

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-71-09** on SR 1119 in Pender County at approximate position 34.48369° N latitude and -78.06239° 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 6/16/2012

Martin A. Gallagher
Martin A. Gallagher, Branch Head
Solid Waste Section

Operator: Wesley Wooten
SLAS #: 71-09
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 This permit shall become void if the soils fail to adequately assimilate the septage and shall be rescinded unless the site is maintained and operated in a manner which will protect the assigned water quality standards of both surface and ground waters.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 site consists of one 4.0-acre field labeled as HAW1. The field shall be planted in row crops that include cereal rye, corn, wheat, and soybeans within an alternating two year rotation. 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/acre and soybeans at 70 lbs/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 other permitted sites. 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. Septage shall not be applied within the buffer areas. 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 4.0 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 200,000 gallons may be applied to this site. This application rate assumes equal septage distribution, on an annual basis, over the permitted area. 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 4,000 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 #: 71-09
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 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 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 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 October 16, 2013.** 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.**

SLAS-71-09



Source: Bing Maps aerial imagery, ESRI, (c) 2010 Microsoft Corporation and its data suppliers; site boundary, NC DENR Division of Waste Management.

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

crc, Oct. 2012



North Carolina Department of Environment and Natural Resources

Division of Waste Management

Beverly Eaves Perdue
Governor

Dexter R. Matthews
Director

Dee Freeman
Secretary

November 9, 2012

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

**RE: Issuance of Permit SLAS-71-09
Lewis Farms & Liquid Waste, INC.
SR 1119 in Pender County**

Dear Mr. Wooten:

The North Carolina Division of Waste Management has reviewed your application for a permit 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-71-09**, 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.** Incorporates crop management details listed in the submitted nutrient management plan.
- **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 4.0 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 200,000 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.

CONTINUE ON BACK

- **Condition 15. This permit is set to expire on October 16, 2013.** 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 permit. Remember that violations to the NC Septage Management Rules or this permit could subject you to administrative penalties of up to \$15,000 per violation per day. If you have any questions concerning your permit or septage in general, please do not hesitate to contact me at (919) 707-8283. When communicating to the Division about this permit, please refer to it as "**SDTF-71-09.**"

Sincerely,



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

Enclosures

cc: Central Office
H. Allen Wooten, Landowner
Pender County Health Department

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May 11, 2012

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



Attention: Chester Cobb, L.S.S.

Reference: **ADDITIONAL INFORMATION REQUEST**
Lewis Farms and Liquid Waste, Inc.
S&ME, Inc. Project No. 1588-95-010 Phase: 01

Mr. Cobb:

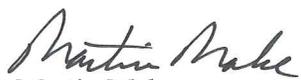
Pursuant to the phone conversation between yourself and Mr. Martin Mabe on May 10, 2012, S&ME, Inc. (S&ME) is submitting the requested additional information on behalf of Lewis Farms and Liquid Waste, Inc. (Lewis Farms) for a new septage permit on land owned by Mr. H. Allen Wooten. This data includes: 1) an updated page 2 of the application form (dropping the use of the traveling irrigation gun) and 2) NCDA&CS Heavy Metal results.

Lewis Farms estimates that the proposed maximum application rate 50,000 gallons/year will be comprised of 40% domestic waste, 20% portable toilet waste, and 40% grease trap waste. However, as we discussed during our phone conversation, these numbers are purely estimates. Grease trap waste will be diluted at a minimum ratio of 1:1 with domestic waste and/or portable toilet waste prior to land application.

Please contact S&ME at your convenience, in order to set up a time and date for the required field review of the site. If there is any further information required or questions regarding this application please do not hesitate to contact S&ME for further assistance.

Sincerely,

S&ME, Inc.


Martin Mabe
Project Manager/Agronomist


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

Enclosures

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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 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.

Wesley Wooten
Signature***

5-11-12
Date

Wesley Wooten
Print name

Secretary
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.



March 20, 2012

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



Attention: Chester Cobb, L.S.S.

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

Mr. Cobb:

S&ME, Inc. (S&ME) is submitting all necessary requirements as specified in the N.C. Septage Management Rules on behalf of Lewis Farms and Liquid Waste, Inc. (Lewis Farms) for a new septage permit on land owned by Mr. H. Allen Wooten. S&ME compiled this application using data gathered by Lewis Farms and S&ME. This data includes: 1) application form, 2) landowner's authorization, 3) soil and agronomic evaluation, 4) detailed site mapping, and 5) septage nutrient management plan.

Please contact S&ME at your convenience, in order to set up a time and date for the required field review of the site. If there is any further information required or questions regarding this application please do not hesitate to contact S&ME for further assistance.

Sincerely,

S&ME, Inc.

Martin Mabe
Project Manager/Agronomist

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

Enclosures

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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 H. Allen Wooten
Address 8155 Malpass Corner Road
Currie, NC 28435

4. Site Location: County Pender State Road Number SR 1100
Directions to site: Site is located approximately 0.75 miles south of the intersection
of SR 1119 and NC Highway 421 on the north side of SR 1119 (Brinson Road)

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

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

Existing site permit number: _____ permit expiration date: _____

6. Number of acres meeting the requirements of the N.C. Septage Management Rules: 5.3 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 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 either utilizing a Pumper truck with a splash plate or a traveling irrigation gun.
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.

