

4110Permit1999 - Batch No. _____

4110 1999

Guilford Co

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

DIVISION OF WASTE MANAGEMENT



**JAMES B. HUNT JR.
GOVERNOR**

**WAYNE McDEVITT
SECRETARY**

**WILLIAM L. MEYER
DIRECTOR**

August 2, 1999

Mr. Duane Jarman
City of High Point
Department of Public Services
P.O. Box 230
High Point, North Carolina 27261

Re: Solid Waste Compost Facility – Permit # SWC-41-10 – Guilford County
City of High Point

Dear Mr. Jarman:

Enclosed is your permit to operate a Large Type I Solid Waste Compost Facility in Guilford County. Please carefully read all permit conditions. Your Operation and Maintenance Manual has been incorporated into the permit conditions. A permit modification will be required to add any additional feed stocks.

Hugh Jernigan, Waste Management Specialist, will be responsible for facility inspections. Mr. Jernigan can be contacted at 336-771-4600.

If you have questions, please feel free to contact me at 919-733-0692, extension 253.

Sincerely,

Ted Lyon, Supervisor
Composting & Land Application Branch

cc: Hugh Jernigan, Waste Management Specialist
Central Files – Solid Waste Section

G. DAVID GARRETT, G. M. RICHARDSON & ASSOC.
h:cla/compost/permits/41-guil/SWC-41-10-99cl

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WASTE MANAGEMENT
PO BOX 29603 RALEIGH, N.C. 27611

City of High Point, NC

is hereby issued a permit to operate a

LARGE, TYPE 1 SOLID WASTE COMPOST FACILITY

at 3001 Ingleside Drive

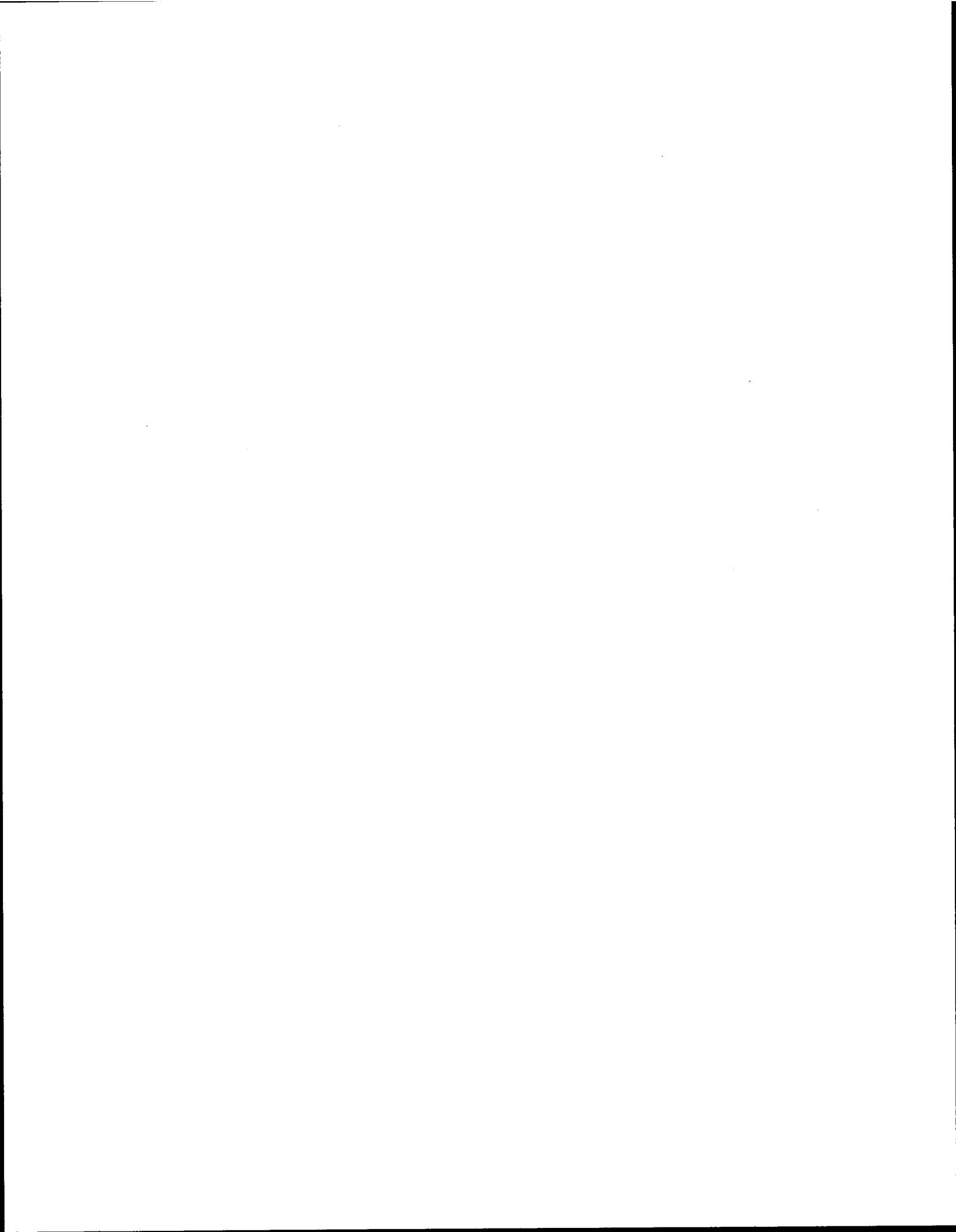
Permit Number SWC-41-10

In accordance with Article 9, Chapter 130A, of the General Statutes of North Carolina and all rules promulgated thereunder and subject to the conditions set forth in this permit.


Dexter R. Matthews, Chief 7-29-99
Solid Waste Section Date

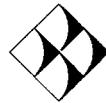
Permit Conditions

1. Operation and maintenance of this facility shall be in accordance with the Solid Waste Compost Rules (15A NCAC 13B, Section .1400), the permit application and the Operation and Maintenance Manual submitted with the permit application. Failure to comply may result in compliance actions or permit revocation.
2. This facility shall be operated in such a manner that erosion and runoff from the site shall be controlled. Any leachate generated at the facility shall be managed in such a manner that it will not be allowed to adversely impact ground or surface waters.
3. Any inaccuracies found in the site plan shall be corrected within 30 days of notification.
4. Only materials specifically listed in the permit application may be managed at this facility without adequate testing and prior approval of the Division of Waste Management.
5. Wastes with low carbon-nitrogen ratios, such as grass clippings, shall be incorporated into the windrows prior to the waste starting to compost (heat), create odors or attract vectors.
6. Compost produced at the facility shall meet the requirements of Rule .1407 of the Solid Waste Compost Rules and the permit application.
7. Testing and reporting shall be conducted in accordance with the requirements of Rule .1408 and the permit application. An annual report of facility activities for the fiscal year July 1 to June 30 shall be submitted to the Division by August 1 of each year.
8. Groundwater monitoring wells may be required if there is indication of the potential for groundwater contamination.
9. The compost operation and the compost pad shall be operated and maintained with sufficient dust control measures to minimize airborne emissions and to prevent dust from becoming a nuisance or safety hazard.
10. **This permit shall expire on July 29, 2004.** Changes in ownership, increase in facility capacity, or receiving additional feedstocks shall require a permit modification.



-Booklet-

APPROVED
DIVISION OF SOLID WASTE MANAGEMENT
DATE 7/29/99 BY JL



G.N. RICHARDSON & ASSOCIATES
Engineering and Geological Services

Permit Application Renewal Report

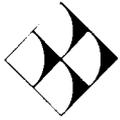
Prepared for
Ingleside Composting Facility

Department of Public Services
City of High Point, North Carolina

Perry A. Kairis, P.E., Director



July 7, 1999



G.N. RICHARDSON & ASSOCIATES
Engineering and Geological Services

June 28, 1999

Mr. Ted Lyon, Supervisor
Composting and Land Application Branch
NC DENR Division of Waste Management
401 Oberlin Road, Suite 150
Raleigh, North Carolina 27605

**RE: Permit Application Renewal
Ingleside Composting Facility
High Point, North Carolina
Permit #41-10**

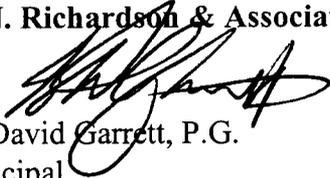
Dear Mr. Lyon:

G.N. Richardson & Associates is pleased to present this permit application renewal report on behalf of the City of High Point. We appreciate the opportunity to have met with you on or about June 22, to discuss the permit application requirements.

This report consolidates earlier submittals made by the City and provides a narrative overview of the facility and its operations in accordance with the requirements of Solid Waste Rule 15A NCAC .1401 through .1408. Please note that this submittal contains no new design work or engineering calculations. We believe this submittal provides all the information required by the Rules and discussed in your office.

If you should have any questions or comments concerning this submittal, please contact either Duane Jarman, Solid Waste Manager for the City of High Point, or myself at your earliest convenience. Thank you in advance for your consideration of this matter.

Cordially,
G.N. Richardson & Associates


G. David Garrett, P.G.
Principal

cc: Duane Jarman – City of High Point

**Permit Renewal Application Report
Ingleside Yard Waste Composting Facility**

City of High Point, North Carolina

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- B Site Maps and Photos
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1.0 Executive Summary

This report was prepared on behalf of the City of High Point, pursuant to the renewal of North Carolina Solid Waste Permit #41-10. The City owns and operates a Large Type 1 Solid Waste Composting Facility, known as the Ingleside Composting Facility (ICF). The ICF has been in operation since 1993. The facility accepts yard wastes, including grass clippings, limbs, leaves and trees. The facility processes and distributes mulch and compost derived from these components. The facility has operated according to an Operations Plan, prepared by the City of High Point in 1992-93. The Record of Operation indicates a good history of compliance and a consistently high quality product. The ICF is operated as a service to the public, not as a profit-making venture.

As with all solid waste management facility permits, the permit for the ICF expired after a period of five years. Since the time of the original permit, regulatory changes occurred that places the facility under the requirements of North Carolina Solid Waste Rules 15A NCAC 13B .1400 *et. seq.* This report has been prepared based on earlier permit submittals to comply with the current regulations. The facility has operated in the interim under a verbal agreement between the City and the NC DENR Division of Waste Management (NC DWM). The following text and supplements are organized according to the regulations to expedite NC DWM review.

2.0 General Facility Description

2.1 Requirement for Permit – .1401

This facility has been (and will continue to be) permitted and operated in accordance with North Carolina Solid Waste Rules .1402 through .1408 of 15A NCAC 13B.

2.2 General Provisions – .1402

The ICF was originally permitted to receive yard wastes generated in the City of High Point and its incorporated service area, including portions of Guilford, Randolph, Davidson and Forsyth Counties. The facility does not accept waste water treatment sludge. The ICF is classified as a Large Type 1 facility. The finished products for distribution meet the requirements of Rule .1407.

2.3 Prohibitions – .1403

No hazardous waste or asbestos-containing materials are accepted at the ICF. In general, household wastes are not accepted. The facility keeps a container on site for trash or other non-compostable wastes that might be screened out of the finished product. These materials are disposed at the Kersey Valley Landfill. The waste acceptance policy and quality control process (outlined in the Operations Section) ensure that the finished product meets regulatory requirements for distribution.

3.0 Siting/Design Criteria – .1404

3.1 Floodplain – .1404 (a)(1)

The facility is not located on a floodplain (see the Flood Insurance Rate Map, in Appendix A).

3.2 Buffers – .1404 (a) (3) through (5)

A site map is presented in Appendix B. The map clearly depicts that the ICF meets all regulatory buffer requirements, described as follows:

- Minimum 50-foot buffer from all compost areas to property lines.
- Minimum 200-foot buffer from all compost areas to residences.
- Minimum 100-foot buffer from all compost areas to water supply wells (all local residences are served by City water).
- Minimum 50-foot buffer from all compost areas to perennial streams.

3.3 Surface Waters – .1404 (a) (6)

Based on examination of USGS topographic quadrangle mapping (Kernersville, High Point West and Lexington East quadrangles), the ICF is located along a headwater tributary to Rich Fork Creek, in the Yadkin River (Cape Fear) basin. Rich Fork Creek merges with Abbots Creek approximately 14 miles down stream of the site – the confluence is located below a public water supply reservoir (City of Thomasville) on Abbots Creek. Rich Fork Creek and its tributaries are classified as Class C waters per 15A NCAC 2B .0200 provisions, as confirmed by the NC DENR Division of Water Quality (Index 12-119-7 – Rich Fork from source to Abbots Creek). The ICF does not affect any public drinking water supply.

3.4 Closed Disposal Area – .1404 (7)

The ICF is not located over a closed disposal facility. The site was filled using a mixture of soil and inert debris from the City's Street Department (roadway, curbing and sidewalk demolition, etc.). A soils investigation (see Section 6) confirmed verbal reports that the site had received an overlay of compacted clayey soil, derived from a nearby construction job. Storm water runoff is managed such as to prevent erosion of surficial soils.

3.5 Fire Equipment Access – .1404 (8)

The facility layout (see Appendix B) depicts ample access to the compost areas (windrow areas) and finished product stockpiles for fire fighting equipment. A fire hydrant is located on the premises, between the scale house and the equipment storage/maintenance building.

3.6 Surface Water Discharge – .1404 (9)

The ICF does not accept any raw feed stocks, or produce any products, which generate a leachate or process water discharge containing substances that would violate the NPDES provisions of the Clean Water Act (Section 402) or non-point source water quality criteria. Only storm water is discharged from the site (thus a NPDES permit is not required). The waste is not allowed to enter any waters or wetlands of the state that would violate Section 404 of the Clean Water Act.

3.7 Ground Water Protection – .1404 (10)

Due to the classification of the facility (Type 1) and the nature of the wastes, ground water monitoring is not required at the ICF. The site does contain an asphalt-paved composting area (windrow area) for the initial material processing. The soils investigation (Section 6.0) indicates that most of the surface area outside the asphalt pad is underlain by a minimum of 18 inches of compacted clayey soil, which limits percolation of surface water into the subgrade. These provisions exceed the requirements for a Type 1 facility. No evidence of the seasonal high ground water table was observed during the soils investigation.

3.8 Other Design Criteria – .1404 (c)

The ICF site is completely fenced to control public access. The ICF operates under an approved Sedimentation and Erosion Control Permit per NC DENR Division of Land Quality Rule 15A NCAC 4. A copy of the plan approval certificate and a recent inspection report (see Appendix A) indicates compliance with these permit requirements. There have been no reported problems with dust or fugitive emissions. Care is taken not to turn compost on windy days. The ICF controls odor and insects with a commercial deodorizer/insecticide, applied to the windrows twice daily.

4.0 Application Requirements – .1405

4.1 Aerial Photograph – .1405 (a) (1)

An aerial photograph prepared by the City of High Point Department of Planning and Development is presented in Appendix B. The photo is shown at a scale of 1 inch equals 400 feet and clearly shows property boundary and the following within 500 feet of the facility boundary: roads, homes, commercial and/or industrial buildings, water courses and other applicable information, i.e. current zoning (Agricultural).

4.2 Zoning Requirements – .1405 (a) (2)

A letter from the City of High Point Planning Department, stating that the ICF operation is consistent with the applicable zoning of the site, is presented in Appendix A. The letter refers to Special Use Permit 92-9, also included in Appendix A, which defines the property and its approved use. These documents constitute the Local Government Approval for the site.

4.3 Siting/Design Compliance – .1405 (a) (3)

A description of how the ICF complies with applicable siting/design criteria defined in Rule .1404 is provided by item in Section 3.0 of this report.

4.4 Waste Types – .1405 (a) (4) (A)

Per records for July 1997 through June 1998, the waste types processed by the ICF consisted of leaves and grass (5,567 tons) and limbs, brush and stumps (3,930 tons). Based on the annual report for the fiscal year ended June 30, 1998 (Appendix A), the division of tonnages by month and

location within the public service area (by individual County areas within the City limits) are shown in the report. There are no bulking agents or admixtures used in the compost process.

