



# COUNTY OF LINCOLN, NORTH CAROLINA

115 WEST MAIN STREET, 2<sup>ND</sup> FLOOR CITIZENS CENTER, LINCOLNTON, NORTH CAROLINA 28092

## DEPARTMENT OF PUBLIC WORKS

PHONE (704) 736-8495

FAX (704) 736-8499

February 18, 2008

North Carolina Department of Environment and Natural Resources  
Division of Waste Management – Solid Waste Section  
1646 Mail Service Center  
Raleigh, North Carolina 27699-1646

Attention: Mark Poindexter  
Branch Head

Subject: December 5, 2007 Facility Compliance Audit  
Lincoln County Landfill – Permit # 55-03  
Crouse, North Carolina

Dear Mr. Poindexter:

A Facility Compliance Audit was conducted at the Lincoln County Landfill on December 5, 2007. A copy of the Audit Report resulting from this audit, prepared by Charles Gerstell and dated December 21, 2007, is attached for your information.

Based on item number 6 of the Facility Compliance Audit Report, and subsequent telephone conversations between County staff and Mr. Gerstell, Lincoln County understands that the NCDENR is now requiring Lincoln County Landfill to compost the mulch produced from its Yard Waste Area and is requiring the County to cease yard waste operations until a revised permit is applied for and issued. I would note, however, that the audit report noted no violations regarding our license to operate.

Prior to the audit, our Landfill has been operating its Yard Waste Area according to its approved permit and Operations Plan. A copy of the approved permit and relevant sections of the Operation Plan are attached with this letter for reference. Please note that previous audits of the facility have made no mention that the Yard Waste Area was out of compliance. Furthermore, we have received no notices or letters from NCDENR of any proposed changes to our permit. I do not understand how the inspector can impose operational changes without some sort of official notification to the permittee. I would point out that any such notification should include some reasonable timeframe for implementing such changes as are being proposed. As our Landfill serves the 70,000+ citizens of Lincoln County, any significant change in operations must be publicized and must give an adequate time for the citizens to make other arrangements to dispose of the items that are affected by this proposed change. I





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am also quite sure some time will be required to prepare any permit modification application and to obtain approval for such a modification.

If, in fact, permit modifications are required and if operational changes are necessary, we would appreciate receiving adequate notification of such changes, along with a proposed timeframe for accomplishing the changes. We will then gladly comply as necessary.

Thank you for your consideration. If you have questions or comments concerning the information contained herein, please do not hesitate to contact me at the number listed above or Nancy Rickard, Solid waste Manager at the Lincoln County Landfill at 704-732-9030.

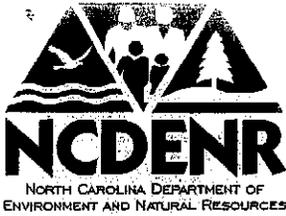
Sincerely,

A handwritten signature in black ink, appearing to read "Stephen A. Gilbert".

Stephen A. Gilbert, PE, PLS  
Public Works Director

C: Michael S. Talbert, Interim County Manager  
Nancy Rickard Solid Waste Manager

Att: Compliance Audit Report, dated December 5, 2007  
Approved Operations Plan dated March 31, 2005



FORM 1000-1 (10/06)

**FACILITY COMPLIANCE AUDIT REPORT**  
**Division of Waste Management**  
**Solid Waste Section**

<b>UNIT TYPE: (check all that apply to this audit with same Permit number)</b>												
Lined MSWLF	<input checked="" type="checkbox"/>	LCID		YW		Transfer		Compost		SLAS		<b>COUNTY: Lincoln</b> <b>PERMIT NO.: 55-03</b> <b>FILE TYPE: COMPLIANCE</b>
Closed MSWLF		HHW		White goods	<input checked="" type="checkbox"/>	Incineration		T&P	<input checked="" type="checkbox"/>	FIRM		
CDLF	<input checked="" type="checkbox"/>	Tire T&P / Collection	<input checked="" type="checkbox"/>	Tire Monofill		Industrial Landfill		DEMO		SDTF		

Date of Audit: December 5, 2007.

Date of Last Audit: June 27, 2007

**FACILITY NAME AND ADDRESS:**

Lincoln County Landfill  
 5291 Crouse Road  
 Crouse, North Carolina 28033

**GPS COORDINATES: (Decimal Degrees) N: 35.42288 E: 81.35695**

**FACILITY CONTACT NAME AND PHONE NUMBER:**

Nancy C. Rickard, Deputy Director of Solid Waste  
 (704) 732-9030

**FACILITY CONTACT ADDRESS (IF DIFFERENT):**

N/A

**AUDIT PARTICIPANTS:**

Charles Gerstell-DENR, Solid Waste Section  
 Nancy Rickard, Lincoln County  
 Mark Bivens, Lincoln County  
 Frank Finger, Lincoln County

**STATUS OF PERMIT:**

A permit to Operate A Municipal Solid Waste Landfill Facility, Phases I, II, and III and C&D Unit Phase IIA was issued on September 11, 2006. This permit shall be reviewed on September 11, 2011.

**PURPOSE OF AUDIT:**

Comprehensive Audit

**NOTICE OF VIOLATION(S) (citation and explanation):**

None

You are hereby advised that, pursuant to N.C.G.S. 130A-22, an administrative penalty of up to \$15,000 per day may be assessed for each violation of the Solid Waste Statute or Regulations. If the violation(s) noted here continue, you may be subject to enforcement actions including penalties, injunction from operation of a solid waste management facility or a solid waste collection service and any such further relief as may be necessary to achieve compliance with the North Carolina Solid Waste Management Act and Rules.

**STATUS OF PAST NOTED VIOLATIONS (List all noted last audit):**

15A North Carolina Administrative Code 13B .1626(6)(i) states: 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.

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Division of Waste Management  
Solid Waste Section

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No barrels or drums w/ insufficient perforations were observed within the waste stream. Therefore, this violation is considered corrected and resolved.

