

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

**PERMIT TO OPERATE A SEPTAGE LAND  
APPLICATION SITE**

Lewis Farms & Liquid Waste, INC.  
Wesley Wooten  
8155 Malpass Corner Rd.  
Currie, NC 28435

is hereby issued a permit to operate a Septage Land Application Site with permit # **SLAS-71-08** on SR 1216 in Pender County at approximate position 34.57879° N latitude and -78.05368° W longitude. The site is to be operated in accordance with 15A NCAC 13B .0800 Septage Management, the information stated in the approved application, and the conditions of this permit. The unauthorized disposal of any liquid or solid wastes other than those specified in the conditions of this permit will be considered a violation of the conditions of this permit. Failure to comply with the conditions of this permit may result in permit suspension, permit revocation, action for injunctive relief, administrative penalties, or other remedies as provided in G.S. 130A, Article 1., Part 2.

This permit shall be reviewed annually to determine if soil test results and management activities are in compliance with the Septage Management Rules and the conditions of this permit. Modifications, where necessary, shall be made in accordance with rules in effect at the time of review.

Date Issued

12/22/11

  
\_\_\_\_\_  
Michael E. Scott Section Chief  
Solid Waste Section

Operator: Wesley Wooten  
SLAS #: 71-08  
County: Pender

**Permit Conditions:**

1. This permit shall become void if the soils fail to adequately assimilate the septage and shall be rescinded unless the site is maintained and operated in a manner which will protect the assigned water quality standards of the surface and ground waters.
2. This site shall be operated and maintained in accordance with the nutrient management plan submitted by Wesley Wooten and approved by the Division of Waste Management. The 25.9-acre site shall be divided into two fields known as Field ST-1 (15.7 acres) and Field ST-2 (10.2 acres). Fields ST-1 and ST-2 are in alternating two year rotations that include cereal rye, corn, wheat, and soybeans. The rye or wheat shall be planted by mid-October (early November at the latest) at a rate of 2.5 to 3 bu/acre or at rates recommended by the NC Cooperative Extension Service. The rye will be harvested as hay, preferably by late April to early-May. The wheat will be harvested as grain by June. The corn and soybeans will be planted as soon as possible after the preceding crop is removed, and they will be harvested as grain in the Fall. Corn will be planted at approximately 30 lbs per acre and soybeans at 70 lbs per acre. The 30-day waiting period between the last application of septage and the harvest of a crop shall be met by alternating septage applications between the two fields. All discharges shall be at locations on the site consistent with the crop rotation in the approved plan.
3. This site shall be operated and maintained in accordance with the erosion and runoff control plan submitted by Wesley Wooten in such a manner as to prevent the migration of wastes off of the designated waste receiving site. An 100 ft buffer shall be maintained from the adjacent ditch bordering Field ST-1. A 50-foot buffer shall be maintained around the remaining perimeter of the site. Septage shall not be applied within the buffer area. The buffer shall be vegetated in bermudagrass, trees, or a commercial wildlife mix of soybeans, sunflowers, chufa, and biologic. Any site improvements noted in the plan must be installed within 30 days of plan approval. The installation of groundwater monitoring wells shall be required as deemed necessary by the Division.
4. The issuance of this permit does not preclude the Permittee from complying with any and all statutes, rules, regulations, or ordinances that may be imposed by other local, state, and federal government agencies which have jurisdiction. It is the responsibility of the Permittee to be in compliance with the Federal Regulations listed in the Code of Federal Regulations, 40 CFR Part 503.
5. This permit may be modified or reissued at any time to incorporate any conditions, limitations, and / or monitoring requirements the Division deems necessary to adequately protect the environment and public health.
6. **This site is only permitted for the land application of domestic septage, grease trap pumpings, and portable toilet waste.** Domestic septage shall be raised to a pH of 12 or higher by alkali addition and, without the addition of additional alkali, shall remain at 12 or higher for 30 minutes prior to land application. Grease septage or grease septage mixed with domestic septage shall be raised to a pH of 12 or higher by alkali addition and, without the addition of additional alkali, shall remain at 12 or higher for 2 hours prior to land application.
7. **This site contains approximately 25.9 acres that are available for the land application of septage.** The maximum annual application rate for this site shall be 50,000 gal/ac/yr. At this application rate, a maximum annual volume of 1,295,000 gallons may be applied to this site. This application rate assumes equal septage distribution, on an annual basis, over the permitted area. The total volume applied to a permitted field within a given year shall not exceed the application rate of 50,000 gal/ac/yr. Monthly septage applications shall not exceed the monthly relative application rates given in the approved nutrient management plan for the site.
8. An approved above ground septage detention system with a minimum design capacity of 25,000 gallons shall be available prior to operation of this site unless an approved wastewater treatment plant is available for use during periods of adverse weather. The storage capacity may be adjusted if it is demonstrated during the operation of the site that this volume of storage is inappropriate.

