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WATAUGA COUNTY
SOLID WASTE PROGRAM
OPERATIONS MANUAL

PERMIT 95-02

Prepared for:

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

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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.

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 operational in January 2005. Old facility being used for storage and will ultimately be demolished.
- Animal Shelter

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 towards 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 people in the following categories:

- Operations Manager (1)

- Scale house clerks (3)
- Equipment operators (9)
- Recycling Coordinator (1)
- Laborers (1)

Appendix 1 contains a list of the current equipment resources owned by the County.

SECTION 4 EXISTING OPERATIONS

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 Layout", included in Appendix 2. In addition, Appendix 3 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 (New Operations)	• Municipal Solid Waste • Commercial Waste • Institutional Waste • Construction Debris • Other materials as approved by County and DENR	Section 4.4
Recycling Center (at Baling Facility)	• Cardboard/pasteboard • Newspaper • Aluminum/steel cans • Electronics • Plastics • Tires • Car Batteries • Used Oil • Scrap Metal / White Goods • Compact fluorescent bulbs	Section 4.3.2 Section 4.3.3 Section 4.3.4 Section 4.3.5
Land Clearing and Inert Debris Landfill	Land Clearing Waste • Stumps/ Brush • Trees • Limbs • Pallets • Grass • Other naturally occurring vegetative material Inert Debris • Concrete • Brick	Section 4.5

FACILITY	PRIMARY WASTE MATERIALS	REPORT SECTION NO.
	• Gravel and Rock	
Mulch Operations	• Yard Waste/ pallets • Untreated / Unpainted Wood	Section 4.6
Swap Shop	Reusable Items	Section 4.7

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, compact fluorescent bulbs. The facility has been operational for 19 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 the waste as it is dropped off by the 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 blowing 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' 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
- Answering the public's questions

4.3 Baling / Former Transfer Station / Recycling Facility:

4.3.1 Former Transfer 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. In 1990, the County constructed a baling facility to bale their MSW prior to placement in the operating landfill. When the Subtitle D regulations became effective, the County reevaluated the continued use of their landfill and decided that closure of the landfill before the April 1994 deadline would be the most cost effective long range solution when coupled with transfer of the waste to a private landfill outside of the County. If the landfill had remained opened, the County would have automatically been obligated to a 30 year post closure period which they wanted to avoid if possible. In addition, because of the presence of groundwater contamination, capping the landfill as soon as possible was determined to be a major component of the corrective action program as part of the presumptive remedy.

In 1994, the baling facility was retrofitted into a transfer station. The operations in this facility were adequate but cramped and inefficient. In 2005, these operations were shutdown and transfer operations were moved to a new facility located approximately 300 feet east of the existing facility.

Materials that were accepted at the transfer station facility included the following:

- Household waste and garbage
- Demolition and debris waste (exclusive of friable asbestos)
- Commercial waste
- Approved industrial waste
- Approved special waste
- Small animal carcasses
- Off-spec recyclables

Materials that were not accepted at the transfer station facility included:

- Hazardous waste
- Liquid waste
- Medical (Red bag) waste
- Large animal carcasses
- Propane tanks
- Gas tanks
- 55 gallon drums-which should go to ferrous metal
- Yard waste - which should go to the mulch operations
- Inert debris - which should go to the LCID landfill
- Untreated wood - which should go to the LCID landfill or mulch operations

- Water or wastewater treatment plant sludges
- Industrial waste not approved as special waste
- Fly ash or bottom ash unless prior approval is received
- Friable asbestos materials
- Radioactive waste
- Lead-acid batteries which are handled at the recycling operations in the baling facility
- White goods or tires which should go to the appropriate recycling operation

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

To retrofit the original baling facility into a transfer station, a long loading area had to be constructed to accommodate the length of the trailer. A transfer trailer is 16' high and the loading area was depressed as much as possible to accommodate this height, although it was not enough to make the top of the trailer flush with the tipping floor. Six feet of trailer extends above the floor slab and the trailer is protected during loading by a concrete push wall. The trailers were backed into this loading area, filled, removed and weighed, and returned for adjustment if insufficient or too much waste was loaded on the trailer. If the weight was within the acceptable range, the trailer was tarped and stored until the haul driver arrived. This operation no longer exists at this building. However the County will retain the wall and loading areas should its use be necessary under emergency circumstances in the future.

Waste was 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 was tipped onto the small tipping floor (approximately 5,700 sf) and then scooped up and lifted over the 6' wall into the receiving trailer by a loader. The goal of the County was to remove all waste from the tipping floor at the end of the day.

As waste was delivered and dumped on the tipping floor, the operator had the opportunity to screen the waste for unacceptable materials. Unacceptable materials were either removed for later handling or isolated until a preliminary identification of the waste and its source could be made. Screening was critical at this stage because the receiving facility could reject a full trailer for disposal if they had reason to suspect the presence of hazardous or unacceptable wastes. This would have created 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 blowing 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 hazmat response should handle suspicious materials.

Fluids from the delivery vehicles and from wash down were collected in the building floor drain system and discharged into a holding tank which discharges into the sanitary sewer system. The floor was steam cleaned as often as possible at the end of the day. At a minimum the floor was cleaned once per week.

