



# COMMONWEALTH of VIRGINIA

## DEPARTMENT OF ENVIRONMENTAL QUALITY

TIDEWATER REGIONAL OFFICE

5636 Southern Boulevard, Virginia Beach, Virginia 23462

(757) 518-2000 Fax (757) 518-2009

[www.deq.virginia.gov](http://www.deq.virginia.gov)

Molly Joseph Ward  
Secretary of Natural Resources

David K. Paylor  
Director

Maria R. Nold  
Regional Director

### STATEMENT OF LEGAL AND FACTUAL BASIS

City of Virginia Beach  
Virginia Beach Landfill No. 2  
Virginia Beach, Virginia  
**Permit No. TRO-61322**

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, the city of Virginia Beach has applied for a Title V Operating Permit for its Virginia Beach Landfill No. 2 facility. The Department has reviewed the application and has prepared a draft Title V Operating Permit.

Permit Writer:

\_\_\_\_\_  
Cindy Keltner  
(757) 518-2167

Date: August 18, 2014

Regional Air Permits  
Manager:

\_\_\_\_\_  
Troy D. Breathwaite

Date: August 18, 2014

Regional Director:

\_\_\_\_\_  
Maria R. Nold

Date: August 18, 2014

## **I. FACILITY INFORMATION**

### Permittee

City of Virginia Beach  
2405 Courthouse Drive  
Virginia Beach, Virginia 23456

### Facility

Virginia Beach Landfill No. 2  
1989 Jake Sears Road  
Virginia Beach, Virginia 23464

County-Plant Identification Number: 51-810-00105

### **A. SOURCE DESCRIPTION**

NAICS Code: 562212 - Solid Waste Landfill

Virginia Beach Landfill No. 2 is a sanitary landfill located at 1989 Jake Sears Road in the City of Virginia Beach, Virginia. The landfill has been in operation since 1971. As a sanitary landfill regulated by the Commonwealth of Virginia, the landfill is permitted to accept only solid wastes which are defined and regulated under the Commonwealth of Virginia Solid Waste Management Regulations. Such wastes are generated from the City of Virginia Beach and include general domestic waste, commercial waste, and construction debris. Ash generated from the Southeastern Public Service Authority Refuse-Derived Fuel facility in Portsmouth, Virginia, has been deposited at the landfill. Only non-liquid, non-hazardous, and non-infectious wastes are accepted at the landfill.

The landfill consists of multiple disposal areas including original mound and phases 1 and 2A. Phases 2B, 3, 4, and 5 are planned. The landfill including all phases operate under a solid waste permit #398 issued by DEQ. The landfill covers approximately 230 acres.

An extensive landfill gas collection and control system is operated at Virginia Beach Landfill No. 2. This system includes extraction wells located throughout the Original Mound and Phase 1 disposal areas and will include other phases as they become operational. Collected landfill gas is either combusted on-site in a flare or sent off-site for beneficial use. The operation of the landfill gas collection and control system is not required by applicable air quality regulations (Standards for Municipal Solid Waste Landfills under 40 CFR Part 60, Subpart WWW) since the City has demonstrated that non-methane organic compound (NMOC) emissions are less than 50 megagrams per year based on Tier 2 testing completed in 1998 and 2003. In addition to the landfill gas collection and control system, the City also operates a leachate collection system, multiple diesel fuel-fired pumps (primarily for pumping water and maintenance purposes), a diesel fuel storage tank, and a small degreasing unit for maintenance purposes at Virginia Beach Landfill No. 2.

The facility is a Title V minor source of NMOC and NO<sub>x</sub> and is part of the Title V permitting program by requirements in 40 CFR 60, Subpart WWW. This source is located in an attainment area for all pollutants. The facility is also permitted under a State Operating Permit issued on March 20, 2003.

