



City of Hickory
Solid Waste Division
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APPROVED DOCUMENT
Division of Waste Management
Solid Waste Section
Date August 23, 2012 By LY Frost

| Permit No. | Scan Date | DIN |
|---------------|-----------------|-------|
| 1806-COMPOST- | August 14, 2012 | 17043 |

July 30, 2010

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

RECEIVED
August 8, 2012
Solid Waste Section
Asheville Regional Office

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,

A handwritten signature in black ink, appearing to read "A. S. Ballentine", with a long horizontal line extending to the right.

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

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



City of Hickory
Post Office Box 398
Hickory, NC 28603
Phone: (828) 323 7439
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Email: aballentine@hickorync.gov

City of Hickory
Solid Waste Composting Facility – Cloninger Mill Rd.

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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 31, 2012

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 ~~one to three~~ 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 stockpiled in the mulch storage area until it can reach it, temperatures above 131 degrees, for no less than three (3) days and then it will be sold. 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.

If unacceptable odors are detected, then 6" of compost material will be used to cover odorous windrow(s)

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.**
- (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).

(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

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.

(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).

.1407 CLASSIFICATION/DISTRIBUTION OF SOLID WASTE COMPOST PRODUCTS

(a) Compost shall not be applied to the land or sold or given away if the concentration of any metal exceeds the concentration in 40 CFR 503.13(b)(3) [See Table 1 below], unless the concentration of all metals are less than the values in 40 CFR 503.13(b)(1) and records are maintained to show compliance with the cumulative and annual metal levels in 40 CFR 503.13(b)(2) and (4).

Table 1

| Metals | Concentration mg per kg |
|----------|----------------------------|
| Arsenic | 41 |
| Cadmium | 39 |
| Copper | 1500 |
| Lead | 300 |
| Mercury | 17 |
| Nickel | 420 |
| Selenium | 36 |
| Zinc | 2800 |

(b) Solid waste compost shall be classified based on Table 2:

Table 2

| Grade | Manmade Inerts % dry wt. of inerts | Pathogen Reduction | Metal Concentration |
|-------|--|-----------------------|------------------------|
| A | ≤ 6 | PFRP | Table 1 40 CFR |
| B | > 6 | NA | 503.13(b)(1) |

(c) Man made inerts shall not exceed 1 inch in size.

(d) Distribution of the defined grades shall be as follows:

- (1) Grade A compost shall have unlimited, unrestricted distribution. This product may be distributed directly to the public;
- (2) Grade B compost shall be restricted to distribution for land and mine reclamation, silviculture, and agriculture (on non-food chain crops) projects; and
- (3) Compost or mulch that is produced at a Type 1 facility and that contains minimal pathogenic organisms, is free from offensive odor, and contains no sharp particles that would cause injury to persons handling the compost, shall have unrestricted applications and distributions if directions are provided with the compost product.

(e) Solid waste compost products may not be distributed or marketed until the permittee has provided adequate test data to the Division as outlined in Rule .1408 of this Section. Within 30 days of receipt of the test data, the Division shall approve or deny the distribution and marketing of the product

based upon the compost classification and distribution scheme. As long as the test data required in Rule .1408 of this Section continues to verify that compost is produced to the specifications of this Rule, the Division's approval to distribute the compost shall be ongoing.

(f) The applicant is responsible for meeting any applicable requirements of the North Carolina Department of Agriculture, Fertilizer Section concerning the distribution of this product.

(g) If the owner intends to distribute the product, the owner shall provide instructions to the user on any restrictions on use and recommended safe uses and application rates. The following information shall be provided on a label or an information sheet and a copy of the label or information sheet shall be submitted to the Solid Waste Section:

- (1) Classification grade as outlined in Paragraph (d) of this Rule;
- (2) Recommended uses;
- (3) Application rates;
- (4) Restrictions on usage; and
- (5) Total N (for products containing sludge).

*History Note: Authority G.S. 130A-309.11; Eff. December 1, 1991;
RRC objection Eff. April 18, 1996 due to lack of statutory authority;
Amended Eff. June 1, 1996.*

.1408 METHODS FOR TESTING AND REPORTING REQUIREMENTS

(a) The compost product from Type 2, 3, and 4 facilities shall be sampled and analyzed as follows:

- (1) A composite sample of the compost produced at each compost facility shall be analyzed at intervals of every 20,000 tons of compost produced or every six months, whichever comes first, for test parameters for each Type of facility as designated in Table 3 of this Rule. Standard methods equivalent to those in Table 3 may be approved by the Division.

Table 3

| Parameter | Unit | Facility | Test Method |
|----------------|----------------|----------|-----------------------------------|
| Foreign Matter | % | all | see Subparagraph (5) of this Rule |
| Arsenic | mg/kg dry wt. | Type 4 | See Appendix A |
| Cadmium | mg/kg dry wt. | all | |
| Chromium | mg/kg dry wt. | Type 4 | |
| Copper | mg/kg dry wt. | all | |
| Lead | mg/kg dry wt. | all | |
| Mercury | mg/kg dry wt. | Type 4 | |
| Nickel | mg/kg dry wt. | all | |
| Selenium | mg/kg dry wt. | Type 4 | |
| Zinc | mg/kg dry wt. | all | |
| Pathogens | See Appendix B | all | See Appendix B |
| Total N | % | see * | Kjeldahl |

* Total N required for products containing sludge subject to 40 CFR 503.

The parameters listed in Table 3 of this Rule may also be determined by methods accepted by the North Carolina Department of Agriculture.

- (2) Sample collection, preservation, and analysis shall assure valid and representative results pursuant to a Division-approved quality assurance plan. At least three individual samples (of equal volume) shall be taken from each batch produced in separate areas along the side of the batch. Each sampling point shall be at a depth of two to six feet into the pile from the outside surface of the pile. Samples that have been analyzed for metals shall be composited and accumulated over a six month period or at intervals of every 20,000 tons of product produced, whichever comes first. Any sample collected for testing for pathogens and nutrients shall be a representative composite sample of the compost and shall be processed within a period of time required by the testing procedure.
- (3) Compost containing sewage sludge shall be tested in accordance with 40 CFR 503, Subpart B.
- (4) The Division may decrease or increase the parameters to be analyzed or the frequency of analysis based upon monitoring data, changes in the waste stream

or processing, or information regarding the potential for presence of toxic substances that are not on the list of monitoring parameters.

- (5) Foreign matter content shall be determined by passing a dried, weighed sample of the compost product through a one-quarter inch screen. EPA Method 160.3 shall be used to dry the sample. The material remaining on the screen shall be visually inspected, and the foreign matter that can be clearly identified shall be separated and weighed. The weight of the separated foreign matter divided by the weight of the total sample shall be determined and multiplied by 100. This shall be the percent dry weight of the foreign matter content.

(b) Record Keeping: All facility owners or operators shall record and maintain records for a minimum of five years. Records shall be available for inspection by Division personnel during normal business hours and shall be sent to the Division upon request:

- (1) Daily operational records must be maintained, which include, at a minimum, temperature data (length of the composting period) and quantity of material processed;
- (2) Analytical results on compost testing;
- (3) The quantity, type and source of waste received;
- (4) The quantity and type of waste processed into compost;
- (5) The quantity and type of compost produced by product classification; and
- (6) The quantity and type of compost removed for use or disposal, by product classification, and the market or permitted disposal facility.

(c) Annual Reporting: An annual report for the period July 1 to June 30 shall be submitted by all facility owners or operators to the Division by August 1, 1996 and every August 1 thereafter and shall contain:

- (1) The facility name, address, and permit number;
- (2) The total quantity in tons, with sludge values expressed in dry weight, and type of waste received at the facility during the year covered by the report, including tons of waste received from local governments of origin;
- (3) The total quantity in tons, with sludge values expressed in dry weight, 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; and
- (7) Results of tests required in Table 3 of this Rule.

(d) Yearly totals of solid waste received and composted shall be reported back to the local government of origin for annual recycling reporting.

