Hillsborough County Public Utilities Department, Solid Waste Management Group (SWMG), HDR Engineering, Inc. (HDR) is pleased to submit four copies of a Minor Modification Permit Application for the Southeast County Landfill (SCLF) to update the SCLF's Operations Plan to include disposal operations for wastewater treatment biosolids. Attached are the permit application documents which include FDEP Form 62-701.900(1) in Attachment A and the revised Operations Plan Sections L.2.c. and L.4 with tracked changes in Attachment B.

Also attached are conformed SCLF Operations and Leachate Management Plans in Attachments C and D, respectively. These conformed documents include revisions approved by the Department as part of previous permit applications and modifications as well as the revisions proposed in Sections L.2.c. and L.4 of this minor modification for the Operations Plan. Please note that the documents provided in the appendices of the Operations Plan have been updated with the most current information and to reflect changes in personnel responsibilities and/or contact information updated from the last submittal to the Department. These conformed documents are being provided with this minor modification for the Department's use and reference.

A check for the minor modification fee of \$250, required by Rule 62-4.050(4)(s), is enclosed with this application. Also enclosed is a letter authorizing Ms. Patricia V. Berry to sign and execute permit applications for solid waste facilities on behalf of the Hillsborough County Public Utilities Department, Solid Waste Management Group (SWMG). Please note that the applicant name has changed from the Hillsborough County Solid Waste Management Department (SWMD) used in previous applications; however, the applicant is the same entity. Documents and plans referenced in the current operations permit will be updated with the new applicant name (SWMG) as part of the next SCLF Operations Permit Renewal Application submittal to the Department.

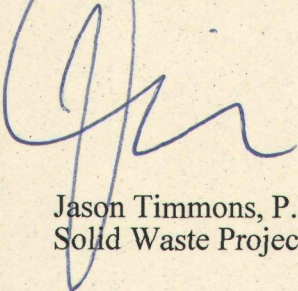
Dept. Of Environmental Protection
MAY 27 2011
Southwest District

Dept. Of Environmental Protection
MAY 27 2011
Southwest District

FILE

Please call me at 813-282-2358 if you require any clarifications or information relating to this submittal.

Sincerely,
HDR Engineering, Inc.



Jason Timmons, P.E.
Solid Waste Project Manager

Enclosures and Attachments

Cc: Patricia Berry, SWMG
Larry Ruiz, SWMG
Ron Cope, EPC



Richard A. Siemering
Solid Waste Section Manager



BOARD OF COUNTY COMMISSIONERS

Kevin Beckner
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Sandra L. Murman
Mark Sharpe

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CHIEF ADMINISTRATIVE OFFICER
Helene Marks

CHIEF FINANCIAL ADMINISTRATOR
Bonnie M. Wise

DEPUTY COUNTY ADMINISTRATORS
Lucia E. Garsys
Sharon D. Subadan

May 19, 2011

Florida Department of Environmental Protection
Southwest District
13051 North Telecom Parkway
Temple Terrace, Florida 33637-0926

FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION
MAY 27 2011
SOUTHWEST DISTRICT
TAMPA


RE: Signature Authority -- Hillsborough County Solid Waste Facilities

To Whom It May Concern:

This letter shall serve as notification that Patricia V. Berry, Hillsborough County Public Utilities Department, Solid Waste Management Group Manager, is an authorized representative of the Hillsborough County Public Utilities Department. Ms. Berry is authorized to sign and execute documents including, but not limited to, all permit applications, modifications, financial assurance documents, and other instruments related to solid waste facilities for the Hillsborough County Public Utilities Department, Solid Waste Management Group.

Should you have any questions, please contact the Public Utilities Department at (813) 272-5977 ext. 43338.

Sincerely,


Paul J. Vanderploog, Director
Public Utilities Department

xc: Rebecca Garland, Public Utilities
Patricia V. Berry, Public Utilities

RAC
PVB

HDR ENGINEERING, INC.
5426 BAY CENTER DRIVE STE 400
TAMPA, FL 33609

1208
63-1608/631

DATE 5/9/2011

PAY
TO THE
ORDER OF

Florida Department of Environmental Protection \$ 250.00

Two hundred fifty and 00/100

DOLLARS

 Security
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FOR

Kimely I got it

ATTACHMENT A

FDEP FORM 62-701.900(1)



Florida Department of Environmental Protection

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

DEP Form # 62-701.0(), 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.

FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION
MAY 27 2011
SOUTHWEST DISTRICT
TAMPA

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: | |

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: Southeast County Landfill (Permit No. 35435-014-SO/01)

5. DEP ID number: SWD/29/41193 County: Hillsborough

6. Facility location (main entrance):

8.8 miles east of US Highway 301 on CR 672

7. Location coordinates:

Section: 13,14,15,18,19,22,23,24 Township: 31S Range: 21E, 22E

Latitude: <u>27° 46' 26"</u>	Longitude: <u>82° 11' 01"</u>	(Phases I-VI)
Latitude: <u>27° 46' 39"</u>	Longitude: <u>82° 10' 34"</u>	(Sections 7,8, and 9)
Latitude: <u>27° 46' 42"</u>	Longitude: <u>82° 10' 20"</u>	(Effluent Storage Tank)

Datum: WGS 84 Coordinate Method: AutoCADD, from survey

Collected by: HDR Company/Affiliation: HDR

8. Applicant name (operating authority): Hillsborough County Public Utilities Department
Solid Waste Management Group
- Mailing address: 925 East Twiggs Street Tampa FL 33602
Street or P.O. Box City State Zip
- Contact person: Ms. Patricia V. Berry Telephone: (813) 272-5977 ext 43338
- Title: Solid Waste Management Group Manager
- berryp@hillsboroughcounty.org
E-Mail address (if available)
9. Authorized agent/Consultant: HDR Engineering, Inc.
- Mailing address: 5426 Bay Center Drive, Suite 400 Tampa FL 33609-3444
Street or P.O. Box City State Zip
- Contact Person: Jason Timmons Telephone: (813) 282-2358
- Title: Solid Waste Project Manager
- jason.timmons@hdrinc.com
E-Mail address (if available)
10. Landowner (if different than applicant): Same as Applicant
- Mailing address: _____
Street or P.O. Box City State Zip
- Contact person: _____ Telephone: _____

E-Mail address (if available)
11. Cities, towns and areas to be served:
City of Tampa, Temple Terrace, and Hillsborough County

12. Population to be served:
Current: 1,205,881 (EDR 2011 Estimate) Five-Year Projection 1,281,402 (EDR 2015 Estimate)
13. Date site will be ready to be inspected for completion: N/A
14. Expected life of the facility: N/A years
15. Estimated costs:
Total Construction: \$ N/A Closing Costs: \$ N/A
16. Anticipated construction starting and completion dates:
From: N/A To: N/A
- Expected volume or weight of waste to be received:

Yds³/day 2,200 (3,000 max) tons/day _____ gallons/day

PART B. DISPOSAL FACILITY GENERAL INFORMATION

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

This Operation Permit Minor Modification Application presents revisions to the Southeast County Landfill Operations Plan to include the disposal of municipal wastewater biosolids at the landfill.

2. Facility site supervisor: Larry E. Ruiz, AIA

Title: General Manager

Telephone: (813) 671-7707

ruizle@hillsboroughcounty.org

E-Mail address (if applicable)

3 Disposal area: Total 162.4 acres; Used 162.4 acres; Available 162.4 acres (Phases I-VI)

Disposal area: Total 34.5 acres; Used 34.5 acres; Available 34.5 acres (Sections 7,8, and 9)

4. Weighing scales used: ☒ Yes ☐ No

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

6. Charge for waste received: _____ \$/yds3 30.60 (yard waste to \$124.20 (mixed load) _____ \$/ton

7. Surrounding land use, zoning:

☒ Residential

☐ Industrial

☒ Agricultural

☐ None

☐ Commercial

☐ Other Describe

8. Types of waste received:

☒ Household

☒ C & D debris

☒ Commercial

☒ Shredded/cut tires

☒ Incinerator/WTE ash

☐ Yard trash

☐ Treated Biomedical

☐ Septic tank

☒ Water treatment sludge

☒ Industrial

☒ Air treatment sludge
☒ Agricultural
☒ Asbestos

☒ Industrial sludge
☒ Domestic sludge
☐ Other Describe

9. Salvaging permitted: ☐ Yes ☒ No

10. Attendant: ☒ Yes ☐ No

Trained operator: ☒ Yes ☐ No

11. Trained Spotters: ☒ Yes ☐ No

Number of spotters used: 1 minimum

12. Site located in: ☐ Floodplain

☐ Wetlands

☒ Other:

Upland, closed phosphate mine

13. Days of operation: Monday through Saturday

Hours of operation: 7:30AM to 5:30PM

15. Days working face covered: Monday through Saturday

16. Elevation of water table: 123.72 SHGWT ft. Datum used: NGVD 1929

17. Number of monitoring wells: 14 (Phases I-VI), 11 (Sections 7, 8, and 9)

18. Number of surface monitoring points: 5 (Phases I-VI), 6 (Sections 7, 8, and 9)

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 (Sections 7, 8, and 9 only)

☐ Single clay liner

☒ Geomembrane & composite (Sections 7, 8, and 9 only)

☐ Single geomembrane

☒ Double composite (Sections 7, 8, and 9 only)

☐ Single composite

☐ None

☐ Slurry wall

☒ Other Describe:

Phosphatic Clay, 4-18 feet thick (Phases I-VI only)

21. Leachate collection method:

- | | |
|---|--|
| <input checked="" type="checkbox"/> Collection pipes | <input checked="" type="checkbox"/> Sand layer |
| <input checked="" type="checkbox"/> Geonets (Sections 7, 8, and 9 only) | <input checked="" type="checkbox"/> Gravel layer |
| <input type="checkbox"/> Well points | <input checked="" type="checkbox"/> Interceptor trench |
| <input type="checkbox"/> Perimeter ditch | <input type="checkbox"/> None |
| <input checked="" type="checkbox"/> Other Describe: | |

Pump Station and chipped tire layer

22. Leachate storage method:

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

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 | |

Biological treatment system on-site.

24. Leachate disposal method:

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

Storage pond evaporation or spray irrigation after treatment at the on-site treatment facility.

25. For leachate discharged to surface waters:

Name and Class of receiving water:

Leachate is not discharged to surface waters.

26. Stormwater:

Collected: ☒ Yes ☐ No

Type of treatment:

Detention/Filtration

Name and Class of receiving water:

Tributary of Long Flat Creek

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

Permit No. 29-0270881-001 Section 9 and Basin C

Permit No. 29-0270881-002 Soil Recovery Area

Permit No. 29-0270881-003 Effluent/Leachate Storage Tank

Permit No. 29-0270881-004 Conceptual ERP

Permit No. 29-0270881-007 Section 10 Capacity Expansion and Stormwater Improvements

Permit No. 29-0270881-008 Housekeeping Pad

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 checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input 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"/>	Refer to Application Package _____	<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)

<input type="checkbox"/>	Refer to Application Package	<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"/>	Refer to Cover Letter	<input type="checkbox"/>	<input type="checkbox"/>	3. A letter of transmittal to the Department; (62-701.320(7)(a),FAC)
<input checked="" type="checkbox"/>	Refer to Application Package	<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"/>	Refer to Cover Letter	<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 type="checkbox"/>		<input checked="" 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"/>	Attachment C No change to Closure Plan	<input type="checkbox"/>	<input checked="" type="checkbox"/>	7. Operation Plan and Closure Plan; (62-701.320(7)(e)1,FAC)
<input checked="" type="checkbox"/>	Attachment C and Attachment D	<input type="checkbox"/>	<input type="checkbox"/>	8. Contingency Plan; (62-701.320(7)(e)2,FAC)
<input type="checkbox"/>		<input checked="" 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 checked="" type="checkbox"/>	<input type="checkbox"/>	a. A regional map or plan with the project location in relation to major roadways and population centers;
<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>	c. A site plan showing all property boundaries certified by a Florida Licensed Professional Surveyor and Mapper; and
<input type="checkbox"/>		<input checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input 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 checked="" type="checkbox"/> | <input 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 checked="" type="checkbox"/> | <input 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 checked="" type="checkbox"/> | <input 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 checked="" type="checkbox"/> | <input 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 checked="" type="checkbox"/> | <input 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 checked="" type="checkbox"/> | <input 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 checked="" type="checkbox"/> | <input type="checkbox"/> | a. Dimensions; |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | b. Locations of proposed and existing water quality monitoring wells; |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input 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 checked="" type="checkbox"/> | <input type="checkbox"/> | d. The source and type of cover material used for the landfill. |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input 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 checked="" type="checkbox"/> | <input 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 checked="" type="checkbox"/> | <input 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 checked="" type="checkbox"/> | <input 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 checked="" type="checkbox"/> | <input 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 checked="" type="checkbox"/> | <input type="checkbox"/> | 2. Landfill liner requirements; (62-701.400(3), FAC) |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | a. General construction requirements; (62-701.400(3)(a), FAC): |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input 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; |

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

PART G CONTINUED

- | | | | | |
|--------------------------|-------|-------------------------------------|--------------------------|---|
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | (2) Document foundation is adequate to prevent liner failure; |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | (3) Constructed so bottom liner will not be adversely impacted by fluctuations of the ground water; |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | (4) Designed to resist hydrostatic uplift if bottom liner located below seasonal high ground water table; |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | (5) Installed to cover all surrounding earth which could come into contact with the waste or leachate. |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | b. Composite liners; (62-701.400(3)(b),FAC) |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | (1) Upper geomembrane thickness and properties; |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | (2) Design leachate head for primary LCRS including leachate recirculation if appropriate; |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | (3) Design thickness in accordance with Table A and number of lifts planned for lower soil component. |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | c. Double liners; (62-701.400(3)(c),FAC) |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | (1) Upper and lower geomembrane thicknesses and properties; |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | (2) Design leachate head for primary LCRS to limit the head to one foot above the liner; |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | (3) Lower geomembrane sub-base design; |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | (4) Leak detection and secondary leachate collection system minimum design criteria ($k \geq 10$ cm/sec, head on lower liner ≤ 1 inch, head not to exceed thickness of drainage layer); |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | d. Standards for geosynthetic components; (62-701.400(3)(d),FAC) |

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

PART G CONTINUED

☒ _____ ☒ ☐

(1) Factory and field seam test methods to ensure all geomembrane seams achieve the minimum specifications;

☐ _____ ☒ ☐

(2) Geomembranes to be used shall pass a continuous spark test by the manufacturer;

☐ _____ ☒ ☐

(3) Design of 24-inch-thick protective layer above upper geomembrane liner;

☐ _____ ☒ ☐

(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.

☐ _____ ☒ ☐

(5) HDPE geomembranes, if used, meet the specifications in GRI GM13 and LLDPE geomembranes, if used, meet the specifications in GRI GM17;

☐ _____ ☒ ☐

(6) PVC geomembranes, if used, meet the specifications in PGI 1104;

☐ _____ ☒ ☐

(7) Interface shear strength testing results of the actual components which will be used in the liner system;

☐ _____ ☒ ☐

(8) Transmissivity testing results of geonets if they are used in the liner system;

☐ _____ ☒ ☐

(9) Hydraulic conductivity testing results of geosynthetic clay liners if they are used in the liner system;

☐ _____ ☒ ☐

e. Geosynthetic specification requirements; (62-701.400(3)(e),FAC)

☐ _____ ☒ ☐

(1) Definition and qualifications of the designer, manufacturer, installer, QA consultant and laboratory, and QA program;

☐ _____ ☒ ☐

(2) Material specifications for geomembranes, geocomposites, geotextiles, geogrids, and geonets;

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

PART G CONTINUED

☒ _____ ☒ ☐

- (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

<input checked="" 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 checked="" type="checkbox"/>	<input type="checkbox"/>	3. Leachate collection and removal system (LCRS); (62-701.400(4),FAC)
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	a. The primary and secondary LCRS requirements; (62-701.400(4)(a),FAC)
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	(1) Constructed of materials chemically resistant to the waste and leachate;
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	(2) Have sufficient mechanical properties to prevent collapse under pressure;

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

PART G CONTINUED

- | | | | | |
|-------------------------------------|-------|-------------------------------------|--------------------------|--|
| <input checked="" type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | (3) Have granular material or synthetic geotextile to prevent clogging; |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | (4) Have method for testing and cleaning clogged pipes or contingent designs for rerouting leachate around failed areas; |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | b. Other LCRS requirements; (62-701.400(4)(b) and (c),FAC) |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | (1) Bottom 12 inches having hydraulic conductivity $\geq 1 \times 10^{-3}$ cm/sec; |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | (2) Total thickness of 24 inches of material chemically resistant to the waste and leachate; |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | (3) Bottom slope design to accommodate for predicted settlement and still meet minimum slope requirements; |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input 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

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.

5. Leachate storage tanks and leachate surface impoundments; (62-701.400(6), FAC)

a. Surface impoundment requirements; (62-701.400(6)(b), FAC)

(1) Documentation that the design of the bottom liner will not be adversely impacted by fluctuations of the ground water;

(2) Designed in segments to allow for inspection and repair as needed without interruption of service;

(3) General design requirements;

(a) Double liner system consisting of an upper and lower 60-mil minimum thickness geomembrane;

(b) Leak detection and collection system with hydraulic conductivity ≥ 1 cm/sec;

(c) Lower geomembrane placed on subbase ≥ 6 inches thick with $k \leq 1 \cdot 10^{-5}$ cm/sec or on an approved geosynthetic clay liner with $k \leq 1 \cdot 10^{-7}$ cm/sec;

(d) Design calculation to predict potential leakage through the upper liner;

(e) Daily inspection requirements and notification and corrective action requirements if leakage rates exceed that predicted by design calculations;

(4) Description of procedures to prevent uplift, if applicable;

(5) Design calculations to demonstrate minimum two feet of freeboard will be maintained;

(6) Procedures for controlling vectors and off-site odors.

S **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 checked="" 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 checked="" type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	(4) Inspection reports available for department review.
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	d. Schedule provided for routine maintenance of LCRS; (62-701.400(6)(e), FAC)
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	6. Liner systems construction quality assurance (CQA); (62-701.400(7), FAC)
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	a. Provide CQA Plan including:
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	(1) Specifications and construction requirements for liner system;
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	(2) Detailed description of quality control testing procedures and frequencies;
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	(3) Identification of supervising professional engineer;
<input checked="" type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/> | <input type="checkbox"/> | (5) State qualifications of CQA professional engineer and support personnel; |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | (6) Description of CQA reporting forms and documents; |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input 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 checked="" type="checkbox"/> | <input type="checkbox"/> | 8. Surface water management systems; (62-701.400(9),FAC) |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input 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 checked="" type="checkbox"/> | <input 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 checked="" type="checkbox"/> | <input type="checkbox"/> | c. Details of stormwater control design including retention ponds, detention ponds, and drainage ways; |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 9. Gas control systems; (62-701.400(10),FAC) |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input 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 checked="" type="checkbox"/> | <input 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 checked="" type="checkbox"/>	<input type="checkbox"/>	1. Submit a hydrogeological investigation and site report including at least the following information:
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	a. Regional and site specific geology and hydrogeology;
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	b. Direction and rate of ground water and surface water flow including seasonal variations;
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	c. Background quality of ground water and surface water;
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	d. Any on-site hydraulic connections between aquifers;
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>	f. Description of topography, soil types and surface water drainage systems;
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>	h. Identify and locate any existing contaminated areas on the site;
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/> a. Description of subsurface conditions including soil stratigraphy and ground water table conditions;
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/> b. Investigate for the presence of muck, previously filled areas, soft ground, lineaments and sink holes;
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/> c. Estimates of average and maximum high water table across the site;
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/> d. Foundation analysis including:
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/> (1) Foundation bearing capacity analysis;
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/> (2) Total and differential subgrade settlement analysis;
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/> (3) Slope stability analysis;
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input 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)

S	LOCATION	N/A	N/C	
<input type="checkbox"/>	Attachment C	<input type="checkbox"/>	<input checked="" 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"/>	Attachment B and C	<input type="checkbox"/>	<input type="checkbox"/>	2. Provide a landfill operation plan including procedures for: (62-701.500(2), FAC)
<input type="checkbox"/>	Attachment C	<input type="checkbox"/>	<input checked="" type="checkbox"/>	a. Designating responsible operating and maintenance personnel;
<input type="checkbox"/>	Attachment C	<input type="checkbox"/>	<input checked="" type="checkbox"/>	b. Emergency preparedness and response, as required in subsection 62-701.320(16), FAC;
<input checked="" type="checkbox"/>	Attachment B and C	<input type="checkbox"/>	<input type="checkbox"/>	c. Controlling types of waste received at the landfill;
<input type="checkbox"/>	Attachment C	<input type="checkbox"/>	<input checked="" type="checkbox"/>	d. Weighing incoming waste;
<input type="checkbox"/>	Attachment C	<input type="checkbox"/>	<input checked="" type="checkbox"/>	e. Vehicle traffic control and unloading;
<input type="checkbox"/>	Attachment C	<input type="checkbox"/>	<input checked="" type="checkbox"/>	f. Method and sequence of filling waste;
<input type="checkbox"/>	Attachment C	<input type="checkbox"/>	<input checked="" type="checkbox"/>	g. Waste compaction and application of cover;
<input type="checkbox"/>	Attachment C	<input type="checkbox"/>	<input checked="" type="checkbox"/>	h. Operations of gas, leachate, and stormwater controls;
<input type="checkbox"/>	Attachment C	<input type="checkbox"/>	<input checked="" type="checkbox"/>	i. Water quality monitoring.
<input type="checkbox"/>	Attachment C	<input type="checkbox"/>	<input checked="" type="checkbox"/>	j. Maintaining and cleaning the leachate collection system;
<input type="checkbox"/>	Attachment C	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	Attachment C	<input type="checkbox"/>	<input checked="" type="checkbox"/>	4. Describe the waste records that will be compiled monthly and provided to the Department annually; (62-701.500(4),FAC)
<input type="checkbox"/>	Attachment C	<input type="checkbox"/>	<input checked="" type="checkbox"/>	5. Describe methods of access control; (62-701.500(5),FAC)

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

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

PART K CONTINUED

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

<input checked="" type="checkbox"/>	Attachment C	<input type="checkbox"/>	<input checked="" type="checkbox"/>	11. Equipment and operation feature requirements; (62-701.500(11),FAC)
<input type="checkbox"/>	Attachment C	<input type="checkbox"/>	<input checked="" type="checkbox"/>	a. Sufficient equipment for excavating, spreading, compacting and covering waste;
<input type="checkbox"/>	Attachment C	<input type="checkbox"/>	<input checked="" type="checkbox"/>	b. Reserve equipment or arrangements to obtain additional equipment within 24 hours of breakdown;
<input type="checkbox"/>	Attachment C	<input type="checkbox"/>	<input checked="" type="checkbox"/>	c. Communications equipment;
<input type="checkbox"/>	Attachment C	<input type="checkbox"/>	<input checked="" type="checkbox"/>	d. Dust control methods;
<input type="checkbox"/>	Attachment C	<input type="checkbox"/>	<input checked="" type="checkbox"/>	e. Fire protection capabilities and procedures for notifying local fire department authorities in emergencies;
<input type="checkbox"/>	Attachment C	<input type="checkbox"/>	<input checked="" type="checkbox"/>	f. Litter control devices;
<input type="checkbox"/>	Attachment C	<input type="checkbox"/>	<input checked="" type="checkbox"/>	g. Signs indicating operating authority, traffic flow, hours of operation; disposal restrictions.
<input type="checkbox"/>	Attachment C	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	Attachment C	<input type="checkbox"/>	<input checked="" type="checkbox"/>	13. Additional record keeping and reporting requirements; (62-701.500(13),FAC)
<input type="checkbox"/>	Attachment C	<input type="checkbox"/>	<input checked="" type="checkbox"/>	a. Records used for developing permit applications and supplemental information maintained for the design period of the landfill;
<input type="checkbox"/>	Attachment C	<input type="checkbox"/>	<input checked="" type="checkbox"/>	b. Monitoring information, calibration and maintenance records, copies of reports required by permit maintained for at least 10 years;
<input type="checkbox"/>	Attachment C	<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"/>	Attachment C	<input type="checkbox"/>	<input checked="" 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>LOCATION</u>	<u>N/A</u>	<u>N/C</u>	
<input type="checkbox"/> _____	<input checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>	c. Ground water monitoring requirements; (62-701.510(3),FAC)
<input type="checkbox"/> _____	<input checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>	(3) Background wells screened in all aquifers below the landfill that may be affected by the landfill;
<input type="checkbox"/> _____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	(4) Location information for each monitoring well;
<input type="checkbox"/> _____	<input checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>	(6) Well screen locations properly selected;
<input type="checkbox"/> _____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	(7) Monitoring wells constructed to provide representative ground water samples;
<input type="checkbox"/> _____	<input checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>	d. Surface water monitoring requirements; (62-701.510(4),FAC)

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

PART L CONTINUED

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|--------------------------|-------|-------------------------------------|--------------------------|---|
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | (1) Location of and justification for all proposed surface water monitoring points; |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | (2) Each monitoring location to be marked and its position determined by a registered Florida land surveyor; |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | e. Leachate sampling locations proposed; (62-701.510(5),FAC) |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | f. Initial and routine sampling frequency and requirements; (62-701.510(6),FAC) |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | (1) Initial background ground water and surface water sampling and analysis requirements; |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | (2) Routine leachate sampling and analysis requirements; |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | (3) Routine monitoring well sampling and analysis requirements; |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | (4) Routine surface water sampling and analysis requirements. |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input 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 checked="" type="checkbox"/> | <input type="checkbox"/> | h. Water quality monitoring report requirements;(62-701.510(9),FAC) |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | (1) Semi-annual report requirements (see paragraphs 62 701.510(6)(c),(d)and (e) for sampling frequencies); |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input 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 checked="" type="checkbox"/> | <input 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>LOCATION</u>	<u>N/A</u>	<u>N/C</u>	
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1. Describe procedures for managing motor vehicles; (62-701.520(1),FAC)
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2. Describe procedures for landfilling shredded waste; (62-701.520(2),FAC)
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3. Describe procedures for asbestos waste disposal; (62-701.520(3),FAC)
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4. Describe procedures for disposal or management of contaminated soil; (62-701.520(4), FAC)
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>	1. Provide the design for a gas management system that will (62-701.530(1), FAC):
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>	b. Be designed for site-specific conditions;
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	c. Be designed to reduce gas pressure in the interior of the landfill;
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input type="checkbox"/>	d. Be designed to not interfere with the liner, leachate control system or final cover.
<input type="checkbox"/>	_____	<input checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>	4. Landfill gas recovery facilities; (62-701.530(5), FAC):

S LOCATION N/A N/C

PART N CONTINUED

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|--------------------------|-------|-------------------------------------|--------------------------|---|
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | a. Information required in Rules 62-701.320(7) and 62-701.330(3), FAC supplied; |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | b. Information required in Rule 62-701.600(4), FAC supplied where relevant and practical; |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | c. Estimate of current and expected gas generation rates and description of condensate disposal methods provided; |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | d. Description of procedures for condensate sampling, analyzing and data reporting provided; |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input 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 checked="" type="checkbox"/> | <input 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 checked="" type="checkbox"/> | <input type="checkbox"/> | 1. Closure permit requirements; (62-701.600(2),FAC) |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | a. Application submitted to Department at least 90 days prior to final receipt of wastes; |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | b. Closure plan shall include the following: |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | (1) Closure design plan; |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | (2) Closure operation plan; |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | (3) Plan for long-term care; |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input 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

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

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

PART O CONTINUED

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

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

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|--------------------------|-------|-------------------------------------|--------------------------|---|
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 5. Declaration to the public; (62-701.600(7),FAC) |
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input 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**

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|--------------------------|-------|-------------------------------------|--------------------------|--|
| <input type="checkbox"/> | _____ | <input checked="" type="checkbox"/> | <input 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**

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

PART S. CERTIFICATION BY APPLICANT AND ENGINEER OR PUBLIC OFFICER

1. Applicant:

The undersigned applicant or authorized representative of the Hillsborough County Public Utilities Department

Solid Waste Management Group is aware that statements made in this form and attached

information are an application for a minor mod to operations Permit from the Florida Department of Environmental Protection and certifies that the information in this application is true, correct and complete to the best of his/her knowledge and belief. Further, the undersigned agrees to comply with the provisions of Chapter 403, Florida Statutes, and all rules and regulations of the Department. It is understood that the Permit is not transferable, and the Department will be notified prior to the sale or legal transfer of the permitted facility.

Patricia V. Berry
Signature of Applicant or Agent

Patricia V. Berry, SWMG Manager
Name and Title (please type)

berryp@hillsboroughcounty.org
E-Mail address (if available)

925 East Twiggs Street

Mailing Address

Tampa, FL 33602

City, State, Zip Code

(813) 272-5977 ext. 43338

Telephone Number

Date: 5/26/11

Attach letter of authorization if agent is not a governmental official, owner, or corporate officer.

2. Professional Engineer registered in Florida (or Public Officer if authorized under Sections 403.707 and 403.7075, Florida Statutes):

This is to certify that the engineering features of this solid waste management facility have been designed/examined by me and found to conform to engineering principles applicable to such facilities. In my professional judgment, this facility, when properly maintained and operated, will comply with all applicable statutes of the State of Florida and rules of the Department. It is agreed that the undersigned will provide the applicant with a set of instructions of proper maintenance and operation of the facility.

Jason Timmons
Signature

Jason Timmons, P.E. Project Mgr.
Name and Title (please type)

FL PE No. 65869, HDR CA No. 4213
Florida Registration Number
(please affix seal)

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(813) 282-2358

Telephone Number

Date: 5/26/11

ATTACHMENT B

REVISED OPERATIONS PLAN PAGE

L.2.c.(2) Motor Vehicles

Motor vehicles will not be accepted at the facility; however, mobile homes will be accepted for disposal in the landfill at the active working face if they cannot be recycled. Appliances (white goods) and waste tires from mobile homes must be removed before being accepted at the facility and processed as stated in Section L.2.c.

L.2.c.(3) Shredded Waste

The Facility will accept shredded tires from the on-site tire-shredding facility. The SWMD uses shredded tires for initial cover since shredded tires are an effective initial cover for controlling disease, vectors, odors, litter, and scavenging. This practice benefits the County by conserving valuable landfill space and recycling materials.

L.2.c.(4) Asbestos Waste

Asbestos waste will be accepted at the Facility. The entire footprint of Phases I-VI and the Capacity Expansion Area will be designated as an asbestos disposal area. Before landfilling, the material must be wetted and placed in a leak-tight wrapping. The bags will be placed in a prepared trench at the working face. Materials such as transite paneling and pipe insulation must be wrapped sufficiently to maintain their integrity during disposal. After placement, the bags will be immediately covered with 6 inches of asbestos-free material (i.e., soil or select waste without large or sharp objects that may damage the asbestos packaging). Copies of the asbestos waste shipment records complying with 40 CFR 61-Subpart M will be maintained on site.

L.2.c.(5) Wastewater Treatment Biosolids

Biosolids (industrial and domestic sludge) from wastewater treatment systems are accepted for disposal in the landfill. Biosolids will be applied to the working face of the landfill and daily cover applied in accordance with Section L.2.g to control odors. Disposal operations of biosolids will not occur within 50 feet of exterior side slopes. A TCLP test of the biosolids from each wastewater treatment plant will be performed at least annually. In addition, biosolids from each wastewater treatment plant (WWTP) will be required to pass the paint filter test which will be based on the percent solids of the biosolids produced by each WWTP.

A paint filter test will be initially performed on the biosolids to demonstrate the minimum percent solids content that will pass the paint filter test. Thereafter, each WWTP will be required to provide a report of the percent solids content of the biosolids delivered each day to the Facility. Biosolids from the WWTPs with percent solids content at or above the minimum solids content passing the paint filter test will be accepted at the Facility. In the event the percent solids content from a WWTP is below the minimum solids content, the WWTP must, before disposal at the SCLF, perform and provide documentation that the lower percent solids content passes the paint filter test.

L.2.j. Leachate Collection and Removal System Maintenance

Refer to the current LMP Report.

L.3 OPERATING RECORD

The operating record will be maintained on site in the Administration Building or at the SWMD office. The operating record will be accessible to the Facility operation personnel and will be available for inspection by FDEP. The records include the following:

- Waste reports
- Operation permits
- Construction and closure permits including any modifications
- Monitoring results, such as water quality testing
- Notifications to FDEP
- Engineering drawings
- Training certifications as required by Chapter 62-701.320(15), FAC

L.4 WASTE RECORDS

The amount of solid waste received at the landfill will be weighed and recorded in tons per day in accordance with Rule 62-701.500(4), FAC. Waste reports will be compiled monthly and kept on site with the operating record. Waste will be listed by the following types and the amount of tons received will be recorded:

- Processable, to include
 - Household waste
 - Treated biomedical waste
- Non-processable, to include
 - Industrial waste
 - Industrial and domestic sludge (biosolids)
 - Air/water treatment sludge
 - Commercial waste
 - Incinerator by-pass waste
 - Agricultural waste
 - Ash
 - Waste tires
 - Construction and demolition debris
 - Asbestos
 - Yard trash

All records will be retained at the SWMD administration office. Report types include daily, month-to-date, and year-to-date totals of waste received from the various haulers. The records will be available to the FDEP for review.

ATTACHMENT C

CONFORMED OPERATIONS PLAN

FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION

MAY 27 2011

SOUTHWEST DISTRICT
TAMPA

**OPERATIONS PLAN
PHASES I-VI AND THE
CAPACITY EXPANSION AREA
(SECTIONS 7, 8, AND 9)
SOUTHEAST COUNTY LANDFILL
HILLSBOROUGH COUNTY, FLORIDA**

Prepared for:

HILLSBOROUGH COUNTY SOLID WASTE MANAGEMENT DEPARTMENT
925 East Twiggs Street
Tampa, FL 33602

Prepared by:

HDR ENGINEERING, INC.
5426 Bay Center Drive, Suite 400
Tampa, FL 33609

Certificate of Authorization #4213

May 2011

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PART L INTRODUCTION

The Southeast County Facility (Facility) includes the Southeast County Landfill (SCLF), which is permitted by the Florida Department of Environmental Protection (FDEP) as a Class I landfill for Phases I-VI and the Capacity Expansion Area. This Operations Plan includes Phases I-VI and Sections 7, 8, and 9 of the Capacity Expansion Area.

The Facility is the final depository for municipal solid waste (MSW) ash residues, non-processables, and bypass wastes from the Solid Waste Management System of Unincorporated Hillsborough County. The Facility also receives solid waste from the cities of Temple Terrace and Tampa, as well as MSW ash residues and bypass wastes from the Waste-to-Energy Incinerator Facility of the City of Tampa. Hazardous waste will not be accepted at the Facility.

This operations plan was prepared in conjunction with an operation permit application; as such, the format follows the requirements of Part L of the Permit Application Form.

L.1 TRAINING

In accordance with Rule 62-701.500(1), Florida Administrative Code (FAC), key supervisory staff at the Facility have received Landfill Operator Certification training. 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 three years. Operator and Spotter training courses will be offered by the University of Florida Center for Training, Research and Education for Environmental Occupations (TREEO) and through other FDEP-approved sources. Appendix A lists the currently available TREEO training courses and schedule. The listing is also available at www.treeo.ufl.edu. Documentation demonstrating that the facility operators and spotters have received the required continuing education is presented in Attachment E.15 of the Phases I-VI and Capacity Expansion Area (Sections 7, 8, and 9) Permit Renewal Application dated January 2007.

As required by Rule 62-701.500(1), FAC, a certified Landfill Operator will be on site when waste is received for disposal at the landfill, and a trained spotter will be on site during all times when waste is deposited at the landfill working face to detect any unauthorized wastes. 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 and operational standards described in the operation permit application.

L.2 LANDFILL OPERATION PLAN

L.2.a. SWMD Organization and Responsibilities

Hillsborough County (County) owns the Facility and is the applicant for the operation permit. A Landfill Contractor (Waste Management, Inc. of Florida) will operate and maintain the Facility in accordance with the permit conditions under the contract that exists between the County and the Contractor.

The following Hillsborough County Solid Waste Management Department (SWMD) and Contractor personnel are currently responsible for the operations at this Facility:

- Larry E. Ruiz, Landfill General Manager (SWMD)
- Ernest Ely, District Landfill Manager (Contractor)

In addition, the following positions are maintained at the Facility: scale-house clerks (SWMD), waste monitors (SWMD), equipment operators (Contractor), spotters (Contractor), laborers (Contractor), security personnel (Contractor), and mechanic (Contractor). At least one trained operator familiar with the landfill operations will be on site at all times while the Facility is open in accordance with Rules 62-701.320(15) and 62-701.500(1), FAC.

L.2.b. Contingency Plan

The contingency plan for the Facility is based upon addressing two potential emergencies:

- Equipment failure.
- Large influx of material resulting from a natural disaster such as a hurricane, fire, or from a breakdown at local resource-recovery facilities.

Sufficient backup equipment will be provided on site for equipment breakdowns and downtime for normal routine equipment maintenance. If primary and backup major equipment (i.e., landfill compactor or bulldozer) fail, one or both of the following contingency measures will be implemented:

- Use existing contracts with contractors and rental equipment dealers to furnish rental equipment on short notice (Appendix B).
- Establish arrangements with other County agencies to furnish equipment.

The Contractor will be responsible for providing equipment and a working force of adequate size and skill to maintain the landfill operation in compliance with all applicable federal, state, and local regulations. If sufficient local personnel are not available, the Contractor will relocate from other facilities sufficient personnel with the proper skills to maintain operations.

Hillsborough County's existing Comprehensive Emergency Management Plan (CEMP) provides policies and procedures necessary to prepare and respond to natural disasters (Appendix C). Under an unforeseen condition of a large influx of waste, the procedures discussed above would also apply. However, in a natural disaster other heavy equipment may not be available. Given that a large volume of wastes requiring disposal from a natural disaster is non-putrescible, it can be stored on site temporarily (adjacent to the working face) and landfilled after the state of emergency has ended.

In the case of a large fire, bomb threat, or other unforeseen situation requiring specialized emergency response personnel, 911 will be called for the local Fire Department or Sheriff's Department. Waste handling will be suspended and the affected area will be evacuated, if necessary. The landfill will be temporarily closed until the responding Department determines that the landfill is safe for re-entry. If the Facility will remain closed for more than 48 hours, the incoming waste will be diverted to an alternate facility in an adjacent county.

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 the valve, turning-off switch, or taking any other necessary action). The affected area will be protected by diverting vehicular traffic. Building a berm, plugging a drain or ditch, or adding absorbent material will control runoff from the affected area. 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 Treatment and Reclamation Facility (LTRF) and the proposed effluent/leachate storage tank, refer to Section 7.1 of the Leachate Management Plan (LMP).

L.2.c. Waste Type Control

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

A minimum of three random load inspections of solid waste per week will be conducted at the active landfill (See Part L.6 and Appendix D). As an additional control, the SWMD has one waste monitor and the Contractor has at least one trained spotter at the working face to visually inspect each load of waste as it is unloaded and deposited. If any unauthorized special waste (i.e., lead-acid batteries, used oil, yard trash, white goods, and whole tires) is found at the working face during the random inspection or as part of routine operations, the waste will be segregated and removed from the site for recycling or other processing in accordance with FDEP regulations. Items that may contain liquids or gases will be stored upright, undamaged, and in a container as appropriate. The maximum on-site storage will be as follows:

- 50 batteries in a secondary containment covered tray.
- 20 gallons of used oil placed upright in an undamaged container.
- 40 cubic yards (cy) yard trash in one 40-cy roll-off container.

- 75 white goods and lawnmowers placed upright (on the ground) until all liquids, CFCs, and freon are removed. After the metal recycling contractor removes all liquids, CFCs, and freon, the white goods are marked with spray paint to indicate that they are ready to be placed in the scrap metal containers.
- Scrap metal in two 40-cy roll-off containers (including processed white goods).

These special wastes will be stored next to the working face and removed from the site within 30 days.

Whole tires will be shredded on site and may be used as initial cover. Lead-acid batteries will be collected by the SWMD's contracted battery recycler. Scrap metal, including white goods and lawnmowers, will be collected and processed by the SWMD's metals recycling contractor. Propane tanks will be collected by the recycling contractor. Used oil and yard trash will be rejected, required to be reloaded, and directed to be taken to the household chemical collection center at the South County Transfer Station.

If unauthorized waste (i.e., hazardous, PCBs, untreated biomedical, or free liquid) is found at the working face, the waste will be isolated and the Landfill Manager will be immediately notified. The Landfill Manager is trained in the proper procedure to follow including notifying the FDEP. Similarly, if suspect waste is found, the waste will be isolated and the Landfill Manager notified. The Landfill Manager will prepare a suspect waste report and ensure that the waste is properly managed (Appendix D). If hazardous wastes are found, the FDEP will be notified immediately and the waste will be isolated and restricted from access until it is removed from the landfill by a qualified hazardous waste contractor. Hazardous wastes will be removed from the Facility within 24 hours.

L.2.c.(1) Special Waste

The SWMD has established policies, procedures, and guidelines for managing special waste to comply with federal, state, and local regulations for minimizing risks to the environment, public health, and employees posed by non-hazardous and unregulated waste. Appendix E presents the SWMD Special Waste Program, which includes guidelines and procedures for accepting and evaluating special waste. Appendix E presents the current policies and management procedures for asbestos, empty containers, ash, soil, polychlorinated biphenols (PCBs), tires, industrial waste, yard waste, chemical waste, used motor oil, construction and demolition debris, white goods, waste tires, household batteries, other batteries, paint, bio-hazardous, and household hazardous waste. The following are the objectives of the special waste program:

- Preclude the entry and disposal of hazardous waste into the Facility.
- Preclude leachate developing hazardous waste characteristics.
- Protect the landfill liner.
- Prevent objectionable odors from becoming a problem.
- Ensure that delivered materials can be handled safely.

L.2.c.(2) Motor Vehicles

Motor vehicles will not be accepted at the facility; however, mobile homes will be accepted for disposal in the landfill at the active working face if they cannot be recycled. Appliances (white goods) and waste tires from mobile homes must be removed before being accepted at the facility and processed as stated in Section L.2.c.

L.2.c.(3) Shredded Waste

The Facility will accept shredded tires from the on-site tire-shredding facility. The SWMD uses shredded tires for initial cover since shredded tires are an effective initial cover for controlling disease, vectors, odors, litter, and scavenging. This practice benefits the County by conserving valuable landfill space and recycling materials.

L.2.c.(4) Asbestos Waste

Asbestos waste will be accepted at the Facility. The entire footprint of Phases I-VI and the Capacity Expansion Area will be designated as an asbestos disposal area. Before landfilling, the material must be wetted and placed in a leak-tight wrapping. The bags will be placed in a prepared trench at the working face. Materials such as transite paneling and pipe insulation must be wrapped sufficiently to maintain their integrity during disposal. After placement, the bags will be immediately covered with 6 inches of asbestos-free material (i.e., soil or select waste without large or sharp objects that may damage the asbestos packaging). Copies of the asbestos waste shipment records complying with 40 CFR 61-Subpart M will be maintained on site.

L.2.c.(5) Wastewater Treatment Biosolids

Biosolids (industrial and domestic sludge) from wastewater treatment systems are accepted for disposal in the landfill. Biosolids will be applied to the working face of the landfill and daily cover applied in accordance with Section L.2.g to control odors. Disposal operations of biosolids will not occur within 50 feet of exterior side slopes. A TCLP test of the biosolids from each wastewater treatment plant will be performed at least annually. In addition, biosolids from each wastewater treatment plant (WWTP) will be required to pass the paint filter test which will be based on the percent solids of the biosolids produced by each WWTP.

A paint filter test will be initially performed on the biosolids to demonstrate the minimum percent solids content that will pass the paint filter test. Thereafter, each WWTP will be required to provide a report of the percent solids content of the biosolids delivered each day to the Facility. Biosolids from the WWTPs with percent solids content at or above the minimum solids content passing the paint filter test will be accepted at the Facility. In the event the percent solids content from a WWTP is below the minimum solids content, the WWTP must, before disposal at the SCLF, perform and provide documentation that the lower percent solids content passes the paint filter test.

L.2.d. Weighing Incoming Waste

All incoming waste will be weighed before disposal in the landfill. The existing scales are fully automated and computerized, with the capability for data storage and retrieval for daily record keeping and reporting. All customers are issued receipts upon exiting the Facility.

L.2.e. Traffic Control

The working face area is the most equipment-intensive area of operation for the Facility. In this area, solid waste transportation vehicles arrive, turn around, back up to the working face, and unload the solid waste. Landfill operation equipment will continually spread and compact the solid waste as it is received. During normal operating conditions, only one working face will be active at any given time, with the solid waste at all other areas within the landfill secured by a minimum of 6 inches of initial cover. The working face may alternate from month to month from Phases I-VI to the active cells at the Capacity Expansion Area and back. It is intended that only one working face will be active at a time at either Phases I-VI or the CEA. However, during the initial placement of selected waste in Section 8 Lift 1 Cell A or in Section 9, a temporary working face will be maintained at Phases I-VI for the placement of large rigid objects and construction demolition debris.

The approach to the working face will be maintained in an accessible condition so that two or more vehicles may safely unload simultaneously side by side. When unloading is complete, the vehicles will immediately leave the working face area. Entrance and exit haul roads will be provided (both temporary and permanent) and maintained to facilitate future unloading operations. Contractor personnel will direct traffic as necessary to expedite safe movement of vehicles and to ensure that all waste transport vehicles dump within the designated area.

L.2.f. Method and Sequence of Filling Waste

L.2.f.(1) Phases I-VI

Each phase will be landfilled as shown in the Operating Sequence Plans provided separately with the Phases I-VI and Capacity Expansion Area (Sections 7, 8, and 9) Permit Renewal Application. The lifts in each of the several phases are shown on one sheet to minimize the number of sheets, but each lift is independent of the others.

One working face will be maintained for the anticipated traffic maneuvering during waste fill operations. Typical lifts consist of two lifts 8 to 10 feet high, to reach the maximum elevation shown on the operating sequence drawings including daily and intermediate cover. Because of the phosphatic clay liner stability in Phases I-VI, at no time shall a lift exceed the maximum height shown on the operating sequence drawings. The cells will be placed as shown on the operating sequence drawings and will be filled moving from west to east across Phase I to the line dividing Phase I from Phase II. Phase II will be filled beginning on the east side of Phase II and proceeding from east to west across Phase II to the line dividing Phase II from Phase III.

The filling of cells in Phase III will begin on the east side of Phase III and proceed from east to west across Phase III to the line dividing Phase III from Phases I, IV, V, and VI.

The cells in Phase IV will be filled from the center of the site (east side of Phase IV) against Phases I and III, proceeding from east to west across Phase IV to the western perimeter of the landfill. The filling of cells in Phases V and VI will proceed counterclockwise from the northeast corner against Phase III around across Phases V and VI to the southwest corner of the landfill against Phase I-VI. The Contractor will prepare filling plans in accordance with the sequence drawings 45 days before the development of a new lift. Subsequently, grades for the new lift will be set on grade stakes by a registered engineer, land-surveyor, or by an authorized agent.

Refer to Table 1 Southeast Landfill Filling Sequence for Phase I-VI and Project Disposal Rate Diversion to the Capacity Expansion Area provided in Appendix F.

L.2.f.(2) Section 7 of the Capacity Expansion Area

The temporary filling in Section 7 was complete as of June 2005. The outer sideslopes have not reached their final design 3H:1V slope. The temporary sideslopes of Section 7 will be filled to reach their maximum design slope of 3H:1V upon construction of Section 9.

L.2.f.(3) Section 8 of the Capacity Expansion Area

The temporary filling in Section 8 was completed as of May 2007. The outer sideslopes have not reached their final design slope of 3H:1V. The temporary sideslopes of Section 8 will be filled to reach their design slope upon construction of Section 9.

Initial Waste Placement

In general, the initial waste placement will begin in the southwest corner and proceed northeast until it reaches the temporary stormwater separation berm. Refer to Part L.7.b for requirements for the first layer of waste. Waste placement will continue up to a crest elevation of 150.8 feet NGVD with exterior sideslopes no steeper than 4 feet horizontal to 1 foot vertical (4H:1V). The working face will be adequate for the anticipated traffic maneuvering during waste-filling operations. Cover soil will be brought from the existing borrow area north of the Section 8 area. Daily lifts of the waste will be no thicker than 8 to 12 feet including cover soils.

Two temporary stormwater separation berms were used to separate leachate from stormwater in the interior of the Section 8. The middle and eastern leachate collection pipes in Section 8 were plugged with a removable air ball plug. Stormwater which does not come in contact with waste material will be pumped into the perimeter stormwater ditch on the eastside of Section 8. The stormwater in the ditch will then drain to Basin C.

A rain tarp was used to cover the sideslopes of the Section 8 area to minimize erosion and washout of the slopes. Before placement of waste, all rain tarps were removed from the sideslopes.

Before placement of waste in the middle and eastern portions of Section 8, the air ball plug was removed from the leachate collection pipe.

Filling of Lift 1

Access to the Section 8 area will continue from the southwest corner for Lift 1. Filling in this area has begun in the southwest corner and will continue in a back-and-forth pattern in Lift 1A. The waste in Lift 1A will be placed against the previously placed waste in Section 7, moving northeast until it reaches the temporary perimeter ditch located on the north and west side of Section 8. Filling will continue in a similar pattern for Lifts 1B and 1C beginning at the southwest corner of each cell, overlapping the slopes of Section 7, and progressing northeast until it reaches the temporary perimeter ditch. The entire Section 8 will be filled and raised so stormwater can sheet flow to the perimeter ditch. Lift 1 will eventually be raised to a crest elevation of 156 feet NGVD.

Stormwater runoff west of the crest will sheet flow into the perimeter ditch located north of the Capacity Expansion Area to Basin C. As filling progresses to the east, stormwater collected east of the temporary stormwater separation berms will be considered stormwater and pumped to the perimeter ditch east of Section 7. The temporary stormwater separation berms will be used to separate leachate from stormwater. Once waste material has been placed east of the temporary stormwater separation berms or if stormwater comes in contact with waste material, the stormwater in this area will be considered leachate.

When filling of the entire base of Section 8 is complete, stormwater runoff from the west and north slopes of the fill area will sheet flow into the perimeter ditch located north of the cell to Basin C.

SPECIAL SECTION 7 AND 8 CELL CONNECTION

Before filling across the leachate collection lines in Cell A of the initial lift and Cell B of Lift 1, the east-west separation berm between Sections 7 and 8 was removed (only in the immediate area of the leachate collection pipe) to provide additional redundancy should the leachate pipe become clogged or collapse. The removal of the berm allows leachate to flow freely from Section 8 into Section 7.

Filling of Lift 2

Filling in Lift 2 will proceed beginning in Lift 2D at the southwest corner. Lift 2D will be placed against the previously placed waste in Section 7. Lifts 2D, 2E, and 2F filling will proceed from the southwest to the northeast, reaching a crest elevation of approximately 175 feet NGVD with

4H:1V exterior sideslopes and a 20H:1V top slope. Vehicle traffic will continue to access the landfill by the temporary haul road previously constructed. As an alternative access route to the Section 8 area, a second temporary access road will be constructed on the south side of Section 7. Traveling across the top of Section 7 will provide access to Section 8.

Stormwater for Lift 2 will drain from the crest to the temporary sideslope stormwater swale installed at approximately elevation 165 feet NGVD. Stormwater for the Lift 2 area will be conveyed to the northeast corner where a temporary stormwater downchute will be constructed. Stormwater conveyed in the temporary stormwater downchute will discharge into the perimeter ditch that leads to Basin C.

Filling of Lift 3

Waste filling will continue in Lift 3 beginning in the southwest corner with Lift 3G. Lift 3G filling will continue from the crest elevation of 165 feet NGVD moving north until it reaches grade elevation 190 feet NGVD. Lift 3G filling will progress toward the northeast reaching an approximate crest elevation of 190 feet NGVD. Lifts 3G will consist of waste filling overlapping the top area of Section 7 and will be graded to 4H:1V sideslopes. Filling will continue on the upper portion of Sections 7 and 8 with a final 20H:1V top slope. Sections 7 and 8 will be filled to a final elevation of 196 feet NGVD.

Stormwater for Lift 3 will drain from the crest to the temporary sideslope stormwater swale installed at approximately elevation 190 feet NGVD. Stormwater for this lift area will be conveyed to the northeast corner where the temporary downchute from Lift 2 will be extended to Lift 3. Stormwater conveyed in the temporary stormwater downchute will discharge into the perimeter ditch that leads to Basin C.

L.2.f.(4) Section 9 of the Capacity Expansion Area

The proposed filling sequence for Section 9 is presented in the drawings provided with the May 2007 RAI Response document for the facility operations permit renewal. The Section 9 area has been divided into three cells by separation berms to manage the amount of leachate generated and stormwater. Filling of the Section 9 area will begin on the southern end of the cell. Waste placement will continue in the southern cell until 20 feet of waste has been placed in the cell. Waste placement will begin with an initial 4-foot lift of select waste. The other two cells will have rain tarps so stormwater can be pumped from these cells. After 20 feet of waste is placed in the southern cell, the filling operation will proceed to the center cell. Again, 20 feet of waste will be placed in the cell with the first 4 feet being select waste, and the filling operation will proceed to the last cell. Once 20 feet of waste has been placed across all of Section 9, the filling operation will resume on the north side and proceed south across the area.

The filling will also be placed against the west sideslopes of Sections 7 and 8. The filling in Section 9 will proceed south to north and against the sideslopes of both Sections 7 and 8. As the Operations Fill Sequence Drawings show, filling will occur to bring the sideslopes of Sections 7,

8, and 9 to their design slope of 3(h) to 1(v) slopes. The filling of Section 7, 8, and 9 areas will bring the combined areas to an approximate elevation of 285 feet.

L.2.g. Waste Compaction and Application of Cover

Waste will be placed at the top or bottom of the working face and spread toward the bottom or top, respectively. Waste will be spread in approximately 2-foot-thick layers and compacted with a minimum of three to five passes of the landfill compactor. The spreading and compacting is intended to be a continuous operation. A minimum in-place waste density of 1,000 pounds/cubic yard (lb/cy) will be achieved.

A minimum of 6 inches of compacted initial cover will be placed over the waste at the end of each operation day. Before the working face between landfills is moved, the area that will remain inactive will be covered with compacted initial cover, soil, or a mixture of 50 percent unscreened wood mulch and 50 percent soil (no ash), with sufficient thickness (minimum 6 inches) to prevent erosion and the mixing of leachate with stormwater. A minimum of 1 foot of intermediate cover, in addition to the 6-inch initial cover, will be applied and maintained within 7 days of cell completion if additional solid waste will not be deposited within 180 days of cell completion.

When landfilling operations begin again in areas with intermediate cover, the intermediate cover (free of waste) will be stripped from the surface (upper 12 inches) and reused over other areas needing intermediate cover. The stripped intermediate cover will be pushed ahead and used as perimeter berms around the active working face area. The intermediate areas are graded to promote drainage (minimum 2 percent slope) and seeded to prevent erosion.

L.2.h. Operation of Leachate, Gas and Stormwater Controls

See Sections L.8, L.9, and L.10 for leachate, gas, and stormwater controls, respectively.

L.2.i. Water Quality Monitoring

L.2.i.(1) Phases I-VI

Groundwater and surface monitoring is included in Section 2 of the Monitoring Plan Evaluation Phases I-VI and the Capacity Expansion Area (Sections 7, 8 and 9). Leachate monitoring is included in Section 9.0, the effluent monitoring is included in Section 9.1.2, and the biosolids monitoring is included in Section 9.1.3 of the Leachate Management Plan.

L.2.i.(2) Capacity Expansion Area

Water quality monitoring for Sections 7, 8, and 9 is included in Section M of the Permit Application. The proposed monitoring plan is designed to be consistent with the conceptual sequencing plan for build-out of the Capacity Expansion Area.

L.2.j. Leachate Collection and Removal System Maintenance

Refer to the current LMP Report.

L.3 OPERATING RECORD

The operating record will be maintained on site in the Administration Building or at the SWMD office. The operating record will be accessible to the Facility operation personnel and will be available for inspection by FDEP. The records include the following:

- Waste reports
- Operation permits
- Construction and closure permits including any modifications
- Monitoring results, such as water quality testing
- Notifications to FDEP
- Engineering drawings
- Training certifications as required by Chapter 62-701.320(15), FAC

L.4 WASTE RECORDS

The amount of solid waste received at the landfill will be weighed and recorded in tons per day in accordance with Rule 62-701.500(4), FAC. Waste reports will be compiled monthly and kept on site with the operating record. Waste will be listed by the following types and the amount of tons received will be recorded:

- Processable, to include
 - Household waste
 - Treated biomedical waste
- Non-processable, to include
 - Industrial waste
 - Industrial and domestic sludge (biosolids)
 - Air/water treatment sludge
 - Commercial waste
 - Incinerator by-pass waste
 - Agricultural waste
 - Ash
 - Waste tires
 - Construction and demolition debris
 - Asbestos
 - Yard trash

All records will be retained at the SWMD administration office. Report types include daily, month-to-date, and year-to-date totals of waste received from the various haulers. The records will be available to the FDEP for review.

L.5 ACCESS CONTROLS

The perimeter fence and berms around the Facility prevent the entry of livestock, protect the public from exposure to potential health and safety hazards, and discourage unauthorized entry or uncontrolled disposal of unauthorized materials. 'No trespassing' signs are also posted along the perimeter fence. The SWMD and Contractor personnel will inspect the premises daily. The gate at the Facility entrance and all other gates will be kept locked at all times the landfill is closed, and the Contractor will provide security personnel to guard the Facility during non-operating hours.

L.6 LOAD-CHECKING PROGRAM

The SWMD has established a random-load-checking program as referenced in Part L.2.c to detect and prevent disposal of unauthorized wastes into the landfill. In addition, site access control discourages the disposal of unauthorized and hazardous wastes. A sign at the entrance of the Facility explains the types of waste prohibited at the landfill.

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 drivers will be directed to discharge their loads at a designated location next to the working face. If any unauthorized special waste (i.e., lead-acid batteries, used oil, yard trash, white goods, and whole tires) is found during the random inspection or as part of routine operations, the waste will be segregated and removed from the site for recycling as described in Part L.2.c. These special wastes will be stored next to the working face and removed from the site within 30 days.

If an unauthorized waste (i.e., hazardous, PCBs, untreated biomedical, or free liquid) is found, the generator of the waste, if known by the driver, will be contacted to determine the waste source. Either the hauling company or the generator of the waste will be directed to remove the unauthorized waste. The random load inspections will be documented on a report form which includes the date and time, name of the hauling company and the driver of the vehicle, the vehicle license number, the source of the waste or generator, and any observations or notes made by the inspector (Appendix D). The inspector will identify and note all unauthorized waste found during the random load inspection, estimated quantity, and the action taken. The inspector will sign the inspection form that will be retained at the Facility.

If the waste owner cannot be identified, the waste will be evaluated by Contractor personnel in charge. The waste will be isolated and contained and will not be moved until the waste is determined to be acceptable. If it is determined that the waste is not suitable for disposal, the SWMD will be notified for additional assessment and testing of the waste. Subsequently, a record of the decision will be placed into the daily operations file for the Facility.

If any regulated hazardous waste is discovered in a random load check or is identified by an operator or spotter, the Landfill Manager and the FDEP will be notified immediately as well as the generator or hauler, if known. The Landfill Manager is trained in the proper procedure to follow including notifications. If the generator or hauler is not known, the SWMD will be responsible for disposing of the hazardous waste at a properly permitted Facility. The hazardous waste will be isolated and restricted from access until it is removed from the landfill by a qualified hazardous waste contractor. Hazardous wastes will be removed from the site within 24 hours.

As required in Rule 62-701.320(15), FAC and discussed in Part L.1, inspectors, scale-house attendants, equipment operators, and landfill spotters will be trained to identify unacceptable wastes and hazardous wastes.

L.7 SPREADING AND COMPACTING WASTE

All loads coming into the Facility, including small-volume unloading containers, will be delivered to the working face daily. To preserve the prepared base area and to protect the leachate collection system, traffic will be prohibited to operate directly on the chipped tires overlying the drainage layer. Traffic will only be allowed to maneuver on top of the compacted and covered waste. Therefore, the initial lift of all new disposal areas will be accessed by vehicles from the top of the working face. The waste will be spread and compacted from the top, keeping all heavy equipment off the prepared base.

For all subsequent lifts, the waste placement will vary depending on field conditions. Some lifts will be built from the bottom of the active working face. At the discretion of the operator, waste will also be placed from the top of the active working face and spread toward the bottom. Waste will be placed against the covered working face of the previous day's waste. The first cell will act as a means of access and as a berm to guide the placement of waste for the remaining cells. See Part L.2.g for additional information on waste compaction.

The following guidelines will provide an efficient and environmentally sound method of operation for the Facility:

- 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, reused, and stockpiled for later use before the placement of a new lift.

- Tire chips, ash residue from incinerated MSW, tarps, soil, or a mixture of soil/mulch may be used for initial cover. Stormwater runoff will not be allowed from waste-filled areas covered with tire chips, ash, or tarp. Runoff from outside 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 inches of compacted soil (or a mixture of soil/mulch) which is free of waste and has been 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 may not be necessary because of the proximity of the borrow area.

L.7.a. Waste Layer Thickness and Compaction Frequencies

Landfill personnel will direct all incoming waste to be unloaded at the toe or top of the working face. Waste will be spread in approximately 2-foot-thick layers and compacted with a minimum of three to five passes of the landfill compactors. The spreading and compacting is intended to be a continuous operation, and waste will not be placed in a layer until the previous layer is compacted.

L.7.b. First Layer Thickness

For Phases I-VI, the initial waste layer has been placed. To protect the integrity of the leachate collection system of the landfill, traffic and heavy equipment were not allowed directly on the sand drainage layer.

The procedure for filling and compacting the first layer of waste for the permitted sections at the Capacity Expansion Area will protect the integrity of the liner and leachate collection system. Traffic directly on the chipped tires will be prohibited, and the first lift will be accessed by vehicles from the top of the working face. An initial 4-foot-thick lift of selected waste will be placed over the protective layer (i.e., chipped tires). The selected waste will be MSW and ash not containing large rigid objects and will be spread and compacted from the top of the working face.

L.7.c. Slopes and Lift Depth

The working face slope will be maintained at a slope no steeper than 3H:1V. Each cell will be constructed in a horizontal lift to an approximate height of 8 to 12 feet, with the maximum height as shown on the Drawings provided separately with the Phases I-VI and the Capacity Expansion Area (Sections 7, 8, and 9) Operations Permit Renewal Application.

L.7.d. Working Face

Cells will be constructed with slopes no steeper than 3H:1V, and a working face will be maintained to provide unhindered vehicle access to the working face while minimizing exposed areas and unnecessary use of cover material. The working face may move from month to month from Phases I-VI to the active cells at the Capacity Expansion Area. The working face will be bermed with soil or a mixture of 50 percent unscreened wood mulch and 50 percent soil (no ash) to prevent the mixing of leachate with stormwater.

L.7.e. Initial Cover Controls

At the end of each working day, the waste will be covered with a 6-inch lift of compacted cover material such as soil, a mixture of 50 percent unscreened wood mulch and 50 percent soil (or ash), ash, chipped tires, or tarps. These cover materials will provide vector control, mitigate windblown litter, reduce the potential for fire, and reduce odors and moisture infiltration into the waste. 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 (i.e., bulldozer or scraper). The initial cover material will not be removed before placement of successive lifts of waste, with the exception of tarps, which will be removed before placement of successive lifts. Any remaining litter and cleanings from equipment will be placed at the bottom of the completed cell and covered.

Before the working face between landfills is moved, the area that will remain inactive will be covered with compacted cover (free of waste), soil, or a mixture of 50 percent unscreened wood mulch and 50 percent soil (no ash), with sufficient thickness (minimum 6 inches) to prevent erosion and the mixing of leachate with stormwater.

L.7.f. Initial Cover Frequency

At the end of each day's operation, the active landfill working face will be thoroughly compacted, and cover material will be spread and compacted to a depth of 6 inches over the day's entire working face and sideslopes. Initial cover material is discussed in Part L.7.e. If needed, the portable barriers that define the working face will be moved to the positions required to define the next day's operation.

The Facility is equipped to excavate and haul cover materials from on-site borrow areas to the working face. Normally, an elevating scraper is used to excavate and haul cover material from the borrow area to the working face where it can be spread by a scraper or bulldozer.

When using a mixture of soil and mulch the following process will be used:

1. The area to be excavated will be identified in advance. The area used for mulch mixing will not be larger than 15 acres.
2. A 4-foot layer of mulch will be placed over the designated excavation area.

3. The mulch placed in a given area will not be allowed to remain in place longer than 2 years.
4. As the area is excavated, the excavator will take bucket loads of the mulch layer plus 4 feet of soil, mixing the load as it is placed in the dump trucks.
5. The trucks will deliver the load to the working face. As the loads are deposited, additional mixing will occur.
6. The soil/mulch mixture will be spread over the working face using a bull dozer, causing additional mixing.

L.7.g. Intermediate Cover

Intermediate cover will be placed and maintained over cells which will not receive additional solid waste or final cover within 180 days as required in Rule 62-701.500(7)(f), FAC. The working face will be bermed to reduce stormwater impacts. Sideslopes will be well maintained to minimize erosion. Intermediate cover material will be placed over the landfill surface within 7 days of cell completion if additional waste will not be placed within 180 days. Intermediate cover will be placed to a minimum compacted thickness of 12 inches on top of the 6 inches of compacted initial cover. On-site material free from organic matter, roots, and branches will be used for intermediate cover. Specifically, phosphatic waste clays available on site will be mixed with sand and used for intermediate cover.

To conserve the soil/clay mix, 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 soil/clay mix (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 interceptor berms constructed around the active working face area. The intermediate cover areas will be graded to promote drainage (minimum 2-percent slope) and seeded to prevent erosion.

L.7.h. Final Cover

L.7.h.(1) Temporary Final Cover

A temporary final cover consisting of a soil layer will be installed over cells in Phases I-VI or the CEA which will not receive additional solid waste. The temporary final cover will consist of 12 inches of 10^{-5} cm/sec soil. Vegetative cover will be placed on areas which have reached interim final grade in Phases I-VI. These areas will not receive additional waste until the end of the consolidation period before waste can be filled on top of the area.

L.7.h.(2) Final Cover

When portions of the Facility are brought to design grades, final cover will be placed over the areas that have attained final elevation within 180 days in accordance with Rule 62-701.500(7)(g), FAC. Vegetative cover will be established. The final cover system and sequence for final cover placement will be submitted with the application for closure at least 90 days before the partial closure of the sideslopes.

L.7.i. Scavenging and Salvaging

Except for such operations that are conducted as part of a recycling program, scavenging and salvaging are not permitted at the Facility.

L.7.j. Litter Policing

If necessary, portable litter fences will be placed downwind of the immediate working area to confine most of the windblown material. Litter around the site and the entrance roadways will be collected regularly and picked up within 24 hours, in accordance with Rule 62-701.500(7)(i), FAC. In addition, the Contractor maintains a litter crew to provide litter control on State Road (SR) 39 from the Lithia-Pinecrest intersection to CR 672 and on CR 672 to Balm-Boyette Road.

L.7.k. Erosion-Control Procedures

The Facility fill sequence and the drainage facilities have been designed to minimize erosion of landfill sideslopes and washout of adjacent areas. The landfill surface will be inspected daily for cracks, eroded areas, and depressions in the landfill surface. Corrective action will be implemented within 7 days of detection. In areas where standing water develops, the area will be filled, compacted, and graded to provide positive drainage. Where the standing water problem cannot be corrected by proper grading, temporary drainage ditches will be constructed to drain off the standing water. Intermediately covered areas or other areas that discharge to the stormwater management system and which exhibit significant erosion will be repaired as follows:

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

L.8 LEACHATE MANAGEMENT

Please see the current LMP.

L.9 GAS MONITORING AND MANAGEMENT PROGRAM

L.9.a. Gas Monitoring

SWMD personnel shall monitor and record landfill gas (LFG) reading quarterly at the perimeter LFG monitoring wells and in the Administration, LTRF, and Maintenance buildings. The locations of the existing LFG monitoring points are included in Appendix G. The ambient air and areas with slab penetration (areas with plumbing for water and drains) will be monitored inside these structures. The monitoring will be conducted for the Lower Explosive Limit (LEL) of methane using a GEM-500 Infrared Landfill Gas Analyzer (or equivalent). The probes will not be purged. Once the GEM is connected to the sampling port, the valve will be opened and the GEM pump will be started. The GEM reading will be observed and the value will be recorded.

When personnel must enter confined spaces or areas where dangerous gases may be present, the SWMD will follow the requirements in the "Code of Federal Regulations Title 29, Part 1910.146 OSHA" and the safety guidelines outlined in "A Compilation of Landfill Gas and Field Practices and Procedures" prepared by the SWANA Landfill Gas Division Health and Safety Task Force.

If methane is detected in concentrations greater than the regulatory limit (100 percent of the lower explosive limit at the property boundary or 25 percent of the lower explosive limit within structures), the SWMD will evaluate potential measures to correct the exceedances. If an unacceptable concentration of methane is detected in a monitoring location (i.e., a well or an on-site structure), the SWMD will immediately take appropriate actions to protect human health. The SWMD will notify FDEP and will re-monitor the location during each of the next 3 days. During this time the SWMD will evaluate potential causes of the exceedance and will implement procedures to remedy the situation if exceedances persist after the third day. Within 7 days of the initial exceedance, the SWMD will submit a remediation plan to FDEP in accordance with Rule 62-701.530(3)(a).

As described in Part L.7, the SWMD has a program for the placement of cover, which is effective for controlling disease, vectors, objectionable odors, and litter. No objectionable odors have been detected or reported by adjacent property owners. At least quarterly, or more frequently if necessary, qualified personnel from the SWMD will assess the presence of ambient objectionable odors at the perimeter monitoring points shown in Appendix G. If objectionable odors are detected at the property line, the SWMD will implement an odor-monitoring program as required by Rule 62-701.530(3)(b) FAC.

For information on the gas management program and gas collection and control system (GCCS), please refer to the approved GCCS Design Plan submitted to FDEP by SCS Engineers dated July 11, 2008.

L.9.b. Landfill Gas Collection System

The design of the Landfill Gas (LFG) collection system and the subsequent operation is in accordance with the federal New Source Performance Standards (NSPS) for municipal solid waste landfills (Subpart WWW) and Subpart AAAAA of the National Emission Standards for Hazardous Air Pollutants (NESHAP), which dictates the operational procedures for the GCCS.

The facility maintains all operational and manufacturer procedural documentation for the blower, flare, control devices, and LFG system components on site in the LFG Specialties User Manual for Utility Flare System Unit 2162 dated September 2009.

L.9.c. Daily Start-Up and Shutdown Procedures

The system is designed and permitted to run continuously. As part of the daily inspection conducted on the landfill, the flare is visually inspected for operations but no specific start-up or shut down procedures are performed daily. If the system shuts down, it is designed to attempt an automatic restart three times. If these three automated restarts are unsuccessful, then the system remains shut down and calls a designated landfill employee via the system's autodialer; this employee is then informed that the system is shut down. When the system shuts down or is shut down for maintenance, it is recorded in accordance with the facility's Startup, Shutdown, and Malfunctions (SSM) plan required by NESHAP. This plan discusses in detail what actions are taken to start up or shut down the system. The SSM plan is included in Appendix H.

L.9.d. Operating and Maintenance Procedures for Vertical Wellhead and Horizontal Collectors

The vertical wellheads are operated in accordance with the federal New Source Performance Standards (NSPS) for municipal solid waste landfills (Subpart WWW) and Subpart AAAAA of the National Emission Standards for Hazardous Air Pollutants (NESHAP).

As required by 40 CFR 60.756, each well or collector that is under vacuum and connected to the GCCS is monitored every month. At the time of the monitoring, the wellhead is checked for leaks at the fittings and hoses and visually inspected. Once monitored, the data collected is reviewed either at the time of collection or shortly thereafter (within 5 days maximum, per rule). Based on a review of the data, the wellhead may or may not be adjusted. If the readings collected meet the NSPS requirements for pressure, temperature, and oxygen, then no adjustment is required. If the requirements are not met and an exceedance occurs, then an adjustment/remedial action are required within 5 days. This reading can be taken the same day as the adjustment. If the re-check now shows a compliant reading, monitoring is done for the month; if not, following adjustments, a re-check is required by the NSPS rule within 15 days following the day of initial exceedance.

The matrix below is used to determine the adjustment/remedial action to be taken based on the exceedance observed.

Wellhead reading in question	Adjustment Required per Rule	Recommended Adjustment
Oxygen above 5%	Yes	Decrease vacuum at wellhead. Re-check all fittings and connects for possible leaks.
Pressure above 0.0 in w.c.	Yes	Increase vacuum to wellhead by opening valve slightly. Check available system vacuum to insure vacuum is available. If no vacuum is available, isolate area of vacuum loss.
Methane below 35%	No	Reduce vacuum at wellhead as long as pressure stays negative.
Methane above 58-59%	No	Increase vacuum to wellhead by opening wellhead valve.
Temperature above 131°F	Yes	Reduce vacuum to wellhead and make sure adequate cover exists around wellhead.

