

4204Permit2002 - Batch No. _____

42042002

2 Halifax Co.

North Carolina
Department of Environment and Natural Resources



Division of Waste Management

Michael F. Easley, Governor
William G. Ross Jr., Secretary
Dexter R. Matthews, Director

December 30, 2002

Mr. Charles Archer, County Manager
County of Halifax
P.O. Box 38
Halifax, North Carolina 27839

Subject: Halifax County MSWLF Facility Transition Plan Modification for
Permit #42-04: Modification #3: 1 year operational extension.

Dear Mr. Archer:

The Solid Waste Section hereby approves the modification of the referenced MSWLF Facility permit to allow the construction and operation of a CONSTRUCTION & DEMOLITION LANDFILL UNIT, Phase 1 area (in accordance with sheet 13/Drawing P1 of the earlier approved plans to an elevation of 328' MSL) and consistent with the proposed Fill Sequence No. 1 area (plan sheet 2/Drawing No. S2 dated 10/03/02) at the Halifax County landfill. The operation of Phase 1 and Fill Sequence No.1 is effective 30 December 2002 and the operational permit for the facility will be valid until 1 January 2004 consistent with the Solid Waste Section memorandum dated 1 April 2002 (see condition 2/page 3).

Please note operational conditions outlined on pages four thru nine, for the facility, specifically conditions 12 (c) and 18 that address the closure requirements for the cap over the C&D waste. The MSW landfill was closed with a cap design consisting of a soil cap with a permeability less than 1×10^{-5} cm/sec. and a final slope of than 5%. In accordance with .1627(c)(1) a cap of equal or less permeability than the base shall be installed. Likewise, a new alternative cap can be proposed consistent with .1627(c)(2) that may consist of a geomembrane/geosynthetic clay liner/geonet system that is less infiltrative than the cap placed over the closed MSW waste. The average permeability of the compacted clay soils placed over the MSW waste shall be used as the baseline for determining the infiltration rate for the existing base verses the proposed final cap over the C&D waste.

1646 Mail Service Center, Raleigh, North Carolina 27699-1646
Phone: 919-733-0692 \ FAX: 919-733-4810 \ Internet: www.enr.state.nc.us/

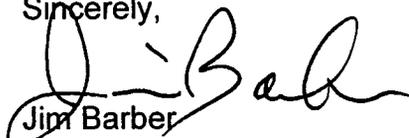
AN EQUAL OPPORTUNITY \ AFFIRMATIVE ACTION EMPLOYER - 50% RECYCLED / 10% POST CONSUMER PAPER

Mr. Archer
Page 2
December 30, 2002

The Waste Management Specialist for this facility is Mr. Ben Barnes and he can be reached in our Raleigh Regional Office at (919) 571-4700.

If you have any questions about this approval letter, please contact me at (919) 733-0692 Ext. 255.

Sincerely,



Jim Barber
Permitting Supervisor
Permitting Branch
Solid Waste Section

cc: Mark Fry
Ben Barnes
Raleigh Central Office: Halifax County MSW Facility Transition Plan Permit #42-04

PERMIT NUMBER: 42-04
DATE MODIFIED(PTO): 09/25/98
DATE MODIFIED(#3/1yr ext): 12/30/02

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WASTE MANAGEMENT
1646 MAIL SERVICE CENTER; RALEIGH, NC 27699-1646

SOLID WASTE PERMIT

COUNTY OF HALIFAX

is hereby issued a PERMIT TO OPERATE

PHASE 1/FILL SEQUENCE NO. 1 of the

Construction and Demolition Landfill Unit

located on S.R. 1417, at the Halifax County Landfill, Aurelian Springs, Halifax County 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.