## **II. COMPLIANCE STATUS**

A full compliance evaluation of this facility, including a site visit, has been conducted on February 27, 2014. In addition, all reports and other data required by permit conditions or regulations, which are submitted to DEQ, are evaluated for compliance. Based on these compliance evaluations, the facility has not been found to be in violation of any state or federal applicable requirements at this time.

### III. EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

The emissions units at this facility consist of the following:

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
<b>Fuel Burning Equipment</b>							
DPs		Multiple diesel fuel-fired pumps	Various < 105 hp				State Operating Permit dated 03/20/2003
PCD-1		LFG Specialties Flare	60.0 mmBTU/hr				State Operating Permit dated 03/20/2003
<b>Process A</b>							
MSW-1		Landfill operations	11.6 million megagrams of municipal solid waste	Flare - LFG Specialties, Serial No. 1530 installed June 1998 rated at 2,000 scfm	F2	VOC, HAPs, NMOC, CO, NO <sub>x</sub> , SO <sub>2</sub> , PM-10	State Operating Permit dated 03/20/2003

#### IV. EMISSIONS INVENTORY

A copy of the 2012 annual emission update is attached. Emissions are summarized in the following tables.

2012 Actual Emissions

Emission Unit	2012 Criteria Pollutant Emission in Tons/Year				
	VOC	CO	SO <sub>2</sub>	PM <sub>10</sub>	NO <sub>x</sub>
LFG Flare	0	39.2	0.7	1.0	2.7
Landfill Areas	1.2				
Diesel Fuel-fired Pumps		0.3		0.1	
Total	1.2	39.5	0.7	1.1	2.7

2012 Facility Hazardous Air Pollutant Emissions

Pollutant	2012 Hazardous Air Pollutant Emission in Tons/Yr
HCL	0.4
HF	0.3
MC	0.1
PERC	0.1

#### V. EMISSION UNIT APPLICABLE REQUIREMENTS - Emission Unit No. DPs - Multiple Diesel Fuel-Fired Pumps

##### A. Limitations

The facility has multiple diesel fuel-fired pumps used mainly for pumping stormwater from the site. In earlier versions of the State Operating Permit, the diesel pumps have been listed individually. The State Operating Permit was amended on March 20, 2003, to combine the pumps into a single category to maintain flexibility for the source. By combining the diesel pumps, an overall combined limitation of 145,500 horsepower-hours per year OR a combined throughput limitation of 7,430 gallons of diesel fuel per year was imposed in order to demonstrate compliance with the emission limitations for NO<sub>x</sub> and CO in Condition 3 of the Title V permit. The limitations are to be calculated monthly as the sum of each consecutive 12-month period.

The diesel pumps are subject to the opacity requirements of 9 VAC 5-50-80. Condition 4 of the Title V permit contains the applicable opacity limitations for the pumps of 20% opacity as determined by EPA Method 9 except during one six-minute period in any one hour in which visible emissions shall not exceed 30% opacity.

The diesel fuel-fired pumps are subject to 40 CFR 63, Subpart ZZZZ. All diesel fuel-fired pumps are below 300 hp and must meet the following requirement, except during periods of startup:

1. Change oil and filter every 1,000 hours of operation or annually, whichever comes first;
2. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; and
3. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

During periods of startup Virginia Beach Landfill #2 must minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.

#### **B. Monitoring**

Condition 5 of the Title V permit provides for periodic visible emissions monitoring of the diesel pumps once per operating day utilizing EPA Method 22. If using Method 22 the observer notes an opacity condition that exceeds 50% of the applicable standard (10% opacity), a Method 9 visible emissions evaluation shall be undertaken. A Method 9 evaluation will not be required, however, if the visible emissions condition is corrected in a timely manner, the emissions unit is operating at normal operating conditions, and the cause and corrective measures taken are recorded in a logbook.

