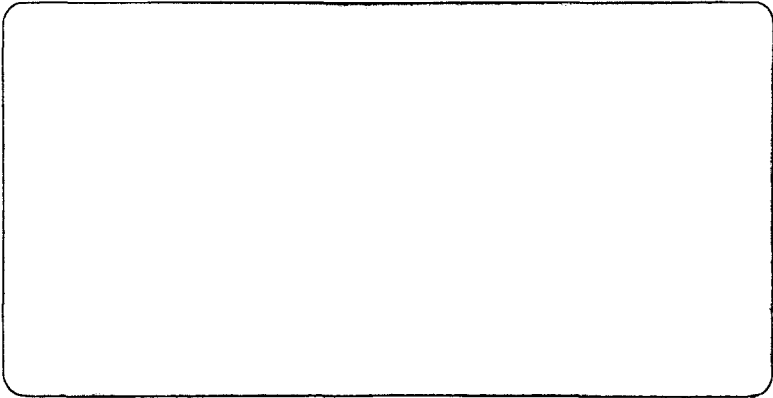


**SCS ENGINEERS**





**MINOR PERMIT MODIFICATION  
FOR THE LANDFILL GAS RECOVERY SYSTEM  
TOMOKA FARMS ROAD LANDFILL  
VOLUSIA COUNTY, FLORIDA**

Submitted to:

**FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION  
Central District  
3319 Maguire Boulevard, Suite 232  
Orlando, Florida 32803-3767**

Submitted by:

**SCS ENGINEERS  
3012 US Highway 301 North, Suite 700  
Tampa, Florida 33619  
(813)621-0080**

For:

**NEO TOMOKA FARMS LIMITED LIABILITY COMPANY  
1221 Nicollet Mall, Suite 700  
Minneapolis, Minnesota 55403-2445**

**June 19, 1996  
File No. 0995051.01**



## SCS ENGINEERS

June 24, 1996  
File No. 0995051.01

Florida Department of Environmental Protection  
Central District  
3319 Maguire Boulevard, Suite 232  
Orlando, Florida 32803-3767



Subject: Submittal of Minor Permit Modification for the Landfill Gas Recovery System  
at the Tomoka Farms Road Landfill, Volusia County, Florida

To whom it concerns:

SCS Engineers (SCS), on behalf of NEO Tomoka Farms Limited Liability Company, is pleased to submit this minor permit modification for the landfill gas recovery system to be installed at the subject facility. Items incorporated into this submittal include:

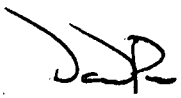
- Six copies of the minor permit modification application and report.
- Six copies of the design drawings, signed and sealed by a registered engineer.
- A check for \$250 to the Florida Department of Environmental Protection.

All correspondence regarding the minor permit modification, including any requests for additional information, should be sent to:

David E. Poe, P.E.  
SCS Engineers  
3012 US Highway 301 North, Suite 700  
Tampa, Florida 33637  
(813) 621-0080

Please feel free to contact David Poe, P.E. of SCS if you have any questions or require additional information.

Very truly yours,

  
David E. Poe, P.E.  
Project Manager  
SCS ENGINEERS

  
Steven M. Hamilton, REP  
Vice President  
SCS ENGINEERS

SMH/DEP:dp  
enclosures

cc: Ben Heuser, NEO

MARY JEAN YON, DEP-TALLAHASSEE  
R. LOTT

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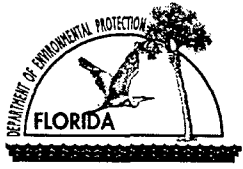
## CONTENTS

### Section

- I MINOR PERMIT MODIFICATION APPLICATION
- II LANDFILL GAS RECOVERY SYSTEM DESIGN REPORT



SECTION I



DEP Form #	62.701.900(1)
Form Title	Solid Waste Management Facility Permit
Effective Date	May 19, 1994
DEP Application No.	_____ (Filled by DEP)

**Florida Department of Environmental Protection**  
Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, FL 32399-2400

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SOLID WASTE MANAGEMENT FACILITY PERMIT  
APPLICATION INSTRUCTIONS AND FORMS

## INSTRUCTIONS TO APPLY FOR A SOLID WASTE MANAGEMENT PERMIT

### I. GENERAL

Solid Waste Management Facilities shall be permitted pursuant to Section 403.707, Florida Statutes, (FS) and in accordance with Florida Administrative Code (FAC) Chapter 62-701. A minimum of six copies of the application shall be submitted to the Department District Office having jurisdiction over the facility. The appropriate fee in accordance with Chapter 62-4, FAC, and Rule 62-701.320(5) (c), FAC, shall be submitted with the application by check made payable to the Department of Environmental Protection (DEP).

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

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

- A. Landfills and Ash Monofills - Submit parts A, B, D through R, and T
- B. Asbestos Monofills - Submit parts A, B, D, E, F, I, K, M through Q, and T
- C. Industrial Solid Waste Facilities - Submit parts A, B, D through Q, and T
- D. Volume Reduction Facilities - Submit parts A, C, D, S, and T
- E. Materials Recovery Facilities - Submit parts A, C, D, S, and T

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

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

### III. Application Parts Required for Closure Permits

- A. Landfills and Ash Monofills - Submit parts A, B, N through R, and T
- B. Asbestos Monofills - Submit parts A, B, M through Q, and T
- C. Industrial Solid Waste Facilities - Submit parts A, B, N through Q, and T
- D. Volume Reduction Facilities - Submit parts A, C, S, and T
- E. Materials Recovery Facilities - Submit parts A, C, S, and T

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

### IV. Permit Renewals

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



**V. Application Codes**

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

**VI. LISTING OF APPLICATION PARTS**

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

STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

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

Please Type or Print

**A. GENERAL INFORMATION**

1. Type of facility:

Disposal ☒ [X]

Class I Landfill ☒ [X]

Class II Landfill ☐ [ ]

Class III Landfill ☐ [ ]

Other ☐ [ ]

Ash Monofill ☐ [ ]

Asbestos Monofill ☐ [ ]

Industrial Solid Waste ☐ [ ]

Volume Reduction ☐ [ ]

Incinerator ☐ [ ]

Composting ☐ [ ]

Materials Recovery ☐ [ ]

Other ☐ [ ]

Pulverizer/Shredder ☐ [ ]

Compactor/Baling Plant ☐ [ ]

Energy Recovery ☐ [ ]

2. Type of application:

Construction ☐ [ ]

Operation ☐ [ ]

Construction/Operation ☒ [X]

Closure ☐ [ ]

3. Classification of application:

New ☐ [ ]

Renewal ☐ [ ]

Substantial Modification ☐ [ ]

Minor Modification ☒ [X]

4. Facility name: Tomoka Farms Road Landfill

5. DEP ID number: \_\_\_\_\_ County: Volusia

6. Facility location (main entrance): 1990 Tomoka Farms Road

7. Location coordinates:

Section: 4 Township: 16S Range: 32E

UTMs: Zone \_\_\_\_\_ km E \_\_\_\_\_ km N

Latitude: 29 ° 08 ' 10 " Longitude: 81 ° 06 ' 06 "

8. Applicant name (operating authority): Volusia County Department of Solid Waste Services

Mailing address: 3151 S.R. 44 Deland FL 32724  
Street or P.O. Box City State Zip

Contact person: James L. Griffin Telephone: (904) 943-7889

Title: Director

9. Authorized agent/Consultant: SCS Engineers  
Mailing address: 3012 U.S. Highway 301 North, Suite 700 Tampa Florida 33619  
Street or P.O. Box City State Zip  
Contact person: Mr. David Poe Telephone: (813) 621-0080  
Title: Project Manager
10. Landowner (if different than applicant): Same  
Mailing address: \_\_\_\_\_  
Street or P.O. Box City State Zip  
Contact person: \_\_\_\_\_ Telephone: ( )
11. Cities, towns and areas to be served: All of Volusia County
12. Population to be served:  
Current: N/C Five-Year Projection: N/C
13. Volume of solid waste to be received: N/C yds<sup>3</sup>/day tons/day gallons/day
14. Date site will be ready to be inspected for completion: N/C
15. Estimated life of facility: N/C years
16. Estimated costs:  
Total Construction: \$ N/C Closing Costs: \$ N/C
17. Anticipated construction starting and completion dates:  
From: N/C To: N/C (For overall facility)

**B. DISPOSAL FACILITY GENERAL INFORMATION**

1. Provide brief description of disposal facility design and operations planned by this application:  
Installation and operation of a landfill gas (LFG) recovery system. Portion of recovered LFG will be used  
for power generation, with remainder of LFG destructed, used for other beneficial use activities  
(e.g., condensate destruction), or transferred to other facilities (e.g., jail, airport) for beneficial use.  
LFG system will be owned and operated by NEO Tomoka Farms Limited Liability Company.
2. Facility site supervisor: Mr. Gene Palmatier (Volusia County)  
Title: Supervisor Telephone: (904 ) 947-2952
3. Disposal area: Total N/C acres; Used N/C acres; Available N/C acres
4. Weighing scales used: Yes ☒ No ☐
5. Security to prevent unauthorized use: Yes ☐ No ☒
6. Charge for waste received: N/C \$/yds<sup>3</sup> \_\_\_\_\_ \$/ton
7. Surrounding land use, zoning:
- |              |                                     |            |                          |
|--------------|-------------------------------------|------------|--------------------------|
| Residential  | <input type="checkbox"/>            | Industrial | <input type="checkbox"/> |
| Agricultural | <input checked="" type="checkbox"/> | None       | <input type="checkbox"/> |
| Commercial   | <input type="checkbox"/>            | Other      | <input type="checkbox"/> |
8. Types of waste received:
- |                        |                                     |                    |                                     |
|------------------------|-------------------------------------|--------------------|-------------------------------------|
| Residential            | <input checked="" type="checkbox"/> | C & D debris       | <input type="checkbox"/>            |
| Commercial             | <input checked="" type="checkbox"/> | Shredded/cut tires | <input type="checkbox"/>            |
| Incinerator/WTE ash    | <input checked="" type="checkbox"/> | Yard trash         | <input type="checkbox"/>            |
| Treated biohazardous   | <input type="checkbox"/>            | Septic tank        | <input type="checkbox"/>            |
| Water treatment sludge | <input type="checkbox"/>            | Industrial         | <input checked="" type="checkbox"/> |
| Air treatment sludge   | <input type="checkbox"/>            | Industrial sludge  | <input type="checkbox"/>            |
| Agricultural           | <input type="checkbox"/>            | Domestic sludge    | <input checked="" type="checkbox"/> |
| Asbestos               | <input checked="" type="checkbox"/> |                    |                                     |
| Other                  | <input type="checkbox"/>            |                    |                                     |
9. Salvaging permitted: Yes ☐ No ☒
10. Attendant: Yes ☒ No ☐ Trained operator: Yes ☒ No ☐
11. Spotters: Yes ☒ No ☐ Number of spotters used: N/C
12. Site located in: Floodplain ☐ Wetlands ☐ Other ☐
13. Property recorded as a Disposal Site in County Land Records: Yes ☒ No ☐
14. Days of operation: Monday-Sunday
15. Hours of operation: Monday-Friday 7:00 am - 5:30 pm, Sat.-Sun. 8:00 am - 2:30 pm
16. Days Working Face covered: Daily
17. Elevation of water table: 26 Ft. NGVD (Estimated)

18. Number of monitoring wells: N/C
19. Number of surface monitoring points: N/C
20. Gas controls used: Yes ☒ No ☐ Type controls: Active ☒ Passive ☐  
 Gas flaring: Yes ☒ No ☐ Gas recovery: Yes ☒ No ☐
21. Leachate control method - liner type:
- |                    |                                     |                         |                          |
|--------------------|-------------------------------------|-------------------------|--------------------------|
| Natural soils      | <input checked="" type="checkbox"/> | Double geomembrane      | <input type="checkbox"/> |
| Single clay liner  | <input type="checkbox"/>            | Geomembrane & composite | <input type="checkbox"/> |
| Single geomembrane | <input checked="" type="checkbox"/> | Double composite        | <input type="checkbox"/> |
| Single composite   | <input type="checkbox"/>            | None                    | <input type="checkbox"/> |
| Slurry wall        | <input type="checkbox"/>            |                         |                          |
| Other              | <input type="checkbox"/>            |                         |                          |
- 
22. Leachate collection method:
- |                  |                                     |                    |                          |
|------------------|-------------------------------------|--------------------|--------------------------|
| Collection pipes | <input type="checkbox"/>            | Sand layer         | <input type="checkbox"/> |
| Geonets          | <input type="checkbox"/>            | Gravel layer       | <input type="checkbox"/> |
| Well points      | <input type="checkbox"/>            | Interceptor trench | <input type="checkbox"/> |
| Perimeter ditch  | <input checked="" type="checkbox"/> | None               | <input type="checkbox"/> |
| Other            | <input type="checkbox"/>            |                    |                          |
- 
23. Leachate storage method:
- |       |                          |                      |                                     |
|-------|--------------------------|----------------------|-------------------------------------|
| Tanks | <input type="checkbox"/> | Surface impoundments | <input checked="" type="checkbox"/> |
| Other | <input type="checkbox"/> |                      |                                     |
- 
24. Leachate treatment method:
- |           |                                     |                    |                                     |
|-----------|-------------------------------------|--------------------|-------------------------------------|
| Oxidation | <input type="checkbox"/>            | Chemical treatment | <input type="checkbox"/>            |
| Secondary | <input type="checkbox"/>            | Settling           | <input checked="" type="checkbox"/> |
| Advanced  | <input type="checkbox"/>            | None               | <input type="checkbox"/>            |
| Other     | <input checked="" type="checkbox"/> | Natural Treatment  |                                     |
- 
25. Leachate disposal method:
- |                     |                          |                             |                                     |
|---------------------|--------------------------|-----------------------------|-------------------------------------|
| Recirculated        | <input type="checkbox"/> | Pumped to WWTP              | <input type="checkbox"/>            |
| Transported to WWTP | <input type="checkbox"/> | Discharged to surface water | <input checked="" type="checkbox"/> |
| Injection well      | <input type="checkbox"/> | Evaporation (ie: Perc Pond) | <input type="checkbox"/>            |
| Other               | <input type="checkbox"/> |                             |                                     |
- 
26. For leachate discharged to surface waters:  
 Name and Class of receiving water: Tomoka River
27. Storm Water:  
 Collected: Yes ☒ No ☐ Type of treatment: Natural Treatment  
 Name and Class of receiving water: Tomoka River
28. Management and Storage of Surface Waters (MSSW) Permit number or status: MS63-218726  
 (Expires 2/5/98)

C. MATERIALS RECOVERY / VOLUME REDUCTION FACILITY GENERAL INFORMATION

1. Provide brief description of materials recovery / volume reduction facility design and operations planned by this application:

N/A

2. Facility site supervisor:

Title: \_\_\_\_\_ Telephone: ( ) \_\_\_\_\_

3. Disposal area: Total \_\_\_\_\_ acres; Used \_\_\_\_\_ acres; Available \_\_\_\_\_ acres

4. Security to prevent unauthorized use: Yes ☐ No ☐

5. Site located in: Floodplain ☐ Wetlands ☐ Other ☐ \_\_\_\_\_

6. Days of operation: \_\_\_\_\_

7. Hours of operation: \_\_\_\_\_

8. Number of operating staff: \_\_\_\_\_

9. Expected useful life: \_\_\_\_\_ Years

10. Weighing scales used: Yes ☐ No ☐

11. Normal processing rate: \_\_\_\_\_ yds<sup>3</sup>/day tons/day gallons/day

12. Maximum processing rate: \_\_\_\_\_ yds<sup>3</sup>/day tons/day gallons/day

13. Charge for waste received: \_\_\_\_\_

14. Type of facility (check one or more):

Incinerator	<input type="checkbox"/>	Composting	<input type="checkbox"/>
Pulverizer/shredder	<input type="checkbox"/>	Materials recovery	<input type="checkbox"/>
Compactor/baling	<input type="checkbox"/>	Energy recovery	<input type="checkbox"/>
Sludge concentration	<input type="checkbox"/>	Pyrolysis	<input type="checkbox"/>
Other	<input type="checkbox"/>		

15. Materials recovered, tons/week:

_____ Paper	_____ Glass
_____ Ferrous metals	_____ Non-ferrous metals
_____ Aluminum	_____ Plastics
_____ Other:	

16. Energy recovery, in units shown:

_____ High pressure steam, lb/hr	_____ Chilled water, gal/hr
_____ Low pressure steam, lb/hr	_____ Oil, gal/hr
_____ Electricity, kw/hr	_____ Oil, BTU/hr
_____ Gas, ft <sup>3</sup> /hr	_____ Gas, BTU/hr
_____ Other:	

17. Process water management:

Recycled: Yes ☐ No ☐

Treatment method used: \_\_\_\_\_

Discharged to: Surface water ☐ Underground ☐ Other ☐

Name and Class of receiving water: \_\_\_\_\_

18. Storm Water:

Collected: Yes ☐ No ☐ Type of treatment: \_\_\_\_\_

Name and Class of receiving water: \_\_\_\_\_

19. MSSW Permit number or status: \_\_\_\_\_

20. Final residue produced:

\_\_\_\_\_ % of normal processing rate

\_\_\_\_\_ % of maximum processing rate

Disposed of at (Site name): \_\_\_\_\_

21. Supplemental fuel used:

Type: \_\_\_\_\_ Quantity used/hour: \_\_\_\_\_

22. Costs:

Estimated operating costs (material-energy revenue): \$ \_\_\_\_\_

Total cost/ton: \$ \_\_\_\_\_ Net cost/ton: \$ \_\_\_\_\_

23. State pollution control bond financing amount: \$ \_\_\_\_\_

24. Estimated amount of tax exemptions that will be requested: \$ \_\_\_\_\_

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

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>	
<u>X</u>				1. Six copies, at minimum, of the completed application form, all supporting data and reports; (62-701.320(5) (a), FAC)
<u>X</u>				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)
<u>X</u>				3. A letter of transmittal to the Department; (62-701.320(7) (a), FAC)
<u>X</u>				4. A completed application form dated and signed by the applicant; (62-701.320(7) (b), FAC)
<u>X</u>				5. Permit fee specified in Rule 62-4.050, FAC and Rule 62-701.320(5) (c), FAC in check or money order, payable to the Department; (62-701.320(7) (c), FAC)
<u>X</u>				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)
			<u>X</u>	7. Operation Plan; (62-701.320(7) (e)1, FAC)
			<u>X</u>	8. Contingency Plan; (62-701.320(7) (e)2, FAC)
				9. Plans or drawings for the solid waste management facilities in appropriate format (including sheet size restrictions, cover sheet, legends, north arrow, horizontal and vertical scales, elevations referenced to NGVD showing; (62-701.320(7) (f), FAC)
<u>X</u>	<u>Drawings</u>			a. A regional map or plan with the project location;
			<u>X</u>	b. A vicinity map or aerial photograph no more than 1 year old;
			<u>X</u>	c. A site plan showing all property boundaries certified by a registered Florida land surveyor;
<u>X</u>	<u>Drawings</u>			d. Other necessary details to support the engineering report.
<u>X</u>	<u>Report, App. C</u>			10. Proof of property ownership or a copy of appropriate agreements between the facility operator and property owner authorizing use of property; (62-701.320(7) (g), FAC)



S	LOCATION	N/A	N/C	
			<u>X</u>	11. For facilities owned or operated by a county, provide a description of how, if any, the facilities covered in this application will contribute to the county's achievement of recycling goals contained in Section 403.706, FS; (62-701.320(7) (h), FAC)
			<u>X</u>	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)
		<u>X</u>		13. Proof of publication in a newspaper of general circulation of notice of application for a permit to construct or substantially modify a solid waste management facility; (62-701.320(8), FAC)
			<u>X</u>	14. Provide a description of how the requirements for airport safety will be achieved including proof of required notices if applicable; (62-701.320(12), FAC)

S	LOCATION	N/A	N/C	
<b>E. LANDFILL PERMIT GENERAL REQUIREMENTS (62-701.330, FAC)</b>				
			<u>X</u>	1. Vicinity map or aerial photograph no more than 1 year old and of appropriate scale showing land use and local zoning within one mile of the landfill and of sufficient scale to show all homes or other structures, water bodies, and roads other significant features of the vicinity. All significant features shall be labeled; (62-701.330(4) (a), FAC)
			<u>X</u>	2. Vicinity map or aerial photograph no more than 1 year old showing all airports that are located within five miles of the proposed landfill; (62-701.330(4) (b), FAC)
				3. Plot plan with a scale not greater than 200 feet to the inch showing; (62-701.330(4) (c), FAC)
			<u>X</u>	a. Dimensions;
			<u>X</u>	b. Locations of proposed and existing water quality monitoring wells;
			<u>X</u>	c. Locations of soil borings;
			<u>X</u>	d. Proposed plan of trenching or disposal areas;
			<u>X</u>	e. Cross sections showing original elevations and proposed final contours which shall be included either on the plot plan or on separate sheets;
			<u>X</u>	f. Any previously filled waste disposal area;
			<u>X</u>	g. Fencing or other measures to restrict access.
				4. Topographic maps with a scale not greater than 200 feet to the inch with 5-foot contour intervals showing; (62-701.330(4) (d), FAC)
			<u>X</u>	a. Proposed fill areas;
			<u>X</u>	b. Borrow areas;
			<u>X</u>	c. Access roads;
			<u>X</u>	d. Grades required for proper drainage;
			<u>X</u>	e. Cross sections of lifts;
			<u>X</u>	f. Special drainage devices if necessary;
			<u>X</u>	g. Fencing;
			<u>X</u>	h. Equipment facilities.

S	LOCATION	N/A	N/C	
				5. A report on the landfill describing the following; (62-701.330(4) (e), FAC)
			<u>X</u>	a. The current and projected population and area to be served by the proposed site;
			<u>X</u>	b. The anticipated type, annual quantity, and source of solid waste, expressed in tons;
			<u>X</u>	c. The anticipated facility life;
			<u>X</u>	d. The source and type of cover material used for the landfill.
			<u>X</u>	6. Provide evidence that an approved laboratory shall conduct water quality monitoring for the facility in accordance with Rule 62-160, FAC; (62-701.330(4) (h), FAC)
			<u>X</u>	7. Provide a statement of how the applicant will demonstrate financial responsibility for the closing and long-term care of the landfill; (62-701.330(4) (i), FAC)

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

			<u>X</u>	1. Describe (and show on a Federal Insurance Administration flood map, if available) how the landfill or solid waste disposal unit shall not be located in the 100-year floodplain where it will restrict the flow of the 100-year flood, reduce the temporary water storage capacity of the floodplain unless compensating storage is provided, or result is a washout of solid waste; (62-701.340(4) (b), FAC)
			<u>X</u>	2. Describe how the minimum horizontal separation between waste deposits in the landfill and the landfill property boundary shall be 100 feet, measured from the toe of the proposed final cover slope; (62-701.340(4) (c), FAC)
			<u>X</u>	3. Describe what methods shall be taken to screen the landfill from public view where such screening can practically be provided; (62-701.340(4) (d), FAC)

S	LOCATION	N/A	N/C	
<b>G. LANDFILL CONSTRUCTION REQUIREMENTS (62-701.400, FAC)</b>				
			X	1. Describe how the landfill shall be designed so that solid waste disposal units will be constructed and closed at planned intervals throughout the design period of the landfill; (62-701.400(2), FAC)
				2. Landfill liner requirements; (62-701.400(3), FAC)
				a. General construction requirements; (62-701.400(3) (a), FAC)
			X	(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;
			X	(2) Document foundation is adequate to prevent liner failure;
			X	(3) Constructed so bottom liner will not be adversely impacted by fluctuations of the ground water;
			X	(4) Designed to resist hydrostatic uplift if bottom liner located below seasonal high ground water table;
			X	(5) Installed to cover all surrounding earth which could come into contact with the waste or leachate.
				b. Composite liners; (62-701.400(3) (b), FAC)
			X	(1) Upper geomembrane thickness and properties;
			X	(2) Design leachate head for primary LCRS including leachate recirculation if appropriate;
			X	(3) Design thickness in accordance with Table A and number of lifts planned for lower soil component.
				c. Double liners; (62-701.400(3) (c), FAC)
		X		(1) Upper and lower geomembrane thicknesses and properties;
		X		(2) Design leachate head for primary LCRS to limit the head to one foot above the liner;
		X		(3) Lower geomembrane sub-base design;

S	LOCATION	N/A	N/C
		X	
			X
			X
			X
			X
			X
			X
			X
			X

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

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

(1) Field seam test methods to ensure all field seams are at least 90 percent of the yield strength for the lining material;

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

(3) Describe operational plans to protect the liner and leachate collection system when placing the first layer of waste above 24-inch-thick protective layer.

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

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

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

(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;

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





S	LOCATION	N/A	N/C
			X
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			X
			X
			X
			X
			X
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			X
			X
			X
			X
			X

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  $\geq 1$  cm/sec;
      - (c) Lower geomembrane placed on subbase  $\geq 6$  inches thick with  $k \leq 1 \times 10^{-5}$  cm/sec;
      - (d) Design calculation to predict potential leakage through the upper liner;
      - (e) Daily inspection requirements and notification and corrective action requirements if leakage rates exceed that predicted by design calculations;
    - (4) Description of procedures to prevent uplift, if applicable;
    - (5) Design calculations to demonstrate minimum two feet of freeboard will be maintained;
    - (6) Procedures for controlling vectors and off-site odors.
  - b. Above-ground leachate storage tanks; (62-701.400(6) (c), FAC)
    - (1) Describe tank materials of construction and ensure foundation is sufficient to support tank;
    - (2) Describe procedures for cathodic protection if needed for the tank;





- (4) Inspection reports available for department review.
- d. Schedule provided for routine maintenance of LCRS; (62-701.400(6) (e), FAC)

Liner systems construction quality assurance (CQA): (62-701.400(7), FAC)

- a. Provide CQA Plan including;
  - (1) Specifications and construction requirements for liner system;
  - (2) Detailed description of quality control testing procedures and frequencies;
  - (3) Identification of supervising professional engineer;
  - (4) Identify responsibility and authority of all appropriate organizations and key personnel involved in the construction project;
  - (5) State qualifications of CQA professional engineer and support personnel;
  - (6) Description of CQA reporting forms and documents;
- b. An independent laboratory experienced in the testing of geosynthetics to perform required testing;

Soil Liner CQA (62-701.400(8) FAC)

- 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;
- b. Description of field test section construction and test methods to be implemented prior to liner installation;
- c. Description of field test methods including rejection criteria and corrective measures to insure proper liner installation.