Wesley Wooten
Signature***

3/15/12
Date

Wesley Wooten
Print name

Secretary
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.

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 Rd, Ste. 150, Raleigh, N.C. 27605



I, H. Allen Wootten (name of site owner) hereby certify that I am the owner of 202.28 acres of land located on Malpass Corner Rd, Currie NC and identified by Book 1027 Page 134 Runder Co. ROD (book and page of recorded deed or tax map parcel) and that I agree to allow Lewis Farms + Liquid Waste Inc (name of site operator) to use said land for septage land application for a period of 99 years (length of time), beginning 6-26-12 (month, day and year) and that I have read the North Carolina Septage Management Rules *, and I understand and agree to maintain the restrictions on land use after septage land application ends **. 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 me or jointly with None (names of all co-owners, or state none).

Signature of landowner H. Allen Wootten Date 6-26-12

Signature of landowner _____ Date _____

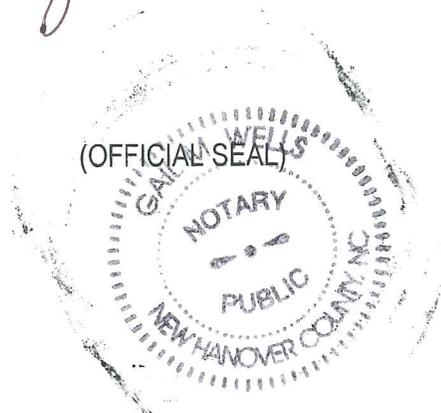
Sworn to and subscribed before me this 26 day of June, 2012.

[Signature]
(Notary Public)

My Commission expires: 9-13-13

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

** As required by Rule .0826



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 Rd, Ste. 150, Raleigh, N.C. 27605

I, H. Allen Wooten (name of site owner) hereby certify that I am the owner of 202.28 acres of land located Malpass Corner Rd, Currie NC and identified by Book 1027 Page 134 Pender Co. 200 (book and page of recorded deed or tax map parcel) and that I agree to allow Lewis Farms + Liquid Waste Inc. (name of site operator) to use said land for septage land application for a period of 99 years (length of time), beginning 3/15/12 (month, day and year) and that I have read the North Carolina Septage Management Rules *, and I understand and agree to maintain the restrictions on land use after septage land application ends **. 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 me or jointly with None (names of all co-owners, or state none).

Signature of landowner H. Allen Wooten Date 3-15-12

Signature of landowner _____ Date _____

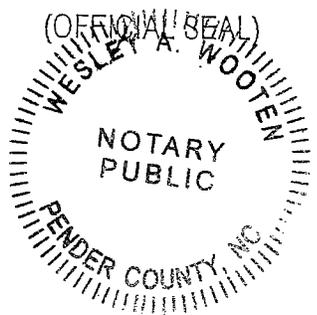
Sworn to and subscribed before me this 15th day of March, 20 12

Wesley A. Wooten
(Notary Public)

My Commission expires: December 12, 2012

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

** As required by Rule .0826





North Carolina Department of Environment and Natural Resources

Division of Water Quality

Charles Wakild, P.E.

Director

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

September 7, 2012

WESLEY WOOTEN, PRESIDENT
COASTAL FARMS AND RESIDUALS, LLC.
8155 MALPASS CORNER
CURRIE, NORTH CAROLINA 28435

Subject: Attachment B Certification
Permit No. WQ0034806
COASTAL FARMS AND RESIDUALS,
LLC.
Residuals Land Application Program
Pender County

Dear Mr. Wooten:

In accordance with your permit modification application package received on August 27, 2012; we are forwarding herewith a modified Attachment B, certified September 7, 2012, to Coastal Farms and Residuals, LLC. for the subject residuals land application program.

This certification is being issued to modify Attachment B to delete Field F-4 owned by Allen H. Wooten consisting of 5.9 acres.

Please replace the existing Attachment B of Permit No. WQ0034806 that was previously certified on June 25, 2012, with this modified Attachment B. It is the Permittee's responsibility to ensure that a **complete permit** is created by inserting this modified Attachment B Permit No. WQ0034806, issued on June 25, 2010, and making sure to retain any vicinity and buffer maps for any existing and unmodified land application sites.

This modified Attachment B shall be effective from the date of certification; shall void Attachment B of Permit No. WQ0034806 that was previously certified on June 25, 2010; and shall be subject to the conditions and limitations as specified therein and well as those specified in the above-referenced permit. As always, remember to **take the time to review this modified Attachment B thoroughly**, as some of the conditions contained therein may have been changed since the last certification. Note that this modified Attachment B is hereby incorporated by reference into Permit No. WQ0034806, issued on June 25, 2010.

