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Solid Waste Section
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**WATAUGA COUNTY
SOLID WASTE PROGRAM
OPERATIONS MANUAL**

PERMIT 95-03T

Prepared for:

**North Carolina
Department of Environmental and Natural Resources
Solid Waste Division
Winston-Salem Regional Office**

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TABLE OF CONTENTS

SECTION 1 INTRODUCTION	1
SECTION 2 ORGANIZATION	2
SECTION 3 RESOURCES	3
SECTION 4 EXISTING OPERATIONS	4
4.1 Public Convenience Center (Waste Collection Facility)	6
4.2 Scales and Scale House.....	7
4.3 Recycling Center.....	8
4.4 Transfer Station.....	11
4.5 Land Clearing and Inert Debris (LCID) landfill	15
4.6 Household Hazardous Waste Operation	22
4.7 Mulching Operations	23
4.8 Swap Shop	24
4.9 Maintenance Facility.....	25
4.10 Erosion Control.....	26
4.11 Post Closure Activities.....	28
4.12 Animal Shelter	30
4.13 Off-Site Public Convenience Centers	30

APPENDICES

Appendix 1	Overall Site Map
Appendix 2	Operations Summary Forms
Appendix 3	Conceptual Layout of Maintenance Facility
Appendix 4	Conceptual Layout of Transfer Station
Appendix 5	Inspection Form for Transfer Station
Appendix 6	Inspection Form for Post Closure Maintenance
Appendix 7	Waste Screening Plan for Transfer Station
Appendix 8	Inspection Checklist for the LCID Landfill
Appendix 9	Emergency Contingency Plan for the LCID Landfill
Appendix 10	Permit to Operate

SECTION 1 INTRODUCTION

The Watauga County Solid Waste Program consists of numerous activities housed on property owned by the County and originally permitted for sanitary and demolition landfill operations. Figure 1 indicates the location of the property. The property consists of approximately 159 acres, of which approximately 35 acres are used or have been used for solid waste management. In 1990, a municipal solid waste (MSW) baling facility was constructed for use in conjunction with the sanitary landfill operations. The original sanitary and demolition landfills were closed in 1994 and 1998 respectively, per the North Carolina Department of Environment and Natural Resources (DENR) regulations, and the baling facility modified to a transfer station/recycling facility in 1994. A new transfer station was constructed on site and became operational in 2005. The previous transfer station/recycling building continues to be used as a Recycling Center. Watauga County is finalizing the approval for operation of a Household Hazardous Waste (HHW) facility.

At this time the following programs are in operation at the site:

- Transfer station;
- Empty transfer trailer storage;
- Full transfer trailer storage;
- Recycling at the original baling facility (including paper, cardboard, scrap metal, white goods, cans, tires, batteries, and electronics);
- Land clearing and inert debris (LCID) landfill;
- Yard / Wood waste collection, and grinding / mulching / screening operations (Processing and Treatment facility permit received);
- Convenience center (waste disposal and recycling);
- Weigh station;
- Swap shop;
- Equipment maintenance shop (including waste oil and oil filters recycling). New facility became operational in January 2005. Old facility being used for storage and will ultimately be demolished;
- Animal Shelter;
- Animal Burial.

The purpose of the following operations manual is to provide an overview of each solid waste activity and to describe the operational criteria for each program.

The manual will serve as a tool for the Operations Manager to assure that compliance with DENR regulations is maintained and that the operations are safe and consistent. The goal of the County is to continue to operate a comprehensive and effective solid waste program, which will serve the County into the future.

SECTION 2 ORGANIZATION

The solid waste program for Watauga County is operated as an enterprise fund. This means that the program must be, or work toward being, self-sufficient without need for money from the general fund of the County. The program has not yet achieved total financial independence from the County's budget but is moving rapidly in that direction. Because of the financial requirements for independence, the operations are conducted as a business and all activities continuously assessed for efficiency and cost effectiveness. The program is organized as follows:

1. The Board of Commissioners has ultimate control of all activities and makes the final decisions on all appropriated funding. They approve the program budget, approve all major expenditures including equipment and disposal contracts and all bid awards. In addition, they can evaluate personnel and make changes as necessary although they leave this role primarily up to the County Manager and Operations Manager. The Board is not involved in day-to-day decisions.

The Board is contacted through the County Manager.

2. The County Manager works for the Board of Commissioners and provides them with the necessary information for their decisions. The County Manager oversees the Operations Manager and evaluates all operational requests prior to taking the request to the Board. The County Manager may be involved in day-to-day decisions of the operations but defers to the Operations Manager.

The County Manager can be reached at 1-828-265-8000

3. The Operations Manager works for the Board of Commissioners and answers directly to the County Manager. The Operations Manager oversees daily operations of the solid waste management program, oversees collection of the waste from the County's convenience sites, makes recommendations on annual budget, bid packages, tipping fees, hires and evaluates the operating personnel, evaluates and recommends equipment purchases, works with engineering consultants, maintains compliance with State regulations and develops new programs as directed by the Board. In addition, the Operations Manager may be trained to operate equipment and/or to repair equipment. This individual is involved in all day-to-day decisions.

The Operations Manager can be reached at 1-828-264-5305

SECTION 3 RESOURCES

Currently the Solid Waste Program includes 15 employees in the following categories:

- Operations Manager (1)
- Scale House Clerks (2)
- Equipment Operators (9)
- Recycling Coordinator (1)
- Laborers (1)

Equipment owned by the County for managing waste is described throughout the Operations Manual.

SECTION 4 EXISTING OPERATIONS

The County currently receives an average of 250 tons per day of municipal solid waste (MSW) with peaks that have exceeded 300 tons per day. The County's solid waste program currently consists of the following operations located at the landfill site. The locations of these operations are identified on the drawing entitled "Overall Site Map", included in Appendix 1. In addition, Appendix 2 contains operational summary forms for each of the activities briefly described below. These forms can be readily updated as activities change.

Overall the following wastes are handled at the facilities indicated:

TABLE 1
Summary of Facilities for
Primary Waste Disposal Activities

FACILITY	PRIMARY WASTE MATERIALS	REPORT SECTION NO.
Transfer Station	<ul style="list-style-type: none"> • Municipal Solid Waste • Commercial Waste • Institutional Waste • Construction Debris • Other materials as approved by County and DENR 	Section 4.4
Recycling Center	<ul style="list-style-type: none"> • Cardboard/pasteboard • Mixed paper • Newspaper • Aluminum/steel cans • Electronics • Plastics • Tires • Car Batteries • Used Oil • Scrap Metal / White Goods • Compact fluorescent bulbs 	Section 4.3
Public Convenience Center	<ul style="list-style-type: none"> • Bagged residential waste • Cardboard/pasteboard • Mixed paper • Newspaper • Aluminum/steel cans • Glass • Plastics • Compact fluorescent bulbs • Household Batteries 	Section 4.1

FACILITY	PRIMARY WASTE MATERIALS	REPORT SECTION NO.
Land Clearing and Inert Debris Landfill	Land Clearing Waste <ul style="list-style-type: none"> • Stumps/ Brush • Trees • Limbs • Pallets • Grass • Other naturally occurring vegetative material • Inert Debris • Concrete • Brick • Concrete Block • Uncontaminated Soil • Gravel and Rock 	Section 4.5
Household Hazardous Waste Facility (Future)	<ul style="list-style-type: none"> • Paint • Stains/varnishes • Aerosols • Mercury items • Chemicals • Cleaners • Used motor oil • Cooking oil • Batteries • Pesticides • Lab packs 	Section 4.6
Mulch Operations	<ul style="list-style-type: none"> • Yard Waste/ pallets • Untreated / Unpainted Wood 	Section 4.7
Swap Shop	Reusable Items	Section 4.8

4.1 Public Convenience Center (Waste Collection Facility)

A waste collection facility is located on the property near the scales and Scale House for use by the general public. In 2005 the location of this facility was moved from the south side of the entrance road to the north side of the road to provide more space and a better traffic pattern. Only bagged residential waste and appropriately segregated recyclables are accepted. The following recyclable materials are collected: cardboard/pasteboard, mixed paper, newspaper, glass, plastics, aluminum and steel cans, household batteries, and compact fluorescent bulbs. The facility has been operational for 24 years. The access to the convenience center is shared with other solid waste traffic including garbage trucks and transfer trailers en route to the transfer station or other disposal facilities. The facility consists of the following collection containers:

- 1 – 28 yd recycling roll-off;
- 1 – 40 yard cardboard roll-off;
- 1 – 30 yd plastic collection container;
- 21 – 8 yd dumpsters (for solid waste);
- 1 – pasteboard container;

The hours of operation are:

Day of Week	Winter Hours	Summer Hours
Monday – Friday	6:30 AM – 6:00 PM	6:30 AM – 7:00 PM
Saturday	8:00 AM – 6:00 PM	8:00 AM – 7:00 PM
Sunday	1:00 PM- 5:00PM	1:00PM – 5:00PM

The site has a full time attendant who visually inspects waste as it is dropped off by County residents. Any unauthorized waste is segregated and handled by the County. The dumpsters are emptied daily. The recycling bins are emptied two times a week.

The site is secured by a fenced enclosure and locked gate at night.

The most important aspects of this operation include:

- Visual inspection of the waste material as it is dumped by citizens to assure that unacceptable waste is not placed in containers.
- Visual inspection of the recyclables to reduce contamination of the loads.
- Enforcement of allowable users (i.e. commercial haulers are not permitted to use the site.)
- Implementation of good housekeeping practices to eliminate the potential for windblown waste, spills, unsafe or unsightly conditions, overfilled containers, contamination of recycle collection containers.
- Enforcement of the no scavenging rules.

4.2 Scales and Scale House

The Scale House currently houses four people: the Operations Manager, the Administrative Assistant and two Office Clerks. The scales were manufactured by Cardinal and installed in 2008. They are 70 feet in length. The transfer station has its own scales, the transfer trailers should not need to cross the office scales on a routine basis. Traffic across the scales is routed in a single direction. Trucks, which must weigh on the way out, must loop back into line to cross the scales.

The hours of operation are:

Day of Week	Winter Hours	Summer Hours
Monday – Friday	8:00 AM – 4:00 PM	Same
Saturday	8:00 AM – 12:00 PM	Same
Sunday	Closed	Closed

The Scale House Attendant directs traffic to the appropriate facility. The Scale House Attendant also visually checks for unauthorized waste and redirects the generator/hauler as appropriate. Hazardous waste and liquids are not accepted. The Operations Manager is contacted if there are any questions relative to the acceptability of a waste material. In addition to weighing the vehicles, screening the waste and answering the public's questions, the personnel in the Scale House are responsible for the monthly billing, and for record keeping for the various operations at the site.

The site is secured at night by the entrance gate and locks on the doors.

Important aspects of this operation include:

- Accurate weighing of incoming and outgoing vehicles through proper maintenance of scales and computers;
- Provision of clear directions on where waste materials must be taken;
- Accurate record keeping;
- Enforcement of rules;
- Policing the scales to collect litter;
- Response to questions from the public.

4.3 Recycling Center

4.3.1 General

The County operates a Recycling Center, which includes collection and storage of recyclables and baling of certain materials. Materials collected from the convenience centers or as delivered by citizens or businesses are processed at the Recycling Center. The baler is used for baling cardboard, newspaper, plastic, aluminum and steel cans. The loose material is stored on the west side of the building or in trailers, then loaded into the baler when time allows.

Recyclable material is delivered by commercial, private and public vehicles, which are directed to the proper areas. Cardboard is delivered directly to the Recycling Center, dumped on the floor and baled. The bales are then moved off the floor and into a storage trailer. Cans, newspaper and plastic are hauled in roll-offs to the Recycling Center where they are baled. Newspaper and plastic are baled directly. Cans are sorted mechanically then baled. Glass is dumped into bunkers, separated by color, and hauled off-site to be processed.

A Recycling Technician separates waste from the recycling. The rejected material is collected in a roll-off container and transported to the transfer station.

For recycling, the County has a forklift, skid steer loader, mini loader, track hoe, tractor, trailers and baler.

The hours of operation are:

Day of Week	Winter Hours	Summer Hours
Monday – Friday	8:00 AM – 4:00 PM	Same
Saturday	8:00 AM – 12:00 PM	Same
Sunday	Closed	Closed

The Recycling Center is secured each night by closing and locking the gate at the Scale House and by closing and locking the doors.

Important aspects of the Recycling Center include:

- Pre-screening of recyclables to assure that contamination is minimized;
- Proper handling and storage of materials to assure that the requirements of the receiving company are met;
- Proper handling and storage of materials to minimize fire hazards;
- Safe operation of baler;

- Good housekeeping practices including clean-up at end of processing period both at tipping floor, baler, and loading area; maintenance of baler; maintenance of storage trailers;
- Marketing of materials;
- Educating the public regarding materials accepted;
- Timely removal of materials to processor.

The Recycling Center building was used as a transfer station building until 2005 when the new transfer station building was completed. The transfer station operations were adequate but cramped and inefficient. Although a new building is used for ongoing transfer station operations, the loading area and wall have been retained at what is now the Recycling Center building and the building will be used temporarily as a transfer station in emergency situations, if the necessity arises.

4.3.2 Battery Recycling

This facility also receives auto batteries for recycling but only those brought in by citizens. The County does not accept batteries from the commercial sector. The batteries are stored in the Recycling Center out of the way of the other operations. When there are 50± batteries stored, the collection company is called and the batteries taken away to a processing facility.

4.3.3 White Good and Scrap Metal Recycling

White goods and scrap metals are collected at the Recycling Center for recycling. The white goods are stockpiled in the location indicated on the drawing in Appendix 1 until the CFCs can be removed. The County has a private contractor who comes in to remove the CFCs. Once the CFCs are removed, the white goods are placed in open top trailers for transportation to the processing facility. Scrap metal is loaded directly into the trailers upon delivery to the facility or stockpiled near the trailers for later loading. The County observes the scrap metal upon delivery to assure that there are no gas tanks, propane tanks, etc. in the load, which could create a dangerous or unsafe condition. These materials are not accepted and if delivered must be removed by the hauler.

Important aspects of this operation include:

- Pre-screening of materials to eliminate potential contaminants or unacceptable materials;
- Removal of CFCs from refrigerators;
- Proper storage until CFCs can be removed;
- Safe storage e.g. doors removed from refrigerators, etc.;
- Good housekeeping practices to make sure that materials do not pile up and become a safety hazard or unsightly problem;
- Timely transport of materials to processor.

4.3.4 Tire Collection

Tires are collected at the Recycling Center and placed in trailers for transport. Tires are not allowed to be piled outside of the trailers except under emergency conditions. Once a trailer is full, it is shipped to the processor.

Important aspects of this operation include:

- Pre-screening of materials to eliminate potential contaminants or unacceptable materials
- Safe storage
- Good housekeeping practices to make sure that materials do not pile up and become a safety hazard or unsightly problem
- Timely transport of materials to processor

4.3.5 Used Oil

Used oil in 1-2 gallon increments is collected at the Recycling Center in a collection tank. Waste oil is only accepted from citizens. The County does not collect waste oil from the commercial sector. Periodically the tank is pumped by a qualified vendor.

4.3.6 Abandoned Manufactured Homes

The County plans to identify abandoned manufactured homes upon request of the homeowner only. A list of abandoned manufactured homes will be available at the Department of Planning & Inspections. The number of homes to be deconstructed will be determined by the amount of funding that is available from the Abandoned Manufactured Homes Grant Program.

The County will hire a licensed and insured contractor to deconstruct the manufactured homes at the home site. Roll-off containers will be delivered to the home site by the County where the Contractor will separate the materials into the containers. The County will pick up the containers. Solid waste materials will be delivered by the County either to a permitted solid waste landfill or to the transfer station. All recyclables will be removed by the contractor and placed in separate roll-off containers to be hauled by County employees to the recycling facility.

If the County receives a mobile home at the facility that has not been deconstructed and if sufficient space is available (the County can only handle one at a time), the County will direct the mobile home to the Recycling Center to be properly deconstructed, separated and disposed of, or transferred.

4.3.7 Thermostats

The County will manage the mercury-containing thermostats at the Hazardous Household Waste (HHW) facility in a way that prevents releases of any universal waste or components to the environment. Thermostat switches will not be disassembled, only removed from units and placed in a container that will be closed, structurally sound and lacking evidence of leakage, spillage or damage. A mercury clean-up system will be readily available to immediately transfer any mercury resulting from spills or leaks. Employees removing thermostats will be thoroughly familiarized with proper waste mercury handling and emergency procedures. Containers with universal mercury-containing thermostats will be labeled and marked clearly "Used Mercury Thermostats". Mercury-containing material will be hauled off by a licensed, insured contractor.

