NCDENR

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

Pat McCrory
Governor

Dexter R. Matthews
Director

John E. Skvarla, III
Secretary

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

PERMIT TO OPERATE A SEPTAGE LAND APPLICATION SITE

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

is hereby permitted to operate Septage Land and Application Site with permit # **SLAS-71-08** located on SR 1216 in Pender County at approximate position 34.57879° N latitude and -78.05368° E longitude. This site is permitted only for operations that are conducted in accordance with the representations made in the approved application, with all conditions attached to this permit, and with all of the provisions of 15A NCAC 13B.0800 -- Septage Management. Failure to operate as permitted may result in the Department suspending or revoking this permit, initiating action to enjoin the unpermitted operation, imposing administrative penalties, or invoking any other remedy as provided in Chapter 130A, Article 1, Part 2 of the North Carolina General Statutes.

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 3/5/2014

Martin A. Gallagher, Branch Head
Composting & Land Application Branch

CONDITIONS OF OPERATING PERMIT

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 This permit shall become void if the soils fail to adequately assimilate the septage and shall be rescinded unless the site is maintained and operated in a manner which will protect the assigned water quality standards of both surface and ground waters.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/ac 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/ac and soybeans at 70 lbs/ac. 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-feet buffer shall be maintained from the adjacent ditch bordering Field ST-1. A 50-feet 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 pH shall be raised to 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 land application of septage.** The maximum annual application rate 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 entire permitted area. Application amounts to the fields shall not exceed the maximum annual application rate or the monthly rates as listed 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.

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 shall not be applied during periods of high soil moisture. 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 voidable 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 or an employee of the firm named in this permit 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 February 20, 2018.** 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).

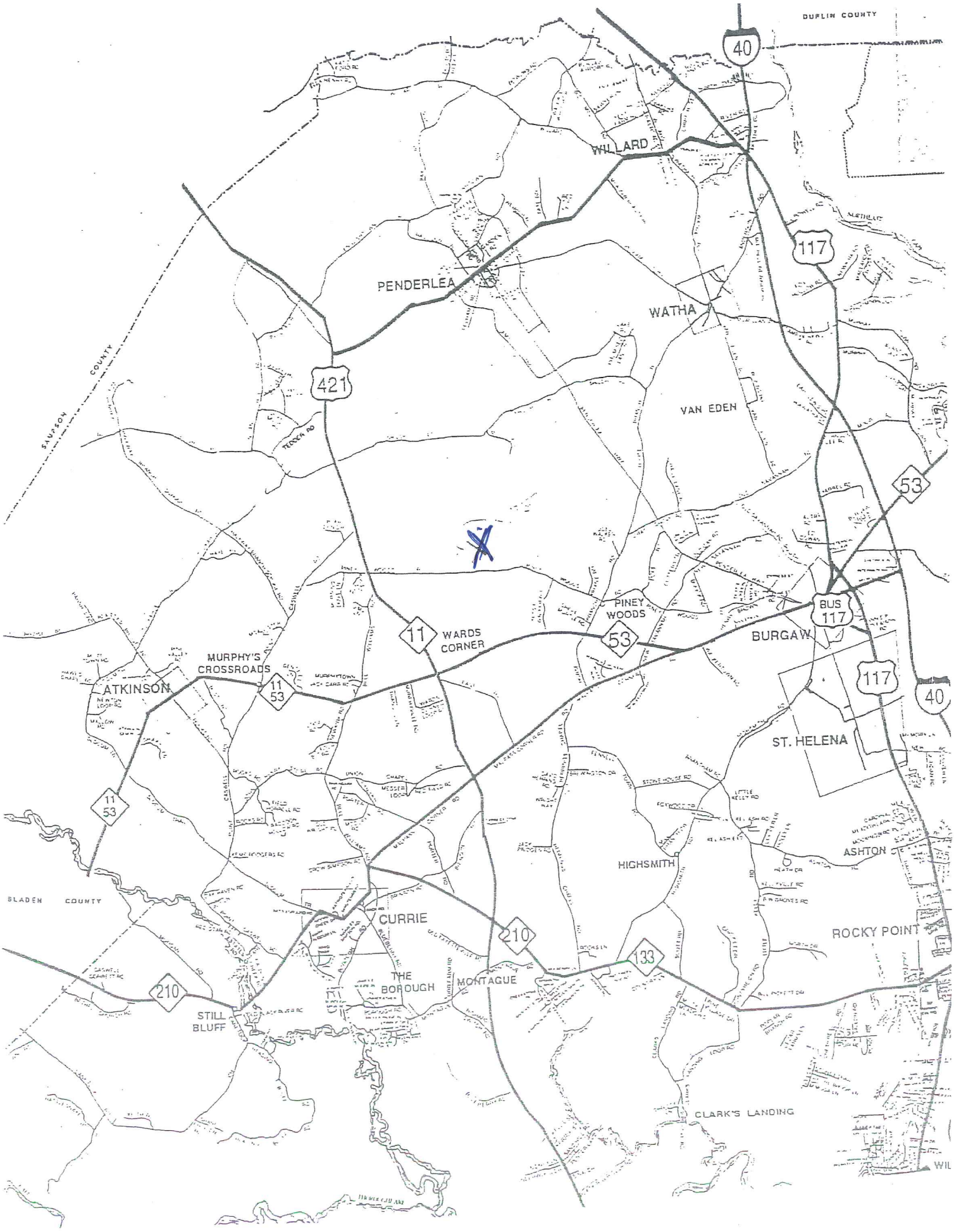
16. Records shall be kept in accordance with 40 CFR 503.17(b). These records shall be made available to a representative of the Division upon request.