5.0 Soils Information – .1405 (a) (4) (B)

A brief investigation report was prepared by G.N. Richardson & Associates in December 1998 (see Appendix C). That report, prepared by a North Carolina licensed professional geologist, described a soils investigation conducted at the site to characterize soil and ground water conditions at the site. The near surface soils located outside the asphalt compost processing pad were characterized in five test pits as clayey silt and silty clay, classified by Unified Soil Classification System (USCS) criteria as ML and CL, respectively. The test pits encountered relict compost at the surface at a few locations. A rock outcrop (granite bedrock) and sandy soils (SM) derived from bedrock were encountered along the south side of the site. A majority of the active areas of the site exist on man-made embankment fill. No ground water was encountered within four feet beneath the surface.

6.0 Site Plan – .1405 (a) (5)

The site plan map (see Appendix B) shows existing topographic contours and other relevant features required by this Rule at a scale of 1 inch equals 100 feet. Included on the drawing are the locations of water control devices (e.g. drainage features, sediment basins), property lines and setback distances, existing utilities and structures, and areas for unloading, processing, active composting, curing and storing of material. No changes to the operations or site layout are anticipated or requested for this permit renewal.

7.0 Overview of Operations – .1405 (a) (6)

7.1 Responsible Party – .1405 (a) (6) (A)

Name of Facility: Ingleside Composting Facility
Address: 3001 Ingleside Drive
High Point, North Carolina 27265
Phone Number: 336-883-8514
Responsible Parties: Mr. James Hussey – Composting Supervisor
Mr. Steve Pendry – Landfill Superintendent

7.2 Site Personnel – .1405 (a) (6) (B)

Composting Supervisor: Supervises site operations and site personnel under the direction of the Landfill Superintendent
Scale House Operator: Weighs, records and directs incoming vehicles
Equipment Operators (3): Operates various equipment associated with composting operations
Sanitation Worker: Performs labor type tasks at the site

7.3 Operation Plan – .1405 (a) (6) (C)

A complete and current Operations Plan, prepared by the City of High Point, that meets the requirements of this rule is presented in Appendix D. The Operations Plan is the operational guideline for the facility, presented here for documentation and completeness of the permit renewal application. The Operations Plan is updated periodically by the City. No changes to the Operations Plan are anticipated or authorized at this time.

7.4 Adverse Weather – .1405 (a) (6) (D)

The Operations Plan (Appendix D, page 4) provides a description of inclement weather precautions that are applicable to the ICF. The City will mobilize additional manpower and equipment as needed to maintain access to the facility, however it is anticipated that during periods of inclement weather the need to access the facility to receive or distribute compost and mulch materials will be slight. Under conditions of severe weather, the Operations Plan makes a provision for the facility to close.

7.5 Nuisance Control – .1405 (a) (6) (E)

The Operations Plan (Appendix D, page 4) provides a description of actions to eliminate nuisances, including but not limited to noise, vectors, air-borne particulates and odors. The Operators of this facility are sensitive to their neighbors and have consistently maintained a good record of compliance with regulatory and public relations issues.

7.6 Product Distribution – .1405 (a) (6) (F)

The finished products (mulch and compost) are distributed to the public for various uses. A majority of the material is sold to commercial landscapers and other professional users. A relative small portion of the material is given away to individuals. The materials are distributed in commercial trucks or private vehicles. There is adequate on-site space for storage of finished materials that cannot be distributed in a year's time. Finished stocks are rotated so that material does not accumulate for long periods of time.

8.0 Facility Report – .1405 (a) (7)

8.1 Design Capacity – .1405 (a) (7) (A)

The ultimate design capacity of the ICF is 25,000 tpy or 100 tpd (based on 250 working days per year). The current utilization averages 10,000 tpy (40 tpd). The utilization varies slightly with public need for the services. The excess capacity is available in the event of disaster, but no plans are under consideration at present to increase the through-put of the facility.

8.2 Process Flow Diagram – .1405 (a) (7) (B)

A process flow diagram for the ICF is presented in Appendix A. This diagram lists the general information required for equipment and feed stocks, including material quantities.

8.3 Measurement and Processing – .1405 (a) (7) (C)

The facility Operations Plan (Appendix D, page 7) provides a complete description of procedures for weighing, depositing and processing the incoming materials. Each incoming load shall be weighed and inspected by the scale house operator and/or the site supervisor, then directed to the appropriate receiving area by classification.

Initial processing consists of grinding or placing in windrows, as appropriate to material classification. Windrows shall be constructed on slopes to promote positive drainage. Trash and other unsuitable materials screened from the feed stocks shall be placed into a 40-yard roll-off box and taken to the Kersey Valley Landfill for disposal.

Site operations tend to be seasonal, that is, leaves and brown stocks typically are received in the autumn, while grass clippings and green stocks are received in the spring and summer months. The windrows for compost are formed in the autumn using leaves, then grass clippings are blended into the windrows using front-end loaders and/or specialized windrow turning equipment (described elsewhere in this report). After composting for the required duration and temperature, the composted materials are stockpiled for final curing. Woody feed stocks are processed into mulch; these materials are placed directly into finished stockpiles after grinding and screening.

8.4 Process Duration – .1405 (a) (7) (D)

For composts, a minimum process duration of nine months is provided for composting and curing. Some materials may stay on site longer during the distribution phase. Woody mulch materials are processed and distributed as required by public use dictates.

8.5 Material Monitoring – .1405 (a) (7) (E)

The facility Operations Plan (Appendix D, page 12) describes the procedure for temperature monitoring, e.g. equipment and locations. Windrow temperatures are taken daily at 100-foot spacings, using a commercially available thermometer probe.

8.6 Temperature Control – .1405 (a) (7) (F)

The facility Operations Plan (Appendix D, page 12) describes the procedure for temperature control, subject to daily measurement by the facility staff. The Operations Plan specifies that the compost will be maintained at a temperature of at least 131°F (55°C) for a minimum of three days. The plan makes a provision to turn the materials to prevent overheating and for the facility staff to troubleshoot and correct any problems that result in low temperatures.

8.7 Material Aeration – .1405 (a) (7) (G)

Materials are turned and aerated with a SCAT Model 482B or 483B tow type compost turner. Manufacturer's specifications do not give the machine capacity, but the facility operators report that they can process (turn) 100 cubic yards of material per hour (600 to 800 c.y. per day).

8.8 Surface Water Control – .1405 (a) (7) (H)

Storm water run-on and run-off is controlled by best management practices in accordance with the approved Sedimentation and Erosion Control Plan. This consists of a system of berms, ditches and sediment basins located as shown on the facility plan (Appendix B). Regular inspection reports indicate satisfactory historical performance over the operational life of the facility. An example report is provided in Appendix A.

8.9 Product Information – .1405 (a) (8)

A handbill provided by the City of High Point to its customers, which describes the product and its recommended uses, is presented in Appendix A.

8.10 Equipment Specifications – .1405 (a) (9)

A site plan map which shows the general facility layout is presented in Appendix A. Equipment used on the site is described in the Operations Plan (Appendix D, page 16). Manufacturer's specification sheets are provided for each listed piece of equipment in Appendix A.

9.0 Operation and Maintenance – .1405 (a) (10)

9.1 Quality Assurance Plan – .1405 (a) (10) (A)

The Operations Plan (Appendix D, page 7) describes the procedures for material acceptance and preparation. Windrow construction is detailed on page 8, and stabilization and curing procedures are detailed beginning on page 12. Windrow quality control monitoring and reporting procedures are provided beginning on page 13. Temperature reporting procedures are described on page 12. Final product quality control is assured through careful attention to the material acceptance criteria and on-site processing and screening. Analytical testing of the final product is typically not required at Type 1 facilities. Record keeping and reporting requirements are discussed in Section 12.0.

9.2 Contingency Plan – .1405 (a) (10) (B)

The contingency plan for mechanical breakdown of equipment is to substitute equipment from another solid waste unit under the City's jurisdiction or, at the discretion of the Landfill Superintendent, activities at the ICF may be temporarily suspended (without adversely affecting long-term site operations) while equipment repairs are made.

The Operations Plan (Appendix D, page 18) describes the contingency plan for non-conforming/unauthorized material. If an off-spec material can be processed into an acceptable material, that material is segregated and stored separately for later processing. All unacceptable material is rejected and haulers are directed to the Kersey Valley Landfill, located on Kivett Drive.

The facility handles no liquid wastes, eliminating the concern for spillage. A contingency for fuel spills includes calling the proper authorities to contain, report and clean up the spill. Any compost that might be affected by a fuel spill shall be removed from the processing area and disposed off-site

along with any soil or absorbent material. Contingencies for other undesirable conditions such as fire are described on page 18 of the Operations Plan, and for vectors and odors on pages 4 and 14 of the Plan.

9.3 Operational Compliance – .1405 (a) (10) (C)

An explanation of how the facility does (and will continue to) comply with the requirements of Rule .1406 will be given in the next section of this report.

10.0 Operational Requirements – .1406

10.1 Plan and Permit Requirements – .1406 (1)

The facility construction has been completed and not is expected to undergo construction or operational changes. The Operation Plan, permit documents and records are kept on site at all times.

10.2 Erosion Control – .1406 (2)

The site is operated in accordance with the approved Sediment and Erosion Control permit issued by NC DENR Division of Land Quality (NC DLQ). Recent NC DLQ inspection reports (Appendix A) indicate that the facility is in compliance with the provisions of the permit. Periodic inspection shall be conducted by the ICF staff, e.g. after heavy rains, to verify that no erosion has taken place, and any erosion noted shall be corrected.

10.3 Surface Water Diversion – .1406 (3)

Surface water is diverted from the active operational areas by way of a system of berms and ditches. All site grades promote positive drainage away from the operational areas.

10.4 Leachate – .1406 (4)

The nature of the waste material does not generate leachate. Due to the facility type (Type 1) the drainage from active composting areas and stockpiles is managed as storm water.

10.4 Access and Security – .1406 (5)

Access is limited to the public with a fully enclosed fence and entrance gate. The site is manned full-time during normal working hours. The site is locked during non-working hours. The entrance road is paved and allows all-weather access.

10.5 Waste Acceptance – .1406 (6)

The waste acceptance criteria is detailed in the Operations Plan (Appendix D, page 18). The site has been successfully operated in accordance with this plan with a history of regulatory compliance.

10.6 Safety Requirements – .1406 (7)

Safety issues pertaining to the operation of the ICF are outlined in the Operations Plan (Appendix D, page 17). No open fires are permitted at the facility. The Operations Plan details procedures for personnel training and the proper response in the event of fire.

10.7 Sign Requirements – .1406 (8)

All required signs are posted on the premises, including the permit number, hours of operation, vehicle traffic flow, waste acceptance criteria, and emergency contact numbers.

10.7 Temperature Monitoring Requirements – .1406 (9) and (10)

Please refer to Section 8.6 of this document.

10.8 Miscellaneous Requirements – .1406 (14)

Finished compost and allowable uses meet the requirements of Rule .1407 (see Section 11). The compost does not contain non-compostable or unacceptable material (such materials are screened out of the finished product and disposed in an appropriate solid waste landfill). The facility is currently operated at approximately 40 percent of the estimated design capacity.

11.0 Material Classification and Distribution – .1407

The solid waste compost and mulch produced at the Ingleside Compost Facility, a Type 1 facility, is comprised entirely of vegetative wastes (leaves, grass, limbs, small trees, stumps) which are processed according to all applicable regulatory requirements. The materials, by nature, contain minimal pathogenic organisms, are free from offensive odors, and contain no sharp objects that would be injurious to the public. The site and production process are managed under close daily supervision in order to obtain the highest quality finished product. The materials produced from a Type 1 facility do not have a regulatory requirement for analytical testing. Based on the nature of the material and the closely controlled process of production, the finished product has historically met the requirements for distribution for a Type 1 facility.

12.0 Testing and Reporting – .1408

12.1 Composite Sample – .1408 (a)

Sampling and analytical testing are not required for Type 1 facilities.

12.2 Record Keeping – .1408 (b)

On-site facility records are maintained by the operator. These records include daily scale house records of incoming material and distributed finished products, as well as weekly records on temperature measurements and information on the windrows (e.g. pile dimensions, moisture, and

turning frequency). A copy of the weekly operations form is presented in the Operation Plan. Scale house records are kept in the facility office on site. The computerized scale house records, tabulated monthly, provide all of the following information:

- Quantity, type and source of incoming materials
- Quantity and type of material processed into compost (only one type is produced) or mulch, by product classification,
- Quantity and type of material removed for use, by product classification and market segment, or removed for disposal (all non-suitable material is disposed at the Kersey Valley Landfill).

12.3 Annual Reporting – .1408 (c)

Annual reports are prepared for each fiscal year beginning July 1 to June 30 and are submitted by the facility owner by each following August 1. The computerized scale house records are tabulated for the period for an Annual Report (see Appendix A), which presents the following information:

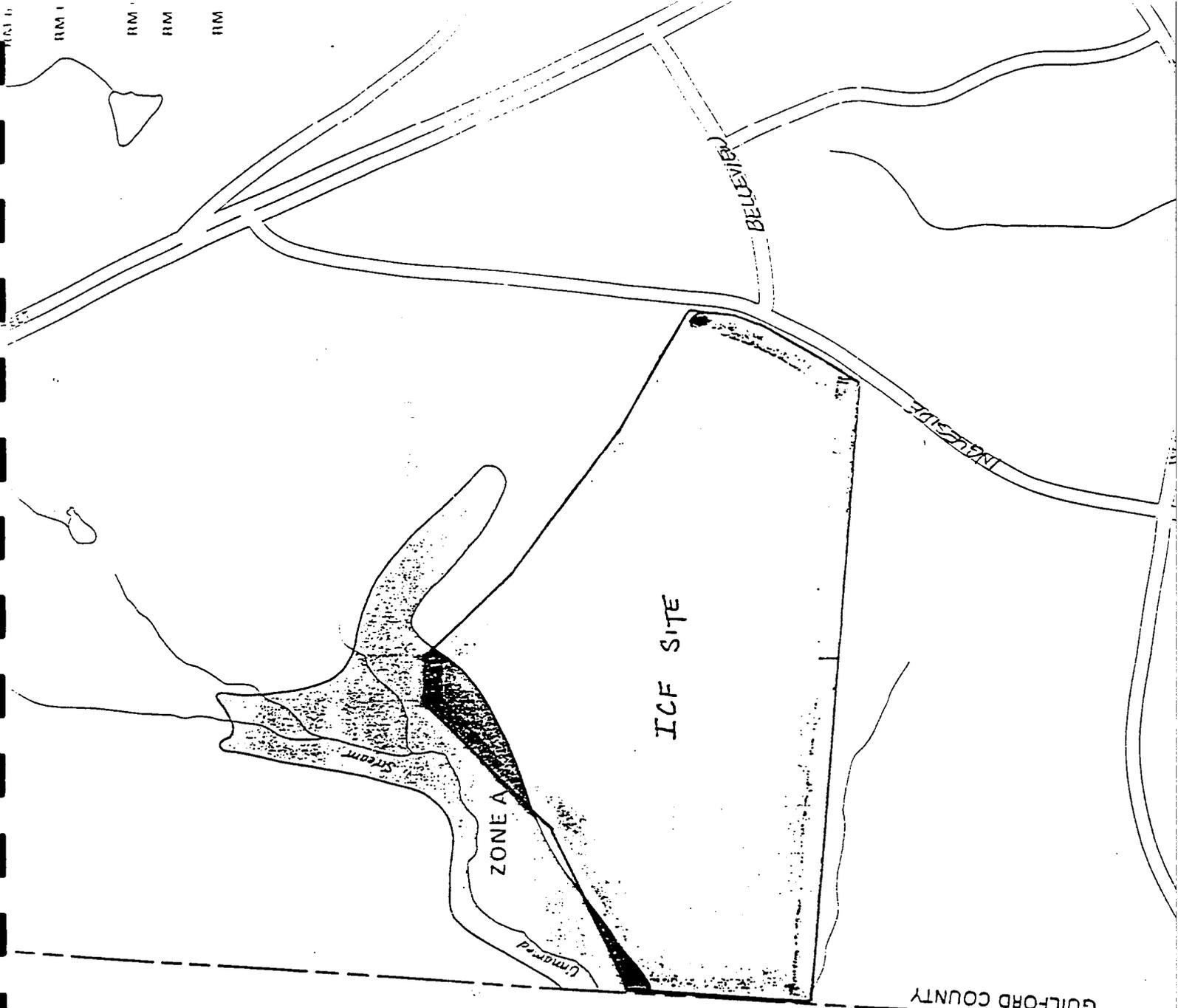
- The facility name, address, permit number,
- Total quantity in tons of wastes received from local governments of origin,
- The total quantity in tons and type of compost (one type is produced) and mulch processed at the facility, by product classification,
- The total quantity in tons and by type of products removed from the facility for use and the market percentages,
- Monthly temperature readings (tabulated weekly data).

