

## G.N. RICHARDSON & ASSOCIATES

Engineering and Geological Services

November 4, 2005

North Carolina DENR  
Division of Air Quality (DAQ), Permits Section  
1641 Mail Service Center  
Raleigh, NC 27699-1641



Attention: Mr. Booker Pullen, Environmental Engineer

**RE: Amended NSPS Design Capacity Report  
Johnston County Landfill (NC Solid Waste Permit No. 51-03)  
Smithfield, North Carolina**

Dear Mr. Pullen:

G. N. Richardson & Associates, Inc. (GNRA) is submitting this amended Design Capacity Report (DCR) (**Attached**) on behalf of Johnston County, for the above referenced site. This report demonstrates compliance with §60.757(a)(3) of the New Source Performance Standards (NSPS) for MSW Landfills (Subpart WWW). This site consists of six (6) phases (1-5, 4A) as shown in **Figure 1 (Attached)**.

### Maximum Design Capacity

An initial DCR<sup>1</sup> was submitted in May of 1998 which demonstrated a capacity below NSPS thresholds for Phases 1-4. Johnston County recently completed construction of Phase 4A, Cell 2, and has since received a revised permit to operate<sup>2</sup> (**Attached**), which increases the capacity of the landfill over previously reported volumes. As shown in **Table 1**, the net design capacity (excluding liner, cap systems and periodic cover) for the entire landfill (permitted to date) is approximately **3,251,998 cubic meters** and **2,300,147 million megagrams (Mg)**, which is below NSPS thresholds.

### Landfill Regulatory Status

A Non-Methane Organic Compound (NMOC) emission rate reports and/or subsequent Title V air permit application addressed in §60.752(b) will not be required to be submitted until the landfill exceeds NSPS thresholds. An amended DCR will be submitted in accordance with NSPS following any events which increase the design capacity at the site.

<sup>1</sup> Recalculation of NMOC Emissions, Johnston County Landfill (Permit No. 51-01), submitted to Mr. Thomas C. Allen, II, NC DENR DAQ by GNRA on May 29, 1998.

<sup>2</sup> Solid Waste Facility Permit No. 51-03, issued to Johnston County by NC DENR Division of Solid Waste Management on August 1, 2005

Amended Design Capacity Report  
November 4, 2005  
Page 2 of 2

All supporting calculations, permits, and figures are provided in **Attachments 1-3**.

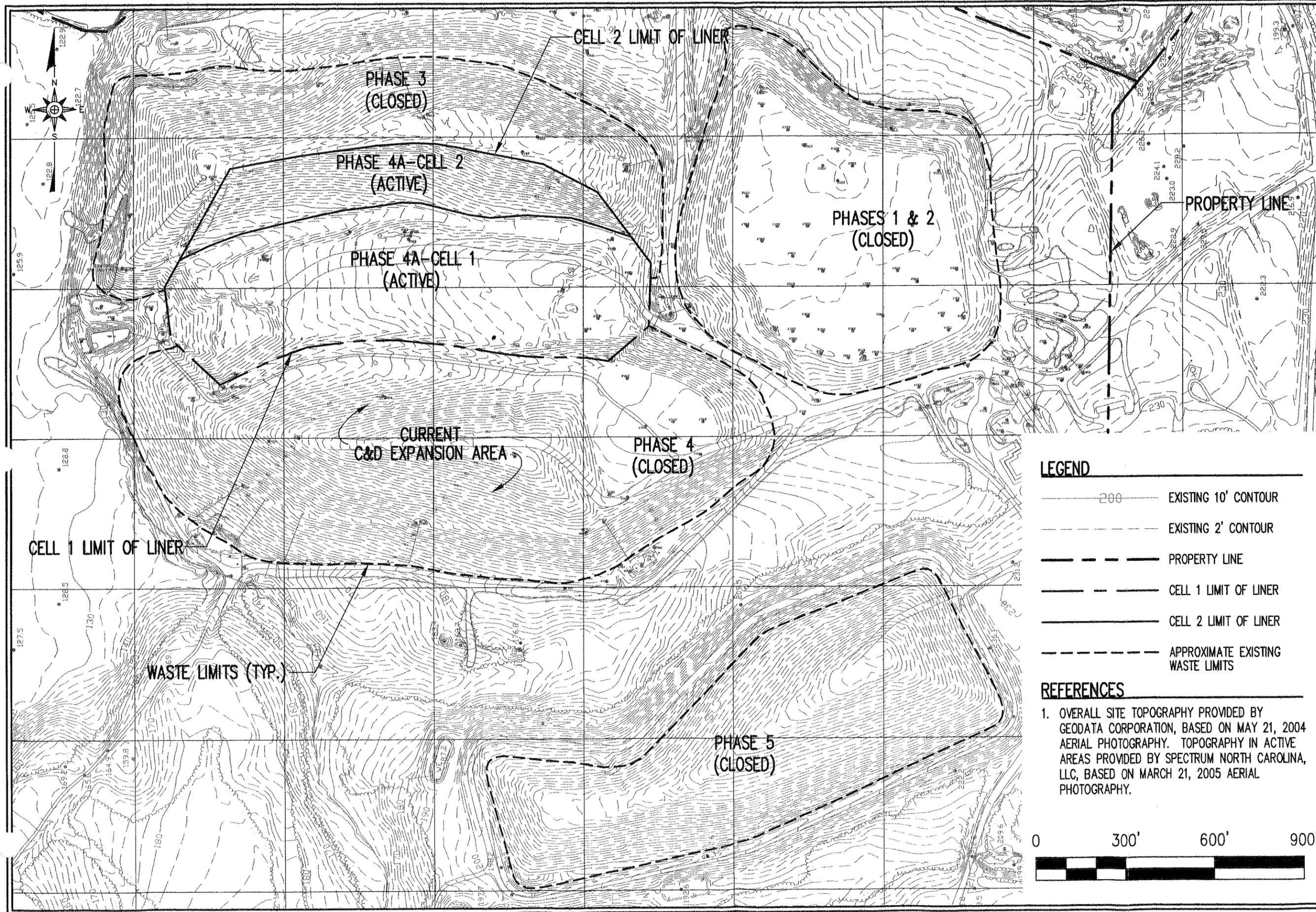
Should you have any questions or require any additional information, please feel free to contact me at (919) 828-0577, extension 121.