Operator: Wesley Wooten  
SLAS #: 71-08  
County: Pender

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9. Only the area designated on the attached site map(s) shall be utilized for septage disposal. Each load of septage discharged at the site shall be distributed from a moving vehicle in such a manner that there is no standing water when the discharge is complete.
10. Septage shall not be applied during any precipitation event, or if there is standing water on the soil surface, if the soil surface is frozen, or if the soil surface is snow covered. The Permittee shall consider pending weather conditions when making the decision to land apply in order to prevent any discharge of septage outside of the permitted boundary.
11. Septage applications that will result in ruts greater than three inches in the soil surface are prohibited.
12. Any discharge of septage outside of the permitted boundaries via runoff, aerial drift, etc. is prohibited.
13. This permit shall become void unless the land application activities are carried out in accordance with the conditions of this permit and in the manner approved by this Division. No one other than the Permittee shall discharge septage at this site without prior appropriate notification and written approval from the Division.
14. Prior to any transfer of this land, a notice shall be given to the new owner that gives full details of the materials applied or incorporated at this site. The Division shall be notified prior to site closure. This permit is non-transferable.
15. **This permit shall expire on December 20, 2012.** Modifications, when necessary, shall be made in accordance with the rules in effect at the time of renewal. An application for permit renewal shall be submitted at least ninety (90) days prior to the permit renewal date. A septage application log for the period of time this permit was valid shall be submitted along with an application for permit renewal or modification. The information required in the log is described in Rule 15A NCAC 13B .0838 (e) (1) of the NC Septage Management Rules and the Code of Federal Regulations, 40 CFR Part 503.17 (b).
16. Records shall be kept in accordance with 40 CFR 503.17 (b). These records shall be made available to a representative of the Division upon request.
17. Any duly authorized officer, employee, or representative of the Division may, upon presentation of credentials, enter and inspect any property, premises, or place on or related to the disposal site and facility at any reasonable time for the purpose of determining compliance with this permit; may inspect or copy any records that must be kept under the conditions of this permit; or may obtain samples of groundwater, surface water, or leachate.
18. Field separations in the nutrient management plan and all pertinent setbacks shall be clearly located on the site. Boundaries of the permitted septage land application field shall be clearly marked on the ground.
19. The areas that can be used for land application of septage shall be maintained at least 500 feet from any existing wells, residences, places of business, or places of public assembly. Septage shall not be disposed of within 50 feet of any property line or within 100 feet of any ditch.
20. **Nutrient additions to the crops being grown shall not exceed the recommendations as noted on the annual soil test report with the exception of nitrogen. Nitrogen applied to the crop from septage and commercial inorganic sources shall not exceed the nitrogen amount listed in the approved nutrient management plan in order to reach the realistic yield expectation of that crop. The annual amounts of all nutrients applied must be recorded for each crop on a pound per acre basis and made available to the Division upon request.**



DUPLIN COUNTY

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BUS 117

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SAMPSON COUNTY

BLADEN COUNTY

WIL

WILLARD

PENDERLEA

WATHA

VAN EDEN

WARDS CORNER

PINEY WOODS

BURGAW

ST. HELENA

ASHTON

ROCKY POINT

CURRIE

THE BOROUGH

MONTAGUE

HIGHSMITH

STILL BLUFF

MURPHY'S CROSSROADS

ATKINSON

CLARK'S LANDING

TIMBERLAKE

# SLAS-71-08



500 250 0 500 Feet

Source: Aerial photo obtained from NC OneMap ([www.nconemap.com](http://www.nconemap.com)).

