City of Hickory
Solid Waste Division
Post Office Box 398
Hickory, NC 28603
Phone: (828) 828.323.7500
Fax: (828) 828.323.7403
www.hickorygov.com

Permit No.	Scan Date	DIN
1806	February 7, 2012	16051

AUG - 3 2010
WASTE SECTION

July 30, 2010

Mr. Michael Scott
North Carolina Dept. of
Environment and Natural Resources
401 Oberlin Road, Suite 150
Raleigh, NC 27605

RE: Application to Operate a Large Type 1 Composting Facility

Dear Mr. Scott,

Please find attached an application package completed in accordance with Solid Waste Composting Rules-Application Process Section .1405 a.10 for a Large Type 1 Solid Waste Composting Facility.

The subject facility has been successfully operating under Permit # 18-06 since June of 2005.

There are four (4) copies of the application package enclosed. Following approval of this submission, please return two (2) stamped copies back for our records. Thank you.

Sincerely,

8,000 Tons/year

Andrew S. Ballentine
Solid Waste Manager
City of Hickory
828-323-7439

Not paid yet

cc w/o enc. Ed Bowman, Public Services Manager

City of Hickory
Solid Waste Division
Post Office Box 398
Hickory, NC 28603
Phone: (828) 828.323.7500
Fax: (828) 828.323.7403
www.hickorygov.com

RECEIVED
AUG - 3 2010
SOLID WASTE SECTION

City of Hickory
Operation and Maintenance Manual
For Solid Waste Composting Facility

Cloninger Mill Rd. Site
Hickory, NC

As required in the Solid Waste Composting Rules – Application Process Section .1405 a 10 for a Large Type 1 Solid Waste Composting Facility

July 30, 2010

Collection of Yard Waste

The City of Hickory Recycling Division collects "Yard Waste", including yard, garden, silvicultural, unpainted and untreated wood waste, weekly. Wood waste is collected the same day as residential garbage.

Three crews, made up of two men each, use rear packer refuse trucks to collect curbside wood waste. Smaller, loose clippings, such as grass, leaves or shrubbery cuttings, are required to be bagged or boxed in easily handled containers. These materials are emptied into the collection truck. Empty bags are placed in a refuse compartment on the side of the collection vehicle. Rigid containers are left at the customer's curb.

Most wood waste collected is cut by the customers to a length no greater than six feet and a diameter no more than six inches. Branches, limbs or trunk materials are placed with the butt end towards the curb. Crews pack this material into the refuse packer trucks.

Larger items exceeding six inches in diameter or six feet in length are collected on a call-in basis by a knuckle-boom truck. Dirt, soil, rocks etc., must be removed from root matter before collection occurs.

Some wood waste originates from activities conducted by other Divisions within the Public Services Department. Streets, Landscaping Services and Utilities occasionally deliver wood waste originating from their respective projects.

All wood waste is compacted by the collection vehicles and delivered to the City of Hickory Yard waste facility on Cloninger Mill Road. The wood waste is then dumped into the receiving area at the facility. All operators collecting the material are careful not to collect painted or treated wood waste. Any unacceptable material dumped at the facility is pulled out and placed in the dumpster or grinder tailings pile to be hauled to an appropriately permitted Solid Waste Management Facility.

Seasonally, leaf collection occurs at the curb. City crews using leaf vacuums collect loose leaves that have been raked out to the street by homeowners. This material is also dumped at the Yard Waste Facility.

Inspection of Incoming Material

All wood waste is inspected curbside by the equipment operators picking up the material. Any wood waste commingled with refuse or other unacceptable materials is left at the curb. Citizens are instructed to re-work these materials so that the wood waste can be recycled. City crews will not collect leaf material mixed with paper or other refuse. Mixed piles of leaves are left at the curb for the citizen to separate or bag as trash.

All wood waste delivered to the Yard Waste Facility is inspected by the operator at the facility. All nonconforming waste is removed. No refuse, appliances, hazardous or other nonconforming waste is allowed on site at the facility.

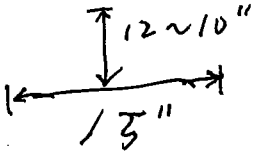
Grinding

All wood waste delivered to the site is ground so that it may be sold as mulch or compost. A private contractor performs all grinding. The Solid Waste Manager solicits Service bids. The awarded contract is structured so that all wood waste on site at any given service period is ground to the City's satisfaction.

A contractor is used four to five times annually. The contractor is responsible for maintenance of his equipment, breakdowns or other non-work time while on site. The contractor is responsible for pushing all wood waste to the grinder set up location, loading the grinder and the operation of his equipment.

A City employee working on site removes the ground wood or leaf waste from the grinder set up location after processing. All nonconforming waste and grinder tailings are placed in the grinder tailing pile for removal to an appropriately permitted Solid Waste Management Facility.

Curing Process



All ground wood waste is piled in paired windrows. Windrows are lined up to allow for adequate drainage using the given topography of the Yard Waste Facility (see site plan drawing). Piles are typically about fifteen feet wide at the base and ten to twelve feet high. The distance between windrows is variable depending on the volume present at a given time. However, a minimum distance is kept between windrows so that equipment can access any portion thereof.

The ground products are not screened Mulch from the wood waste contains many fines and the ratio of carbon to nitrogen is usually beneficial in generating temperatures adequate for composting. No additives are used. Most, if not all of the product is typically sold as mulch to be used as a bedding or soil amendment prior to completion of the composting cycle. Demand for the ground leaf product is particularly high.

Any product not sold or used is continually monitored twice weekly. Piles are maintained at temperatures above 131 degree's Fahrenheit for no less than 3 days. Windrows are turned as needed to provide aeration and maximize heat potential. A compost thermometer is used to derive temperatures. Temperatures are taken for every fifty feet of windrow length. Product that will not hold an adequate temperature is sold or stockpiled in the mulch storage area.

Moisture is also continuously monitored using a hand squeeze test. Acceptable water content exists when the product feels damp to the touch and only a drop or two of water is expelled when squeezed tightly in the hand. When conditions are too wet, water will fill the pores required for air diffusion, and anaerobic conditions can develop that are not conducive to composting.

Product moisture and temperature are logged on the "Yard Waste Compost Facility Data Sheet" (attached). Any remedial actions needed, such as aeration or watering, is performed until conditions improve to a satisfactory state.

Record Keeping

Customers that purchase products generated at the facility are offered a "product label sheet" (attached) stating suggested product uses and quality. This label is also used as a receipt for customers who require one.