Sincerely  
**G. N. Richardson & Associates, Inc.**

A handwritten signature in black ink, appearing to read "Matthew S. Lamb". The signature is fluid and cursive, with the first name being the most prominent.

Matthew S. Lamb  
Project Scientist

cc: Tim Broome, P.E., JC  
Rick Proctor, JC  
Haywood Phthisic, JC  
~~Ed Mussler, P.E., NCDENR~~  
File

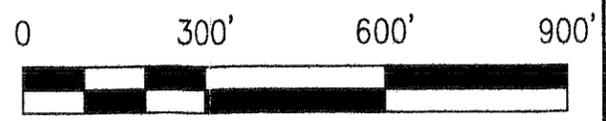


**LEGEND**

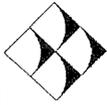
- 200 — EXISTING 10' CONTOUR
- - - - - EXISTING 2' CONTOUR
- - - - - PROPERTY LINE
- - - - - CELL 1 LIMIT OF LINER
- - - - - CELL 2 LIMIT OF LINER
- - - - - APPROXIMATE EXISTING WASTE LIMITS

**REFERENCES**

1. OVERALL SITE TOPOGRAPHY PROVIDED BY GEODATA CORPORATION, BASED ON MAY 21, 2004 AERIAL PHOTOGRAPHY. TOPOGRAPHY IN ACTIVE AREAS PROVIDED BY SPECTRUM NORTH CAROLINA, LLC, BASED ON MARCH 21, 2005 AERIAL PHOTOGRAPHY.



<b>G. N. RICHARDSON &amp; ASSOCIATES, INC.</b> <small>Engineering and Geological Services</small> 14 N. Boylan Ave. Raleigh, N.C. 27603 ph: 919-828-0577 fax: 919-828-3899 www.gnra.com			
DRAWN BY: <b>C.T.J.</b>	CHECKED BY:	SCALE: <b>AS SHOWN</b>	FIGURE NO. <b>1</b>
DATE: <b>AUG. 2005</b>		PROJECT NO. <b>JOHN-27</b>	
TITLE: <b>JOHNSTON COUNTY LANDFILL          MSW LANDFILL - ALL PERMITTED          AND EXISTING AREAS          PERMITTED SITE CONDITIONS</b>		FILE NAME: <b>JOHN-B0375</b>	

**G.N. Richardson & Associates**

Engineering and Geological Services

14 N. Boylan Avenue  
Raleigh, NC 27603Tel: 919-828-0577  
Fax: 919-828-3899SHEET: 1/1  
JOB #: JOHNSTON-27  
DATE: 8/9/05  
BY: M. LAMB  
CHKD BY:**TABLE 1**  
**Johnston County Landfill**  
**Design Capacity Summary (Calculations Attached)**

Disposal Area (excluding C&D Landfill)	Area (Acres)	Total Net Capacity		
		(CY)	(m <sup>3</sup> )	(Mg)
<b>Unlined MSW Landfill Units (See Note 1)</b>				
Phase 1/2 (Closed)	22.1	495,790	379,059	269,864
Phase 3 (Closed)	25.4	819,136	626,274	445,865
Phase 4 (Closed)	37.3	1,133,533	866,648	616,994
Total (Unlined MSW)	84.8	2,448,459	1,871,981	1,332,723
<b>Lined MSW Landfill Units (See Notes 2 &amp; 3)</b>				
Phase 5 (Inactive)	19.2	884,625	676,344	466,457
Phase 4A (Cell 1) (Active)	16.0	420,129	321,212	228,680
Phase 4A (Cell 2) (Active)	6.1	500,240	382,461	272,286
Total (Lined MSW)	41.3	1,804,994	1,380,017	967,424
<b>Total (All MSW)</b>	<b>126.1</b>	<b>4,253,453</b>	<b>3,251,998</b>	<b>2,300,147</b>

Notes:

1. Phases 1-4: As reported in Recalculation of NMOC Emissions, Johnston County Landfill (Permit No. 51-01), submitted to Mr. Thomas C. Allen, II, NC DENR DAQ by GNRA on May 29, 1998.
2. Net capacity of Phase 5 is based on actual tonnage records.
3. Net capacity of Phase 4A is based on 12.5% soil usage and 0.6 tons/cy waste density.

Conversions:

1 cubic yard = 0.765 cubic meters (m<sup>3</sup>)  
 1 ton = 0.907 Megagrams (Mg)

**ATTACHMENT 1**  
**AMENDED DESIGN CAPACITY REPORT**

**AMENDED DESIGN CAPACITY REPORT  
FOR NSPS FACILITIES  
(Please Print or Type)**

This form is for NSPS facilities, (facilities which began construction, reconstruction, or modification, or began accepting waste, on or after May 30, 1991).