AQUIFER PROTECTION SECTION
1636 Mail Service Center, Raleigh, North Carolina 27699-1636
Location: 2728 Capital Boulevard, Raleigh, North Carolina 27604
Phone: 919-733-3221 \ FAX 1: 919-715-0588; FAX 2: 919-715-6048 \ Customer Service: 1-877-623-6748
Internet: www.ncwaterquality.org

An Equal Opportunity \ Affirmative Action Employer

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North Carolina
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ATTACHMENT B - APPROVED LAND APPLICATION SITES

Certification Date: 09/07/2012

Permit Number: WQ0034806 Version: 1.1

Coastal Farms and Residuals, LLC - Coastal Farms and Residuals, LLC Land Application Program (503)

Field/ Site	Owner	Lessee	County	Latitude	Longitude	Net Acreage	Dominant Soil Series
F-1	Wooten, Allen H.		Pender	34°29'11"	78°03'59"	13.9	Norfolk - NoA
F-2	Wooten, Allen H.		Pender	34°29'24"	78°04'09"	21.5	Norfolk - NoA
F-3	Wooten, Allen H.		Pender	34°29'32"	78°04'05"	16.9	Norfolk - NoA
F-1	Burns, Julia	Wooten, Allen H.	Pender	34°33'38"	78°07'57"	28.9	Norfolk - NoA
F-2	Burns, Julia	Wooten, Allen H.	Pender	34°33'45"	78°08'20"	59.3	Norfolk - NoA
F-1	Corbett Package Company	Wooten, Allen H.	Pender	34°28'28"	77°52'10"	71.8	Norfolk - NoA
F-2	Corbett Package Company	Wooten, Allen H.	Pender	34°28'14"	77°51'41"	55.4	Norfolk - NoA
F-1	Corbett Brothers	Wooten, Allen H.	Pender	34°28'17"	77°52'09"	11.8	Norfolk - NoA
F-1	Corbett Farming Company	Wooten, Allen H.	Pender	34°28'03"	77°52'00"	81.9	Norfolk - NoA
F-2	Corbett Farming Company	Wooten, Allen H.	Pender	34°27'55"	77°51'33"	72.8	Goldsboro - GoA
F-1	Sidbury, Alfred	Wooten, Allen H.	Pender	34°28'07"	77°51'22"	70.2	Goldsboro - GoA
F-1	Corbett, Wilber	Wooten, Allen H.	Pender	34°24'03"	77°56'40"	93.4	Anttyville - AuB
Total						597.8	



Septage Nutrient Management Plan
for
Lewis Farms Owner: Lewis Farms & Liquid Waste, Inc.
8155 Malpass Corner Rd.
Currie, NC 28435
(910) 283-9823
(new application)

Purpose: The purpose of this document is to present the septage nutrient management plan proposed for the Brinson Road site.

Site Conditions: The relevant property lines, site limits, natural geographic conditions and known site improvements are incorporated from the application permit.

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. Pay particular attention to: **soil pH, zinc index, and copper index.**
3. Total available area for septage application on this site is 5.3 acres.
4. The dominant soil series at this site is Goldsboro A (0-2 % slope) fine sandy loam.

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 HAW1 will be in a two-year rotation that includes cereal rye (optional winter cover between soybeans and corn), 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 field may also be switched over to pasture at a future date (see details below in B3 – B6). If so, the cropping pattern will be summer Bermuda grass with winter small grain (wheat or cereal rye) as cover. The table below gives approximate planting and harvesting dates. These dates have some flexibility due to weather constraints.

The following seeding rates are recommended to produce good stand density. Under adverse conditions, a much lower percentage of the seeds will establish successfully. For that reason, many seeds are needed to obtain a satisfactory stand:

- 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>HAW1 (rowcrop option)</i>		<i>HAW1 (pasture option)</i>	
1	wheat	October-June	bermuda	April-October
	soybeans	June-November	cereal rye	November-April
2	cereal rye	November-April	bermuda	April-October
	corn	May-September	cereal rye	November-April

If the field is switched to pasture:

3. The field may be switched to have Bermuda during the warm season; and cereal rye, wheat, or a small grain mix used for the cool season.
4. The owner will seed the field with Bermudagrass (Cheyenne or another seeded variety, NOT “giant Bermuda”). See the “General Note”, item B5 below, for establishment of Bermudagrass.

Once established, the first Bermuda hay harvest each year will be when the grass is 12 to 15 inches tall. Subsequent cuttings should occur at four- to five-week intervals or when it is 12 to 15 inches tall, whichever comes first. Recommended Bermudagrass practices are detailed in the attached Extension publication, *Bermudagrass Management in North Carolina*. It should be noted that true “common” Bermudagrass does not grow very tall and will be shorter than the Cheyenne. Mowing all varieties of Bermudagrass will help the grass spread and reduce weed problems. Maintaining proper soil pH is very important. **If the pH gets above 6.5, it is recommended that 200 lbs/acre of elemental sulfur be applied to the field.**

Overseeding with cereal rye, wheat, or small grain mix (“winter overseed”) will occur near mid-October of each year, at a rate of roughly 100-120 lbs per acre. This seeding rate is from *Planting Guide for Forage Crops in North Carolina*, to obtain the proper crop stand density required to meet the realistic yield expectations. Failure of sufficient germination will likely require reseeding in affected areas. The winter overseed crop will be harvested as hay, preferably by late April to very early-May.