These transfer operations have been relocated to the new transfer facility. However, the loading area and concrete retaining wall will be kept in place should an emergency backup facility be necessary.

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

The facility was inspected monthly.

Record keeping included:

- Log of daily events
- Accident, damage or incident reports
- Unacceptable waste reports and waste screening log
- Weigh records
- Maintenance logs
- Recyclable records (delivered/shipped)
- Personnel records
- Inspection logs

Important aspects of this operation included:

- 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

4.3.2 Recycling Operations:

The baling/transfer station facility is also used and will continue to be used for recycling. These recycling operations process materials collected from the convenience centers or as delivered by citizens or businesses. The baler is used for baling cardboard, newspaper, plastic and 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.

Recycling material is delivered by commercial, private and public vehicles which are directed to the proper areas. Cardboard is delivered directly to the facility, 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. Newspaper and plastic are baled directly. Cans are sorted mechanically then baled. Glass is dumped into an open top roll-off and shipped out to the processing facility. New glass bunkers are under construction and once completed, glass will be stored in the bunkers and hauled off site to be processed as needed.

A recycling technician separates waste from the recycling. The rejected material is dumped onto the tipping floor for placement into the haul trailer.

The expansion of the current recycling facility has increased efficiency and effectiveness of the operations.

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 facility is secured each night by closing and locking the gate at the scale house and by closing and locking the doors of the facility.

Important aspects of this operation 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

4.3.3 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 baling facility 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.

4.3.4 White good and scrap metal recycling:

White goods and scrap metals are collected at the baling facility for recycling. The white goods are stockpiled in the location indicated on the attached drawing 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

4.3.5 Tire Collection:

Tires are collected at the baling facility 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

4.3.6 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.

4.3.7 Mobile Home and Thermostat Recycling Process

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 on-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 and properly dispose of the materials at the Landfill.
- 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 perhaps we receive a mobile home at the landfill that has not been deconstructed, we have adequate space to receive one at a time and plan to properly deconstruct, separate, and dispose of material.

Thermostat(mercury switches) Recycling Process

The county will manage the mercury containing thermostats in a way that prevents releases of any universal waste or components to the environment. The 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".

4.3.7 Electronics Recycling

Watauga County accepts all types of electronics for recycling at the main 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 transported to Synergy Recycling in Mayodan, NC , and picked up on a quarterly basis, where they are disassembled and all components are recycled.

1. Illegal Disposal/Litter

4.4 New Transfer Station:

Watauga County constructed a new 14,000 sf transfer station which went on line in 2005. The layout of the facility is provided in Appendix 5. The new transfer station is configured to allow the waste to be pushed directly into a loading hopper and into the haul trailer. This will eliminate the problems and inefficiencies with the previous system where the waste was lifted over a 6' high wall. In addition, the new facility will segregate the residential traffic from the larger commercial and public haulers. This should improve the safety of the delivery system. With the new configuration, the facility will be able to handle peak periods more effectively and should be able to meet the needs of the County for the future. The floor will be washed at the end of each day and other housekeeping chores completed.

The additional size of the facility will improve the handling and waste screening activities. The facility has been positioned such that the open doors are on the opposite side from the prevailing wind. Blowing waste in the transfer station should be minimal. The transfer truck loading bay will be equipped with doors to minimize blowing litter as it is dropped into the hopper. The facility will be 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 will enhance the waste screening process.

The tipping floor will have a trench drain system for collecting fluids that may discharge from the delivery vehicles and for collecting the washdown water. Trench drains will also be placed in the trailer loading bay to collect washdown water. Washdown waters and fluids from the delivery vehicles will be passed 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.
- 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 PCB's;
- 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;
- Large animal carcasses;
- Propane tanks;

- Gas tanks;
- 55 gallon drums.
- Plastics #(1-7)
- White Goods
- Aluminum cans
- Whole scrap tires
- Antifreeze
- Motor vehicle oil filters
- Wooden pallets
- Oyster shells
- Computer Equipment
- Discarded televisions

Waste that is acceptable but which is not to be disposed of in the transfer station 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 at the baling facility
- Waste oil which should go to the recycling center at the baling facility
- White goods or tires which should go to the recycling center at the baling facility

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. Our 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 8 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 blowing 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 a 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:

In 1998 Watauga County closed their demolition landfill which 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.

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 transfer station 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 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.

The facility is policed daily. A full time operator is not stationed at the site, as materials are delivered sporadically. A dozer is assigned to the facility.

The operator checks the site frequently for signs of erosion and repairs/modifies the operations accordingly. Erosion control measures which may be implemented include:

- Placement of additional cover soil and stabilization with temporary seeding
- Installation of silt fence around working face
- Improvement or addition of stormwater channels or temporary diversion ditches
- Temporary seeding

The operator must also work diligently to maintain access into the site. The access road is graded and graveled as necessary to minimize safety concerns, minimize dust and to minimize mud tracked onto the main landfill road.