4.3.8 Electronics

Watauga County accepts all types of electronics for recycling at the Recycling Center including computers and all computer accessories, hard drives, monitors, laptops, televisions, VCR/DVD players, phones, (home and cell), fax machines, copiers, etc. The electronics are stacked and wrapped on pallets and loaded on a staged trailer. Full trailer loads are picked up by a licensed, insured contractor on a quarterly basis and transported to a pre-qualified location, where they are disassembled and all components are recycled.

4.4 Transfer Station

Watauga County constructed a new 14,000 sf transfer station, which went on line in 2005. The operations in the previous building, which is now used as the Recycling Center building, were adequate but cramped and inefficient. The Recycling Center building can still be used temporarily for transfer station operations in emergency situations, if the necessity arises. The layout of the new facility is provided in Appendix 4. The new transfer station is configured to allow the waste to be pushed directly into a loading hopper and into the haul trailer.

This has eliminated the problems and inefficiencies with the previous system where the waste was lifted over a 6' high wall. In addition, the new facility segregates the residential traffic from the larger commercial and public haulers. This has improved the safety of the delivery system. With the new configuration, the facility is able to handle peak periods more effectively and is able to meet the needs of the County for the future. The floor is washed at the end of each day and other housekeeping chores completed.

The additional size of the facility has improved the handling and waste screening activities. The facility is positioned such that the open doors are on the opposite side from the prevailing wind. Windblown waste in the transfer station is minimal. The transfer truck loading bay is equipped with doors to minimize windblown litter as it is dropped into the hopper. The facility is policed diligently to contain the litter.

The office provided at the transfer station is located and designed to give the Operators full visibility of the operations at all times. This enhances the waste screening process.

The tipping floor has a trench drain system for collecting fluids that may discharge from the delivery vehicles and for collecting the washdown water. There are also trench drains in the trailer loading bay to collect washdown water. Washdown waters and fluids from the delivery vehicles pass through an oil water separator and grit chamber prior to discharge into the sanitary sewer system.

Materials that are accepted at the facility include the following:

- Commercial waste;
- Construction waste;
- Debris;
- Demolition waste;
- Discarded material;
- Garbage;
- Household waste;
- Industrial waste as approved by the County and disposal facility;
- Institutional waste except anatomical waste from health care facilities or infectious waste as specified in Regulated Medical Waste Regulations;
- Municipal solid waste;
- Putrescible waste including occasional animal carcasses.(small and large);
- Refuse;
- Residential waste;
- Rubbish;
- Scrap metal;
- Trash;
- Specific wastes as approved by the DENR and disposal facility.

Materials that are not accepted at the facility include:

- Bulk or non-containerized liquid (household liquids are exempt);
- Regulated hazardous wastes;
- Solid wastes, residues, or soils containing Dioxins;
- Solid wastes, residues, or soils containing PCBs;
- Sludges unless special approval is received;
- Pesticide containers that have not been triple rinsed and crushed;

- Drums that are not empty, properly cleaned, and opened;
- Used Oil;
- Contaminated soil;
- Regulated medical waste;
- Friable and non-friable asbestos;
- Radioactive wastes;
- Lead acid batteries;
- Propane tanks;
- Gas tanks;
- 55 gallon drums;
- Plastics #(1-7 & rigid);
- White Goods;
- Aluminum cans;
- Whole scrap tires;
- Antifreeze;
- Motor vehicle oil filters;
- Wooden pallets;
- Oyster shells (at discretion of receiving disposal facility);
- Computer Equipment;
- Discarded televisions;

Waste that is acceptable, but which is not to be disposed of, but directed to one of the other facilities on site includes:

- Yard waste, which should go to the mulch operations or LCID landfill;
- Inert debris, which should go to the LCID landfill;
- Untreated wood, which should go to the LCID landfill or mulch operations;
- Lead-acid batteries, which should go to the Recycling Center;
- Waste oil, which should go to the Recycling Center;
- White goods or tires, which should go to the Recycling Center;
- Abandoned manufactured homes, which should go to the Recycling Center;
- Mercury-containing thermostats, which should go to the Household Hazardous Waste facility;
- Household Hazardous Waste, which should go to the Household Hazardous Waste building.

All employees are instructed in the identification of acceptable and non-acceptable wastes.

Waste is delivered to the facility by a variety of collection vehicles ranging from the top loading County collection trucks, to roll-offs, to private citizens in pickup trucks. Waste is tipped onto the tipping floor, visually inspected and then pushed into the receiving trailers. The permit prohibits waste on the tipping floor after operating hours.

As waste is delivered and dumped on the tipping floor, the Operator has the opportunity to screen the waste for unacceptable materials. Appendix 7 provides the information included in the waste screening plan.

Unacceptable materials are either removed for later handling, or isolated until a preliminary identification of the waste and its source can be made. Screening is critical at this stage because the receiving facility can reject a full trailer for disposal if they have reason to suspect the presence of hazardous or unacceptable wastes. This would create an expensive handling situation for the County as the entire contents of the trailer could require redirection to a hazardous waste disposal facility. The tipping floor is the best place for screening as fluids can be contained and windblown debris minimized. In evaluating the potential hazards of a waste, the following criteria are used and are listed from first priority to last priority. The Operator should check as follows for:

- Visible labels;
- Strong or irritating odors;
- Noisy reactions or visible fumes;
- Fine metal particles, grindings, shavings;
- Presence of moist or unusual looking soil;
- Liquid saturated waste or liquid in containers;
- Bulk liquids, slimes or sludges.

Any of these items could indicate a hazardous material and the Operator should isolate the material, then contact the Operations Manager who will determine the next step. At no time should the Operator handle the material without protective clothing, eye protection, gloves and other protective gear. Only personnel trained in hazardous materials response should handle suspicious materials.

Fluids from the delivery vehicles and from wash down are collected in the building floor drain system and discharged into an oil water separator, which discharges into the sanitary sewer system.

The hours of operation are:

Day of Week	Winter Hours	Summer Hours
Monday – Friday	8:00 AM – 4:00 PM	Same
Saturday	8:00 AM – 12:00 PM	Same
Sunday	Closed	Closed

The facility is secured at night via the locked gate and locked doors of the station.

Monthly the facility is inspected.

Record keeping includes:

- Log of daily events
- Accident, damage or incident reports
- Unacceptable waste reports and waste screening log
- Weigh records
- Maintenance logs
- Personnel records
- Inspection logs

Important aspects of this operation include:

- Waste screening;
- Good housekeeping practices, which include removal of waste from floor at night, washdown of floor, cleanup of trailer loading area;
- Safety;
- Enforcement of rules;
- Maximizing waste tonnage on trailers without exceeding allowable road weight;
- Maintenance of scales;

4.5 Land Clearing and Inert Debris (LCID) Landfill (the Facility)

In 1998 Watauga County closed their demolition landfill that was permitted to handle a wide variety of materials, and constructed an LCID landfill to handle a portion of the demolition waste. Because the disposal area was less than 2 acres, the facility did not need a formal permit from DENR. On June 15, 2011 DENR issued to Watauga County Permit No 95-02 for a proposed expansion that would result in a disposal area exceeding 2 acres. The June 15, 2011 Permit to Operate and Permit to Construct are included as Attachment 10 to this Operations Manual. Operational components of the February 7, 2011 permit application and February 8, 2011 Technical Review comment letter by DENR are included in this section of the Operations Manual so that this Operations Manual meets Rule .0566 of 15A NCAC 13B. Should operations described in this section change, this section will be updated. Should a new Permit to Operate be issued by DENR, the permit should be included in Appendix 10.

Land clearing waste is defined as waste which is generated solely from land clearing activities such as stumps, trees, limbs, brush, grass and other naturally occurring vegetative material. Inert debris is defined as material consisting of concrete, brick, concrete block, uncontaminated soil, gravel and rock. Both can be handled in an LCID landfill. In addition, untreated, unpainted wood such as pallets can be accepted. Other demolition materials once accepted by the County must now be handled through the Recycling Center or transported directly by the generator to a permitted disposal facility.

Although the LCID facility cannot accept the same waste materials as the demolition landfill once did, it is still an important service for the residents of the County. Without this facility, more waste materials would need to be delivered to the transfer facility and hauled off site, at great expense.

The facility receives mostly inert debris as the woody vegetative material is handled by the mulching operation. Material is delivered by commercial and private haulers who must pass over the facility scales. If the material is found to be acceptable through discussion of its origination and a surficial visual inspection, it is delivered to the LCID landfill and dumped at the location indicated by the Operator. The County then pushes the material into position in the landfill and periodically covers the waste with 4 – 6 inches of dirt. As the material is being pushed into place an additional inspection of the waste is made to assure that unacceptable waste is not included in the materials. If unacceptable material is found, it is segregated from the acceptable waste and later removed from the area to the transfer station or other acceptable handling facility.

4.5.1 Personnel

An Operator is assigned to handle LCID waste at the Facility as part of his duties at the Facility. This Operator is not stationed at the LCID site on a full-time basis as waste materials are delivered sporadically. When LCID materials are processed through the Scale House, an Operator is notified to travel to the LCID site to oversee the unloading.

Training is available for employees from many sources. Solid waste trade and professional associations sponsor seminars and training at low or no cost. One such training seminar is the Manager of Landfill Operations program conducted by the Solid Waste Association of North America (SWANA). Watauga County participates in this program and enters key personnel for certification.

The American Red Cross, Fire Department and National Safety Council can provide first aid, fire and vehicle safety information. Equipment manufacturers are a source of information on equipment operation.

New and current employees are expected to be cross-trained on all aspects of the operation of the Watauga County facility. As such, personnel are given classes concerning the various operations, vehicles, equipment and software packages utilized by the Facility.

4.5.2 Site Access

The Watauga County LCID landfill accepts waste during these hours of operation:

Day of Week	Winter Hours	Summer Hours
Monday – Friday	8:00 AM – 4:00 PM	Same
Saturday	8:00 AM – 12:00 PM	Same
Sunday	Closed	Closed

All traffic for the facility crosses the scales at the entrance to the Facility. The Scale House Attendant directs traffic to the appropriate facility on the site.

The access road will be graded and graveled as necessary to minimize safety concerns, minimize dust and to minimize mud tracked onto the main landfill road. A gravel-surfaced area is currently maintained at the LCID area for off-loading during inclement weather. The area will be resurfaced and maintained periodically as required.

Signs identifying the Owner and Operator, listing acceptable materials, and providing emergency phone numbers are placed at the entrance to the site before the scales.

The site is secured at night by the entrance gate.

4.5.3 Filling Operation

After material is unloaded by the customer, the Operator will push the material into position in the landfill. As the material is being pushed into place, an additional inspection of the waste will be made to assure that unacceptable waste is not included in the materials. If unacceptable material is found, it will be segregated from the acceptable waste and removed from the area to the transfer station or other acceptable handling facility. The material will be covered with periodic cover on an as-needed basis.

The working face of the LCID landfill shall be restricted to the smallest possible area feasible, and compacted as densely as practical into the landfill cell.

At a minimum, adequate soil cover shall be applied monthly, or when the active area reaches one acre in size, whichever occurs first.

The nature of the waste disposed at the LCID landfill is inert and nonputrescible. As such, leachate generation is not expected. When applicable, leachate shall be properly managed through the use and maintenance of best management practices for stormwater control. Stone filters similar to those used in sediment traps will be installed at locations where runoff leaves the LCID cells. The sediment basin collects all drainage from the LCID area before it leaves the property.

4.5.4 Waste Handling

The facility receives mostly inert debris as the woody vegetative material is handled by the mulching operation. Material is delivered by commercial and private haulers who must pass over the facility scales.

The Facility shall only accept the solid wastes that it is permitted to receive. All LCID landfill traffic must cross the Facility scales. The Scale House Attendant visually checks for unauthorized waste and redirects the generator/hauler as appropriate. Hazardous waste and liquids are not accepted. If the material is found to be acceptable through discussion of its origination and a visual inspection, it is delivered to the landfill and dumped at the location indicated through signage and/or by the Operator. The list of wastes accepted at the LCID landfill is as follows:

- stumps;
- trees;
- limbs;
- brush;
- other, naturally occurring vegetative material;
- concrete;
- brick;
- concrete block;
- uncontaminated soil;
- asphalt;
- gravel;
- rock;
- untreated, unpainted wood such as pallets.

4.5.5 Compaction and Cover

The County will push the material into position in the landfill and compact to the greatest extent possible. Adequate soil cover shall be applied monthly, or when the active area reaches one acre in size, whichever occurs first. The working face of the landfill will be kept as small as possible and compacted as densely as practical to minimize erosion control issues and maximize landfill capacity.

4.5.6 Equipment

A dozer and a loader are assigned to the facility for movement and compaction of waste materials and placement/spreading of cover soil. A tracked excavator is sometimes used for moving material. Additional vehicles available for use in landfill operations include a backup loader, recycling truck and trash truck.

4.5.7 Open Burning

Open burning is not permitted at the Watauga County Solid Waste Management Facility.

4.5.8 Placement of Waste in State Waters

Deposits of solid wastes, windblown wastes, leachate, or other sources of waste contamination in State waters are strictly prohibited.

4.5.9 Safety

A copy of the Emergency Contingency Plan, which describes the safety precautions in place at the Watauga County LCID landfill can be found in Appendix 9.

4.5.10 Inspection Plan

Periodically, the Operations Manager should evaluate the overall landfill operations. A monthly evaluation of the general site conditions should look for problems with routine operations. A checklist is included in Appendix 8. Any deficiencies can be incorporated into a "punch list" for further action. Items appearing for more than two months should trigger a more detailed look at that portion of the operation. Twice yearly, the landfill should be evaluated in detail. After the evaluation, a plan to correct any deficiencies should be developed.

The Operator checks the site frequently for signs of erosion and repairs/modifies the operations accordingly. Erosion control measures are described in section 4.10 of this manual.

In addition, other items should be inspected regularly. These include:

1. Security Control Devices

The security control devices include the gate and lock at the entrance and the fence surrounding the facility. The gate and lock should be inspected daily, the fence surrounding the facility quarterly. Any damage that would interfere with the function of the devices should be immediately corrected.

2. Safety and Emergency Equipment

Safety equipment includes the following:

- Hand-Held Fire Extinguishers: inspected monthly,
- First Aid Kits: inspected quarterly for dated or contaminated products, and
- Communications Systems: checked daily.

3. Incoming Wastes

The Scalehouse Attendant shall check incoming LCID loads for any unacceptable wastes. Those not permitted into the LCID landfill will be turned away or directed to the Transfer Station. If the Scale Clerk does not recognize the hauler, the load will be visually inspected if possible before the vehicle is allowed onto the facility. Enclosed containers cannot be inspected at the scalehouse. The scalehouse attendant will contact the Operator before releasing load to the working face. These shall be checked at the working face of the LCID landfill.

Even though there are wastes which are prohibited at the landfill and the prohibition is posted at the entrance, some small quantities of prohibited waste may unknowingly get into the LCID landfill. The personnel working at the scalehouse and the Operator should be aware of the more common items they might find and how to handle those items. The items shall be removed from the working face, if found.

Waste will consist of only those materials that are considered acceptable for an LCID facility. Wastes will come from businesses and private citizens from within Watauga County only.

4.5.11 Groundwater Monitoring System

Because of the inert, non-putrescible nature of the materials received at the LCID landfill, it is not anticipated the LCID landfill will have an impact on the site groundwater. While not specific to the operation of the LCID landfill, the LCID landfill is within a Solid Waste Management Facility which is covered by a Groundwater Monitoring System.

4.5.12 Gas Collection and Monitoring Systems

Because of the inert, non-putrescible nature of the materials received at the LCID landfill, gas collection and monitoring is not believed to be necessary at the LCID landfill at this time. A two-stage approach to landfill gas monitoring is believed to be the appropriate way to proceed.

Stage 1 consists of a probe installed in the LCID waste approximately six feet below the surface. This probe is monitored quarterly as a part of the overall facility gas monitoring program. If methane is detected at a concentration of 80% LEL in the Stage 1 probe, then the Department will be notified and monthly monitoring will be initiated. If methane concentrations remain at or above the 80% LEL for two additional consecutive months, then Phase 2 of the monitoring program will be conducted. If concentrations return to levels below 80% LEL, then quarterly monitoring of the Stage 1 probe will be resumed.