History Note: Authority G.S. 130A-294; 130A-309.03; 130A-309.11; 130A-309.29; Eff. December 1, 1991; RRC objection Eff. April 18, 1996 due to lack of statutory authority; Amended Eff. June 1, 1996.

Detention Times and Waste Flow Rates –

Woody Waste is collected through the year and stockpiled on the facility until material is ground and stored in wind rows and sold.

Leaves are only collected from November through mid-January. Then they are ground, monitored until the wind rows reach a consistent 131 degrees for at least 3 days, then the material is sold.

The site is constantly maintained to ensure storm water is not ponding around the material nor on the site which also helps control odors.

Within 3 months, we are sold out of all material. During the times of sales, the material is turned to ensure composting is complete and thorough. Which keeps the odors to a minimum.



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
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 Madison soil series on the lower half of the yard and a Cecil-Pacolat 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
NCDA Regional Agronomist and Soil Scientist



James A. Graham
Commissioner

North Carolina
Department of Agriculture
Agronomic Division

Dr. Donald W. Eaddy
Director

Page 2

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

- 0-3" Topsoil, decomposed organic matter with many, fine fibrous roots
- 3-12" Silty clay soil, greasy, many fine mica particles
- 12-20" Red clay soil, good texture and structure, mixed with small weathered mica flakes
- 20-33" Red clay soil, greasy, highly micaceous, mixed with clear and milk quartz fragments
- 33-58" Weathered saprolite, yellowish brown 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 fibrous roots
 - 20-33" Red clay with some faint yellow mottles
 - 33-48" Red and yellowish clay soil with few, fine quartz 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.



Soil Test Report

4500 Reedy Creek Road Raleigh, NC 27607-6466

(919) 733-2655

Report No. 7236

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
Howard, Lynn
604 Pine Mountain Road
Hudson, NC 28638

Farm: Catawba County

Agonomist 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 drede pounds/1000 square feet by 24 (this equates to lbs/cubic yard). M. Ray Tucker, Agonomist

| Sample No. | Last Crop | Applied Lime | | Recommendations | | Lime | N | P2O5 | K2O | Mg | Cu | Zn | B | Mn | See Note |
|------------|-----------|--------------|-----|--------------------------|-----|------|---|------|-----|----|----|----|---|----|----------|
| | | Mo Yr | T/A | Crop or Year | | | | | | | | | | | |
| CNS | | | | 1st Crop: Garden, Flower | 20M | | | | | | | | | | 4 |
| | | | | 2nd Crop: | | | | | | | | | | | |

| 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 | NO3-N | NH4-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 | | | | |

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

Heavy Metal Soil Test Report

MEHLICH-3 EXTRACTION

Report #: 22236

Questions concerning these analyses should be referred to the Agronomic Division, Soil Testing Section
323-7435

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

| Sample ID | Cd Cadmium | Ni Nickel | Pb Lead | Se Selenium mg/dm ³ (ppm) | Cr Chromium | Al Aluminum | As Arsenic |
|--|---------------|--------------|------------|--|----------------|----------------|---------------|
| CYS <u>Compost YARD</u> on <u>Cloninger Mill Road</u> | 0.10 | 0.30 | 0.50 | 0.00 | 0.40 | | 0.40 |

YARDWASTE COMPOST FACILITY DATA SHEET
City of Hickory, North Carolina

Data Collected by: A. BAILENTINE Date: 4/12/12

Weather Information (Sunny, Rain, Etc.) None

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

Air Temperature: 80° F. Time of day: 2:00pm

Site Observation Comments (Water ponding, dust, etc.) no dust, barely
dry

Windrow Moisture ("Hand Squeeze" test observation) Circle One:

Needs Moisture

Satisfactory

Excess

Odor Circle One: None

Minimal

Strong

Windrow Temperature

| Windrow Number | Temperature F. | | |
|----------------|----------------|-----|-----|
| 1 | 126 | 133 | 128 |
| | | | |
| | | | |
| | | | |

Diagram

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

YARDWASTE COMPOST FACILITY DATA SHEET
City of Hickory, North Carolina

Data Collected by: A. BOURNINE Date: 4/3/12

Weather Information (Sunny, Rain, Etc.) HAZE RAIN

Wind direction (from Northeast, South, Etc.) —

Air Temperature: 77° F. Time of day: 2:30pm

Site Observation Comments (Water ponding, dust, etc.) NO dust, not muddy, damp

Windrow Moisture ("Hand Squeeze" test observation) Circle One:

Needs Moisture Satisfactory Excess
Odor Circle One: None Minimal Strong

Windrow Temperature

| Windrow Number | Temperature F. | | |
|----------------|----------------|-----|-----|
| 1 | 131 | 135 | 130 |
| | | | |
| | | | |
| | | | |

Diagram

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

YARDWASTE COMPOST FACILITY DATA SHEET
City of Hickory, North Carolina

Data Collected by: A BALLANTINE Date: 4/21/12

Weather Information (Sunny, Rain, Etc.) partly cloudy

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

Air Temperature: 83° F. Time of day: 2:15 pm

Site Observation Comments (Water ponding, dust, etc.) perfect, no dust,
at meal

Windrow Moisture ("Hand Squeeze" test observation) Circle One:

Needs Moisture Satisfactory Excess
Odor Circle One: None Minimal Strong

Windrow Temperature

| Windrow Number | Temperature F. | | |
|----------------|----------------|-----|-----|
| 1 | 130 | 134 | 129 |
| | | | |
| | | | |
| | | | |

Diagram

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



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.

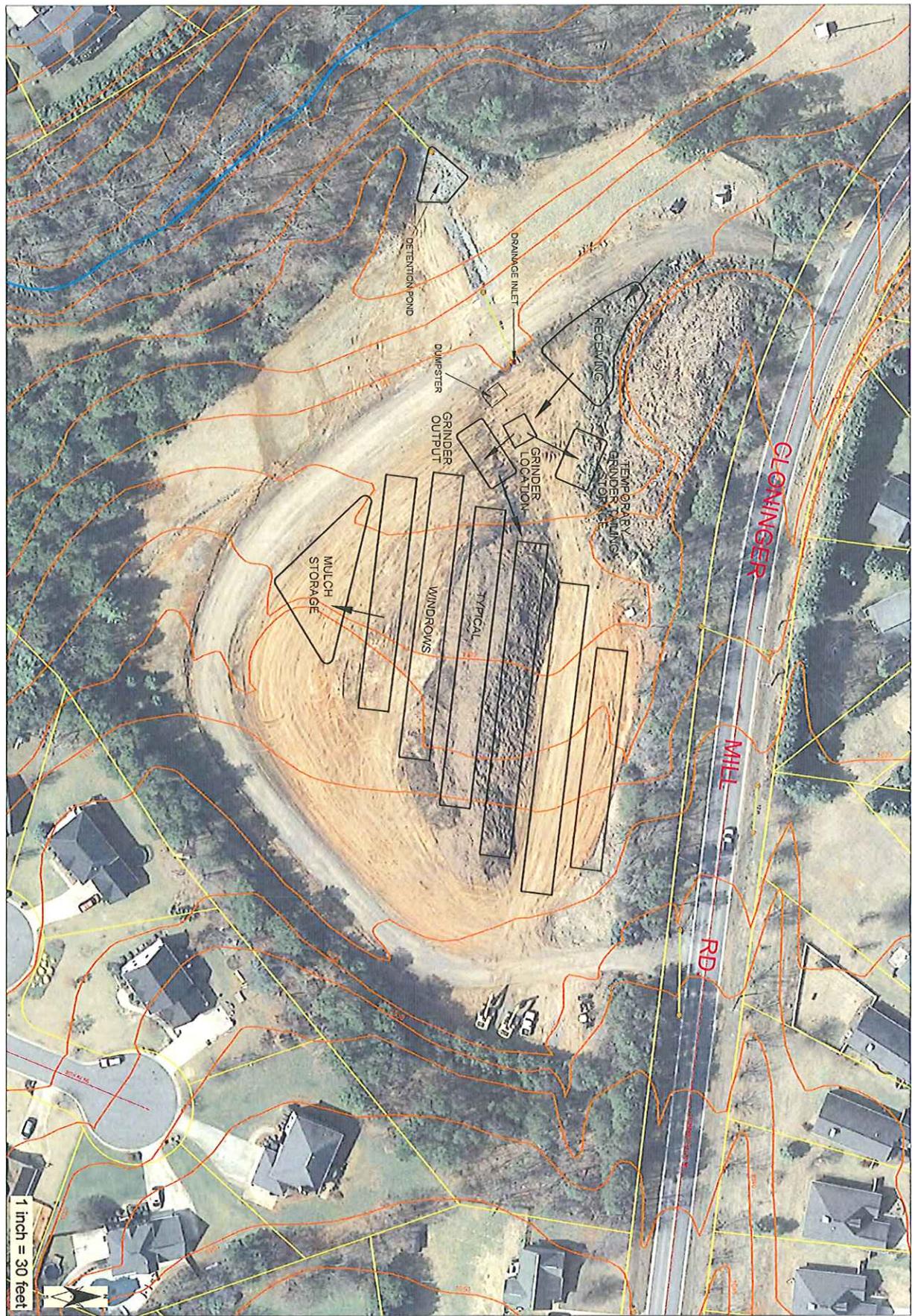
Recommended Application Rate:

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.



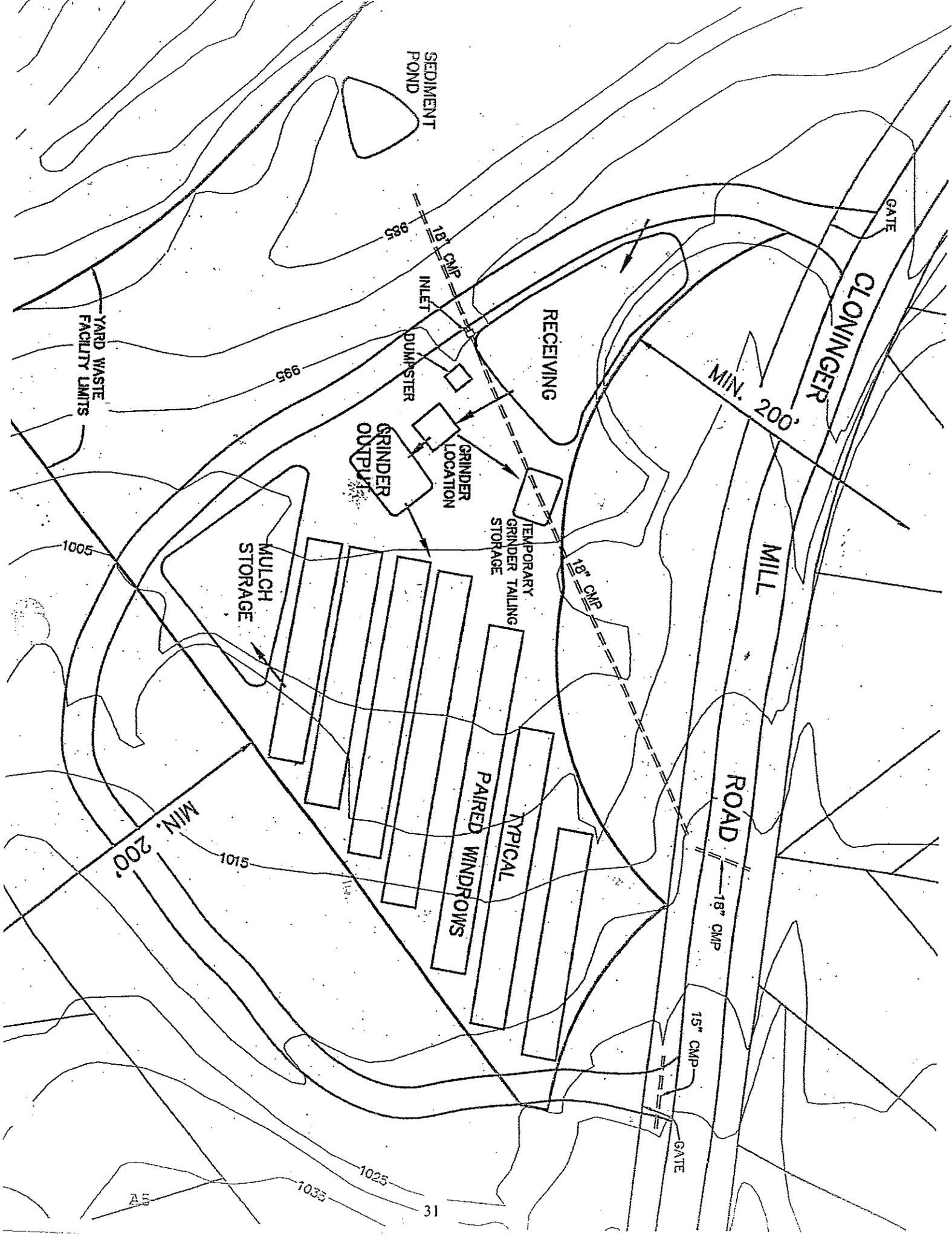
1 inch = 30 feet

DATE: 6-22-12
 DRAWN BY: DWA
 VERIFIED: [Signature]

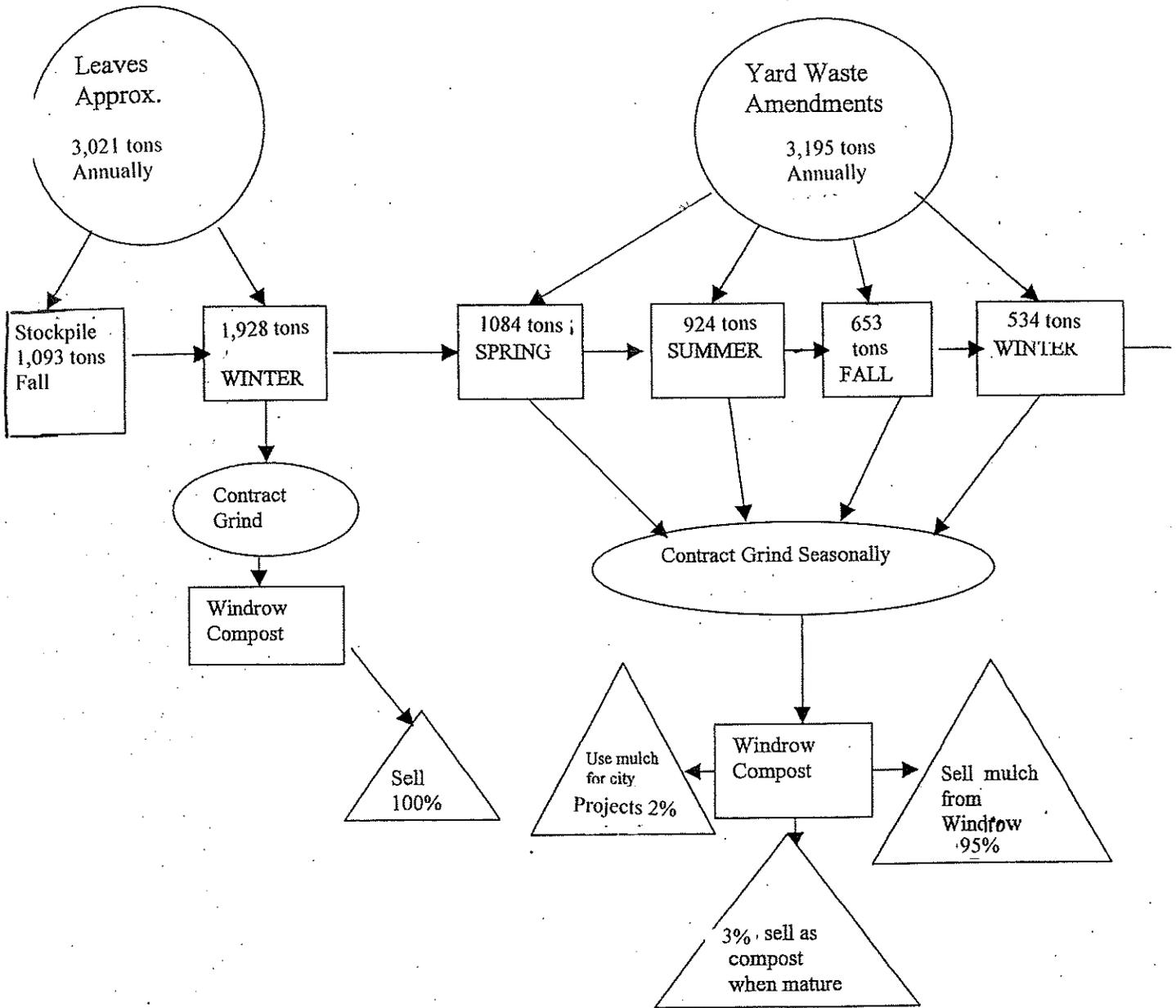
| NO. | REVISIONS |
|-----|-----------|
| | |