This form fulfills the requirements of the amended design capacity report for the municipal solid waste landfills new source performance standards promulgated on March 12, 1996 (61 FR 9905), 40 CFR 60 Subpart WWW.

This form must be completed and submitted to the implementing agency within 90 days of an increase in the maximum design capacity of the landfill to or above 2.5 million megagrams and 2.5 million cubic meters.

**I. IDENTIFYING INFORMATION**

1. Name of person completing form: Matthew S. Lamb  
Telephone number: 919-828-0577, extension 121
2. Person's position: Project Scientist, G. N. Richardson & Associates, Inc.
3. Name of landfill: Johnston County Landfill, MSW Permit No. 51-03
4. Address of landfill: 604 County Home Road, Smithfield, North Carolina, 27577
5. Name of landfill owner: Mr. Haywood Phthisic, Public Utilities Department
6. Address of landfill owner: 309 E. Market Street, Smithfield, North Carolina, 27577
7. Name of landfill operator: Mr. Rick Proctor, Solid Waste Manager
8. Address of landfill operator: 309 E. Market Street, Smithfield, North Carolina, 27577

## II. DATES

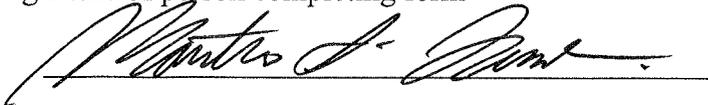
9. Date solid waste construction or operating permit was issued: Permit to Operate 51-03 for Phase 4A, Cell 2 and C&D Vertical Expansion issued August 1, 2005.
10. Date landfill began construction, modification, or reconstruction: Cell 2 construction (approximately) began in February, 2005.
11. Date landfill first accepted waste: Unlined Phase 1 (approximately began accepting waste in 1974.
12. Date this form is submitted: November 4, 2005

## III. DESIGN CAPACITY INFORMATION

13. Maximum design capacity of landfill in Mg or m<sup>3</sup>: 2,300,147 Mg (approximate)  
**(Attachment 2)**
- A. If the landfill has a State or local solid waste construction or operating permit stating the maximum design capacity, attach a copy of the permit to this form.
- B. If maximum design capacity is NOT specified in a permit, attach design capacity calculations, and fill out the following information:
- B1. Depth of refuse: **Attachment 2**
- B2. Refuse acceptance rate: **Attachment 2**
- B3. Compaction practices: **Attachment 2**
- B4. Other information affecting design capacity (explain): **Attachment 2**
14. Attach a map or plot map of the landfill to this form. The map should provide the size and location of the landfill. Include an identification of all areas where refuse may be landfilled according to the provisions of the State or local permit. **Figure 1**

## IV. SIGNATURE

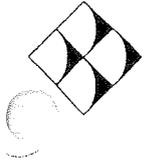
15. Signature of person completing form



16. Date of signature: November 4, 2005

**ATTACHMENT 2**

**SOLID WASTE BY AREAS  
AND VOLUME CALCULATIONS**



**G.N. RICHARDSON & ASSOCIATES**  
**Engineering and Geological Services**

June 16, 2003

Mr. Rick Proctor  
Johnston County Department of Public Utilities  
P.O. Box 2263  
Smithfield, NC 27577

**RE: Johnston County MSW Landfill - Phase 5  
Volume Study**

Dear Rick:

Based on the survey of Phase 5 performed on June 4, 2003 by Southwind Surveying and Engineering, Inc. (Southwind) (see the attached **Figure 1**), G.N. Richardson & Associates, Inc. (GNRA) has evaluated the waste density relative to the 1997 site survey (prior to any waste placement in Phase 5).

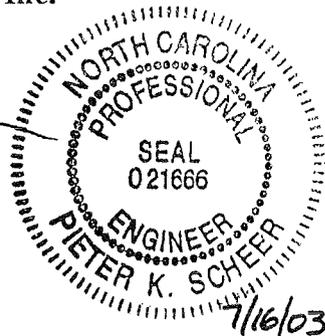
The attached calculations show that based on the survey data provided by Southwind, the in-place volume of soil and waste in Phase 5 relative to the 1997 survey is approximately 1,087,199 cubic yards (Gross Volume). Based upon County operational techniques it is estimated that approximately 15 percent (156,110 cubic yards) of this total is periodic soil cover and another 46,464 cubic yards is intermediate soil cover. After subtracting the estimated soil volumes, a net (waste) volume remaining is approximately 884,625 cubic yards. Based on the net volume and the total tonnage of waste received in Phase 5 between the two survey dates (514,181 tons), the waste density is approximately 1,162 pounds per cubic yard (0.58 tons/cy).