Surface water management systems; (62-701.400(9), FAC)

- a. Design of surface water management system to isolate surface water from waste filled areas and to control stormwater run-off;
- b. Details of stormwater control design including retention ponds, detention ponds, and drainage ways;

<u>S</u>	<u>LOCATION</u>	<u>N/A</u>	<u>N/C</u>	
				9. Gas control systems; (62-701.400(10), FAC)
<u>X</u>	<u>Drawings</u>	<u>      </u>	<u>      </u>	a. Design details for gas control system including collection pipes and vents, and passive venting or vacuum extraction details;
<u>X</u>	<u>Report</u>	<u>      </u>	<u>      </u>	b. Documentation that the gas control system will not impact the liner or leachate control system;
<u>X</u>	<u>Report/Drawings</u>	<u>      </u>	<u>      </u>	c. Proposed methods of odor control including flaring designs in accordance with Chapter 62-210, FAC;
<u>X</u>	<u>Report</u>	<u>      </u>	<u>      </u>	d. Description of a routine gas monitoring program to ensure gas control system is operating properly including:
<u>      </u>	<u>      </u>	<u>X</u>	<u>      </u>	(1) Location of monitoring points;
<u>      </u>	<u>      </u>	<u>X</u>	<u>      </u>	(2) Requirements for quarterly sampling of all monitoring points;
<u>X</u>	<u>      </u>	<u>      </u>	<u>      </u>	(3) Description of corrective measures to be completed within 60 days of detection of elevated levels of explosive gases;
<u>X</u>	<u>Report</u>	<u>      </u>	<u>      </u>	e. Description of condensate collection and disposal methods.
				10. Landfill gas recovery facilities; (62-701.400(11), FAC)
<u>X</u>	<u>      </u>	<u>      </u>	<u>      </u>	a. Information required in Rules 62-701.320(7) and 62-701.330(4), FAC supplied;
<u>X</u>	<u>Report</u>	<u>      </u>	<u>      </u>	b. Information required in Rule 62-701.600(4), FAC supplied where relevant and practical;
<u>X</u>	<u>Report</u>	<u>      </u>	<u>      </u>	c. Estimate of current and expected gas generation rates and description of condensate disposal methods provided;
<u>X</u>	<u>Report</u>	<u>      </u>	<u>      </u>	d. Description of procedures for condensate sampling, analyzing and data reporting provided;
<u>X</u>	<u>Report</u>	<u>      </u>	<u>      </u>	e. Closure plan provided describing methods to control gas after recovery facility ceases operation;
<u>X</u>	<u>Report</u>	<u>      </u>	<u>      </u>	f. Performance bond provided to cover closure costs if not already included in other landfill closure costs.
<u>      </u>	<u>      </u>	<u>      </u>	<u>X</u>	11. For landfills designed in ground water, provide documentation that the landfill will provide a degree of protection equivalent to landfills designed with bottom liners not in contact with ground water; (62-701.400(12), FAC)

S	LOCATION	N/A	N/C
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**H. HYDROGEOLOGICAL INVESTIGATION REQUIREMENTS (62-701.410, FAC)**

- |  |  |  |          |                                                                                                                                                                                                                                                                             |
|--|--|--|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |  |  | <u>X</u> | 1. Submit a hydrogeological investigation and site report including at least the following information;                                                                                                                                                                     |
|  |  |  | <u>X</u> | a. Regional and site specific geology and hydrogeology;                                                                                                                                                                                                                     |
|  |  |  | <u>X</u> | b. Direction and rate of ground water and surface water flow including seasonal variations;                                                                                                                                                                                 |
|  |  |  | <u>X</u> | c. Background quality of ground water and surface water;                                                                                                                                                                                                                    |
|  |  |  | <u>X</u> | d. Any on-site hydraulic connections between aquifers;                                                                                                                                                                                                                      |
|  |  |  | <u>X</u> | 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;                                                                                                |
|  |  |  | <u>X</u> | f. Site topography and soil characteristics;                                                                                                                                                                                                                                |
|  |  |  | <u>X</u> | g. Inventory of all public and private water wells within a one-mile radius of the landfill including well top of casing and bottom elevations, name of owner, age and usage of each well, stratigraphic unit screened, well construction technique and static water level; |
|  |  |  | <u>X</u> | h. Description of topography, soil types, and surface water drainage systems;                                                                                                                                                                                               |
|  |  |  | <u>X</u> | i. An inventory of all public and private water wells within one mile of the landfill.                                                                                                                                                                                      |
|  |  |  | <u>X</u> | j. Existing contaminated areas on landfill site.                                                                                                                                                                                                                            |
|  |  |  | <u>X</u> | 2. Report signed, sealed and dated by PE or PG.                                                                                                                                                                                                                             |

S	LOCATION	N/A	N/C
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**I. GEOTECHNICAL INVESTIGATION REQUIREMENTS (62-701.420, FAC)**

1. Submit a geotechnical site investigation report defining the engineering properties of the site including at least the following:

_____	_____	_____	<u>X</u>
_____	_____	_____	<u>X</u>
_____	_____	_____	<u>X</u>
_____	_____	_____	<u>X</u>
_____	_____	_____	<u>X</u>
_____	_____	_____	<u>X</u>
_____	_____	_____	<u>X</u>
_____	_____	_____	<u>X</u>
_____	_____	_____	<u>X</u>
_____	_____	_____	<u>X</u>

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

2. Report signed, sealed and dated by PE or PG.

S	LOCATION	N/A	N/C	
<b>J. VERTICAL EXPANSION OF LANDFILLS (62-701.430, FAC)</b>				
_____	_____	<u>X</u>	_____	1. Describe how the vertical expansion shall not cause or contribute to leachate leakage from the existing landfill or adversely affect the closure design of the existing landfill;
_____	_____	<u>X</u>	_____	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;
_____	_____	<u>X</u>	_____	3. Provide foundation and settlement analysis for the vertical expansion;
_____	_____	<u>X</u>	_____	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.
_____	_____	<u>X</u>	_____	5. Minimum stability safety factor of 1.5 for the lining system component interface stability and deep stability;
_____	_____	<u>X</u>	_____	6. Provide documentation to show the surface water management system will not be adversely affected by the vertical expansion;
_____	_____	<u>X</u>	_____	7. Provide gas control designs to prevent accumulation of gas under the new liner for the vertical expansion.
<b>K. LANDFILL OPERATION REQUIREMENTS (62-701.500, FAC)</b>				
_____	_____	_____	<u>X</u>	1. Provide documentation that landfill will have at least one trained operator during operation and at least one trained spotter at each working face; (62-701.500(1), FAC)
_____	_____	_____	_____	2. Provide a landfill operation plan including procedures for: (62-701.500(2), FAC)
_____	_____	_____	<u>X</u>	a. Designating responsible operating and maintenance personnel;
_____	_____	_____	<u>X</u>	b. Contingency operations for emergencies;
_____	_____	_____	<u>X</u>	c. Controlling types of waste received at the landfill;
_____	_____	_____	<u>X</u>	d. Weighing incoming waste;
_____	_____	_____	<u>X</u>	e. Vehicle traffic control and unloading;
_____	_____	_____	<u>X</u>	f. Method and sequence of filling waste;
_____	_____	_____	<u>X</u>	g. Waste compaction and application of cover;
_____	_____	_____	<u>X</u>	h. Operations of gas, leachate, and stormwater controls;
_____	_____	_____	<u>X</u>	i. Water quality monitoring.

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

S	LOCATION	N/A	N/C	
				8. Describe operational procedures for leachate management including; (62-701.500(8), FAC)
			X	a. Leachate level monitoring, sampling, analysis and data results submitted to the Department;
			X	b. Operation and maintenance of leachate collection and removal system, and treatment as required;
			X	c. Procedures for managing leachate if it becomes regulated as a hazardous waste;
			X	d. Agreements for off-site discharge and treatment of leachate;
			X	e. Contingency plan for managing leachate during emergencies or equipment problems;
			X	f. Procedures for recording quantities of leachate generated in gal/day;
			X	g. Procedures for comparing precipitation experienced at the landfill with leachate generation rates.
			X	9. Describe routine gas monitoring program for the landfill as required by Rule 62-701.400(10), FAC; (62-701.500(9), FAC)
			X	10. Describe procedures for operating and maintaining the landfill stormwater management system to comply with the standards of Chapters 62-3, 62-302, and 62-25, FAC; (62-701.500(10), FAC)
				11. Equipment and operation feature requirements; (62-701.500(11), FAC)
			X	a. Sufficient equipment for excavating, spreading, compacting and covering waste;
			X	b. Reserve equipment or arrangements to obtain additional equipment within 24 hours of breakdown;
			X	c. Communications equipment;
			X	d. Personnel shelter and sanitary facilities, first aid equipment;
			X	e. Dust control methods;
			X	f. Fire protection capabilities and procedures for notifying local fire department authorities in emergencies;
			X	g. Litter control devices;
			X	h. Signs indicating operating authority, traffic flow, hours of operation, disposal restrictions.



S	LOCATION	N/A	N/C	
			<u>X</u>	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)
				13. Additional record keeping and reporting requirements; (62-701.500(13), FAC)
			<u>X</u>	a. Records used for developing permit applications and supplemental information maintained for the design period of the landfill;
			<u>X</u>	b. Monitoring information, calibration and maintenance records, copies of reports required by permit maintained for at least 10 years;
			<u>X</u>	c. Background water quality records shall be maintained for the design period of the landfill;
			<u>X</u>	d. Maintain annual estimates of the remaining life of constructed landfills and of other permitted areas not yet constructed and submit this estimate annually to the Department.



S	LOCATION	N/A	N/C
			X
			X
			X
			X
			X
			X
			X
			X

- f. Routine sampling frequency and requirements;  
(62-701.510(6), FAC)
- (1) Background ground water and surface water sampling and analysis requirements;
  - (2) Leachate semi-annual and annual sampling and analysis requirements;
  - (3) Detection well semi-annual sampling and analysis requirements;
  - (4) Compliance well sampling and analysis as requirements;
  - (5) Surface water sampling and analysis requirements;
- g. Describe procedures for implementing assessment monitoring and corrective action as required;  
(62-701.510(7), FAC)
- h. Water quality monitoring report requirements;  
(62-701.510(9), FAC)
- (1) Semi-annual report requirements;
  - (2) Bi-annual report requirements signed, dated and sealed by PG or PE.

S	LOCATION	N/A	N/C	
<b>M. SPECIAL WASTE HANDLING REQUIREMENTS (62-701.520, FAC)</b>				
			<u>X</u>	1. Describe procedures for managing motor vehicles; (62-701.520(1), FAC)
			<u>X</u>	2. Describe procedures for landfilling shredded waste; (62-701.520(3), FAC)
			<u>X</u>	3. Describe procedures for asbestos waste disposal; (62-701.520(4), FAC)
			<u>X</u>	4. Describe procedures for contaminated soil disposal; (62-701.520(5), FAC)
<b>N. LANDFILL FINAL CLOSURE REQUIREMENTS (62-701.600, FAC)</b>				
			<u>X</u>	1. Closure schedule requirements; (62-701.600(2), FAC)
			<u>X</u>	a. Documentation that a written notice including a schedule for closure will be provided to the Department at least one year prior to final receipt of wastes;
			<u>X</u>	b. Notice to user requirements within 120 days of final receipt of wastes;
			<u>X</u>	c. Notice to public requirements within 10 days of final receipt of wastes.
				2. Closure permit general requirements; (62-701.600(3), FAC)
			<u>X</u>	a. Application submitted to Department at least 90 days prior to final receipt of wastes;
				b. Closure plan shall include the following;
			<u>X</u>	(1) Closure report;
			<u>X</u>	(2) Closure design plan;
			<u>X</u>	(3) Closure operation plan;
			<u>X</u>	(4) Closure procedures;
			<u>X</u>	(5) Plan for long term care;
			<u>X</u>	(6) A demonstration that proof of financial responsibility for long term care will be provided.

3. Closure report requirements; (62-701.600(4), FAC)
  - a. General information requirements;
    - (1) Identification of landfill;
    - (2) Location, description and vicinity map;
    - (3) Total acres of disposal areas and landfill property;
    - (4) Legal property description;
    - (5) History of landfill;
    - (6) Identification of types of waste disposed of at the landfill.
  - b. Geotechnical investigation report and water quality monitoring plan required by Rule 62-701.330(4), FAC;
  - c. Land use information report indicating: identification of adjacent landowners; zoning; present land uses; and roads, highways right-of-way, or easements.
  - d. Report on actual or potential gas migration at landfills containing biodegradable wastes including detailed description of test and investigation methods used;
  - e. Report assessing the effectiveness of the landfill design and operation including results of geotechnical investigations, surface water and storm water management, gas migration and concentrations, condition of existing cover, and nature of waste disposed of at the landfill;
4. Closure design requirements to be included in the closure design plan: (62-701.600(5), FAC)
  - a. Plan sheet showing phases of site closing;
  - b. Drawings showing existing topography and proposed final grades;
  - c. Provisions to close units when they reach approved design dimensions;
  - d. Final elevations before settlement;
  - e. Side slope design including benches, terraces, down slope drainage ways, energy dissipators and discussion of expected precipitation effects;

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S	LOCATION	N/A	N/C	
<b>O. CLOSURE PROCEDURES (62-701.610, FAC)</b>				
			<u>X</u>	1. Survey monuments; (62-701.610(2), FAC)
			<u>X</u>	2. Final survey report; (62-701.610(3), FAC)
			<u>X</u>	3. Certification of closure construction completion; (62-701.610(4), FAC)
			<u>X</u>	4. Declaration to the public; (62-701.610(5), FAC)
			<u>X</u>	5. Official date of closing; (62-701.610(6), FAC)
			<u>X</u>	6. Use of closed landfill areas; (62-701.610(7), FAC)
<b>P. LONG TERM CARE REQUIREMENTS (62-701.620, FAC)</b>				
			<u>X</u>	1. Right of property access requirements; (62-701.620(4), FAC)
			<u>X</u>	2. Successors of interest requirements; (62-701.620(5), FAC)
			<u>X</u>	3. Requirements for replacement of monitoring devices; (62-701.620(4), FAC)
<b>Q. FINANCIAL RESPONSIBILITY REQUIREMENTS (62-701.630, FAC)</b>				
			<u>X</u>	1. Provide cost estimates for closure costs and long term care costs estimated by a PE for a third party performing the work, on a per unit basis, with the source of estimates indicated; (62-701.630(3), FAC)
			<u>X</u>	2. Describe procedures for providing annual cost adjustments to the Department based on inflation and changes in the closure and long-term care plans; (62-701.630(4), FAC)
			<u>X</u>	3. Describe funding mechanisms for providing proof of financial responsibility and include appropriate financial responsibility forms; (62-701.630(5)&(6), FAC)
<b>R. CLOSURE OF EXISTING LANDFILLS (62-701.640, FAC)</b>				
		<u>X</u>		1. Demonstrate that facility does not pose a bird hazard to aircraft as specified in Rule 62-701.320(12)(b), FAC.
		<u>X</u>		2. Demonstrate that facility does not restrict the flow of the 100-year flood, reduce water storage capacity or result in wash-out of solid waste as specified in Rule 62-701.340(4)(b), FAC.

S	LOCATION	N/A	N/C	
		X		3. Demonstration that facility is not located in a fault area, seismic zone or unstable area as specified in Rule 62-701.420(1)(c), FAC.
		X		4. Request for extension of closure criteria as specified in Rule 62-701.420(1)(c), FAC.
		X		a. Demonstration of no alternative disposal capacity.
		X		b. Demonstration of no threat to human health or the environment.
<b>S. MATERIALS RECOVERY FACILITY REQUIREMENTS (62-701.700, FAC)</b>				
		X		1. Proof of posting a performance bond payable to the Department to cover closing costs, if required; (62-701.700(4), FAC)
		X		2. Materials recovery facility requirements; (62-701.700, FAC)
		X		a. Submit information required in Rule 62-701.320, FAC
		X		b. Submit an engineering report including the following:
		X		(1) Description of the solid waste proposed to be collected, stored, processed or disposed;
		X		(2) Projection with assumptions for waste types and quantities expected in future years;
		X		(3) Description of operation and functions of all processing equipment with design criteria and expected performance;
		X		(4) Description of flow of solid waste, expected regular facility operations, procedures for start up and shut down, potential safety hazards and control methods including fire protection;
		X		(5) Description of loading, unloading, and processing areas;
		X		(6) Identification and capacity of temporary on-site storage areas for materials handled and provisions for solid waste and leachate containment;
		X		(7) Identification of potential ground water and surface water contamination;



S	LOCATION	N/A	N/C
		X	
		X	
		X	
		X	
		X	
		X	
		X	
		X	
		X	

(8) Plan for disposal of unmarketable recyclables and residue and contingencies for waste handling during breakdowns.

c. Submit the following operational information:

- (1) Operation and maintenance manual;
- (2) Waste control plan to manage unauthorized wastes;
- (3) Contingency plan for emergencies;
- (4) Closure plan including the following:
  - (a) Notification to Department 180 days prior to closure;
  - (b) Procedures for removal of all waste within 30 days of receipt of final waste;
  - (c) Completion of closure activities within 180 days of final waste and notification to the Department that closure is complete.

T. CERTIFICATION BY APPLICANT AND ENGINEER OR PUBLIC OFFICER

A. Applicant

The undersigned applicant or authorized representative of Volusia County is aware that statements made in this form and attached information are an application for a minor modification to an existing 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 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.

James L. Griffin  
Signature of Applicant or Agent

JAMES L. GRIFFIN, DIRECTOR  
Name and Title

Date: JUNE 19, 1996

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

B. Professional Engineer Registered in Florida or Public Officer as required in Section 403.707 and 403.707(5), Florida Statutes.

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

David E. Poe  
Signature

David E. Poe, Project Manager  
Name and Title (please type)

45344  
Florida Registration Number  
(please affix seal)

SCS Engineers, 3012 U.S. Highway 301 North, Suite 700  
Mailing Address

Tampa, Florida 33619  
City, State, Zip Code

(813) 621-0080  
Telephone Number

Date: June 19, 1996



**LANDFILL GAS RECOVERY SYSTEM  
DESIGN REPORT  
TOMOKA FARMS ROAD LANDFILL  
VOLUSIA COUNTY, FLORIDA**

Submitted to:

**FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION  
Central District  
3319 Maguire Boulevard, Suite 232  
Orlando, Florida 32803-3767**

Submitted by:

**SCS ENGINEERS  
3012 US Highway 301 North, Suite 700  
Tampa, Florida 33619  
(813)621-0080**

For:

**NEO TOMOKA FARMS LIMITED LIABILITY COMPANY  
1221 Nicollet Mall, Suite 700  
Minneapolis, Minnesota 55403-2445**

**June 19, 1996  
File No. 0995051.01**



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## INTRODUCTION

This Landfill Gas (LFG) Recovery System Design Report for the Tomoka Farms Road Landfill in Volusia County, Florida, has been prepared by SCS Engineers (SCS) for NEO Tomoka Farms Limited Liability Company (NEO Tomoka Farms L.L.C.), in accordance with the approved scope of services, dated March 7, 1996. This report, along with the LFG recovery system design Drawings, constitutes the design and permitting documents for the LFG recovery system. The blower/flare station and power generation units will be designed by others and incorporated into the project as directed by the manufacturer. The performance criteria for the blower/flare station are set forth in this minor permit modification report. Performance criteria for the power generation units have not been set forth in this report, as the units are not an integral component of LFG recovery system, but instead represent a beneficial use of the LFG extracted by the recovery system.

### Background

The Volusia County Department of Solid Waste Services (County), under the authority of the Volusia County Board of County Commissioners, currently operates the approximately 105-acre Class I landfill designated as the Tomoka Farms Road Landfill. The Tomoka Farms Road Landfill is approximately 5 miles southwest of the Daytona Municipal Airport and the Daytona International Speedway and is bordered by Tomoka Farms Road on the east and Interstate 4 to the north. The site location is shown on the Drawings cover sheet.

Initial landfilling activities began in 1978. The cells were operated as an excavate and fill type landfill, with the average excavation reportedly to be 19 feet below original grade (approximate bottom elevation of 11 feet National Geodetic Vertical Datum (NGVD)). The landfill bottom liner system is comprised of a 10-mil polyvinyl chloride (PVC) geomembrane. The final cover system is comprised of a geosynthetic clay liner (GCL) layer overlain by approximately 2 feet of cover soil. The landfill sideslopes are being closed as areas of landfilling are completed. Surface elevations are designed to



range from 30 to 126 feet NGVD. The maximum refuse depth is expected to be approximately 115 feet at time of closure. Current surface elevations for the active area range from approximately 30 To 110 feet NGVD. Filling is expected to be completed in late 1997.

#### **LFG Recovery System Description and Objectives**

The LFG recovery system is comprised of vertical extraction wells, collection piping to transport the LFG from the well heads to the blower/flare station; a condensate management system; blowers to generate a flow-inducing vacuum on the well field; and a flare station to destruct all LFG not beneficially used. A portion of the LFG collected by the recovery system will be diverted from the LFG recovery system to gas-powered generators located adjacent to the blower/flare station, and electricity will be generated using the recovered LFG.

The blower/flare station is being purchased by NEO Tomoka Farms L.L.C. as a package unit from a manufacturer, and therefore only the performance criteria for the blower/flare station has been incorporated into this minor permit modification application and report.

The objectives of NEO Tomoka Farms L.L.C. installing and operating the LFG recovery system and associated power generation units is the extraction and beneficial use of the LFG generated by the landfill. The benefit to the landfill owner (i.e., Volusia County) will come in the way of odor and migration control, and income from the electricity sales, which will occur as a result of the recovery and beneficial use of the LFG.

#### **PERMITTING AND REGULATORY REQUIREMENTS**

In accordance with recent discussions between representatives of the Florida Department of Environmental Protection (FDEP) and SCS, construction of the LFG recovery system will require a minor modification to the existing operations permit for the facility. A copy of the minor permit modification application is presented in



Section I of this document. In addition, County building permits will be required for the facilities; however, these will be obtained by the Contractor selected to construct the facility, and are not addressed herein.

Review of the minor permit modification application indicates the following items must be addressed within this design report:

- Design details of the LFG recovery system.
- Documentation that LFG recovery system will not impact the liner or leachate control systems.
- Proposed method of odor control including flaring designs.
- Description of routine LFG monitoring program.
- Description of condensate collection and disposal methods.
- Estimates of current and expected LFG generation rates.
- Description of procedures for condensate sampling, analysis, and data reporting.
- Closure plan describing methods to control LFG after the recovery facility ceases operation.
- Performance bond to cover closure costs if not already included in other landfill closure costs.
- Agreement between facility operator and owner authorizing use of property.

Each of above items is addressed below.





## DESIGN DETAILS OF THE LFG RECOVERY SYSTEM

The following paragraphs present description of the various components which comprise the LFG recovery system.

### LFG Extraction Wells

A detail of the LFG extraction wells is provided on Sheet 4 of 11 of the Drawings. As shown on the detail, the extraction wells will incorporate the following features:

- 3-foot diameter boreholes.
- 8-inch diameter, schedule 80 PVC well screens and piping. Sections of the piping and well screen will be glued and lag screwed prior to installation.
- 1 to 1-1/2 inch non-calcareous crushed stone filter packing.
- Well heads which incorporate the ability to measure LFG temperatures, pressures, and flow at the individual well locations. The well heads also incorporate a valve, which allows flow from the individual wells to be adjusted or shut off. These features are helpful in optimizing LFG collection and quality.
- A 3-foot thick granular bentonite plug overlying the crushed stone filter pack.

Note that the detail shows a second shallow extraction well installed in the same borehole as the deeper well. The need for the shallow wells will be evaluated in the field, based upon sludge and liquid levels observed during the drilling activities. If observations during drilling indicate a good conduit through the sludge layer previously observed during the pump test (at a depth of approximately 20 feet below the existing top surface [elevation 110 NGVD]) does not exist, then the shallow wells will be



installed on the interior wells to enhance LFG collection from shallow zones in the interior of the landfill.

Forty-six vertical wells are proposed for the entire landfill. Ideal spacing of the extraction wells based on a minimum overlap of surrounding zones of influence, results in a typical spacing of the wells ranging from approximately 200 to 400 feet. Well depths will extend approximately 75 to 85 percent of the waste depth with the length of perforated pipe equal to approximately 65 percent of the total well depth in most cases. This results in well depths ranging from 45 and 90 feet.

#### **LFG Collection Header System**

As shown on the Drawings, the LFG collection header system is comprised of high density polyethylene (HDPE) piping. The piping will be butt-fusion or extrusion welded in the field. The pipe sizes for the system were determined based upon combining the anticipated maximum flow from the individual wells into the various sections of piping, and then applying the maximum gas velocity criteria of 2,400 feet per minute (fpm) for flow through pipe with a downward slope (i.e., gas flow in same direction as condensate flow) and 1,200 fpm for pipe with an upward slope (i.e., gas flow in opposite direction of condensate flow). The results of SCS' pipe flow calculations are presented in Appendix A. The piping will be installed within the 2-foot thick protective soil layer overlying the GCL layer of the final cover system, with a minimum 6-inches of soil cover required over the installed piping.