As required in Rule .1408 (b), all records are maintained for no less than 5 years. All records are kept in the supervisor's office at the Public Services Facility. Records can be made available to local governments or NC DENR by request. Site observations, moisture, temperature and corrective actions taken are recorded on the "Yard Waste Compost Facility Data Sheets" (attached). Specific information on the actual grinding contractor, grinding dates, types and quantities of waste, or product classification can be obtained through the Solid Waste Manager's office by request. All waste is collected solely within the City of Hickory limits and is conforming to the permit requirements.

Outline of Reports to be Submitted

Annual Report-An annual report for the period of July 1 to June 30 shall be submitted by all facility owners or operators to NC DENR by the 1st of August each year (example attached), and shall contain:

1. The facility name and permit number
2. The total quantity in tons and type of waste received at the facility during the year covered by the report, including tons of waste received by local governments of origin.
3. The total quantity in tons and type of waste processed into compost during the year covered by the report.
4. The total quantity in tons and type of compost produced at the facility, by product classification, during the year covered by the report.
5. The total quantity in tons and type of compost removed for use or disposal from the facility, by product classification, along with a general description of the market if for use during the year covered by the report.
6. Monthly temperature monitoring to support Rule .1406 of this Section (if requested).

A recycling report is also issued to Catawba County on a monthly basis which details total tonnages recycled, by category. This report, along with any required documentation, may also be submitted as requested to fulfill any state or local policy requirements.

Corrective Measures

Aeration

Aeration for moisture and temperature control is performed with a rubber tire loader. The product is pushed up and over the windrow using the loader, thus forming a new windrow approximately six to eight feet over from the original. Product is aerated when a moisture or temperature problem exists as noted in the "Curing Process section of this manual.

Nonconforming Waste

A dumpster is on site and emptied as needed by the City of Hickory Solid Waste Division. This dumpster is used for the collection of any refuse removed from the wood waste prior to the grinding process, or for the disposal of items illegally dumped outside of the facility gates. Undesirable wood waste or tailings from the grinding process are placed in the grinding tailing pile. As needed, the Streets Division will haul the tailings to an appropriately permitted Solid Waste Management Facility. Any appliances or other bulky items dropped at the gates after hours are removed immediately by the Solid Waste Division.

Equipment Failure

All City equipment is serviced at the City of Hickory garage with the exception of minor repairs, which are normally done on site. Operators have radio contact with the Garage to immediately report equipment malfunctions. Contractors are responsible for the maintenance and repair of their own equipment.

Spill Containment

Most fueling and fluid exchanges are performed at the City Garage. The garage staff performs any fuel delivery at the site and proper containment gear is readily available in the delivery vehicle.

In the event of a fuel or hydraulic fluid spill, absorbent is promptly applied and the absorbent and contaminated soil is removed in leak proof containers and transported to the City Transfer Station where it is stored. An environmental contractor would be retained to dispose of the abated soil and absorbent.

Fire Response

In the event of fire, operators dial 911 for emergency response. Response time from the nearest fire station is under four minutes. Two hydrants have been installed to aid responders along Cloninger Mill Road. They are located near each access gate.

Vector Control

There is low risk of disease associate with the Yard Waste Facility. If a nuisance or disease vector harborage is detected, immediate abatement by a licensed pest control operator is performed. The retention pond is monitored during warm, wet months for mosquito hatches and treated if necessary.

Odor Control

The facility is well screened by woodlands and required property set backs are met. Item's stockpiled in windrows are turned as needed to minimize any odors and eliminate possible anaerobic conditions.

Facility Maintenance

Landscaping

The City of Hickory Landscape Management Division assists the Recycling Division in the planning and placement of trees, shrubbery and grasses for the purposes of screening the facility, erosion control and site beautification.

Grading and Service Road Repair

Grading improvements are performed as needed by the City of Hickory Street Division. They also oversee any needed improvements to the entrance, exit, roadway and retention pond area.

Hours of Operation

The facility is open to City crews daily. Each crew has access keys to open the gates for the purpose of depositing collected yard waste.

When processed material is available, and weather and site conditions are conducive to safe loading of material, the site is open to the public on Friday's between 8 a.m. and 1 p.m. During the busy spring season, when product is in high demand, the facility is also open to the public on Saturday's from 8 a.m. to 1 p.m. The public is not allowed in the facility for any reason outside of these times.

.1405 **Application Requirements for Solid Waste Compost Facilities.**

(a) **City of Hickory, NC application for a Large Type 1 Solid Waste Compost Facility.**

(1) **See enclosed as built drawing.**

(2) **See letter from City Zoning enclosed.**

(3) **This is a controlled access, gated site in which the boundaries for storage of compost have been adjusted based on new home construction to obtain the 200 foot buffer from dwellings and meets the 50 foot buffer from property lines. There are no known wells or streams within the required buffer area and the site is located outside of any floodplain. Storm water runoff from the storage area is directed away from the stored materials and through a sediment pond to prevent off site sedimentation. The site was found to be in compliance with the Sedimentation Pollution Control Law as stated in the attached letter of compliance.**

(4) (A) **Yard and garden waste, silvicultural waste, unpainted and untreated wood waste or any combination thereof as collected for recycling purpose by the City of Hickory Solid Waste Department. Estimated quantity of 8,000 tons of solid waste to be mulched or composted per year. No bulking agent is currently used. Seasonally, leaf material becomes the primary source of solid waste received.**

(B) **See attached soil report from Lynn Howard, Jr. (Regional Agronomist).**

(5) **See enclosed as built drawing.**

(6) (A) **Responsible Party: City of Hickory, NC**

Emergency Contact: Andrew S. Ballentine
Solid Waste Manager
PO Box 398
Hickory, NC 28603
Office: (828) 323-7439
Home: (828) 267-1732
Mobile: (828) 302-3747

City Fire Department
Office: (828) 323-7420
Emergency: 911

(B) Personnel Required for operations:
Administrative: Andrew S. Ballentine
Responsible for all management, budget, and other administrative duties.
Equip. Operator: Herb Collins (or other as designated by the Dept.) Responsible for all daily operations, preventative maintenance, and sales.

(C) The intent and operation of the City of Hickory Yardwaste Facility is to provide an approved manner of disposal for all City collected yard and garden waste. The facility is to be operated within the guidelines of all local, state, and federal rules. All recyclable yard and garden waste is ground into mulch or compost to be sold back to the citizens as a soil amendment or bedding material.