James C. Coffey
Section Chief
Solid Waste Section
Division of Waste Management

PERMIT NUMBER: 42-04
DATE MODIFIED(#2/pto): 09-25-98
DATE MODIFIED(#3/1 yr ext): 12/30/02

SOLID WASTE PERMIT
Permit to Operate
Halifax County Landfill
Construction and Demolition Debris Landfill Unit

CONDITIONS OF PERMIT:

GENERAL

1. When this property is sold, leased, conveyed or transferred, the deed or other instrument of transfer shall contain in the description section in no smaller type than that used in the body of the deed or instrument, a statement that the property has been used as a sanitary landfill.
2. This permit will be subject to review on/or before 1 January 2004, as per memorandum dated 1 April 2002 from the Solid Waste Section. Modifications to the facility may be required in accordance with rules in effect at the time of review.
3. The approved plan is described by Attachment 1, "List of Documents for Approved Plan". Where discrepancies may exist, the most recent submittal and the Conditions of Permit shall govern. Some components of the approved plan are reiterated in the Conditions of Permit.
4. This permit is not transferable.
5. The Financial Assurance Instrument(FAI) for this facility shall be amended when Closure Certification has been complete and the Closure/Post-Closure Care portion of the instrument is amended. The FAI shall be reviewed and updated annually for this facility once closure of the MSW unit is complete.
6. If during the operational life of the C&D unit it becomes apparent that the operations at the facility are impacting ground water adversely; the Solid Waste Section will require landfilling activities to cease and closure of the operating unit.

CONSTRUCTION AND OPERATION

7. This permit is for development of the Halifax County Landfill Construction and Demolition Unit, Phase 1 in accordance with the approved plan, sheet 13/Drawing P1 and the revised plan sheet No. 2/Drawing S2 (dated 10/03/02). Waste can begin along the south boundary of Phase 1 and the existing slope of the MSW unit based on the certification report dated 24 September 1998 addressing CQA documentation for the closure cap of the MSW unit.

8. This solid waste management facility 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; and
- c. Asphalt in accordance with G.S. 130-294(m).
- 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.

9. All sedimentation/erosion control activities will be conducted in accordance with the Sedimentation Control Act codified at 15 NCAC 4. Native vegetation shall be established on the completed landfill.

10. The following requirements shall be met prior to operation of Phase 1 at this facility:

- a. Site preparation and or closure of that area of the MSW unit shall be in accordance with the construction closure plans.
- b. Signs shall be posted at the facility in accordance with the Access and Safety Requirements under Operation Condition No. 5 listed below.
- c. 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.
- d. Closure certification and documentation shall be submitted to the Solid Waste Section and a approved by the Section prior to receiving C&D waste in the proposed unit(s). Partial closure of units will be accepted with certification and documentation of partial unit closure submitted for approval. Seeding and stabilization of cover soils shall be performed prior to receiving C&D waste.

11. Operation of the C&D landfill units shall conform to the operating procedures described in the approved plan, in accordance with Section .1626 of the Solid Waste Management Rules, and in accordance with the following requirements:
Waste Acceptance and Disposal

- a. The facility shall accept only those solid wastes which it is permitted to receive.
- b. No municipal solid waste, hazardous waste, industrial waste, liquid waste or waste not characterized as LCID or C&D shall be accepted for disposal.
- c. The permittee shall implement a program at the facility for detecting and preventing the disposal wastes listed in item "b" of this section. The program shall include, at a minimum:
 - (i) Random inspections of incoming loads or other comparable procedures;
 - (ii) Records of any inspections;
 - (iii) Training of personnel to recognize hazardous and liquid wastes;
 - (iv) Development of a contingency plan to properly manage any identified wastes listed in item "b" of this section; the plan must address identification, removal, storage, and final disposition of waste.

12. Cover Material Requirements

- a. Operational soil cover of at least six inches shall be placed at least once per week or when the active area reaches ½ acre 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.
- b. Areas which will not have additional waste placed on them for 12 months or more, but where final termination of operations has not occurred, shall be covered with a minimum of one foot of soil cover.
- c. After final termination of disposal operations at the site or major part thereof, or upon revocation of a permit, the fill areas shall be covered with a cap in accordance with .1627(c)(1) or .1627(c)(2) in accordance with the rules at the time of closure.