**AREAS OF CONCERN AND COMMENTS:**

- 1.) The permit and operations plan were reviewed and are available for inspection.
- 2.) The facility is currently accepting approximately 138 tons per day of MSW and 27 tons per day of C&D waste.
- 3.) The scrap tire area was observed and was well managed.
- 4.) The white goods area was observed and was well managed.
- 5.) Scrap metal area was observed and was well managed.
  - a. White goods containing Freon are being separated from other metals until the gas is removed.
- \* 6.) The yard waste area was observed. The approved operations plan shows under section 3.1, "Yard Waste Generation and Acceptance", that material accepted at the yard waste area consists of uncontaminated tree limbs, brush, grass clippings, and leaves. The operations plan also shows under section 3.2, "Yard Waste Disposal", that mulch generated from the yard waste is delivered to schools located within Lincoln County for playground use upon request. The plan also shows that excess mulch is given away to the general public in the spring and fall of each year by the landfill. Brush, tree limbs, grass clippings, and leaves are considered yard trash. Simply mulching of this material is unacceptable due to the potential existence of pathogens. Therefore, yard trash must be composted and the facility must follow all operational guidelines for Solid Waste Compost Facilities under section .1400 of North Carolina Administrative Code 13B. The facility must modify the permit to accept and process yard trash. This modification must include the submittal of a revised Operations Plan to the Division for approval detailing the proper treatment and disposal this waste. All appropriate fees must be submitted for this permit modification. The facility must discontinue acceptance and distribution of yard waste until a permit modification is issued.
- 7.) Operations of the municipal landfill unit were observed:
  - a. The working face was small and compact.
  - b. Be sure that all windblown waste is collected and returned to the working face at the conclusion of each day of operation. Additional attention must be given to windblown waste.
  - c. No unacceptable waste streams were observed.
  - d. Be sure to adequately cover all waste with 6-inches of soil cover. Additional soil should be provided to inactive areas east of the working face.
- 8.) Operations of the construction and demolition unit were observed:
  - a. Working face was under ½ acre in size.
  - b. Windblown material was minimal surrounding the C&D unit at the time of inspection.
  - c. Some waste material was noted at the toe of the fill slopes located on the northern portion of the C&D unit. This material must be collected and returned to the active face.
- 9.) All roadways were well maintained.
- 10.) The two leachate tanks were reviewed and were being managed properly at the time of inspection. Leachate is pumped and hauled to the Waste Water Treatment Plant. Leachate levels in the tanks were observed to be 15.3-feet and 21.9-feet.
- 11.) The leachate basin has been removed. The embankment has been backfilled and re-graded to the surrounding topography. Closure of the basin will not be considered complete until all supporting documentation has been submitted to Larry Frost, Regional Engineer, and closure approval has been given by the Division. Please refer to the letter dated July 16, 2007 (Plan Approval, Leachate Closure Plan) issued by Larry Frost, Regional Engineer to Nancy Rickard, for all required documentation.
- 12.) The waste screening forms were reviewed and appeared that they are being performed on a minimum of 1% of the waste stream.
- 13.) Water-quality records were reviewed and were being performed semi-annually.
- 14.) Leachate sampling was being conducted semi-annually.
- 15.) Landfill gas monitoring was being performed quarterly as required.

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Division of Waste Management  
Solid Waste Section

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- 16.) Tire certification forms were reviewed. Please ensure that all documents are properly signed and all numbers filled out in the proper areas.

Please contact me if you have any questions or concerns regarding this audit report.

Charles T. Gerstell (Signature) Phone: (704) 663-1699  
Charles T. Gerstell  
Regional Representative

**Distribution: original signed copy to facility -- e-mail to compliance officer -- e-mail or copy to super**

Delivered on : <u>12/21/07</u> by		hand delivery	X	US Mail		Certified No. [ ]
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**APPROVED**  
DIVISION OF WASTE MANAGEMENT  
SOLID WASTE SECTION  
DATE 8-31-05 BY [Signature]  
55-03

**LINCOLN COUNTY LANDFILL-PHASE III  
APPLICATION FOR PERMIT TO CONSTRUCT  
CROUSE, NORTH CAROLINA  
S&ME PROJECT NO. 1356-03-255**

**VOLUME II OF II**

Prepared For:

North Carolina Department of Environment and Natural Resources  
Division of Waste Management  
Solid Waste Section  
Raleigh, North Carolina

Prepared By:

S&ME, Inc.  
9751 Southern Pine Blvd  
Charlotte, NC 28273  
(704)523-4726

September 3, 2004



**S&ME**

**OPERATIONS PLAN  
LINCOLN COUNTY LANDFILL – PHASE III  
APPLICATION FOR PERMIT TO CONSTRUCT  
CROUSE, NORTH CAROLINA  
S&ME PROJECT NO. 1356-03-255**

Prepared for:

North Carolina Department of Environment and Natural Resources  
Division of Waste Management  
Solid Waste Section  
Raleigh, North Carolina

Prepared by:

S&ME, Inc.  
9751 Southern Pine Boulevard  
Charlotte, North Carolina 28273  
(704) 523-4726

September 3, 2004  
Revised: November 9, 2004

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Lincoln County Landfill – Phase III  
Operations Plan

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September 3, 2004

## 1.0 MSW LANDFILL OPERATIONS AND MAINTENANCE

The Lincoln County MSW Landfill is owned and operated by Lincoln County. Operation of the landfill is the responsibility of Mr. John Avery, Solid Waste Director of Lincoln County Landfill. The Operational Manager responsible for the maintenance of the site is Mr. John Avery.

### 1.1 Landfilling Sequence

The development of the Lincoln County MSW Landfill has been sequenced in phases. Landfilling operations generally proceed from the up-gradient end of Phases I and II, towards the down-gradient end by the use of cells. To continue the existing sequencing, Phase III will “piggyback” on Phase II will be raised to an elevation of 932 feet. Each cell within Phase III will be filled to approximately 10 to 12 feet on the initial lift and the entire cell will be covered prior to beginning the initial lift in the next cell. Once the initial lift has been placed in Cells 1 through 3, the second and subsequent lifts of solid waste will be placed. This method is intended to reduce leachate generation by diverting stormwater with the daily cover.

### 1.2 Stormwater Collection and Removal System

Outside the landfill limits, the perimeter berms with adjacent permanent drainage ditches will divert surface water run-on from entering the landfill limits. A temporary divider berm and pipes are provided within each cell to allow removal of surface water that has not contacted waste. These temporary pipes, located at the low point of each cell, passes through the divider berm and the Phase III interim berm to allow open channel flow drainage to the down gradient surface water collection and removal system where surface water is discharged into a channel leading to a sediment basin.

