

APPLICATION FOR A PERMIT TO OPERATE A SEPTAGE LAND APPLICATION SITE

North Carolina Department of Environment and Natural Resources
Division of Waste Management – Solid Waste Section
401 Oberlin Rd., Ste. 150, Raleigh, N.C. 27605



I. Site and Operator Information

1. Applicant Waste Management of Wilmington
Address 3920 River Rd
Wilmington, NC 28412
Phone 910-798-1238

2. Contact person for site operation (if different from applicant): Gerald M Murrell
Title or position Septic Operations Manager Phone: 910-798-1238
Address 3920 River Rd
Wilmington, NC 28412

3. Landowner Waste Management of Carolinas, Inc
Address 3920 River Rd
Wilmington, NC 28412

4. Site Location: County Columbus State Road Number HWY 211
Directions to site: Hwy 74/76 West, Left on Hwy 211 towards Supply. Approx 10 miles.

5. Indicate whether request is: new renewal modification

For a permit renewal or modification, provide the following information:

Existing site permit number: SLAS permit expiration date:

6. Number of acres meeting the requirements of the N.C. Septage Management Rules:

7. Substances other than septage or grease trap pumpings previously disposed of on the site:
(a) None , or (b) Attach a list indicating other substances, the amounts discharged, and the dates of discharge.

8. Attach written, notarized landowner authorization to operate a septage disposal site signed by the landowner (if the permit applicant does not own the property). ***If a corporation owns the land use a corporate landowner authorization form. If limited liability company owns the land, use a limited liability company landowner authorization form.***

9. Attach site evaluation report, including aerial photograph and soil analysis with metals results, unless the Division prepared the report.

10. Attach a vicinity map (county road map showing site location).

(over)



II. Site Management Information:

The following information shall be included with the application form:

- 1. Nutrient Management Plan
- 2. Soil Erosion and Runoff Control Plan
- 3. Alternative plan for disposal (detention facility permit number or wastewater treatment plant authorization): SDTF-65-01

- 4. Types of septage proposed to be discharged at the site (check all that apply):
 - (a) Domestic septage pumped from septic tanks X
 - (b) Grease trap pumpings X
 - (c) Portable toilet waste X
 - (d) Commercial / Industrial septage X
- 5. Proposed treatment method of each type of septage to be land applied (use additional paper to explain if necessary): Human septage is to be lime stabilized for a min. of 30 minutes until it reaches a PH of 12. Grease trap waste will be lime stabilized for a min. of two (2) hours until it reaches a PH of 12 before land application.

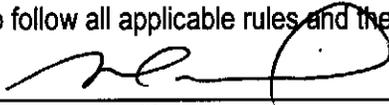
- 6. Proposed method of applying septage to land, including septage distribution plan if required * (use additional paper to explain if necessary): Hose tow spray irrigation system to equally distribute all waste.

- 7. Demonstration from the appropriate state or federal government agency that the land application site complies with the Endangered Species Law ** or if any part of the site specified is not agricultural land (use additional paper to explain if necessary): No endangered Plants or Animals have been determined to be in the spray irrigation site.

III. Certification

I hereby certify that:

- 1. The information provided on this application is true, complete, and correct to the best of my knowledge.
- 2. I have read and understand the N.C. Septage Management Rules, and
- 3. I am aware of the potential consequences, including penalties and permit revocation, for failing to follow all applicable rules and the conditions of a Septage Land Application Site permit.



 Signature***

9/07/10

 Date

Gerald M Murrell
Print name

Septic Operations Manager
Title

Note: This application will not be reviewed until all parts of the application are complete.

*** Refer to Section .0821(e) of the N.C. Septage Management Rules.**

**** Refer to Section .0821(g) of the N.C. Septage Management Rules.**

*****Signature of company official required.**





North Carolina Department of Environment and Natural Resources
Office of Conservation, Planning, & Community Affairs

Beverly Eaves Perdue, Governor

Linda Pearsall, Director

Dee Freeman, Secretary

February 1, 2011

Dr. Robert Rubin

Subject: New Septage Site in Columbus County; south of NC 211, near Juniper Creek, Columbus County

Dear Dr. Rubin:

The Natural Heritage Program has a number of records of rare species, significant natural communities, significant natural heritage areas, and conservation/managed areas within a mile of the project area, though none technically within the strict confines of the project site.