(D) When adverse weather conditions exist, data collected through monitoring of the product is used to assess the likelihood of problematic conditions. If moisture, odor, or temperature problems exist, preventative action is taken immediately.

(E) Staff monitors moisture, temperature, and odor. Remedial actions are taken as needed to maintain optimum conditions. Woodland areas surround the site and act as a natural barrier to nearby residents.

Testing?

(F) 90% of the product(s) produced is sold back to the community by the truckload. The remaining 10% is stockpiled on site. Sales are held every Friday from 7:00a.m. – 1:00p.m. on site. Product(s) are loaded by use of a rubber tire loader into

customer or City vehicles. Any unmarketable product is used as a soil amendment in City projects or given away as such.

(7) (A) Large Type 1 Facility (Over 6,000 cubic yards per quarter).

(B) Flow diagram- See enclosed as built drawing.

Equipment- No equipment is stored on site. Operational equipment and contracted equipment is delivered to site on operational days.

(C) Trucks are weighed periodically on scales located at the City Transfer Station. Based on periodic weights and number of loads and estimate is determined and recorded monthly by the Solid Waste Supervisor. Yard and garden waste, unpainted and untreated wood waste, silvicultural waste is collected separate from refuse, junk, and other solid waste matter. These approved materials are received daily at the Yard Waste Facility and stockpiled in a holding area. Four to five times annually, grinding equipment is contracted and the operator(s) mix and proportion input materials to attain balanced product(s). grinding

(D) The process is ongoing year round. Contracted service(s) and equipment are brought on site four to five times annually to process the approved incoming waste materials. The start to finish duration depends on the immediate demand and quality of the product(s). Materials are received constantly and stockpiled. Materials are processed every two to four months into a mulch or compost product.

(E) No monitoring equipment is kept on site. Product temperature, moisture, odor, and ambient conditions are measured and recorded weekly.

(F) (See Yardwaste Compost Facility Data Sheet enclosed).
Moisture: 45-50%. When conditions are too wet, water will fill the pores required for air diffusion, and anaerobic conditions result. If conditions are too dry, the decomposition rate will slow down. City workers use squeeze test to gauge the moisture. Water content is acceptable when product feels damp to the touch with only a drop or two of water expelled when tightly squeezed in the hand.
Temperature: A temperature measurement is taken for every 100' of windrow. The temperature is taken with a 3' stem thermometer from the lower third of the windrow. Also

Raw material 50'

recorded are the current weather conditions, odor, ambient air temperature, and site observations. If any problem exists, remedial action is taken.

(G) A rubber tire loader with a 2 cubic yard bucket is utilized for aeration purposes.

(H) Surface water run on from off site has been collected and routed around the storage area where possible and some has been piped through the storage area and combined with run off water from the storage area and is directed through a permanent sediment pond to remove suspended solids and pollutants from the runoff. See enclosed as built drawing.

(8) See attached label sheet.

(9) *City Equipment*:
2007 John Deere 544J Tire Loader (see performance data enclosed), Reotemp (A 36 PF) Stem Thermometer (see performance data enclosed).

Any additional equipment used for site preparation is provided by the City of Hickory Street Department or Building and Grounds Department.

(10) (A) All materials are inspected in the field by City staff collecting the yardwaste and by the facility operator on-site. All site monitoring is done twice a week and recorded on the Yardwaste Compost Facility Data Sheet (see the enclosed copy). A copy of this form is kept in the rubber tire loader so it can be available during the operational hours.

(B) Contingency Plans:
Fire- Any conditions outside of the normal operation that may promote a fire will be reported to the City of Hickory Fire Department for safe handling. Any observed signs of fire will be reported immediately to 911 dispatch for emergency response.
Spills- Any fuel or chemical spills observed will be reported to the City of Hickory Fire Department for immediate clean up and HAZMAT response or reporting.
Illegal Dumping- Any items illegally dumped at the gate area or any part of the premises not conforming to the approved waste shall be removed by the City of Hickory Solid Waste Department and disposed of in an approved manner.

Vectors & Odor- Any presence of a disease vector harborage or breeding site will be controlled by use of a licensed pest control applicator using an integrated pest management program to reduce any favorable conditions prior to the use of pesticides or rodenticides. Any conditions that require remedial action such as excess odor due to product temperature or moisture will be addressed by disposing of any unmarketable material or turning of windrows to maintain optimum composting conditions.

Cover w/ compost

(1/2)'

(C) See attached operation requirements as specified by in rule .1406 of the Solid Waste Compost Rules.

(11) See enclosed as built drawing.

July 30, 2010

.1406 Operational Requirements of Solid Waste Compost Facilities

(1) (A) See enclosed as built drawing.

(B) A copy of all operational reports, product labels, plans, and the permit shall be kept in the rubber tire loader on site at the facility during all hours of operation.

(2) Refer to explanations for .1405 (a) (3), and .1405 (a) (7) (H).

(3) Refer to explanations for .1405 (a) (3), and .1405 (a) (7) (H).

(4) Refer to explanations for .1405 (a) (3), and .1405 (a) (7) (H).

(5) (A) The facility is secured by an upper and lower gate. The landscape and topography of the site allows woodlands and berms to act as natural borders on all sides. The locked gates are the only route in and out of the area.

(B) The facility has limited hours that it is open to the public. During these times an operator will be on site.

(C) The roadway is of all weather construction and is maintained by the City Street Department when and if repairs are warranted.

(6) Only yard and garden waste, silvicultural waste, untreated and unpainted wood waste is accepted on site. Most of which is collected by and delivered to the site by City staff.

(7) (A) No open burning is allowed.

(B) The equipment on site is equipped with appropriate fire extinguishers and arrangements with the City Fire Department and City Police have been made to help prevent and control any fire hazards.

(C) The operator on site will be signed off on the operation of any needed equipment and shall be knowledgeable in composting techniques,

including remedial actions that may be needed to avoid fire, moisture, odor, or vector problems.

(8) (A), (B), & (C) Proper signage exist on site that states permit number, emergency contact(s), hours of operation, traffic directions, and no dumping. Any needed signs can be developed by the City Sign Shop and placed on site as directed.

(9) (A), & (B) See explanations for .1405 (a) (7) (E), and .1405 (a) (7) (F).

(10) The windrows are monitored twice weekly and the product is aerated as needed to ensure optimum composting conditions exist.

(11) Not Applicable, we are a large type 1 facility.

(12) Not Applicable, we are a large type 1 facility.

(13) No supplements are added to the products generated at this facility. Most products are recycled as a bedding material or soil amendment soon after it is processed. Quantities are limited and do not last long.

