

NORTH CAROLINA DIVISION OF AIR QUALITY <p style="text-align: center;">Air Permit Review</p>		Region: Raleigh Regional Office County: Wake NC Facility ID: 9200593 Inspector's Name: Brian Bland Date of Last Inspection: 04/29/2004 Compliance Code: 3/In Compliance - Inspection	
Permit Issue Date:		Permit Applicability (this application only)	
<p style="text-align: center;">Facility Data</p> Applicant (Facility's Name): North Wake County Landfill Facility Facility Address: North Wake County Landfill Facility 9004 Deponie Drive Raleigh, NC 27615 SIC: 4953 / Refuse Systems NAICS: 562212 / Solid Waste Landfill Facility Classification: Before: Title V After: Title V Fee Classification: Before: Title V After: Title V		SIP: NSPS: WWW NESHAP: MACT Subpart AAAA PSD: PSD Avoidance: NC Toxics: Compliance Demonstration due 112(r): Other:	
Contact Data			Application Data
Facility Contact	Authorized Contact	Technical Contact	Application Number: 9200593.04A Date Received: 09/29/2004 Application Type: Renewal Application Schedule: TV-Renewal <p style="text-align: center;">Existing Permit Data</p> Existing Permit Number: 08890/T00 Existing Permit Issue Date: 07/07/2000 Existing Permit Expiration Date: 06/30/2005
Johnny Beal Solid Waste Specialist (919) 856-5634 Solid Waste Management Division Raleigh NC, 27602	James Reynolds Solid Waste Director (919) 856-5520 P.O. Box 550 Raleigh NC, 27602	Robert E. Dick, P.E. Engineer (804) 598-9480 SCS Engineers Powhatan, VA	
Review Engineer: Mike Benson Review Engineer's Signature: Date:		Comments / Recommendations: Issue 08890/T01 Permit Issue Date: Permit Expiration Date:	

I. Introduction/Description:

North Wake County Landfill owns and operates a municipal solid waste (MSW) landfill located in Wake County. The application for this landfill (9200593.04A) was received by the DAQ on October 4, 2004. This renewal permit will be sent to a 30 day public notice and a 45 day EPA review concurrently. Permit No. 08890T01 will be issued with a new expiration date that will be five years from the issue date of the permit.

II. Statement of Compliance

The DAQ has reviewed the compliance status of this facility. The most recent inspection was performed on April 29, 2004 by the Raleigh Regional Office. The inspection report is not available at the time, however, the Raleigh Regional Office considers the landfill to be in compliance with all applicable Air Quality regulations.

III. Summary of Emission Sources and Control Devices

The following table identifies all emission sources and associated control devices for which the Initial Title V Operating Permit is being issued.

Emission Source ID No.	Emission Source Description	Control Device ID No.	Control Device Description
ES-1 and ES-2 (NSPS/MACT)	Municipal solid waste landfill	CD-GCCS1 and CD-1 -or- * Boiler (ID No. 1) (NSPS)	One landfill gas collection and control system (ID No. GCCS1) with one landfill gas-fired candlestick-type flare (38.0 million Btu per hour heat input capacity, ID No. CD-1) One landfill gas-fired boiler (34.0 million Btu per hour heat input capacity)

* This boiler is owned by and physically located on the adjacent property of Mallinckrodt Chemical Company, and is operated by Raleigh Steam Producers, LLC (Permit No. 08361R03, Facility ID No. 9200588).

IV. Emission Source-by-Source Evaluation

A. Municipal solid waste landfill (ID No. ES-1 and ES-2) with associated open type flare (CD-1)

1. **Description:** This facility receives municipal solid waste. The anaerobic decomposition of the buried municipal solid waste produces landfill gas (LFG) which is collected and conveyed to an open type flare (ID No. CD-1). A blower unit applies a vacuum to the landfill through a series of vertical and/or horizontal collection piping and routes the landfill gas to an candlestick-type flare to be burned on site, or the gas is piped to a facility (Mallinckrodt) to be burned as fuel in a boiler. This facility **does** have a landfill gas treatment operation onsite that meets the requirements of Subpart WWWW.

2. **Applicable Regulatory Requirements:** This municipal solid waste landfill (ID Nos. ES-1 and ES-2) was modified after May 30, 1991, and is therefore subject to 40 CFR Part 60, Subpart WWWW. The landfill has a design capacity (in-place waste plus additional permitted waste) of greater than 2.5 million megagrams by mass (2.75 million tons) and 2.5 million cubic meters by volume and is therefore subject to Title V. Nonmethane organic compound (NMOC) emissions from the landfill are greater than 50 Mg per year (in 1991 according to EPA model), therefore the landfill is required by Subpart WWWW to install and operate a gas collection and control system.

The candlestick-type flare (ID No. CD-1) **is not** subject to any specific NSPS except that it must be designed in accordance with 40 CFR §60.18 “General Control Device Requirements”. This landfill is also subject to the landfill MACT in accordance with 40 CFR Part 63, Subpart AAAA.