Along the eastern border of the project site is the Juniper Creek Game Land, owned by the N.C. Wildlife Resources Commission (see enclosed map). Their boundary shares a common boundary with the Waste Management Company tract. The Wildlife Game Land boundary is essentially the same as the boundary of the NC Natural Heritage Program's Juniper Creek Floodplain significant natural heritage area; this natural area is rated of State significance.

About 0.05-mile to the west of the project site is a location of the State Special Concern Venus flytrap (*Dionaea muscipula*); the site is D-rated (poor viability) and was last seen in 2000, though it is not certain if the population has been looked for in the intervening time. About 0.3-mile to the west of the project area is a 1987 record of Henslow's sparrow (*Ammodramus henslowii*), which is State Special Concern and a Federal Species of Concern. This species is typically found in early-succession clearcuts, and thus the species is not likely to still be present at that site (as the vegetation would be too tall), though it could appear anywhere in the general area where early-succession tracts are present.

About 0.45-mile to the north of the proposed site is the Hoy Savanna Remnant significant natural heritage area, rated of Regional significance. Locations of Venus flytrap and the State Threatened spring-flowering goldenrod (*Solidago verna*) have been found there – the flytrap last reported in 2002 and the goldenrod in 1994.

Our Program is concerned about potential runoff of septage to the east and south toward the Juniper Creek Game Land and the natural area at this game land. We would like to see that Waste Management has controls in place to prevent impacts to both the terrestrial part of the game land and natural area and also the waters within these sites, including Juniper Creek itself. The site is also quite close to the Venus flytrap population just west of the site. Again, it is important that runoff or other ground disturbances not impact this small population of flytraps. The Hoy Savanna Remnant appears to be located far enough away from the septage site that no impacts are expected. Likewise, no impacts are likely to the Henslow's sparrow site, if it still exists in the general project area.

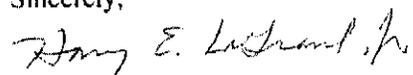
1601 Mail Service Center, Raleigh, North Carolina 27699-1601
Phone: 919-715-4195 \ FAX: 919-715-3060 internet: www.oneNCSaturally.org

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Natural Resources Planning and Conservation

Please do not hesitate to contact me at 919-715-8697 if you have questions or need further information.

Sincerely,

A handwritten signature in cursive script that reads "Harry E. LeGrand, Jr.".

Harry E. LeGrand, Jr., Zoologist
Natural Heritage Program



**SAMPLE NUTRIENT MANAGEMENT PLAN FOR
SEPTAGE APPLICATIONS TO BERMUDA GRASS, RYE GRASS and PINES
PROPOSED WASTE MANAGEMENT FACILITY
Riegel Ridge Site, Waste Management of Wilmington
COLUMBUS COUNTY, NC**



Waste Management of Wilmington is proposing to apply dewatered septage, grease trap waste, and portable toilet waste onto a wholly owned parcel in Columbus County. The area available for the proposed land application operation is approximately 40 acres of the approximately 600 acre site. Clearly only a small portion of the property is intended to host this land application operation. The liquid loading to the site is proposed as 50,000 gallons per acre per year during this initial year of the operation. This loading is dictated by NC Rule for new operations.

On occasion, the dewatering operation may be inoperable; should that occur the untreated liquid will be stored at the Wilmington facility, but should the storage capacity be compromised, the untreated liquid may be applied to this site. Should that occur, untreated liquid loading to the pines would be reduced to 25000 gallons per acre while the load to the grassed area would remain at the proposed 50000 gallon load.

The site contains four (4) distinct areas identified as receiver areas for this liquid waste. These are listed as fields 1 through 4 on site maps contained in the application for the permit. Fields 1 and 4 are intended to remain in a pine stand. Fields 2 and 3 are proposed as small grain and Bermudagrass. This plan is intended for the initial year of the Waste Management land treatment operation. Subsequent investigation and nutrient plans will be submitted prior to expiration of this initial permit.