(14)(A), (B), & (C) The products generated at this facility meet the requirements of .1407 (d) (3) as noted in .1405 (a) (8).

City of Hickory
Solid Waste Division
Post Office Box 398
Hickory, NC 28603
Phone: (828) 828.323.7500
Fax: (828) 828.323.7403
www.hickorygov.com

City of Hickory
Yard Waste Facility
Permit # 18-06

Site Location:	Cloninger Mill Rd, Hickory, North Carolina		
Hours:	Thursday – Friday	Seasonally	8:00am – 1:00pm
	Saturday	Seasonally	8:00am – 1:00pm
Cost:	Mulch – Single Ground		$5.00 per scoop
	Mulch – Double Ground		$15.00 per scoop
	Ground Leaves/Compost		$15.00 per scoop
Products:	Mulch and Leaf Compost (when available)		

Product Classification:
Compost or mulch that is produced at a Type 1 facility and that contains minimal pathogenic organisms, and is free from offensive odor.

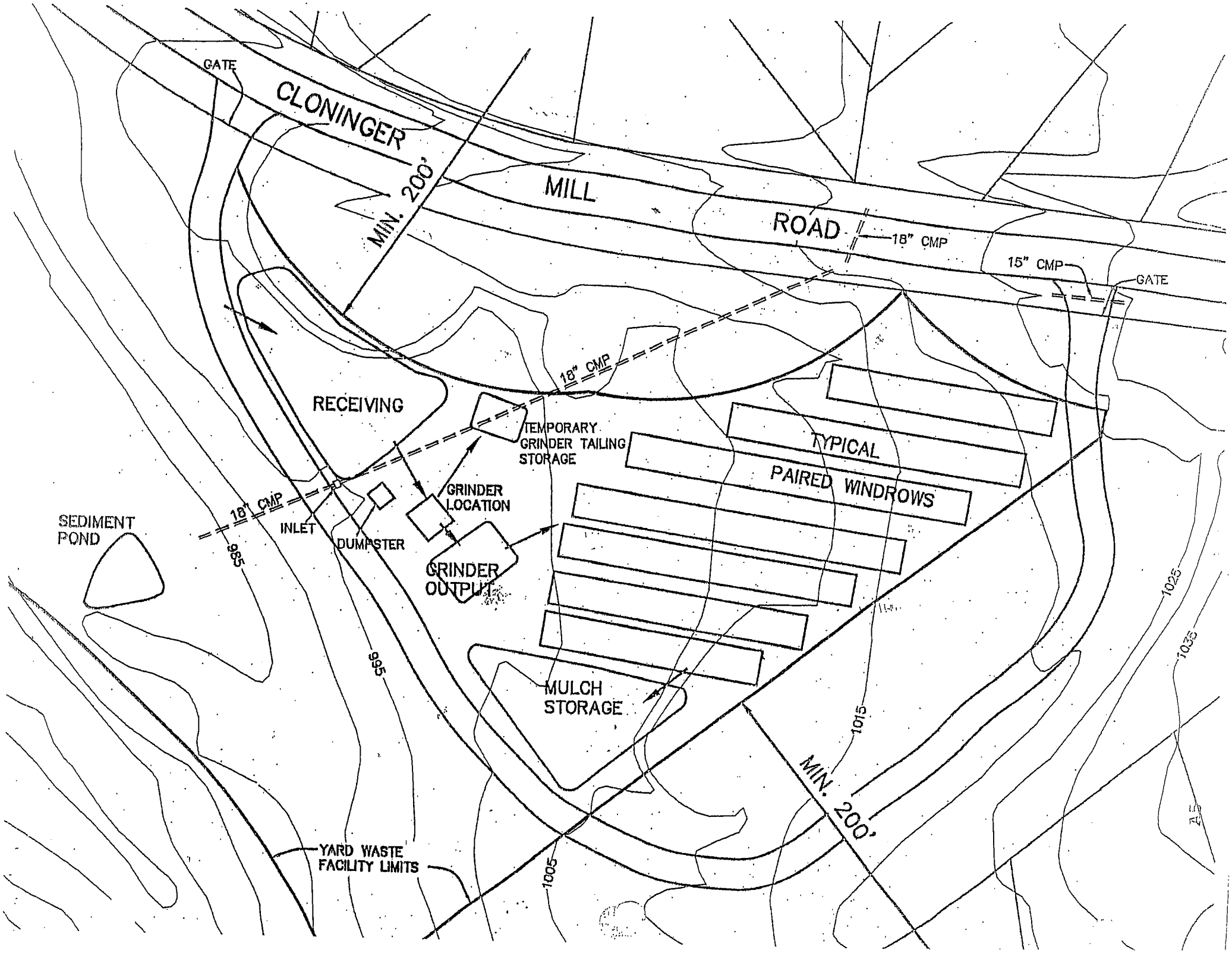
Recommended Uses:
Mulch - Bedding material or ground cover.
Leaf Compost - Bedding material or soil amendment.

Recommended Application Rate:
Mulch - Spread to a depth of two to six inches as ground cover or bedding material.
Leaf Compost - Liberally spread as bedding material or till into soil as an amendment.

No restrictions on usage.

Receipt Amount:_____ Date:_____ Attendant:_____

For more information contact Andrew S. Ballentine, Solid Waste Manager.


GATE
CLONINGER
MILL
ROAD
MIN. 200'
18" CMP
15" CMP
GATE
18" CMP
RECEIVING
TEMPORARY
GRINDER TAILING
STORAGE
TYPICAL
PAIRED WINDROWS
18" CMP
INLET
DUMPSTER
GRINDER
LOCATION
GRINDER
OUTPUT
SEDIMENT
POND
985
995
MULCH
STORAGE
1015
1025
1035
MIN. 200'
YARD WASTE
FACILITY LIMITS
1005

Hickory
Where Business and Pleasure Grow Together

Planning and Development Department
City of Hickory
PO Box 398
Hickory, NC 28603
828-323-7422

June 30, 2005

Mr. Ted Lyon
North Carolina Dept. of
Environment and Natural Resources
401 Oberlin Road, Suite 150
Raleigh, NC 27605

RE: Zoning Verification Letter for 310 Cloninger Mill Road NE, Hickory, NC (City of Hickory yard waste composting facility)

Dear Mr. Lyon:

The City of Hickory's yard waste mulching and compost facility is located within the City of Hickory and its planning and zoning jurisdiction. The property is located at 310 Cloninger Mill Road NE and is also identified on the Catawba County, NC tax maps by PIN 3714-07-69-1239. This property is located in a R-3 Residential Zoning District. The R-3 Zoning District permits "Public Service Facilities" as a special use. The facility in question is in compliance with all local zoning laws.