5. General Note: grass establishment

Prior to initial seeding with Bermuda, the existing crop will be cut, removed, and the remaining vegetation sprayed with plant killer, especially if ryegrass is present. For better germination, it is recommended that a cultipacker be used during seeding to improve seed/soil contact. If the stand of Bermuda grass in any field falls below 80% coverage, then the field (or specific problem areas) will be sprigged, in March or April, with 30-40 bushels of Bermuda grass sprigs per acre or seeded, in April or May, with 10-15 lbs per acre Cheyenne Bermuda (or another seeded variety) grass seed. If weeds caused the problem with the grass coverage, the weed problem is to be addressed **before** re-seeding or sprigging. In bare areas, a light discing can be used to incorporate the sprigs. The winter cover crop needs to be removed before the Bermuda is put out and the pumping schedule adjusted accordingly.

Bermuda grass establishes best at a pH of 6-6.5. Use the soil test report to determine if lime, phosphorus and potassium additions are needed. **If the soil pH is greater than 6.5, apply 200 lb/acre elemental sulfur.** When growth starts, 30 pounds of nitrogen per acre can be applied. After the plants begin to make runners, an additional 30 pounds of nitrogen per acre can be applied. These nitrogen applications are to be documented and kept along with the other application records. If weedy grasses are not a problem, let the new grass grow 8-10 inches tall before clipping. During establishment, clipping (short mowing) will encourage the plants to spread across the soil, and will also help control some weeds.

6. Weed control

Well-managed bermudagrass is competitive with most perennial and summer annual weeds. If weeds become a problem, especially during grass establishment, contact your technical specialist for assistance and/or the most recent *North Carolina Agricultural Chemicals Manual* for herbicides to control specific weeds. Promptly removing the winter overseed crop is important to avoid shading out and competing with the Bermuda early in its growing season. Pre-emergent herbicides can be used to control crabgrass and other warm season annual weeds; **do not use in areas that are to be reseeded.**

Weed control for the various crops is very weed specific. Please consult one of your local advisors for proper identification and control recommendations.

C. Nitrogen needs for crops grown:

RYE = Realistic Yield Expectation for Goldsboro A in Pender

N App. Rate = Suggested nitrogen application rate

<i>HAWI</i>	<i>Crop</i>	<i>RYE</i>	<i>Rowcrop option</i>		<i>*Gal/ac/yr</i>	<i>Adjusted Gal/ac/yr</i>	<i>Actual lbs N/ac</i>
			<i>N App. Rate</i>	<i>Total lbs N/ac</i>			
yr 1	small grain	10.5 t/ac	11.4 lb/ton	120	46,154	20,000	52
yr 1	corn	130 bu/ac	1 lb/bu	130	50,000	30,000	78
yr 2	wheat	65 bu/ac	2 lb/bu	130	50,000	20,000	52
yr 2	soybeans	38 bu/ac	3.9 lb/bu	148	56,923	30,000	78

<i>HAWI</i>	<i>Crop</i>	<i>RYE</i>	<i>Pasture option</i>		<i>*Gal/ac/yr</i>	<i>Adjusted Gal/ac/yr</i>	<i>Actual lbs N/ac</i>
			<i>N App. Rate</i>	<i>Total lbs N/ac</i>			
	bermuda	5.5 t/ac	46 lb/ton	253	97,308	30,000	78
	small grain	10.5 t/ac	11.4 lb/ton	120	46,154	20,000	52

*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 and bermuda 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: 68 lbs nitrogen
 Corn: 52 lbs nitrogen
 Wheat: 78 lbs nitrogen
 Soybeans: 70 lbs nitrogen
 Bermuda: 175 lbs nitrogen

All such additions are to be documented. Although corn is actively growing in May-September, it is not practical to apply septage over the crop using a pumper truck. The same is true for the soybeans. Applications for these crops would be made post-harvest of the preceding crop, immediately prior to planting the corn or soybeans.

The amount of supplemental N is based on the RYE for the field soil type. For example, the RYE for corn is 130 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
Bermuda grass	May-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 wheat after 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>Rowcrop (application per acre)</i>		<i>Pasture (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	high	cereal rye
May	none	wheat	medium	bermuda
June	high	soybeans	high	bermuda
July	high	soybeans	high	bermuda
August	high	soybeans	medium	bermuda
September	low	soybeans	medium	bermuda
October	low	soybeans/rye	low	bermuda/rye
November*	low	cereal rye	low	cereal rye
December*	low	cereal rye	low	cereal rye
January*	low	cereal rye	low	cereal rye
February*	low	cereal rye	low	cereal rye
March*	medium	cereal rye	medium	cereal rye
April	medium	cereal rye	high	cereal rye
May	medium	corn	medium	bermuda
June	high	corn	high	bermuda
July	high	corn	high	bermuda
August	low	corn	medium	bermuda
September	none	corn	medium	bermuda
October	low	corn/wheat	low	bermuda/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. Septage will be applied by a pumper truck with a splash plate, when the crops are of suitable height and the field is trafficable. 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 prior to the Spring crop planting or the bermuda grass 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. The Bermudagrass will be cut as hay and baled at four- to five-week intervals or when it is 12 to 15 inches tall, whichever comes first. Recommended Bermudagrass practices are detailed in the Extension publication, *Bermudagrass Management in North Carolina*.
4. 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
3. Septage land application log
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** is used to record septage pumped by the firm. The **Septage Land Application Log** 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. 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. 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.
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: 8-22-12

Plan prepared by: Diana M.C. Rashash

Date: August 10, 2012

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*

Lewis Farms & Liquid Waste, Inc.