A. General Information:

- 1. Periodic sampling (at least 4/year) of the dewatered septage/fog/portable toilet waste will be conducted for waste analysis. (optional)**
- 2. Field 1 contains approximately 12 acres and Field 2 contains approximately 10 acres, field 3 contains approximately 6 acres, and field 4 contains approximately 5 acres. The attached copy of the aerial photograph for the site shows field boundaries and identifications. In addition, the GPS coordinates have been provided through DWM.**
- 3. The soil series exhibiting the lowest productivity on the site include Goldsboro, Foreston and Noboca on portions of the site intended to receive the dewatered materials. RYE calculations based on the Noboca series.**
- 4. Septage will not be applied where the site is untrafficable (untrafficable is defined as soil that will allow a loaded truck to leave a depression in sod greater than 3 inches in depth).**

5. All nitrogen recommendations for forages will be 75% of the realistic yield expectation nitrogen rate should the forage be grazed. This common provision in a standard nutrient plan is Not Applicable since the grassed sites (fields 2 and 3) will not be grazed, only harvested as hay
6. Septage storage shall be provided to account for the average volume of septage pumped per week, or an alternative plan, such as disposal at a waste treatment plant, should be in place. Storage provided at Waste Management parent facility in Wilmington, NC.

B. Crops to be grown and approximate planting times:

1. Fields 2 and 3, including buffer zones, will be seeded in coastal Bermuda grass at a rate of 25 to 30 lb/acre in March-April, 2012 in order to establish a permanent stand. Immediate seeding will be small grain to provide winter cover at a rate of 125 lb-rye, wheat, or oats in September-October, 2011. These recommended rates follow from NC Seeding Rate Guide. Pine in fields 1 and 4 will be thinned and utilized as a receiver crop in year 1 through 5 of this project. To promote stand establishment the following steps will be taken the first year (weed control/reduced number of harvests/reduced vehicular traffic, etc): weed control will be implemented in fall 2011 and spring 2012 and limited access will be afforded during germination.

Areas that develop with less than 90% groundcover by Bermudagrass will be re-seeded with Bermudagrass at a rate of 10 lb/acre in March each year until a stand density of 99% is realized.

Each year thereafter, the field will be overseeded with annual rye grass at a rate of approximately 40-50 lbs/acre September-October (drilled).

2. Field 2 will be treated the same as Field 3. Fields 1 and 4 will remain in a pine stand. The pine stand will be improved in accordance with recommendations provided by Dr. Douglas Frederick, NCSU Forestry and Mr. Scott Frederick, E.I., and president SWE Group.

C. Nitrogen needs for crops grown:

FIELDS 2 and 3: RYE = Realistic Yield Expectations N App. Rate + Suggested N application rate based on RYE for soil type. NOTE: The most restrictive of the soil resources was selected as the benchmark for this site. The nutrient load will be significantly reduced below this maximum because initial year loadings are limited to 50,000 gallons per acre.

<u>Crop (hay)</u>	<u>RYE</u>	<u>N App. Rate</u>	<u>lbs N/acre</u>
Coastal Bermudagrass	5 tons/acre x	40 lbs N/dry ton =	200
Annual rye grass	3.0 tons/acre x	25 lbs N/dry ton =	75
		Total =	275 (This is below

recommended in NRCS)

Pine stands in FIELDS 1 and 4: RYE = Realistic Yield Expectations N App. Rate + Suggested N application rate based on RYE for soil type. NOTE: The most restrictive of the soil resources was selected as the benchmark for this site. The nutrient load will be significantly reduced below this maximum because initial year loadings are limited to 50,000 gallons per acre. This liquid load is based on the reduced nutrient content in the dewatered materials.

Crop (hay)	Site Index	N App. Rate	lbs N/acre
Pine (Loblolly)	86	80	80
Pine (Longleaf)	76	80	80

D1. Relative application rates for Fields 2 and 3:

Month	Field	
	1	2
January	Low	Low
February	Low	Low
March	Medium	Med
April	High	High
May	Medium	Med
June	High	High
July	High	High
August	Medium	Med
September	Medium	Med
October	Low	Low
November	Low	Low
December	Low	Low

D2. Relative application rates for pine stands, fields 1 and 4

Month	Field	
	1	2
January	Low	Low
February	Low	Low
March	Medium	Medium
April	Medium	Medium
May	Medium	Medium
June	Medium	Medium
July	Medium	Medium
August	Medium	Medium
September	Medium	Medium
October	Low	Low
November	Low	Low
December	Low	Low

None = 0 gallons; Low = 5,000 gallons
 Medium = 10,000 gallons; High = 15,000 gallons

NOTE: Cumulative application rate is not to exceed the permitted application rate. Annual application rate is not to exceed 50,000 gallons per acre.