Map created by NC DENR Division of Waste Management, Compost & Land Application Branch for permitting purposes only.



North Carolina Department of Environment and Natural Resources

Division of Waste Management

Beverly Eaves Perdue  
Governor

Dexter R. Matthews  
Director

Dee Freeman  
Secretary

January 6, 2012

Mr. Wesley Wooten  
Lewis Farms & Liquid Waste, INC.  
8155 Malpass Corner Rd.  
Currie, NC 28435

**RE: Issuance of Permits SDTF-71-08 and SLAS-71-08  
Lewis Farms & Liquid Waste, INC.  
SR 1216 in Pender County**

Dear Mr. Wooten:

The NC Division of Waste Management has reviewed your application to operate a septage detention facility in Pender County. Your application has been approved in accordance with NC Septage Management Rules and your permit, **SDTF-71-08**, is enclosed. Please read all permit conditions carefully. Pay particular attention to Conditions 7, 8 and 9. **Permit Condition 7 states that this facility consists of three (3) aluminum tankers with a total storage capacity of 24,000 gallons for domestic septage, grease trap pumpings, and portable toilet waste. The storage or treatment of any liquid or solid waste other than domestic septage, grease trap pumpings, or portable toilet waste is prohibited. Condition 8 states that only the Permittee or an employee of the firm named in the permit may discharge septage at this facility unless the Division is notified and approval granted by the Division. Condition 9 states that this permit shall expire on December 20, 2012 and that an application for permit renewal shall be submitted at least ninety (90) days prior to the permit expiration date.**

The Division also reviewed your application to operate a septage land application site in Pender County. Your application has been approved in accordance with NC Septage Management Rules and your permit, **SLAS-71-08**, is enclosed. Please read all permit conditions carefully. The nutrient management and soil erosion and runoff control plans you submitted have been included in your permit. In particular, pay close attention to **Permit Conditions 2, 6, 7, 10, 11, 12, 15, and 20**. The following is a summation of those Conditions.

- **Condition 2.** Field sizes along with crop management details listed in the submitted nutrient management plan have been incorporated into this condition.
- **Condition 6.** States that this site is only permitted to receive domestic septage, grease trap pumpings, and portable toilet waste. Disposal of any other type of septage or waste at this site is prohibited.

- **Condition 7.** States that there are 25.9 acres available at this site for land application of septage at a rate of 50,000 gal/ac/yr. **This allows for an annual maximum application volume of 1,295,000 gallons.** These rates along with the monthly rates listed in the nutrient management plan are not to be exceeded.
- **Condition 10.** Septage shall only be applied when soil and weather conditions are favorable for application.
- **Condition 11.** Soil conditions must be monitored such that any septage application will not result in ruts greater than three inches in the soil surface.
- **Condition 12.** Any discharge, including aerial drift, of septage outside of the permitted boundaries is prohibited.
- **Condition 15.** **This permit is set to expire on December 20, 2012.** Ninety (90) days prior to the expiration of your permit, you must submit an application for permit renewal along with your septage land application logs for the entire time your current permit was valid.
- **Condition 20.** With the exception of nitrogen, nutrient additions to the crops being grown shall not exceed the recommendations as noted on the annual soil test report. Any nitrogen added from commercial fertilizer must not exceed the amount stated in the nutrient management plan minus the nitrogen that has and will be applied through septage applications.

Again, please pay close attention to all of the conditions within the enclosed permits. Each permit is different from the other and contains specific conditions in relation to the operation of a septage detention facility or a septage land application site. Permit, **SDTF-71-08**, covers the septage storage facility and permit, **SLAS-71-08**, covers the septage land application site. Remember that violations to the NC Septage Management Rules or these permits could subject you to administrative penalties of up to \$15,000 per violation per day. If you have any questions concerning your permits or septage in general, please do not hesitate to contact me at (919) 707-8283. When communicating to the Division about these permits, please refer to them as "**SDTF-71-08**" or "**SLAS-71-08**".