Prior to landfilling a cell, the surface water drainage pipe within the cell shall be removed and replaced with backfill. The Operational Manager shall observe and document the removal of the pipe to verify that the underlying liner system is not damaged. Following the pipe removal, surface water that accumulates within the active cell will either infiltrate into the operational cover or flow

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into the leachate header pipe located at the low point of the cell. This surface water, which has contacted waste, will then flow into the leachate collection and removal system and will be treated as leachate. In addition, the up-gradient temporary divider berm shall be removed and used as daily cover. Care shall be taken during removal of the divider berm so that at least 24 inches of operational cover remains above the liner system.

Since landfilling will progress from up-gradient to down-gradient, surface water will drain down-gradient of the active face and flow into the leachate collection system. Landfilled areas up-gradient of the active face will be graded so that surface water drains around the active face. Prior to development of the last cell within the phase, the divider berm shall be removed and used as daily cover. In addition, the HDPE stormwater removal pipe shall be grouted the entire length of pipe and capped with an HDPE welded cap. It is recommended that this task be observed by the design engineer to verify that the liner penetration has been completely sealed.

### 1.3 Leachate Collection and Removal System

The leachate collection and removal system consists of a geonet composite with a series of collection pipe laterals. The lateral pipes are connected to an HDPE header pipe that provides gravity drainage of the leachate to sump locations within the phase to discharge to the leachate conveyance and storage system.

The general operation required to activate a cell for waste placement will include the activation of the leachate collection and removal system within the active cell. This task is accomplished by opening the leachate header pipe located along the toe of the perimeter berm just up-gradient from the previously removed surface water drainage pipe. Opening of the leachate header pipe will involve removal of the temporary armored channel and cover geotextile over the header pipe drainage material. The opened header pipe feeds directly into the leachate collection and removal system such that rain water entering the cell will now enter the leachate collection and removal system and not pond within the cell. The temporary geotextile placed over the header pipe drainage material shall be cut along its centerline and pulled back just prior to placing waste over the header pipe. The Operations Manager shall document the activation of the leachate collection system

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within each cell and file the documentation in the facility operation records. The ENGINEER will be on-site to monitor and document the removal of the stormwater system and the activation of the leachate collection and removal system in the sump area.

Clean-out pipes have been provided at the ends of the leachate header pipes in the event that the leachate collection and removal pipes become clogged. If a clogging problem exists within a pipe, the pipe can be cleaned out by the use of a clean-out snake or high pressure water flushing.

#### 1.4 Placement of Waste and Cover Material

Prior to waste placement, stakes indicating the limits of waste placement, as shown on the Engineering Plan Drawings, shall be located. The solid waste shall be compacted as densely as practical using landfill compactors and dozers. Waste placement will be in lifts not less than 10 feet in vertical thickness for the initial fill placement adjacent to the lined side slopes. A minimum of five feet of waste must be placed on the cell floor before truck access or compaction with a landfill compactor is allowed. A minimum of four passes by the compactor will be required prior to placement of the next lift of waste. Based on the type of waste, additional passes may be required to achieve higher compaction rates. Initially the waste shall be placed from up-gradient to down-gradient, but as higher waste elevations are achieved, the waste may be placed from down-gradient to up-gradient on the active face slope as long as landfill surfaces are graded to allow proper drainage. A minimum five percent slope shall be graded on the landfill surface to promote surface water runoff. Solid waste shall not be disposed of in water, and surface water shall not be impounded over or in the solid waste. In addition, the landfill active face should be as small as possible to reduce the amount of daily cover. Phasing Diagrams for the proposed landfilling sequence are presented in Appendix I.

As waste is being placed directly onto the operational cover, care shall be taken so that sharp objects are not placed directly on the operational cover to minimize the potential of damaging the leachate collection and liner systems. All cover material will be obtained from on-site stockpiles or borrow areas. Solid waste will be covered with a layer of compacted soil at least 6 inches thick or a

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geotextile fabric. A demonstration and permit modification request will be submitted to the Division of Waste Management should it become desired to utilize alternative daily covers.

An intermediate cover shall be placed on areas where waste placements will be inactive for 12 months or more. The intermediate cover will be placed at frequencies suitable for specific waste management operations. Areas receiving intermediate soil cover shall be grassed in accordance with the Rules. The final cover system shall be placed in accordance with the Closure/Post-Closure Program.

### **1.5 Waste Acceptance, Disposal and Screening Requirements**

The procedural requirements for waste acceptance at the Lincoln County Landfill will generally be the same as those currently in use. The landfill will accept industrial, commercial, and municipal solid wastes and may accept special wastes upon proper approval for disposal. Special waste shall be handled in accordance with local, state and federal guidelines. The landfill shall only accept those solid wastes, which it is permitted to receive.

The landfill owner or operator shall notify the Division of Waste Management within 24 hours of attempted disposal of any waste the landfill is not permitted to receive, including waste from outside the area the landfill is permitted to serve. No hazardous, liquid, or infectious waste shall be accepted or disposed of in the landfill. Wastes prohibited for disposal include those hazardous wastes defined in 15A NCAC 13A (including hazardous waste from conditionally exempt small quantity generators), polychlorinated biphenyls as defined in 40 Code of Federal Regulations (CFR) 761, septic waste, waste oil or any waste that is determined to contain "free liquids" as defined by EPA Method 9095 (Paint Filter Liquids Test), S.W. 846.

Management of asbestos shall be in accordance with 40 CFR 61. Asbestos shall be disposed of at the landfill on the bottom of the active landfill face apart from other wastes and immediately covered with soil.

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Bulk or non-containerized liquid waste may not be disposed in the landfill unless the waste is a household waste other than septic waste or waste oil or the waste is leachate or gas condensate from the landfill. Containers holding liquid waste may not be disposed in the landfill unless the container is a small container similar in size to that normally found in household waste, the container is designed to hold liquids for use other than storage, or the waste is a household waste. Management of asbestos shall be in accordance with 40 CFR 61.