E. Application Method

The preceding information is based on septage being evenly applied over the entire permitted site by Hose reel surface application/irrigation spraying in a full circle or part circle pattern depending on field position and a tractor towed tank vehicle to accommodate portions of the site not easily irrigated. Portions of the site that are not irrigated will be applied with a tractor towed spreader vehicle. The initial or start-up distribution plan in fields 2 and 3 is to utilize a tractor towed operation until such time as the operation is well established and the hose reel is deemed most suitable to cover areas. The irrigation operation will begin in fields 1 and 4 (pines). A layout for the irrigation system is provided.

F. Additional Fertility Requirements

Phosphorus and potassium will be added in accordance with the soil test results for the crops grown. These requirements are contained in the application to utilize the area as a receiver (Rubin and Graham, 2010). Only minimal phosphorus and potassium will be added to support germination. A more thorough nutrient addition program will be implemented as the site is assessed as a receiver area. Dewatered septage, FOG and Portable toilet waste analysis is available, the phosphorus fertilizer requirement can be reduced by accounting for the amount of phosphorus in the septage. The analysis suggests these materials contain sufficient nutrient to support plant growth. The hydro-seeding operation proposed will supply sufficient nutrients to support germination.

The buffer areas will be fertilized with 100 lbs/acre of 10 - 10 - 10 N-P-K fertilizer to maintain production based on soil test results. These areas will be hydro-seeded and fertilized simultaneously or fertilized and seeded with a drill or surface applicator.

G. Harvest of the crops and their use:

1. The Bermudagrass will be cut as hay and baled whenever it reaches approximately 12 inches in height, or roughly every 4 to 6 weeks beginning in June. At least three harvests will be made from each fields 2 and 3 each year.
2. The rye grass will be cut as hay and baled in March and April of each year from Fields 2 and 3, respectively.
3. A 30-day waiting period must be observed between the last application of septage and harvest. Beginning about the first of March each year, septage will be applied strictly to Field 2 while the rye on Field 3 is undisturbed for 30 days. After 30 days the rye in Field 2 will be harvested and septage application switched to Field 3. After an additional 30 days, in late April to early May, the rye will be harvested from Field 2. By early May, a rotation will be established which can cycle every 30 to 45 days between Bermuda grass harvests. By the end of October, rye will have been planted and the entire site will be available for septage application until the end of February the following year.

4. The hay will be sold to a local farmer to feed his beef cows and horses.

5. Pine stands will be thinned as directed by Dr. Frederick. Pine will remain in place for at least 2 years. After 2 years, the pine operation will be reassessed. Two potential options include replacing the natural regeneration with an established plantation or replacing the pine with Bermudagrass.

SOIL EROSION AND RUNOFF CONTROL PLAN

Given that slopes on this site do not exceed five percent, a 50 foot buffer, planted in Bermuda and rye grasses or maintained in natural, undisturbed pine and forest vegetation should suffice to prevent septage waste from migrating off of the fields. More severe site conditions could require that soil erosion structures be installed before septage can be applied, but none were observed in the assessment.

Submitted by:  Date: 8/12/11
Site Operator

This nutrient management plan prepared with cooperation from both Scott Frederick and Robert Rubin.

Plan prepared and certified by:

Scott Frederick  Date: 7/13/11

3216 Byers Dr, suite B
Raleigh, NC, 27607
919 831 1234
Certification: _____

Plan prepared in cooperation with:

 7/13/11

A. R. Rubin,
192 Ferrington Post
Pittsboro, NC, 27312
919 545 3066

Forestry Report for Fields 1 and 4

Land Application site, Columbus County, North Carolina

For

Waste Management of Wilmington

**Douglas Frederick, Ph.D
Professor of Forestry**

I have reviewed the Permit Application document prepared for Waste Management of Wilmington by Dr. A.R. Rubin and Dwayne A. Graham, RS, LSS and I visited the site on September 23, 2010. The site is intended to serve as a land application site for low strength liquid generated at a septage/grease trap waste dewatering facility to be located at the Waste Management facility in Wilmington. At the site, I inspected fields 1 and 4, took soil borings and sampled vegetation. Based on this information, I have concluded that these fields are well-suited to the proposed use of applying 50,000 gallons per year of liquid, dewatered waste. This volume is near that recommended on the pine stand in the site report (Rubin and Graham) referenced above.