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 fields 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 established crop shall not exceed the recommendations listed on the annual soil test report with the exception of nitrogen. Nitrogen additions to the crop from septage and commercial fertilizers shall not exceed the nitrogen amount listed in the approved nutrient management plan. 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
40
WILLARD
117
PENDERLEA
WATHA
421
SAMPSON COUNTY
VAN EDEN
53
PINEY WOODS
BUS 117
BURGAW
11
WARDS CORNER
MURPHY'S CROSSROADS
ATKINSON
11 53
117
40
ST. HELENA
ASHTON
HIGHSMITH
BLADEN COUNTY
CURRIE
210
133
ROCKY POINT
THE BOROUGH
MONTAGUE
STILL BLUFF
CLARK'S LANDING

SLAS-71-08

500 250 0 500 Feet

Source: Aerial photo obtained from NC OneMap (www.nconemap.com).

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

crc - Nov. 2011

NCDENR
North Carolina Department of Environment and Natural Resources
Division of Waste Management
Dexter R. Matthews
Director

Pat McCrory
Governor

John E. Skvarla, III
Secretary

March 13, 2014

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

RE: SLAS-71-08 Permit Renewal
Lewis Farms & Liquid Waste, INC.
SR 1216 in Pender County

Dear Mr. Wooten:

The NC Division of Waste Management has reviewed your application to renew Septage Land Application Site Permit, **#SLAS-71-08**, in Pender County. Your application has been approved in accordance with NC Septage Management Rules and your permit, **#SLAS-71-08**, is enclosed. When communicating to the Division about this permit, please refer to it as **"SLAS-71-08."**

Your nutrient management and soil erosion and runoff control plans have been included in your permit's conditions. The permitted maximum annual application rate for this site is stated within Permit Condition 7. Also, an application for permit renewal must be submitted at least ninety (90) days prior to the permit expiring as stated within Permit Condition 15. **The enclosed permit will expire on February 20, 2018.**

Please read all permit conditions carefully. Violations to the NC Septage Management Rules or this permit may result in administrative penalties of up to $15,000 per violation per day in accordance with NC General Statue 130A-22. If you have any questions concerning your permit or septage in general, please do not hesitate to contact me at (919) 707-8283.

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

S:Solid_Waste\cla\septage\slasper\71-Pender\Wooten\7108cl14p.docx

1646 Mail Service Center, Raleigh, North Carolina 27699-1646
Phone: 919-707-8200 Internet: http://portal.ncdenr.org/web/wm/sw

SLAS Permit Review

Permit #:	71-08
Application Received:	9-10-12

☑ NEW ☑ RENEWAL ☐ MODIFICATION

ISSUED: 12-22-11 EXPIRES: 12-20-12

APPLICATION

COMPLETE

LANDOWNER AUTHORIZATION FORM

NEED UPDATED FORM WITH SOME NOTARY OTHER THAN WESLEY
UPDATED

MAPS

ON FILE

NUTRIENT MANAGEMENT PLAN

Crops: CORN, SOYBEANS, RYE, WHEAT

- ☑ Planting:
- ☑ 80% coverage (replanting guidelines):
- ☑ Harvest:
- ☑ Soil Erosion and Runoff Control Plan:

Fields:	2	Acres:	25.9	Maximum Annual Application Amount:	1,295,000	gal.