13. Access and Safety

- a. The facility shall be adequately secured by means of gates, chains, berms, fences, or other security measures approved by the DWM to prevent unauthorized entry.
- b. An attendant shall be on duty at the site at all times while it is open for public use to ensure compliance with operational requirements.
- c. The access road to the site shall be of all-weather construction and maintained in good condition.
- d. Dust control measures shall be implemented when necessary.

- e. Signs providing information on dumping procedures, the hours of operation, the permit number, and other pertinent information shall be posted at the site entrance.
- f. Signs shall be posted stating that no MSW, hazardous waste or liquid waste can be received.
- g. Traffic signs or markers shall be provided as necessary to promote an orderly traffic pattern to and from the discharge area and to maintain efficient operating conditions.
- h. The removal of solid waste from the facility is prohibited unless the owner/operator approves and the removal is not performed on the working face.
- i. Barrels and drums shall not be disposed of unless they are empty and perforated sufficiently to ensure that no liquid or hazardous waste is contained therein, except fiber drums containing asbestos.
- j. Open burning of solid waste is prohibited.
- k. The concentration of explosive gases generated at the facility shall not exceed:
 - i. twenty-five percent of the limit for gases in site structures (excluding gas control or recovery system components; and
 - ii. the lower explosive limit for gases at the facility boundary.

14. Erosion and Sedimentation Control

- a. Adequate sedimentation and erosion control measures shall be practiced to prevent silt from leaving the site.
- b. Adequate sedimentation and erosion control measures shall be practiced to prevent excessive on-site erosion.
- c. Provisions for a vegetative ground cover sufficient to restrain erosion must be accomplished within 30 working days or 120 calendar days upon completion of any phase of C&D landfill development.

15. Drainage Control and Water Protection Requirements

- a. Surface water shall be diverted from the operational area.
- b. Surface water shall not be impounded over or in waste.
- c. A separation distance of at least four feet shall be maintained between waste and the ground-water table.
- d. Solid waste shall not be disposed of in water.
- e. Leachate shall be contained on site or properly treated prior to discharge. An NPDES permit may be required prior to discharge of leachate to surface waters.

16. All pertinent landfill operating personnel will receive training and supervision necessary to properly operate this C&D landfill unit in accordance with G.S. 130A-309.25 and addressed by memorandum dated 29 November 2000(enclosed).

17. Ground water quality at this facility is subject to the classification and remedial action provisions referenced in Rule .1634 thru .1637 of 15A NCAC 13B.
18. A closure and post-closure plan must be submitted for approval at least 90 days prior to closure or partial closure of any landfill unit. The plan must include all steps and measures necessary to close and maintain the facility in accordance with all rules in effect at that time. At a minimum, the plan shall address the following:
 - a. Design of a final cover system; using the cap requirements outlined in Rule .1627(c)(1) or .1627(c)(2)
 - b. Construction and maintenance/operation of the final cover system and erosion control structures;
 - c. Surface water, ground water, and explosive gas monitoring.

MONITORING AND REPORTING REQUIREMENTS

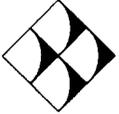
19. Ground-water monitoring wells and monitoring requirements for the C&D landfill units shall be in accordance with the monitoring system approved in the TRANSITION PLAN for the facility and these additional conditions:
 - a. Monitoring well design and construction shall conform to the specifications outlined in Attachment 2, "North Carolina Water Quality Monitoring Guidance Document for Solid Waste Facilities".
 - b. A geologist shall be in the field to supervise well installation, if necessary. The exact locations, screened intervals, and nesting of the wells shall be established after consultation with the SWS Hydrogeologist at the time of well installation for new monitoring wells.
 - c. For each new monitoring well constructed, a well completion record shall be submitted to DWM within 30 days upon completion.
 - d. Sampling equipment, procedures, and parameters shall conform to specifications outlined in the above-referenced guidance document, (Attachment 2), or the current guidelines established by DWM at the time of sampling and in accordance with the approved TRANSITION PLAN OR ASSESSMENT AND REMEDIATION PLAN.
 - e. In order to determine ground-water flow directions and rates, each monitoring well shall be surveyed, and hydraulic conductivity values and effective porosity values shall be established for the screened intervals for each new monitoring well.
 - f. The permittee shall sample the monitoring wells semi-annually or as directed by the SWS Hydrogeologist.
 - g. A readily accessible unobstructed path shall be initially cleared and maintained so that four-wheel drive vehicles may access the monitoring wells at all times.