Stage 2 will consist of installation of two perimeter landfill gas probes, placed at the western and northern sides of the LCID fill area. These probes would be established as part of the overall facility gas monitoring system and would be monitored regularly in accordance with the overall program.

The Overall Site Map (Figure 1) in Appendix 1 shows the approximate locations of the Stage 1 (installed) and Stage 2 (not installed at this time) probes.

4.5.13 Surface Water Monitoring

The LCID landfill is a part of the Watauga County Solid Waste Management Facility. The SWM Facility conducts surface water monitoring in accordance with the *Watauga County Landfill Assessment Plan* (DAA, September 3, 1993) and the *Remedial Investigation and Alternatives Report* (DAA, January 12, 1996). These programs include monitoring points adjacent to the LCID landfill; therefore, any potential surface water constituents will be detected.

4.5.14 Closure

1. Closure Activities

On or before 120 calendar days after completion of any phase of disposal operations, or upon revocation of a permit, the disposal area shall be covered with a minimum of one foot of suitable soil cover, sloped to allow surface water runoff in a controlled manner. The soil cover will be fertilized, limed and seeded. Erosion control matting will be applied to assist in achieving stabilization. Further actions in order to correct any condition that is or may become injurious to the public health, or a nuisance to the community may be required by DENR.

2. Post Closure Activities

Due to the non-putrescible nature of LCID waste, it is anticipated that the post-closure activities for the LCID landfill will not extend beyond cover/site maintenance. Once the LCID landfill is closed, the site will be stabilized with vegetation. Erosion and sediment control measures will be monitored and maintained throughout the post closure care period.

Groundwater and gas monitoring for the LCID landfill is not necessary due to the nature of the waste disposed at the landfill.

Under post closure care, the County shall maintain the closure cap on the LCID landfill as necessary. It is important that the vegetative cover be retained in a good condition, and this task will be accomplished through reseeded, liming and mowing. The LCID landfill will have a soil cap. The grass on the LCID landfill shall be mowed once a year. In addition, the access roads into and on the facility caps, and the stormwater conveyance system shall be maintained in good condition. These facilities shall be inspected periodically and repaired as necessary.

The LCID landfill property will be maintained as open space after completion of closure activities.

4.6 Household Hazardous Waste Facility

Watauga County is in the process of designing and constructing a permanent Household Hazardous Waste (HHW) facility in accordance with all state and local construction codes and fire codes, which address hazardous materials. The facility will be located in front of the current Recycling Center as generally shown on the Overall Site Map (Figure 1) in Appendix 1. A contractor will manage and operate the facility, including the training of employees and disposal of the HHW collected.

Currently, the County has two collection events per fiscal year for residential homeowners only (no commercial) at the Recycling Center. The new facility will be open to the public at least one day a month (March - November), which will provide at least nine disposal days per year to County residents. The building will be open from 8:00 AM to 4:00 PM.

The household hazardous waste building will be secured each night by closing and locking the gate at the Scale House and by closing and locking the doors.

4.7 Mulching Operations

On January 1, 1993, DENR banned yard waste from sanitary landfills. Because of the ban, the County cannot transfer their yard waste to a disposal facility and instead, the County segregates most of the land clearing debris and untreated wood for mulching. The mulching operation is considered a “Treatment and Processing Facility” under Rules .0301-.0320 of the Title 15A Subchapter 13B of the *NC Administrative Code*. In October 2001 a permit amendment application was filed for this operation, and on December 18, 2001 DENR approved the permit modification. The Permit to Operate was most recently amended on June 15, 2011 for a five-year renewal of the Treatment and Processing Unit. The June 15, 2011 Permit to Operate is included as Appendix 10 of this plan and contains several conditions. Should a new Permit to Operate be issued by DENR, the permit should be included in Appendix 10.

Approximately 3,000 tons per year are received and stored in an area on site as indicated on the Overall Site Map (Figure 1) in Appendix 1. Twice a year, the County contracts the processing of the materials into mulch, which is stored in the same area. The contractor also disposes of the mulch by hauling it to their facility. The County has rented a trommel screen in the past to screen mulch to produce two components, a fine component consisting of the residual dirt and finer organic particles and a coarser component for landscaping mulch. By screening the material, the landfill staff believes that a larger market will be developed.

The mulching operations require significant space for the various stockpiles and operations. Operations also require stormwater management, adequate access for the public and fire suppression measures. To enhance control, these operations must be visible from the Scale House or transfer station as the operation is not staffed and quality control is important. The operation must also be readily accessible by the fire department for fire control. The current operations area meets all these criteria. It is estimated that approximately 2+ acres are involved in the operation.

A dozer, trackhoe, and rubber tire loader are used in the operation as well as the leased tub grinder. One Equipment Operator is needed to operate the facility; however, this individual is assigned additional duties as this operation requires only minimal operator time except during the grinding operations or during periods of heavy use by the public, either in dropping off materials or picking up mulch. The County loads the mulch for the public.

Fire suppression and control is important in the operation of this facility. To reduce the potential for fire, the piles are visually monitored for hot spots. The mulch product is turned periodically to help reduce these hot zones.

The hours of operation are:

Day of Week	Winter Hours	Summer Hours
Monday – Friday	8:00 AM – 4:00 PM	Same
Saturday	8:00 AM – 12:00 PM	Same
Sunday	Closed	Closed

Important aspects of the operation of this facility include:

- Meeting permit conditions;
- Pre-screening of waste to eliminate unacceptable materials;
- Maintenance of appropriate erosion and sediment control measures including silt fence and diversion channels;
- Policing materials to assure that unacceptable waste is segregated and properly handled;
- Periodic turning of the mulch to assure that insects and rodents do not become a nuisance, and to reduce the potential for spontaneous combustion;
- Maintenance of access for public and fire department to reduce potential for bogging down in the mud and to reduce mud tracked out on the road;
- Good housekeeping to confine the materials to the area generally indicated on the drawing;
- Promotion of the use of mulch to assure turn over of the materials.

4.8 Swap Shop

As with any waste operation, items are received that may still have a useful life. A facility has been developed at the on-site convenience center where useful items can be taken from the tipping floor or brought directly in by citizens and made available to the public. Examples of items include bicycles, lawn mowers, old doors, windows, etc.

All items delivered must be re-usable. If an item is not re-usable or of marginal quality, it will be directed to the transfer station.

Hours of operation are:

Day of Week	Winter Hours	Summer Hours
Monday – Friday	8:00 AM – 4:00 PM	Same
Saturday	8:00 AM – 12:00 PM	Same
Sunday	Closed	Closed

The facility is attended during its hours of operation. The attendant keeps a record of items which are brought to or removed from the facility. Any item which does not move out of the facility after being dropped off within a reasonable time is taken to the transfer station for disposal.

Important aspects of this operation include the following:

- Communication with the public on what is and is not acceptable for drop off.
- Record keeping
- Good housekeeping to keep the items arranged for ease of drop-off and removal, to minimize safety concerns, and to reduce other hazards.
- Removal of items which are not usable or which do not appear to be acceptable to the public.
- Marketing the operation.

4.9 Maintenance Facility

A new maintenance facility was completed in 2005. The County has moved all operations to this new facility, using the older facility only for storage. Eventually, the old building will be demolished. Appendix 3 contains a building plan for the new facility. The County Solid Waste Department services trucks, collection vehicles, heavy equipment, and trailers at this facility. The maintenance facility has a maintenance pit, tool and parts storage, an indoor wash bay and several work bays. With the additional space, the County provides service to the general County fleet for tire changes and balancing.

The County has one Mechanic and one Mechanic Helper for this operation.

The hours of operation are:

Day of Week	Winter Hours	Summer Hours
Monday – Friday	8:00 AM – 4:00 PM	Same
Saturday	8:00 AM – 12:00 PM	Same
Sunday	Closed	Closed

The maintenance facility has specific areas designated for storage of the fluids as needed for maintenance (e.g. oil, hydraulic and transmission fluids). An indoor washdown bay with the appropriate wastewater handling system has been provided to wash down the vehicles before maintenance and to wash off the garbage trucks daily. Wash down water passes through an oil water separator before it discharges into the sanitary sewer system. A maintenance pit has been provided to allow better and safer maintenance of the under carriage of the various vehicles.

Important aspects of this operation include:

- Safe and efficient maintenance of equipment;
- Proper storage and handling of oils, fuel and other vehicle fluids;
- Recycling of used motor oil;
- Proper pretreatment of washdown water prior to release into the sanitary sewer system;
- Completion of maintenance record;
- Maintenance of parts and tool inventory.

4.10 Erosion Control

Erosion control is a primary activity for the LCID landfill and mulching operations. The County addresses erosion control in several ways as follows:

- Sediment ponds which capture the runoff from the facility;
- Seeding;
- Proper road and culvert maintenance;
- Silt fence;
- Stormwater conveyance channels and diversions.

The following maintenance schedule is suggested for erosion and sedimentation control, but it represents a minimum. Inspection and repair should be increased as necessary:

- **Sediment Ponds**

The sediment ponds will be inspected after each major rainfall to determine if any repairs are needed. If repairs are needed they will be completed as soon as possible. In addition, the County will monitor the depth of sediment in the ponds and schedule cleanout as necessary. Typically, when a pond is 50% full, it should be cleaned out. Sediments from the pond can be placed on land to drain provided that there is not waste beneath the drying area and provided that the runoff from the drying area will be directed back into the sediment pond. The sediment once sufficiently dry can be used as cover in the LCID landfill or can be seeded in place. As a precautionary measure, the County may consider installing silt fence around the drying area.

The condition of the outlet structures should also be evaluated periodically to assure that the structures have not become clogged with debris or structurally compromised. If problems are noted, the County will schedule repairs as appropriate.

- **Silt Fences**

Silt fences will be installed as necessary at the LCID landfill, mulching operations or during cleanout of the sediment basins. Silt fences shall be inspected after each rainfall and daily during a prolonged rainfall event. Repairs will be made as soon as practical. Should the fabric on a silt fence decompose or become ineffective prior to the end of the expected usable life, the fabric shall be replaced promptly. Sediment deposits should be removed after each storm event. They must be removed when deposits reach approximately one-half the height of the barrier. Any sediment deposits remaining in place after the silt fence or filter barrier is no longer required shall be dressed to conform with the existing grade, prepared and seeded.

- **Storm Water Conveyance Channels/Diversion Ditches/Roadside Ditches**

During the initial establishment, grass-lined channels should be inspected weekly and after every major storm event, repaired immediately and grass reestablished as necessary. After grass has become established, the channel should be checked periodically to determine if the grass is remaining viable. The channels should be mowed periodically, being sure that the grass cover is protected from damage. It is particularly important to check the channel outlet and all road crossings for bank stability and evidence of piping or scour holes. All significant sediment accumulation should be removed to maintain the designed carrying capacity.

Riprap channels shall be inspected weekly and after every major storm event and repaired or cleaned as soon as possible.

- **Seeding**

All disturbed areas will be stabilized at the facility in accordance with the *NC Erosion and Sedimentation Control Manual*. Prior to seeding, the soil shall be tested for nutrient and pH levels. Fertilizer and lime shall be added according to test results. Seeding shall be accomplished per the *NC Erosion and Sediment Control Manual*.

If timing for permanent seeding is inappropriate, temporary seeding per the manual shall be used with mulch or matting. Annually all seeded areas will be inspected and a maintenance plan prepared as necessary.

- **Matting**

Matting may be used in areas susceptible to erosion in conjunction with seeding. Areas which have been matted will be inspected after each rainfall for the first year to assure that erosion rills do not develop under the matting. If they do, the matting will be stripped back, the area regraded and reseeded. A check will also be made to determine where water is entering and repairs made accordingly.

All erosion control shall be completed in accordance with the *North Carolina Erosion and Sediment Control Manual*, latest edition.

4.11 Post Closure Activities

Post closure activities at the County's closed landfills consist of three components: groundwater monitoring, gas monitoring and routine maintenance. A brief description of each activity is provided below:

4.11.1 Groundwater Monitoring

Assessment groundwater and surface water monitoring is conducted semiannually at the Watauga County Landfill in accordance with the *Watauga County Landfill Assessment Plan* (DAA, Sept. 3, 1993) and subsequent monitoring program revisions as approved by the NCDENR.

In June 1998, the NCDENR approved the following monitoring program revisions:

- 1) The initiation of monitoring a smaller subset of six core monitoring wells (2,3,8,9,12&17) for semiannual monitoring and a larger set (1,10,11,15&19) for annual monitoring,
- 2) Annual rather than semiannual analysis for target metals, and
- 3) Withdrawal of select non-impacted monitoring wells (4,5,13,14&18) from routine groundwater monitoring.

Six surface water sampling locations and select off-site wells continue to be sampled semiannually. Select MNA indicator parameters are also collected semiannually.

4.11.2 Gas Monitoring

Gas is monitored quarterly at the closed Watauga County Landfill and at the LCID landfill. There are currently three probes and several facilities that are monitored for methane. The facilities monitored include the Scale House, baling/recycling facility, maintenance shop (old and new), new transfer station, and animal shelter. In addition several adjacent homes to the south of the MSW landfill are monitored on a schedule set by DENR. The two landfill gas monitoring probes for the facility and the interiors of the buildings at the site are monitored for landfill gas at least quarterly. If methane is detected at levels above those described in the Gas Remediation Plan, sampling is increased to monthly intervals.

4.11.3 Gas Collection

Gas is collected from the MSW landfill through wells installed through the synthetic cap. The gas that is collected is transmitted by underground piping to one main blower flare station. In 2014 Watauga County installed a landfill gas to energy system comprised of two generators, a switchgear, generator engines and transmission lines from the blower flare station in order to utilize the landfill gas to produce electricity that will be used for the Sanitation Department. The remaining electricity is put on the grid and sold to Blue Ridge Electric Membership Corporation.

The entire system, including the well field, piping and pipe system components, flare station and related components, and generator system is owned and maintained by the County. The well field is regularly inspected, monitored and tuned to ensure that each well is functioning properly. Underground leaks in the gas extraction piping are repaired as soon as is practical. Condensate sumps are checked regularly for presence of liquid that may be evidence of a backup or blockage.

On a daily basis, the blower flare station and generators are inspected to assure proper operation. Maintenance at the blower flare station and generators are performed regularly as required by manufacturer's data and as maintenance needs arise.

4.11.3 Routine Maintenance

Under post closure care, the County must maintain the closure caps on the demolition landfill and the MSW landfill as necessary. It is important that the vegetative cover be retained in a good condition and this is done through reseeded, liming and mowing. The demolition landfill has a soil cap; the MSW landfill has a composite cap consisting of a soil infiltration layer topped with a 40-mil LLDPE membrane, geocomposite drainage layer and cushion soil.

The vegetative cover is currently in excellent condition. The grass on the MSW landfill is mowed once a year and collected for hay. In addition, the access roads into and on the facility caps, the stormwater conveyance system and gas well/vent/blower flare system must be maintained in good condition. These facilities are inspected periodically and repaired as necessary. The blower flare system requires limited maintenance except to review the operation of the ignition system which is solar powered. Periodically the solar batteries must be replaced. Appendix 6 contains a sample inspection form for use by the County.

4.12 Animal Shelter

The operation of the animal shelter is not a function of the solid waste program. However, the shelter does periodically euthanize animals and the carcasses are buried on site in a designated area or frozen and placed in the transfer trailers in small numbers.

4.12.1 Animal Burial

Animal carcasses are delivered to the facility by residential and commercial haulers. They are weighed in at the scalehouse and then delivered to the Transfer Station to be transferred to the animal burial area. If the customer insists, the animals are buried on site. Otherwise, they are placed on trailers and hauled to the Foothills Environmental Landfill.

4.13 Off-Site Public Convenience Centers

There are ten (10) staffed convenience centers throughout Watauga County that offer trash disposal and recycling for county residential use only. Materials that are accepted at all of the convenience centers for recycling include glass (green, brown and clear); metal (tin cans, aluminum cans and tin foil); plastics (all rigid plastic bottles #1 - #7 and other plastic containers #1 and #2); corrugated cardboard; paper (newsprint, magazines, junk mail and office paper); household batteries; and compact fluorescent lights. Pasteboard also is accepted for recycling at four (4) convenience centers. In addition other items that are accepted for recycling at the Sanitation Department's main Recycling Center include all electronics, tires, lead-acid batteries, white goods, scrap metal and used oil. Beginning on July 1, 2010, the County began accepting a broad range of plastic items including yogurt tubs, five gallon buckets, kitty litter buckets, milk crates, plastic trash cans, broken recycling bins, plant pots, plastic storage totes and their lids, plastic lawn furniture, kiddie pools, broken plastic sleds and other plastic toys at the main Recycling Center.