Non-regulated medical waste may be disposed with general solid waste. All sharps that are broken or unbroken shall be placed in a sealed, puncture-proof container prior to disposal. Spoiled foods, animal carcasses, abattoir waste, hatchery waste, and other animal waste delivered to the disposal site should be immediately covered with soil.

The sludge from a wastewater treatment plant may be disposed with general solid waste in accordance with passing the Paint Filter Liquids Test (EPA Method 9095) and tested with a Toxicity Characteristic Leaching Procedure (TCLP). Barrels and drums shall not be disposed of unless they are empty and perforated sufficiently to ensure that they do not contain liquid (except for household wastes in small containers of original packaging) or hazardous waste. Additional materials banned from the Subtitle D landfill include hazardous waste, aluminum cans, lead batteries, white goods, whole tires, and yard waste and land clearing debris.

The County shall conduct a screening program at the facility for detecting and preventing disposal of hazardous and liquid waste. The program shall consist of random inspections of incoming loads. One inspection should be performed on a minimum weekly basis for commercial and industrial waste. The selection of the vehicle that will have its load inspected shall be the responsibility of the Operations Manager. The selection will be made at the scales or landfill workface. The hauler shall be required to sign the Pre-Acceptance Agreement (after being completed by the Screening Inspector). The Operations Manager shall notify the landfill facility's "Screening Inspector" (chosen by the Operations Manager and adequately trained) to meet the designated hauler at an area specifically set aside for conducting screening inspections (preferably on a level solid ground, pavement or concrete pad) away from the working face and any on-going landfill operations. The hauler shall dump the load of waste on the pad then the Screening Inspector shall "sort" through the

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waste using a loader or other similar equipment for handling bulky materials and by hand with a rake or shovel. Once the waste is spread thin enough to observe the entire load, the inspector will record the information required on the Detailed Screening Report and Waste Screening Checklist. If liquid or hazardous wastes are not found in the inspected load, then the waste will be disposed of on the working face in the cell immediately after completion of the inspection.

If hazardous or liquid wastes are identified in the load, the screening inspector shall immediately notify the Operations Manager. If hazardous waste is identified, the hazardous materials emergency response team for Lincoln County shall also be notified. If liquid waste is discovered, it shall be contained on the pad (either with curb for asphalt or concrete pad, with a soil berm or with other suitable measures) temporarily until an absorbent can be placed with the liquid or until proper containers are available for filling. The saturated absorbent or containers will then be disposed of at an appropriate facility. If hazardous waste is discovered, it shall be maintained in the same manner as the liquid waste and will be disposed of at a suitable facility for hazardous waste as determined by the emergency response team or a qualified environmental/hazardous waste consultant.

Records of any inspections shall be maintained in a "Screening Inspection" file or notebook as a permanent record at the facility office. Sample forms for the waste acceptance and screening inspections are provided in Appendix II. These forms include a Waste Screening Checklist, a Pre-Acceptance Agreement, and a Detailed Screening Report. Facility personnel involved with the screening inspections should be trained for identification of hazardous and liquid wastes through programs offered by the State or by the Solid Waste Association of North America (SWANA). The "Screening Inspector" should also have the Occupational Safety and Health Administration (OSHA) 40-hour hazardous waste and safety training.

## **1.6 Training of Facility Personnel**

Due to the diversity of job tasks required at Subtitle D type landfills and the critical nature of the landfill components, personnel should be adequately trained to handle the operation and maintenance of the facility. Some of the critical tasks include:

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- Operation and maintenance of leachate storage tanks and associated piping.
- Maintaining leachate flow volumes and records.
- Accurate records of waste loading (quantitative and qualitative).
- Identification of hazardous and liquid wastes.
- Control of accidental fires.

The Operations Manager should have a general understanding of all the tasks required for site operations. He should have individuals performing the various tasks that have had training for the specific tasks they are assigned through programs offered by the State or by organizations like SWANA.

### **1.7 Operations Record Keeping**

Lincoln County maintains an on-site operating record in accordance with the North Carolina Solid Waste Management Rules, Section .1626 (10). The operating record includes the following:

1. Waste screening program
2. Waste screening inspections
3. Waste screening training program
4. Waste determination records
5. Waste amounts received (and source)
6. Methane gas monitoring plan, gas monitoring results, and any remediation plans
7. Groundwater monitoring information
  - a. Documentation of approval from the Division
  - b. Approved groundwater monitoring plan
  - c. Groundwater monitoring results
  - d. Notice of statistically significant changes in constituents (if any)
  - e. Report of explanation of significant changes if not caused by the MSWLF unit.
  - f. Notice of Appendix II constituents detected (if any)
  - g. Report of each sampling event
  - h. Permit modification to document selection of corrective action (if any)

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- i. Report justifying alternative corrective measures (if any)
- j. Report documenting completion of corrective action (if any)
8. Closure and post-closure monitoring plan and results
9. Closure cost estimate and financial assurance documentation
10. Records required by 40 CFR 61 (asbestos rules)
11. Operations plan
12. Leachate management plan

The above records will be kept in the operating record for the active life of the landfill and the post-closure care period. All information contained in the operating record must be furnished upon request to the Division or made available for inspection by the Division. Additional records kept on-site by Lincoln County include:

1. Facility Permits
  - a. Solid waste facility permits
  - b. EPA generator I.D./permit
  - c. National Pollutant Discharge Elimination System (NPDES) stormwater discharge permit
  - d. Non-domestic wastewater discharge permit
  - c. Erosion and sediment control plan permit
2. Regulatory agency inspection reports
3. Employee training program and records
4. Internal Vehicle maintenance records
5. Site drawings and specifications
6. Spill Prevention, Control and Countermeasure (SPCC) plan
7. Special waste acceptance records

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## 2.0 C&D LANDFILL OPERATIONS AND MAINTENANCE

The C&D Landfill is owned and operated by Lincoln County. It is located on the mid-eastern portion of the Lincoln County Landfill site. The Operational Manager responsible for the operations and maintenance of the site will be Mr. John Avery of Lincoln County Landfill.

Lincoln County anticipates that the waste stream for the C&D Landfill will be generated from residential, agricultural facilities, commercial businesses, and industrial facilities within the State of North Carolina. The waste stream will be typically waste resulting from the construction, remodeling, repair or demolition operations on pavement, buildings, or other structures. No household solid waste, commercial solid waste, industrial solid waste, hazardous waste, PCB waste, liquid waste or other banned wastes that may pose a threat to the environment and public health will be disposed at this facility.