Sincerely,

  
Chester R. Cobb, Soil Scientist  
Composting & Land Application Branch

Enclosures

cc: Central Office  
Lewis Farms of Burgaw Inc (T. Russell Lewis), Landowner  
Pender County Health Department

# 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 Lewis Farms & Liquid Waste, Inc  
Address 8155 Malpass Corner Rd  
Currie NC 28435  
Phone 710-283-9823

2. Contact person for site operation (if different from applicant): Wesley Wooten  
Title or position Operator Phone 710-283-9823  
Address 8155 Malpass Corner Rd  
Currie NC 28435

3. Landowner Lewis Farms of Burgaw  
Address P.O. Box 234  
Burgaw NC 28425

4. Site Location: County Pender State Road Number SR 1216  
Directions to site: 2 miles east of Hwy 421 on Pine Woods  
Road (SR1216)

5. Indicate whether request is: new \_\_\_\_\_ renewal X modification \_\_\_\_\_

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

Existing site permit number: SLAS 71-04 permit expiration date: May 14 2012

6. Number of acres meeting the requirements of the N.C. Septage Management Rules: 25.9  
acres.

7. Substances other than septage or grease trap pumpings previously disposed of on the site:  
(a) None X, 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): Detention facility Permit
4. Types of septage proposed to be discharged at the site (check all that apply):
  - (a) Domestic septage pumped from septic tanks
  - (b) Grease trap pumpings
  - (c) Portable toilet waste
  - (d) Commercial / Industrial septage
5. Proposed treatment method of each type of septage to be land applied (use additional paper to explain if necessary): Lime, Hydrated lime will be added to domestic septage raising PH to 12 or higher for 30 min. prior to land application. Septage containing grease trap pumping or any mixture of grease trap pumping will be raised to a PH of 12 or higher for 2 hours prior to land application
6. Proposed method of applying septage to land, including septage distribution plan if required\* (use additional paper to explain if necessary): Pumper Truck w/ splash plate or traveling irrigation gun. Septage will be applied evenly across the fields with no ponding or surface disturbance as a result of the application.
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): N/A Agricultural land

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.

Wesley Wooten  
Signature\*\*\*

Wesley Wooten  
Print name

10-11-11  
Date

Secretary / Lewis Farms  
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.

**Corporate Landowner's Authorization to Operate a Septage Land Application Site**  
North Carolina Department of Environment and Natural Resources  
Division of Waste Management - Solid Waste Section  
401 Oberlin Road, Suite 150, Raleigh, NC 27605

I hereby certify that the undersigned corporation, Lewis Farms of Burgaw, owns 275 acres of land located 6455 Piney Woods Rd (SR 1216) and identified by Book 562 Page 113 (book and page of recorded deed or tax map parcel) and that I agree to allow Lewis Farms + Liquid Waste Inc (operator name) to use said land for septage land application for a period of 20 years beginning 2011 and that I have read the North Carolina Septage Management Rules \*. I further understand that no septage may be land applied until the Division of Waste Management has issued a permit for a septage land application site. The above described property is owned solely by the undersigned corporation or jointly with (name all co-owners, or state none) None.

\_\_\_\_\_  
Corporate Name (print)

(Corporate Seal)

X By: T Russell Lewis  
\_\_\_\_\_  
President or Vice President name (print)

10-11-11

\_\_\_\_\_  
President or Vice President signature

\_\_\_\_\_  
Date

Attest:

\_\_\_\_\_  
Corporate Secretary name (print)

\_\_\_\_\_  
Corporate Secretary signature

\_\_\_\_\_  
Date

North Carolina

Pender County

I, Wesley A Wooten, a Notary Public for said County and State do hereby certify that T. Russell Lewis (name of Corporate Secretary) personally appeared before me this day and acknowledged that he (she) is Secretary of Lewis Farms of Burgaw Inc, a corporation, and that by authority duly given and as the act of the corporation, the forgoing instrument was signed in its name by its President (President or Vice President), sealed with its corporate seal, and attested by himself (herself) as its Secretary. Witness my hand and official seal, this the 11<sup>th</sup> day of October, 20 11.