Copies of the Annual Report are kept at the site. Please note there are no sludges accepted at the ICF, and no analytical testing is required.

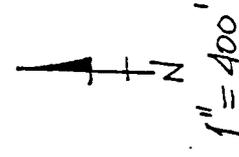
12.4 Yearly Recycling Totals – .1408 (d)

Yearly totals of compost and mulch are reported to the Department of Public Services and tabulated into a year-end recycling summary table. These numbers are tabulated monthly (see Appendix A) from scale house records. The recycling totals shown in these records reflect the tonnage of finished materials distributed from the facility by product type.

RM 1
RM 1
RM 1
RM 1

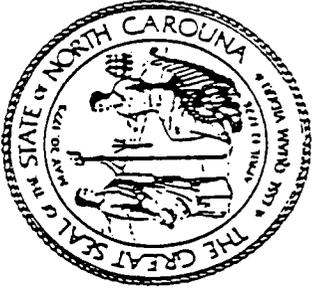


FLOOD INSURANCE
RATE MAP



DAVIDSON COUNTY
GUILFORD COUNTY

CERTIFICATE OF PLAN APPROVAL



The posting of this certificate certifies that an erosion and sedimentation control plan has been approved for this project by the North Carolina Department of Environment, Health, and Natural Resources in accordance with North Carolina General Statute 113A - 57 (4) and 113A - 54 (d) (4) and North Carolina Administrative Code, Title 15A, Chapter 4B.0007 (c). This certificate must be posted at the primary entrance of the job site before construction begins and until establishment of permanent groundcover as required by North Carolina Administrative Code, Title 15A, Chapter 4B.0027(b).

INGLESIDE COMPOST FACILITY - GUILFORD

Project Name and Location

3-17-93

Date of Plan Approval


Asst Regional Engineer

SEDIMENTATION INSPECTION REPORT

NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

LAND QUALITY SECTION: 585 Waughtown St. Winston-Salem, NC 27107 (336)771-4600

County: Gulford Project: CHP Inland Compost Facility River Basin Cape Fear

Person Financially Responsible: City of High Point

Address: P.O. Box 230, High Point, NC 27261

Project Location: Inland Drive Pictures: Yes No Prints Slides Video

Weather and Soil Conditions: Sunny 60's S.C. 11/7

3. Is site currently under notice of violation? Yes No

4. Is the site in compliance with the S.P.C.A. and the rules? Yes No If No, check violations below:

Violations:

- a. No approved plan, G.S. 113A-57(4) and 15A NCAC 4B.0007(c)
- b. Failure to follow approved plan, G.S. 113A-61.1
- c. Failure to submit revised plan, G.S. 113A -54.1(b) and 15A NCAC 4B.0018(a)
- d. Failure to provide adequate groundcover, G.S. 113A-57(3) and 15A NCAC 4B.0007(b) or 15A NCAC 4B.0024(e)
- e. Insufficient measures to retain sediment on site, G.S. 113A-57(3)
- f. Failure to take all reasonable measures, 15A NCAC 4B.0005
- g. Inadequate buffer zone, G.S. 113A-57(1)
- h. Graded slopes and fills too steep, G.S. 113A-57(2) or 15A NCAC 4B.0024 (d)
- i. Unprotected exposed slopes, G.S. 113A-57(2)
- j. Failure to maintain erosion control measures, 15A NCAC 4B.0013
- k. Other (describe) _____

6. Has sedimentation damage occurred since the last inspection? Yes If yes, where? (check all that apply): No

Lake/natural watercourse on the tract Lake/natural watercourse off the tract Other property

Description: _____

Degree of damage: Slight Moderate Severe

7. Contact made with (Name) Steve Boudry Title _____

Inspection report given or sent to the Person Financially Responsible Date given/sent _____

Corrective actions needed: N/A

8. Comments: Sediment Trap cleaned out and rebuilt as requested in 7-30-98 inspection.

Report by: G.S. Gray, Harker J. Others present: _____

Date of Inspection: 12-1-98 Time arriving at site: 10:40 AM Time leaving site: 11:00 AM

cc: _____



CITY OF HIGH POINT
NORTH CAROLINA

June 28, 1999

David Garrett
G. N. Richardson & Associates
425 N. Boylan Avenue
Raleigh, NC 27603

Re: Ingleside Dr. Composting Facility

Dear Mr. Garrett:

This letter will advise you that the Ingleside Composting Facility was approved and established in accordance with the City of High Point Development Ordinance. The facility received a Special Use Permit on May 21, 1992 in accordance with Development Ordinance procedures to allow a non-hazardous solid waste disposal facility in an Agricultural (AG) District. To the best of my knowledge, this facility continues to meet applicable zoning requirements.

If you have any questions please feel free to contact me at 336-883-3538.

Sincerely,

A handwritten signature in cursive script that reads "Robert L. Robbins".

Robert L. Robbins, AICP
Development Administrator
Department of Planning and Development

Cc: SUP 92-9 file



CITY OF HIGH POINT

NORTH CAROLINA

SPECIAL USE PERMIT 92-9

CITY OF HIGH POINT, NORTH CAROLINA

THE HIGH POINT CITY COUNCIL, PURSUANT TO TITLE 9, CHAPTER 3 OF THE CITY CODE, APPROVED A SPECIAL USE PERMIT FOR THE FOLLOWING USE, SUBJECT TO THE CONDITION(S) LISTED BELOW ON MAY 21, 1992.

USE

To allow a nonhazardous solid waste disposal facility in an Agricultural (AG) District.

CONDITION

Development of the site shall be pursuant to Section 9-4-5(a) of the Development Ordinance and in accordance with the site plan approved by City Council.

The property is located on the west side of Ingleside Drive opposite the western terminus of West Bellevue Drive.

It is known as County Tax Map Number 299, Block Number 1, Lot Number 1.

DESCRIPTION OF PROPERTY: Being one lot totalling approximately 32.80 acres as shown on Guilford County Tax Map 229, Block 1, Lot 1. The property is located on the west side of Ingleside Drive opposite the western terminus of West Bellevue Drive.

If the property involved in this Special Use Permit is used as approved, the property described in this Special Use Permit will be subject to such conditions as imposed on said Special Use, unless subsequently changed or amended as provided for in Title 9, Chapter 3 of the City Code. The Special Use Permit and its conditions shall bind the owner(s) of the above described property and any successors in interest.

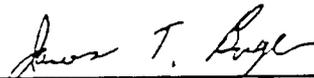
The issuance of a Special Use Permit shall not allow the development of the site for the Special Use, but shall merely authorize the filing of an application for a required building permit, site plan, subdivision or other approval required by the Technical Review Committee.

Construction of the project specified within this Permit shall begin within eighteen (18) months from the date of City Council approval or the Special Use Permit shall expire.



Director of Public Works

June 1, 1992
Date



Director of Planning and Development

June 1, 1992
Date



City Manager

June 2, 1992
Date

Attest: 

Patricia Paris Simmons
City Clerk



State of North Carolina

Department of Environment, Health, and Natural Resources
Division of Waste Management

SOLID WASTE YARD WASTE FACILITY ANNUAL REPORT

FOR THE PERIOD OF JULY 1, 1997 - JUNE 30, 1998

Report must be sent to the county manager of each county from which waste was received.

CITY OF - YARD WASTE FAC

Permit: 4110 Id: P0491

NC 27261

KAIRIS

883-3215

883-3419

For questions or require assistance in completing this report, contact your Regional Agreement Specialist. Completed forms must be returned by August 1, 1998 to:

1
10000 Street
Raleigh, NC 27107-2241 (910) 771-4600

\$36.00 /Ton (Attach a schedule of tipping fees if appropriate.)

Report waste received at this facility during the period of July 1, 1997, through June 30, 1998 by
county. (Note: Number of cubic yards divided by 5 equals number of tons. Also, one cubic yard

H	TONS FROM		TONS FROM		TOTAL
	Guilford COUNTY	Randolph COUNTY	Davidson/ Forsyth COUNTY		
	494.71	.76	.09	.13	495.69
	504.09	.40	-	.69	505.18
	486.18	1.67	-	.13	487.98
	549.41	-	.21	-	549.62
	799.87	-	-	-	799.87
	1,300.47	.14	-	.30	1,300.91
	1,032.26	-	-	-	1,032.26
	403.11	.08	-	.04	403.23
	703.39	.14	.3	1.71	705.54
	970.70	.08	.42	.21	971.41
	1,242.35	6.14	-	1.55	1,250.04
	1,041.59	7.42	.15	.25	1,049.41
	9,528.13	16.83	1.17	5.01	9,551.14

Copy the Table and use when waste is received from more than three counties.)

MOD WASTES
3. 4000 TPY
(16 TPD)
4 CY/DAY

GRINDING²
SCREENING³

HEATED STOCKPILE

PUBLIC
DISTRIBUTION



CITY OF HIGH POINT

NORTH CAROLINA

The compost and mulch produced at Ingleside Compost Facility are Type 1 facility products:

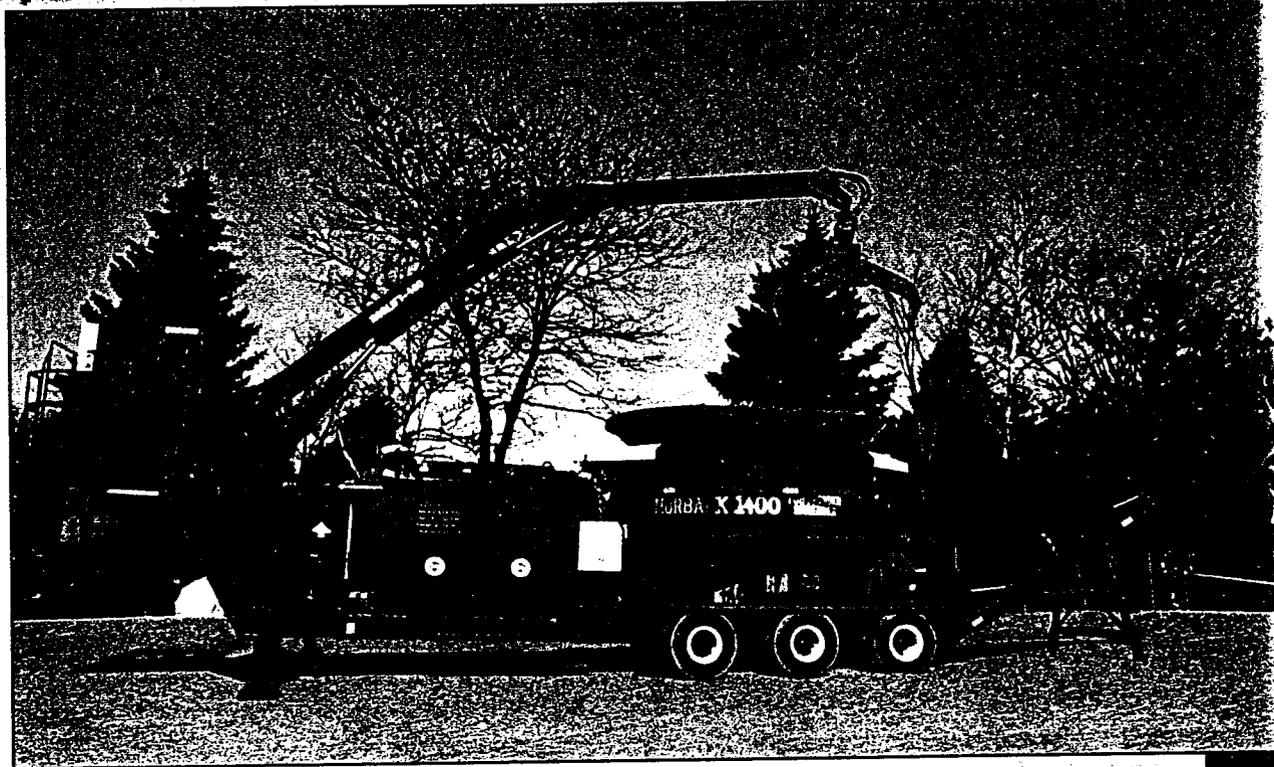
- Contain minimal pathogenic organisms
 - Are free from offensive odor
 - Contain no sharp particles that would cause injury to persons handling compost
 - Have unrestricted applications and distributions
- Recommended uses
- ◆ soil additives for gardens and lawns
 - ◆ use for natural areas around shrubbery and flowers
 - ◆ newer mulch should not be placed around young plants



Morbark Tub Grinder

Product Information

Model 1400



When the application calls for high volume grinding—and a standard 11 or 12-foot tub grinder can't meet the requirements—the Morbark Model 1400 Tub Grinder answers the call. The 1400 has the power, ruggedness and technology necessary to process wood and other

organic waste at rates up to **400 cubic yards or 75 to 100 tons per hour**, depending on the type of material.

This self-contained, portable unit is fed with its own knuckleboom loader, offering 14,000 pounds of lifting power at 10'. Morbark's telescoping cab elevates to an operating height of 15'6", providing the operator with excellent visibility for material processing. Protecting the engine and clutch from shock or overload is Morbark's high torque reduction gear box with torque limiter.

The Model 1400 can also be equipped with an optional 159 horsepower auxiliary power unit, for all hydraulic functions. This option results in 800 horsepower being directly transmitted to the hammermill, resulting in even higher production.

For high volume processing of stumps, logs, brush, pallets, yard waste, demolition debris and up to 1,300 railroad ties per hour, the Morbark 1400 Tub Grinder is in a class by itself.