Should you have any questions please give me a call at (828) 324-4651.

Sincerely,

Cal Overby

Cal Overby
Planner

GREATER HICKORY METRO

James A. Graham
Commissioner

North Carolina
Department of Agriculture
Agronomic Division

Dr. Donald W. Eaddy
Director

February 15,1999

To : Mr. Tim Bennett
City of Hickory
PO Box 398
Hickory, NC 28603

From: Lynn Howard
NCDA Regional Agronomist and Soil Scientist
604 Pine Mtn. Rd.
Hudson, N.C. 28638
(828) 728-4675

Subject: On-site soils investigation for soil suitability and soil absorption acceptance rates for City of Hickory, Compost Yard Permit Renewal. The compost yard is located on Cloninger Mill Road, Hickory ,NC in Catawba Co.

On January 27,1999 Mr. Lynn Howard , NCDA Regional Agronomist and Soil Scientist and Mr. Tim Bennett , with the City of Hickory , did an on-site soils evaluation of the compost yard. The compost yard was laid out extremely well. It has excellent drainage built in and a holding pond to catch the runoff. The soil types in this area were Madision soil series on the lower half of the yard and a Cecil-Pacolot on the upper half of the yard. There were NO gray drainage mottles found in the soil profile. The Cecil soil, on the upper half of the yard has a very high soil water acceptance rate, and would cause no problems with any type of ground water pollution. The Madison soil series on the lower half of the yard has a slower water acceptance rate, but it is being used as a shredder site.

Please see Page 2 for a soils profile description of the site in question. Also, please see enclosed copies of NCDA Soil Test Reports.

It is my professional opinion that the Hickory Compost Yard property is SUITABLE for the intended purpose for which it is being used.

If I may be of further assistance, please call on me.

Lynn Howard

Lynn Howard
NCDA Regional Agronomist and Soil Scientist

4300 Reedy Creek Road, Raleigh, North Carolina 27607-6465
(919) 733-2655 • FAX (919) 733-2837

James A. Graham
Commissioner

North Carolina
Department of Agriculture
Agronomic Division

Dr. Donald W. Eaddy
Director

Soil Profile description of the Madision Soil Series found on the lower half of the site:

0-3" Topsoil, decomposed organic matter with many, fine fiberous roots
3-12" Silty clay soil, greasey, many fine mica particles
12-20" Red clay soil, good texture and structure, mixed with small weathered mica flakes
20-33" Red clay soil, greasey, highly micaceous, mixed with clear and milk quartz fragments
33-58" Weathered saprolite, yellowish brow in color, many fine mica flakes
" NO signs of any perched watertable problems"

Soil Profile description of the Cecil-Pacolot Soil Series found on the upper half of the site:

0-9" Good topsoil with excellent texture and structure
9-20" Red clay with good texture and structure, many fine fiberous roots
20-33" Red clay with some faint yellow mottles
33-48" Red and yellowish clay soil with few, fine quarz fragments
Note: Almost no mica found in this soil
The center portion of the compost yard had been graded down for good surface water drainage.

4300 Reedy Creek Road, Raleigh, North Carolina 27607-6465
(919) 733-2655 • FAX (919) 733-2837

Agronomic Division 4300 Reedy Creek Road Raleigh, NC 27607-6465 (919) 733-2655

Report No. [illegible]236

Soil Test Report

2/11/99

SERVING N.C. CITIZENS FOR OVER 50 YEARS

Grower: Hickory, City of
Attn:Tim Bennett
PO Box 398
Hickory, NC 28603

Copies to: Howard, Lynn

Farm:

Catawba County

Howard, Lynn
604 Pine Mountain Road
Hudson, NC 28638

Agronomist Comments:
The heavy metal concentration is well within the limits of normal background levels and should pose no threat to crops grown in this soil. Follow soil test recommendations for lime and fertilizer application. I have assigned a flower crop code to provide a lime and fertilizer recommendation. If you need to convert the rates to lbs/cubic yard divede pounds/1000 square feet by 24 (this equates to lbs/cubic yard). M. Ray Tucker, Agronomist

Field Information		Applied Lime			Recommendations										
Sample No.	Last Crop	Mo	Yr	T/A	Crop or Year	Lime	N	P_2O_5	K_2O	Mg	Cu	Zn	B	Mn	See Note
CYS					1st Crop: Garden,Flower	20M	(20 lbs 5-10-5 or EQUIV PER 1000 SQ FT)								4
					2nd Crop:										

Test Results

Soil Class	HM%	W/V	CEC	BS%	Ac	pH	P-I	K-I	Ca%	Mg%	Mn-I	Mn-AI (1)	Mn-AI (2)	Zn-I	Zn-AI	Cu-I	S-I	SS-I	NO_3-N	NH_4-N	Na
MIN	0.46	0.97	3.8	79.0	0.8	5.5	4	145	37.0	23.0	240			40	40	40	168				00

Tim: HM% is Good for your Area
CEC - holding ability of nutrients, is a little low
Acidity is Low
ph is OK for compost yard
Phosphorus is extremely low - (should be above 25 index) This means you will have 0 (zero) phosphorus pollution in the ground water
Potash is high
Calcium is a little low due to low ph
All other elements are in the desired range

Agronomic Division 4300 Reedy Creek Road Raleigh, NC 27607-6465 (919) 733-2655

Heavy Metal Soil Test Report

MEHLICH-3 EXTRACTION

Hickory, City of
Attn:Tim Bennett
PO Box 398
Hickory, NC 28603
Catawba County
323 - 7439

Report #: 22236

Questions concerning these analyses should be referred to the Agronomic Division, Soil Testing Section

Sample ID	Cd Cadmium	Ni Nickel	Pb Lead	Se Selenium	Cr Chromium	Al Aluminum	As Arsenic
	mg/dm3 (ppm)						
CYS	0.10	0.30	0.50	0.00	0.40		0.40

Compost YARD on Cloninger Mill Road

YARDWASTE COMPOST FACILITY DATA SHEET
City of Hickory, North Carolina

Data collected by: _____ Date _____

Other Information (Sunny rain, etc.) _____

Wind direction (from Northeast, South, etc.) _____

Air Temperature: _____F. Time of day: _____

Site Observation Comments (Water ponding, dust, etc.) _____

Windrow Moisture ("Hand squeeze" test observation) Circle one:

Needs moisture Satisfactory Excess

Odor Circle one: None Minimal Strong

Windrow Temperature

Windrow Number	Temperature F.		

