



Florida Department of Environmental Protection

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PERMITTEE

Indian River County, Solid Waste Disposal District
1325 74th Avenue Southwest
Vero Beach, Florida 32968

Authorized Representative:
Himanshu Mehta, P.E., Managing Director

Air Permit No. 0610015-006-AC
Permit Expires: January 1, 2018
Minor Air Construction Permit
Indian River County Landfill
Flare Installation Project

PROJECT

This is the final air construction permit, which authorizes the installation of a landfill gas flare. The proposed work will be conducted at the existing Indian River County Landfill, which is a solid waste landfill categorized under Standard Industrial Classification No. 4953. The existing facility is located in Indian River County at 1325 74th Avenue Southwest in Vero Beach, Florida. The UTM coordinates are: Zone 17, 551.28 East and 3050.79 North. Latitude is: 27°34'48" North, and Longitude is: 80°28'49" West.

This final permit is organized into the following sections: Section 1 (General Information); Section 2 (Administrative Requirements); Section 3 (Emissions Unit Specific Conditions); and Section 4 (Appendices). Because of the technical nature of the project, the permit contains numerous acronyms and abbreviations, which are defined in Appendix A of Section 4 of this permit. As noted in the Final Determination provided with this final permit, only minor changes and clarifications were made to the draft permit.

STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of: Chapter 403 of the Florida Statutes (F.S.) and Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297 of the Florida Administrative Code (F.A.C.). The permittee is authorized to conduct the proposed work in accordance with the conditions of this permit. This project is subject to the general preconstruction review requirements in Rule 62-212.300, F.A.C. and is not subject to the preconstruction review requirements for major stationary sources in Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

Upon issuance of this final permit, any party to this order has the right to seek judicial review of it under Section 120.68 of the Florida Statutes by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel (Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000) and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within 30 days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida

For:

Syed Arif, P.E., Program Administrator
Office of Permitting and Compliance
Division of Air Resource Management

FINAL PERMIT

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Final Air Construction Permit package was sent by electronic mail, or a link to these documents made available electronically on a publicly accessible server, with received receipt requested before the close of business on the date indicated below to the following persons.

Himanshu H. Mehta, PE, Indian River County, Solid Waste Disposal District: hmehta@ircgov.com

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Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to Section 120.52(7), Florida Statutes, with the designated agency clerk, receipt of which is hereby acknowledged.

SECTION 1. GENERAL INFORMATION

FACILITY DESCRIPTION

Indian River County Landfill is an existing municipal solid waste (MSW) landfill, which is categorized under Standard Industrial Classification Code No. 4953. The existing Indian River County Landfill is located in Indian River County at 1325 74th Avenue Southwest in Vero Beach, Florida.

The Indian River County Landfill, located in southeastern Indian River County, is engaged in active landfilling of solid waste generated within Indian River County. Initial waste acceptance at the site occurred in 1978. The total site area encompasses approximately 276 acres and consists of Class I disposal areas, a construction and demolition (C&D) debris cell, a biosolids dewatering facility, yard waste processing area, household hazardous waste transfer facility, a recovered materials transfer facility, tire storage, and necessary site ancillary infrastructure (including storm water management pond and a borrow pond area). The total permitted Class I waste design capacity of the site exceeds 2.5 million megagrams (Mg) or 2.5 million cubic meters (m³), making it a Title V major source under 40 CFR 60 Subpart WWW.

The Class I disposal area (EU 003) consists of three Class I (MSW) segments (1, 2, and 3) and an infill Class I area between Segments 1 and 2. Landfilling of Class I and C&D waste occurs in active disposal Segment 3, located directly east and adjacent to Segment 2 with integrated infrastructure. There is a C&D cell devoted to landfilling clean concrete. Landfilling operations began in 1978 in the Segment 1 area of the site, currently closed. Current landfilling of Class I and C&D waste in Segment 3, Cell 1, proceeds at a rate of approximately 151,000 Mg yearly (approximately 530 tons/day). At final build out Segment 3 is permitted to contain 8 total disposal cells. Waste in place exceeds 2.5 million Mg; waste in place at the end of 2015 was estimated at 3.86 million Mg (4.25 million tons); it is estimated, based on anticipated waste acceptance rates, by the end of 2021 waste in place will approximate 4.82 million Mg (5.30 million tons).