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 operations of this facility include:

- Pre-screening of waste to eliminate unacceptable materials
- Maintenance of appropriate erosion and sediment control measures including temporary seeding, silt fence as needed, and diversion channels.
- Policing materials to assure that unacceptable waste is segregated and properly handled.
- Periodic covering of the waste materials to assure that insects and rodents to not become a nuisance, and to assure that erosion or dust are not problems.

4.6 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 contained the following conditions:

1. Operation and maintenance of this facility shall be in accordance with the Solid Waste Management Rules (15A NCAC 13B, Section .0302), the permit application and Operation Plan submitted with the permit application. Failure to comply may result in compliance actions or permit revocation.
2. Any leachate generated in the treatment and processing area shall be managed in such a manner that there will be no degradation of ground or surface waters.

3. This facility shall be operated in such a manner that soil erosion and runoff from the site shall be controlled. Storm water structures shall be maintained as approved for the landfill.
4. All waste and processed materials shall be maintained at leave 50 feet from permit boundary lines.
5. Only materials specifically listed in the permit application may be managed at this facility without adequate testing and prior approval of the Division of Waste Management. Should materials begin to compost, generate heat in excess of 110 degrees Fahrenheit, resulting in a change in physical appearance of the ground material it will be necessary to obtain a compost permit for this application.
6. Non-conforming waste received at the facility shall be removed and recycled or managed at the adjacent transfer station.
7. Engineered (glued) wood products shall not be managed in this area.
8. This facility 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.
9. The amount of waste received and the amount and type of products sold or otherwise distributed shall be reported to the Department of Waste Management by August 1st of each year for the previous July 1 to June 30.
10. 75% of materials received shall be treated or processed and distributed within 12 months of receipt.
11. **This permit shall expire on April 20,2011**. Changes in ownership, increase in facility capacity, process changes or receiving additional wastes shall require a permit modification. Any modifications to the Treatment and Processing Rules will have to be addressed within 90 days of the effective date of those rules.

Approximately 3,000 tons per year are received and stored in an area on site as indicated on the drawing in Appendix 2. Twice a year, the County contracts the grinding to process 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 the 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. It also requires 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 to 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.

4.7 Swap shop:

As with any waste operation, items are received which may still have a useful life. A facility has been developed at the new convenience center in which 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
Wednesday and 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.

4.8 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 4 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 new maintenance facility has a maintenance pit, tool and parts storage, an indoor wash bay and several work bays. With the additional space, the County will also provide 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 new 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 records
- Maintenance of parts and tool inventory.

4.9 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 Handbook, latest edition.

4.10 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:

4.10.1 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.

4.10.2 Gas monitoring:

Gas is monitored quarterly at the closed Watauga County Landfill. There are two 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.

Gas is vented from the MSW landfill through 22 passive vents installed through the synthetic cap. The gas that is collected is flared off to one main blower system. On a daily basis, the blower system is inspected to assure proper

operation. A landfill gas remediation plan has been implemented to decrease the amount of methane detected.

Watauga County is in the process of installing a landfill gas to energy project that will use the methane gas currently being collected to run two generators to produce electricity that will be used for the Sanitation Department with the remainder being put on the grid and sold to Blue Ridge Electric Membership Corporation. Following is a description of the equipment being used for the project. Included in this information are safety and disconnect features in case of an emergency. All work has been/will be performed in OSHA Level D protection and in accordance with the SWANA Landfill Gas Division Health and Safety Task Force, "A Compilation of Landfill Gas Laboratory and Field Practices and Procedures', dated March, 1992.

GAS TRANSMISSION LINE: Carlson Environmental Consultants, PC has installed a below grade landfill gas transmission pipeline from the blower/flare station location to the maintenance facility. A condensate trap was required due to the topography of the route and a field fabricated 12-inch condensate trap and secondary isolation vessel were also installed to facilitate condensate removal. The 6-inch HDPE transmission line was installed with a minimum cover of 12-inches along the gravel road passing the old maintenance facility and the animal shelter. The pipeline was terminated near the electricity generation equipment location (behind the Maintenance Shop) with a 4-inch flange connection and blind flange.

SWITCHGEAR: The components of the switchgear are: outside safety disconnect, inside 3ph circuit breaker panel, two (2) 3ph protective breakers, inside (2) 3ph motor contactors to join/disconnect from Grid, inside one (1) ph 277 V breaker for inside 277 V lighting, inside one (1) ph 277 V breaker for inside breaker panel for control circuits, inside breaker panel for inside control circuits and general purpose receptacles, and an inside step down transformer 277 - 120/240 V and Woodward easYgen controls.

GRID CONNECTION AND ENGINES: The point of interconnection is the new Blue Ridge Electric Membership Corporation (BREMC) transformer that will be installed close to the generator building. There are no transmission lines and no distribution lines. The county's connections will be to the 480V side of the BREMC transformer - the point of common coupling (PCC). BREMC will meter the 480V side of the transformer to see what is delivered to the distribution system. BREMC also will meter the distribution delivery to all facilities at the landfill for billing purposes.

This generation facility operates with methane gas provided by a capped landfill operation. The components are connected to the BREMC distribution system 300 KVA 0.48KV secondary padmount transformer Point of coupling (PCC).