APPENDIX 1
OVERALL SITE MAP

APPENDIX 2
OPERATIONS SUMMARY FORMS



Container Sites: Operation Activity

- A. Location and Background
 - ◆ 10 Convenience centers located throughout the County
- B. Hours of Operation
 - ◆ Monday thru Friday 6:30am to 6:00pm (Winter), to 7:00pm (Summer)
 - ◆ Saturday 8:00am to 6:00pm (Winter), to 7:00pm (Summer)
 - ◆ Sunday 1:00pm to 5:00pm (Landfill Site Only)
- C. Equipment Requirements
 - ◆ Roll-off containers
 - ◆ Dumpsters
 - ◆ Trash trucks
 - ◆ Roll-off trucks
- D. Personnel Requirements
 - ◆ Site attendants
 - ◆ Trash truck drivers
- E. General Description of Operations
 - ◆ Waste delivered by residential citizens (household garbage only)
 - ◆ Picked up by trash trucks and hauled to Transfer Station
 - ◆ Recycling picked up from sites with roll-off trucks and delivered to Baling Facility
- F. Special Waste Handling Procedures
 - ◆ Any waste dropped off at site by mistake is handled by County
- G. Unauthorized Waste Screening Procedure
 - ◆ Attendant visually checks for unauthorized disposal material
- H. Emergency Plans
 - ◆ Fire: Fire extinguisher located in the building
 - ◆ Snow: County plows, distributes salt and cleans site
 - ◆ Hazardous waste: N/A
 - ◆ Medical: N/A
 - ◆ Asbestos: N/A

- I. Monitoring Requirements
 - ◆ Attendant monitors residential loads

- J. Housekeeping/Maintenance Requirements
 - ◆ Site must be swept and maintained daily
 - ◆ Dumpsters emptied daily
 - ◆ Recycling bins emptied at least once a week

- K. Training Requirements
 - ◆ Training in what to accept and what not to

- L. Security Devices
 - ◆ All entries to sites are gated and locked each night

- M. Other Information
 - ◆ None



Scale House: Operation Activity

- A. Location and Background
 - ◆ Located at entrance

- B. Hours of Operation
 - ◆ Monday thru Friday 8:00am to 4:00pm
 - ◆ Saturday 8:00am to 12:00pm

- C. Equipment Requirements
 - ◆ Scales for weighing trucks, cars, etc
 - ◆ Computers
 - ◆ Printers

- D. Personnel Requirements
 - ◆ Office clerks
 - ◆ Administrative assistants
 - ◆ Scale clerk

- E. General Description of Operations
 - ◆ Waste hauled to facility by commercial, private and public vehicles and weighed on scale
 - ◆ Direct haulers to proper disposal areas
 - ◆ Keep records of all recyclable tonnages and revenues
 - ◆ Process monthly billing
 - ◆ Assist public with any questions or concerns

- F. Special Waste Handling Procedures
 - ◆ Prepare proper paper work on metal dust taken from industry
 - ◆ Overall record keeping

- G. Unauthorized Waste Screening Procedure
 - ◆ Visually check for unauthorized waste
 - ◆ See Appendix 8

- H. Emergency Plans
 - ◆ Fire: Fire extinguisher located in the building
 - ◆ Snow: County plows roads and parking areas

- ◆ Hazardous waste: Reject load if needed, contact emergency management
 - ◆ Medical waste: Assure proper handling procedures or reject load
 - ◆ Asbestos: Accept non-friable only
- I. Monitoring Requirements
- ◆ Scale operator monitors loads, rejects liquids, hazardous wastes
 - ◆ Scale operator checks to see if loads are mixed and require separation
- J. Housekeeping/Maintenance Requirements
- ◆ Keep clean working environment, work area, etc
 - ◆ Scales must be serviced twice a year
- K. Training Requirements
- ◆ Training to run and operate scales and manual scales
 - ◆ Waste screening program
 - ◆ Billing procedures
- L. Security Devices
- ◆ Access to facility gated at scale house
 - ◆ All entries to scale house are locked each night
- M. Other Information
- ◆ None



New Transfer Station: Operation Activity

- A. Location and Background
- ◆ North side of Landfill Rd
 - ◆ Receives 250 tons per day average with peaks reaching 300tpd
 - ◆ Tipping floor approximately 14,000 sf
- B. Hours of Operation
- ◆ Monday thru Friday 8:00am to 4:00pm
 - ◆ Saturday 8:00am to 12:00pm
- C. Equipment Requirements
- ◆ Wheel Loaders (2)
 - ◆ Tractor – to reposition haul trailers
 - ◆ Trash trucks
 - ◆ Haul trailers - contracted
 - ◆ Scales
- D. Personnel Requirements
- ◆ Equipment operators
 - ◆ Laborer
- E. General Description of Operations
(See Section 4.4 for authorized / unauthorized waste list)
- ◆ Solid waste delivered by commercial, private and public vehicles and dumped onto tipping floor
 - ◆ Loader will push waste into pit and then into trailer
 - ◆ Waste on trailer is compacted
 - ◆ Full trailer is weighed on scale in loading bay
 - ◆ Tarpred and sent to disposal facility
 - ◆ County pulls in empty trailer
- F. Special Waste Handling Procedures
- ◆ Unacceptable wastes are segregated
 - ◆ See Appendix 8 – Waste Screening Plan
 - ◆ Animal Carcasses
 - Small: Receive frozen bodies from animal control
 - Large: Small and large animals are buried in specified burial ground

- G. Unauthorized Waste Screening Procedure
 - ◆ See Appendix 8 – Waste Screening Plan

- H. Emergency Plans
 - ◆ Fire: Fire extinguishers are located on equipment and at facility; fire station numbers are posted
 - ◆ Snow: County plows road and maintains operations
 - ◆ Hazardous waste: Identify the source hauler and call emergency management and NCDENR. See Appendix 8.
 - ◆ Medical waste: Segregate. Assure proper handling. See Appendix 8
 - ◆ Asbestos: Non-friable only

- I. Monitoring Requirements
 - ◆ Watch for unacceptable loads
 - ◆ Watch for hazardous waste
 - ◆ Periodically check oil water separator
 - ◆ Check gas monitoring systems

- J. Housekeeping/Maintenance Requirements
 - ◆ Waste to be removed from floor daily
 - ◆ Rodent control
 - ◆ Washdown of floor
 - ◆ Litter pick-up
 - ◆ Clean up of loading bay and around scale pads
 - ◆ Dust control
 - ◆ Repair of structure
 - ◆ Maintain oil water separator
 - ◆ Maintain scales
 - ◆ Maintain gas monitoring systems
 - ◆ Check signage
 - ◆ Maintain landscaping

- K. Training requirements
 - ◆ SWANA Transfer Station Operators Training and Certification (minimum 1 operator at station at all times)
 - ◆ Instruction on equipment operation and maintenance
 - ◆ First Aid (Kits provided)
 - ◆ Waste screening program

- L. Security Devices
 - ◆ Doors of building are shut and locked each night
 - ◆ Facility is gated

M. Other information

- ◆ See Appendix 8 for Waste Screening Plan
- ◆ Record keeping by facility manager
 - Vehicle maintenance records
 - Waste screening documentation
 - Haul vehicle weight records
 - Personnel, etc.
- ◆ Records kept at scale house



Land Clearing and Inert Debris Landfill: Operation Activity

- A. Location and Background
 - ◆ Located to north of access road
 - ◆ Since less than 2 acres, no formal permit needed
 - ◆ See Section 4.5 for full description of operation
- B. Hours of Operation
 - ◆ Monday thru Friday 8:00am to 4:00pm
 - ◆ Saturday 8:00am to 12:00pm
- C. Equipment Requirements
 - ◆ Dozer
- D. Personnel Requirements
 - ◆ Equipment operator
- E. General Description of Operations
 - ◆ See Section 4.5 for acceptable wastes
 - ◆ Materials delivered by commercial and private haulers
 - ◆ Material is dozed into LCID pit
 - ◆ Intermediate cover (4-6 inches dirt) placed on top
- F. Special Waste Handling Procedures
 - ◆ Remove any unacceptable items from site
- G. Unauthorized Waste Screening Procedure
 - ◆ Visually inspect site
 - ◆ Separate out unacceptable items and handle appropriately
- H. Emergency Plans
 - ◆ Fire: Contact Town of Boone Fire Department
 - ◆ Snow: County keeps access road plowed
 - ◆ Hazardous waste: N/A
 - ◆ Medical: N/A
 - ◆ Asbestos: N/A

- I. Monitoring Requirements
 - ◆ Keep unwanted material removed
 - ◆ Monitor erosion control

- J. Housekeeping/Maintenance Requirements
 - ◆ Maintain erosion control
 - ◆ Place periodic cover
 - ◆ Keep site clean as possible
 - ◆ Maintain access road

- K. Training requirements
 - ◆ Train to operate equipment
 - ◆ Training in fill protocol
 - ◆ Train in Waste Screening Plan

- L. Security Devices
 - ◆ Access to facility gate is locked each night

- M. Other information
 - ◆ None



Mulch and Grinding Operations: Operation Activity

- A. Location and Background
 - ◆ Southeast of Landfill Rd
 - ◆ Permit for operation received December 2001
 - ◆ Permitted for 3,000 tons per year

- B. Hours of Operation
 - ◆ Monday thru Friday 8:00am to 4:00pm
 - ◆ Saturday 8:00am to 12:00pm

- C. Equipment Requirements
 - ◆ Dozer
 - ◆ Trackhoe
 - ◆ Tub Grinder (leased twice a year)
 - ◆ Rubber Tire Loader

- D. Personnel Requirements
 - ◆ Equipment operator

- E. General Description of Operations
 - ◆ See Section 4.6 for operations and list of acceptable waste
 - ◆ Accept brush, stumps, clean wood
 - ◆ Store material
 - ◆ Rent tub-grinder twice a year to grind materials
 - ◆ Load mulch with loader for the public

- F. Special Waste Handling Procedures
 - ◆ Turn mulch piles periodically to prevent over-heating
 - ◆ Police materials closely

- G. Unauthorized Waste Screening Procedure
 - ◆ Visually check for unauthorized materials (eg. treated wood, garbage, inert materials)

- H. Emergency Plans
 - ◆ Fire: Contact Town of Boone Fire Department
 - ◆ Snow: County keeps access road plowed
 - ◆ Hazardous waste: N/A

- ◆ Medical: N/A
- ◆ Asbestos: N/A

I. Monitoring Requirements

- ◆ Keep unwanted material removed
- ◆ Visually check for smoke or spontaneous combustion
- ◆ Monitor amount of waste received, mulch produced and mulch moved off site

J. Housekeeping/Maintenance Requirements

- ◆ Keep site clean as possible
- ◆ Keep mulch rotating through system
- ◆ Periodically turn mulch piles

K. Training requirements

- ◆ Train to operate equipment
- ◆ Train in Waste Screening Plan

L. Security Devices

- ◆ Access to facility gate is locked each night

M. Other information

- ◆ Permit must be renewed before January 1, 2006. Current limit of 6,000 cy / quarter will be increased to accommodate 3,000 tons + processed by the County annually.



Recycling Operations:
(Located in baling facility)
Operation Activity

- A. Location and Background
- ◆ Located at rear of existing recycling center
 1. White goods
 2. Tires
 3. Scrap metal
 4. Glass
 - ◆ Located inside existing recycling center
 1. Cardboard
 2. Steel and aluminum cans
 3. Plastics
 4. Car batteries
 5. Used oil
- B. Hours of Operation
- ◆ Monday thru Friday 8:00am to 4:00pm
 - ◆ Saturday 8:00am to 12:00pm
- C. Equipment Requirements
- ◆ Forklift
 - ◆ Skidsteer
 - ◆ Loader
 - ◆ Trackhoe
 - ◆ Roll-off trucks
 - ◆ Front loading trash truck
 - ◆ Tractor
 - ◆ Trailers
 - ◆ Baler
- D. Personnel Requirements
- ◆ Equipment operator
 - ◆ Truck driver
 - ◆ Recycling technician
- E. General Description of Operations
- ◆ See Section 4.3.2 for detailed description of operations
 - ◆ Recycling material delivered by commercial, private and public vehicles and distributed to proper areas
 - ◆ White goods/scrap metal are loaded on trailers for transportation

- ◆ Tires are placed directly on trailers to be hauled
- ◆ Cardboard is dumped on tipping floor, placed on conveyor belt to be baled
- ◆ Steel/aluminum cans are hauled in from sites on roll-off truck, dumped into hopper, place in can machine for separation and baled
- ◆ Glass is hauled in roll-off, placed in hopper, dumped in open top roll-off and hauled to GDS
- ◆ Newsprint is hauled in roll-off, baled and placed on trailers
- ◆ Plastic is hauled in roll-off, baled and place on trailer
- ◆ Batteries are stacked in building out of way of other operations and are removed periodically by a private vendor when full load achieved. Batteries are not taken in bulk from commercial enterprises.
- ◆ Used oil is accepted from residents in 1-2 gallon lots. Citizens pour oil into tank. Periodically a private vendor removes waste oil.

F. Special Waste Handling Procedures

- ◆ Freon removal: Removed by private contractor
- ◆ Lead acid batteries: Removed by private contractor
- ◆ Used oil: Removed by private contractor

G. Unauthorized Waste Screening Procedure

- ◆ Recycling technician separates waste from the recycling
- ◆ See Appendix 8

H. Emergency Plans

- ◆ Fire: Fire extinguishers are located on equipment and at the facility, fire station numbers are posted
- ◆ Snow: County plows roads and makes all areas accessible
- ◆ Hazardous waste: Identify hauler, contact emergency management and NCDENR. See Appendix 8
- ◆ Medical: N/A
- ◆ Asbestos: N/A

I. Monitoring Requirements

- ◆ Scrap metal: gas tanks, propane tanks, 55 gallon drums, any liquid (none of these are acceptable)
- ◆ Inspection of batteries to assure not leaking
- ◆ Inspection of used oil tank to check fill level and housekeeping

J. Housekeeping/Maintenance Requirements

- ◆ Keep scrap metal and white goods loaded
- ◆ Keep tires hauled to proper location
- ◆ Keep cardboard baled and loaded
- ◆ Keep newsprint and plastic baled and loaded
- ◆ Keep steel and aluminum cans baled and loaded
- ◆ Keep glass separated and hauled to GDS
- ◆ Keep battery area clean and handle leaks immediately
- ◆ Keep used oil area clean and handle spills immediately
- ◆ Maintenance of baler

- K. Training requirements
 - ◆ Instructions on operating equipment
 - ◆ Collection of recyclables
 - ◆ Separation of materials
 - ◆ Maintenance of equipment
 - ◆ Waste Screening Program

- L. Security Devices
 - ◆ Access to facility gated at scale house
 - ◆ Doors of building shut and locked each night

- M. Other information
 - ◆ None



Swap Shop: Operation Activity

- A. Location and Background
- ◆ North side of Landfill Rd
 - ◆ Public can bring re-useable items instead of putting in trash
 - ◆ Public can take re-useable items instead of scavenging
- B. Hours of Operation
- ◆ Wednesday and Friday 8:00am to 4:00pm
 - ◆ Saturday 8:00am to 12:00pm
- C. Equipment Requirements
- ◆ Building to house items collected
- D. Personnel Requirements
- ◆ Swap shop attendant
- E. General Description of Operations
- ◆ Re-useable items delivered to shop by county residents
 - ◆ Re-useable items picked up at shop by residents
 - ◆ Attendant assists public and keeps a record of items
- F. Special Waste Handling Procedures
- ◆ N/A
- G. Unauthorized Waste Screening Procedure
- ◆ Only appropriate, re-useable materials are collected
- H. Emergency Plans
- ◆ Fire: Fire extinguishers are located at the facility
 - ◆ Snow: County plows parking lot
 - ◆ Hazardous waste-N/A
 - ◆ Medical-N/A
 - ◆ Asbestos-N/A
- I. Monitoring Requirements
- ◆ All items must be reusable and in good condition

- J. Housekeeping/Maintenance Requirements
 - ◆ Keep floors clean
 - ◆ Dispose of unwanted items

- K. Training requirements
 - ◆ Accepting only re-useable items
- L. Security Devices
 - ◆ Doors of building shut and locked each night