#### **C. Recordkeeping**

Condition 6 of the Title V permit specifies recordkeeping requirements. Such records include the annual hours of operation of the diesel pumps in horsepower-hours per year OR the annual combined throughput of diesel fuel, calculated monthly as the sum of each consecutive 12-month period; and records of each visible emissions observation. Combined annual hours of operation in horsepower-hours per year or combined diesel fuel throughput are indicators of compliance with the annual emissions limitations from the combined units of NO<sub>x</sub> and CO. Emission limitations are based on combined annual hours of operation and AP-42 emission factors (AP-42, Table 3.3-1, Emission Factors for Uncontrolled Gasoline and Diesel Industrial Engines, SCC #2-02-001-02).

#### **D. Testing**

The permit does not require source tests. The Department and EPA has authority to require testing not included in this permit if necessary to determine compliance with an emission limit or standard.

## **VI. EMISSION UNIT APPLICABLE REQUIREMENTS - Emission Unit No. MSW-1 - Landfill Operations**

#### **A. Limitations**

The facility has a design capacity limitation on the landfill of 11,035,531 megagrams and, as such, is subject to the requirements of NSPS Subpart WWW.

## **B. Monitoring and Reporting**

At this time, NMOC (non-methane organic compound) emissions from the landfill remain below the 50 megagram per year threshold that triggers the installation of an NSPS Subpart WWW landfill gas collection and control system. The facility is required to submit an annual NMOC emission rate report to DEQ no later than April 15<sup>th</sup> of each calendar year outlining the previous calendar year's actual NMOC emissions. If any annual NMOC emission rate report determines that annual emissions have reached or exceeded 50 megagrams, the facility will be required to install a landfill gas collection and control system in accordance with the requirements of NSPS Subpart WWW or demonstrate using site-specific NMOC concentrations or a site-specific methane generation constant that the 50 megagram NMOC threshold has not been exceeded by the landfill.

## **C. Recordkeeping**

The permittee is required to maintain records of all emission data and operating parameters necessary to demonstrate compliance with the Title V permit. For the landfill operations (MSW-1), these records shall include records of current maximum landfill design capacity, current amount of refuse in place, and annual (calendar year) refuse accumulation rates; description, location, amount, and placement of all non-degradable refuse including asbestos and demolition debris placed in landfill areas and which are excluded from landfill gas estimation; and the installation dates and locations of all vents, wells, and flares.

# **VII. GENERAL CONDITIONS**

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110 that apply to all Federal-operating permitted sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions.

### **1. Comments on General Conditions**

#### **Condition B. Permit Expiration**

This condition refers to the Board taking action on a permit application. The Board is the State Air Pollution Control Board. The authority to take action on permit application(s) has been delegated to the Regions as allowed by §2.2-604 and §10.1-1185 of the *Code of Virginia*, and the "Department of Environmental Quality Agency Policy Statement No. 2-09".

#### **Condition F. Failure/Malfunction Reporting**

Section 9 VAC 5-20-180 requires malfunction and excess emission reporting within four hours of discovery. Section 9 VAC 5-80-250 of the Title V regulations also requires malfunction reporting; however, reporting is required within two days. Section 9 VAC 5-20-180 is from the general regulations. All affected facilities are subject to section 9 VAC 5-20-180 including Title V facilities. Section 9 VAC 5-80-250 is from the Title V regulations. Title V facilities are subject to both sections. A facility may make a single report that meets the requirements of 9 VAC 5-20-180 and 9 VAC 5-80-250. The report must be made within four daytime business hours of discovery of the malfunction.

#### Condition J. Permit Modification

This general condition cites the sections that follow:

9 VAC 5-80-50. Applicability, Federal Operating Permit For Stationary Sources

9 VAC 5-80-190. Changes to Permits.

9 VAC 5-80-260. Enforcement.

9 VAC 5-80-1100. Applicability, Permits For New and Modified Stationary Sources

9 VAC 5-80-1605. Applicability, Permits For Major Stationary Sources and Modifications Located in Prevention of Significant Deterioration Areas

9 VAC 5-80-2000. Applicability, Permits for Major Stationary Sources and Major Modifications Located in Nonattainment Areas

#### Condition U. Malfunction as an Affirmative Defense

The regulations contain two reporting requirements for malfunctions that coincide. The reporting requirements are listed in sections 9 VAC 5-80-250 and 9 VAC 5-20-180. The malfunction requirements are listed in General Condition U and General Condition F. For further explanation see the comments on general condition F.