The two Baldor GLC100 generators will be utilizing 700 or less BTU landfill gas and will operate independently. The metering of the facility will be of a 4 quandrant meter provided by BREMC and will provide profile metering of the energy and reactive vars data generated and received by the generation facility. The components of the facility are:

1. Two (2) Baldor GLC100 methane gas engine generators rated at 109 KVA @ 150 degC Standby rating or 98 KVA@105 deg C Prime rating 0.48KV 4w wye
2. Two (2) Woodward easYgen synchro-controls
3. Two (2) 135A NEMA Size 4 0.48KV contactors
4. Two (2) E Frame 18KA 100A 3Pole protective breakers
5. One (1) NEMA 1 400A mains 0.48wye/.277KV Class 1670 Panel
6. One (1) Outside safety disconnect NEMA 3 200A 22,000A Asym 3Ph fault
7. Two (2) 3ph-4wire circuits of 1/0 cu 75 deg C conductor from the safety disconnect to the PCC.

GAS LINE CONNECTION TO ENGINES: Following are the components of the gas line connection to the engines:

1. 6-inch diameter SDR 17 HDPE piping for inlet LFG gas to condensate knock-out pot.
2. 12-inch diameter HDPE condensate knock-out pot with flanged top and bottom drain.
3. Two (2) 4-inch diameter HDPE pipe runs from the condensate pot to the engine inlets.
4. 4-inch diameter flange for future 3rd engine inlet.
5. Two (2) HDPE ball valves for gas flow shut-off to engines.
6. Two (2) temperature gauges for inlet gas temperature to engines.
7. Two (2) pressure gauges for inlet pressure to engines.
8. Flanged 5-ft straight run of 4-inch HDPE pipe on each inlet line to allow for future installation of flow meters.
9. Two (2) stainless steel flexible connections from inlet gas line to engine inlet.

The county has a secondary blower as a backup in case of primary blower failure.

4.10.3 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 reseeding, liming and mowing. The demolition has a soil cap; the MSW landfill has a composite cap consisting of a soil infiltration layer topped with a 40mil 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 vent/flare system must be maintained in good condition. These facilities are inspected periodically and repaired as necessary. The blower 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 7 contains a sample inspection form for use by the County.

4.11 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 Convenience Center

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 will begin 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

EQUIPMENT LIST

EQUIPMENT LIST

Trucks

Year	Model/Description
08	Freightliner Trash Truck
02	Freightliner trash truck – front loader
05	Autocar trash truck – front loader
92	White GMC – roll off
05	Volvo – roll off
86	GMC General – road tractor
08	Sterling Dump truck
86	International – dump truck tandem
96	Kenworth – road tractor
66	Kaiser – army truck
86	Chevy – Service truck
09	Freightliner Road Tractor

Heavy Equipment

Year	Model/Description
98	160 JD Excavator
98	644G JD Loader
05	Komatsu Loader
98	750C JD Dozer
07	580K Case Backhoe
99	Skid Steer New Holland
90	Vermeer Wood Chipper
90	Finn Hydroseeder
91	Toyota Forklift
99	644-H JD Loader
68	CAT12F Motor Grader
08	Case 821 Loader
08	Cat Mini Wheel Loader

Trailers

Year	Model/Description
83	Great Dane Trailer
79	Fruehauf Trailer
87	Fontaine Trailer
89	Interstate 40 ton
86	Great Dane Trailer
86	Great Dane Trailer
68	Fruehauf Trailer
83	Great Dane Trailer
83	Trail Mobile Trailer
72	Thea ScrapTrailer

Pickups

Year	Model/Description
97	4 x 4 Ford ¾ ton pickup
99	4 x 4 Ford ¾ ton pickup
02	Ford – F-150
05	Chevy – Pickup

Collection Boxes

Site	Number - Description
Aho	2 - 8yd plastic 1 - 25 yd recycling roll-off 1 - 30 yd cardboard roll-off 15 - 8yd dumpsters
Bethel	1 - 30 yd recycling roll-off 1 - 40yd cardboard 14 - 8yd dumpster 2 - 7yd plastic 1 - 6yd dumpster
Deep Gap	15 - 8yd dumpsters 1 - 8yd plastic

	1 - 30yd cardboard roll-off 1 - 30 yard recycling roll-off
Foscoe	20 - 8yd dumpsters 1 - 40yd cardboard roll-off 1 - 25yd recycling roll-off 1- pasteboard recycling container
Green Valley	20 - 8yd dumpsters 1 - 25 yd recycling roll-off 1 - 40yd cardboard roll-off 3 - 8yd plastic 1- pasteboard recycling container
Old Landfill	1 - 25yd recycling roll-off 1 - 40yd cardboard roll-off 21- 8yd dumpsters 1 - 30yd plastic 1- 15yd pasteboard dumpster
Triplett	1 - 30yd recycling roll-off 8 - 8yd dumpsters 2 - 8yd cardboard
Valle Crucis	1 - 30yd recycling roll-off 3 - 8yd cardboard 3- 6yd dumpster 9- 8yd dumpsters
221	1 - 30yd recycling roll-off 6 - 8yd dumpsters 1 - 8yd plastic 1 - 8yd cardboard 2- 6yd dumpsters
421 West	1 - 25yd recycling roll-off 3 - 8yd plastic 1 - 40yd cardboard roll-off 25 - 8yd dumpsters 1- pasteboard recycling container
TOTAL:	**199**