All collection devices connected to the GCCS are operated in this manner. If maintenance is required on an individual well or wellhead, it will be discovered during the monthly monitoring and maintenance will be performed on the devices as needed. Monitoring is also performed at the blower and flare inlets and recorded monthly. Additional operation information as it pertains to the operation of the wellheads can be found in Section 5.3 of the GCCS Design plan submitted to the FDEP Air Division on July 11, 2008.

L.9.e. System Readings and Wellhead Adjustments

Refer to Section L.9.d.

L.9.f. Procedures for Evaluation of the Performance of the System

Refer to Sections L.9.d. for well and horizontal collector evaluations. The GCCS is designed to remove LFG from the landfill and combust the LFG to avoid LFG rising through the landfill and entering directly into the atmosphere or migrating off site through the ground. To ensure performance of the system, surface emissions monitoring (SEM) occurs on a quarterly basis per 40 CFR 60 Subpart WWW to ensure that the system is working and that no LFG is being vented directly to the atmosphere through the landfill's cap. Quarterly LFG perimeter probe monitoring

also occurs to ensure that the no LFG is traveling out of the landfill. These required monitoring events, along with the monthly monitoring, ensure that the system is performing as required. All instances where any of these monitoring events leads to readings not in compliance with the regulations are reported in the NSPS semiannual reports submitted to the FDEP Air Division for the site in June and December of every year. The quarterly perimeter probe monitoring is submitted quarterly to the FDEP Solid Waste Division per the facility's operating permit. Meeting these regulatory requirements ensures that the system is performing as required.

L.9.g. Procedures for Isolation of Parts of the System in the Event of Damage, Repair, or Maintenance of Parts of the System

The GCCS has been designed so that portions of the GCCS can be isolated from the remainder of the system with the use of isolation valves. This design allows for the majority of the system to remain operational while one section of the system is maintained or repaired. There are nine isolation valves located on the LFG header that can close off a vacuum to an area of the landfill for maintenance to be performed on the header, lateral, or wellhead. These valves have been positioned to allow for isolation of Phases I-VI from Sections 7 and 8 and for Phases I-VI to be isolated into four separate areas. Similarly, there are eight valves on the air supply line and seven valves on the condensate force main that allow for isolation of the system without having to shut down the flare or support systems.

Specific procedures for performing isolation of the system will be performed as maintenance or damage occurs or as required to assure the performance of the system is remaining in compliance with NSPS and NESHAP standards.

L.9.h. Condensate Management System Monitoring and Maintenance Procedures

The majority of the condensate management system drains into the leachate management system for the landfill and will be handled along with the current leachate management system. The remainder of the condensate management system between AR-8, AR-1 and AR-7 all drain to CS-1. The pneumatic pump in CS-1 is checked daily to assure operation during the landfill's daily inspection. There are no specific maintenance practices for sump CS-1 as the system performs automatically on a demand basis. Should the pump in CS-1 malfunction, the condensate would build up in the sump and ultimately affect the vacuum to the well field and result in an automatic shutdown due to low flow or methane concentration. The system would then be diagnosed and the location of the vacuum blockage identified and repaired. Should the pump be required to be removed for an extended period of time, the sump is equipped with a port that can be used to pump out the sump above grade with a portable pump, which would allow the system to continue to operate. Under normal operating conditions the pump in CS-1 will be serviced according to manufacturer's recommendations as described in the pump's manual (Appendix I). The condensate from CS-1 is pumped into the leachate management system and is managed under the facility's current leachate management plan.

L.9.i. Description of Safety Protocols and Considerations Relating to Subsurface Landfill Fires

The majority of subsurface fires occur in a landfill when excess oxygen is introduced into the waste mass. In consideration of this fact, the GCCS is monitored monthly and was designed to minimize this effect. The introduction of oxygen can occur around a landfill gas well if appropriate cover material is not placed and the vacuum pulls oxygen into the system through the ground surface. The LFG extraction wells have all been designed with 20 feet of solid pipe below grade to avoid pulling oxygen through the wells. The horizontal collectors are located near the surface of the waste mass and therefore must be operated under very small vacuum or no vacuum until adequate waste is in place on top of the collectors to avoid introducing oxygen into the landfill. The operational procedures for the horizontal collectors are further described in Section 5.3 of the GCCS Design plan submitted to the FDEP Air Division on July 11, 2008. The monthly monitoring is also designed to ensure that the potential for a subsurface fire is minimized as described in 40 CRF 60.755 (5):

60.755(5) For the purpose of identifying whether excess air infiltration into the landfill is occurring, the owner or operator shall monitor each well monthly for temperature and nitrogen or oxygen as provided in §60.753(c). If a well exceeds one of these operating parameters, action shall be initiated to correct the exceedance within 5 calendar days. If correction of the exceedance cannot be achieved within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial exceedance. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the Administrator for approval.

If the landfill personnel detect a temperature above 131°F in any of the LFG extraction wells, remedial action will be taken to lower the temperature in the well by decreasing or eliminating vacuum to the well, applying additional cover material in the area to eliminate the potential for oxygen intrusion, and monitoring the surrounding wells to ensure there is not a rise in the overall temperature of the waste mass in the area. Subsequent LFG well re-checks and monthly monitoring events will determine if the actions taken were successful or additional remedial activities are required.

L.10 STORMWATER-MANAGEMENT SYSTEM

L.10.a. Leachate Reduction

L.10.a.(1) Stormwater Diversion

L.10.a.(1).1 Site Stormwater System

The stormwater system was designed to transport the maximum expected flows from a 24-hour, 25-year rainfall event and minimize the collection of standing water within the disposal areas. To efficiently collect and transport the stormwater runoff away from the disposal areas, the stormwater system will be maintained in good condition, with the proper slopes and free from obstructions. Erosion control measures and corrective action are described in Part L.7.k of the Operations Plan. In addition, the design maintains conformance with the site's Southwest Florida Water Management District (SWFWMD) Stormwater Permit (a copy was submitted in Volume 3 of the Construction Permit Application for the Capacity Expansion Area, Section 7, September 2002). The major stormwater component designs and operations are as follows:

- Interior Stormwater Separation berms are generally designed to be 3 feet high and 3 feet wide across the top with sideslopes of 3H:1V. The separation berms divide the contributing runoff areas to facilitate the collection and handling of stormwater as well as providing separation from leachate.
- Sideslope swales were designed to convey stormwater flow from the sideslopes to the downchutes as shown on the drawings. Sideslope swales will be constructed where needed and as shown on the sequence drawings provided separately with the Phases I-VI and Capacity Expansion Area (Sections 7, 8, and 9).
- Downchutes constructed on the side slopes of the landfill will transport stormwater flow to the perimeter stormwater ditches.
- The perimeter stormwater ditches collect surface water runoff around the site, prevent offsite drainage from entering the landfill area, and drain runoff to the appropriate stormwater basins located around the site.

L.10.a.(1).2 Phases I-VI

The Phases I-VI stormwater collection system directs stormwater runoff from the landfill and surrounding sub-shed areas and into stormwater detention basins. The basins are designated as Basins A, B, C, D, and E, and an evaporation area. As the Phase I-VI areas are filled with waste, daily and intermediate cover (clean fill) is applied over the waste which promotes drainage away from the waste material. This minimizes the amount of water that is allowed to infiltrate into the waste. Stormwater that comes in contact with the waste in the active working area is considered leachate and will not be allowed to run off into the stormwater management system. The size of the working area will be kept to a minimum to minimize leachate and berms around the working

area will separate stormwater from leachate. The runoff will be directed toward downchutes that will be conveyed to one of the basins.

L.10.a.(1).3 Capacity Expansion Area

The Capacity Expansion Area stormwater collection system directs stormwater runoff from the landfill and surrounding sub-shed areas and into the existing stormwater detention basins. The receiving basins are designated as Basins C and D. As the Capacity Expansion Area, currently Sections 7 and 8 (Section 9 to be constructed), is filled with waste, it will then be covered with daily and intermediate cover (clean fill) to allow drainage away from the waste. This minimizes the amount of water that is allowed to infiltrate into the waste. Stormwater that comes in contact with the waste (now considered leachate) in the active working area will not be allowed to run off into the stormwater management system. The size of the working area will be kept to a minimum to minimize leachate. Berms around the working area will separate stormwater from leachate. The runoff will be directed toward downchutes and transported via stormwater ditches to Basin C. The undeveloped areas of the Capacity Expansion Area will collect and drain stormwater runoff to Basin D.

L.10.a.(1).4 Other Site Stormwater Basins

Several other basins located around the site collect stormwater runoff; however, they do not collect runoff from disposal areas. The other basins are mentioned in this plan for informational purposes. Basin E and Retention Ponds F and G collect runoff from the scalehouse. Retention Pond H collects runoff from the LTRF.

L.10.a.(2) Rain Tarps

Rain tarps will be used to cover open areas (areas that have not received waste material yet but are connected to the leachate collection system) to keep stormwater out of the leachate collection system. Water that has collected on top of the rain tarp is considered stormwater and can be pumped to the appropriate stormwater basin that was designed for that area. Before placement of waste, all rain tarps will be removed.

L.10.a.(3) Stabilized Slopes

As filling progresses, the top and side slopes that will not receive additional solid waste for 2 or more months will be stabilized. First, compacted fill will be placed over the waste material to keep stormwater from infiltrating into the waste and to promote runoff. The slopes can then be stabilized with vegetative cover, seed, and mulch, or rain tarp covers. Exterior side slopes that are constructed to design grade and interior side slopes that will not receive waste for longer than 180 days will be covered with intermediate cover and either vegetative cover or hydroseed.

L.10.a.(4) Closure

As disposal areas reach final elevations as discussed in Part L.7.h, areas may have a final or temporary cover placed over the waste material that will provide a low permeability cover over the waste and thus minimize long-term infiltration of stormwater into the waste materials as described in Section L.7.h.(1). As stormwater infiltration is cut off, water within the waste will drain out and into the leachate collection system. Since no further infiltration of stormwater will occur, the amount of leachate from stormwater infiltration will reduce with time.

The methods described above represent the current plan; however, as operations continue, they may be modified if alternate methods prove more efficient or allow a higher percentage of stormwater runoff, thus resulting in greater leachate minimization.

L.11 EQUIPMENT AND OPERATION

Landfill operation was discussed in Part L.2.

L.11.a. Operating Equipment

The landfill is currently operated with the following on-site equipment:

- Two steel-wheeled compactors.
- Two bulldozers.
- One self-propelled scraper.
- One water tank truck.
- One motor grader.
- One excavator.
- Several pickup trucks.
- Other miscellaneous construction and maintenance equipment.

Where appropriate, equipment is fitted with safety cabs and fire extinguishers. The Contractor is required to have back-up equipment available within 24 hours.

L.11.b. Reserve Equipment

Sufficient backup equipment will be provided on site for equipment breakdowns and downtime for normal routine equipment maintenance. Pre-arrangements with contractors and rental equipment dealers will be made to furnish equipment on short notice in the case of a major equipment failure. The Reserve Equipment Agreement is presented in Appendix B.

L.11.c. Communications Equipment and Personnel Facilities

Telephones are located at the Administrative and Maintenance Buildings for use in emergencies. Cellular telephones and two-way radios are also used. The Administration Building is equipped

with water supply, toilet facilities, emergency first-aid supplies, and electricity. The building also provides shelter for employees in case of inclement weather. The Maintenance Building is equipped with spare parts, tools, equipment, and electrical services for operations and repair.

L.11.d. Dust Control

L.11.d.(1) Phases I-VI

Dust control outside of the landfill will be provided by applying water sprayed from a water tank truck and will be applied to the unpaved access roads as required to control dust generation. Dust control inside of the landfill will be provided by applying small quantities of leachate as described in Section 8.4 of the LMP.

L.11.d.(2) Capacity Expansion Area

Dust control outside of the landfill will be provided by applying water sprayed from a water tank truck and will be applied to the unpaved access roads as required to control dust.

Dust control inside the active waste disposal areas will be provided by applying small quantities of leachate from a spray bar mounted on the rear of a tank truck. Leachate will be sprayed onto the active fill areas of the Capacity Expansion Area, including the working face, which includes a berm to prevent runoff, and areas with the required 6 inches of initial cover as required to control dust.

Leachate used as dust control reduces the amount of fresh pond water that would otherwise be sprayed from tanker trucks to control dust on the active fill areas and provides for leachate evaporation. Leachate quantities used for dust control will continue to be reported in the leachate balance report submitted to the FDEP.

The SWMD will monitor the rate of application, soil moisture conditions, and the specific landfill areas used so that this leachate disposal method does not generate runoff. Spray bar leachate spraying will be applied under the following conditions:

- Leachate will only be sprayed on active-fill areas, including the working face that includes a berm to prevent runoff and areas with the required 6 inches of compacted initial cover.
- Leachate will not be sprayed on areas with intermediate or final cover, seeded or unseeded, or on areas that do not have a berm to prevent runoff.
- The maximum grade leachate will be sprayed on is 10H:1V slope. Areas within 150 feet of a 4H:1V or steeper sideslope will not be sprayed. Areas receiving leachate will be controlled at all times to prevent leachate runoff from entering the stormwater system.

- Leachate will not be sprayed during a rainfall event.
- The tank truck spray bar method maximizes evaporation. The application rate of leachate will be such that leachate does not accumulate on the landfill surface nor infiltrate quickly into the covered refuse. The main goal of this leachate disposal method is evaporation rather than recirculation of leachate.
- Leachate will 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 used.

L.11.e. Fire Protection and Chemical Fires

A charged fire extinguisher is kept at the scalehouse, Administration Building, Maintenance Building, and with all landfill equipment all times. Excavated soil will be used for fire control at the working face.

If a load of waste delivered to the site is smoking or on fire, landfill personnel direct the load to the "hot spot" area (an area within the landfill footprint with at least 12 inches of soil cover) where appropriate fire fighting procedures are followed.

Water for fire protection will be supplied from the fire hydrant and intake structure located east of Phase II. A second fire hydrant and intake structure is located south of the LTRF. If there is a small fire at the working face, waste handling will continue on an alternate working face until the fire is suppressed. If a fire cannot be controlled using materials and personnel already on site, the Fire Department will be immediately contacted and the emergency response plan described in Part L.2.b will be followed. See Part L.2.b for spills and containment of contaminated water such as from fire fighting.

No chemicals will be accepted at the landfill. All waste coming through the scale house will be observed to eliminate unwanted chemicals capable of starting a fire. If a chemical accident does occur, the following steps will be taken:

- Call the local Fire Department (911).
- Contain the fire in a small area until Fire Department arrives. To eliminate inhalation of potentially toxic fumes, fight fire from the upwind side.
- Stay with fire until out and cover with sand.

L.11.f. Litter Control Devices

See Part L.7.j of this Operations Plan.

L.11.g. Signs

A sign indicating the hours of operation is located at the Facility entrance. Signs indicating the name of the operating authority, charges for disposal, and identifying the asbestos disposal site are located near the scalehouse area. Traffic flow and speed limit signs are located at various points along the landfill access road.

L.12 ALL-WEATHER ACCESS ROAD

The access roadway enters the site from CR 672. An asphalt paved road travels north through citrus groves and turns east into the Facility. The access road location was selected to minimize impacts to residential and agricultural areas along CR 672. There is a gate on the access roadway at CR 672 and fencing to prevent unauthorized access.

The main access road is a 40-foot-wide roadway with a 24-foot-wide asphalt paved section and 8-foot-wide shoulders constructed within the 100-foot-wide right-of-way. The main access road is paved and extends into the Facility through the property entrance, runs along the south side of the site, and turns north along the east side of the Facility area.

Other on-site roadways will be required on a temporary and permanent basis to serve the borrow area and for maintenance and services of on-site facilities. A stockpile of materials to construct and maintain all-weather roads to the active working face is available on site.

L.13 ADDITIONAL RECORDKEEPING

Operation records, such as permits, plans, inspections and others, are maintained at the Facility and at the SWMD office. The active area of Phases I-VI will be surveyed monthly and the active area of the Capacity Expansion Area will be surveyed twice each year to calculate the volume used and to estimate the in-place density.

L.13.a. Permit Application Development

The SWMD keeps all information including site investigations, construction records, operation records, inspections, and permits.

L.13.b. Monitoring Information and Background Water Quality

The SWMD also keeps all monitoring records on groundwater, surface water, weather, and landfill gas. Copies are regularly submitted to the FDEP and the Environmental Protection Commission of Hillsborough County.

L.13.c. Remaining Site Life Estimates

An estimate of the remaining site life for the permitted area will be prepared annually for submission to the FDEP.

L.13.d. Archiving and Retrieving Records

Records of the landfill that are more than 3 years old will be available at the County's offices at 925 East Twiggs Street, Tampa, FL 33602.

APPENDIX A

TRAINING COURSES

FLORIDA'S SOLID WASTE MANAGEMENT FACILITY OPERATOR AND SPOTTER

Approved Initial and Continuing Education Courses

Last updated 3/17/2009

- Initial training courses can be taken for continuing education credit if the course was not taken as the initial training course.
- The initial course can be retaken as continuing education credit during the second three-year training period.
- Courses taken prior to your initial training does not count toward continuing education.
- No continuing education credit will be given for the same course taken within the same 3-year period.
- Visit: <http://landfill.treeo.ufl.edu/> to see operator/spotter training transcripts.

Class I, II, III Landfill Operators [Initial Training]			I, II, III	C&D	Transfer	MRF	Spotter
No.	COURSE TITLE	PROVIDED BY					
30	SWANA - Manager of Landfill Operations Training Course [MOLO®]	SWANA	30				
160	SWANA - Manager of Landfill Operations [MOLO®]	SWANA-FL / UF TREEO	30	30			
195	24-Hour Initial Training Course for Landfill Operators (Class I, II and III and C&D Sites)	Kohl Consulting, Inc.	24				
442	Initial Training for Landfill Operators and C&D Sites – 24 Hour	UF TREEO/ Innovative Waste Consulting Services, Inc.	24	24			

Construction and Demolition Debris Operators [C & D] [Initial Training]			I, II, III	C&D	Transfer	MRF	Spotter
No.	COURSE TITLE	PROVIDED BY					
200	Construction and Demolition Debris Landfills - A Short Course for Operators-24 hours	SWANA-FL / UF TREEO		24			
5	24-Hour Initial Training Course for Landfill Operators (Class I, II and III and C&D Sites)	Kohl Consulting, Inc	24	24			
442	Initial Training for Landfill Operators and C&D Sites – 24 Hour	UF TREEO/ Innovative Waste Consulting Services, Inc.	24	24			

Transfer Stations [Initial Training]			I, II, III	C&D	Transfer	MRF	Spotter
No.	COURSE TITLE	PROVIDED BY					
196	16-Hour Initial Training Course for Transfer Station Operators	Kohl Consulting, Inc			16		
225	19-Hour Initial Training for Transfer Station and MRF Operators	Kohl Consulting, Inc			19	19	
42	Transfer Station Design & Operations	SWANA			16		
222	SWANA - Managing MSW Transfer Station Systems	Solid Waste Association of North America SWANA			16		
443	Initial Training Course for Operators of Transfer Stations and Material Recovery Facilities – 16 Hour	UF TREEO/ Innovative Waste Consulting Services, Inc.			16	16	

Materials Recovery Facilities [MRF] [Initial Training]			I, II, III	C&D	Transfer	MRF	Spotter
No.	COURSE TITLE	PROVIDED BY					
225	19-Hour Initial Training for Transfer Station and MRF Operators	Kohl Consulting, Inc			19	19	
197	16-Hour Initial Training Course for Materials Recovery Facilities [MRFs]	Kohl Consulting, Inc				16	
443	Initial Training Course for Operators of Transfer Stations and Material Recovery Facilities – 16 Hour	UF TREEO/ Innovative Waste Consulting Services, Inc.			16	16	

Spotters [Initial Training]

			I, II, III	C&D	Transfer	MRF	Spotter
	COURSE TITLE	PROVIDED BY					
203	8 Hour Initial Training for Spotters at Class I, II, III Landfills, Waste Processing Facilities, and C&D Sites	Kohl Consulting, Inc.	8	8	8	8	8
219	8-Hour Initial Training for Spotters	Consolidated Resource Recovery, Inc.	8	8	8	8	8
488	8-Hour Spotter Training Class I II III Landfill C&D Sites and Transfer Facilities	Safety Consulting and Training	8	8	8	8	8
462	8-Hour Training Course for Spotters at Landfills, C&D Sites and Transfer Stations	UF TREEO Center	8	8	8	8	8
97	Basic Landfill Operations	Kohl Consulting, Inc.	8	8	8	8	8
474	Spotter Training for Solid Waste Management Staff with Elements of a Solid Waste Operations Plan	Joe Grusauskas	8	8	8	8	8
91	Eight Hour Spotter Training for C&D Sites	Kohl Consulting, Inc.	8	8	8	8	8
121	Eight-Hour Training for Personnel at C&D Materials Recovery Facilities	Kohl Consulting, Inc.	8	8	8	8	8
111	Landfill Operations and Waste Screening for Class I, II & III Sites	Kohl Consulting, Inc.	8	8	8	8	8
365	Safety Issues for Solid Waste Management Facilities – 8 hours	Kohl Consulting, Inc.	8	8	8	8	8
257	Spotter Training Course – 8 Hours Initial Training	Hewitt Contracting Company, Inc.	8	8	8	8	8
248	Spotter Training for Solid Waste Facilities	UF TREEO	8	8	8	8	8
214	Spotter Training Plan for Land Clearing Debris Site	Wetland Solutions	8	8	8	8	8
147	Training for Spotters at Landfills, C&D Sites and Transfer Stations	JEA/TREEO	8	8	8	8	8
36	Waste Screening & Identification For Landfill Operators and Spotters	TREEO	8	8	8	8	8
122	Waste Screening and Operation Orientation for Transfer Station Personnel	Kohl Consulting, Inc.	8	8	8	8	8
	Waste Screening at MSW Management Facilities {On-site Delivery}	SWANA	10	10	10	10	10

Continuing Education			I, II, III	C&D	Transfer	MRF	Spotter
No.	COURSE TITLE	PROVIDED BY					

204	1-Hour Overview of Health & Safety Issues at Solid Waste Facilities	Kohl Consulting, Inc	1	1	1	1	
105	11th Annual SE Recycling Conference & Trade Show [3/1-4/98]	SE Recycling	8	8			
197	16-Hour Initial Training Course for Materials Recovery Facility (MRF) Operators	Kohl Consulting, Inc.	10	10	8	8	
443	Initial Training Course for Operators of Transfer Stations and Material Recovery Facilities – 16 Hour	UF TREEO/ Innovative Waste Consulting Services, Inc.	12	12	8	8	4
196	16-Hour Initial Training Course for Transfer Station Operators	Kohl Consulting, Inc.	10	10	8	8	
52	17-701 & 17-703 Update [6/17/94]	SWANA - FL	4				
225	19-Hour Initial Training Course for Transfer Station and MRF Operators	Kohl Consulting, Inc	10	10	8	8	
516	24 Hour HazMat Technician Level	FL Dept of Mgmt Services	6	6	6	6	6
282	24-Hour HazWoper Technician Training	Safety Training & Consulting	6	6	6	6	
195	24-Hour Initial Training Course for Landfill Operators (Class I, II, III, and C&D Sites)	Kohl Consulting, Inc.	16	16			
442	Initial Training for Landfill Operators and C&D Sites – 24 Hour	UF TREEO/ Innovative Waste Consulting Services, Inc.	16	16	8	8	4
169	40-hour Train-the-Trainer Program for Hazardous Waste Operations and Emergency Response Program	Chinn Training	8	8	8	8	
450	40hr General Site Worker Hazardous Waste Operations	University of South Florida – Sunshine ERC	8	8	8	8	8
478	40 hour HazWoper	American Compliance Technologies	8	8	8	8	4
507	40-Hour HazWoper	Compliance Solutions	8	8	8	8	4
314	8-hour Bioreadiness Training	USF Center for Biological Defense	8	8	8	8	
283	8-Hour DOT HM-126 Training	Safety Training & Consulting	4	4	4	4	
17	8-Hour HazWoper OSHA Refresher	FDEP / All Pro /USL City Env	4	4	4	4	
280	8-Hour HazWoper Refresher	USF / ERC	4	4	4	4	
290	8-Hour HazWoper Refresher (same as #266)	Sunshine ERC	4	4	4	4	4
144	8-Hour HazWoper Refresher Training	Stephen Mraz	4	4	4	4	
307	8-Hour HazWoper Refresher Training	Emergency Response Educators and Consultants, Inc.	4	4	4	4	4
371	8-Hour HazWoper Refresher	WPB Fire Rescue Special Op	4	4	4	4	4
203	8-Hour Initial Training Course for Spotters at Class I, II, III Facilities, Waste Processing Facilities, and C&D Facilities	Kohl Consulting, Inc.	8	8	8	8	8
219	8-Hour Initial Training for Spotters	Consolidated Resource Recovery, Inc.	8	8	8	8	8
463	4-Hour Refresher Course for Spotters at Landfills, C&D Sites and Transfer Stations	UF TREEO Center	4	4	4	4	4
488	8-Hour Spotter Training Class I II III Landfill C&D Sites and Transfer Facilities	Safety Consulting and Training	8	8	8	8	8
504	4-hour Spotter Training Refresher Class I II III, C&D Sites and Transfer Facilities	Safety Consulting and Training	4	4	4	4	4
288	A Little is Enough: Reducing Man-Made mercury Impacts	UF TREEO Center	2	2	2	2	2
357	Adult First Aid/CPR	American Health & Safety Institute	4	4	4	4	2
410	Adult CPR	American Red Cross	1	1	1	1	1
270	Advanced Topics in Compost Utilization	UF IFAS Extension Office	2	2		2	2
182	Air Compliance and LGF System Operation [11/9-10/00]	SCS Engineers	16				
171	An Overview of Solid Waste Technologies and Waste Screening Review	Kohl Consulting, Inc.	2	2	2	2	2
71	Asbestos Awareness Course for Landfill Operators	UF TREEO Center	4	4	4	4	4
17	Asbestos Awareness Refresher Course for Landfill Operators	UF TREEO Center	2	2	2	2	2
164	Asbestos Inspector	UF TREEO Center	3	3			
236	Authorized Entrant for Permit – Required Confined Spaces	UF TREEO Center	16				
145	Avoiding OSHA Citations and Liabilities in Florida [6/29/99]	Lorman Education Services	6				

Continuing Education			I, II, III	C&D	Transfer	MRF	Spotter
No.	COURSE TITLE	PROVIDED BY					
143	Basic Confined Space [8/17/99]	North Florida Environmental Services	8	8	8	8	8
97	Basic Landfill Operations	Kohl Consulting, Inc.	8	8	8	8	8
253	Basic Math for Water and Wastewater Operations at FW&PCOA Annual or Regional Short School	Michael Switzer	5	5	5	5	
339	Bioreactor Landfill Workshop	FCSHWM	8				
430	Bioreactor Workshop [5/25-26/06]	FCSHWM	7				
313	Bioreadiness for Government Professionals	USF Center for Biological Defense	2	2	2	2	2
72	Bird and Wildlife Management at Solid Waste Mgmt Facilities	UF TREEO Center	8	8	8		
206	Bird Management at Solid Waste Facilities	UF TREEO Center	4	4	4		
312	Building Material ReUse Workshop	SWIX, FDEP, UF-Rinker	3	6	3	3	
318	C&D Operator/Spotter Training Refresher	Kohl Consulting, Inc.	4	4	4	4	4
285	Chemical Compatibility and Storage	UF TREEO Center	4	4	4	4	4
403	Chemical Compatibility and Storage – 8 hours	UF TREEO Center	8	8	8	8	4
233	Chemicals That You Work With	Charlotte County	2	2	2	2	2
391	Chemical Spill Response Training	Dept of Agriculture and Consumer Services	8	8	8	8	8
12	Chemistry for Environmental Professionals	UF TREEO Center	8	8	8	8	8
367	Chemistry for the Non-Chemist	NAHAMMA – Rosemary Bottcher	4	4	4	4	4
386	Community Hurricane Preparedness - Online	Emergency Management Institute	7	7	7	7	
16	Complete Preventative Maintenance: Using New Technologies [No longer offered]	UF TREEO Center	13				
8	Compost Tour and Hands-On Training [5/20/03]	UF – IFAS Extension Office	3				
525	Composting Wastewater Residuals (Biosolids) in Charlotte County	Kohl Consulting Inc	3				
436	Confined Space Entry Course	Florida Atlantic University	8	8	8	8	
35	Confined Space Entry & Assessment	Applied Associates International	8	8	8	8	
18	Confined Space Entry & Assessment [no longer offered]	UF TREEO Center	20				
29	Confined Space Entry & Rescue	South Tech Fire Academy	40	40	40	40	
181	Confined Space for Private Industry	Sarasota Co. Tech	24	24	24	24	
80	Construction and Demolition Debris Landfills - A Short Course for Operators [no longer offered] (See #200)	UF TREEO Center/ SWANA – FL	20	20			
200	Construction and Demolition Debris Landfills - A Short Course for Operators - 24 hours	UF TREEO Center/ SWANA – FL	16	16			
440	Construction and Demolition Debris Workshop	Hinkley Center	3	3	3	3	
103	Construction and Demolition Waste Recycling	UF TREEO Center	7	7		7	7
485	Contemporary Techniques of Supervision /Management	Indian River Community College	7	7	7	7	
357	CPR and First Aid (Adult)	American Red Cross	4	4	4	4	2
410	CPR (Adult)	American Red Cross	2	2	2	2	2
502	Debris Management – 4 hours	UF TREEO Center	4	4	4	4	4
114	Debris Management G202	FEMA/FL Div	12	12	8	8	4
136	Debris Management-Advanced Course (G202-Advanced)	FDEP/FEMA	8	8	8	8	8
161	Design of Lateral Drainage Systems for Landfills [3/14/00]	Tenax	5				
520	Design of Waste Containment Liners and Closure Systems	ASCE	14				
108	Developing a Usable Operations Plan	Kohl Consulting, Inc.	4	4	4	4	4
457	Disaster Debris Management	ASCE	6	6	6		2
267	DOT 4 Hour Awareness Training [5/5/03, 12/04] - NAHAMMA	FDEP / NAHAMMA	2	2	2	2	2
2	Efficient Stormwater Management and Pipe Performance	Advanced Drainage Systems, Inc	2				
130	Eight Hour Confined Space Training Course	Charles Davis	8	8	8	8	8
91	Eight Hour Spotter Training for Construction & Demolition Sites	Kohl Consulting, Inc.	8	8	8	8	8

Continuing Education			I, II, III	C&D	Transfer	MRF	Spotter
No.	COURSE TITLE	PROVIDED BY					
287	Emergency Response Operations for Incident Command	UF TREEO Center	4	4	4	4	
40	Environmental Drilling, Well Installation & Sampling	Nielson Environmental Field School, Inc.	16	16			
316	Environmental Impacts of Preservative Treated Wood Conference [2/8-11/04]	UF FICISS	12	12		6	
271	Environmental Management Systems - Introduction	UF TREEO Center	2	2	2	2	
175	Environmental Management Systems - Overview	UF TREEO Center	4	4	4	4	
176	Environmental Management Systems Internal Audit Procedures	UF TREEO Center	4	4	4	4	
384	Environmental Management System Webcast	UF TREEO	1	1	1	1	
420	Environmental Management System Webcast – How to Build...	UF TREEO/APWA	1	1	1	1	
43	Environmental Sampling Laboratory & Data Analysis [12/12-12/94]	Executive Enterprises, Inc.	12				
405	Environmental Workshop	METRA	4	4	4	4	
100	Excavation, Trenching: Competent Person Training	UF TREEO Center	8	8			
284	Excavation, Trenching: Competent Person Training 16-Hour	UF TREEO Center	16	16			
500	Excavation & Trenching Safety Procedures	UF TREEO Center	4	4			
66	Exposure to Bloodborne and Waterborne Pathogens <i>[No longer offered]</i>	UF TREEO Center	8				
167	FDEP 8-Hour HazWoper OSHA Refresher [5/3/00]	FDEP / All Pro	4	4	4	4	
199	FDEP 8 Hour HazWoper OSHA Refresher [5/1/01]	FDEP	4	4	4	4	
228	FDEP 8 Hour HazWoper OSHA Refresher [5/22/02]	FDEP / Kenton Brown	4	4	4	4	
232	FDEP 8 Hour HazWoper OSHA Refresher [5/22/02]	FDEP [Bottcher/Knox]	4	4	4	4	
266	FDEP 8 Hour HazWoper OSHA Refresher [5/5/03, 5/9/03]	FDEP	4	4	4	4	
1	FDEP 8 Hour HazWoper OSHA Refresher [12/04]	FDEP	4	4	4	4	
435	FDEP 8 hour HazWoper OSHA Refresher	FDEP /DeHate	4	4	4	4	
48	FDEP Annual SQG Assessment, Notification & Verification Program Workshop [4/30/96]	FDEP	5				
88	FDEP Annual SQG Assessment, Notification & Verification Program Workshop [5/5-7/97]	FDEP	5				
107	FDEP Annual SQG Assessment, Notification & Verification Program Workshop [5/4-6/98]	FDEP	7	7	7	7	
134	FDEP Annual SQG Assessment, Notification & Verification Program Workshop [5/3-5/99]	FDEP	5	5	5	5	
226	FDEP Annual SQG Assessment, Notification & Verification Program Workshop [5/20-21/02]	FDEP	5	5	5	5	
264	FDEP Annual SQG Assessment, Notification & Verification Program Workshop [5/5-6/03]	FDEP	5	5	5	5	
433	FDEP Annual SQG Workshop [5/3-5/06]	FDEP	5	5	5	5	
360	FDEP Annual HHW-SQG Workshop & 2004 NAHAMMA Conf [12/04]	FDEP & NAHAMMA Conf	5	5	5	5	5
366	FDEP/NAHAMMA Behavior Change Training [12/7/04]	FDEP & NAHAMMA Conf	4	4	4	4	
367	FDEP/NAHAMMA Identification of Unknowns and Chemistry for Non-Chemists Training [12/10/04]	FDEP & NAHAMMA Conf	4	4	4	4	4
267	FDEP DOT 4 Hour Awareness Training [5/5/03, 12/04]	FDEP	2	2	2	2	2
268	FDEP HHW Facility Design [5/9/03]	FDEP	4	4	4	4	4
54	FDEP HHW & Conditionally Exempt SQG [5/3-5/95]	FDEP	14				
59	FDEP HHW & Conditionally Exempt SQG [5/1/96]	FDEP	5				
84	FDEP HHW & Conditionally Exempt SQG [5/5-7/97]	FDEP	5				
106	FDEP HHW & Conditionally Exempt SQG [5/6-8/98]	FDEP	5	5	5	5	
5	FDEP HHW & Conditionally Exempt SQG [5/5-7/99]	FDEP	5	5	5	5	
166	FDEP HHW & Conditionally Exempt SQG [5/1-3/00]	FDEP	5	5	5	5	
198	FDEP HHW & Conditionally Exempt SQG [4/30-5/1/01]	FDEP	5	5	5	5	

Continuing Education			I, II, III	C&D	Transfer	MRF	Spotter
No.	COURSE TITLE	PROVIDED BY					
227	FDEP HHW & Conditionally Exempt SQG [5/22-24/02]	FDEP	5	5	5	5	
265	FDEP HHW & Conditionally Exempt SQG [5/7-8/03]	FDEP	5	5	5	5	5
434	FDEP Household Hazardous Waste Workshop [5/1-3/06]	FDEP	5	5	5	5	
330	FDEP SOP Sampling Training for Groundwater, Surface Water and Wastewater	UF TREEO Center	7	7			
114	FEMA Debris Management Course	SWANA/UF TREEO	12	12	8	8	4
32	Field Sampling Short School [7/22-24/91]	Environmental Technology Center	22				
110	Fires at Landfills	Kohl Consulting, Inc.	2	2		2	
484	Fires at Landfills – 4 hours	Kohl Consulting, Inc.	4	4	4	4	4
411	First Aid (Standard) – Workplace Training	American Red Cross	2	2	2	2	2
291	Fleet Management	Fleet Solutions	4	4	4	4	
293	Fleet Management and Predictive Maintenance	Fleet Solutions	8	8	8	8	
491	Florida Construction & Demolition Debris Recycling & Management Workshop [5/12/08]	FDEP and SWIX	4	4	4	4	4
377	Florida Landfill Gas to Energy Symposium	Florida Energy Office	5	5			
273	Florida Master Naturalist Program – Florida Freshwater Wetlands Systems	UF IFAS Extension Office	4	4	4	4	
496	Florida Solid Waste Regulations Review and Update	UF TREEO Center	4	4	4	4	4
289	Florida Stormwater and Erosion Control and Sedimentation Inspector Training Program (same as #202-Stormwater Inspector)	METRA-North, UF TREEO, FDEP	12	12	8	4	
451	Florida Water & Pollution Control Operators Association Short School – Stormwater Section	FW&PCOA	16	16			
521	Foundations of Project Management	SunCam Inc	4	4	4	4	
255	Four Hour Spotter Orientation for Class I, II and III Supervisors	Kohl Consulting, Inc.	4	4	4	4	4
256	Four Hour Spotter Refresher for Class I II III Landfills, Waste Processing Facilities and C&D Facilities	Kohl Consulting, Inc.	4	4	4	4	4
119	Four Hour Spotter Training Refresher for Construction & Demolition Sites	Kohl Consulting, Inc.	4	4	4	4	4
113	Full Cost Accounting for Municipal Solid Waste Management [2/17/98]	Terra Tech EM Inc	6				
120	Fundamentals of Operations for MRF Facilities Personnel	Kohl Consulting, Inc.	8			8	
274	Fundamentals of Slope Stability	UF TREEO Center	16	16			
456	Fundamentals of Slope Stability and Settlement for Solid Waste Disposal Facilities (Engineers Only)	UF TREEO Center	22	22	22		
401	Fundamentals of Successful Project Management	Skill Path	7	7	7	7	
271	General Environmental Workshop [Feb-Mar 2003]	METRA	4	4	4	4	4
154	Geosynthetics for Advanced Solutions [11/4/99]	GSE Lining Tech	6				
423	Geosynthetic Testing and Landfill Design Issued – Short Course	Jones Edmunds	8	8	4		
338	Governor's Hurricane Conference - 2004 [Debris Management track-only]	Florida Dept of Community Affairs	6	6	6	6	6
393	Governor's Hurricane Conference - 2005	Governor's Hurricane Conference	7	7	7	7	
501	Groundwater Issues for Landfill & MRF Operators – 4 Hours	UF TREEO Center	4	4		4	
152	Groundwater Issues for Landfill Operators [No longer offered]	UF TREEO Center	6	6			
308	Groundwater Issues for Landfill Operators - 8 Hours [Effective 11 2003-	UF TREEO Center	8	8	0	0	0
17	Groundwater Monitoring, Analysis and Data Interpretation	UF TREEO Center	12	12			
76	Groundwater Monitoring, Requirements and Techniques for Landfills	Kohl Consulting, Inc.	2	2			
101	Hazard Communications Course	Escambia County Emergency Prep	4	4	4	4	4
514	Hazardous / Chemical Safety Training	FDEP (Kenton Brown)	4	4	4	4	4
255	Hazardous Material and Site Investigations	EnSafe	6	6	6	6	6
252	Hazardous Material Chemistry for Non-Chemist [1/18/95]	St. Petersburg Junior College	7				
286	Hazardous Materials Chemistry for Non-Chemist	UF TREEO Center	8	8	8	8	4
131	Hazardous Material Recognition Awareness Level Refresher [3/1/96]	Citrus County	4				

Continuing Education			I, II, III	C&D	Transfer	MRF	Spotter
No.	COURSE TITLE	PROVIDED BY					
81	Hazardous Material Transportation [no longer offered]	UF TREEO Center	4				
304	Hazardous Materials Awareness for Solid Waste Online	UF TREEO Center	5	5	5	5	2
50	Hazardous Materials Awareness Training [1/25/94]	Citrus County	8				
102	Hazardous Materials in Construction & Demolition Waste	UF TREEO Center	4	4			
224	Hazardous Materials in Construction & Demolition Waste OnLine	UF TREEO Center	4	4			
86	Hazardous Materials Incident Awareness Level Training [2/5/97]	Escambia County Emergency Prep	8	8	8	8	8
503	Hazardous Materials Incident Response Operations – 24 hour OSHA	Kenton Brown	6	6	6	6	3
356	Hazardous Materials Incident Response Operations – 40 hour OSHA	Kenton Brown	8	8	8	8	4
70	Hazardous Materials Management Conference [11/6-9/96]	International City & County Mgmt Associate	12				
469	Hazardous Materials Operations / OSHA Level II	United Agri Products	4	4	4	4	2
439	Hazardous Materials Training	JJ Keller	6	6	6	6	6
98	Hazardous Materials Transportation Seminar [5/7-8/97]	City Environmental Services, Inc of Florida	5	5	5		
34	Hazardous Waste & Emergency Response	Applied Associates International	8	8	8	8	8
535	Hazardous Waste Management: The Complete Course	Environmental Resource Center, South Carolina					
510	Hazardous Waste Management Course	Air Force Institute of Technology	8	8	8	8	4
53	Hazardous Waste Management for Government Employees [9/95, 10/95]	UF TREEO Center	6				
60	Hazardous Waste Mgmt 40 CFR 261-265 [4/17/96]	Occupational Safety Training, Inc.	8				
99	Hazardous Waste Operations & Emergency Response	Sterling Fibers/ESP	3	3	3		
188	Hazardous Waste Operations Emergency Response Refresher	Orange Co. Environmental Protection Division	4	4	4	4	
9	Hazardous Waste Operations & Emergency Response Site Supervision 8 Hour Course	USF Sunshine ERC	4	4	4	4	2
63	Hazardous Waste Regulations for Generators	UF TREEO Center	4	4	4	4	4
519	Hazardous Waste Regulations for Solid Waste Occupations	UF TREEO Center	4	4	4	4	4
20	Hazardous Waste Training for Solid Waste Managers [7/16/93]	SWANA – FL	5				
531	HazCom Standard Right-to-Know Online	UF TREEO Center	2	2	2	2	2
217	HazWoper 24-Hour Moderate Risk Online	UF TREEO Center	6	6	6	6	3
216	HazWoper 40-Hour OSHA Health & Safety Online	UF TREEO Center	8	8	8	8	
421	HazWoper 40-Hour OSHA Course	Applied Environmental Health and Safety, Inc.	8	8	8	8	4
269	HazWoper 8 Hour OSHA Refresher	Gulf Coast Industrial Services Inc.	4	4	4	4	2
218	HazWoper 8-Hour Refresher Online	UF TREEO Center	4	4	4	4	2
422	HazWoper 8-Hour Refresher OSHA Course	Applied Environmental Health and Safety, Inc.	4	4	4	4	2
115	HazWoper Material Control & Emergency Response	Air Safe	8	8	8	8	4
170	Health & Safety Issues for Solid Waste Management Facilities	Kohl Consulting, Inc.	8	8	8	8	4
281	Health and Safety for Solid Waste Workers	UF TREEO Center	8	8	8	8	8
528	Health and Safety for Solid Waste Workers – 4 hours	UF TREEO Center	4	4	4	4	4
498	Health and Safety for Solid Waste Workers – Part 1	UF TREEO Center	4	4	4	4	4
499	Health and Safety for Solid Waste Workers – Part 2	UF TREEO Center	4	4	4	4	4
69	Health and Safety Training for Hazardous Materials: 40-Hour OSHA Compliance Course	UF TREEO Center	8	8	8	8	
	Health and Safety Training for Hazardous Materials: 8 hour OSHA Refresher	UF TREEO Center	4	4	4	4	2
223	Health and Safety Training for Landfill Operations OnLine [no longer offered 11/03, see course #304]	UF TREEO Center	5	5	5	5	2
149	Health and Safety Training for Landfill Operations	UF TREEO Center	5	5	5	5	2

Continuing Education			I, II, III	C&D	Transfer	MRF	Spotter
No.	COURSE TITLE	PROVIDED BY					
295	Heavy Equipment Operator Training – 4 hour	Fleet Solutions	4	4	4	4	
201	Hiring and Retaining Good Employees	UF TREEO Center	2	2	2	2	
434	HHW Pak & Sort [NAHAMMA]	NAHAMMA	4	4	4	4	
33	Household Hazardous Waste [6/30/94]	Care Environmental Corp.	4				
306	Household Hazardous Waste Training Workshop	Charlotte County Solid Waste	4	4	4	4	4
397	Household Hazardous Waste Training Workshop [June 2005]	Charlotte County Solid Waste	4	4	4	4	4
492	Hurricane Debris Management Workshop [4/9/2008]	Alachua County and Hinkley Center	4	4	4	4	
209	Hurricane Preparedness and Post Disaster Recovery Workshop [8/10/01]	Dewberry & Davis LLC	8	8	8	8	8
19	Hydrogeology: Applications of Fundamental Concepts & Field Techniques to Florida Groundwater Investigations [No longer offered]	UF TREEO Center	20	20			
476	Improving Landfill Operations	Kohl Consulting Inc	4	4			
517	Improving Transfer Station Efficiency	Kohl Consulting Inc			4	4	
11	Inspection Procedures for Agri-chemical Containers offered for Recycling [No longer offered]	Dept. of Agriculture & Consumer Services	1				
44	Inspection Procedures for Agri-chemical Containers offered for Recycling [Pesticide] [No longer offered]	Institute of Food & Agriculture Science [IFAS]	1				
129	Inspector's Handbook for Construction Projects	Hillsborough County Solid Waste	7				
151	Integrated Management Course: Hurricane Recovery and Mitigation	FEMA/EMI	7	7	7	7	
443	Initial Training Course for Operators of Transfer Stations and Material Recovery Facilities – 16 Hour	UF TREEO/ Innovative Waste Consulting Services, Inc.	12	12	8	8	4
442	Initial Training for Landfill Operators and C&D Sites – 24 Hour	UF TREEO/ Innovative Waste Consulting Services, Inc.	16	16	8	8	4
37	Introduction to Electrical Maintenance [prior to 1/1/02]	UF TREEO Center	7				
2	Introduction to Electrical Maintenance [taken after 1/1/02]	UF TREEO Center	16	16	16	16	
14	Introduction to Groundwater: Contamination, Investigation, & Remediation Assessment	UF TREEO Center	13	13			
527	Introduction to Heavy Equipment and Skill Testing	UF TREEO Center	4	4	4	4	4
472	Landfill and Transfer Station Operators: Waste Acceptability and Safety Issues Review	Kohl Consulting Inc	4	4	4	4	4
124	Landfill Compaction Training School [prior to 1/1/02]	Caterpillar & Ringhaver Equipment	5	5			
229	Landfill Compaction Training School - 8 hours [taken after 1/1/02]	Caterpillar & Ringhaver Equipment	8	8			
75	Landfill Compliance Inspections	Kohl Consulting, Inc.	2	2			2
157	Landfill Design and Construction	UF TREEO Center	28				
4	Landfill Design: Cell Design & Construction [3/9/92]	UF TREEO Center	14				
6	Landfill Design: Closure & Long Term Care [5/19/92]	UF TREEO Center	15				
2	Landfill Design: Conceptual Design Operations & Monitoring [1/12/92]	UF TREEO Center	14				
78	Landfill Design: Landfill Design and Construction [5/5-9/97], [3/27-30/00]	UF TREEO Center	28				
5	Landfill Design: Leachate & Gas Management [3/11/92]	UF TREEO Center	15				
79	Landfill Design: Leachate and Gas Management System Design [6/10-12/97]	UF TREEO Center	21				
3	Landfill Design: Liner Systems Materials Installation & Quality Assurance [2/11/92]	UF TREEO Center	14				
1	Landfill Design: Planning & Permitting [1/21/92]	UF TREEO Center	14				
77	Landfill Design: Planning and Permitting for Solid Waste Management [4/8-9/97]	UF TREEO Center	16				
179	Landfill Gas & Energy: Alternative Uses [9/25-27/00]	CDM, Inc.	8				
49	Landfill Gas & Leachate Systems	UF TREEO Center / SCS Engineers	8	8			
2	Landfill Gas Collection and Control Systems [8/19-20/99]	CDM, Inc.	8				
276	Landfill Gas Collection and Control Systems Operator Training [9/2002]	Waste Management.	12				
518	Landfill Gas Collection and Re-Use	Kohl Consulting Inc	4	4			
511	Landfill Gas Control and Compliance Seminar [10/2007]	Waste Management.	8				

Continuing Education			I, II, III	C&D	Transfer	MRF	Spotter
No.	COURSE TITLE	PROVIDED BY					
89	Landfill Gas: How to Profit From the New Mandates [6/17/97]	FDEP	7				
83	Landfill Gas NSPS Workshop [7/15/96]	FDEP	6				
67	Landfill Gas NSPS Workshop [7/9/96]	SWANA - FL	4				
466	Landfill Gas Operation and Maintenance	SWANA	16	16			
311	Landfill Gas Safety Training Program – Nature, Hazards, Regulations, Response	UF TREEO Center / SCS Engineers	4	4			4
57	Landfill Gas System Design- A Practical Approach [6/14-15/94]	Landfill Control Technologies	8				
194	Landfill Operating Issues for Class I, II, III and C&D Sites	Kohl Consulting, Inc.	8	8			8
260	Landfill Operation Online	UF TREEO Center	16	16			
261	Landfill Operation	UF TREEO Center	16	16			
111	Landfill Operations and Waste Screening for Class I, II & III Sites	Kohl Consulting, Inc.	8				8
399	Landfill Operator and MRF Operator Training	Crown Services, Inc	16	16	8	8	
58	Landfill Operator Education (Landfill Mining and Landfill Gas and Leachate Mgmt) [3/22/96]	SWANA - FL	4				
168	Landfill Service School (Leachate Pumps and Controls School) [3/25-26/99]	EPG Companies	7	7			
118	Landfill Wildlife Training Course	Applied Technology & Mgmt, Inc – ATM/UF TREEO Center	4	4			
277	Laws and Rules for Florida Engineers - *only for PEs	UF TREEO Center	4				
441	Laws and Rules - *only for PEs	FS - ASCE	4				
158	Leachate and Gas Management System Design [5/9-10/00]	UF TREEO Center	12				
461	Leachate and Landfill Gas 4-hour Refresher Short Course	UF TREEO Center	4	4			
340	Leachate and Landfill Gas Management System Design-2004	UF TREEO Center	16				
387	Low-Flow Ground Water Sampling and Florida SOPs	STL & QED and FDEP	5	5			
5	Management of Leachate, Gas, Stormwater and Odor at Class I, II, III Landfills	Kohl Consulting, Inc.	8	8			
249	Management of Special Waste for/SWM Facility Operators	Kohl Consulting, Inc.	4	4	4	4	4
394	Managerial Decision-Making and Problem-solving in Government Organizations	Eglin Air Force Base	7	7			
389	Map and Plan Reading Class	Sarasota Co. Tech	5	5	5	5	5
333	Mathematics for Landfill Operators	Wetland Solutions	8	8			
523	Maximizing Beneficial Use of Disaster Debris	Kessler Consulting, Inc.	4	4	4	4	
109	Measurements and Calculations for Landfill Operators	Kohl Consulting, Inc.	5	5			
38	Mechanical Maintenance (Pumps and Pumping) (prior to 1/1/02) (see #213)	UF TREEO Center	7				
140	Meeting the Challenges of Environmental Liability with Case Studies in Solid Waste [6/16/99]	SWANA - FL	4				
128	Methods of Erosion and Sedimentation Control for Construction Sites	UF TREEO Center/FDEP	6	6			
390	MicroPurge Low-Flow Purging and Groundwater Sampling	The Nielsen Environmental Field School	8	8			
003	Military Active Duty						
424	National Incident Management System [NIMS] IS-00700 an Introduction	Official Certificate with IS-00700	4	4	4	4	
454	NAHHMA - North America Hazardous Materials Management Association - Florida Chapter Conference (2007)	NAHHMA-FL Chapter	8	8	8	8	4
489	NAHHMA - North America Hazardous Materials Management Association - Florida Chapter Conference (2008)	NAHHMA-FL Chapter	4	4	4	4	4
528	NAHHMA Florida Caribbean Chapter HHW/SQG 2009 Workshop	NAHHMA-FL Chapter	4	4	4	4	4
208	NPDES Phase II Inspector Certification Course	University of Florida – T2 Center	12	12	8	4	
0	NUCA Competent Person Training	Sarasota Co. Tech	8	8			
364	Odor Control at Class I II III	SWA PBC	8				
10	On Site Operations Personnel [11/91]	SWANA - FL					

Continuing Education			I, II, III	C&D	Transfer	MRF	Spotter
No.	COURSE TITLE	PROVIDED BY					
332	Operational Techniques and Compliance Inspections for Landfills	Wetland Solutions	8	8			
438	Operating Considerations for Transfer Stations	Kohl Consulting Inc			4		
352	Operator Safety on Heavy Equipment	Ring Power	4	4	4	4	4
395	Organics Committee Workshop	FOR A/Force				3	
177	OSHA 40-Hour Course	R. Cooley	8	8	8	8	
165	OSHA 8-Hour HazWoper Annual Refresher [2/25/00]	University of North Florida/ Safety America	4	4	4	4	2
228	OSHA 8hr Refresher	Kenton Brown - FDEP	4	4	4	4	2
359	OSHA 8-Hour HazWoper Annual Refresher -Online	Compliance Solutions	4	4	4	4	2
142	OSHA 8-Hour Refresher for Hazardous Waste Operations and Emergency Response	FDEP/Jamson	4	4	4	4	2
515	OSHA Operations Level Course	Highlands County	4	4	4	4	4
68	OSHA Update Seminar [8/7/96]	J.J. Keller & Associates, Inc.	6				
183	Overview of Class I Landfill Operations and Waste Screening	Kohl Consulting, Inc.	3	3			3
458	Overview of Landfill Gas Management and Leachate Management for Solid Waste Operators	UF TREEO	4	4	2		
92	Overview of Solid Waste Management Technologies	Kohl Consulting, Inc.	3				
184	Overview of Transfer Stations Operations and Waste Screening Review	Kohl Consulting, Inc.			3	3	3
301	Overview of Transfer Stations Operations and Waste Screening Review	Kohl Consulting, Inc			4	4	4
15	Overview Understanding the Planning & Training Requirements of Big 3:OSHA, EPA, DOT (Regulatory Overview)	UF TREEO Center	7				
532	Paint Filter Test – 1 hour	Kohl Consulting, Inc.	1	1	1	1	1
192	Pedestrian, Vehicles and Equipment Safety at Transfer Stations	Kohl Consulting, Inc.			2	2	2
196	Pedestrian, Vehicles and Equipment Safety in the Landfill	Kohl Consulting, Inc.	2	2			2
494	Permit Required Confined Space Awareness	UF TREEO Center	4	4	4	4	
459	Permit Required Confined Space Entry Supervisor [2-Day]	UF TREEO Center	16	16	16		
104	Permit Required Confined Space Training	UF TREEO Center	8	8	8	8	
388	Permit Required Confined Space Training	Jones Edmunds & Associates	5	5	5	5	5
96	Personnel Law Up-date [12/11-12/96]	Council on Education in Management	5				
497	Personnel Protective Equipment (PPE) and Personal Safety Procedures	UF TREEO Center	4	4	4	4	4
372	Phase I and II Environmental Site Assessment	Florida Environmental Assessor Association (FEAA)	2				
239	Pollution Prevention and Environmental Essentials Conference	UF TREEO Center	5	1	5	5	
362	Pollution Prevention Conference [8/4-6/2004]	UF TREEO Center	2	1			
292	Predictive Maintenance	Fleet Solutions	4	4	4	4	
533	Principles of Landfill Fires E Course	SWANA	4	4			
468	Project Risk Management (PE Only)	American Society of Civil Engineers - ASCE	4	4	4	4	
230	Proper Maintenance of Heavy Equipment and Safety	Caterpillar & Ringhaver Equipment	3	3	3	3	3
153	Pump Maintenance [4/13-14/00]	National Tech Transfer	7				
213	Pumps and Pumping (taken after 1/2/02) (See #38 Mechanical Maint)	UF TREEO Center	16	16	16	16	
237	Recycle Organics 2002	University of Florida - IFAS	4	4	4	4	
280	Recycle Florida Today 10 th Annual Conference [6/3-6/03]	Recycle Florida Today	5	4	5	5	
380	Recycle Florida Today 2004 Annual Conference - 6/4-6/04	Recycle Florida Today				3	
381	Recycle Florida Today 2005 Annual Conference - 6/6-8/05	Recycle Florida Today				3	
382	Recycle Florida Today 2006 Annual Conference [5/1-5/06]	Recycle Florida Today	2	2	2	2	
460	Recycle Florida Today 2007 Annual Conference [6/4-6/07]	Recycle Florida Today				2	
512	Recycle Florida Today 2008 Annual Conference [6/1-4/08]	Recycle Florida Today	4	4	4	5	

Continuing Education			I, II, III	C&D	Transfer	MRF	Spotter
No.	COURSE TITLE	PROVIDED BY					
327	Recycle Florida Today 2004 Issues Forum [2/04]	Recycle Florida Today				8	
373	Recycle Florida Today 2005 Issues Forum [2/23-24/05]	Recycle Florida Today	4	4	4	4	
431	Recycled Florida Today 2006 Issues Forum [1/06]	Recycled Florida Today	3	3	3	3	
479	Recycled Florida Today 2008 Issues Forum [1/08]	Recycled Florida Today	2	2	2	2	2
90	Recycling Coordinator Training Course 1997 (Basic Recycling Training) [5/19-21/97]	UF TREEO Center	8	8			
137	Recycling Coordinator Training Course 1999	UF TREEO Center	8	8			
205	Recycling Coordinators Training Course 2001 [8/2--24/01]	SWANA - FL	8	8			
146	Recycling Disaster Debris [8/6/99]	University of Central Florida / Engineering	6	6	6	6	6
193	Safe Operating Issues for Transfer Stations	Kohl Consulting, Inc.			2	2	
309	Safety Awareness Training for Transfer Stations	UF TREEO Center			8	8	
331	Safety Issues for Solid Waste Management Facilities-4 hour	Kohl Consulting, Inc.	4	4	4	4	4
365	Safety Issues for Solid Waste Management Facilities-8 hour	Kohl Consulting, Inc.	8	8	8	8	8
358	Safety Issues for Transfer Station and Landfill Operators	Kohl Consulting, Inc.	4	4	4	4	4
123	School/University Advanced Recycler Training Course [10/20-21/98]	UF TREEO Center	7	7			
7	Site Monitoring at Solid Waste Facilities	SWANA - FL	10				
139	Solid Waste Facility Operations for Construction and Demolition Operators [No longer offered] (See #196)	Kohl Consulting, Inc.		20			
138	Solid Waste Facility Operations for Landfill Operators [No longer offered] (See #196)	Kohl Consulting, Inc.	20				
41	Solid Waste in Florida's Small Counties Workshop	Florida Counties Foundation & the Florida Institute of Government	4				
1	Solid Waste Landfill Operators Short School [No longer offered]	UF TREEO Center/SWANA - FL	20				
28	Solid Waste Landfills Correspondence Course (course # C240-A180)	University of Wisconsin	20	20			
22	Solid Waste Management: Managing Special Waste [5/19/92]	UF TREEO Center	6				
470	Solid Waste Operator and Spotter Refresher Training – Fall 2007	UF TREEO Center	16	16	8	8	4
452	Solid Waste Operator and Spotter Refresher Training – Summer 2007	UF TREEO Center	16	16	8	8	4
481	Solid Waste Operator and Spotter Refresher Training - Spring 2008	UF TREEO Center	16	16	8	8	4
486	Solid Waste Operator and Spotter Refresher Training – FWB 2008	UF TREEO Center	16	16	8	8	4
487	Solid Waste Operator and Spotter Refresher Training – Summer 2008	UF TREEO Center	16	16	8	8	4
55	Solid Waste Regulatory Review Workshop [3/10/95]	SWANA - FL	3				
526	Spill Prevention Control and Countermeasure Regulation Seminar (SPCC) – Webcast	EPA	4	4	4	4	
522	Spill Prevention Control and Countermeasure (SPCC) Training and Development Course	UF TREEO Center	6	6	6	6	
301	Spotter Safety and Waste Control at Landfills	Kohl Consulting, Inc	4	4			4
300	Spotter Safety and Waste Control at Transfer Stations	Kohl Consulting, Inc			4	4	4
400	Spotter Training	Crown Services	8	8	8	8	8
257	Spotter Training Course – 8 Hours Initial Training	Hewitt Contracting Company, Inc.	8	8	8	8	8
437	Spotter Training Course for Waste Processing and Transfer Stations	American Training Institute	2	2	2	2	2
263	Spotter Refresher 4-Hour Training for Solid Waste Facilities	UF TREEO Center	4	4	4	4	4
248	Spotter Training for Solid Waste Facilities	UF TREEO Center	8	8	8	8	8
378	Spotter Training for Solid Waste Facilities - Spanish	UF TREEO Center	8	8	8	8	8
474	Spotter Training for Solid Waste Management Staff with Elements of a Solid Waste Operations Plan	Joe Grusauskas	8	8	8	8	4
214	Spotter Training Plan for Land Clearing Debris Site	Wetland Solutions	8	8	8	8	8
5	Spotter Training Plan for Land Clearing Debris Site 4-Hour Refresher	Wetland Solutions	4	4	4	4	4
471	Spotters at Landfills and Transfer Stations: Safety Awareness Review	Kohl Consulting Inc	4	4	4	4	4
453	Storage Tank Conference 17th Annual [Feb 2007]	FDEP and the National Institute of	6	6	6	6	

Continuing Education

No. COURSE TITLE

PROVIDED BY

I, II, III

C&D

Transfer

MRF

Spotter

		Storage Tank Management					
506	Storage Tank Conference 18th Annual [May 2008]	National Institute of Storage Tank Management	6	6	6	6	
475	Storage Tank Central Florida State Conference 13 th Annual [Sep 2007]	National Institute of Storage Tank Management	6	6	6	6	
505	Storage Tank Central Florida State Conference 14 th Annual [Apr 2008]	National Institute of Storage Tank Management	6	6	6	6	
150	Storm Water Management Training	S2Li	4				
315	Stormwater Design and Permitting: An Introduction in Using Computers to Solve Stormwater Problems	UF TREEO Center	7	7			
329	Stormwater Control and Florida Inspection Certification (same as 202& 289)	UF TREEO Center	12	12	8	4	
202	Stormwater Inspector Certification Course	Sarasota Co. Tech	12	12	8	4	
407	Stormwater Leachate Cover and Compaction for Landfills	Kohl Consulting, Inc	4	4			
39	Stormwater Management for Landfills [No longer offered]	UF TREEO Center	8				
370	Stormwater Management at Solid Waste Facilities	Jones Edmunds & Associates	8	8	8	8	
56	Successfully Contracting for Solid Waste Services [7/14/95]	SWANA - FL	4				
61	Successfully Contracting Solid Waste Services	UF TREEO Center / SCS Engineers	4				
416	SWANA – eCourse – Litter Management at Landfills	SWANA	4	4	2	2	2
319	SWANA E-Seminar: What is Single Stream [1/7/04]	SWANA				1	
320	SWANA E-Seminar: Single Stream in Action [1/21/04]	SWANA				1	
321	SWANA E-Seminar: Heavy Metals in Landfills [2/4/04]	SWANA	1	1			
322	SWANA E-Seminar: Bioreactors - Next Generation Landfills [2/11/04]	SWANA	1				
323	SWANA E-Seminar: Landfill Gas and Micro-Turbines [2/18/04]	SWANA	1				
334	SWANA E-Seminar: Special Waste Mesa County [3/3/04]	SWANA			1	1	
335	SWANA E-Seminar: SWM - SPSA Chesapeake VA [3/10/04]	SWANA			1	1	
336	SWANA E-Seminar: Marketing - City of Hamilton [3/17/04]	SWANA			1	1	
337	SWANA E-Seminar: GRVD WTE Facility [4/7/04]	SWANA	1	1	1	1	
341	SWANA E-Seminar: Making Ends Meet When Revenues Start to Disappear [5/5/04]	SWANA	1				
342	SWANA E-Seminar: What Middle Managers Say About Change [5/12/04]	SWANA	1				
343	SWANA E-Seminar: Improving Operational Efficiencies Through Team Bonus Incentives [5/19/05]	SWANA	1				
349	SWANA E-Seminar: Changing Services -City of San Jose's Transition to Single Stream Recycling [6/2/04]	SWANA	1	1	1	1	1
350	SWANA E- Seminar: Business Recycling - How to Increase Participation [6/9/04]	SWANA	1	1	1	1	1
351	SWANA E- Seminar: New York City's Waste Less Website [6/16/04]	SWANA	1	1	1	1	1
215	SWANA - 2001 Special Waste Conference [12/3-4/01]	SWANA	10	9	10	8	
258	SWANA - 2002 Special Waste Conference [12/5-6/02]	SWANA	10	9	9	9	
310	SWANA - 2003 Special Waste Conference [12/11-12/03]	SWANA	10	9	9	9	
345	SWANA - Bioreactor Landfill Course	SWANA	8	8			
404	SWANA – Bioreactor Landfill Manager	SWANA	16	16			
242	SWANA - Business Planning, Marketing and Communications for the Solid Waste Industry	SWANA	8	8	4	4	
252	SWANA - FEMA's Debris Management	SWANA	8	8	8	8	8
250	SWANA - Construction and Demolition Debris Course	SWANA	22	22	22	22	8
247	SWANA - Financing Integrated MSW Management Systems [5/14/96]	SWANA	8				
229	SWANA - Compost on Subtitle D Landfills - Webinar [3/23/06]	SWANA	1			1	
46	SWANA - Groundwater Monitoring/Leachate Mgmt	SWANA	8	8			
94	SWANA - Health & Safety at MSW Landfills	SWANA	10	10			

Continuing Education			I, II, III	C&D	Transfer	MRF	Spotter
No.	COURSE TITLE	PROVIDED BY					
238	SWANA - Household Hazardous Waste & CESQG Facility Operations 24 hour Training	SWANA / SWANA - FL	15	15	15	15	15
26	SWANA - International Meeting [8/11-13/91]	SWANA	20				
244	SWANA - Landfill Gas Basics	SWANA	8	8			
27	SWANA - Landfill Gas Management (Spring Seminar 1994) [3/4/94]	SWANA	4				
133	SWANA - Landfill Gas Symposium 22 nd Annual [3/22-25/99]	SWANA	15				
163	SWANA - Landfill Gas Symposium 23 rd Annual [3/22-30/00]	SWANA	15				
190	SWANA - Landfill Gas Symposium 24 th Annual [3/19-23/01]	SWANA	18				
262	SWANA - Landfill Gas Symposium 26 th Annual [3/25-27/03]	SWANA	15	15			
325	SWANA - Landfill Gas Symposium 27 th Annual [3/22-25/04]	SWANA	18	18			
368	SWANA - Landfill Gas Symposium 28 th Annual [3/7-10/05]	SWANA	15	15			
428	SWANA - Landfill Gas Symposium 29 th Annual [3/27-30/06]	SWANA	15				
446	SWANA - Landfill Gas Symposium 30 th Annual [3/4-8/07]	SWANA	11	11	4	4	
483	SWANA - Landfill Gas Symposium 31 st Annual [March 2008]	SWANA	14	14	4	4	
528	SWANA - Landfill Gas Symposium 32 nd Annual [March 2009]	SWANA	4	4	4	4	4
231	SWANA - Landfill Gas System Operation and Maintenance	SWANA	16	16			
93	SWANA - Landfill Operational Issues	SWANA	8	8			
74	SWANA - Landfill Symposium 1st Annual [11/4-6/96]	SWANA	17				
87	SWANA - Landfill Symposium 2nd Annual [2/4-6/97]	SWANA	18				
117	SWANA - Landfill Symposium 3rd Annual [7/22-24/98]	SWANA	18				
159	SWANA - Landfill Symposium 4th Annual [6/28-30/99]	SWANA	16				
211	SWANA - Landfill Symposium 6th Annual [6/18-20/01]	SWANA	18				
275	SWANA - Landfill Symposium 8th Annual [6/17-19/03]	SWANA	13				
344	SWANA Landfill Symposium 9 th Annual & Solid Waste Managers Conference [2004]	SWANA	17	17			
376	SWANA - Landfill Symposium 10 th Annual & Solid Waste Managers Conf [6/2005]	SWANA	15	15	7	7	
427	SWANA - Landfill Symposium 11 th Annual [6/5-7/06]	SWANA	15				
465	SWANA - Landfill Symposium 12 th Annual [6/25-28/07]	SWANA	15	15			
490	SWANA - Landfill Symposium 13 th Annual [6/9-12/08] and Planning & Management Conference	SWANA	12	12			
245	SWANA - Leadership Skill Development for Solid Waste Professionals	SWANA	8	8	4	4	
8	SWANA - Managing Landfill Gas at MSW Landfills	SWANA	10	10	10	10	10
95	SWANA - Managing Landfill Gas at MSW Landfills [1997] Onsite Delivery	SWANA	5	5			
30	SWANA - Manager of Landfill Operations	SWANA	16	16			4
160	SWANA - Manager of Landfill Operations [MOLO®]	UF TREEO Ctr/SWANA - FL	16	16	8	8	
001	SWANA - Manager of Landfill Operations [MOLO®] Exam Only	SWANA/ SWANA - FL	0				
243	SWANA - Managing Composting Programs	SWANA	10	10			
251	SWANA - Managing MSW Collection Systems	SWANA	8		8	8	
246	SWANA - Managing MSW and Recyclables Collection Efficiency Workshop	SWANA	8	8	4	4	
234	SWANA - Managing MSW Recycling Systems	SWANA / SWANA - FL	7	7	7	7	
002	SWANA - Managing MSW Recycling Systems Exam Only	SWANA/ SWANA - FL	0				
222	SWANA - Managing Transfer Station Systems	SWANA			8	8	
297	SWANA Online - Health & Safety at MSW Landfills	SWANA	6	6			
296	SWANA Online - Training Sanitary Landfill Operation Personnel	SWANA	5				
298	SWANA Online - Waste Screening at MSWM Facilities	SWANA	6				
247	SWANA - Outsourcing Decisions and Contracting Strategies: Risk and Rewards	SWANA	8	8	4	4	
13	SWANA - Paying for your MSW Management Systems-Revenue Generation & Cost Accounting [10/24/00] [10/14/01]	SWANA	7				
174	SWANA - Principles of Managing Integrated Municipal Solid Waste Management Systems	SWANA	7				

Continuing Education			I, II, III	C&D	Transfer	MRF	Spotter
No.	COURSE TITLE	PROVIDED BY					
45	SWANA - Principles of Managing IMSWM Systems [Certified Municipal Solid Waste Manager I]	SWANA	24				
346	SWANA - Promoting Mercury Containing Lamp Recycling: A Guide for Solid Waste Managers	SWANA & SWANA-FL	4				
413	SWANA 2006 Recycling and Special Waste Conference	SWANA	4	4	4	4	
383	SWANA - Relationship is the Key Workshop	SWANA	2	2	2	2	
303	SWANA - Southern States Regional Conference	SWANA	11				
132	SWANA - Training Sanitary Landfill Operating Personnel	SWANA	5				
216	SWANA - Transfer Station Design & Operations [course taken after 1/1/2002]	SWANA	10	10	8	8	4
42	SWANA - Transfer Station Design & Operations [course taken prior to 1/1/2002]	SWANA	16		16		
191	SWANA - Waste Con 2000 [10/23-26/00]	SWANA	13		13		
221	SWANA - Waste Con 2001 [10/15-18/01]	SWANA	8	2			
254	SWANA - Waste Con 2002 [10/15-18/02]	SWANA	6	6	6	6	
317	SWANA - Waste Con 2003 [10/12-14/03]	SWANA	5	5	3	4	
354	SWANA - Waste Con 2004 [9/21-23/04]	SWANA	6	4	4	4	
398	SWANA - Waste Con 2005 [9/27-29/05]	SWANA	9	9	9	9	
448	SWANA - Waste Con 2006 [9/19-21/06]	SWANA	6	6	6	6	
455	SWANA-Waste Con 2007 [10/16-19/07]	SWANA	10				
509	SWANA-Waste Con 2008 [10/21-23/08]	SWANA	7	3	4	2	
259	SWANA - Waste Reduction, Recycling and Composting 14 th Annual Symposium [2/24-3/1/2003]	SWANA	7	7	15	15	
4	SWANA - Waste Reduction, Recycling and Composting 15 th Annual Symposium [2/9-14/2004]	SWANA			12	12	
51	SWANA - Waste Screening at Municipal Solid Waste [5/23/94,etc]	SWANA	6				
9	SWANA - Waste Screening at MSW Mgmt Facilities [On-site Delivery]	SWANA	10	10	10	10	10
369	SWANA - Winter Technical Symposia	SWANA	7	16	16	16	
141	SWANA-Florida 1999 Summer Conference [8/3-5/99]	SWANA - FL	4				
173	SWANA-Florida 2000 Summer Conference [8/10-11/00]	SWANA - FL	6	6			
189	SWANA-Florida 2001 Spring Conference [3/29-31/01]	SWANA - FL	3	3			
207	SWANA-Florida 2001 Summer Conference	SWANA - FL	5	5	5	5	1
162	SWANA-Florida 2000 Spring Tri-State Conference [4/3-5/00]	SWANA - FL	3				
220	SWANA-Florida 2002 Spring Tri-State Conference [4/7-10/02]	SWANA - FL	6	6	6	6	
326	SWANA-Florida 2004 Spring Tri-State Conference [4/4-7/04]	SWANA - FL	12	12	12	12	
425	SWANA-Florida 2006 Spring Tri-State Conference [4/2-5/06]	SWANA - FL	7	7	5	5	
235	SWANA-Florida 2002 Summer Conference [7/24-26/02]	SWANA - FL	4	4	2	1	
255	SWANA-Florida 2003 Spring Conference [4/7-12/03]	SWANA - FL	6	6	5	5	3
294	SWANA-Florida 2003 Summer Conference [8/21-22/03]	SWANA - FL	12	12	12	12	
353	SWANA-Florida 2004 Summer Conference	SWANA - FL	4	2	2	2	
374	SWANA-Florida 2005 Spring Conference [4/10-13/05]	SWANA - FL	6	6	4	5	2
385	SWANA-Florida 2005 Summer Conference [6/26-29/05]	SWANA - FL	8	5	3	3	1
426	SWANA-Florida 2006 Summer Conference [7/23-26/06]	SWANA - FL	7	7	4	4	
447	SWANA-Florida 2007 Summer Conference [7/15-18/07]	SWANA - FL	11	11	4	4	
480	SWANA-Florida 2008 Senior Management Conference [1/21-23/08]	SWANA-FL	9	9	5	5	
534	SWANA-Florida 2009 Managers Winter Meeting [3/2009]	SWANA-FL	4	4	3	3	
396	SWANA-Florida Chapter Road-e-o Heavy Equipment Operator Training	SWANA - FL	2	2	2	2	2
116	The Complete Ground-Water Monitoring Course	Nielson Environmental Field School, Inc.	16	16			
241	The Old Landfill Seminar	UF TREEO Center / SCS Engineers	5	5			
530	The Original Environmental Bootcamp	The Aarcher Institute of Environmental Training	8	8	4	4	

Continuing Education			I, II, III	C&D	Transfer	MRF	Spotter
No.	COURSE TITLE	PROVIDED BY					
406	The Sense of Smell, Odor, Theory and Odor Control	Kohl Consulting, Inc	4	4	4	4	2
477	Tractor/Mower Operator Safety Training Program	The Cutting Edge Safety Training Program	6	6	6	6	
187	Traffic and Equipment Safety at Landfills	Kohl Consulting, Inc.	2	2			2
13	Train-The-Trainer for Environmental Occupations (Management Credit ONLY)	UF TREEO Center	7	7	7	7	
513							
305	Train-The-Trainer Refresher	UF TREEO Center	7	7	7	7	
121	Training for Personnel at Construction & Demolition Materials Recovery Facilities	Kohl Consulting, Inc.	8			8	
147	Training for Spotters at Landfills, Construction & Demolition Sites and Transfer Stations	JEA, Inc. / UF TREEO Center	8	8	8	8	8
347	Training in the Production and Utilization of Compost in Florida 5/2004	FORCE				8	
355	Training in the Production and Utilization of Compost in Florida 6/2004	FORCE				4	
363	Training in the Production and Utilization of Compost in Florida 10/2004	FORCE	2	2			
148	Two-Hour Landfill Spotter Refresher Training Online	JEA, Inc.	2	2	2	2	2
392	Unacceptable Employee Behavior	Fred Pryor Seminars	6	6	6	6	
112	US DOT Hazardous Material / Waste Transportation	UF TREEO Center	6	6	6	6	
23	Utility Management Certification: Financial Management [No longer offered]	UF TREEO Center	7				
24	Utility Management Certification: Management & Supervision [No longer offered]	UF TREEO Center	7				
25	Utility Management Certification: Personnel Management [No longer offered]	UF TREEO Center	7				
3	Utility Management for Supervisors at Solid Waste Facilities	UF TREEO Center	7	7	7	7	
126	Waste Acceptability for Spotters, Equipment Operators and Scale House Personnel	Kohl Consulting, Inc.	2	2	2	2	2
210	Waste Control and Spotter Safety Awareness	Kohl Consulting, Inc.	2	2	2	2	2
419	Waste EXPO 2006 [4/4-6/06-Las Vegas]	NSWMA	9	9	6	6	419
328	Waste Issues Forum 2004	The Solid & Hazardous Waste Public Information Committee (SHWPIC) serving the Alachua County area	4	4			
382	Waste Issues Forum 2005	The Solid & Hazardous Waste Public Information Committee (SHWPIC) serving the Alachua County area	3	3			
31	Waste Management of North America (Landfill University) (no longer offered)	Landfill University	20				
302	Waste Management Technologies and Operating Guidelines	Kohl Consulting, Inc	8	8	8	8	4
36	Waste Screening & Identification For Landfill Operators and Spotters	UF TREEO Center / SCS Engineers	8	8	8	8	8
256	Waste Screening & Identification For Landfill Operators and Spotters Refresher	Citrus County – Hazardous Waste Section	4	4	4	4	4
122	Waste Screening and Operation Orientation for Transfer Station Personnel	Kohl Consulting, Inc.	8		8		
164	Waste Tech 2000 [3/5-8/00]	Waste Tech	7				
524	Waste Screening Refresher for Supervisor and Managers for SW Facilities	UF TREEO Center	4	4	4	4	4
418	Waste Tech 2006 [2/27-28/06]	NSWMA	7				
508	Waste Tech 2007 [3/2007]	NSWMA	14				
185	Weighmaster Orientation and Waste Screening Review	Kohl Consulting, Inc.	2	2	2	2	2
	Wet Weather Operations	Kohl Consulting, Inc.	4	4			
449	Wetlands Variance Training	Kohl Consulting	2	2			
65	What Can I Accept & How Do I Keep It From Blowing Around	Kohl Consulting, Inc.	2				

Continuing Education

No. COURSE TITLE

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64	When it Rains, It Pours (And We Stay Open)	Kohl Consulting, Inc	2	2			
492	Wildlife and Wetland Compliance Training for Solid Waste Facilities	UF TREEO Center	4	4	4	4	4
279	Wildlife and Wetland Training for Solid Waste Facilities	UF TREEO Center	8	8			
348	Wood Waste Recycling Conference-2004	RFT	6	6	6	6	
411	Workplace Training: Standard First Aid	American Red Cross	2	2	2	2	2
482	Workzone Safety Training	The Sunshine Safety Council, Inc.	2	2	2	2	2
240	WMI Odor School [5/29/02]	WMI / St. Croix Sensory, Inc.	7	7	7	7	7

APPENDIX B

RESERVE EQUIPMENT AGREEMENT

Ring Power

Ring Power Corporation
9797 Gibsonton Drive
Riverview, FL 33569
(813) 671-3700

Waste Management Inc./Southeast Landfill
PO box 627
Balm, FL 33503
location: Hillsborough County Landfill

9/18/2006

Rental rates effective through 12/31/06.