An active gas collection and control system (GCCS), installed voluntarily in 2004, consisting of a network of vertical and horizontal extraction wells, manifold piping, three blowers, and an open utility flare for gas combustion, serves to collect landfill gas (LFG) from Segment 1, Segment 2, and the infill area. Prior to combustion in the flare, LFG is routed through a knockout pot for condensate and particulate removal. After installation of the GCCS, Tier 2 sampling to determine the site-specific LFG concentration of non-methane organic compounds (NMOC) was performed, yielding a result of 176.1 parts per million by volume (ppmv). An emergency generator (EU 004) is used to provide power to the biosolids dewatering facility located on site, which accepts biosolids residuals from the Indian River County West Regional Wastewater Treatment Plant. No portion of the site operates as a bioreactor. Asbestos containing wastes are also accepted at the site and disposed with Class I wastes in Segment 3, Cell 1 through daily operations.

The existing facility consists of the following emissions units (EU).

EU No.	Emission Unit Description
003	Municipal Solid Waste Landfill
004	Emergency Standby Generator (805 HP)

PROPOSED PROJECT

The Indian River County Solid Waste Disposal District proposes to obtain an air construction permit for a previously installed flare station, containing one open, candlestick type, utility flare used to treat gas generated and collected from Segments 1, 2, 3 and the infill area (spanning the gap between Segments 1 and 2) of the Indian River County Landfill. The flare combusts the collected LFG, which reduces emissions of hazardous air pollutants and ozone precursors. Flaring LFG is also a proven technique to reduce odors from landfills, by oxidizing hydrogen sulfide (H₂S) to sulfur dioxide (SO₂).

This project will add the following emissions units.

EU No.	Emission Unit Description
005	Landfill Gas Utility Flare

SECTION 1. GENERAL INFORMATION

FACILITY REGULATORY CLASSIFICATION

- The facility is not a major source of hazardous air pollutants (HAP).
- The facility does not operate units subject to the acid rain provisions of the Clean Air Act (CAA).
- The facility is a Title V major source of air pollution in accordance with Chapter 62-213, F.A.C.
- The facility is not a major stationary source in accordance with Rule 62-212.400(PSD), F.A.C.
- The facility operates units subject to the New Source Performance Standards (NSPS) of Title 40 Part 60 of the Code of Federal Regulations (40 CFR 60).
- The facility operates units subject to the National Emission Standards of Hazardous Air Pollutants (NESHAP) of 40 CFR 61.

SECTION 2. ADMINISTRATIVE REQUIREMENTS

1. Permitting Authority: The permitting authority for this project is the Office of Permitting and Compliance in the Division of Air Resource Management of the Department of Environmental Protection (Department). The Office of Permitting and Compliance mailing address is 2600 Blair Stone Road (MS #5505), Tallahassee, Florida 32399-2400.
2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Department's Southeast District Office at: 3301 Gun Club Road, MSC 7210-1, West Palm Beach, FL 33406. The office's telephone number is 561-681-6600.
3. Appendices: The following Appendices are attached as a part of this permit: Appendix A (Citation Formats and Glossary of Common Terms); Appendix B (General Conditions); Appendix C (Common Conditions); and Appendix D (Common Testing Requirements).
4. Applicable Regulations, Forms and Application Procedures: Unless otherwise specified in this permit, the construction and operation of the subject emissions units shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403, F.S.; and Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296 and 62-297, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations.
5. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]
6. Modifications: The permittee shall notify the Compliance Authority upon commencement of construction. No new emissions unit shall be constructed and no existing emissions unit shall be modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]
7. Construction and Expiration: The expiration date shown on the first page of this permit provides time to complete the physical construction activities authorized by this permit, complete any necessary compliance testing, and obtain an operation permit. Notwithstanding this expiration date, all specific emissions limitations and operating requirements established by this permit shall remain in effect until the facility or emissions unit is permanently shut down. For good cause, the permittee may request that a permit be extended. Pursuant to Rule 62-4.080(3), F.A.C., such a request shall be submitted to the Permitting Authority in writing before the permit expires. [Rules 62-4.070(3) & (4), 62-4.080 & 62-210.300(1), F.A.C.]
8. Source Obligation:
 - a. At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.
 - b. At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by exceeding its projected actual emissions, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

[Rule 62-212.400(12), F.A.C.]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

A. Landfill Gas Utility Flare (EU 005)

This section of the permit addresses the following emissions units.