CITY OF HICKORY
 YARD WASTE FACILITY

HICKORY CITY OF HICKORY
 ENGINEERING DEPARTMENT
 78 NORTH CENTER STREET
 RD 604 358
 HICKORY, NORTH CAROLINA 28603
 (704) 323-7416



FLOW DIAGRAM
CITY OF HICKORY YARD WASTE FACILITY
PERMIT #18-06



Andrew Ballentine

From: Terry Watts

Sent: Monday, July 02, 2012 9:24 AM

To: Andrew Ballentine

Subject: Flood Insurance Rate Map Panel Number for Yard Waste Facility

Andrew,

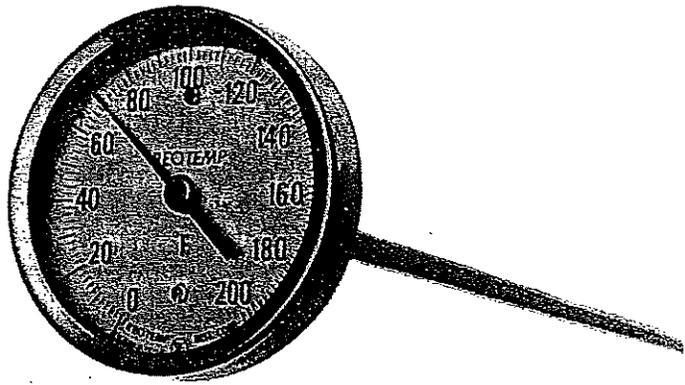
The Flood Insurance Rate Map Number is 3710371400J, Panel 3714J, effective September 5, 2007. This is the information that you need to provide to DENR. This map shows the flood plain is outside of the limits of the yard waste facility.

If you have any questions, let me know.

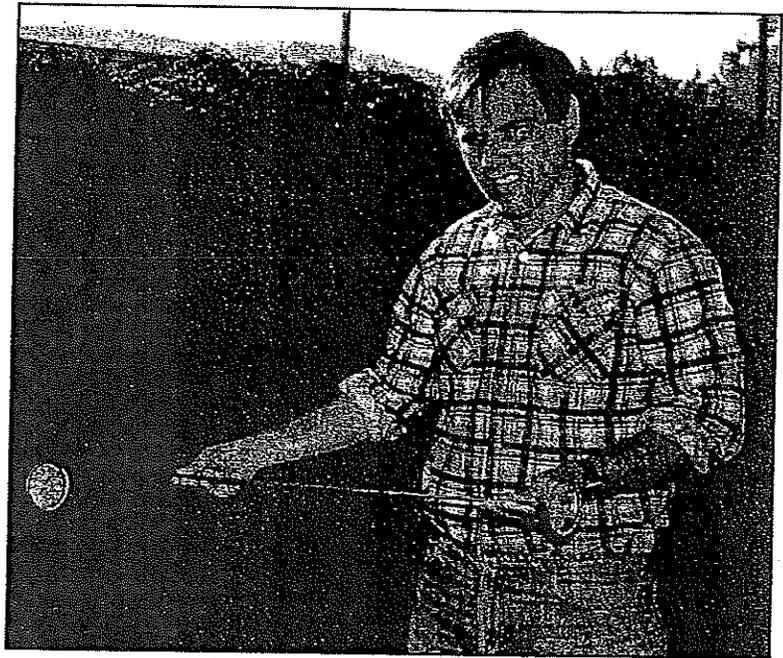
Terry

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 ($\pm 1\%$ 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

11566 Sorrento Valley Road, Suite 10 • San Diego, CA 92121 U.S.A.
Telephone (609) 646-7737 • FAX (619) 481-7150

John Deere 544J Wheel Loader Specs

Engine

| | | |
|---------------------------|--|--|
| Type | John Deere PowerTech 6068H complies with EPA Tier 2 regulations | |
| Cylinders | 6 | |
| Valves per Cylinder | 2 | |
| Displacement | 414 cu. in. (6.8 L) | |
| Net Peak Power (ISO9249) | 160 hp (116 kW) @ 1,900 rpm | |
| Net Peak Torque (ISO9249) | 485 lb. ft. (650 Nm) @ 1,400 rpm | |
| Aspiration | turbocharged and charge air cooled | |
| Air Cleaner | dual element dry type; restriction indicator in cab | |
| Fan Drive | hydraulically driven, proportionally controlled, fan aft of coolers | |
| Electrical System | 24 volt with 80-amp alternator | |
| Batteries (two 12 volt) | 950 CCA | |

Transmission

| Travel Speeds | Forward | Reverse |
|---------------|----------------------|----------------------|
| Gear 1 | 4.3 mph (6.9 km/h) | 4.5 mph (7.3 km/h) |
| Gear 2 | 7.4 mph (11.9 km/h) | 7.8 mph (12.6 km/h) |
| Gear 3 | 14.2 mph (22.8 km/h) | 15.0 mph (24.1 km/h) |
| Gear 4 | 23.8 mph (38.4 km/h) | |