The following provides a summary of limits and/or standards for the emission source(s) described above.

Regulated Pollutant	Limits/Standards	Applicable Regulation
Non methane organic compounds (NMOC)	Route landfill gas to a flare designed in accordance with 40 CFR §60.18 or through a treatment operation on site	15A NCAC 2D .0524 40 CFR Part 60, Subpart WWW
Sulfur dioxide (flare)	2.3 pounds per million Btu heat input	15A NCAC 2D .0516
Visible emissions (flare)	20 percent opacity	15A NCAC 2D .0521
HAPs	Work practice standards and startup, shutdown, malfunction requirements	15A NCAC 2D .1111 40 CFR Part 63, Subpart AAAA
Odor	Suitable control equipment State Enforceable Only	15A NCAC 2D .1806
CAM	Exempt from CAM because of the dates that the NSPS and the MACT were proposed	15A NCAC 2D .0614
Toxic air pollutants	Facility wide toxics evaluation	15A NCAC 2Q .0705 (Last MACT, North Carolina toxics evaluation)

a. Applicable Regulatory Requirements:

This landfill and associated equipment are subject to the following regulations:

- 15A NCAC 2D .0516
- 15A NCAC 2D .0521
- 15A NCAC 2D .0524
- 15A NCAC 2D .1806

No regulatory review is required for the regulations listed above, because there are no new sources added under this renewal application. The following regulations listed below will be evaluated for this renewal permit application.

- 15A NCAC 2D .0614 “Compliance Assurance Monitoring”
The North Wake County Landfill **is not subject** to CAM in accordance with 15A NCAC 2D .0614 (b) “Exemptions” because it is subject to a New Source Performance Standard that was proposed after November 15, 1990. The New Source Performance Standard for Landfills (Subpart WWW) was first proposed in the Federal Register on May 30, 1991 (56 Fr 24468). This regulation was finally promulgated on March 12, 1996. The date of the proposed MACT, Subpart AAAA is also after November 15, 1990.
- 15A NCAC 2D .1111, 40 CFR Part 63, Subpart AAAA: National Emission Standards for Hazardous Air Pollutants, Municipal Solid Waste Landfills.
The effective date of this MACT was **January 16, 2003**. The compliance date for existing sources was **January 16, 2004**. The North Wake County Landfill is by definition an existing area source because it was constructed/reconstructed before November 7, 2000. Also, because the landfill has a design capacity that is greater than 2.5 million megagrams (Mg) and 2.5 million cubic meters (m³) with estimated uncontrolled emissions of NMOCs equal to or greater than 50 megagrams per year (Mg/yr).

Applicability

i. North Wake County Landfill (**ID Nos. ES-1 and ES-2**) shall comply with all requirements of 15A NCAC 2D .1111 “Maximum Achievable Control Technology” and 40 CFR Part 63, Subpart AAAA “National Emission Standards for Hazardous Air Pollutants, Municipal Solid Waste Landfills” [40 CFR, §63.1935]

Definitions and Nomenclature [40 CFR, §63.1990]

ii. For the purpose of this permit condition, the definitions and nomenclature contained in 40 CFR, §63.1990 shall apply.

REGULATED POLLUTANTS [40 CFR, §63.2]

iii. Hazardous Air Pollutant (HAP) means any air pollutant listed in or pursuant to section 112(b) of the Clean Air Act. [40 CFR, §63.2]

40 CFR Part 63 Subpart A “GENERAL PROVISIONS”

iv. The Permittee shall comply with the requirements of 40 CFR, §63 Subpart A “General Provisions” according to the applicability of Subpart A to such sources as identified in 40 CFR Part 63, Subpart AAAA, §63.1935.

Compliance dates [40 CFR Part 63, §63.1945]

v. The Permittee (North Wake County Landfill) is an **existing affected area source** in accordance with 40 CFR Part 63, §63.1935 (a)(3). An area source is by definition a landfill that is not major due to the annual emission rate of HAPs, but one that has greater than 2.5 million megagrams (Mg) and 2.5 million cubic meters (m³) and has estimated uncontrolled emissions equal to or greater than 50 megagrams per year (Mg/yr) NMOC emissions. This facility shall be in compliance with this regulation by the date this landfill is required to install a collection and control system in accordance with 40 CFR §60.752(b)(2) of the New Source Performance Standards, Subpart WWW. [§ 63.1945]

Monitoring [40 CFR Part 63, §63.1955 and §63.1960]

vi. Compliance with this Subpart (AAAA) is determined in accordance with the New Source Performance Subpart WWW, including performance testing, monitoring of the collection system, continuous parameter monitor, and other credible evidence. In addition, continuous parameter monitoring data, collected under 40 CFR §60.756(c)(1) and (d) of Subpart WWW, are used to demonstrate compliance with the operating conditions for control systems.

The Permittee shall develop and implement a written Start-Up/Shutdown/Malfunction (SSM) plan according to the provision in 40 CFR 63.6(e)(3). A copy of the SSM shall be maintained on site.