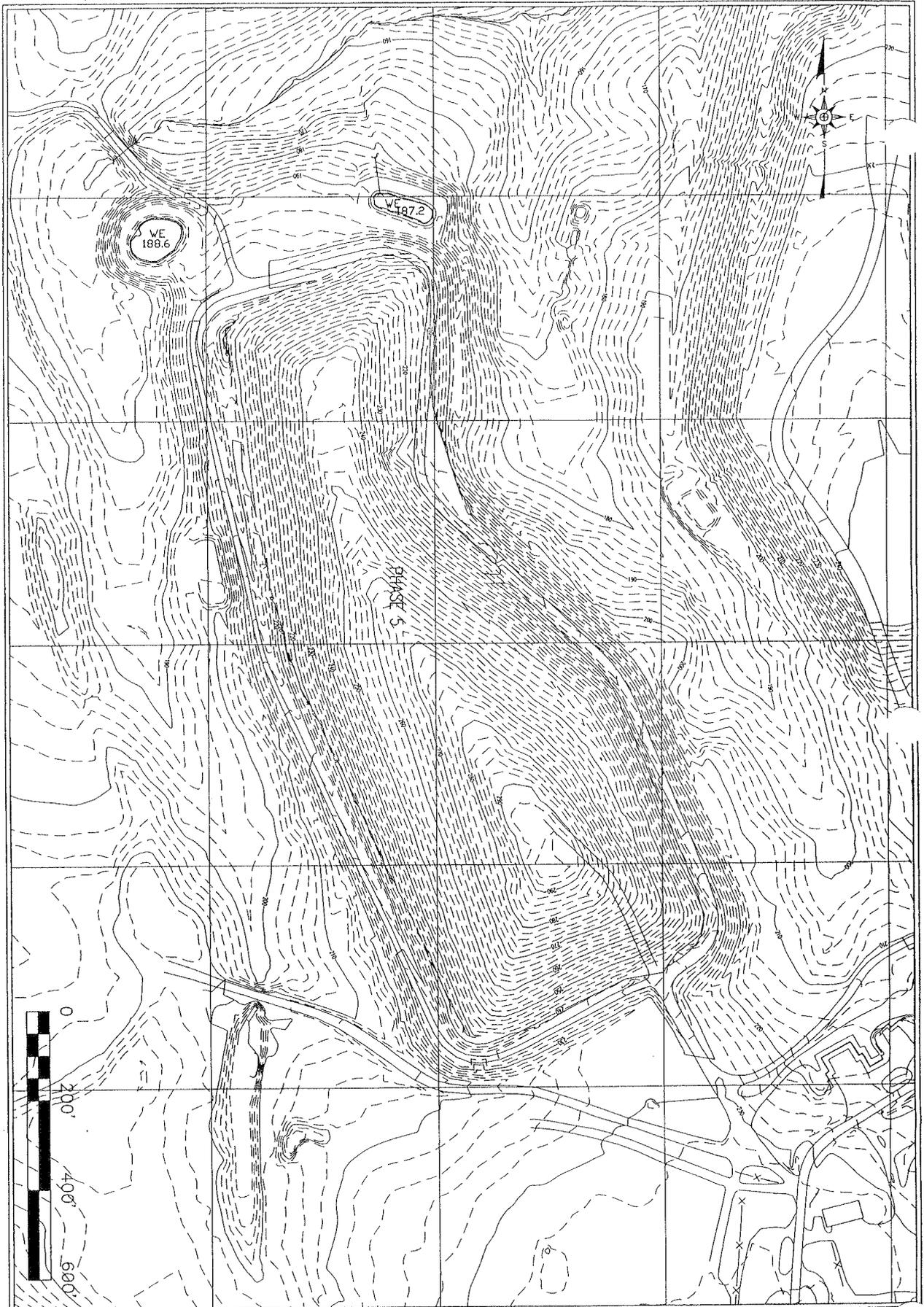
Please call me at your earliest convenience if you have any questions or comments on this analysis.

Sincerely,  
G.N. Richardson & Associates, Inc.

Pieter K. Scheer, P.E.  
Project Manager

Attachments





TITLE: JOHNSTON COUNTY LANDFILL PHASE 5 6/16/03 SURVEY	DRAWN BY: C.T.J.	CHECKED BY: P.K.S.	SCALE: AS SHOWN	FIGURE NO. 1
	DATE: JULY 2003	PROJECT NO. JOHN-2	FILE NAME JOHN-B0295	G.N. RICHARDSON & ASSOCIATES, INC. <b>Engineering and Geological Services</b> 14 N. Boylan Avenue Raleigh, North Carolina (919)-828-0577 Fax:(919)-828-3899 www.gnra.com

# G.N. Richardson & Associates

ENGINEERING AND GEOLOGICAL SERVICES

## Johnston County MSW Landfill - Phase 5 Analysis of Waste Density

SHEET: 1 12

JOB #: JOHNSTON-2

DATE: 7/15/03

BY: PKS

CHKD BY:

### Input Parameters:

Percentage of Periodic Cover =	15 (Assumed)
Area of Waste Footprint (Ac.) =	19.2
Quantity of Waste In-Place (Tons) =	514,181 (Per Scale Records Through 6/4/03)

### Volume Calculations:

Volume (Gross) From AutoCAD =	1,087,199 cy	(See Attached)
		(6/4/03 vs. 1997)

### Adjustment For Other Layers:

1.5 feet of Intermediate Cover =	<u>46,464 cy</u>
Sum =	46,464 cy

Volume of Waste and Periodic Cover (cy) = 1,040,735

Volume of Periodic Cover (cy) = 156,110

Volume (Net) of Waste (cy) = 884,625

Waste Density (tons/cy) = 0.581

Waste Density (lbs/cy) = 1,162

2/2

Johnston County Phase 5 Airspace

Project: LAND PROJECTS

Thu July 03 17:15:06 2003

Site Volume Table: Unadjusted

Cut yards	Fill yards	Net yards	Method
=====			
Site: PHASE 5 AIRSPACE			
Stratum: PHASE 5 BASE GRADES TO 061603 SURVEY			
19	1,087,218	1,087,199 (F)	Composite

514,181.45 Tons

- Subtract 18" Int. Cur.
- Subtract  $\approx$  15% Cover

PROJECT Johnston County MSW Landfill - Phase 4ASHEET 1 OF 193 MSJJOB NO. JOHNSTON-9DATE 2/22/00SUBJECT Landfill Life ExpectancyCOMPUTED BY PKSCHECKED BY GUR**Objective**

To determine the expected life of landfill Phases 5, 4A, 6, 7, and 8 given the proposed contours. Also, to determine the expected life of each fill sequence of Phase 4A.