Waste Management responsible for maintenance and all damages to rental equipment.

Equipment rental subject to availability.

Transportation cost quoted upon request

<u>Make</u>	<u>Model</u>	<u>description</u>	<u>day rate</u>	<u>week rate</u>	<u>month rate</u>	<u>cleaning fee</u>
Cat	D8R	dozer (w/out waste handling arrangement)	\$ 1,800.00	\$ 5,400.00	\$ 16,200.00	\$ 2,400.00
Cat	D6R	dozer (w/out waste handling arrangement)	\$ 1,100.00	\$ 3,300.00	\$ 9,800.00	
Cat	D6N	dozer (w/out waste handling arrangement)	\$ 850.00	\$ 2,500.00	\$ 7,400.00	
Cat	D5G	dozer (w/out waste handling arrangement)	\$ 600.00	\$ 1,750.00	\$ 5,200.00	
Cat	725	articulated dump truck 18.8 cyd capacity	\$ 1,000.00	\$ 3,000.00	\$ 8,900.00	
Cat	325CL	hydraulic excavator 2.5 cyd bucket capacity	\$ 800.00	\$ 2,400.00	\$ 7,200.00	
Cat	615C	scraper 17 cyd bowl capacity	\$ 1,400.00	\$ 4,200.00	\$ 12,600.00	
Cat	12H	motor grader 14' mold board	\$ 700.00	\$ 2,000.00	\$ 5,900.00	
Cat	938G	wheel loader 3.5 cyd bucket capacity	\$ 550.00	\$ 1,600.00	\$ 4,800.00	
Cat	416E	loader backhoe	\$ 200.00	\$ 500.00	\$ 1,500.00	
Cat	CS-563E	single drum roller 84" wide drum	\$ 400.00	\$ 1,200.00	\$ 3,600.00	

Ring Power guarantees Waste Management a suitable rental machine delivered to Hillsborough County Landfill within 24 hours of their request.

APPENDIX C

COMPREHENSIVE EMERGENCY MANAGEMENT PLAN

HILLSBOROUGH COUNTY
SOLID WASTE MANAGEMENT
PUBLIC UTILITIES DEPARTMENT
COMPREHENSIVE EMERGENCY MANAGEMENT PLAN (CEMP)

A. General

Hillsborough County is vulnerable to a wide variety of natural disasters. This plan will provide the Solid Waste Management Division (SWMD) policies and procedures to be incorporated in the Hillsborough County Comprehensive Emergency Management Plan.

B. Purpose

To provide the SWMD employees with uniform policies and procedures for the effective coordination of actions necessary to prepare for, and respond to, a variety of natural disasters which might affect the health, safety or general welfare of the residents in Hillsborough County.

C. Scope

The Solid Waste Peacetime Emergency Plan is designed for use in all natural and man made disasters. It does not address the effects or impacts of wartime actions. The Plan includes the following.

1. Procedures for pre-disaster phase.
2. Procedures for disaster phase.
3. Procedures for recovery phase.
4. Procedures for financial cost tracking.

D. Priority or Emergency Communications Notification Procedures
ADMINISTRATIVE DIRECTIVE # 167

Key contact and alternate personnel

- | | | |
|----|-------------------|----------------------------------|
| 1. | Key contact | Patricia V. Berry, Manager |
| 2. | Alternate contact | Eli Alvarado, Project Manager II |

1. PRE-DISASTER PHASE

- a. SWMD Director, Special Projects Coordinator and Public Information Officer will not be located at the Emergency Operations Center until the recovery phase.
- b. Managers will obtain the employee recall roster from the Administrative Office of the SWMD. This roster will be used to inform employees, by phone, of any reporting instructions for the Recovery Phase. Employee site assignment will be indicated on this roster.
- c. To the extent possible, SWMD sites will secure all equipment to protect it from flying debris or from becoming flying debris.
- d. Solid Waste equipment will be dispersed in the following manner:
 - (1) Northwest County Facility semi-tractor trailers will remain at the Facility.
 - (2) Northwest County Facility will furnish two (2) semi-tractors and drivers to pickup refrigeration trailers for Emergency Services to be transported to a specified location.
 - (3) Small equipment for Landfill Services at Northwest County Facility will be stored in the storage building.
 - (4) South County Facility will furnish two (2) semi-tractors and trailers to Fleet Management
 - (5) South County semi-tractors will be transported to the Southeast Landfill.
 - (6) Front-end loaders and small equipment at the Northwest and South County Facilities will be stored in the tipping buildings.
 - (7) Small equipment at Hillsborough Heights will be stored in the shop building at Hillsborough Heights.
 - (8) Administrative Office cars and pickup trucks will be removed from downtown locations and will be stored at their normal location or other special assignment.
 - (9) Computers and electronic equipment in the County Center that are near windows will be moved to conference room B or another location as determined by the Fiscal Section if Conference Room B is unavailable.

- (10) As much as possible, computers and electronic equipment at all other sites will be secured in a high and dry location.
- e. All gasoline powered equipment must be topped off with fuel.
- f. All employees must carry their employee I. D. cards with them so that they may meet security requirements for travel over County roads.
- g. All SWMD employees' regularly assigned cellular telephones will keep their telephones with them for on-going communication with the Emergency Command Center and other employees. Employees should also keep their battery chargers so as to maintain telephone service during the event.
- h. Employees who may be required to evacuate and know the telephone number at their evacuation location should provide their supervisor with that telephone number.
- i. All supervisors will instruct their employees to listen to the **Emergency Alert System (EAS) WMTX 100.7 MHz (FM)** for information and any reporting instructions.
- j. Employee compensation during this Phase will be in accordance with the County "Disaster/Disaster Recovery Policy – Compensation".

2. DISASTER PHASE

- a. All SWMD employees will insure the safety and welfare of their families and follow all evacuation instructions.
- b. All SWMD employees' regularly assigned cellular telephones will keep their telephones with them for on-going communication with the Emergency Command Center and other employees. Employees should also keep their battery chargers so as to maintain telephone service during the event.

3. RECOVERY PHASE

- a. All employees must listen to the **Emergency Alert System (EAS) WMTX 100.7 MHz (FM)** for recall information and any reporting instructions.
- b. All employees must carry their employee I. D. cards with them so that they may meet security requirements for travel over County roads.
- c. Solid Waste Management (SWMD) has regional type facilities and

possesses the ability to relocate or shift staff between facilities as necessary. The Administration Building of the Northwest County Facility on Linebaugh Avenue, located ¼ mile west of Veteran's Expressway will become SWMD's Administrative Emergency Command Center (ECC). The Hillsborough Heights site, located ¼ mile north of I-4 on CR 579 and the Administration Building of the South County Facility, located on US-41 in Gibsonton will also be considered for the SWMD's Administrative Emergency Command Center (ECC) in that same priority order, if the Northwest County Facility is inoperable or inaccessible. The conference room of the Resource Recovery Facility, located on Falkenburg Road, can also be utilized to a limited extent as the SWMD's Administrative Emergency Command Center if need be. The utilization of any of Solid Waste Management's alternate locations will be re-evaluated depending upon assessing disaster event impacts on each facility.

d. Reporting Assignments

- (1) Unless identified otherwise and upon receiving the recall notice, all employees must report to their normal work location or to their alternate locations in accordance with the County's Disaster Recovery Policy - Work Assignments and the Know Your Role Plan. If the designated location is not accessible, employees must report to the nearest Solid Waste Management Facility that is operational.
- (2) CCC's will be closed until the facilities can be safely operated. Alderman Ford CCC Attendants will report to the South County Facility. All other CCC Attendants will report to their designated sites.
- (3) If the downtown location is offline, SWMD staff will report to the alternate sites as follows:
 - Administration – Northwest County Facility, Hillsborough Heights or South County Facility (alternates shown in order of priority)
 - Landfill Services – Hillsborough Heights and Southeast County Landfill
 - Fiscal Services – Northwest County Facility and any operational Scale Houses (SWMD's facilities)
 - Contracts & Customer Services – Resource Recovery Facility (conference room) and Debris Management Sites
 - Operations – Northwest County and South County Facilities
- (4) Senior Staff assignments are as follows:
 - Patricia V. Berry – BSOC/Hillsborough Heights
 - JoAnn Caride - BSOC/Hillsborough Heights
 - James Ransom - BSOC
 - Doug DeArmond – Resource Recovery Facility
 - Nate Johnson – BSOC/Resource Recovery Facility
 - Chris Snow - Resource Recovery Facility

- Richard VanEpps - Itinerating Between Debris Management Sites
 - Eli Alvarado - Itinerating Between Debris Management Sites and Hillsborough Heights. Also the backup person for Emergency Operations Center (EOC).
- e. Employee compensation during this Phase will be in accordance with the County "Disaster/Disaster Recovery Policy – Compensation".
 - f. For recovery phase, Managers will utilize the recall roster to inform employees, by phone, of any reporting instructions for the recovery phase.
 - g. Designated site Managers and Crew Leaders will secure the sites and direct any clearing of debris so as to open the facilities as soon as possible.
 - h. Managers and Crew Leaders will schedule employees on shifts to allow the sites to operate on a 12-hour schedule or as needed to accept storm debris at all facilities.
 - i. To the extent possible, solid waste will be managed in the following manner during the recovery phase.
 - (1) Every effort must be made to ensure that the solid waste delivered to the Solid Waste Management System is separated into:
 - processable;
 - yard waste; and
 - non-processable/construction and demolition debris.
 - (2) Customers will be asked if the solid waste is storm debris or solid waste generated from normal activities.
 - (3) Customers delivering solid waste generated from normal activities should be directed to the normal SWMD facilities where the accounting and billing structure is in place. Solid waste delivered to the normal SWMD facilities will be accounted for and billed in accordance with normal operating procedures, unless the solid waste is clearly identified as storm debris.
 - (4) The transfer stations and the Resource Recovery Facility should only receive processable solid waste generated from normal activities. The yard waste processing facilities should only receive yard waste generated from normal activities. Yard waste storm debris from residential sources should be directed to the maximum extent possible to the Parks Department yard waste drop off sites. The ability to do this will be evaluated and alternative procedures may be established. To the extent possible, yard waste must be separated from processable solid waste.

- (5) Customers delivering storm debris should be encouraged to place their material at the curb for collection by the debris contractors. To the extent possible, the yard waste should be stored separately from the construction and demolition debris. If processable solid waste is included in the load, the customer should separate it from the other solid waste so that it can be immediately removed from the site.
- (6) During the Recovery Phase, all solid waste received by the SWMD must be properly accounted for. The charge for the disposal of storm debris will be in accordance with charges established by Board Resolution or by an appropriate action by the County Administrator during the declared State of Emergency.
- (7) A receipt ticket will be prepared for each vehicle entering a SWMD facility (except for the CCCs) as well as the emergency sites. Each ticket must include, but not be limited to, the following information:

date and time;

delivery location;

origin of the debris;

person/company delivering the debris;

estimated volume delivered; and

certification that it is storm debris.

During times of disaster, traffic control at the Resource Recovery Facility, Northwest County Facility and South County Facility is important due to the large volumes of yard waste being delivered to the processing site.

Temporary traffic controllers are needed during time of disaster. Barry M. Boldissar, Director and Richard Mims, Special Projects Coordinator, will be able to provide information needed to bring temporary traffic controllers on board when/if needed.

4. FINANCIAL COST TRACKING

- a. Each Section Manager will keep adequate records showing details of all expenses which can be directly attributed to the preparation for, during and following the disaster event. These records will show what, why, when and the costs which requires reimbursement from FEMA. Reference exhibit-A for the Disaster Expense Costs Tracking Form.
- b. Fiscal Services is responsible for the development, maintenance and administering the SWMD Disaster Expense Cost Tracking System/Form to ensure the accuracy and integrity of the financial data that is compiled, complies with FEMA requirements for reimbursement.
- c. Fiscal Services will work closely with the Department of Management and Budget to ensure that this same data is consistent with and is reconciled to our internal financial systems.
- d. Fiscal Services will ensure the database and all records are retained for a period of three (3) years from the date of the final settlement of all claims.
- e. Staff must continue using the form until after the cleanup for the declared disaster is complete and advised through the Division Director.
- f. Once use of the disaster reporting forms is discontinued, all sections will revert back to standard SWMD practices.

5. NORMAL DISPOSAL FACILITIES

- a. Processable solid waste
 1. Northwest Transfer Station
8001 West Linebaugh Avenue
Tampa, Florida
Phone: 264-3816
Location: East of Sheldon road on north side of Linebaugh Avenue
 2. South County Transfer Station
13000 US 41 South
Gibson, Florida
Phone: 671-7611
Location: 1/4 mile north of Big Bend Road on east side of highway 41
 3. Southeast County Landfill
CR 672
Lithia, Florida

Phone: 671-7675

Location: 8 miles east of Highway 301, 2 miles west of Highway 39,
entrance to landfill off of CR 672

4. Resource Recovery Facility
350 Falkenburg Rd
Brandon, Florida
Phone: 744-5599
Location: 1 mile north of Highway 60, entrance of Falkenburg Rd.
- b. Yard Waste
 1. Northwest County Facility
8001 West Linebaugh Ave
Tampa Florida
Phone: 264-3816
Location: East of Sheldon road on north side of Linebaugh Avenue
 2. Falkenburg Yard Waste Facility
350 Falkenburg Rd
Brandon, Florida
Phone: 744-5599
Location: 1 mile north of Highway 60, entrance of Falkenburg Rd..
 3. South County Yard Waste Facility
13000 S U.S. HWY 41
Gibsonton, Florida
Phone: 671-7611
Location: 1/4 mile north of Big Bend Road on east side of highway 41
- c. Non-processable/construction and demolition debris
 1. Southeast County Facility
15960 CR 672
Lithia, Florida
Phone: 671-7675
Location: 8 miles east of Highway 301, 2 miles west of Highway 39,
entrance to landfill off of CR 672

6. DEBRIS MANAGEMENT SITES (DMS's)

Main Countywide DMS's

1. Southeast County Facility – 15960 C.R. 672, Lithia – Solid Waste Management
Latitude 27° 46' 6" N, Longitude 82° 12' 8" W
Latitude 27.768333 Longitude -82.202222
TRS – 31-21-14
Folio #88551.0000
800 acres with 30 acres available
Contact: Patricia V. Berry, SWMD (813) 272-5977 ext. 43338, cell (813) 323-6557
Larry Ruiz, SWMD (813) 671-7707, cell (813) 503-6671
2. Northwest Equestrian Trail Property – South Mobley Road, 1 mile west of Gunn Hwy
Parks, Recreation and Conservation Department
Latitude 28° 5' 8" N, Longitude 82° 35' 45" W
Latitude 28.085556 Longitude -82.595833
TRS – 27-17-34
Folio #2737.0000
100 acres with 50 acres minimum available
Contact: Timothy Fischer, Park Manager - (813) 264-3917 / (813) 781-8090
3. Bullfrog Creek Scrub Area-2 Site – Hwy 301, 2 miles south of Big Bend Road
Parks, Recreation and Conservation Department
Latitude 27° 44' 48" N, Longitude 82° 20' 10" W
Latitude 27.746667 Longitude -82.336111
TRS – 31-20-30
Folio #77954.0000
1,620 acres with 100 acres minimum available
Contact: Ross Dickerson, Gen. Manager II - (813) 672-7876 / (813) 967-7051

Other Potential DMS's (by area)

Northwest Area

1. Northwest Wastewater Treatment Plant Property – 10880 South Mobley Road – (9599 Exposition Drive)
Water Resource Division
Latitude 28 degrees 4min 11sec Longitude -82 degrees -36min -10sec
Latitude 28.0696215932317 Longitude -82.6027488498955
TRS – 28-17-9
Folio #3543.0000 and 3535.0000
1500 acres with approximately 80 – 100 acres available
Contact: Dwayne Wills, WD (813) 272-5977 ext. 2237, cell (813) 334-6499

Central Area

1. Vacant Water Resource Division Property – 410 Kingsway
Water Resource Division
Latitude 28 degrees 3min -178" Longitude -82 degrees -16min -41sec
Latitude 28.0005020374256 Longitude -82.2779756605253
TRS -28-20-35
Folio #63532.0000
24.68 acres available
Contact: Dwayne Wills, WD (813) 272-5977 ext. 2337, cell (813) 334-6499

South County

1. Triple Creek Property
Parks, Recreation and Conservation Department
Latitude 27degrees 48min 29sec Longitude -82degrees -14min -15sec
Latitude 27.8080055164137 Longitude -82.23735425209237
TRS - 31-21-6
Folio # 88497.0100
95 acres
Contact: Jeff Mauch, Gen. Manager I - (813) 744-5815, cell (813) 927-6586
2. South County Facility – 13001 U.S. Hwy 41 South
Solid Waste Management Division
Latitude 27 degrees 48min 13sec Longitude -82 degrees -22min -57sec
Latitude 27.8035816165415 Longitude -82.3824897247714
TRS - 31-19-11
Folio #51494.0000
20 acres available
Contact: Chris Snow, SWMD (813) 276-8408, cell (813) 508-0712

7. ALTERNATIVE ENGINEERING SERVICES

FOR HILLSBOROUGH COUNTY

COUNTYWIDE EMERGENCY DEBRIS MANAGEMENT

The following Scope of Services is provided by Consultant(s) to the Hillsborough County Solid Waste Division (OWNER) to assist the County in responding to a disaster ("EVENT"), by providing assistance for countywide emergency debris cleanup and management. The OWNER may request the Consultant (s) to provide professional services to prepare for, respond to, and recover from, a natural or manmade disaster by authorizing the Consultant (s) to proceed with, Disaster Recovery Services, as described in their respective Agreements.

The OWNER will alert the Consultant (s) of the probability of activating the contract as soon as a threat of a situation that could result in the declaration of a disaster ("EVENT") is evident. The Consultant(s) agree to respond to the activation of this contract with appropriate resources and schedule, as outlined, in the Scope of Services or developed to meet unforeseen conditions.

PROJECT UNDERSTANDING

The Consultant (s) shall provide professionals upon request by OWNER to prepare for, respond to, and recover from an EVENT. The professionals will be brought together with OWNER employees as an Emergency Debris Management Team (EDMT). An EVENT is any hurricane, tornado, flood, earthquake, or any other manmade or natural disaster that is beyond OWNER's ability to respond. An EVENT may also be the preparation/training for the condition. The following services may be activated by OWNER in response to an EVENT:

Professionals may be supplied as fulltime, contract, or subcontract employees. Regardless of the status of a professional with the Consultant (s), they will be considered part of the EDMT in terms of this agreement.

OWNER will activate work under the terms of this agreement by contacting the Consultant (s) primary contact person or their alternate. OWNER will identify task assignments that are to be activated. The Consultant (s) will recommend staffing assignments to meet the task requirements. OWNER will authorize the Consultant (s) to proceed with task assignments.

SCOPE OF SERVICE

1.0 Pre-Storm Actions

- 1.1 OWNER will notify the Consultant (s) upon notice of a Category 1 or above hurricane or other situation that could generate large volumes of debris and cause damage to OWNER's infrastructure.
- 1.2 The Consultant (s) will establish presence and coordinate with the OWNER should the situation dictate to proceed with task assignments. The Consultant (s) will initially locate

at the OWNER's Emergency Operations Center, and will work directly with OWNER's employees. The EDMT may relocate to the Debris Management Center (DMC) upon activation.

- 1.3 The Consultant (s) will notify all EDMT members and place them on alert status to be prepared to move into the Hillsborough County area within 12 hours after receipt of a notice-to-proceed from OWNER.

2.0 Call-Down Procedures

- 2.1 OWNER will contact the Consultant (s) and advise of the need for actual or possible deployment to the EDMT. The Consultant (s) will provide office, cell telephone, fax and pager numbers of the contact person and an alternate.
- 2.2 The Consultant (s) will contact pre-identified personnel to assemble the EDMT staff. Information on possible staff members will be kept current.
- 2.3 The actual deployment of personnel to staff the EDMT will be coordinated between OWNER and the Consultant (s). Deployments will not be made until task assignments are made and the notice-to-proceed is given by OWNER.

3.0 Post-Storm Actions

- 3.1 The Consultant (s) will provide overall supervision of the EDMT. A Team Manager will exercise daily operational control of the EDMT staff.
- 3.2 The EDMT staff will recommend assignment of Disaster Debris Removal and Disposal Contractors based on OWNER's Debris Management Plan.
- 3.3 The Consultant (s) provide staff to administer and provide oversight of the Disaster Debris Removal and Disposal Contractors' efforts. Specific actions will include the following:
 - Baseline data collection from designated emergency debris management sites. This includes physical features documentation, and soil and groundwater sampling and analysis. This information is essential to document conditions of the land before it is used as a process, storage, and/or burn site, as follows:
 - a) Install shallow up gradient and down gradient wells for groundwater monitoring.
 - b) Thoroughly videotape and/or photograph (ground or aerial) each site before any activities begins.
 - c) Periodically update video and photographic documentation to track site evolution.

- d) Note the location and condition of existing structures, fences, culverts, and irrigation systems.
 - e) Take random soil and groundwater samples prior to volume reduction activities.
 - f) Conduct continuous groundwater sampling after operations commence.
 - g) Sample designated household hazardous wastes, ash, and fuels storage areas prior to site setup.
 - h) Contact County and State environmental agencies to establish:
 - Regulatory requirements
 - Chain of custody requirements
 - Acceptable sample collection methods
 - Certified laboratories
 - Test Parameters
- Assist the County in obtaining permits for DMS's
 - Plan debris management sites inspection, quality control, and other contract administration functions
 - Provide inspectors to monitor debris removal and to distribute load tickets on each load to invoice areas assigned
 - Receive and review all county disposal site Inspector's verified debris load tickets
 - Make recommendations on OWNER and debris removal contractor work assignments and priorities based on OWNER's Debris Management Plan
 - Report on progress and prepare status briefings
 - Provide input to the Public Information Officer (PIO) on debris removal and disposal activities
- 3.4 The Consultant(s) will coordinate with OWNER's Purchasing Agent on all contracting questions.
- 3.5 The Consultant(s) will have a qualified Hazardous Materials Specialist available with extensive experience in post-disaster cleanup of hazardous household waste, and facilities with lead-based paint and/or asbestos if required.
- 3.6 The Consultant(s) will provide the Field Inspection Teams to ensure requirements stated in the contracts are met.
- 3.7 The Consultant(s) will provide on-site training for Load Site Inspectors and Disposal

Site Inspectors to ensure that accurate load quantities are being properly recorded on pre-printed load tickets.

- 3.8 The Consultant(s) will provide a Contract Specialist to support OWNER with respect to reporting requirements and ongoing contract matters. The Consultant(s) staff will assist field personnel with respect to reconciling contractor load tickets against load.
- 3.9 The Consultant(s) will provide technical assistance in performing preliminary damage assessments, Damage Survey Report (DSR) preparation, preparation of plans and specifications, construction administration, and project closeout on OWNER's facilities, which have been damaged as a result of an EVENT.
- 3.10 The Consultant(s) will review schedules prepared by contractors and prepare press releases for the OWNER.

4.0 Training Actions

- 4.1 This Agreement may be activated by OWNER to participate in an annual workshop or training with Hillsborough County staff. The purpose of the workshop is to review the Debris Management Plan procedures and to ensure that the EDMT operation works smoothly. Items of discussion will include:

- Review of the Hurricane Plan and Debris Management Plan
- Roles and responsibility of the EDMT
- Mobilization sites
- Logistical support
- Pre-storm mobilization
- Procedures for call-up of contractor personnel and equipment
- Haul routing
- Contractor vehicle identification and registration
- Debris hauling load ticket administration
- Mobilization and operation of the debris management sites
- Contractor payment request submission, review, and verification
- Special procedures for household hazardous waste
- Debris management site closure requirements

Fuel Through Fleet Management

Fleet Management stated that they will take the following action concerning departments and their fuel needs during major storms.

- Will send out notice for all vehicles to "top off" with fuel.
- Will attempt to set up portable fuel units at the State Fair Grounds

Fuel & Storm Category

- Fleet Management states that depending on the category of the storm, it may take 3-10 days before cars/trucks can fuel up
- If storm is a category three (3) or greater, Fleet will attempt to establish fuel tankers at various sites around the County

Fuel On P-Card

- Fleet Management states that if they are under water and there are no other County means of obtaining fuel, then staff would need to use their P-Cards at any available gas station

Fuel Sites

- Craig Putnam (744-5557 x 127) will provide a list of all possible fuel sites in the County
- Normal fuel sites can be found on COIN

Fleet Management stated that if a "great storm" shutdown the Port of Tampa, the County will be limited to the amount of fuel we can receive (if any).

Fleet Management Contracted Tires/Service

Since Fleet Management anticipates that due to debris in the roads, there will be a great need for tires, Fleet Management has contracted with Good/Year for tires of all types during a category storm.

- Solid Waste Management Division should provide Fleet Management with a list of all tire sizes that may be needed in case of an emergency/storm
- Fleet Management contract with Good/Year includes the changing of County tires
- All County departments/staff must go through Fleet (Craig Putnam 744-5557 x 127) for all tire service during emergencies/storms

APPENDIX D

RANDOM INSPECTION AND VIOLATION REPORT

SOLID WASTE FACILITY INSPECTION / VIOLATION REPORT

REPORT TYPE: ☐ INSPECTION ☐ VIOLATION ☐ LF RANDOM INSPECTION

LOCATION: _____ DATE: _____ TIME: _____

DELIVERING COMPANY: _____ FRANCHISE COLLECTOR: ☐ WMI ☐ EB ☐ KR
OTHER: _____

DRIVER NAME: _____ VEHICLE #: _____

VEHICLE TYPE ☐ FEL ☐ RO ☐ RL ☐ SL ☐ SEMI ☐ DUMP
OTHER: _____

CUSTOMER / GENERATOR: _____ TRANSACTION #: _____

TYPE OF WASTE:

<input type="checkbox"/> YARD WASTE	<input type="checkbox"/> INDUSTRIAL	<input type="checkbox"/> AUTO PARTS	<input type="checkbox"/> BY PASS WASTE
<input type="checkbox"/> C & DD	<input type="checkbox"/> INSULATION	<input type="checkbox"/> ASH RESIDUE	<input type="checkbox"/> ANIMAL WASTE
<input type="checkbox"/> FURNITURE	<input type="checkbox"/> AG WASTE	<input type="checkbox"/> ROOFING	<input type="checkbox"/> SPECIAL WASTE
<input type="checkbox"/> CARDBOARD	<input type="checkbox"/> FIELD PLASTIC	<input type="checkbox"/> METALS	
<input type="checkbox"/> COMMERCIAL WASTE	<input type="checkbox"/> HOUSEHOLD GARBAGE		
<input type="checkbox"/> OTHER: _____			

TYPE OF VIOLATION: ☐ FACILITY ☐ LOAD ☐ SAFETY ☐ CONTAINER


DETAILS: _____

DRIVER COMMENTS: _____

RESULTS: ☐ ACCEPTED ☐ REJECTED ☐ RELOAD ☐ ALREADY IN PIT

INSPECTOR'S SIGNATURE: _____

ADDITIONAL COMMENTS: _____

Inspect  White Copy: Customer

Yellow Copy: Inspector

Pink Copy: Office

APPENDIX E

SPECIAL WASTE PROGRAM

**Hillsborough County
Public Utilities Department**

SOLID WASTE MANAGEMENT DIVISION

**WASTE PROFILE PROGRAM
GUIDELINES
General Waste & Special Waste**

2010



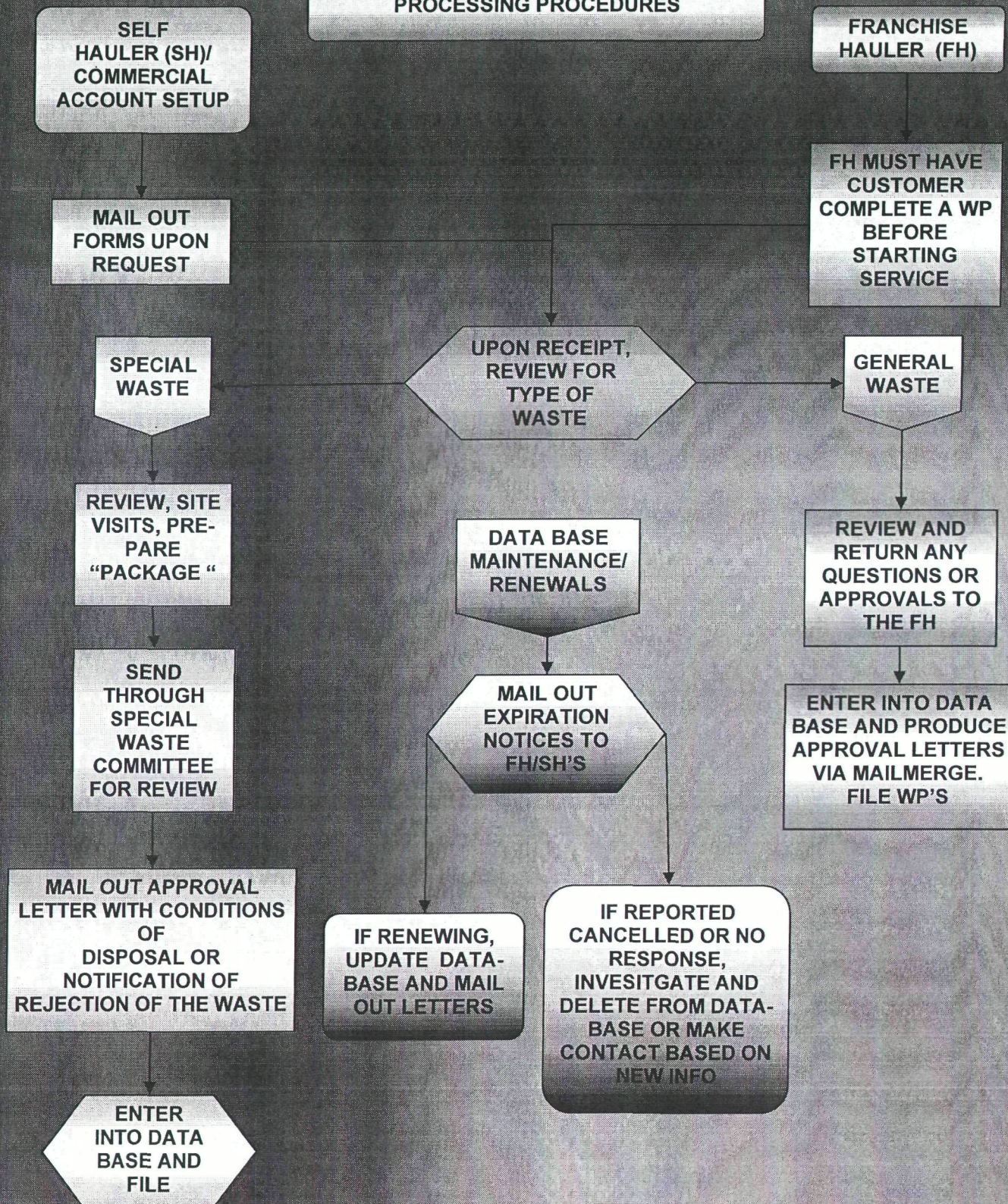
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SOLID WASTE MANAGEMENT DIVISION

Waste Profile Program

WASTE PROFILE (WP) PROGRAM PROCESSING PROCEDURES



SPECIAL WASTE PROFILE PROCEDURES

The Countywide Solid Waste Profile Program was developed to assist in identifying all non-residential solid waste streams generated in Hillsborough County and delivered to the Solid Waste Management System. The Program is designed to prescreen municipal solid waste prior to acceptance for disposal.

NEW APPLICATIONS:

- Receive Special Waste application packages submitted by private commercial waste generators, Government Agencies and Franchise Haulers. Review applications for completeness and accuracy.
- Determine whether Application packages are routine or will require committee review. If determined "routine", application request packages may be accomplished by authorized staff assigned to Waste Profile Program.
- Check and prepare packages with cover letters, supporting documentation such as Material Safety Data Sheets (MSDS), photos, test analysis data (TCLP), etc.
- Interpret TCLP test analysis and/or MSDS sheets to assist in determining waste stream toxicity characteristics that may exist in the waste stream.
- Determine if on-site environmental audit (visit) is warranted to assist in validating integrity of information provided in Waste Profile Application. Focus mainly on waste streams generated at facility and its commercial disposal practices.
- Compile all information, prepare draft response letter and add Review cover sheet for submittal to Special Waste Committee.

COMMITTEE REVIEW:

- Each member of the Special Waste Committee (6 members-includes Director) receives Special Waste packages and conducts their own individual reviews on a case-by-case basis.
- Each member checks for completeness and accuracy of required documentation, checks type of waste and observe photos (when presented) to further describe waste streams.
- Interpret all test analysis results and analyze MSDS sheets to determine toxicity characteristics that may exist in a particular waste stream.
- Each member will enter written comments on the review cover sheet of each package and make recommendations for "Approval" or "Rejection" based on their

Cont.

findings. Packages are returned to Waste Profile staff and prepared for Director submittal.

DIRECTOR'S DISPOSITION:

- Director receives Special Waste packages, review documentation, check for completeness and accuracy, weigh each member's comments and chooses disposition for Approval or Rejection. Final sign-off action by Director.
- After sign-off, response letters are mailed to each generator, hard copy (cc) goes to other entities and filed away inner-office.

RENEWALS:

- Procedure is done monthly. Approval periods are usually for 1 to 2 years
- Produce Renewal Information "notices" via database mail-merging, then mail to Self Haulers.
- Once Information notices are returned, enter all changes into database.
- Produce Approval letters and mail to self haulers and generators for that month.
- Hard copy goes to other entities (cc) and filed away inner-office.

MAINTAINING DATABASE:

- Review weekly reports received from Franchise Haulers. Reports contain data on new accounts and closed or cancelled accounts.
- Research all info to determine if businesses are still operating or changed ownership occurred since last renewal.
- Contact businesses to confirm current hauler, name change, address changes, etc. as needed.
- Update all information for self haulers as well as general waste customers in database on daily bases.
- Ensure all data is kept current as possible by contacting and interacting with Franchise Haulers as well as self haulers.

DISPOSAL INQUIRIES:

- Ensure all voice mail disposal enquiries are logged in daily for immediate response.
- Ensure the date, time of call, party called, phone #, and subject of call is accurately documented.
- Respond to all daily calls as promptly and professionally as possible and ensure all customers get direct and courteous assistance to all disposal questions and issues.



Hillsborough County Solid Waste Management Department
COUNTYWIDE SOLID WASTE PROFILE FORM

SWMD #4444

PLEASE RETURN FORM TO:

Hillsborough County Solid Waste Management Department
P.O. BOX 1110
TAMPA, FL 33601-1110
ATTN: Management and Environmental Services Section

COUNTY USE ONLY

Approved _____ Rejected _____
Disposal Facility _____
Expiration Date _____
Special Instructions _____
Reviewed By _____

PART A. GENERAL INFORMATION

1. Business Name _____
2. Type of Business _____
3. Business Location _____
(Street) (City) (State) (Zip Code)
4. Mailing Address _____
5. Technical Contact Person _____
6. Phone _____
9. Collector's Name _____

SPECIAL WASTE FORM

PART B. What is the general nature of your waste (Check all that apply):

1. ☐ Agricultural/Nursery Retail
2. ☐ Automotive Service
3. ☐ Dry Cleaning/Laundry Establishments
4. ☐ Industrial Process/Manufacturing
5. ☐ Medical/Veterinary/Pharmaceutical
6. ☐ Photo Film Processing
7. ☐ Retail/Office
8. ☐ Other _____
(Describe)

PART C. SOLID WASTE CHARACTERIZATION: (Please complete a separate form for each type of waste.)

1. Name of Waste _____
2. Current Method of Disposal _____
3. Frequency of Disposal _____
4. Quantity Generated _____ Per Week _____ Month _____ Year _____
5. Physical State _____ Solid _____ Liquid _____ Semi-Solid _____ Other (Describe) _____
6. Empty Container Types _____ How Many? (Per Week, Month, Year) _____
7. Is this a RCRA or D.O.T. hazardous material? (As defined in USEPA 40 CFR PART 260.10) _____ YES _____ NO
8. Are there any Free Liquids present? _____ YES _____ NO

PART D. SAMPLING CRITERIA

Some industrial/commercial wastes require analytical testing data to determine if they are acceptable for disposal in the Solid Waste Management System. The Hillsborough County Solid Waste Management Department (HCSWMD) may require additional information on your waste stream. (Please see instruction sheet.) The HCSWMD reserves the right to require additional analysis of waste prior to, or subsequent to acceptance for disposal.

1. Indicate current method used to determine the physical and chemical composition of the waste.
_____ TCLP _____ OTHER (Describe): _____
2. A copy of current test results are to be submitted with this form. Attached? Yes _____ No _____

PART E. GENERATOR CERTIFICATION By signing this form, generator certifies that, unless clearly stated above:

1. This waste is not hazardous waste (as defined by the USEPA 40 CFR Part 260.10) Federal Regulation or other State and Local Regulations.
2. This waste does not contain any levels of Polychlorinated Biphenols (PCBs).
3. This waste does not contain any infectious, biomedical, or biohazardous waste materials.
4. This waste does not contain any soil (dirt) material.
5. This form contains a true and accurate description of the waste material to be disposed.
6. All relevant information regarding known or suspect hazards in possession of the generator has been disclosed.

NOTE: Should any changes occur in the character of the solid waste, the generator shall immediately notify the Hillsborough County Solid Waste Management Department.

7. _____ Signature _____ 8. _____ Title _____
9. _____ Name (Type or Print) _____ 10. _____ Date _____

SPECIAL WASTE REVIEW

SWMD #

WASTE

DATE REC'D

DISPOSITION

<u>APPR'D</u>	<u>RJCT'D</u>	<u>COMM. MEMBER</u>	<u>DATE</u>	<u>COMMENTS/CONCERNS</u>
<input type="radio"/>	<input type="radio"/>	ERNIE MAYES	_____	_____ _____
<input type="radio"/>	<input type="radio"/>	DAVE ADAMS	_____	_____ _____
<input type="radio"/>	<input type="radio"/>	JIM CLAYTON	_____	_____ _____
<input type="radio"/>	<input type="radio"/>	MEGAN MILLER	_____	_____ _____
<input type="radio"/>	<input type="radio"/>	PATTY BERRY	_____	_____ _____

GENERAL WASTE PROFILE PROCEDURES

NEW APPLICATIONS:

1. Review forms from Franchise Collectors (FH) as received.
2. Fax back to FH with any questions or if incomplete.
3. If approved, fax to FH with conditions for disposal.
4. Enter approvals into the data base.
5. Produce approval letters and mail to the FH customers. Letters include conditions and restrictions.

RENEWALS (This procedure is done monthly. Approvals are for 2-3 years based on the waste description/type of business or history of problems.)

1. Produce "renewal" notices and mail to FH for review.
2. Upon receipt back, enter changes in data base. Produce letters and mail to generators/customers.

(NOTE: Renewals average 150/mth.)

MAINTAINING DATA BASE (This is based on the above if accounts are reported as closed, and the weekly reports of "new and cancelled" accounts from the FH.)

1. Review all accounts reported as closed. Research to see if still in business, based on several sources.
2. If found to still be in business, contact business by letter to verify if service was stopped, changed hauler, etc.
3. Update data base based on info.
4. Notify FH of this info in case a different FH is now servicing but did not report it in the weekly reports.

(NOTE: This last procedure is also done for Special Waste if reported as cancelled or no response was received from a "self hauler".)



Hillsborough County Solid Waste Management Department
COUNTY WIDE SOLID WASTE PROFILE FORM
GENERAL WASTE

SWMD

Please read instructions before completing this form. Failure to complete the form accurately will delay processing.

THIS FORM IS NOT TO BE USED FOR "SPECIAL WASTE" DISPOSAL.

PART A: SERVICE INFORMATION

Collector/Hauler Name: _____ Service Start Date: _____ Frequency: _____ Quantity: _____
☐ Permanent ☐ Temporary End Date: _____ ☐ ONE TIME

PART B: GENERAL INFORMATION

1. Service Location Name: _____
2. Business Description: _____
3. Physical/Service Address: _____
(Number) (Street) (Suite) (City) (Zip)
4. Service Location Contact: _____ Title/Position: _____
5. Mailing Address of Contact: _____
(Number) (Street) (Suite) (City) (State) (Zip)
6. Phone #: () - 7. Fax #: () - 8. E-Mail: _____

PART C: SOLID WASTE DESCRIPTION (See instructions for definitions of waste streams.)

9. List Waste: _____
(Be Specific)
10. Does this location recycle? YES ☐ 11. List items recycled: _____

PART D: GENERATOR CERTIFICATION By signing this form the Generator and the Franchise Collector certifies that, unless clearly stated above:

- G. This waste is not hazardous waste (as defined by the USEPA 40 CFR Part 260.10) Federal Regulation or other State and Local Regulations.
- H. This waste does not contain any levels of Polychlorinated Biphenols (PCBs).
- I. This waste does not contain any infectious, biomedical, or bio-hazardous waste materials.
- J. This waste does not contain any soil/dirt material.
- K. This form contains a true and accurate description of the waste material to be disposed.
- L. All relevant information regarding known or suspect hazards in possession of the generator has been disclosed.

NOTE: Should any changes occur in the character of the solid waste, the generator shall immediately notify the Hillsborough County Solid Waste Management Department.

10. _____ Signature 11. _____ Title
12. _____ Name (Type or Print) 13. _____ Date
14. _____ Hauler Agent Name (Print) 15. _____ Hauler Agent Signature

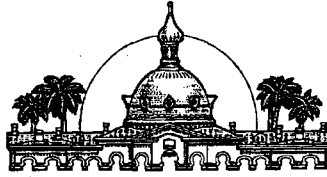
FOR COUNTY USE ONLY

☐ The HCSWMD has **APPROVED** the solid waste for disposal at the _____ subject to the following conditions: _____

NO LIQUIDS WILL BE ACCEPTED. OUT OF COUNTY WASTE WILL NOT BE ACCEPTED. DEVICES OR WASTES THAT CONTAIN HAZARDOUS PROPERTIES WILL NOT BE ACCEPTED. EXPIRATION DATE _____

☐ The HCSWMD has **REJECTED** the solid waste for disposal due to the following reasons: _____

REVIEWED BY: _____ DATE: _____



Hillsborough County
Florida

Office of the County Administrator
Daniel A. Kleman

Deputy County Administrator
Patricia Bean

Assistant County Administrators
Kathy C. Harris
Edwin Hunzcker
Anthony Shoemaker

BOARD OF COUNTY COMMISSIONERS

Stacey L. Easterling
Pat Frank
Chris Hart
Jim Norman
Jan K. Platt
Thomas Scott
Ronda Storms

NOTICE

EFFECTIVE OCTOBER 1, 1997

COUNTYWIDE SOLID WASTE PROFILE PROGRAM

The Hillsborough County Solid Waste Management Department (SWMD) has developed a Countywide Solid Waste Profile (Program) that will assist in identifying *all* non-residential solid waste streams generated in Hillsborough County and delivered to the Solid Waste Management System (System).

The purpose of this "Notice" is to inform you of the Program's requirement that a Countywide Solid Waste Profile application must be completed and returned to the SWMD prior to waste disposal in the System. The SWMD may require waste generators to provide additional back-up information (Laboratory analysis, MSDS, certification letters, etc.) to support their application..

Upon receipt of the completed application, the SWMD Waste Profile Committee will review each application on a case-by-case basis and make recommendations to the Department Director for approval or rejection of the request for solid waste disposal.

The Program is designed to pre-screen *all* non-residential solid waste prior to acceptance for disposal. An on-site inspection by SWMD personnel may be necessary to verify the Applicant's waste generation process and/or the waste materials. The generator will be contacted to schedule a site inspection if required.

Countywide Solid Waste Profile Applications determined to be acceptable will receive disposal approval for a minimum term of one (1) year. The SWMD, however, reserves the right to cancel disposal privileges if it is determined that the Countywide Solid Waste Profile application is no longer representative of the material delivered to the System.

Franchised Solid Waste Collectors under contract to Hillsborough County must have *all* non-residential customers complete a Countywide Solid Waste Profile application. *Franchise Collectors may not collect and dispose of non-residential solid waste unless the generator has approval from the SWMD to utilize the system.*

Should you have any questions regarding this program, please contact Ernie Mayes at 276-2930.

Future of Hillsborough

Comprehensive Plan for Unincorporated Hillsborough County Florida

SOLID WASTE

**As Amended by the Hillsborough County Board of County
Commissioners June 5, 2008 (Ordinance 08-13)**

**Department of Community Affairs Notice of Intent to Find
Comprehensive Plan Amendments in Compliance published
August 4, 2008 {DCA PA No. 08-1ER-NOI-2901- (A)-(I)}**

August 26, 2008 Effective Date

Residents also generate hazardous waste in the form of leftover paints and related products, pesticides and herbicides, and cleaning solvents. These wastes are exempt from the Resource Conservation and Recovery Act (RCRA) requirements and may be disposed of in a Class I landfill. The State of Florida, as reported by the FDEP, generates approximately 120,000 tons of household hazardous waste annually.

Currently there are several businesses located in the State of Florida which have demonstrated financial responsibility to FDEP to transport, process, and coordinate with an out-of-state treatment, storage, and disposal facility (TSDF) for the treatment and disposal of hazardous waste. Federal and state regulations require large quantity generators (LQGs - generators of greater than 1000 kilograms of hazardous waste per month) and small quantity generators (SQGs - generators of between 100 and 1000 kilograms of hazardous waste per month) to process their waste in accordance with the RCRA's cradle-to-grave concept. At this time, Universal Waste and Transit is a FDEP permitted TSDF presently operating in Hillsborough County.

"To meet the need for managing small quantities of hazardous waste, and encourage proper hazardous waste disposal, the 1988 Florida legislature established a grant program to construct safe, secure local or regional hazardous waste collection centers, and initiate the operation of the centers for the collection and removal of hazardous waste. The hazardous waste stream that is targeted by this legislation is household hazardous waste and exempt small quantity generators waste." (Section 403.7265 Florida Statutes). Hillsborough County received the State's grant monies and has sited two household chemical collection facilities in the County, that are open one weekend a month on a rotating basis.

The Hillsborough County Solid Waste Management Department (HCSWMD) has updated the department's special waste program to provide a level of quality assurance to meet mandated State and Federal requirements. The Federal requirements are those associated with Sub-Title "D" of RCRA which provide for aggressive screening of the waste stream to eliminate or reduce the introduction of hazardous waste at the landfill, resource recovery facility, and transfer stations. The HCSWD has established an intensive education program to comply with CFR 25, 1910, as it pertains to mandatory employer training requirements for those employees who could potentially come in contact with hazardous wastes or materials at their job sites.

IV. INTRODUCTION

Profiling/tracking of Special Waste disposals began in the early 1980's and expanded to include ALL commercially generated waste in 1997. As part of the Franchise Collector Agreement, the Franchise Collector was responsible for obtaining Waste Profiles for ALL of their commercial accounts if delivering the waste to the Hillsborough County Solid Waste Management Department (SWMD) facilities for disposal.

In May 2007, the SWMD modified the requirements for obtaining an approval for waste disposal. Only those Franchise Collector customers having a high risk, by the nature of the business (having the possibility of mixing potentially hazardous materials with acceptable waste), will be required to submit the "General Waste" Profile form for the disposal of "General" (Processible) waste. Generators with minimal risk of disposing of waste with potentially hazardous properties will NOT be required to submit the new "General Waste" form for disposal of general waste. However, ALL customers disposing of "Special" waste, as described later in this document, into the SWMD system MUST submit the Special Waste form.

ALL new generators/customers with waste being delivered to the SWMD system WILL have to be listed in the Weekly Update report.

V. PURPOSE OF THE WASTE PROFILE PROGRAM

The Franchise Collector should explain to its customer the reason for completing the Waste Profile forms. These forms are used to review the waste streams the Generator wishes to dispose of, to notify the Generator of the proper disposal practices for the waste stream, to make the waste generator aware of what can and can not be disposed of in the county's disposal system, and to notify the Franchise Collector of the disposal facility based on the waste described.

Hillsborough County Solid Waste Management Department requires that all commercial establishments wishing to dispose of waste at Hillsborough County's facilities complete the Waste Profile form for each type of waste being generated. (See "Waste Descriptions" on page 9.)

The Franchise Collector should make customers aware that they can not be serviced until the county has given approval to the Franchise Collector to begin service.

VI. FRANCHISE COLLECTOR AGREEMENT

Section 17.2.1 – *The FRANCHISE COLLECTOR shall be responsible for complying with all aspects of the COUNTY'S Waste Profile Program which will be implemented at the start of the effective date of this contract.*

Section 17.2.2 – *The FRANCHISE COLLECTOR shall insure that all Commercial Customers have a valid Waste Profile approval from the COUNTY prior to providing Commercial Collection Service. Waste Profile forms are not required for customers producing Construction and Demolition Debris which is not being disposed of within the Solid Waste System. However, any customer, whose waste is being disposed of within the Solid Waste System, must submit a Waste Profile approval form and obtain approval from the Solid Waste Management Department.*

Section 17.2.3 – *Should a Commercial Customer not have a Waste Profile approval from the COUNTY, the FRANCHISE COLLECTOR shall be required to secure a completed Waste Profile*

Form from the Commercial Customer. The FRANCHISE COLLECTOR shall submit the completed Waste Profile Form to the COUNTY for Approval. Commercial Collection Service shall not be provided until the Commercial Customer receives COUNTY approval of that Customer's Waste Profile Form, or until the COUNTY advises the FRANCHISE COLLECTOR to pick up the waste in order to avoid the illegal accumulation of Solid Waste by the Customer pursuant to Ordinance 96-34.

ALL WASTE GENERATED WITHIN HILLSBOROUGH COUNTY BOUNDARIES, AS DEFINED IN THE FRANCHISE COLLECTOR AGREEMENT, MUST BE APPROVED FOR DISPOSAL PRIOR TO BEING TRANSPORTED TO SWMD SYSTEM UNLESS REJECTED UPON REVIEW OF A WASTE PROFILE FORM.

VII. CHANGES TO THE WASTE PROFILE PROGRAM

The SWMD has compiled a list of those types of businesses that may dispose of waste other than "General Waste" (paper, plastics, cardboard, foodstuffs, etc.). If a Franchise Collector signs up a new customer listed on the "Required List" (see page 10) for disposal of General Waste, the new General Waste form is to be used. This new "General Waste" form may be faxed to the SWMD, but must be legible in order to be reviewed/approved by the SWMD. ANY Generator disposing of waste other than General Waste MUST complete the "Special Waste" form. (This is the *original 3-part carbon set* form that, previously, was used for ALL waste.) , (See pages 9 & 19 for "Required Waste".) The Special Waste form can NOT be faxed... ONLY ORIGINAL forms will be accepted for waste other than "General". (See page 9 as to which form to use.) Any waste going to the Southeast County Landfill must be approved.

ORIGINAL (not faxed) forms should be completed by the Generator (business) receiving the service. However a Franchise Collector representative may pre-complete some portions in order to ensure accuracy. DO NOT use the new General Waste form for waste that is NOT "General" (Processible/Burnable). The Special Waste form must be used for all other types of waste including Special Waste disposal and MUST be completed by the Waste Generator... no copies or facsimiles will be accepted for disposal of NON General Waste. Completion of the information on the Special Waste forms follows the same Guidelines shown in this document.

VIII. APPROVAL PROCESS

When the SWMD receives a completed Waste Profile form, staff will review all information. If any REQUIRED information is missing, the form will be returned to the Franchise Collector. The Franchise Collector has **48** hours to respond. After 48 hours a route audit may be conducted to determine if the Franchise Collector has serviced the account without approval. The service information will be turned over to the Franchise Coordinator as a violation of the Franchise Agreement and a "Stop Service" order may be issued.

The SWMD will notify the Franchise Collector if there will be a delay in processing the request due to a possible site visit, based on the type of business and the waste listed. When all information is provided an approval or rejection will be sent to the Franchise Collector with the conditions for the approval or reasons for the rejection. The SWMD will fax the approval to the Franchise Collector. The Franchise Collector and the Generator will be notified as to the disposal facility that the waste is to be transported to, the date of expiration, and conditions of the approval. It is the Franchise Collector's responsibility to ensure that the waste is transported to the approved facility.

If the Franchise Collector plans to transport the approved waste to a different facility, the Franchise Collector must notify the SWMD of the discrepancy.

The SWMD will send a copy of the approval/rejection to the waste generator explaining the conditions of the disposal or the reasons for rejection.

Franchise Collector customers, AS DESCRIBED IN THIS DOCUMENT, can NOT be serviced until a Waste Profile has been completed and approved.

IX. OVERVIEW OF PROCEDURES

(Revised August 2006)

A. FRANCHISE COLLECTOR RESPONSIBILITIES

1. Obtain a completed and signed Waste Profile for waste that will be delivered to Hillsborough County Solid Waste Management Department disposal facilities using the new General Waste profile form or Special Waste form. **Special Waste disposals require the use of the 3 part carbon set form. Only original (not faxed) forms will be accepted for Special Waste disposals. (See pages 9 & 19-22 for Special Waste description and examples.)**
2. Review forms for accuracy, legibility and completion.
3. Forward completed forms to the county on a daily basis. (Franchise Collectors may **NOT** service a location or a waste stream until the SWMD has reviewed the waste stream.)
4. Respond to any questions the SWMD may have in order to approve or reject a waste stream. **Response must be made within 48 hours.** A few reasons the form may be returned are:
 - a. Incomplete address, ie: a suite number for a known multi-purpose location.
 - b. Another business in the SWMD system at the same address of the newly received form, and no notification of cancellation was given to the SWMD of the original account.
 - c. Form is illegible.
 - d. Incomplete waste description.
5. Report, weekly, ALL new and closed businesses/accounts. This is by location/service address. (See details shown later in this document.)
6. Review monthly expirations for renewal. Return to the SWMD by no later than the 15th of the expiration month.
7. Review monthly list of services cancelled by other Franchise Collectors, and notify the SWMD if now servicing the Generator for the same waste stream. Complete a Waste Profile or Change of Information form if servicing any of the generators on this list
8. Using the Change of Information procedures, notify the SWMD of changes in approved Waste Profile information: moved, change of Hauler, etc.

B. SOLID WASTE MANAGEMENT DEPARTMENT RESPONSIBILITIES

1. Review forms received from the Franchise Collectors and, within 24 hours of receipt:
 - a. Return incomplete forms to the Franchise Collector for completion.
 - b. Notify the Franchise Collector if there will be a delay in processing an approval and the reasons for same, ie: a site visit by the SWMD.
 - c. Forward approved or rejected applications to the Franchise Collector upon completion of review.
2. Notify the waste generator of the conditions of the waste disposal.
3. Maintain data base daily, forward monthly expiration/renewal and reported cancellation list to the Franchise Collectors for review.

C. FRANCHISE COLLECTOR PROCEDURES

WASTE PROFILE

Following the procedures outlined in this document, have a Waste Profile form completed by the customer for the disposal of waste in the SWMD system. The Franchise Collector should supply a "Sample" of a completed form to the Generator to use as a guide, and the instructions on the back of the form must be followed or the disposal may be denied.

CHANGE OF INFORMATION FORM

The Change of Information forms are to be used to notify the SWMD when your customer moves, the company changes names but has the same ownership, if ownership changes but name stays the same (the Change of Information form must be signed by the new owner), or a company changes haulers. *If both name and ownership change, it's obviously not the same business that was approved and requires a new Waste Profile form.* There are exceptions to this and you will be notified by the SWMD on a case by case basis. ***When in doubt, call the SWMD Waste Profile Program contact.***

Several times a year the Franchise Collector will receive a copy of the SWMD's database. This database is to be used ONLY for the purpose of ascertaining if a Generator is already approved for a waste stream and whether a Waste Profile or a Change of Information form is needed. The SWMD may periodically request a copy of the Franchise Collector data base to insure compliance with the agreement.

Change of Information forms are not to be used if the SWMD database shows that expiration has lapsed by 45 days. Waste Profile's are to be used, with a note stating "replacing Waste Profile #00000". The SWMD will remove any expired Waste Profile's from the system after 60 days. The SWMD will also verify and remove any Waste Profile from the system that was reported as cancelled by a Franchise Collector and was not reported as being serviced by another Franchise Collector within 60 days.

WASTE PROFILE RENEWALS

Once a month, the Franchise Collector will receive a print out of those approvals that are due to expire. This information must be reviewed for accuracy and returned to the SWMD by no later than the 15th day of the expiration month. The Franchise Collector is to use this report to report any changes in service address, change in mailing address of the contact (not a billing address), disposal facility, or to complete any other missing information. These reports are also used to remind the Franchise Collector of the approval conditions and facility that the waste is to be taken to. As in the completion of the original Waste Profile form, the renewal information pertains to the service location, not necessarily Franchise Collector billing information.

WEEKLY UPDATES

Once a week, by close of business on Monday, the Franchise Collector is to forward a list of **ALL NEW** business (including "low risk" generators) with waste going in the SWMD system, and those customers that have cancelled their service for an approved waste stream. **The report must contain the business name, business description, service address, service info (container size, waste description, requested disposal facility), start date if new, cancellation date, and reason for cancellation if known.** Do NOT report a cancelled account if you are still

servicing the business for an approved waste stream but other changes were made in **your** system such as size of dumpster, relocation, new ownership with same name. In other words, if you are still servicing the business for an approved waste stream, do not report it to the SWMD as cancelled. (See Change of Information Instructions.) This process helps to avoid any delays in approvals/rejections when we receive a Waste Profile for a business at the same address already in our system.

Example: John Smith Ent. @ 1234 Apple Ln., Franchise Collector Acct. #9-5903 for an 8 yrd. FEL that the SWMD approved for disposal of General Waste, Waste Profile#38857, and Acct. #8-9657 for a 20 yrd. OT for Construction Debris, approved Waste Profile#38947.

1. Company moved to a new location, Hauler closed accounts but opened under new account numbers at new location. **DO NOT report as cancelled as you are still servicing the business for the approved waste stream. Complete a Change of Information form for both waste streams.**
2. Company no longer needs the OT. Company is still being serviced for the FEL. **Report only the OT cancellation. Be specific on the report that only the waste stream/OT was cancelled. Refer to the Waste Profile# 38947 for that waste stream.**
3. The company changed their name, same ownership, to Smith Tools Inc. New accounts were set up. **Do NOT report as cancelled as they are still being serviced for the same FEL and OT waste streams. Complete a Change of Information form.**
4. Company closed down operations completely, out of business. **Report as Cancelled. Give reason if known.**
5. Company closed accounts and switched to another hauler. **Report both accounts as Cancelled.**

Upon notification of a cancelled service, the SWMD will mail a questionnaire to the business in order to verify the cancelled service. The SWMD will also forward a list of those Waste Profile's due to be removed from the system to the Franchise Collector. The Franchise Collector is to review this list and notify the SWMD if the Franchise Collector is servicing any of the locations for the waste in the SWMD system. The list will request a Change of Information form or Waste Profile form on a case by case scenario.

THE COUNTY RESERVES THE RIGHT TO REQUEST ADDITIONAL WASTE PROFILES BASED ON THE WEEKLY UPDATES OF NEW CUSTOMERS.

NOTE: Businesses choosing to haul their own wastes must contact the SWMD for instructions prior to delivering waste to any County disposal facility.

X. TYPES OF WASTE – Which Form To Use

The Collector/Hauler representative, if pre-completing the form, and the Franchise Collector representative reviewing the form before forwarding to the SWMD, must be aware of the different types of waste and how to separate them. These waste streams should be separated as they go to different disposal facilities. The sales rep should advise the Generator/Customer that the County requires that wastes be separated.

“The 1988 State of Florida “Solid Waste Management Act” mandates that certain types of solid waste, including construction and demolition debris, whole tires, lead acid batteries and white goods, be separated from other solid waste. In addition, the Hillsborough County Solid Waste Management System requires that processible solid waste be separated from other types of solid waste to maximize the utilization of the Resource Recovery Facility. The Mixed Load Surcharge provides a monetary incentive to encourage customers to separate their solid waste.”

NOTE: A SEPARATE FORM MUST BE USED FOR EACH TYPE OF WASTE AS DESCRIBED BELOW.

Processible/Burnable: These materials are what most businesses using Front End Loaders (FEL's) will be disposing of. This waste includes food waste, paper, plastics, cardboard, etc. This waste goes to the incinerator. Wood pallets/skids must be broken down or separated out and be sent to the Yard/Wood Waste processing facility. **USE GENERAL WASTE FORM.**

Yard & Wood Waste: yard waste, branches, pallets, untreated/unpainted wood, etc. This waste goes to the Yard Waste processing facilities. No other waste can be commingled with a load designated/approved as “Wood Waste”. **USE SPECIAL WASTE FORM. (Only original forms will be accepted. No faxed copies.)**

Nonprocessible/Nonburnable: This waste is usually construction type materials such as treated wood, concrete, metals, furniture, etc. This waste goes to the Southeast County landfill. **USE SPECIAL WASTE FORM. (Only original forms will be accepted. No faxed copies.)**

Special Waste: Special Waste is any waste that requires special or extra-ordinary handling, testing, etc. **USE SPECIAL WASTE FORM. (Only original forms will be accepted. No faxed copies.)**

NOTE: A ‘Mixed Load’ surcharge will be assessed at the facilities when any of the above are mixed in the same load. This surcharge will be based on the percentage of one waste to the other. Processible/Burnable waste is to be delivered to the incinerator. If a load arrives there that contains 10%+ NON burnable waste the disposal fee is double the normal processible waste fee... i.e: \$56.48 x 2 or \$112.96 a ton. Non-processible waste is to be delivered to the Southeast County landfill. Any load containing 5%+ processible waste will be charged double the normal rate... i.e.: \$34.06 x 2 or \$68.12 a load. The load may be redirected to the correct disposal facility. Any load containing unapproved Special Waste will be refused.

TABLE 1**FORM REQUIRED**

Agricultural (Nursery, Animal Breeders Stables, Dairies, Growers, etc.)
 Apartment Complexes/Mobile Home Parks using OTs, ROs and Compactors
 Auto Service/Repair/Full Service gas stations
 Car/Truck Wash Facilities
 Computer/Electronics Sales/Service/Repair
 Contractors (Electrical, Painters, Construction, Installers, Repair, Plumbers, A/C, etc.)
 Dry Cleaning/Laundromats facilities
 Glass Sales/Repair (Window, mirrors, etc.)
 Hardware/Home Improvement
 Hospitals
 Industrial (IE: TECO, Cargill, Agrico, etc.)
 Laboratories
 Lawn Service/Landscaping (Office and Yard waste)
 Manufacturing/Fabrication (Paint companies, electronics, welding, etc.)
 Multi-purpose facilities (Strip centers, malls, business parks, storage facilities, etc.)
A TENANT LIST, OR A LIST OF THE TYPES OF BUSINESSES MUST BE ATTACHED TO THE WASTE PROFILE FORM.
 Pest Control
 Pet stores with animals
 Photo Processing
 Pool Supply/Construction
 Retail: any store that has any of the non-processible wastes listed in its inventory, I.E.: Home Depot, Office Depot, Wal-mart, Sherwin Williams, etc. (paint, computers, etc.)
 Veterinary
 Schools: Colleges, Tech, Public/Private (See "not required")
 Warehouses/Wholesale/Distribution (pallets)
 Waste Disposal/Recycling
 Zoos (Lowry Park, Busch Gardens, etc.)

TABLE 2**FORM NOT REQUIRED (see notes....)**

Apartment/Condo complexes (see Table 1)
 Auto Sales/Rental (NO Mechanical work)
 Bars/Pubs, Food Service/Restaurants
 Business Offices
 Churches
 Day Care/Nursery
 Entertainment (Sports, movies, etc.)
 Food Service/Restaurants
 Hotels, Motels, Campgrounds, RV Parks
 Professional Offices/Complexes
 Residential/Home Owner
 Retail (Only "High Risk" require a WP to be completed. See Required Retail)

Any generator (commercial or residential, Tables 1 & 2) disposing of Yard/Wood Waste, Nonprocessible and Special Waste must complete the Special Waste form if the waste is being transported to the SWMD facilities. (See Table 3 on page 16 and lists of waste on pages 19-22.)

Note: Generators listed in "Table 2" do not have to complete the General Waste form for general waste **except** for RO, OT, and Compactor service due to the risk of unacceptable waste being commingled with General Waste because of the larger sizes of the containers.



Hillsborough County Solid Waste Management Department WASTE PROFILE CHANGE OF INFORMATION REPORT

This form is to be used for changes in Ownership, OR Name, and/or Hauler, Address, or service information for those waste generators with an approved Waste Profile. Changes in Ownership AND Business Name, or waste streams, require that a new Waste Profile form be completed.

This form is to be completed by the Generator. The "*" sections may be pre-completed by the Hauler.

PLEASE PRINT

1. * APPROVED WASTE PROFILE _____

EXPIRATION DATE: _____

2. * GENERATOR OF BUSINESS NAME (as approved): _____

3. * SERVICE ADDRESS (as approved): _____

4. * TYPE OF CHANGE

OWNERSHIP ☐

ADDRESS ☐

NAME ☐

HAULER ☐

OTHER ☐

NEW INFORMATION: _____

CHANGE OF INFORMATION FORM

5. * GENERATOR NAME: _____

6. * SERVICE ADDRESS: _____

7. * TECHNICAL CONTACT: _____

8. * PHONE #: _____

9. FAX #: _____

10. E-MAIL: _____

11. * MAILING ADDRESS OF CONTACT (NOT Billing Address, 3rd party, etc.)

12. * CONTAINER SIZE: _____

* FREQUENCY: _____

13. * HAULER: _____

14. * DESCRIBE WASTE (be detailed): _____

15: REQUIRED IF NEW OWNERSHIP

GENERATOR CERTIFICATION By signing this form, generator certifies that, unless clearly stated above:

1. This waste is not hazardous waste (as defined by the USEPA 40 CFR Part 260.10) Federal Regulation or other State and Local Regulations.
2. This waste does not contain any levels of Polychlorinated Biphenols (PCBs).
3. This waste does not contain any infectious, biomedical, or biohazardous waste materials.
4. This waste does not contain any soil (dirt) material.
5. This form contains a true and accurate description of the waste material to be disposed.
6. All relevant information regarding known or suspect hazards in possession of the generator has been disclosed.