Fill materials required for construction of perimeter berms, subgrade, and cover will be obtained from excavation of the landfill.

### 2.1 Landfill Capacity

The C&D Landfill consists of Phases I and II. The Phase II landfill is an expansion of the C&D Phase I landfill. The development of the C&D Landfill - Phase II will be in two (2) sub-phases as a "piggy back" system up the existing Phase I slope. Phase IIA will provide the foundation base for Phase IIB. Phase IIB will "piggyback" Phase IIA and Phase I. Sub-phasing will be designated as an elevation up the slope based on tonnage rates. The sub-phasing is divided out based on two elevations that approximately represents five years of landfill capacity. The capacity is based on a yearly disposal rate of 20,000 tons/year at 5 percent increase per year and 1,200 lbs/cy (0.6 tons/cy) compaction.

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## 2.2 Landfill Phasing

Waste will be placed initially in Phase II from the upgradient (west) to the downgradient (east) end of the phase. An initial approximate 10-foot lift of waste will be placed across the phase floor working from upgradient to downgradient areas. After the initial lift has been placed, the subsequent lifts will also proceed from the upgradient end toward the downgradient end. Once the lifts of waste are high enough, the waste shall be “piggy-backed” onto the existing adjacent C&D Landfill - Phase I. This procedure will continue until proposed final contours for Phase II are reached. Additional phased filling will proceed after Phase II is completed, contingent on future permitting by the State of North Carolina.

The C&D Landfill – Phase II will be operated with equipment owned by Lincoln County Landfill. Primarily, one waste compactor, one dozer, one excavator, one pan, one grader, and a water truck will be used for site operations and maintenance. Additional equipment will be available as necessary during operation of the C&D landfill.

## 2.3 Stormwater Collection and Removal

Storm water runoff from the proposed C&D Landfill – Phase II will be directed to existing sediment basins through a system of diversion benches, downchute piping, and direct runoff and temporary channels as needed. The sediment basins, channels, and benches will be inspected on a regular basis and any necessary repairs will be made as early as practical.

## 2.4 Waste Placement

Waste placement will be in lifts of approximately 10-foot vertical thickness. As mentioned earlier, each lift will begin at the upgradient (west) end of the phase and progress towards the downgradient (east) end and once the lifts of waste are high enough, the waste shall be “piggy-backed” onto the existing adjacent C&D Landfill - Phase I.

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As higher elevations are reached, the waste may be placed from upgradient to downgradient on the active face slope as long as landfill surfaces are graded to allow proper drainage. Soil berms will be constructed as necessary to divert run-on from entering the working face or allowing run off to escape active areas.

## 2.5 Waste Acceptance and Disposal Requirements

The C&D landfill is expected to receive a waste stream of the following waste types:

- a. Land-clearing debris as defined in G.S. 130A-290, specifically, solid waste that is generated solely from land-clearing activities, such as stumps, trees, etc.;
- b. Inert Debris defined as waste that consists solely of material that is virtually inert, such as brick, concrete, rock, cut tires and clean soil;
- 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.

The landfill operator shall notify the Division within 24 hours of attempt to dispose of any other waste products. No hazardous, liquid, or infectious waste shall be accepted or disposed of in the C&D Landfill.

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### **3.0 YARD WASTE AND MULCHING OPERATIONS**

The yard waste and mulching operations is owned and operated by Lincoln County. There are two areas, one for yard waste storage (Yard Waste Area) and one for mulch storage (Mulch Pile). These two areas are located in between the Existing C&D Landfill and the Existing Area "E" Closed Landfill, just north of the Existing Area "D" Phase I Landfill. The Mulch Pile is located just to the north of the Yard Waste Area. The Operational Manager responsible for the operations and maintenance of the site is Mr. John Avery of Lincoln County Landfill.

#### **3.1 Yard Waste Generation and Acceptance**

The waste stream for the Yard Waste Area is generated from residential yard maintenance activities within Lincoln County. No items except uncontaminated tree limbs, brush, grass clippings, and leaves is accepted to the Yard Waste Area.

#### **3.2 Yard Waste Disposal**

The yard waste materials are removed from the Yard Waste Area and loaded up into a 1050 Morbark Tub Grinder via a 963 Cat Loader and ground up into mulch. The mulch is stored in the Mulch Pile located due north of the Yard Waste Area. Mulch from the Mulch Pile is used for the facility's roads during wet weather work to improve traction and to prevent damage. Mulch is also delivered to schools located within Lincoln County for playground use upon request. Any excess mulch is given away to the general public in the Spring and Fall of each year by the landfill.

#### **3.1 Stormwater Collection and Removal**

Storm water runoff from the Yard Waste and Mulch Area is directed to existing Sediment Basins SB-E and SB-B through a system of channels and culverts. The sediment basins, channels, and culverts will be inspected on a regular basis and any necessary repairs will be made as early as practical.

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#### **4.0 SITE OPERATIONS AND MAINTENANCE**

The site operations and maintenance plan will be for the entire Lincoln County Landfill. It will incorporate items that are needed for the MSW and C&D landfills. The items covered in the site operations cover topics from erosion control to methane control. Contingency items will be discussed along with controlling smell and varmints.

##### **4.1 Erosion/Sedimentation Control Maintenance and Water Protection**

Erosion/sedimentation control structures include sediment basins, sediment traps, and channels. Sediment basins shall be checked after periods of significant runoff. Sediment shall be removed from the basin to its original dimensions when sediment accumulates to one half of the design depth. The sediment basins, embankments, spillways and outlets shall also be inspected for erosion damage. All necessary repairs shall be made immediately. Any trash or debris within the sediment basin riser shall be removed.

Channels shall be inspected for damage after each runoff event. Riprap-lined channels and outlet protection aprons used to prevent damage to channel vegetation shall be inspected for washouts. Riprap shall be added to these areas as needed to maintain the integrity of the structure.