EU No.	Emission Unit Description
005	Landfill Gas Utility Flare

This emission unit (EU 005) is an open, non-assisted, candlestick-type utility flare manufactured by LFG Specialties, Inc., used to control gaseous emissions from the Municipal Solid Waste Landfill (EU 003). The flare is and will continue to be used in conjunction with a landfill GCCS to control the emissions of LFG. The utility flare has an overall stack height of 41 feet, a maximum flow rate of 3,000 standard cubic feet per minute (scfm), and an exit temperature of 1,400 degrees Fahrenheit (°F).

The flare is equipped with a temperature monitoring system manufactured by Yokogawa, which records temperature, flare on and off time and blower run time, a Dwyer-Magnehelic differential pressure indicator, and a meter for LFG flow monitoring. The flare is equipped with three HSI centrifugal exhaust gas blowers with a maximum design flow rate of 1,000 scfm (at a pressure loss of 40 inches of water column each) to provide vacuum for transmittal of collected LFG to the flare. All gas collected from the landfill is routed to the flare through a network of collection wells and manifold piping. The flare station was initially installed at the site in 2004, and relocated in 2012 to accommodate the site's Segment 3 expansion.

{Permitting Note: As of the issuance of this permit, this flare is not subject to the provisions for flares in the NSPS General Provisions in 40 CFR 60, Subpart A. If the landfill (EU 003) becomes subject to the requirement to install and operate a landfill gas collection and control system under a state plan referring to 40 CFR 60, Subpart Cf, or under the NSPS in 40 CFR 60, Subpart WWW, the flare will become subject to the flare requirements in 40 CFR 60, Subpart A.}

EQUIPMENT

1. Landfill Gas Utility Flare: The permittee is authorized to operate and maintain a 3,000 scfm candle-stick utility type flare (LFG Specialties, Serial No. 1865, Model No. CF1238110) to control emissions of landfill gas. Additional equipment installed includes the following: a steel blower skid, several blowers to facilitate movement of landfill gas, a flare control panel, moisture separator (i.e., condensate knockout pot), and flame arrestor. [Design, Application No. 0610015-006-AC]

PERFORMANCE RESTRICTIONS

2. Permitted Capacity: The maximum landfill gas flow rate shall not exceed 3,000 scfm of landfill gas. [Rule 62-210.200(PTE), F.A.C.]
3. Restricted Operation: The hours of operation are not limited (i.e., 8,760 hours/year). [Rules 62-4.070(3) and 62-210.200(PTE), F.A.C.]

EMISSIONS STANDARDS

4. General Visible Emissions: The flare shall not exceed 20% opacity. This condition does not impose a specific testing requirement; however, testing in accordance with **Specific Condition 8** could be required if the Department has reason to believe that the general visible emissions rule is being exceeded. [Rule 62-296.320(4)(b), F.A.C.]

TESTING REQUIREMENTS

5. Landfill Gas Sulfur Content Tests: During each calendar year (January 1st to December 31st), the landfill gas shall be tested for total reduced sulfur (TRS). [Rule 62-4.070(3), F.A.C.; and Application No. 0610015-006-AC]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

A. Landfill Gas Utility Flare (EU 005)

6. **Test Requirements:** The permittee shall notify the Compliance Authority in writing at least 15 days prior to any required tests. Tests shall be conducted in accordance with the applicable requirements specified in Appendix D (Common Testing Requirements) of this permit. [Rule 62-297.310(9), F.A.C.]
7. **Test Methods:** Required tests shall be performed in accordance with the following reference methods.

Method	Description of Method and Comments
9	Visual Determination of the Opacity of Emissions from Stationary Sources
ASTM D5504-12 or D7493	Determination of Sulfur Compounds in Natural Gas and Gaseous Fuels

The above methods are described in Appendix A of 40 CFR 60 and are adopted by reference in Rule 62-204.800, F.A.C. No other methods may be used unless prior written approval is received from the Department. [Rules 62-204.800, F.A.C.; and Appendix A of 40 CFR 60]

8. **Special Compliance Tests:** When the Department, after investigation, has good reason (such as complaints, increased visible emissions, or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it may require the owner or operator of the emissions unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emission unit and to provide a report on the results of said tests to the Department. [Rule 62-297.310(7)(b), F.A.C.]