Schools

Site	Number - Description
Bethel	**1 - 8yd dumpster**
	1 - 8yd cardboard
	2 - 6yd dumpsters
Blowing Rock	1 - 8yd dumpster
Cove Creek	2 - 8yd dumpsters
Green Valley	1 - 8yd cardboard
Hardin Park	3 - 8yd dumpsters
	2 - 6yd dumpsters 1 cardboard
High School	**2 - 8yd dumpsters**
	2 - 6yd dumpsters
Mabel	2 - 8yd dumpsters
Parkway School	2 - 8yd dumpsters
	1 - 8yd dumpster
Valle Crucis	2 - 8yd dumpsters
	1 - 8yd cardboard
	TOTAL: 21

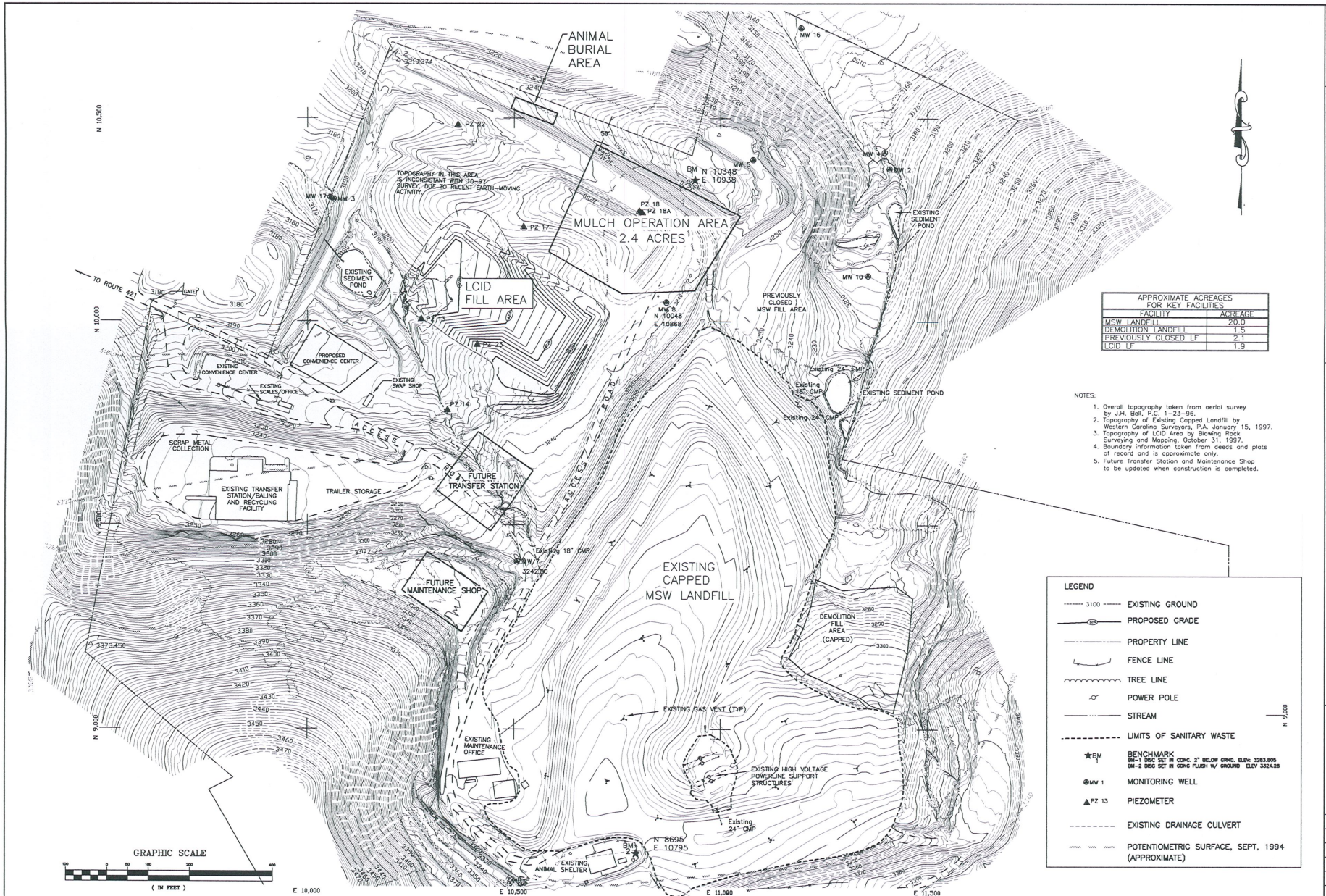
Other

Site	Number - Description
Ag. Ext	1 - 6yd dumpster
Armory	1 - 4yd dumpster
Board of Education	2 - 6yd dumpsters
	1 - 8yd dumpster
Caldwell Campus	1 - 8yd dumpster
Caldwell Comm College	1 - 8yd dumpster
Conference Center	1 - 8yd dumpster
Courthouse	1 – 8yd dumpster