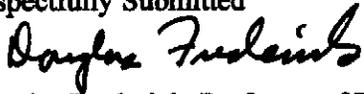
The liquid is to be applied through a high pressure irrigation system and a small nozzle should be utilized in the system to atomize liquid to the greatest extent possible. This will facilitate distribution of the liquid into the pine stand. Such application should have little or no negative effect on the vegetation on these fields at this low application rate. In fact, since these soils have significant limitations in nutrient content and availability plus, serious moisture retention issues, this liquid application should improve overall growth conditions for the vegetation. Also, the proposed design of spray corridors which specify a set of lane parallel to the major pull lanes and a set of lanes perpendicular to the pull lane for improving the penetration of the this wastewater will result in a relatively even distribution of the liquid over the site. This is important and will minimize the effect of sporadic over-application and possible negative effects on nutrient-sensitive species such as *Pinus palustris*, longleaf pine as well as the potential under-application associated with the dense cover.

This intended use should allow effective use of the area for several years, at which time a major thinning could take place with removal of a marginally valuable chip crop. If major thinning were accomplished now, the value of the stand will be reduced dramatically; delaying the thinning between 3 to 5 years will generate a larger biomass harvest. With the lane cutting proposed, a series of rain gauges could be set in the stands to measure uniformity of coverage and loadings could be adjusted if necessary.

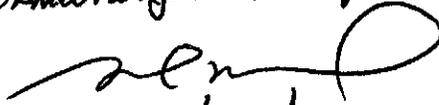
The density of pine on these areas is high and the sites are fully-occupied for this age. The spray line corridors which bisect the stand parallel to the pull lanes and cross every 60 to 100 feet across the pull lanes will help in breaking up some of the inter-tree competition on the sites and will allow more expression of dominance, at least adjacent to the corridors. This will increase the potential for using the water and nutrients sprayed on the sites. There is a high capacity for the pines and associated vegetation to utilize this wastewater and nutrients. The vegetation will also intercept significant amounts of the sprayed wastewater so there will be some direct evaporation. Monitoring of the site should include observation of any direct effects to vegetation this wastewater may have. For example, needle yellowing, browning or mortality should be noted by species. I don't expect there should be any of this but it should be noted during this 9-month trial period, if it occurs.

This is a good site for wastewater application. After this trial application period, I recommend that the sites be reevaluated and decisions made on continuing at these application rates or increasing rates as needed.

Respectfully Submitted



Douglas Frederick, Professor of Forestry
North Carolina State University

Acknowledged Receipt:

10/27/10

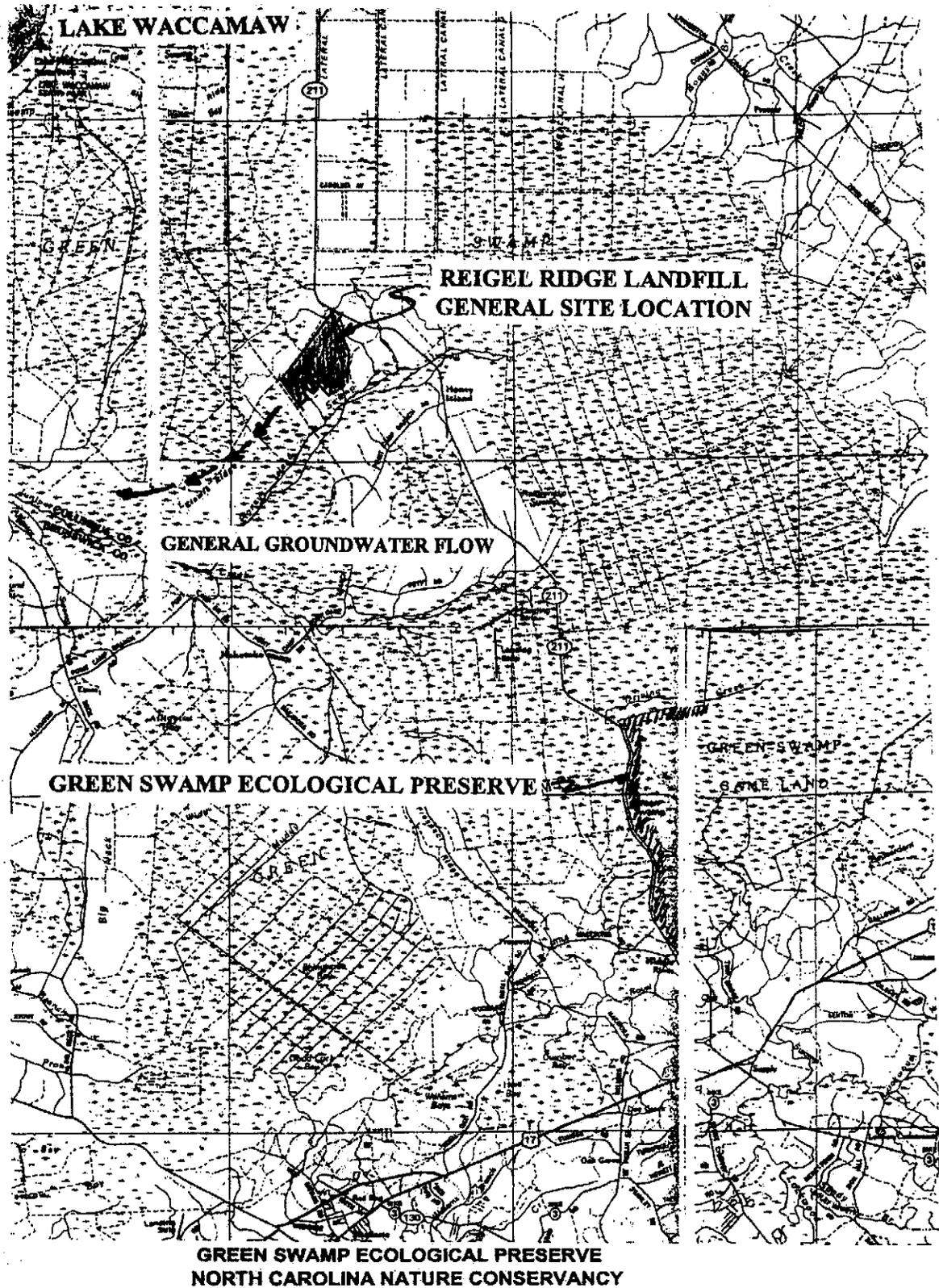


FIGURE 4.8F

RIEDEL RIDGE LANDFILL
PROXIMITY MAP

Marlowe, Dretzler & Associates
219 N. Boylan Ave.
Raleigh, NC 27603
919-834-1117

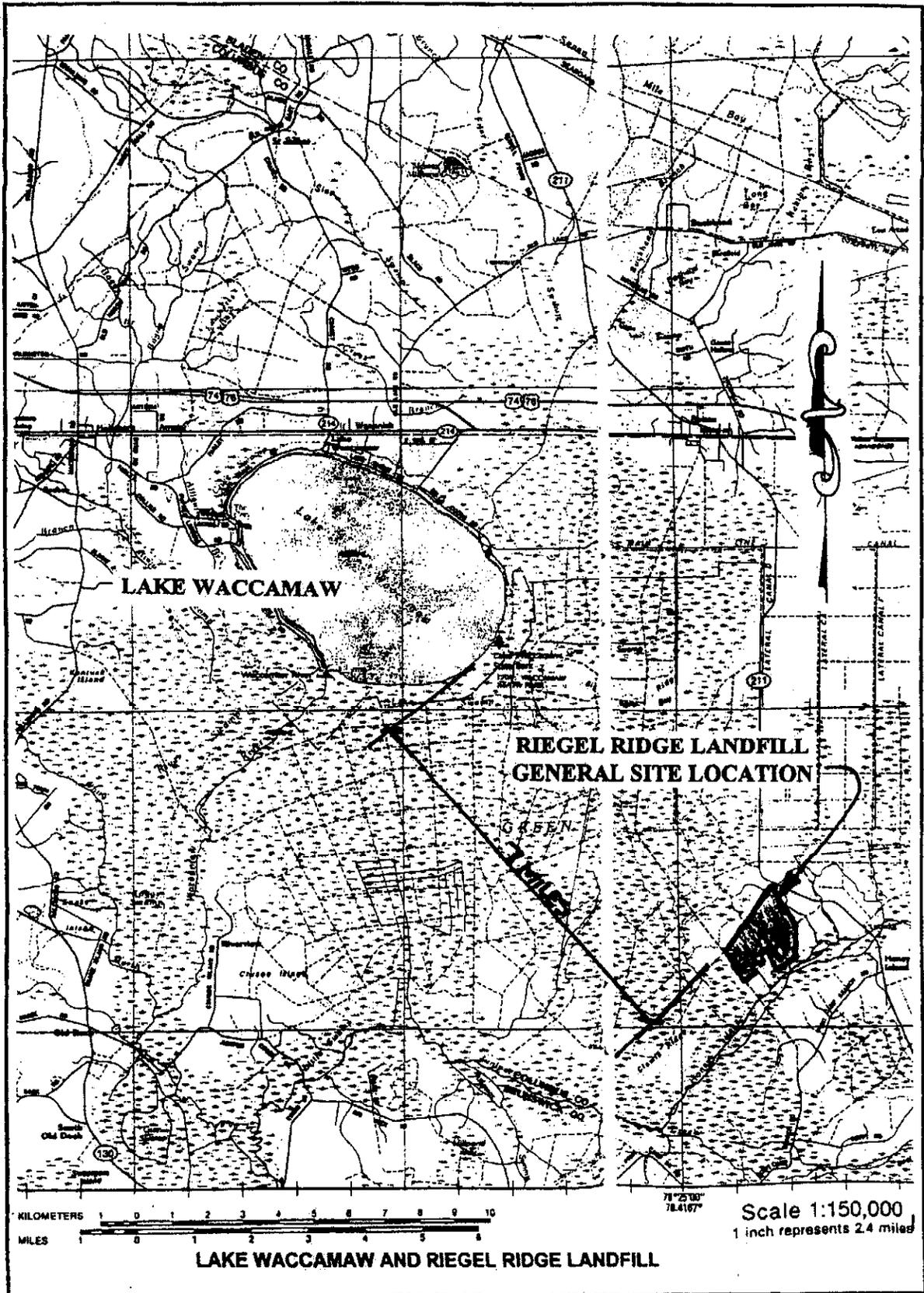


FIGURE 4.8D

**RIEGEL RIDGE LANDFILL
PROXIMITY MAP**

Marlowe, Dretzler & Associates
219 N. Boylan Ave.
Raleigh, NC 27603
919-834-1113



3920 River Road
Wilmington, NC 28412

January 31, 2010

Mr. Michael Scott
NCDENR - Division of Waste Management
Compost and Land Application Branch
401 Oberlin Road.
Raleigh, NC

Re: Clarification of Intended Use
Proposed Septage Land Application Site
Permit No. SLAS-24-08
Bolton, Columbus County, NC

Dear Mr. Scott;

As you are aware, Waste Management of Wilmington (WM) has submitted an application to the Division of Waste Management (DWM) to permit a Septage Land Application Site (SLAS) in Columbus County, North Carolina (Permit No. SLAS-24-08). As stated in the permit application, the proposed scope of the project includes the beneficial reuse and recovery of the liquid and nutrient content of treated and dewatered domestic septage, portable toilet waste, and grease trap residuals. In accordance with the approved Nutrient Management Plan, the liquid phase will be land applied on approved cover crops at conservative loading rates, but at levels consistent with the needs of the proposed crops (pine, Bermuda Grass, and others). The solid phase may be utilized in compost and/or as a fuel source.

As defined in North Carolina General Statute (GS) 130A-290, Solid Waste Management, domestic treatment plant septage includes, but is not limited to, scum or solids removed in primary, secondary, or advanced wastewater treatment processes and a material derived from domestic treatment plant septage.