NOTE: SHOULD ANY CHANGES OCCUR IN THE CHARACTER OF THE SOLID WASTE, OR ANY OTHER INFORMATION ABOVE, THE GENERATOR SHALL IMMEDIATELY NOTIFY THE HILLSBOROUGH COUNTY SOLID WASTE MANAGEMENT DEPARTMENT.

SIGNATURE

TITLE

PRINTED NAME

DATE

FOR COUNTY USE ONLY

APPROVED _____

REJECTED _____

DISPOSAL FACILITY _____

SPECIAL INSTRUCTIONS _____

REVIEWED BY: _____

DATE: _____



Hillsborough County Solid Waste Management Department WASTE PROFILE RENEWAL INFORMATION

This form is to be used for RENEWING/UPDATING a currently approved disposal. This form may be used for changes in addresses, phone number, contact. Please verify that **ALL** info is correct. Complete any missing info. **Make sure that the disposal facility is the same as the disposal facility you are taking the waste to.** If you have any questions, please contact Sue.

This form is to be completed by the Hauler. **PLEASE PRINT**
RETURN TO THE SWMD BY MAIL OR FAX BY NO LATER THAN THE 15TH OF THE RENEWAL MONTH.

INFORMATION ON THIS FORM PERTAINS TO YOUR SERVICE LOCATION...
NOT BILLING INFORMATION! (NO 3RD PARTY INFORMATION)

APPROVED WASTE PROFILE: 19854 GW EXPIRATION DATE: 11/30/2005 HAULER: REPUBLIC WASTE SERVICES

HILLS CTY WATER DEPT/LAKE PARK PLANT

COUNTY AGENCY

SERVICE LOCATION NAME (as approved):

TYPE OF BUSINESS

SERVICE ADDRESS: 17316 DALE MABRY HWY N TAMPA 33524

LOCATION CONTACT: WAREHOUSE MANAGER PHONE NUMBER: (813)264-3867

MAILING ADDRESS OF CONTACT (NOT Billing Address, 3rd party, etc.)

17316 DALE MABRY HWY N
TAMPA FL 33524

APPROVED DISPOSAL FACILITY: RESOURCE RECOVERY FACILITY

APPROVED WASTE: PAPER/PLASTICS/CARDBOARD/FOODSTUFFS ETC

CONDITIONS: WATER SLUDGES, JET VAC DEBRIS, AND HEADWORKS DEBRIS MUST NOT BE COMINGLED WITH THE
APPROVED WASTE STREAM.

RENEWAL INFORMATION FORM

THIS SECTION IS TO BE USED TO MAKE CHANGES TO THE ABOVE INFORMATION

RENEWAL NOT
NEEDED ☐

CANCELLATION DATE:

REASON:

ADDITIONAL INFORMATION (Contact Information)

FAX #: _____ E-MAIL: _____

CHANGES:

SERVICE
ADDRESS: _____

MAILING ADDRESS:
(OF CONTACT) _____

PHONE #
(OF CONTACT) _____

THANKS FOR YOUR ASSISTANCE.

APPENDIX F

TABLE 1 PROJECTED DISPOSAL AND DIVERSION RATES

APPENDIX F - TABLE 1

PROJECTED DISPOSAL AND DIVERSION RATES TO PHASES I-VI AND EXPANSION AREA (SECTIONS 7, 8 AND 9)
SOUTHEAST COUNTY LANDFILL
HILLSBOROUGH COUNTY, FLORIDA

Year	Projected Disposal Rate (1) (TONS PER YEAR)	Diversion to To PH I-VI (2) (%)	Diversion to Sec 7/8/9 (2) (%)	Waste To PH I-VI (TON)	Waste To PH I-VI (3) (CY)	Waste To Sec 7/8/9 (TON)	Waste To Sec 7/8/9 (3) (CY)	Remaining Capacity for PH I-VI (2,4,5) (CY)	Remaining Capacity for Sec 7/8/9 (2,4,5) (CY)
2010	272,691	70%	30%	190,884	200,930	81,807	86,113	6,594,045	1,898,550
2011	272,691	70%	30%	190,884	200,930	81,807	86,113	6,393,115	1,812,437
2012	272,691	70%	30%	190,884	200,930	81,807	86,113	6,192,185	1,726,324
2013	272,691	70%	30%	190,884	200,930	81,807	86,113	5,991,254	1,640,211
2014	272,691	70%	30%	190,884	200,930	81,807	86,113	5,790,324	1,554,098
2015	272,691	70%	30%	190,884	200,930	81,807	86,113	5,589,394	1,467,985
2016	272,691	70%	30%	190,884	200,930	81,807	86,113	5,388,464	1,381,872
2017	272,691	70%	30%	190,884	200,930	81,807	86,113	5,187,534	1,295,759
2018	272,691	70%	30%	190,884	200,930	81,807	86,113	4,986,603	1,209,646
2019	272,691	70%	30%	190,884	200,930	81,807	86,113	4,785,673	1,123,533
2020	272,691	70%	30%	190,884	200,930	81,807	86,113	4,584,743	1,037,421
2021	272,691	70%	30%	190,884	200,930	81,807	86,113	4,383,813	951,308
2022	272,691	70%	30%	190,884	200,930	81,807	86,113	4,182,882	865,195
2023	272,691	70%	30%	190,884	200,930	81,807	86,113	3,981,952	779,082
2024	272,691	70%	30%	190,884	200,930	81,807	86,113	3,781,022	692,969
2025	272,691	70%	30%	190,884	200,930	81,807	86,113	3,580,092	606,856
2026	272,691	70%	30%	190,884	200,930	81,807	86,113	3,379,162	520,743
2027	272,691	70%	30%	190,884	200,930	81,807	86,113	3,178,231	434,630
2028	272,691	70%	30%	190,884	200,930	81,807	86,113	2,977,301	348,517
2029	272,691	70%	30%	190,884	200,930	81,807	86,113	2,776,371	262,404
2030	272,691	70%	30%	190,884	200,930	81,807	86,113	2,575,441	176,291
2031	272,691	70%	30%	190,884	200,930	81,807	86,113	2,374,511	90,178
2032	272,691	68%	32%	185,430	195,189	87,261	91,854	2,173,581	-1,676
2033	272,691	100%	0%	272,691	287,043	0	0	1,892,278	0
2034	272,691	100%	0%	272,691	287,043	0	0	1,605,235	0
2035	272,691	100%	0%	272,691	287,043	0	0	1,318,192	0
2036	272,691	100%	0%	272,691	287,043	0	0	1,031,149	0
2037	272,691	100%	0%	272,691	287,043	0	0	744,105	0
2038	272,691	100%	0%	272,691	287,043	0	0	457,062	0
2039	272,691	100%	0%	272,691	287,043	0	0	170,019	0
2040	272,691	100%	0%	272,691	287,043	0	0	-117,024	0

Notes:

- 1 The 272,691-ton for 2010 is based on actual waste tonnage disposed at SCLF from July 1, 2009 to June 30, 2010. This value is used for future waste tonnage projections. It is assumed that waste tonnage remains constant with no escalations to reflect current and near future economy. This table will be revised periodically during permit modifications or renewal when necessary.
- 2 Diversion rates to Phases I-VI and CEA (Sections 7, 8 and 9) were based on extending the remaining site life of both disposal areas as evenly as feasible. Once the CEA area is filled to final permitted grades (~ year 2032 based on the projected waste tonnages and diversion rates), all incoming waste will be disposed in Phases I-VI.
- 3 Volume (Cubic yards) conversion from tons was based on a 1,900 lb/cy (PCY) Apparent Waste Density (AWD). AWD = actual waste tonnage disposed / airspace consumed by both waste and daily cover. The relatively high AWD is due to the higher content of ash (~ 75% of total waste stream) from the Hillsborough County Waste-to-Energy facility in the current and projected incoming waste stream.
- 4 Remaining air space calculations were based on the July 7, 2010 site aerial topographic survey (prepared by Pickett Surveying & Photogrammetry) and permitted final build out contours. Final cover volumes were deducted from gross airspace. Daily cover volumes were included in the remaining airspace (after final cover reduction) calculations by using the Apparent Waste Density of 1,900 PCY.
- 5 Remaining capacities in 2010 were from 2010 Remaining Capacity Report submitted to DEP in Sept 2010. CEA (Sec 7/8/9) reaches capacity ~year 2032, and Phases I-VI ~ year 2040.

APPENDIX G

LANDFILL GAS MONITORING POINTS

**HILLSBOROUGH COUNTY SOLID WASTE MANAGEMENT DEPARTMENT
SOUTHEAST COUNTY LANDFILL LFG READINGS**

ADMINISTRATION BUILDING

	METHANE GAS	L E L	CARBON DIOXIDE	OXYGEN	BALANCE GAS
S.P.1					
S.P.2					
S.P.3					
S.P.4					
S.P.5					
S.P.6					
S.P.7					
S.P.8					
S.P.9					

MAINTENANCE BUILDING

	METHANE GAS	L E L	CARBON DIOXIDE	OXYGEN	BALANCE GAS
S.P.10					
S.P.11					
S.P.12					
S.P.13					

LEACHATE TREATMENT PLANT

	METHANE GAS	L E L	CARBON DIOXIDE	OXYGEN	BALANCE GAS
S.P.14					
S.P.15					
S.P.16					

LANDFILL GAS PERIMETER MONITORING POINT

WELL	METHANE GAS	L E L	CARBON DIOXIDE	OXYGEN	BALANCE GAS	OBJECTIONAL AMBIENT ODOR (Y/N)
LFG-1						N
LFG-2						N
LFG-3						N
LFG-4						N

TECHNICIAN SIGNATURE _____

SUPERVISOR SIGNATURE _____

DATE _____

COMMENTS _____

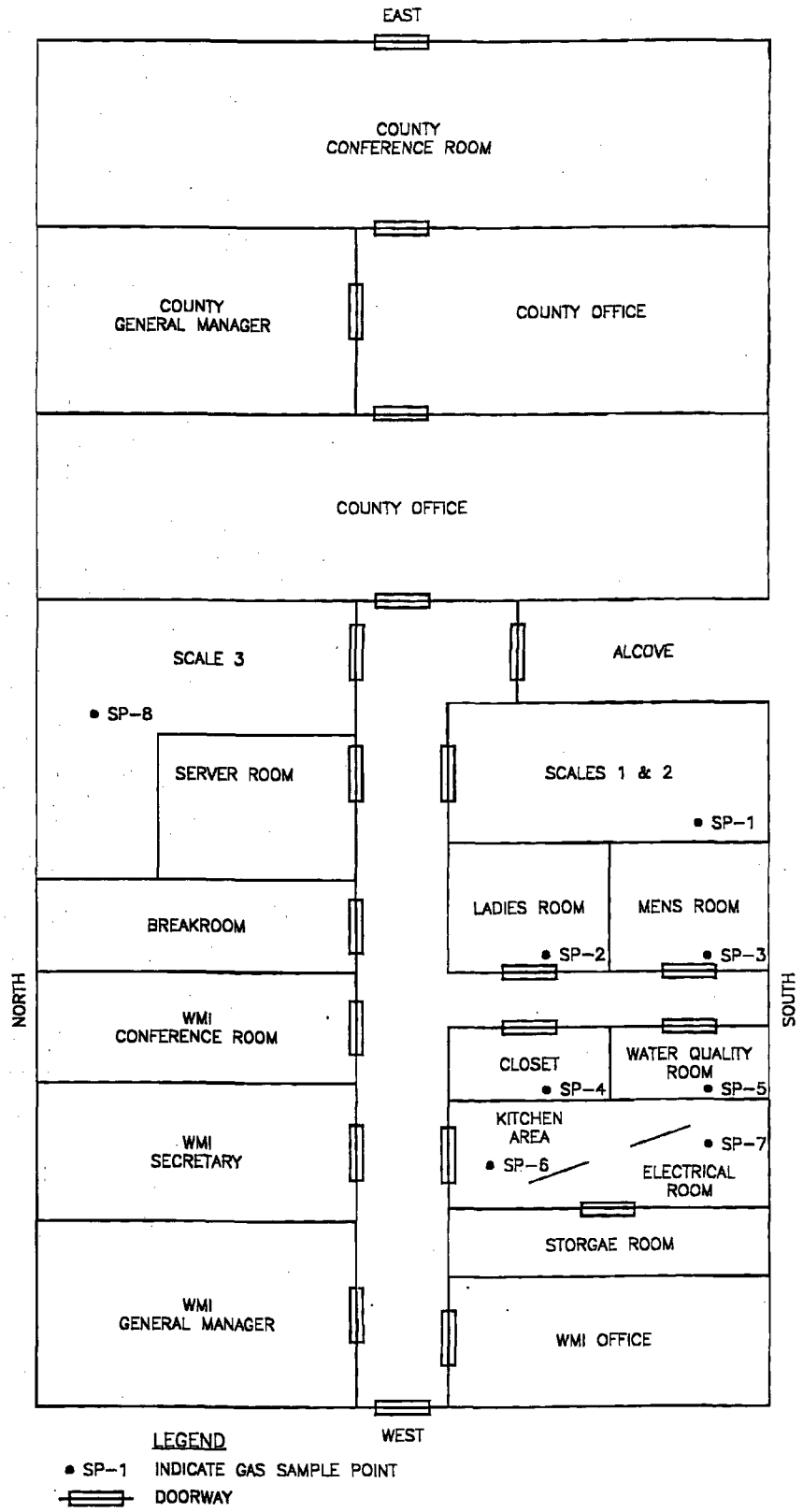
LEGEND S P = AMBIENT SAMPLE POINT

08449-030-04

Plotted: 5/17/10 2:25pm Jmendes

\\\\pms001\\drafting\\08449 Hillsborough County\\030-04\\1200\\08449-030-04-FIGURE H-2.DWG

LAST SAVED: 5/17/2010 3:57 PM JHORALES



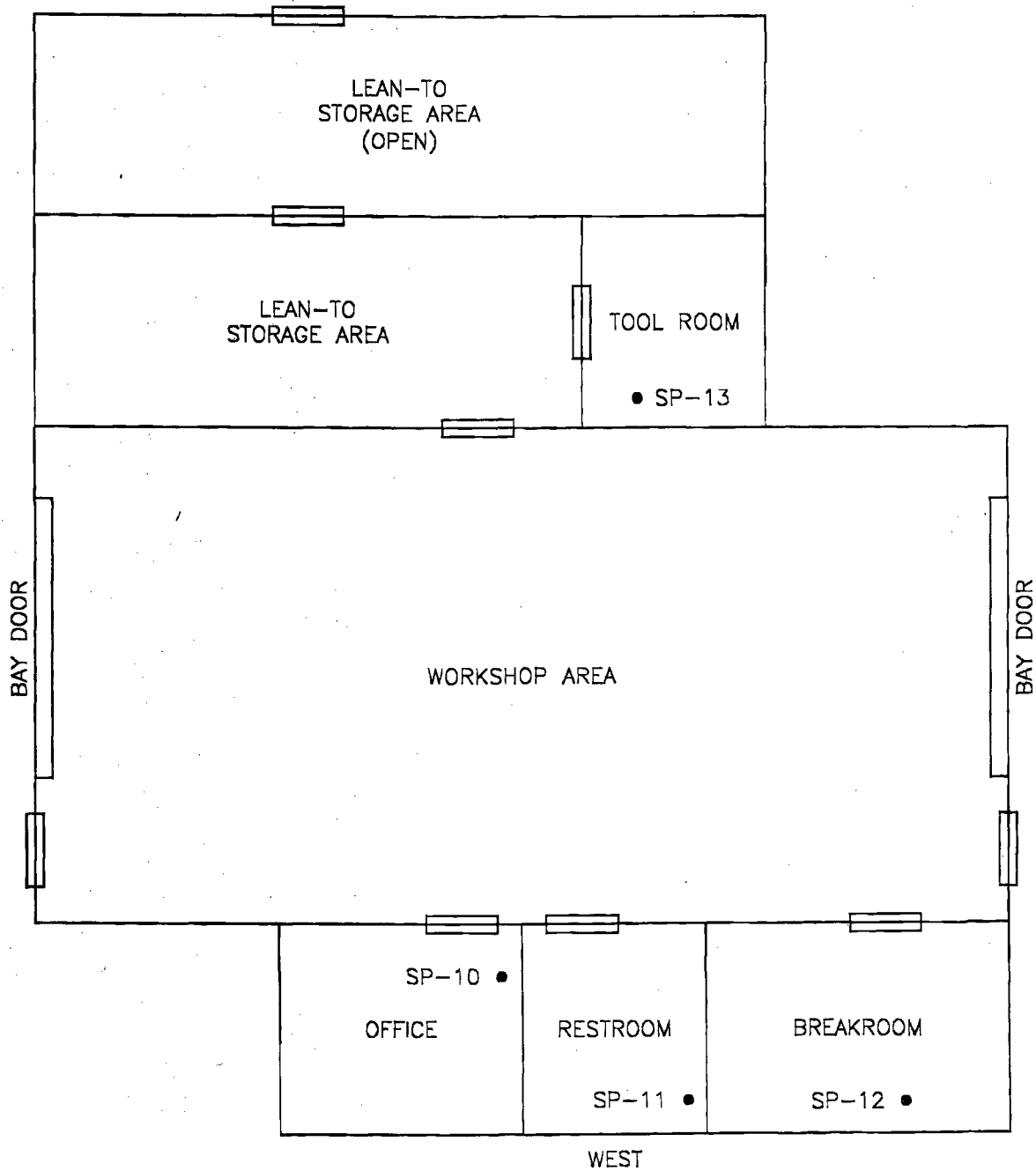
Revised May 2010

NOT TO SCALE

Figure F-2 Scalehouse / Administration Building LFG monitoring Points



08449-030-01
T:\08449 - Hillborough\030-04 SCIF General Services\1200 - Title V\SCS Operations Permit Mod\TAKEN BY DOCPROD\Ops Plan\OPSP288-449\UP-2-288m Inroads
LAST SWED: 1/10/2007 5:07 PM CRESTREPO



LEGEND

- SP-10 INDICATE GAS SAMPLE POINT
- — — DOORWAY

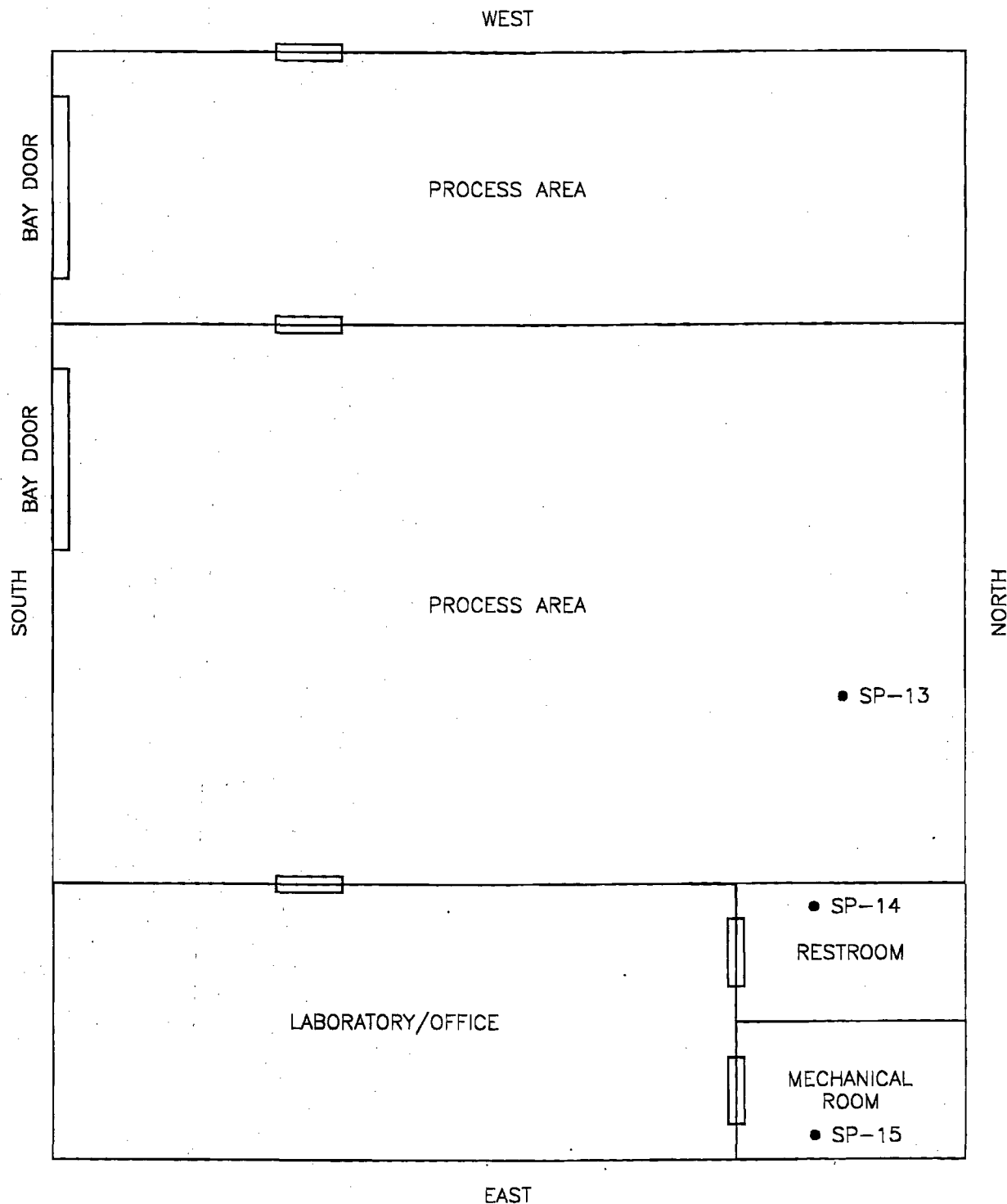
Revised January 2007

NOT TO SCALE

Figure F-3

Maintenance Building LFG Monitoring Points

JONES
EDMUNDS

LEGEND

- SP-14 INDICATE GAS SAMPLE POINT
- DOORWAY

Revised May 2010

NOT TO SCALE

Figure F-4

LTRF Office LFG Monitoring Points

JONES
EDMUNDS

APPENDIX H

STARTUP, SHUTDOWN, AND MALFUCTION (SSM) PLAN



**MUNICIPAL SOLID WASTE LANDFILL
GAS COLLECTION AND CONTROL SYSTEM (GCCS)**

STARTUP, SHUTDOWN, AND MALFUNCTION PLAN

**SOUTHEAST COUNTY LANDFILL
Hillsborough County, Florida**

Prepared by:

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Florida Board of Professional Engineers
Certificate No. 00004892

Original Date of Issuance: January 19, 2010

☐ This version of this plan has been superseded.

If the box above has been checked, complete the following information:

This copy of the plan may be discarded after _____
(enter the date that is 5 years after date on which this version was superseded by a newer version)



Southeast County Landfill
Date of Issuance: January 19, 2010

GAS COLLECTION AND CONTROL SYSTEM (GCCS)
STARTUP, SHUTDOWN, AND MALFUNCTION (SSM) PLAN
SOUTHEAST COUNTY LANDFILL
Hillsborough County, Florida

This Startup, Shutdown, and Malfunction (SSM) Plan was prepared by SCS Engineers in order to comply with the requirements of 40 CFR 63.6(e)(3), as this facility is subject to 40 CFR Part 63, Subpart AAAAA, the National Emission Standard for Hazardous Air Pollutants (NESHAPs) for Municipal Solid Waste (MSW) Landfills. The SSM Plan contains all of the required elements set forth within 40 CFR 63.6(e).

This SSM Plan will be revised if the procedures described herein do not adequately address any malfunction or startup/shutdown events that occur at the facility. A copy of the original plan and all revisions/addenda will be kept on file at the facility for at least five (5) years. The Site/Facility Manager is responsible for assuring that the most recent copy of this SSM Plan is made available to all personnel involved with the landfill gas (LFG) collection and control system (GCCS) at Southeast County Landfill as well as to appropriate regulatory agency personnel for inspection.

Name of Plan Preparer: Daniel R. Cooper, P.E. 1/19/2010
Name Date

Approved:
Plant Manager: Larry Ruiz. 1/19/2010
Name Date



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APPENDICES

- A Common Causes and Response Actions for GCCS Malfunctions
- B SSM Plan Reporting Forms
- C SSM Procedures
 - C-1 Manual Startup Procedures for Utility Flare & Gas Mover System
 - C-2 Manual Shutdown Procedure for Utility Flare
- D Glossary

ADDENDA

- I. Southeast County Landfill Gas Collection Control System Design Plan

REFERENCES

Hillsborough County Southeast County Landfill Mechanical Catalogues
Hillsborough County Southeast County Landfill Title V Operation Permit No. 0570854-006-AV
Hillsborough County Southeast County Landfill Solid Waste Permit O&M Plan



Southeast County Landfill
Date of Issuance: January 19, 2010

1 Revision History

Add the effective date of the most-recent revision to the list below. Do not overwrite or delete any dates. This is intended to be a complete record of all revisions made to this plan, and assists in making certain that all plan versions are retained for at least five (5) years as required by §63.6(e)(3)(v). Please note that this SSM Plan supersedes any previous version that may have been prepared.

Date of Initial Issuance
January 18, 2010
Revision Dates



2 INTRODUCTION

2.1 Purpose and Scope

The municipal solid waste (MSW) landfill owner or operator of an affected source must develop and implement a written Startup, Shutdown, and Malfunction (SSM) Plan that describes, in detail, procedures for operating and maintaining the source during periods of startup, shutdown, and malfunction; a program of corrective action for malfunctioning processes; and air pollution control and monitoring equipment used to comply with the relevant standard. The purpose of the SSM Plan is to:

- Ensure that, at all times, the MSW landfill owner or operator operates and maintains the affected source, including associated air pollution control and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions to the levels required by the relevant standards;
- Ensure that MSW landfill owners or operators are prepared to correct malfunctions as soon as practicable after their occurrence in order to minimize excess emissions of hazardous air pollutants; and
- Reduce the reporting burden associated with periods of startup, shutdown, and malfunction (including corrective action taken to restore malfunctioning process and air pollution control equipment to its normal or usual manner of operation).

A glossary of terms used throughout or applicable to this SSM Plan is included in Appendix D.

2.2 Description of SSM Plan

This SSM Plan has been divided into three major sections comprising the major elements related to startup, shutdown, and/or malfunction of a landfill gas (LFG) collection and control system (GCCS) at a MSW landfill. Malfunction events are distinct events when the GCCS is not operating in accordance with NSPS requirements and which result, or have the potential to result, in an exceedance of one or more emission limitations or operational standards under the NSPS. Startup and shutdown events are generally planned events associated with system repair, maintenance, testing, and upgrade, and may or may not be related to or occur in association with a malfunction of the GCCS.

2.3 Site Background

The Southeast Central Landfill is an existing affected source under the Maximum Achievable Control Technology (MACT) rule for MSW landfills, which previously began operating its GCCS on an "exempt" Title V Air Permit basis. New construction commenced on March 11, 2009 and began operating its GCCS on December 16, 2009. As such, this SSM Plan is required



to be implemented for the Southeast County Landfill by January 19, 2009 for compliance with NSPS MACT regulations. This SSM Plan meets or exceeds this requirement

2.4 Management Approval

In accordance with the requirements of 40 CFR 63.6(e)(3)(i), this SSM Plan does not need to address any scenario that would not cause the source to exceed an applicable emission limitation in the relevant standard. The management of the Southeast County Landfill fully understands and acknowledges the SSM Plan requirements of the MACT rule. This SSM Plan has been developed to specifically address these requirements as summarized above.

2.5 Revisions

This SSM Plan will be revised if the procedures described herein do not adequately address any malfunction or startup/shutdown events that occur at the facility. A copy of the original plan and all revisions/addenda will be kept on file at the facility for at least five (5) years. The County is responsible for assuring that the most recent copy of this SSM Plan is made available to all personnel involved with the GCCS at the site as well as to appropriate regulatory agency personnel for inspection.

The table at the front of this document shall be completed upon any future revisions in order to document the most recent version of the Plan.

2.6 Recordkeeping and Reporting

The SSM Plan is included as part of the facility's Part 70 Title V operating permit. However, any revisions made to the SSM Plan do not constitute Title V permit revisions. If the SSM Plan is revised, previous versions must be available at the site for inspection or copying by the Florida Department of Environmental Protection (FDEP) for five years after the revisions are made.

In addition, Hillsborough County is required to submit semiannual SSM Plan reports detailing actions taken during startups, shutdowns, and malfunctions of the affected source that are consistent with the site's SSM Plan. Also, immediate SSM Plan reports are required any time an action is taken during a startup, shutdown, or malfunction that is not consistent with the site's SSM Plan on file. Later sections of this Plan provide further information on startup, shutdown, and malfunction reporting.



2.7 Site Equipment Subject To This SSM Plan

The following components of the GCCS are subject to this SSM Plan:

Table 2-1. GCCS Components Subject to SSM Plan

Collection wells and other collectors
Lateral and header extraction piping
LFG mover equipment
Flame monitoring and recording equipment
Flow monitoring and recording equipment
Flare automated controls
Flare



3 STARTUP PLAN

This section details procedures for the startup of the GCCS to ensure that, at all times, good safety and air pollution control practices are used for minimizing emissions to the levels required by the relevant standards.

Pursuant to the requirements of the NSPS for MSW landfills, a GCCS must be installed and operated when the landfill exceeds a threshold of 50 Mg/year NMOC and meets all the applicable criteria for a controlled landfill.

3.1 How to Identify a GCCS Startup Event

The regulatory definition of "startup" reads as follows:

"Startup means the setting in operation of an affected source or portion of an affected source for any purpose." (§63.2)

GCCS startup operations generally include startup of gas mover equipment, LFG control devices, and any ancillary equipment that could affect the operation of the GCCS (e.g., power supply, air compressors, etc.). In accordance with the requirements of 40 CFR 63.6(e)(3)(i), this SSM Plan does not need to address any scenario that would not cause the source to exceed an applicable emission limitation in the relevant standard.

3.2 What to do When the GCCS is Started-Up

The following provides a summary of typical response actions for startup of the GCCS.

3.2.1 Gas Mover and Collection System

The following activities may have the potential to emit regulated air pollutants to the atmosphere during startup of the collection system portion of GCCS: (1) startup of gas mover equipment; (2) purging of gases trapped within piping system prior to normal operation; (3) repair of system leaks discovered during startup, (4) connection of the leachate collection risers (LCRS) to the GCCS; and (5) all other activities after construction of the system but prior to fulltime operation, which could release HAPs from the collection system. These activities would be subject to the SSM Plan portion of the SSM Plan.

During such activities, work shall progress such that air emissions are minimized to the greatest extent possible by:



- Temporarily capping pipes venting gas if such capping does not impact safety or the effective construction of the system.
- Minimizing surface area allowing gas to emit to the atmosphere to the extent that it does not impact safety or the effective construction of the system.
- Ensuring that other parts of the system, not impacted by the activity, are operating in accordance with the applicable requirements of NSPS.
- Limiting the purging of piping to as short duration as possible to ensure safe combustion of the gas in the control device.

GCCSs, once installed, are "closed" systems designed to prevent the uncontrolled release of LFG to the atmosphere. The network of piping installed at the site connects each extraction point with the control device(s) with no open vents located anywhere in the collection system.

Portions of active collection systems or individual extraction points may be isolated by valves installed in the system from time to time and subsequently opened. Opening these valves shall not be considered a startup of the active collection system, unless such an activity causes the venting of gas to the atmosphere. If the activity results in emissions to the atmosphere, the actions listed above shall be followed.

The operation of the collection system, once installed, shall be consistent with the provisions of the NSPS as well as the GCCS Design Plan, which has been developed and approved for the facility.

3.2.2 Gas Control System

Personnel shall follow the procedures as identified below when starting the respective control systems. Gas control systems operating at MSW landfills normally undergo planned startups. However, flare systems are designed for unattended automatic operation.

A startup checklist for manual and automatic startups is provided on the Startup Report Form included in Appendix B. However, it is recommended that startups be conducted in the automatic mode. System should not be left unattended in Manual mode since safety shutdowns are bypassed.

Additional startup information is included by reference in Appendix C-1 for LFG Specialties Utility Flare System Unit 2162.

3.3 What to Record for All Startup Events

In the event the control device does not restart automatically, the operator shall record the following information on the attached Startup Report Form (Appendix B):



- The date and time the startup occurred.
- The duration of the startup.
- The actions taken to affect the startup.
- Whether procedures in this SSM Plan were followed. If the procedures in the SSM Plan were not followed, a SSM Plan Departure Report Form (Appendix B) must also be completed.
- If an applicable emission limitation was exceeded, a description of the emission standard that was exceeded or had the potential to be exceeded.

3.4 Whom to Notify at the Facility in Case of a Startup Event

For all startup events the following persons must be notified:

- The Site/Facility Manager, Engineer, or other appropriate Facility Personnel should be notified immediately of the startup.
- The Site/Facility Manager, Engineer, or other appropriate Facility Personnel should be notified within a reasonable timeframe of progress of the diagnosis and resolution of the startup.
- The Site/Facility Manager or Engineer for the site should be notified when the alternative timeframe for startup has been established if it is outside of the timeframes currently allowed by the NSPS for particular compliance elements.
- The Startup Report Form must be initially prepared upon startup, or discovery of an automatic startup, and implementation of the SSM Plan. The form must be finalized by the appropriate Facility Personnel on duty upon successful implementation of the SSM Plan and submitted to the Site/Facility Manager or Engineer. The original form should be retained in the Operation files for five (5) years.

3.5 What to Report for a Startup Event

- If the actions taken during the startup were consistent with this SSM Plan, file the necessary information in your semi-annual SSM report (*within 30 days following the end of each 6-month period*) with the following information included:
 1. Name and title of Site/Facility Manager or other appropriate Facility Personnel;



2. Certifying signature of the owner/operator or other responsible official (Note that "responsible official" has the same meaning as under the Title V permitting program);
 3. Statement that the actions taken during the startup or shutdown were consistent with the SSM Plan; and
 4. If the SSM Plan was revised during the reporting period, to reflect changes in equipment or procedures at the affected source, this must be reported in the semiannual report.
- If the actions taken during the startup were not consistent with this SSM Plan, but the startup did not result in an exceedance of an applicable emission, the responsible official shall state this in the semi-annual SSM report (*within 30 days following the end of each 6-month period*) with the following information included:
 1. Name and title of Site/Facility Manager;
 2. Certifying signature of the owner/operator or other responsible official;
 3. Statement that the actions taken during the startup were not consistent with the SSM Plan, but the source did not exceed any applicable emissions limit standards;
 4. Number, duration, and description of startup events; and
 5. If the SSM Plan was revised during the reporting period to reflect changes in equipment or procedures at the affected source, this must be reported in the semiannual report.
 - If the actions taken during a startup were not consistent with this SSM Plan, and the startup resulted in an exceedance of an applicable emission standard, the Site/Facility Manager or Other appropriate Facility Personnel must report the actions taken to the enforcing authority (FDEP Southwest District) by telephone or facsimile transmission within two (2) working days after the startup. A letter must then be sent to the enforcing authority within seven (7) working days after the startup. The letter should be sent by certified or registered mail or overnight delivery service, and must include the following information:
 1. Name and title of Site/Facility or Other appropriate Facility Personnel;
 2. Certifying signature of the owner/operator or other responsible official (Note that "responsible official" has the same meaning as under the Title V permitting program);
 3. A copy of the **Startup Report Form**;
 4. Detailed explanation of the circumstances of the startup;
 5. The reasons the SSM Plan was not adequate; and whether any excess emissions and/or parameter monitoring exceedances is believed to have occurred during the event.
 6. A copy of the **SSM Plan Departure Report Form**.
 7. Revise the SSM plan within 45 days of the non-conforming event.



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Hillsborough County must retain documentation of the conversation with FDEP or fax regarding the 2-day notification, the 7-day letter, and proof of receipt by FDEP of the 7-day letter in the site's files for a minimum of five years. If the actions taken during startup were not consistent with this SSM Plan, the SSM Plan must be revised. The revised SSM Plan shall include the new actions to be taken for startup of the GCCS during similar startup events. If the revisions to the SSM Plan alter the scope of the process activities at Hillsborough County Solid Waste Management Facility or otherwise modify the applicability of any emission limit, work practice requirement, or other requirement in the MACT rule and/or the NSPS, the revised SSM Plan is not effective until written notice has been provided to the permitting authority describing the SSM Plan revision(s). The revised SSM Plan shall be included in the next semiannual SSM Plan Report.



4 Shutdown Plan

This section details procedures for the shutdown of the GCCS to ensure that, at all times, good engineering, safety and air pollution control practices are used for minimizing emissions to the levels required by the relevant standards.

Pursuant to the requirements of the NSPS for MSW landfills, a GCCS cannot be removed unless the landfill meets all the applicable criteria for removal of collection and control system in 40 CFR 60, Subpart WWW.

4.1 How to Identify a GCCS Shutdown Event

The regulatory definition of "shutdown" reads as follows:

"Shutdown means the cessation of an affected source or portion of an affected source for any purpose." (§63.2)

GCCS shutdown events generally include shutdown of the gas collection system, the gas control system, and any ancillary equipment that could affect the operations or monitoring of the GCCS. There are two general types of shutdown events, those that are initiated manually by an operator (e.g. for purposes of system maintenance) and those that are initiated automatically by the control system in response to certain monitored conditions. Each of these types of shutdown events is discussed below. In accordance with the requirements of 40 CFR 63.6(e)(3)(i), this SSM Plan does not need to address any scenario that would not cause the source to exceed an applicable emission limitation in the relevant standard. Operational exceptions are identified in the Title V permit modification and GCCS Design Plan.

Table 4-1. Potential Events Necessitating Shutdown of the GCCS

Control Device Maintenance, Repair, or Cleaning
Addition of New GCCS Components
Extraction Well Raising
Movement of LFG Piping to Accommodate New Components or Filling Operations
Source Testing
Gas Mover Equipment Maintenance, Repair, or Cleaning
Gas Processing Treatment System Equipment Maintenance, Repair, or Cleaning
Ancillary Equipment (e.g., compressors, etc.) Maintenance, Repair, or Cleaning
New Equipment Testing and Debugging
Shutdown and Subsequent Startup to Address Malfunctions or Other Occurrences
Planned Electrical Outages



Table 4-1. (continued)

Power generation equipment maintenance, repair, and cleaning
Other Site-Specific Shutdown Events

4.1.1 Manual Shutdowns

Table 4-1 includes events that may necessitate a shutdown of the GCCS at a MSW Landfill. This list should not be considered exhaustive. In the event a manual shutdown is required, the procedures specified in Section 4.2 for manual shutdowns should be followed and documented.

4.1.2 Automatic Shutdowns

The GCCS may automatically shutdown one or more of its components in response to monitored conditions that fall outside of set-point ranges. In these instances, the shutdown is completely automatic, and there are no shutdown steps that need to be taken by facility personnel. Personnel will need to evaluate the cause of the shutdown and initiate corrective action as needed with a goal of restarting the system in a safe and timely manner.

Some events that may cause the GCCS to shutdown automatically are listed in Table 4-2 below. This list should not be considered exhaustive.

Table 4-2. Potential Causes of Automatic Shutdowns of the GCCS

Loss of gas flow to the flare
High inlet gas temperature
Flame sensor detects loss of flame
Elevated flame arrestor temperature
High liquid level in knockout pot
Loss of power from the grid
Treatment system component shutdowns
Power generation equipment shutdowns

4.2 Actions to Take When The GCCS Is Shutdown

4.2.1 Collection System

GCCSs, once installed, are "closed" systems designed to prevent the uncontrolled release of LFG to the atmosphere. The network of piping installed at the site connects each extraction point with the control device(s) with no open vents located anywhere in the collection system.

Portions of active collection systems or individual extraction points may be isolated by valves installed in the system from time to time. Periodic or occasional closing of individual valves on



the active collection system for valid operational reasons shall not be considered a shutdown of the overall GCCS for purposes of this Plan.

4.2.1.1 Gas Control System – Automatic Shutdown

Automatic shutdowns of the flare system (including the blower and other related equipment) do not involve any operator interaction. Therefore, there is no procedure to be followed for an automatic shutdown, and no need to document whether established procedures were or were not followed. A shutdown report shall be generated for each automatic shutdown. These reports should indicate that the event that occurred was an automatic shutdown. No procedures checklist need be completed.

4.2.1.2 Gas Control System – Manual Shutdown

Personnel shall follow the procedures identified in this section when shutting down the respective control devices. Control devices operating at MSW landfills normally undergo planned shutdown for the various events listed above.

Control device shutdown procedures for Manual Shutdown are located Appendix C-2 and included on the Shutdown Report Form, (Appendix B).

4.3 What To Record For All Shutdown Events

The operator should record the following information on the attached Shutdown Report Form (Appendix B):

- The date and time the shutdown occurred
- The duration of the shutdown
- The actions taken to effect the shutdown
- Whether procedures in this SSM Plan were followed. If the procedures in the plan were not followed, a SSM Plan Departure Report Form must also be completed
- If an applicable emission limitation was exceeded, a description of the emission standard that was exceeded or had the potential to be exceeded

4.4 Whom to Notify at the Facility in Case of a Shutdown Event

- The Site/Facility Manager, Engineer, or other designated personnel should be notified immediately of the shutdown.
- The Site/Facility Manager, Engineer, or other designated personnel should be notified within a reasonable timeframe of progress of the diagnosis and resolution of the shutdown.



- The Site/Facility Manager, Engineer, or other appropriate personnel should be notified when the alternative timeframe for shutdown has been established if it is outside of the timeframes currently allowed by the NSPS for particular compliance elements.
- The Shutdown Report Form should be initially prepared upon shutdown, or discovery of an automatic shutdown, and implementation of the SSM Plan. The form should be finalized by the operator on duty upon successful implementation of the SSM Plan and submitted to the Site/Facility Manager or other appropriate Personnel. The original form should be retained in the landfill files for five (5) years.

4.5 What to Report for a Shutdown Event

- If the actions taken during the shutdown were consistent with this SSM Plan, file the necessary information in your semi-annual SSM report (*within 30 days following the end of each 6-month period*) with the following information included:
 1. Name and title of Site/Facility Manager.
 2. Certifying signature of the owner/operator or other responsible official (Note that "responsible official" has the same meaning as under the Title V permitting program.
 3. Statement that the actions taken during the shutdown were consistent with the SSM Plan; and
 4. If the SSM Plan was revised during the reporting period to reflect changes in equipment or procedures at the affected source, this must be reported in the semiannual report.
- If the actions taken during the shutdown were not consistent with this SSM Plan, but the shutdown did not result in an exceedance of an applicable emission, the responsible official shall state this in the semi-annual SSM report (*within 30 days following the end of each 6-month period*) with the following information included:
 1. Name and title of Site/Facility Manager;
 2. Certifying signature of the owner/operator or other responsible official;
 3. Statement that the actions taken during the shutdown were not consistent with the SSM Plan, but the source did not exceed any applicable emissions limit standards;
 4. Number, duration, and description of shutdown events; and
 5. If the SSM Plan was revised during the reporting period to reflect changes in equipment or procedures at the affected source, this must be reported in the semiannual report.
- If the actions taken during a startup were not consistent with this SSM Plan, and the shutdown resulted in an exceedance of an applicable emission standard, the



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Site/Facility Manager or Other appropriate Hillsborough County Facility Personnel must report the actions taken to the enforcing authority by telephone or facsimile transmission within two (2) working days after commencing the actions that were inconsistent with the plan. A letter must then be sent to the enforcing authority within seven (7) working days after the startup or shutdown. The letter should be sent by certified or registered mail or overnight delivery service, and must include the following information:

1. Name and title of Site/Facility Manager;
2. Certifying signature of the owner/operator or other responsible official (Note that "responsible official" has the same meaning as under the Title V permitting program. See previous corporate guidance on this topic.);
3. A copy of the **Shutdown Report Form**;
4. Detailed explanation of the circumstances of the shutdown;
5. The reasons the SSM Plan was not adequate; and whether any excess emissions and/or parameter monitoring exceedances is believed to have occurred during the event.
6. A copy of the **SSM Plan Departure Report Form**.
7. Revise the SSM plan within 45 days of the non-conforming event.

Hillsborough County must retain documentation of the conversation with FDEP or fax regarding the 2-day notification, the 7-day letter, and proof of receipt by FDEP of the 7-day letter in the site's files for a minimum of five years. If the actions taken during startup were not consistent with this SSM Plan, the SSM Plan must be revised. The revised SSM Plan shall include the new actions to be taken during similar GCCS shutdown events in the future. If the revisions to the SSM Plan alter the scope of the process activities at Hillsborough County Solid Waste Management Facility or otherwise modify the applicability of any emission limit, work practice requirement, or other requirement in the MACT rule and/or the NSPS, the revised SSM Plan is not effective until written notice has been provided to the permitting authority describing the SSM Plan revision(s). The revised SSM Plan shall be included in the next semiannual SSM Plan Report.



5 Malfunction Plan

5.1 How to Identify a GCCS Malfunction

The regulatory definition of "malfunction" reads as follows:

"Malfunction means any sudden, infrequent, and not reasonably preventable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner which causes, or has the potential to cause, the emission limitations in an applicable standard to be exceeded. Failures that are caused in part by poor maintenance or careless operation are not malfunctions." (§63.2, revised 5/30/03)

The following list includes events that may constitute a malfunction of the GCCS at Southeast County Landfill. The cause of these events should be investigated immediately in order to determine the best course of action to correct the malfunction. Each of these malfunctions could have multiple causes that need to be evaluated and possibly considered. It is the intent of this SSM Plan to include all possible causes for the specific malfunction events. Common malfunction events for LFG collection and control systems are listed in Table 5-1.

Table 5-1. Potential Malfunction Events

Possible Malfunction	Potential Resulting Emission Limitation Exceedance [citation]
Gas Mover/Power Generation Equipment Malfunction with resulting loss of LFG flow	GCCS downtime of greater than 5 days [60.755(e)]
Loss of Electrical Power	GCCS downtime of greater than 5 days [60.755(e)]
Loss of Flame at the Flare	Control device downtime of greater than 1 hour with free venting of LFG [60.755(e)]
Malfunction of Flow Measuring/Recording Device	Failure to record flow [60.756(c)(2)(i)]
Collection Well and Pipe Failures	Failure to route collected gases to the control device. [60.753(e)]
Condensate Pump Failure (resulting in gas collection line blockage)	Failure to route collected gases to the control device. [60.753(e)]



Table 5-1. (continued)

Possible Malfunction	Potential Resulting Emission Limitation Exceedance [citation]
Loss of flame-sensing instrument at flare tip.	Failure to monitor presence of pilot light or flare flame [60.756(c)(1)]
Failure of flare continuous-flame-presence recorder	Failure to continuously record the presence of a flame or pilot light [60.758(c)(4)]
Loss of air compressor	GCCS downtime of greater than 5 days [60.755(e)]
Loss of electricity	Multiple, including possibly:
	• Failure to record flow [60.756(c)(2)(i)]
	• Failure to route collected gases to the control device. [60.753(e)]
	• Failure to continuously record the presence of a flame or pilot light [60.758(c)(4)]

If the occurrence does not result in an exceedance of an applicable emission limitation contained in the NSPS or MACT rules, it is **not** required to be corrected in accordance with this SSM Plan, although use of the plan may still be advisable.

Malfunctions should be considered actionable under this SSM Plan whether they are discovered by the MSW landfill owner or operator during normal operations or by a regulatory agency during compliance inspections.

The operator should follow all the corrective action, notification, record keeping, and reporting procedures described herein in case of malfunction of the GCCS. The various malfunction reference sections of this SSM Plan are provided in Table 5-2 below:

Table 5-2. Malfunction Procedure Reference

Possible Malfunction	Section
Loss of LFG Flow/Gas Mover Malfunction	5.3
Loss of Electrical Power	5.4
Low Temperature Conditions at Control Device	5.5
Loss of Flame at the Control Device	5.6
Malfunction of Flow Monitoring/Recording Device	5.7
Malfunction of Flame Monitoring/Recording Device	5.8
Collection Well and Pipe Failures	5.9
Possible Malfunction	Section
Other Control Device Malfunctions	5.10



Malfunctions of Field Monitoring Equipment	5.11
Malfunction of the Automatic Spark Ignition System	5.12

5.2 Actions To Take When The GCCS Malfunctions - All Malfunctions

- Determine whether the malfunction has caused an exceedance, or has the potential to cause an exceedance, of any applicable emission limitation contained in the NSPS/EG or MACT.
- Identify whether the malfunction is causing or has caused excess emissions to the atmosphere. If excess emissions are occurring, take necessary steps to reduce emissions to the maximum extent possible using good air pollution control practices and safety procedures.
- Contact the Site/Facility Manager for the site immediately and proceed with the malfunction diagnosis and correction procedures described in Appendix A ("Common Causes and Response Actions for GCCS Malfunctions") for each specific malfunction.
- Site-specific malfunction and/or troubleshooting procedures are contained in the documents or appendices referenced below. Personnel shall follow these procedures when addressing a malfunction of a collection system or control device.
- If the procedures in this SSM Plan do not address or adequately address the malfunction that has occurred, the operator should attempt to correct the malfunction with the best resources available. The Site/Facility Manager and Hillsborough County Landfill Operations Personnel should be notified of this situation immediately. Complete a SSM Plan Departure Report Form (Appendix B) as discussed in Section 5.14. The SSM Plan must be updated to better address this type of malfunction.
- Notify the Site/Facility Manager of the progress of the diagnosis and correction procedures and status of the malfunction as soon as practicable.
- If the GCCS malfunction cannot be corrected within the time frame specified in the NSPS/EG, notify the Site/Facility Manager for the site and proceed to shutdown the control device and/or the process(es) venting to the flare control device, if this has not already occurred automatically.
- If the GCCS malfunction cannot be corrected within the time frame allowed by the NSPS/EG rule for each specific malfunction, define the appropriate alternative timeframe for corrective action that is reasonable for the type of repair or maintenance that is required to correct the malfunction.



- If the GCCS malfunction cannot be corrected within alternative timeframe for corrective action specified above, notify the Site/Facility Manager for the site and conduct the appropriate record keeping and reporting required for deviations of the MACT rule and Title V permit.
- Once the malfunction is corrected, notify the Site/Facility Manager for the site as soon as the system is operational.
- Complete the **Malfunction Report Form** (Appendix B) after the malfunction diagnosis and correction procedures are completed.
- If the procedures in this SSM Plan do not address or adequately address the malfunction that has occurred, the operator should note the circumstances and the actual steps taken to correct the malfunction in the **Malfunction Report Form** (Appendix B). This SSM Plan will need to be revised based on this information, as described in Section 5.13 below.
- Follow procedures in Sections 5.13 through 5.15, as appropriate, to adequately document, notify, and report the malfunction and corrective action.

5.3 Loss of LFG Flow/Gas Mover Malfunction

- Follow the procedures in Section 5.2, above.
- Check to see if the control device has shutdown. If control device has shutdown, make sure that gas mover equipment has shutdown to prevent free venting of LFG. Attempt to restart control device to determine if system will remain operational.
- Conduct diagnostic procedures to identify the cause of the malfunction. Potential causes and response actions for this type of malfunction are listed in Appendix A.
- If the malfunction cannot be corrected within 5 days, follow the procedures under Section 5.2 above to establish an appropriate alternative timeframe for corrective action and complete necessary record keeping and reporting if the malfunction cannot be corrected within the established timeframe.

5.4 Loss of Electrical Power

- Follow the procedures in Section 5.2, above.
- Conduct diagnostic procedures to identify the cause of the malfunction. Potential causes and response actions for this type of malfunction are listed in Appendix A.



- If the malfunction cannot be corrected within the time frame allowed by the NSPS/EG rule, follow the procedures under Section 5.2 above to establish an appropriate alternative timeframe for corrective action and complete necessary record keeping and reporting if malfunction cannot be corrected within the established timeframe.

5.5 Low Temperature Conditions at the Control Device

- Follow the procedures in Section 5.2, above.
- Check to see if the control device has shutdown. If control device has shutdown, make sure that gas mover equipment has shutdown to prevent free venting of LFG. Attempt to restart control device to determine if system will remain operational.
- Conduct diagnostic procedures to identify the cause of the malfunction. Potential causes and response actions for this type of malfunction are listed in Appendix A.
- If the malfunction causes the GCCS to go off-line and cannot be corrected within the time frame allowed by the NSPS/EG rule, follow the procedures under Section 5.2 above to establish an appropriate alternative timeframe for corrective action and complete necessary record keeping and reporting if the malfunction cannot be corrected within the established timeframe.

5.6 Loss of Flame at the Control Device

- Follow the procedures in Section 5.2, above.
- Check to see if the control device has shutdown. If control device has shutdown, make sure that gas mover equipment has shutdown to prevent free venting of LFG. Attempt to restart control device to determine if system will remain operational.
- If system will not restart, follow also the procedures in Section 5.3.
- Conduct diagnostic procedures to identify the cause of the malfunction. Potential causes and response actions for this type of malfunction are listed in Appendix A.
- If the malfunction cannot be corrected within the time frame allowed by the NSPS/EG rule, follow the procedures under Section 5.2 above to establish an appropriate alternative timeframe for corrective action and complete necessary record keeping and reporting.



5.7 Malfunctions of Flow Monitoring/Recording Device

- Follow the procedures in Section 5.2, above.
- Conduct diagnostic procedures to identify the cause of the malfunction. Potential causes and response actions for this type of malfunction are listed in Appendix A.
- If the malfunction cannot be corrected in the time frame allowed by the NSPS/EG rule, follow the procedures under Section 5.2 above to establish an appropriate alternative timeframe for corrective action and complete necessary record keeping and reporting.

5.8 Malfunctions of Flame Monitoring/Recording Device

- Follow the procedures in Section 5.2, above.
- Conduct diagnostic procedures to identify the cause of the malfunction. Potential causes and response actions for this type of malfunction are listed in Appendix A.
- If the malfunction cannot be corrected within 15 minutes, follow the procedures under Section 5.2 above to establish an appropriate alternative timeframe for corrective action and complete necessary record keeping and reporting.

5.9 Collection Well and Pipe Failures

- Follow the procedures in Section 5.2, above.
- Follow also the procedures in Section 5.3, above.
- Conduct diagnostic procedures to identify the cause of the malfunction. Potential causes and response actions for this type of malfunction are listed in Appendix A.
- If the malfunction causes the entire GCCS to go off-line and cannot be corrected within 5 days, follow the procedures under Section 5.2 above to establish an appropriate alternative timeframe for corrective action and complete necessary record keeping and reporting.

5.10 Other Control Device Malfunctions

- Follow the procedures in Section 5.2, above.



- Check to see if the control device has shutdown. If control device has shutdown, make sure that gas mover equipment has shutdown to prevent free venting of LFG. Attempt to restart control device to determine if system will remain operational.
- Conduct diagnostic procedures to identify the cause of the malfunction. Potential causes and response actions for this type of malfunction are listed in Appendix A.
- If the malfunction causes the entire GCCS to go off-line and cannot be corrected within 5 days, follow the procedures under Section 5.2 above to establish an appropriate alternative timeframe for corrective action and complete necessary record keeping and reporting.

5.11 Malfunctions of Field Monitoring Equipment

- Follow the procedures in Section 5.2, above.
- Verify that malfunction of monitoring equipment will cause a deviation of the NSPS/EG requirements for wellhead and/or surface emissions monitoring.
- Conduct diagnostic procedures to identify the cause of the malfunction.
- Repair the device or obtain replacement device to complete the monitoring as required by the NSPS/EG.
- Conduct proper calibration procedures before use of the device for NSPS/EG compliance monitoring.
- If the malfunction cannot be corrected so that the monitoring equipment can be used for the purposes required by the NSPS/EG rule, follow the procedures under Section 5.2 above to establish an appropriate alternative timeframe for corrective action and complete necessary record keeping and reporting.

5.12 Malfunction of the Automatic Spark Igniter System Size

- Follow the procedures in Section 5.2, above.
- Check to see if the sparking mechanism has shutdown, perform diagnostics and shut the valve if necessary to prevent free venting of LFG. Attempt to restart control device to determine if system will remain operational.
- Conduct diagnostic procedures to identify the cause of the malfunction. Potential causes and response actions for this type of malfunction are listed in Appendix A.



5.13 What to Record for a Malfunction

The operator must record the following information on the attached **Malfunction Report Form**:

- The date and time the malfunction occurred.
- The duration of the malfunction.
- A description of the affected equipment.
- The cause or reason for the malfunction (if known).
- The actions taken to correct the malfunction (checklist).
- Whether the procedures in this SSM Plan were followed. If the procedures in the plan were not followed, a SSM Plan Departure Report Form must also be completed.
- A description of the emission standard that was exceeded or had the potential to be exceeded.

5.14 Whom to Notify at the Facility in Case of a Malfunction

- The Site/Facility Manager shall be notified immediately of the malfunction.
- The Site/Facility Manager shall be notified within a reasonable timeframe of progress of the diagnosis and corrective action of the malfunction.
- The Site/Facility Manager and Hillsborough County Landfill Operations shall be notified when the alternative timeframe for corrective action has been established if it is outside of the timeframes currently allowed by the NSPS for particular compliance elements.
- The Site/Facility Manager and Hillsborough County Landfill Operations shall be notified if the malfunction cannot be corrected within the timeframe allowed by the NSPS rule or the alternate timeframe established under this SSM Plan. Notification should also occur if the malfunction that occurred is not addressed by the current SSM Plan.
- The **Malfunction Report Form** shall be initially prepared upon discovery of the malfunction and implementation of the SSM Plan. The form shall be finalized by the operator on duty upon successful implementation of the SSM Plan and submitted to



the Site/Facility Manager. The original form must be retained in the landfill files for five (5) years.

5.15 What to Report for a Malfunction Event

- If the actions taken during the malfunction were consistent with this SSM Plan, file the necessary information in your semi-annual SSM report (*within 30 days following the end of each 6-month period*) with the following information included:
 1. Name and title of Site/Facility Manager or other appropriate personnel;
 2. Certifying signature of the owner/operator or other responsible official. (Note that "responsible official" has the same meaning as under the Title V permitting program. See previous corporate guidance on this topic.)
 3. Statement that the actions taken during the malfunction were consistent with the SSM Plan; and
 4. If the SSM Plan was revised during the reporting period to reflect changes in equipment or procedures at the affected source, this must be reported in the semiannual report.
- If the actions taken during the malfunction were not consistent with this SSM Plan, but the malfunction did not result in an exceedance of an applicable emission, the responsible official shall state this in the semi-annual SSM report (*within 30 days following the end of each 6-month period*) with the following information included:
 1. Name and title of Site/Facility Manager or other Hillsborough County landfill operations personnel;
 2. Certifying signature of the owner/operator or other responsible official;
 3. Statement that the actions taken during the malfunction were not consistent with the SSM Plan, but the source did not exceed any applicable emissions limit standards;
 4. Number, duration, and description of malfunction events; and
 5. If the SSM Plan was revised during the reporting period, to reflect changes in equipment or procedures at the affected source, this must be reported in the semiannual report.
- If the actions taken during a malfunction were not consistent with this SSM Plan, and the malfunction resulted in an exceedance of an applicable emission standard, (see items listed under Step 1 above), the Site/Facility Manager or Other appropriate Facility Personnel must report the actions taken to the enforcing authority by telephone or facsimile (FAX) transmission within two (2) working days after commencing the actions that were inconsistent with the plan. A letter must then be sent to the enforcing authority within seven (7) working days after the malfunction. The letter should be sent by certified or registered mail or overnight delivery service, and must include the following information:



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1. Name and title of Site/Facility Manager or other Hillsborough County landfill operations personnel;
2. Certifying signature of the owner/operator or other responsible official. (Note that "responsible official" has the same meaning as under the Title V permitting program. See previous corporate guidance on this topic.);
3. A copy of the **Malfunction Report Form**;
4. Detailed explanation of the circumstances of the malfunction;
5. The reasons the SSM Plan was not adequate; and whether any excess emissions and/or parameter monitoring exceedances is believed to have occurred during the event.
6. A copy of the **SSM Plan Departure Report Form**.
7. Revise the SSM Plan within 45 days of the non-conforming event.

Hillsborough County shall retain documentation of the conversation with FDEP or fax regarding the 2-day notification, the 7-day letter, and proof of receipt by FDEP of the 7-day letter in the site's files for a minimum of five years. If the actions taken during startup were not consistent with this SSM Plan, the SSM Plan must be revised. The revised SSM Plan shall include the new actions to be taken for startup of the GCCS during similar startup events. If the revisions to the SSM Plan alter the scope of the process activities at Hillsborough County Solid Waste Management Facility or otherwise modify the applicability of any emission standard, work practice requirement, or other requirement in the MACT rule and/or the NSPS, the revised SSM Plan is not effective until written notice has been provided to the permitting authority describing the SSM Plan revision(s). The revised SSM Plan shall be included in the next semiannual SSM Plan Report.



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APPENDIX A

Common Causes and Response Actions for GCCS Malfunctions

(Appendix A represents a summary of possible causes and response actions for GCCS malfunctions. The list is not considered to be exhaustive. The list of response actions is not intended to be a sequence of events that are to be implemented in order. Certain malfunction incidents may or may not be associated with the listed "common causes" nor will the "common response actions" be appropriate in all instances. Site-specific evaluation of the malfunctions and development of specific response actions is recommended in all cases.)



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EQUIPMENT	PURPOSE	MALFUNCTION EVENT	COMMON CAUSES	TYPICAL RESPONSE ACTIONS
LFG Collection and Control System				
Blower or Other Gas Mover Equipment	Applies vacuum to wellfield to extract LFG and transport to control device	Loss of LFG Flow/Blower Malfunction	<ul style="list-style-type: none"> -Flame arrestor fouling/deterioration -Automatic valve problems -Blower failure (e.g., belt, motor, impeller, coupling, seizing, etc.) -Loss of power -Extraction piping failure -Condensate knock-out problems -Extraction piping blockages -Pneumatic pump failure -Air compressor failure -Condensate trapped in pipe headers. 	<ul style="list-style-type: none"> -Repair breakages in extraction piping -Clean flame arrestor -Repair blockages in extraction piping -Verify automatic valve operation, compressed air/nitrogen supply -Notify power utility, if appropriate -Provide/utilize auxiliary power source, if necessary -Repair Settlement in Collection Piping -Repair Blower -Activate back-up blower, if available -Clean knock-up pot/demister -Drain knock-out pot -Repair pneumatic pump(s) -Repair air compressor -Repair air lines/condensate force main piping -Drain condensates
Extraction Wells and Collection Piping	Conduits for extractions and movement of LFG flow	Collection well and pipe failures	<ul style="list-style-type: none"> -Break/crack in header, lateral, or extraction well piping -Leaks at wellheads, valves, flanges, test ports, seals, couplings, etc. -Collection piping blockages -Problems due to settlement (e.g. pipe separation, deformation, development of low points) -Pneumatic pump failure -Air compressor failure 	<ul style="list-style-type: none"> -Repair leaks or breaks in lines or wellheads -Follow procedures for loss of LFG flow/blower malfunction -Repair blockages in collection piping -Repair settlement in collection piping -Re-install, repair, or replace piping -Repair pneumatic pump -Repair air compressor -Repair air lines/condensate force main piping



EQUIPMENT	PURPOSE	MALFUNCTION EVENT	COMMON CAUSES	TYPICAL RESPONSE ACTIONS
LFG Collection and Control System				
Blower or Other Gas Mover Equipment And Control Device	Collection and control of LFG	Loss of electrical power	<ul style="list-style-type: none"> - Force majeure/Act of God (e.g., lightning, flood, earthquake, etc.) - Area-wide or local blackout or brown-out - Interruption in service (e.g. blown service fuse) - Electrical line failure - Breaker trip - Transformer failure - Motor starter failure/trip - Overdraw of power - Problems in electrical panel - Damage to electrical equipment from on-site operations 	<ul style="list-style-type: none"> - Check/reset breaker - Check/repair electrical panel components - Check/repair transformer - Check/repair motor starter - Check/repair electrical line - Test amperage to various equipment - Contact electricity supplier - Contact/contract electrician - Provide auxiliary power (if necessary)
LFG Control Device	Combusts LFG	Low and high temperature conditions at control device	<ul style="list-style-type: none"> - Problems with temperature - monitoring equipment - Problems/failure of -thermocouple and/or thermocouple wiring - Change of LFG flow - Change of LFG quality - Problems with air louvers - Problems with air/fuel controls - Change in atmospheric conditions 	<ul style="list-style-type: none"> - Check/repair temperature monitoring equipment - Check/repair thermocouple and/or wiring - Follow procedures for loss of flow/blower malfunction
LFG Control Device	Combusts LFG	Loss of Flame	<ul style="list-style-type: none"> - Problems/failure of thermocouple - Loss/change of LFG flow - Loss/change of LFG quality - Problems with air/fuel controls - Problems/failure of flame sensor - Problems with temperature monitoring equipment 	<ul style="list-style-type: none"> - Check/repair temperature monitoring equipment - Check/repair thermocouple - Follow procedures for loss of flow/blower malfunction - Check/adjust air/fuel controls - Check/adjust/repair flame sensor - Check/adjust LFG collectors



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EQUIPMENT	PURPOSE	MALFUNCTION EVENT	COMMON CAUSES	TYPICAL RESPONSE ACTIONS
LFG Collection and Control System				
Flow Monitoring/Recording Device	Measures and records gas flow from collection system to control	Malfunctions of Flow Monitoring/Recording Device	<ul style="list-style-type: none"> -Problems with orifice plate, pitot tube, or other in-line flow measuring device -Problems with device controls and/or wiring -Problems with chart recorder 	<ul style="list-style-type: none"> -Check/adjust/repair flow measuring device and/or wiring -Check/repair chart recorder -Replace paper in chart recorder
Flame Presence/Heat Sensing Device	Indicates continuous presence of a flame at the control device	Malfunctions of Flame Presence/Heat Sensing Device	<ul style="list-style-type: none"> -Problems with thermocouple or ultraviolet beam sensor -Problems with device controls and/or wiring 	<ul style="list-style-type: none"> -Check/adjust/repair thermocouple or ultraviolet beam sensor -Check/adjust/repair controller and/or wiring -Check/adjust/repair electrical panel components
Control Device	Combusts LFG	Other Control Device Malfunctions	<ul style="list-style-type: none"> -Control device smoking (i.e. visible emissions) -Problems with pilot light system -Problems with thermocouple -Problems with flame arrester -Alarmed malfunction conditions not covered above -Unalarmed conditions discovered during inspection not covered above 	<ul style="list-style-type: none"> -Site-specific diagnosis procedures -Site-specific responses actions based on diagnosis -Clean pitot orifice -Clean/drain flame arrester -Refill propane supply -Check/repair pilot sparking system
Condensate Management System	Manages condensate	Failure of condensate sumps	<ul style="list-style-type: none"> - Electrical failure - Mechanical failure of air compressor for pneumatic condensate sump pumps - Pump failure 	<ul style="list-style-type: none"> - Check/adjust/repair electrical supply or connections - If pneumatic pumps, diagnose pump controls, etc., and air compressor per manufacturer's instructions and repair or replace as appropriate. Procure temporary air compression capacity if needed. - Check/adjust/repair pumps per manufacturer's instructions



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APPENDIX B
SSM Plan Reporting Forms



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HILLSBOROUGH COUNTY SOUTHEAST COUNTY LANDFILL - STARTUP REPORT FORM

This form is used to document actions taken during any startup of any portion of the gas collection and control system. If any of the steps taken are not consistent with this procedure, document the variations on a "SSM Plan Departure Form" and follow the reporting requirements in the SSM plan.	
<input type="checkbox"/> Flare <input type="checkbox"/> Collection System	
1. Beginning of Startup Event	Date: Time:
2. End of Startup Event	Date: Time:
3. Duration of Startup Event (hours):	
4. Description of Affected Equipment:	
5. Cause/Reason for Startup:	
6. Name of person completing this form (please print):	
7. Date completed:	
8. Type of Shutdown (check one): <input type="checkbox"/> Manual <input type="checkbox"/> Automatic	
<ul style="list-style-type: none">If this is an automatic startup, skip sections 9 and 10 below and go to section 11.If this is a manual startup, the procedure listed in section 9 should be followed. Check off the steps completed and continue on to section 10.	
9. STARTUP PROCEDURE CHECKLIST	Check if procedure was followed
10. Did the actual steps taken vary from the procedure specified above? <input type="checkbox"/> YES <input type="checkbox"/> NO If response is "Yes," proceed to section 11 below. If "No," stop.	
11. Did this startup result in an exceedance of any applicable emission limitation? <input type="checkbox"/> YES <input type="checkbox"/> NO If response is "Yes," proceed to section 12 below. If "No," stop.	
12. Describe the emission standard that was exceeded below. Complete a "SSM Plan Departure Report Form." Notify the appropriate regulatory agency verbally or by fax within 2 working days after commencing the actions that an event inconsistent with the SSM Plan and which resulted in an exceedance of an applicable emission limitation has occurred. Follow up in writing to the agency within working 7 days after the end of the event.	

This form is intended to satisfy the recordkeeping requirements of 40 CFR 63.6(e)(3)(iii) and (iv) and 63.10(b)(2).



Southeast County Landfill
Date of Issuance: January 19, 2010

HILLSBOROUGH COUNTY SOUTHEAST COUNTY LANDFILL - SHUTDOWN REPORT FORM

This form is used to document actions taken during any shutdown of any portion of the gas collection and control system. If any of the steps taken are not consistent with this procedure, document the variations on a "SSM Plan Departure Form" and follow the reporting requirements in the SSM plan.	
<input type="checkbox"/> Flare <input type="checkbox"/> Collection System	
1. Beginning of Shutdown Event	Date: _____ Time: _____
2. End of Shutdown Event	Date: _____ Time: _____
3. Duration of Shutdown Event (hours): _____	
4. Description of Affected Equipment: _____	
5. Cause/Reason for Shutdown: _____	
6. Name of person completing this form (print): _____	
7. Date completed: _____	
8. Type of Shutdown (check one): <input type="checkbox"/> Manual <input type="checkbox"/> Automatic	
<ul style="list-style-type: none">• If this is an automatic shutdown, skip sections 9 and 10 below and go to section 11.• If this is a manual shutdown, the procedure listed in section 9 below should be followed. Check off the steps completed and continue on to section 10.	
9. SHUTDOWN PROCEDURE CHECKLIST	Check if procedure was followed
10. Did the actual steps taken vary from the procedure specified above? <input type="checkbox"/> YES <input type="checkbox"/> NO If response is "Yes," proceed to section 11 below. If "No," stop.	
11. Did this shutdown result in an exceedance of any applicable emission limitation? <input type="checkbox"/> YES <input type="checkbox"/> NO If response is "Yes," proceed to section 12 below. If "No," stop.	
12. Describe the emission standard that was exceeded below. Complete a "SSM Plan Departure Report Form." Notify the appropriate regulatory agency verbally or by fax within 2 working days after commencing the actions that an event inconsistent with the SSM Plan and which resulted in an exceedance of an applicable emission limitation has occurred. Follow up in writing to the agency within working 7 days after the end of the event.	

This form is intended to satisfy the recordkeeping requirements of 40 CFR 63.6(e)(3)(iii) and (iv) and 63.10(b)(2).



Southeast County Landfill
Date of Issuance: January 19, 2010

HILLSBOROUGH COUNTY SOUTHEAST COUNTY LANDFILL - MALFUNCTION REPORT FORM

This form is used to document actions taken during a malfunction of any portion of the gas collection and control system. If any of the steps taken are not consistent with this procedure, document the variations on a "SSM Plan Departure Form" and follow the reporting requirements in the SSM plan.		
<input type="checkbox"/> Flare <input type="checkbox"/> Collection System		
1. Beginning of Malfunction Event	Date:	Time:
2. End of Malfunction Event	Date:	Time:
3. Duration of Malfunction Event (hours):		
4. Description of Affected Equipment:		
5. Cause/Reason for Malfunction:		
6. Name of person completing this form (please print):		
7. Date completed:		
Follow the procedure listed below for each malfunction. This form is to be used to document the actions taken during each malfunction. Check off the steps completed.		
8. MALFUNCTION PROCEDURE CHECKLIST		Check if procedure was followed
9. Did the actual steps taken vary from the procedure specified above? If response is "Yes," proceed to box 10 below. If "No," stop.		
<input type="checkbox"/> YES <input type="checkbox"/> NO		
10. Did this malfunction result in an exceedance of any applicable emission limitation? If response is "Yes," proceed to box 11 below. If "No," stop.		
<input type="checkbox"/> YES <input type="checkbox"/> NO		
11. Describe the emission standard that was exceeded below. Complete a "SSM Plan Departure Report Form." Notify the appropriate regulatory agency verbally or by fax within 2 working days after commencing the actions that an event inconsistent with the SSM Plan and which resulted in an exceedance of an applicable emission limitation has occurred. Follow up in writing to the agency within working 7 days after the end of the event.		

This form is intended to satisfy the recordkeeping requirements of 40 CFR 63.6(e)(3)(iii) and (iv) and 63.10(b)(2).