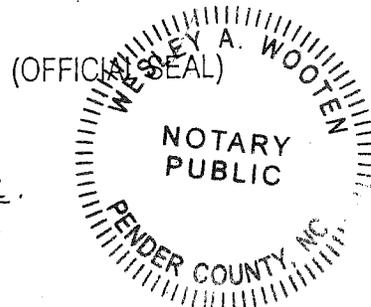
Wesley A. Wooten  
\_\_\_\_\_  
(Notary Public)

Expires December 12, 2012

My Commission expires: December 12 2012.

\* 15A N.C. Admin. Code 13B Section .0800

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November 8, 2011

Septage Nutrient Management Plan  
for  
Lewis Farms

Owner: Lewis Farms & Liquid Waste, Inc.  
8155 Malpass Corner Rd.  
Currie, NC 28435  
(910) 283-9823  
(renewal of SLAS 71-04)



Purpose: The purpose of this document is to update the septage nutrient management plan of SLAS # 71 - 04 and to provide updated compliance with state regulations. This version of the plan shows the change of ownership of the facility and site.

Existing Site Conditions: The relevant property lines, approved site limits, natural geographic conditions and known site improvements are incorporated from prior plans.

**A. General Information:**

1. Septage will be sampled at least three (3) times per year for waste analysis. These samples will be used to monitor nutrient loadings. The recommended procedure for collecting the samples is as follows:
  - a. Make sure the septage has been stabilized at a pH of 12 with hydrated lime for 30 minutes (domestic septage) or for 2 hours (grease trap septage).
  - b. Set out some pans in the path where the truck will be disposing the septage. Plastic pans are recommended. Do not use zinc plated or galvanized metal pans; the metals content will be distorted.
  - c. Mix contents of 3-4 pans and fill a 16-20 ounce plastic bottle  $\frac{3}{4}$  full. Squeeze out some of the excess air and label the bottle with your name and septage sample identification.

If samples are collected over a couple of days or from different truckloads, it makes for a more representative sample; however, samples should be kept cool and mailed as soon as possible. Only one sample is needed, as long as it is mixed from several different sub-samples.

Mail the samples directly to NCDA&CS or bring the samples by the Extension Office for forwarding to the NCDA&CS labs. Please use a check made out to NCDA&CS (\$5.00 per sample). Bottles need to be clearly labeled as a household -lime stabilized- septage sample (waste code MLS). For extra security, place the bottle in a plastic freezer bag. The form and check can be put in an envelope and placed in the bag with the bottle.

2. An annual soil sampling of each numbered field will be conducted and the results maintained on file.

3. Total available area for septage application on this site is 26.7 acres. This is divided into two smaller fields:
  - a. Field St-1 contains approximately 15.2 acres
  - b. Field St-2 contains approximately 11.5 acres
4. The dominant soil series at this site are Norfolk A (0-2 % slope) and Norfolk B (2-6% slope) loamy fine sand.
5. Septage will not be applied when and 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. It also will not be applied when the field is flooded, frozen, or snow covered.
6. Grease septage is to be diluted at least 1:1 from its original concentration when pumped with domestic septage or water. Grease septage applications shall not exceed 25,000 gallons/acre/yr.
7. 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.

**B. Crops to be grown and approximate planting and harvest times:**

1. Field ST1 and Field ST2, are in alternating two year rotations that include cereal rye, corn, wheat, and soybeans. The rye or wheat are to be planted by mid-October (early November at the latest) at a rate of approximately 2.5 bu/acre to 3 bu/acre or at rates appropriate under NC Cooperative Extension guidelines for the grain utilized. The rye will be harvested as hay, preferably by late April to early-May. The wheat will be harvested as grain by June. The corn and soybeans will be planted as soon as possible after the preceding crop is removed, and they will be harvested as grain in the fall. The table below gives approximate planting and harvesting dates. These dates have some flexibility due to weather constraints.