Health Dept.	1 – 8yd dumpster
Park & Rec.	1 - 6yd dumpster
POA	1 - 8yd dumpster
Western Com. Center	1 - 6yd dumpster
TOTAL:	**13**
GRAND TOTAL	**233**

APPENDIX 2

OVERALL SITE LAYOUT MAP



APPROXIMATE ACREAGES FOR KEY FACILITIES	
FACILITY	ACREAGE
MSW LANDFILL	20.0
DEMOLITION LANDFILL	1.5
PREVIOUSLY CLOSED LF	2.1
LCID LF	1.9

NOTES:

1. Overall topography taken from aerial survey by J.H. Bell, P.C. 1-23-96.
2. Topography of Existing Capped Landfill by Western Carolina Surveyors, P.A. January 15, 1997.
3. Topography of LCID Area by Blowing Rock Surveying and Mapping, October 31, 1997.
4. Boundary information taken from deeds and plats of record and is approximate only.
5. Future Transfer Station and Maintenance Shop to be updated when construction is completed.

LEGEND

- EXISTING GROUND
- PROPOSED GRADE
- PROPERTY LINE
- FENCE LINE
- TREE LINE
- POWER POLE
- STREAM
- LIMITS OF SANITARY WASTE
- BENCHMARK — BM-1 DISC SET IN CONC. 2" BELOW GRND. ELEV: 3283.805; BM-2 DISC SET IN CONC FLUSH W/ GROUND ELEV 3324.26
- MONITORING WELL
- PIEZOMETER
- EXISTING DRAINAGE CULVERT
- POTENTIOMETRIC SURFACE, SEPT, 1994 (APPROXIMATE)

Draper Aden Associates
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Blacksburg, VA 2206 South Main Street Blacksburg, VA 24060 540-552-4444 Fax: 540-552-0291 www.daa.com
Raleigh-Durham, NC 2521 Sorrelfield Road, Suite 106 Apex, NC 27502 919-387-9997 Fax: 919-387-9994

OVERALL SITE LAYOUT
WATAUGA CO. SOLID WASTE FACILITY
WATAUGA COUNTY, NC

REVISIONS
June 15, 2010
Added Animal Burial Area

DESIGNED BY:
DRAWN BY: MAC
CHECKED BY:
SCALE: 1"=100'
DATE: January 23, 2003
PROJECT NUMBER: 6520-10

APPENDIX 3

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

Transfer Station (Former Operations):

Operation Activity

A. Location and Background
- South side of landfill road. Located in baling facility.
- Receives 250 tons per day average with peaks reaching 300tpd
- Retrofitted from MSW baling facility in 1994. Waste lifted over wall and into trailer
- Tipping floor approximately 5,700 sf
- Operations eliminated at this facility and relocated to new transfer station
- Facility to be maintained to be used only in the event of an emergency

B. Hours of Operation
- Not in operation

C. Equipment Requirements
- Equipment relocated to new operations

D. Personnel Requirements
- Personnel relocated to new operations

E. General Description of Former Operations
- Waste delivered by commercial, private and public vehicles and dumped on tipping floor
- Loader picked up waste and dumped into trailer over 6' wall
- Waste in trailer compacted
- Full trailer was weighed at scales. If too light or too heavy, returned to loading area for adjustment. If within acceptable weight range, tarped and sent to disposal facility
- County backed in empty trailer

F. Special Waste Handling Procedures
- N/A as not in operation

G. Unauthorized Waste Screening Procedure
- N/A as not in operation

H. Emergency Plans
- N/A as not in operation

I. Monitoring Requirements
- None

J. Housekeeping/Maintenance Responsibilities
- N/A as not in operation

K. Training Requirements
- Instruction on equipment operation and maintenance
- First Aid (kits provided)
- Waste screening

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

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 to12:00pm

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
- Tarped 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 to12:00pm

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 to12:00pm

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, mulched 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 to12:00pm