#### **LFG Condensate Collection System**

As shown on the Drawings, condensate drain lines have been installed at three of the four corners of the landfill, with a fourth condensate drainage line installed in the main header between the well field to the blower station. Condensate which is collected in the collection header will drain by gravity to the corners of the landfill, and then through the condensate drain lines into the sumps located at the corners of the landfill. The collection header system also has been designed to incorporate expansion chambers



(i.e., sections where the pipe diameter increases, resulting in a sudden decrease in LFG velocity) at the locations of the condensate drains. The drop in LFG velocity which will result at the expansion chambers will cause additional condensate to "fall out" of the LFG into the condensate drain lines.

As shown on the detail, the condensate collection system will incorporate the following features:

- 4-inch diameter gravity drain lines from the LFG collection header to the sumps.
- 2-inch diameter pressure lines between the sumps. Pumps installed in the individual sumps will transfer the condensate between the sumps, and ultimately to the primary sump (CS-1).
- 3-foot diameter HDPE sumps, with pumps, floats, and individual control panels. The HDPE sumps will be constructed of a continuous section of HDPE pipe, with an HDPE plate extrusion welded onto the bottom of the pipe to form the sump.
- A control panel which incorporates on and off controls for the pumps, and a high level alarm which will emit audible and visual alarms if the condensate levels within the sump rise to the emergency high float. A high level alarm within the primary condensate sump (CS-1) will be connected to the blower control panel, and will shut off the blowers if condensate within the main sump rises to the emergency high float.

#### **Blower/Flare Station**

The blower/flare station will be provided by a flare manufacturer and supplier, and will be integrated such that the blowers and flare performance are compatible. Typical blower and flare stations plans are shown on the Drawings. The actual design may vary



from as shown on the Drawings. The actual blower/flare station design will be submitted to the FDEP with the as-built Drawings at the completion of construction.

The blower/flare station to be provided by the manufacturer will incorporate the following features:

- One or more blowers with the combined capacity to handle approximately 5,000 cubic feet per minute (cfm), at a maximum negative pressure (vacuum) of 45 inches of water column. The blower(s) will either be mounted on a skid rig or on concrete pads specifically sized for the blowers. The skid or blower station will be designed to accommodate adding one additional blower in the event system performance indicates additional LFG can be collected from the well field, or as a backup to the originally installed blower(s).
- Valving to allow throttling or shutdown of individual blowers. The blower station piping also will incorporate monitoring ports to allow system pressures to be measured.
- One or more utility (candlestick) flares capable of destructing up to 5,000 cfm of LFG. The flare station will include a flame arrestor and valving to allow throttling or shutdown of the flare for maintenance. The flare also will incorporate an automatic pilot system which will reignite the flare in the event the flame is extinguished, and a relay which will activate the automatic dialer in the event the pilot cannot reignite the flame. An actuated valve will automatically shut down flow of LFG to the flare in the event the flare is extinguished and cannot reignite.
- An electrical control panel which will control the blowers and flare. The panel will include an automatic dialer system which will automatically notify the designated LFG system manager in the event the system shuts down. Additionally, a recorder will be incorporated into the control panel which will record system performance.



### **Power Generation Station**

The power generation station will be comprised of up to four 3516 Caterpillar engines with electric generators. Power generated by the system will be sold to the local utility, or used by on-site facilities.

### **Potential Future System Improvements and Modifications**

Potential future system improvements and modifications might include:

- Rerouting of the condensate discharge line from the currently proposed condensate injection well to the leachate management system proposed for the new Class I landfill.
- Piping of the excess LFG from the blower station to off-site beneficial users.

A minor permit modification application describing any of the potential future system improvements will be submitted to the FDEP for approval prior to implementation.

### **DOCUMENTATION THAT LFG RECOVERY SYSTEM WILL NOT IMPACT THE LINER OR LEACHATE CONTROL SYSTEMS**

The LFG extraction wells have been designed to extend no closer than approximately 15 to 25 feet of the bottom liner system. Consequently, the well installations will not impact the landfill bottom liner system. The remainder of the system components are typically above the final cover system, or are installed directly below the final cover system (which will be repaired after installation). Therefore, the system will not impact the liner or leachate control systems.



## **PROPOSED METHOD OF ODOR CONTROL INCLUDING FLARING DESIGNS**

The flare provided by the manufacturer will provide a minimum 98 percent destruction efficiency for LFG extracted from the recovery system. This level of destruction is accepted within the industry and by the United States Environmental Protection Agency (USEPA) as providing sufficient destruction and odor control of LFG.

The actual blower/flare station design, which will be submitted to the FDEP with the as-built Drawings at the completion of construction. An operations manual for the blower/flare station also will be submitted with the as-built Drawings.

## **DESCRIPTION OF ROUTINE LFG MONITORING PROGRAM**

A LFG monitoring program typically is required for landfills where the potential exists for LFG to migrate through the surficial soils to beyond the property boundary at levels exceeding 100 percent of the lower explosive limit (LEL) of the methane component of the LFG. The LEL of LFG is defined as a 5 percent methane concentration in air. However, the Tomoka Farms Road Landfill is unique, in that it is situated on approximately 3,500 acres, with a minimum offset of approximately 2,700 feet between the landfill and the nearest property boundary. In addition, the landfill is surrounded by a stormwater collection system that is designed to impound water year-round, which will prohibit LFG migration in the surficial soils beyond the toe of the landfill. Consequently, LFG migration beyond the property boundary (or even beyond the perimeter stormwater system) likely would be a physical impossibility. Therefore, an LFG monitoring system is not warranted for the current Class I landfill.

## **DESCRIPTION OF CONDENSATE COLLECTION AND DISPOSAL METHODS**

Description of the condensate collection and disposal methods are described above in the report section titled "Design Details of the LFG Recovery System".



## LFG GENERATION AND RECOVERY RATES

The design of a LFG collection system requires an evaluation of current and future LFG generation and recovery rates. SCS estimated LFG generation and recovery rates at the Tomoka Farms Road Landfill using the 1st order LFG generation computer model developed by the USEPA, and site-specific LFG generation information obtained from a LFG generation pump test conducted at the site. The model is run by inputting fixed and variable values developed through either site specific data and/or assumptions based on experience at similar sites. Parameters used in evaluating LFG production and projected recovery included the following:

- **Moisture content:** Moisture content values may range from 20 percent to as high as 45 percent in the wettest sites are typical for landfills.
- **Landfill mass:** The landfill mass may vary depending on the density of in-place materials. Values of 1,000 to 1,800 pounds (lbs) per cubic yard (cy) of refuse are typical in-place densities, depending on age, depth, and placement methods. A value of 1,550 lb/cy was used by SCS for the analysis. This value is based upon comparison of waste placement receipts and volume estimates derived from survey information.
- **Lifetime LFG generation:** For the analysis SCS used an ultimate theoretical value of 4,411 cubic feet (cf) of methane per Megagram of refuse was used in the model. This value was obtained from the USEPA's "Supplement F to Compilation of Air Pollutant Emission Factors, Volume 1" (AP-42).
- **Annual LFG generation rate:** A value of 0.186 cf of LFG per lb of refuse per year was used for SCS' analysis. This value was obtained from actual pump test data.



- **Generated LFG fuel content:** This is the fuel value per cf of the raw LFG before extraction. Typical values range from 500 to 600 British thermal units (Btu). A value of 550 Btu/cf was used for SCS' analysis.
- **LFG collection efficiency:** Varies from 50 to 95 percent depending on the geometry of the landfill, the permeability of the landfill's cover, the extraction well spacing, and other factors. Generally, mounded landfills with poor covers will have lower collection efficiencies and trench, canyon, or other subsurface landfills with good covers will have higher collection efficiencies. Values of 70, 80, and 90 percent collection efficiency were calculated by SCS.

### **Modeling Results**

The results of SCS' LFG generation and collection analysis are presented in Appendix B. As shown in the figure included in Appendix B, LFG generation will peak at the estimated 4,746 standard cubic feet per minute (scfm) in 1997, dropping to 891 scfm by the year 2016. The figure included in the Appendix presents the estimated LFG collection rates for 70, 80 and 90, percent recovery.

### **DESCRIPTION OF PROCEDURES FOR CONDENSATE SAMPLING, ANALYSIS AND DATA REPORTING**

At present, no condensate sampling, analysis, or data reporting is anticipated for this project. The system is anticipated to generate from 2,000 to 3,000 gallons per day of condensate (based upon an assumed condensate generation rate of 500 gallons per million cubic feet of LFG), which will be allowed to drain into the landfill, re-injected back into the landfill or co-mingled with the leachate generated by the new landfill (future). This is a relatively insignificant liquids volume for a landfill the size of the current Class I landfill, and will have inconsequential impacts on leachate generation or collection from the landfill. Consequently, SCS does not believe sampling or analysis of condensate is warranted.





## **CLOSURE PLAN DESCRIBING METHODS TO CONTROL LFG AFTER RECOVERY FACILITY CEASES OPERATION**

At present, no closure plan describing the methods to control LFG after the recovery facility ceases operations has been prepared, as the system proposed under this minor permit modification will be owned and operated by a private corporation, and not the County. Consequently, in the event the system ceases operation, it then would be incumbent upon the County to prepare and submit to the FDEP a plan for LFG control at the site.

Review of the closure and long term care cost estimate for the facility, which previously was submitted to the FDEP (dated September 1995), indicates the County incorporated \$120,000 for LFG vent installation and \$1,700 per year maintenance into their closure and long-term care cost estimates. In the event the LFG system proposed under this minor permit modification ceases operations, SCS anticipates that the County then would prepare a minor permit modification application describing implementation of the proposed LFG management strategy.

## **PERFORMANCE BOND PROVIDED TO COVER CLOSURE COSTS**

Closure costs for the system proposed under this minor permit modification would be insignificant, and therefore do not justify posting a performance bond for the closure costs. Closure would consist only of removing the salvageable facilities (i.e., blower and flare station, and power generation station), with the remainder of the improvements likely left in place. Depending upon their condition at the time of system shutdown, the wells and collection system piping would be abandoned, in place, and subsequently used for passive venting of LFG or incorporated into the LFG control system proposed by the County.

The cost of landfill closure, vent installation, and annual maintenance already have been incorporated into the County's closure and long term care estimate.



## **AGREEMENT BETWEEN FACILITY OPERATOR AND OWNER AUTHORIZING USE OF PROPERTY**

A copy of the agreement between the facility operator (NEO Tomoka Farms L.L.C.) and the owner (Volusia County) is provided in Appendix C.

## **SCHEDULE FOR CONSTRUCTION**

As previously stated, this LFG recovery project is being undertaken by NEO Tomoka Farms L.L.C., a private corporation, for development of alternative fuel systems. The key component in making this project economically feasible is the qualification for alternative fuels tax credits. In order to qualify for the tax credits, it is required that the system be installed and operational no later than December 31, 1996. Consequently, it is imperative that construction of the system begin no later August 15, 1996.

While NEO Tomoka Farms L.L.C. understands that the FDEP, by regulation, is allowed up to 90 days to either approve or deny a minor modification permit (in accordance with Section 62-4.055 (5), Florida Administrative Code [FAC]), NEO Tomoka Farms L.L.C. asked that the FDEP give consideration to granting partial or conditional approval of individual components of the proposed construction in order to facilitate NEO Tomoka Farms L.L.C. meeting the December 31, 1996 operational requirement. Specifically, if installation of the wells and associated collection piping could be conditionally approved early in the review process, then review of the remaining system components could be ongoing at the start of construction. NEO Tomoka Farms L.L.C. believes this conditional approval is warranted, based on the positive environmental impacts associated with the installation and operation of a LFG recovery system, and the fact that the ability of NEO Tomoka Farms L.L.C. to construct and operate the system is dependent upon NEO Tomoka Farms L.L.C.'s ability to meet the December 31, 1996 operational deadline.



A

APPENDIX A  
PIPE FLOW CALCULATIONS



**TABLE 1a. PIPE SIZING CALCULATIONS**  
**TOMOKA FARMS ROAD LANDFILL GAS RECOVERY SYSTEM**  
**VOLUSIA COUNTY, FLORIDA**

Well Location		Unit Flow (cfm)	Total Flow (cfm)	Pipe Dia. (inches)	Velocity (fpm)
From	To				
<b><u>SUBHEADER A</u></b>					
EW-30	EW-29	200	200	5.85	1071
EW-29	EW-28	200	400	5.85	2143
EW-28	wye	200	600	7.61	1900
EW-45	EW-46	200	200	5.85	1071
EW-46	wye	200	400	5.85	2143
wye	EW-27	0	1000	9.49	2036
EW-27	Main Header	50	1050	9.49	2138
<b><u>SUBHEADER B</u></b>					
EW-40	EW-31	200	200	5.85	1071
EW-31	wye	200	400	5.85	2143
EW-34	EW-33	200	200	5.85	1071
EW-33	wye	200	400	5.85	2143
wye	EW-32	0	800	9.49	1629
EW-32	Main Header	50	850	9.49	1730
<b><u>SUBHEADER C</u></b>					
EW-41	EW-42	200	200	5.85	1071
EW-42	wye	200	400	5.85	2143
EW-44	wye	200	200	5.85	1071
wye	EW-39	0	600	7.61	1900
EW-43	Main Header	50	650	7.61	2058
<b><u>SUBHEADER D</u></b>					
EW-39	EW-38	200	200	5.85	1071
EW-38	EW-37	200	400	5.85	2143
EW-37	wye	200	600	7.61	1900
EW-35	wye	200	200	5.85	1071
wye	EW-36	0	800	9.49	1629
EW-36	Main Header	50	850	9.49	1730

**Notes**

- (1) Subheader locations shown on attached Sheet 3 of 10.
- (2) cfm = cubic feet per minute
- (3) fpm = feet per minute
- (4) Maximum 1,200 fpm for upgradient flow (against condensate flow).
- (5) Maximum 2,400 fpm for downgradient flow (with condensate flow).

**TABLE 1b. PIPE SIZING CALCULATIONS**  
**TOMOKA FARMS ROAD LANDFILL GAS RECOVERY SYSTEM**  
**VOLUSIA COUNTY, FLORIDA**

Well Location		Unit Flow (cfm)	Total Flow (cfm)	Pipe Dia. (inches)	Velocity (fpm)
From	To				
<b><u>NORTH LOOP</u></b>					
1/2 Subheader D	EW-13	425	425	9.49	865
EW-13	EW-12	50	475	9.49	967
EW-12	EW-11	50	525	9.49	1069
EW-11	EW-10	50	575	9.49	1171
EW-10	EW-9	50	625	9.49	1272
EW-9	Subheader B	50	675	9.49	1374
Subheader B	EW-8	850	1525	14.12	1402
EW-8	EW-7	50	1575	14.12	1448
EW-7	EW-6	50	1625	14.12	1494
EW-6	EW-5	50	1675	14.12	1540
EW-5	EW-4	50	1725	14.12	1586
EW-4	EW-3	50	1775	12.35	2134
EW-3	EW-2	50	1825	12.35	2194
EW-2	EW-1	50	1875	12.35	2254
EW-1	Subheader A	50	1925	14.12	1770
<b><u>SOUTH LOOP</u></b>					
1/2 Subheader D	EW-14	425	425	9.49	865
EW-14	EW-15	50	475	9.49	967
EW-15	EW-16	50	525	9.49	1069
EW-16	EW-17	50	575	9.49	1171
EW-17	EW-18	50	625	9.49	1272
EW-18	EW-19	50	675	9.49	1374
EW-19	EW-20	50	725	9.49	1476
EW-20	EW-21	50	775	9.49	1578
EW-21	Subheader C	50	825	9.49	1680
Subheader C	EW-22	650	1475	14.12	1356
EW-22	EW-23	50	1525	14.12	1402
EW-23	EW-24	50	1575	14.12	1448
EW-24	EW-25	50	1625	12.35	1953
EW-25	EW-26	50	1675	12.35	2014
EW-26	Subheader A	50	1725	14.12	1586
South and North Loops Combined	Blower Station	1050	4700	19.41	2287

**Notes**

- (1) cfm = cubic feet per minute
- (2) fpm = feet per minute
- (3) Maximum 1,200 fpm for upgradient flow (against condensate flow).
- (4) Maximum 2,400 fpm for downgradient flow (with condensate flow).

**TABLE 2. FRICTION LOSS/BLOWER SIZING CALCULATIONS  
FOR ASSUMED FURTHEST WELL IN WELL FIELD  
TOMOKA FARMS ROAD LANDFILL GAS RECOVERY SYSTEM  
VOLUSIA COUNTY, FLORIDA**

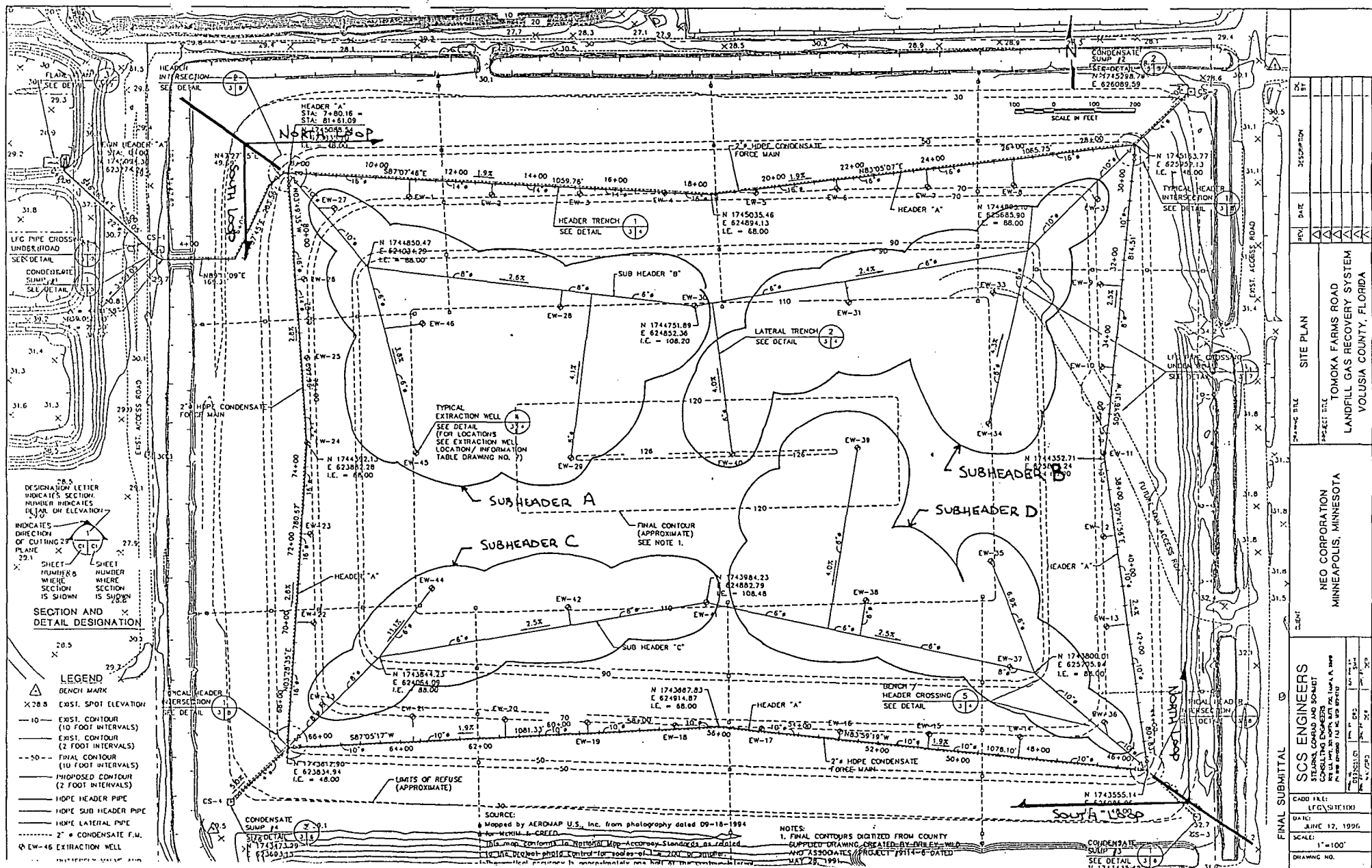
Well Location		Unit Flow (cfm)	Total Flow (cfm)	Pipe Dia. (inches)	Length (ft)	Velocity (fpm)	Cs Value	Change in P (in. w.c.)	Total Change in P (in. w.c.)
From	To								
<b>NORTH LOOP</b>									
EW-39	EW-38	200	200	5.85	540	1071	2652.74	1.61	1.61
EW-38	EW-37	200	400	5.85	380	2143	2652.74	4.54	6.15
EW-37	wye	200	600	7.61	65	1900	2721.64	0.45	6.60
wye	EW-36	0	400	9.49	240	814	2751.98	0.24	6.39
EW-36	EW-13	50	450	9.49	510	916	2751.98	0.64	7.24
EW-13	EW-12	50	500	9.49	228	1018	2751.98	0.35	7.59
EW-12	EW-11	50	550	9.49	214	1120	2751.98	0.40	7.99
EW-11	EW-10	50	600	9.49	224	1221	2751.98	0.50	8.49
EW-10	EW-9	50	650	9.49	215	1323	2751.98	0.56	9.05
EW-9	Subheader B	50	700	9.49	343	1425	2751.98	1.04	10.08
Subheader B	EW-8	850	1550	14.12	300	1425	2740.06	0.62	10.70
EW-8	EW-7	50	1600	14.12	214	1471	2740.06	0.47	11.17
EW-7	EW-6	50	1650	14.12	225	1517	2740.06	0.52	11.69
EW-6	EW-5	50	1700	14.12	205	1563	2740.06	0.51	12.20
EW-5	EW-4	50	1750	14.12	227	1609	2740.06	0.59	12.79
EW-4	EW-3	50	1800	12.35	211	2164	2753.68	1.13	13.92
EW-3	EW-2	50	1850	12.35	220	2224	2753.68	1.24	15.17
EW-2	EW-1	50	1900	12.35	208	2284	2753.68	1.24	16.41
EW-1	Subheader A	50	1950	14.12	296	1793	2740.06	0.96	17.37
<b>Total North Loop Friction Loss</b>									<b>17.37</b>
South and North Loops Combined	Blower Station	1050	4700	19.41	1015	2287	2670.02	4.11	4.11
<b>Total Friction Loss</b>									<b>21.48</b>

**SUMMARY TABLE**

Component/Assumption	Pressure (in. w.c.)
Total Pipe Friction Loss (from above table)	22
Assumed Friction Loss for Valves and Appurtanances	5
Residual Pressure at Furthest Point in Well Field	10
<b>Minimum Recommended Blower Capacity</b>	<b>37</b>

**Notes**

- (1) Based upon review of system friction loss calculations, EW-39 assumed to be furthest well from blower station.
- (2) Well designations in above table refer to location of intersection of lateral lines serving referenced wells and header pipe.