20. The permittee shall maintain a record of all monitoring events and analytical data. Reports of the analytical data for each water quality monitoring sampling event shall be submitted to DWM in a timely manner.
21. The permittee shall maintain a record of the amount of solid waste received at the facility, compiled on a monthly basis. Scales shall be used to weigh the amount of waste received.
22. On or before 1 August 2003 (or an earlier date as requested by the Solid Waste Section), and each year thereafter, the permittee shall report the amount of waste received (in tons) at this facility and disposed of in the landfill to the Solid Waste Section and to all counties from which waste was accepted, on forms prescribed by the Section. This report shall include the following information:
 - a. The reporting period shall be for the previous year, beginning 01 July and ending on 30 June;
 - b. The amount of waste received and landfilled in tons, compiled on a monthly basis, according to Condition 6 described above; and
 - c. Documentation that a copy of the report has been forwarded to all counties from which waste was accepted.
23. All records shall be maintained on-site and made available to the SWS upon request.
24. The Post-Closure plan approved in the TRANSITION PLAN shall be implemented and followed upon capping and closing the operating unit(s).

ATTACHMENT LIST

List of Additional Documents for the Approved Transition Plan

1. Site and Construction Transition Plan modification application for the Halifax County Landfill, Permit #42-04. Document titled "Permit Application Report - CDLF Vertical Expansion for closed MSWLF Unit - Halifax County Landfill - Permit Number 42-04" dated 19 December 1997 and received 23 December 1997.
2. Site plans and operations plan dated 19 December 1997 and received 23 December 1997.
3. Certification letter dated 20 February 1998 and faxed to the Solid Waste Section on 26 February 1998 addressing closure of a 1 acre area of Phase 1 C&D Unit.
4. Certification report dated 24 September 1998 for the cap closure CQA for the Halifax County MSW unit.
5. Modification #3: Permit document dated 3 October 2002, received 3 October 2002 for the extension of C&D landfill operations for one year (until 1 January 2004) consistent with Sheet No. 2/Drawing No S2.



G.N. RICHARDSON & ASSOCIATES

Engineering and Geological Services

October 3, 2002

Mr. Jim Barber
Regional Engineer
NC DENR - Solid Waste Section
225 Green Street, Suite 714
Fayetteville, NC 28301

OCT 2002
Received
Solid Waste
Section

APPROVED
DENR - SOLID WASTE MANAGEMENT
SOLID WASTE SECTION
DATE 12/30/02 BY DJS

**RE: Halifax County Landfill
Request for Permit Extension (Permit No. 42-04)
C & D Landfill Vertical Expansion**

PTD - MOO.#3

42-04

FILL SEQ. No. 1 ONLY

VALID UNTIL 1 JAN. 2004

CENTRAL FILE COPY

Dear Jim:

On behalf of Halifax County, G.N. Richardson & Associates (GNRA) would like to submit this request to extend the operation of their existing construction and demolition debris (C&D) vertical expansion over closed portions of their closed MSW landfill disposal area at the Halifax County Landfill facility near Littleton. This request follows guidance given in the Solid Waste Section's memo dated April 1, 2002.