- M. Other information
 - ◆ None



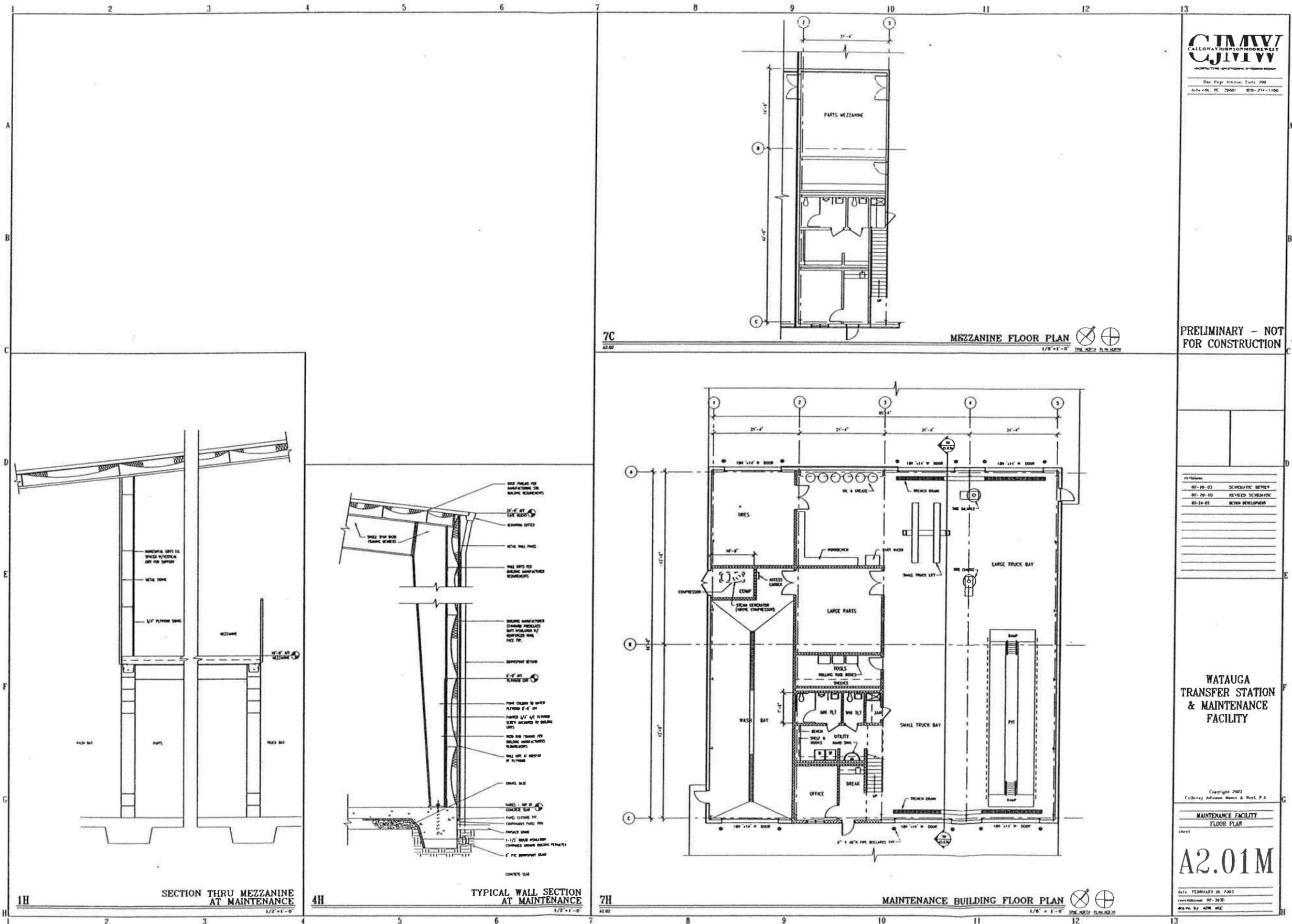
Maintenance Facility: Operation Activity

- A. Location and Background
- ◆ New facility placed in operation January 2005
 - ◆ Located to the east of the baling facility
- B. Hours of Operation
- ◆ Monday thru Friday 8:00am to 4:00pm
 - ◆ Saturday 8:00am to 12:00pm
- C. Equipment Requirements
- ◆ All equipment necessary for repairs
- D. Personnel Requirements
- ◆ Mechanic
 - ◆ Mechanic helper
- E. General Description of Operations
- ◆ Service all department vehicles
 - ◆ Service all equipment
 - ◆ Minor repair on vehicles and equipment
 - ◆ Welding repairs
 - ◆ Tire replacement on all vehicles and equipment
- F. Special Waste Handling Procedures
- ◆ Used motor oil is recycled
- G. Unauthorized Waste Screening Procedure
- ◆ N/A
- H. Emergency Plans
- ◆ Fire: Fire extinguishers are located at facility
 - ◆ Snow: County keeps parking lot and access road open
 - ◆ Hazardous waste: N/A
 - ◆ Medical: N/A
 - ◆ Asbestos: N/A

- I. Monitoring Requirements
 - ◆ Make sure all equipment is operational
- J. Housekeeping/Maintenance Requirements
 - ◆ Keep area free from oil spills
- K. Training requirements
 - ◆ Minimum one year training in servicing equipment
- L. Security Devices
 - ◆ All entries to sites are gated and locked
- M. Other information

APPENDIX 3

CONCEPTUAL LAYOUT OF MAINTENANCE FACILITY



PRELIMINARY - NOT FOR CONSTRUCTION

07-10-07	SCHEMATIC DEVELOPMENT
07-20-07	REVISED SCHEMATIC
08-24-07	SCHEMATIC DEVELOPMENT

**WATAUGA
 TRANSFER STATION
 & MAINTENANCE
 FACILITY**

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MAINTENANCE FACILITY
 FLOOR PLAN

A2.01M

Date: FEBRUARY 10, 2007
 Drawn by: ADL, MLC



EAST ELEVATION
 1/8" = 1'-0"

SOUTH ELEVATION
 1/8" = 1'-0"

WEST ELEVATION
 1/8" = 1'-0"

NORTH ELEVATION
 1/8" = 1'-0"

PRELIMINARY - NOT FOR CONSTRUCTION

02-10-03	SCHEMATIC REVIEW
02-20-03	REVISED SCHEMATIC
02-21-03	DESIGN DEVELOPMENT

**WATAUGA
 TRANSFER STATION
 & MAINTENANCE
 FACILITY**

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MAINTENANCE FACILITY
 ELEVATIONS

A5.01M

DATE: FEBRUARY 10, 2003
 DRAWING NO.: 01-2630
 DRAWN BY: JSM, MJC

DATE: Feb 10, 2003 - 1:51:22pm - PLOT SCALE: OPERATIONS, MJC FILE NAME: A5.01-MB-R04

APPENDIX 4

CONCEPTUAL LAYOUT OF TRANSFER STATION

PRELIMINARY - NOT FOR CONSTRUCTION

07-28-03	SCHEMATIC REVIEW
07-29-03	REVIEWED ARCHITECT
07-24-03	ARCHITECT

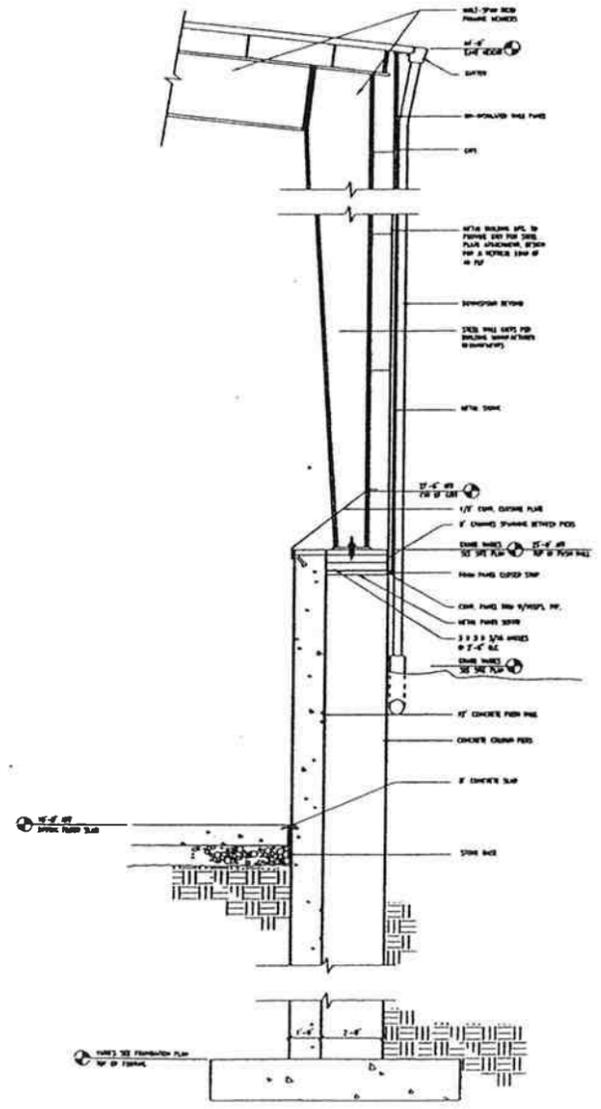
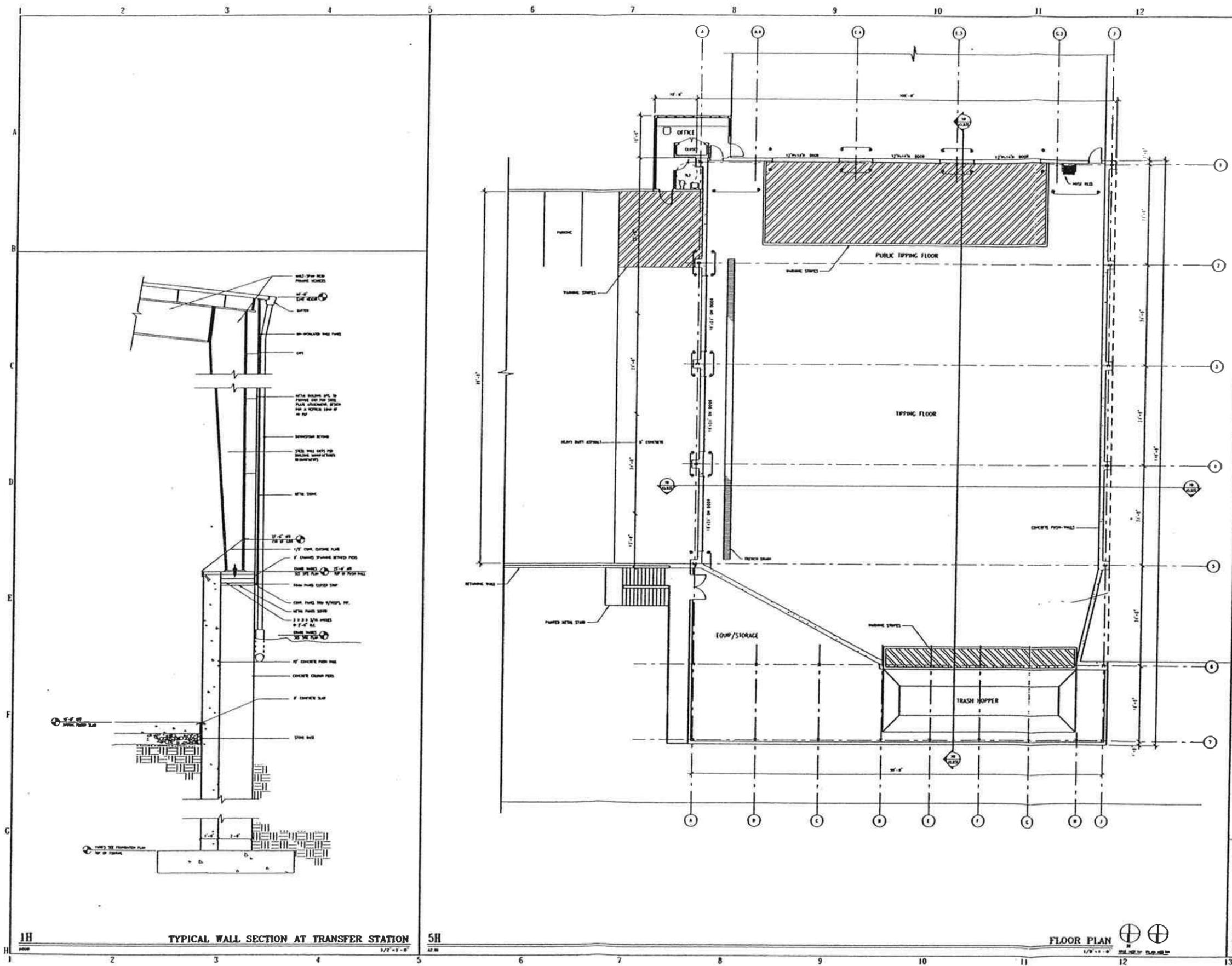
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 FACILITY**

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TRANSFER STATION
 FLOOR PLAN

A2.01T

DATE: FEBRUARY 18, 2003
 PROJECT: WATAUGA TRANSFER STATION
 DRAWN BY: JMM



1H TYPICAL WALL SECTION AT TRANSFER STATION
 1/2" = 1'-0"

5H FLOOR PLAN
 1/8" = 1'-0"

APPENDIX 5

INSPECTION FORM FOR TRANSFER STATION

TRANSFER STATION INSPECTION FORM

<input type="checkbox"/> if inspected	Item	Y	N	N/A	Comments/Action
	1. Presence of litter outside building				
	2. Presence of litter in loading bay.				
	3. Floor appears to be routinely washed.				
	4. Clogged floor drains.				
	5. Scales operational				
	6. Doors operational				
	7. Oil Water Separator in good working order				
	8. Grit Chamber in good working order.				
	9. Signs readily observed and in good condition.				
	10. Warning stripes on floor in good condition.				
	11. Problems with tipping floor (cracks, spaulding)				
	12. Hopper flaps in good condition				
	13. Rubber blade on loader in good condition.				
	14. Access road in good condition.				
	15. Trailer parking area in good condition.				

Other Comments: _____

Prepared By: _____
 Date: _____

APPENDIX 6

INSPECTION FORM FOR POST CLOSURE MAINTENANCE

**POST-CLOSURE INSPECTION CHECKLIST
WATAUGA COUNTY LANDFILLS
PERMIT 95-02**

Date of Inspection _____
Inspector's Name _____

Category	No.	Inspection to be Conducted		
Security	1	Is entrance gate and lock functioning properly	Yes	No
Control	2	Is fencing maintained	Yes	No
Devices	3	Is access controlled by wooded areas where no fence exists	Yes	No
Leachate	4	Are there any leachate seeps on slopes	Yes	No
Seeps	5	Are there any signs of leachate seeps surrounding landfill	Yes	No
Erosion	6	Is there any sign of erosion damage on the landfill such as gullies or rills on the surface	Yes	No
Damage	7	Are ditches and channels collection siltation	Yes	No
	8	Are the sedimentation basins at capacity	Yes	No
	9	Are the spillways cleaned, functional, and undamaged	Yes	No

(Note: Erosion damage to be inspected after every major storm event in addition to monthly inspection)

Cover	10	Is there any sign of settlement on the landfill	Yes	No
Settlement	11	Is there any evidence of slope failures on landfill cap	Yes	No
Vegetative	12	Are there any areas of the cap needing vegetation	Yes	No
Cover	13	Does the vegetation appear healthy	Yes	No
Condition	14	Does the vegetation appear healthy	Yes	No
Run-on & Run-off	15	Surface water control features functional (is run-on and run-off diverted from site)	Yes	No
Control	16	Surface water control features adequate for site	Yes	No
	17	Is ponding on water on top of waste in evidence	Yes	No
Air Quality	18	Is there any indication of decomposition gas migration vented to atmosphere	Yes	No
	19	Is there any concentration of decomposition gases in a manner that will pose an explosion or toxicity hazard	Yes	No
	20	Are there any areas of dead vegetation on the landfill	Yes	No

APPENDIX 7

WASTE SCREENING PLAN FOR THE TRANSFER STATION

WASTE SCREENING PROGRAM

TABLE OF CONTENTS

<u>Section</u>	<u>Page Number</u>
I. Introduction.....	1
II. Acceptable Material	1
III. Prohibited Material	2
A. Unauthorized Wastes	2
B. Identifying Prohibited Material.....	2
IV. Waste Screening.....	4
A. Scale House.....	4
B. Tipping Floor	5
C. Random Waste Inspections.....	5
V. Response to Unauthorized Waste	7
A. Prior to Acceptance.....	7
B. At Waste Screening Location	7
C. Disposal.....	7
VI. Reporting.....	8
VII. Alternate Collection Programs.....	8
VIII. Training Program	9
 <u>Attachments</u>	
Attachment 1	10
Illustrated Screening Protocol	
Attachment 2.....	11
Random Waste Inspection Report Sample	

I. INTRODUCTION

This plan will be implemented at the Watauga County Transfer Station and all other waste disposal or handling operations on site (the Facility) to prevent the disposal of unauthorized waste at this facility. The important concepts of the plan are for facility personnel to:

- a. Know the material that is acceptable at the facility.
- b. Recognize how to identify loads that may contain unacceptable material; and
- c. Know procedures for preventing, removing, and reporting unacceptable material that enters the facility.