ST-1 15.7 AC
ST-2 10.2 AC

RECORDS

- ☐ Septage Land Application Log Cover Sheet
- ☐ Overapplied

- PH MISSING FROM JUNE & JULY 2012 ⇒ EMAILED MARION MABE
- UPDATED LOGS RECEIVED 4-8-13 (EMAILED)
- NO OVERAPPLICATIONS

COMPLIANCE ISSUES AND OTHER COMMENTS (NOV's and NOD's)

- TALKED TO WESLEY ON 3-19-13 ABOUT LANDOWNER FORM
  - NEED ANOTHER NOTARY OTHER THAN YOU
- TALKED TO MARION ABOUT LANDOWNER FORM 3-2013
- 3-20-13 EMAILED MARION MABE ABOUT PH FOR JUNE & JULY 2012

- ECLP LISTED ON RECORDS FOR SEPTAGE TYPE
  ⇒ NEEDS TO BE DOM., GREASE, OR PTW.
- CONTINUE ON BACK

- NOD ISSUED ON 5-21-12 FOR
  - NO MARKERS PRESENT (RULE .0838(a)(10))
  - PONDING, RUNOFF (RULE .0838(a)(7))

- OBSERVED VIOLATION NOTED ON 3-6-13 FOR RUTS GREATER THAN 3" (RULE .0838 (a)(9))

Cobb, Chester

From: Cobb, Chester
Sent: Wednesday, March 20, 2013 3:15 PM
To: Martin Mabe <MMabe@smeinc.com> (MMabe@smeinc.com)
Subject: Records for SLAS-71-08

Martin,

While looking through the records sent with the permit application for SLAS-71-08, I noticed that there were no pH values recorded for the months of June and July. Not sure if this was just an oversight. Check and let me know.

On another note, you have been sending more copies than necessary. For SLAS and SDTF permit renewals, I only need one original submittal. A second original submittal or copy is not needed for SLAS or SDTF permit renewals. For new sites, we request two copies of the application and supporting documents (an original and a copy). The original stays here at the Central office and the copy goes to the Regional Office. We do not need three copies. I can also work with one original being mailed and a scanned copy being sent electronically. The biggest issue is the maps.

Any questions, please contact me.

Thanks,

Chester

Chester R. Cobb
Soil Scientist
Composting and Land Application Branch

MAILING ADDRESS: NC DENR, Division of Waste Management
1646 Mail Service Center, Raleigh, NC 27699-1646
PHYSICAL ADDRESS: Green Square Complex, 217 W. Jones Street, Raleigh, NC 27603
Phone & Fax: 919-707-8283
chester.cobb@ncdenr.gov
http://portal.ncdenr.org/web/wm/sw

Cobb, Chester

From: Martin Mabe <MMabe@smeinc.com>
Sent: Monday, April 08, 2013 3:50 PM
To: Cobb, Chester
Cc: Wesley Wooten (wesley@lewisfarmsandliquidwaste.com)
Subject: Lewis Farms & Coastal Farms - Requested Information
Attachments: Copy of 2012-2013 Septage Log 4-4-13- Copy.pdf

Chester,

I have attached the updated records on behalf of Lewis Farms and Liquid Waste, Inc. I will also bring the originals of the executed Corporate Landowner's Authorization to Operate a Septage Land Application Site form and the Corporate Landowner's Authorization to Operate a Septage Detention or Treatment Facility form to our meeting on Thursday, April 11, 2013. Additionally, I will have the original executed APPLICATION FOR A PERMIT TO OPERATE A SEPTAGE MANAGEMENT FACILITY form along with a check for $200.00.

Thanks,

Martin Mabe
Project Manager / Agronomist

S&ME
ENGINEERING INTEGRITY.