Southeast County Landfill
Date of Issuance: January 19, 2010

**HILLSBOROUGH COUNTY SOUTHEAST COUNTY LANDFILL - SSM PLAN
DEPARTURE REPORT FORM**

1. Type of Event: <input type="checkbox"/> Startup <input type="checkbox"/> Shutdown <input type="checkbox"/> Malfunction		
2. Date:	Time:	Duration:
3. Provide detailed explanation of the circumstances of the startup, shutdown, or malfunction:*		
4. Provide description of corrective actions taken:*		
5. Describe the reasons the SSM Plan was not followed:*		
6. Describe any proposed revisions to the SSM Plan:*		
7. Name (print):		
8. Title		

*Use additional sheets if necessary.

Note: If the event documented in this form was a malfunction and if the SSM plan needs to be revised to address the particular type of malfunction that occurred, the revision of the SSM plan must be made within 45 days of the event.

- This form is intended to assist in meeting the recordkeeping and reporting requirements of 40 CFR 63.6(e)(3)(iv).



Southeast County Landfill
Date of Issuance: January 19, 2010

APPENDIX C

SSM PROCEDURES



Southeast County Landfill
Date of Issuance: January 19, 2010

APPENDIX C-1

Manual Startup Procedures for Utility Flare and Gas Mover System

**(See LFG Specialties User Manual for
Utility Flare System Unit #2162)**



Southeast County Landfill
Date of Issuance: January 19, 2010

APPENDIX C-2

Manual Shutdown Procedure for Utility Flare



Southeast County Landfill
Date of Issuance: January 19, 2010

Manual Shutdown Procedure for Utility Flare

In the event that the flare and associated blower(s) equipment must be shutdown manually the following procedure shall be followed:

- Manually depress the emergency stop plunger on the front of the flare control panel or deenergize the electrical service to the flare control panel. Turning the panel power selector switch to the off position or terminating electrical service to the panel can accomplish this task.
- Verify that the flare fail/safe valve is in the closed position. This valve must close to ensure there are no uncontrolled emissions from the flare stack.
- Verify that the continuous flare pilot is no longer operating.
- Verify that the pneumatic pumps at the nearest condensate pump station to the flare station are operable. If electrical service has been deenergized the air compressor, which services the pneumatic pumps, must remain in operation.
- Implement proper lock-out/tag-out procedures on electrical equipment, panel boxes and valves per Hillsborough County's standards.



Southeast County Landfill
Date of Issuance: January 19, 2010

APPENDIX D

Glossary



GLOSSARY OF COMMON TERMS AND ACRONYMS

Affected Source - A source of air pollution subject to the requirements of the MACT rule.

Control Device - A flare or other device used to burn the collected landfill gas and destroy or reduce the air pollutants present in the gas prior to being released into the environment.

Deviation - Variation from the set procedures outlined in this SSM Plan. If a deviation occurs, then a SSM Plan Deviation Report Form must be completed.

Gas Mover - A landfill gas blower or compressor used to apply vacuum to the landfill gas wells and extract gas from the wellfield and landfill. The gas mover is also used to send the collected gas to the control device such as a flare or burner.

GCCS - Gas Collection and Control System. The GCCS consists of all parts of the landfill gas system including wells, wellheads, gas collectors, piping, condensate sumps, valves, blowers, and the flare.

LFG - Landfill Gas. Gas created by the decomposition of municipal solid waste that consists primarily of methane and carbon dioxide.

MACT - Maximum Achievable Control Technology. A set of federally mandated rules written to control and reduce the emission of hazardous air pollutants (HAPs) from various industrial sources of air pollution, including certain landfill facilities.

Malfunction - Any sudden, infrequent, and not reasonably preventable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner which causes, or has the potential to cause, the emission limitations in an applicable standard to be exceeded.

NSPS - New Source Performance Standards for MSW landfills. A set of federally mandated rules that require certain landfills to control the emission of non-methane organic compounds (NMOC) found in landfill gas.

Shutdown - The cessation of the operation of the GCCS or portion of the GCCS for any purpose.

SSM Plan - Startup, Shutdown, and Malfunction Plan. A plan required for certain landfills under the MACT rule to ensure that the GCCS is operated and maintained properly during periods of startup, shutdown, and malfunction.

Startup - The setting in operation of the GCCS or portion of the GCCS for any purpose.

Utility Flare - A control device that combusts landfill gas in a vertical stack.

APPENDIX I

QED AUTO PUMP OPERATIONS MANUAL



OPERATIONS
MANUAL

AP-4 AutoPump®

AutoPump Controllerless System
(for 4-inch wells or larger)

QED Environmental Systems, Inc.
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Fax: 281-469-1101
Email: sales@qedenv.com
Web: www.qedenv.com

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QED-AP-4-0000-01

The equipment in this manual is protected under U.S. and foreign patents issued and pending:

- | | |
|--|-----------|
| U.S. Patents: | |
| Selective Oil Skimmer (SOS) | 4,497,370 |
| Specific Gravity Skimmer (SPG) | 4,663,037 |
| AutoPump (AP) | 5,004,405 |
| Specific Gravity Skimmer (SPG) Product Sensing | 5,474,685 |
| Vacuum/Pressure Hydrocarbon Recovery System | 4,761,225 |
| SPG PSR technology | 5,474,685 |
| AP-2 | 5,641,272 |
| Gentle System | 5,704,772 |
| Canada Patent: | |
| Specific Gravity Skimmer (SPG) | 1,239,668 |
- "AP" is a Registered Trademark of "QED Environmental Systems"
"AutoPump" is a Registered Trademark of "QED Environmental Systems"
"SOS" is a Registered Trademark of "QED Environmental Systems"
"Gentle" is a Registered Trademark of "QED Environmental Systems"
"SPG" is a Registered Trademark of "QED Environmental Systems"
The QED Environmental Systems logo is a Registered Trademark of "QED Environmental Systems"
QED Environmental Systems is a Registered Trademark of "QED Environmental Systems"

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Introduction

Welcome to QED Environmental Systems' AutoPump® (AP-4) manual.

To ensure the best operator safety and system performance, it is strongly recommended that the operators read this entire manual before using the system.

This manual reflects our many years of experience and includes comments and suggestions from our sales and service personnel and most importantly from our customers. The chapters, their contents and sequence were designed with you, the user and installer, in mind. We wrote this manual so it can be easily understood by users who may not be familiar with systems of this type or are using a QED system for the first time.

Safety

Safety has been a cornerstone of our design which has been proven out in building and shipping systems throughout the world. Our high level of performance is achieved by using quality components, building in redundancies or backup systems, and not compromising our commitment to quality manufacturing. The net result is the highest quality and safest pneumatic pump recovery system on the market. We feel so strongly about safety, based on years of working with the hydrocarbon industry, that it is the first section in all of our manuals.

How to Contact QED

If for any reason you are unable to find what you need in this manual please feel free to contact the QED Service Department at any time. We encourage you to use following communication methods to reach us at any time:

Service Department
QED Environmental Systems
www.qedenv.com

Oakland Service Center
1133 Seventh Street
Oakland, California 94607

(800) 537-1767 — North America Only
(510) 891-0880 — Tele.
(510) 444-6789 — Fax

Ann Arbor Service Center
PO Box 3726
6095 Jackson Road
Ann Arbor, Michigan 48106-3726

(800) 624-2026 — North America Only
(734) 995-2547 — Tele.
(734) 995-1170 — Fax
info@qedenv.com — E-mail

QED can be reached 24 hours a day

We welcome your comments and encourage your feedback regarding anything in this manual and the equipment you have on-site.

Thank you again for specifying QED remediation equipment.

Chapter 1: Safety

Safety has been a prime consideration when designing the AutoPump System. Safety guidelines are provided in this manual, and the AutoPump System safety features are listed below. Please do not attempt to circumvent the safety features of this system.

We have also listed some possible hazards involved when applying this system to site remediation. Nothing will protect you as much as understanding the system, the site at which it is being used, and the careful handling of all the equipment and fluids. If you have any questions, please contact the QED Service Department for guidance.

As you read through this manual, you will encounter three kinds of warnings. The following examples indicate how they appear and lists their respective purposes.

Note: Highlights information of interest.
Caution: Highlights ways to avoid damaging equipment.
WARNING: Highlights personal safety issues.

A Partial List of Safety Procedures

WARNING:

The air compressor and any other electrical equipment used with this pneumatic system must be positioned outside of any area considered hazardous because of possible combustible materials.

These safety procedures should be followed at all times when operating QED equipment on or off site, and should be considered as warnings:

- Wear safety goggles when working with the AutoPump System to protect eyes from any splashing or pressure release.
- Wear chemically resistant rubber gloves, boots, and coveralls when handling the AutoPump and fluid discharge hose to avoid skin contact with the fluid being recovered.

- Point all hoses away from personnel and equipment when connecting or disconnecting.
- Always ensure that the fluid discharge hose is connected before the air hose to prevent accidental discharge.

The AutoPump System minimizes the potential for accidents with the following safeguards:

Fire and Explosion Protection

Almost all of QED underground fluid extraction systems are pneumatic. This offers many inherent fire and explosion protection features:

- Compressed air lines eliminates electrical wiring in hazardous areas.
- Aluminum or fiberglass enclosures prevent sparking.
- Standard systems use brass fittings to eliminate sparking hazard.

Personal Protection

On-site, service and maintenance personnel can safely use QED equipment. Safety-in-use is the primary design feature in all systems. Following are some samples:

- All standard high pressure air hoses have automatic shut off quick-connects on the supply side which prevents injury due to hose whip or air blown particles. Tubing does not usually have quick-connect fittings, but is pushed over barbs or pushed into compression fittings.
- Metal regulators and filter bowls are rated at 200 psi and plastic bowls are rated at 150 psi. The metal air filter bowl is made of zinc, providing greater pressure and chemical resistance than plastic bowls and it is less prone to damage if dropped. The customer can choose either material.

Spill Protection

On-site spills cannot always be prevented. QED equipment is designed to take into consideration such unpredictable occurrences that may happen despite strict adherence to standardized safety practices.

- The standard air and fluid hoses are rated at over 800 psi burst pressure to prevent accidental hose breakage.
- Down well quick-connects have locking features to prevent accidental disconnections.

Chapter 2: Overview

The AutoPump® fills and empties automatically, and is very easy to install, use, and maintain.

The AutoPump is a pneumatic fluid extraction pump that pumps in pulses. It handles any liquid which flows freely into the pump and is compatible with the component materials and with the connecting hoses. The AP-4 is intended for vertical operation in well casings with a 3.75-inch or greater internal diameter. It can pump particles up to 1/8-inch in diameter.

The AutoPump is very versatile and available in a wide range of lengths, valve arrangements, and materials of construction to meet particular site specifications.

Equipment will vary by application and site specifications. (See Chapter 3)

General Specifications

Pump Diameter	3.50 inch	88.9 mm
Pressure Range	5 - 120 psi	0.4 - 8.5 Kg/cm ²
High Pressure Option	5 - 200 psi	0.4 - 14.1 Kg/cm ²
Flow Ranges	0-16 gallons per minute	0-60 liters per minute

This is How it Works

The AutoPump is a submersible compressed air-driven pump which fills and empties automatically. It also controls the fluid level in a well automatically. The pump fills (see Figure 1) when fluids enter either the top or bottom check valve. Air in the pump chamber exits through the exhaust valve as the fluid fills the pump. The float inside the pump is carried upwards by the fluids rising in the casing until it pushes against a stop on the control rod, forcing the valve mechanism to switch to the discharge mode.

The switching of the valve causes the exhaust valve to close and the air inlet valve to open. This causes the pump to empty (see Figure 1) by allowing compressed air to enter the pump. This pressure on the fluid closes the inlet check valve and forces the fluids up the discharge tube and out of the pump through the outlet check valve. As the fluid level falls in the pump, the float moves downwards until it pushes against the lower stop on the control rod, forcing the valve mechanism to switch to the fill mode. The outlet check valve closes and prevents discharged fluids from re-entering the pump. The filling and discharging of the pump continues automatically.

Note: The figures shown here are simplified schematics.

Major AutoPump Features

- The AutoPump System is small and lightweight and can be easily moved from site to site, allowing quick response to changing conditions.
- The hoses are color coded and all the fittings are different so only the proper connections can be made.
- Rugged construction ensures long system life, even under harsh conditions.
- The entire system is pneumatically powered with no electrical components, thus avoiding sparks in control power and sensing devices.
- Durable stainless steel air valves that can pass liquids as viscous as 90 weight gear oil without fouling. The air valves can handle reverse flow and submersion for long periods of time. Unlike pumps with bubblers or bleed hoses, there are no problems with start up, clogging, and failure under these difficult conditions when using the AP-4. This results in less downtime and lower training, maintenance, and repair costs.

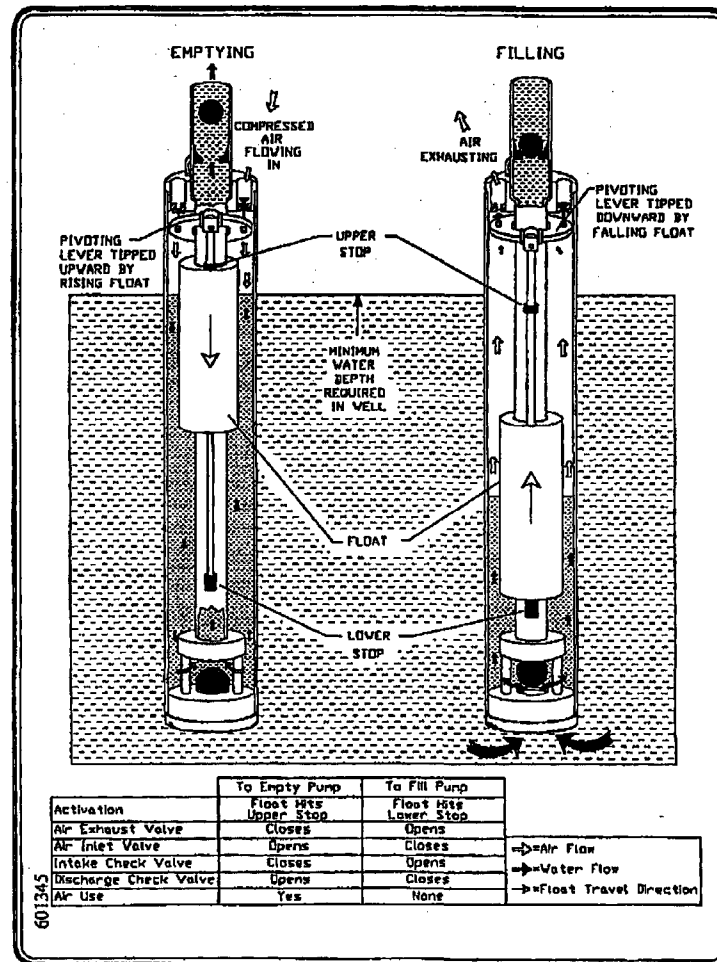


Figure 1 - How it Works

Chapter 3: Equipment

Unpacking

During the unpacking procedure, check for the following:

- All parts on the packing list have been included in the box
- All fitting openings are unobstructed
- The equipment has not been damaged in shipment

Equipment List

The equipment list will vary depending on site specifications, but the following list is a typical configuration:

1. Top-Loading or Bottom-Loading AP-4 with support harness
2. Single stage filter/regulator with:
 - 5 micron filter with auto drain trap
 - Pressure regulator with gauge
3. Pump Cycle Counter (PCC)
4. Hoses:
 - Fluid discharge hose (black)
 - System air supply hose (blue)
 - AutoPump air hose (green)
 - Air exhaust hose (blue)

Note:

Black nylon tubing can be used in place of hose.

5. Pump support system:

- Well cap
- Polypropylene support rope with quick-link assembly or SS wire rope (Alternate materials as required)

Tools

The following tools are used to service the AP-4:

- Spanner wrench

Parts List

In aggressive sites over millions of cycles, the parts that one may anticipate replacing are:

- Discharge check valve ball

AP-4 AutoPumps

In both the Bottom-Loading and the Top-Loading models, the fluid is pushed out of the pump through a check valve located at the top of the pump. This check valve prevents the fluid from reentering the pump.

Bottom-Loading AP-4/BL

The Bottom-Loading AutoPump fills through a check valve at the bottom of the pump. There are three lengths of AP-4/BL: long, short, and low drawdown. The fluid level in the well can be drawn down to 36 inches from the bottom of the long BL, and 25 inches from the bottom of the short BL (See Figure 3) and as low as 11.5 inches with the low drawdown configuration (See Figure 5)

Top-Loading AP-4/TL

The Top-Loading AutoPump fills through a check valve at the top of the pump, therefore the fluid level in the well will never go below the level of this check valve. There are three lengths of AP-4/TL: long, short (See Figure 4) and low drawdown.

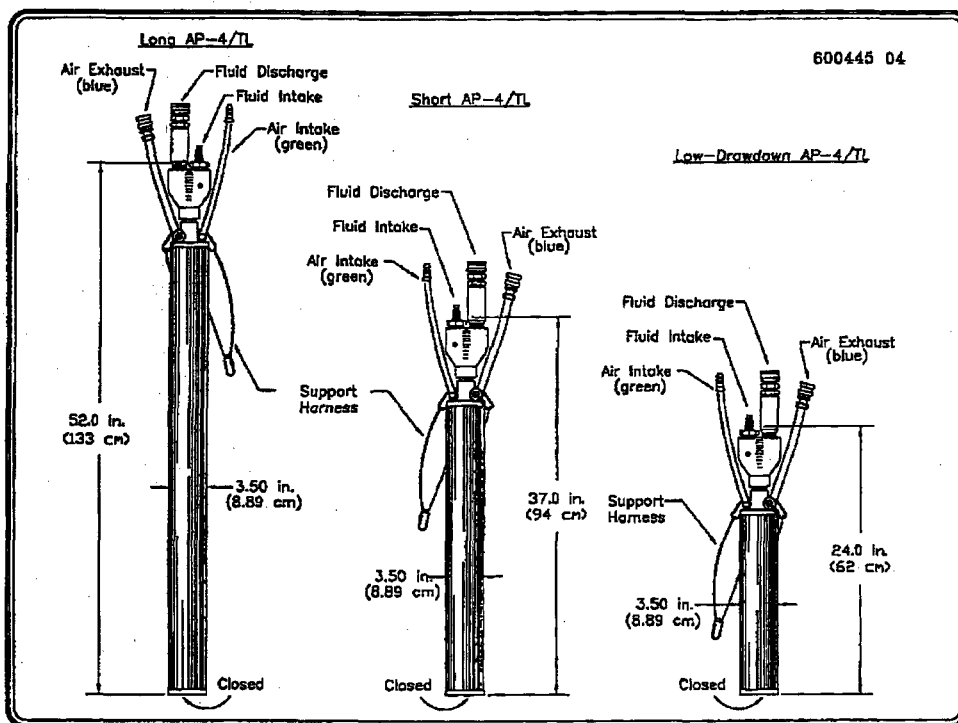


Figure 4 - Long, Short and Low-Drawdown Top-Loading (AP-4/TL)
Revision 12 - September, 2007

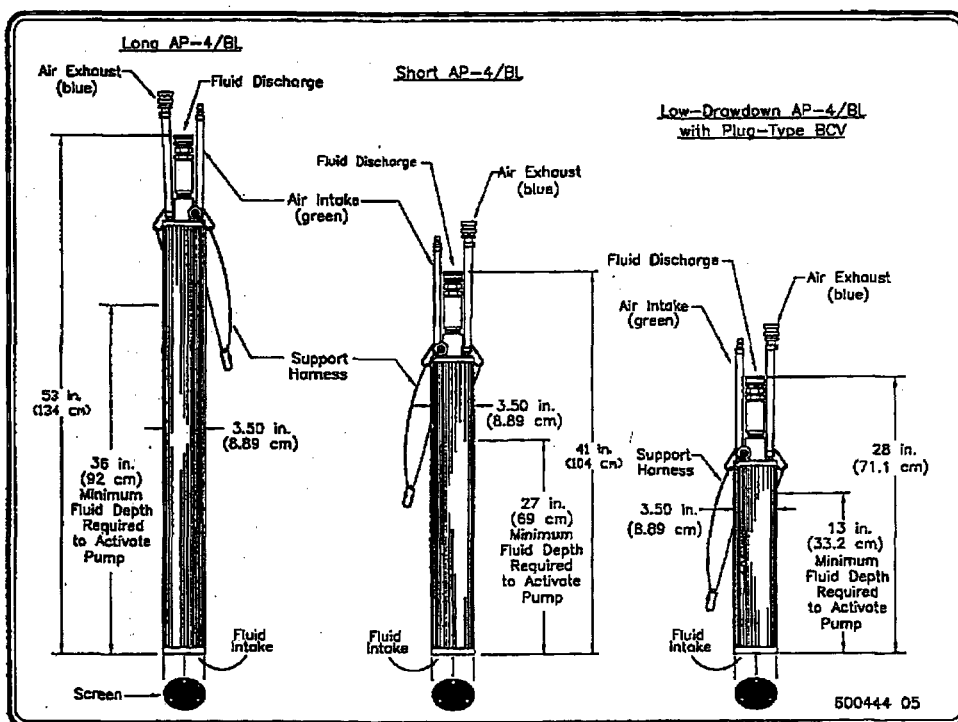


Figure 3 - Long, Short and Low-Drawdown Bottom-Loading (AP-4/BL)
Page 14

Specifications

Pump	Length	Vol/Cycle Range	Weight	Outside Diameter
Long AP-4/BL	53-inches 134-cm	.58 gal - .78 gal 2.2 L - 3.0 L	16 lb 7.2 Kg	3.5-in 8.89-cm
Short AP-4/BL	41-inches 104-cm	.22 gal - .36 gal .83 L - 1.4 L	13 lb 5.9 Kg	3.5-in 8.89-cm
LD AP-4/BL	28-inches 71.1-cm	.11 gal - .16 gal .42 L - .61 L	10 lb 4.5 Kg	3.5-in 8.89-cm
Long AP-4/TL	62-inches 152-cm	.58 gal - .78 gal 2.2 L - 3.0 L	17 lb 7.7 Kg	3.5-in 8.89-cm
Short AP-4/TL	37-inches 94-cm	.22 gal - .36 gal .83 L - 1.4 L	14 lb 6.3 Kg	3.5-in 8.89-cm
LD AP-4/TL	24-inches 62-cm	.11 gal - .16 gal .42 L - .61 L	12 lb 5.4 Kg	3.5-in 8.89-cm

Component Materials

Typical component materials include stainless steel, acetal, Viton, fiberglass, PTFE (Teflon), PVDF (Kynar), UHMWPE, epoxy, and brass.

Performance and Air Use Curves -- See Appendices A and B.

Landfill Pump Configurations

All lengths (Long, Short, and Low Drawdown) and intake configurations (Bottom-Loading) are available in models for landfill leachate, condensate pumping and dewatering applications. (See Figure 5)

These models have material options to withstand temperatures up to 212° F (100° C) and pH levels from 1 to 12. Various inlet screen sizes also available.

Landfill Specifications

Pump	Length	Vol/Cycle Range	Weight	Outside Diameter
Long AP-4/BL	53-inches 134-cm	.58 gal - .78 gal 2.2 L - 3.0 L	16 lb 7.2 Kg	3.5-in 8.89-cm
Short AP-4/BL	41-inches 104-cm	.22 gal - .36 gal .83 L - 1.4 L	13 lb 5.9 Kg	3.5-in 8.89-cm
LD AP-4/BL w/Rad Screen	28-inches 66 cm	.11 gal - .16 gal .42 L - .61 L	10 lb 4.5 Kg	3.5-in 8.89-cm
LD AP-4/BL w/Ext Screen	30.5-inches 77.5-cm	.11 gal - .16 gal .42 L - .61 L	12 lb 4.5 Kg	3.5-in 8.89-cm

Component Materials

Typical component materials include stainless steel, acetal, Viton, nylon, fiberglass, Teflon (PTFE), PVDF (Kynar), UHMWPE, epoxy, and brass.

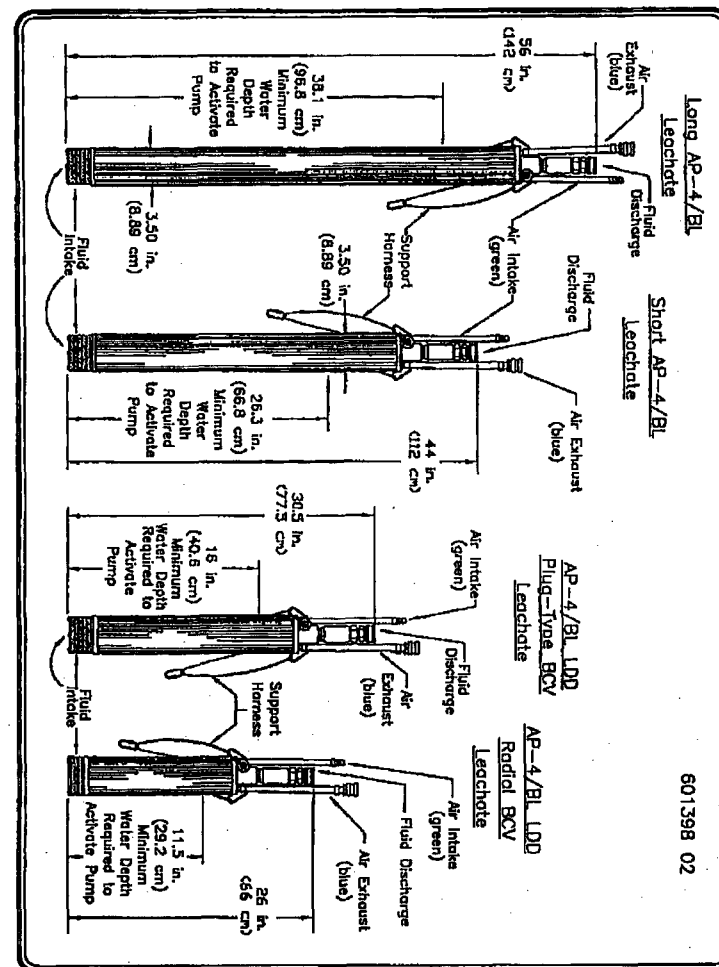


Figure 5 - Long, Short, and LDD Bottom-Loading Leachate (AP-4/BL)

Single Stage Filter/Regulator

A single stage 5 micron particulate air filter/regulator has an a manual or an optional automatic drain and is installed on the system air supply hose. The filter/regulator removes particles and some oil vapor, and water droplets from the air passing to the AP-4. The regulator should produce at least as much pressure as required to move the fluid from the depth at which the pump is installed. (See Figure 6)

Note:

Too much air pressure can result in low pump efficiency.

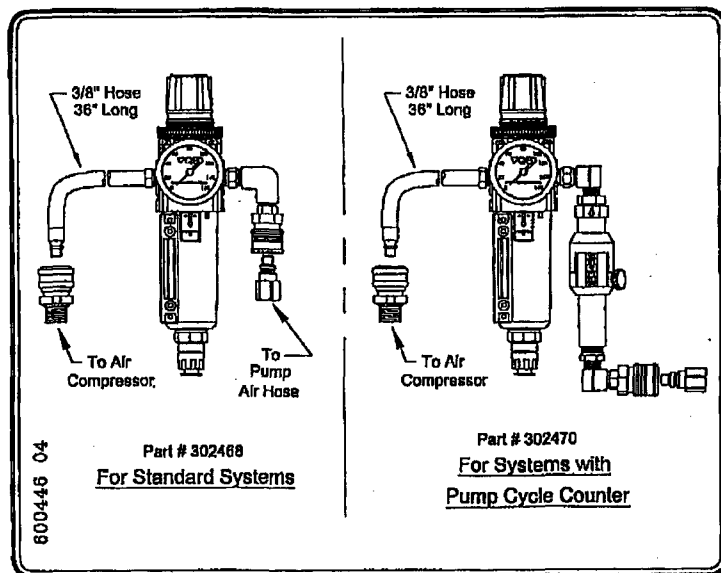


Figure 6 - Single Stage Filter/Regulator 60 with Quick-Connects

Hoses and Fittings

The table below shows the normal hose colors. These may change due to application or need.

Hose and Tubing Color Code Table

	System Air Supply Hose	Fluid Discharge Hose	AutoPump Air Hose	Air Exhaust Hose
Hose Color	Blue	Black	Green	Blue
Hose Material	Nitrile	Nitrile	Nitrile	Nitrile
Hose Size I.D.	3/8-inch to 3/4-inch	5/8-inch to 1-1/4-inch	3/8-inch to 1/2-inch	1/2-inch to 3/4-inch
Tubing Color*	Black	Black	Black	Black
Tubing Material*	Nylon	Nylon	Nylon	Nylon
Tubing Size O.D.*	3/8-inch to 1-inch	5/8-inch to 1-1/4-inch	3/8-inch to 5/8-inch	5/8-inch to 1-inch
Function	Transports air from air compressor to filter/regulator	Transports product from AutoPump to discharge point	Transports air from filter/regulator to AutoPump	Exhausts air from AutoPump
Fittings	Hose barb and clamp or one-way quick-connect fitting	Hose barb and clamp or straight through quick-connects	Hose barb and clamp or one-way quick-connect fitting	Hose barb and clamp or straight through quick-connects

* Nylon tubing is available in single tube or jacketed bundles. Contact QED for the sizes and bundle configurations.

If optional quick-connects are used, the flow of air and fluid in the hoses runs *into* the male plug and *out* of the female socket.

The quick-connect fittings on one type of hose will usually not interchange with those of another, so it is very difficult to connect a hose to an incorrect fitting.

Note:

The down well hose fittings normally have locking quick-connects. On sites with water depths over 50 feet, special consideration may be required to support the hoses. Consult with QED regarding such applications.

Volumes Pumped Per Cycle

- The volume of fluid pumped per cycle from an AutoPump varies depending upon the inlet air pressure, the fluid inlet head and the force against which the pump must move the fluid. This force is a sum of the static head and dynamic losses incurred during fluid movement, usually referred to as Total Head.
- The Total Head depends upon back pressure in the surface lines, hose size, fittings, vertical and horizontal pumping distance, the number of pumps feeding the hose system, air pressure to the pump, and the type of pump.
- The effects of some of these variables may cause the volume pumped per cycle to vary from pump to pump on a single site.

Pump	Volume per Cycle: Range	Volume per Cycle: Typical
Long AP4	0.58 - 0.78 gal (2.2 - 3.0 L)	0.85 gal (2.46 L)
Short AP4	0.22 - 0.36 gal (0.87 - 1.36 L)	0.25 gal (0.95 L)
Low Drawdown AP4	0.11 - 0.16 gal (0.42 - 0.61 L)	0.13 gal (0.51 L)

All figures above are dependent on site specific conditions under which the pump is operating

Pump Support System

To safely support the AP-4, a pump support system is offered. Included in the system are a well cap, support rope, and quick-link assembly. (See Figure 13 on page 36, and Figure 14 on page 37)

Well caps with various fitting combinations are available. (See Figure 12 on page 34)

Caution:

Although it may be possible to support the pump using only tubing, it is not always wise to do so. If a pump becomes jammed in a well, a strong rope or wire rope separate from the tubing may be needed to withstand the force required to free it. Thus a separate support line is recommended.

Chapter 4: Assembly & Installation

WARNING:

PVC pipe is generally not recommended for compressed air service.

Cautions

The following suggestions are offered to reduce the complications involved in assembly and installation.

- Cover the hose ends with tape if they are being pulled through trenches. Be sure the ends of the hoses that connect to the air compressor and fluid discharge have the correct fitting leading out of the well. If you are unsure, look at the respective fittings on the pump.
- Blow out all water and particles from compressed air conduits (trunk lines, sensor hoses, air supply hoses etc.) and fluid lines for at least 10 seconds after the water and particles exit before connecting them to the system.
- When running hoses in conduit, include a rope to pull additional hoses in case they are needed at a later date
- If solid metal piping is used for compressed air conduit, it is advised that an air filter or a "Y" strainer with a fine mesh screen (60 mesh or finer) be placed at the downstream end of the piping. Metal flakes, rust, galvanizing material, dirt, etc. can be dislodged from such metal piping and travel to the pump.

Compressed Air Supply

The AP-4 System includes a compressor-to-pump air line quick disconnect fitting for the compressor.

There is a distinct air inlet on the AP-4; an "I" is stamped next to it on the head of the pump. The air inlet quick connect fitting on the pump has a female counterpart on the air inlet hose. The air inlet must be connected for the AP-4 System to function. Do not lubricate the compressed air coming out of the compressor. The AP-4 does not require lubrication and excess oil may foul the filter/regulator.

WARNING:

The compressor should not provide more pressure than the filter can accept. The filter and regulator with plastic bowl accepts a maximum of 150 psi air pressure. The metal bowl can accept 250 psi. Maximum output air pressure setting on the standard regulator is 120 psi. A higher pressure regulator and gauge are optional.

Component Assembly

Quick-Connects/Hose Barbs

Follow the instructions on Figure 7 for properly securing the locking quick-connects. See Figure 8 and Figure 9 for properly securing hose barbs.

AutoPump Assembly

STEP 1 - Attach Fluid Discharge Hose (black)

Note:

If a well cap with holes is used, insert the hoses through the cap before attaching hose.

- Attach the fluid discharge hose or tubing to the AutoPump.

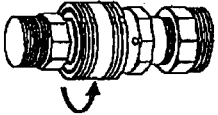
(See Figure 10 and Figure 11)

- Attach the other end of the discharge hose to the fluid discharge point.

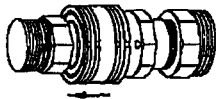
Figure 7 - Locking Quick-Connects

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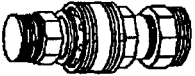
- Rotate the socket sleeve so the groove does not align with the pin. To test, gently pull hexes of both fittings in opposite directions. Fittings must remain attached.



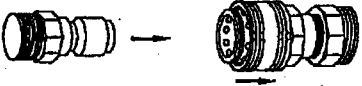
- Let the socket sleeve go in. It must slide all the way until the pin is visible again.



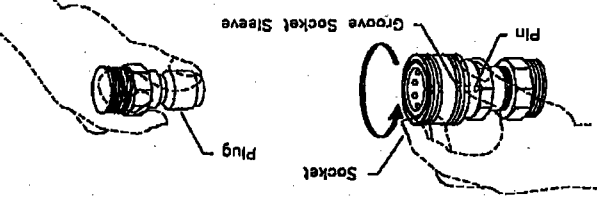
- Push plug into socket until the plug is almost covered.



- Pull socket sleeve against the hex (the pin will be totally covered). Hold in this position for plug insertion.



- Rotate socket sleeve until groove is aligned with the pin close to the hex.



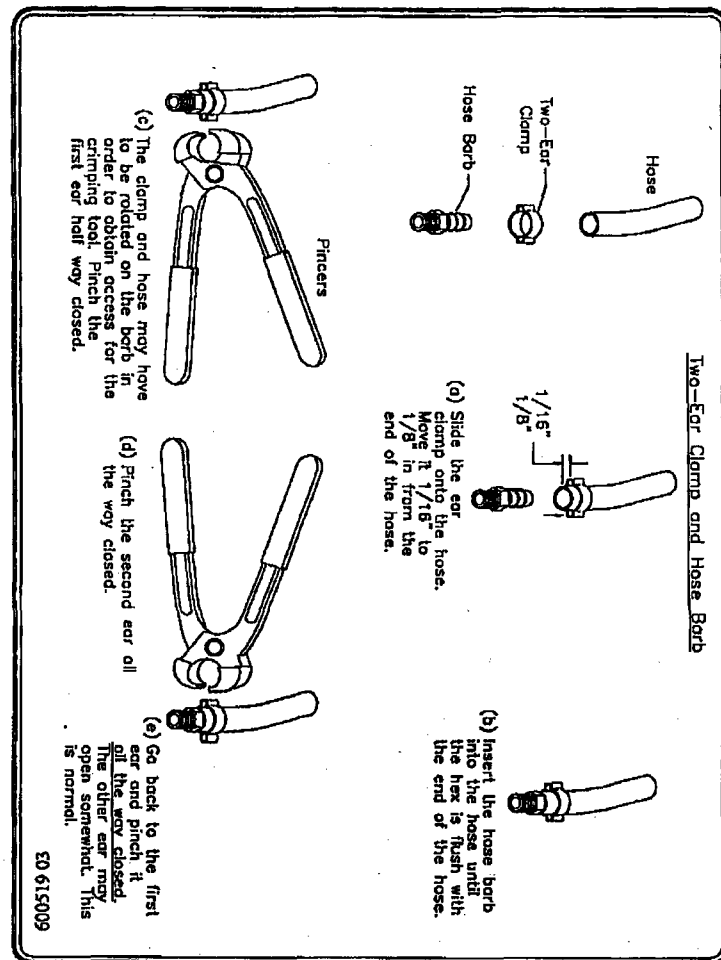


Figure 8 - Two-Ear Clamp and Hose Barb Assembly Instructions

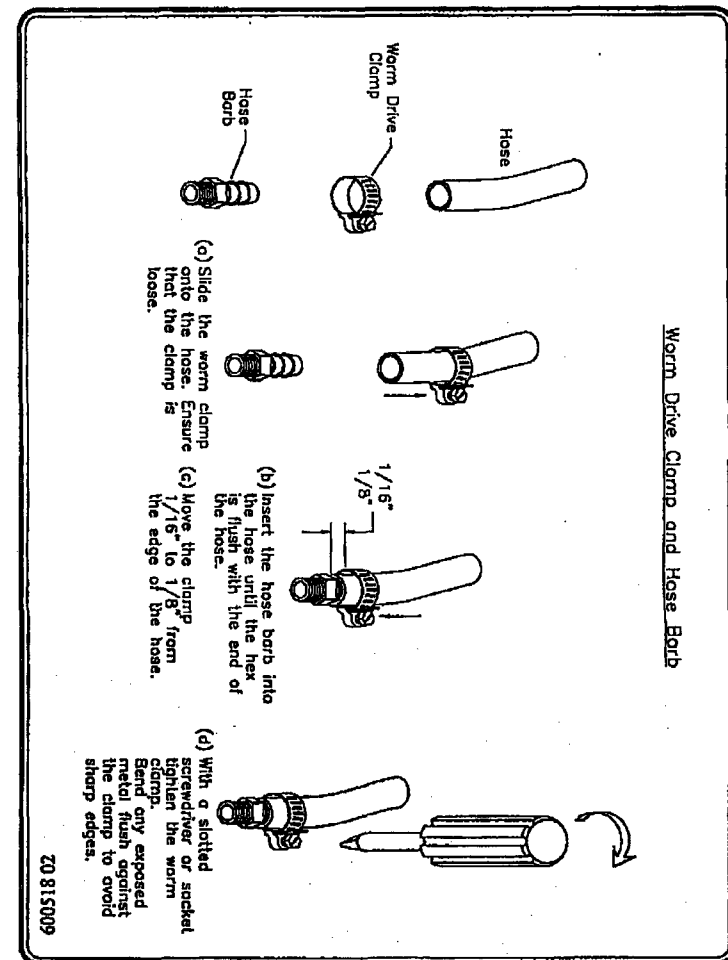
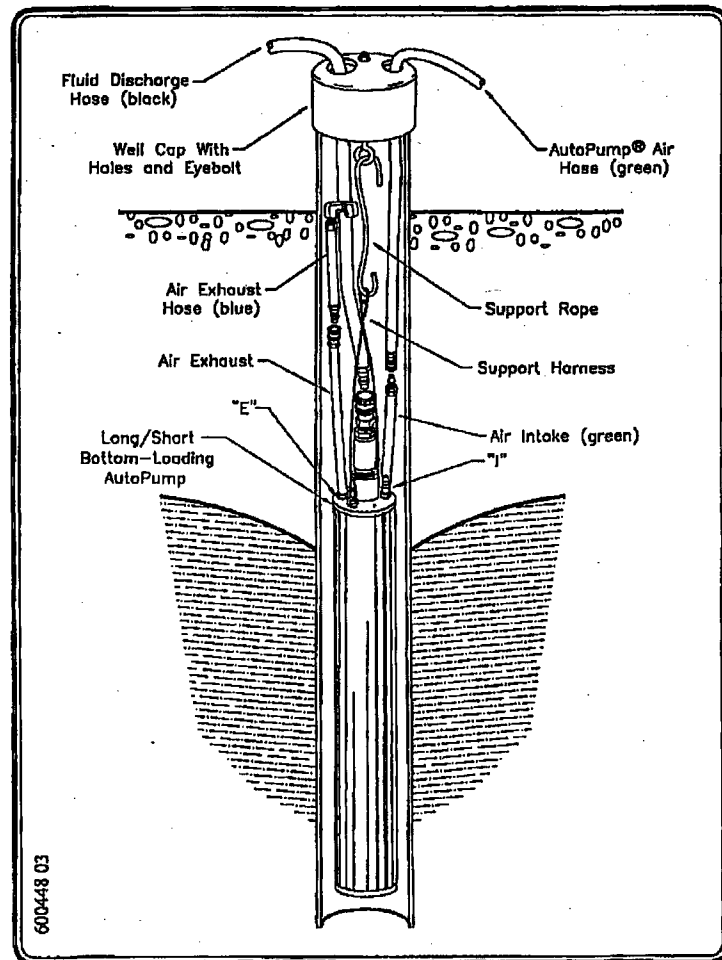
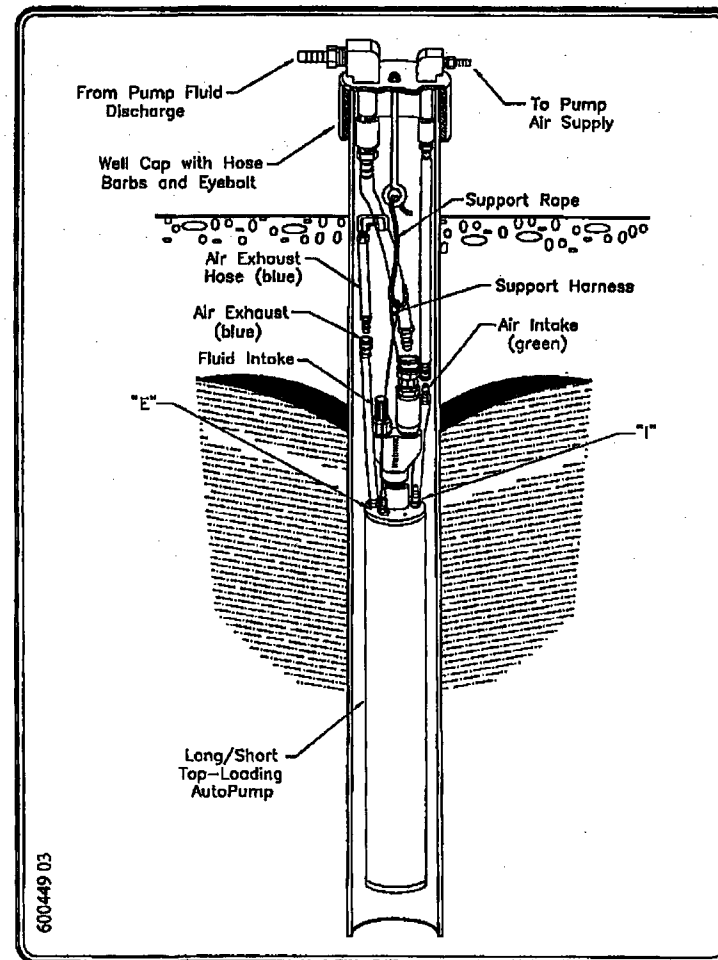


Figure 9 - Worm Drive Clamp and Hose Barb Assembly Instructions



600448 03

Figure 10 - AP-4 Assembly with Quick-Connects: Well Cap with Holes



600449 03

Figure 11 - AP-4 Assembly: Well Cap with Hose Barbs

STEP 2 - Attach AutoPump Air Hose (green)

- a. If a Pump Cycle Counter (PCC) is used, install it downstream of the air filter/regulator and as close to the pump as is reasonable.
- b. Attach the AutoPump air hose to the single stage filter/regulator or optional Pump Cycle Counter (See Figure 2 on page 11)
- c. Attach the other end of the AutoPump air hose to the AutoPump.

STEP 3 - Attach Air Exhaust Hose (blue)

- a. Attach the air exhaust hose to the AutoPump. (See Figure 10 and Figure 11)

STEP 4 - Attach System Air Supply Hose (blue)

- a. Thread the air hose socket with 1/4-inch MPT to the compressor. Use Teflon tape or sealant on the threads.
- b. Attach the air hose plug end of the system air supply hose to the socket now attached to the compressor.
- c. Attach the socket on the discharge end of the hose to the single stage filter/regulator. (See Figure 2 on page 11)

The pump will work in a well that is under vacuum, but there are several conditions that must be considered. (See Appendix D)

Dry Test

Before installing the AutoPump in the recovery well, it is important to test the system for proper operation. Before beginning this test, make sure that all hoses are properly connected as described in the previous section.

To test for float movement and air valve actuation follow these steps:

- STEP 1 -** Drain all fluid from the pump through the bottom inlet check valve (Bottom-loading) or air inlet fitting (Top-loading).

- STEP 2 -** Hold the pump horizontally.

- STEP 3 -** Tip the top of the pump downwards to about 45°. The float should slide to the top of the pump and open the air valve. Air should be heard going into the pump. It will exit the inlet fluid check valve (Bottom-loading) or the outlet check valve (Top-loading).

Caution:

If air is not acceptable in the fluid discharge hose, disconnect the hose before performing this test.

- STEP 4 -** Tip the head of the pump upwards past horizontal to 45° from the vertical. The float should slide to the bottom of the pump and close the air valve.

- STEP 5 -** Repeat this process 3 or 4 times to ensure the float moves freely and the air-valve opens and closes. If the pump must be tilted nearly vertical before the float slide or the air valve moves, open the pump and inspect for interference.

Pump Support System and Hose Bundling Assembly

A pump support system can be created to support the pump and hoses. The pump support system uses well caps with various fitting combinations. (See Figure 12)

Though it is possible in some instances to support a downwell pump with only the tubing, a separate support line is recommended.

Note:

The walls of some wells deform over time. They may trap a downwell pump. In some of those cases the AP-4 support harness and strong support line have proven useful when retrieving the pump.

In addition to supporting the down-well equipment with a support rope, it may be important to support down-well hoses (in most cases nylon tubing does not need to be supported by the support line). Since the down-well hoses can weigh more than the pump, particularly in wells over 50 feet deep with fluid inside the discharge hose, hose support can avoid problems such as kinking, jamming, and breaking.

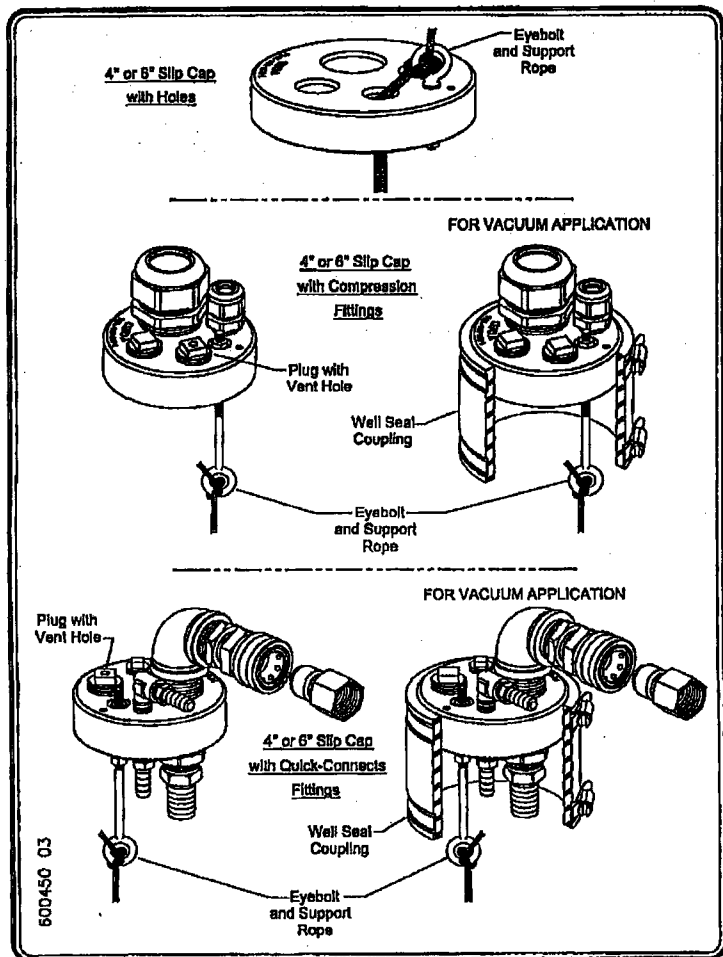


Figure 12 - Examples of Well Caps

Hose bundling or the use of jacketed tubing reduces equipment entanglement at the well surface, and aids the removal of the pump from the well. Bundling also assists in positioning the pump and down-well hose assembly against one side of the well casing. Maximum space is created for other items, such as probes, to be periodically placed inside the well.

Follow these instructions to create a hose bundle.

- STEP 1 -** Lay the equipment on the ground and make all of the necessary hose connections. (See Component Assembly on page 26 and 32)
- STEP 2 -** If a well cap is supplied, install it on the hoses. (See Figure 10 for well cap with holes; see Figure 11 for well cap with hose barbs)
- STEP 3 -** Connect the quick-link assembly on the support rope to the eyebolt on the AP-4 and lay the support rope out along with the hoses. Make sure that none of the hoses or support ropes are crossing over each other. (See Figure 13)

Note:

To make the next step easier, pull the support rope and the hoses taut.

- STEP 4 -** Starting at the AutoPump end of the hose, put a tie-wrap through the center of the braided support rope just above the uppermost quick-connect or barb on the AutoPump. (See Figure 13 and Figure 14)
- STEP 5 -** Pulling the rope taut, put the tie-wrap around the fluid discharge hose with the rough surface outwards. Cross the ends and complete the figure-8 pattern by securing the ends around the exhaust hose. When you connect the tie-wrap make sure it is straight and is not kinking the hoses. (See Figure 13 and Figure 14)

Note:

After completing this step, the fluid discharge hose will be attached to the support rope and the exhaust hose. At this point the air supply hose is still lying free.

- STEP 6 -** Place the next tie-wrap two feet towards the well cap from the first. Secure the air supply hose rather than the exhaust hose.

Note:

It is important to put the tie-wraps approximately two feet apart to keep a proper discharge hose/support rope bundle. Experience has shown that spreading the tie-wraps further apart than two feet increases the probability for hose kinking.

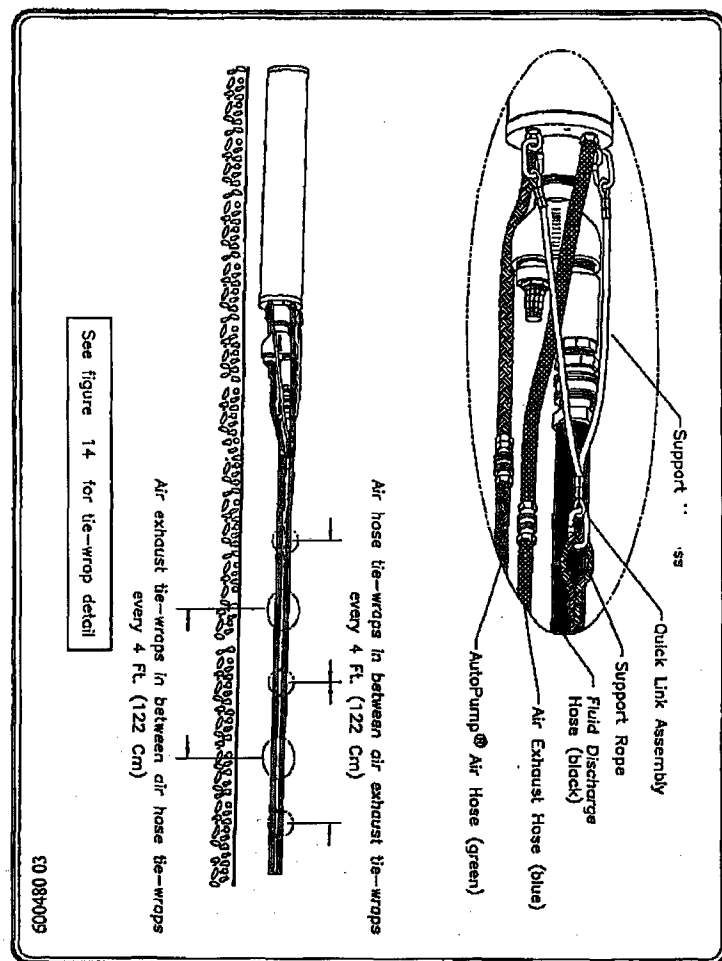


Figure 13 - Hose Bundling: Part 1 of 2

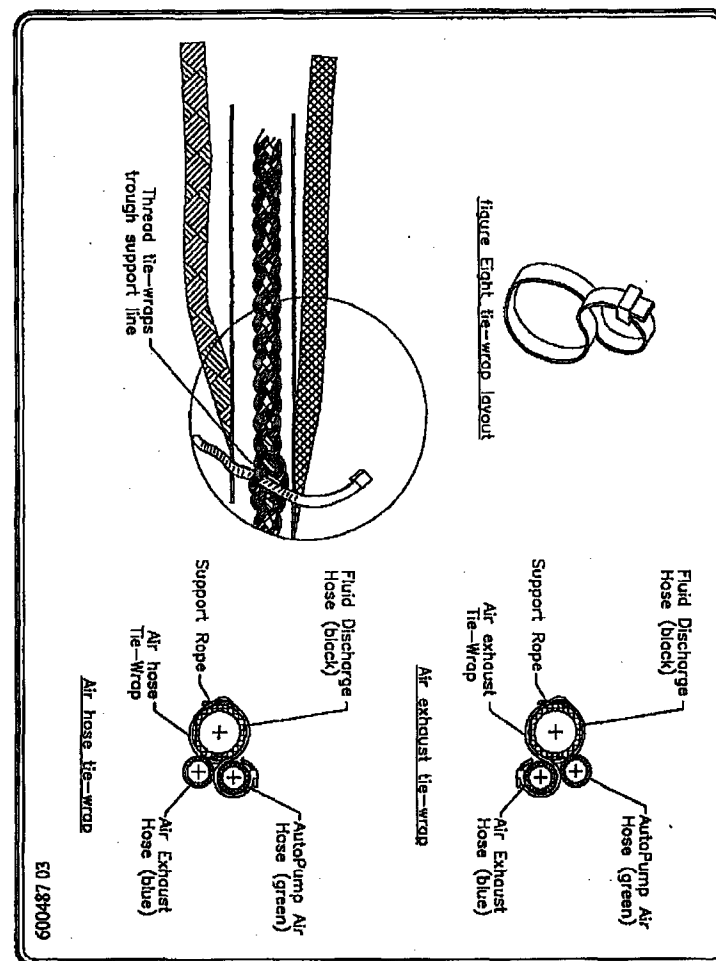


Figure 14 - Hose Bundling: Part 2 of 2

STEP 7- Continue to alternate the air exhaust and the air supply tie-wraps every two feet, stopping about five feet from the wellhead.

STEP 8- Being careful not to leave any sharp edges, cut the excess from the tie-wraps.

You now have a down-well bundled hose assembly that supports both the hoses and the down-well equipment.

AutoPump Installation

Once the installation of the pump support system is completed, you may install the AutoPump in the recovery well.

STEP 1 - Lower the pump until it is at the desired level.

STEP 2 - Secure the pump by tying off (securing) the support line or by placing the well cap on the well.

STEP 3 - Increase the air pressure to the pump until the pump is pushing the fluid out at the desired rate. With sufficient air pressure (at least 10 to 15 psi over the vertical static head), the AutoPump will gradually draw down the fluid level in the well to the level of the pump. The time required for this draw down varies with the yield of the well as compared to the flow rate of the pump. The maximum recommended continuous operating pressure is 120 psi (200 psi for high pressure version).

The pump rate can be increased slightly by increasing the air pressure to the pump. However, under conditions with high inlet pressures and little discharge resistance, some air may exit with the fluid. That would be due to a brief residual pressure in the pump which discharges fluid (and air) even after the exhaust valve is opened.

Under normal operating conditions, no air should exit the pump with the fluid.

If the pump is moving air out the fluid discharge and this is undesirable, a needle valve in the air line can be used. This reduces the air flow rate to the pump and thus the pressure buildup in the pump. Alternately, reduce the pressure going to the pump through the pressure regulator.

Note:

Submerging the pump before supplying it with air will result in fluids entering the exhaust hose. Those fluids will be discharged from the exhaust hose during the first few cycles of the pump. If such discharge will not be confined to the well, the operator may wish to install the pump with a low air pressure supplied to the pump. To obtain the value of that low pressure in psi, multiply the number of feet that the pump is to be submerged by one-half (0.5).

WARNING:

Be sure that the fluid discharge has a closed valve during such a process because the pump may have enough pressure to begin pumping fluid from the well.

Chapter 5: Start Up and Operation

Start Up Checklist

In normal operation, the AP-4 System requires little attention.

Before regulating the air pressure to the desired operating pressure, ensure that the following conditions exist:

1. Personal Protective Equipment (PPE) is being used by all personnel.
2. The pump is submerged below the fluid level.
3. All hoses are connected.
4. The exterior air filter is mounted vertically to allow the filter and its bowl drain to operate properly.
5. All out-of-well air and fluid valves are in their correct positions.
6. A method of rapid disconnect and exhaust (or at least a shut off) of compressed air to the pump is available in case of an unexpected occurrence.
7. When pumping is to begin, either gradually raise the air pressure to the pump or gradually open the air valve to the pump to allow the pump and hoses to slowly pressurize. Check for leaks as you do this.
8. As the air pressure overcomes the static and dynamic resistant forces, the pump will begin to cycle. Listen for the periodic exhaust of air from the pump to determine that the pump is working. The pump should push fluid out and then exhaust sharply to fill before pressurizing and pushing the fluid out again. Cycling can also be monitored by placing an air pressure gauge at the well head and by observing a pulse counter, if one is present.
9. If a pulse cycle counter is installed, it should be adjusted to accommodate the individual well conditions. Refer to the PCC manual, Document # 600473.

Observation of System Operation

Observe the system operation for at least 10 pump cycles to ensure everything is working. If the well influx is low so the pump seldom cycles, pour clean water into the well to check on the pump. If allowed, the pump discharge can be directed into the well so the pump will cycle within an acceptable period to allow for observance of operation. Check your local regulations to determine if these practices are permissible.

Note:

The Pump Cycle Counter may have to be readjusted if it is set when the water is recirculating to the well.

After the entire site is operating, return to each well to ensure that the pump and PCCs are functioning properly. The addition of other pumps and possible system back pressure can necessitate air pressure and counter readjustment.

Downwell Testing of the AutoPump

While the AutoPump is in the well, it can be tested by putting compressed air into the exhaust hose of the pump.

Note:

The air supply hose must be shut off or pressurized when this is done.

The compressed air will enter the pump through the exhaust valve and push any fluids in the pump up the discharge tube. If sufficient compressed air is continually supplied, it will also exit the discharge tube and cause the fluid in the discharge hose to be airlifted to the surface. This method can be used to lighten the pump and hoses before removing the pump from the well. This process can also show whether the fluid inlet check valve is sealing and if the pump is capable of discharging fluid.

AutoPump Shutdown while Submerged

The AutoPump can be submerged for long periods of time at most sites. If the well environment is such that deposition occurs on stainless steel parts, the operator may wish to raise the pump above the water level during a shutdown of the system.

AutoPump Removal Technique (optional)

By pressurizing the exhaust hose as noted above and airlifting the fluids out of the well, the fluid in an AutoPump and discharge hose can be reduced significantly. This can be used to lighten the system before removing it from the well.

Chapter 6: Maintenance

General Maintenance

The AP-4 should be relatively free of maintenance. The frequency of maintenance depends upon the nature of the fluids being pumped. Follow these general maintenance checks.

- Periodically inspect all hoses and connections for damage. Make sure that the hoses are not split or cracked, and listen for leaks in the system.
- Even if significant amounts of oil and water enters the air hose, the AP-4 System should perform reliably for years. Check the Air filters and filter bowl drains on the filters/regulator for saturation and operation every few weeks.
- Periodically drain the air filters on the air hose to the pumps of collected particles, water and oil. Draining prevents the filter from clogging up or being otherwise damaged. Check the regulator to ensure the pressure setting has not drifted appreciably.
- An automatic drain on the compressor is highly recommended, since such an addition can dramatically increase air filter life and decrease maintenance. Automatic drains are available from QED.
- The pump can be opened up in the field if the area is clean and dry.

A maintenance video is available from QED.

Maintenance Table

A visual check and/or maintenance is recommended at least once every two weeks, but some site environments may demand more frequent service. The following table outlines the recommended minimum schedule for the AP-4 System.

Equipment	Biweekly	Monthly*	As Required
Air Quality Check • Single Stage Filter/Regulator	X		
AutoPump Service			X
Check Pump Cycle Counter	X		
Check Volume Pumped Per Cycle		X	

* Site conditions may require maintenance more often.

The following sections describe each maintenance activity in detail.

Air Quality Check

Single Stage Filter/Regulator Maintenance

Even using air which has some oil and water in it, the AutoPump System should operate trouble-free for years. The air filter is normally a 5 micron filter with a replaceable element.

To replace the element in the air filter on the single stage filter/regulator use the following procedure:

STEP 1 - Disconnect Air Source

- Valve off the air supply and drain the downstream air to the air filter. Or disconnect the blue system air supply hose from the single stage filter/regulator. The air filters will depressurize, allowing them to be safely serviced.

WARNING:

Do not remove a filter bowl that is pressurized.

STEP 2 - Remove Filter Bowl

- Different styles of air filters are available. The following instructions are given for the most typical filter used, one with 1/4" pipe thread.
- Remove the bowl of the air filter by sliding the button downward and twisting the bowl about 1/8 of a turn. The bowl should slide downward from the upper portion of the filter revealing the filter element. Unscrew the element as you would unscrew a light bulb. Hand tighten the element after replacing it.

Make sure to replace the correct filter element.

- Blue or black filter bowl:
QED Filter element Part No. 205071
- Silver filter bowl:
QED Filter element Part No. 205800

STEP 3 - Bowl Drain

- Optional Float Drain
 - Wash out any deposits and oil buildup from the filter bowl with warm water and soap. To make sure the float drain is operating freely, shake it; the drain should rattle. Test the float drain by filling the bowl with water, assembling the bowl to the filter and reconnecting it to the air supply. The water should drain from the bowl. When under pressure, the drain should not leak.
- Standard Manual Drain
 - With water in the bowl, open the drain and ensure the liquid drains easily. When under pressure and closed, the drain should not leak.

AutoPump Service**AutoPump Shutdown and Removal from Well**

To shut down and remove the AutoPump, follow these directions:

- STEP 1 -** Wait until the pump is in its discharge cycle and then raise it above the water level in the well. This will empty most of the fluid from the pump making it lighter to lift. There will also be less fluid to drain from the pump.

Note:

See Start Up and Operation for optional pump removal technique.

- STEP 2 -** Pull the pump and hoses to the surface.
- STEP 3 -** Shut off the air to the pump and disconnect the air hose from the pump.
- STEP 4 -** Ensure that there is a safe place to drain any fluid from the pump and discharge hose.
- STEP 5 -** Disconnect the fluid discharge hose from the pump.

For Bottom-loading pumps

Drain the fluid in the pump by lifting the bottom inlet check valve from its seat by using a thin wire or Allen wrench.

For Top-loading pumps

Drain the fluid by turning the pump upside-down and allowing fluid to flow from the air inlet fitting.

Caution:

Wear gloves and catch the draining fluid in a sump or bucket.

Removing Pump Casing

Follow these instructions for removing the pump casing:

Caution:

When assembling or disassembling the pump, do not rotate the casing. This action may cause the float and control rod to rotate with the casing. Instead of rotating the casing, spin the bottom check valve (or plug on a Top-Loading pump) and hold the casing stationary.

Caution:

After troubleshooting is completed and before assembling the pump, slowly move the float through its range to ensure that the lever will trip, even if the pump fills and empties slowly.

Unscrew the bottom check valve or plug from the discharge tube. (See Figure 15)

- STEP 1 -** Fit a spanner wrench in one of the holes in the circumference of the lower head. The lower head has right-handed threads, so the direction of rotation for disassembly is counterclockwise if looking at the bottom of the pump.
- STEP 2 -** Hold the top head of the pump by the support rings.
- STEP 3 -** Insert a large screw driver through one of the support rings and leverage it against the coupling for the discharge tube.

Caution:

Do not press against the air hoses or air hose fittings.

- STEP 4 -** Turn the plug or check valve.

Caution:

Do not leverage the large screwdriver against the air inlet or air exhaust fittings. This could damage the fittings.

Note:

The O-rings at the top and bottom of the pump may have swollen due to solvents in the fluid being pumped and therefore make turning the plug or check valve difficult.

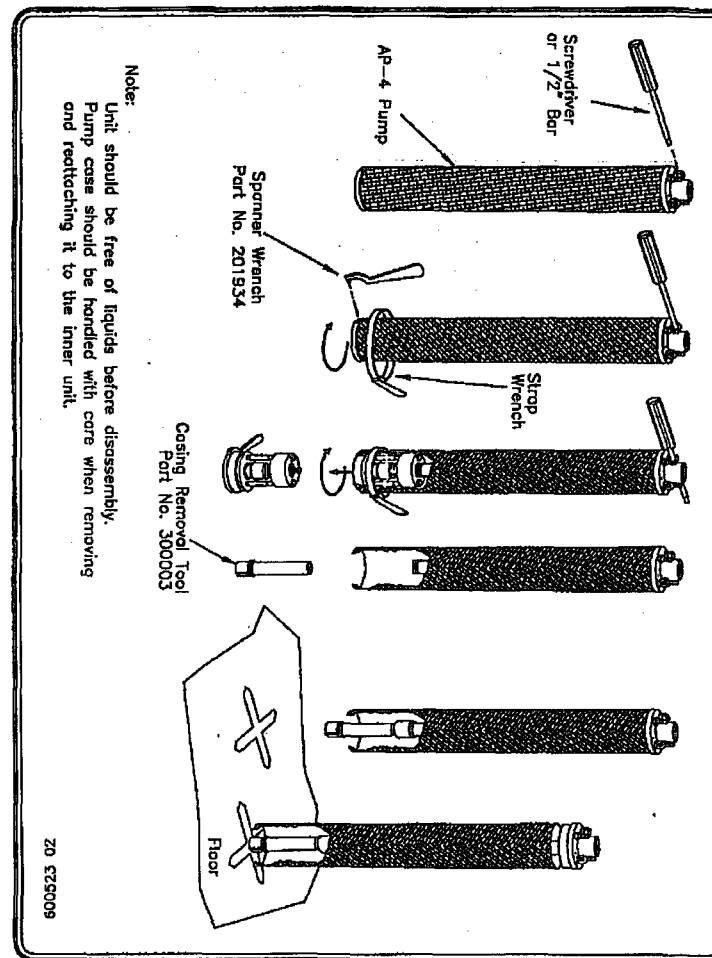


Figure 15 - Removing AP-4 Pump Casing

- STEP 5 -** If you suspect the pump of being clogged with mud or other particles, prevent the outer casing from turning while the lower plug or check valve is unscrewed.
- STEP 6 -** Have a second person hold a strap wrench around the pump casing. If there is only one person, hold the upper head in a vise while unscrewing the lower head. This allows a free hand to hold the strap wrench which prevents the pump casing from rotating.
- STEP 7 -** When the plug or check valve is removed, use a pump casing removal tool to remove the pump casing. The pump casing removal tool is a specially threaded coupling with a pipe extension.
- STEP 8 -** Thread the coupling onto the bottom of the discharge pipe (onto the same threads from which the lower head was unscrewed).
- STEP 9 -** Hold the pump vertically upright with the pump casing removal tool extending down out of the pump casing.
- STEP 10 -** Hold the pump casing and striking the pump casing removal tool on the ground. This will cause the pump casing to slide off the upper O-ring and will allow it to slide off the pump.

Cleaning Pump Interior

The inner workings of the pump should now be exposed for inspection and cleaning. (See Figure 16, Figure 17, Figure 18, Figure 19, Figure 20, and Figure 21)

Note:

A Scotch Brite® abrasive pad is useful for cleaning debris from the pump components.

- STEP 1 -** Gently brush off built-up solids from the float, the discharge tube, the pump casing and the control rod guide.
- STEP 2 -** The pump can be steam cleaned without damage.
- STEP 3 -** Remove thick deposits of hardened scale on the discharge tube by using a handbrush or by lightly tapping the discharge tube with a small hammer. Be careful not to strike any pins or other components, since they may be damaged.