For the purposes of this Requirement, **deviation means** any instance in which an affected source subject to this subpart, or an owner or operator of such a source:

- (A) fails to meet any requirement or obligation established by this subpart, including, but not limited to, any emissions limitation (including any operating limit) or work practice standard;
- (B) fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit;
- (C) fails to meet any emission limitation, (including any operating limit), or work practice standard in this subpart during SSM, regardless of whether or not such failure is permitted by this subpart; or
- (D) fails to write, develop, implement, or maintain a copy of the SSM plan.

If a deviation occurs, the Permittee has failed to meet the control device operating conditions describe in this subpart and have deviated from the requirements of this subpart.

Recordkeeping/Reporting Requirements [40 CFR Part 63, §63.1980]

vii. Keep records and reports as specified in the general provisions of 40 CFR Part 60, and in Subpart WWW, except the annual report described in 40 CFR §60.757(f) shall be submitted every 6 months.

If actions taken during a startup, shutdown, and malfunction plan are consistent with the procedures in the startup, shutdown, and malfunction plan, this information shall be included in a semi-annual startup, shutdown, and malfunction plan report. Any time an action taken during a startup, shutdown and malfunction plan is not consistent with the startup, shutdown and malfunction plan, the source shall report actions taken within **2 working days** after commencing such action, followed by a letter **7 days** after the event.

- **Toxic Air pollutants - State enforceable only**

The following table provides a summary of notification requirements for MACT facilities

Regulated Pollutant	Requirement	Applicable Regulation
TAPs	Facility wide toxics evaluation/demonstration State enforceable only	15A NCAC 2Q .0705

State-Enforceable Only

1. 15A NCAC 2Q .0705 “EXISTING FACILITES AND SIC CALLS”

a. For sources at a facility subject to a MACT standard, a permit application shall be required demonstrating compliance with the 15A NCAC 2D .1100 by the same deadline that the facility is required to comply with the last MACT, excluding the MACT for combustion sources, as outlined in 15A NCAC 2D .0705.

b. Schedule Of Compliance

North Wake County Landfill shall submit a toxics demonstration to the DAQ within **90 days** of the issuance of this permit in accordance with 15A NCAC 2Q .0705 and 2D .1100. The calculations shall include an evaluation for all toxic air pollutants covered under 15A NCAC 2D .1104 for all sources at the facility, excluding those sources exempt from evaluation in Rule 15A NCAC 2Q .0702. The owner or operator of a facility whose actual rate of emissions from all sources are not greater than the toxic permitting emissions rates (TPERs) listed in Rule 15A NCAC 2Q .0711, does not have to file a permit application to comply with 15A NCAC 2D .1100. The Permittee shall provide documentation that the facility’s emissions of toxic air pollutants are below the levels in Rule 15A NCAC 2Q .0711 if the Director requests this documentation.

The DAQ has decided to perform the air toxics demonstration in the following manner:

Using a conservative approach, DAQ used guidance in AP-42, Section 2.4 “Municipal Solid Waste landfills”, Revisions 11/98, Supplement E. From Section 2.4.4.2 of AP-42, it states that collection efficiencies typically range from 60 to 85 percent, with an average of 75 percent most commonly used. The efficiency rating for an enclosed flare is 99.2 percent (this is also used for candlestick flares) destruction rate. Table 2.4-1 lists default concentrations for landfill gas constituents.

A demonstration will be done using the North Carolina toxics that are components of landfill gas for the 1.8 percent of gas that is not burned by the flare and the 25 percent of gas that does not get collected by the gas collection and control system for the controlled sections of the landfill. The emissions of landfill gas through the soil cover for those sections not yet controlled will be included in the demonstration for those sections producing landfill gas. Once the specific emission rate of each toxic chemical is calculated, the rate is compared to the “TPERs”. If these rates are above the TPERs, then modeling of toxic air pollutants will be required for those pollutants above their TPER.

- V. A Professional Engineers Seal **is not** required for this renewal, however it was sealed by Robert E. Dick of SCS Engineers.
- VI. A consistency determination **is not** required for this renewal.
- VII. An application fee **is not** required for this renewal.
- VIII. The appropriate number of copies of the application were received by the DAQ on October 4, 2004.
- IX. The application was signed by an authorized official as defined by 15A NCAC 2Q .0304(j).
- X. **PSD does not apply** for this renewal.
- XI. Public Notice
Public notice **is required** for this Title V renewal. The permit will go through a 30-day public comment period and a 45-day EPA review concurrently.

The 30-day public comment period was from _____ through _____. ___ public comments were received during the public comment period.

The EPA 45-Day review period was from _____ through _____. ___ comments were received during the comment period.

XII. Recommendations:

A copy of the revised review and the revised permit were sent to the Raleigh Regional Office on DATE. This permit, issued as renewal Title V for the North Wake County Landfill, located in Raleigh, North Carolina, has been reviewed by the DAQ to determine compliance with all requirements. The RRO concurs with the issuance of this permit.

Issue permit No. 08890T01.