**B**



**APPENDIX B**  
**LFG GENERATION AND RECOVERY RATES**



# Model Parameters

Lo : 4411.000000 ft<sup>3</sup> / Mg \*\*\*\*\* Note : Default value not used \*\*\*\*\*  
 k : 0.088000 1/yr \*\*\*\*\* Note : Default value not used \*\*\*\*\*

NMOC : 4000.000000 ppmv

Methane : 55.000000 % volume \*\*\*\*\* Note : Default value not used \*\*\*\*\*

Carbon Dioxide : 45.000000 % volume

## Landfill Parameters

Year Opened : 1977 Current Year : 1996 Year Closed: 1997

Capacity : 6727815.000000 Mg

Average Acceptance Rate : 336184.631579 Mg/year

Average Acceptance Rate Required from

Current Year to Closure Year : 340307.000000 Mg/year

## Model Parameters

Year	Refuse In Place (Mg)	Methane Emission Rate (Mg/yr)	(Cubic Ft/yr)
1978	1.760E+005	1.290E+003	6.830E+007
1979	3.664E+005	2.578E+003	1.365E+008
1980	5.604E+005	3.784E+003	2.003E+008
1981	7.730E+005	5.024E+003	2.659E+008
1982	9.849E+005	6.155E+003	3.258E+008
1983	1.217E+006	7.339E+003	3.885E+008
1984	1.576E+006	9.354E+003	4.952E+008
1985	1.921E+006	1.109E+004	5.871E+008
1986	2.152E+006	1.185E+004	6.274E+008
1987	2.560E+006	1.385E+004	7.329E+008
1988	3.070E+006	1.642E+004	8.694E+008
1989	3.567E+006	1.868E+004	9.891E+008
1990	4.332E+006	2.272E+004	1.203E+009
1991	4.733E+006	2.374E+004	1.257E+009
1992	5.048E+006	2.406E+004	1.273E+009
1993	5.386E+006	2.450E+004	1.297E+009
1994	5.707E+006	2.480E+004	1.313E+009
1995	6.047E+006	2.520E+004	1.334E+009
1996	6.388E+006	2.557E+004	1.354E+009
1997	6.728E+006	2.592E+004	1.372E+009
1998	6.728E+006	2.373E+004	1.256E+009
1999	6.728E+006	2.173E+004	1.150E+009
2000	6.728E+006	1.990E+004	1.054E+009
2001	6.728E+006	1.823E+004	9.648E+008
2002	6.728E+006	1.669E+004	8.835E+008
2003	6.728E+006	1.528E+004	8.091E+008
2004	6.728E+006	1.400E+004	7.409E+008
2005	6.728E+006	1.282E+004	6.785E+008
2006	6.728E+006	1.174E+004	6.214E+008
2007	6.728E+006	1.075E+004	5.690E+008
2008	6.728E+006	9.844E+003	5.211E+008
2009	6.728E+006	9.015E+003	4.772E+008
2010	6.728E+006	8.255E+003	4.370E+008
2011	6.728E+006	7.560E+003	4.002E+008
2012	6.728E+006	6.923E+003	3.665E+008
2013	6.728E+006	6.340E+003	3.356E+008
2014	6.728E+006	5.806E+003	3.073E+008

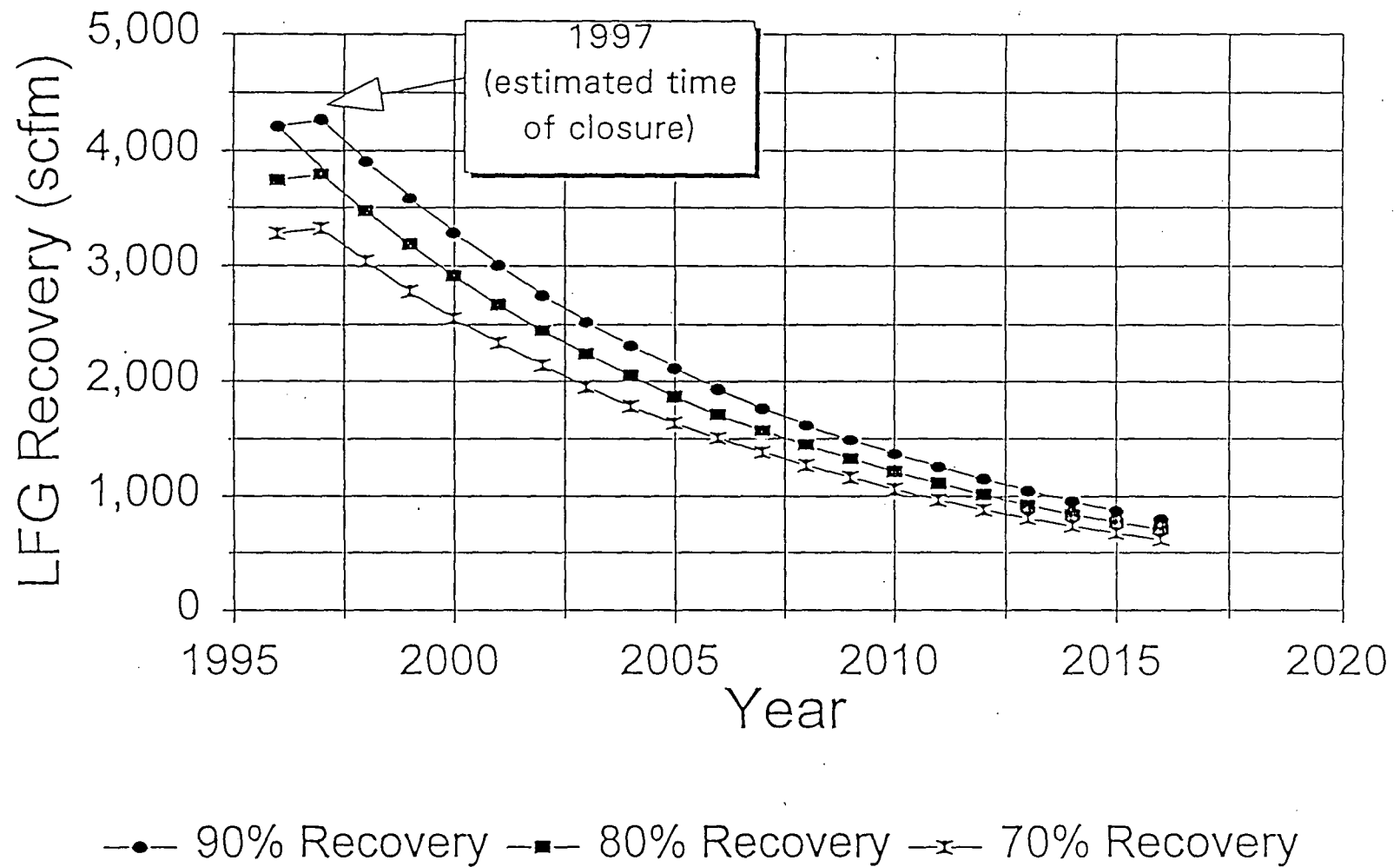
2015	6.728E+006	5.317E+003	2.814E+008
2016	6.728E+006	4.869E+003	2.577E+008
2017	6.728E+006	4.459E+003	2.360E+008
2018	6.728E+006	4.083E+003	2.161E+008
2019	6.728E+006	3.739E+003	1.979E+008
2020	6.728E+006	3.424E+003	1.813E+008
2021	6.728E+006	3.136E+003	1.660E+008
2022	6.728E+006	2.872E+003	1.520E+008
2023	6.728E+006	2.630E+003	1.392E+008
2024	6.728E+006	2.408E+003	1.275E+008
2025	6.728E+006	2.205E+003	1.167E+008
2026	6.728E+006	2.020E+003	1.069E+008
2027	6.728E+006	1.849E+003	9.790E+007
2028	6.728E+006	1.694E+003	8.965E+007
2029	6.728E+006	1.551E+003	8.210E+007
2030	6.728E+006	1.420E+003	7.518E+007
2031	6.728E+006	1.301E+003	6.885E+007
2032	6.728E+006	1.191E+003	6.305E+007
2033	6.728E+006	1.091E+003	5.774E+007
2034	6.728E+006	9.989E+002	5.287E+007
2035	6.728E+006	9.147E+002	4.842E+007
2036	6.728E+006	8.377E+002	4.434E+007
2037	6.728E+006	7.671E+002	4.061E+007
2038	6.728E+006	7.025E+002	3.718E+007
2039	6.728E+006	6.433E+002	3.405E+007
2040	6.728E+006	5.891E+002	3.118E+007
2041	6.728E+006	5.395E+002	2.856E+007
2042	6.728E+006	4.940E+002	2.615E+007
2043	6.728E+006	4.524E+002	2.395E+007
2044	6.728E+006	4.143E+002	2.193E+007
2045	6.728E+006	3.794E+002	2.008E+007
2046	6.728E+006	3.474E+002	1.839E+007
2047	6.728E+006	3.182E+002	1.684E+007

TABLE 7. ESTIMATED LANDFILL GAS PRODUCTION AND RECOVERY  
TOMOKA FARMS ROAD LANDFILL, VOLUSIA COUNTY, FLORIDA

Year	Landfill Gas Produced (from 1st Order Model)		Landfill Gas Recovered					
			90% Recovery Rate		80% Recovery Rate		70% Recovery Rate	
	(scfm)	(MM Btu/hr)	(scfm)	(MM Btu/hr)	(scfm)	(MM Btu/hr)	(scfm)	(MM Btu/hr)
1996	4,684	156	4,215	141	3,747	125	3,279	109
1997	4,746	159	4,271	143	3,797	127	3,322	111
1998	4,345	145	3,910	131	3,476	116	3,041	102
1999	3,978	133	3,580	120	3,183	106	2,785	93
2000	3,646	122	3,281	110	2,917	97	2,552	85
2001	3,337	111	3,004	100	2,670	89	2,336	78
2002	3,056	102	2,751	92	2,445	82	2,139	71
2003	2,799	93	2,519	84	2,239	75	1,959	65
2004	2,563	86	2,307	77	2,050	68	1,794	60
2005	2,347	78	2,112	71	1,878	63	1,643	55
2006	2,150	72	1,935	65	1,720	57	1,505	50
2007	1,968	66	1,771	59	1,575	53	1,378	46
2008	1,803	60	1,622	54	1,442	48	1,262	42
2009	1,651	55	1,486	50	1,321	44	1,156	39
2010	1,512	50	1,361	45	1,209	40	1,058	35
2011	1,384	46	1,246	42	1,108	37	969	32
2012	1,268	42	1,141	38	1,014	34	887	30
2013	1,161	39	1,045	35	929	31	813	27
2014	1,063	36	957	32	850	28	744	25
2015	973	33	876	29	779	26	681	23
2016	891	30	802	27	713	24	624	21

Revised 5/14/96

Figure 5. Estimated LFG Recovery  
Tomoka Farms Road Landfill



C

**APPENDIX C**

**AGREEMENT BETWEEN FACILITY OPERATOR AND OWNER**





**AGREEMENT BETWEEN NEO TOMOKA FARMS L.L.C.  
AND CAMBRIAN ENERGY SYSTEMS**



RECORDING REQUESTED BY  
AND WHEN RECORDED MAIL TO:

Tim Hunstad  
NEO Corporation  
1221 Nicollet Mall, Suite 700  
Minneapolis, MN 55403-2445

FILE COPY

ASSIGNMENT OF LANDFILL GAS LEASE

(Tomoka Farms Landfill)

THIS ASSIGNMENT OF LANDFILL GAS LEASE is made  
February 16, 1996 by and between Cambrian  
Energy Systems, a California limited  
partnership ("Cambrian"), and NEO TOMOKA FARMS  
LLC, a Delaware limited liability company  
("NEO").

W I T N E S S E T H:

On August 25, 1995, Cambrian entered into a Landfill Gas  
Lease and Operating Agreement for Conversion Systems (the "Lease")  
with the County of Volusia, a political subdivision of the State  
Florida.

Cambrian desires to assign all of its right, title and  
interest in such Lease to NEO, and NEO desires to accept such  
assignment and assume all of the obligations of Cambrian arising  
following the effective date of this Assignment under such Lease.

ACCORDINGLY, in consideration of the premises, it is  
agreed as follows:

1. Assignment and Assumption. Cambrian hereby assigns  
and transfers to NEO all of its right, title and interest in the  
Lease, and NEO accepts the assignment and assumes and agrees to  
perform, effective upon the date that this Assignment is signed by  
NEO, as a direct obligation to the County of Volusia, all  
applicable provisions of the Lease.

C:\D\CES\Visalia\assign.lse  
EGU 1-17-96

1

IN WITNESS WHEREOF, the parties have signed this Assignment of Landfill Gas Lease effective on the date that the acceptance hereof is signed by NEO.

## ASSIGNOR:


CAMBRIAN ENERGY SYSTEMS

a California limited partnership

BY: CAMBRIAN MANAGEMENT, INC.

a California corporation as  
general partner

By



Evan G. Williams, President

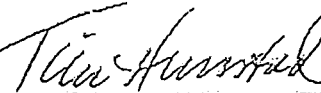
Dated: February 16, 1996

## ASSIGNEE:

NEO TOHOKA FARMS LLC

a Delaware limited liability company

By:



Tim P. Hunstad, Manager

Dated: February 16, 1996

EXHIBIT 1

## LANDFILL GAS RECOVERY SITE

## LEGAL DESCRIPTION

A portion of the Northeast 1/4 of Section 9, Township 16 South, Range 32 East, Volusia County, Florida, being more particularly described as follows:

COMMENCE at the Northeast corner of said Section 9; Thence S88°49'44"W along the northerly line of said Northeast 1/4 a distance of 35.55 feet; Thence departing said section line S01°02'18"E a distance of 240.70 feet to a point in the easterly boundary of the herein described parcel, and the POINT OF BEGINNING; Thence continue S01°02'18"E along said easterly boundary a distance of 1666.67 feet to the point of curvature of a curve concave northwesterly, having a radius of 120.00 feet, a central angle of 91°38'04", a chord bearing of S44°46'44"W, a chord distance of 172.11 feet; Thence southwesterly along the arc of said curve a distance of 191.92 feet to the point of tangency; Thence N89°24'14"W along the southerly boundary of the herein described parcel a distance of 2245.98 feet to the point of curvature of a curve concave northeasterly, having a radius of 120.00 feet, a central angle of 88°18'06", a chord bearing of N43°15'11"W, a chord distance of 167.17 feet; Thence northwesterly along the arc of said curve a distance of 184.94 feet to the point of tangency; Thence N01°06'08"W along the westerly boundary of the herein described parcel a distance of 1595.93 feet to the point of curvature of a curve concave southeasterly, having a radius of 120.00 feet, a central angle of 89°53'37", a chord bearing of N43°50'40"E, a chord distance of 169.55 feet; Thence northeasterly along the arc of said curve a distance of 188.27 feet to the point of tangency; Thence N88°47'29"E along the northerly boundary of the herein described parcel a distance of 2246.86 feet to the point of curvature of a curve concave southwesterly, having a radius of 120.00 feet, a central angle of 90°10'13", a chord bearing of S46°07'25"E, a chord distance of 169.96 feet; Thence southeasterly along the arc of said curve a distance of 188.85 feet to the point of tangency and to close on the POINT OF BEGINNING.

CONTAINING 106.51 ACRES, MORE OR LESS.

EXHIBIT 2

## LANDFILL GAS TREATMENT AND GENERATION FACILITY

## LEGAL DESCRIPTION

A portion of the Northwest 1/4 of Section 9, Township 16 South, Range 32 East, Volusia County, Florida, being more particularly described as follows:

COMMENCE at the Northeast corner of the Northwest 1/4 of said Section 9; Thence S88°31'42"W along the northerly line of the Northwest 1/4 of said Section 9 a distance of 190.00 feet; Thence departing said section line S01°32'19"E a distance of 100.00 feet to the Northeast corner of the herein described parcel and the POINT OF BEGINNING;

Thence continue S01°32'19"E along a line lying 190.00 feet westerly of and parallel with the easterly line of the Northwest 1/4 of said Section 9 a distance of 350.00 feet to the Southeast corner of the herein described parcel; Thence S88°31'42"W along a line lying 450.00 feet southerly of and parallel with the northerly line of the Northwest 1/4 of said Section 9 a distance of 300.00 feet to the Southwest corner of the herein described parcel; Thence N01°32'19"W along a line lying 490.00 feet westerly of and parallel with the easterly line of the Northwest 1/4 of said Section 9 a distance of 350.00 feet to the Northwest corner of the herein described parcel; Thence N88°31'42"E along a line lying 100.00 feet southerly of and parallel with the northerly line of the Northwest 1/4 of said Section 9 a distance of 300.00 feet to close on the POINT OF BEGINNING.

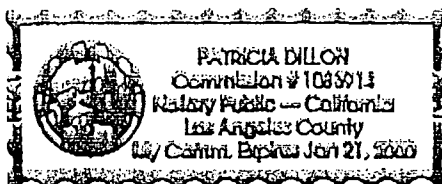
CONTAINING 2.41 ACRES, MORE OR LESS.

STATE OF CALIFORNIA            )  
                                      ) SS.  
COUNTY OF LOS ANGELES        )

On February 16, 1996 before me, Patricia Dillon, a Notary Public in and for said State, personally appeared Evan G. Williams, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Signature Patricia Dillon

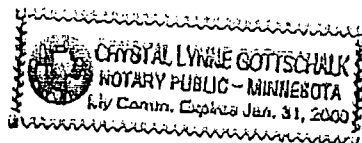


STATE OF MINNESOTA )  
COUNTY OF HENNEPIN ) ss.

on FEBRUARY 16, 1996 before me, CRYSTAL LYNN GOTTSCHALK  
Notary Public in and for said State, personally appeared Tim P.  
Hunstad, personally known to me (or proved to me on the basis of  
satisfactory evidence) to be the person whose name is subscribed to  
the within instrument and acknowledged to me that he executed the  
same in his authorized capacity, and that by his signature on the  
instrument the person, or the entity upon behalf of which the  
person acted, executed the instrument.

WITNESS my hand and official seal.

Signature Crystal Lynn Gottschalk



FILE COPY

## ASSIGNMENT OF SUBORDINATION AGREEMENT

(TOMOKA FARMS LANDFILL)

THIS ASSIGNMENT OF SUBORDINATION AGREEMENT is made February 16, 1996 and between CAMBRIAN ENERGY SYSTEMS, a California limited partnership ("CAMBRIAN"), and NEO TOMOKA FARMS LLC, a Delaware limited liability company ("NEO").

## W I T N E S S E T H:

On August 25, 1995, Cambrian entered into both a Landfill Gas Lease and Operating Agreement for Conversion Systems as well as a Subordination Agreement (the "Subordination Agreement") with respect thereto with the County of Volusia, a political subdivision of the State of Florida.

Concurrently herewith Cambrian is assigning to NEO the Landfill Gas Lease and Operating Agreement for Conversion Systems.

Cambrian desires to assign all of its right, title and interest to the Subordination Agreement to NEO, and NEO desires to accept such assignment and assume all of the obligations of Cambrian arising following the effective date of this Assignment under such Subordination Agreement.

ACCORDINGLY, in consideration of the premises, it is agreed as follows:

1. Assignment and Assumption. Cambrian hereby assigns and transfers to NEO all of its right, title and interest in the Subordination Agreement, and NEO accepts the assignment and assumes and agrees to perform, effective upon the date that this Assignment is signed by NEO, as a direct obligation to the County of Volusia, all applicable provisions of the Lease.



IN WITNESS WHEREOF, the parties have signed this Assignment of Subordination Agreement effective on the date that the acceptance hereof is signed by NEO.

ASSIGNOR:

CAMBRIAN ENERGY SYSTEMS  
a California limited partnership  
BY: CAMBRIAN MANAGEMENT, INC.  
a California corporation as  
general partner

BY

Evan G. Williams

Evan G. Williams, President

Dated: February 16, 1996

ASSIGNEE:

NEO TOMOKA FARMS  
a Delaware limited liability company

BY

Tim P. Hunstad

Tim P. Hunstad, Manager

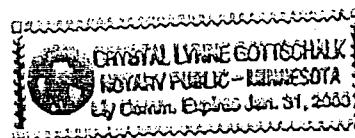
Dated: February 16, 1996

STATE OF MINNESOTA )  
COUNTY OF HENNEPIN ) ss.

on FEBRUARY 16, 1996 before me, CRYSTAL LYNN GOTTSCALK,  
Notary Public in and for said State, personally appeared Tim P.  
Hunstad, personally known to me (or proved to me on the basis of  
satisfactory evidence) to be the person whose name is subscribed to  
the within instrument and acknowledged to me that he executed the  
same in his authorized capacity, and that by his signature on the  
instrument the person, or the entity upon behalf of which the  
person acted, executed the instrument.

WITNESS my hand and official seal.

Signature Crystal Lynn Gottschalk

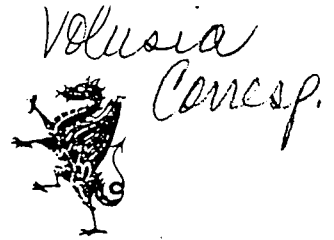


**AGREEMENT BETWEEN CAMBRIAN ENERGY SYSTEMS  
AND VOLUSIA COUNTY**



**CAMBRIAN ENERGY DEVELOPMENT LLC**

One Wilshire Building • Suite 2420  
624 South Grand Avenue, Los Angeles, California 90017-3325  
(213) 628-8312  
Fax (213) 488-9890

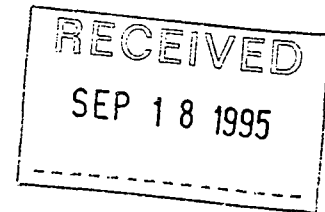


September 15, 1995

**FILE COPY**

VIA FEDERAL EXPRESS

Mr. Tim Hunstad  
NEO Corporation  
1221 Nicollet Mall, Suite 700  
Minneapolis, MN 55403-2445



**Re: Volusia County**

Dear Tim:

I am enclosing a signed copy of the Landfill Gas Lease and Operating Agreement for Conversion Systems and a signed copy of the Subordination Agreement, each of which is between Cambrian Energy Systems and the County of Volusia. I also have a signed copy for our files.

In the letter of transmittal of these documents from Jim Griffin of Volusia County, he indicated that a survey and legal description was being prepared and would be sent as soon as possible. The legal description needs to be attached as Exhibit 1 to the Lease.

As you are aware, we are expecting a revised draft of the Interconnection Agreement, which will incorporate the power purchase provisions pursuant to existing tariffs, from Rita McClelland of Florida Power & Light Company.

We are prepared to assign the Landfill Gas Lease to NEO Corporation as soon as we can sign our Marketing, Development and Joint Proposing Agreement. I am sending you a revised draft of that Agreement under separate cover.

Best regards,

A handwritten signature in cursive script, appearing to read "Evan".

Evan G. Williams

EGW:mel  
Enclosures

cc: Al Jensen (w/o encls.)  
Tudor D. Williams (w/o encls.)

Recording Requested By  
and When Recorded Return to:

**FILE COPY**

Evan G. Williams, Esq.  
Poindexter & Doutre', Inc.  
624 So. Grand Avenue, Suite 2420  
Los Angeles, California 90017

RECEIVED

SEP 18 1995

THIS LANDFILL GAS LEASE and OPERATING AGREEMENT FOR CONVERSION SYSTEMS ("Lease") is entered into this 24<sup>th</sup> day of August, 1995 by and between CAMBRIAN ENERGY SYSTEMS, a California limited partnership ("Cambrian"), and the COUNTY OF VOLUSIA, a political subdivision of the State of Florida (the "Landfill Owner").

W I T N E S S E T H :

Landfill Owner owns and operates the Landfill as defined herein. The parties hereto estimate that the biomass contained in the Landfill currently is generating through its decomposition Landfill Gas comprised principally of methane gas and carbon dioxide which is being generated at a sufficient flow rate and has sufficient heat value and low enough concentrations of corrosive elements to permit the installation and operation of a Conversion System or Systems, as defined herein, for the generation of electric power or the processing of Landfill Gas and the subsequent sale thereof to a public utility or other commercial user.

It is the desire of the Landfill Owner to cooperate with Cambrian to further evaluate the Landfill with respect to the quantity and quality of Landfill Gas being generated therefrom, the economic feasibility of installation of a Conversion System thereon, the feasibility of obtaining all environmental and other regulatory permits to allow the continuous operation of the Conversion System, and certain other factors which would permit the installation and operation of the Conversion System to the economic advantage of both parties to this Lease.

The parties acknowledge that the primary use of the Landfill is as a sanitary landfill. The parties intend that Cambrian shall be provided exclusive rights to the Site as defined herein, but as to the remainder of the Landfill, the rights of Cambrian shall be limited to those portions of the Landfill at which or within which the Collection System is located from time to time as permitted by the terms of this Lease. The parties acknowledge that at all times during the term of the Lease the Landfill Owner shall have all rights required for the Landfill Owner to operate a landfill at the Landfill and meet all requirements imposed upon it in connection with the operation of a landfill at the Landfill in accordance with all applicable federal, state and local laws, rules, regulations, permits and orders, and those rights are paramount to any rights granted to Cambrian hereunder.

ACCORDINGLY, in consideration of the premises and the mutual covenants set forth herein, and subject to the terms and conditions hereof, it is agreed between the parties as follows:

1. Definitions

Wherever used in this Lease, the following terms shall have (unless otherwise expressly indicated) the meanings defined as follows:

"Additional Generating Capacity" means an increment of additional electric power generating capacity or additional Landfill Gas processing capacity that has been added to either an electric power generation facility or a Landfill Gas processing facility by a Landfill Gas energy customer of either Cambrian or any Sublessee that will result in the purchase from Cambrian of additional Landfill Gas collected at the Landfill for use as either a fuel or feedstock.

"Btu" means one (1) British Thermal Unit, which is the amount of heat required to raise the temperature of one (1) pound of water from fifty-eight and one-half degrees Fahrenheit (58.5°F) to fifty-nine and one-half degrees Fahrenheit (59.5°F) at a standard constant pressure of fourteen and seventy-three one hundredths pounds per square inch absolute (14.73 psia).

"Cambrian" shall mean Cambrian Energy Systems, a California limited partnership, its successors and assigns.

"Collection System" shall mean a network of gas collection wells, interconnecting pipes, valves, monitoring equipment, any necessary flare/blower stations, vacuum pumps and any additional gas extraction equipment installed on the Landfill and used for the purpose of the extraction of Landfill Gas.

"Collection System Maintenance Manual" shall mean the current manual of procedures, materials, specifications, "as built" plans and other data set forth for the maintenance, repair, replacement and expansion of the Collection System at the Landfill prepared by Cambrian or its engineering consultants, and such amendments, changes, replacements and supplements to such manual as may be prepared by Cambrian or its consultants from time to time during the term of this Lease, all in accordance with good engineering practice.

"Conversion System" shall mean all of the equipment determined by Cambrian or, if pre-approved by Landfill Owner as set forth herein, any Sublessee to be necessary to convert Paying Quantities of Landfill Gas into processed Landfill Gas, electric power, Thermal Energy, any other energy product, or any two or more of the foregoing. Such Conversion System will normally include a compressor (gas or electrically driven), a gas pretreatment system (if required), gas processing equipment for upgrading the Landfill Gas, a concrete pad and an outdoor enclosure. "Conversion System" shall also mean all of the equipment determined by Cambrian or any Sublessee to be necessary to convert Paying Quantities of Landfill Gas into electric power and, if elected by Cambrian or any Sublessee, Thermal Energy, including a fuel pretreatment system, one or more gas turbines or reciprocating engines, one or more boilers, one or more steam turbines, one or more generators, switch gear, paralleling control gear, cooling towers, and a water treatment facility. However Cambrian or any Sublessee may elect to use such different technologies or equipment for the processing of Landfill Gas, the generation of electric power or other energy as either of them, in its sole judgment, determines would be better suited for the application. Where the context requires, "Conversion System" shall also mean any new or different technologies and equipment installed by Cambrian or any Sublessee on or from the Site to produce commercial revenues from the sale of the Landfill

Gas or the conversion of Landfill Gas to other energy products.

"Energy Customer" shall mean any entity or other person to which Landfill Gas collected at the Landfill is sold by Cambrian, whether such sale occurs at the Site or at any other location within or without the Landfill.

"Force Majeure Period" means any period of time following the Start-up during which the obligations of Cambrian under the Lease are suspended as the result of the occurrence of an event of force majeure pursuant to Section 16.01 of the Lease.

"Generating Entity" shall mean a Sublessee that shall cause to be constructed and operated the Conversion System for the generation of electric power on a portion of the Site.