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 to12:00pm

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 to12:00pm

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

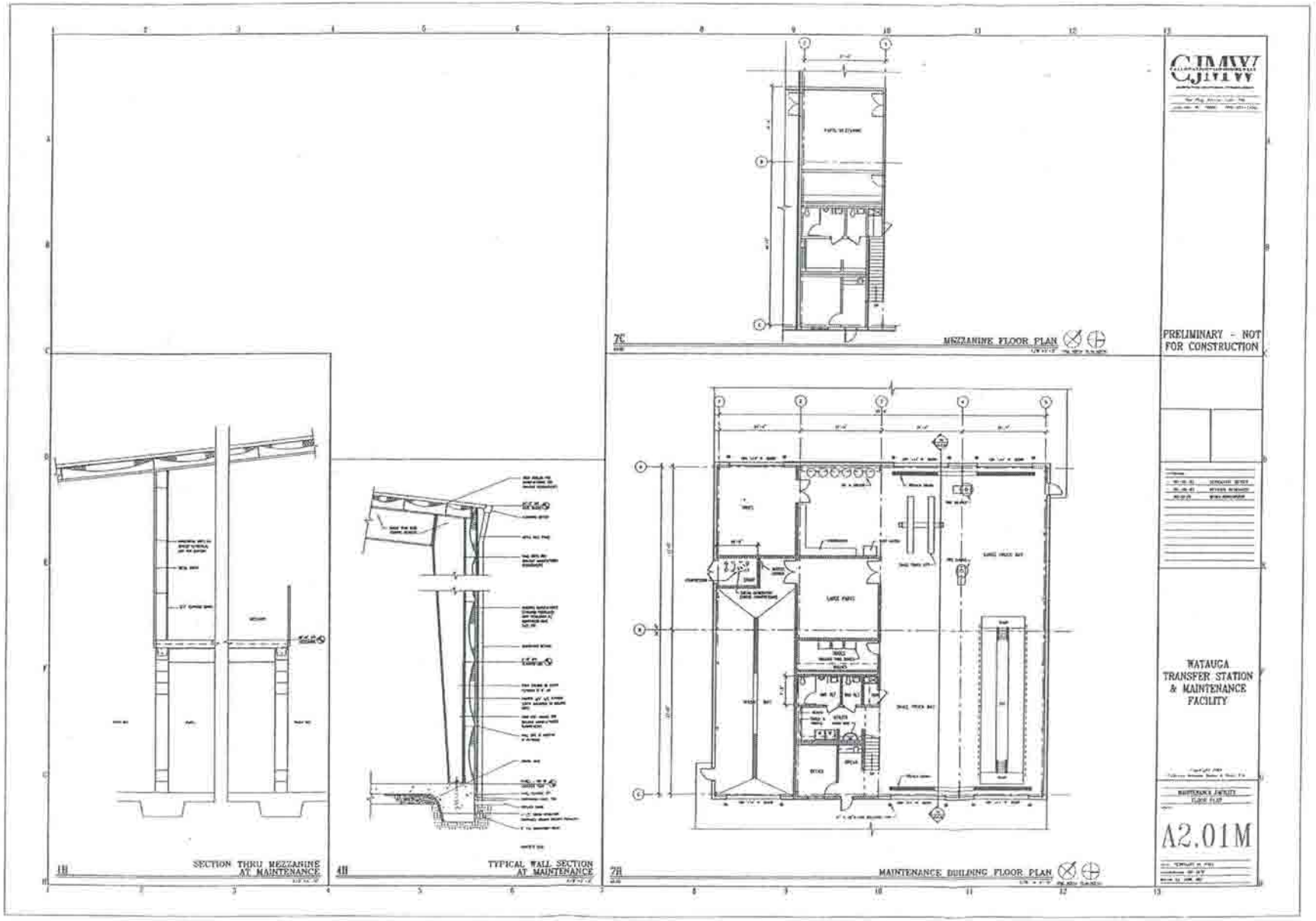
K. Training requirements
- Minimum one year training in servicing equipment

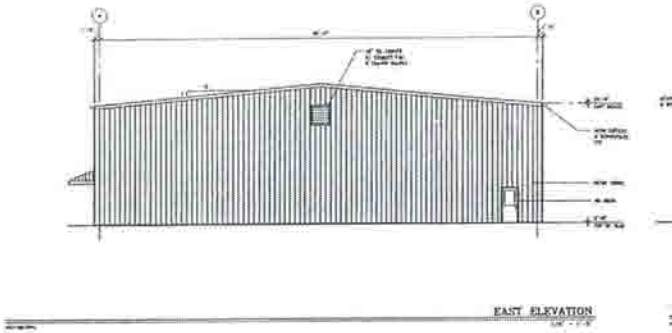
L. Security Devices
- All entries to sites are gated and locked

M. Other information

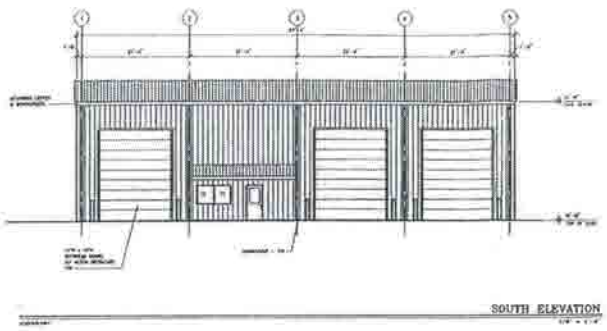
APPENDIX 4

CONCEPTUAL LAYOUT OF MAINTENANCE FACILITY

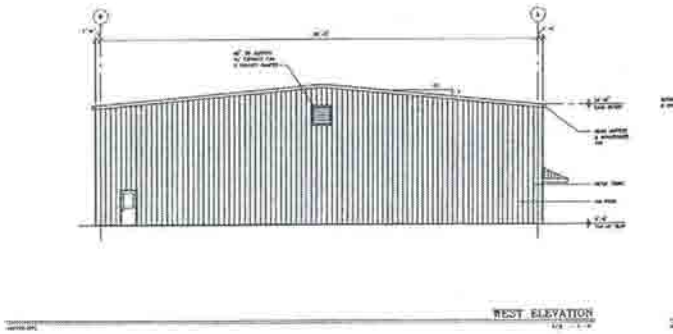

7C
MEZZANINE FLOOR PLAN
PRELIMINARY - NOT FOR CONSTRUCTION
1B
SECTION THRU MEZZANINE AT MAINTENANCE
4B
TYPICAL WALL SECTION AT MAINTENANCE
7B
MAINTENANCE BUILDING FLOOR PLAN
WATAUGA TRANSFER STATION & MAINTENANCE FACILITY
A2.01M