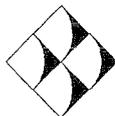
**Assumptions**

1. Density of Waste.
2. Waste to Periodic Cover (i.e. daily and intermediate) Ratio.
3. Waste Generation/Disposal Rates

**Analysis**

AutoCAD was used to generate volumes.

LIFE.WPD

**G.N. RICHARDSON & ASSOCIATES**

Engineering and Geological Services  
425 N. Boylan Avenue, Raleigh, NC 27603  
Telephone: (919) 828-0577

# G.N. Richardson & Associates

ENGINEERING AND GEOLOGICAL SERVICES

SHEET: *2A, 19, 3 MS2*

JOB #: JOHNSTON-9

DATE: 1/2/02

BY: PKS

CHKD BY:

## Johnston County MSWLF - Phase 4A Phasing Life Expectancy - Fill Sequence 1-2

### Waste Parameters:

Unit Weight (pcy) =	1,200
Unit Weight (tcy) =	0.6
Percentage of Periodic Cover =	12.5
Area of Waste Footprint (Ac.) =	14.1

### Volume Calculations:

Volume From AutoCAD =

525,643 cy

(See Attached)

### Adjustment For Other Layers:

2 feet of LCS/Pro. Cover =

45,496 cy

Sum =

45,496 cy

Volume of Waste and Periodic Cover (cy) =

480,147

Volume of Periodic Cover (cy) =

60,018

Volume of Waste (cy) =

420,129

Volume of Waste (tons) =

252,077

CELL 1

PHASING.WB3(2)

Fill seq 1-2 will handle:

2003

100284

2004

103549

203,833 Tons

$$\Delta = 252,077 - 203,833 = 48,244$$

$$\frac{48,244}{106,808} = 45\% \approx 5 \text{ mos. of } 2005$$

$$\text{Life}_{1-2} = 2 \text{ yrs, } 5 \text{ mo.}$$

# G.N. Richardson & Associates

ENGINEERING AND GEOLOGICAL SERVICES

SHEET: *MS 19 B MS2*

JOB #: JOHNSTON-9

DATE: 1/2/02

BY: PKS

CHKD BY:

## Johnston County MSWLF - Phase 4A Phasing Life Expectancy - Fill Sequences 1-3

### Waste Parameters:

Unit Weight (pcy) =	1,200
Unit Weight (tcy) =	0.6
Percentage of Periodic Cover =	12.5
Area of Waste Footprint (Ac.) =	20.8

### Volume Calculations:

Volume From AutoCAD = 1,118,965 cy (See Attached)

### Adjustment For Other Layers:

2 feet of LCS/Pro. Cover = 67,115 cy

Sum = 67,115 cy

Volume of Waste and Periodic Cover (cy) = 1,051,850

Volume of Periodic Cover (cy) = 131,481

Volume of Waste (cy) = 920,369

Volume of Waste (tons) = 552,221

**CELL 1-2**

PHASING.WB3(3)

Fill Seq. 1-3 will handle:

2003 100284

2004 103549

2005 106808

2006 109959

2007 113099

533,699 Tons

$$\Delta = 552,221 - 533,699 = 18,522 \text{ Tons}$$

$$\frac{18,522}{116,311} = 16\% \approx 2 \text{ mos. of 2008}$$

Life<sub>1-3</sub> = 5 yrs, 2 mos.  
⇒ 1st 5 yr Portion

**ATTACHMENT 3**

**PERMIT TO OPERATE  
FACILITY PERMIT NO. 51-03**



NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

Dexter R. Matthews, Director

Division of Waste Management

Michael F. Easley, Governor  
William G. Ross Jr., Secretary

FACILITY PERMIT NO: 51-03

Part 2-Permit to Operate

Date of Original Issue: April 3, 2002  
(Permit 51-03 and C&D Phase 4A)

Date of Permit Amendment: December 20, 2002  
(Cell 1, Phase 4A)

Date of Permit Amendment: August 1, 2005  
(Cell 2, Phase 4A)

Page 1

STATE OF NORTH CAROLINA  
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES  
DIVISION OF WASTE MANAGEMENT  
1646 MAIL SERVICE CENTER, RALEIGH NC 27699  
**MUNICIPAL SOLID WASTE LANDFILL FACILITY PERMIT**

JOHNSTON COUNTY

is hereby issued a PERMIT TO OPERATE a

MUNICIPAL SOLID WASTE LANDFILL FACILITY,

MUNICIPAL SOLID WASTE LANDFILL UNIT, PHASE 4A, CELL 2

located on N.C.S.R. 1503, Johnston County, North Carolina, in accordance with Article 9, Chapter 130A, of the General Statutes of North Carolina and all rules promulgated thereunder and subject to the conditions set forth in this permit.