"Gross Revenues" means the revenues received by Cambrian solely from the sale of landfill gas collected at the Landfill less (i) any wheeling or transportation charges paid to a third party by Cambrian in connection with the transmission or delivery of Landfill Gas and (ii) all sales, energy, license, severance, production, transportation, distribution or ad valorem taxes, if applicable. However, no capital stock tax, privilege tax, or franchise tax, and no income or similar tax based upon profits as such, shall be deducted from Gross Revenues. Gross Revenues shall not include (i) the revenues received by Cambrian or any Sublessee from the sale or use of any energy product derived in whole or in part from Landfill Gas collected at the Landfill, including, but not limited to, electric power, methanol, compressed natural (i.e. high Btu) gas, liquified natural (i.e. high Btu) gas, or high Btu gas (i.e. approximately meeting natural gas pipeline standards), or (ii) any revenues, receipts or income received by Cambrian from the sale, lease or other disposition of any tangible or intangible property, real or personal, other than revenues received by Cambrian from the sale of Landfill Gas collected at the Landfill.

"Hazardous Material" shall mean any hazardous or toxic substance, material or waste which is or becomes regulated by any governmental authority, whether local, state or federal. The term "Hazardous Material" includes, without limitation, any material or substance which is (1) designated as a "hazardous substance" pursuant to



Section 311 of the federal Water Pollution Control Act (33 U.S.C. Section 1151 et seq.), (2) defined as a "hazardous waste" pursuant to Section 1004 of the Resource Conservation and Recovery Act of 1976, 42 U.S.C. Section 6903 et seq. (42 U.S.C. Section 6903) or (3) defined as a "hazardous substance" pursuant to Section 101 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. Section 9601 et seq. (42 U.S.C. Section 9601).

"Landfill" shall mean the real property designated as a permitted solid waste disposal area from time to time by the State of Florida, Department of Environmental Protection, which is commonly known as the Tomoka Farms Landfill and is more particularly described on Exhibit 1 attached hereto and hereby incorporated by reference.

"Landfill Gas" shall mean the gas generated at the Landfill from the anaerobic digestion by methanogenic bacteria of refuse and other solid wastes deposited in the Landfill but including all vapors that may condense in the normal collecting, transporting and processing of the Landfill Gas as described in this Lease, specifically including landfill condensate. The composition of Landfill Gas varies, but usually contains methane in the range of 40% to 60% by volume, carbon dioxide in the range of 40% to 60% by volume, and smaller percentages of water vapor, hydrogen sulfide, ammonia and other gaseous elements.

"Landfill Owner" shall mean the County of Volusia, a political subdivision of the State of Florida, its successors and assigns.

"Lender" means any person or entity which provides financing for the construction, acquisition, operation and maintenance, or any one or more of the foregoing, or otherwise to Cambrian in connection with the performance of its duties hereunder, including without limitation any lender, any owner in a sale and a leaseback transaction, and any guarantor and any replacement, assignee or successor thereof. The term "Lender" is intended to be broad and not restrictive and sufficient to cover any person or entity which provides or assists in providing financing to Cambrian or for the purposes described in the preceding sentence either through traditional means or otherwise.

"Pledge" shall mean any mortgage, deed of trust, transfer, security agreement, assignment, sale and leaseback in a sale and leaseback financing arrangement, or other security instrument or transaction in favor of a Lender which constitutes a lien on or transfer of any or all of (a) the rights created in favor of Cambrian by this Lease, or (b) the subleasehold estate created by any Sublease.

"Paying Quantities" shall mean quantities of Landfill Gas which (i) are capable of being recovered by the Collection System proposed for the Landfill, (ii) have a heat value (expressed in Btus) within the operating limits of a Conversion System, (iii) are recoverable at a flow rate (expressed in standard cubic feet per minute) which is both within reasonable safety margins to prevent interruption of anaerobic conditions in the Landfill and sufficient to continuously operate a Conversion System without interruption during the Lease term, (iv) have supportable test data indicating in the judgment of Cambrian the economic longevity of the Landfill Gas reservoir, and (v) in the sole judgment of Cambrian, would provide a sufficient return upon the capital required for the installation and operation of a Conversion System or Systems after the payment of all expenses related thereto, including the rental payable to the Landfill Owner.

"Pipeline Entity" shall mean a Sublessee that shall own and operate a pipeline for the transmission to the Generating Entity or other Sublessee of Landfill Gas received from Cambrian.

"Site" shall mean a location having an approximate size of 43,560 square feet within the Landfill on native soil that is level, or capable of being leveled by grading, and that is firm and not susceptible to settlement following the pouring of a concrete slab and the installation of the Conversion System and certain parts of the Utility Interface. However, Cambrian shall be responsible to perform such geotechnical investigations necessary to determine that the Site meets the qualifications for the installation of the Conversion System. The Site shall neither contain, nor have ever contained, refuse from landfilling operations or any other fill material. The Site shall be mutually agreed upon by the parties taking into account the convenience to the Collection System, the convenience and proximity to the Utility Interface, and aesthetic and

environmental considerations. Following selection of the Site, the parties may elect to cause to be prepared a plat map or other legal description in recordable form setting forth the location of the Site on the Landfill, which may be initialed by the parties and attached to this Lease following its execution as Exhibit 2. If during the term of this Lease the initial Site becomes unsuitable, in the opinion of Cambrian, for the effective operation of the Conversion System, then at the request of Cambrian an alternative Site shall be selected by the parties. Additionally, Cambrian shall have the right to expand the initial Site or to construct on an additional location within the Landfill for the purpose of expanding the Conversion System or Systems in connection with the full implementation of Conversion Systems on the Landfill. If such an expansion or relocation occurs, Cambrian shall be solely responsible for costs associated with such expansion or relocation.

"Start-up" means the date on which Cambrian has completed the first commercial sale of Landfill Gas collected at the Landfill for a continuous period of seventy-two (72) hours to its energy customer.

"Sublease" shall mean (i) any sublease entered into between Cambrian, as Sublessor, and any sublessee affecting the Landfill or any part thereof, and (ii) any sub-sublease (including further sub-subleases) entered into between any Sublessor deriving possessory rights pursuant to the Lease or any prior Sublease and any sub-sublessee affecting the Landfill or any part thereof.

"Sublessee" shall mean any person which is then the record holder of title to the subleasehold estate arising from any Sublease. The term "Sublessee" shall also mean and include any successor or assignee of any Sublessee which is then the record holder of title to the leasehold estate arising under any Sublease.

"Sublessor" shall mean (i) Cambrian, in its capacity as sublessor under any Sublease, and (ii) any sub-sublessor that has derived possessory rights affecting the Landfill or any part thereof pursuant to a Sublease. The term "Sublessor" shall also mean and include any successor or assign of Cambrian or any other sub-sublessor which is then the record holder of title to the Sublessor's interest in and reversionary interest under any Sublease.

"Supplemental Start-up" means the date on which Cambrian has completed the first commercial sale of additional Landfill Gas collected at the Landfill for a continuous period of seventy-two (72) hours that is used to fuel Additional Generating Capacity installed by the energy customer of Cambrian or any Sublessee.

"Thermal Energy" shall mean a thermal energy product, whether or not produced as part of a cogeneration process, including, but not limited to, steam, heat, hot water and cold water.

"Utility Interface" shall mean (i) if the Energy Customer or Generating Entity elects to use the Landfill Gas to generate electric power, the step-up transformer, metering facilities, protection circuitry, transmission lines, poles and any other equipment necessary to interconnect the Conversion System or Systems with the grid of the public utility in whose franchise area the Landfill is located, or (ii) the metering facilities, pipelines, valves and any other equipment necessary to interconnect the Conversion System or Systems with the transmission or distribution pipelines or other facility of the public utility, pipeline company or other energy purchaser within reasonable proximity to the Landfill.

2. Landfill Gas Recovery and Conversion System Installation and Operation

2.01 In consideration of good and valuable consideration and of the covenants of Cambrian herein contained, the receipt and adequacy of which are hereby acknowledged, the Landfill Owner hereby grants to Cambrian the right to evaluate, collect, test, treat, process, develop, sell and utilize, or any one or more of the foregoing, all Landfill Gas collected by the Collection System and to use and occupy the Site for the term, and subject to the covenants, conditions and provisions hereinafter set forth. In the event Cambrian desires to enhance production of the Landfill Gas, the Landfill Owner shall have the final approval of the method proposed to be used for such enhancement. The rights granted to Cambrian hereunder shall specifically include the right to make test borings and test the Landfill for Paying Quantities of Landfill Gas, the right

to install, operate, maintain and repair a Collection System or Systems, and the right to install, operate, maintain and repair all facilities and equipment necessary for the generation, transmission and sale of electric power, the processing and sale of pipeline quality or medium BTU gas derived from Landfill Gas, the production, sale, use and delivery, or any one or more of the foregoing, of Thermal Energy or other energy generated by the Conversion System, and for the sale of any other energy product or products into which the Landfill Gas collected by the Collection System may be converted, or any one or more of the foregoing. However, Cambrian shall have no rights to and shall have no responsibility or liability with respect to any Landfill Gas that is not collected by the Collection System. Cambrian shall also have the right to place and maintain on the Landfill tanks, roads, pipelines, power lines, and all other structures, works and improvements as may be necessary or convenient in Cambrian's operations hereunder, together with all other rights necessary or convenient for any and all of the purposes set forth in this Section, including, but not limited to, non-exclusive rights of way, licenses and easements over, upon and across the Landfill and any other real property or real property interests owned by the Landfill Owner. The Landfill Owner expressly reserves the right to grant non-exclusive rights of way, licenses and easements over, upon and across the Landfill and any other real property or real property interests owned by the Landfill Owner. The Landfill Owner, its agents, successors and assigns shall have the right to the use of the surface of the Landfill. However, the Landfill Owner, its agents, successors or assigns shall exercise its right to such use so as not to unreasonably interfere with the full and proper operations of the Collection System or Systems, the Conversion System or Systems, and the Utility Interface. The Landfill Owner expressly reserves all rights of use, control and possession of the Landfill and of any Landfill Gas not collected by the Collection System, and all other rights therein of whatever character not herein expressly given exclusively to Cambrian.

2.02                   The Landfill Owner hereby agrees to grant to the public utility or utilities or other energy purchaser to which Cambrian or any Sublessee sells or delivers for transmission the electric power, Thermal Energy and any other energy

product generated by its Conversion System or Systems all necessary rights of way and easements to install, operate, maintain, replace, relocate and remove the Utility Interface and any required pipelines and related equipment. Such rights shall include adequate and continuing access rights on the Landfill with respect thereto for the term of this Lease, but shall not unreasonably interfere with operations of the Landfill Owner at the Landfill.

2.03 To the extent that it is necessary for Cambrian or any Sublessee to run power lines or pipelines, or both, through land owned by the Landfill Owner other than on the Landfill in order to intertie the Utility Interface with the grid of a public utility or to deliver Landfill Gas or Thermal Energy produced by the Conversion System to a customer, the Landfill Owner hereby agrees to grant to Cambrian and any Sublessee without charge for the term of this Lease all necessary licenses, rights of way, easements or other legal rights in, under, over, across or through such land as may be necessary to install, construct, operate and maintain power poles, power lines, pipelines, pumps, compressors and ancillary equipment, as the case may be. Additionally, if the Landfill Owner owns existing power poles or similar poles located along a route on land other than the Landfill which is owned by the Landfill Owner and which would facilitate interconnecting the Utility Interface with the grid of a public utility purchasing or wheeling the electric power generated by the Conversion System, the Landfill Owner hereby grants to Cambrian and any Sublessee the right, without any additional compensation to be paid by Cambrian or any Sublessee, to attach its power lines to such poles owned by the Landfill Owner. If the Landfill Owner (i) owns any existing pipeline easement or right of way on or through land owned by third parties along a route that would facilitate the construction of a pipeline by Cambrian or any Sublessee to deliver Landfill Gas or Thermal Energy produced by the Conversion System to a customer, and (ii) the construction of such pipeline by Cambrian or any Sublessee would constitute a permissible burden on the servient tenement under the terms of such easement or right of way and would not unreasonably interfere with any existing or proposed use of such easement or right of way by the Landfill Owner, then the Landfill Owner hereby grants to Cambrian and any Sublessee the right, without any additional compensation to be paid by Cambrian or any

Sublessee, to construct, operate, repair, replace and maintain such pipeline within such easement or right of way.

2.04 Cambrian agrees to hold harmless the Landfill and the Landfill Owner from claims of laborers and materialmen resulting from Cambrian's operations hereunder, and the Landfill Owner may post and keep posted on the Landfill such notices of non-responsibility as the Landfill Owner may desire to protect the Landfill against liens.

2.05 Cambrian agrees to conduct its operations so as not to unreasonably interfere with the full and proper operation of the Landfill for sanitary landfill operations.

2.06 In constructing, retrofitting, drilling, equipping, operating and maintaining the Collection System and the Conversion System, Cambrian shall use reasonable care and diligence and shall perform all work in a proper and workmanlike manner that is consistent with the health and safety guidelines included in the Solid Waste Management Association of North America's compilation of landfill gas field practices and procedures dated March 1992.

2.07 During the term of this Lease, Cambrian and any Sublessee shall have the right to initially install as well as to later substitute at its expense any item or items of equipment or an entire Conversion System at the Site and to retrofit Conversion Systems in order to improve their operating characteristics or to comply with existing or newly-instituted environmental or other regulations, or for any other reason. Such substitution may include the installation of equipment representing new or different technologies available to Cambrian or any Sublessee, including the utilization of cogeneration technology, if applicable. The Landfill Owner shall have the right to review and comment on the substitution of equipment or the entire Conversion System at the Site and any retrofitting to the Conversion System.

2.08 If the Landfill Owner has at any time during the term of this Lease a Collection System installed on the Landfill, Cambrian may, upon consent by the Landfill Owner, use all or any portion of such Collection System for the

term of this Lease. Cambrian may modify the Landfill Owner's Collection System in any manner determined to be necessary or advantageous by Cambrian in order to integrate the Landfill Owner's Collection System with the Collection System to be installed by Cambrian. If Cambrian elects to use all or any portion of the Landfill Owner's Collection System as set forth herein, Cambrian shall be responsible for and shall have full authority to repair, maintain, operate, relocate and replace that portion of the Landfill Owner's Collection System elected to be used to the same extent as Cambrian has responsibility and authority to perform such duties with respect to the Collection System or Systems installed by Cambrian. Cambrian agrees to cooperate with the Landfill Owner in the Landfill Owner's efforts to achieve its goals for controlling emissions at the Landfill. However, such cooperation shall not create any duty for Cambrian to incur capital or operating expenses beyond what Cambrian has determined is reasonable for the commercial collection and use of Landfill Gas at the Landfill.

2.09 During the term of this Lease, the Landfill Owner agrees to coordinate its efforts with Cambrian and, to the extent consistent with applicable permits and regulations and with maintaining an efficient sanitary landfill operation, operate its sanitary landfill operation to permit Cambrian, if Cambrian so elects and the Landfill Owner agrees, to install a horizontal Collection System. If Cambrian determines that it is advantageous and profitable to install a horizontal Collection System, then Cambrian agrees to use its best efforts to install a horizontal Collection System either immediately prior to or concurrently with the filling of the Landfill with refuse. Such horizontal Collection System would be installed concurrently with the filling of the Landfill so as to achieve the installation of the Collection System prior to the generation of Landfill Gas by decomposition of materials within the Landfill. However, Cambrian agrees to coordinate the installation of pipe constituting a portion of any horizontal Collection System so as to minimize the time during which such pipe could remain uncovered by refuse.

2.10 The Landfill Owner agrees to use its best efforts to adopt an operational landfilling plan and use its best efforts to implement such plan, to



the extent permissible under applicable permits and regulations, which would permit Cambrian to collect Paying Quantities of Landfill Gas from the refuse placed in the Landfill by the Landfill Owner at the earliest opportunity. The Landfill Owner agrees to cooperate and coordinate with Cambrian in the integration of the installation and operation of the Collection System by Cambrian and the filling of the Landfill by the Landfill Owner. The Landfill Owner shall supply Cambrian with a copy of such operational landfilling plan as soon as practicable after its adoption.

2.11 The Landfill Owner agrees to use its best efforts to supervise the machine operators employed at the Landfill and to instruct them not to damage any vertical well pipes or other material or equipment of Cambrian installed at the Landfill which may extend above or be located below the surface of the Landfill during either normal day-to-day operations or during any operations in which the Landfill is brought up to its final grade. To the extent that any damage occurs to the Collection System, the Conversion System or the Utility Interface from the negligence of the Landfill Owner, or any contractor, agent, licensee or invitee of the Landfill Owner, all of such damages shall be the responsibility of the Landfill Owner. In connection therewith, all repairs to the Collection System, Conversion System and Utility Interface shall be performed by Cambrian. However, all reasonable costs and expenses incurred by Cambrian in making any such repairs shall, to the extent not covered by any insurance coverage carried by the Landfill Owner, be payable immediately by the Landfill Owner upon the submission by Cambrian of an invoice therefor to the Landfill Owner.

2.12 If Landfill Gas is being generated at a rate that, in the opinion of the Landfill Owner, requires the installation of a Collection System in order to comply with federal, state and local regulations regarding emissions of Landfill Gas at the Landfill, the Landfill Owner shall notify Cambrian of the Landfill Owner's determination of the necessity to install a Collection System in specified areas of the Landfill and shall be free to proceed to design and install a Collection System in the area of areas of the Landfill indicated in its notice to Cambrian. The design and installation of any such Collection Systems shall be designed so as not to unreasonably interfere with the

Collection System operated by Cambrian.

2.13 The engineering staffs of the Landfill Owner and Cambrian shall meet and confer on the design of any expansion or additions to the Landfill Owner's Collection System at the Landfill. The parties agree to cooperate in specifying the materials, design, and location of horizontal and vertical collection wells for such Landfill Owner's Collection System with a view to achieving the installation of a Landfill Owner's Collection System capable of collecting and delivering Landfill Gas with low levels of oxygen by volume for use in the Conversion System as well as satisfying applicable federal, state, and local regulations as to air quality or other environmental concerns at the Landfill. The design and construction of any addition or expansion to the Landfill Owner's Collection System shall utilize design elements that (i) are intended to minimize the intrusion of oxygen into the Landfill Gas collected by the Collection System and (ii) will meet applicable federal, state and local laws, regulations, rules, permits, orders and other governmental requirements pertaining to Landfill Gas. Following completion of the design by or at the direction of the Landfill Owner of the Landfill Owner's Collection System, but prior to commencement of construction, all plans and specifications shall be submitted to Cambrian for review and comment. On or before fifteen (15) business days following receipt of such plans and specifications and the description of the proposed equipment and materials, Cambrian shall notify the Landfill Owner as to any requested modifications to such plans, specifications, items of equipment or other property proposed for such Landfill Owner's Collection System that Cambrian has determined would better meet its requirements for a commercial Collection System at the Landfill. The Landfill Owner shall use its best efforts to incorporate such requested modifications. However, the design of and expansion or addition to the Landfill Owner's Collection System shall include a sufficient number of horizontal collection wells to meet applicable legal requirements in the professional judgment of a mutually acceptable qualified independent engineering firm experienced in the design and operation of Landfill Gas migration control systems and Collection Systems.

2.14 Cambrian shall provide to the Landfill Owner a "call out"

list which shall set forth the names and telephone or pager numbers of personnel of Cambrian or contractors retained by Cambrian who have been designated by Cambrian to respond to conditions relating to the operation, maintenance or repair of the Collection System during periods, including any holidays and weekends, when personnel of Cambrian may not otherwise be present at the Landfill. Such "call out" list provided to the Landfill Owner shall be kept current by Cambrian. It is the intent of the parties that personnel of Cambrian or its contractors designated by Cambrian shall be available for contact by the Landfill Owner, either in person, by pager or other message system or by telephone, 24 hours each day throughout the term of the Agreement for purposes of notification of conditions requiring a timely response for the performance of the duties of Cambrian as set forth herein.

2.15 The parties recognize that the Landfill Owner is required to promptly respond to complaints or other notifications received from governmental agencies having jurisdiction over the Landfill as to any purported noncompliance of the Landfill with applicable rules, orders, permits or regulations. Accordingly, to the extent that any purported noncompliance relates to the collection of Landfill Gas, requests of Cambrian to increase the draw rate on the wells constituting part of the Collection System may be made by authorized personnel of the Landfill Owner orally, either in person or by telephone, to operating personnel of Cambrian. Such oral request shall state the specific action that the Landfill Owner desires Cambrian to take with respect to the operation of the Collection System in order to meet the requirements of the applicable governmental agency. If Cambrian is able to comply with the request of the Landfill Owner without adversely affecting the operation of its Conversion System or Systems, or the quantity (measured by Btu content) or quality (measured by air and nitrogen content) of methane in Landfill Gas sold to any Energy Customer, Cambrian shall utilize its best efforts to do so. If Cambrian is unable to comply with such requests within eight (8) hours from the receipt of such request by Cambrian, or, if the Landfill Owner is unable to locate any personnel of Cambrian to deliver such request within an eight (8) hour period, then the Landfill Owner shall be authorized through a technician or other

personnel trained in the operation of the Collection System to adjust a well or wells included in the Collection System in order to meet the requirements of any rule, order, permit or regulation of any applicable governmental agency having jurisdiction over the Landfill. Cambrian shall supply the Landfill Owner with two copies of the Collection System Maintenance Manual as in effect from time to time. The personnel utilized by the Landfill Owner to adjust or perform other corrective work on the Collection System shall perform such work in accordance with the procedures and standards set forth in the Collection System Maintenance Manual. If the Landfill Owner makes an oral request of Cambrian to take action with respect to the Collection System that results in the Landfill Owner using its personnel to adjust any such Collection System, following the completion of any such action taken by the Landfill Owner, the Landfill Owner shall notify Cambrian in writing of all actions taken and all modifications made to the Collection System. Such notification shall be accompanied by a copy of either the order, rule, regulation, log data, notice of violation, written warning or other written evidence, if any, pursuant to which the action was taken by the Landfill Owner. The Landfill Owner may, at its sole cost, add wells that meet the design criteria set forth in Section 2.13 hereof in order to comply with applicable governmental rules, regulations and orders pertaining to Landfill Gas migration or emissions at the Landfill.

2.16 In order to allow the Landfill Owner to comply with all applicable laws, rules, orders, permits and regulations with respect to its operations conducted at the Landfill, the Landfill Owner shall have the right to request that any Landfill Gas not being used by the Conversion System be directed to a flare operated as a part of either Cambrian's Collection System or the Landfill Owner's Collection System. Such request may be made at any time during which the Landfill Owner may be required to comply with applicable laws, rules, orders, permits or regulations pertaining to Landfill Gas at the Landfill, irrespective of whether or not the Conversion System is operational or is being operated. Any such request may be made orally by the Landfill Owner. Cambrian shall use its best efforts to comply with such request as soon as practicable. If Cambrian is unable or fails to comply with such request within eight (8) hours from the receipt of

such request by Cambrian, or if the Landfill Owner is unable to locate any personnel of Cambrian to deliver such request within an eight (8) hour period, then the Landfill Owner shall be authorized through a technician or other personnel trained in the operation of the flare or flares included in either Cambrian's Collection System or the Landfill Owner's Collection System as well as in the operation of the Collection System to direct to one or the other of the flares that may be included in the Collection System the Landfill Gas not being used in the Conversion System or destroyed in one or the other of such flares. The personnel utilized by the Landfill Owner shall also be authorized to repair or take corrective action with respect to any flare included in Cambrian's Collection System in order to maintain its operability to the greatest extent practicable and to the extent that such work has not been performed by Cambrian. If the Landfill Owner makes an oral request of Cambrian to direct Landfill Gas that is not used or destroyed to a flare in the Collection System or to repair or maintain a flare in the Collection System, and the failure to meet such request results in the Landfill Owner using its personnel to either direct such Landfill Gas to any such flare or to repair any such flare, following the completion of any such action taken by the Landfill Owner, the Landfill Owner shall notify Cambrian in writing of all actions taken and all modifications and repairs made to any such flare in the Collection System. Such notification shall be accompanied by a copy of order, rule, regulation, log data, notice of violation, written warning or other written evidence, if any, pursuant to which the action was taken by the Landfill Owner.

2.17 During the term of the Lease the Landfill Owner intends to measure the concentrations of Landfill Gas which may from time to time escape from the surface of the Landfill with a view to monitoring Landfill Gas emissions for compliance with applicable air quality or other environmental regulations. The parties agree that they shall coordinate their efforts with a view toward maintaining the Landfill in compliance with applicable air quality or comparable environmental regulations. If the Landfill Owner at any time determines that the emissions of Landfill Gas from the Landfill exceed permissible limits, the Landfill Owner shall use its best efforts to determine the cause for such emissions. If the presence of excess concentrations of Landfill Gas are

determined by the Landfill Owner to be caused by cracks in the Landfill or other Landfill surface or subsurface irregularities, then the Landfill Owner shall have the sole responsibility for the repair of such cracks or other Landfill surface or subsurface irregularities. If such excess concentrations of Landfill Gas are determined to be caused by the generation of Landfill Gas at the Landfill at a rate greater than the rate of collection by the Collection System operated by Cambrian, then the Landfill Owner shall promptly notify Cambrian of its determination and provide Cambrian with the data in the possession of the Landfill Owner supporting its determination of the cause of such excess concentration of Landfill Gas. Upon receipt of such notification and supporting data, Cambrian agrees to use its best efforts to increase the draw rate on the wells in the Collection System located nearest to the area or areas of excess concentration of Landfill Gas. The parties have set forth the preceding procedure to evidence their intent to cooperate with each other in an effort to maintain the compliance of the Landfill with applicable air quality regulations. However, by pledging its cooperation, Cambrian shall have no liability for the failure of the Landfill to meet such air quality or comparable regulations as may be in effect from time to time during the term of this Lease.