#### Condition Y. Asbestos Requirements

The Virginia Department of Labor and Industry under Section 40.1-51.20 of the Code of Virginia also holds authority to enforce 40 CFR 61 Subpart M, National Emission Standards for Asbestos.

### **VIII. STATE ONLY APPLICABLE REQUIREMENTS**

The following Virginia Administrative Codes have specific requirements only enforceable by the State and have been identified as applicable by the applicant:

1. 9 VAC 5 Chapter 40, Part II, Article 2. Emission Standards for Odor (Rule 4-2)
2. 9 VAC 5 Chapter 60, Part II, Article 5. Emission Standards for Toxic Pollutants from New and Modified Sources (Rule 6-5)

### **IX. FUTURE APPLICABLE REQUIREMENTS**

None identified at this time.

### **X. INAPPLICABLE REQUIREMENTS**

40 CFR 60, Subpart Kb no longer applies to the 20,000-gallon fuel oil storage tank (Unit No. T-6) because the vapor pressure of the stored VOL is below 15 kPa. Therefore, Condition 6 of the 3/20/03 State Operating Permit has been streamlined out of the Title V permit.

As of January 2, 2011, sources that are major for criteria pollutants are required to include a statement on Greenhouse Gases (GHG) in their Title V permit Statement of Basis.

There are no applicable GHG permitting requirements.

The startup, shut down, and malfunction opacity exclusion listed in 9 VAC 5-40-20 A 4 cannot be included in any Title V permit. This portion of the regulation is not part of the federally approved state implementation plan. The opacity standard applies to existing sources at all times including startup, shutdown, and malfunction. Opacity exceedances during malfunction can be affirmatively defended provided all requirements of the affirmative defense section of this permit are met. Opacity exceedances during startup and shut down will be reviewed with enforcement discretion using the requirements of 9 VAC 5-40-20 E, which state that "At all times, including periods of startup, shutdown, soot blowing and malfunction, owners shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with air pollution control practices for minimizing emissions."

## XI. INSIGNIFICANT EMISSION UNITS

The insignificant emission units are presumed to be in compliance with all requirements of the Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

Insignificant emission units include the following:

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted (9 VAC 5-80-720 B)	Rated Capacity (9 VAC 5-80-720 C)
LCS-1	Leachate Collection System (including manholes, leachate equalization basin, and pump station)	9 VAC 5-80-720 B.2.	VOC	45.4 gallons of leachate per minute
DU-1	Degreasing System, 40" x 38" tank	9 VAC 5-80-720 B.2.	VOC	40" x 38" tank
T-6	Diesel fuel storage tank – Fixed roof, horizontal	9 VAC 5-80-720 A.41.	VOC, HAPs, NMOC, CO, NO <sub>x</sub> , SO <sub>2</sub> , PM-10	20,000 Gallons
T-7	Diesel fuel storage tank	9 VAC 5-80-720 B.2.	VOC	500 gallon tank

<sup>1</sup>The citation criteria for insignificant activities are as follows:

9 VAC 5-80-720 A - Listed Insignificant Activity, Not Included in Permit Application

9 VAC 5-80-720 B - Insignificant due to emission levels

9 VAC 5-80-720 C - Insignificant due to size or production rate

## XII. CONFIDENTIAL INFORMATION

The permittee did not submit a request for confidentiality. All portions of the Title V application are suitable for public review.

## XIII. PUBLIC PARTICIPATION

The proposed permit will be placed on public notice in the **Virginian-Pilot** newspaper from **Tuesday, July 1, 2014** to **Thursday, July 31, 2014**.