Donald J. Barber, Supervisor  
Permitting Branch  
Solid Waste Section

1646 Mail Service Center, Raleigh, North Carolina 27699-1646  
Phone 919-508-8500 \ FAX 919-733-4810 \ Internet <http://wastenotnc.org>

## ATTACHMENT 3

### Approved Documents

#### PART I: GENERAL FACILITY CONDITIONS

1. Permit to Operate 51-02, issued August 6, 1997, modified March 27, 2001
2. Permit to Operate 51-01, Amended January 22, 2002
3. Permit to Construct 51-02 December 22, 1995

#### PART II: MUNICIPAL SOLID WASTE LANDFILL CONDITIONS

1. *Johnston County Subtitle D Landfill Phase 5, Permit 51-02, Construction Quality Assurance and As-Built Certification for Permit-to-Operate.* Prepared by: McKim & Creed Engineers, P.A., Cary, North Carolina. McKim & Creed Project No.0358-0060.OR. March 1997. 3 Volumes.
2. *Johnston County Subtitle D Landfill CQA, AS-BUILT, and Revised Engineering Plan.* Prepared by: McKim & Creed Engineers, P.A., Cary, North Carolina. McKim & Creed Project No.0358-0060.OR. March 1997. 14 sheets.
3. *Johnston County Landfill, Phase 5, Permit 51-02, Johnston County, North Carolina, Survey and As-Built Plans.* Prepared and Certified By: F. Donald Lawrence, NCRLS No. L-1290, Monroe, N.C., Provided by: Ground Improvement Techniques, Inc., Contractor, Submitted by: McKim & Creed. March 1997. 7 sheets.
4. Letter Grimes to Fry, Requesting approval of Alternative Daily Cover, Tarpomatic. Includes Brochure. July 27, 1998
5. *Leachate Recirculation Plan. Johnston County MSW Landfill- Phase 5. Johnston County, North Carolina.* Prepared for: Johnston County Department of Public Utilities. 204 S. Second Street, Smithfield, NC 27577. Prepared by: G.N. Richardson & Associates, Inc. Raleigh, NC. May 2000 as amended through February 2001.
6. *Construction Quality Assurance Report. Johnston County MSW Landfill- Phase 4A- Cell .1. Johnston County, North Carolina.* Prepared for: Johnston County Department of Public Utilities. 309 E. Market Street, Smithfield, NC 27577. Prepared by: G.N. Richardson & Associates, Inc. Raleigh, NC. December 2002. 2 volumes
7. *Construction Quality Assurance Report. Johnston County MSW Landfill- Phase 4A- Cell-2. Johnston County, North Carolina.* Prepared for: Johnston County Department of Public Utilities, Smithfield, NC. Prepared by: G.N. Richardson & Associates, Inc. Raleigh, NC. July 2005.

#### PART III: CONSTRUCTION AND DEMOLITION LANDFILL CONDITIONS

1. *Permit Modification Application. Johnston County C&D Landfill Vertical Expansion. Johnston County, North Carolina.* Prepared For: Johnston County Department of Public Utilities, 204 E. Second Street, Smithfield, North Carolina, 27577. Prepared By: G.N. Richardson & Associates, Inc. 425 N. Boylan Avenue, Raleigh, North Carolina 27603. January 2002. (Amendment #2, Area 4A Permit 51-01)

FACILITY PERMIT NO: 51-03

Part 2-Permit to Operate

Date of Original Issue: April 3, 2002

(Permit 51-03 and C&D Phase 4A)

Date of Permit Amendment: December 20, 2002

(Cell 1, Phase 4A)

Date of Permit Amendment: August 1, 2005

(Cell 2, Phase 4A)

Page 3

2. *Permit Modification Application. Johnston County C&D Landfill Vertical Expansion. Johnston County, North Carolina.* Prepared For: Johnston County Department of Public Utilities, Smithfield, NC. Prepared By: G.N. Richardson & Associates, Inc., Raleigh, NC. December 2003, Revised July 2005.

PART IV: LAND CLEARING AND INERT DEBRIS LANDFILL CONDITIONS (NOT APPLICABLE)

PART V: YARD WASTE CONDITIONS (NOT APPLICABLE)

PART VI: MISCELLANEOUS TREATMENT AND PROCESSING FACILITIES CONDITIONS

1. Division of Water Quality Permit NO. WQ0019631, Johnston County, Conjunctive Use at the Johnston County Landfill, Reclaimed Water Utilization System, SRF Project Number CS370560-07. March 27, 2002

## ATTACHMENT 4

### Conditions of Permit to Operate

#### PART I: GENERAL FACILITY CONDITIONS

1. This permit shall be reviewed, pursuant to 15A NCAC 13B.0201(e). This permit expires five (5) years from the original issuance date of this permit, on December 20, 2007. No later than September 2, 2007, Johnston County shall submit to the Solid Waste Section, for review, an amendment to the permit prepared in accordance with 15A NCAC 13B .1603(a)(2), or a permit modification prepared in accordance with 15A NCAC 13B .1603(a)(3), as applicable.

Operation of the Construction and Demolition Debris Vertical Expansion will be subject to review on or before December 20, 2007, as per 15A NCAC 13B .0201. Modifications to the unit or its operation may be required in accordance with rules in effect at the time of review.