2.18 It is the intent of the parties hereto (but without any warranties express or implied) that the Collection System and all replacements, expansions and additions thereto and the operation thereof shall function to collect the Landfill Gas generated at the Landfill to the greatest extent practicable so that (i) the operation of the Landfill will remain in compliance with applicable federal, state and local laws and regulations, (ii) as much Landfill Gas as reasonably possible will be available for use by Cambrian in the Conversion System operated by Cambrian or any Sublessee, and (iii) the collection of Landfill Gas by the Collection System will occur in a fashion so that a minimum of oxygen by volume will intrude into the Collection System. In view of the foregoing, in order to achieve the intrusion limit, the Landfill Owner shall use its best efforts to continue to maintain the cover over those portions of the Landfill where it is currently installed and may continue to install such cover over additional portions of the Landfill as they are filled with refuse and cover material has been placed in accordance

with the sanitary landfill operational plan referred to in Section 2.10 above.

3. Term

3.01 The term of this Lease shall be for twenty (20) years from and after the date hereof and shall automatically renew for five (5) year periods thereafter unless the Landfill Owner gives written notice to Cambrian on or before six (6) months prior to the expiration of the initial 20 year period or any subsequent 5 year renewal period. In no event shall this Lease extend beyond the limitations set forth in any applicable legal limitation pertaining to the term of an agreement of the nature set forth herein.

4. Compensation for Landfill Gas and Rent for Site

4.01 As the only consideration payable to the Landfill Owner by Cambrian for the rights granted in Section 2.01 and elsewhere herein pertaining to Landfill Gas, including the rights to extract, use and sell Landfill Gas, Cambrian shall pay to the Landfill Owner the sum of One Thousand Dollars (\$1,000) for each calendar month during the term hereof in which a sale of Landfill Gas from the Landfill is made by Cambrian to an Energy Customer. Such consideration shall be payable in arrears on or before the twenty-fifth (25th) day of the calendar month following the month for which such consideration is due.

4.02 As consideration solely for the use of the Site as provided in Section 2.01 and elsewhere herein, Cambrian shall pay to the Landfill Owner both a base rent and additional rent. The base rent shall be in the amount of One Thousand Dollars (\$1,000) per month commencing with the first full calendar month following the first commercial sale of Landfill Gas from the Landfill for a cumulative period of seventy-two (72) hours and continuing for each month thereafter in which any commercial sale (other than to Landfill Owner) of Landfill Gas occurs. Subject to the operation of Section 16.01 hereof, such rent shall be payable in arrears on or before the twenty-fifth (25th) day of the calendar month following the month in which any such

commercial sale of Landfill Gas from the Landfill occurs. The additional rent for the Site shall be paid based upon the gross revenues received by Cambrian as set forth in Section 4.03 hereof. It is the intent of Cambrian to enter into an agreement for the sale of Landfill Gas collected at the Landfill either (i) with the Pipeline Entity that will transmit such Landfill Gas to the Generating Entity or to another energy purchaser that will utilize such Landfill Gas either to generate electric power, Thermal Energy, another energy product, or two or more of the foregoing, or (ii) directly with either the Generating Entity or another Energy Customer. Cambrian intends to sublease all or a portion of the Site to either the Pipeline Entity or the Generating Entity. If the Site is subleased to the Pipeline Entity, the Pipeline Entity may, in turn, sublease a major portion of the Site to the Generating Entity. If the Site is subleased by the Generating Entity from Cambrian or from the Pipeline Entity, the Generating Entity would be anticipated to enter into such Sublease for the purpose of constructing and operating an electric power generation facility. The Pipeline Entity, the Generating Entity and Cambrian may be controlled by or under common control with (through ownership or otherwise) the same individuals or entities. Each payment of base rent and additional rent shall be accompanied by a statement showing the computation of additional rent owing by Cambrian to the Landfill Owner.

4.03           The additional rent payable by Cambrian pursuant to Section 4.02 hereof shall be determined as follows:

(a)   During the first ten (10) years (exclusive of any Force Majeure Periods) following Start-up, Cambrian shall pay additional rent to the Landfill Owner in an amount equal to ten percent (10%) of the Gross Revenues received by Cambrian.

(b)   During year 11 and each year thereafter (exclusive of any Force Majeure Periods) following Start-up, Cambrian shall pay additional rent to the Landfill Owner in an amount equal to fifteen percent (15%) of the Gross Revenues received by Cambrian.

(c)   If any energy customer of Cambrian or any Sublessee adds Additional Generating Capacity, then during the first ten (10) years following the Supplemental Start-up (exclusive of any Force Majeure Periods) Cambrian shall pay additional rent to the Landfill Owner in an amount equal to ten percent (10%) of the Gross Revenues received



by Cambrian that are attributable to the additional Landfill Gas collected at the Landfill for use as a fuel or feedstock for the Additional Generating Capacity. During year 11 and each year thereafter following Supplemental Start-up (exclusive of any Force Majeure Periods), Cambrian shall pay additional rent to the Landfill Owner in an amount equal to fifteen percent (15%) of the Gross Revenues received by Cambrian that are attributable to the additional Landfill Gas collected at the Landfill for use as a fuel or feedstock for the Additional Generation Capacity.

4.04 Commencing with the signing of this Lease, the Landfill Owner and Cambrian shall enter into a Subordination Agreement in the form attached hereto as Exhibit 3. The obligations of Cambrian for the payment of money to the Landfill Owner pursuant to the terms of this Lease, whether in the form of compensation for the right to collect and sell Landfill Gas pursuant to Section 4.01 or in the form of base rent and additional rent for use of the Site pursuant to Section 4.02, or otherwise, shall be subject to the provisions of such Subordination Agreement.

4.05 The Landfill Owner or its authorized representatives shall have the right to inspect during reasonable business hours the sales journal and any other pertinent books and records of Cambrian relating to the gross revenues upon which the payment of additional rent will be based. Such inspection rights shall be conducted during business hours and in such a manner so as not to unreasonably interfere with the ongoing business of Cambrian.

4.06 Cambrian shall install and maintain instruments to meter the quantity and energy content of the Landfill Gas extracted from the Landfill. The Landfill Owner shall have the right, upon the giving of reasonable prior written notice, to examine and inspect during reasonable business hours any and all meters installed at the Landfill, whether installed by Cambrian or otherwise insofar as it relates to the duties of Cambrian pursuant to this Lease.

##### 5. Scope of Cambrian Duties

Subject to the rights to any early termination or surrender of this

Lease, and following the signing of an agreement by Cambrian and an Energy Customer for the sale of processed Landfill Gas recovered from the Landfill, Cambrian will perform the following duties during the term of this Lease:

5.01 If necessary, drill a test boring or borings on the Landfill to estimate the flow rate and estimated reservoir life of the Landfill Gas.

5.02 Conduct any analysis regarded as necessary by Cambrian of the Landfill Gas to determine its heat value and general chemical composition.

5.03 Design any required Collection System for the extraction of Landfill Gas.

5.04 Select equipment to be utilized in the Conversion System based upon the quantity and quality of the Landfill Gas, including the design of any required fuel pretreatment system.

5.05 Following a determination by Cambrian that Landfill Gas is collectible in Paying Quantities, use its best efforts to obtain all required licenses and permits, including all permits and authorities under applicable local, state and federal environmental laws, for the construction and operation of the Collection System, the Conversion System and the Utility Interface.

5.06 Use its best efforts to negotiate an agreement with a public utility, pipeline company or other energy user for the sale to such public utility, pipeline company or other energy user of the energy product or products produced by the Conversion System.

5.08 Subject to obtaining all required governmental authorizations, including all environmental reports and permits, acquire or install the Collection System and the Conversion System, and, if applicable, coordinate with the public utility, pipeline company or other energy user in whose franchise area the Landfill is located as to the installation of the Utility Interface.

5.09 After obtaining all required governmental permits and other authorizations and completing all required construction, operate and maintain the Collection System and the Conversion System and cause to be operated and maintained the

Utility Interface with a view to as continuous operation as possible. It is acknowledged, however, by the parties that the continuity of operation of the Collection System and the Conversion System or Systems will be subject to interruption caused by routine maintenance, equipment breakdowns, supplier delays, emergency outages affecting the pipeline or electric grid for the delivery of energy products to the energy purchaser of Cambrian or any Sublessee, and by force majeure.

6. Environmental Permits; Available Data; Cooperation

6.01 Following (i) any analysis regarded as necessary by Cambrian of the Landfill Gas and the determination by Cambrian that the Landfill Gas at the Landfill is recoverable in Paying Quantities, and (ii) the signing of an agreement by Cambrian and an Energy Customer, Cambrian shall, at its own expense, prepare and file applications and diligently prosecute the processing of such applications for the purpose of obtaining all environmental and other permits which may be required under applicable local, state and federal environmental laws and regulations for the installation and operation of the Collection System and the Conversion System. In connection therewith, the Landfill Owner agrees to make available to Cambrian all existing public records of environmental information reports, environmental impact reports, air impact assessment studies, copies of all environmental applications filed and other available data relating to and used in connection with obtaining any environmental permits necessary for the installation and operation of any equipment or the conducting of any other activities on the Landfill, except the records which may be privileged or exempt pursuant to Chapter 119, Florida Statutes. The Landfill Owner agrees that it shall cooperate with Cambrian and shall make available to Cambrian all current data in the possession of or reasonably obtainable by the Landfill Owner which is needed by Cambrian to prepare and file any application for an environmental permit or other operating authority necessary to install and operate the Collection System or the Conversion System or Systems on the Landfill. The environmental permits which Cambrian shall apply to obtain are limited solely to the scope of its commercial operation of the Collection System and Conversion System.

Nothing herein shall be construed to require Cambrian to apply for or obtain any environmental permits, conduct any studies, or perform any work relating to the collection, control, migration, or emission of any Landfill Gas which is not collected by the Collection System or any other aspects relating to the Landfill or operations conducted thereon which shall remain the responsibility of the Landfill Owner.

7. Equipment to Remain Personal Property

7.01 The parties hereby acknowledge and agree that all of the equipment and property incorporated in the Collection System or Systems, the Conversion System or Systems and the Utility Interface are the sole and exclusive property of Cambrian or any Sublessee, as the case may be. All of such equipment or property shall remain personal property notwithstanding the method or mode of its installation on, under or attachment to any real property. Should the Landfill be subject to a lease or mortgage by the Landfill Owner, upon the written request by Cambrian the Landfill Owner shall provide to Cambrian and to each Sublessee designated by Cambrian in such written request prior to the delivery of such equipment and personal property a waiver or estoppel certificate from the lessor or mortgagee, or both, of the Landfill, in a form satisfactory to Cambrian, acknowledging that such equipment and property is personal property owned by Cambrian or by such designated Sublessee, as the case may be, and subject to the right of removal by Cambrian and each such Sublessee. Additionally, should any lessor or lender with respect to any equipment or property included in the Collection System, the Conversion System or Systems, or the Utility Interface require a waiver or estoppel certificate, the Landfill Owner agrees to provide to any such lessor or lender a waiver or estoppel certificate from the Landfill Owner and from any lessor, lessee or mortgagee of the Landfill Owner, in a form satisfactory to the lessor or lender to Cambrian, acknowledging that such equipment and property is personal property and is owned by and may be removed by Cambrian.

8. Taxes

8.01 Cambrian shall pay all taxes levied on the Collection System, the Conversion System or Systems and, if owned by Cambrian, the Utility Interface.

8.02 The Landfill Owner shall pay all other taxes and assessments on the Landfill and on all other improvements and personal property thereon.

9. Water

9.01 To the extent that the Landfill Owner has access at the Landfill to water above the needs of the Landfill Owner for use on the Landfill, the Landfill Owner agrees to make available or permit Cambrian to arrange for the availability of such excess water for use in connection with the operation of the Conversion System or Systems. All of such water made available to Cambrian, whether from a private well or storage tank, a municipal water company, a mutual water company, or any other source, shall be separately metered and shall be provided at the sole expense of Cambrian. However, if such water is supplied to Cambrian by the Landfill Owner from wells or storage tanks owned or controlled by the Landfill Owner, such water shall be delivered to Cambrian at a cost no greater than the cost to the Landfill Owner.

9.02 Cambrian shall notify the Landfill Owner of the method under which the condensate of the Landfill Gas collected by Cambrian from the Collection System or the Conversion System, or both, at the Landfill or the Site, or both, shall be treated, disposed of or transported by Cambrian. The Landfill Owner agrees that such condensate may be treated through the Landfill Owner's leachate treatment system at no cost to Cambrian if the condensate does not test positive for any substance which would qualify the condensate as a Hazardous Material or would adversely affect the leachate treatment system.

10. Insurance

10.01 To protect each of the parties against liability, loss, or expense arising out of, in connection with or resulting from the respective duties of the parties provided for hereunder, each of the parties shall, immediately prior to the

commencement of test drilling or any other substantial activities on the Landfill and thereafter throughout the term of this Lease, at its own expense, in reliable insurance companies authorized to do business in the state or area in which the duties of each such party are to be performed hereunder, maintain the following minimum insurance coverages:

(a) Comprehensive General Liability Insurance, including contractor's contingent coverage, with limits of not less than \$5,000,000 per occurrence Bodily Injury and \$1,000,000 per occurrence Property Damage.

(b) Contractual Bodily Injury Liability and Contractual Property Damage Liability Insurance covering liability assumed under this Lease with limits the same as that provided for Comprehensive General Liability Insurance.

(c) To the extent applicable, Worker's Compensation Insurance as required by law and Employer's Liability Insurance limits of not less than \$100,000 for any accident covering location of all work places involved in this Lease.

10.02 Any and all deductibles in the above-described insurance policies shall be assumed by, for the account of and at the respective party's sole risk.

10.03 As to any of the foregoing the Landfill Owner may elect to self-insure to the extent permitted by law.

10.04 Nothing stated hereinabove operates to waive Landfill Owner's sovereign immunity as set forth in Section 768.28, Florida Statutes.

## 11. Indemnity

11.01 The Landfill Owner agrees to indemnify and hold harmless Cambrian, each Sublessee, each Lender, and any and all agents, directors, officers, employees, partners, co-venturers, subcontractors or servants of Cambrian, each Sublessee and each Lender, against any and all losses, costs or expenses (including all legal expenses), claims, demands, suits or judgments (including, but not limited to, claims, demands, suits or judgments for bodily injury, death or loss of services, property or wages) which may be brought against Cambrian, any Sublessee or any Lender, or in which Cambrian, any

Sublessee or any Lender is named a party defendant or in which any or all such agents, directors, officers, employees, partners, subcontractors or servants of Cambrian, any Sublessee or any Lender are named party defendant or parties defendant, as the case may be, by any person or entity in any way arising out of or incident to the Landfill or any operations conducted thereon or therefrom by any person or entity other than Cambrian, any Sublessee, or any Lender its successors and assigns, irrespective of whether such suits are based on the relationship of master and servant, third party, or otherwise, or are based upon strict liability in tort. The Landfill Owner further agrees to investigate, handle, respond to, provide defense for and defend any such claim, demand, or suit at its sole expense and agrees to bear all other costs and expenses related thereto, even if the same is groundless, false, or fraudulent; and the Landfill Owner may make such investigation, negotiation, and settlement of such claim, demand, or suit as it deems expedient.

11.02 Cambrian agrees to indemnify and hold harmless the Landfill Owner and any and all agents, directors, officers, employees, subcontractors or servants of the Landfill Owner, against any and all losses, costs or expenses (including all legal expenses), claims, demands, suits or judgments (including, but not limited to, claims, demands, suits or judgments for bodily injury, death, or loss of services, property or wages) which may be brought against the Landfill Owner, or in which the Landfill Owner is named a party defendant or in which any or all such agents, directors, officers, employees, partners subcontractors, or servants of the Landfill Owner are named party defendant or parties defendant, as the case may be, by any person or entity in any way arising out of or incident to the work performed by or under the direction of Cambrian or any Sublessee under this Lease, irrespective of whether such suits are based on the relationship of master and servant, third party, or otherwise, or are based upon strict liability in tort. Cambrian further agrees to investigate, handle, respond to, provide defense for and defend any such claim, demand, or suit at its sole expense and agrees to bear all other costs and expenses related thereto, even if the same is groundless, false, or fraudulent, and Cambrian may make such investigation, negotiation, and settlement of any such claim, demand, or suit as it deems expedient.

11.03 To the extent not specifically included in the indemnities set forth in Section 11.01, the Landfill Owner shall indemnify and hold Cambrian, each Sublessee, each Lender, and any and all directors, officers, employees, partners, co-venturers, contractors and servants of each (collectively the "Cambrian Indemnified Parties"), harmless from, and defend the Cambrian Indemnified Parties against, any and all claims, demands and liabilities, including reasonable attorneys' fees, of whatever nature relating to or in any way arising out of any damage or harm to any one or more of the Cambrian Indemnified Parties which arises because the Landfill Owner or any other person, other than one of the Cambrian Indemnified Parties, has ever in connection with the Landfill or the performance or nonperformance of the duties of the Landfill Owner as set forth in this Lease, except in accordance with applicable federal, state or local law, (i) owned, occupied or operated a site or structure on or in which any Hazardous Material was or is stored, transported or disposed of, (ii) transported or arranged for the transportation of any Hazardous Material, or (iii) caused or has been held legally responsible for any release or threatened release of any Hazardous Material, or received notification from any federal, state, local or other governmental authority of any release or threatened release of any Hazardous Material.

11.04 To the extent not specifically included in the indemnities set forth in Section 11.02, Cambrian shall indemnify and hold the Landfill Owner and any and all directors, officers, employees, partners, co-venturers, contractors and servants of the Landfill Owner (collectively the "Landfill Owner Indemnified Parties"), harmless from, and defend the Landfill Owner Indemnified Parties against, any and all claims, demands and liabilities, including reasonable attorneys' fees, of whatever nature relating to or in any way arising out of any damage or harm to any one or more of the Landfill Owner Indemnified Parties which arises because the Cambrian Indemnified Parties, or any one or more of them, has ever in connection with the Site or the performance or nonperformance of the duties of Cambrian as set forth in this Lease, except in accordance with applicable federal, state or local law, (i) owned, occupied or operated the Site or any structure thereon or in which any Hazardous Material was or is stored, transported or



disposed of, (ii) transported or arranged for the transportation of any Hazardous Material, or (iii) caused or has been held legally responsible for any release or threatened release of any Hazardous Material, or received notification from any federal, state, local or other governmental authority of any release or threatened release of any Hazardous Material.

11.05 The indemnities set forth in Sections 11.01 through 11.04 shall survive the expiration or other termination of this Lease.

11.06 The provisions in this Lease in no way waives Landfill Owner's sovereign immunity or liability limits under Section 768.28, Florida Statutes.

## 12. Right to Quitclaim

12.01 For a period of twelve (12) months from the date of this Lease, Cambrian may, at any time, or from time to time, quitclaim this Lease to the Landfill Owner, either in its entirety or in part, and thereupon Cambrian shall be released from all further obligations as to the part or parts so quitclaimed. It is particularly understood, however, that all lands so quitclaimed shall remain subject to, and Cambrian shall have the right to use and enjoy, such rights-of-way and easements in, under, across and through the quitclaimed portion of the Landfill as may be necessary or convenient, in whole or in part, for Cambrian's operations on the portion of the Landfill retained under this Lease.

## 13. Termination Rights of Landfill Owner

13.01 Subject to the provisions of Section 21 hereof, if Cambrian has not met the Performance Date for any of the Milestones set forth in the table below, this Lease may, at the option of the Landfill Owner, be terminated without liability therefor effective, absent a cure by Cambrian as hereafter provided, upon 60 days written notice of termination. If Cambrian cures its failure within said 60 day notice period, or, if the default or failure is of a type that cannot be reasonably cured within a 60 day period, Cambrian shall have commenced to cure such default or failure within such 60 day notice

period and diligently continues its efforts to completion, then Landfill Owner's termination notice shall be null and void. Such 60 day period may be extended at the discretion of the Landfill Owner. The following table sets forth the Milestones to be achieved by Cambrian and the Performance Date for each such Milestone:

<u>MILESTONE</u>	<u>PERFORMANCE DATE</u>
1. Applications completed and filed for all permits required for the construction of the Collection System and the Conversion System.	180 days following the date on which this Lease is signed by both Cambrian and the Landfill Owner.
2. Commence construction of the Collection System and the Conversion System at the Landfill.	30 days following receipt of all permits required for construction of the Collection System and the Conversion System.
3. Completion of the installation of the Collection System at the Landfill.	10 months following the receipt of all permits required for installation of the Collection System (excluding any delays attributable to the occurrence of events of force majeure as described in Section 16 herein).
4. Completion of the installation of the Conversion System.	12 months following the receipt of all permits required for installation of the Conversion System (including any delays attributable to the occurrence of events of force majeure as described in Section 16 herein).
5. The first commercial sale by Cambrian of Landfill Gas collected at the Landfill to the entity operating the Conversion System at the Site or to any other commercial customer for the Landfill Gas.	24 months following the date on which this Lease is signed by both Cambrian and the Landfill Owner (excluding any delays attributable to the occurrence of events of force majeure as described in Section 16 herein as well as any delays in the receipt of all necessary permits for the installation and operation of the Conversion System, and the Utility Interface).

13.02 Subject to the provisions of Section 21 hereof, if Cambrian defaults in the performance of any other material obligation under this Lease, including the timely payment of rent, this Lease may at the Landfill Owner's option be terminated, without liability therefor, effective upon 60 days written notice of termination. In the event Cambrian cures its default or failure within said 60 days notice period, or, if the default or failure of Cambrian is of a type that cannot be reasonably cured within a 60 day period, Cambrian shall have commenced to cure such default or failure within such 60 day notice period and diligently continues its efforts to completion, then Landfill Owner's termination notice shall be null and void. Such 60 day notice period may be extended at the discretion of the Landfill Owner.

14. Termination Rights of Cambrian

Subject to the provisions of Section 21 hereof, Cambrian shall have the right to terminate this Lease and thereupon be relieved of any further obligations hereunder upon the occurrence of any of the following events and following the giving of at least thirty (30) days' written notice of termination specifying in such notice which of such events is the cause of such termination.

14.01 Based on data regarding the Landfill obtained or received by Cambrian, the Landfill Gas is determined by Cambrian not to be in Paying Quantities.

14.02 Cambrian is unable to obtain any required license, permit or other authority necessary to construct or operate the Collection System, the Conversion System or Systems, and the Utility Interface, or any of them, including without limitation, building permits and environmental permits.

14.03 Cambrian is unable to obtain from suppliers of equipment for the Collection System and the Conversion System or Systems to be operated on the Landfill Gas warranties which are sufficient to enable the financing of such equipment by institutional lenders.

14.04 Cambrian is unable to enter into (i) a contract for

the sale by Cambrian or the Generating Entity of electric power generated by the Conversion System or Systems if Cambrian or the Generating Entity elects to convert the Landfill Gas to electric power, or (ii) a contract for the sale of Landfill Gas processed by the Conversion System or Systems if Cambrian elects to process the Landfill Gas and upgrade it to medium Btu gas or pipeline quality gas, on such terms and conditions, including an adequate price and a minimum term of fifteen (15) years, as are deemed prudent and necessary in the sole judgment of Cambrian to justify the investment of the capital required for the installation of the Collection System, the Conversion System and, if applicable, the Utility Interface.

14.05            If within eighteen (18) months from the date of this Lease Cambrian is unable to obtain commitments from institutional lenders or lessors to finance at least fifty percent (50%) of the installed cost of the Collection System and Conversion System and on such terms and conditions as may be acceptable to Cambrian in its sole judgment.

14.06            The interruption of the sale of electric power, processed Landfill Gas or other energy produced pursuant to this Lease due to damage or destruction to the Collection System, the Conversion System, the Utility Interface, or the grid or pipeline of the public utility, pipeline company or other customer to which the Conversion System is interconnected whereby the repair of such damage or destruction and the resumption of the sale of electric power, processed Landfill Gas or other energy produced pursuant to this Lease is reasonably expected by Cambrian to require longer than ninety (90) days from the date on which the interruption of the sale of electric power, processed Landfill Gas or other energy first occurred.

14.07            The inability of Cambrian to obtain any waivers or consents from the owner or owners of any easements, leaseholds, rights of reversion or other interests in the Landfill which Cambrian determines in its sole judgment are necessary for the construction and operation of the Collection System, the Conversion System, or the Utility Interface.

14.08            The inability of Cambrian to obtain agreements

with any public utility, mutual water company or other entity authorized to supply natural gas, water, or both, to the Landfill or to supply gas or water, or both, to Cambrian at the Site in such quantities, at such availability and on such terms as are determined by Cambrian to be necessary for the economic operation of the Conversion System or Systems.

14.09           The interruption for a period of longer than one hundred twenty (120) days or the cessation for whatever reason (with the reasonable expectation that such cessation will continue beyond one hundred twenty (120) days and probably indefinitely) of the recovery from the Landfill by the operating Collection System of Landfill Gas in less than Paying Quantities.

14.10           It is mutually understood that Cambrian is not a public utility, and that no lands or properties or wells controlled or leased by it, or in which it may have an interest of any nature, are dedicated to public or quasi-public uses or purposes, nor shall the execution hereof and/or any performance or partial performance hereunder be deemed to be a dedication by Cambrian of any nature to public or quasi-public uses or purposes, or as subjecting this Lease or Cambrian itself or its property, either real or personal, or any portion thereof, to regulations of any character, description or degree. Should any federal, state or other jurisdiction declare Cambrian a public utility by virtue of its activities hereunder, Cambrian shall have the right to terminate this Lease upon thirty (30) days' written notice to the Landfill Owner given within ninety (90) days following such declaration hereafter taken by any federal, state or other regulatory body.

14.11           Should at any time, in the sole judgment of Cambrian, the prospective or existing operation or proposed operation of the Collection System, Conversion System or Systems and the Utility Interface, if any, prove to be economically or technically infeasible, or unsuccessful or without sufficient profit.