MONITORING REQUIREMENTS

9. **TRS Emissions Monitoring Requirement:** The permittee shall continue to monitor TRS from the landfill gas after the 5-year actual emission reporting period (see **Specific Condition 11**). If it is determined that the landfill becomes a PSD major source for emissions of SO₂, the permittee shall submit a minor air construction permit application within 180 days of discovery to install add-on controls to treat the landfill gas for sulfur content prior to flaring. [Rule 62-4.070(3), F.A.C.; and Application No. 0610015-006-AC]

RECORDS AND REPORTS

10. **Annual Operating Report:** The calculated emissions of SO₂ shall be included in the facility's Annual Operating Report. The SO₂ calculations shall be based on the landfill gas TRS measurements as required in **Specific Condition 5**. [Rule 62-4.070(3), F.A.C.; and Application No. 0610015-006-AC]
11. **Actual Emissions Reporting:** This permit is based on an analysis of the potential emissions from the flare and avoided the requirements of subsection 62-212.400(4) through (12), F.A.C. for SO₂. Therefore, pursuant to Rule 62-212.300(1)(e), F.A.C., the permittee is subject to the following monitoring, reporting and recordkeeping provisions.
 - a. The permittee shall monitor the emissions of any PSD pollutant that the Department identifies could increase as a result of the construction or modification and that is emitted by any emissions unit that could be affected; and, using the most reliable information available, calculate and maintain a record of the annual emissions, in tons/year on a calendar year basis, for a period of 5-years following resumption of regular operations after the change. Emissions shall be computed in accordance with the provisions in Rule 62-210.370, F.A.C., which are provided in Appendix C of this permit.
 - b. The permittee shall report to the Department within 60 days after the end of each calendar year during the 5-year period setting out the unit's annual emissions during the calendar year that preceded submission of the report. The report shall contain the following:
 - (1) The name, address and telephone number of the owner or operator of the major stationary source;
 - (2) The annual emissions calculations pursuant to the provisions of 62-210.370, F.A.C., which are

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

A. Landfill Gas Utility Flare (EU 005)

provided in Appendix C of this permit;

- (3) If the emissions differ from the preconstruction projection, an explanation as to why there is a difference; and
 - (4) Any other information that the owner or operator wishes to include in the report.
- c. The information required to be documented and maintained pursuant to subparagraphs 62-212.300(1)(e)1 and 2, F.A.C., shall be submitted to the Department, which shall make it available for review to the general public.
 - d. The permittee shall compute and report annual emissions in accordance with Rule 62-210.370(2), F.A.C. as provided by Appendix C of this permit. For this project, the permittee shall use the following methods in reporting the actual annual SO₂ emissions for the flare:
 - (1) When calculating the actual annual emissions of SO₂ for the flare, the permittee shall use the following information: TRS concentration in the landfill gas as determined by ASTM D5504-12 or D7493 site-specific landfill gas testing; and the approximate capacity landfill gas flow rate of flare station. The total actual annual SO₂ emissions from the flare shall then be computed using the following equation:

$$\dot{M}_{SO_2} = \frac{(C_s)(Q_g)(MW_{SO_2})(2.2)(P)}{(MW_S)(10^6)(8.205 * 10^{-5})(1000)(273 + T)(2000)}$$

Where,

\dot{M}_{SO_2} = annual mass release emissions of pollutant SO₂, tons/year

Q_g = yearly actual volumetric landfill gas flow rate, m³/year

C_s = measured sulfur (S) concentration determined in annual TRS testing, parts per million by volume (ppmv)

MW_{SO_2} = molecular weight SO₂, 64.0584 lb/lbmol

MW_S = molecular weight of sulfur, 32.065 lb/lbmol

T = temperature of landfill gas, degree Celsius (°C) (if unknown use 25°C)

$8.205 * 10^{-5}$ = ideal gas law constant, m³-atmosphere (atm)/gram mol-Kelvin (K)

1,000 = conversion factor, gram/kilogram (g/kg)

2.2 = conversion factor, lb/kg

P = pressure, 1 atm

2,000 = conversion factor, lb/ton

10^6 = correction for ppm S concentration

Source: US EPA. (1998). AP-42 2.4 Municipal Solid Waste Landfills.

- (2) As defined in Rule 62-210.370(2), F.A.C., the permittee shall use a more accurate methodology if it becomes available.

[Rules 62-4.070, 62-212.300(1)(e) and 62-210.370, F.A.C.; and Application No. 0610015-006-AC]

12. **Test Reports:** The permittee shall prepare and submit reports for all required tests in accordance with the requirements specified in Appendix D (Common Testing Requirements) of this permit.
Rule 62-297.310(10), F.A.C.]