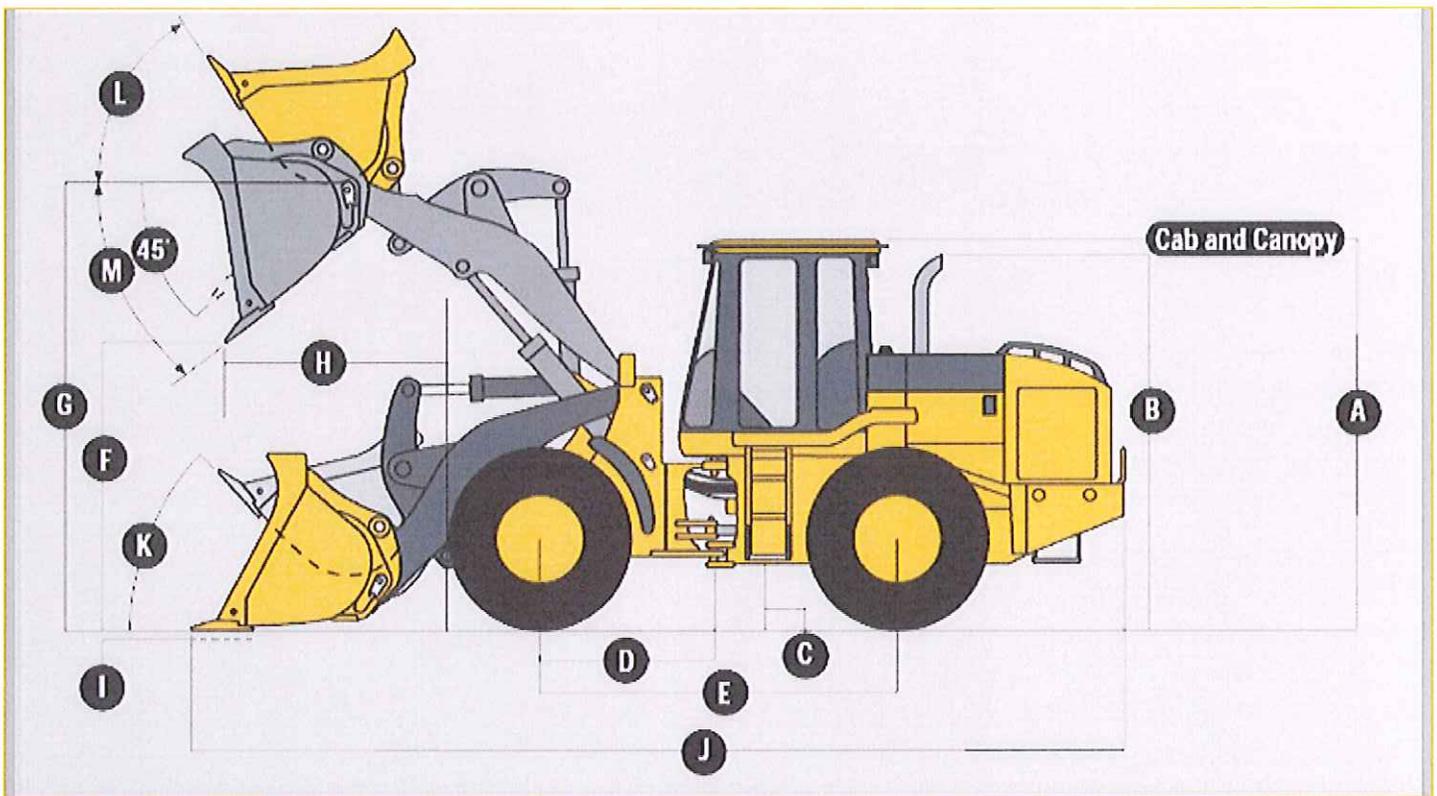
Refill Capacities

| | |
|--|--------------------|
| Fuel Tank (with ground level fueling) | 85 gal. (322 L) |
| Cooling System | 22 qt. (21 L) |
| Engine Oil, Including Filter | 19.5 qt. (18.5 L) |
| Transmission, Including Filter | 19.5 qt. (18.5 L) |
| Differential (front and rear, each axle) | 19 qt. (18 L) |
| Hydraulic Reservoir and Filters | 25.5 gal. (96.5 L) |
| Wet-Disc Parking Brake | 10 oz. (0.3 L) |

Hydraulic System / Steering

 2.5 cu. yd. (1.9 m³) bucket with bolt on cutting edge

| Maximum Lift Capacity | Standard Z Bar | High Lift Z Bar |
|------------------------|-----------------------|-----------------------|
| Lift at Ground Level | 29,596 lb (13 422 kg) | 26,074 lb (11 835 kg) |
| Lift at Maximum Height | 14,904 lb (6759 kg) | 12,996 lb (5894 kg) |



Dimensions (with Pin On Bucket)

| | Standard Z-Bar | High-Lift Z Bar |
|---|--------------------------|--------------------------|
| A) Height to Top of Cab | 10 ft. 7.6 in. (3241 mm) | 10 ft. 7.6 in. (3241 mm) |
| B) Height to Top of Exhaust | 10 ft. 7 in. (3227 mm) | 10 ft. 7 in. (3227 mm) |
| C) Ground Clearance | 17.7 in. (450.5 mm) | 17.7 in. (450.5 mm) |
| D) Length from Centerline to Front Axle | 57.1 in. (1450 mm) | 57.1 in. (1450 mm) |
| E) Wheelbase | 114.2 in. (2900 mm) | 114.2 in. (2900 mm) |
| F) Dump Clearance | see below | see below |
| G) Height to Hinge Pin, Fully Raised | 12 ft. 7 in. (3836 mm) | 13 ft. 9 in. (4188 mm) |
| H) Dump Reach | see below | see below |
| I) Maximum Digging Depth | 3.25 in. (83 mm) | 6.5 in. (165 mm) |
| J) Overall Length | see below | see below |
| K) Maximum Rollback at Ground Level | 41 degrees | 41 degrees |
| L) Maximum Rollback, Boom Fully Raised | 55 degrees | 55 degrees |
| M) Maximum Bucket Angle, Fully Raised | 50 degrees | 50 degrees |

Dimensions (with Quick-Coupler and Bucket)

| | Standard Z Bar | High Lift Z Bar |
|--------------------------------------|------------------------|------------------------|
| A) Dump Clearance | see below | see below |
| B) Dump Reach | see below | see below |
| C) Maximum Digging Depth | 5.5 in. (139 mm) | 8.7 in. (221 mm) |
| D) Height to Hinge Pin, Fully Raised | 12 ft. 7 in. (3836 mm) | 13 ft. 9 in. (4188 mm) |
| E) Overall Length | see below | see below |

| | | |
|---|------------|------------|
| F) Maximum Rollback, Boom Fully Raised | 55 degrees | 49 degrees |
| G) Maximum Bucket Discharge Angle, Fully Raised | 55 degrees | 51 degrees |
| H) Maximum Rollback at Ground Level | 42 degrees | 41 degrees |

Dimensions (with Quick-Coupler and Construction Fork)

| | Standard Z Bar | High Lift Z Bar |
|-------------------------------|------------------------|-------------------------|
| A) Reach, Fully Raised | 2 ft. 6 in. (758 mm) | 2 ft. 6 in. (760 mm) |
| B) Fork Height, Fully Raised | 11 ft. 9 in. (3574 mm) | 12 ft. 11 in. (3926 mm) |
| C) Maximum Reach, Fork Level | 5 ft. 1 in. (1546 mm) | 5 ft. 11 in. (1810 mm) |
| D) Fork Height, Maximum Reach | 5 ft. 7 in. (1705 mm) | 5 ft. 7 in. (1705 mm) |
| E) Reach, Ground Level | 3 ft. 0 in. (912 mm) | 4 ft. 1 in. (1249 mm) |
| F) Depth Below Ground | 1.2 in. (30 mm) | 1.2 in. (30 mm) |
| G) Tine Length | see below | see below |
| H) Overall Length | see below | see below |

Standard Z-Bar Information with Pin On Bucket

| Bucket Type/Size | General Purpose w/ Bolt on Edge | |
|---|-----------------------------------|-----------------------------------|
| Capacity, Heaped SAE | 3.0 cu. yd. (2.3 m ³) | 2.5 cu. yd. (1.9 m ³) |
| Capacity, Struck SAE | 2.6 cu. yd. (2.0 m ³) | 2.1 cu. yd. (1.6 m ³) |
| Bucket Weight | 2,617 lb (1187 kg) | 2,061 lb (935 kg) |
| Bucket Width | 105.9 in. (2690 mm) | 100.4 in. (2550 mm) |
| Breakout Force, SAE J732C | 24,250 lb (11 000 kg) | 26,770 lb (12 143 kg) |
| Tipping Load, Straight | 21,993 lb (9976 kg) | 22,798 lb (10 341 kg) |
| Tipping Load, 40-Degree Full Turn, SAE | 18,653 lb (8461 kg) | 19,422 lb (8810 kg) |
| Reach, 45-Degree Dump, 7 ft (2.13 m) Clearance | 57.2 in. (1453 mm) | 56.22 in. (1428 mm) |
| Reach, 45-Degree Discharge, Full Height | 37.0 in. (939 mm) | 34.7 in. (882 mm) |
| Dump Clearance, 45-Degree Full Height | 111 in. (2837 mm) | 114 in. (2904 mm) |
| Overall Length, Bucket on Ground | 23 ft. 11 in. (7281 mm) | 23 ft. 7 in. (7184 mm) |
| Loader Clearance Circle, Bucket in Carry Position | 38 ft. 2 in. (11 630 mm) | 37 ft. 7 in. (11 445 mm) |
| Operating Weight | 27,703 lb (12 566 kg) | 27,149 lb (12 315 kg) |