2. In the event of conflicts between this Permit to Operate and previously issued conditions, the conditions of this Permit to Operate shall supersede previously issued conditions.
3. The solid waste management units within this facility shall conform to all operating procedures described in the approved plans, 15A NCAC 13B, and the conditions specified herein.
4. Additional conditions and revision of the approved documents or changes during the operation of the landfill require approval by the North Carolina Solid Waste Section.
5. On or before August 1 of each year, the Johnston County shall report the amount of waste received (in tons) at this facility and disposed of in the landfill units to the Solid Waste Section, on forms prescribed by the Section. The reporting period shall be for the previous year, beginning July 1 and ending on June 30. This report shall include the following information:
  - a. The tons of waste received and disposed of, compiled on a monthly basis by county, city, or transfer station of origin and by specific waste type if diverted to a specific unit within the permitted facility.
  - b. A physical measurement of the volume of air space used in the lined MSW shall be performed during the second quarter of the calendar year. The volume in cubic yards and date of the measurement shall be included in the report.
  - c. The amount of waste, in tons, from scale records, disposed of in the lined MSW cells since August 6, 1997 through the date of the annual volume determination.
  - d. The completed report shall be forwarded to the Regional Waste Management Specialist for the facility. A copy of the completed report shall be forwarded to the County Manager of each county from which waste was received.

6. Ground water quality at this facility is subject to the "Classifications and Water Quality Standards Applicable To The Groundwater of North Carolina", 15A NCAC 2L. This includes, but is not limited to, provisions for detection monitoring, assessment, and corrective action.

**PART II:  
MUNICIPAL LANDFILL UNIT SPECIFIC CONDITIONS**

**GENERAL CONDITIONS**

1. This permit approves the operation of Cell 2 of Phase 4A of the municipal solid waste landfill unit as well as the on-site environmental management and protection facilities as described in the approved plans. Operation of future Phases or Cells will require written permission from the Division and will be subject to the conditions of the Part 1- Permit to Construct 51-03, issued April 3, 2002.
2. Phase 4A, Cells 1 and 2 are approved for operation of a five year permitted gross disposal capacity of approximately 1,051,850 cubic yards, consistent with the final contours as shown on sheet 34 of Document 2, Part II, Attachment 1. The facility has a total gross design capacity of approximately 5,660,000 cubic yards. Gross capacity is the volume calculated from the top of protective cover through the top of the final cover, consistent with the approved contours. Approximately 1,929,456 cubic yards has been constructed and a permitted for phases 5 and 4A, Cells 1 and 2. The remaining gross volume of the facility is 3,730,734 cubic yards in Phases 4A, cell 3, and Phases 6-8.

The landfill will be constructed in four additional phases, Phase 4A, Cell 3 and Phases 6-8. Construction of cells within each phase shall be in accordance with the Division approved plans. This permit to operate does not approve operation or construction of additional phases or cells outside of Phase 4A, Cells 1 and 2.

3. This capacity is based on an average annual disposal rate of approximately 78,000 tons (approximately 250 tons per day based on 312 operating days per year) facility total as set forth in Part II, Document 1, Attachment 1. The landfill is permitted to receive solid waste generated by and in Johnston County, North Carolina, consistent with local government waste management plans(s) and with local government approval and as defined in North Carolina General Statutes 130A-290(a)(35), except where prohibited by the North Carolina General Statutes Article 9 of Chapter 130A and rules adopted by the Commission for Health Services.

**MONITORING AND REPORTING**

4. Ground water monitoring at this unit shall be as prescribed by the appropriate requirements of 15A NCAC 13B .1630-.1637 and the approved monitoring plan.
5. A readily accessible unobstructed path shall be cleared and maintained so that four-wheel drive vehicles may access monitoring well locations at all times.

6. A field log book which details all development, sampling, repair, and all other pertinent activities associated with each monitoring well and all sampling activities associated with each surface water and leachate sampling location shall be kept as part of the permanent facility record.
7. Records of all ground-water, surface water and leachate analytical data shall be kept as part of the permanent facility record.
8. Ground water monitoring wells and surface water sampling locations must be sampled for Appendix I constituents at least semi-annually according to the specifications outlined in the approved water quality monitoring plan and the current policies and guidelines of the Section in effect at the time of sampling.
9. Reports of the analytical data for each water quality sampling event shall be submitted to the Section within 60 days of the respective sampling event. Analytical data shall be submitted in a manner prescribed by the Section.
10. The four independent samples which comprise the initial baseline sampling event shall be collected from each ground water monitoring well and the report shall be submitted to the Section within six months after issuance of the Permit to Operate.
11. Untreated leachate shall be sampled and analyzed at least semi-annually concurrently with the ground and surface water sampling. The leachate shall be analyzed for all Appendix I constituents, pH, specific conductance, BOD, COD, sulfates, nitrates, and phosphates. Test results shall be submitted to the Section along with ground and surface water test results.
  - a. Leachate is approved for recirculation in Phase V. Additional leachate sampling shall be in accordance with the plan approved in Document 5, Part II, Attachment 3.

#### **OPERATIONAL CONDITIONS**

12. The landfill unit shall conform to all operating requirements described in the approved plans, 15A NCAC 13B .1626, and the conditions specified herein.
13. The use of tarps and the "Tarpomatic" system as an alternative daily cover is approved. Its use shall be in accordance with Document 5 of Part 2, Attachment 3. Soil cover shall be applied at a minimum of one time per week in accordance with Rule .1626 (2). Soil shall be applied more frequently, if needed, to control nuisance, odor or vectors
  - a. The use of other or different alternate daily cover requires approval, prior to implementation, by the Solid Waste Section. Requests for alternative daily cover approval must include a comprehensive use and demonstration of the effectiveness plan developed according to Section guidelines and consistent with the approved plan. Plans which are approved by the Section will be incorporated into, and made a part of, the approved documents found in Attachment 3.