H. ALLEN WOOTEN FARM

SOILS AND AGRONOMIC EVALUATION

The H. Allen Wooten farm is located off of Brinson Road (SR 1119) in Pender County, N.C. Field HAW1 is located on the north side of Brinson Road approximately 0.75 miles south of the intersection of NC Highway 421 and Brinson Road. The surrounding area is primarily agricultural and forested.

Field HAW1 is currently in a row crop rotation consisting of corn, soybean, and wheat. Future plans for Field HAW1 may call for establishment of common bermuda for hay production and to be overseeded annually with ryegrass for hay production. However, in the interim, row crop production will continue. The topography over the field ranges from 0 to 2 %. Buffer requirements as required by 15A NCAC 13B .0800 for setbacks will need to be adhered to and will reduce the useable acreage in these fields. Refer to "Buffer Maps" for specific buffer/setback requirements and acreage totals.

A field investigation was conducted by an S&ME agronomist and soil scientist on December 19, 2011. Preliminary soils information for this site was obtained from the Pender County Natural Resources Conservation Service and Web Soil Survey. An S&ME soil scientist advanced hand auger boring on each field to characterize the proposed application site (hand auger boring location(s) are indicated on Figure 3 – NRCS Soil Series Map). Soil profile descriptions were performed on each proposed fields and indicated each field as suitable according to the criteria outlined in 15A NCAC 13B .0837(a)(4-6). The predominant soil series associated with Field HAW1 is most similar to the Goldsboro series (Fine-loamy, siliceous, subactive, thermic Aquic Paleudults). Soil Profile description sheets are contained within this section of the application indicating the predominant soil series identified on each field.

Both the soils and the crops should be able to assimilate the proposed loadings of liquids, solids, nitrogen, phosphorus, heavy metals, and salts known to be in the septage. This assessment is based on the residual analysis provided, the planned application rate, proper crop management guidelines and adherence to permit requirements. Soil pH for mineral soils should be maintained above 6.0 and at levels to ensure optimal crop production. Soil tests should be reviewed annually to identify any changes in the nutrient status of the soil. Management practices should be evaluated prior to each application to account for changes in the proposed hay cutting and land use objectives. Crop management guidelines that will be of importance for this site will be:

- timing of application events with plant nutritional needs and periods of plant dormancy,
- split application to prevent hydraulic overloading or nutrient leaching,
- performance of proper stabilization methods to fit crop and soil needs,

- maintenance of proper vegetative cover on more sloping areas with runoff potential, and
- proper coordination between application events and crop harvesting.

The results of the soil analysis for these fields, included in this report, indicate no gross deficiencies in the fertility of these fields. By using standard agricultural practices for the management of forage and crop production, the operator should see significant benefits from the application of septage. In turn, these well-maintained fields should provide good assimilation of the plant available nutrients contained in the septage and afford an environmentally safe means of solids disposal and nutrient recycling.



Martin Mabe
Martin Mabe
Agronomist

Rob Willcox
Rob Willcox, L.S.S.
Soil Scientist

S&ME, INC.

SITE/SOIL EVALUATION

Project No. 1588-95-010 Phone No. _____ Date: 12-19-11
 Location Bronson Rd. Pin _____ County: Pender Property Size _____

Proposed Facility: _____ Water Supply: On-Site Well Evaluation: Auger Boring
 Community Pit
 Public Cut
 Described By: Franklin Brubaker
 Weather: Sunny 60° Antecedent Moisture _____ Surface Water: _____

FACTORS	PROFILE 1	PROFILE 1 (continued)	PROFILE	PROFILE
Landscape Position %	<u>L 0-2%</u>			
Horizon Depth I	<u>10-9</u>			
Color Munsell	<u>10YR 4/4</u>			
Texture	<u>sl</u>			
Structure	<u>wsbk</u>			
Consistence	<u>VFR</u>			
Boundary				
Horizon Depth II	<u>9-18</u>	<u>3i-29</u>		
Color - Munsell	<u>10YR 6/4</u>	<u>10YR 6/2</u>		
Texture	<u>sl</u>	<u>sl</u>		
Mottles	<u>-</u>	<u>C: 10YR 6/4; 7.5YR 5/8</u>		
Structure	<u>wsbk</u>	<u>wsbk</u>		
Consistence	<u>VFR</u>	<u>VFI S P</u>		
Boundary				
Horizon Depth III	<u>18-25</u>			
Color - Munsell	<u>10YR 6/4</u>			
Texture	<u>sl</u>			
Mottles	<u>C: 10YR 6/4</u>			
Structure	<u>wsbk</u>			
Consistence	<u>FR SS SP</u>			
Boundary				
Horizon Depth IV	<u>25-31</u>			
Color - Munsell	<u>10YR 6/4</u>			
Texture	<u>sl</u>			
Mottles	<u>F: 10YR 6/4</u>			
Structure	<u>wsbk</u>			
Consistence	<u>FR SS SP</u>			
Boundary				
Soil Wetness		<u>25"</u>		
Restrictive Horizon		<u>JHWT 25"</u>		
Saprolite				
LTAR				
Classification		<u>Suitable</u>		
Predominant Soil Series for Field		<u>Goldboro-Gol</u>		