14.12           The nonperformance by the Landfill Owner of any material covenant or the breach of any representation or warranty in this Lease, and the failure to correct such nonperformance or breach following the giving of sixty (60) days' written notice by Cambrian specifying the particulars in which it is claimed the Landfill Owner is in default.

15. Surrender of Possession

15.01 On the expiration of this Lease, or its sooner termination, Cambrian shall quietly and peaceably surrender possession of the premises to the Landfill Owner, and shall deliver to the Landfill Owner a quitclaim deed in recordable form with respect to the interest of Cambrian in this Lease.

15.02 Following any termination of this Lease, Cambrian shall have a reasonable period of time for the removal from the Landfill of all or any portion of the Collection System, the Conversion System or Systems, and the Utility Interface. The Landfill Owner shall have the option to retain the Collection System and flares at the termination of the Lease at no expense to the Landfill Owner.

16. Force Majeure

16.01 Notwithstanding anything contained in this Lease to the contrary, it is expressly understood and agreed that the obligations imposed upon the parties may be suspended so long as and to the extent that such party or any Sublessee is prevented from or delayed in performing such obligations by the elements, accidents, strikes, lock-outs, riots, delays in transportation, inability to secure fuel, materials, utilities or services in the open market, delays by suppliers of equipment, acts of war or conditions attributable to war or compliance by either party or any Sublessee hereunder with federal, state, county, municipal or other governmental agency or quasi-governmental agency regulations, rules or orders, fire or other acts of God, the act or omission of any governmental authority or of the Landfill Owner, the order of any court, the interruption of the generation of Landfill Gas in Paying Quantities, or other causes beyond the reasonable control of the affected party or any Sublessee hereunder, whether similar or dissimilar to the foregoing. This Lease shall remain in full force and effect during any suspension of any of the affected party's obligations under any provisions of this Section and for a reasonable time thereafter, provided that, after the removal of the cause or causes preventing or hindering the performance of such obligation, the affected party or any Sublessee hereunder diligently commences or resumes the performance of such

obligation.

17. Recording

Either party to this Lease may file for record with the County Recorder of the county or counties in which the Landfill is located either this Lease or a short form of this Lease. The party causing such recording agrees to provide the other party with a certified copy of the recorded short form of this Lease.

18. Authority; Title

The Landfill Owner hereby represents and warrants to Cambrian that the Landfill Owner is the owner of the Landfill and of all rights to the Landfill Gas and has the full right and authority to lease to Cambrian the rights to recover and use the Landfill Gas and the rights to use such portion of the surface of the Landfill as set forth in this Lease. The Landfill Owner further represents and warrants that no other party, including, without limitation, the owner of any interest in oil, gas or other hydrocarbons at the Landfill, has any rights to the Landfill Gas or income generated therefrom. At or prior to the signing of this Lease, the Landfill Owner shall deliver to Cambrian a copy of a policy of title insurance, preliminary title report, abstract of title, or other evidence satisfactory to Cambrian as to the status of legal title to the Landfill which shall reflect an absence of any interests which might constitute adverse claims to the right of Cambrian to collect and use the Landfill Gas at the Landfill pursuant to the terms of this Lease. The receipt of such policy of title insurance, preliminary title report or other such evidence as to the status of legal title to the Landfill shall be a condition precedent to the obligations of Cambrian under this Lease. The Landfill Owner agrees to indemnify, defend and hold Cambrian, each Sublessee and each Lender harmless from and against any loss, costs or expense arising from any claims or actions brought by any third party asserting rights against Cambrian, any Sublessee, any Lender, or any one or more of the foregoing, and their respective successors or assigns, or against the Landfill which challenge, seek to deny, or in any way limit the rights of Cambrian, any Sublessee, any Lender, or any one or

more of the foregoing, under this Lease.

19. Landfill Conditions

19.01 The parties acknowledge that due to the significant voids which may exist in any landfill, substantial settlement is likely to occur in the Landfill during the term of this Lease. Under no circumstances shall Cambrian, any Sublessee, any Lender, or any one or more of the foregoing, and their respective agents, employees, partners, officers, directors, contractors, successors or assigns, have any liability to the Landfill Owner, its employees, agents, contractors, lessees, licensees or invitees resulting, directly or indirectly, from any change in the surface or subsurface conditions of the Landfill resulting from the settlement of the Landfill either during or after the construction and installation of the Collection System and the installation of the Conversion System or Systems and the Utility Interface. It is likely that during the term of this Lease that Cambrian will be required to repair the Collection System at Cambrian's cost for damage resulting from settlement of the Landfill. The Landfill Owner shall not take any action or enter into any agreement with a third party which would prevent Cambrian from having access at all times to the Collection System in order to carry out its duties of operation, maintenance, repair, replacement and removal of the Collection System, without the prior written consent of Cambrian being first obtained. Unless otherwise agreed in writing, if Cambrian is required to remove any covering or obstruction on the surface of the Landfill, such as asphalt, concrete, paving or the like, in order to carry out its duties of maintenance, repair, replacement and removal of the Collection System, Cambrian shall repair any such surface covering at its cost.

19.02 Cambrian shall have no obligation of any nature with respect to the monitoring, collection, control, flaring or disposal of any Landfill Gas produced by the Landfill, except as actually collected by Cambrian through the operation of its Collection System referred to herein. Cambrian expressly disclaims any and all liability, responsibility, representation, guarantee or warranty, whether expressed or implied with respect to any Landfill Gas migration from the Landfill, and the Landfill Owner



hereby agrees to defend, indemnify and hold Cambrian, each Sublessee, each Lender, and their respective agents, employees, partners, officers, directors and partners harmless from and against any and all claims, liabilities, causes of action, demands, losses or expenses, including attorneys' fees, arising out of any claim from any third party as a result of any migration of Landfill Gas from the Landfill.

19.04 Landfill Owner represents, warrants and covenants to Cambrian, each Sublessee and each Lender, each of which may rely on such representation, warranty and covenant, that (i) Landfill Owner has complied with and shall continue to comply with all federal, state, local and other laws, rules, regulations, orders and other governmental authorities which pertain to Hazardous Material, and (ii) the Landfill does not contain and will not contain during the term of this Lease any Hazardous Material except (a) household waste that may contain small quantities of Hazardous Material at levels below those that would give rise to liability as a consequence thereof, including liability for any clean-up or remediation, and (b) the storage, disposal, transport or emission of any Hazardous Materials as permitted under and in compliance with any applicable federal, state or local law, rule, regulation, order, permit or other governmental authority which pertains to Hazardous Material. Cambrian represents, warrants and covenants to the Landfill Owner that (i) Cambrian and any Sublessee shall comply with all applicable federal, state, local and other laws, rules, regulations, orders and other governmental authorities which pertain to Hazardous Material, and (ii) the Site will not contain during its exclusive possession by Cambrian or any Sublessee any Hazardous Material except the storage disposal, transport or emission of any Hazardous Material as permitted under and in compliance with any applicable federal, state or local law, rule regulation, order, permit or other governmental authority which pertains to Hazardous Material.

## 20. Assignment

If the estate of either party hereto is assigned or conveyed (and the privilege of assigning in whole or in part is expressly allowed), the rights and obligations

created hereby and the covenants hereof shall extend to and be binding upon such party's assigns or transferee. The party so assigning or transferring such interest shall thenceforth be released from all obligations hereunder to the extent of the interest so assigned or transferred, provided that at the time of such assignment or transfer the transferring party's assignee or transferee has the legal ability to perform such obligations. No change of ownership in the Landfill or in the party or parties to receive compensation for Landfill Gas or base rent or additional rent for use of the Site shall be recognized by Cambrian until Cambrian has been furnished with written notice of such transfer or assignment, together with a certified copy of the instruments of transfer or assignment.

21. Hypothecation of Leasehold

21.01 Cambrian may, without obtaining the consent of Landfill Owner, from time to time enter into a Pledge. On or before entering into a Pledge, Cambrian shall give written notice to Landfill Owner setting forth (i) the name of the Lender making the loan or other financing to Cambrian, (ii) the amount of such loan or other financing, (iii) the general nature of the transaction under which Lender has been granted an interest by or acquired an interest from Cambrian, and (iv) Lender's address for notices hereunder. Thereafter, the Lender shall be entitled to the protections set forth in Sections 21 and 22.

21.02 Any Lender shall be protected as described below until such time as the Pledge has been extinguished:

(a) Any other provision of this Lease, or any default by Cambrian in the performance or observance of any agreement, covenant or condition of this Lease on the part of Cambrian to be performed or observed notwithstanding, Landfill Owner shall have no right to terminate this Lease unless prior to such a termination (i) Cambrian shall have defaulted hereunder and such default shall be continuing; (ii) Landfill Owner shall have given Lender written notice of such default as required hereunder; and (iii) Lender shall have failed to remedy such default or to take such other actions as set forth and within the time specified by this Section 21.

(b) Should any default by Cambrian under this Lease occur, Landfill Owner shall mail or deliver to Lender a duplicate copy of any and all notices in writing that Landfill Owner may from time to time serve upon Cambrian pursuant to the provisions of this Lease. Landfill Owner shall also deliver to Lender in writing a notice of any other breach or default under this Lease which does not require notice directly to Cambrian. Each such notice shall be mailed or delivered to Lender simultaneously with the notices given to or served upon Cambrian by Landfill Owner if required to be so served or at the earliest opportunity if such notice is not required to be given to Cambrian. No notice by Landfill Owner to Cambrian shall be deemed to be given to Cambrian unless and until a copy thereof shall have been mailed by certified or registered mail, return receipt requested, to Lender.

(c) Should any default by Cambrian under this Lease occur, Lender shall have sixty (60) days after receipt of written notice from Landfill Owner (setting forth the nature of such default and the actions required to cure such default) and a reasonable time after the expiration of such 60 day period within which to remedy such default; provided that Lender (i) shall have fully cured any default in the payment of any monetary obligations of Cambrian hereunder within such sixty (60) day period and shall thereafter continue to faithfully perform all such monetary obligations, (ii) shall have commenced action to cure any default within such sixty (60) day period (including but not limited to commencing foreclosure or other appropriate proceedings in the nature thereof designed to acquire Cambrian's leasehold estate if such acquisition of Cambrian's leasehold estate is necessary or appropriate to cause such cure), and (iii) shall thereafter diligently prosecute such action or proceeding to completion. All rights of Landfill Owner to terminate this Lease as a result of the occurrence of any default by Cambrian shall be subject to and conditioned upon Landfill Owner having first given to Lender written notice of such default as specified herein, and Lender having failed to act as set forth in and within the time specified in this Section 21.

(d) If Lender is prohibited by any process or injunction issued by any court or governmental authority or by reason of any action by any court or any other

governmental authority having jurisdiction or any bankruptcy reorganization, insolvency or debtor relief proceeding involving Cambrian or Landfill Owner or any material third party from commencing or prosecuting foreclosure or other proceedings in the nature thereof or taking other appropriate curative action, the time specified in (c) above for commencing or prosecuting such foreclosure or other proceedings or taking such other appropriate curative action shall be extended for a period of such prohibition.

(e) Foreclosure of the Pledge or any sale thereunder whether by judicial proceeding or otherwise or any conveyance of Cambrian's leasehold estate and the interest of Cambrian hereunder from Cambrian to Lender through or in lieu of foreclosure or other appropriate proceedings similar thereto shall not require the consent of Landfill Owner nor constitute a breach of any provision of or a default under this Lease. Upon such foreclosure, sale or conveyance, Landfill Owner shall recognize the Lender in such proceeding as if it were Cambrian hereunder. In the event Lender takes Cambrian's place under this Lease, Lender shall be liable for the obligations of Cambrian under this Lease only for the period of time that it takes the place of Cambrian. Upon completion of such foreclosure, sale or conveyance, Lender shall have the right to assign this Lease to any third party thereafter without the consent of Landfill Owner and without any restriction on assignment otherwise imposed on Lender or Cambrian under this Lease. Thereafter, Lender shall be released from all liability under this Lease without further action.

(f) Landfill Owner and Cambrian will cooperate from time to time including in this Lease by suitable amendment or by execution of new documents of any provision which may be reasonably necessary or helpful to implement the provisions of this Section 21, or to facilitate the financing of the construction, acquisition, operation and maintenance, or any one or more of the foregoing, of the Collection System, Conversion System and Utility Interface, or any one or more of the foregoing, with a Lender; provided however, that such amendment or other document shall not in any way affect the term hereof or affect adversely in any material respect any rights or duties of Landfill Owner or Cambrian under this Lease.

(g) Landfill Owner shall not accept any surrender of this

Lease, nor shall Landfill Owner consent to any amendment or modification of this Lease without the prior written consent of Lender.

(h) Should this Lease be terminated as a result of any rejection by Cambrian (or a trustee acting on behalf of Cambrian) of this Lease in any bankruptcy, reorganization or insolvency proceeding commenced by or against Cambrian under Title 11 of the U.S. Code (or any successor statute thereto) any Sublease shall not terminate, and all of Cambrian's right, title and interest as sublessor under any Sublease shall automatically be transferred to and become vested in Landfill Owner, and Landfill Owner shall, upon written request by any Lender (or the then holder of the subleasehold estate under any Sublease) given within sixty (60) days after such termination, immediately execute and deliver a new lease of the Landfill to such Lender (or holder of any subleasehold estate, as the case may be), or its nominee, purchaser, assignee or transferee, for the remainder of the term of this Lease with the same agreements, covenants, and conditions (except for any requirements which have been fulfilled by Cambrian prior to termination) as are contained herein and with priority equal to that hereof; provided, however, that such Lender (or the then holder of the subleasehold estate arising under any Sublease, as the case may be) shall promptly cure any defaults of Cambrian susceptible to cure by a Lender within sixty (60) days following the later to occur of (a) the execution and delivery of a new lease of the Landfill pursuant to this Section 21.02(h), or (b) the date on which the lessee under such new lease is able to occupy the Landfill following the eviction of or vacating by Cambrian; and provided, further, that if the Lender and the holder of the subleasehold estate under any Sublease both request such new lease, the Lender shall prevail unless said sublessee concurrently executes and delivers a Pledge in favor of such Lender upon the new leasehold estate or otherwise confirms the existence of a Pledge encumbering the subleasehold estate arising under any Sublease as a lien upon the new leasehold estate in such manner as may be requested by such Lender in its sole discretion. Upon execution and delivery of such new lease, Landfill Owner, at the expense of the new lessee, shall take such action as shall be necessary to cancel and discharge this Lease to remove Cambrian from the Landfill. Concurrently with the execution and delivery of said

new lease, Landfill Owner shall transfer and assign all of its right, title and interest as sublessor under any Sublease to the Lender (or Sublessee under any Sublease, as the case may be) named as lessee under the new lease. If Landfill Owner does not receive a written request for a new lease from the Lender within said one hundred and twenty (120) day period, Landfill Owner may thereafter, at its sole option, terminate the Sublease.

22. Estoppel Certificates

Cambrian or the Landfill Owner, as the case may be, shall execute, acknowledge and deliver to the other and/or to any Lender, promptly upon request, its certificate certifying (a) that this Lease is unmodified and in full force and effect (or, if there have been modifications, that this Lease is in full force and effect, as modified, and stating the modifications), (b) the dates, if any, to which all rental due hereunder has been paid, (c) whether there are then existing any charges, offsets or defenses against the enforcement by Landfill Owner of any agreement, covenant or condition hereof on the part of Cambrian to be performed or observed (and, if so, specifying the same), and (d) whether there are then existing any defaults by Cambrian in the performance or observance by Cambrian of any agreement, covenant or condition hereof on the part of Cambrian to be performed or observed and whether any notice has been given to Cambrian of any default which has been cured (and, if so, specifying the same). Any such certificate may be relied upon by a prospective purchaser, mortgagee or trustee or beneficiary under a deed of trust constituting or intended to constitute a Pledge.

23. Landfill Owner Encumbrances

Landfill Owner hereby agrees that its right to encumber its fee estate and reversionary interest in the Landfill is subject to the condition that the beneficiary, assignee, mortgagee or other secured party under any encumbrance upon Landfill Owner's interest in the Landfill execute and deliver, in favor of each and every Lender, each Sublessee and each and every sub-sublessee, a subordination agreement in recordable form which shall expressly provide by its terms that such encumbrance is and shall at all times

remain subject and subordinate to (a) this Lease as well as any and all renewals, replacements or extensions hereof, including without limitation, any new lease created pursuant to Section 21.02(h) hereof or any similar provision embodied in any new lease created thereunder, and the leasehold estate created hereunder, (b) each and every Pledge, whether now existing or hereafter arising and whether constituting a lien upon (i) the leasehold estate created by this Lease, (ii) the subleasehold estate created by any Sublease or (iii) the sub-subleasehold estate under any sub-sublease created by any sub-sublease executed by any Sublessee as sub-lessor thereunder, (c) each Sublease as well as any and all renewals, replacements or extensions thereof, including, without limitation, any new sublease created pursuant to any provision of a Sublease or any similar provision embodied in any new sublease created thereunder, and the subleasehold estate arising thereunder, and (d) each and every sub-sublease executed by Sublessee as sublessor thereunder, as well as any renewals, replacements and extensions, including, without limitation, any new sublease granted to a Lender thereunder or under any new sub-sublease created pursuant thereto, and the sub-subleasehold estate(s) arising thereunder. Landfill Owner further agrees to execute and deliver any and all additional or further documents or instruments which may be required in the reasonable judgment of a Lender to evidence and confirm that the lien of any such encumbrance upon the fee estate and reversionary interest in the Landfill shall have no adverse affect on any Pledge.

24. Place for Payment of Rent

All statements of gross revenues, compensation for Landfill Gas, base rent and additional rent for use of the Site, and all payments to be made by Cambrian to the Landfill Owner hereunder shall be sent to the Landfill Owner as set forth below. Cambrian shall, upon notification of change of ownership in the Landfill or party or parties entitled to receive such compensation and rent hereunder, as provided in Section 20 hereof, divide and distribute the same to the new owners of such interest. Provided, however, that if at any time there are three (3) or more persons entitled to receive such compensation and rent hereunder, Cambrian may, at its option, withhold payment of such compensation

and rent until a majority in interest of such persons designate in writing and in a recordable instrument delivered to Cambrian, a bank, trust company, or corporation in California, as a common agent and depository, to receive all payments due hereunder to such persons. Such designation may be changed at any time in the same manner. Delivery of all statements and payments hereunder may be made by depositing the same in the United States Mail duly addressed to Landfill Owner at the address or addresses set forth below or to such agent and depository which shall constitute full performance of Cambrian's obligations to make such delivery. The address or addresses of the Landfill Owner for purposes of this Section are as follows:

County of Volusia  
Attn: County Manager  
123 W. Indiana Avenue  
Deland, FL 32720-4608

25. Notices

All notices herein required or permitted to be given or furnished under this Lease given by either party to the other shall be in writing, and shall be deemed sufficiently given and served upon the other party if sent by certified or registered mail, return receipt requested, postage prepaid, addressed as follows:

If to Cambrian:	Cambrian Energy Systems One Wilshire Bldg., Ste. 2420 624 South Grand Avenue Los Angeles, CA 90017
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If to Landfill Owner:	County of Volusia Attn: County Manager 123 W. Indiana Avenue Deland, FL 32720-4608
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Each party shall have the right, from time to time, to designate a different address by notice given in conformity with this Section.

26. Entire Agreement



This Lease and the Exhibits attached hereto contain the entire agreement between the parties and supersede all previous written or oral negotiations, commitments, proposals and writings. It is expressly understood by Landfill Owner that due to the number of uncertainties regarding the Landfill Gas and the steps which must be validated prior to the implementation of a Collection System and Conversion System, Cambrian has made no representation or warranty that either a Collection System or a Conversion System can or will be successfully installed and operated on the Landfill.

27. Amendments

No amendments to this Lease may be made except by a writing signed by both parties.

28. Authority to Sign

Each party hereto represents to the other that it has full power and authority to enter into this Lease. Each corporate or partnership entity which is a party hereto represents that the persons signing on its behalf are authorized so to sign and that their signatures hereon are valid and that such individuals have the authority to bind such corporate or partnership entity to the terms of this Lease.

29. Counterparts

This Lease may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

30. Successors and Assigns

This Lease shall be binding upon the successors, assigns, heirs, executors and administrators of each of the parties hereto.

31. Controlling Law

The validity, construction or enforceability of this Lease shall be governed by the laws of the State of Florida.

32. Attorneys' Fees

If either party to this Lease is successful in any action, arbitration or proceeding between the parties hereto, reasonable attorneys' fees and expenses of that party shall be added to the judgment or decision therein.

33. Severability

If any provision of this Lease is unenforceable, the remaining provisions shall not be affected thereby but shall remain in full force and effect.

IN WITNESS WHEREOF, the parties hereto have duly executed this Lease  
the day and year first above written.

CAMBRIAN

CAMBRIAN ENERGY SYSTEMS  
a California limited partnership

By: Cambrian Management, Inc.  
a California corporation,  
as General Partner

By *Evan G. Williams*  
Evan G. Williams, President

LANDFILL OWNER

COUNTY OF VOLUSIA

By *Freddy C. Moore*  
**FREDDY C. MOORE**  
By \_\_\_\_\_  
CHAIRMAN

APPROVED AS TO FORM:  
COUNTY ATTORNEY

By *James E. Moore*


ATTEST:  
COUNTY MANAGER

By *Raymond C. Moore*

STATE OF FLORIDA )  
 )  
COUNTY OF VOLUSIA )

On AUG 24 1995, 19\_\_ before me, the undersigned, a Notary Public in and for said State, personally appeared **FREDDYE C. MOORE**, personally known to me or proved to me on the basis of satisfactory evidence to be the CHAIRMAN of Volusia County Council the CHAIRMAN that executed the within instrument, and acknowledged to me that such CHAIRMAN executed the same.

WITNESS my hand and official seal.

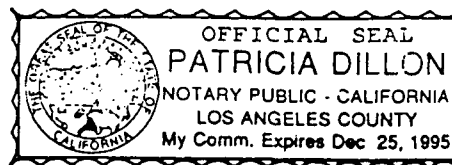
Bernice Wendland  
NOTARY PUBLIC  
 BERNICE WENDLAND  
COMMISSION # CC 463236  
EXPIRES MAY 14 1999  
BONDED THRU  
ATLANTIC BONDING CO., INC.

STATE OF CALIFORNIA )  
 ) ss.  
COUNTY OF LOS ANGELES )

On July 25, 1995 before me, Patricia Dillon, a Notary Public in and for said State, personally appeared Evan G. Williams, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Signature Patricia Dillon



**EXHIBIT 1**

**a legal description of landfill**

**[to be provided]**

**EXHIBIT 2**

**Site**

**[to be provided by the parties and attached hereto]**

### EXHIBIT 3

#### SUBORDINATION AGREEMENT

This SUBORDINATION AGREEMENT is made as of the \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_, by and between CAMBRIAN ENERGY SYSTEMS, a California limited partnership (the "Company") and County of Volusia, a municipal corporation (the "Landfill Owner").

#### RECITALS

A. Company and Landfill Owner have entered into that certain Landfill Gas Lease concurrently herewith.

B. Pursuant to the Landfill Gas Lease the Company will design, construct and operate a collection system and pipeline (the "Gas System") to collect and deliver landfill gas that will be sold to a third party (the "Energy Customer"). The Energy Customer will either transmit such landfill gas to another customer by pipeline, construct a landfill gas conversion system to convert such landfill gas to electricity or another energy product (collectively referred to as the "Project") or will directly use such landfill gas as a fuel in its existing facility.

C. As a condition of entering into the above agreements, the Company has required that the Landfill Owner subordinate certain payments due the Landfill Owner under the Landfill Gas Lease to financing for the Gas System and the Project.

NOW THEREFORE, in consideration of the promises and the mutual covenants set forth herein, and other good and valuable consideration the receipt and sufficiency of which is hereby acknowledged, it is agreed between the parties as follows:

Section 1. Definitions. The following defined terms as used in this Agreement shall have the meaning set forth below:

"Agreement" means this Subordination Agreement entered into between the Company and the Landfill Owner.

"Company" means Cambrian Energy Systems, a California limited partnership, its successors and assigns.

"Creditors" means all persons other than the Landfill Owner who contribute or provide the Senior Debt.

"Energy Customer" means the third party with which the Company will enter into an agreement for the sale of landfill gas collected at the property subject to the Landfill Gas Lease.

"First Mortgage" means any obligation incurred by the Company or the Energy Customer to provide for initial financing of the Gas System, the Project, or both.

"Gas System" means the system of collection wells, pipes and headers installed or to be installed at the property subject to the Landfill Gas Lease and any pipeline, whether or not on such property, which shall be operated to collect and deliver landfill gas to the Energy Customer.

"Landfill Gas Lease" means the Landfill Gas Lease and Operating Agreement for Conversion Systems dated \_\_\_\_\_, 1995 by and between the Company and the Landfill Owner.

"Landfill Owner" means County of Volusia, a political subdivision of the State of Florida, a corporation, its successors and assigns.

"Project" means all equipment and structures, including engines, generator sets, switch gear, electrical interface, and any pipelines, incorporated in any facility or facilities designed to transport or utilize landfill gas collected at the property subject to the Landfill Gas Lease as a fuel for conversion to electric power or any other energy product, or both.

"Senior Debt" means the definition set forth in Section 2.

"Subordinated Debt" means all payments due to the Landfill Owner either now existing or hereafter arising under the Landfill Gas Lease and any other



agreement or other document entered into by the Landfill Owner in connection with the Project.