Standard Z-Bar Information with Quick Coupler and Bucket

| Bucket Type/Size | General Purpose w/ Bolt on Edge | |
|---------------------------|-----------------------------------|-----------------------------------|
| Capacity, Heaped SAE | 3.0 cu. yd. (2.3 m ³) | 2.5 cu. yd. (1.9 m ³) |
| Capacity, Struck SAE | 2.6 cu. yd. (2.0 m ³) | 2.1 cu. yd. (1.6 m ³) |
| Bucket Weight | 3,206 lb (1454 kg) | 2,879 lb (1306 kg) |
| Bucket Width | 105.9 in. (2690 mm) | 100.4 in. (2550 mm) |
| Breakout Force, SAE J732C | 19,039 lb (8636 kg) | 18,937 lb (8590 kg) |

| | | |
|---|---------------------------|--------------------------|
| Tipping Load, Straight | 18,163 lb (8237 kg) | 20,741 lb (9408 kg) |
| Tipping Load, 40-Degree Full Turn, SAE | 15,314 lb (6945 kg) | 17,548 lb (7960 kg) |
| Reach, 45-Degree Dump, 7 ft (2.13 m) Clearance | 59.0 in. (1499 mm) | 61.4 in. (1560 mm) |
| Reach, 45-Degree Discharge, Full Height | 40.3 in. (1099 mm) | 43.7 in. (1109 mm) |
| Dump Clearance, 45-Degree Full Height | 103.6 in. (2632 mm) | 107.0 in. (2718 mm) |
| Overall Length, Bucket on Ground | 24 ft. 10 in. (7581 mm) | 23 ft. 1 in. (7475 mm) |
| Loader Clearance Circle, Bucket in Carry Position | 37 ft. 10 in. (11 575 mm) | 38 ft. 3 in. (11 669 mm) |
| Operating Weight | 28,299 lb (12 834 kg) | 27,967 lb (12 686 kg) |

Standard Z-Bar with Quick Coupler and Construction Fork

| | | |
|--|------------------------|------------------------|
| Tine Length | 48 in. (1220 mm) | 60 in. (1525 mm) |
| Overall Length | 25 ft. 7 in. (7802 mm) | 26 ft. 7 in. (8106 mm) |
| Tipping Load, Straight (fork level, load centered 36 in. (914 mm) on tine) | 14,859 lb (6740 kg) | 14,002 lb (6351 kg) |
| Tipping Load, 40 deg. Full Turn (fork level, load centered 36 in (914 mm) on tine) | 12,632 lb (5730 kg) | 11,887 lb (5392 kg) |
| Operating Weight | 27,097 lb (12 289 kg) | 27,199 lb (12 335 kg) |

High-Lift Z-Bar Pin-On Type Bucket

| Bucket Type/Size | General Purpose w/ Bolt on Edge | |
|---|-----------------------------------|-----------------------------------|
| Capacity, Heaped SAE | 3.0 cu. yd. (2.3 m ³) | 2.5 cu. yd. (1.9 m ³) |
| Capacity, Struck SAE | 2.6 cu. yd. (2.0 m ³) | 2.1 cu. yd. (1.6 m ³) |
| Bucket Weight | 2,396 lb (1087 kg) | 2,061 lb (935 kg) |
| Bucket Width | 105.9 in. (2690 mm) | 100.4 in. (2550 mm) |
| Breakout Force, SAE J732C | 22,394 lb (10 158 kg) | 24,671 lb (11 191 kg) |
| Tipping Load, Straight | 18,713 lb (8488 kg) | 19,380 lb (8791 kg) |
| Tipping Load, 40-Degree Full Turn, SAE | 15,815 lb (7174 kg) | 16,455 lb (7464 kg) |
| Reach, 45-Degree Dump, 7 ft (2.13 m) Clearance | 68.7 in. (1744 mm) | 67.1 in. (1705 mm) |
| Reach, 45-Degree Discharge, Full Height | 37.0 in. (941 mm) | 34.5 in. (876 mm) |
| Dump Clearance, 45-Degree Full Height | 125.6 in. (3189 mm) | 128.0 in. (3249 mm) |
| Overall Length, Bucket on Ground | 24 ft. 11 in. (7612 mm) | 24 ft. 8 in. (7516 mm) |
| Loader Clearance Circle, Bucket in Carry Position | 39 ft. 2 in. (11 942 mm) | 38 ft. 7 in. (11 751 mm) |
| Operating Weight | 27,855 lb (12 635 kg) | 27,302 lb (12 384 kg) |

High-Lift Z-Bar Quick Coupler Bucket

| Bucket Type/Size | General Purpose w/ Bolt on Edge | |
|----------------------|-----------------------------------|-----------------------------------|
| Capacity, Heaped SAE | 3.0 cu. yd. (2.3 m ³) | 2.5 cu. yd. (1.9 m ³) |
| Capacity, Struck SAE | 2.6 cu. yd. (2.0 m ³) | 2.1 cu. yd. (1.6 m ³) |
| Bucket Weight | 3,595 lb (1631 kg) | 2,879 lb (1306 kg) |

| | | |
|---|---------------------------|--------------------------|
| Bucket Width | 105.9 in. (2690 mm) | 100.4 in. (2550 mm) |
| Breakout Force, SAE J732C | 17,557 lb (7964 kg) | 18,104 lb (8212 kg) |
| Tipping Load, Straight | 16,964 lb (7695 kg) | 17,687 lb (8023 kg) |
| Tipping Load, 40-Degree Full Turn, SAE | 14,202 lb (6442 kg) | 14,905 lb (6761 kg) |
| Reach, 45-Degree Dump, 7 ft (2.13 m) Clearance | 70.5 in. (1790 mm) | 72.7 in. (1846 mm) |
| Reach, 45-Degree Discharge, Full Height | 43.0 in. (1092 mm) | 43.4 in. (1102 mm) |
| Dump Clearance, 45-Degree Full Height | 117.2 in. (2977 mm) | 120.6 in. (3063 mm) |
| Overall Length, Bucket on Ground | 25 ft. 11 in. (7905 mm) | 25 ft. 7 in. (7807 mm) |
| Loader Clearance Circle, Bucket in Carry Position | 39 ft. 10 in. (12 151 mm) | 39 ft. 4 in. (12 002 kg) |
| Operating Weight | 28,836 lb (13 080 kg) | 28,122 lb (12 756 kg) |

High Lift Z-Bar with Quick Coupler and Construction Fork

| | | |
|--|------------------------|------------------------|
| Tine Length | 48 in. (1220 mm) | 60 in. (1525 mm) |
| Overall Length | 26 ft. 8 in. (8139 mm) | 27 ft. 8 in. (8442 mm) |
| Tipping Load, Straight (fork level, load centered 36 in. (914 mm) on tine) | 13,379 lb (6069 kg) | 12,651 lb (5739 kg) |
| Tipping Load, 40 deg. Full Turn (fork level, load centered 36 in (914 mm) on tine) | 11,345 lb (5146 kg) | 10,711 lb (4858 kg) |
| Operating Weight | 27,249 lb (12 358 kg) | 27,351 lb (12 404 kg) |

[Click Here to download full brochure](#)

According to (G.S. 130A-309.09D(b)) completed forms must be returned by August 1, 2012 and a copy of this report must be sent to the County Manager of each county from which waste was received. If you have questions or require assistance in completing this report, contact your Regional Environmental Senior Specialist.