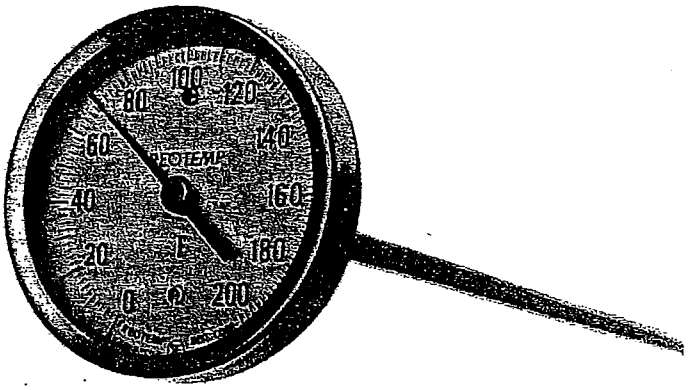
Diagram

Actions Taken (turned windrow, graded, watered, etc.): _____

rcy\ywcfrpt

REOTEMP®

COMPOST THERMOMETERS



- Rugged, all stainless construction
- Hermetically sealed — will not fog
- Unbreakable plastic crystal
- Pointed stem for easy insertion
- Easy-to-read 3" diameter dial
- External reset adjustment
- Very accurate (±1% of scale)
- °F or °C scales available
- Regular 1/4" diameter stem or Heavy Duty 5/16" diameter stem available

Composter checks interior temperatures of windrow at 36" and 72" depths

The **REOTEMP** Compost Thermometer is ideally suited for monitoring interior temperatures of compost piles and windrows. The clear, easy-to-read dial, with the pointer directly driven by the sensitive bi-metal helix in the bottom of the stem, gives an accurate reading every time. Used by composters everywhere for waste disposal, recycling, mushroom growing, etc.

Standard Model: **A36P** (36" stem, 0-200°F)
Standard Temperature Range: 0-200°F
Stem Lengths Up to 72"

Optional Models: (1/4" diameter stem): **A12P, A24P, A48P, A60P, A72P**
Optional Models with Heavy-Duty 5/16" stem: **A12PF, A24PF, A36PF, A48PF, A60PF, A72PF**
Optional Temperature Ranges:
0-250°F, 0-100°C, –10-110°C
0-250°F / –20-120°C Dual Scale
0-200°F / –10-90°C Dual Scale

To Order:
Ask for A36P or A36PF, or specify optional model, range, and stem length.

Distributed by:

REOTEMP® INSTRUMENT CORPORATION
11568 Sorrento Valley Road, Suite 10 • San Diego, CA 92121 U.S.A.
Telephone (800) 648-7787 • FAX (619) 481-7150

408.1192

621 BASIC TRACTOR

ENGINE

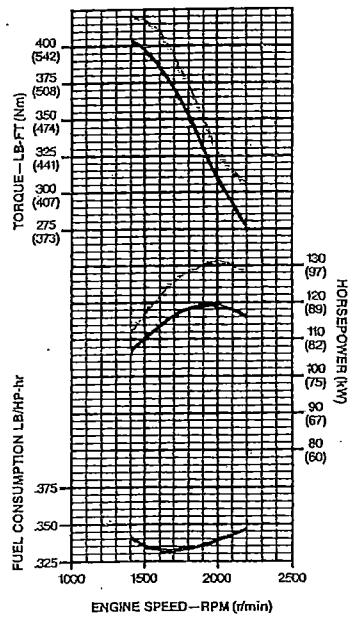
Make and model ..... Case 6T-590
Type of fuel ..... No. 1 or 2 diesel
No. of cylinders 6
Bore and stroke ..... 4.02" x 4.72" (102 mm x 120 mm)
Displacement ..... 359 in³ (5.9 L)
Compression ratio ..... 17.5 to 1
Fuel induction ..... Open chamber, direct injection
Fuel supply ..... Injection pump
Air cleaner ..... Dry type—replaceable elements
Oil filter ..... Replaceable, spin-on full flow cartridge
Lubrication ..... Positive pressure
Cooling system ..... Air, water w/lube oil cooler

Horsepower
(1) Gross ..... 128 @ 2200 rpm (95.4 kW @ 2200 r/min)
(2) SAE Net ..... 116 @ 2200 rpm (86.5 kW @ 2200 r/min)

Max. torque ft-lb
(1) Gross ..... 416 @ 1400 rpm (564 Nm @ 1400 r/min)
(2) SAE Net ..... 403 @ 1400 rpm (548 Nm @ 1400 r/min)

(1) Gross engine horsepower or torque at flywheel per SAE Standard J1349
(2) Net engine horsepower or torque at flywheel per SAE Standard J1349

POWER CURVE



GROSS ENGINE PERFORMANCE
NET ENGINE PERFORMANCE

ELECTRICAL

System voltage ..... 24 volts, negative ground
Battery (2) ..... 12 volt, low maintenance 600 cold cranking amps 0°F (−18C)
Alternator ..... 45 amp

TRAVEL SPEEDS—MPH (km/h)

Engine at full throttle—17.5 x 25 tires

	1st	2nd	3rd	4th
Forward/	4.1	7.4	12.5	23.9
Reverse	(6.6)	(11.9)	(20.1)	(38.5)

POWER TRAIN

Transmission: 4 speeds forward, 4 reverse powershift. Modulated clutching.

Torque converter: Single stage integral with transmission. 3.10 to 1 stall ratio.

BRAKES

Air-over-hydraulic, 4-wheel, caliper disc. Two brake pedals, left pedal applies brakes and electrically neutralizes power flow to drive wheels. Right pedal applies brakes only. Two master cylinders for split front and rear system. Manually applied parking brake electrically neutralizes power flow to drive wheels when applied.

AXLES

Outboard planetary. Torque-proportioning differentials. Front axle fixed. Rear axle oscillates 24° total or 15.4" (391 mm) in each direction.

STEERING

Center pivot articulated design with hydrostatic power steering. Front and rear wheels always track. Two hydraulic cylinders controlled by a hydrostatic steering gear with relief and flow control valve.