14. A leachate recirculation demonstration project is approved in Phase 5. Leachate may be recirculated in accordance with the plan as identified in Attachment 3, Part II, Document 5. Upon completion of a 120 day trial period, a report shall be submitted in accordance with the approved plan. The trial period shall commence when leachate is first recirculated. The 120 day trial period does not include planning and construction time prior to the introduction of leachate into the cell. Recirculation may continue during the report preparation and review phase, unless otherwise directed by the division.
  - a. The use of leachate recirculation as a leachate management tool during the Post-Closure care period requires approval, by the Solid Waste Section, prior to implementation. Additional engineering demonstrations and operational plans may be necessary. Such demonstrations and plans shall be developed, incorporated into the final Closure and Post-Closure plan, and submitted to the Solid Waste Section for approval prior to implementation. Plans which are approved by the Section will be incorporated into, and made a part of, the approved documents found in Attachment 3.
15. The landfill facility is permitted to co-dispose of wastewater treatment sludge generated within the facility's approved service area, and subject to the terms and procedures of the approved plan.
16. Closure or partial closure of any MSWLF unit shall be in accordance with the Closure Plans described in the approved plans and 15A NCAC 13B .1629. Final Closure Plans shall be submitted to the Division at least 90 days prior to implementation. Closure and Post-closure financial instruments shall be updated annually pursuant to 15A NCAC 13B .1628.

### **PART III:**

#### **CONSTRUCTION AND DEMOLITION DEBRIS UNIT SPECIFIC CONDITIONS**

1. The Phase 4A C&D unit vertical expansion is approved for a disposal capacity of approximately 568,000 cubic yards consistent with the approved contours as shown by Drawing S2 (Final Cover Plan), Document 2, Part III, Attachment 3. This capacity is based on an average disposal rate of approximately 75 tons per day, increasing 25 tons per day annually.
2. Operation of the C& D unit shall be in accordance with 15A NCAC 13B .0505, the approved plan, and the following specific conditions:
  - a. Waste Acceptance and Disposal:

The C&D unit is permitted to receive the following waste types:

    - A. Land Clearing Debris as defined in G.S. 130A-290, specifically, solid waste which is generated solely from land-clearing activities, such as stumps, trees, etc.;
    - B. Inert Debris defined as solid waste which consists solely of material that is virtually inert, such as brick, concrete, rock and clean soil;
    - C. Asphalt in accordance with G.S. 130A-294(m); and
    - D. Construction and Demolition Debris defined as solid waste resulting solely from construction, remodeling, repair or demolition operations on pavement, buildings or other structures.

- E. C&D like waste that are similar to wastes typically found in the land clearing-inert debris and C&D waste streams consisting of wastes at this time: roofing shingle waste from the manufacturer, waste building materials from mobile home/modular home manufacturer and wooden pallets. Other wastes **MAY** be approved by the Division upon receipt of a written request with the specific waste type, how its generated, how much is generated; along with any additional information the Division may request to render a final decision on the disposal options for the waste.

Yard trash as defined in G.S. 130A-290, shall not be disposed in the landfill area. However, yard trash, along with land-clearing debris, may be accepted for processing in the Yard Waste Composting Area.

b. Cover Material Requirements:

Waste shall be covered with six inches (6) of suitable cover at least once per week, or when the active working area reaches one-half acre ( $\frac{1}{2}$ ) in size, or more often as necessitated by the nature of the waste, so as to prevent the site from becoming a visual nuisance and to prevent fire, windblown materials, vectors or water infiltration. Areas which will not receive additional waste on them for twelve months or more, but where final elevations have not been reached, shall be covered with one (1) foot of soil cover.

c. Monitoring Requirements:

Groundwater and surface water sampling and analysis shall conform to the specifications found in the approved plan. The existing groundwater monitoring system will be utilized for ground water monitoring for the C&D unit(s) in accordance with .1630 thru .1633. Assessment monitoring shall continue in accordance with Solid Waste Management Rules and any additional requirements set forth by Solid Waste Section Hydrogeologist.

3. Closure Requirements- The C& D unit shall be closed in accordance with the approved plan and the requirements of the Solid Waste Section at the time of closure. A final closure plan shall be submitted for review at least ninety (90) days prior to closure of any phase of the C&D landfill unit.

**PART IV:**

**LAND CLEARING AND INERT DEBRIS UNIT SPECIFIC CONDITIONS (NOT APPLICABLE)**

**PART V:**

**YARD WASTE UNIT SPECIFIC CONDITIONS**

1. Yard waste operations shall be confined to the area identified by Sheet 3, Document 2, Part II Attachment 1. Relocation of yard waste areas will require written permission of the Solid Waste Section.
2. Operations shall conform to the requirements of Rules .1402 and .1406 of 15A NCAC 13 B.

FACILITY PERMIT NO: 51-03

Part 2-Permit to Operate

Date of Original Issue: April 3, 2002

(Permit 51-03 and C&D Phase 4A)

Date of Permit Amendment: December 20, 2002

(Cell 1, Phase 4A)

Date of Permit Amendment: August 1, 2005

(Cell 2, Phase 4A)

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**PART VI:**

**MISCELLANEOUS TREATMENT AND PROCESSING UNIT SPECIFIC CONDITIONS**

**(Specify Unit Type)**

**SPRAY IRRIGATION UNIT-**

1. Operation of the spray irrigation system at the landfill will be in accordance with the approved solid waste management operation plan, Document 1, Part II, Attachment 1.
2. Operation of the spray irrigation system will be in accordance with Water Quality Permit Number WQ0019631, Document 1, Part VI, Attachment 3.