Morbark Sales Corporation

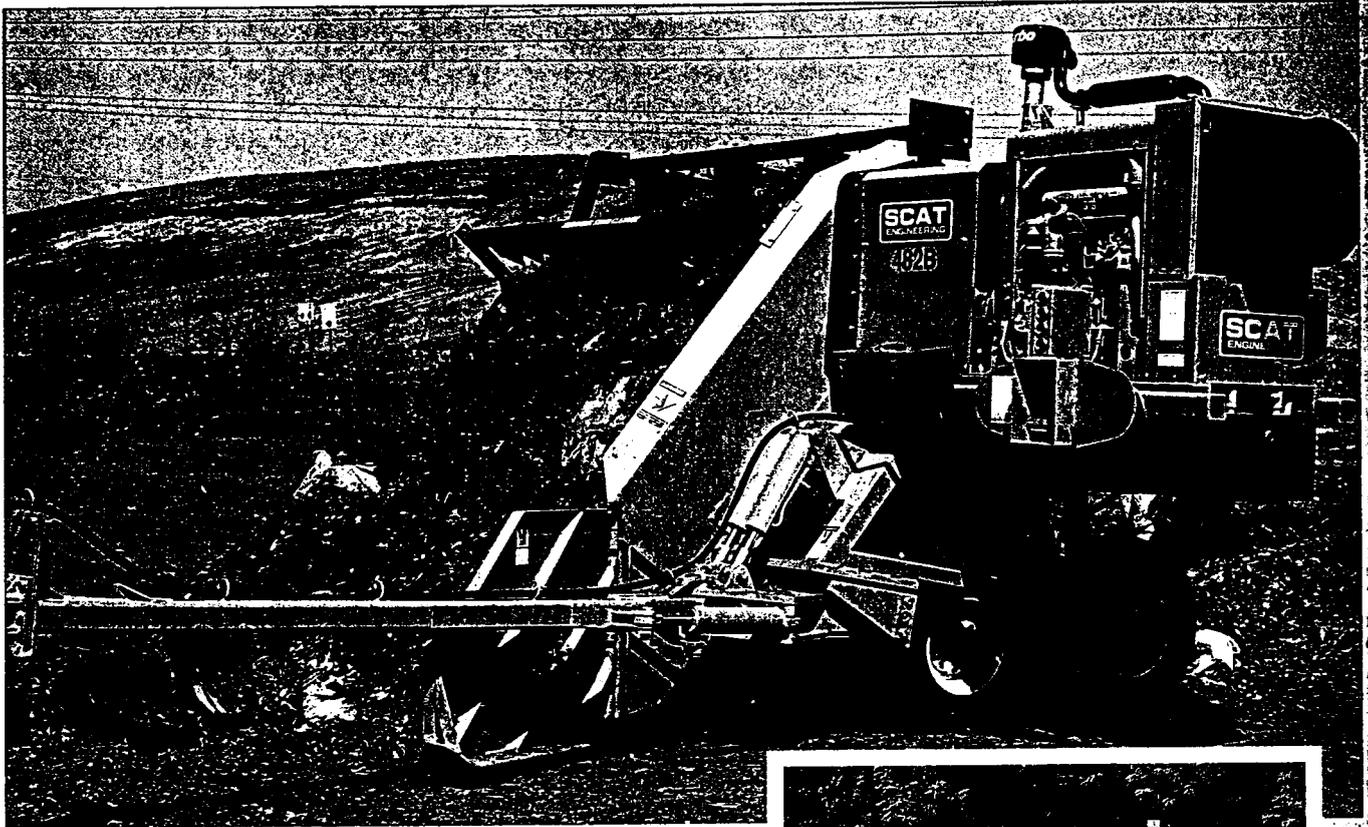
8507 S. Winn Road
P.O. Box 1000
Winn, MI 48896

(800) 233-6065
(517) 866-2381
Fax (517) 866-2280



SCAT
ENGINEERING

SCAT 482B & 483B Tow-Type Compost and Bioremediation Turners



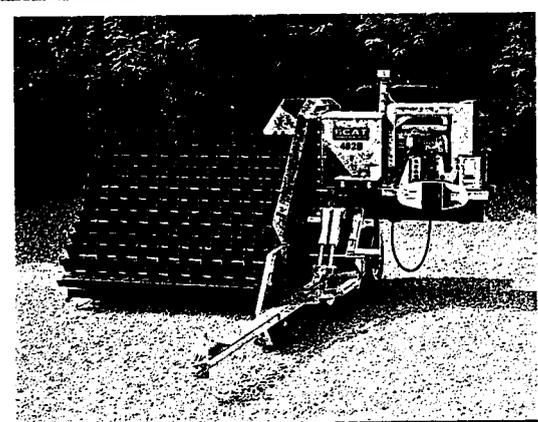
The unique Elevating Face allows taller windrows and maximizes the blending of materials.

SCAT handles material with ease.

In contrast to methods which tend to compress or compact materials, SCAT's unique elevating face gently turns the material in high windrows with optimal aeration and mixing. Taller windrows together with maximum aeration and mixing result in better inner thermal currents, shorter bio reduction time, better odor control, higher quality compost, and efficient use of available space.

- Able to service multiple sites
- Minimizes compaction/compression of windrow
- Debagging Teeth and Bag-Breaking Bar optional
- Versatile and economical

SCAT Turners are easy to use and have low operating costs per cubic yard/meter. SCAT Turners help provide optimal composting and bioremediation environments.

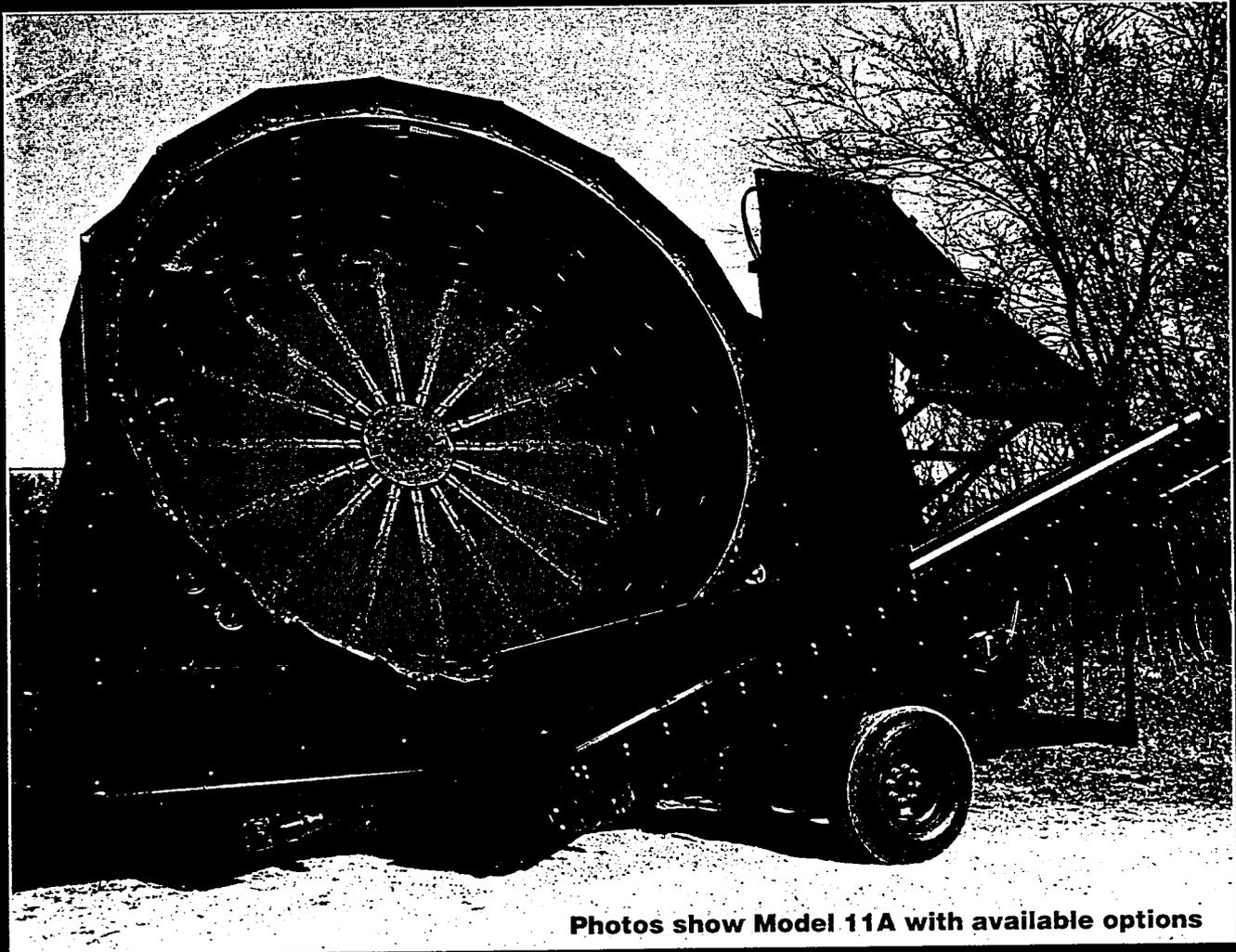


- Optimal Aeration
- Superior Mixing
- Complete Inversion
- Greater Capacity
- Accelerated Bio Reduction
- Higher Quality Compost
- Thorough Bioremediation

SATELLITE SCREENS



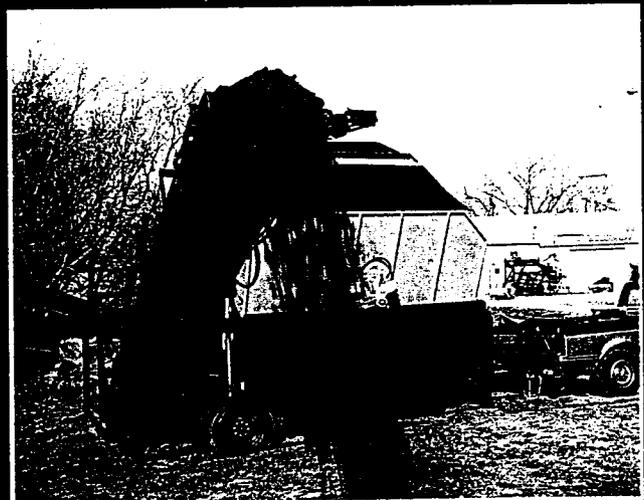
A TRULY EFFECTIVE, MULTI-PURPOSE, PORTABLE SCREENING MACHINE



Photos show Model 11A with available options

APPLICATIONS

- Compost
- Top Soil
- Backfill Dirt
- Aggregates
- Sawdust
- Wood Chips
- Mulch
- Bark
- Granular Materials
- Moist or Dry Materials
- Many Others



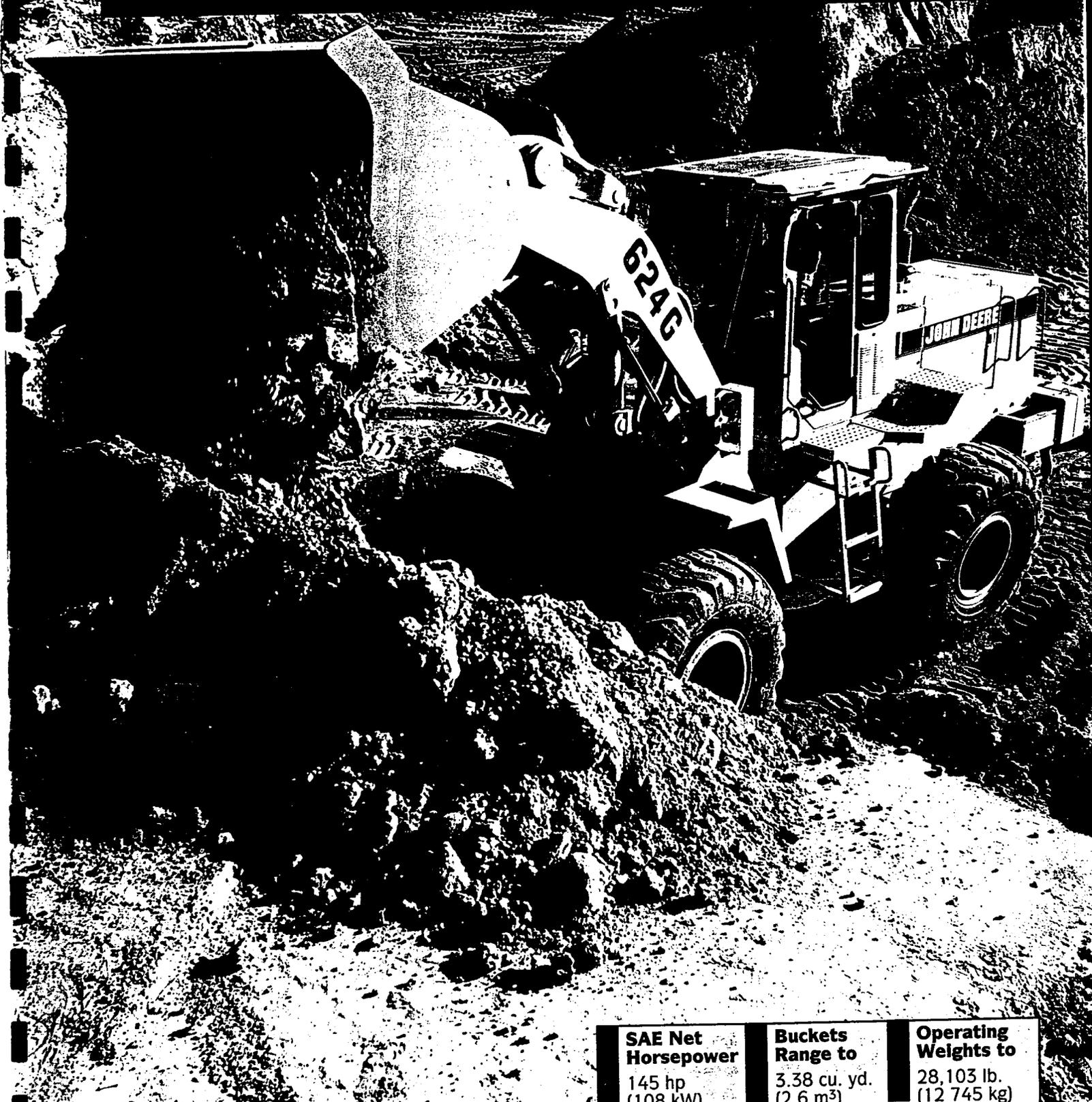
SATELLITE SCREENS





624G

LOADER



Model shown may include options

SAE Net Horsepower 145 hp (108 kW)	Buckets Range to 3.38 cu. yd. (2.6 m ³)	Operating Weights to 28,103 lb. (12 745 kg)
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WA320-3

KOMATSU

BUCKET CAPACITIES

3.0 - 4.2 yd³

2.3 - 3.2 m³



WHEEL LOADER

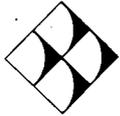
WA320-3

City of High Point Solid Waste and Recycling Totals

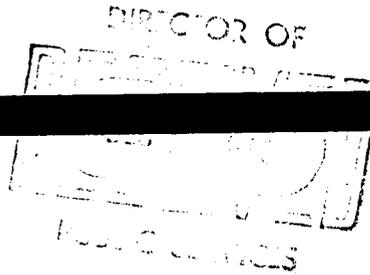
	Jan 99	YTD
I. MSW Tonnages		
Tons Across Scales	10,092.60	76,709.93
Tons To Kersey Valley	8,727.05	67,097.35
Tons to ICF	938.75	6,144.10
Tons to Wood Pile	161.85	860.29
Tons to MRF High Point	241.43	1,879.46
Tons to MRF Lexington	-	12.38
Tons to MRF Thomasville	-	13.99
Tons to MRF Archdale	15.40	125.27
Tons to MRF Market OCC	8.12	577.09
% of MSW to MRF	2.63%	3.40%
II. MRF Recovery		
Total Tons to MRF	264.95	2,608.19
Residual Tons Baled	53.93	734.73
Recovery at MRF (wt)	211.02	1,873.46
Residual at MRF (%)	20.35%	28.17%
III. Recyclables		
Recyclables Shipped	179.19	1,147.03
Recyclables Inventoried	-	-
ONP Drop Off	43.31	324.40
White Goods	-	147.71
Wood Chips Used at Landfill	160.82	1,368.07
ICF Mulch	111.37	1,448.42
ICF Compost	100.67	1,312.78
Total Tons Shipped	595.36	5,748.41
IV. Overall Tons Recovered*		
	1,354.93	8,223.14
V. Overall Recovery Rate*		
	13.37%	10.67%
VI. Revenue		
MRF Recyclables	\$19,652.85	\$68,507.00
ONP Drop Off	\$433.10	\$3,244.00
White Goods	\$0.00	\$0.00
ICF Mulch	\$1,114.20	\$11,251.85
ICF Compost	\$1,955.17	\$24,153.79
Total Revenue	\$23,155.32	\$107,156.64

} TONS SHIPPED FROM
ICF BY PRODUCT TYPE
DURING JAN 1999

*Overall Tons Recovered is calculated by: (Recovery at MRF + Tons To Wood Pile + Tons To ICF+ ONP + White Goods)
 *Overall Recovery Rate is calculated by: Overall Tons Recovered / (Tons across scales + ONP)



G.N. RICHARDSON & ASSOCIATES
Engineering and Geological Services



December 15, 1998

Mr. Duane Jarman
Solid Waste Manager
Department of Public Services
P.O. Box 230
High Point, North Carolina 27261

**RE: Report of Site Evaluation
Ingleside Composting Facility**

Dear Duane:

G.N. Richardson & Associates (GNRA) is pleased to present this report of a site evaluation performed on December 9, 1998 at the referenced site. The evaluation consisted of a site reconnaissance and test pit investigation to characterize subsurface conditions, in partial fulfillment of NC DENR Division of Waste Management (NC DWM) requirements for a permit renewal application. This evaluation was performed at your request and was assisted by Mr. Steve Pendry and Mr. James Hussey of the City of High Point. This report describes the findings of our site evaluation and draws specific conclusions regarding facility capacity, as well as soil and ground water conditions at the site.