Embankment slopes shall be periodically inspected for erosion. The embankment slopes shall be mowed at least once a year. The embankment slopes shall be refertilized in the second year unless vegetation growth is fully adequate. The damaged areas shall be reseeded, fertilized and mulched immediately. Seeding, fertilizing and mulching shall be in accordance with the North Carolina Erosion and Sedimentation Control Guidelines.

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 landfill development.

The landfill operation shall not cause a discharge of pollutants into waters of the United States, including wetlands, that violates any requirement of the Clean Water Act, including, but not limited

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to, NPDES requirements, pursuant to Section 402. The landfill shall not cause the discharge of a non-point source of pollution to waters of the United States, including wetlands, that violates any requirement of an area-wide or statewide water quality management plan that has been approved under Section 208 or 319 of the Clean Water Act, as amended.

#### **4.2 Access and Security Requirements**

The site shall be enclosed by a fence with access controlled by means of gates. A security check station and weigh scales are located at the landfill entrance to evaluate the incoming waste for proper disposal. An attendant will be on duty at the site at all times while the landfill is open for public use to insure compliance with operational requirements. Facilities currently in place will remain operational. Access roads to the site shall be of all weather construction and maintained in good condition.

The removal of solid waste from the landfill is prohibited unless the owner or operator approves and the removal is not performed on the working force. 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.

#### **4.3 Dust, Litter, Odors, and Vectors**

Dust generated due to landfill activities will be controlled through the application of water by truck or other approved dust control products, if necessary. Removal of mud and dirt from the roads will also be a part of the dust control measures and will be accomplished with a motor grader. Additionally, final cover will be vegetated as soon as practical in order to minimize the blowing of dust on-site.

The potential problem of blowing litter will be minimized by limiting the active working face and using daily cover over the active fill area. Other methods, such as the utilization of pickers and portable fencing will be employed to contain loose paper and other wind blown refuse during the landfill operations. The landfill area will be policed as required to collect airborne materials.

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Odors generated because of landfill activity will be controlled through the application of daily cover. If odors continue to be a problem, masking agents and/or neutralizers then will be used to alleviate this problem. If odors persist, passive and/or active venting will be used. Control of vectors, such as rodents and flies, is an important environmental control. Control is accomplished by denying them a food source with daily cover. Placement of soil cover may be necessary at more intervals that are frequent in order to control vectors, fires, blowing litter and scavenging.

#### **4.4 Landfill Signs**

Signs providing information on disposal procedures, the hours that the site is open for public use, the permit number, stating that no hazardous or un-permitted waste can be received without written permission from the State Division of Waste Management, and other pertinent information will be posted at the site entrance. Traffic signs and markers are provided as necessary to promote an orderly traffic pattern to and from the discharge area and maintain efficient operating conditions.

#### **4.5 Fire Control**

No open burning of solid waste will be permitted at the Lincoln County Landfill. Equipment and stockpiled soil shall be provided to control accidental fires. Any fire that occurs at the landfill shall be reported to the Division within 24 hours and a written notification will be submitted within 15 days by the Operations Manager.

If a fire occurs at the landfill, the local fire department shall be notified. Hot loads that are brought in are to be immediately dumped away from the landfill and the fire department is to be called. The hot load is to be sprayed down with water until the fire or combustion is extinguished. The load is then to be reloaded for disposal in the landfill.

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#### **4.6 Methane Gas Monitoring Program**

A methane gas-monitoring program has been implemented to detect possible migration of methane gas off-site from the existing landfill and future landfill development. The methane gas monitoring program is in accordance to the requirements of the North Carolina Solid Waste Management Rules, Section .1626(4)(b).

##### **4.6.1 MSW Methane Gas Monitoring Program**

Included in this program is the permanent methane monitoring system, monitoring well locations and construction, methane monitoring procedures, sampling frequency and reporting requirements. Proposed gas monitoring well locations are shown on the Gas Management System Plan contained in the Engineering Plan. Details of the gas management system are also provided in the Engineering Plan Drawings.

##### **4.6.2 Permanent Methane Monitoring Well System**

The proposed permanent gas monitoring wells are positioned to detect methane gas that may migrate into the structures located at the landfill (landfill office and maintenance building) or beyond the landfill property boundary. The wells are located between the waste boundary and the property boundary and between the waste boundary and facility structures that are occupied or used regularly by landfill personnel. The landfill perimeter gas monitoring wells are spaced from 100 to 200 feet outside the waste boundary and at intervals of no more than 500 feet apart.

The proposed methane gas monitoring well locations are shown in the Engineering Plan. Actual locations of the methane monitoring wells may change slightly depending on soil, hydrogeologic, and hydraulic conditions encountered during site investigations or development.

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#### 4.6.3 Methane Monitoring Well Construction

Methane monitoring wells shall be constructed around the perimeter of the landfill by advancing an auger to the depth of groundwater or elevation equal to the lowest elevation at bottom of the landfill, whichever is greater. A one-inch diameter schedule 40 polyvinyl chloride (PVC) perforated pipe will be inserted into each boring hole and the annular space backfilled with pea gravel. The top of the boreholes shall be sealed with a concrete bentonite mixture and the wells protected with steel lockable covers. The PVC pipe will be installed with a non-venting PVC pipe cap at each location. The well construction records for each of the methane monitoring wells and their actual locations shall be placed in the operating record and submitted to the State.

#### 4.6.4 Methane Monitoring Procedures and Frequency

The methane monitoring will be performed by the Lincoln County Landfill personnel trained to use an explosimeter. Methane monitoring will be conducted in each of the methane monitoring wells and within the facility structures occupied by the landfill personnel using a gas meter. Testing procedures for the wells are to be as follows:

1. Calibrate the explosimeter (if required) in accordance with the manufacturer's recommendations for methane calibration using 1.5% methane test gas in an area free from potential methane contamination.
2. Aspirate to purge the explosimeter 4 to 5 times prior to each reading in an area free from potential methane contamination.
3. Open the cover of the methane monitoring well.
4. Insert the explosimeter tube into the well at a depth of 1-2 feet from the top of casing.
5. Aspirate 5 to 7 times immediately before gas is evacuated.
6. Read the percent methane and percent LEL (lower explosive limit).
7. Record reading on a form to be included in the operating record.