- LEGEND**
- LANDSCAPE POSITION**
- R Ridge Interfluve
 - S Shoulder
 - L Linear Slope
 - FS Foot Slope
 - N Nose Slope
 - H Head Slope
 - Cc Concave Slope
 - Cv Convex Slope
 - T Terrace
 - P Flood Plain
- TEXTURE**
- s sand
 - ls loamy sand
 - sl sandy loam
 - l loam
 - si silt
 - sil silt loam
 - sicl silty clay loam
 - cl clay loam
 - scl sandy clay loam
 - sc sandy clay
 - sic silty clay
 - c clay
- CONSISTENCE WET**
- Ns non-sticky
 - Ss slightly sticky
 - S sticky
 - Vs very sticky
- MOIST**
- Np non-plastic
 - Sp slightly plastic
 - P plastic
 - Vp very plastic
- STRUCTURE**
- vfr Very friable
 - fr friable
 - fi firm
 - vfi Very firm
 - sg single grain
 - m massive
 - cr crumb
 - gr granular
 - sbk subangular blocky
 - abk angular blocky
 - pl platy
 - pr prismatic

Copies To:

Grower: **Mabe, Martin**

S & ME, Inc
3718 Old Battleground Rd
Greensboro, NC 27410

Farm: H Allen Woolen



Soil Test Report

SERVING N.C. RESIDENTS FOR OVER 60 YEARS

Received: 01/19/2012 Completed: 01/23/2012 Links to Helpful Information Pender County

3.1

Agronomist Comments

The heavy metal report is found on a separate page. Using Mehlich 3 as a soil test extractant, background levels of these metals typically seen in NC soils when analyzed are as follows: arsenic (As)- 4.5 ppm, cadmium (Cd)- 0.1 ppm, chromium (Cr)- 0.2 ppm, lead (Pb)- 4.2 ppm, nickel (Ni)- 0.8 ppm, & selenium (Se)- 0.2 ppm (FY2005-2007). Although the above metals here are not believed to pose a concern for plant growth, continue to monitor these and note where elevated above background levels.

Noted are elevated lead (Pb) levels above what is typically seen.

Note lime and fertilizer recommendations. Where soil test phosphorus (P) is very high (P-1 > 100), crops will not respond to additional P applied. Where the sulfur index (S-1) is 25 or less, sulfur at a rate of 20 to 25 lbs per acre may be of benefit.

The routine report will not be mailed to you as in the past; you will receive the heavy metals report by mail. In the the near future, heavy metals data will be combined with routine soil test information on one report and will be online. You will find the routine report at <http://agronomy.agr.state.nc.us/NewPALS/GrowerLogin.aspx>

David H. Hardy, Agronomist

January 22, 2012

Field Information		Applied Lime		Recommendations													
Sample No.	Last Crop	Mo	Yr	T/A	Crop or Year	Lime	N	P₂O₅	K₂O	Mg	S	Cu	Zn	B	Mn	See Note	
HAW 1					1st Crop: Corn Grain	0	120-160	70-90	10-30	0	0	0	0	.0		\$pH	3
					2nd Crop: Soybeans	0	0	70-90	10-30	0	0	0	0			\$pH	3

Test Results

Soil Class	HM%	W/V	CEC	BS%	AC	pH	P-J	K-I	Ca%	Mg%	Mn-I	Mn-AI(1)	Zn-I	Zn-AI	Cu-I	S-I	SS-I	NO₃-N	NH₄-N	Na
MIN	1.67	1.35	7.8	92.0	0.6	6.8	23	65	63.0	25.0	31	23	16	182	182	171	27			0.1

Heavy Metal Soil Test Report

MEHLICH-3 EXTRACTION

Mabe, Martin
S & ME, Inc
3718 Old Battleground Rd
Greensboro, NC 27410
Pender County

Report #: 23769

Questions concerning these analyses should be referred to the Agronomic Division, Soil Testing

Sample ID	Cd Cadmium	Ni Nickel	Pb Lead	Se Selenium	Cr Chromium	As Arsenic	Al Aluminum	Fe Iron
2	0.10	0.20	3.40	0.00	0.20	0.30	1,511.00	242.20
1	0.20	0.10	10.10	0.00	0.20	0.30	1,095.00	227.60



www.aleastern.com

A&L Eastern Laboratories, Inc.
7621 Whitepine Road Richmond, Virginia 23237 (804) 743-9401 Fax (804) 271-6446