Project Background

Originally permitted for a five year operation on December 1998, the C&D vertical expansion began on January 1, 1998. The original design of this vertical expansion provided for approximately 10 years of site life to be developed in two five year phases based on a daily tonnage of 30 tons and a waste density of 1,720 pounds per cubic yard (pcy). As of the date of this letter, after 4.7 years of operations, the landfill contours are somewhat below those assumed for the first five year phase. However, as actual tonnages have been only approximately 16 tons per day, actual waste densities have also been lower - on the order of 1,000 pcy.

Proposed Modifications

Halifax County would like to continue to operate their C&D unit over the closed MSW disposal area through the end of 2003. The approximate existing and proposed contours of the expansion are shown on the attached **Drawing S1** (Existing Site Conditions) and **Drawings S2 - S3** (Phasing Plan). The expansion will remain within the limits of the plans originally approved in 1998. Development of the expansion through 2003 will consist of a lift of up to 10 to 12 feet of waste placed over existing contours and the filling of a portion of the current access road. Development of the expansion and development beyond 2003, if allowed, will occur in small lifts across the fill area; thus, allowing the landfill to be able to be closed at any time with a minimal footprint and only minor required adjustments to the final slopes in preparation for closure.

The attached life expectancy calculations show that, based on the proposed filling sequence

Mr. Jim Barber
October 3, 2002
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shown on **Drawings S2 - S3**, the volume of Fill Sequence 1 will last through December 31, 2003. Fill Sequences 2-7 correspond to 5.5 additional years of expansion beyond 2003, if allowed.

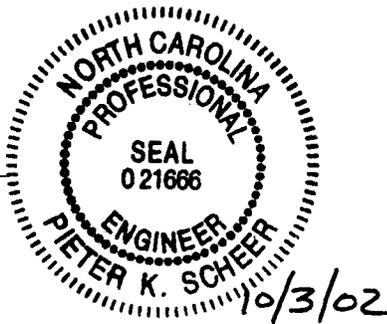
In that the proposed fill areas are within the overall plans originally approved, no other changes (final cover, erosion & sedimentation control, etc.) are required or requested at this time.

Please contact us at your convenience with any further questions or comments which you may have on this request.

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



Pieter K. Scheer, P.E.
Project Manager



Attachments: A. Life Expectancy Calculations
B. Permit Modification Drawings (Drawing S1, Drawing S2, & Drawing S3)

cc: Larry Garriss, Halifax County

G.N. Richardson & Associates

ENGINEERING AND GEOLOGICAL SERVICES

Halifax Co. Landfill - C&DLF Expn. Analysis of Life Expectancy

SHEET: /
JOB #: HALIFAX-4
DATE: 10/3/02
BY: PKS
CHKD BY:

Waste Parameters:

Unit Weight (pcy) =	1000
Unit Weight (tcy) =	0.5
Percentage of Periodic Cover =	10

Volume Calculations:

Fill Sequence No. 1:

Volume of Waste and Periodic Cover (cy) =	10000 (AutoCAD - See Attached Fill Seq. No. 1)
Volume of Periodic Cover (cy) =	1000
Volume of Waste (cy) =	9000
Volume of Waste (tons) =	4500

Fill Sequence No. 2:

Volume of Waste and Periodic Cover (cy) =	10000 (AutoCAD - See Attached Fill Seq. No. 2)
Volume of Periodic Cover (cy) =	1000
Volume of Waste (cy) =	9000
Volume of Waste (tons) =	4500

Fill Sequence No. 3:

Volume of Waste and Periodic Cover (cy) =	10000 (AutoCAD - See Attached Fill Seq. No. 3)
Volume of Periodic Cover (cy) =	1000
Volume of Waste (cy) =	9000
Volume of Waste (tons) =	4500

Waste Loading Parameters:

Projected Annual Tonnage =	4500
Total (Tons) =	4500 (1 Year's Tonnage)
	9000 (2 Year's Tonnage)
	13500 (3 Year's Tonnage)

LIFE.WB3