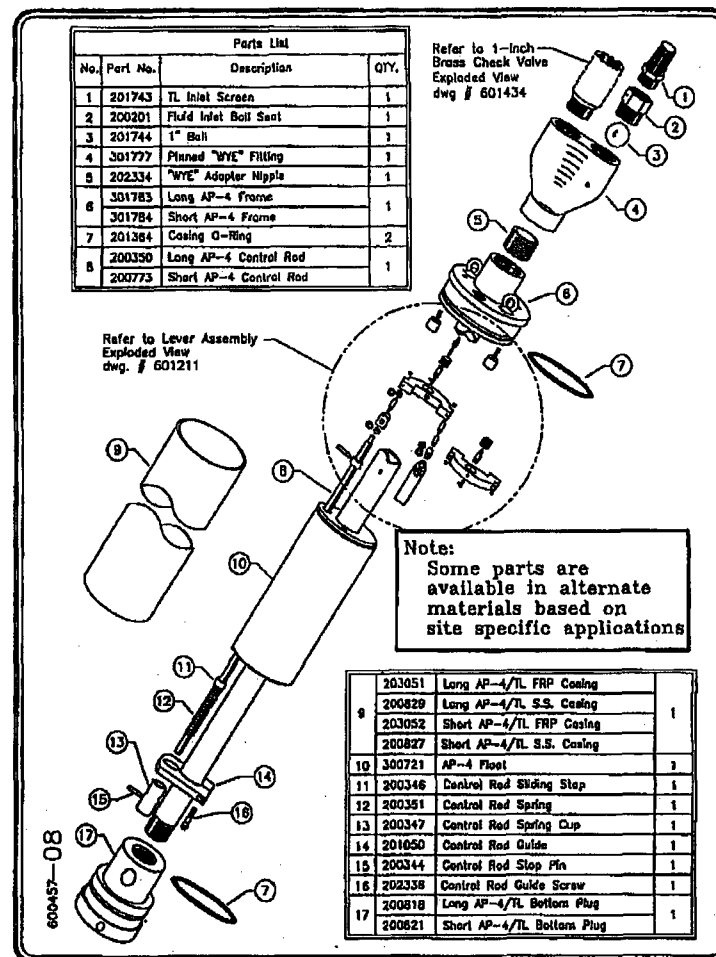


Figure 16 - Exploded View of a Top-Loading AutoPump AP-4 (Long & Short)

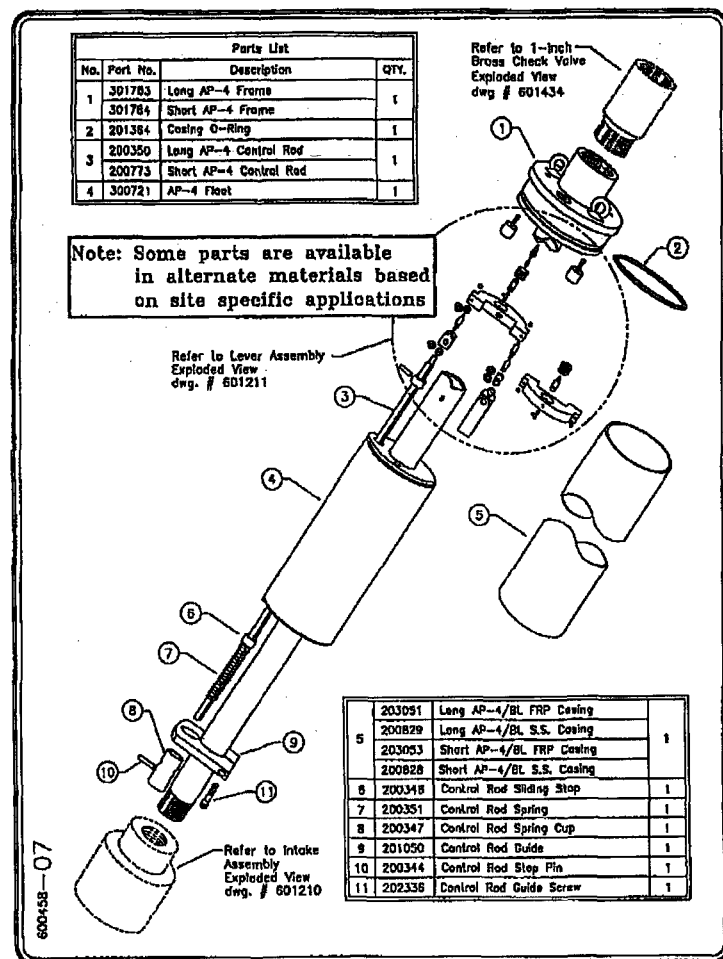


Figure 17 - Exploded View of a Bottom-Loading AutoPump AP-4 (Long & Short)

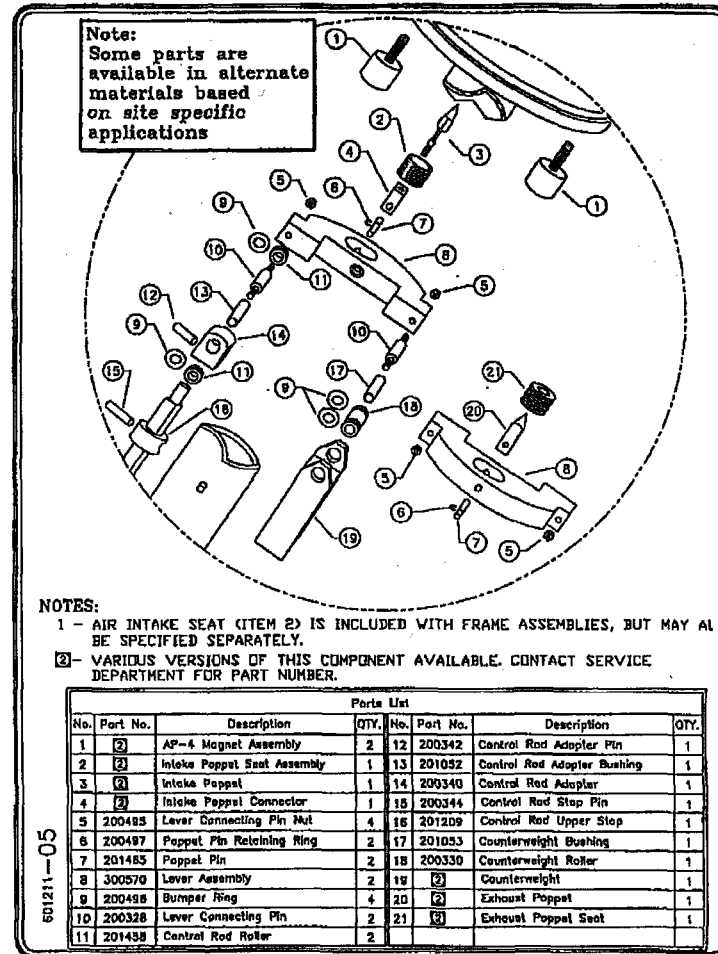


Figure 18 - Exploded View of AP-4 Lever Assembly

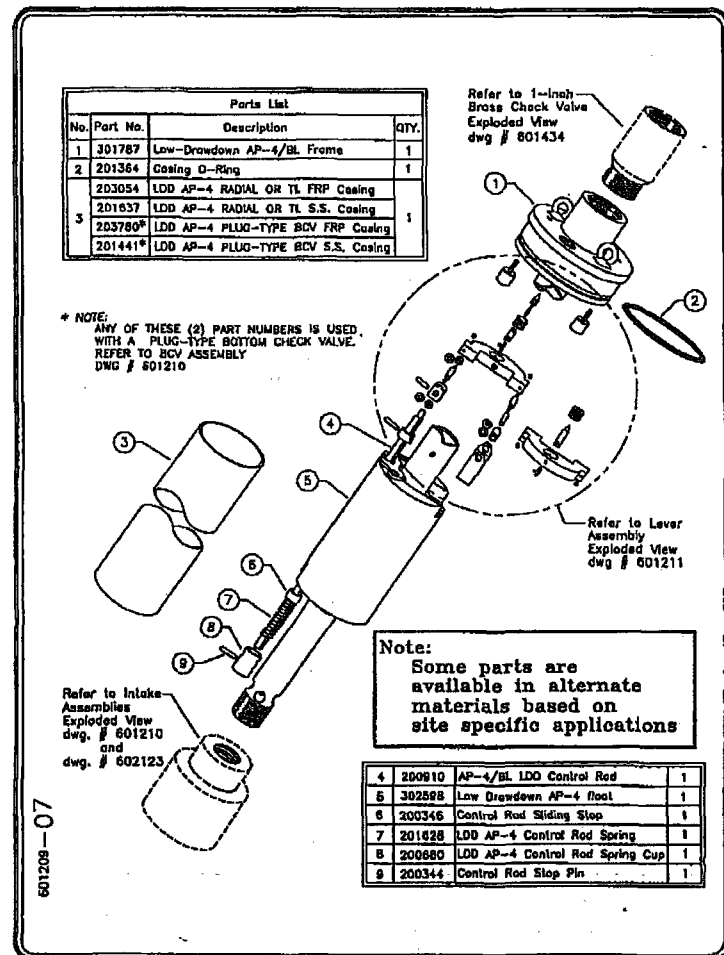


Figure 19 - Exploded View of LDD Bottom-Loading AutoPump AP-4

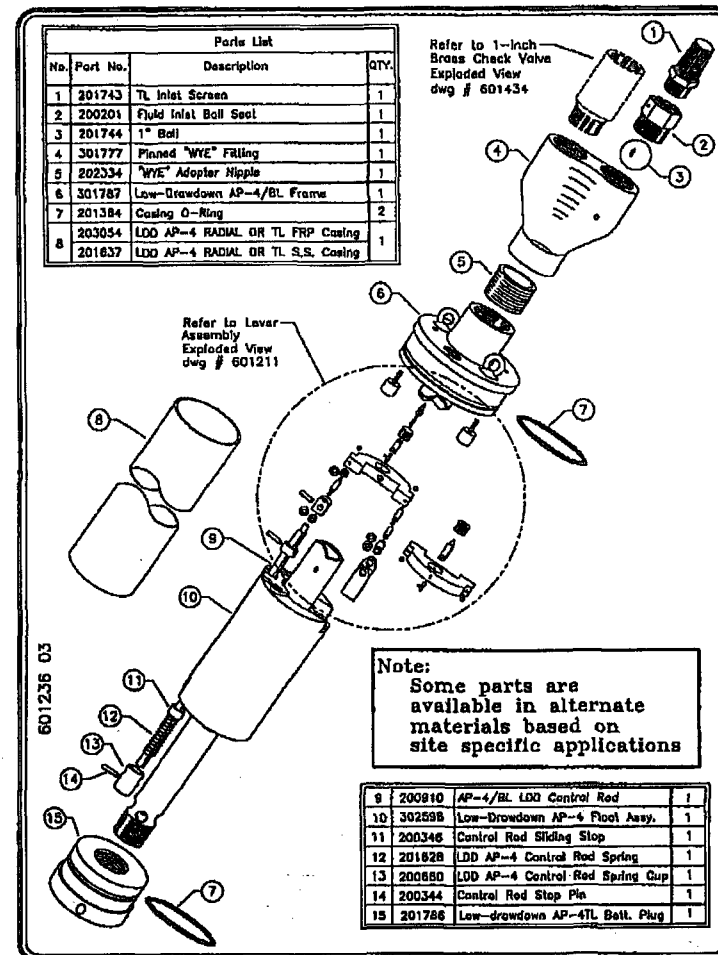


Figure 20 - Exploded View of LDD Top-Loading AutoPump AP-4

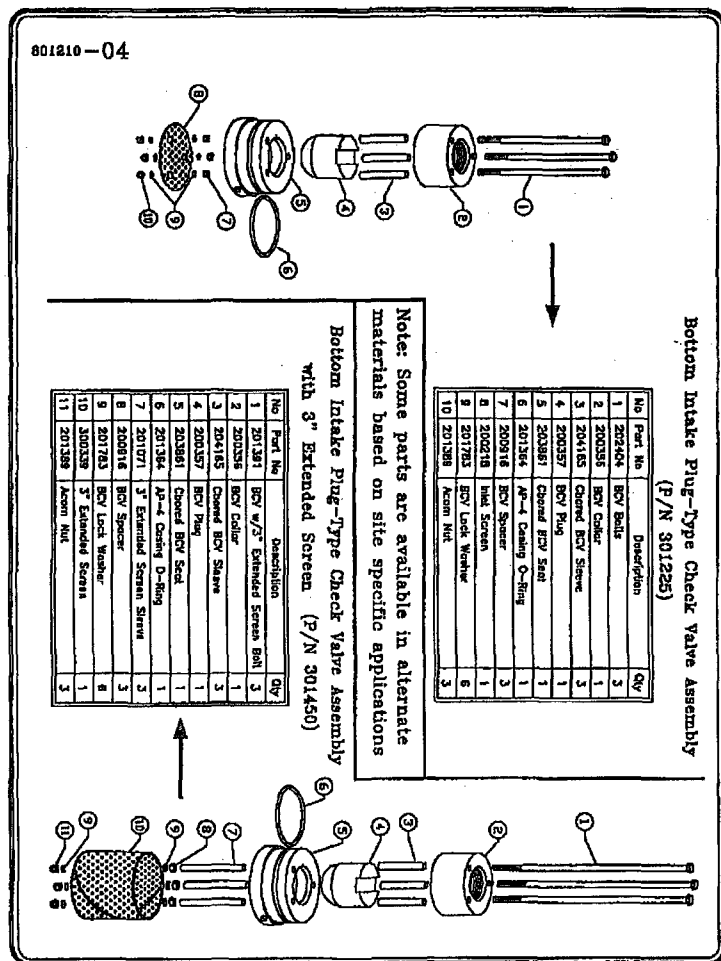


Figure 21 - Bottom Intake Plug-Type Check Valve Assembly

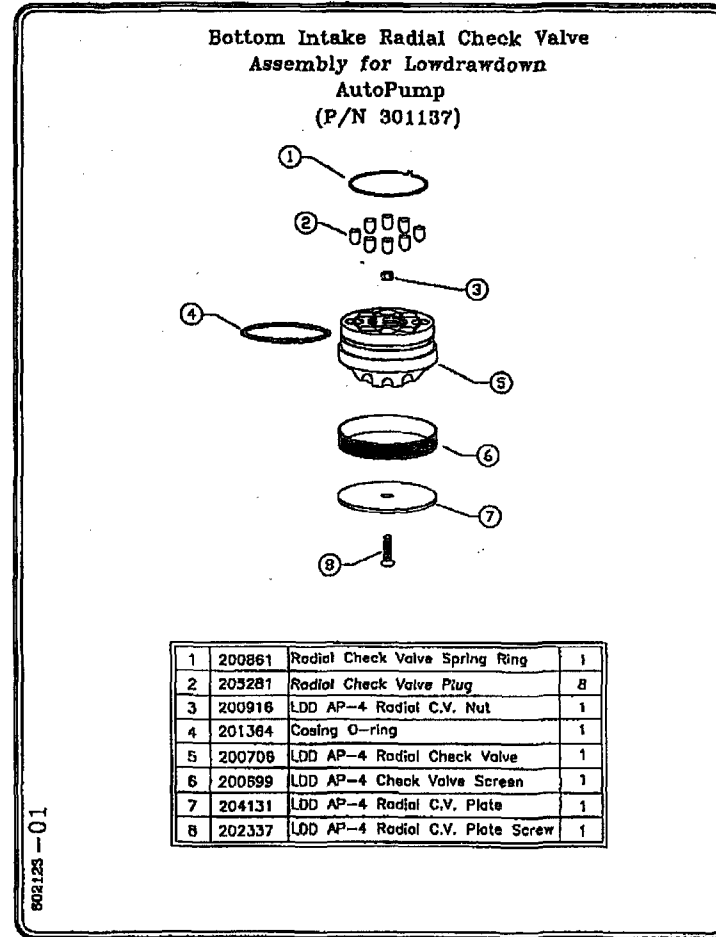


Figure 22 - Exploded View of Bottom Intake Radial Check Valve for Low-Drawdown Pump

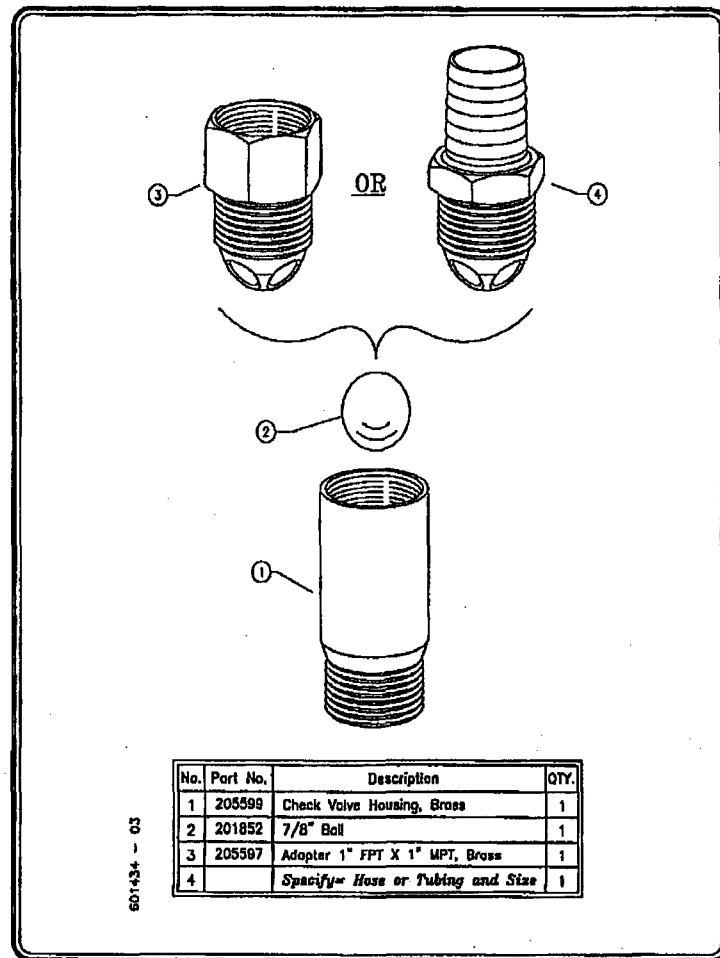


Figure 23 - Exploded View of 1-Inch Brass Check Valve

Iron Build-up Cleaning Procedure

After the casing has been removed from the AutoPump please follow the procedure below:

Note:

The procedure described below can be seen in the Maintenance Video Tape. This will aid the technicians understanding and ease of properly disassembling the AutoPump, effectively cleaning components and then re-assembling the AutoPump.

- STEP 1 -** The bottom intake check valve assembly should be removed from the casing. (See page 49, and Figure 15 on page 50)
- STEP 2 -** Visually inspect both the 1 inch stainless steel fluid discharge pipe for iron build-up or debris. Also, do the same with the float that rides up and down on the SS discharge pipe.
- STEP 3 -** Should there be iron deposits on either or both the discharge pipe or float, then remove the float from the SS fluid discharge pipe as follows:
- Remove the control rod guide. (See Figure 16 and Figure 17)
 - Remove the small SS pin from the bottom spring cup "Stop". The Stop is the small white part located just below the Spring identified on Figure 16 and Figure 17. The pin and Stop removal will allow you to remove the spring and float from the SS discharge pipe.
- STEP 4 -** The 1 inch stainless steel fluid discharge pipe can now be cleaned using either a Scotch Brite pad, a wire brush or finally a wire wheel on either a drill or a grinding machine. After removing the iron debris, it is recommended the pipe be water rinsed.
- STEP 5 -** Usually the AP-4 float will be one of two types. Most floats have a metal plate on each end. The second type of float has round pins protruding into its center hole, and it does not have metal plates.

Both the internal and external surfaces of the float will generally require cleaning. The material choices include a Scotch Brite pad, and a light grade 150 sandpaper.

For floats with plates: If these plates are removed to ease cleaning, they should be replaced on the same float end from which they came. That is, the plates should maintain their original top and bottom positions.

For floats without plates: A knife may be used to aid in cleaning this float.

STEP 6 - The white plastic square Control Rod is the next component to be cleaned. The control rod is the item that fits through the smaller hole in the float and is adjacent to the SS discharge pipe in the assembled pump. Again, use the Scotch Brite pad or a razor or Exacto knife (not sandpaper).

STEP 7 - The final component to be cleaned is the outer AutoPump casing. Please note you may either have a stainless steel or FRP fiberglass pump casing. The fastest and most effective way to clean out the inside surface of the pump casing is to use a three-stone honing tool. The technique is to move the hone in-and-out a half dozen times or so through each end of the casing. The time for the casing cleaning should take no longer than 5 minutes.

The AutoPump is now ready for re-assembly by following the steps above in reverse order.

Installing Pump Casing

STEP 1 - Inspect the O-rings to ensure they are capable of sealing (no discernible cuts or abrasions).

STEP 2 - Lubricate both inside ends of the casing to a depth of 3/4" with a thin layer of food-grade grease. Ensure that the film reaches the edges of the casing.

STEP 3 - Place the bottom check valve (Bottom Loading Pump) or bottom plug (Top Loading Pump) upright on a clean level surface.

STEP 4 - Pull the casing down over the check valve or plug.

Warning:

The pump casing has beveled ends that allow it to slide over the O-rings easily. Keep fingers, hands and other body parts away from these edges as they approach the heads. These edges can pinch when the pump casing is slid over the lower and upper heads.

STEP 5 - Turn the pump upside down and spin the casing assembly on the discharge tube by hand until the edge of the casing contacts the O-ring on the pump head.

Caution:

Be careful to swing the counterweight inside the pump.

STEP 6 - Using a spanner wrench on the bottom fitting, or, a strap wrench on the bottom end of the casing (pump bottom), turn the parts together until the casing just contacts the pump head.

STEP 7 - Turn the bottom check valve or the plug in the reverse direction (counter clockwise) so it is looser by 1/4 turn.

Checking Volumes Pumped Per Cycle

See page 20 for information on the AutoPump volumes pumped per cycle. Ensure that volumes correspond with the previous experience on-site, and with the ranges indicated on page 23. If it doesn't correspond, then one of the following may exist:

1. The AutoPump is malfunctioning. (See Chapter 7: Troubleshooting & Repair)
2. The Pump Cycle Counter may not be counting correctly. Refer to the Pump Cycle Counter Manual for troubleshooting procedures.
3. Site conditions (e.g. air pressure, discharge head) may have changed substantially.

Chapter 7: Troubleshooting & Repairs

Problems may occur and usually can be easily resolved by following these instructions. If, after careful reading and service, you cannot resolve the problem, please contact the QED Environmental Systems (QED) Service Department at (800) 537-1767.

Caution:

Wear goggles, gloves, and coveralls when servicing this system.

After troubleshooting is completed and before assembling the pump, slowly move the float through its range to ensure that the lever will trip even if the pump fills and empties slowly.

Note:

See Chapter 6: Maintenance for disassembly and cleaning instructions.

Possible Causes Detailed Instructions Follow this Chart	Symptoms		
	Pump not cycling	Pump Cycles, but volume is reduced or there is no discharge	Air in fluid discharge
1. Air supply	X		X
2. Fluid level	X		
3. Air exhaust restricted	X		X
4. Fluid Inlet clogged	X		
5. Debris, scale or very viscous fluid	X	X	X
6. Float pins	X		X
7. Lever pivot wear	X		X
8. Debris in air inlet valve	X		
9. Fluid check valve		X	
10. Valve timing	X		

Troubleshooting

1. Air Supply:

- If the air pressure is too low, or if the flow is severely restricted, the pump will not cycle. Check the flow by inserting the pump air fitting part way into the air line socket. A healthy discharge of air should result.
- If the air pressure exceeds the design limitations of the pump, the pump may fail to cycle, or the exhaust valve may have locked up and cause air to enter the fluid discharge.

2. Fluid Level:

- The fluid level must be above the fluid inlet on a Top-Loading pump. On a Bottom-Loading pump, the fluid must be no lower than 9 inches below the head of the pump.

3. Air Exhaust Restricted:

- The exhaust line must not be kinked, plugged, or too small in diameter.
- The air exhaust outlet must be above the fluid level.
- If the air exhausts in the well, the well must be vented to the atmosphere or a functioning vapor recovery line.
- If the air exhausts to the atmosphere (outside the well) and a vacuum is drawn on the well, the pump may fail to fill. In order for the pump to fill under these adverse conditions, the pump must be submerged to make up for the pressure difference between the atmosphere and the partial vacuum in the well.

The pressure difference, expressed as feet of water column (FT. W. C.), is how far the fluid must be above the pump before it can fill.

- See Appendix D if there is a vacuum on the well.
- Ice may be forming on the exhaust valve seat due to the temperature drop that accompanies expansion of compressed air. Restrict the exhaust to lower the expansion rate of the exhaust. Restrict the air inlet hose or lower the pressure to reduce the rate of incoming compressed air. The previous three suggestions may reduce the flow rate from the pump. Submerge the head of the pump, if it is not already submerged. Protect the air lines from low temperatures and freezing by burial or insulation.

4. Fluid Inlet Clogged:

- If the fluid inlet screen is clogged with debris, or if a Bottom-Loading pump is on the bottom of the well, water cannot enter the pump.

5. Debris, Scale, or very Viscous Fluid:

- If debris, scale or a very viscous fluid has accumulated inside the pump, the float may not move freely up and down, or the control rod may not slide easily through the float.
- Clean the float, control rod, and the casing. See Chapter 6 for cleaning instructions.

6. Float Pins:

- Determine if any part of the float material itself can contact the discharge pipe. Move each end of the float back and forth, sideways, to ensure that the pins prevent float contact. Call QED for repair options.

Note:

If viscous materials cause continual problems, contact QED for possible solutions.

7. Lever Pivot Wear:

- Grasp the center of the lever with thumb and forefinger. Rotate the lever to horizontal.
- Push up and down, toward and away from the head. Confirm that there is less than 1/32 inch of movement.
- Replace the levers if the pivot hole is worn

8. Debris in Air Inlet Valve: (First check #7-Lever Pivot Wear)

- Open the pump. Connect the air supply. Pull the control rod down. Listen to determine if air leaks through. If so, clean the valve by blowing air or water through it from both ends.
- If air still leaks through the valve with the control rod down, the air-hose must be removed to access the valve inlet to check for debris in the valve or in the hose pigtail.
- Push the rod upwards. If little or no air passes through, remove the air-in hose to access the valve inlet. Blow air through the valve from the poppet side to clear debris from the ball and seat.

9. Fluid Check Valves:

- Open the pump. Hold the pump vertically and pour water into the discharge check valve. If water flows through, clean the valve.
- Remove the valve and use emery cloth or a very fine sand paper to polish the surface where the ball seats.
- If the pump is a Bottom-Loading design, inspect the seat of the bottom check valve for debris and wear. Clean or replace if necessary.
- If the pump is a Top-Loading design, remove the fluid inlet check valve and inspect the seating surface and the ball for debris and wear.

10. Air Inlet Valve Timing:

- (First check lever pivot wear per #7)
- Call the QED Service Department for correct air valve timing for your pump.

Returning Equipment for Service

If the equipment needs to be returned to QED for servicing, please follow these steps:

- STEP 1 -** Call the QED Service Department and obtain a Return Material Authorization (RMA) number. Please have available the customers contact person's name, company name and address, phone number, fax number, reason for the return, and the names of the chemicals to which the equipment has been exposed.
- STEP 2 -** Clean all equipment before shipping. See Equipment Cleaning Requirements at the end of this section.
If the equipment must be cleaned after it arrives at QED, the customer will be charged for the cleaning and disposal of material, if necessary. (Cost can be \$200.00 per piece of equipment cleaned.) Drain and dry all equipment after cleaning.
- STEP 3 -** Package the equipment so that it will not be damaged in shipment. Use bubble pack rather than styrofoam flakes as packing material.
- STEP 4 -** Ship the equipment via a carrier and service level (i.e., one-day, two-day shipping) in consideration of probable service time and return shipment time.
- STEP 5 -** It is recommended that such shipments be insured so if the shipment is badly damaged or lost, the customer can replace the equipment at little or no cost.
- STEP 6 -** Include the contact's name, company, phone number and RMA number given by QED.
- STEP 7 -** Write the RMA number on the outside of the packaging so it will be directed immediately to the QED Service Department.

Equipment Cleaning Requirements

If the equipment is to be shipped to another site or to the factory for service, it needs to be thoroughly cleaned before leaving the site. Cleaning the equipment protects the user (sender), the shipper, and the receiver from dirt and/or contaminants. If the equipment is not cleaned prior to shipping for servicing, it may be severely delayed, refused or the shipper may be charged a cleaning fee. Before packing and shipping, ensure that the equipment is dry inside and out.

The following is a list of equipment and how it should be cleaned prior to shipment.

Hoses and Fittings

- STEP 1 -** Pump clean water or water with a gentle soap solution (e.g. Dove Dish Soap) through the pump to remove free product and particles.
- STEP 2 -** Rinse all soap off of the equipment.
- STEP 3 -** Soak and rinse the outside of the unit with water to remove loose debris and dirt.
- STEP 4 -** Steam clean inside and out to remove difficult dirt and contaminants.

Caution:

Use low pressure (less than 40 psi) when steam cleaning.

AutoPumps

- STEP 1 -** Pump clean water or water with a gentle soap (e.g. Dove Dish Soap) solution through the pump to remove free product and particles.
- STEP 2 -** Rinse all soap off of the equipment.
- STEP 3 -** Soak and rinse the outside of the unit with water to remove loose debris and dirt.
- STEP 4 -** Steam clean inside and out to remove difficult dirt and contaminants.

Caution:

Use low pressure (less than 40 psi) when steam cleaning.

Appendix A: Performance Curves

These curves were derived from in-house tests using a pump with average air flow capacity. Flow rates in the field may vary slightly due to temperature, air quality, flow restrictions and minor differences in pump adjustments. Flow rates can be affected due to the natural cooling effect of compressed air expansion. If this cooling effect is lowering the flow rate, decreasing the air pressure to the pump can actually increase the flow rate in some cases. Another way to reduce freezing of water vapor in compressed air is to use an air dryer on the compressed air line.

The following charts show the performance flow rate curves for Long, Short, and Low-Drawdown

Long Bottom and Top-Loading AP-4 AutoPumps (3.5-inch OD).

- For US units, see Figures 22, 23, 26, and 27.
- For Metric units, see Figures 24, 25, 28, and 29.

Short Bottom and Top-Loading AP-4 AutoPumps (3.5-inch OD).

- For US units, see Figures 30, 31, 34, and 35.
- For Metric units, see Figures 32, 33, 36, and 37.

Low-Drawdown Bottom and Top-Loading AP-4 AutoPumps (3.5-inch OD).

- For US and Metric units, see Figures 38, 39, 40, and 41.

The curves are categorized by pump type, hose size, depth of submergence and air supply pressure. To determine the flow rate a pump will produce, the following information must be known:

1. Pump – Long, Short or Low Drawdown; Top- or Bottom-Loading.
2. Discharge hose size – 3/4-inch or 1-inch is standard. A larger inside diameter may yield a higher flow rate. This depends on site conditions.
3. Fluid Inlet Submergence – Select the submergence depth of the pump below the fluid under normal operating conditions.
4. Air pressure.

With the previous information, obtain the flow rate by using the following steps:

- On the horizontal scale, find the depth in the well at which the pump will be located.
- Trace that depth upwards to the line for the air inlet pressure you selected.
- Travel horizontally over to the vertical scale and read the flow rate.

Example: A long Bottom-Loading pump with a 1-inch discharge hose and 70 psi supply pressure positioned 100 feet below ground and submerged 6 inches below the fluid will produce about 4.5 gallons per minute (GPM).

The same pump submerged 10 feet below the fluid produces 6 GPM.

Note:

These flow rates are only applicable for the designated well head conditions. Any additional resistance from out-of-well equipment (e.g. surface hoses, valves, etc.) will affect the values shown on these curves.

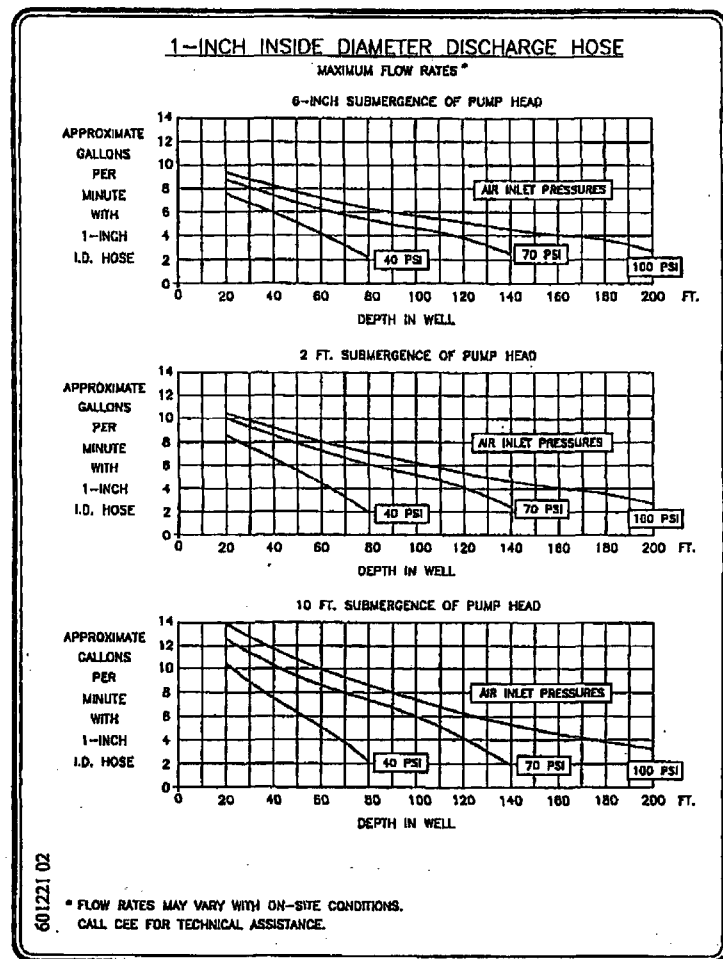


Figure 24 - Long AP-4/BL Performance Curves: 1-inch I.D. Discharge
U.S. UNITS (Includes Leachate Models)

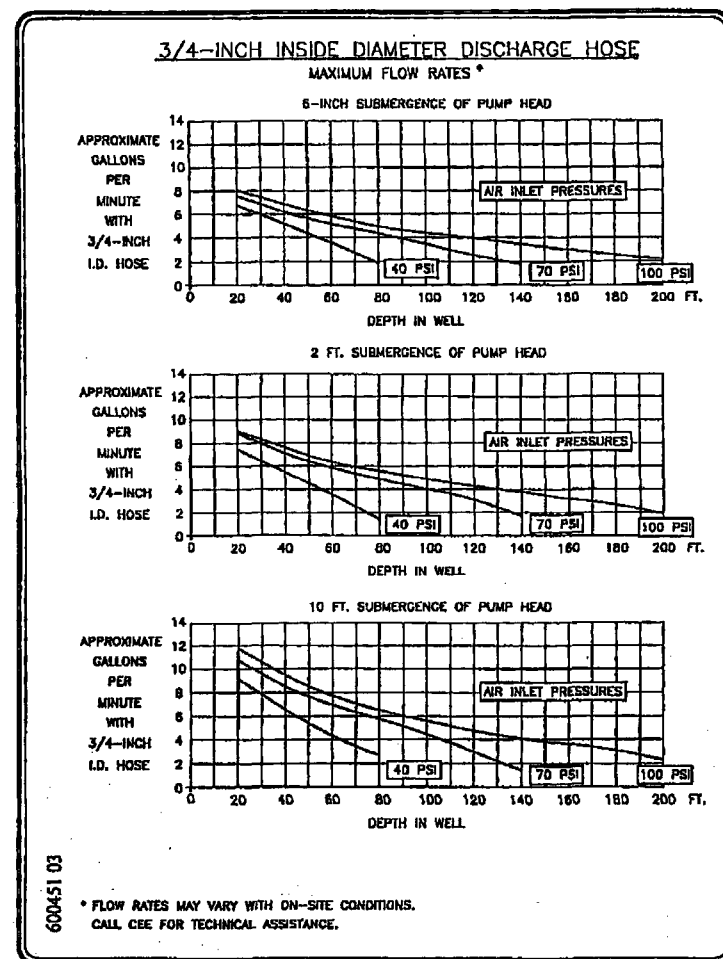


Figure 25 - Long AP-4/BL Performance Curves: 3/4-inch I.D. Discharge
U.S. UNITS (Includes Leachate Models)

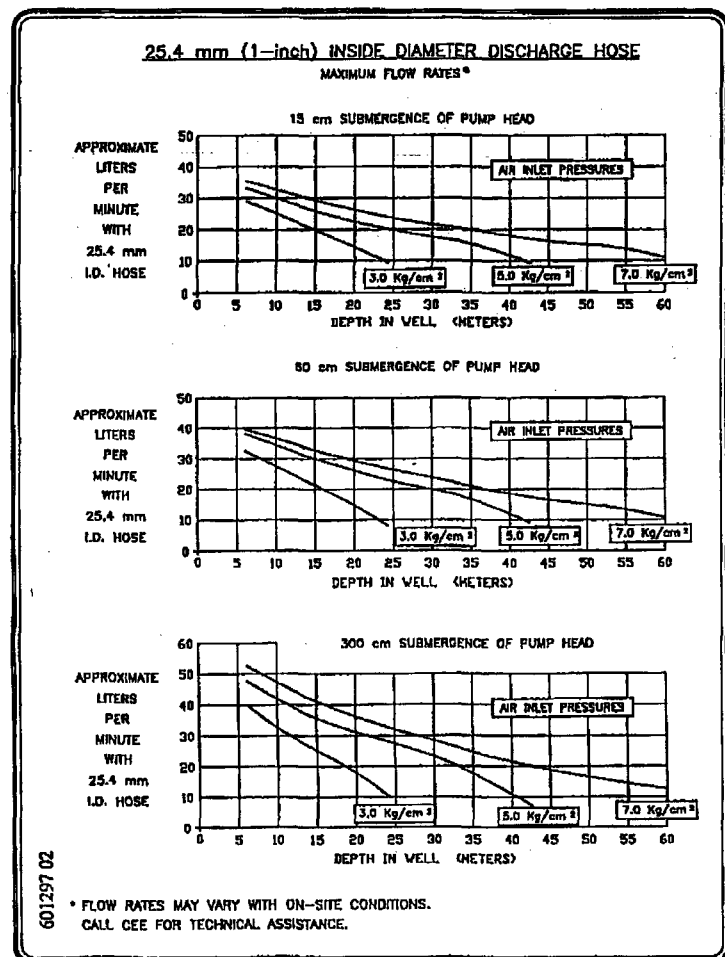


Figure 26 - Long AP-4/BL Performance Curves: 25.4 mm (1-inch) I.D. Discharge
METRIC UNITS (Includes Leachate Models)

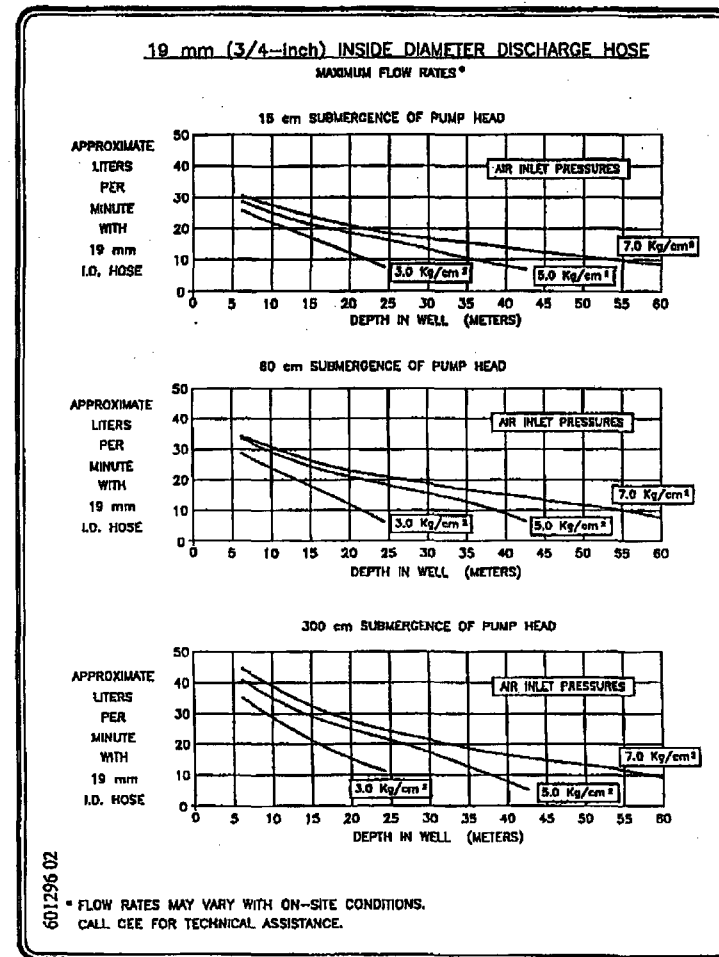


Figure 27 - Long AP-4/BL Performance Curves: 19 mm (3/4-inch) I.D. Discharge
METRIC UNITS (Includes Leachate Models)

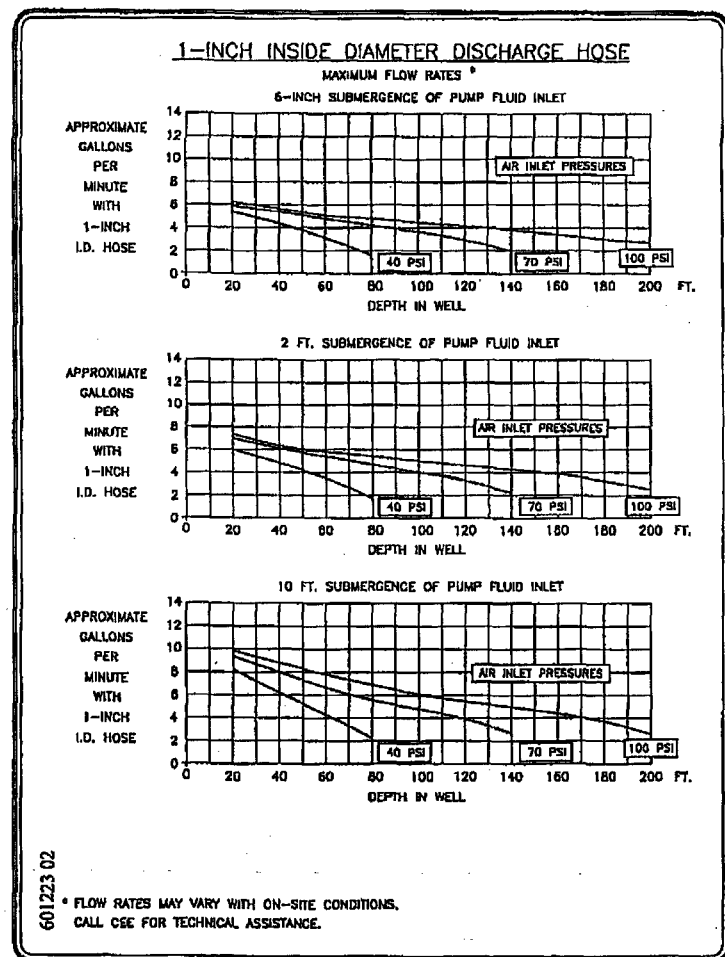


Figure 28 - Long AP-4/TL Performance Curves: 1-inch I.D. Discharge
U.S. UNITS (Includes Leachate Models)

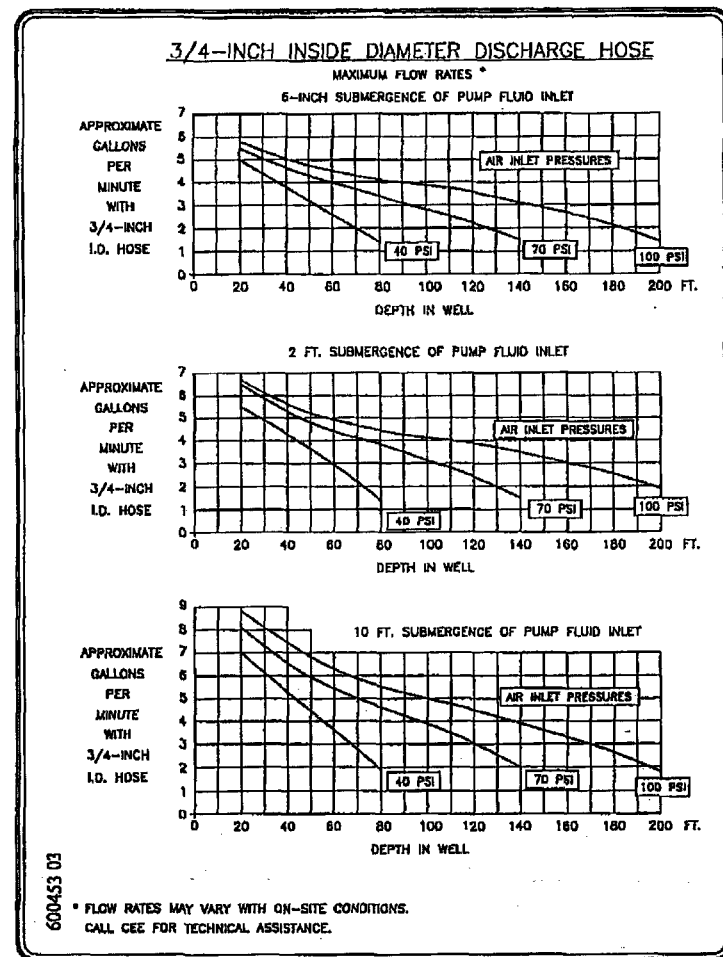
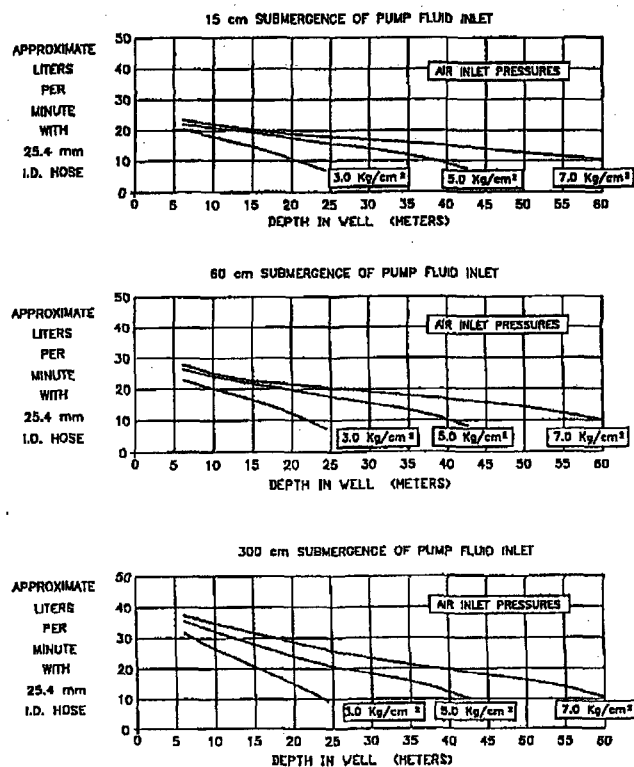


Figure 29 - Long AP-4/TL Performance Curves: 3/4-inch I.D. Discharge
U.S. UNITS (Includes Leachate Models)

25.4 mm (1-inch) INSIDE DIAMETER DISCHARGE HOSE

MAXIMUM FLOW RATES*

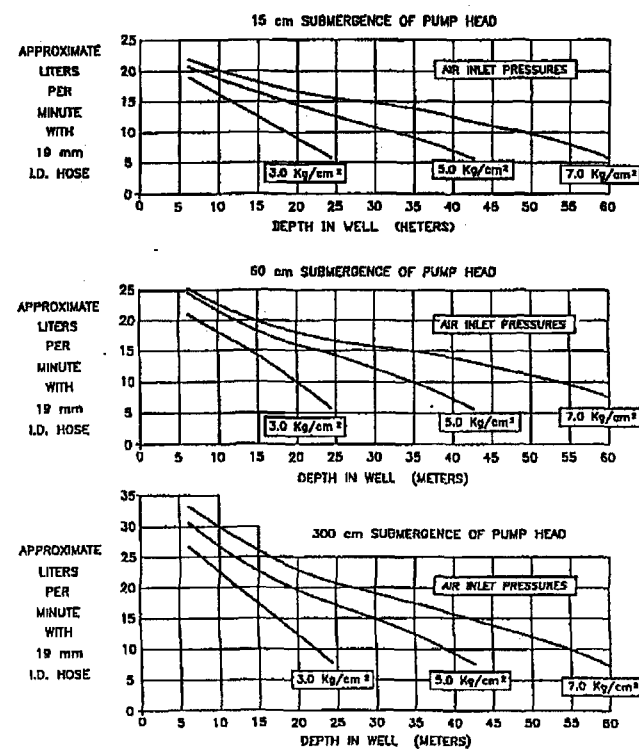


* FLOW RATES MAY VARY WITH ON-SITE CONDITIONS.
CALL CEE FOR TECHNICAL ASSISTANCE.

Figure 30 - Long AP-4/TL Performance Curves: 25.4 mm (1-inch) I.D. Discharge
METRIC UNITS (Includes Leachate Models)

19 mm (3/4-inch) INSIDE DIAMETER DISCHARGE HOSE

MAXIMUM FLOW RATES*



* FLOW RATES MAY VARY WITH ON-SITE CONDITIONS.
CALL CEE FOR TECHNICAL ASSISTANCE.

Figure 31 - Long AP-4/TL Performance Curves: 19 mm (3/4-inch) I.D. Discharge
METRIC UNITS (Includes Leachate Models)

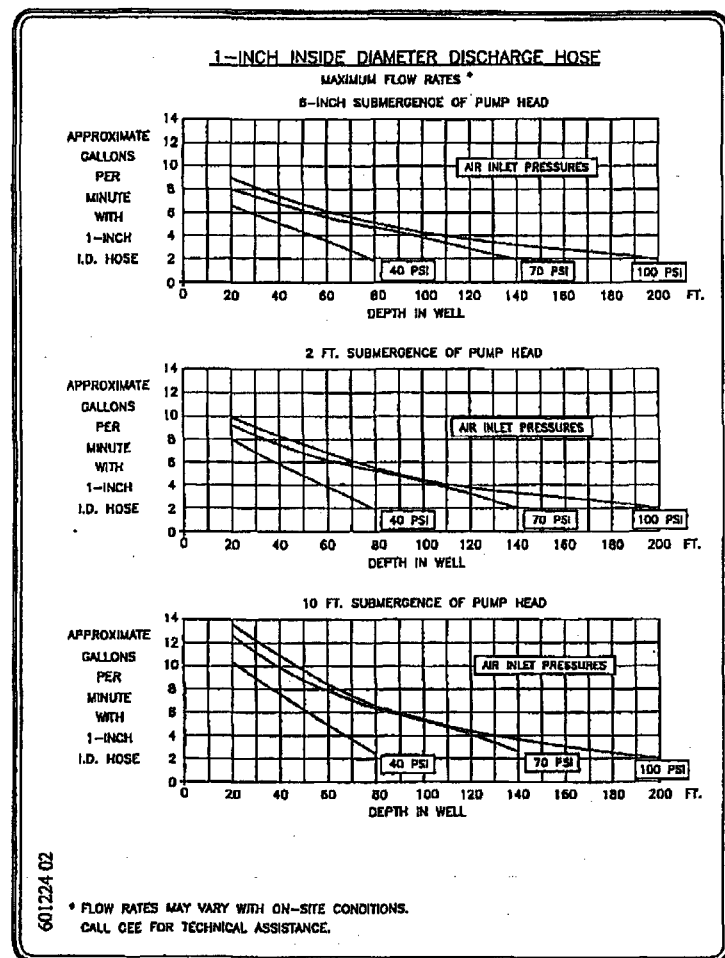


Figure 32 - Short AP-4/BL Performance Curves: 1-inch I.D. Discharge
U.S. UNITS (Includes Leachate Models)

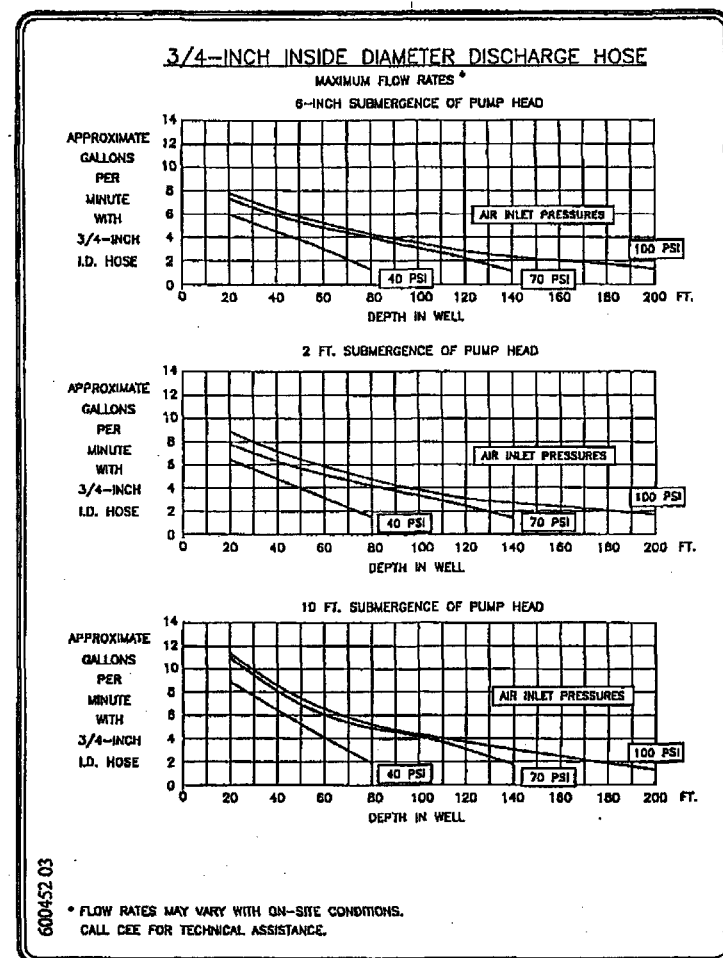
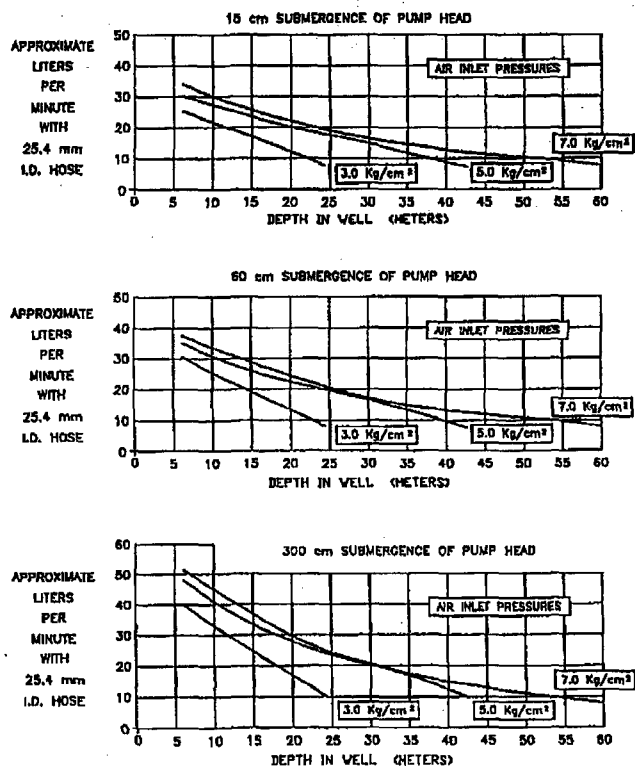


Figure 33 - Short AP-4/BL Performance Curves: 3/4-inch I.D. Discharge
U.S. UNITS (Includes Leachate Models)

25.4 mm (1-inch) INSIDE DIAMETER DISCHARGE HOSE

MAXIMUM FLOW RATES*

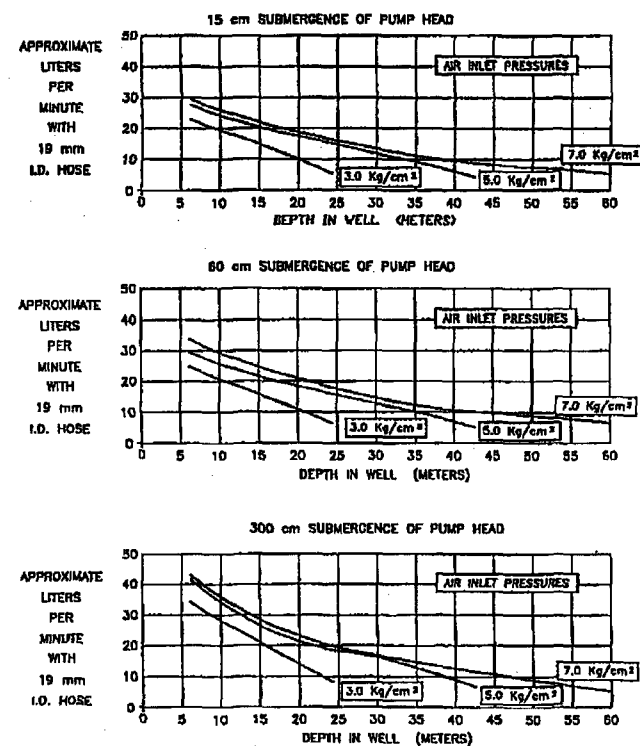


* FLOW RATES MAY VARY WITH ON-SITE CONDITIONS.
CALL CEE FOR TECHNICAL ASSISTANCE.

Figure 34 - Short AP-4/BL Performance Curves: 25.4 mm (1-inch) I.D. Discharge
METRIC UNITS (Includes Leachate Models)

19 mm (3/4-inch) INSIDE DIAMETER DISCHARGE HOSE

MAXIMUM FLOW RATES*



* FLOW RATES MAY VARY WITH ON-SITE CONDITIONS.
CALL CEE FOR TECHNICAL ASSISTANCE.

Figure 35 - Short AP-4/BL Performance Curves: 19 mm (3/4-inch) I.D. Discharge
METRIC UNITS (Includes Leachate Models)

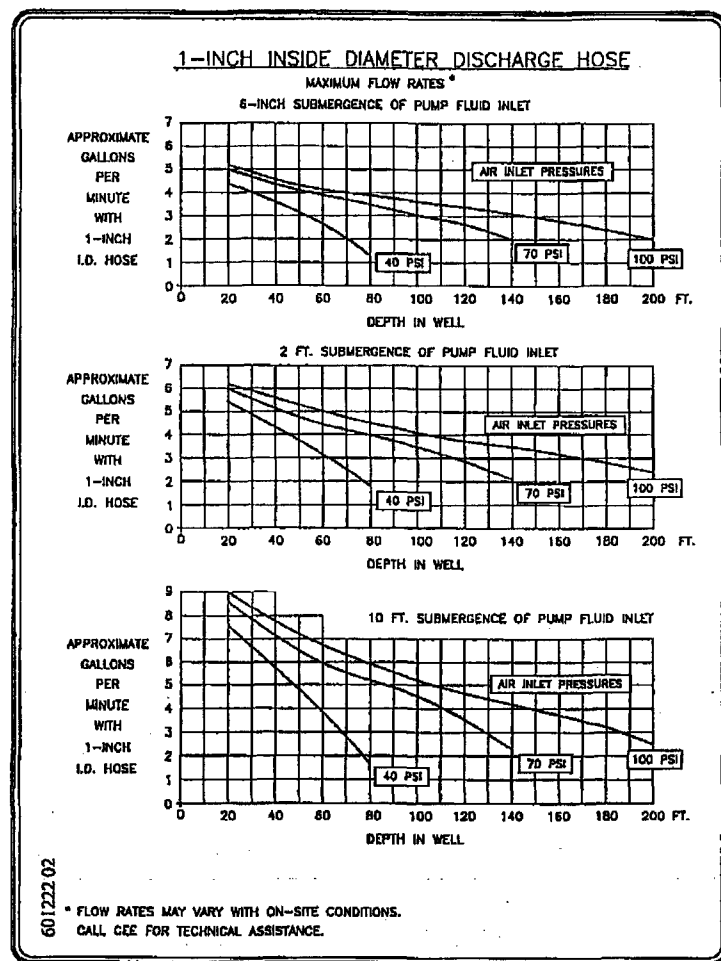


Figure 36 - Short AP-4/TL Performance Curves: 1-inch I.D. Discharge
U.S. UNITS (Includes Leachate Models)

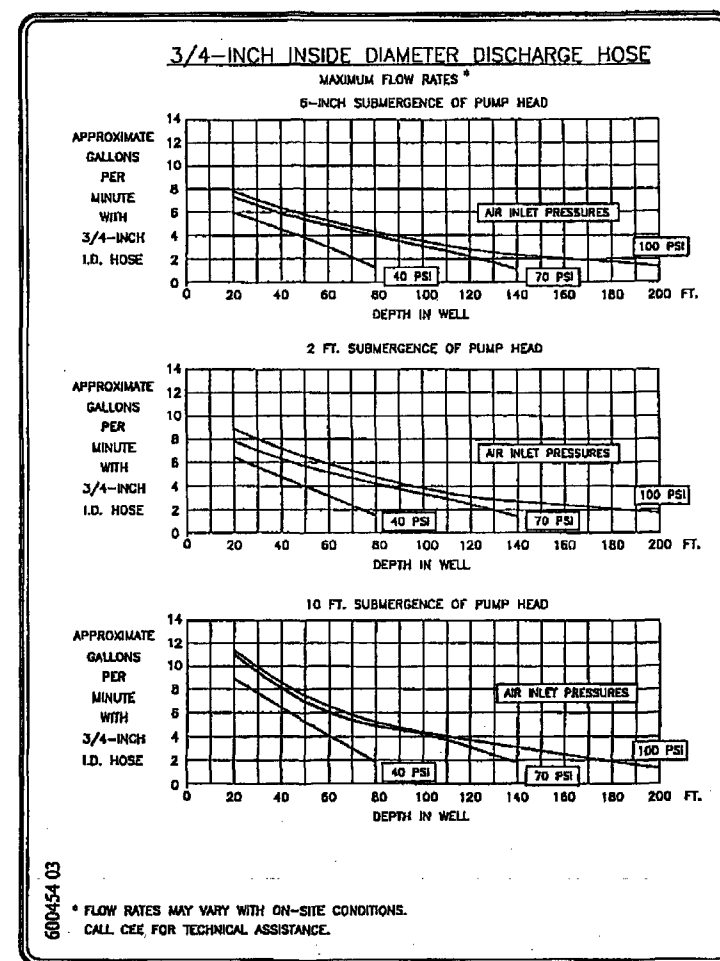
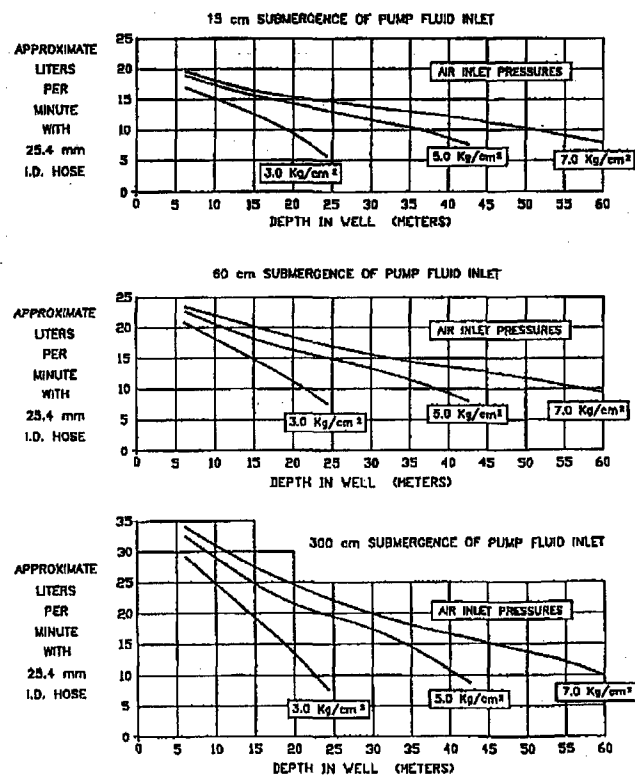


Figure 37 - Short AP-4/TL Performance Curves: 3/4-inch I.D. Discharge
U.S. UNITS (Includes Leachate Models)

25.4 mm (1-inch) INSIDE DIAMETER DISCHARGE HOSE MAXIMUM FLOW RATES*

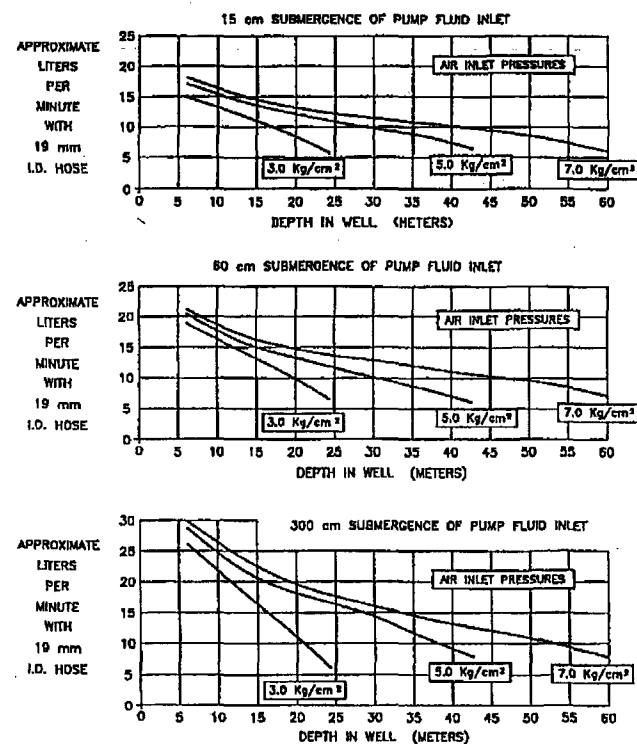


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* FLOW RATES MAY VARY WITH ON-SITE CONDITIONS.
CALL CEE FOR TECHNICAL ASSISTANCE.

Figure 38 - Short AP-4/TL Performance Curves: 25.4 mm (1-inch) I.D. Discharge
METRIC UNITS (Includes Leachate Models)

19 mm (3/4-inch) INSIDE DIAMETER DISCHARGE HOSE MAXIMUM FLOW RATES*



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* FLOW RATES MAY VARY WITH ON-SITE CONDITIONS.
CALL CEE FOR TECHNICAL ASSISTANCE.

Figure 39 - Short AP-4/TL Performance Curves: 19 mm (3/4-inch) I.D. Discharge
METRIC UNITS (Includes Leachate Models)

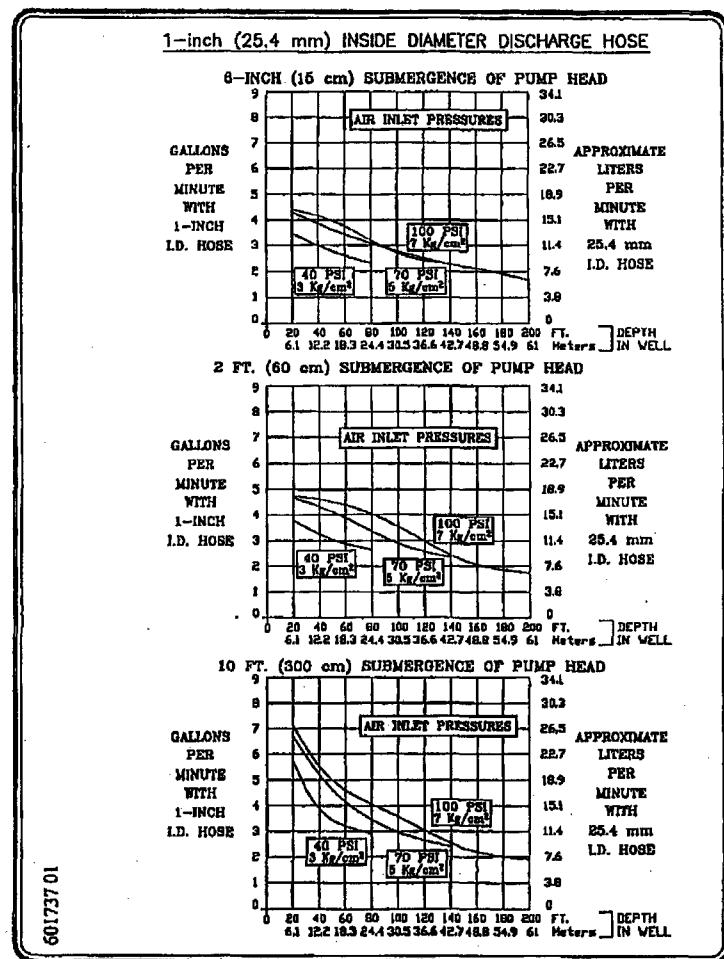


Figure 40 - Low Drawdown AP-4/BL Performance Curves:
1-inch (25.4 mm) I.D. Discharge US and METRIC UNITS

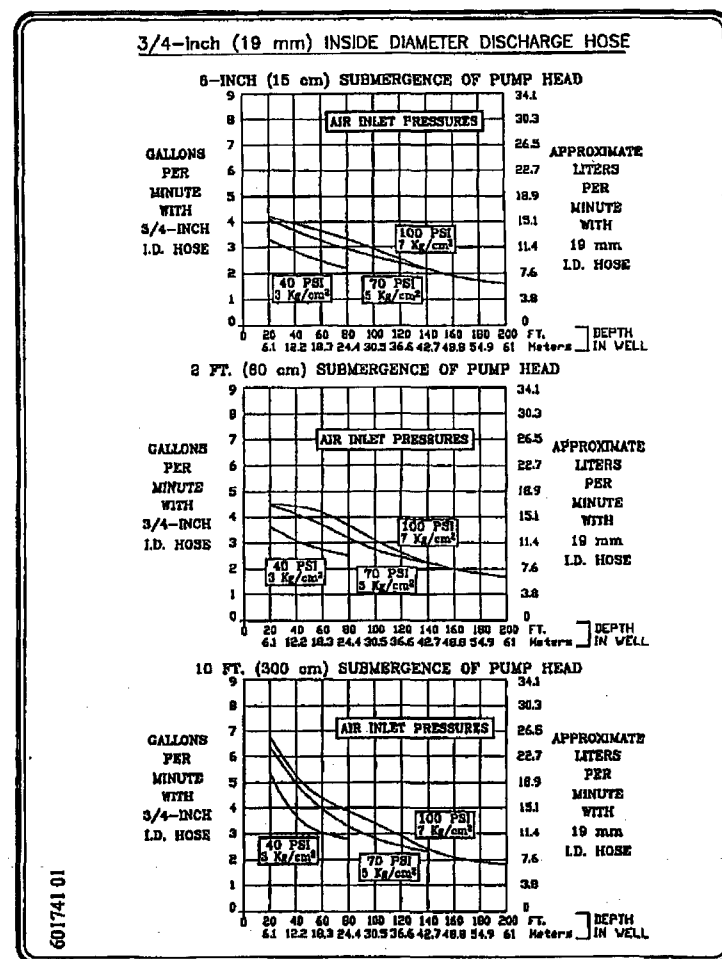
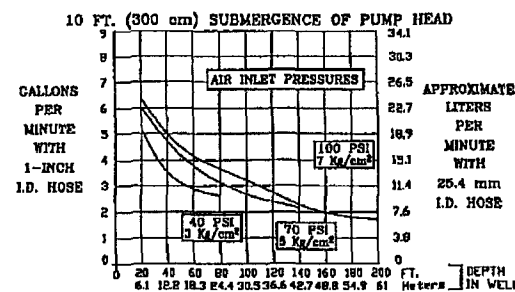
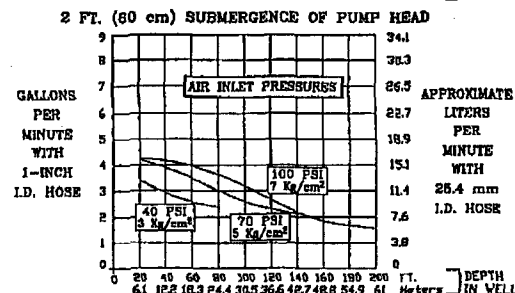
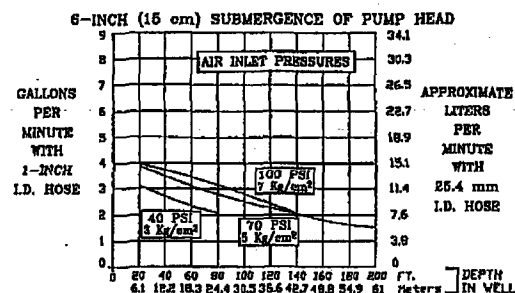


Figure 41 - Low Drawdown AP-4/BL Performance Curves:
3/4-inch (19 mm) I.D. Discharge US and METRIC UNITS

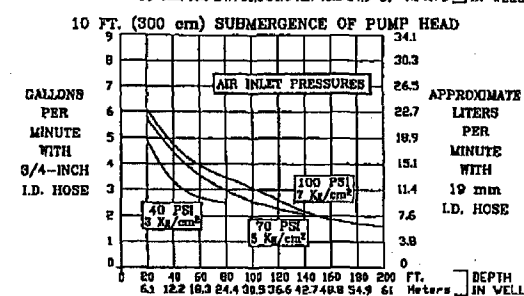
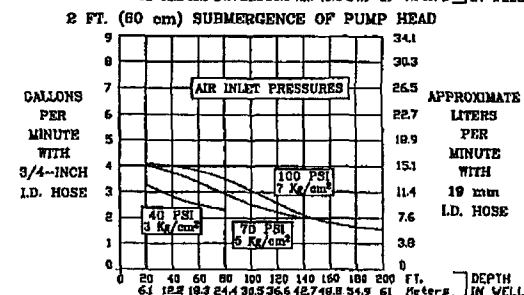
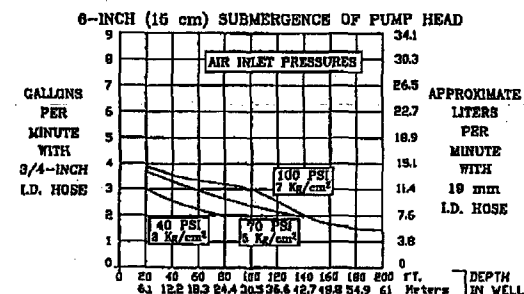
1-inch (25.4 mm) INSIDE DIAMETER DISCHARGE HOSE



601739 01

Figure 42 - Low Drawdown AP-4/TL Performance Curves:
1-inch (25.4 mm) I.D. Discharge US and METRIC UNITS

3/4-inch (19 mm) INSIDE DIAMETER DISCHARGE HOSE



601743 01

Figure 43 - Low Drawdown AP-4/TL Performance Curves:
3/4-inch (19 mm) I.D. Discharge US and METRIC UNITS

Appendix B: Air Consumption Curves

The following charts show the air consumption curves for the Long, Short, and Low-Drawdown length 3.5-inch OD AutoPumps. These curves can be used to estimate air use and compressor sizing. A compressor with reserve capacity is recommended.
(For U.S. UNITS, See Figures 42, 43, 46, 47, 50, 51, 52 and 53)
(For METRIC unit measurements, See Figures 44, 45, 48, 49, 50, 51, 52 and 53)

The curves are categorized by pump length, hose size, depth of submergence and air supply pressure. To determine the amount of air used for each gallon of fluid pumped, the following information must be known:

1. Pump – Long, Short, or Low Drawdown.
2. Discharge hose size – 3/4-inch or 1-inch is standard. A larger diameter may yield slightly lower use rates depending upon site conditions.
3. Air pressure.

With the above information, obtain the probable flow rate by using the following steps:

- On the horizontal scale, find the depth in the well at which the pump will be located.
- Trace that depth upwards to the line for the air inlet pressure you selected.
- Travel horizontally over to the vertical scale and read the air use factor.

Example: A long Bottom-Loading pump with a 1-inch discharge hose and 70 psi supply pressure positioned 100 feet below ground will use about .73 SCF of air for each gallon of fluid pumped.

The flow rate for the pump, taken from the flow rate curves, when there is 10 feet of fluid over the pump, is about 12.6 GPM.

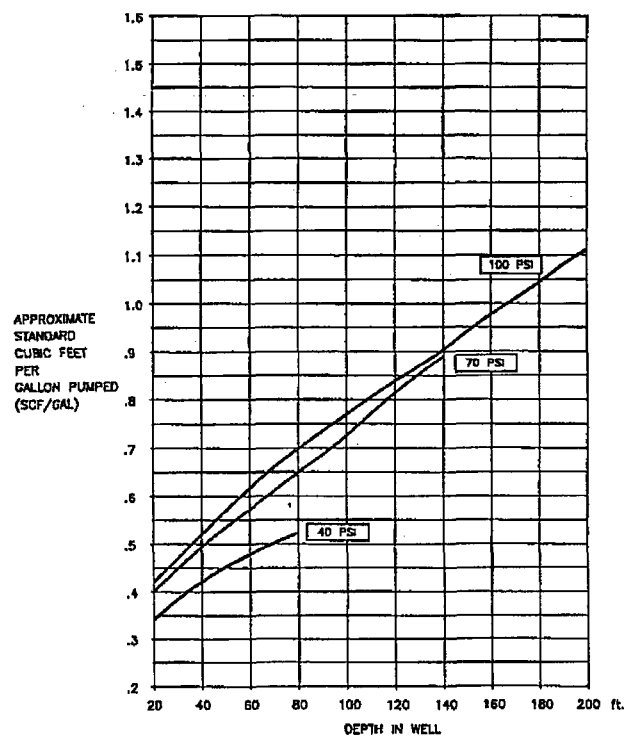
Multiply the 12.6 GPM flow rate times the .73 SCF air use factor to generate a 9.2 SCFM (Standard Cubic Feet per Minute) air use result.