S&ME, Inc.
3718 Old Battleground Road
Greensboro NC 27410 Map
Ph: 336-288-7180
Fax: 336-288-8980
Mobile: 336-312-1396
mmabe@smeinc.com
www.smeinc.com

SLAS-71-08

			2012					
	Septage	Grease	PTW	Field 1	Field 2	Field 3	Field 4	
January				31,500	43,700			L
February				49,800	29,300			L
March					81,300			M
April				57,000	31,800			L
May				73,900				M
June				79,900				H
July					77,200			H
August					101,100			H
September				77,450	9,700			L
October				56,900	49,200			L
November				77,500	13,800			L
December				66,900				L
TOTAL	0	0	0	570,850	437,100	0	0	
			0				1,007,950	

			2013					
	Septage	Grease	PTW	Field 1	Field 2	Field 3	Field 4	
January				52,100	50,300			L
February				46,300	31,600			L
March				78,500	44,300			L
April								H
May								H
June								H
July								H
August								H
September								M
October								M
November								L
December								L
TOTAL	0	0	0	176,900	126,200	0	0	
			0				303,100	

8.1	@	50,000 gal/ac/yr			1,295,000	gal/yr
	Field 1	Field 2	Field 3	Field 4		Site
ACRES	15.7	10.2	0	0		25.9
low	78,500	51,000	0	0		
medium	157,000	102,000	0	0		
high	235,500	153,000	0	0		
Max. Amount	785,000	510,000	0	0	1,295,000	

Monthly Rate	
None	
Low	5,000
Medium	10,000
High	15,000

S&ME

3718 Old Battleground Road
Greensboro, North Carolina 27410
Phone: (336) 288-7180
Fax: (336) 288-8980

LETTER OF TRANSMITTAL

Date: September 6, 2012

Project Number: 1588-95-010

From: Rob Willcox RPW 9/6/12

To: Division of Waste Management
1646 Mail Service Center
Raleigh, N.C. 27699-1646

Copy to:

Attention: Mr. Chester Cobb

Subject: SLAS-71-08 Permit Renewal Application
SDTF-71-08 Permit Renewal Application

Transmitted via
First Class Mail [ ] **Overnight Express** [X] **Hand Delivery** [ ] **Other** [ ]

Remarks:

Chester,

Please find enclosed 1 original and 1 copy of the Permit Renewal Applications for Lewis Farms for SLAS-71-08 and SDTF 71-08. Please let us know during your review if you have any questions or comments.

Thanks,
Rob

S&ME

September 6, 2012

Division of Waste Management
1646 Mail Service Center
Raleigh, North Carolina 27699-1646

Attention: Chester R. Cobb, L.S.S.
Composting and Land Application Branch

Reference: **SLAS-71-08 PERMIT RENEWAL APPLICATION**
PERMIT TO OPERATE A SEPTAGE LAND APPLICATION SITE
Lewis Farms & Liquid Waste, Inc.
S&ME, Inc. Project No. 1588-95-010 Phase: 01

Mr. Cobb:

S&ME, Inc. (S&ME), on behalf of with Lewis Farms & Liquid Waste, Inc. (Lewis Farms), is submitting all necessary information as requested in the August 7, 2012 "Permit Renewal Notification" letter received by Mr. Wesley Wooten with Lewis Farms. In accordance with Rule 15A NCAC 13B.0835(g), S&ME, is submitting the enclosed permit renewal application to the Division of Waste Management (Division) at least ninety (90) days prior to the expiration date of the permit. S&ME compiled this renewal application using data gathered by Lewis Farms and S&ME. This data includes: 1) Operator and Site Information, 2) Site Management Information, 3) Certification, 4) Corporate Landowner Authorization Form, 5) Current Nutrient Management Plan and Soil Erosion and Runoff Control Plan, and 6) Septage Land Application Logs.

If there is any further information required or questions regarding this application please do not hesitate to contact S&ME or Lewis Farms.

Sincerely,

S&ME, Inc.

Martin Mabe
Project Manager/Agronomist

Rob Willcox, L.S.S.
Natural Resources Services Leader

Enclosures

S:\1588\REPORTS1588\LewisFarms\2012 Septage Permitting\2012 Septage Land Application Renewal\Septage Land Application Renewal Cover Letter.doc

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
1646 Mail Service Center, Raleigh, NC 27699-1646

I. Site and Operator Information

1. Applicant Lewis Farms & Liquid Waste, Inc.
   Address 8155 Malpass Corner Road
   Currie, NC 28435
   Phone (910) 283-9823

2. Contact person for site operation (if different from applicant): Wesley Wooten
   Title or position Secretary Phone (910) 283-9823
   Address 8155 Malpass Corner Road
   Currie, NC 28435

3. Landowner Lewis Farms of Burgaw, Inc.
   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 Highway 421 on Piney Woods Road (SR 1216)