Steering angle—
each direction from center ..... 40°
Pump ... Transmission mounted, positive displacement, tandem gear type
Pump capacity ..... 30.3 gpm @ 2200 rpm @ 2500 psi (114.7 lit/min @ 2200 r/min @ 17 237 kPa)
System relief pressure ..... 2500 psi (17 237 kPa)
Steering cylinders, double acting ..... (2) 3" dia x 17.43" stroke, 1.75" rod (76 mm dia x 443 mm stroke, 44 mm rod)
Turning ratio (stop to stop) ..... 4 turns
Turning radius outside tires ..... 16' 11" (5.16 m)

LOADER HYDRAULIC SYSTEM

Cylinders: Double-acting, bolted gland, with hardened and chrome-plated rods.
Lift (2) ..... 5" dia x 32.8" stroke, 3" rod (127 mm dia x 833 mm stroke, 76 mm rod)
Tilt (1) ..... 6" dia x 21.4" stroke, 3" rod (152 mm dia x 544 mm stroke, 76 mm rod)

Pump: Tandem, gear-type, engine-driven 55.2 gpm @ 2200 rpm @ 2250 psi (209 lit/min @ 2200 r/min @ 15 513 kPa)

Control valve: Open-center, series parallel circuit with low pressure regeneration for bucket dump.

Hydraulic lines: steel tubing with SAE fittings and wire-braid, high-pressure hose with swaged fittings.

Reservoir: Positive pres[illegible] tered hydraulic oil system se[illegible] exclusion. All hydraulic oil pas[illegible] a 100 mesh screen.

System relief pressure .....

Filtration: Two 10 micron, full [illegible] elements on return line.

Hydraulic cycle time:
(Rated load in bucket)
Raise .....
Dump .....
Lower (float down) .....
Total .....

SERVICE CAPACITIES

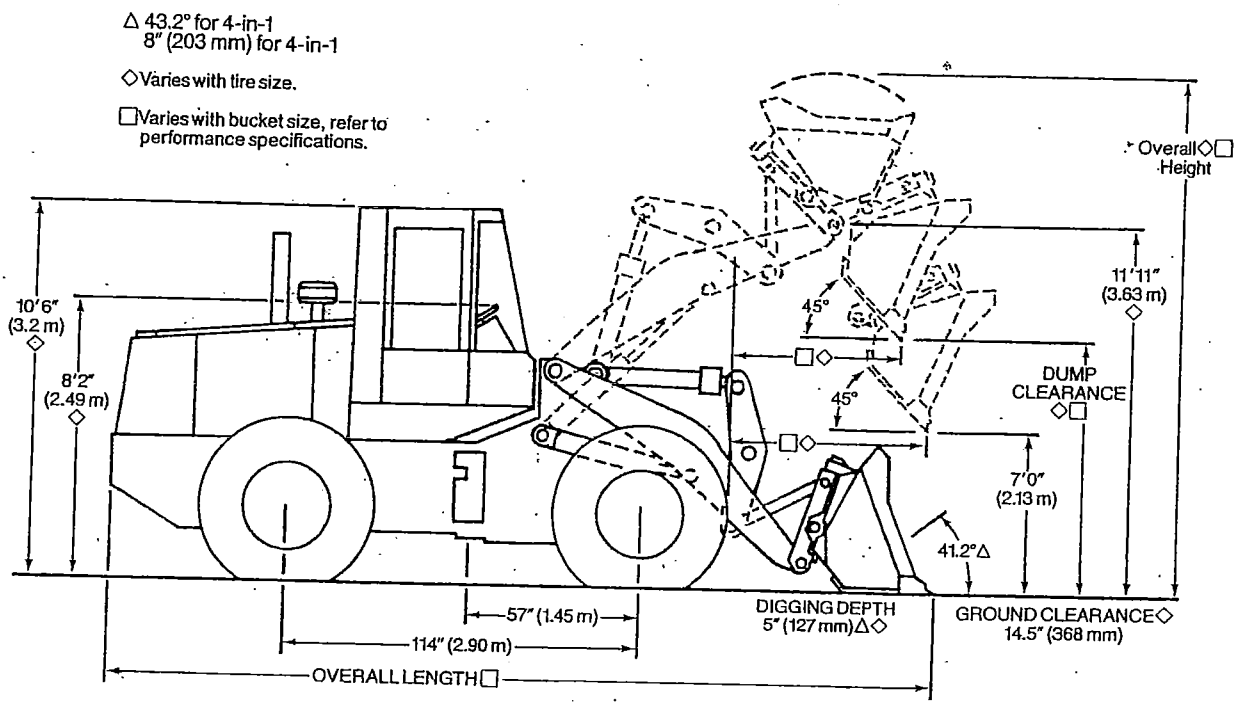
U.S. G

Fuel tank .....
Hydraulic system—total .....
—reservoir 2
Transmission and torque converter .....
Engine crankcase (with filter) .....
Axles
Front
Differential .....
Planetaries ..... (
Rear
Differential .....
Planetaries ..... (
Cooling system .....

STANDARD EQUIPMENT

Air cleaner, two elemen[illegible] • Alternator with voltage reg[illegible] freeze to −34° F (−36° C) • [illegible] lock • Backup alarm • Batterie[illegible] • Brake, parking • Brakes, fo[illegible] • Bucket position indicato[illegible] Monitor, four level warning • [illegible] torque proportioning • Engir[illegible] • Engine, industrial diesel [illegible] coupler, air operated • Fan [illegible] pusher • Fuel filter, dual • Fu[illegible] breaker (automatic) protecte[illegible] trical circuits • Gauges, [illegible] engine coolant temperatu[illegible] • Grab handles • Horn • [illegible] • Hydraulic oil cooler • Hy[illegible] spool • Lights, 2 front & 2 [illegible] floods, 2 rear stop • Loa[illegible] hydraulic servo type with de[illegible] switch • Loader linkage, s[illegible] canopy • Rear fenders • [illegible] automatic • Seat, bucket ty[illegible] 2" (51 mm) anticreep • St[illegible] • Steering column, tilting • [illegible] disconnect switch • Tra[illegible] cooler • Transmission, elec[illegible] • Warning lights (LE[illegible] engine oil pressure, [illegible] lights, air filter restriction, h[illegible] striction, hydraulic tempera[illegible] sion temperature, parking [illegible]

PERFORMANCE DATA-BUCKETS



PERFORMANCE SPECIFICATIONS—Buckets—Loader ratings are governed by SAE J732 and 742