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

Facility Website (URL): www.hickorygov.com

| Physical Address | Mailing Address |
|--|--|
| Street 1: <u>900 Cloninger Mill Rd</u> | Street 1: <u>P.O. Box 398</u> |
| Street 2: _____ | Street 2: _____ |
| City: <u>Hickory</u> County: <u>Catawba</u> | City: <u>Hickory</u> |
| State: <u>North Carolina</u> Zip: <u>28601</u> | State: <u>North Carolina</u> Zip: <u>28603</u> |

| Primary Facility Contact Person | Billing Contact Person |
|---|---|
| Name: <u>Andrew S. Ballentine</u> | Name: <u>Andrew S. Ballentine</u> |
| Phone: <u>(828) 323-7439</u> Fax: <u>(828) 323-7403</u> | Phone: <u>(828) 323-7439</u> Fax: <u>(828) 323-7403</u> |
| Email: <u>aballentine@hickorync.gov</u> | Email: <u>aballentine@hickorync.gov</u> |

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, 2011 thru June 30, 2012.
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, 2011 thru June 30, 2012. **Current Rules state that "Compost shall be analyzed at intervals of every 20,000 tons of compost produced or every six months, whichever comes first."**
4. What type and quantity of waste was composted by your facility?

| Materials COMPOSTED | Check X if Received | Tons RECEIVED | Tons COMPOSTED | Unusable Tons DISPOSED |
|-----------------------|-------------------------------------|-----------------|----------------|------------------------|
| Yard Waste | <input checked="" type="checkbox"/> | 3,021.24 | | |
| Clean Wood | <input checked="" type="checkbox"/> | 3,195.02 | | |
| Sawdust | <input type="checkbox"/> | | | |
| Wooden Pallets | <input type="checkbox"/> | | | |
| Food Waste | <input type="checkbox"/> | | | |
| Animal Waste | <input type="checkbox"/> | | | |
| Sludge and Biosolids | <input type="checkbox"/> | | | |
| Grease Trap Waste | <input type="checkbox"/> | | | |
| Animal Mortalities | <input type="checkbox"/> | | | |
| Sheetrock | <input type="checkbox"/> | | | |
| Commingled (Describe) | <input type="checkbox"/> | | | |
| Other (Describe) | <input type="checkbox"/> | | | |
| Other (Describe) | <input type="checkbox"/> | | | |
| Other (Describe) | <input type="checkbox"/> | | | |
| TOTAL | | 6,216.26 | | |



FACILITY COMPLIANCE INSPECTION REPORT
Division of Waste Management
Solid Waste Section

| | | | | | | | | | | | |
|-------------------|--|-----------------------|--|---------------|--|---------------------|--|---------|-------------------------------------|------|--|
| UNIT TYPE: | | | | | | | | | | | |
| Lined MSWLF | | LCID | | YW | | Transfer | | Compost | <input checked="" type="checkbox"/> | SLAS | COUNTY: CATAWBA PERMIT NO.: SWC 18-06 FILE TYPE: COMPLIANCE |
| Closed MSWLF | | HHW | | White goods | | Incineration | | T&P | | FIRM | |
| CDFL | | Tire T&P / Collection | | Tire Monofill | | Industrial Landfill | | DEMO | | SDTF | |

Date of Site Inspection: 6/29/12

Date of Last Inspection: 1/12/2012

FACILITY NAME AND ADDRESS:

City of Hickory Compost Facility
 Cloninger Mill Road
 Hickory, NC 28601

GPS COORDINATES: N:35.78609 W:-81.30431

FACILITY CONTACT NAME AND PHONE NUMBER:

Andrew Ballentine, Solid Waste Manager
 828-323-7439
 aballentine@hickorync.gov
 Fax: 828-323-7403

FACILITY CONTACT ADDRESS:

PO Box 398
 Hickory, NC 28603

PARTICIPANTS:

Andrew Ballentine, Solid Waste Manager – City of Hickory
 Terry Watts, Engineering Division – City of Hickory
 Tony Gallagher, Composting and Land Application Branch Supervisor – NCDENR Solid Waste Section
 Larry Frost, Regional Permitting Engineer - NCDENR Solid Waste Section
 Deb Aja, NCDENR Solid Waste Section

STATUS OF PERMIT:

Permit issued on September 12, 2005 with a renewal date of September 12, 2010 for a Large, Type 1 Solid Waste Compost Facility. A permit renewal application was submitted to the Division and is currently under review.

PURPOSE OF SITE VISIT:

Comprehensive Inspection.

STATUS OF PAST NOTED VIOLATIONS:

N/A

OBSERVED VIOLATIONS:

None.

The item(s) listed above were observed by Section staff and require action on behalf of the facility in order to come into or maintain compliance with the Statutes, Rules, and/or other regulatory requirements applicable to this facility. Be advised that pursuant to N.C.G.S. 130A-22, an administrative penalty of up to \$15,000 per day may be assessed for each violation of the Solid Waste Laws, Regulations, Conditions of a Permit, or Order under Article 9 of Chapter 130A of the N.C. General Statutes. Further, the facility and/or all responsible parties may be subject to enforcement actions including penalties, injunction from operation of a solid waste management facility or a solid waste collection service and any such further relief as may be necessary to achieve compliance with the North Carolina Solid Waste Management Act and Rules.

FACILITY COMPLIANCE INSPECTION REPORT
Division of Waste Management
Solid Waste Section

Page 2 of 3



Figure 1 - SWC 18-06 Facility Location

ADDITIONAL COMMENTS

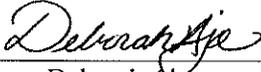
1. The facility is a Large, Type 1 Solid Waste Compost Facility that is permitted to compost yard and garden waste, silvicultural waste, and unpainted and untreated wood waste.
2. The site visit was to conduct a comprehensive inspection and address permit review items.
3. Requested permit review items were discussed. An updated facility aerial was provided on-site. It was agreed that the facility will provide all information requested to complete the review process no later than 30 days (by July 30, 2012).
4. The facility is secured with an upper and lower gate to prevent unauthorized access.
5. The required signage is posted at each gate stating the permit number, hours of operation, and no dumping.
6. Mr. Ballentine provided had the Permit and Operations Plan available for inspection.
7. Mr. Ballentine will provide temperature logs with the annual report for compost processes that occurred since the last inspection. The temperature logs will be reviewed at that time.
8. The facility grinds stockpiled wastes at the end of the collection season. The ground waste is then placed in windrows and composted. There was approximately 100 to 150 yards of finished compost on-site. There were no ongoing composting activities.
9. The facility appeared to accept only those wastes it is permitted to receive. Any waste that is inadvertently delivered to the site is removed by an attendant and placed in a waste container for removal to a permitted solid waste disposal facility.
10. The facility access road was maintained in operational condition.
11. An access road is also maintained around all stockpiled waste (land clearing debris). Adequate distance was provided between stockpiles for access by firefighting equipment.
12. The inspection was conducted during hot dry weather. Very minimal dust was observed. Please continue to implement dust control as required.
13. There were no areas ponding of surface water at the site.
14. Stormwater from the site was directed to a retention basin. The retention basin and riser pipe were maintained. There was no water present in the basin.

FACILITY COMPLIANCE INSPECTION REPORT
Division of Waste Management
Solid Waste Section

Page 3 of 3

- 15. Silt fence should continue to be maintained surrounding the run-on inlet, and should be re-installed around other stormwater features along the access road.
- 16. It appeared that all required buffers had been maintained.

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



Deborah Aja
 Environmental Senior Specialist
Regional Representative
deborah.aja@ncdenr.gov

Phone: 828-296-4702
 Asheville Regional Office
 2090 US Hwy 70
 Swannanoa, NC 28778

| | | | | | | | | |
|--|---|-------|--|------------------|--|---------|--|-----------------|
| Sent on: July 2, 2012, to: Andrew Ballentine, City of Hickory by; | X | Email | | Hand Delivery | | US Mail | | Certified Mail. |
|--|---|-------|--|------------------|--|---------|--|-----------------|

- Copies: Jason Watkins, Western District Supervisor
 Tony Gallagher, Composting and Land Application Branch Supervisor
 Becky Whetstone, Composting and Land Application Branch
 Jessica Montie, Compliance Officer
 Larry Frost, Regional Permitting Engineer



North Carolina Department of Environment and Natural Resources

Division of Waste Management

Dexter R. Matthews

Director

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

SOLID WASTE SECTION

February 15, 2012

Mr. Andrew Ballentine, Solid Waste Manager
City of Hickory
Post Office Box 398
Hickory, North Carolina 28603

Subject: Request for Additional Information
Cloninger Mill Road, Large Type-1 Solid Waste Composting Facility, Permit No. 1806
Catawba County, DIN 16105

Dear Mr. Ballentine:

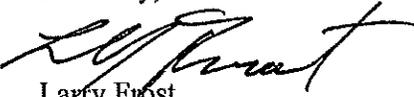
On August 3, 2010 the Division of Waste Management (Division) received your application for a Permit Amendment five (5) year renewal, entitled;
Application to Operate a Large Type 1 Composting Facility. Prepared by the City of Hickory. August 2010. DIN 16051.