The following seeding rates are recommended:

Cereal rye:	2.5-3 bu/acre (140-160 lbs per acre)
Wheat:	2.5-3 bu/acre (150-180 lbs per acre)
Corn:	30 lbs per acre
Soybeans:	70 lbs per acre

2. Crop rotation table:

<i>Year</i>	<i>Field ST1</i>		<i>Field ST2</i>	
1	cereal rye	November-April	wheat	October-June
	corn	May-September	soybeans	June-November
2	wheat	October-June	cereal rye	November-April
	soybeans	June-November	corn	May-September

**C. Nitrogen needs for crops grown:**

RYE = Realistic Yield Expectation

N App. Rate = Suggested nitrogen application rate

<i>Field</i>	<i>Crop</i>	<i>RYE</i>	<i>N App. Rate</i>	<i>Total lbs N/ac</i>	<i>*Gal/ac/yr</i>	<i>Adjusted Gal/ac/yr</i>	<i>Actual lbs N/ac</i>
ST1	cereal rye	2.5 t/ac	40 lb/ton	100	38,461	20,000	52
yr 1	corn	108 bu/ac	1 lb/bu	108	41,538	30,000	78
ST1	wheat	59 bu/ac	2 lb/bu	118	45,384	20,000	52
yr 2	soybeans	37 bu/ac	3.5 lb/bu	129	49,615	30,000	78
ST2	wheat	59 bu/ac	2 lb/bu	118	45,384	20,000	52
yr 1	soybeans	37 bu/ac	3.5 lb/bu	129	49,615	30,000	78
ST2	cereal rye	2.5 t/ac	40 lb/ton	100	38,461	20,000	52
yr2	corn	108 bu/ac	1 lb/bu	108	41,538	30,000	78

\*This column represents the number of gallons needed to meet the total nitrogen needs of the crops. The maximum permitted application is 50,000 gal/acre/yr, with a maximum winter monthly application of 5,000 gal/acre.

The cereal rye will be harvested as hay and removed from site. If used for animal feed or bedding, no septage applications can be made within 30 days of harvest. The **Adjusted gal/acre/year** column represents what can be applied so as not to exceed the maximum permitted application rate of 50,000 gal/acre/yr.

Because the nitrogen needs will not be met, commercial nitrogen fertilizer, such as 10-0-0 can be used IF NEEDED. A Plant Tissue Analysis sample can be collected to determine if the plants are deficient. If fertilizer is used, it is important that the crop N requirements not be exceeded! The following amounts of commercial fertilizer can be added to each crop:

- Cereal rye: 48 lbs nitrogen
- Corn: 30 lbs nitrogen
- Wheat: 66 lbs nitrogen
- Soybeans: 51 lbs nitrogen

All such additions are to be documented. From the Soil Analysis, the fields do not need additional phosphorus (P-I > 200). The fields are also getting high in zinc (Zn-I > 600). If the zinc index continues to increase, this may cause application and toxicity problems in the future.

The amount of supplemental N is based on the RYE for the field soil type. For example, the RYE for corn is 108 bu/acre. The nitrogen application can be increased if crop yield records are kept. To do this, the average yield from the best three out of five years is calculated. If that yield was 150 bu/acre, the new application rate would be determined as follows:

$$\text{Yield} \times \text{N/bushel} = 150 \text{ bu/acre} \times 1 \text{ lb N/bu} = 150 \text{ lb N/acre} - 78 \text{ lb N septage} = 72 \text{ lb N fert.}$$

**D. Monthly/yearly application rate estimates in gallons:**

<i>Crop</i>	<i>Maximum Uptake Period</i>
Cereal rye	February-April
Corn	May-July
Wheat	February-April
Soybeans	July-September

As shown in the above table, the cereal rye and wheat have their maximum nutrient uptake during February through April. There is some uptake, however, as these crops first grow and become established. It is generally recommended that 1/3 of the nutrients be applied during the lower growth months (November-January) and the remaining 2/3 be applied during February-April. Applications should not be made to the corn or soybean fields outside of the application dates listed above.