Project Description

The site is a Type 1 Composting Facility, as defined by North Carolina solid waste rule 15A NCAC 13B .1405 et seq. The facility is owned and operated by the City of High Point for the exclusive use of the City and its constituents. The facility accepts only yard wastes, pursuant to its permit, which was observed to comprise leaves, limbs, some larger wood debris, grass clippings and other vegetative debris that is considered to be yard wastes. There is an on-site scales, with a certified operator, and a full-time crew and supervisor. Mr. Pendry estimated that the facility receives approximately 10,000 tons of yard wastes annually (average, last 3 years).

Mr. Hussey described the overall material handling process. Woody vegetative debris, received all year long, are ground or shredded as needed prior to stockpiling as wood mulch. Leaves are received by the facility in the autumn months, comprising the chief carbon source. The leaves are stored in windrows on an asphaltic concrete composting pad, which measures approximately 500 by 175 feet. The windrows are turned periodically, as needed determined by temperature measurement — typically every week or two during the winter season, more often in the warmer seasons.

In the spring and summer months, grass clippings provide the chief nitrogen source, which is added to the windrows and blended as needed based on temperature. The compost typically matures in a few weeks following introduction of nitrogen sources, and the mature compost is screened (using the City's equipment) and stockpiled until sold to the public. The stock pile area has much more potential storage area than is typically required.

The entire site covers approximately 14 acres, with an active working area of about 5 acres, including the asphaltic concrete windrow pad. The concrete is supported on a soil embankment. The facility was constructed about 5 years ago. The site is located on a relatively broad ridge top, with drainage divided to the west (primary drainage direction for the active composting/storage areas) and toward the north east (mowed area north of scale house). Traffic access is from the east via Bellevue Street, crossing Ingleside Drive at the gate). The entire site is fenced. Surface water drainage is good, with very little surface ponding, despite the 0.8 inches of rain that fell overnight prior to the site visit. Sedimentation and erosion control features appear to be functional.

Original site preparation required minor grade cuts to the eastern side of the site, where natural rock exposures were noted, and embankment fills estimated to vary to 12 feet in thickness to the west side of the property. Much of the fill was brought in during construction of the Wal-Mart on U.S. 311, according to Mr. Pendry, including a layer of reddish clayey soils that reportedly "capped" the entire embankment area prior to construction of the composting facility. These soils were encountered in some of the test pits, described later.

Facility Capacity

Based on the facility operations descriptions provided by the site managers, a full autumn season's leaves can be stored on the asphaltic concrete pad, followed by a full spring/summer season's grass and other vegetative debris above the leaves. After composting (and associated bulk volume reduction), the stockpiles provide in excess of a full year's storage of finished compost. This provides, at a minimum, two year's operating capacity at the estimated 10,000 tpy intake. However, there are unused portions of the site within the 50-foot buffers that could be utilized for composting and/or storage, if needed, and ample space for storing completed compost adjacent to the asphaltic concrete pad. In short, the facility has more than sufficient space and buffer for the current operations.

Soil and Ground Water

Five (5) test pits were dug on the premises with a rubber-tire backhoe, as shown on the attached site map. Three pits (TP-1, -2 and -3) were dug near the asphaltic concrete pad, in the active composting and storage areas, underlain by man-made embankment. Two others (TP-4 and -5) were dug in the eastern areas, underlain by natural ground. The test pits were extended to depths of 4 to 6 feet, except where asphaltic concrete debris (in the embankment fill) or bedrock resulted in refusal conditions. Representative samples of the various soils were taken for visual identification per the Unified Soil Classification System and further evaluation, if needed. Table 1 presents a summary of conditions encountered at each test pit location.

Near the asphaltic concrete pad, test pits encountered a layered mix of organic soils (silty clay mixed with composted materials and/or gravel), stiff orange clayey silt (imported borrow) and a dry gravelly silt (resembling crusher run). The clayey soils, found in a 3 to 6+ foot thick horizon, were moist and very plastic, owing to the high clay content (estimated at 30 to 40 percent) and the presence of abundant mica. The plasticity is generally an indication of a high field capacity

(moisture retention) and a low permeability. The embankment soils appeared to be well compacted.

There were no saturated zones encountered within the soil embankment, except that the surficial soils were wet from the previous night's precipitation. There was no indication of ground water movement within the upper 4 to 6 feet beneath the asphaltic concrete pad. The test pits in the central and west portions of the site did not encounter natural soils, due to depth of the embankment, but past experience suggests that permanent ground water levels are deeper than the embankment section.

To the east of the asphaltic concrete pad, test pits encountered tan slightly clayey silty fine to coarse sands, derived from a parent bedrock exposed near one of the test pits (TP-4). The natural soils were dry to slightly moist and showed no residual texture or staining that would suggest the presence of shallow ground water. These soils exhibited slight to moderate plasticity, indicating a rather high (estimated 15 to 20 percent) clay content and a moderately high field capacity.

The asphaltic concrete pad and clayey fill soils observed near the pad limit surface water infiltration. Much of the site is graded and compacted, or covered with pavements. Based on topographic relationships and the test pit observations, ground water recharge from the active composting and storage areas is minimal. Ground water levels across the site are probably in excess of 20 feet, including both the active composting and storage areas and the undeveloped areas to the east.

Summary of Findings

- The site appears to be well managed, with adequate surface grades and storm water management features to minimize surface ponding.
- The active composting occurs on an asphaltic concrete pad, which is supported on a man-made embankment fill, with fill depths varying to an estimated 12 feet along the west side of the active area.
- The embankment fill was capped with a 2 to 3 foot thickness of compacted clayey silt during construction of the composting facility.
- The clayey horizon, in conjunction with the pavements and other hardened surfaces on the site, is believed to provide a barrier against downward migration of water.
- Drainage within active areas is to the west.
- The overall site is underlain by stable soils derived from a granitic bedrock.
- None of the excavated soils showed signs of ground water movement. The soils were generally slightly moist to dry, except in the upper few inches beneath the surface.

Mr. Duane Jarman
Ingleside Composting Facility
Page 4

- No ground water or saturated zones were encountered within 4 to 6 feet beneath the ground surface.
- Based on topographic relationships and subsurface conditions encountered in the test pits, ground water depths are estimated to be in excess of 20 feet.
- At the estimated 10,000 tpy intake, there is more than ample developed space to conduct site operations, with at least 2+ years of available material processing and storage capacity.
- This estimated facility capacity discounts potential undeveloped areas and public demand for the finished compost.

Closing

GNRA appreciates the opportunity to be of continued service to the City of High Point. If you should have further questions, or if we may be of further service, please contact us at your convenience.

Very Truly Yours,
G.N. Richardson & Associates



G. David Garrett, P.G.
Vice President, Senior Geologist
N.C. Geology License No. 983

Table 1
Summary of Test Pit Data

TP-1	Southeast corner of asphaltic concrete pad
0"	Gravel and old compost
0 - 24"	Mixed clayey silt and gravelly silty fine sand — fill
	No water, difficult digging conditions due to relatively dense fill, no sample
TP-1A	Next to finished stockpile
0 - 29"	Old compost, clay, gravel
29 - 60"	Stiff orange-red micaceous clayey silt (CH-MH) — fill, sample taken
60+"	Dense gray-green gravelly fine sand with silt (SM, GM) — fill, sample taken
	No water, fill had some wood and concrete debris, appeared well compacted
TP-2	Northeast corner of asphaltic concrete pad
0 - 24"	Dense gravelly sand (SM) with old compost at surface — fill
	No water, difficult digging, no sample
TP-3	West side of asphaltic concrete pad, 150 feet from NW corner
0 - 24"	Old compost, clay and gravel
24 - 72"	Stiff slightly fine sandy, clayey silt with mica (ML-MH) — fill, sample taken
	No water, uniform material, moderately well compacted, fill height estimated to be 10 - 12 feet at northwest corner
TP-4	Southeast side of property, about 200 feet south of scale house
0"	Surficial grass, area likely has been graded
0 - 24"	Dense, dry, tan slightly clayey silty fine sand with rock fragments (SM) — sample
	Difficult digging, refusal on bedrock (granite outcrop 45 feet west), no water, area high on slope with fairly good drainage (ground water several feet deep)

Mr. Duane Jarman
Ingleside Composting Facility
Page 6

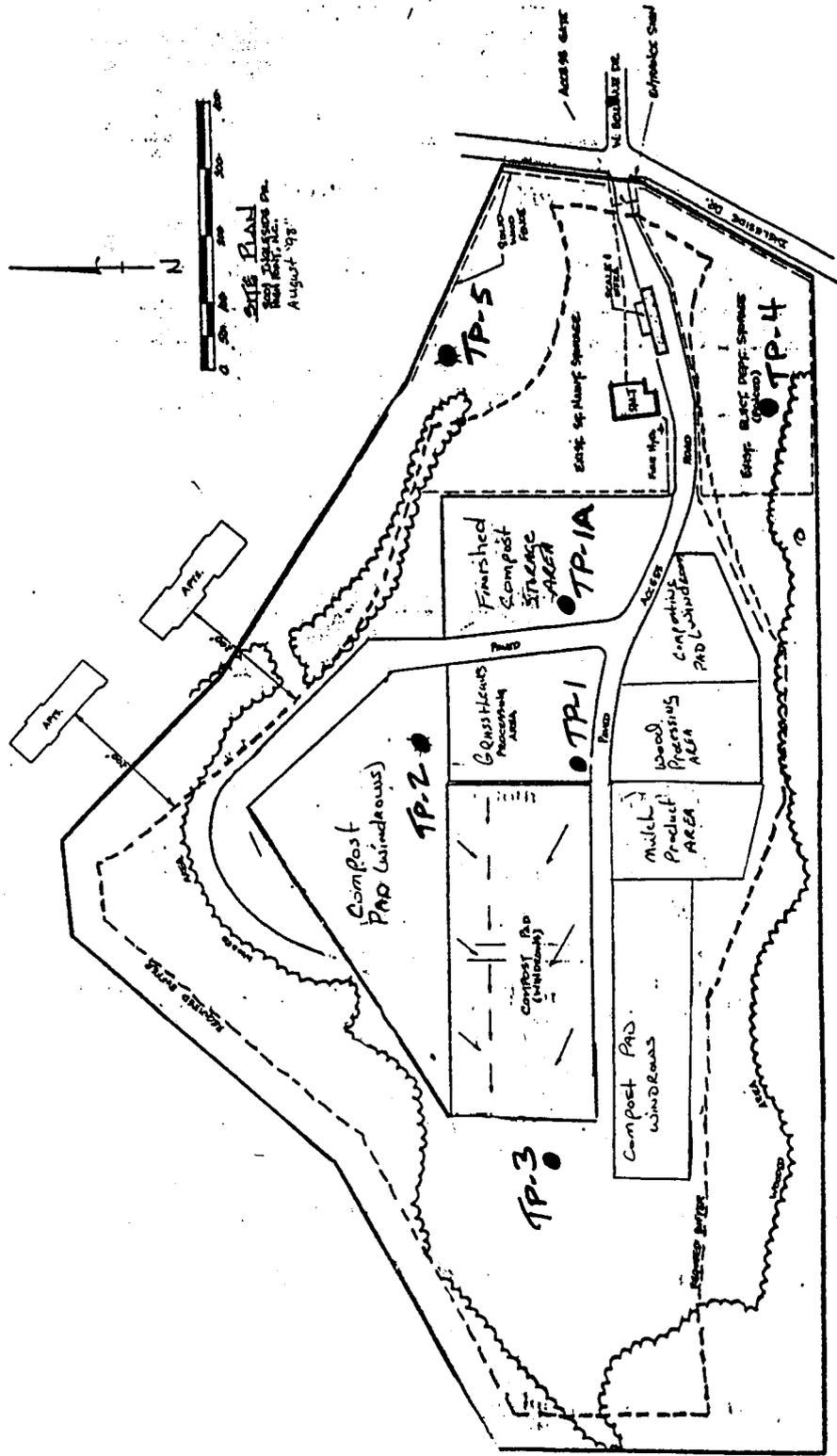
TP-5 Northeast side of property, 300 feet north of scale house

0" Surficial grass, little to no grading

0 - 36" Medium stiff, tan-white, very slightly moist, slightly clayey silty fine sand

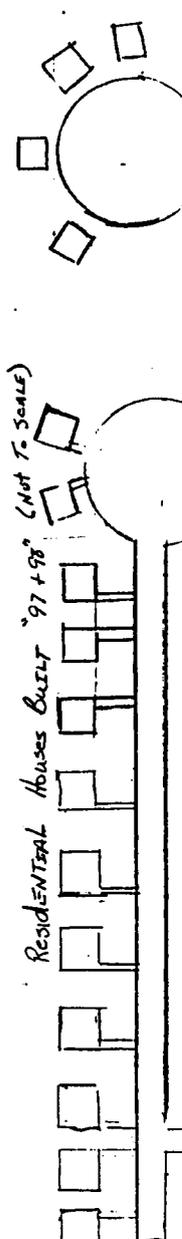
No water, no staining or residual texture, area high on slope with good drainage

INGLESIDE COMPOST FACILITY
PUBLIC SERVICES DEPARTMENT



SITE PLAN
 PREPARED BY
 AUGUST 1978

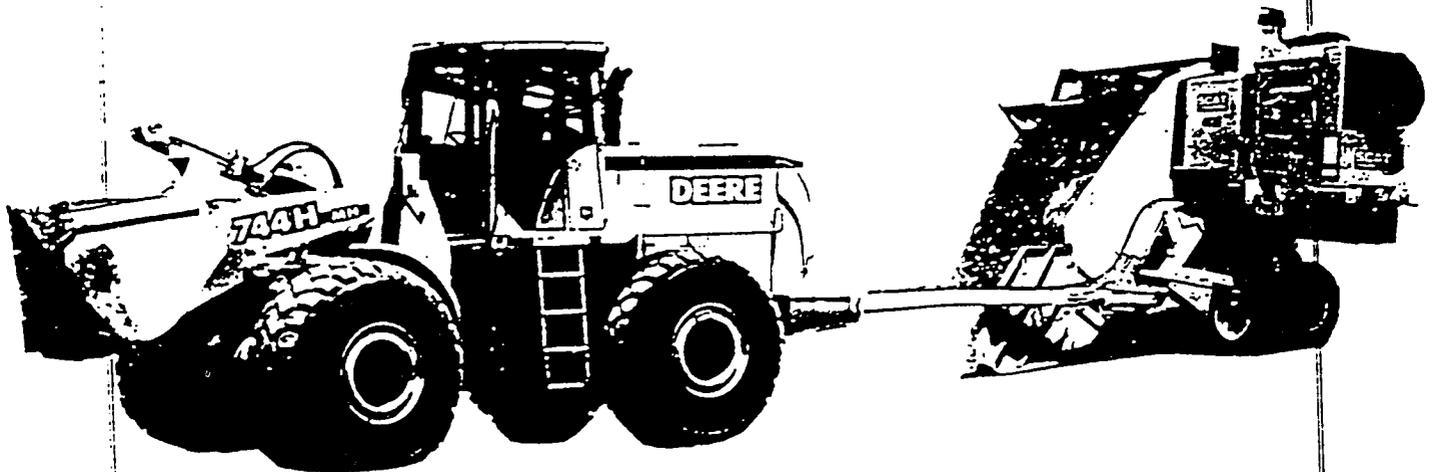
RESIDENTIAL HOUSES BUILT '97+' (NOT TO SCALE)



OPERATIONS PLAN
FOR THE
INGLESIDE COMPOST FACILITY



CITY OF HIGH POINT
NORTH CAROLINA



INGLESIDE COMPOSTING FACILITY OPERATIONS PLAN

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DESCRIPTION OF OPERATIONS

NAME OF FACILITY

Ingleside Compost Facility (ICF)

ADDRESS

3001 Ingleside Dr.
High Point, NC 27265

RESPONSIBLE PERSONS

Mr. James Hussey (Composting Supervisor)
Mr. Steve Pendry (Landfill Superintendent)

PHONE NUMBER

(336) 883-8514

SITE PERSONNEL

Composting Supervisor

Supervise site operations and site personnel under the direction of the Landfill Superintendent.