Testing procedures for the facility structures are as follows:

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1. Calibrate the explosimeter (if required) in accordance with the manufacturer's recommendations.
2. Aspirate to purge the explosimeter (4 to 5 times) prior to each reading in an area free from potential methane contamination.
3. For Structures with concrete slab-on-grade: Place explosimeter tube beside any penetrations through walls or floors (i.e., floor drains, electrical outlets and switches, wall mounted lights, cracks in slab, etc.) or around floorboard if plumbing and electrical fixtures are not present. Aspirate 5 to 7 times at each location. Purge explosimeter (as above) prior to moving to the next location.
4. For Structures with a crawl space: Conduct testing as described above. In addition, perform testing at the opening for the entrance to the crawl space and any vents or openings for the crawl space. Insert explosimeter 2 to 3 feet into the opening to the crawl space and aspirate 5 to 7 times. Purge explosimeter prior to moving to the next location.
5. Read and record percent methane and percent LEL on a form to be included in the operating record.

As required by the Solid Waste Management Rules, the methane monitoring will be conducted on a minimum quarterly basis.

#### 4.6.5 Reporting Requirements and Response Plan

The results of the measurements of the methane gas monitoring wells will be recorded for each monitoring well and within each facility structure for each sampling event and placed in the operating record. The State regulations require that explosive gases be controlled such that concentrations of gases will be less than 25 percent of the LEL (lower explosive limit) for methane in site structures and less than the LEL for methane in the subgrade at the facility property boundaries.

If methane gas levels exceeding the maximum LEL (25% LEL in site structures and LEL at facility property boundary) are detected, the Lincoln County Landfill personnel shall immediately take all

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necessary steps to protect human health and notify the Division of Solid Waste Management. The steps that should be taken include but are not limited to:

- Evacuate and restrict access to facility structures or exterior areas with high methane levels;
- Prohibit use of equipment and materials that may cause sparks or an open flame;
- Report methane levels to the Landfill Manager;
- Turn off electrical main switch outside of the structure where high methane levels are present;
- Landfill Manager should direct qualified and properly equipped response teams/contractors to locate the source of methane and cap or isolate it.

Within seven days of detecting levels exceeding the maximum LEL, the methane gas levels shall be placed in the operating record with a description of the steps taken to protect human health. Within 60 days of detecting gas levels exceeding the maximum LEL, a remediation plan for the methane gas releases shall be implemented. The plan shall be placed in the operating record, and the Division shall be notified that the plan has been implemented. An extension to the schedules noted above may be granted by the Division if a need for an extension is demonstrated by Lincoln County.

#### 4.6.6 C&D Methane Gas Monitoring Program

Gas monitoring will be performed annually in the groundwater monitoring wells and within on-site manned structures. If methane gas is encountered, surface probing will be performed to determine the extent of gas migration for use in design and installation of a permanent gas monitoring system for on-site facility structures and property boundaries. If the permanent gas monitoring system detects methane above acceptable limits, a remediation plan will be prepared and implemented.

Explosive gases will be controlled such that concentrations of gases will be less than 25 percent of the lower explosive limit (LEL) in site structures and below the LEL of gases in the subgrade at the property boundary.

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#### 4.7 Leachate Management System for MSW Landfill

The maintenance of the leachate management system's physical facilities (consisting of HDPE piping and manholes and leachate storage basin) and records is performed by Mr. John Avery, the on-site landfill operations manager for Lincoln County. Leachate will be sampled semi-annually, concurrent with the groundwater sampling events. Leachate should be sampled for constituents listed in Section .1634 Assessment Monitoring Program of Solid Waste Management, pH, BOD, COD, TDS, phosphate, nitrate, and sulphate. If the County contracts landfill operations to a private company, the contracted operator will be responsible for maintenance of the leachate management system.

##### 4.7.1 Maintenance, Record Keeping and Sampling

Periodic maintenance checks and cleaning shall be performed on the leachate storage basin and equipment as recommended by the manufacturer. The maintenance checks will consist of checking equipment for corrosion, leakage, wear, scale build-up, improper functioning, and any other improper operations. Appropriate measures shall be taken when maintenance checks reveal any equipment is operating in a way other than what is specified by the manufacturer. Scale and sludge build-up on the basin bottoms will also be cleaned at least once annually or as required for proper operations.

The County shall maintain records of the amounts of leachate generated and disposed of at the wastewater treatment facility. The County shall conduct leachate quality sampling for the parameters and frequencies as required by the existing leachate discharge permit. Additional semi-annual leachate quality sampling shall include the same parameters as performed for the groundwater monitoring. This sampling event shall be performed concurrently with the semi-annual groundwater sampling events. The leachate shall be sampled for constituents listed in Section .1634 Assessment Monitoring Program of Solid Waste Management.

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#### 4.7.2 System Design

Leachate by regulatory definition is water that drains through solid waste. A more general definition includes water that contacts or has the potential for contacting solid waste such as precipitation that falls on an open landfill cell. Free liquids originating in a landfill cell are collected in the cell under drain system and conveyed by, gravity flow, through a pipeline to allow for discharge to the leachate storage tanks. The leachate is hauled to a local wastewater treatment plant (WWTP) for treatment. If leachate strengths increase, a future aeration system or mixing system will be added as needed.

The leachate storage tanks have a capacity of 500,000 gallons. Based on the HELP model estimated daily average and peak leachate generation volumes, the leachate storage tanks can accommodate significant holding time or storm surges.

#### 4.7.3 Contingency Plan

Under normal operation, leachate will be pumped at least twice a week. The volume of leachate stored would not be allowed to exceed 250,000 gallons without beginning removal operations. A factor of safety is available in the leachate storage capacity in the event of storm surges. In emergencies, the valve provided at the first manhole exiting the landfill cell can be closed to back up leachate in the landfill. When this occurs, Lincoln County shall notify the State within 24 hours and submit a written report to the State within three days that provides the reason for the occurrence.

In the event of extreme operational conditions requiring the temporary shutdown of the leachate storage basin, a contingency plan shall be used. The plan shall be implemented in the case of repairs or maintenance required for the tanks and the leachate pipeline between the landfill cell and leachate storage tanks. The leachate shall be pumped to the local WWTP. The valve provided at the first manhole exiting the landfill cell shall be closed to back up the leachate in the landfill. If the pipeline between the cell and storage basin requires repairs, the leachate can be pumped and hauled from one of the header cleanouts along the basin berm.



**NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES**

**DIVISION OF WASTE MANAGEMENT  
FACILITY PERMIT NO: 55-03**

Part 2-Permit to Operate  
Date of Original Issue: September 23, 1988  
Date of Permit Renewal: April 5, 1999  
Date of Permit Modification: March 21, 2000  
Page 1

**JAMES B. HUNT JR.  
GOVERNOR**

**BILL HOLMAN  
SECRETARY**

**WILLIAM L. MEYER  
DIRECTOR**

**STATE OF NORTH CAROLINA  
DEPARTMENT OF ENVIRONMENT  
AND NATURAL RESOURCES  
DIVISION OF WASTE MANAGEMENT  
MUNICIPAL SOLID WASTE LANDFILL  
FACILITY PERMIT**

**[REDACTED] COUNTY**  
has applied for a permit to operate a  
**MUNICIPAL SOLID WASTE LANDFILL FACILITY,**  
**PHASE 1, and PHASE 2**

located on S.R. 1169, near Crouse, Lincoln 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. The facility is located and described by the legal description of the site or the property map contained within the approved application.

James C. Coffey, Supervisor  
Permitting Branch  
Solid Waste Section



1646 MAIL SERVICE CENTER, RALEIGH, NORTH CAROLINA 27699-1646  
401 OBERLIN ROAD, SUITE 150, RALEIGH, NC 27605  
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## ATTACHMENT 2

### PART I:

#### GENERAL FACILITY CONDITIONS

1. This condition not used.
2. This permit approves the Facility Plan which, in accordance with 15 NCAC 13B .1619, defines the comprehensive development of the facility including the total municipal solid waste landfill capacity, the municipal solid waste stream, all onsite solid waste management facilities and related facility infrastructure.

The approved plans are described in Attachment 1, "Approved Documents", Where discrepancies may exist, the most recent approved submittal and Conditions of Permit shall govern.

3. This facility has an anticipated gross total municipal solid waste disposal capacity in lined municipal solid waste landfill cells of approximately 5,315,00 cubic yards consistent with the approved final contours, which will be developed in construction phases of five years each. Development of Phase II, will be in accordance with the Division approved plans.
4. The landfill is permitted to receive solid waste generated by and in Lincoln County, North Carolina consistent with the local government waste management plan(s), and as defined in 15A NCAC 13B .0101(36), except where prohibited by North Carolina General Statutes Article 9 of Chapter 130A, and rules adopted by the Commission for Health Services. The owner or operator of the landfill facility shall not knowingly dispose of municipal solid waste that is generated within the boundaries of a unit of local government that by ordinance:
  - (a) Prohibits generators or collectors of municipal solid waste from disposing of that type or form of municipal solid waste.
  - (b) Requires generators or collectors of municipal solid waste to recycle that type or form of municipal solid waste.
5. This facility is subject to the requirements of all applicable sections of the most recent version of the North Carolina Solid Waste Management Rules, 15A NCAC 13B and the specific conditions contained herein.
6. This facility shall conform to the specific conditions set forth in this permit and the provisions of 15A NCAC 13B .1604(b)(2).
7. This facility permit is issued under the criteria set forth in 15A NCAC 13B.1603(a)(5). Any facility changes that effect the criteria established in 15A NCAC 13B.1603(a)(1) may require a new permit.

*New permit*

Facility Plan  
Lincoln County Landfill

S&ME Job No. 1356-97-285  
Revised October 10, 1997

### 2.3 Service Area

Lincoln County anticipates that the waste stream for the landfill expansion will be generated from residents, agricultural facilities, commercial businesses, and industrial facilities within the State of North Carolina.

### 2.4 Procedures for Segregated Management

The general waste stream currently accepted at the Lincoln County Landfill facility includes household waste, commercial solid waste, and industrial solid waste as defined in Section 2.1 above. This waste stream enters the landfill at the scales and scale house, is weighed and routed directly to the landfill disposal area.

The County has a screening program at the facility for detecting and preventing disposal of hazardous and liquid waste. The program consists of random inspections of incoming loads. The inspections will be performed on a weekly basis (minimum) for the various commercial and industrial waste haulers. The selection of the vehicle that will have its load inspected shall be the responsibility of the Operations Manager. The selection will be made at the scales. The hauler shall be required to sign a Pre-Acceptance Agreement (after being completed by Scale Technician). The Operations Manager shall notify the landfill facility's "Screening Inspector" (chosen by Operations Manager and adequately trained) to meet the designated hauler at an area specifically set aside for conducting screening inspections (preferably on a level solid ground, pavement or concrete pad) away from the working face and any on-going landfill operations. The hauler shall dump the load of waste on the pad. Then the Screening Inspector shall "sort" through the waste using a loader or other similar equipment for bulky materials and hand rake or shovel. Once the waste is spread thin enough to observe the entire load, the inspector will record the information required on the Detailed Screening Report and Waste Screening Checklist. If liquid or hazardous

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located generally coincide with streams tributary to Indian Creek. Area "E" is an active landfill at the northwest end of the site. Area "D" is the lined cell proposed to accept waste beginning October 9, 1993. This report concerns the Phase I construction of Area "D".

A boundary survey of the approximately 200 acres that constitute the existing approved landfill site was done by others and was submitted in the Site Plan Application. Drawing 1 of the Phase I construction plans (submitted in previous correspondence) shows the property boundaries and other information obtained by the survey.

## 1.2 Utilization and Operation

The new lined cell will be utilized primarily by residents, businesses and industries in the county. The landfill currently receives an estimated 130 tons of municipal solid waste per day. The rate of loading might be reduced if other waste management facilities are put into operation or if additional recycling programs are implemented. Area "D" consists of approximately 23 acres; approximately 40 acres were disturbed during earthmoving operations for Phase I (see Grading Plan (A) and Grading Plan (B), Drawings Nos. 2 and 3 of the construction plans). The design capacity of the entire Area 'D' cell is approximately 0.81 million cubic yards. It is expected that landfill compactors, scrapers, bulldozers and other equipment will be used to maintain the site as required. Mr. John Avery, Solid Waste Director for Lincoln County will be responsible for the overall operation and maintenance of the landfill.