Report Number
12-003-0537 Page: 1 of 1
Account Number
45788

Send To : S&ME INC #1588-09-010
MARTIN MABE
3718 OLD BATTLEGROUND RD
GREENSBORO , NC 27410-2314

Submitted By : MARTIN MABE
Purchase Order : 151778
Report Date : 1/6/2012
Date Received : 1/3/2012

Client : #1588-95-010
H ALLEN WOOTEN

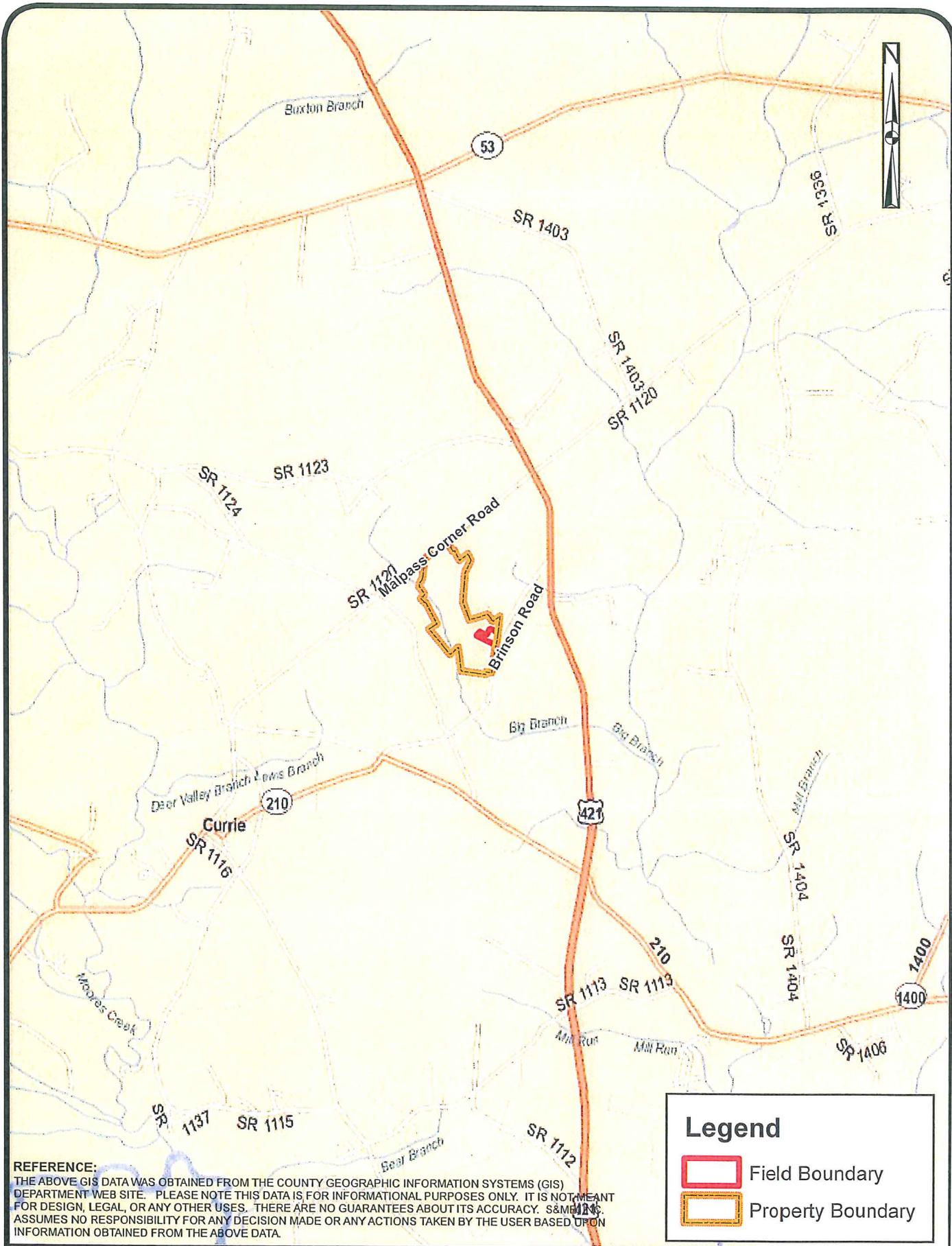
REPORT OF ANALYSIS

Lab No	Sample ID	Sample Date and Time	Mercury
17757	HAN1	"Brinson Road"	MEHLICH 3 HG
			ppm
			< 0.400
17758	2	"Plantation"	< 0.400

Method Reference:
Mehlich, A. 1984. Mehlich 3 soil test extractant. Comm. Soil Sci. Plant Anal. 25:1409-1416.

Pauric McGeary

Pauric McGroary



REFERENCE:
 THE ABOVE GIS DATA WAS OBTAINED FROM THE COUNTY GEOGRAPHIC INFORMATION SYSTEMS (GIS) DEPARTMENT WEB SITE. PLEASE NOTE THIS DATA IS FOR INFORMATIONAL PURPOSES ONLY. IT IS NOT MEANT FOR DESIGN, LEGAL, OR ANY OTHER USES. THERE ARE NO GUARANTEES ABOUT ITS ACCURACY. S&ME ASSUMES NO RESPONSIBILITY FOR ANY DECISION MADE OR ANY ACTIONS TAKEN BY THE USER BASED UPON INFORMATION OBTAINED FROM THE ABOVE DATA.