To ensure that the facility personnel follow these concepts, they will be required to review the contents of the plan during their first few days on the job and attend at least annual training regarding the Program. Records of training will be placed in the operating record for the facility.

II. ACCEPTABLE MATERIAL

The following list outlines the type of wastes that are acceptable for transfer from the Transfer Station:

- A. Commercial waste
- B. Construction waste
- C. Debris
- D. Demolition waste
- E. Discarded material
- F. Garbage
- G. Household waste
- H. Industrial waste as approved by the County or disposal facility
- I. Institutional waste except anatomical waste from health care facilities or infectious waste as specified in Regulated Medical Waste Regulations.
- J. Municipal solid waste
- K. Putrescible waste including occasional animal carcasses.
- L. Refuse
- M. Residential waste
- N. Rubbish
- O. Scrap metal
- P. Trash
- Q. Specific wastes as approved by the DENR

The following list outlines the type of wastes that are acceptable at the LCID landfill:

- A. Land clearing debris / yard waste (brush, grass, limbs, stumps, etc.)
- B. Inert materials (concrete, brick, concrete block, uncontaminated soil, rock, etc.)

- C. Untreated / unpainted wood

The following list outlines the type of wastes that are acceptable for the Mulch operations:

- A. Land clearing debris
- B. Yard waste
- C. Untreated / unpainted wood

III. PROHIBITED MATERIAL

- A. Unauthorized Wastes

The following materials are unauthorized wastes that will not be accepted at the transfer station or any other disposal or mulching facility on site:

1. Bulk or non-containerized liquid (household liquids are exempt);
2. Regulated hazardous wastes;
3. Solid wastes, residues, or soils containing Dioxins;
4. Solid wastes, residues, or soils containing PCB's;
5. Pesticide containers that have not been triple rinsed and crushed;
6. Drums that are not empty, properly cleaned, and opened;
7. Waste oil (except as accepted at the Recycle Center);
8. Contaminated soil;
9. Regulated medical waste;
10. Friable and non-friable asbestos;
11. Radioactive wastes;
12. Lead acid batteries (except as accepted at the Recycle Center).

- B. Identifying Prohibited Material

The following list outlines the types of prohibited waste:

1. Regulated Hazardous Waste

Regulated hazardous waste is determined based upon its listing as a hazardous waste in Subpart C, 40 CFR Part 261 or it exhibits characteristics of hazardous waste, i.e. ignitable, corrosive, reactive or toxic. Hazardous material coming from a household typically used in a household and normally discarded in residential trash is considered household hazardous waste and is accepted at the facility.

2. Regulated Medical Waste

Regulated medical waste typically is generated at health care or medical research facilities and is suspected by the health care professional capable of producing infectious disease in humans. Regulated medical wastes are required to be placed

in a red bag with an infectious warning symbol. Any such bags encountered should be assumed to contain regulated medical waste.

Regulated medical waste includes:

1. Cultures and stock of microorganisms and biologicals, discarded cultures, stocks, specimens, vaccines and associated items likely to have been contaminated by them if they are likely to contain organisms likely to be pathogenic to healthy humans.
2. Wastes consisting of human blood, human blood products (includes serum, plasma, etc.) and items contaminated by human blood.
3. All human anatomical wastes and all wastes that are human tissues, organs, body parts, or body fluids are regulated medical waste.
4. Sharps likely to be contaminated with organisms that are pathogenic to healthy humans, and all sharps used in patient care or veterinary practice.
5. Animal carcasses, body parts, bedding and related wastes when animals are intentionally infected with organisms likely to be pathogenic to healthy humans for the purposes of research, in vivo testing, production of biological materials or any other reason.

The following regulated medical wastes are not subject to the requirements of the regulations when dispersed among normal solid wastes and not accumulated separately:

1. Used products for personal hygiene, such as diapers, facial tissues and sanitary napkins.
2. Material, not including sharps, containing small amounts of blood or body fluids, but containing no free flowing or unabsorbed liquid.

3. Liquid Waste

Wastes containing free liquids are not acceptable at the facility unless it is a small quantity such is normally found in a household. However, even household pesticide containers must be triple rinsed and crushed. Drums must be empty, properly cleaned and opened.

4. Waste Containing PCBs

Polychlorinated biphenyls (PCBs) were produced between 1929 and 1977 and typically used as dielectric fluids (insulating liquids) in electrical transformers and capacitors. Trade names for PCBs include Aroclor, Askarel, Pyroclor, Sanotherm, and Pyranol. PCBs are typically clear to yellow in color and exhibit a heavy oil-like consistency.

5. Friable and Non-Friable Asbestos

Friable asbestos consists of any waste material containing more than 1.0% asbestos as determined using the polarized light microscopy methods specified in 40 CFR Part 763, Subpart F, Appendix A, Section 1, that, when dry, is capable of being crumbled, pulverized or reduced to powder by hand pressure. Asbestos was used in applications that required material that is noncombustible, resistant to corrosion, has a high tensile strength and a low electrical conductivity. Such applications included thermal insulation, brake linings, cement pipe, floor tile, shingles and sealants. Floor tile is generally non-friable, and does not emit airborne fibers unless subject to sawing or sanding operations. Other materials such as asbestos cement sheet and pipe can emit asbestos fibers if the materials are subject to breakage or crushing during demolition. For this reason, such materials are considered friable.

IV. WASTE SCREENING *(see "Attachment 1" for illustrated screening protocols)*

A. Scale House

The safest and most effective way to prevent unauthorized waste from being disposed at the facility is to discover unacceptable material before it is dumped on the tipping floor. This could occur as the load stops at the scale house. Workers in the scale house should be familiar with the regular haulers that come to the facility and where those loads are generated. Special attention should be given to haulers from the manufacturing industry, the automotive services industry, or the printing industry.

Haulers unfamiliar to the scale house operator should be scrutinized. Indications that there may be unacceptable waste on the load are hazardous placards or markings, powders or dusts, drums and commercial size containers, and chemical odors. Loads suspected of containing unacceptable wastes shall be isolated to the side and inspected by the facility supervisor. If that is not possible, the scale house operator shall notify the transfer station by radio to alert them of the suspicious load.

If practical, operating personnel will visually inspect uncovered loads for the presence of unauthorized wastes. Trucks containing these items will be turned

away. In addition, the vehicles that have special waste, such as tires, batteries, waste oil to be recycled, or white goods, will be directed to special unloading areas.

B. Tipping Floor

The transfer station operator will direct any suspicious load to a separate area of the tipping floor where the load can be examined for unacceptable material. Personnel at the transfer station will routinely observe loads as they are dumped. They will monitor for free liquids, regulated hazardous wastes, regulated medical wastes, or other waste not to be accepted at this facility as listed above. They will watch for items such as cans with liquids, compressed gas cylinders, drums, powder or liquid that emits a vapor or smoke. Equipment operators should constantly be looking for suspicious containers mixed in with the refuse. If one is spotted, the operator should get off of the equipment to look closer at the container. If the equipment operator can determine that there is no unapproved waste present, then he can proceed with his duties. If he is not certain of the waste, he should contact the facility supervisor. Under no circumstances should the equipment operators open the container or touch or try to smell the waste. This could be a very hazardous material and should be treated accordingly.

In the event unacceptable material is discovered, the observer shall:

1. Immediately report the incident to the facility supervisor or his designated representative.
2. Avoid exposure to the substance in question and ensure other personnel and site users are clear of the area.
3. Ask the driver to remain at the facility until the situation is resolved.

Transfer Station personnel should notify the facility supervisor or his designated representative once it is determined that the material is unacceptable. The facility supervisor or his designated representative shall notify the North Carolina Department of Environmental and Natural Resources (DENR) and discuss the steps necessary for removal or treatment. The County will coordinate the removal and proper disposal of the material at a permitted facility, if necessary. A detailed written report will document the incident and be placed in the operating record and a copy sent to DENR. Information contained in the report will include the names, addresses, and phone numbers of the original waste generator and transporter and the names, addresses, and phone numbers of the transporter and the facility for the final destination, where known.

C. Random Waste Inspections

Not including inspection of suspicious loads, the facility will conduct inspections on at least one percent of incoming loads. The facility operator or spotter will randomly

pick the vehicle chosen for inspection. The procedures for inspections will follow the waste screening methods outlined in this plan. Records of these random inspections will be placed in the facility operating record.

The load selected for inspection should be dumped separately from other waste and visually inspected. A copy of a waste inspection form is attached to this waste screening plan as Attachment 2. The form records the date and time of inspection, the inspector, the waste hauler and source of the waste, and comments on the inspection of the waste.

Waste inspections will include the following items:

- Spread and visually examine the waste;
- Flag suspicious items;
- Conduct field tests as appropriate;
- Collect samples for laboratory tests (or have a laboratory collect the samples);
- Record inspection event.

Even though regulated hazardous waste and regulated medical waste are prohibited at the facility and the prohibition is posted at the entrance, some small quantities of hazardous or medical waste may get into the facility, typically in household wastes. The staff should be aware of the more common items they might find and how to handle those items. The following procedures should be followed if a suspicious item is found.

1. As waste is being unloaded, watch for items such as: 1 and 5 gallon cans with liquids, compressed gas cylinders, 20, 35 and 55 gallon drums, powder or liquid that emits a vapor or smoke, automotive batteries, red bags or packaging with a biological hazard symbol on a label, syringes with attached needles. The operator may add to this list.
2. Items that are spotted should be isolated and operations adjusted or moved to another location or halted depending on the potential risk involved.
3. The facility manager or supervisor must be called immediately to inspect the situation and decide on the appropriate course of action.
4. Every attempt should be made to identify the hauler who brought the container into the site. That hauler should be responsible for its removal and cleanup costs, damage to equipment, or injury to operating personnel or users of the facility.
5. During the period the material is on site, no one should attempt to move it by hand or to sample or smell it. Protective clothing and equipment is usually required to handle such material.

6. The facility supervisor should record pertinent facts regarding the vehicle and the waste including, but not limited to: name of hauling company, license number, where the load was picked up if known, visible evidence identifying the waste, and quantity and state of the substance (solid or if contained or loose).
7. The facility supervisor will coordinate removal of the unacceptable waste with proper authorities.

V. RESPONSE TO UNAUTHORIZED WASTE

A. Prior to Acceptance

The facility will refuse to accept the waste if it has not been unloaded. The incident will be logged in the appropriate waste inspection form and the form incorporated into the operating record. If regulated hazardous or regulated medical waste is detected, the DENR will be notified.

B. At Waste Screening Location

If it is accepted (discovered/received/unloaded) and the hauler or generator cannot be identified, the facility must remove, segregate, and provide the DENR with a record identifying the final disposition of the material. The facility may allow the hauler to remove prohibited wastes such as tires, batteries, unrinsed pesticide containers, etc. If regulated hazardous waste, medical waste, or PCB containing waste is identified, the waste will not be returned to the hauler. The facility will follow the procedures discussed in the next paragraph.

C. Disposal

Regulated hazardous waste, medical waste, and waste containing PCB's, and other unauthorized wastes are not allowed at this facility. The generator and/or hauler may be in violation of state or federal laws in attempting to dispose of the waste at this facility. If these materials are detected, the operator will:

- Segregate the waste (isolate it from the rest of the facility waste);
- Secure the waste;
- Contain or cover the waste to prevent leakage or contamination;
- Notify the DENR;
- Have an approved contractor handle cleanup and removal as soon as practical, but no longer than within 90 days of discovery;
- Have the approved contractor disposal of the material at a regulated disposal facility;

- If the waste is regulated medical waste, it must be refrigerated unless it can be demonstrated that the waste has not been, or will not be, stored for more than seven days. Regulated medical waste must be properly removed within 15 days of discovery.

VI. REPORTING

Records of inspections, rejected waste, and unauthorized wastes removed from the site will be maintained in the facility's operating record. The records should include time and date of the inspection, the personnel involved, the hauler, and the results of the inspection (*see "Attachment 2" for a suggested format*). Records will be kept for the life of the facility plus the post-closure care period. The operating record will be subject to inspection by the DENR at any time.

If regulated hazardous or medical waste is found at the facility, DENR must be contacted. Verbal notification will be provided within 24 hours of the time that the facility becomes aware of the material. Written notification will follow within five days of the time that the facility becomes aware of the unacceptable material. The written report will include:

- Description of the event;
- Cause of the event;
- Time and date of the event;
- Actions taken to respond to the event.

If needed, DENR will assist the facility personnel in handling and disposal of the hazardous or medical wastes. Only authorized transporters may transport regulated hazardous and medical wastes. Records will be maintained of the transporter and final treatment and disposal of regulated hazardous and medical wastes detected at the facility.

The following records must be kept in the operating record of the facility:

- Sample Random Waste Inspection Form
- Results of inspection of suspicious loads
- Documentation of all waste screening training for each employee

VII. ALTERNATE COLLECTION PROGRAMS

The County currently collects tires, waste oil and lead acid batteries at the Recycling Center. Should these be found in a load, they will be collected and taken to the Recycle Center. Additional collection programs may be added. The programs will include proper removal and disposal of collected wastes.

VIII. TRAINING PROGRAM

The facility operating personnel will be trained in waste screening and recognition of regulated hazardous waste and other unacceptable waste. The SWANA Waste Screening Course and training sessions are recommended. In addition all transfer station operators will have SWANA Transfer Operations training that also touches on acceptable and unacceptable wastes and their handling on the tipping floor. The facility manager or supervisor will distribute information from these courses and other sources on waste screening to the site personnel. The facility will conduct periodic training on waste screening policies and procedures for personnel.

The training program will include issues such as:

- Applicable regulations;
- Lists of authorized and unauthorized wastes;
- How to recognize unauthorized wastes;
- Waste screening procedures;
- Protocols for random inspections;
- Proper procedures for removal of unauthorized wastes detected; and
- Protocols for reporting incidences of the receipt of unauthorized wastes.

Recognition of unauthorized wastes will include an understanding of the list of materials that can be accepted and not accepted, and indicators such as hazardous placards, containers, liquids, powders, dusts, sludges, bright colors, or chemical odors.

PCBs may be found in some lubricants, plastic insulation, computer and television casings, solvents, and sealants. Ballasts in older fluorescent light fixtures may contain PCB's.

Flooring tiles, older roofing shingles, and some exterior siding may contain asbestos. Older pipe wrap insulation may also contain asbestos.

Medical waste may be red-bagged, or identified by bloody rags, needles, syringes or labels that state "Medical Waste" or "Infectious Waste"

Records of training activities will be kept on file to verify that training has taken place.

ATTACHMENT 1

Illustrated Screening Protocols

ATTACHMENT 2

Sample Random Waste Inspection Form

Watauga County
Transfer Station

Random Waste Inspection Report

Date: _____ Time: _____

Name of Inspector: _____

Location of Inspection (circle one)

Transfer Station Scales Other _____

Type of Vehicle (circle one)

Roll-off Packer Dump-Truck Other _____

Name of Business/Hauling Company: _____

Vehicle License Number: _____

Driver's Name: _____

Is Customer a Regular Facility User? Yes No

Type of Waste (circle one)?