If the yield of the well is less than the maximum pump rate predicted by the appropriate flow rate graph, multiply the actual fluid recovery rate times the air use factor. This air use can be diminished if the regulator pressure is reduced. The maximum pump rate for the lower air pressure can be predicted using the performance curves.

Note:

These air use factors are only applicable for the designated well head conditions. Any additional resistance from out-of-well equipment (e.g. surface hoses, valves, etc.) will affect the factors shown on these curves.

1-INCH I.D. FLUID DISCHARGE HOSE



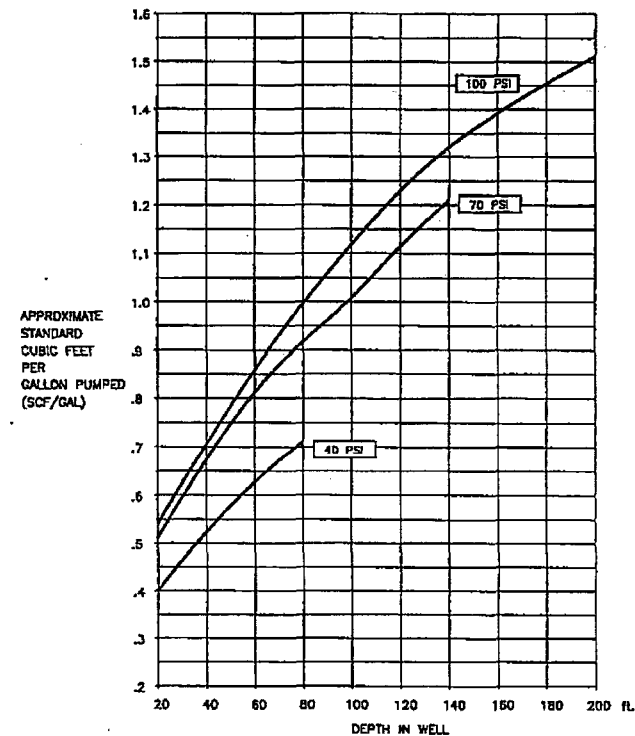
601225 02

MAXIMUM AIR USE IN STANDARD CUBIC FEET (SCF) PER GALLON PUMPED. (SURFACE LINE MAY INCREASE AIR USE.)

THIS GRAPH $\frac{\text{SCF/GAL}}{\text{GPM}} \times \text{FLOW RATE CURVES} = \frac{\text{SCFM}}{\text{GPM}}$ MAXIMUM STANDARD CUBIC FEET PER MINUTE

Figure 44 - Long AP-4 Air Consumption Curves: 1-inch I.D. Discharge
U.S. UNITS (Includes Leachate Models)

3/4-INCH I.D. FLUID DISCHARGE HOSE



600514 03

MAXIMUM AIR USE IN STANDARD CUBIC FEET (SCF) PER GALLON PUMPED. (SURFACE LINE MAY INCREASE AIR USE.)

THIS GRAPH $\frac{\text{SCF/GAL}}{\text{GPM}} \times \text{FLOW RATE CURVES} = \frac{\text{SCFM}}{\text{GPM}}$ MAXIMUM STANDARD CUBIC FEET PER MINUTE

Figure 45 - Long AP-4 Air Consumption Curves: 3/4-inch I.D. Discharge
U.S. UNITS (Includes Leachate Models)

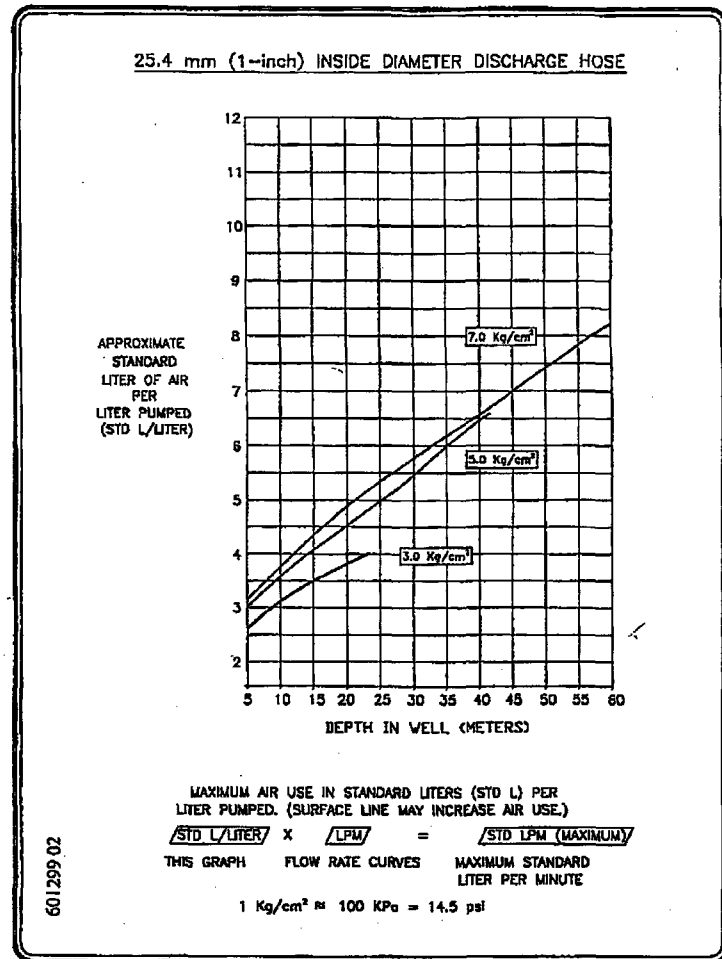


Figure 46 - Long AP-4 Air Consumption Curves: 25.4 mm (1-inch)
I.D. Discharge METRIC UNITS (Includes Leachate Models)

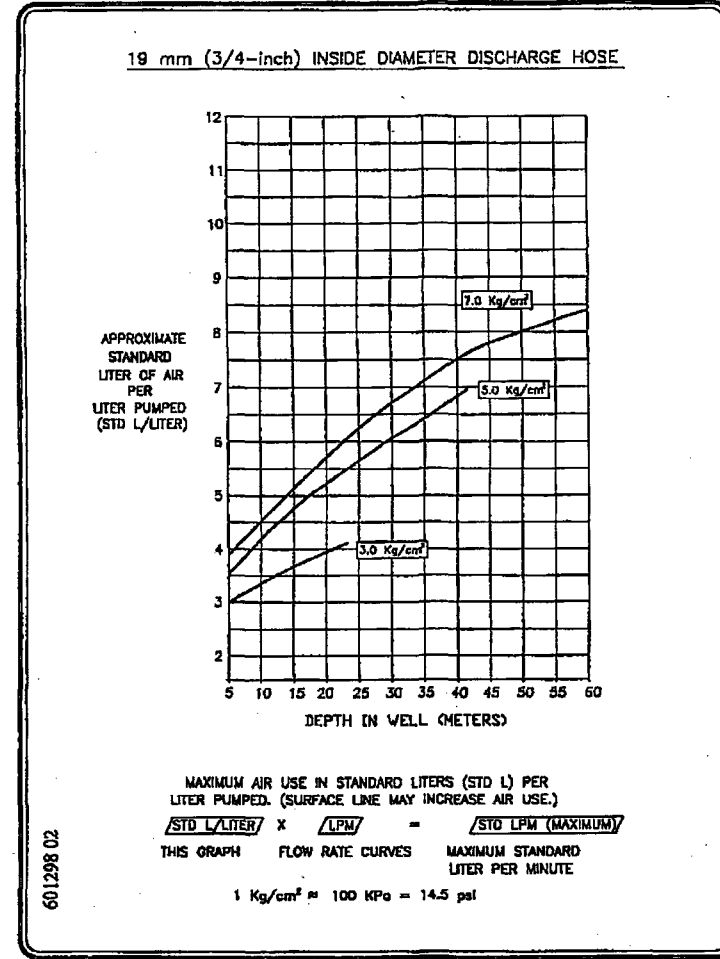


Figure 47 - Long AP-4 Air Consumption Curves: 19 mm (3/4-inch)
I.D. Discharge METRIC UNITS (Includes Leachate Models)

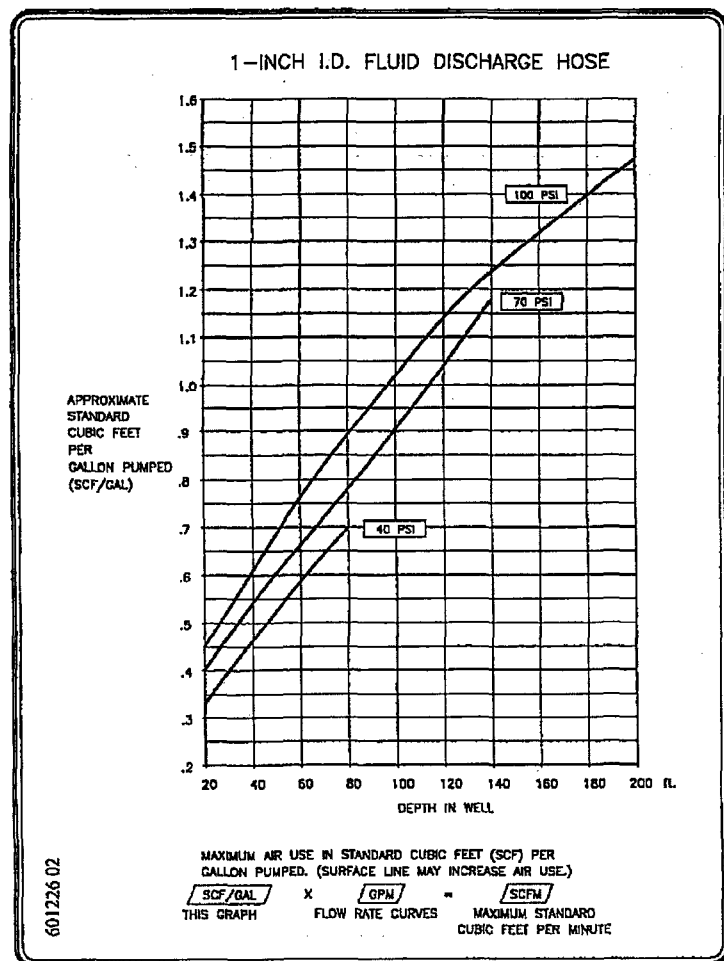


Figure 48 - Short AP-4 Air Consumption Curves: 1-inch I.D. Discharge
U.S. UNITS (Includes Leachate Models)

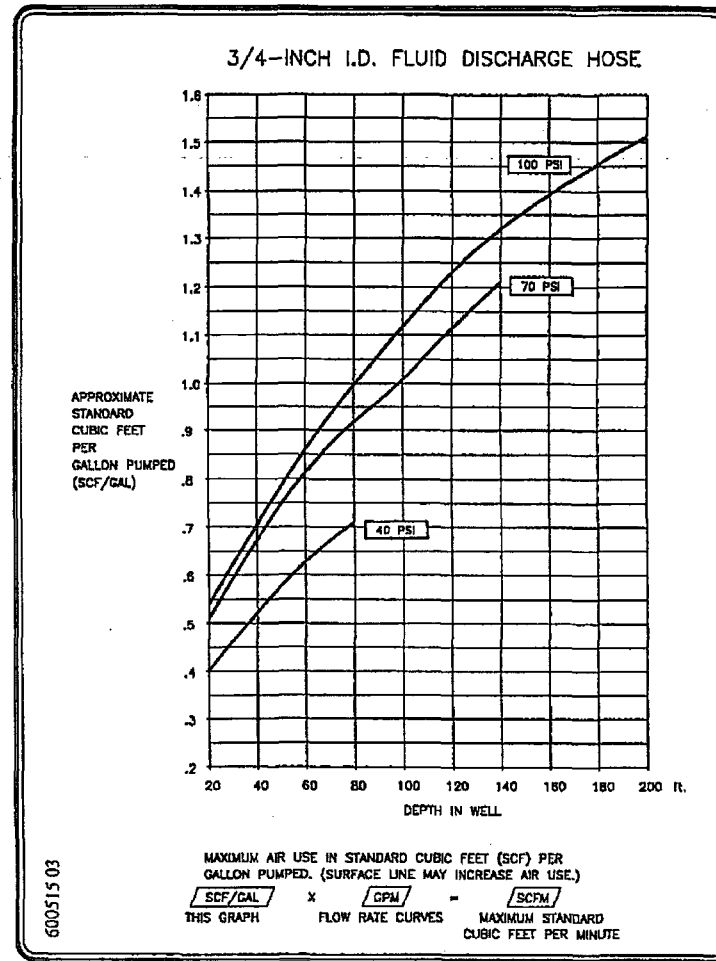


Figure 49 - Short AP-4 Air Consumption Curves: 3/4-inch I.D. Discharge
U.S. UNITS (Includes Leachate Models)

It is understood and agreed that QED Environmental Systems shall in no event be liable for incidental or consequential damages resulting from its breach of any of the terms of this agreement, nor for special damages, nor for improper selection of any product described or referred to for a particular application. Liability under this warranty is limited to repair or replacement F.O.B. QED's factory, or its appointed agent's shop, of any parts which prove to be defective within the duration and conditions set forth herein, or repayment of the purchase price at the option of QED, provided the products have been returned in accordance with the duration and conditions set forth herein.

Subassemblies and Other Equipment Manufactured by Others

The foregoing warranty does not apply to major subassemblies and other equipment, accessories, and other parts manufactured by others, and such other parts, accessories, and equipment are subject only to the warranties, if any, supplied by their respective manufacturers. QED makes no warranty concerning products or accessories not manufactured by QED. In the event of failure of any such product or accessory, QED will give reasonable assistance to Buyer in obtaining from the respective manufacturer whatever adjustment is reasonable in light of the manufacturer's own warranty.

Illustrations and Drawings

Reasonable Effort has been made to have all illustrations and drawings accurately represent the product(s) as it actually was at the time of doing the illustrations and drawings.

However, products may change to meet user requirements and therefore may not be reflected in the literature. In addition, literature may be updated to reflect the most recent equipment revision(s). Changes to either or both equipment and/or literature can be made without notice.

Buyer's Remedies

The buyer's exclusive and sole remedy on account of or in respect to the furnishing of defective material or workmanship shall be to secure replacement thereof as aforesaid. QED shall not in any event be liable for the cost of any labor expended on any such product or material or for any special, direct, indirect or consequential damages to any one by reason of the fact that it shall have been deemed defective or a breach of said warranty.

Changes without Notice

Prices and Specifications are subject to change without notice.

Shipping Dates

Shipping dates are approximate and are subject to delays beyond our control.

F.O.B. Point and Title

All material is sold F.O.B. factory. Title to all merchandise sold shall pass to Buyer upon delivery by Seller to carrier at factory. All freight insurance is the responsibility of the Buyer and shall be charged to the Buyer on the invoice unless directed in writing. All Freight claims are the Buyer's responsibility.

Terms

Payment terms are Net 30 days; 1.5% per month past due.

State and Local Taxes

Any taxes, duties or fees which the seller may be required to pay or collect upon or with respect to the sale, purchase, delivery, use or consumption of any of the material covered hereby shall be for the account of the Buyer and shall be added to the purchase price.

Acceptance

All orders shall be subject to the terms and conditions contained or referred to in the Seller's quotation, acknowledgments, and to those listed here and to no others whatsoever. No waiver, alteration or modification of these terms and conditions shall be binding unless in writing and signed by an executive officer of the Seller. All orders subject to written acceptance by QED Environmental Systems, Ann Arbor, MI, U.S.A.

Warranty Claims Procedure (Responsibility of purchaser)

The original purchaser's sole responsibility in the instance of a warranty claim shall be to notify QED or its appointed agent, of the defect, malfunction, or other manner in which the terms of this warranty are believed to be violated. The purchaser may secure performance of obligations hereunder by contacting the Customer Service Department of QED or its appointed agent, and:

1. Identifying the product involved by model or serial number, or other sufficient description, that will allow QED, or its appointed agent, to determine which product is defective.
2. Specifying where, when, and from whom the product was purchased.
3. Describing the nature of the defect or malfunction covered by this warranty.

4. After obtaining authorization from QED, sending the malfunctioning component via a RMA# (Return Material Authorization number) to the address below or to its appointed agent:

QED Environmental Systems
1133 Seventh Street
Oakland, CA 94607
USA

(800) 537-1767 Toll-Free in North America
(510) 891-0880
(510) 444-6789 FAX

5. Equipment must be cleaned before shipment or it will be cleaned by QED before any work is performed. The customer will be charged for such cleaning.

If any product covered hereby is actually defective within the terms of this warranty, purchaser must contact QED, or its appointed agent, for determination of warranty coverage. If the return of a component is determined to be necessary, QED, or its appointed agent, will authorize the return of the component at Purchaser's expense. If the product proves not to be defective within the terms of this warranty, then all costs and expenses in connection with the processing of the Purchaser's claim and all costs for repair, parts, labor, and shipping and handling, as authorized by owner hereunder, shall be borne by the Purchaser. In no event shall such allegedly defective products be returned to QED, or its appointed agent, without its consent, and QED's, or its appointed agent's, obligations of repair, replacement or refund are conditional upon the buyer's return of the defective product to QED, or its appointed agent. All equipment returned to QED will be appropriately cleaned of contamination before shipping.

ATTACHMENT D

**CONFORMED LEACHATE
MANAGEMENT PLAN**

**LEACHATE MANAGEMENT PLAN
PHASES I-VI AND THE
CAPACITY EXPANSION AREA
SOUTHEAST COUNTY LANDFILL
HILLSBOROUGH COUNTY, FLORIDA**

FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION
MAY 27 2011
SOUTHWEST DISTRICT
TAMPA

Prepared for:

HILLSBOROUGH COUNTY SOLID WASTE MANAGEMENT DEPARTMENT
925 East Twiggs Street
Tampa, Florida 33602

Prepared by:

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5426 Bay Center Drive, Suite 400
Tampa, FL 33609

Certificate of Authorization #4213

May 2011

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1.0 LEACHATE MANAGEMENT

The Hillsborough County Southeast County Facility includes the Southeast County Landfill (SCLF), which is permitted by the Florida Department of Environmental Protection (FDEP) as a Class I landfill for Phases I-VI and the Capacity Expansion Area (CEA). This Leachate Management Plan (LMP) includes Phases I-VI and Sections 7, 8, 9, and 10 of the CEA.

This plan will give the SCLF employees a general understanding of the requirements for managing the leachate generated from the Class I landfill operations within the Phases I-VI and CEA disposal areas. As defined in Rule 62-701.200(66), FAC, leachate is liquid that has passed through or emerged from solid waste and may contain dissolved, suspended, or mixed materials. Leachate must be contained and kept separate from any groundwater or surface waters.

2.0 LEACHATE GENERATION

One of the goals of the landfill design and daily operation is to minimize leachate production from the landfill to reduce the cost associated with leachate treatment and thus minimize the potential environmental contamination risks. The methods described in this section can be used separately or simultaneously to achieve leachate reduction.

Leachate is generated as water passes through solid waste or as liquids drain from solid waste materials. Water may be from stormwater infiltration, irrigation, groundwater, or other sources added to the waste material. Liquids from the solid waste include moisture from food or waste products and fluids disposed of in the waste. Water and liquids that drain through or from the waste materials eventually drain via gravity into the collection systems at the bottom of the Class I disposal areas. Once collected, the leachate is pumped to the on-site Leachate Treatment and Reclamation Facility (LTRF) for treatment or hauled off site for treatment at a wastewater treatment facility.

In addition, leachate is generated in the form of condensate from the collection of landfill gas from Phases I-VI and the Capacity Expansion Area. Condensate is managed by several methods, including drainage back to the landfill or collection in sumps at low areas. While landfill gas condensate collection and transmission are not addressed in the leachate management plan, condensate management is addressed within the Gas Collection and Control System design and operations plan for the SCLF referenced as part of the SCLF Title V operating permit. This plan should be referenced for details regarding condensate management.

3.0 LEACHATE COLLECTION SYSTEMS

The leachate collection system for Phases I-VI and the leachate collection and detection systems for the CEA are depicted in Figure 3-1 and Figure 3-2, respectively. Additional descriptions of these systems are provided in the following sections.

3.1 PHASES I-VI LEACHATE COLLECTION

Phases I-VI of the Southeast County Landfill Facility were constructed directly above a waste clay settling area for a former phosphate mine known as *Lonesome Phosphate Mine* or *Boyette Mine*. The Phases I-VI Landfill is approximately 162.4 acres. The settling area, also known as *Settling Area No. 1*, was built on natural ground with a perimeter dike constructed of sand borrowed from surrounding areas. As part of the phosphate mining operations, waste phosphatic clay and other soils were washed and phosphate minerals removed from the surrounding soils.

The washed waste phosphatic clays and soils were pumped to the settling areas and allowed to settle to the bottom of the settling ponds. The low-permeability waste phosphatic clays now form the bottom containment liner for the disposal of waste in the Phase I-VI area. A single layer of 36-mil chlorosulfonated polyethylene (CSPE) and high-density polyethylene (HDPE) liners is tied into the waste phosphatic clay layer as a side containment liner barrier.

The leachate collection and removal system for Phases I-VI consists of crushed granite rock and tire-chip-filled trenches, 8-inch-diameter perforated Schedule 80 polyvinyl chloride (PVC) pipes in granite rock-filled trenches, and 8-inch-diameter perforated HDPE pipes in granite rock-filled trenches. The gravel- and tire-filled trenches drain to the 8-inch pipes which then drain to Pump Station B (PS-B) located in the Phase VI disposal area. PS-B was designed to be the ultimate low point for the entire footprint of Phases I-VI after final placement of waste material and loading of the waste phosphatic clays. As the waste phosphatic clays are loaded, the clays settle. Excess water from within the clays is squeezed out during the loading of the clays and enters the leachate collection system. During interim operating conditions, when a portion of the bottom liner of Phases I-VI may not drain to PS-B, Temporary Pump Station 6 (TPS-6) in Phase IV is operated to collect leachate that does not flow to PS-B.

3.2 CAPACITY EXPANSION AREA LEACHATE COLLECTION

3.2.1 Section 7

3.2.1.1 Leachate Collection System

Section 7 of the CEA landfill is approximately 12.5 acres. The dimensions of Section 7 are approximately 750 feet long (southwest to northeast) and 800 feet wide (northwest to southeast). Section 7 was designed with a double-liner system—one for leachate collection on the primary liner and the other for detection (secondary liner) of any leachate that may leak through the collection liner. A 300-mil bi-planar geocomposite was installed on the top of each of the 60-mil

HDPE geomembranes to convey leachate toward collection trenches. Twelve inches of drainage sand and 12 inches of chipped tires were placed above the primary collection system to provide additional drainage collection and provide puncture protection of the underlying HDPE liners.

Leachate travels through the primary geocomposite and sand/tire-chip drainage layer and is collected in the leachate collection trench. This trench consists of 8-inch perforated HDPE leachate collection pipes and gravel wrapped in a geotextile to minimize migration of sand into the pipes. Leachate that collects in the trench flows to a collection header and then toward a collection sump in the southwest corner of Section 7. The sump was designed as the lowest point in Section 7 and was filled with gravel. A riser pipe was installed in the gravel fill of the sump and contains a submersible pump for leachate removal.

3.2.1.2 Leachate Detection System

The leachate detection system of Section 7 consists of a bi-planar geocomposite between the primary and secondary geomembranes. The geocomposite drains leachate toward an 8-inch perforated HDPE pipe in a gravel-filled trench. The lateral pipes drain to a main header on the southwest end of Section 7. The main header drains to the low point of Section 7 containing a sump with gravel fill and a riser pipe. Leachate is removed from the Section 7 leachate detection system via the riser pipe using an above-grade pump.

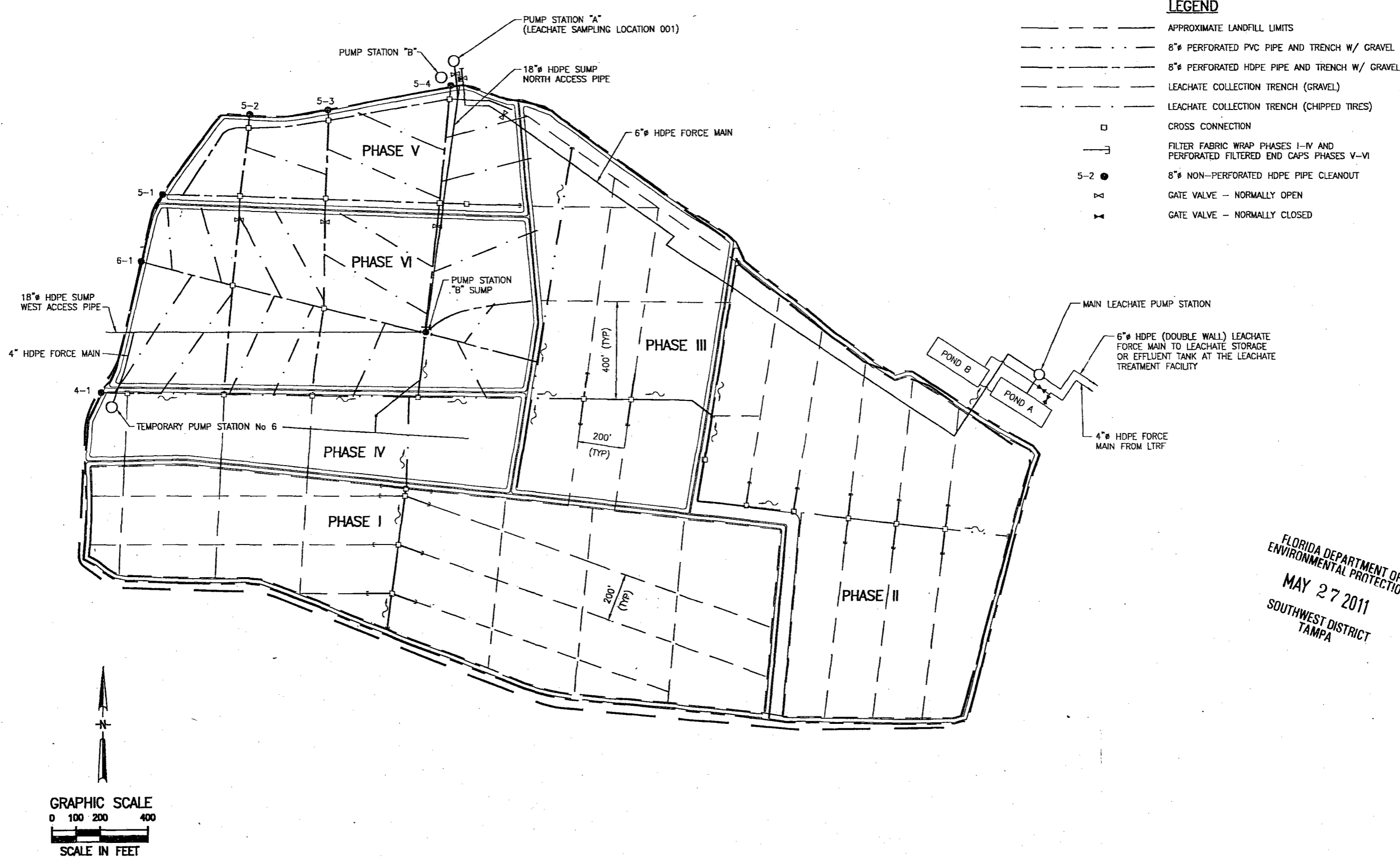
During standard practices, the detection system is expected to collect a small volume of leachate. Leakage rates collected in the detection system will be used to monitor the performance of the collection system. The action leakage rate for the CEA is discussed in Section 9.3.3.

3.2.2 Section 8

3.2.2.1 Leachate Collection System

Section 8 of the CEA is approximately 6.8 acres. The dimensions of Section 8 are approximately 500 feet long (southwest to northeast) and 660 feet wide (northwest to southeast). Section 8 was designed with a double-liner system—one for leachate collection (primary liner) and the other (secondary liner) for detection of any leachate that may leak through the collection liner. A 300-mil tri-planar geocomposite was installed on the top of each of the 60-mil HDPE geomembranes to convey leachate toward leachate collection trenches. Twelve inches of drainage sand and 12 inches of chipped tires were placed above the primary collection system to provide additional drainage collection and provide puncture protection of the underlying HDPE liners.

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LAST SAVED: 1/3/2007 9:25 AM OBUCK



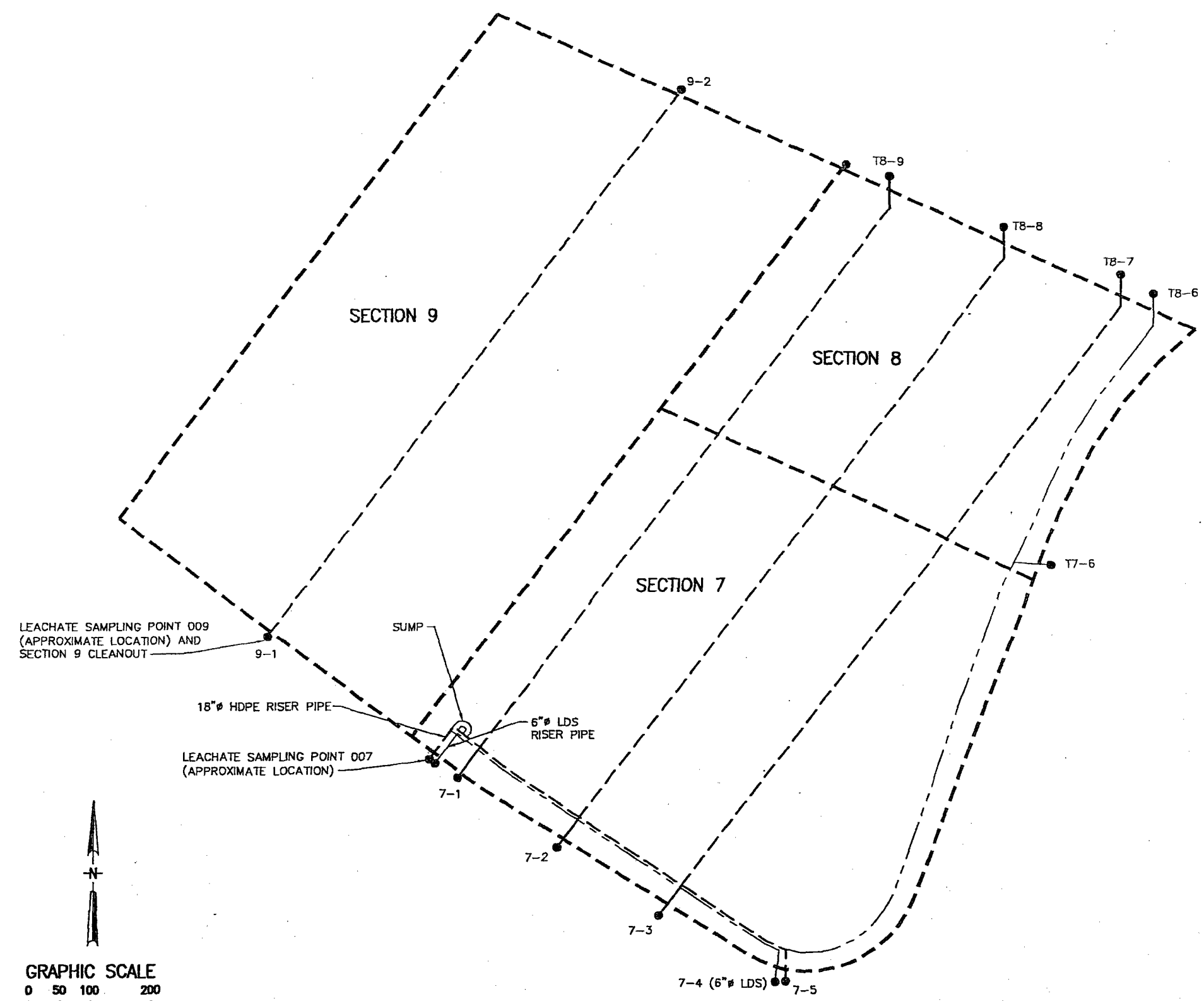
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MAY 27 2011
SOUTHWEST DISTRICT
TAMPA

FIGURE 3-1
PHASES I-VI
LEACHATE COLLECTION SYSTEM

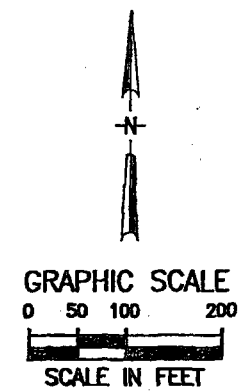
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LAST SAVED: 12/23/2009 2:59 PM JTIMMONS

LEGEND

- SECTIONS 7, 8 AND 9 BOUNDARY
- - - 8" PERFORATED HDPE LEACHATE COLLECTION PIPE AND TRENCH W/ GRAVEL
- - - 6" PERFORATED HDPE LEACHATE COLLECTION PIPE AND TRENCH W/ GRAVEL
- T8-6 ● NON-PERFORATED HDPE PIPE CLEANOUT



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TAMPA



REVISED DECEMBER 2009



FIGURE 3-2
CAPACITY EXPANSION AREA
LEACHATE COLLECTION SYSTEM

The design of Section 8 included connecting the leachate collection and detection system components to Section 7. Therefore, leachate travels through the upper geocomposite and sand/tire drainage layer and is collected in the leachate collection trenches in Section 8. This trench consists of an 8-inch perforated HDPE leachate collection pipe and several feet of gravel wrapped in woven geotextile. Leachate that collects in the trenches flows through Section 8 to the pipes and into Section 7. Once in the Section 7 collection system, leachate drains to the sump in the southwest corner of Section 7.

3.2.2.2 Leachate Detection System

The leachate detection system of Section 8 consists of a tri-planar geocomposite between the primary and secondary geomembranes. The Section 8 tri-planar geocomposite was connected to the Section 7 bi-planar geocomposite. The geocomposite drains leachate to 8-inch perforated HDPE pipes in gravel filled trenches. The trenches flow through Sections 7 and 8. The lateral pipes drain to a main header on the southwest end of Section 7. The main header drains to the leachate sumps in the southwest corner of Section 7 as described in previous sections.

During standard practices the detection system should collect a small amount of leachate. Leakage rates collected in the Section 8 detection system cannot be measured independently from Section 7; however, since each system is connected, the total leakage measured in the Section 7 sump will be used to monitor the performance of the Sections 7 and 8 collection systems.

3.2.3 Section 9

3.2.3.1 Leachate Collection System

Section 9 of the CEA landfill is approximately 15.2 acres. Section 9 is approximately 980 feet long (southwest to northeast) and 580 feet wide (northwest to southeast). The primary leachate collection system is composed of a combination of synthetic materials and natural granular materials. A geocomposite consisting of an HDPE geonet with the top and bottom sides bonded to a geotextile is directly above the primary 60-mil HDPE geomembrane. The geocomposite is overlain by a 12-inch-thick natural granular (sand) drainage layer and a 12-inch-thick chipped-tire drainage layer.

Leachate flows by gravity to a central leachate collection trench that conveys the leachate to the leachate collection sump on the southside of Section 9. The leachate collection pipe is a perforated 8-inch-diameter SDR 11 HDPE pipe surrounded by gravel and geotextile. From the sumps, leachate is pumped via a 6-inch SDR 11 HDPE forcemain to the Leachate Treatment and Recycling Facility (LTRF) located northeast of Sections 7 and 8.

3.2.3.2 Leachate Detection System

The secondary LCRS includes a geocomposite consisting of a HDPE geonet with the top and bottom sides bonded to a geotextile installed between the primary and secondary geomembranes. Leachate entering the secondary LCRS flows by gravity through the geonet to the leak-detection trench. The trench, constructed at a slope of approximately 0.75%, conveys leachate to a leachate-detection sump on the southside of Section 9. From the sump, leachate is pumped via a 6-inch SDR 11 HDPE forcemain to the LTRF.

During standard practices, the detection system is expected to collect a small volume of leachate. Leakage rates collected in the detection system will be used to monitor the performance of the collection system. The action leakage rate for the CEA is discussed in Section 9.3.3.

4.0 LEACHATE TRANSMISSION

A schematic of the leachate management system at the SCLF is shown in Figure 4-1. The following sections provide additional details for the transmission components of the leachate management system at the SCLF.

4.1 PHASES I-VI

4.1.1 Pump Station A (PS-A)

PS-A consists of an 8-foot-inside-diameter below-grade concrete sump with a single submersible pump. From PS-A, leachate is pumped to the Main Leachate Pump Station (MLPS) via force main. The pump operation is set with the “on” float at 42 inches from the sump bottom and the “off” float at 18 inches from the sump bottom.

If a high-level condition occurs, the PS-A sump control panel will shut down Pump Station B (PS-B). It will also transmit a signal, via a transceiver, with the sump condition to the control computer in the LTRF, the effluent/leachate storage tank (T6), and the landfill administration office (Office) located at the scalehouse at the entrance of the SCLF. If PS-A will be inoperable for more than 8 hours, leachate from PS-B will be pumped through the bypass line directly to the MLPS.

Operational procedures and valve settings including a representational schematic of the pump and piping system for PS-A and PS-B are provided in Appendix B.

4.1.2 Pump Station B (PS-B)

PS-B sump (located in Phase VI) is the primary leachate collection point for Phases I-VI. Upon consolidation of the phosphatic clay liner, the low point for the final collection and removal of leachate within the landfill is projected to be at the PS-B sump location. The leachate collection and removal system (LCRS) for the landfill was designed to drain to the PS-B sump.

PS-B sump consists of an 8-foot-square (inside dimension) below-grade concrete vault. The vault has two 18-inch-diameter HDPE horizontal access pipes, the main access pipe leading to PS-A, and an alternate access pipe leading toward the western perimeter of the landfill between cleanouts 4-1 and 6-1.

The primary pump used to remove leachate from the PS-B sump is a vacuum-assisted Goulds Model 3657. The self-priming pump has a capacity of 150 gallons per minute (gpm). If the primary pump fails, the SWMD has stored an Acme-Sykes Model GP100 vacuum-assisted diesel pump that may be used as backup. PS-B sump is equipped with a level indicator located at the control panel near PS-A, and the SWMD monitors the liquid level daily to ensure that the levels noted below are maintained. Maintaining the operation of PS-B as proposed will provide

reasonable assurance that Phases I-VI will maintain a leachate head over the liner of 12 inches or less during routine landfill operation.

PS-B pumps leachate to PS-A via a vacuum-assisted pump. The bubbler leveling system with an “on” sensor is set at 24 inches above the sump bottom and the “off” sensor is set at 15 inches from the bottom. The settings provide for free flow of leachate into the vault from the surrounding Phase I-VI disposal areas, thereby maximizing the leachate collection efficiency.

Operational procedures and valve settings including a representational schematic of the pump and piping system for PS-A and PS-B are provided in Appendix B.

4.1.3 Temporary Pump Station 6 (TPS-6)

TPS-6 consists of an above-ground pump station to remove leachate from Phase IV from the 8-inch-diameter header line connected to Cleanout 4-1 as shown in Figure 3-1. The leachate is removed via a 3-inch-diameter HDPE suction line that was inserted 1,100 feet into the 8-inch header. TPS-6 pumps leachate to PS-B sump through the west 18-inch-diameter access pipe via a 4-inch-diameter HDPE force main. TPS-6 operates in tandem with PS-B via radio telemetry.

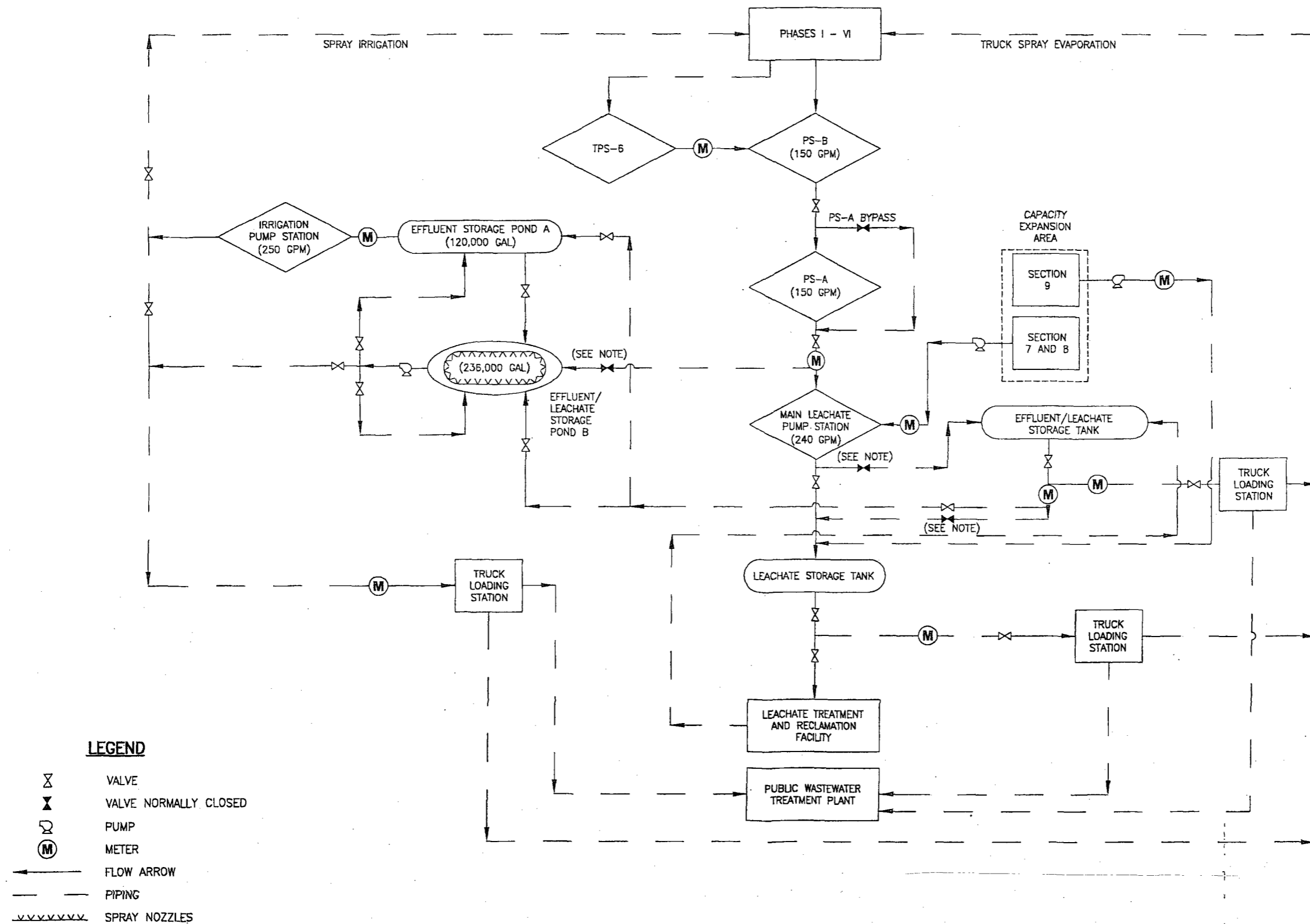
The primary pump at TPS-6 is a self-priming pump with a minimum capacity of 150 gpm. If the primary pump fails, the SWMD can use the stored vacuum-assisted diesel pump that may be used as backup or the SWMD can use the reserve equipment agreement to bring a pump on site. The SWMD monitors the flow daily to ensure that the levels noted above are maintained. Maintaining the operation of TPS-6 will provide reasonable assurance that leachate storage within Phases IV and VI is minimized.

Operational procedures and valve settings including a representational schematic of the pump and piping system for TPS-6 are provided in Appendix B.

4.2 CAPACITY EXPANSION AREA

4.2.1 Section 7 – Pump Station 7 (PS-7)

The leachate collection and leachate detection system piping for Section 7 and 8 drains to sumps in the southwest corner of Section 7 as shown in Figure 3-2. The leachate detection sump is pumped to the leachate collection sump by an above-grade pump located at PS-7. The leachate collection sump pumps leachate using a submersible pump in the sump to the MLPS via an underground force main.



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FIGURE 4-1
LEACHATE MANAGEMENT SYSTEM SCHEMATIC

There are separate pumps for the leachate collection (submersible pump) and detection (above grade pump) sideslope risers. The levels in each sump are controlled with pressure transducers at the bottom of the riser pipes. These transducers are programmed for a high-level alarm at 48 inches, pump on at 24 inches, and pump off at 12 inches. All elevations are from the bottom of the Section 7 sump. Flow measurements are taken using readings from magnetic flow meters on each discharge line. Separate sampling ball valves allow separate leachate samples to be taken from either the collection or detection sumps.

Operational procedures and valve settings including a representational schematic of the pump and piping system for the Sections 7 and 8 pump system are provided in Appendix B.

4.2.2 Section 8

Section 8 was constructed by connecting the leachate collection and detection systems to the Section 7 systems. No pumping systems are included in the Section 8 design. Section 8 uses the sumps and pumps for Section 7 to pump leachate to the MLPS.

4.2.3 Section 9 – Pump Station 9 (PS-9)

The Section 9 area includes sideslope riser pipes—two for the primary leachate collection and one for the leachate detection system—with submersible pumps. All the pumps for Section 9 area are controlled by a separate control panel located on the southside of Section 9. Leachate is conveyed by a buried forcemain which connects to the existing forcemain on the southside of Section 7. The forcemain then continues to the LTRF northeast of the Capacity Expansion Area.

The Section 9 pumps are controlled by a bubbler level sensing system at the PS-9 control panel. The standard practice bubbler settings for the primary leachate collection pumps from the bottom of the sump are high-level alarm at 36 inches, lag pump on at 33 inches, lead pump on at 27 inches, and low level alarm at 6 inches. The standard practice bubbler settings for the secondary detection pump from the bottom of the sump are high-level alarm at 36 inches, pump on at 27 inches, and pump off at 21 inches.

In addition, the Section 9 pumps are deactivated when the leachate storage tank (T1) senses a high-level alarm.

Operational procedures and valve settings including a representational schematic of the pump and piping system for the Section 9 pump system are provided in Appendix B.

4.3 MAIN LEACHATE PUMP STATION (MLPS)

The MLPS consists of a 7-foot-square (inside dimension) below-grade concrete sump with dual submersible pumps (i.e., one operating and one stand-by). Each submersible pump is rated to pump at a maximum discharge rate of 240 gpm. The operating pump is set for a 24-hour operation cycle with the “on” float at 48 inches from the sump bottom and the “off” float at 24 inches from the sump bottom.

If a high-level condition occurs at the MLPS sump, the control panel will shut down PS-7, PS-A and PS-B. It will also transmit a signal, via a transceiver, with the sump condition to the control computer in the LTRF effluent/leachate storage tank (T6) and the administration office. Maintenance and inspection of the MLPS pump are described in Section 10.0.

From the MLPS, leachate is pumped to the 575,000-gallon leachate storage tank (T1) or to the 575,000-gallon effluent/leachate storage tank (T6) [effluent/leachate storage tank (T6)—for emergency use only, as described in Section 7.0] at the LTRF.

Operational procedures and valve settings, including a representational schematic of the pump and piping system for the MLPS, are provided in Appendix B. In addition, Ponds A and B, discussed in more detail in Section 8.0, are included with the MLPS instruction sheets and schematic.

5.0 LEACHATE STORAGE TANK (T1)

Leachate from Phases I-VI and the CEA is currently stored in a 575,000-gallon maximum capacity glass-fused-to-steel aboveground raw leachate holding tank before being treated or hauled. The leachate level in the leachate storage tank (T1) is maintained to provide for the maximum storage capacity possible. The leachate storage tank (T1) is maintained with an average low level of 6 feet or 173,000 gallons (3 days' storage) to ensure that enough leachate is available for the LTRF to operate without interruptions. When the level in the leachate storage tank (T1) is below 6 feet, leachate hauling and spray evaporation will be temporarily reduced or stopped. Similarly, an action level is established for a high level of 11 feet in the leachate storage tank (T1). A level of 11 feet provides a storage capacity in the leachate storage tank (T1) of 259,000 gallons (4 days' storage) to allow continuous operation of the landfill pump stations. When levels are above 11 feet, treatment, hauling, and/or spray evaporation will be increased.

If a high-level alarm condition occurs (at 16.5 feet) in the leachate storage tank (T1), the LTRF will continue to operate, and the MLPS, PS-9, PS-10, and the LTRF filtrate pumps will be shut down. A signal indicating the leachate storage tank (T1) condition will be sent to the control computer in the LTRF and the Administration Office. When a high-level alarm condition exists, additional hauling trucks will be used to transport the leachate to a wastewater treatment plant, thus lowering the leachate from the tank.

Additional operational procedures and valve settings, including a representational schematic of the pump and piping system associated with the leachate storage tank (T1) and operation of the effluent/leachate storage tank (T6) discussed in Section 7.0, are provided in Appendix B.

5.1 T1 SECONDARY CONTAINMENT SYSTEM

The LTRF leachate tank system is located within a concrete containment area. The secondary containment area has two sumps for stormwater drainage with 6-inch-diameter HDPE pipes. The gate valves from the HDPE pipes are normally closed. The LTRF secondary containment area was designed to hold 110% of the largest storage tank in case of failure of the tanks. Therefore, the concrete flooring and containment walls will be inspected weekly for cracks or structural deficiencies as discussed in Section 5.3. Any cracks will be immediately sealed using flexible concrete grout. Any structural deficiencies will be identified and corrective action taken to repair the walls.

5.2 T1 LIQUID LEVEL MONITORING

The leachate storage tank (T1) contains an overflow pipe. The overflow pipe is installed outside of the storage tank, with the tank sidewall penetration within 30 inches of the top of the sidewall of the tank. The tank is equipped with liquid level indicators that are float-operated with a direct readout. The level gauge boards are mounted in a highly visible location on the exterior of the tank. A visual and audible alarm (a light and horn) is located on the gauge boards to alert staff to

a potential problem before overflow. The tank level is recorded daily on the leachate reporting forms. An example form is provided in Appendix A.

5.3 T1 EXTERIOR AND INTERIOR INSPECTIONS

The following describes the inspections of the leachate storage tank (T1) and procedures to be followed after the inspections:

- Overfill Prevention System: The overfill prevention system components will be inspected weekly. These components include level sensors, gauges, high-level alarm, and automatic shutoff controls.
- Tank Exterior: The exterior of the tanks and the secondary containment system will be inspected weekly for adequacy of the electrical impressed cathodic protection system, leaks, corrosion, and maintenance deficiencies. The control panel for the electrical impressed cathodic protection system (located on the outside of the secondary containment walls next to the truck loading station) will be inspected to ensure that it is working properly. In addition, the inspection includes evaluating structural damage to the tank, damage to the coating system, loose connections, corrosion, visible leaks, and maintenance deficiencies. The inspector will also look for any structural damage to the concrete slab, peeling of the paint system, and visible leaks.
- Tank Interior: The interior of the tanks will be inspected whenever the tanks are drained or at least every 3 years. The inspector will look for any damage to the interior coating system, structural damage, cracking of the tank, visible leaks, and any accumulation of sludge.
- Procedures for Corrective Actions: If inspections reveal any deficiencies with the tank or the secondary containment system that could result in the system's failing to contain the leachate, the SWMD shall take immediate action to correct the situation by assessing the problem and coordinating the required actions. Failures or damage to the tanks will be repaired by the tank manufacturer or a designated contractor. The SWMD shall notify the manufacturer or designated contractor of the situation; the tank manufacturer or designated contractor will remediate the tanks and prepare a detailed damage-assessment report. FDEP will be notified in writing of the situation and of the proposed corrective action.
- Inspection Reports: Inspection reports and reports of any remedial action measures taken will be maintained at the SCLF and will be made available to FDEP upon request. The weekly inspection report form is provided in Appendix A. All reports will be maintained for the life of the tanks and the containment system.

6.0 LEACHATE TREATMENT AND RECLAMATION FACILITY (LTRF)

In December 1994, the SWMD constructed an on-site LTRF. The LTRF system and operation are described in detail in the *General Process and Operation Manual for the Powder Activated Carbon Treatment (PACT) system*, Volume III, prepared by Zimpro Environmental, Inc dated March 1994.

Process tanks and equipment are maintained in accordance with *General Process and Operation manual for the Powder Activated Carbon Treatment (PACT) PACT System*, dated March 1994.

The treatment system of the LTRF includes biological treatment components. The LTRF is operated according to the operation manual listed above provided by the manufacturer with the exception that the powder-activated carbon is no longer used. The maximum treatment capacity of the LTRF is 60,000 gallons per day.

After treatment, the leachate is pumped through a 4-inch-diameter single-walled HDPE pipe to the effluent storage pond (Pond A) or the effluent/leachate storage tank (T6) described in Section 7.0. The effluent from the LTRF must meet pre-treatment standards before being pumped to a tanker truck for transport to Hillsborough County's wastewater treatment facilities.

The primary process tank at the LTRF includes a skirt on the southeast quadrant at the top perimeter of the tank intended to minimize process foam from the tank from blowing outside the tank to the containment area. If the foam is found outside the tank in the containment area, the following cleaning process shall be followed:

1. Pressure wash the affected areas.
2. The wash water will be collected and placed in the leachate storage tank.

7.0 EFFLUENT/LEACHATE STORAGE TANK (T6)

The effluent/leachate storage tank (T6) is a welded steel aboveground tank with a maximum capacity of 575,000 gallons. The effluent/leachate storage tank (T6) receives treated leachate (effluent) from the LTRF and pumps effluent to the effluent storage pond (Pond A) or stores the effluent for transport to the County's wastewater treatment facilities. If leachate must be stored in the effluent/leachate storage tank (T6) from the MLPS while the leachate storage tank (T1) is repaired or inspected, normal operations at the LTRF will stop. Once the leachate storage tank is repaired or inspected, the leachate stored in the effluent/leachate storage tank (T6) will be pumped back to the leachate storage tank (T1). The effluent/leachate storage tank (T6) will be cleaned of leachate before effluent storage resumes.

The following conditions and associated valve settings are provided on instruction sheets and a schematic in Appendix B:

1. Pump effluent from the LTRF to the effluent/leachate storage tank (T6) (standard practice).
2. Pump effluent from the effluent/leachate storage tank (T6) to Pond A (standard practice).
3. Pump leachate from the MLPS to the effluent/leachate storage tank (T6) (special condition).
4. Pump leachate from the effluent/leachate storage tank (T6) to the Leachate Storage Tank (special condition).

7.1 T6 SECONDARY CONTAINMENT SYSTEM

The secondary containment system for the effluent/leachate storage tank (T6) can contain a minimum of 110% of the total volume of the tank. The effluent/leachate storage tank (T6) provides 575,000 gallons of maximum storage.

The secondary containment system consists of a 60-mil HDPE geomembrane lined basin. The tank is constructed at the bottom of the basin on a reinforced concrete pad and surrounded by a 6-inch-thick reinforced concrete walkway. The lined basin is connected at the walkway slab and runs up 3H:1V sideslopes where it is anchored at a 12-foot-wide berm.

The precipitation collected in the containment area is pumped into the adjacent stormwater management system via a horizontal submersible pump and sideslope riser. The sideslope riser system includes an additional camlock connection to be used for emergency effluent/leachate removal using an additional pump. Any spilled leachate and/or effluent that accumulates in the secondary sump is pumped to the leachate storage tank (T1) via a suction line originating from the horizontal centrifugal pump at the loading pad. The centrifugal pump is equipped with

valves to operate in suction mode to remove any spilled effluent/leachate from the secondary sump. The submersible sump pump is manually operated to remove stormwater or used as an alternate for effluent/leachate removal.

Accumulated precipitation will be removed within 24 hours of observation. The precipitation will be pumped into the adjacent stormwater management system.

Accumulated liquid in the trench drain that is not precipitation resulting from a recent storm event will be treated as effluent and pumped into the effluent/leachate storage tank (T6).

7.2 T6 LIQUID LEVEL MONITORING

The effluent/leachate storage tank (T6) contains an 8-inch overflow pipe. The overflow pipe is installed outside of the effluent/leachate storage tank (T6) with the tank sidewall penetration within 30 inches of the top of the sidewall of the tank. The tank is equipped with liquid level indicators that are float operated with a direct readout. The level gauge boards are mounted in a highly visible location on the exterior of the tank. A visual and audible alarm (a light and horn) are located on the gauge boards to alert staff of a potential problem before overflow. The effluent/leachate storage tank (T6) level is recorded daily on the leachate reporting forms provided in Appendix A.

7.3 T6 EXTERIOR AND INTERIOR INSPECTIONS

The following describes the inspections of the effluent/leachate storage tank (T6) and steps to be followed after the inspections:

- Overfill Prevention System: The overfill prevention system components will be inspected weekly. These components include level sensors, gauges, high-level alarm, and automatic shutoff controls.
- Tank Exterior: The exterior of the tank and the secondary containment system will be inspected weekly for adequacy of the cathodic protection system, leaks, corrosion, and maintenance deficiencies. In addition, the inspection includes an evaluation of any structural damage to the tank, damage to the coating system, loose connections, corrosion, visible leaks, and maintenance deficiencies. The inspector will also look for any structural damage to the concrete slab or HDPE lining of the secondary containment system, peeling of the paint system, and visible leaks.
- Tank Interior: The interior of the tank will be inspected whenever the tank is drained or at least every 3 years. The inspector will look for any damage to the interior coating system, structural damage, cracking of the tank, visible leaks, and accumulation of sludge.

- Procedures for Corrective Actions: If inspections reveal any deficiencies with the tank or the secondary containment system that could result in failure of the system to contain the leachate, the SWMD shall take immediate action to correct the situation by assessing the problem and coordinating the required actions. Failures or damage to the tanks will be repaired by the tank manufacturer or a designated contractor. The SWMD shall notify the manufacturer or designated contractor of the situation; the tank manufacturer or designated contractor will remediate the tanks and prepare a detailed damage assessment report. FDEP will be notified in writing of the situation and of the proposed corrective action.
- Inspection Reports: Inspection reports and reports of any remedial action measures taken will be maintained at the SCLF and will be made available to FDEP upon request. The weekly inspection report form is provided in Appendix A. All reports will be maintained for the life of the tanks and the containment system.

7.4 ACID MIXER AND TANK

The acid dosing pumps at the effluent/leachate storage tank (T6) pump station inject sulfuric acid into the 4-inch effluent pipe right before a 4-inch-diameter static mixer. The static mixer thoroughly mixes the acid and effluent in the pipe before discharging to either the storage pond or truck loading pad. Landfill personnel monitor the pH by pulling grab samples from the sampling port or reading from the pH meter at the control panel, thereby allowing the acid dosing to be optimized and preventing large swings in pH. The acid dosing rate is controlled by an operator at the control panel using the pH readout to adjust the acid dose to achieve the appropriate pH range. Also, the system includes controls between the acid dosing pumps and the pH meter to allow automatic acid dosing. The acid dosing pump controls are connected to the booster pump controls so acid dosing will only occur when the booster pumps are running. In addition, when the booster pumps are signaled off, the acid dosing pumps stop and the booster pumps continue to run for approximately 30 seconds to allow the piping system to be flushed of any residual acid.

8.0 LEACHATE AND EFFLUENT DISPOSAL

Leachate is disposed of at the SCLF by various methods, including the on-site LTRF, hauling of raw leachate via tanker truck to a County wastewater treatment plants (WWTP), and truck-mounted spray evaporation of raw leachate within the contained working surface. Effluent from the on-site LTRF is disposed of by an effluent spray irrigation system, effluent evaporation, or transporting effluent via tanker trucks to a County WWTP.

8.1 EFFLUENT STORAGE POND A

The effluent storage pond (Pond A) receives treated leachate (effluent) from the LTRF or the effluent/leachate storage tank (T6). The pond was lined with 80-mil HDPE and provides for temporary effluent storage of 120,000 gallons plus 1 foot of freeboard. Using the existing staff gauge in the pond, Pond A is maintained at a maximum depth of 3.7 feet (elevation 136.9) and a minimum depth of 6 inches. Off-site hauling could increase if levels in Pond A reach the maximum level of 3.7 feet. In addition, an overflow pipe allows flow from Pond A into Pond B. Similarly, if levels are below 6 inches, irrigation, evaporation, and off-site hauling from Pond A will be temporarily reduced.

The following conditions and associated valve settings are provided on the Main Leachate Pump Station operation instruction sheet and schematic in Appendix B:

1. Pump effluent from Pond A to spray irrigation system.
2. Pump effluent from Pond A to truck loading arm.
3. Recirculate effluent in Pond A to stabilize pH.

8.2 EFFLUENT/LEACHATE STORAGE POND B

The effluent/leachate storage pond (Pond B) provides an additional storage volume of 236,000 gallons and is located next to Pond A, as shown in Figure 3-1. Pond B was designed with 1 foot of storage for the 25-year/24-hour storm and 1 foot of freeboard. The pond was designed to store either raw leachate or effluent; however, Pond B's primary use is for additional storage of effluent from the LTRF or the effluent/leachate storage tank (T6). If the need for leachate storage arises, the SWMD will notify FDEP before using the pond for leachate storage. The notification to FDEP will include the reason(s) for leachate storage in the pond and the anticipated duration.

Pond B was designed with an upper and lower 60-mil HDPE geomembrane. An HDPE geonet was installed between the two liners. The subbase for the lower geomembrane consists of 6 inches of soil with a saturated hydraulic conductivity of 1×10^{-5} centimeters per second or less, installed over the on-site soil which was cleared of vegetation and graded. Supplemental effluent evaporation in Pond B is provided using a spray evaporation system. The spray evaporation

nozzle system was designed around the perimeter of the pond and consists of 30 nozzles, with an estimated flow capacity of 17 gpm per nozzle and a 510-gpm pump.

In general, the SWMD operates the spray evaporation system manually and only during the hours the landfill is open. The spray evaporation system is not operated during windy conditions (i.e., over 10 miles per hour) to prevent overspray outside the limits of the pond liner system.

The following conditions and associated valve settings are provided as part of the Main Leachate Pump Station operation instruction sheets and schematic in Appendix B:

1. Effluent storage and spray evaporation operation in Pond B (standard practice).
2. Leachate storage in Pond B (special condition).
3. Resuming effluent storage in Pond B following leachate storage (special condition).

8.3 EFFLUENT IRRIGATION

8.3.1 Effluent Irrigation Pump Station

The effluent irrigation pump station consists of a 5-foot-square (inside dimension) below-grade concrete sump with dual vertical turbine pumps (one operating and one stand-by). From the effluent irrigation pump station, effluent is pumped to the spray irrigation system on the landfill. The pump in operation is set manually depending on weather conditions.

The effluent irrigation pump station is hydraulically connected to Effluent Pond A, and Effluent Pond A is hydraulically connected via pipe to Effluent/Leachate Pond B; therefore, if the effluent irrigation pump station reaches high level, it will drain to Ponds A and B and not overflow. Ponds A and B are visually monitored by landfill operations personnel and if high level occurs steps are initiated as described in Sections 8.1 and 8.2 for Ponds A and B, respectively.

8.3.2 Effluent Spray Irrigation on Phases I-VI

The SWMD operates a mobile irrigation system consisting of two irrigation reels manufactured by ABI Irrigation, Model ABI Series 700 Model No. 110JX1312 with a GXE 1312 spray nozzle with a maximum application rate of 192 gpm. The mobile irrigation reels in Figure 8-1 are shown positioned on the west side of Phase I and on the east side of Phase II. These locations are shown for information purposes only since the position will change due to operational constraints with waste filling in Phase I-VI. Only effluent will be disposed of through the spray irrigation system.

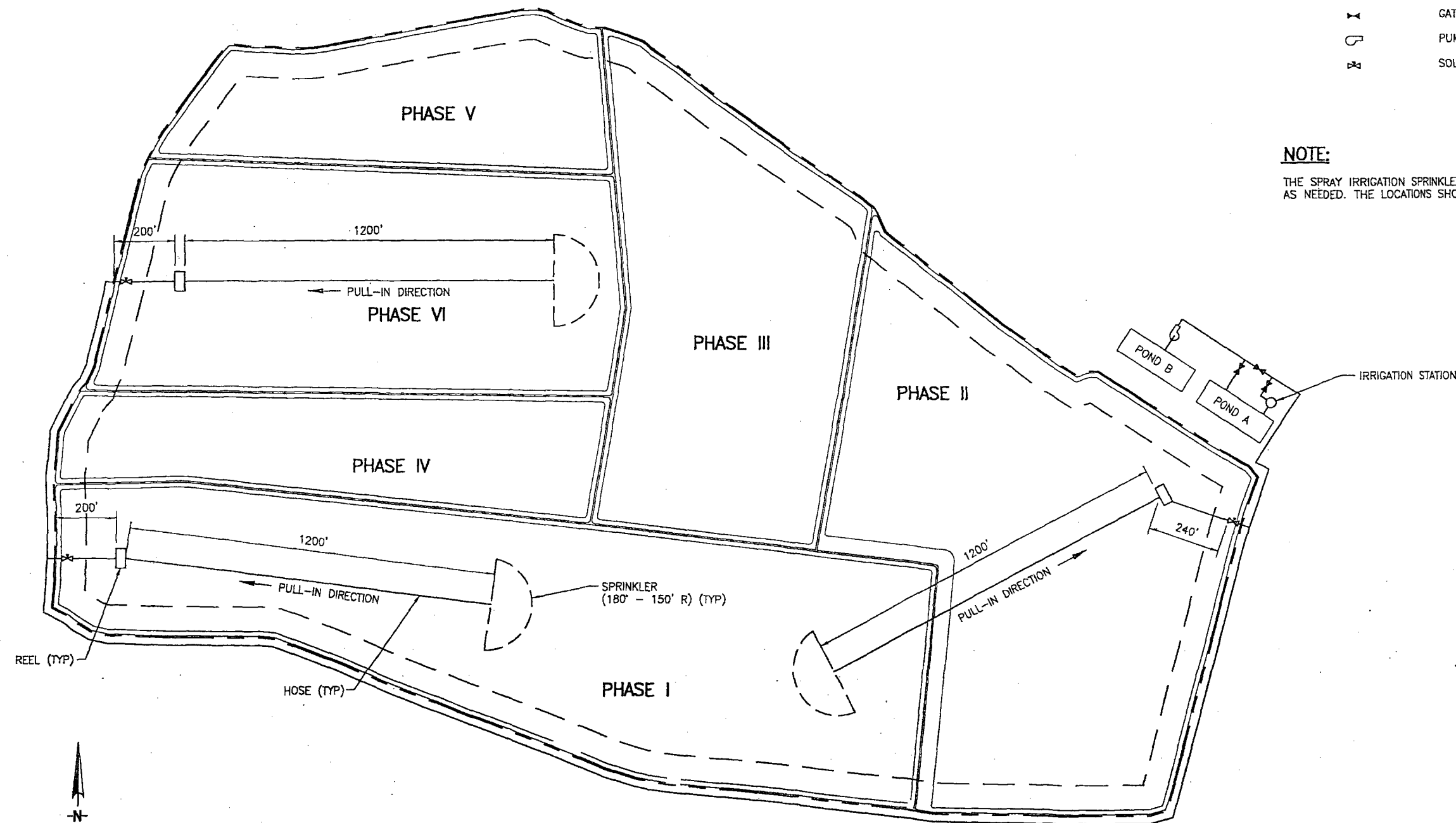
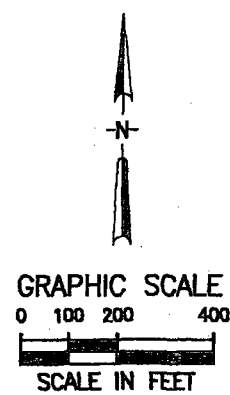


FIGURE 8-1
LOCATION OF IRRIGATION SPRINKLER REELS

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The operational sequence of the mobile reel irrigators is as follows:

- Before each irrigation event, the medium-density polyethylene (PE) hose is stretched out with a vehicle (approximately 1,200 linear feet). At the end of the PE hose is a spray nozzle that applies the effluent across a large area to maximize evaporation and prevent runoff from draining into the stormwater system.
- Once both PE hoses have been stretched out across the top of the landfill, personnel manually turn on the irrigation pump. The pumps maintain an operating pressure in the irrigation reel. The reel is equipped with a drive system that automatically reels in the PE hose and spray irrigation nozzle at a preset rate (i.e., 200 feet per hour).
- At the end of the irrigation cycle, personnel manually turn off the irrigation pump.

Spray irrigation occurs under the following conditions:

- Spray irrigation is applied at a rate of one pass per day with a maximum application rate of 0.30 inch per day of effluent. Under no circumstances is effluent allowed to discharge as runoff to adjacent stormwater systems. Effluent is not sprayed during severe weather conditions or in quantities that may cause runoff, surface seeps, wind-blown spray outside of the landfill footprint, or ponding on the cover.
- Spraying takes place only when rainfall runoff into the on-site retention areas down gradient from the spray areas has terminated for 2 hours based on daily inspections of the influent point to each related retention area or as follows, whichever is more restrictive:
 - At least 4 hours after a rainfall of 3/4 inches or less.
 - At least 24 hours after a day of rainfall of 3/4 inches to 2-1/2 inches.
 - At least 48 hours after a day of rainfall of 2-1/2 inches or greater.
- Spray irrigation of effluent is not conducted within 100 feet of the landfill liner trench, on slopes steeper than 10%, nor on areas with permanent final cover.
- Spray irrigation may be used on areas with bare ground (little or no grass) or on areas which have been seeded to help with grass growth. These areas will not allow runoff to the stormwater system, as described in this Section.
- Spray irrigation of treated effluent will be conducted between 8:00 A.M. and 4:00 P.M.

The Leachate Reporting Forms provided in Appendix A are completed monthly and submitted at least quarterly to FDEP and the Environmental Protection Commission (EPC) by the 15th of January, April, July, and October of each year. At a minimum, the following data are recorded daily:

- Effluent sprayed in gal/day.
- Rainfall on site in inches/day and time of day.
- Observed runoff influent to retention areas (yes and/or no).
- Time of day of inspection.

8.4 LEACHATE AND EFFLUENT EVAPORATION VIA TRUCK-MOUNTED SPRAYING

Evaporation is employed as a supplemental method of disposing of leachate. The supplemental evaporation of leachate involves spraying small quantities of leachate—an average of 9,700 gallons per day—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 the SCLF since 1984. 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 SWMD monitors the rate of application, soil moisture conditions, and the specific landfill areas used so that this leachate disposal method does not generate runoff. Leachate spray evaporation is applied under the following conditions:

- Leachate is only sprayed on active-fill areas, including the working face, and areas with the required 6 inches of initial cover.
- Leachate is not sprayed on areas with intermediate or final cover, seeded or unseeded.
- The maximum grade leachate may be sprayed on is 10H:1V slope. Areas within 150 feet of a 4H:1V or steeper sideslope may not be sprayed on. At all times, areas receiving leachate are controlled to prevent leachate runoff from entering the stormwater system.
- Leachate is not sprayed when it is raining.
- The tank truck spray bar method maximizes evaporation. The application rate of leachate will be such that leachate does not accumulate on the landfill surface nor infiltrate quickly into the covered refuse. Evaporation is the main goal of this leachate disposal method.
- Leachate is not sprayed at the end of the day on the initial cover of the working face or other areas. Spraying is done early in the morning after any dew

evaporates and continues until early afternoon or until all available areas have been sprayed.

The SWMD evaporates leachate and effluent in full conformance with Chapter 62-701, FAC. The SWMD notifies FDEP of all evaporated quantities in the monthly water balance reports.

8.5 EFFLUENT AND LEACHATE TRUCK LOADING FACILITIES

8.5.1 Truck Loading Procedures

Truck loading facilities are located at the LTRF, Effluent Pond A, and the effluent/leachate storage tank (T6). Operating procedures and valve settings for each station are provided in the instruction sheets and schematics provided in Appendix B.

The truck loading stations include a loading arm for discharging stored leachate or effluent from the leachate storage tank (T1) and effluent/leachate storage tank (T6) to a transfer tanker for disposal. Tanker trucks remove the liquid from the LTRF, effluent/leachate storage tank (T6), or Pond A and transport the liquid to a County WWTP.

The truck loading facilities are equipped with flow meters that provide readout of the gallons of liquid that have been pumped into the tanker trucks. The capacity of each tanker truck is approximately 6,000 to 8,000 gallons, and the leachate tankers are normally filled. If the flow meter gauges are inoperable or not accurate, the quantity of leachate removed can be determined by converting the weight for the truck scale weight tickets to gallons (tons x 2,000 lb/ton/ 8.34 lb/gal = gallons).

Appendix A includes a Leachate Hauling/Disposal Reporting Form for use when loading leachate or effluent for off-site disposal. The daily field data entry form provided in Appendix A includes recording leachate storage tank (T1) levels. The external level indicators provide a measured indication of the depth of the leachate or effluent in the storage tanks. Information required includes the time of day and the level indicated on the side of the storage tank. Each reading of the storage tanks should be conducted at approximately the same time each day. This will provide the landfill operations personnel with a relative basis for comparing the amount of leachate stored daily and generated daily.