Scalehouse Operator

Weighs, records and directs incoming vehicles.

(3) Landfill Equipment Operators 1

Operate various equipment associated with composting operations.

Sanitation Worker

Performs labor type tasks at the site.

SCHEDULED HOURS OPEN TO THE PUBLIC

Monday - Friday	9:00 am - 4:00 pm
Saturday	9:00 am - 1:00 pm
Sunday	closed

GENERAL OPERATION PLAN

The Ingleside Compost Facility (ICF) is designed to be a large Type I composting facility. The overall operational goals shall be to compliment the integrated solid waste management plan instituted by the City of High Point. This plan is designed to meet or exceed the State of North Carolina Solid Waste Management Rules and Solid Waste Laws, Section .1400, and aid in conserving the environmental resources available to the City of High Point residents and corporate business interest. This will be accomplished by the removal, processing, use and sale of the organic portion of the municipal waste stream commonly referred to as "Wood and Yard" waste.

It is the intent of the ICF to accept all yard waste and acceptable wood from residential and commercial enterprises for recycling. This will encourage the use of the facility and minimize illegal disposal of materials. The city collection vehicles designated for yard waste collection, leaf collection, organic construction debris collection, etc. will also deliver acceptable materials to the ICF.

RECEIVING

All vehicles entering the facility will be weighed and recorded according to the type of material. The scale-house attendant will then instruct the vehicle driver to the appropriate off-loading area (i.e. wood processing area, grass and leave processing area, etc.). A scalehouse attendant will notify the appropriate ICF employee to allow inspection of the materials as they are being off-loaded. The visual inspection insures received materials are compatible with the intent and goals of the ICF. Those materials not acceptable at the ICF shall be handled appropriately as outlined.

PREPARATION AREA

The receiving areas will be that portion of the ICF so designated (see attached site plan) for the off-loading of incoming materials and temporary storage of said materials. The processing area(s) will be used for the appropriate processing of the materials (i.e. grinding of wood, de-bagging of leaves and grass, separation of large wood items, etc.).

This area will be designed and maintained to allow easy access and use in various weather conditions to facilitate the consistent use of the ICF.

INCLEMENT WEATHER PRECAUTIONS

During wind, heavy rain, snow, freezing or other adverse conditions appropriate changes will be made. Receiving and preparation areas will be made as accessible as possible to incoming vehicles. Appropriate fences and boundaries will be installed to secure materials. All other operations will cease if necessary. If the situation warrants it, the facility will be closed.

ACTIONS TO ELIMINATE NUISANCES

Since the opening of ICF, several actions have become established in our normal operating procedures to eliminate possible nuisances to the surrounding area. These include:

- construction of earthen berms which are approximately 8-10' high
- site is enclosed by 6' high chain-link fence with 2' of barbed wire
- 6' wooden fence on eastern boundary of site
- portable litter fences – used as needed around working areas
- deodorizer and insect control chemical is sprayed twice daily

Furthermore, the site is elevated higher than the surrounding area. Therefore, water run-on is minimal. Water run-off is controlled by the use of four sediment basins which surround the working areas.

WINDROW METHOD

The technology to be employed at the ICF shall be open "windrow." The windrows will be constructed on the designated windrow areas. The windrows shall be constructed using layered feedstocks, as materials are available. The height and width of the windrows shall be determined by the mechanical design of the machinery used for the turning process.

STABILIZATION

The stabilizing of the compost product is achieved through a process which allows for the gradual reduction of microbial activity in the presence of moisture and aeration. This stabilizing usually requires two to four weeks and may be performed in the original windrow placement.

CURING, SCREENING, QUALITY CONTROL

This stage of the Composting Process requires the movement of the stabilized compost to the final storage area. The compost product shall go through a screening process for the removal of large particles and improve the consistency and quality of the final product. Screening may occur as the compost is transferred from the windrow to the final storage area. If compost is transferred to the final storage without screening, final screening shall occur prior to transport of compost for final use.

STORAGE, TRANSPORTATION

In the final storage area, compost shall be stockpiled and final curing of the product may occur. The storage area shall be maintained to allow easy access and movement of equipment for screening and loading of materials for transporting to end-users. Trucks arriving at the ICF to load compost shall weigh-in at the scales. The scale operator will give direction to the final storage area and notify the ICF staff of the need to load the customer. The loaded vehicle will then exit across the scales so materials may be recorded by weight.

USE AND MARKETABILITY OF COMPOST

It is the intent of the City of High Point to develop products at the ICF which would have the ability to be used at parks, golf courses, road right-of-ways and beautification projects. In addition, commercial landscapers and private citizens could purchase the compost as soil amendments. Numerous studies conducted in North Carolina and the U.S. have proven the excellence of compost materials in the following uses: soil

amendments are tilled into the soil to help retain the particle moisture, enhance soil drainage, improve nutrient transfer to plants, and enable deep root penetration resulting in healthier plants; soil mulch applied to the top of the soil to help control weeds, protect plant roots and prevent soil from drying. Compost may also be used to help replace topsoil and aid in the prevention of erosion. The bulk application of compost in agricultural uses has proven to be an effective, economically viable method of improving nutrient depleted soils while reducing the need for commercial fertilizers.

The key to successful marketing will be the perception and acceptance of the product by the public. With good ICF public relations, education and marketing expertise, the compost product should have readily available markets within the Piedmont/Triad metro in governmental, commercial, agricultural and private applications. Our previous experience has proven this to be true and we expect more of the same for the future.

COMPOSTING PROCEDURES

The purpose of this section is to establish the procedures for producing compost at the ICF. These procedures may be refined or modified as experience is gained in the composting process.

ACCEPTABLE MATERIALS

The ICF is designed as a wood and yard waste composting facility. Materials accepted at the ICF from the public (commercial & private) shall include:

- untreated wood waste
- yard waste (leaves, grass, brush, limbs)
- other biodegradable waste determined as suitable for the composting process by authorized personnel and by section .1400 of the Solid Waste Management Rules of North Carolina

After weighing in, the acceptable materials shall be off loaded at the appropriate location as determined by the ICF Staff (receiving area, windrow area, over-flow area). Each load will be examined for contaminants, non-conforming or unauthorized material. The ICF Staff will be responsible for the coordination of removal of these products. Acceptable materials may be expanded as knowledge, technology and expertise allow processing of these materials.

PREPARATION OF MATERIALS

The preparation of materials will consist of grinding/mulching of wood waste, brush, leaves, etc., also the debagging of leaves and grass. This preparation will be performed at the designated areas. The ICF staff will be responsible for preparation of the material in a manner suitable for application as feedstock in the windrow area. The ICF staff will be responsible for the "timely" processing and transfer of material from the processing area to the windrow area.

Grass clippings shall be incorporated into windrows and turned within 48 hours of

on-site arrival. This will prevent odors and insure space availability at the receiving and processing areas for incoming materials.

WINDROW CONSTRUCTION

The windrows shall be constructed in the designated areas as shown on the attached site plan. The dimension of the windrows shall be approximately 12 feet wide by 4 - 6 feet high. The height and width of the windrows shall be determined by the mechanical design of the machinery used for the turning process. The windrows shall be constructed using layered feedstocks as materials are available. The materials may be placed in the original windrow by one of the following methods:

- Dumping bed or eject bed trucks may off-load the first layer of feedstock (leaves, wood chips, grass, etc.) in the windrow in a contiguous length dumping method. This method shall be done at the direction and supervision of the ICF staff.
- Materials may be moved from the receiving or processing area and placed in windrows by a front-end loader.

The original layer of feedstock may range in depth from 12 to 60 inches depending on the percentage and number of feedstocks being used to generate the desired type of compost. The second layer of feedstock may be placed on the windrow by dumping material from a truck onto the original layer, if the layer is less than 18 inches in depth. The preferred method is to place the second layer of feedstock on the windrow with a front end loader. The feedstock for the second and subsequent layers shall be placed by a front-end loader. These feedstock layers shall be placed 12 feet wide at the base, 4-6 feet high at the center and may be triangular or trapezoidal in shape.

The various feedstocks for the second and subsequent layers may be moved to the windrow area from the processing area by dump truck or front end loader. The feedstocks may be dumped next to the windrow under construction to allow easy front-end loader application to the windrow. During the layering of the feedstocks it is permissible and desirable to have a "mixing" of feedstocks in the windrow. The

front-end loader, while placing feedstocks in the appropriate quantities, shall be accomplishing the desired windrow shape. During the layering of the feedstocks it is desirable to check and adjust the moisture of the windrow. This will assure a proper moisture level throughout the windrow during its construction.

Moisture

The percentage of water in the composting material is a vital element in achieving the desired aerobic composting results. The bacteria required in the aerobic process need adequate quantities of moisture, oxygen and nutrients to accomplish particle decomposition. The initial formation of the windrow should strive to achieve a 60% moisture to 40% solid ratio. The water should be applied during the layering of feedstocks to assure adequate mixing and retard runoff. As the composting process begins, the initial turning and temperature rise will create a substantial loss of moisture. After this initial loss of moisture, the desired moisture content should be approximately 50% until initial stabilization of the material begins. A 40% moisture to 60% solid ratio is optimum during the stabilization and curing stages. The moisture content during the composting cycle is critical to producing a satisfactory final product. Excessive water will cause undesirable odors. Insufficient water will slow the decomposing process by "drying" of the bacteria prior to the final energy release of the process. The ICF staff has established good operating and testing procedures to insure proper moisture. The exposed windrows may allow rain to penetrate and change the moisture content. The ICF staff should be aware of current weather conditions and forecast weather when determining moisture additions to the windrows. The shape of the windrow will help reduce moisture penetration by shedding the rain, thereby minimizing excess moisture. The grade of the pad will allow rapid drainage of the composting area. Free moisture on the compost pad should not be allowed to occur. The ICF staff will be responsible for proper drainage of the compost pad.

Oxygen

The composting process is best in the aerobic state -- in the presence of oxygen.

While decomposition will occur in the anaerobic (without oxygen) state, it is much slower and is normally associated with severe odor problems. The windrows should be formed without mechanical compaction. This will automatically leave voids in the materials allowing the area required for oxygen. The windrow should be turned periodically to "fluff" and mix the composting material. This will allow a more consistent availability of oxygen for microbial activity. While oxygen is necessary for aerobic composting, too much oxygen (turning too frequently) will slow down the metabolic process by allowing the heat formed in the pile to escape also causing excess moisture evaporation.

Nutrients

Wood and yard wastes have the nutrients of nitrogen, phosphorus and potassium of which nitrogen is the key element in the composting process. The carbon to nitrogen ratio is a critical element in determining the rate of decomposition. The carbon to nitrogen ratio must take into account the difference between decomposable carbon and total carbon. Different feedstocks will have various levels of decomposable carbon. Normally, during windrow construction, the layering of feedstocks will be designed to allot the proper carbon to nitrogen ratio. This ratio should ideally be in the 20:1 to 35:1 range. The average carbon to nitrogen ratios for specific materials are as follows:

Materials C:N Ratio

*Wood Chips	800:1
*Sawdust	400:1
*Straw	100:1
*Leaves (dry)	90:1
*Leaves (fresh)	40:1
*Grass	20:1

The on-site construction of windrows should have goals of 20-35:1 ratios at the beginning of the composting process. The cured product may see reductions to 10-15:1 through carbon released during the decomposing process. The ICF staff should analyze

incoming materials to determine the availability of low C:N ratio materials to be mixed. The use of partially decomposed or composted materials as a layered feedstock is permissible. This material would have a lower C:N ration and would act as an inoculate and help reduce the C:N ratio of higher feed stocks. (example: materials in the middle of the composting process 3 - 6 weeks, may be layered into a new windrow of leaves and woodchips to provide a lower C:N ratio and aid in achieving the desired decomposition rate.)

Other nutrients, such as phosphorus and potassium are normally not a limiting factor in wood and yard composting activities.

pH

pH is the measure of acidity/alkalinity. The correct pH balance plays another critical role in the composting process. The pH balance affects the quantity of nutrients available to support the microbial activity. The overall metabolic rate may be affected and the heavy metal solubility is reduced if the correct pH balance is not maintained. It has been found through various programs and tests that a pH level in the 6 to 8 range (neutral) is the desired level for the composting process. Lime as an additive to the feedstock is recommended as necessary to increase pH levels.

It is of paramount importance to monitor temperature, nutrient levels, etc. The monitoring procedures shall be performed by the ICF staff.

Physical Properties

The physical properties include particle size, temperature and their relation during the composting process. The role of particle size affects the rate of decomposition. The smaller particle size allows more surface area for microbial activity which results in a rapid decomposition rate and a natural volume reduction. The small particle size must be balanced by the need to have voids (air space) available between particles for oxygen to the microorganisms. This often results in the blending of feedstocks to insure a good mix of small particles and larger "bulking" particles to maximize oxygen availability and microbial activity.

All microorganisms have an optimum temperature range. The ideal range for the decomposition process is 131 to 145 degrees Fahrenheit for several consecutive days. (minimum of 3 days). It is also necessary to insure that all portions of the compost are exposed to this temperature for the minimum number of days to insure the pathogen destruction that must occur to have a quality compost.

Temperature is also a key element to internal windrow activity. If microbial activity is so great that temperatures rise above 150 degrees, this results in destruction of the microorganisms and the retarding or stopping of the microbial activity prior to the complete aerobic decomposition of the feedstocks. If the temperatures do not exceed 131 degrees, the microbial activity is not sufficient and the ICF staff shall troubleshoot and correct the cause of the low temperature.

Temperatures will be taken daily with a Reotemp thermometer approximately 100 feet apart. When temperatures reach a sustained 131 degrees for three days, windrows will be turned with a SCAT compost turner.

The ICF staff will be responsible for mixing feedstocks to achieve the blend of properly sized material and will be responsible for the testing of windrows to insure temperatures are met.

COMPOST STABILIZING AND CURING

The stabilizing and curing of compost are two separate steps which may take place at different locations at the facility.

Stabilizing is the gradual reduction of microbial activity while in the presence of oxygen and moisture. This microbial activity reduction results from the completion of the decomposition of the mixed feedstocks. The stabilizing process shall be done by combining windrows of similar feedstock age. This will maximize the utilization of the compost pad. The ICF staff should record when windrows are combined and keep appropriate records of materials. Stabilizing of the compost usually begins 9 to 12 weeks after windrow construction. Stabilizing is characterized by a substantial drop in temperature after the active composting period. The windrow will also visually be smaller with a distinct particle size reduction. The ICF staff shall use their discretion

on stabilizing periods (normally 3 - 4 weeks) and combining of windrows.

The final curing period of the compost shall be accomplished in the final storage area. The ICF staff shall determine the appropriate time to transfer the compost to the final storage area. Screening to achieve correct particle size and compost quality should occur at this point if the ICF staff determines work conditions are appropriate. The curing process allows for "piling" of materials. The process is characterized by low temperatures and low microbial activity. Some further decomposition of cellulose and lignin may occur during curing.

COMPOST SCREENING AND STORAGE

Screening of the material should occur before transfer from the windrow to the final storage area or prior to off site shipping. The market and end use will have a direct effect on final product size. The screening is the sifting of the compost through a screen to remove large particles and improve the quality and consistency of the compost. Typical screen sizes range from .25 inches to 1.0 inches and are interchangeable. Often, the larger screened particles will have a market allowing this larger material to be the final product. Large material may also be reintroduced as feedstock (the bulking agent) in new windrow construction.