Residential Industrial Commercial Construction/Demolition/Debris
Other _____

Description of Load:

Drums Yes No

If yes, are drums crushed? Yes No

If drums not open and crushed, describe condition and contents: _____

Signs of medical waste? Yes No

If yes, describe material: _____

Are there abnormal odors or fumes related to material: Yes No

If yes, describe: _____

Are there liquids associated with material? Yes No

If yes, describe and quantify liquids: _____

Any signs of asbestos containing material? Yes No

If yes, describe material: _____

Load Rejected (circle one): Yes No

If yes, call supervisor to complete the load rejection report

Additional Comments/Actions Taken: _____

Signature of Inspector: _____

APPENDIX 8

INSPECTION CHECKLIST FOR THE LCID LANDFILL

QUARTERLY INSPECTION CHECKLIST
WATAUGA COUNTY LCID LANDFILL

Date of Inspection _____ Weather _____
 Inspector's Name _____

Category	No.	Inspection to be Conducted	Yes	No
Security	1	Is entrance gate and lock functioning properly?	Yes	No
	2	Is fencing maintained?	Yes	No
Devices	3	Is access controlled by wooded areas where no fence exists?	Yes	No
Site Accessibility	4	Site accessible to vehicles by all-weather roads leading from public system?	Yes	No
	5	Scale attendant at entrance?	Yes	No
	6	Is traffic pattern safe for landfill users?	Yes	No
Waste Handling	7	Are wastes deposited in proper designated areas?	Yes	No
Compaction	8	Landfill equipment capable of functioning on a slope not steeper than one (vertical) to three (horizontal)?	Yes	No
	9	Wastes compacted to smallest practical volume?	Yes	No
	10	Is working face small enough to manage?	Yes	No
Cover Material	11	Adequate equipment on site to cover wastes periodically?	Yes	No
	12	Is periodic soil cover adequate?	Yes	No
	13	Final cover applied to areas at final grade	Yes	No
	14	Is vegetative cover established on closed areas	Yes	No
	15	Is vegetative cover established on exterior landfill slopes	Yes	No
	16	Do areas require seeding within the LCID area	Yes	No
	17	Is there sign of settlement on the landfill	Yes	No
	18	Is there evidence of slope failures on the landfill cover	Yes	No
	19	Does the vegetation require mowing	Yes	No
	20	Does the vegetation appear healthy	Yes	No
Aesthetics	21	Is dust controlled on site	Yes	No
	22	Are vectors (birds, rodents, other animals) controlled on site	Yes	No
Erosion Damage	23	Is there sign of erosion damage on the landfill such as gullies or rills on the surface	Yes	No
	24	Do any of the ditches and channels need maintenance	Yes	No
	25	Does the sedimentation basin need cleaning	Yes	No
	26	Are surface water control features functional (is run on collected and run-off diverted from site)	Yes	No
	27	Is ponding of water on top of waste in evidence	Yes	No

(Note: Erosion damage to be inspected after every major storm event in addition to quarterly inspections)

APPENDIX 9

EMERGENCY CONTINGENCY PLAN FOR THE LCID LANDFILL

**EMERGENCY CONTINGENCY PLAN
FOR THE LAND CLEARING AND INERT DEBRIS LANDFILL**

A. GENERAL

This Emergency Contingency Plan details responses to fires on the Watauga County LCID landfill and to releases from the facility. The plan includes the names of persons responsible for emergency coordination and lists the emergency telephone numbers.

B. PLAN CONTENTS

1. Fire Control Plan

Although open burning is not permitted on the landfill, fires can occasionally start in the disposal area. In the event of small fires within the landfill disposal area, each piece of equipment should be fitted with at least two multi-purpose dry chemical 10 lb. fire extinguishers. Whenever smoke is noticed, the source should be investigated. If detected early, the hand held fire extinguishers should stop most small fires. Equipment should be parked off of the working cell and disposal halted while the fire is extinguished. The fire department can provide training in proper use of fire extinguishers.

1.1 Brush/Forest Fire

1. Call 911 and describe situation.
2. Alert on-site personnel in path of fire to evacuate.
3. Remove equipment in path of fire, but only if this can be performed without endangering operator.
4. Fire control will be the responsibility of the Fire Department personnel.
5. If active workface appears to be in the path of the fire, and as directed by Fire Department personnel, place cover soil over exposed waste, if combustible.

1.2 Fire in an Active Cell

1. Operator shall notify the scale personnel of the fire so they can call 911 and describe situation.
2. If the fire appears to be dangerous, the operator will immediately leave the area. The Fire Department may require the utilization of on-site earth moving equipment to extinguish the fire.
3. If the fire cannot be extinguished with cover soil, the Fire Department must apply water as the operator turns the debris in order to ensure complete saturation of the debris to put out the fire. At no time should the operator move the landfill equipment directly into an active blaze.

4. If the operator is involved in fire fighting measures, the operator should take care to avoid equipment contact with the fire and breathing the smoke generated from the fire.
5. The Fire Department personnel should utilize their fire suppression methods when they arrive. A limited amount of non-potable water is available on site in case of fire. The source is the sediment basin west of the LCID landfill. Landfill equipment shall be used to expose any dirt or debris material, ensure that live coals are no longer present. After the fire has been suppressed, all combustible materials and the surrounding area shall be thoroughly soaked with water. The Fire Department personnel shall determine when the fire is totally extinguished.

1.3 Equipment Fire

1. Make sure no person is inside of or on the equipment.
2. The person who discovered the fire should notify the scalehouse of the situation and have them alert the local Fire Department of the situation.
3. If the blaze appears to be suppressible by means of a hand held extinguisher, the onboard fire extinguisher (if accessible) or another available one shall be used. Suppression will depend upon the fuel source of the fire.
4. In the case of an uncontrollable equipment fire, the personnel shall leave the immediate area and wait for the Fire Department.

1.4 Fire or Suspected Fire in an Incoming Waste Load

1. If the vehicle is on the scales, have the vehicle move to an open area away from other equipment and buildings.
2. If not on the scales, alert the scalehouse personnel and move vehicle to open area away from other equipment, buildings or combustible materials.
3. Ascertain the extent of fire in load by visual inspection of vehicle.
4. Dump load on an area of the landfill with intermediate cover away from the working face.
5. Separate combustibles from burning material if possible.
6. Attack source of fire with available building and/or vehicle fire extinguishers.
7. Put water on the fire and remaining smoldering materials to completely extinguish the fire.
8. At all times make every effort to avoid breathing smoke.
9. If deemed necessary at any point in this process, clear the immediate area and call 911.

2. OTHER EMERGENCIES:

2.1 Harmful Liquid Spills

Potential liquid spills could include fuels or lubricants for the equipment at the working face or fluids hidden in the loads. Management of the spill would

proceed as follows:

1. The landfill personnel shall attempt to contain the spilled liquid through the use of soil berms and absorbent materials.
2. Any contaminated soils or absorbent materials shall be disposed of using proper methods.
3. If liquids spill on the working face resulting in toxic or harmful fumes being released, all personnel shall be evacuated from the area of spill and 911 shall be called.
4. If a person has been splashed with a harmful liquid in the process of operations, he/she shall be immediately taken to the nearest eye-wash or shower area to shower off. Eye-wash/shower facilities are located in the Maintenance Shop.

2.2 Harmful Gas Release

Due to the screening process at the scalehouse, the likelihood of a large gas holding container reaching the working face is remote. However, in the event such a gas container leaks or is punctured, there are two primary scenarios possible.

1. An explosion or fire caused by the escaping gas:

1. If injuries result from the explosion or fire, personnel should immediately notify the scalehouse to call 911 and should attempt to stabilize the injured.
2. If no injuries have occurred due to an exploding container and containment of any fire generated as a result has taken place, there is very little that can be done after an explosion. Policing the area for additional containers will be warranted after such an event. If the damaged container has any source identification on it, Watauga County personnel should make every effort to inform the source of the illegality of depositing such containers in the LCID landfill.

2. Gas is hazardous to breathe:

1. If an operator senses that his breathing (or that of others in the vicinity) is being affected by something in the air, he should notify the scalehouse personnel by radio and ensure that all personnel leave the area.
2. The scalehouse personnel should call 911 and describe the nature of the problem and maintain contact with the personnel being affected.
3. Once the gas has been identified, appropriate measures shall be taken to contain, neutralize and/or disperse the gas.
4. The Emergency Coordinator shall determine if residences downwind of the facility should be notified of the problem and/or be evacuated.

2.3 Physical Injury

1. In the event of injury of landfill employees or private citizens at the site, the scalehouse should be immediately notified to call 911 and describe the nature of the problem and maintain contact with the personnel being affected.
2. First aid shall be administered to the injured by available personnel until the Rescue Squad can arrive.

Emergency numbers are listed in Section 4 of this Plan. This list should be posted in a conspicuous place and updated as needed. The landfill operator should review the fire fighting procedures with the fire department to gain their cooperation and to avoid confusion when they arrive at the landfill.

In case of fires after hours when landfill personnel are not present, authorized representatives of the Fire Department should be provided access to the facility property entrance gate. They should also be given permission to cut the lock if necessary to gain entry.

3. Release of Wastes

Since the types of wastes accepted at the Watauga LCID landfill are strictly controlled, releases of wastes that would constitute an emergency are highly unlikely. Some debris may fall from vehicles in route to the disposal area. The routine cleanup of roads and ditches will resolve this problem. If a large quantity of debris is dumped outside of the disposal area, equipment will be used to load and move the waste to the landfill.

4. Emergency Arrangements

The local fire and sheriff's departments will be provided with copies of this emergency plan. Since all parties are departments of the same Watauga County government, formal arrangements for emergency responses are not needed. The following are telephone numbers for emergency situations:

Emergency Telephone Numbers

Fire, Police, Rescue:	911
Watauga Medical Center 336 Deerfield Road Boone, North Carolina 28607	(828) 262-4100
Department of Environment and Natural Resources, Division of Waste Management Winston-Salem Regional Office	(919) 508-8400 (336) 771-5000

5. Emergency Coordinator

Director of Solid Waste (828) 264-5305 (Landfill)

Office Address:

Watauga County Solid Waste/Recycling Department
842 West King Street, Suite 1
Boone, North Carolina 28607-3525

6. Emergency Equipment

The emergency equipment on site will include the multi-purpose dry chemical 10 lb hand held fire extinguishers. The pickup truck used by the landfill personnel carries an extinguisher. One extinguisher will be stored in the attendant's trailer and one will be kept in the equipment building. Every employee will be shown the location of each extinguisher. Each extinguisher will be inspected on a monthly basis. The equipment fire suppressant systems will be inspected by qualified personnel at least yearly.

7. Evacuation Plan

Formal evacuation plans for the habitable structures at landfill are posted in each building. In the event of a building fire, personnel should evacuate the structures as outlined in the plans. The structures are one story, with multiple exit points. Evacuation will begin as soon as a fire is detected.

For fires on the landfill, there are typically only one or two employees at the workface at any one time. These operators will move their equipment away from larger fires, except to fight the fires as discussed earlier. Vehicles hauling waste into the landfill will be directed away from the area of the fire. If the fire is small, the customers will be instructed to wait until the fire is extinguished before dumping their loads on the landfill. For larger fires, when the fire fighting time will be significant, a separate disposal area will be designated, and landfilling operations will continue as the fire is contained. If the fire is large enough to raise concerns about spreading, the landfill operations will cease until the fire is stopped. Haulers will be directed to leave the landfill disposal area until the fire is completely extinguished. Since the fire will be on the landfill, the main access road will not be blocked and alternate routes are not necessary.

8. Emergency Contractor

The Solid Waste/Recycling Department has an additional loader on-site for use when maintenance is required on the landfill loader. In addition, equipment can be borrowed from other County departments should the need arise.

C. PLAN DISSEMINATION

Copies of this emergency plan will be maintained at the following:

Watauga County Solid Waste Facility Scalehouse
336 Landfill Road
Boone, North Carolina 28607

Watauga County Solid Waste Director
842 West King Street, Suite 1
Boone, North Carolina 28607

Boone Fire Department
721 West King Street
Boone, North Carolina 28607

Watauga County Sheriff's Department
184 Hodges Gap Road
Boone, North Carolina 28607

D. PLAN AMENDMENTS

The emergency plan will be reviewed and revised if:

1. The facility permit is amended;
2. The plan fails in an emergency;
3. Changes in the facility design, construction, operation, or other circumstances materially increase the potential for fires, explosions, or releases or change the response necessary in an emergency; or
4. The emergency coordinator or emergency equipment list changes.

APPENDIX 10
PERMIT TO OPERATE



North Carolina Department of Environment and Natural Resources

Division of Waste Management

Beverly Eaves Perdue
Governor

Dexter R. Matthews
Director

Dee Freeman
Secretary

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WASTE MANAGEMENT
SOLID WASTE SECTION

SOLID WASTE MANAGEMENT LANDFILL FACILITY
Permit No. 95-02

WATAUGA COUNTY
is hereby issued a

PERMIT TO OPERATE

LAND CLEARING & INERT DEBRIS LANDFILL PHASE 1
TREATMENT & PROCESSING UNIT

PERMIT TO CONSTRUCT

LAND CLEARING & INERT DEBRIS LANDFILL PHASE 1 EXPANSION

Located at 336 Landfill Road, in Watauga 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 legal description of the site is identified on the deeds recorded for this property listed in Attachment No. 1 of this permit.

cn=Edward F. Mussler III, P.
E., o=Solid Waste Section,
ou=NC DWM, email=ed.
mussler@ncdenr.gov, c=US
2011.06.15 13:44:04 -04'00'

Edward F. Mussler, III, P.E.,
Permitting Branch Supervisor
Solid Waste Section

ATTACHMENT 1

PART I: PERMITTING HISTORY

1. On December 18, 2001 a modification was made to the Permit for the operation of a Treatment and Processing unit.
2. On April 20, 2006 an amendment was made to the Permit to Operate for a five-year renewal of the Treatment and Processing unit.
3. On June 15, 2011 a New Permit was issued for construction and operation of an LCID disposal unit and an amendment was made to the Permit to Operate for a five-year renewal of the Treatment and Processing unit.

Permit Type	Date Issued	DIN
Permit Modification	December 18, 2001	
Permit Amendment	April 20, 2006	
New Permit / Amendment	June 15, 2011	13409

PART II: LIST OF DOCUMENTS FOR THE APPROVED PLAN

NO.	DOCUMENT DESCRIPTION	DOCUMENT ID NO.
1.	<i>Treatment and Processing Facility Permit Amendment Application.</i> Prepared by: Draper Aden Associates. Prepared for: Watauga County. October 23, 2001.	
2.	<i>Permit Renewal for Treatment and Processing Facility, Mulching Operations, Watauga County Landfill.</i> Prepared by: Draper Aden Associates. Prepared for: Watauga County. February 16, 2006.	
3.	<i>Watauga County Landfill Gas to Energy Project.</i> Prepared by: Watauga County. Prepared for: Watauga County. April 13, 2010.	10372
4.	<i>Certification Report: LFG Collection & Control System Modifications.</i> Prepared by: Carlson Environmental Consultants. Prepared for: Watauga County. June 16, 2010.	10903
3.	<i>Watauga County Solid Waste Program Operation Manual.</i> Prepared by: Watauga County. Prepared for: Watauga County. Revised August 2010.	11369
4.	<i>Watauga County – Proposed LCID Landfill Facility.</i> Prepared by: Draper Aden Associates. Prepared for: Watauga County. February 8, 2011.	12899

PART III: PROPERTIES APPROVED FOR THE SOLID WASTE FACILITY

Watauga County, N.C. Register of Deeds				
Book	Page	Acreage	Grantee	Parcel ID No.
085	053	15.0±	Watauga County	2920392009000
252	739	21.1±	Watauga County	2920397780000
134	848	39.5±	Watauga County	2920482773000
Total Site Acreage: 75.6±				

Notes:

1. Deed book references are from the Watauga County GIS website (<http://www.wataugacounty.org/ias/arcgismaps/arcgismapadvanced.aspx>) accessed June 2011.

PART IV: GENERAL PERMIT CONDITIONS

1. This permit is issued by the North Carolina Department of Environment and Natural Resources, Division of Waste Management, Solid Waste Section (Section). In accordance with North Carolina Solid Waste Management Rule 15A NCAC 13B .0201(d), a solid waste management facility permit shall have two parts: a Permit to Construct and a Permit to Operate. The Permit to Construct must be implemented in accordance with Attachment 2 of this permit. The Permit to Operate must be implemented in accordance with Attachment 3 of this permit.
2. The persons to whom this permit is issued (“permittee”) are the owners and operators of the solid waste management facility.
3. (Intentionally blank)
4. When this property is sold, leased, conveyed, or transferred in any manner, 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 and a reference by book and page to the recordation of the permit.
5. By initiating construction or receiving waste at this facility the permittee shall be considered to have accepted the terms and conditions of this permit.
6. Construction and operation of this solid waste management facility must be in accordance with the Solid Waste Management Rules, 15A NCAC 13B, Article 9 of the Chapter 130A of the North Carolina General Statutes (NCGS 130A-290, et seq.), the conditions contained in this permit; and the approved plan. Should the approved plan and the rules conflict, the Solid Waste Management Rules shall take precedence unless specifically addressed by permit condition.