The SWMD has its own tanker trucks as well as a contract with haulers and WWTPs to haul and treat leachate stored in the tanks for disposal. The private tanker vehicles are required to have onboard pump systems or provide portable pumps if the storage system pumps fail.

8.5.2 Wastewater Treatment Plants

Leachate can be disposed of off site at a County-owned wastewater treatment plant (WWTP). Agreements exist with two of Hillsborough County's wastewater treatment plants for leachate or effluent disposal. Hillsborough County and private contract fleets are used to haul the leachate

to the WWTP. Leachate will be measured by a flow meter as the tanker trucks are loaded at the LTRF truck loading station.

9.0 LEACHATE MONITORING, FLOW MEASUREMENT, DATA COLLECTION, AND REPORTING

9.1 GENERAL LEACHATE MONITORING

The SWMD field sampling personnel conduct the leachate sampling activities in accordance with the applicable FDEP Standard Operating Procedures for field sampling. The leachate samples are collected from Location No. 001 (see Figure 3-1); at the PS-A sump; and from Locations No. 007, No. 009, and No. 010 at the Sections 7, 8, 9, and 10 (see Figure 3-2) sumps by grab sample using a decontaminated Teflon bailer. A Teflon flow-control valve attached to the bailer is used to empty the contents into the volatile organic compound (VOC) sample container to minimize aeration. The samples are containerized in the appropriate sample containers and labeled, sampling procedures are summarized in field documentation, and the sample containers are secured in a cooler on wet ice. A standard Chain of Custody log will be completed and included with the samples. The cooler is sealed with a Custody Seal and shipped by common carrier to an FDEP- and Florida Department of Health (FDH)-approved environmental laboratory for analysis.

Leachate is collected and analyzed annually for the parameters listed in Rule 62-701.510(8)(c) and 8(d). If the annual analysis indicates that a contaminant listed in 40 CFR 261.24 exceeds the regulatory level listed in the Rule, the SWMD will initiate a monthly sampling and analysis program in accordance with Rule 62-701.510(6)(c)2, FAC. If in any 3 consecutive months the same listed contaminant exceeds the regulatory level, the SWMD will, within 90 days, initiate a program designed to identify the source and reduce the presence of the contaminant in the leachate so that it no longer exceeds the regulatory level. This program may include additional monitoring of waste received and additional up-front separation of waste materials. If leachate cannot be taken to a permitted industrial or domestic wastewater treatment facility, it will be treated or managed so that no contaminant exceeds the regulatory level of 40 CFR Part 261.24. If in any 3 consecutive months no listed contaminant is found to exceed the regulatory level, the SWMD will discontinue the monthly sampling and analysis and return to previous sampling schedule.

If leachate is classified as a hazardous waste, it will be managed in accordance with Chapter 62-730, FAC, "Hazardous Waste."

9.1.1 Leachate Quality

Annual leachate influent sampling is conducted for analysis of the following parameters:

Field Parameters

Specific conductivity
pH
Dissolved oxygen
Colors and sheens
(by observation)

Laboratory Parameters

Total ammonia - N
Bicarbonate
Chlorides
Iron
Mercury
Nitrate
Sodium
Total dissolved solids (TDS)
Those parameters listed in 40 CFR Part 258,
Appendix II

9.1.2 Effluent Quality

To provide reasonable assurance of adequate leachate treatment, the SWMD samples and analyzes the treated leachate (effluent) semi-annually for Primary and Secondary Drinking Water parameters and EPA Priority Pollutants. Samples will be taken after the LTRF has achieved steady-state conditions with regard to its treatment capability or within 30 days after downtime due to maintenance or repairs, whichever is less.

In addition, effluent grab samples before disposal are taken for the following parameters at the frequency indicated:

<u>Parameter</u>	<u>Frequency</u>	<u>Units</u>
pH	weekly	Std. Units
BOD ₅	monthly	mg/L
COD	monthly	mg/L
TSS	monthly	mg/L
NO ₃ -N	monthly	mg/L
TDS	monthly	mg/L

9.1.3 Biosolids Quantity and Disposal

The biosolids from the LTRF are disposed of at the SCLF if they are found to be non-hazardous and pass the paint filter test. The biosolids are sampled and analyzed annually for EPA Priority Pollutants, the Toxicity Characteristic Leaching Procedure (TCLP), and for the following parameters:

<u>Parameters</u>	<u>Units</u>
Total Nitrogen	percent (dry weight)
Total Phosphorus	percent (dry weight)
Total Potassium	percent (dry weight)
Arsenic	mg/kg (dry weight)
Cadmium	mg/kg (dry weight)
Copper	mg/kg (dry weight)
Lead	mg/kg (dry weight)
Mercury	mg/kg (dry weight)
Molybdenum	mg/kg (thy weight)
Nickel	mg/kg (dry weight)
Selenium	mg/kg (dry weight)
Zinc	mg/kg (dry weight)
pH	std. units
Solids	percent

If the biosolids are found to be hazardous, the material will be managed in accordance with Chapter 62-730, FAC, "Hazardous Waste."

9.2 PHASES I-VI MONITORING

9.2.1 Leachate Sampling Locations

Leachate from the Phases I-VI area is sampled annually from Sample Location No. 001 at PS-A (see Figure 3-1). The applicable FDEP Standard Operating Procedures are used to collect a leachate grab sample from the PS-A sump and analyze the leachate for the parameters listed in Rule 62-701.510(8)(c) and 8(d). The results of the leachate analyses are reviewed and submitted to FDEP.

9.2.2 Flow Measurement

For Phases I-VI, the leachate quantity is recorded by flow meters at PS-A and TPS-6. SWMD personnel record flow meter readings each day the SCLF is open and the quantities are reported to FDEP. Sample leachate reporting forms are included in Appendix A.

When pumping records from TPS-6 and PS-B show that in 2 consecutive months the average daily flow rate from TPS-6 is less than 250 gallons per day, TPS-6 will be shut down and removed from operation.

9.2.3 PS-B Settlement Plates

Four settlement plates were installed at the bottom of each corner of the vault for PS-B in Phase VI. The rods for these plates have been extended during operation of the landfill. The elevation of these plates will be measured annually. The historical measurements are provided in Appendix C. These records have shown that PS-B has been settling as predicted and as

discussed in Part J of the Phases I-VI and Capacity Expansion Area (Sections 7, 8, and 9) Permit Renewal Application. The rods for the settlement plates will be less accurate as operations continue due to deformation from settlement of the waste between the top of waste and PS-B. If, after two consecutive annual measurements from any of the four settlement plates, there is no change in elevation, that settlement plate is assumed to be malfunctioning and will not be measured in future events. The settlement at malfunctioning settlement plates is assumed to be the same as the settlement measured at adjacent functioning plates.

9.2.4 Bottom Liner Clay Evaluation

Approximately 1 year before a particular phase of Phases I-VI is entered, an in-situ, undisturbed, clay sample will be collected from beneath the phase proposed to be filled. The collected clay sample will be tested and the shear strengths computed.

The in-situ, undisturbed, clay sample will be tested either using a Direct Shear Test (ASTM D-3080) or Tri-Axial Test (ASTM D-2850) method to determine the clay strength. Three individual testing points—covering the existing, proposed filling, and proposed final build-out pressures—will be conducted. A representative phi and cohesion value will be determined to cover proposed filling and final build-out strengths.

Slope stability models, using both Sliding Block and Circular Failure Methods, will be conducted on the proposed filling and the final-build out conditions. If a Factor of Safety (FS) of 1.5 or greater is achieved for a particular filling scenario, that particular phase is deemed complete and no further testing for that phase is necessary. If a particular filling scenario does not achieve a FS of 1.5 or greater, recommendations for filling the phase will be provided.

Results of the Slope Stability Models, along with a report and recommendations signed and sealed by a professional engineer, will be submitted to FDEP for approval at least 6 months before filling begins in that phase.

9.3 CAPACITY EXPANSION AREA

9.3.1 Sampling Locations

Leachate from Sections 7, 8, and 9 of the CEA are sampled annually from Sample Port No.007 and No. 009 located at the sideslope riser at the Section 7 valve vault and the Section 9 sideslope riser as shown in Figure 3-2. The sampling ports for these locations are shown in the associated schematics provided in Appendix B. Note that there are multiple sampling ports—labeled 007, 007a, 009, 009a, and 009b—at the Section 7 and Section 9 pump stations. These names are given to help the operator identify each valve; however, only one leachate sample will be collected from Section 7 and Section 9 for leachate monitoring. The appropriate sampling port will be used by the sampling team. The applicable FDEP Standard Operating Procedures are used to collect and analyze leachate for the parameters listed in Rule 62-701.510(8)(c) and 8(d). The results of the leachate analyses are reviewed and submitted to FDEP.

9.3.2 Flow Measurement

Under standard practice, leachate from Sections 7 and 8 is collected from the sump risers in the southwest corner of Section 7 at PS-7 and leachate from Section 9 is collected from the south slide slope riser at PS-9. The leachate from Sections 7 and 8 is pumped to the MLPS and then via force main to the leachate storage tank (T1). The leachate force main from PS-9 is tied into the MLPS force main to the leachate storage tank (T1); therefore, leachate is pumped directly from Section 9 to the leachate storage tank (T1). The leachate quantities from Section 9 and the MLPS are recorded by separate flow meters before the flow combines in the force main to the leachate storage tank (T1). SWMD personnel record flow meter readings each day the SCLF is open, and report the quantities to FDEP. Sample leachate reporting forms are included in Appendix A.

9.3.3 Leachate Detection Action Leakage Rate

The action leakage rate (ALR) is defined in 40 CFR 265.302 as the maximum design flow rate that the leak detection system (LDS) can remove without the leachate head on the bottom of the liner exceeding 1 foot. In accordance with Rule 62-701.400(3)(c)2., FAC, the LDS should be designed to limit the head in the LDS to less than 1 inch of head or the thickness of the geocomposite.

The ALR for Sections 7 and 8 is 100 gal/acre/day. The total estimated footprint area of Sections 7 and 8 is approximately 19.3 acres. An initial response ALR of 1,930 gpd (19.3 acres x 100 gal/acre/day) will be used for the flow rate measured from Sections 7 and 8. The leachate flow from the Section 7 and 8 LDS system is measured by the flow meter from the LDS pump in the southeast corner sump of Section 7.

The ALR for Section 9 is 306 gal/acre/day. The total estimated footprint of Section 9 is 15.2 acres. An initial response ALR of 4,651 gpd will be used for the flow rate measured from Section 9. The leachate flow from the Section 9 LDS system is measured by the flow meter from the LDS submersible pump in the south end sump of Section 9.

Initial ALR actions will include the following:

- Check the pump and flow meter at the LDS sideslope riser for proper operation.
- Increase the pumping rate from the LDS to lower the stored levels of leachate. A pocket or slug of leachate may have been conveyed to the LDS riser. Upon further pumping, the levels or flow rates may be lowered below the ALR.
- Check the cover or capping systems over the Sections 7 and 8 or Section 9 to reduce infiltration into the LDS.
- Continue monitoring the flow rates out of the LDS, based on the recommendations above to determine further action, if needed.

If the ALR for Sections 7 and 8, 9, or 10 is exceeded, FDEP and EPC will be notified and a written assessment provided within 7 days. The written assessment shall demonstrate continued compliance with the double-liner requirements specified in Rule 62-701.400(3)(c)2, FAC, or a corrective action plan and schedule for implementation shall be submitted for FDEP approval.

9.4 MAIN LEACHATE PUMP STATION

Operation of the MLPS is described in Section 4.3.

9.5 LEACHATE TREATMENT AND RECLAMATION FACILITY

Sampling of the LTRF biosolids and effluent is described in Sections 9.1.2 and 9.1.3.

10.0 MAINTENANCE AND INSPECTION

10.1 LEACHATE COLLECTION SYSTEM SCHEDULE FOR MAINTENANCE AND INSPECTION

The leachate facilities are inspected daily. The leachate collection and removal systems will be water pressure cleaned or video inspected as needed during the duration of the permit. The leachate system components will also be maintained as needed. Routine maintenance for these components at the SCLF is performed following the schedule in Table 10-1.

10.2 STORAGE TANK MAINTENANCE AND INSPECTION

Storage tank maintenance and inspection procedures are discussed in Sections 5.0 and 7.0.

Table 10-1 Schedule for Maintenance

Component	Frequency	Performance Criteria	Corrective Action
Pump Station A (PS-A)	Pump: semi-annual. Sump: annual.	Pump is unable to maintain the required levels in the sump. Inspect for sediment in sump and adequacy of level controls by testing the automatic on/off float settings (see LMP Section 4.1.1 for PS-A float settings).	Pump inspected for damage or other problems and repaired or replaced as needed. Replacement pump will be installed within 24 hours. If PS-A cannot be repaired before pumping is required, the bypass line will be used to pump leachate from PS-B directly to the MLPS. For level controls (i.e., floats and control panel), if testing fails, remedial measures will be initiated immediately by contacting an electrician and the condition will be corrected within 48 hours. Excessive sediment in the sump will be removed within 2 weeks after inspection.
Pump Station B (PS-B)	Pump: semi-annual. 18-inch across pipes; at time of permit renewal.	Pump is unable to maintain the required levels in the sump. Inspect for adequacy of level controls. Manually pump sump until air enters the pump; at that time bubbler should read between 0 to 4 inches (see LMP Section 4.1.2 for PS-B sensor settings). If blockage of the 4-inch suction line or the bubbler pressure tube is suspected, remove the suction line for inspection.	Pump inspected for damage or other problems and repaired or replaced as needed. Replacement pump will be installed within 24 hours. For level controls failure, remedial measures will be initiated immediately by contacting DCC and the condition will be corrected within 48 hours. If needed, water pressure clean the interior of the 4-inch suction line. The 18-inch access pipes will be water pressure cleaned and video inspected as needed at time of permit renewal. If the 18-inch access pipes are not performing adequately, the SWMD will submit to FDEP and EPC an evaluation report with proposed remedy.
Main Leachate Pump Station (MLPS)	Pump: semi-annual. Sump: annual.	Pump is unable to maintain the required levels in the sump. Inspect for sediment in sump and adequacy of level controls by testing the automatic on/off float settings (see LMP Section 4.3 for MLPS float settings).	Pump inspected for damage or other problems and repaired or replaced as needed. Replacement pump will be installed within 24 hours. For level controls (i.e., floats and control panel), if testing fails remedial measures will be initiated immediately by contacting an electrician and the condition will be corrected within 48 hours. Excessive sediment in the sump will be removed within 2 weeks after inspection.

Table 10-1 Schedule for Maintenance

Component	Frequency	Performance Criteria	Corrective Action
Temporary Pump Station 6 (TPS-6)	Pump: semi-annual.	Pump is not operational. Inspect mechanical operation of pump. Manually check radio telemetry to ensure signal is reaching PS-B. Inspect for adequacy of level controls at PS-B. If blockage of the 3-inch suction line or the bubbler pressure tube is suspected, remove the suction line for inspection.	Pump inspected for damage or other problems and repaired or replaced as needed. Replacement pump will be installed within 48 hours. For level controls failure, remedial measures will be initiated immediately by contacting DCC and the condition will be corrected within 48 hours. If needed, water pressure clean the interior of the 3-inch suction line.
Storage Pond A	Surface: annual.	Empty, water pressure clean, and remove sediment. Visually inspect geomembrane for punctures, seam continuity, and defects around concrete sump.	Defects found will be repaired before reusing the pond.
Storage Pond B	Surface: annual Leak detection: weekly.	Empty, water pressure clean, and remove sediment. Visually inspect geomembrane for punctures, seam continuity, and defects around concrete sump. If leak detection rate is higher than 1,500 gpd, empty pond and inspect geomembrane for defects.	Defects found will be repaired before reusing the pond.
Storage Tanks	Exterior: weekly. Interior: whenever the tank is drained or every three years.	Inspect for adequacy of the cathodic protection system, leaks, corrosion, level controls, and maintenance deficiencies	Deficiencies that could result in failure of the tank or leaks will be corrected before reusing the tank. For level controls failure, remedial measures will be initiated immediately by contacting an electrician and the condition will be corrected within 48 hours.
Section 7 Pump	Semi-annual.	Pump is unable to maintain the required levels in the sump.	Pump inspected for damage or other problems and repaired or replaced as needed.
Section 9 Pump	Semi-annual.	Pump is unable to maintain the required levels in the sump.	Pump inspected for damage or other problems and repaired or replaced as needed.
Leachate collection and removal system	Twice during permit period	Water pressure clean or video inspect as needed at the existing cleanout locations.	If any component is not performing adequately or if a problem is shown by the video inspection, the SWMD will submit to FDEP and EPC an evaluation report with proposed remedy.

11.0 CONTINGENCY PLANS

FDEP and EPC will be notified of any equipment failure or event that disrupts the routine operation of the leachate management system. If the need for storing leachate in Pond B and/or the effluent/leachate storage tank (T6) arises as described in Sections 8.2.2 and 7.0, respectively, the SWMD will notify the FDEP and EPC. The person responsible for operation of the SCLF is Mr. Larry Ruiz, Landfill General Manager. Mr. Ruiz reports to Ms. Patricia V. Berry, Landfill Services Executive Manager for the SWMD. The SWMD will continue to evaluate the accuracy and applicability of this leachate management plan and will propose modifications as necessary to accomplish the objectives of the leachate management plan and continue the proper management of leachate at the SCLF. The following sections provide information regarding contingency operations for specific events which may occur at the SCLF.

11.1 REPLACEMENT OF FLOW METERS

If a flow meter ceases to operate, maintenance personnel will remove the instrument and insert a spare flow meter. If the spare flow meter is not available or not working, a pipe spool piece will be inserted in its place to allow the leachate to flow from the transfer pump. The instrument will be shipped to the service representative or manufacturer for repair or replacement. It is anticipated that the instrument could be removed from service for up to 3 months. This schedule includes the issue of a County purchase order, shipping, and maintenance time or new part delivery. During this time leachate production will be determined by recording the run-time meter on the transfer pumps. Leachate production of a specific pump can be estimated by taking the difference in the run-time readings and the rated pump test flow rate.

11.2 STORAGE TANK SECONDARY CONTAINMENT SPILL COUNTERMEASURES

As discussed in previous sections, the LTRF leachate tank system is contained within a concrete containment area. The containment area has two sumps for stormwater drainage with 6-inch-diameter HDPE pipes and gate valves that are normally closed. The effluent/leachate storage tank (T6) is contained within a high-density polyethylene (HDPE) liner. The containment area has one secondary sump for stormwater, effluent/leachate drainage. Before draining stormwater from the containment areas, the SWMD will visually inspect the stormwater and the tanks to ensure that no leaks have occurred. If no spills have occurred, the sump valves will be opened to drain the stormwater accumulated in the containment area. Under supervision by the Landfill General Manager (or qualified designee), the sump valves will be closed immediately after the stormwater is drained.

If a liquid spills from the LTRF tankage system, the following will be done:

1. Assess the cause of the spill and correct the condition promptly.
2. If the spill condition is at the leachate storage tank (T1) (575,000 gallons):
 - a. Shut down the MLPS and PS-9.

- b. Shut down the LTRF filtrate pumps. The LTRF may continue to operate.
 - c. With a sump pump, transfer the spilled liquid directly into tanker trucks for disposal at an off-site County wastewater treatment plant.
3. If the spill condition is at the LTRF process tank (T2) or the secondary stage clarifier tank (T3):
 - a. Shut down the LTRF.
 - b. The MLPS continues to operate.
 - c. With a sump pump, transfer the spilled liquid directly into tanker trucks for disposal at an off-site County wastewater treatment plant or into the leachate storage tank (T1).
4. If the spill condition is at the effluent storage tank (T5):
 - a. Shut down the LTRF.
 - b. The MLPS continues to operate.
 - c. With a sump pump, transfer the spilled liquid directly into tanker trucks for disposal at an off-site County wastewater treatment plant or into the leachate storage tank (T1).
5. If the spill condition is at the effluent/leachate storage tank (T6):
 - a. Shut down the LTRF effluent pumps. The LTRF may continue to operate.
 - b. With a sump pump, transfer the spilled liquid directly into tanker trucks for disposal at an off-site County wastewater treatment plant or into the leachate storage tank (T1). Refer to the instruction sheet for this condition in Appendix B.
6. If the spill condition is at the methanol tank (red tank at LTRF):
 - a. Shut down the LTRF.
 - b. Turn the LTRF electrical power off at the circuit breaker located outside the LTRF office on the south wall and evacuate staff.
 - c. Shut down the MLPS, PS-9, and PS-10.
 - d. Contact the current hazardous waste Contractor. The Contractor will manage the removal, off-site disposal, and containment area cleanup for methanol.
7. For spill conditions No. 2, 3, and 4 above, after the spilled liquid is removed, SWMD personnel will water pressure wash the containment area and the rinse water will be pumped directly into a tanker truck for disposal at an off-site County wastewater treatment plant.
8. If the leachate storage tank (T1) will remain out of service for more than 48 hours, the SWMD will resume leachate removal from the SCLF to either the effluent/leachate storage tank (T6) or Storage Pond B by following the procedures detailed in the instruction sheets provided in Appendix B. Leachate hauling off

site can resume from the effluent/leachate storage tank (T6) or Pond B by following the procedures included on the instruction sheets for these areas provided in Appendix B. If the effluent/leachate storage tank (T6) is unavailable for leachate or effluent storage, Pond B can also be used for back-up storage capacity. Leachate can be diverted back to the leachate storage tank (T1) via the MLPS or to the truck loading facility from Pond B. Leachate can also be diverted back to the leachate storage tank (T1) from the effluent/leachate storage tank (T6).

9. Within 24 hours of the spill occurrence, the SWMD will verbally notify FDEP and EPC. A written report with remedial measures taken will be submitted to FDEP and EPC within 7 days after the leachate spill incident.

APPENDIX A

LEACHATE REPORTING AND INSPECTION FORMS

**HILLSBOROUGH COUNTY SOUTHEAST COUNTY FACILITY
LEACHATE MANAGEMENT
DAILY FIELD DATA ENTRY FORM**

Disposal Area (check one)	Phases I-VI	Sections 7-8	Section 9
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Technician:	Start Time:
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Location	Date (prior day)	Date (today)	Total
Temporary Pump Station #6, gal			
Pump Station A, gal			
Pump Station B, inches ⁽¹⁾	9"+	9"+	
Section 9 Pump #1, gal			
Section 9 Pump #2, gal			
Section 9 LDS, gal ⁽²⁾			
Sections 7-8 Pump, gal			
Sections 7-8 LDS, gal ⁽³⁾			
Depth in Pond B, feet ⁽⁴⁾			
Pond B LDS, gal ⁽⁵⁾			
Pond B Spray, gal			
Depth in Pond A, feet ⁽⁶⁾			
Spray Irrigation Pump, gal ⁽⁷⁾			
Main LTP Leachate Bypass, gal			
Depth in Leachate Tank, feet ⁽⁸⁾			
Depth in Effluent Tank, feet ⁽⁸⁾			

Note: (1) If greater than 24 inches, contact Supervisor immediately.

(2) If rate is greater than 4,651 gallons per day, contact Supervisor immediately.

(3) If rate is greater than 1,930 gallons per day, contact Supervisor immediately.

(4) If greater than 4.4 feet, contact Supervisor immediately.

(5) If rate is greater than 1,500 gallons per day, contact Supervisor immediately.

(6) If greater than 3.7 feet, contact Supervisor immediately.

(7) If runoff observed, STOP irrigation and contact Supervisor immediately.

(8) If level is greater than 15 feet, contact Supervisor immediately.

Comments:

TABLE 1. LEACHATE WATER BALANCE REPORT FORM
OCTOBER
SOUTHEAST COUNTY LANDFILL, HILLSBOROUGH COUNTY, FLORIDA

I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	XXII	XXIII	XXIV
Day	Rainfall (in.)	Depth in Pond A (ft.)	Depth in Pond B (ft.)	Estimated Depth at PS-8 (in.)	Leachate Pumped to PS-8 from TP8-6 (gal.)	Leachate Pumped to MLPS from Phases I-V (gal.)	Leachate Pumped from Sections 7-8 LDS (gal.)	Leachate Pumped to MLPS from Sections 7-8 (gal.)	Leachate Pumped to LTRF from MPLS (gal.)	Leachate Pumped to LTRF from Section 9 (gal.)	Leachate Pumped from Section 9 LDS (gal.)	Leachate in 575K Tank (gal.)	Effluent in 575K Tank (gal.)	Leachate Treated at LTRF (gal.)	Total Leachate Hauled (gal.)	Leachate Dust Control (Sprayed) (gal.)	Pond A Storage (gal.)	Pond B Storage (gal.)	Effluent Sprayed Pond B (gal.)	Effluent Irrigation (gal.)	Effluent Dust Control (Sprayed) (gal.)	Total Effluent Hauled (gal.)	Total Evaporation (gal.)
1																							
2																							
3																							
4																							
5																							
6																							
7																							
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28																							
29																							
30																							
31																							
Total																							
Daily Average																							
Mo. Average																							

Notes:

1. NR = No Records, NA = Not Available.
2. Values in bold are estimated; values in *italics* are substitute for missing data and are based on averaged values.
3. Daily average is calculated by dividing the total by the actual days measured in the month.
4. Monthly average calculated by dividing the total by the number of days of the month.
5. Column II, Trace is less than 0.01 inches and is not included in total.
6. Columns III and IV, field measured at staff gauges.

7. Column V, PPS-8 sensor reading plus 9 inches.

8. Columns VIII & IX, Section 7-8 leak detection pumped into Section 7 leachate sump riser.

9. Column XIII & XIV, calculated from depth in 575,000 gal. tanks.

10. Columns VI-XII, XV-XVII, and XX-XXII, quantities from flow meters.

11. Column XXIV includes 80% of the daily values from Columns XVII, XXI, and XXII plus 5% of the daily values from column XX.

TABLE 2. FIELD DATA ENTRY FORM
OCTOBER 200X
SOUTHEAST COUNTY LANDFILL, HILLSBOROUGH COUNTY, FLORIDA

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
Day	Rainfall (in.)	Flow Meter TPS-6 (gal.)	Flow Meter Pump Sta. A (gal.)	Reading PS-B (in.)	Section 9 Pump 1 (gal.)	Section 9 Pump 2 (gal.)	Section 9 LDS (gal.)	Sections 7-8 Pump (gal.)	Sections 7-8 LDS (gal.)	Pond B Depth (ft.)	Pond B Effluent Sprayed (gal.)	Pond A Depth (ft.)	Effluent Spray Irrigation (gal.)	Depth in 575K Tank Leachate (ft.)	Depth in 575K Tank Effluent (ft.)	Leachate Treated at LTRF (gal.)	Leachate Hauled		Leachate Dust Control (Sprayed) (gal.)	Effluent Hauled		Effluent Dust Control (Sprayed) (gal.)
1																						
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						
13																						
14																						
15																						
16																						
17																						
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22																						
23																						
24																						
25																						
26																						
27																						
28																						
29																						
30																						
31																						
Totals																						

Notes:

- NR = No Records, NA = Not Available.
- Values in bold are estimated; values in *italic* are substitute for missing data and are based on averaged values
- Column IV includes quantities from leak detection system.
- Column B, trace is less than 0.01 inches.
- Columns C, D, F, G, H, I, J, L, N, Q, R-V and W are quantities from flow meters.
- Columns K and M measured from staff gages in each pond.

Type of Cover	Phases I-VI acres	Sections 7-8 acres	Section 9 acres
Open			
Intermediate			
Final			
Not Opened			

**TABLE 3. LEACHATE BALANCE SUMMARY
SOUTHEAST COUNTY LANDFILL
HILLSBOROUGH COUNTY, FLORIDA
YEAR-200X**

Month	Rainfall (in.)	Leachate Arriving at LTRF				Leachate Leaving LTRF			Effluent Disposal			Inflow / Outflow For LTRF		
		Leachate Hauled to LTRF from HHLF/TRLF (gal.)	Leachate from Section 9 Pumped to LTRF (gal.)	Leachate from Section 7-8 Pumped to LTRF (gal.)	Leachate from Phases I-VI Pumped to LTRF (gal.)	Total Leachate Hauled from LTRF (gal.)	Leachate Dust Control (Sprayed) (gal.)	Leachate Treated at LTRF (gal.)	Total Effluent Hauled (gal.)	Effluent Dust Control (Sprayed) (gal.)	Effluent Irrigation (gal.)	Total Inflow to LTRF (gal.)	Total Outflow from LTRF (gal.)	Change in Storage ³ (gal.)
January														
February														
March														
April														
May														
June														
July														
August														
September														
October														
November														
December														
YTD Total														

Note:

1. If the bypass at the effluent pond is ever used to pump effluent back to the LTRF, this table must be modified.
2. Leachate from the Hillsborough Heights and Taylor Road landfills is being hauled to the Faulkenburg Road Wastewater Treatment Facility.
3. Change in storage represents total inflow to LTRF minus total outflow from LTRF.

Leachate Treatment Facility Flows
Month

Day	Influent	Total	Effluent	Total
Last				
1		0		0
2		0		0
3		0		0
4		0		0
5		0		0
6		0		0
7		0		0
8		0		0
9		0		0
10		0		0
11		0		0
12		0		0
13		0		0
14		0		0
15		0		0
16		0		0
17		0		0
18		0		0
19		0		0
20		0		0
21		0		0
22		0		0
23		0		0
24		0		0
25		0		0
26		0		0
27		0		0
28		0		0
29		0		0
30		0		0
31		0		0

Southeast County Landfill Storage Tanks Inspection

Date: _____

Time: _____

			L E A C H A T E	P R O C E S S	2 C N L D A R S I T F A I G E R	M E T H A N O L	E F F L U E N # T 1	E F F L U E N # T 2
			T1	T2	T3	T4	T5	T6
TANKS	1	Any visible leaks? (Y/N)						
	2	Any dents or scratches evident?						
	3	Any exterior corrosion?						
	4	Level controls in good condition?						
	5	Current Cathodic Protection		N/A	N/A	N/A	N/A	
	6	Volume of Tank (gals)	575,000	220,000	19,000	1,700	3,700	575,000
	7	Material of Construction:	STEEL	STEEL	STEEL	STEEL	STEEL	STEEL

Comments: _____

PIPES	7	Any pipes bent or deformed?						
	8	Any joints or connections leak?						
	9	Are the pipes free of corrosion?						

Comments: _____

CONTAINMENT	10	Is containment area in good condition?						
	11	Is there non-stormwater in the secondary containment area?						
	12	If no, was the stormwater released?						

Comments: _____

Inspector's Signature: _____

LEACHATE HAULING / DISPOSAL REPORTING FORM

DATE: _____

DISPOSAL LOCATION: _____

Time loaded	PRODUCT E / L	LOAD NO.	GALLONS	METER READING START	METER READING END	pH	Time unloaded
TOTAL:							

Signature: _____
Driver

Signature: _____
Plant Operator

Comments _____

Was sample taken: Y N if yes, sample was taken by: _____ Date: _____ Time: _____
Initials

E = Effluent (Treated Leachate)

L = Leachate (Raw Leachate)

Note: Gallons are to be recorded and totaled daily.

White: Contractor

Yellow: Solid Waste

Pink or Goldenrod: Plant Operator

APPENDIX B

LEACHATE MANAGEMENT SYSTEM INSTRUCTION SHEETS AND SCHEMATICS

OPERATION PROCEDURE FOR PUMP STATIONS A & B (PS-A and PS-B)

Pump Station B (PS-B) removes leachate from the landfill Phases I-VI and discharges into the Pump Station A sump (PS-A).

The standard practice valve settings are as follows:

1. Valves 1, 3, 4, 5, and 6 are OPEN.
2. Valves 2, 7, 8, 9, and 10 are CLOSED.
3. Standard practice is for Pump No. 1 to be in operation.

All of the following conditions begin from the standard practice valve settings shown above.

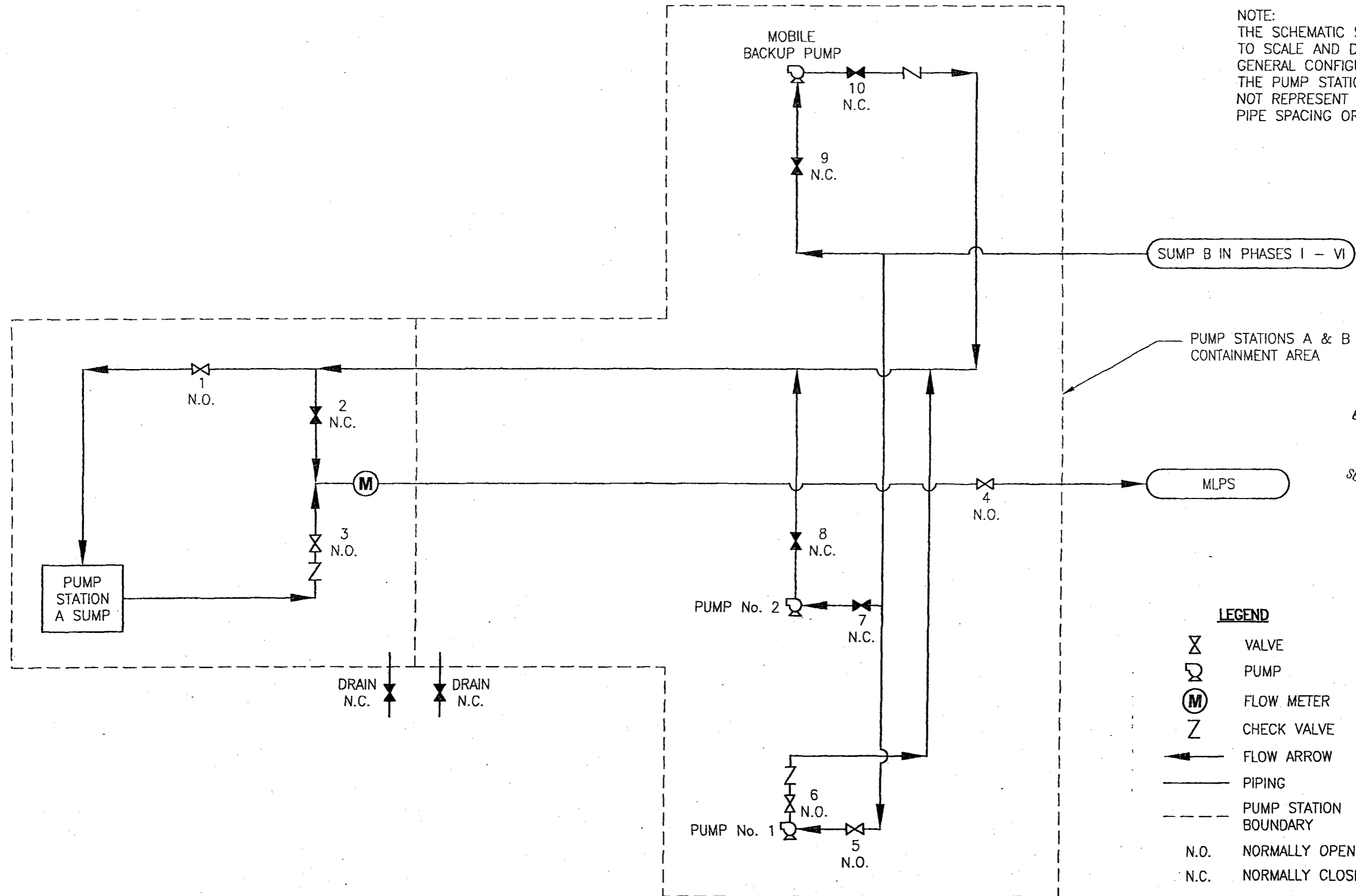
To use Pump No. 2 go to Step 4 or to use the Backup Pump go to Step 6.

4. CLOSE Valves 5 and 6, then ensure Valves 9 and 10 are CLOSED.
5. OPEN Valves 7 and 8. (DO NOT PROCEED TO STEP 6)
6. CLOSE Valves 5 and 6, then ensure Valves 7 and 8 are CLOSED.
7. OPEN Valves 9 and 10.

If PS-A needs to be repaired or maintained, PS-B can bypass PS-A and discharge directly into the Main Leachate Pump Station by performing the following:

1. CLOSE Valves 1 and 3.
2. OPEN Valve 2. Ensure Valve 4 is OPEN.

NOTE:
THE SCHEMATIC SHOWN IS NOT
TO SCALE AND DEPICTS THE
GENERAL CONFIGURATION OF
THE PUMP STATION AND DOES
NOT REPRESENT THE ACTUAL
PIPE SPACING OR LAYOUT.



PUMP STATIONS A & B
CONTAINMENT AREA

MLPS

FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION
MAY 27 2011
SOUTHWEST DISTRICT
TAMPA

PUMP STATIONS A & B SCHEMATIC

OPERATION PROCEDURE FOR TEMPORARY PUMP STATION 6 (TPS-6)

Temporary Pump Station 6 (TPS-6) operates using the primary Mobile Pump 1 (Pump 1). A mobile backup pump (backup pump) is in place to be used as necessary. TPS-6 pumps from Cleanout 4-1 to Sump B in Phases I-VI. Under standard practice Pump 1 is on/off running in tandem with Pump Station B (i.e., via radio telemetry, TPS-6 will start and stop at the same time as PS-B).

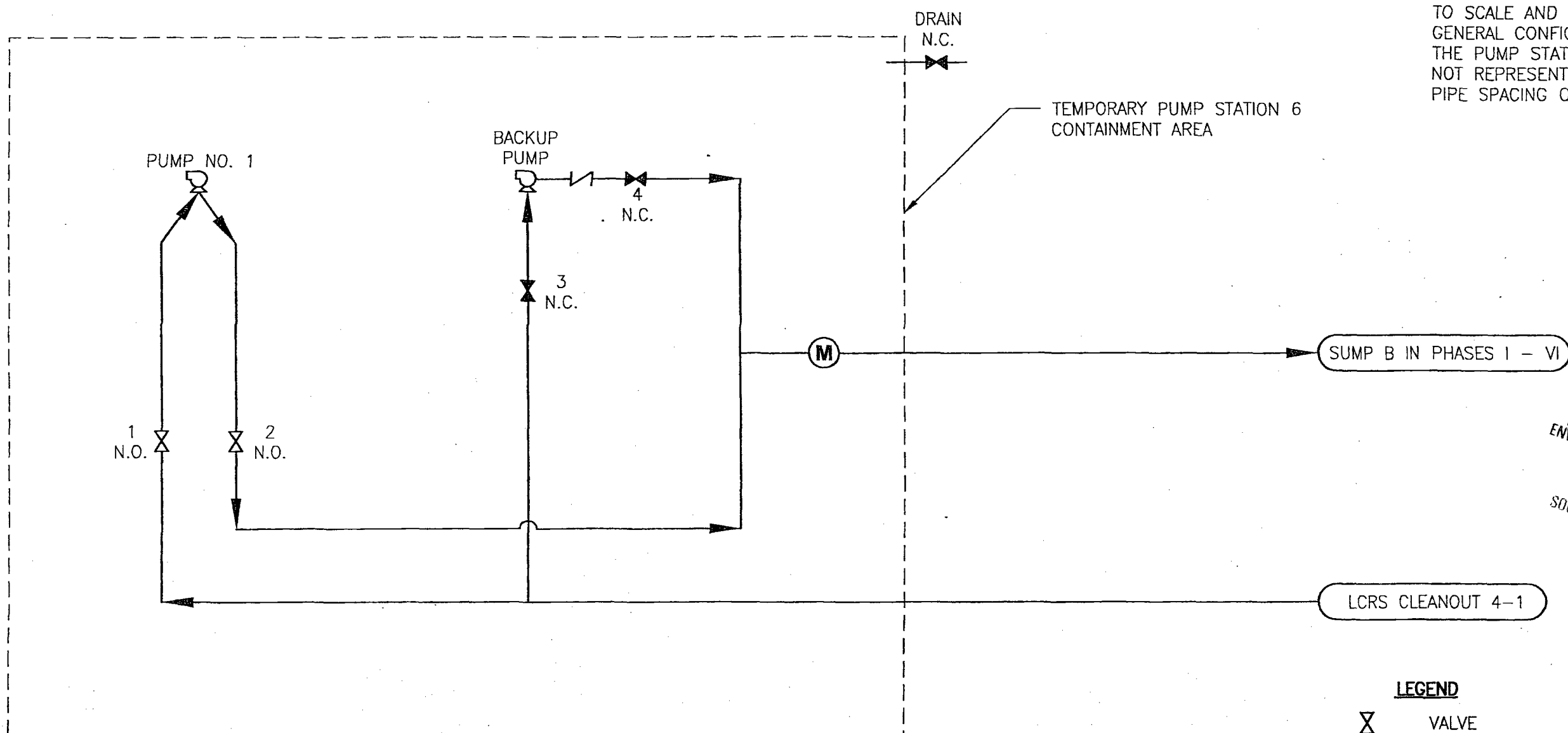
The standard practice valve settings are as follows:

1. Valves 1 and 2 are OPEN.
2. Valves 3 and 4 are CLOSED.

The following condition begins from the standard practice valve settings shown above.

If Pump 1 needs to be repaired or maintained, the mobile backup pump may be used to continue removing leachate from Phase IV. Perform the following when Pump 1 is off and the backup pump is running manually. County personnel will manually start and stop the pump at 7:30 A.M. and 4:30 P.M., respectively.

1. CLOSE Valves 1 and 2.
2. OPEN Valves 3 and 4.



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FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION
MAY 27 2011
SOUTHWEST DISTRICT
TAMPA

LEGEND

- ⋈ VALVE
- ⋈ PUMP
- (M) FLOW METER
- Z CHECK VALVE
- FLOW ARROW
- PIPING
- - - PUMP STATION BOUNDARY
- N.O. NORMALLY OPEN (WHITE)
- N.C. NORMALLY CLOSED (BLACK)

TEMPORARY PUMP STATION 6
SCHEMATIC

OPERATION PROCEDURE FOR SECTION 7 PUMP STATION (PS-7)

Section 7 Pump Station pumps leachate from Sections 7 and 8 to the MLPS.

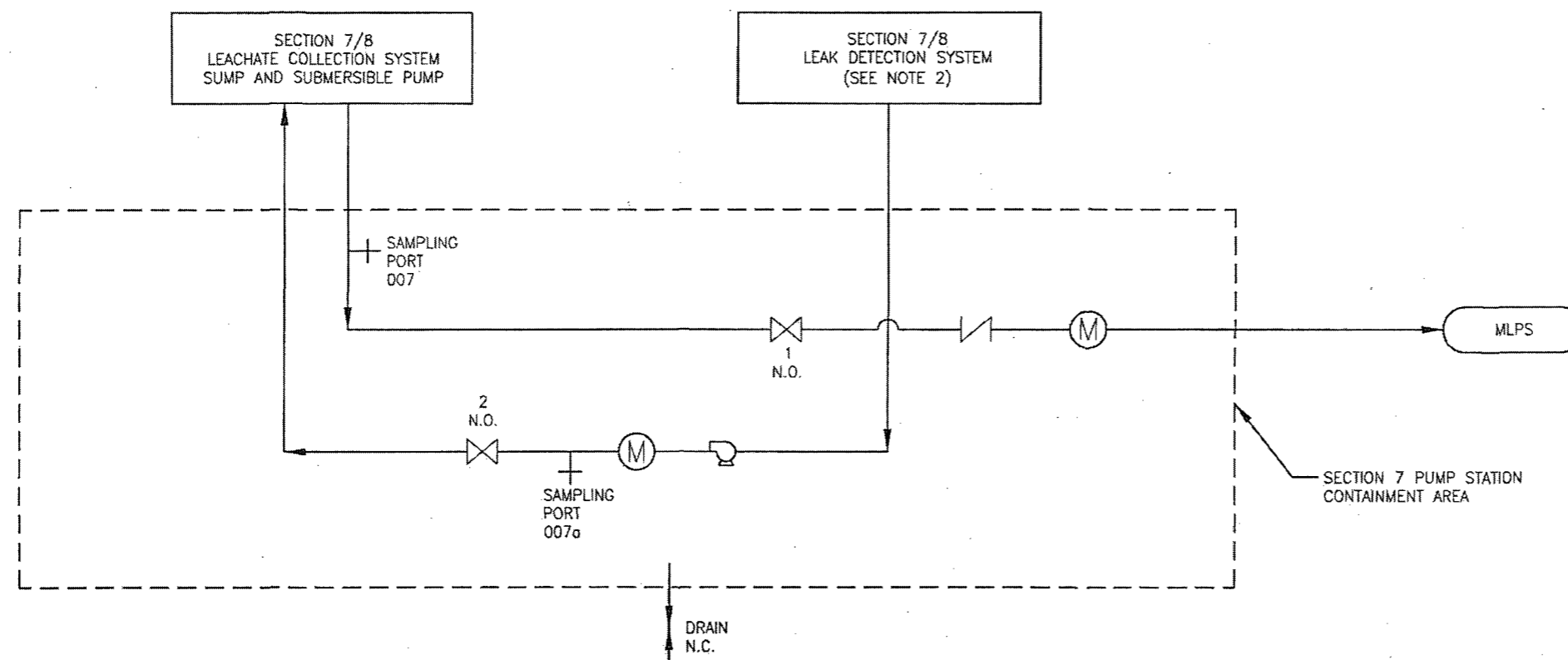
The standard practice valve settings are as follows:

1. Valves 1 and 2 are OPEN.

If Section 7 needs to be isolated from the MLPS, perform the following:

1. CLOSE Valve 1.

Sections 7 and 8 Leak Detection System is currently setup to pump directly into PS-7 Leachate Collection Sump. If the Action Leakage Rate of 1,930 gpd (Section 9.3.3 of the LMP) is exceeded, the Leak Detection System Discharge will be retrofitted to divert the discharge directly into the forcemain heading to the Main Leachate Pump Station.










NOTES:

1. THE SCHEMATIC SHOWN IS NOT TO SCALE AND DEPICTS THE GENERAL CONFIGURATION OF THE PUMP STATION AND DOES NOT REPRESENT THE ACTUAL PIPE SPACING OR LAYOUT.
2. SECTIONS 7 AND 8 LEAK DETECTION SYSTEM IS CURRENTLY SETUP TO PUMP DIRECTLY INTO PS-7 LEACHATE COLLECTION SUMP. IF THE ACTION LEAKAGE RATE OF 1,930 GPD (SECTION 9.3.3 OF LMP) IS EXCEEDED, THE LEAK DETECTION SYSTEM DISCHARGE WILL BE RETROFITTED TO DIVERT THE DISCHARGE DIRECTLY INTO THE FORCEMAIN HEADING TO THE MAIN LEACHATE PUMP STATION.

FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION
MAY 27 2011
SOUTHWEST DISTRICT
TAMPA

LEGEND

-  VALVE
-  PUMP
-  FLOW METER
-  CHECK VALVE
-  FLOW ARROW
-  PIPING
-  PUMP STATION BOUNDARY
- N.O. NORMALLY OPEN (WHITE)
- N.C. NORMALLY CLOSED (BLACK)

SECTION 7 PUMP STATION SCHEMATIC

REVISED APRIL 2011

OPERATION PROCEDURE FOR SECTION 9 PUMP STATION (PS-9)

Section 9 Pump Station pumps leachate from Section 9 to the leachate storage tank (T1) at the Leachate Treatment and Reclamation Facility.

The standard practice valve settings are as follows:

1. Valves 1, 2, 3, and 4 are OPEN.

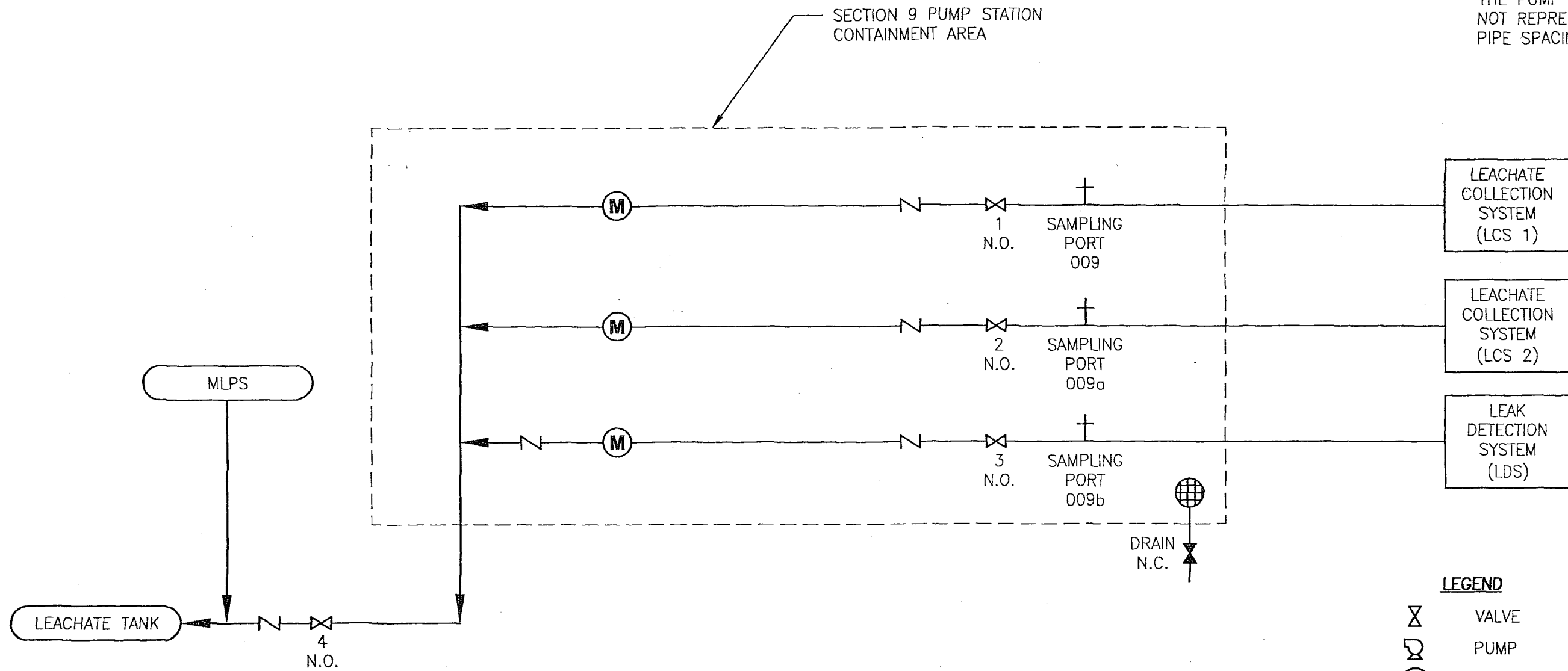
If the Section 9 Pump Station needs to be isolated from the Main Leachate Pump Station, perform the following from the standard practice valve condition above:

1. CLOSE Valve 4.

If the LCS 1, LCS 2, or LDS pumps require repair, they may be isolated by closing Valves 1, 2, or 3, respectively.

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THE PUMP STATION AND DOES
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PIPE SPACING OR LAYOUT.

FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION
MAY 27 2011
SOUTHWEST DISTRICT
TAMPA



LEGEND

- ⋈ VALVE
- ⊞ PUMP
- (M) FLOW METER
- Z CHECK VALVE
- FLOW ARROW
- PIPING
- - - PUMP STATION BOUNDARY
- N.O. NORMALLY OPEN (WHITE)
- N.C. NORMALLY CLOSED (BLACK)

**SECTION 9 PUMP STATION
SCHEMATIC**

OPERATION PROCEDURE FOR MAIN LEACHATE PUMP STATION (MLPS)

The Main Leachate Pump Station (MLPS) pumps leachate from Sections 7 and 8, Pump Station A (PS-A), and the Truck Loading Area to the leachate storage tank (T1) at the Leachate Treatment and Reclamation Facility (LTRF).

The standard practice valve settings are as follows:

1. Valves 2, 5, 6, 7, 8, 9, 12, 16, 21, and 22 are CLOSED
2. Valves 1, 3, 4, 10, 11, 13, 14, 15, 17, 18, 19, and 20 are OPEN

All of the following conditions begin from the standard practice valve settings shown above.

A. To spray irrigate effluent from Pond A, perform the following:

1. OPEN Valves 10, 13, 14, and 15 (set under standard practice).
2. CLOSE Valves 7, 8, 9, and 16 (set under standard practice).
3. Record the flow meter readings at the irrigation pump.
4. Start/Stop the irrigation pump manually.
5. Record the flow meter reading at the irrigation pump.

B. To haul effluent by truck from Pond A, perform the following:

1. OPEN Valve 9 and ensure Valves 13, 14, and 15 are OPEN.
2. CLOSE Valve 10 and ensure Valves 7, 8, and 16 are CLOSED.
3. Record the flow meter readings at the truck loading arm.
4. Start/Stop the irrigation pump.
5. Record the flow meter readings at the truck loading arm.

C. If the effluent in Pond A needs to be re-circulated to stabilize the pH, perform the following:

1. CLOSE Valve 13.
2. OPEN Valve 16.

D. If Pond B is to be used for storage of effluent from the LTRF and spray evaporation, perform the following:

1. OPEN Valves 1, 3, and 4 (set under standard practice).
2. CLOSE Valves 2, 5, 6, 7, and 22 (set under standard practice).
3. If Pond B reaches its maximum level of 4.4 feet, CLOSE Valve 3. Increase spray irrigation, pond spray evaporation, and hauling as needed.
4. When the effluent in Pond B reaches 3.0 feet deep, as noted on the staff gauge in the pond, the pump for the spray evaporation system may be activated. Manually operate the spray evaporation system and monitor for changing weather conditions (i.e. wind speed greater than 10 mph). Over spraying outside the limits of geomembrane is not allowed.

E. If Pond B is to be used for leachate storage, then perform the following:

1. Notify FDEP and Hillsborough County EPC 24 hours before continuing operation. The notification must include reasons for and the anticipated duration of leachate storage in Pond B.

To empty Pond B of effluent before beginning leachate storage perform the following:

2. CLOSE Valves 1, 3, and 4.
3. OPEN Valves 5 and 6,
4. Ensure Valve 7 is CLOSED,
5. Start evaporation pump at Pond B to pump effluent from Pond B to Pond A.
6. When Pond B is empty, shut of evaporation pump.
7. To fill Pond B with leachate from LTRF go to Step 8 or to fill Pond B with leachate from Pump Station A and Section 7/8 go to Step 11:

To fill Pond B from LTRF perform the following:

8. CLOSE Valves 1, 3, 4, 5 and 6.
9. OPEN Valve 2.
10. When Pond B is full, CLOSE Valve 2. Do not proceed to Step 11.

To fill Pond B from Pump Station A and Section 7/8:

11. CLOSE Valve 11.

12. OPEN Valve 12.

13. When Pond B is full, CLOSE VALVE 12 and OPEN Valve 11.

F. To resume effluent storage and spray evaporation in Pond B after leachate storage, perform the following:

1. CLOSE Valves 10 and 13 and ensure Valve 6 is CLOSED.

2. OPEN Valves 5 and 7 to begin draining Pond B of leachate.

3. To pump leachate to the truck loading station next to Ponds A and B go to Step 4 or to pump to the leachate storage tank (T1) at the LTRF via the MLPS go to Step 7, if the evaporation pump at Pond B is not operational go to Step 10:

To pump leachate to the truck loading station, perform the following:

4. OPEN Valve 9.

5. CLOSE Valve 8.

6. Start the evaporation pump at Pond B and Go to Step 12.

To pump to the leachate storage tank (T1) and LTRF via the MLPS, perform the following:

7. OPEN Valve 8.

8. CLOSE Valve 9.

9. Start the evaporation pump at Pond B. Go to Step 12.

If the evaporation pump is not operational, Pond B can be emptied by connecting a portable pump to Valve 22 and perform the following:

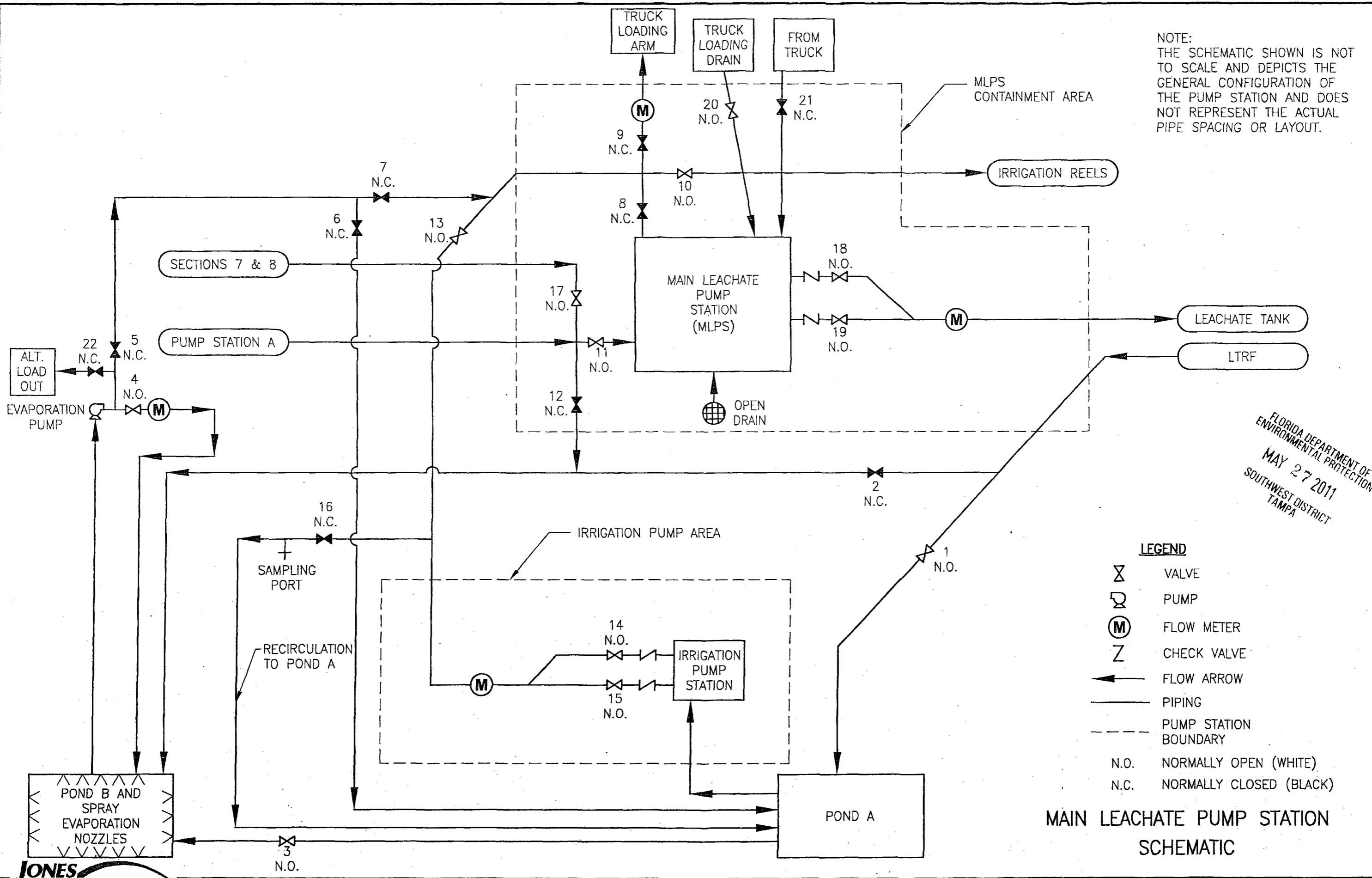
10. CLOSE Valves 4 and 5

11. OPEN Valve 22, Go to Step 12.

12. When Pond B is emptied, rinse the leachate off the geomembrane using effluent or clean water and pump out the rinse water to the truck loading station to haul off

site as leachate. Pond B must be cleaned of leachate before effluent storage resumes. If leachate was pumped from the LTRF, go to Step 13.

13. OPEN Valve 2 and pump out the first 18,000 gallons of effluent to the truck loading arm for off-site disposal as leachate.
14. When all leachate is removed and Pond B is clean, shut off the evaporation pump, and CLOSE Valves 2, 5, 6, and 7.
15. OPEN Valves 1, 3, 4, 10, and 13.



NOTE:
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TO SCALE AND DEPICTS THE
GENERAL CONFIGURATION OF
THE PUMP STATION AND DOES
NOT REPRESENT THE ACTUAL
PIPE SPACING OR LAYOUT.

- LEGEND**
- ⋈ VALVE
 - ⊕ PUMP
 - (M) FLOW METER
 - Z CHECK VALVE
 - FLOW ARROW
 - PIPING
 - - - PUMP STATION BOUNDARY
 - N.O. NORMALLY OPEN (WHITE)
 - N.C. NORMALLY CLOSED (BLACK)

FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION
MAY 27 2011
SOUTHWEST DISTRICT
TAMPA

MAIN LEACHATE PUMP STATION
SCHEMATIC

OPERATION PROCEDURE
FOR EFFLUENT/LEACHATE STORAGE TANK (T6)

The standard practice operation for the effluent/leachate storage tank (T6) is to receive pumped effluent from the Leachate Treatment and Reclamation Facility (LTRF).

The standard practice valve settings are as follows:

1. Valves 4, 11, 12, 15, 20, 20A, 20B, 21, 22, 24, and 28 are CLOSED
2. Valves 5, 6, 13, 14, 16, 17, 18, 19, 23, 25, 26, 27, 29, and 30 are OPEN

Please note that Valves 1, 2, 3, 7, 8, 9, and 10 are not shown on the attached schematic since they are internal to the operation of the LTRF.

All of the following conditions begin from the standard practice valve settings shown above.

The standard practice for operating the booster pumps is to pump effluent from the effluent/leachate storage tank (T6) to Ponds A and B. Under this standard practice use the following settings:

3. Ensure Valves 18, 19, 24, 25, 26, and 27 are OPEN. Valve 24 is electronically actuated (see Note 1 below).
4. Ensure Valves 21, 22, and 28 are CLOSED. Valve 22 is electronically actuated (see Note 1 below).

If effluent is pumped to the truck loading arm from the effluent/leachate storage tank (T6), then perform the following:

5. Ensure Valve 24 is CLOSED. Valve 24 is electronically actuated (see Note 1 below).
6. OPEN Valve 22 and ensure Valve 23 is OPEN. Valve 22 is electronically actuated (see Note 1 below).

If effluent from the LTRF is pumped directly to Ponds A and B, perform the following:

7. CLOSE Valve 13 and ensure Valve 12 is CLOSED.
8. OPEN Valve 11.

If leachate from the Main Leachate Pump Station (MLPS) must be stored in the effluent/leachate storage tank (T6) while the leachate storage tank (T1) is repaired or inspected, then perform the following:

9. CLOSE Valve 14.
10. OPEN Valve 15.
11. Determine if effluent is to continue to be pumped to the Effluent/Leachate Storage or diverted to Ponds A and B. If pumping effluent to Pond A and B, then go to instructions above for that condition.

If leachate stored in the effluent/leachate storage tank (T6) is to be pumped back to the leachate storage tank (T1) after repairs or inspection, perform the following:

12. OPEN Valves 14 (previously closed in Step 9) and 28, then ensure that Valves 18, 19, 24, 25, and 26 are OPEN. Valve 24 is electronically actuated (see Note 1 below).
13. CLOSE Valves 15 (previously opened in Step 10) and 27, then ensure that Valves 21 and 22 are CLOSED. Valve 22 is electronically actuated (see Note 1 below).

Note 1: Valves 22 and 24 are electronically actuated and controlled by a switch on the Booster Pump control panel at the truck loading station. When the switch is in the "To Ponds" position, Valves 22 and 24 are set in the closed position. Valve 24 will only open in the condition when one or both of the booster pumps are activated. Until the booster pumps are activated Valve 24 will remain closed. When the switch is in the "To Truck" position Valve 22 is set in the open position, Valve 24 is set to the closed position, and the booster pumps are deactivated.

In addition, after the pumps are signaled off, the pumps will run for an additional 30 seconds to allow the system to flush any sulfuric acid from the piping. The electronically actuated valves (22 and 24) are set to close after 60 seconds.

The electronically actuated valves can also be operated using the manual wheel located on the actuator assembly.

The standard practice to remove stormwater from the effluent/leachate storage tank (T6) is as follows:

1. Inspect the tank and piping to ensure there are no leaks. If there are no visible leaks proceed to Step 2. If a leak is observed proceed to Steps 5.
2. If no leaks were observed, OPEN Valve 20 and ensure that Valves 20A and 20B are CLOSED.

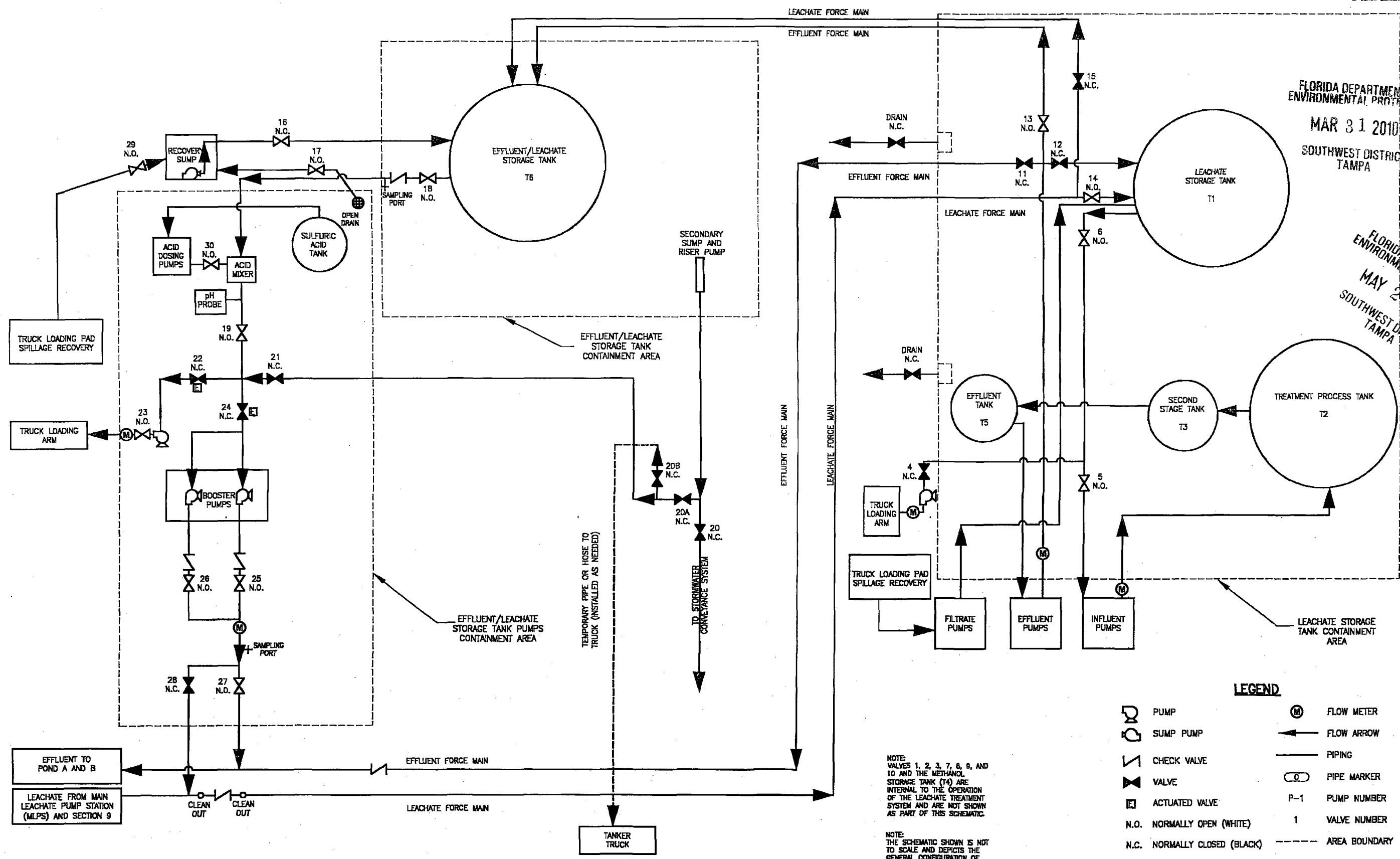
3. Start the secondary pump.
4. When stormwater is pumped out of the secondary containment, Stop the secondary pump and CLOSE Valve 20.
5. If a leak was observed, contact supervisor immediately
6. Go to Step 7 to pump liquid to either the leachate storage tank (T1), Ponds A and B, or the truck loading arm. Go to Step 13 to pump liquid via hose to a tanker truck.
7. To pump from the containment area using the secondary pump, OPEN Valves 20A and 21.
8. Ensure Valves 20 and 20B are CLOSED.
9. CLOSE Valve 19 and refer to Step 12 to pump to the leachate storage tank (T1) at the LTRF, to Step 3 to pump to Ponds A and B, or to Step 5 to pump to the truck loading arm for the appropriate valve settings depending on where liquid is to be pumped.
10. Start the secondary pump and the booster pump or truck loading pump.
11. When containment area is pumped down, stop secondary pump and booster pump and OPEN Valve 19.
12. CLOSE Valves 20A and 21. DO NOT PROCEED TO STEP 13.
13. The containment area may also be pumped to a tanker truck on the adjacent road by performing the following:
14. Ensure Valves 20 and 21 are CLOSED.
15. OPEN Valves 20A and 20B.
16. Connect a temporary hose to the camlock connector and run hose to tanker truck.
17. Start secondary pump.
18. When containment area is pumped down, stop secondary pump, and CLOSE Valves 20A and 20B.

Plotted: 3/11/10 5:55pm JEdmunds

Leachate Storage Tank.dwg

LAST SAVED: 12:18 PM JEdmunds

© Jones Edmunds 2234



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
MAR 31 2010
SOUTHWEST DISTRICT TAMPA

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
MAY 27 2011
SOUTHWEST DISTRICT TAMPA

LEACHATE AND EFFLUENT/LEACHATE STORAGE TANK SCHEMATIC

APPENDIX C

SETTLEMENT DATA FORM

TABLE 1. APPROXIMATE TOP OF CLAY ELEVATIONS
PUMP STATION B SUMP
SOUTHEAST COUNTY LANDFILL

DATE	NW	NE	SE	SW
March 3, 1999	115.65	115.63	115.66	115.62
May 4, 1999	115.63	115.59	115.63	115.58
July 28, 1999	115.49	115.46	115.49	115.45
September 17, 1999 ²	115.59	115.55	115.65	115.56
November 11, 1999	115.44	115.40	115.50	115.31
January 3, 2000	115.31	115.26	115.36	115.17
March 30, 2000	115.39	115.35	115.45	115.26
July 5, 2000 ³	114.85	114.82	114.90	114.71
October 5, 2000	114.83	114.78	114.87	114.67
April 6, 2001	114.35	115.33	114.33	114.29
April 18, 2001 ²	114.15	114.59	114.17	114.07
August 8, 2001	114.34	115.31	114.32	114.28
September 19, 2001 ²	113.78	114.20	113.79	113.69
December 18, 2001	113.63	114.02	113.62	113.52
March 29, 2002	113.22	113.58	113.21	113.10
August 15, 2002 ²	112.67	113.04	112.64	112.58
February 1, 2003	112.08	112.46	112.04	111.99
May 1, 2003	111.78	112.19	111.80	111.71
September 2, 2003	111.56	111.92	111.54	111.46
December 1, 2003	111.44	111.80	111.42	111.34
April 1, 2004	111.30	111.66	111.29	111.20
July 31, 2004	111.04	111.41	111.04	110.94
December 1, 2004	111.09	111.45	111.10	111.00
March 1, 2005	111.01	111.38	111.02	110.92
June 2, 2005	110.93	111.30	110.95	110.85
October 1, 2005	110.65	111.01	110.65	110.55
February 1, 2006	110.67	111.03	110.69	110.58
June 6, 2006	110.60	110.96	110.63	110.52
October 2, 2006	110.53	110.91	110.59	110.47
February 1, 2007	110.40	110.76	110.43	110.32
June 1, 2007	110.37	110.74	110.41	110.29
September 1, 2007 ²	110.37	110.74	110.41	110.29
January 2, 2008	110.31	110.72	110.39	110.27
April 1, 2008	110.21	110.63	110.29	110.17
May 8, 2008 ²	110.33	110.69	110.37	110.25
July 1, 2008	110.13	110.50	110.19	110.06
October 1, 2008	110.01	110.41	110.10	109.97
January 2, 2009	109.84	110.25	109.94	109.82
April 1, 2009	109.79	110.20	109.90	109.77
July 2, 2009	109.71	110.12	109.82	109.69
October 8, 2009	109.68	110.10	109.79	109.67
January 4, 2010	109.63	110.04	109.74	109.61
April 1, 2010	109.59	110.00	109.70	109.58
July 1, 2010	109.56	109.97	109.68	109.55
October 4, 2010	109.50	109.91	109.62	109.49
December 20, 2010	109.51	109.92	109.63	109.50
January 3, 2011	109.49	109.90	109.61	109.47
April 1, 2011	109.46	109.87	109.58	109.45

(seachute/ea/ClayTop.xls; updated 4/13/11) by ler

Notes:

1. Vertical Datum based on feet NGVD 1929.
2. WMI extended the rods of the settling plates.
3. Benchmarks used in March 30, 2000 survey were found to have settled; elevations shown for July 5, 2000 were tied into new benchmarks.