WINDROW REPORT, SAMPLING, QUALITY CONTROL

The composting process is a natural biological process. A composting program may have various degrees of success when compared to the goals and objectives desired. To insure a successful composting program, a systematic approach to recording and reporting shall be employed. The ICF staff shall be the responsible party for recording information for each windrow constructed. The windrow report will contain the following: the amounts and types of feedstocks, percentage of moisture at windrow construction and subsequent applications, the initial temperature of the windrow, periodic temperature of windrow, approximate distance between testing points, date of each turning of windrow, date when windrows are combined, comments section for general notes on processing, weather, etc.

The compost will have unrestricted applications and distribution provided that it contains no pathogenic organisms, is free from offensive odor, and has no sharp particles which would cause injury to persons handling the compost.

The ICF staff should maintain a daily calendar where notations of weather conditions may be recorded. This information will be used in comparing and analyzing windrow reports for processing rates, volume reduction and compost suitability.

The ICF staff shall be the responsible party for achieving and maintaining Quality Controls in the composting process. The success of the composting program is directly related to the quality of the final product. The ICF staff should seek the advice and input of Public Services staff and independent experts when areas of concern develop with regards to quality control of the compost product.

ODOR, DUST, AND VECTOR CONTROL

The ICF is intended to be a positive, environmentally friendly waste disposal alternative. The ICF shall be operated utilizing procedures which will minimize odor, dust and vectors.

Odor control shall be of paramount importance for favorable acceptance and good public relations with users of the facility and surrounding neighbors.

Grass clippings may present the most consistent problem of minimizing odor at the ICF. Grass clippings begin the decomposition process quickly and will go "anaerobic" quite easily. Odors are often released during mixing or turning of the windrow. Several factors should be incorporated to help negate the odor problem:

- Grass shall be processed and turned within 48 hours of arrival at the receiving area
- Windrows should be well aerated
- The ICF staff should be knowledgeable of "aerobic" and "anaerobic" characteristics of windrow composting
- Wind should be minimum or blowing away from neighbors when compost turning occurs (when feasible)
- ICF should maintain large natural buffers to help minimize the effect on neighbors

When areas in the windrows are deemed to be in the "anaerobic" state, an acidic condition occurs in the compost. Often, the application of lime will aid in the neutralizing of the acidic condition and be effective in odor control.

The ICF shall be regularly patrolled for trash, wind blown debris, etc. These materials shall be placed in the appropriate area or containers for proper disposal. It shall be the responsibility of the ICF staff to minimize any problems in this area. The ICF staff shall maintain proper drainage and minimize standing water at the ICF to reduce the possibility of vector problems.

EQUIPMENT

The primary equipment required at the ICF and their general uses are listed below:

- Tubgrinder: used for grinding of bulk wood, limbs, etc.
May also be used to reduce particle size of feedstocks
- Two Front-End Loaders: used to transport, move materials, load trucks, mix feedstocks and form windrows
- Dump Truck: used to transport feedstocks from mixing area to windrows and compost from windrows to final storage area.
- Compost Turning Machine: used to turn, mix, mulch and form the windrows of feedstocks
- Screening Machine: used to screen stabilized compost for product particle sizing, quality and consistency
- Compost Thermometer: used to determine temperatures in the windrows, stabilizing piles and curing piles

STORM WATER CONTROL

The ICF shall be engineered to provide optimum drainage for all areas of the facility.

SECURITY AND NON-CONFORMING MATERIALS

The ICF is intended for use by the public, commercial and governmental bodies for recycling of organic waste. Due to the use of the ICF by diverse groups, safety is of paramount importance. The implementation of the following guidelines should minimize incidents and allow ICF personnel suitable methods for reaction to any occurrences.

SECURITY

The ICF is designed to be a restricted access facility. As a restricted access facility there are posted hours of operation. The various parties will be allowed to use the facility during the posted hours and at other times mutually agreed by City of High Point Public Services staff.

To prevent access during non-operational hours, fencing at all areas of access shall be installed, maintained and used by the ICF personnel. Fencing shall be adequate to control automobile, motorcycles etc. as well as capable of deterring foot traffic. Security of the facility shall be aided by strategic placement of lights to restrict theft and miscellaneous nuisance behavior.

If it is deemed in the best interest of the city, a security guard may be located at the ICF during non-operational hours.

SAFETY

The safety of personnel and users at the ICF shall be of paramount importance. The categories of safety shall include: Human, Equipment and Environmental.

Human safety: shall encompass all people working, delivering materials, or receiving finished product at the ICF. The City of High Point ICF operation shall be conducted in compliance with the applicable safety mandates. All appropriate telephone numbers of emergency agencies should be prominently displayed and all ICF staff shall be familiar with said numbers and location of telephones. Guidelines shall be utilized to insure proper response and reporting in the event of injury.

Property safety: It is the intent of the City of High Point to acquire adequate equipment accomplish the goals and objectives of the ICF. As such, all equipment shall be used in the manner for which it was intended. The ICF staff shall take all necessary steps to maintain equipment in a safe and operational condition. The staff should be familiar with and follow all manufacturers' recommendations in the use and maintenance of the equipment.

Environmental safety: The ICF is designed to be an environmentally friendly yard waste facility. As such, the ICF is designed to generate products which will compliment our environment by replacing lost soil components. The layout and operation of the facility will control the by-products of the composting process to insure the environmental compatibility of the ICF.

FIRE

The ICF will be implementing the natural process of composting. The process develops internal heat to aid in the natural decomposition process. When heat is in the presence of various flammable feedstocks, there is the potential for occasional fires.

The ICF personnel shall be trained in elementary, on-site fire reaction procedures. The ICF personnel shall have on-site, accessible equipment to aid in the early suppression of fire. This equipment shall include but not be limited to: fire extinguishers, fire hoses for the on-site fire hydrant and hand shovels.

The ICF operation shall allow access and movement of emergency fire fighting equipment at all times. The ICF management shall arrange fire drills to test ICF personnel on proper response. Any and all occurrences of fire shall be recorded and analyzed by City of High Point staff and procedures established to prevent the reoccurrence of similar circumstance. Fire shall be reported to the state of North Carolina as required by the permit (41-10-yw).

NON-CONFORMING/UNAUTHORIZED MATERIALS

It is not the intent of the ICF to accept any materials not in the "Acceptable Material" category. Loads shall be inspected by ICF personnel prior to and during off loading to

insure acceptable material types. Any non-conforming/unauthorized materials shall not be allowed to off-load. Any materials found during off-loading shall be reloaded into the delivery vehicle by the driver of the vehicle. ICF personnel shall be knowledgeable of approved disposal options for various non-conforming/unauthorized materials. Drivers with said materials shall be directed to appropriate disposal locations. Prior to the vehicle exiting the ICF with non-conforming/unauthorized material, the vehicle should weigh at the ICF scalehouse to insure accurate weights of incoming materials.

In the event small quantities of non-conforming/unauthorized waste are found in the receiving/processing area, these materials shall be separated by the ICF staff. A location has been established for temporary storage of these materials (40 c.y. roll-off box). ICF personnel shall be responsible for the loading and transporting of said materials to the Kersey Valley Landfill for disposal. Weight and material reports shall be kept of all such disposal loads to facilitate accurate analysis of the ICF program.

Due to the mixing of various feedstocks during the windrow construction and varying sizes and decomposition rates, the final compost product is expected to have large and small particles. Screening of the final product will allow size separation according to screen dimensions. Materials too large for use as a soil amendment, mulch, or other suitable application, shall be classified as "Off Specification" material. Final compost materials which do not meet the conditions for unrestricted application shall also be considered "Off Specification" material. These "Off Specification" materials shall be handled as follows:

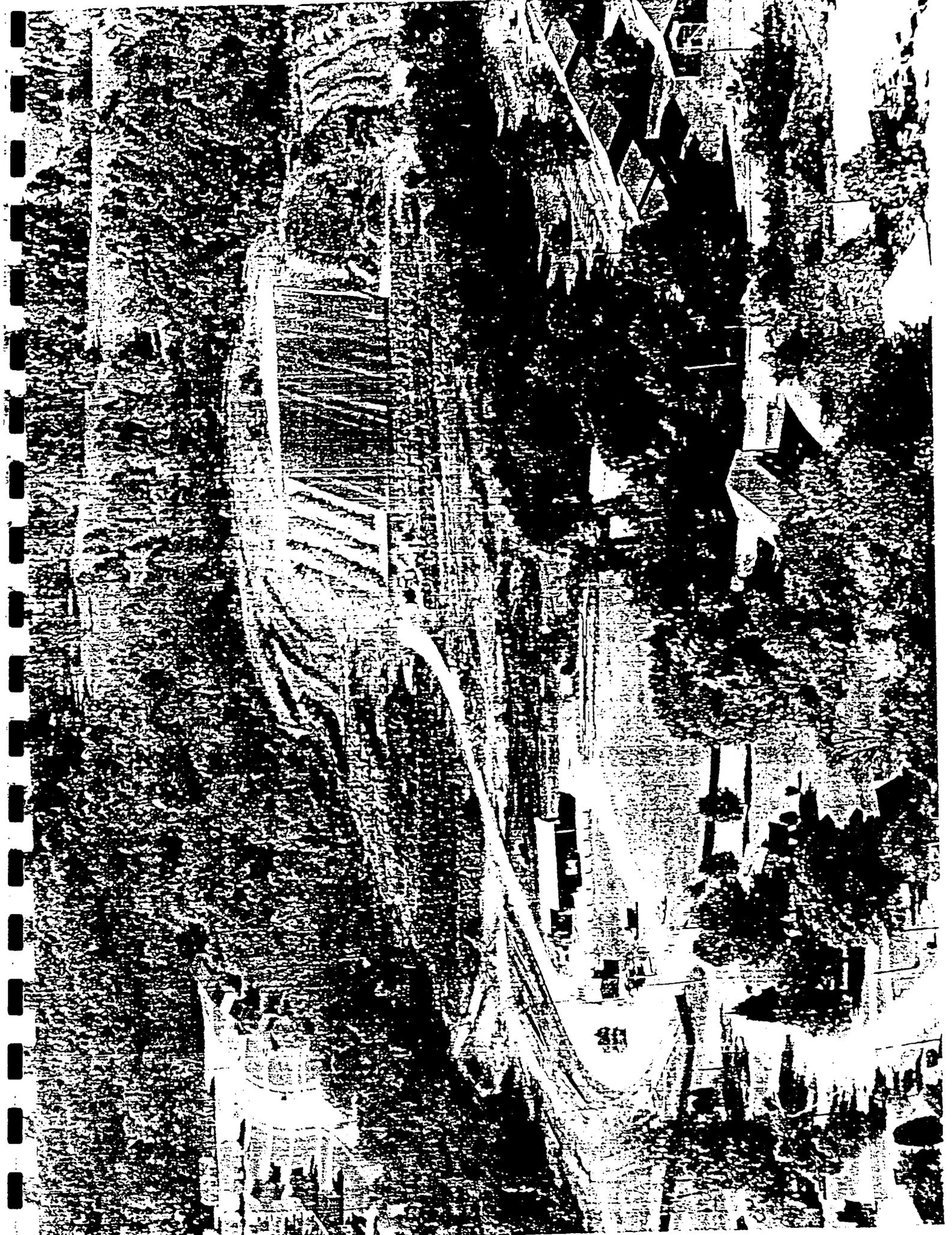
- If the Off Spec. material is suitable for use as a feedstock (bulking agent) it may be reintroduced in new windrow construction. Records of such use shall be included on the windrow report.
- If the Off Spec. material is not suitable for use as described above, and no alternative use is available, the Off Spec. material shall be disposed of in the same manner as described for non-conforming/unauthorized materials. Detail reports of weights, materials and reason for disposal shall be kept by the ICF staff.

SUMMARY

It is the intent of this Operation Plan to provide the basic information required to operate the ICF. While many operational problems and situations have been addressed, not every circumstance can be listed. The plan is designed to allow amending and expansion as day to day operations and experience are realized. All changes or additions to the Operations Plan shall be done by Public Services staff with appropriate consultation if required.

The ICF is a positive method of recycling yard and wood waste generated in the City of High Point area. The ICF may address future growth by expanding the acceptable materials to include other biodegradable organic matter which would produce a marketable final product.

The composting of biodegradable organic matter is given priority on the EPA hierarchy of waste management methods. The ICF will allow the City of High Point a complimentary program to aid in the overall waste reduction goals as established in the Solid Waste Management Plan adopted by the City of High Point City Council.



CITY OF HIGH POINT
INGLESIDE COMPOST FACILITY
Weekly Status Report Date: _____

1. Windrow Formation

Row: _____ Length _____ Height _____ Width _____
Primary Materials _____
Temperature: Mon _____ Tue _____ Wed _____ Thur _____ Fri _____
Moisture: Mon _____ Tue _____ Wed _____ Thur _____ Fri _____
Turned: _____ Misc. _____

Row: _____ Length _____ Height _____ Width _____
Primary Materials _____
Temperature: Mon _____ Tue _____ Wed _____ Thur _____ Fri _____
Moisture: Mon _____ Tue _____ Wed _____ Thur _____ Fri _____
Turned: _____ Misc. _____

Row: _____ Length _____ Height _____ Width _____
Primary Materials _____
Temperature: Mon _____ Tue _____ Wed _____ Thur _____ Fri _____
Moisture: Mon _____ Tue _____ Wed _____ Thur _____ Fri _____
Turned: _____ Misc. _____

Row: _____ Length _____ Height _____ Width _____
Primary Materials _____
Temperature: Mon _____ Tue _____ Wed _____ Thur _____ Fri _____
Moisture: Mon _____ Tue _____ Wed _____ Thur _____ Fri _____
Turned: _____ Misc. _____




**NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES**
DIVISION OF WASTE MANAGEMENT

May 28, 1999

JAMES B. HUNT JR.
GOVERNOR

WAYNE MCDEVITT
SECRETARY

WILLIAM L. MEYER
DIRECTOR

Mr. Duane Jarman
Solid Waste Manager
City of High Point
P.O. Box 230
High Point, North Carolina 27261

Re: City of High Point – Permit [REDACTED]

Dear Mr. Jarman:

I have reviewed the most recent submittal of your application to repermit High Point's Ingleside Composting Facility. Unfortunately some of the information you provided still does not meet the application requirements.

Rule .1405(a)(7)(A) asks for the design capacity of the facility. The design capacity is how much waste the facility was designed to handle per unit of time. Please note the enclosure from another from another application. If you can determine the design capacity from the information provided by Grey Richardson and Associates, you may indicate that number of tons per unit of time in the application.

The information you submitted for a process flow diagram is not consistent with what is normally accepted. Enclosed are examples of process flow diagrams that have been approved.

The information you referred to on record keeping was reviewed again. This information does not appear to meet the requirements of .1408(b). Similarly, the copy of last year's annual report you submitted does not include all the information required in .1408(c). For example, the report does not include the total number of tons for each type of compost produced. Enclosed is a copy of how record keeping and reporting were handled in another application that was approved. These pages are copied from an operation and maintenance manual.

Hopefully the copies of other parts of approved applications will assist you in completing your application. Please keep in mind that we need four copies of a properly completed application. We will of course be more than willing to review a single copy to see if application requirements have been met.

If I can be of any assistance to you in this matter, please feel free to contact me at 919-733-0692, extension 253.

Sincerely,

A handwritten signature in cursive script that reads "Ted Lyon".

Ted Lyon, Supervisor
Composting & Land Application Branch

cc: Hugh Jernigan, Winston Salem Regional Office

h:da/compost/apprev/41-guil/High Point/99-ywrev#3

- (F) A description of the ultimate use for the finished compost, method for removal from the site, and a contingency plan for disposal or alternative usage of residues or finished compost that cannot be used in the expected manner due to poor quality or change in market conditions.

See attached Operation and Maintenance Plan.