The SLAS permit application includes a series of "check boxes" to describe the activity proposed on the site. The last of these check boxes include the category of commercial/industrial septage. These sources are linked in the permit request. As defined in NCGS 130A-290, industrial septage includes "waste resulting from any process of industry." During the permit review process, DWM approved the application of industrial septage for this project.

Although Solid Waste Management Rule 15A NCAC 13B.0835 does allow for land application of industrial septage, we must clarify that the operation proposed for this project will not include industrial process waste. Domestic septage from industrial and commercial facilities may be included, but due to Waste Management's internal Industrial/Commercial (Special) Waste Policies, industrial process waste will not.

If you have any questions or require additional information, feel free to contact me at (910) 798-1221.

Sincerely;

Chris McKeithan
District Manager
Waste Management of Wilmington



A. R. Rubin and Associates
Sustainable Environmental Solutions
192 Fearington Post
Pittsboro, NC, 27312

Mr. Chester Cobb

Compost and Land Application Branch

NCDWM

491 Oberlin Rd

Raleigh, NC, 27695

Dear Mr. Cobb,

Subject: Distribution plan

Please find attached a distribution plan for the liquid waste generated at the Waste Management facility in Wilmington, NC. The site map demonstrates areas proposed as receiver for the irrigation operation as well as the "honey-wagon" approach. The total area measures approximately 40 acres in the four (4) fields. Field sizes range between approximately 5 and 15 acres each.