It is understood that homeowner pumping requests are greatest during the winter months. The application recommendations in the table below, therefore, are given as the permissible amount WEATHER, CROP, and FIELD CONDITIONS PERMITTING.

<i>Month</i>	<i>Field ST1 application per acre</i>		<i>Field ST2 application per acre</i>	
		<i>Crop</i>		<i>Crop</i>
January*	low	wheat	low	cereal rye
February*	low	wheat	low	cereal rye
March*	medium	wheat	medium	cereal rye
April	low	wheat	low	cereal rye
May	medium	wheat	medium	corn
June	high	soybeans	high	corn
July	high	soybeans	high	corn
August	high	soybeans	low	corn
September	low	soybeans	none	corn
October	low	soybeans/rye	low	corn/wheat
November*	low	cereal rye	low	wheat
December*	low	cereal rye	low	wheat
January*	low	cereal rye	low	wheat
February*	low	cereal rye	low	wheat
March*	medium	cereal rye	medium	wheat
April	low	cereal rye	low	wheat
May	medium	corn	medium	wheat
June	high	corn	high	soybeans
July	high	corn	high	soybeans
August	low	corn	high	soybeans
September	none	corn	low	soybeans
October	low	corn/wheat	low	soybeans/rye
November*	low	wheat	low	cereal rye
December*	low	wheat	low	cereal rye

Low = up to 5,000 gallons; medium = up to 10,000 gallons; high = up to 15,000 gallons

Note: Application dates are approximate and subject to adjustments due to harvesting (30 day rest periods) and weather. They are given as an application guide.

\* These months can have wetter soil conditions than during the other months. It is exceedingly important that the applications be applied to the largest surface area practicable, so as not to have any ponding or runoff and to minimize untrafficable areas.

For both fields, the Winter crop may be harvested upon crop maturity before the specified field harvest date. Regulations mandate that a crop be planted or break dormancy within 30 days of any application of septage.

#### **E. Application method:**

The preceding information is based on septage being **evenly applied** over the entire permitted site. For this facility, septage will be applied by a pumper truck with a splash plate when the crops are of suitable height and the field is trafficable. At times when the crops are too tall or the field is not accessible by truck, the septage will be applied by traveling gun. If the entire field is not covered each time, markers or some form of consistent rotation are needed to ensure that one portion of the field is not more heavily loaded than other portions of the field. This can be done by dividing each field into sub-fields (ex.: 1a, 1b, 1c, etc.).

An application record for each sub-field is highly recommended. Waste record forms SLUR-1 and SLUR-2 can be used for record keeping. These and additional forms are available from the local Cooperative Extension office.

#### **F. Additional fertility requirements:**

Optimum nitrogen uptake will not occur if the concentrations of other nutrients limit the crop growth. Septage does not provide adequate supplies of all necessary nutrients over a prolonged period of time, so periodic supplements may be required. These maintenance applications should be based on annual soil test analyses. The soil samples should be taken in late Fall or early Winter, so that the supplements can be added in the Spring prior to the Bermudagrass breaking dormancy. **DO NOT FOLLOW THE NITROGEN RECOMMENDATION FROM THE SOIL TEST REPORT!** You are to use the nitrogen amounts given in this waste application plan.

A separate soil sample should be collected for the buffer areas. Commercial fertilizer applications to the buffers are to be based on the soil sample results. If you have questions, feel free to ask a Certified Waste Management Plan person in the local Cooperative Extension or Soil & Water Conservation offices.

#### **G. Harvest of the crops and their use:**

1. The cereal rye will be harvested as hay during April to early May and removed from site. If used for animal feed or bedding, no septage applications can be made within 30 days of harvest.
2. The corn, wheat, and soybeans will be harvested as grain for animal feed.
3. A 30-day waiting period must be observed between the last application of septage and harvest for all material that is to be used as livestock feed or bedding; therefore, an application rotation will need to be established among the fields. Record keeping will be an important factor in documenting proper application. This cycle will continue until the

next plan update or other instructions from either DENR or a Certified Waste Management Plan person. Any changes are to be put into writing, placed in the plan file, and copies given to the appropriate agencies.