Section 2. Senior Debt. For purposes of this Agreement, the term "Senior Debt" shall mean the principal amount together with all accrued interest thereon of all funds loaned or contributed other than by the Landfill Owner to provide project financing, whether provided to the Company, the Energy Customer, or both, or their respective successors in interest, and whether now existing or hereafter arising under and in respect of (a) all leasing costs, permitting costs, construction costs and development costs for the Gas System, the Project, or both (b) the First Mortgage, (c) any obligation incurred by the Company, the Energy Customer, or both, to extend, increase, refund or refinance Senior Debt in whole, including interest and premiums on any such debt, (d) any agreement entered into by the Company, the Energy Customer, or both, in connection with any such debt, as such agreement may be amended, supplemented or otherwise modified from time to time, and (e) all other amounts payable in respect of any such debt or agreement. The Senior Debt shall be deemed outstanding until such time as all amounts payable thereunder, including all principal together with accrued interest, have been paid in full. For the purposes herein, interest shall be deemed to be at the higher of the actual rate of interest applicable to any Senior Debt, or the rate the Company or the Energy Customer, or both, pays to the First Mortgage lender.

Section 3. Subordination. Landfill Owner hereby agrees, for the benefit of the Creditors, that the Subordinated Debt shall be subordinated and junior in right of payment to all Senior Debt to the extent provided in this Agreement.

(a) Payment of Senior Debt When Due. Upon the maturity of any Senior Debt by lapse of time, acceleration or otherwise, all principal thereof and interest thereon and other obligations in respect thereof shall first be paid in full, before any payment is made for or on account of the Subordinated Debt, and Landfill Owner shall not take or receive from the Company, or the Energy Customer, directly or indirectly, in cash or other

property or by set-off or in any other manner (including, without limitation, from or by way of collateral) payment of all or any of the Subordinated Debt.

(b) Event of Default. Upon the occurrence and during the continuance of an Event of Default (as defined in the First Mortgage), then, unless and until such Event of Default shall have been cured or waived in writing by the Creditors, no payment shall be made by or on behalf of the Company or the Energy Customer for or on account of any Subordinated Debt, and Landfill Owner shall not take or receive from the Company or the Energy Customer, directly or indirectly, in cash or other property or by set-off or in any other manner (including, without limitation, from or by way of collateral) payment of all or any of the Subordinated Debt.

(c) Payment in Trust. In furtherance of the provisions of Section 2, in the event that, notwithstanding the foregoing provisions of Section 3, any payment for or on account of the Subordinated Debt shall be made by or on behalf of the Company or the Energy Customer and received by Landfill Owner, at a time when such payment was prohibited by the provisions of this Section 3, then, unless and until such payment is no longer prohibited by this Section 3, such payment shall be held in trust by Landfill Owner for the benefit of, and shall be immediately paid over to, the Company, or to the Energy Customer, as the case may be, for application to the payment of all Senior Debt remaining unpaid to the extent necessary to pay all Senior Debt in full, after giving effect to any concurrent payment or distribution to or for the holders of Senior Debt.

Section 4. Liquidation, Etc. Upon any distribution of assets of the Company or the Energy Customer or upon any dissolution, winding up, liquidation, reorganization, or marshalling of assets, of the Company or the Energy Customer (whether in bankruptcy, insolvency or receivership proceedings or upon any assignment for the benefit of creditors or otherwise):

(a) the holders of all Senior Debt shall first be entitled to receive payment in full of such Senior Debt before Landfill Owner is entitled to receive any payment on account of the Subordinated Debt;

(b) any payment or distribution of assets of the Company or the Energy Customer of any kind or character, whether in cash, property or securities, to which Landfill Owner would be entitled except for the provisions of this Agreement, shall be paid by the liquidating trustee or agent or other person making such a payment or distribution, directly to the Company or to the Energy Customer, as the case may be, to the extent necessary to make payment in full of all Senior Debt remaining unpaid, after giving effect to any prior or concurrent payment or distribution to the holders of such Senior Debt; and

(c) in the event that, notwithstanding the foregoing, any payment or distribution of assets of the Company or the Energy Customer of any kind or character, whether in cash, property or securities, shall be received by Landfill Owner for or on account of any Subordinated Debt before all Senior Debt is paid in full, such payment or distribution shall be received and held in trust for and shall be paid over to the Company or to the Energy Customer, as the case may be, for application to the payment of such Senior Debt until all such Senior Debt shall have been paid in full, after giving effect to any prior or concurrent payment or distribution to the holders of such Senior Debt.

#### Section 5. Appointment of Creditors as Attorney-In-Fact.

(a) The Creditors are hereby irrevocably authorized and empowered (in their own name or in the name of Landfill Owner), but shall have no obligation, to demand, sue for, collect and receive every payment or distribution referred to in Section 4 above and give acquittance therefor and to file claims and proofs of claim and take such other action as they may deem necessary or advisable for the exercise or enforcement of any of the rights or interests of the Creditors.

(b) Landfill Owner shall duly and promptly take such action as the Creditors may request (i) to collect the Subordinated Debt for account of the Creditors and to file appropriate claims or proofs of claim in respect of the Subordinated Debt, (ii) to execute and deliver to the Creditors such powers of attorney, assignments or other instruments as they may request in order to enable them to enforce any and all claims with respect to the Subordinated Debt, and (iii) to collect and receive any and all payments or distributions

that may be payable or deliverable upon or with respect to the Subordinated Debt.

(c) The Creditors are hereby authorized to demand specific performance of the provisions of this Agreement, whether or not the Company or the Energy Customer shall have complied with any of the provisions hereof applicable to any of them, at any time when Landfill Owner shall have failed to comply with any of the provisions of this Agreement applicable to it. Landfill Owner hereby irrevocably waives any defense based on the adequacy of a remedy at law that might be asserted as a bar to such remedy of specific performance. Landfill Owner hereby acknowledges that the provisions of this Agreement are intended to be enforceable at all times, whether before or after the commencement of a proceeding referred to in Section 4.

Section 6. Restriction on Acceleration, Commencement of Suits and Bankruptcy Proceedings.

At any time when there is outstanding any Senior Debt, in the event of any "event of default" hereunder, Landfill Owner shall not: (i) by declaration pursuant to this Agreement, accelerate the maturity of the principal of or accrued interest on the Subordinated Debt unless the Creditors shall have accelerated (and not rescinded) the maturity of all such Senior Debt; (ii) commence any judicial action or proceeding to collect the payment of principal of and interest on the Subordinated Debt unless the Creditors shall have commenced (and have not withdrawn) judicial action or proceedings to collect payment of the principal of and interest on all such Senior Debt; or (iii) commence an involuntary case or proceeding in bankruptcy against the Company or the Energy Customer unless the Creditors shall have commenced (and have not withdrawn) such a case or proceeding.

Section 7. Agreement Not to Prevent Events of Default.

No provision of this Agreement shall be construed as preventing the failure to make a payment of the Subordinated Debt from being an "event of default" under this Agreement, subject, however, to the provisions of Section 6 and provided, however, that

in the event that the Subordinated Debt is declared due and payable before its stated maturity, then and in such event the Company and the Energy Customer shall be entitled to receive payment in full of all amounts due or to become due or in respect of all Senior Debt before the holders or owners of the Subordinated Debt are entitled to receive any payment by the Company or the Energy Customer for or on account of the Subordinated Debt.

Section 8. Miscellaneous.

(a) Landfill Owner and the Creditors each will, at the Company's and, provided the Energy Customer is an obligor under the Senior Debt, at the Energy Customer's expense and at any time and from time to time, promptly execute and deliver all further instruments and documents, and take all further action, that may be necessary or desirable, or that the Creditors may request, in order to protect any right or interest granted or purported to be granted by the provisions of this Agreement or to enable the Company and the Energy Customer to exercise and enforce their respective rights and remedies hereunder.

(b) All rights and interests under this Agreement of the Creditors, and all agreements and obligations of Landfill Owner and the Creditors under this Agreement, shall remain in full force and effect irrespective of:

(i) any lack of validity or enforceability of the Landfill Gas Lease, the First Mortgage, or any other agreement or instrument relating thereto or to any other Senior Debt;

(ii) any change in the time, manner or place of payment of, or in any other term of, all or any of the Senior Debt, or any other amendment or waiver of or any consent to departure from any agreement or instrument relating thereto or to any other Senior Debt;

(iii) any exchange, release or non-perfection of any collateral, or any release or amendment or waiver of or consent to departure from any guaranty, for all or any of the Senior Debt; or

(iv) any other circumstance that might otherwise constitute a defense available to, or a discharge of, the Company, the Generating Entity or Cambrian or a subordinated creditor.

(c) The provisions of this Agreement shall continue to be effective or be reinstated, as the case may be, if at any time any payment of any of the Senior Debt is rescinded or must otherwise be returned by the Company or the Energy Customer upon the insolvency, bankruptcy or reorganization of the Company, or the Energy Customer or otherwise, all as though such payment had not been made.

(d) Landfill Owner, the Creditors, the Company, and the Energy Customer each hereby waive promptness, diligence, notice of acceptance and any other notice with respect to any of the Senior Debt and this Agreement and any requirement that the Creditors protect, secure, perfect or insure any security interest or lien or any property subject thereto or exhaust any right or take any action against the Company, the Energy Customer or any other person or entity or any collateral.

(e) No failure on the part of the Company or the Energy Customer to exercise, and no delay in exercising, any right hereunder shall operate as a waiver thereof, nor shall any single or partial exercise of any right hereunder preclude any other or further exercise thereof or the exercise of any other right. The remedies herein provided are cumulative and not exclusive of any remedies provided by law.

(f) Landfill Owner hereby waives and relinquishes any duty on the part of the Creditors to disclose any matter, fact or thing relating to the business, operations or condition of the Company and the Energy Customer now known or hereafter known by the Creditors.

(g) Landfill Owner agrees that the Creditors, in their discretion, without notice or demand and without affecting the rights of the Creditors, or the duties of Landfill Owner under this Agreement, may foreclose upon the Security Agreements (as defined in the First Mortgage) to which it is a party, by power of sale, execution sale following entry of judgment or other nonjudicial sale; and Landfill Owner hereby waives any defense to the rights of the Creditors against Landfill Owner under this Agreement after a power of sale,

execution sale following entry of judgment or other nonjudicial sale and Landfill Owner expressly waives any defense or benefits that may be derived under Texas foreclosure laws or any similar statute in effect in any other jurisdiction. Without limiting the foregoing, Landfill Owner waives any defense arising out of any such power of sale, execution sale following entry of judgment or other nonjudicial sale even though such sale operates to impair or extinguish any right of reimbursement or subrogation or any other right or remedy of Landfill Owner against the Company, the Energy Customer or any collateral security.

Section 9. Benefits of Article. Landfill Owner, the Creditors, the Company, and the Energy Customer each acknowledge and agree that this Agreement is intended to benefit the Company and all other persons who from time to time are holders of Senior Debt in their capacity as such holders.

Section 10. Inducement to Holders of Senior Debt. Landfill Owner acknowledges and agrees that the subordination provisions of this Agreement are, and are intended to be, an inducement and a consideration to the Creditors, whether the Senior Debt was created or acquired before or after the creation of the Subordinated Debt, to acquire or to continue to hold the Senior Debt, and the Creditors shall be deemed conclusively to have relied on such provisions in acquiring or in continuing to hold, the Senior Debt.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement effective as of the date first above written.

CAMBRIAN ENERGY SYSTEMS  
a California limited partnership  
By Cambrian Management, Inc.  
General Partner

By: \_\_\_\_\_  
Name:  
Title:

COUNTY OF VOLUSIA

By: \_\_\_\_\_  
Name:  
Title:

APPROVED AS TO FORM:  
COUNTY COUNSEL

ATTEST:  
COUNTY CLERK

By \_\_\_\_\_

By \_\_\_\_\_



## SUBORDINATION AGREEMENT

This SUBORDINATION AGREEMENT is made as of the 24<sup>th</sup> day of August, 1995, by and between CAMBRIAN ENERGY SYSTEMS, a California limited partnership (the "Company") and County of Volusia, a municipal corporation (the "Landfill Owner").

### RECITALS

A. Company and Landfill Owner have entered into that certain Landfill Gas Lease concurrently herewith.

B. Pursuant to the Landfill Gas Lease the Company will design, construct and operate a collection system and pipeline (the "Gas System") to collect and deliver landfill gas that will be sold to a third party (the "Energy Customer"). The Energy Customer will either transmit such landfill gas to another customer by pipeline, construct a landfill gas conversion system to convert such landfill gas to electricity or another energy product (collectively referred to as the "Project") or will directly use such landfill gas as a fuel in its existing facility.

C. As a condition of entering into the above agreements, the Company has required that the Landfill Owner subordinate certain payments due the Landfill Owner under the Landfill Gas Lease to financing for the Gas System and the Project.

NOW THEREFORE, in consideration of the promises and the mutual covenants set forth herein, and other good and valuable consideration the receipt and sufficiency of which is hereby acknowledged, it is agreed between the parties as follows:

Section 1. Definitions. The following defined terms as used in this Agreement shall have the meaning set forth below:

"Agreement" means this Subordination Agreement entered into between the

Company and the Landfill Owner.

"Company" means Cambrian Energy Systems, a California limited partnership, its successors and assigns.

"Creditors" means all persons other than the Landfill Owner who contribute or provide the Senior Debt.

"Energy Customer" means the third party with which the Company will enter into an agreement for the sale of landfill gas collected at the property subject to the Landfill Gas Lease.

"First Mortgage" means any obligation incurred by the Company or the Energy Customer to provide for initial financing of the Gas System, the Project, or both.

"Gas System" means the system of collection wells, pipes and headers installed or to be installed at the property subject to the Landfill Gas Lease and any pipeline, whether or not on such property, which shall be operated to collect and deliver landfill gas to the Energy Customer.

"Landfill Gas Lease" means the Landfill Gas Lease and Operating Agreement for Conversion Systems dated August 24, 1995 by and between the Company and the Landfill Owner.

"Landfill Owner" means County of Volusia, a political subdivision of the State of Florida, a corporation, its successors and assigns.

"Project" means all equipment and structures, including engines, generator sets, switch gear, electrical interface, and any pipelines, incorporated in any facility or facilities designed to transport or utilize landfill gas collected at the property subject to the Landfill Gas Lease as a fuel for conversion to electric power or any other energy product, or both.

"Senior Debt" means the definition set forth in Section 2.

"Subordinated Debt" means all payments due to the Landfill Owner either now existing or hereafter arising under the Landfill Gas Lease and any other agreement or other document entered into by the Landfill Owner in connection with the Project.

Section 2. Senior Debt. For purposes of this Agreement, the term "Senior Debt" shall mean the principal amount together with all accrued interest thereon of all funds loaned or contributed other than by the Landfill Owner to provide project financing, whether provided to the Company, the Energy Customer, or both, or their respective successors in interest, and whether now existing or hereafter arising under and in respect of (a) all leasing costs, permitting costs, construction costs and development costs for the Gas System, the Project, or both (b) the First Mortgage, (c) any obligation incurred by the Company, the Energy Customer, or both, to extend, increase, refund or refinance Senior Debt in whole, including interest and premiums on any such debt, (d) any agreement entered into by the Company, the Energy Customer, or both, in connection with any such debt, as such agreement may be amended, supplemented or otherwise modified from time to time, and (e) all other amounts payable in respect of any such debt or agreement. The Senior Debt shall be deemed outstanding until such time as all amounts payable thereunder, including all principal together with accrued interest, have been paid in full. For the purposes herein, interest shall be deemed to be at the higher of the actual rate of interest applicable to any Senior Debt, or the rate the Company or the Energy Customer, or both, pays to the First Mortgage lender.

Section 3. Subordination. Landfill Owner hereby agrees, for the benefit of the Creditors, that the Subordinated Debt shall be subordinated and junior in right of payment to all Senior Debt to the extent provided in this Agreement.

(a) Payment of Senior Debt When Due. Upon the maturity of any Senior Debt by lapse of time, acceleration or otherwise, all principal thereof and interest thereon and other obligations in respect thereof shall first be paid in full, before any payment is made for or on account of the Subordinated Debt, and Landfill Owner shall not take or receive from the Company, or the Energy Customer, directly or indirectly, in cash or other property or by set-off or in any other manner (including, without limitation, from or by way of collateral) payment of all or any of the Subordinated Debt.

(b) Event of Default. Upon the occurrence and during the continuance of an Event of Default (as defined in the First Mortgage), then, unless and until such Event of Default shall have been cured or waived in writing by the Creditors, no payment shall be

made by or on behalf of the Company or the Energy Customer for or on account of any Subordinated Debt, and Landfill Owner shall not take or receive from the Company or the Energy Customer, directly or indirectly, in cash or other property or by set-off or in any other manner (including, without limitation, from or by way of collateral) payment of all or any of the Subordinated Debt.

(c) Payment in Trust. In furtherance of the provisions of Section 2, in the event that, notwithstanding the foregoing provisions of Section 3, any payment for or on account of the Subordinated Debt shall be made by or on behalf of the Company or the Energy Customer and received by Landfill Owner, at a time when such payment was prohibited by the provisions of this Section 3, then, unless and until such payment is no longer prohibited by this Section 3, such payment shall be held in trust by Landfill Owner for the benefit of, and shall be immediately paid over to, the Company, or to the Energy Customer, as the case may be, for application to the payment of all Senior Debt remaining unpaid to the extent necessary to pay all Senior Debt in full, after giving effect to any concurrent payment or distribution to or for the holders of Senior Debt.

Section 4. Liquidation, Etc. Upon any distribution of assets of the Company or the Energy Customer or upon any dissolution, winding up, liquidation, reorganization, or marshalling of assets, of the Company or the Energy Customer (whether in bankruptcy, insolvency or receivership proceedings or upon any assignment for the benefit of creditors or otherwise):

(a) the holders of all Senior Debt shall first be entitled to receive payment in full of such Senior Debt before Landfill Owner is entitled to receive any payment on account of the Subordinated Debt;

(b) any payment or distribution of assets of the Company or the Energy Customer of any kind or character, whether in cash, property or securities, to which Landfill Owner would be entitled except for the provisions of this Agreement, shall be paid by the liquidating trustee or agent or other person making such a payment or distribution, directly to the Company or to the Energy Customer, as the case may be, to the extent necessary to make payment in full of all Senior Debt remaining unpaid, after giving effect to any prior or concurrent payment or distribution to the holders of such Senior Debt; and

(c) in the event that, notwithstanding the foregoing, any payment or distribution of assets of the Company or the Energy Customer of any kind or character, whether in cash, property or securities, shall be received by Landfill Owner for or on account of any Subordinated Debt before all Senior Debt is paid in full, such payment or distribution shall be received and held in trust for and shall be paid over to the Company or to the Energy Customer, as the case may be, for application to the payment of such Senior Debt until all such Senior Debt shall have been paid in full, after giving effect to any prior or concurrent payment or distribution to the holders of such Senior Debt.

Section 5. Appointment of Creditors as Attorney-In-Fact.

(a) The Creditors are hereby irrevocably authorized and empowered (in their own name or in the name of Landfill Owner), but shall have no obligation, to demand, sue for, collect and receive every payment or distribution referred to in Section 4 above and give acquittance therefor and to file claims and proofs of claim and take such other action as they may deem necessary or advisable for the exercise or enforcement of any of the rights or interests of the Creditors.

(b) Landfill Owner shall duly and promptly take such action as the Creditors may request (i) to collect the Subordinated Debt for account of the Creditors and to file appropriate claims or proofs of claim in respect of the Subordinated Debt, (ii) to execute and deliver to the Creditors such powers of attorney, assignments or other instruments as they may request in order to enable them to enforce any and all claims with respect to the Subordinated Debt, and (iii) to collect and receive any and all payments or distributions that may be payable or deliverable upon or with respect to the Subordinated Debt.

(c) The Creditors are hereby authorized to demand specific performance of the provisions of this Agreement, whether or not the Company or the Energy Customer shall have complied with any of the provisions hereof applicable to any of them, at any time when Landfill Owner shall have failed to comply with any of the provisions of this Agreement applicable to it. Landfill Owner hereby irrevocably waives any defense based on the adequacy of a remedy at law that might be asserted as a bar to such remedy of specific performance. Landfill Owner hereby acknowledges that the provisions of this Agreement are intended to be enforceable at all times, whether before or after the

commencement of a proceeding referred to in Section 4.

Section 6. Restriction on Acceleration, Commencement of Suits and Bankruptcy Proceedings.

At any time when there is outstanding any Senior Debt, in the event of any "event of default" hereunder, Landfill Owner shall not: (i) by declaration pursuant to this Agreement, accelerate the maturity of the principal of or accrued interest on the Subordinated Debt unless the Creditors shall have accelerated (and not rescinded) the maturity of all such Senior Debt; (ii) commence any judicial action or proceeding to collect the payment of principal of and interest on the Subordinated Debt unless the Creditors shall have commenced (and have not withdrawn) judicial action or proceedings to collect payment of the principal of and interest on all such Senior Debt; or (iii) commence an involuntary case or proceeding in bankruptcy against the Company or the Energy Customer unless the Creditors shall have commenced (and have not withdrawn) such a case or proceeding.

Section 7. Agreement Not to Prevent Events of Default.

No provision of this Agreement shall be construed as preventing the failure to make a payment of the Subordinated Debt from being an "event of default" under this Agreement, subject, however, to the provisions of Section 6 and provided, however, that in the event that the Subordinated Debt is declared due and payable before its stated maturity, then and in such event the Company and the Energy Customer shall be entitled to receive payment in full of all amounts due or to become due or in respect of all Senior Debt before the holders or owners of the Subordinated Debt are entitled to receive any payment by the Company or the Energy Customer for or on account of the Subordinated Debt.

Section 8. Miscellaneous.

(a) Landfill Owner and the Creditors each will, at the Company's and, provided the Energy Customer is an obligor under the Senior Debt, at the Energy Customer's expense and at any time and from time to time, promptly execute and deliver all further

instruments and documents, and take all further action, that may be necessary or desirable, or that the Creditors may request, in order to protect any right or interest granted or purported to be granted by the provisions of this Agreement or to enable the Company and the Energy Customer to exercise and enforce their respective rights and remedies hereunder.

(b) All rights and interests under this Agreement of the Creditors, and all agreements and obligations of Landfill Owner and the Creditors under this Agreement, shall remain in full force and effect irrespective of:

(i) any lack of validity or enforceability of the Landfill Gas Lease, the First Mortgage, or any other agreement or instrument relating thereto or to any other Senior Debt;

(ii) any change in the time, manner or place of payment of, or in any other term of, all or any of the Senior Debt, or any other amendment or waiver of or any consent to departure from any agreement or instrument relating thereto or to any other Senior Debt;

(iii) any exchange, release or non-perfection of any collateral, or any release or amendment or waiver of or consent to departure from any guaranty, for all or any of the Senior Debt; or

(iv) any other circumstance that might otherwise constitute a defense available to, or a discharge of, the Company, the Generating Entity or Cambrian or a subordinated creditor.

(c) The provisions of this Agreement shall continue to be effective or be reinstated, as the case may be, if at any time any payment of any of the Senior Debt is rescinded or must otherwise be returned by the Company or the Energy Customer upon the insolvency, bankruptcy or reorganization of the Company, or the Energy Customer or otherwise, all as though such payment had not been made.

(d) Landfill Owner, the Creditors, the Company, and the Energy Customer each hereby waive promptness, diligence, notice of acceptance and any other notice with respect to any of the Senior Debt and this Agreement and any requirement that the Creditors protect, secure, perfect or insure any security interest or lien or any property subject thereto or exhaust any right or take any action against the Company, the Energy Customer

or any other person or entity or any collateral.

(e) No failure on the part of the Company or the Energy Customer to exercise, and no delay in exercising, any right hereunder shall operate as a waiver thereof; nor shall any single or partial exercise of any right hereunder preclude any other or further exercise thereof or the exercise of any other right. The remedies herein provided are cumulative and not exclusive of any remedies provided by law.

(f) Landfill Owner hereby waives and relinquishes any duty on the part of the Creditors to disclose any matter, fact or thing relating to the business, operations or condition of the Company and the Energy Customer now known or hereafter known by the Creditors.

(g) Landfill Owner agrees that the Creditors, in their discretion, without notice or demand and without affecting the rights of the Creditors, or the duties of Landfill Owner under this Agreement, may foreclose upon the Security Agreements (as defined in the First Mortgage) to which it is a party, by power of sale, execution sale following entry of judgment or other nonjudicial sale; and Landfill Owner hereby waives any defense to the rights of the Creditors against Landfill Owner under this Agreement after a power of sale, execution sale following entry of judgment or other nonjudicial sale and Landfill Owner expressly waives any defense or benefits that may be derived under Texas foreclosure laws or any similar statute in effect in any other jurisdiction. Without limiting the foregoing, Landfill Owner waives any defense arising out of any such power of sale, execution sale following entry of judgment or other nonjudicial sale even though such sale operates to impair or extinguish any right of reimbursement or subrogation or any other right or remedy of Landfill Owner against the Company, the Energy Customer or any collateral security.

Section 9. Benefits of Article. Landfill Owner, the Creditors, the Company, and the Energy Customer each acknowledge and agree that this Agreement is intended to benefit the Company and all other persons who from time to time are holders of Senior Debt in their capacity as such holders.



Section 10. Inducement to Holders of Senior Debt. Landfill Owner acknowledges and agrees that the subordination provisions of this Agreement are, and are intended to be, an inducement and a consideration to the Creditors, whether the Senior Debt was created or acquired before or after the creation of the Subordinated Debt, to acquire or to continue to hold the Senior Debt, and the Creditors shall be deemed conclusively to have relied on such provisions in acquiring or in continuing to hold, the Senior Debt.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement effective as of the date first above written.

CAMBRIAN ENERGY SYSTEMS  
a California limited partnership  
By Cambrian Management, Inc.  
General Partner

By: Evan G. Williams  
Name: Evan G. Williams  
Title: President

COUNTY OF VOLUSIA

By: Freddie C. Moore  
Name: FREDDIE C. MOORE  
Title: CHAIRMAN

APPROVED AS TO FORM:  
COUNTY COUNSEL

ATTEST:  
COUNTY CLERK

By: James E. Hamm By: Reynold P. Purnell