7. This permit is issued based on the documents submitted in support of the application for permitting the facility including those identified in Attachment 1, "List of Documents for Approved Plan," and which constitute the approved plan for the facility. Where discrepancies exist, the most recent submittals and the Conditions of Permit shall govern.
8. This permit may be transferred only with the approval of the Section, through the issuance of a new or substantially amended permit in accordance with applicable statutes and rules. In accordance with NCGS 130A-295.2(g) the permittee must notify the Section thirty (30) days prior to any significant change in the identity or business structure of either the owner or the operator, including but not limited to a proposed transfer of ownership of the facility or a change in the parent company of the owner or operator of the facility.
9. The permittee is responsible for obtaining all permits and approvals necessary for the development of this project including approval from appropriate agencies for a General or Individual NPDES Stormwater Discharge Permit. Issuance of this permit does not remove the permittee's responsibilities for compliance with any other local, state or federal rule, regulation or statute.

- End of Section -

ATTACHMENT 2 CONDITIONS OF PERMIT TO CONSTRUCT

PART I: GENERAL FACILITY CONDITIONS

1. The issuance date of the Permit to Construct is **June 15, 2011**. The initial, substantial, construction authorized by this Permit to Construct must commence within 18 months from the issuance date of this permit. If substantial construction does not begin within 18 months from the issuance date of this permit, then the permit to construct shall expire. Substantial construction includes, but is not limited to, issuance of construction contracts, mobilization of equipment on site, and construction activities including installation of sedimentation and erosion control structures. The permittee may reapply for the permit to construct prior to the expiration date. The re-application will be subject to the statutes and rules in effect on that date and may be subject to additional fees.
2. Construction of all solid waste management units within this facility must be in accordance with the pertinent approved plans and only for those phases of development approved for construction as described in Attachment I, Part II List of Documents for the Approved Plan.
3. The permittee must conduct a preconstruction meeting at the facility prior to initiating construction of any unit/cell and must notify the Section at least 10 days prior to the meeting.
4. Modifications or revisions of the approved documents or changes during construction require approval by the Section, and may constitute a permit modification and be subject to a permitting fee.

Geologic, Groundwater, Surface water, Landfill Gas, and Monitoring Requirements

7. Samples from new ground water monitoring wells and surface water stations shall be sampled for constituents listed in the approved Monitoring Plan and submitted to the Section prior to receiving the Permit to Operate.
8. Prior to construction of the phase or cell(s) within the phase, all piezometers, borings, probes, landfill gas monitoring wells, and groundwater monitoring wells within the footprint must be properly abandoned in accordance with 15A NCAC 2C.0113(b), entitled "Abandonment of Wells."
9. In areas where soil is to be undercut, abandoned piezometers, monitoring wells and borings must not be grouted to pregrade land surface, but to the proposed base grade surface to prevent having to cut excess grout and possibly damage the wells.
10. A Licensed Geologist must report any pertinent geological feature(s) exposed during phase or cell excavation. Prior to placing any landfill liner, the geologist must submit to the Section hydrogeologist a written report that includes an accurate description of the exposed geological feature(s), subsurface soil condition, and effect of the geological feature(s) on the design, construction, and operation of the cell, phase, or unit.

11. A Licensed Geologist must supervise installation of groundwater monitoring wells, landfill gas monitoring wells and probes, and surface water sampling stations.
12. Any modification to the approved water quality and landfill gas monitoring, sampling, and analysis plans must be submitted to the Section Hydrogeologist for review.
13. Within 30 days of completed construction of any new groundwater and/or landfill gas monitoring well, a well construction record (GW-1 form), typical well schematic, boring log, field log and notes, and description of well development activities must be submitted to the Section.
14. The permittee must provide a legible plan sheet-sized, scaled topographical map with a legend, showing the location and identification of all new, existing, and abandoned wells, probes, and piezometers after installation of groundwater and landfill gas monitoring wells.
15. Within thirty (30) days of the completed permanent abandonment of a groundwater or landfill gas monitoring well, the well abandonment record (GW-30 form) and any additional information included in the abandonment record) must be submitted to the Section. The well abandonment records must be submitted to the Solid Waste Section in accordance with 15A NCAC 2C.0114(b) and be certified by a Licensed Geologist.

Erosion and Sedimentation Control Requirements

16. All required sedimentation and erosion control measures must be installed and operable to mitigate excessive on-site erosion and to prevent silt from leaving the area of the landfill unit during the service life of the facility.
17. All earth disturbing activities must be conducted in accordance with the Sedimentation Pollution Control Act of 1973 (15 NCAC 4) and consistent with any other local, state or federal requirements.
18. Facility construction, operations or practices must not cause or result in a discharge of pollution, dredged material, and/or fill material into waters of the state in violation of the requirements under Sections 401 and 404 of the Clean Water Act, as amended.
19. Modifications to the approved sedimentation and erosion control activities require approval by the North Carolina Land Quality Section. The Section must be notified of any sedimentation and erosion control plan modifications.

PART II: MUNICIPAL SOLID WASTE LANDFILL UNIT SPECIFIC CONDITIONS

Not Applicable

PART III: CONSTRUCTION AND DEMOLITION DEBRIS LANDFILL UNIT SPECIFIC CONDITIONS

Not Applicable

PART IV: LAND CLEARING AND INERT DEBRIS LANDFILL UNIT SPECIFIC CONDITIONS

20. Pursuant to the NC Solid Waste Management Rules (Rule) 15A NCAC 13B.0201(c) and (d)(1), this permit approves construction for the expansion of Phase 1 consisting of approximately 0.28 acres increasing the disposal unit to 2.23 acres with a calculated gross capacity of approximately 59,030 cubic yards.
21. Pursuant to the NC Solid Waste Management Rule (Rule) 15A NCAC 13B.542(i)(2) burning of land-clearing debris generated on site as a result of construction activities requires approval by the Section prior to initiating the burn. In addition, the Facility must ensure the activity is in compliance with all air pollution and open burning laws, regulations, and ordinances.
22. The following conditions must be met prior to operation of the expansion of Phase 1:
 - a. The Permittee must obtain a Permit to Operate for the expansion Phase 1 from the Section in accordance with 15A NCAC 13B.0201(d).
 - b. Construction Quality Assurance (CQA) documentation as well as a certification by the project engineer that the landfill was built in accordance with approved plans and the conditions of the permit must be submitted to the Section for review and approval.
 - c. The Permittee must contact the appropriate regional environmental specialist and permitting engineer to determine whether the Section chooses to hold a pre-operative meeting with key landfill personnel and representatives of the Section.
 - d. The edge of the waste footprint must be identified with permanent physical markers.

PART V: MISCELLANEOUS SOLID WASTE MANAGEMENT SPECIFIC CONDITIONS

Not Applicable

ATTACHMENT 3 CONDITIONS OF PERMIT TO OPERATE

PART I: GENERAL FACILITY CONDITIONS

1. The Permit to Operate shall expire **June 15, 2016**. Pursuant to 15A NCAC 13B .0201(e), no later than **January 15, 2016**, the owner or operator must submit a request to the Section for permit review and must update pertinent facility plans including, but not limited to, the facility operation and waste screening plans.
2. All sedimentation and erosion control activities must be conducted in accordance with the Sedimentation Control Act N.C.G.S. 113A-50, et seq., and rules promulgated under 15A NCAC 4.
3. The edge of the waste footprint for all disposal units must be identified with permanent physical markers.
4. The permittee must not knowingly dispose of, or accept for transfer for subsequent disposal, 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. Copies of this permit, the approved plans and all records required to be maintained by the permittee must be maintained at the facility, unless otherwise approved by the Section, and made available to the Section upon request during normal business hours.
6. Financial assurance as required by state rules and statutes must be continuously maintained for the duration of the facility in accordance with applicable rules and statutes. Closure, post-closure cost estimates and financial instruments must be updated for inflation annually within 60 days prior to the anniversary date of the establishment of the financial instrument(s).
7. Closure or partial closure of any unit must be in accordance with the Closure Plans described in the approved plans. Revised Closure Plans must be submitted to the Division at least 90 days prior to implementation.

Operational Requirements

8. This facility is permitted to receive solid waste generated within Ashe, Avery, Caldwell, Watauga and Wilkes Counties, consistent with the local government waste management plan and with local government approval and as defined in G.S. 130-290 (a)(35), except where prohibited by the N. C. General Statutes Article 9 of Chapter 130A, and the rules adopted by the Commission for Health Services.

9. The facility operator must complete an approved operator training course in compliance with G.S. 130A-309.25.
 - a. A responsible individual certified in landfill operations must be on-site during all operating hours of the facility at all times while open for public use to ensure compliance with operational requirements.
 - b. All pertinent landfill-operating personnel must receive training and supervision necessary to properly operate the landfill units in accordance with G.S. 130A-309.25 and addressed by memorandum dated November 29, 2000.
10. The use of different alternative daily cover requires approval, prior to implementation, by the Solid Waste Section. Requests for alternative daily cover approval must include a plan detailing the comprehensive use and a demonstration of the effectiveness of the alternative daily cover. The plan must be developed according to Section guidelines. Plans which are approved by the Section will be incorporated into, and made a part of, the approved documents listed in Attachment 1.
11. The facility must maintain records for all solid waste materials accepted as alternative cover material and used as alternate daily cover. The records must include: the date of receipt, weight of material, general description of the material, identity of the generator and transporter, and county of origin. Such records must be made available to the Solid Waste Section upon request.

Monitoring and Reporting Requirements

12. Groundwater, surface water, and landfill gas monitoring locations must be established and monitored as identified in the approved plans.
13. A licensed geologist must be present to supervise the installation of groundwater monitoring wells. The exact locations, screened intervals, and nesting of the wells must be established after consultation with the SWS Hydrogeologist at the time of well installation.
14. 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.
15. Reports of the analytical data for each monitoring event must be submitted to the Section within 120 days of the respective sampling event. Analytical data must be submitted in a manner prescribed by the Section. Records of all groundwater, surface water, leachate and landfill gas analytical data must be kept as part of the permanent facility record.
16. The four independent samples which comprise the initial baseline sampling event must be collected from each groundwater monitoring well and the report must be submitted to the Section within six months after issuance of the Permit to Operate.
17. Untreated leachate must be sampled and analyzed at least semi-annually concurrently with the groundwater water and surface water sampling, one sample per event. The

leachate must be analyzed for all Appendix I constituents, pH, specific conductance, BOD, COD, nitrates, sulfates, and phosphates. Test results must be submitted to the Section along with groundwater and surface water test results. In the event leachate is recirculated, additional leachate sampling may be required.

18. A readily accessible unobstructed path must be cleared and maintained so that four-wheel vehicles may access monitoring well locations at all times.
19. 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 must be kept as part of the permanent facility record.
20. All well construction records and soil boring logs for new wells must be submitted to the Solid Waste Section Hydrogeologist for review within 30 days of completion.
21. The owner or operator must maintain a record of the amount of solid waste received at the landfill unit, compiled on a monthly basis. Scales must be used to weigh the amount of waste received.
22. On or before August 1 annually, the Permittee must submit an annual facility report to the Solid Waste Section, on forms prescribed by the Section.
 - a. The reporting period shall be for the previous year beginning July 1 and ending June 30.
 - b. The annual facility report must list the amount of waste received and landfilled in tons and be compiled:
 - i) On a monthly basis.
 - ii) By county, city or transfer station of origin.
 - iii) By specific waste type.
 - iv) By disposal location within the facility.
 - v) By diversion to alternative management facilities.
 - c. A measurement of volume utilized in the landfill cells must be performed during the second quarter of the calendar year. The date and volumes, in cubic yards, must be included in the report.
 - d. The amount of waste, in tons from scale records, disposed in landfill cells from October 8, 1993 through the date of the annual volume survey must be included in the report.
 - e. The completed report must be forwarded to the Regional Waste Management Specialist for the facility by the date due on the prescribed annual facility report form.
 - f. A copy of the completed report must be forwarded to each county manager for each county from which waste was received at the facility. Documentation that a copy of the report has been forwarded to the county managers must be sent to the

Regional Waste Management Specialist by the date due on the prescribed annual facility report form.

PART II: MUNICIPAL SOLID WASTE LANDFILL UNIT SPECIFIC CONDITIONS

- 23. The MSW landfill unit stopped receiving waste in April 1994.
- 24. Watauga County must maintain the integrity and effectiveness of the cap system, including making repairs to the cover as necessary to correct the effects of settlement, subsidence, erosion, or other events, and prevent surface water from impounding over waste and run-on and run-off from eroding or otherwise damaging the cap system.
- 25. Post-closure use of the property is subject to review and approval by the Division and must not disturb the integrity of the cap system, or the function of the monitoring systems. The Division may approve any other disturbance if the owner or operator demonstrates that disturbance of the cap system, including any removal of waste, will not increase the potential threat to human health or the environment.
- 26. The permittee must continue to conduct groundwater, surface water sampling and landfill gas monitoring in accordance with the approved plans.
- 27. The permittee must maintain a record of all monitoring events and analytical data. Reports of the sampling events and analytical data must be submitted to the Section in a timely manner.
- 28. Any proposed expansion to the closed MSW landfill unit will be considered a new landfill for purposes of Solid Waste Management permitting.

PART III: CONSTRUCTION AND DEMOLITION DEBRIS LANDFILL UNIT SPECIFIC CONDITIONS

Not Applicable

PART IV: LAND CLEARING AND INERT DEBRIS LANDFILL UNIT SPECIFIC CONDITIONS

- 29. This permit approves the continued operation of Phase 1 of the land clearing and inert debris landfill, as well as the onsite environmental management and protection facilities as described in the approved plans.
- 30. The following table lists the dimensions and details for the LCID landfill unit. The following waste volumes include waste, daily cover, and intermediate cover, but do not include final cover.

Unit	Acres	Gross capacity (cubic yards)	Status
Phase 1	1.95		Operational
Phase 1 Exp.	0.28		Future
Phase 2	0.72		Future

Phase 3	1.28		Future
Total	4.23	90,850	

31. The facility is approved to accept approximately 15,000 tons per year, approximately 48 tons per day (based on 312 days per year), with a maximum variance in accordance with GS 130A-294(b1)(1) as listed in Attachment 1, Part II.
32. The following, at a minimum, must not be accepted for disposal at the facility: hazardous waste, yard trash, liquid wastes, regulated medical waste, sharps not properly packaged, PCB waste as defined in 40 CFR 761, and wastes banned from disposal in North Carolina by G.S. 130A-309.10(f).

PART V: MISCELLANEOUS SOLID WASTE MANAGEMENT SPECIFIC CONDITIONS

General Conditions

33. Wastes received and product stored shall be maintained in reasonably sized piles with adequate fire breaks and lanes in accordance with the approved operational plans and the pertinent rules.
34. Surface water shall be diverted from all operational and storage areas to prevent standing water in operational areas and under or around storage piles. Water that comes in contact with solid waste shall be contained on-site or properly treated prior to discharge.
35. These areas shall be operated and maintained with sufficient dust control measures to minimize airborne emissions and to prevent dust from becoming a nuisance or safety hazard.
36. These areas shall be operated and maintained in a manner so as to minimize odors, prevent the creation of a nuisance, potential health hazard, or a potential fire hazard.
37. Effective vector control measures shall be applied as necessary to control flies, rodents, insects, or vermin.

Operational Conditions – Treatment & Processing (Wood Grinding)

38. The facility is permitted to operate a treatment and processing facility as defined in 15A NCAC 13B, Rule .0101(49).
39. The facility is permitted to receive land clearing waste as defined in 15A NCAC 13B, Rule .0101(23).
40. The facility is permitted to receive wooden pallets constructed of unpainted and untreated natural wood.
41. The facility is permitted to receive yard trash as defined in 15A NCAC 13B, Rule .0101(55). However, this ground material containing yard trash may not be distributed to the public unless it has been composted in accordance with Rule .1400.
42. The facility must manage the treatment and processing according to the Operation Plan included in Attachment 1, Part II: "List of Documents for the Approved Plan". This

document is included in the approved plan. Any revisions to the approved plan shall be approved by the Section, prior to implementation.

Operational Conditions – Type 1 Composting Unit

43. The facility is permitted to operate a compost facility as defined in 15A NCAC 13B, Rule .0101(7).
44. The facility is only permitted to receive waste materials described in 15A NCAC 13B, Rule .1402(f)(1) and (2).
45. The facility must monitor and maintain records to demonstrate the requirements of 15A NCAC 13B, Rule .1406 are continually being met. In addition, the facility is required to maintain records on the following information:
 - a. The amount of waste received into the facility,
 - b. the amount of compost land applied as a soil amendment,
 - c. the area of land compost was applied to as a soil amendment, and the amount and final termination of any remaining compost.

- *End of Permit Conditions* -