**H. Records required to be kept for five years:**

1. Soil tests are to be done annually and the reports kept. Although nitrogen and phosphorus are the main nutrients of interest, some micronutrients are also of concern. Check your soil test results and compare them to the follow table:

<i>Pollutant</i>	<i>Maximum Cumulative Loading Rate (kilograms per hectare)</i>	<i>Equivalent Soil Test Report Value (parts per million)</i>
Zinc	2800	1400
Copper	1500	750
Cadmium	39	19.5
Nickel	420	210
Lead	300	150
Selenium	100	50
Arsenic	41	20.5
Mercury	17	8.5

2. Septage pumping log (modified SLUR-1)
3. Septage land application log (modified SLUR-2)
4. Septage land application log cover sheet with signed certification

The NC Septage Management Rules (15A NCAC 13B .0822(e)) and the Federal Rules (40 CRF 503.17(b)) require that specific information be recorded and maintained for septage land application sites. Incomplete record keeping may result in penalties. If you do not include the required records your site may not be re-permitted. If you have more than one site and each site has a separate permit number, the records for each must be maintained separately.

One **Septage Land Application Log Cover Sheet** is to be attached to each set of log forms submitted to DENR. The **Septage Pumping Log** (modified SLUR-1) is used to record septage pumped by the firm. The **Septage Land Application Log** (modified SLUR-2) is used to record how the septage is treated and land applied. All blocks are to be completed. One Septage Land Application Log is to be kept for each field and crop. Your site would have a minimum of four log forms for each growing cycle: Field #1, small grain, Field #1 Bermudagrass, Field #2 small grain, and Field #2 Bermudagrass. If the fields are sub-divided for applications, additional forms may be used.

Although not required, crop harvest records are strongly recommended.

Questions regarding the regulations? Contact the Composting and Land Application Branch at 919-707-8285.

**Soil Erosion and Runoff Control Plan**

Natural Resource Conservation Service best management practices (BMPs) are readily available and directly applicable to septage application sites. Some recommended BMPs for this site include:

1. Maintain a vegetative cover. At any time of the year, crops or their residue should be present on the site.
2. Manage soil surface for maximum infiltration. Minimize soil disturbance by drill planting the Winter small grain crop. The Onslow Extension Center has a grain drill available for rent. If soil compaction should become evident (ponding of applied septage), use a subsoiler to loosen the soil and improve infiltration. Field traffic should be kept to a minimum.
3. Maintain vegetation on swales, ditch channels, and all other field exits for stormwater runoff. Bermudagrass buffers at least 50 feet wide should be maintained around the site. At this particular site, 20 feet of the buffer width is planted with a commercial wildlife seed mix (soybeans, sunflower, chufa, and biologic). Field ST1 has a 100 ft buffer from an adjacent ditch. If additional control or screening is needed, contact the Soil & Water Conservation office to see if the site qualifies for Cost Share assistance. They may be able to help you get trees or shrubs.
4. Extra care and control may be needed on those areas with increased slope. If possible, field edges should be shaped to detain runoff.

Nutrient management and erosion control plans are not static instruments; they are blueprints for planning and optimizing the defined crop use goals. As crop use goals or site conditions change, the management plan may need to be amended. Information sources, such as Cooperative Extension or Soil & Water Conservation, should be used on an ongoing basis.

Submitted by: Lewis Farms + Liquid Waste Inc.  
Wally West Date: November 8, 2011

Plan prepared by: Diana M.C. Rashash Date: November 7, 2011

Address: Diana M.C. Rashash, PhD EI  
 North Carolina Cooperative Extension  
 4024 Richlands Hwy.  
 Jacksonville NC 28540

Phone: (910) 455-5873

Fax: (910) 455-0977

email: [diana\\_rashash@ncsu.edu](mailto:diana_rashash@ncsu.edu)

Please sign both copies and send one copy to:

*Chester Cobb, Soil Scientist  
 Division of Waste Management  
 217 West Jones St.  
 1646 Mail Service Center  
 Raleigh NC 27699-1646*