- (7) A report on the design of the facility, including:

- (A) Design capacity of the facility;

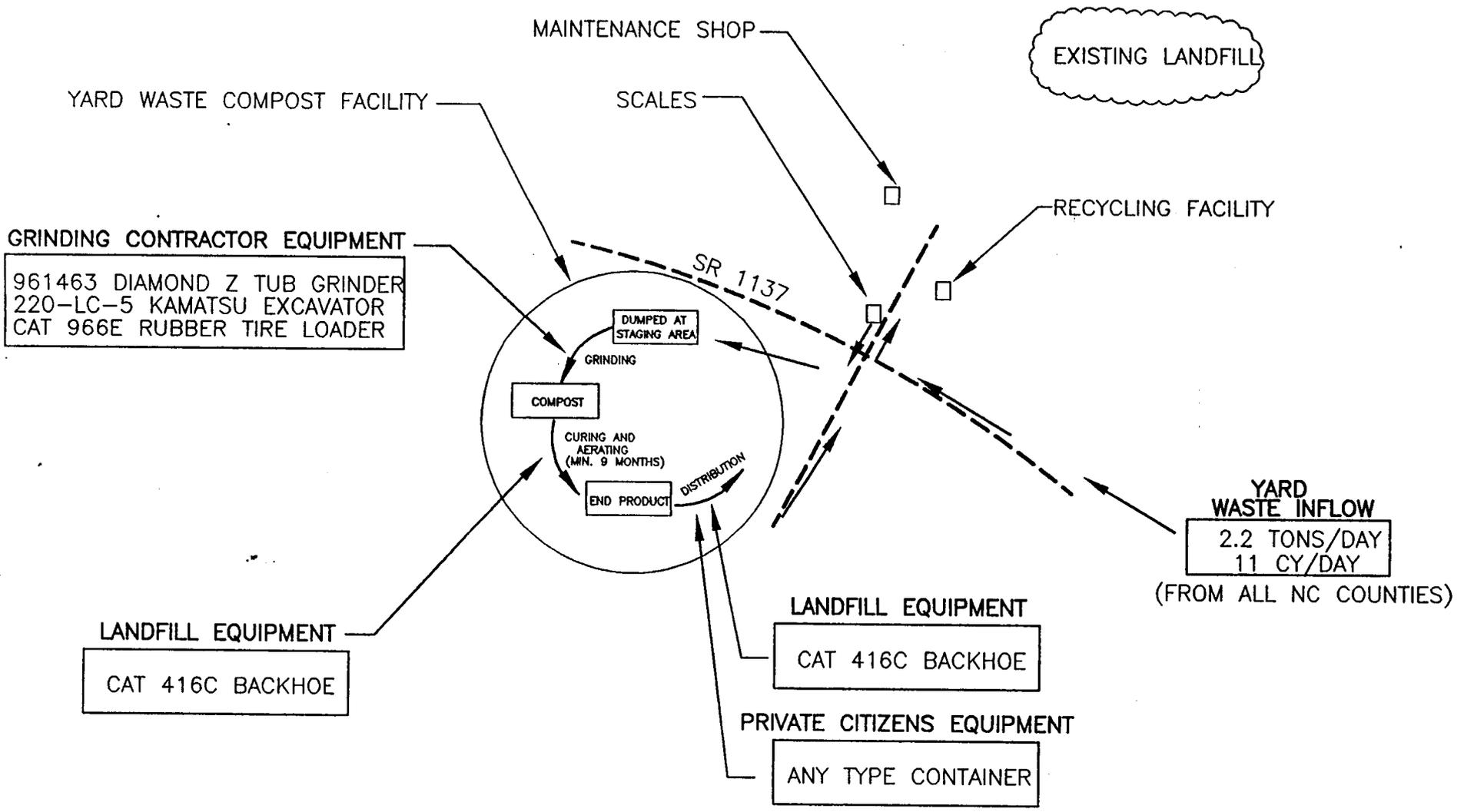
The design capacity of the facility is 100 tons/day. See attached Operation and Maintenance Plan.

- (B) A process flow diagram of the entire facility, including the type, size, and location of all major equipment, and feedstock flow streams. The flow streams shall indicate the quantity of materials on a wet weight and volumetric basis;

See Operation and Maintenance Plan.

- (C) The means for measuring, shredding, mixing, and proportioning input materials;

Uwharrie Environmental contracts with a private grinding company (Charles Blythe Equipment Company, (252) 448-9181, P.O. Box 69, Trenton, NC 28585) that comes on site to grind all yard waste.

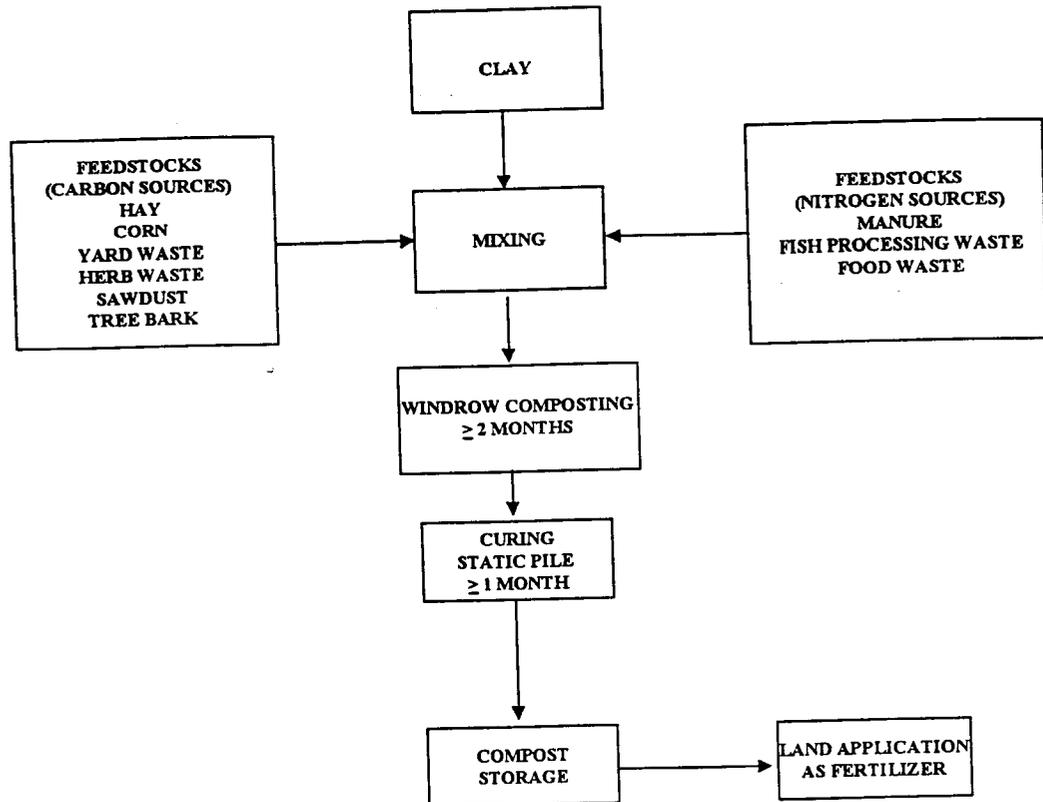


NOTE: ALL LANDFILL EQUIPMENT IS LOCATED AT LANDFILL MAINTENANCE SHOP NORTH OF THE SCALES. ALL GRINDER CONTRACTOR EQUIPMENT IS BROUGHT TO THE SITE AS NEEDED.

PROCESS FLOW DIAGRAM
UWHARRIE REGIONAL RECYCLING FACILITY
YARD WASTE COMPOST FACILITY

N.T.S.

FIGURE 2
GAIA FARMS SOLID WASTE COMPOSTING FACILITY
PROCESS FLOW DIAGRAM



2.7.1 - Materials Receiving/Processing

Based on operational records, the facility processed approximately 950 tons of feedstocks during the 1996 - 1997 operating year. To maintain a minimum two month period in windrows, a maximum of approximately 16,400 CY can be processed in the existing compost area. Feedstocks are delivered by truck to the site and placed in the receiving area. If manure, food waste, or fish waste is to be included in a particular windrow, it will be mixed with the other materials upon being delivered to the site. Windrows are constructed in 33 foot sections. The windrows are constructed by first placing a layer of straw onto the composting pad and then placing the manure or food waste onto the straw. A final layer of straw or other material serving as a carbon source is placed on top of the manure or food waste. Water from a portable water tank is added as needed. The material is then blended together using the windrow turner. Once a 33 foot section is completed, a

Total metal analysis will be completed for coal or wood ash that is to be added to the windrows. The analysis will be completed prior to addition to the windrows to determine compliance with 40 CFR 503.13 Table 1. Samples will be analyzed by the Environmental Compliance division of EMD or by a private laboratory, and analytical results will be forwarded to the division of waste management.

Solid waste compost products will not be distributed until Camp Lejeune has received approval from the solid waste division for its product and distribution scheme. If the test data continues to comply with the testing parameters no additional approvals will be required from the solid waste division.

- c. Testing Schedules: Pathogen analysis will be conducted quarterly. Samples will be collected each quarter from windrows that have completed the 15 day pathogen reduction period during that quarter. These samples will be composited and forwarded to a laboratory for pathogen analysis.

Analysis for foreign matter, inerts, total metals, and total nitrogen will be completed at intervals of every 20,000 tons of compost produced or once every six months, whichever comes first. Samples from each windrow will be composited into a single batch sample until the testing interval is reached.

As previously stated, solid waste compost products will not be distributed until Camp Lejeune has received approval from the solid waste division for its product and distribution scheme. To facilitate the approval process, samples from the first composting windrow should be collected and analyzed following the 15 day pathogen reduction period. These samples should be analyzed for pathogens, foreign matter, inerts, total metals, and total nitrogen. The analytical data should be forwarded to the solid waste division. Sampling the first compost windrow will speed up the approval process and avoid a stockpile of cured compost that cannot be distributed. Following initial approval from the solid waste division, the testing schedule provided above should be followed. If the test data continues to comply with the testing parameters no additional approvals will be required from the solid waste division.

3. Reports and Forms

a. Reporting Requirements

An annual report for the period July 1 to June 30 will be submitted by all facility owners or operators to the Division by August 1, 1998 and every August 1 thereafter and will 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 each major collection point on base;

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 the operational plan.

Yearly totals of solid waste received and composted will be tracked by the P2 section of EMD for annual recycling reporting.

b. Record Keeping Requirements

The P2 section will record and maintain records for a minimum of five years. Records will be available for inspection by Division personnel during normal business hours and will be sent to the Division upon request:

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



CITY OF HIGH POINT

NORTH CAROLINA

April 15, 1999

Mr. Ted Lyon
NCDENR
Composting & Land Application Branch
401 Oberlin Road, Suite 150
Raleigh, NC 27605



Re: City of High Point – Permit [REDACTED]

Dear Mr. Lyon:

This is in response to your letter written March 23rd. In it you listed seven items which you could not locate in our application for a renewal of our permit. I will respond to each item individually.

1. *The design capacity of the facility as required in .1405 (a)(7)(A) of the Solid Waste Compost Rules.*
This is found on page two of the report from the firm Greg Richardson and Associates. Under the section "FACILITY CAPACITY" it states that the facility "provides, at a minimum, two year's operating capacity at the estimated 10,000 tpy intake."
2. *A process flow diagram as required in .1405 (a)(7)(B).*
I have attached a flow diagram for the incoming materials.
3. *A product label or handout as required in .1405 (a)(8).*
I have attached a copy of instructions and information for the facility products.
4. *Recordkeeping requirements as required in .1405(a)(10)(A).*
This facility uses weekly reports. A copy is included in the back of the Operations Manual. A lists of procedures used in inspecting incoming material, monitoring, sampling and analyzing the compost process and final product, testing schedule, and recordkeeping requirements are discussed on pages 7-14 of the Operations Manual – and in particular on pages 13 and 14 under the section labeled, "WINDROW REPORT, SAMPLING, QUALITY CONTROL."
5. *An outline of the annual report as required in .1405 (a)(10)(C).*
I have attached a copy of last year's annual report.
6. *The information you submitted refers to a grinder, a screen, and temporary waste storage for screenings. The location of these items, or their location when in at the site, should be included on the site plan.*
 - The grinding of wood waste, and therefore the location of the tubgrinder occurs in the section labeled "Wood Waste Processing Area."
 - The screening of compost occurs at varying locations within the area labeled "Windrows." Therefore, there can be no one designated spot for the screener.
 - I have indicated on the attached flow diagram of the site plan the location of the temporary waste storage for screenings – which is actually a 40 yard roll-off dumpster.

7. *An indication in the operation and maintenance information that material other than those specifically approved by the Division of Waste Management shall not be managed at the facility.*

This is indicated in the Operations Manual on pages 7, 18 and 19. On page seven under the section "ACCEPTABLE MATERIALS" the materials are listed as:

- untreated wood waste
- yard waste (leaves, grass, brush, limbs)
- other biodegradable waste determined as suitable for the composting process by authorized personnel and by section .1400 of the Solid Waste Management Rules of North Carolina

By stating it must be authorized by "section .1400 of the Solid Waste Management Rules of North Carolina," the manual indicates that the Division of Waste Management approves the materials. The manual further states on pages 18 and 19, "any non conforming/unauthorized materials shall not be allowed to off-load."

The City of High Point hopes that this answers all your concerns. In anticipation of this completing the application I have included four copies of information previously submitted and all additional material indicated in this letter. If you have questions or further comments, please contact me at (336) 883-3215. Should you wish to visit our facility again please let me know. Your consideration to this application and approval is appreciated.

Sincerely,



Duane Jarman
Solid Waste Manager

NORTH CAROLINA DEPARTMENT OF
ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WASTE MANAGEMENT

March 23, 1999

JAMES B. HUNT JR.
GOVERNOR

WAYNE MCDEVITT
SECRETARY

WILLIAM L. MEYER
DIRECTOR

Mr. Duane Jarman
Solid Waste Manager
City of High Point
P.O. Box 230
High Point, North Carolina 27261

Re: City of High Point – Permit #41-10

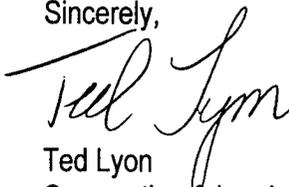
Dear Mr. Jarman:

The Division of Waste Management, Solid Waste Section has reviewed the information you submitted to have the City of High Point's Ingleside Compost Facility permitted. The following information could not be located in the application.

1. The design capacity of the facility as required in .1405(a)(7)(A) of the Solid Waste Compost Rules.
2. A process flow diagram as required in .1405(a)(7)(B).
3. A product label or handout as required in .1405(a)(8).
4. Recordkeeping requirements as required in .1405(a)(10)(A).
5. An outline of the annual report as required in .1405(a)(10)(C).
6. The information you submitted refers to a grinder, a screen, and temporary waste storage for screenings. The location of these items, or their location when in at the site, should be included on the site plan.
7. An indication in the operation and maintenance information that materials other than those specifically approved by the Division of Waste Management shall not be managed at the facility.

Please note that, once we have determined that the application is complete, four complete copies will be required. If you have questions, please feel free to contact me at 919-733-0692, extension 253.

Sincerely,



Ted Lyon
Composting & Land Application Branch

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CITY OF HIGH POINT
NORTH CAROLINA

February 10, 1999

Mr. Ted Lyon
NCDENR
401 Oberlin Rd., Suite 150
Raleigh, NC 27605

RE: CITY OF HIGH POINT - 3001 INGLESIDE DRIVE - PERMIT #41-10

Dear Mr. Lyon:

As we have previously discussed, you will find enclosed an application for a permit renewal for our composting facility.

Ingleside Composting Facility is a Large Type 1 facility, and complies with Section .1400 of the Solid Waste Management Rules and Laws for the State of North Carolina. This facility has been in existence for five years and very little has changed since the initial opening. We are in good standing with all inspections from every State department and division.

I believe we have addressed all the concerns in your letter addressed on 12/12/98. We appreciate the verbal extension from Mr. Matthews and ask that you review the attached information and reply as soon as possible as to the status of our permit. Thank you for your attention to this matter.

Very truly yours,

A handwritten signature in black ink, appearing to read "Duane Jarman".

Duane Jarman
Solid Waste Manager

dj



February 20.doc