Portions of the field suited for irrigation may receive application with either the tank truck or the hose reel. Areas not depicted by the irrigation will receive only tank application. In no instance will the load be greater than 50,000 gallons per acre per year during this initial year of the operation.

Thank you for your attention to this material.

Sincerely,


A. R. Rubin



Liquid Distribution Plan

Waste Management Riegel Ridge Liquid Distribution

Liquid from Dewater Operation

By

A. R. Rubin and Jerry Murrell

The dewatering operation permitted to Waste Management in Wilmington will separate the solid and liquid fractions from domestic and commercial waste materials. The solid fraction will be composted, accommodated in a permitted landfill, or potentially commingled with fuel and marketed as a sustainable fuel. The liquid will be transported to permitted facilities for final treatment. One option is the facility at Riegel Ridge.

Waste Management is proposing to apply liquid to a site in Columbus County. Liquid from the dewatering operation will be supplied to the site using two methods of distribution. The initial plan involves irrigation of a portion of the liquid generated at Wilmington at a rate of 50,000 gallons per acre per year and to utilize a tank or spreader vehicle also applying no more than 50,000 gallons per acre per year onto areas uncovered by the irrigation system. The areas on the attached map showing full or part circle coverage will be irrigated using the hose reel system described below. Areas within the proposed application area which indicate no irrigation zones will be receiving application by tank towed vehicle or "honey-wagon". This hybrid application plan allows optimum use of the entire designated in the Graham report as acceptable as receiver areas for this liquid product.

The irrigation system is powered by a Cummings 152 HP B series motor/pump and liquid is discharged through a hose reel (Rain Reel) consisting of an AgRain gun cart with a Nelson SR 150 sprinkler nozzle and a 1.26 inch ring mounted onto the AgRain wheeled cart. The gun is fed by a hose pulled from the pump to a stop in the field and the cart is reeled back to the pump, irrigating as it moves through the site.

The hose reel measures 912 feet in length and will be extended as required to cover large areas of the site. The hose will pull to a distance 100 feet shy of the irrigation area. This is necessary to assure liquid is applied onto permitted portions of the site. The "gun" operates at pressures in excess of 50 PSI and distributes liquid at a rate of 0.71 inches per hour full coverage. The specification states 0.41 in/hr at 320 Degrees coverage. Typical pattern is 224 feet (diameter) by 912 feet (travel length) when the hose is extended the maximum length.

The system discharges at a rate of 255 GPM and 50 PSI and 275 GPM at 60 PSI. The irrigation system will be recalibrated to supply liquid at a rate of 50000 gallons ($50000/27154 = 1.85$ inches) per acre per year. This will allow irrigation onto any portion of the site for a maximum of approximately 4.5 hours per year. This will be spread through the year to assure no over-irrigation.

The gun sprays an approximately 112 feet radius, irrigation lanes are separated by 200 feet to allow very little overspray at the distal end of the arch as practiced with more traditional irrigation systems. The irrigation system will be moved between irrigation operations spraying an area approximately four (4) times per year. The speed through the field will be calibrated to allow no more than 0.4 inches application in any irrigation event. With this schedule portions of the site will be actively receiving the liquid waste 5 or 6 times per year; this spreads the application operation out to a minimum of five application events per receiver area per year.

A tractor towed tank spreader will be utilized on the remainder of the site. Typically these consist of rear or side discharge tank vehicles towed through the field with a farm tractor. These spreaders are readily available and should WM require one to cover portions of the area un-irrigated, they can be purchased as new or used equipment, rented as needed or contracted with local farmers to apply.

Regardless of the method of distribution some calibration is essential to assure the liquid is applied at rates sufficiently conservative to allow no ponding of liquid on the soil surface; ponding is defined as liquid waste remaining on the soil surface 1 hour after an irrigation event. Prior to commencing the operation, a calibration exercise will be conducted. The pump rate, cart speed, nozzle size, and operating pressures will be compared to the precipitation rate on the soil surface. This will be measured using calibrated catch cans to measure the depth of liquid irrigated under varied conditions specified in the exercise.

Once the irrigation and other application equipment is properly calibrated, the irrigation time will be recorded as a part of the record-keeping activity and where spreader vehicles are utilized, the speed and volume dosed shall be recorded with each application operation. These practices will assure proper application rates for the liquid materials and serve as the foundation for the annual DWM report.