5. Indicate whether request is: new _____ renewal X modification _____

   For a permit renewal or modification, provide the following information:
   Existing site permit number SLAS-71-08 permit expiration date: December 20, 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. (Attached)***

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

10. Attach a vicinity map (county road map showing site location). **(On file with the Division)**

(over)

II. Site Management Information:

The following information shall be included with the application form:

1. Nutrient Management Plan **(Attached)**
2. Soil Erosion and Runoff Control Plan **(Attached)**

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 X
   (b) Grease trap pumpings X
   (c) Portable toilet waste X
   (d) Commercial / Industrial septage

5. Proposed treatment method of each type of septage to be land applied (use additional paper to explain if necessary): Hydrated lime will be added to domestic septage raising the 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 hr. 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): Septage will be applied evenly across the fields with no ponding or surface disturbance by utilizing a Pumper truck with a splash plate.

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): Not Applicable – 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.

Signature* **	**Date**
Wesley Wooten	Secretary
Print name	**Title**

Note: This application will not be reviewed until all parts of the application are complete.
*** Refer to Section .0837(e) of the N.C. Septage Management Rules.**
**** Refer to Section .0837(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
1646 Mail Service Center, Raleigh, NC 27699-1646

I hereby certify that the undersigned corporation, Lewis Farms of Burgaw, Inc, 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, (operator name) to use said land for septage land application for a period of 10 years beginning 2013 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.

Lewis FARMS of BURGAW, INC.
Corporate Name (print)

(Corporate Seal)

By: T Russell Lewis
President or Vice President name (print)
T. Russell Lewis
President or Vice President signature — 3-20-13 Date

Attest:
Mary Ann W. Lewis
Corporate Secretary name (print)
Mary Ann W. Lewis
Corporate Secretary signature — 3-20-13 Date

North Carolina
New Hanover County
I, Gail Wells, a Notary Public for said County and State do hereby certify that Mary Ann 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 T Russell Lewis (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 20 day of Mar, 2013.

(Notary Public)

(OFFICIAL SEAL)

GAIL M. WELLS NOTARY PUBLIC NEW HANOVER COUNTY, NC

My Commission expires: 9-13-13.

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

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. 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. c.Mix contents of 3-4 pans and fill a 16-20 ounce plastic bottle ¾ 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 ST1and 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:

Year	*Field ST1*		*Field ST2*	
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

Field	*Crop*	*RYE*	*N App. Rate*	*Total lbs N/ac*	**Gal/ac/yr*	*Adjusted Gal/ac/yr*	*Actual lbs N/ac*
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:

Yield x N/bushel = 150 bu/acre x 1 lb N/bu = 150 lb N/acre – 78 lb N septage = 72 lb N fert.

D. Monthly/yearly application rate estimates in gallons:

Crop	*Maximum Uptake Period*
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.

Month	*Field ST1 application per acre*		*Field ST2 application per acre*	
		Crop		*Crop*
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 to15,000 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:

Pollutant	*Maximum Cumulative Loading Rate (kilograms per hectare)*	*Equivalent Soil Test Report Value (parts per million)*
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: _____ Date: 8-30-12

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

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

SEPTAGE LAND APPLICATION LOG

COVER SHEET

Site Operator: Lewis Farms &Liquid Waste, Inc.

SLAS Permit #: SLAS 71-08

Site Location: 34° 34' 40.87" N 78° 3' 14.29" W
(street address for the site **or** latitude and longitude)

Number of acres permitted: 25.9

Permitted application rate: 50,000 gals/acre/year
(gallons septage per acre per year)

Crop(s): ST-1 Cereal Rye/Corn ST-2 Wheat/Soybeans 52/78

Crop nitrogen requirement(s): 52/78 for both fields
(pounds nitrogen per acre)

CERTIFICATION:

"I certify, under penalty of law, that the pathogen requirements in (insert either 503.32 (c)(1) or 503.32 (c)(2)) and the vector attraction reduction requirements in (insert 503.33 (b)(9), 503.33 (b)(10) or 503.33 (b)(12)) have been met. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements and vector attraction reduction requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."

Walt Lewis
(signature)

8-2-13
(date)

S&ME, INC. / 3718 Old Battleground Road / Greensboro, NC 27410 / p 336.288.7180 f 336.288.8980 / www.smeinc.com