On March 7, 2011, in response to the City's Application the Division performed a technical review of the Application and requested additional information, the letter entitled:
City of Hickory, Cloninger Mill Road Site, Large Type-1 Solid Waste Composting Facility, Permit Application and Operations Plan, Facility Permit No.: SWC-18-06. Prepared by Michael Scott and Zi-Qiang Chen. March 2011. DIN 16053.

The Division has no evidence that you have responded to this letter. Failure to respond will result in denial of the permit action and cancellation of the requested permitting activity. I have attached a copy of the Division's technical review letter for your consideration.

Should you have any questions regarding this matter you may contact me at (828) 296-4704 or larry.frost@ncdenr.gov.

Sincerely,



Larry Frost
Environmental Engineer

Enclosure

cc: Deb Aja – SWS/ARO



North Carolina Department of Environment and Natural Resources
Division of Waste Management

Beverly Eaves Perdue
Governor

Dexter R. Matthews
Director

Dee Freeman
Secretary

March 7, 2011

Andrew S. Ballentine, Solid Waste Manager
City of Hickory Composting Facility
P. O. Box 398
Hickory, NC 28603

Subject: City of Hickory
Cloninger Mill Road Site
Large Type-1 Solid Waste Composting Facility
Permit Application and Operations Plan
Facility Permit No.: SWC-18-06

Dear Mr. Ballentine:

The Division of Waste Management, Solid Waste Section, has completed its technical review of the subject Permit Application and Operations Plan. The comments resulting from the review are attached for your reference. A revised Permit Application and Operations Plan of the facility that incorporates responses to these comments should be submitted for our review and approval as soon as possible. Providing thorough and complete responses to these comments in a timely manner is necessary to avoid delays of the Division's decision on the Permit Application.

If you or your engineer have any questions or need assistance in resolving the technical review issues, please contact Mr. Zi-Qiang Chen, PhD, at (919)-508-8523. Also, you may contact me at (919)-508-8508.

Sincerely,

Michael E. Scott, Supervisor
Composting & Land Application Branch

ZQC:dr

Attachment (all cc's)

cc:

Zi-Qiang Chen, Ph.D., Environmental Engineer II
DWM/SWS/CLA/PERMIT

CITY OF HICKORY

**Technical Review Comments
For A Large Type-1 Solid Waste Compost Facility Permit Application
And
The Facility's Operations and Maintenance Manual
Facility Permit No.: SWC-18-06**

March 7, 2011

NOTE: Please provide a response to all of the comments on a "comment for comment" basis. Where appropriate, add or revise narrative in the text of both the Permit Application (§) and the Facility's Operations Manual (§§) that addresses the issues discussed in the comments. In addition, the comments and responses may be included as a part of the revised Permit Application and Operations Manual (e.g. in an appendix).

I. General

1. Provide a "Table of Contents" and number the pages of the Application and number all the attachments presented in the report.
- Completed - see attached information packet

II. Permit Application (§)

1. Confirm that the proposed facility will meet all the floodplain stipulations set by Rule 15A NCAC 13B .1404(a)(1). Flood Plain Information added
2. An application for a Large Type-1 compost permit shall provide materials, as required by .1405(a): A recent aerial photograph or scaled drawing with a scale of 1" = 400'. Mark the facility's physical location on a recent aerial photo, show the adjacent (within the ¼-mile radiance) surroundings, and add the legend to denote these features and the 100-year flood plan and other major hydro-geological features on the map. Updated Aerial Map included
3. Provide the following information:
 - a). An updated as-built drawing: Per Rule .1405 (a)(7)(A), provide a preliminary engineering calculation to demonstrate that the facility can adequately handle the process capacity of 8,000 tons per year based on the pile dimensions (10~12' tall x 15' wide).
included - 1,350ft of windrow capacity 9000cu yd at one time or 3,825 tons X 4 per year
 - b). Per Rule .1405 (a)(7)(B): a process flow diagram of the facility updated and included
 - c). Per Rule .1405 (a)(9): Plans and Specifications for the facility, including manufacturer's performance data for all equipment selected.
updated and included

4. Section "Curing Process", paragraph 3: Explain or correct the sentence: "Product that will not hold an adequate temperature is sold or stockpiled in the mulch storage area."
"until proper temps. can be maintained for no less than 3 days prior to sales."
5. Per Rule .1406(4), leachate shall be properly managed at site of the composting facility. As noted in the Division's site-visit on February 21, 2011, the on-site process wastewater management needs be improved across the site. It is recommended that compost socks be added along the drainage ways, that truck access points be minimized, and that drainage areas be seeded to filter and better manage flows that may leave the site.
see note *5 below for updated information
6. The stormwater run-on and its flow must be properly diverted to the on-site retention pond. Make sure that the inlets and all piping are free from obstruction and properly maintained. Protection structures around the inlets shall be maintained to assure the free flow of stormwater / process wastewater, as well as worker's safety.
see note *6 below for updated information
7. Per Rules .1407(d)(3) and .1408(c)(7), provide the sampling / testing protocol and frequency at the facility. A sampling and testing interval of every 20,000 tons of compost produced or every six months is recommended. The parameters and test methods are listed in "Table 3" of Rule .1408(a)(1). Senate Bill 229 does not require Heavy Metal testing for Type 1 Facility
Facility has only processed 18,863,77 tons since FY09-10
8. Application pages, Section (10)(B) Vectors & Odor: Provide a detailed discussion in this section to address how to minimize offensive odor at the property boundary and what kinds of corrective actions would be taken if an offensive odor crosses the property boundary. It is a common practice to apply a 6-inch-thick compost product evenly on odorous windrows to reduce or eliminate odor during active composting. Material is stockpiled in well drained area of the facility for less than 3 months (leaves). Once it is ground, monitored for 3 days, then sold
9. Clarify how and how often the monitoring equipment, such as temperature and/or moisture probes, are calibrated? Thermometer has not been recalibrated due to very light use and temperatures, are reading consistently Thermometer will be re-calibrated yearly per manufacturers recommended process.

III. Operations Manual (SS)

1. As partially discussed in item II.3 b) above, provide a fact sheet and process flow diagram that summarizes actual equipment sizing, aeration capacity, detention times, storage capacity, and waste flow rate for the system. updated flow diagram, equipment specs, storage capacity, is included in updated information packet. Updated Detention & Waste Flow Rates are included.
 2. Specify how the facility handles the compost products which do not meet a federal Class-A and/or Class-B standards. Materials are screened prior to being brought to the site, if contaminated residents are instructed to re-work these materials so wood and leaves can be recycled.
 3. Confirm that the facility will meet Rule. 1407 requirements of classification and distribution of the compost products. Senate Bill 229 does not require Type 1 facilities to test for Heavy Metals
Facility has only processed 18,863.77 tons since FY09-10.
 4. Confirm that the facility will meet Rule .1408 testing and reporting requirements.
Senate Bill 229 does not require Type 1 Facilities to test for Heavy Metals
Facility has only processed 18,863.77 tons since FY09-10.
- *5) Access has been limited, new swells have been cut in, grass is growing in the swells
- *6) Drainage inlets have been fitted with erosion and debris control fencing and rock to filter storm water. Inlets are clearly visible with concrete protective covers in place over them for worker's safety. Also, reference Facility Compliance Report # 6/29/12 included in this application.

Section III, #2 Amendment – product is stored, turned in windrows until standards are met. If standards are not met, Then they are disposed of properly at a licensed Solid Waste Facility.