ATTACHMENT	GENERAL PURPOSE	GENERAL PURPOSE	4-in-1
SAE rated (nominally heaped)	2.25 yd³ (1.70 m³)	2.50 yd³ (1.91 m³)	2.00 yd³ (1.53 m³)
Struck	1.84 yd³ (1.41 m³)	2.16 yd³ (1.65 m³)	1.68 yd³ (1.28 m³)
Bucket width	96" (2.44 m)	96" (2.44 m)	96" (2.44 m)
Weight	2,002 lbs (908 kg)	2,197 lbs (997 kg)	2,639 lbs (1197 kg)
Dump clearance @ 45° dump—full height	9'0" (2.74 m)	8'11" (2.72 m)	8'9" (2.67 m)
Bucket reach @ full height and 45° dump	3'9" (1.14 m)	3'10" (1.17 m)	3'8" (1.12 m)
Bucket reach @ 7' (2.13 m) clearance and 45° dump	5'1" (1.55 m)	5'2" (1.57 m)	4'11" (1.50 m)
Loader clearance circle—bucket in carry position	37'2" (11.33 m)	37'3" (11.35 m)	35'0" (10.67 m)
Overall length	22'10" (6.96 m)	23'0" (7.01 m)	23'2" (7.06 m)
Overall height	16'3" (4.95 m)	16'7" (5.05 m)	15'10" (4.83 m)
SAE breakout force	20,840 lbs (9453 kg)	19,583 lbs (8883 kg)	19,159 lbs (8690 kg)
SAE tipping load*			
Straight	16,584 lbs (7522 kg)	16,282 lbs (7385 kg)	14,903 lbs (6760 kg)
40° turn	13,868 lbs (6290 kg)	13,626 lbs (6181 kg)	12,392 lbs (5621 kg)
Operating load*	6,934 lbs (3145 kg)	6,813 lbs (3090 kg)	6,196 lbs (2810 kg)
Rated load**	6,800 lbs (3084 kg)	6,800 lbs (3084 kg)	6,000 lbs (2722 kg)
Hydraulic lifting capacity @ full height	9,523 lbs (4320 kg)	9,136 lbs (4144 kg)	7,730 lbs (3506 kg)
SAE operating weight*	25,666 lbs (11 642 kg)	25,861 lbs (11 730 kg)	26,303 lbs (11 931 kg)

*For select items, add to or deduct from the machine operating weight and tipping loads as given in the chart. All dimensions and specifications based upon unit with 17.5 x 25, 12PR tires, with 1000 lbs (454 kg) counterweight, ROPS cab, fenders, F.A.C.T. coupler and attachment specified, fully serviced and with 175 lb (79 kg) operator.

**Continuous load exceeding specified rated load can affect service life of machine.

State of North Carolina

Department of Environment and Natural Resources
Division of Waste Management

SOLID WASTE COMPOST FACILITY

Facility Annual Report

For the period of JULY 1, 2009-JUNE 30, 2010

If you have questions or require assistance in completing this report, contact your Regional Environmental Senior Specialist. According to (G.S. 130A-309.09D(b)) completed forms must be returned by August 1, 2010 and a copy of this report must be sent to the County Manager of each county from which waste was received.

Facility Name: City of Hickory Permit: 1806-COMPOST- ID: P0397

Facility Website (URL): www.hickorygov.com

Physical Address	Mailing Address
Street 1: 900 Cloninger Mill Road	Street 1: P.O. Box 398
Street 2:	Street 2:
City: Hickory County: Catawba	City: Hickory
State: North Carolina Zip: 28601	State: North Carolina Zip: 28603

Primary Facility Contact Person	Billing Contact Person
Name: Andrew S. Ballentine	Name: Andrew S. Ballentine
Phone: (828) 323-7439 Fax: (828) 323-7403	Phone: (828) 323-7439 Fax: (828) 323-7403
Email: aballentine@ci.hickory.nc.us	Email: aballentine@ci.hickory.nc.us

1. Tipping Fee: $0.00 per Ton (Attach a schedule of tipping fees if appropriate.)

2. Please attach results of monthly temperature monitoring for the period of July 1, 2009 thru June 30, 2010.

3. For Type II, III, and IV facilities, attach results of tests (Waste Analysis with metals, foreign matter and pathogens) as required in Table 3 of Rule 15A NCAC 13B .1408 for the period of July 1, 2009 thru June 30, 2010. **Current Rules state that "Compost shall be analyzed at intervals of every 20,000 tons of compost produced or every six months."**

4. What type and quantity of waste was composted by your facility?

Materials COMPOSTED	Tons
Limbs, Brush	3,298
Leaves	2,925
TOTAL	6,223.00

5. What type and quantity of compost was produced by your facility?

Type of Compost PRODUCED by Product Classification (15A NCAC 13B .1407)	Tons
Mulch	3,298
Leaf Compost/Mulch	2,925
TOTAL	6,223.00

6. What type and quantity of compost was removed or disposed by your facility?

Type of Compost REMOVED or DISPOSED by Product Classification	Tons
Mulch	2,473
Leaf Compost/Mulch	2,195
TOTAL	4,668.00

7. How was the final product ultimately used? If the final product had multiple uses, please indicate approximate percentages of each.

Mulch was used as ground cover.

Leaf Compost was used as ground cover or soil amendment when mixed in to gardens or flower beds.

8. Indicate waste received at this compost facility during the period of July 1, 2009, through June 30, 2010. Indicate **tonnage** received by COUNTY of waste origin.

Received from	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	Total
City of Hickory	277.00	205.00	298.00	352.00	1,642.00	1,345.00	623.00	161.00	373.00	356.00	311.00	280.00	6,223.00

Grand Total 6,223.00

9. Did your facility stop receiving waste during this past Fiscal Year? ☐ Yes ☒ No

If so, please report the date this occurred: _____

REMINDER: According to (G.S. 130A-309.09D(b)), this report must be sent to the Regional Environmental Senior Specialist for your area and a copy of this report must be sent to the County Manager of each county from which waste was received.

Your Regional Environmental Senior Specialist:

C.T. Gerstell
610 East Center Avenue
Mooresville, NC 28115
phone: 704.235.2144 email: charles.gerstell@ncdenr.gov

CERTIFICATION: I certify that the information provided is an accurate representation of the activity at this facility.

Signature: Andrew S. Ballentine Digitally signed by Andrew S. Ballentine DN: cn=Andrew S. Ballentine, o=City of Hickory, ou, email=aballentine@ci.hickory.nc.us, c=US Date: 2010.07.28 15:06:47 -04'00' Date: 7/28/2010

Name: Andrew S. Ballentine Title: Solid Waste Manager

Phone Number: (828) 323-7439 Email: aballentine@ci.hickory.nc.us