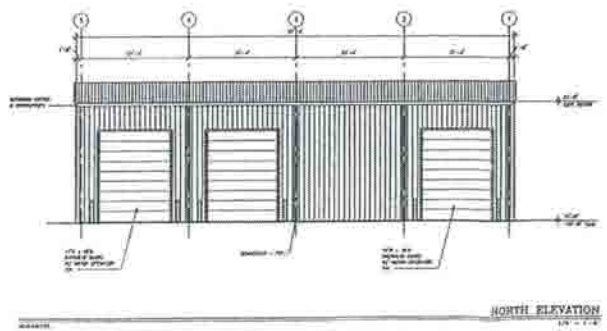
EAST ELEVATION



SOUTH ELEVATION



WEST ELEVATION



NORTH ELEVATION

PRELIMINARY – NOT FOR CONSTRUCTION

WATAUGA TRANSFER STATION & MAINTENANCE FACILITY

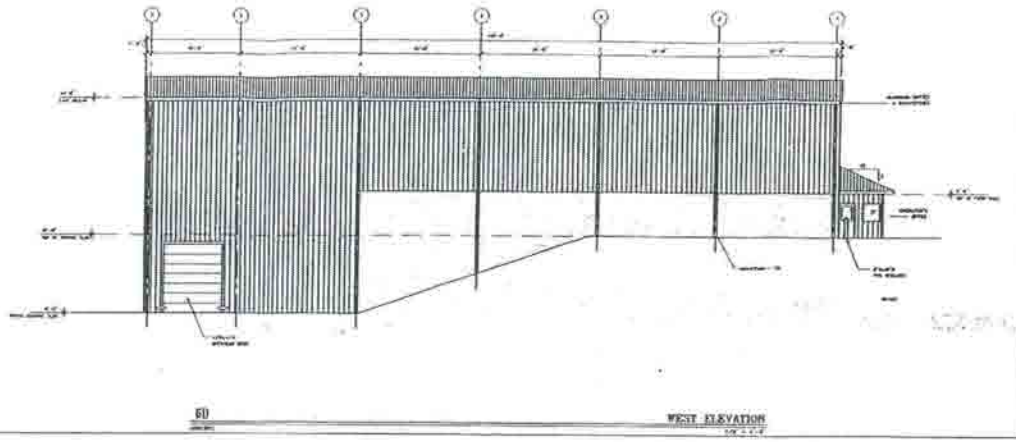
MAINTENANCE FACILITY
ELEVATIONS

A5.01M

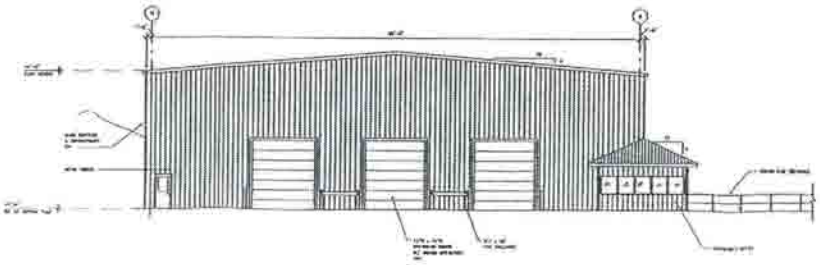
APPENDIX 5

CONCEPTUAL LAYOUT OF NEW TRANSFER STATION

TYPICAL WALL SECTION AT TRANSFER STATION
FLOOR PLAN
PRELIMINARY - NOT FOR CONSTRUCTION
HATAVUCA TRANSFER STATION & MAINTENANCE FACILITY
A2.01T



6D WEST ELEVATION



6B SOUTH ELEVATION

PRELIMINARY - NOT FOR CONSTRUCTION

WATAUGA TRANSFER STATION & MAINTENANCE FACILITY

A5.02T

APPENDIX 6

INSPECTION FORM FOR TRANSFER STATION
(Suggested format)

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 7

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	Yes	No
Damage		such as gullies or rills on the surface		
	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 &	15	Surface water control features functional (is run-on	Yes	No
Run-off		and run-off diverted from site)		
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

	21	Are the gas probes damaged	Yes	No
	22	Are the gas vents damaged	Yes	No
	23	Is there any settlement around the gas vent	Yes	No
Groundwater Monitoring System	24	Are groundwater monitoring well locks missing or inoperable	Yes	No
	25	Are well outer casings damaged	Yes	No
	26	Are well inner casings damaged	Yes	No
	27	Are there any signs of well contamination	Yes	No
	28	Any signs of settlement or damage to concrete apron	Yes	No

Comments: (Include item number from checklist where applicable)

APPENDIX 8

WASTE SCREENING PLAN

WASTE SCREENING PROGRAM

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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