Legend

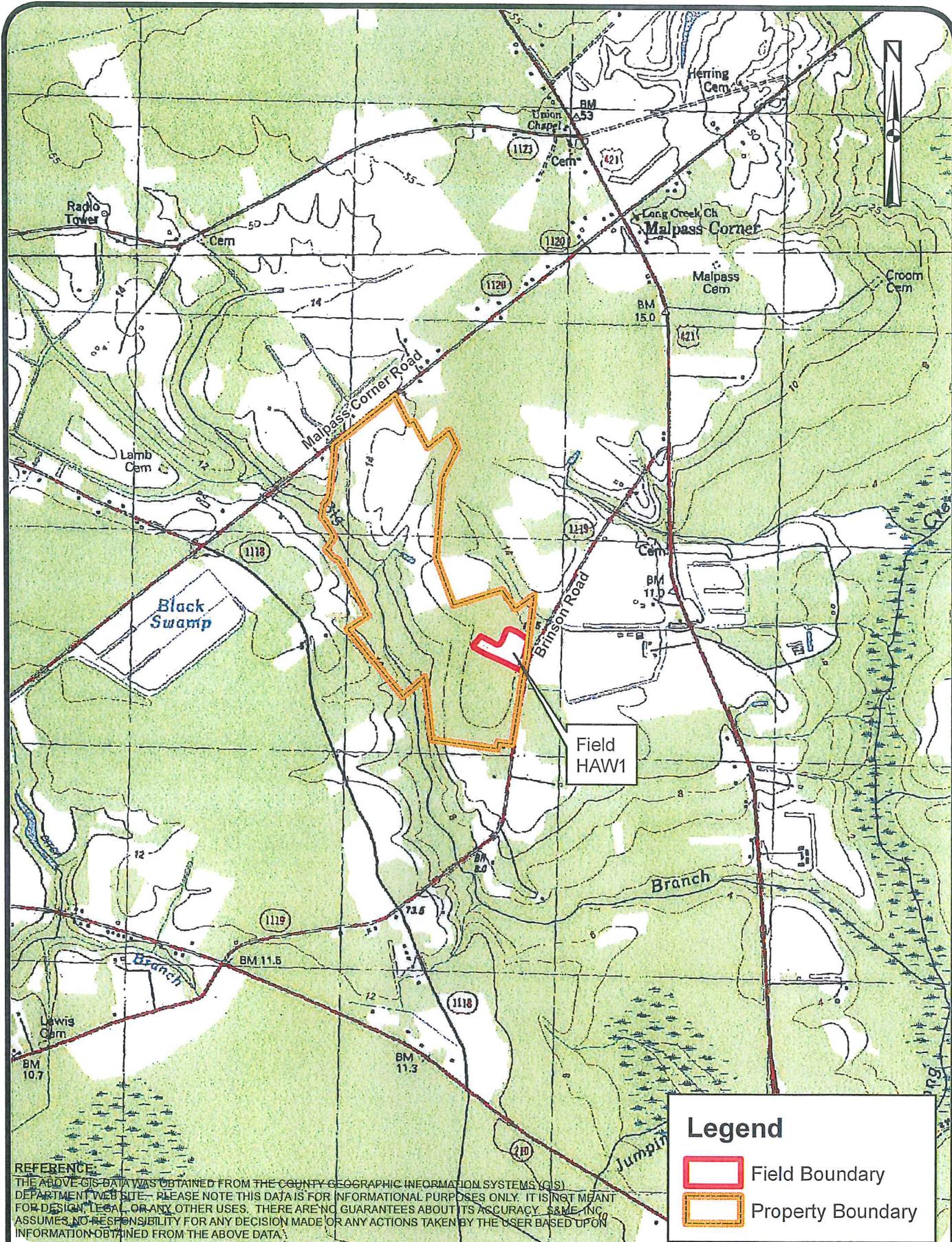
-  Field Boundary
-  Property Boundary

SCALE: 1" = 1 Mile
 DATE: January 2012
 DRAWN BY: MEM
 PROJECT NO: 1588-95-010



LEWIS FARMS & LIQUID WASTE, INC.
H. ALLEN WOOTEN PROPERTY
 VICINITY MAP
 PENDER COUNTY, NC

FIGURE NO. **1**



REFERENCE:
 THE ABOVE GIS DATA WAS OBTAINED FROM THE COUNTY GEOGRAPHIC INFORMATION SYSTEMS (GIS) DEPARTMENT WEB SITE. PLEASE NOTE THIS DATA IS FOR INFORMATIONAL PURPOSES ONLY. IT IS NOT MEANT FOR DESIGN, LEGAL, OR ANY OTHER USES. THERE ARE NO GUARANTEES ABOUT ITS ACCURACY. S&ME, INC. ASSUMES NO RESPONSIBILITY FOR ANY DECISION MADE OR ANY ACTIONS TAKEN BY THE USER BASED UPON INFORMATION OBTAINED FROM THE ABOVE DATA.

Legend

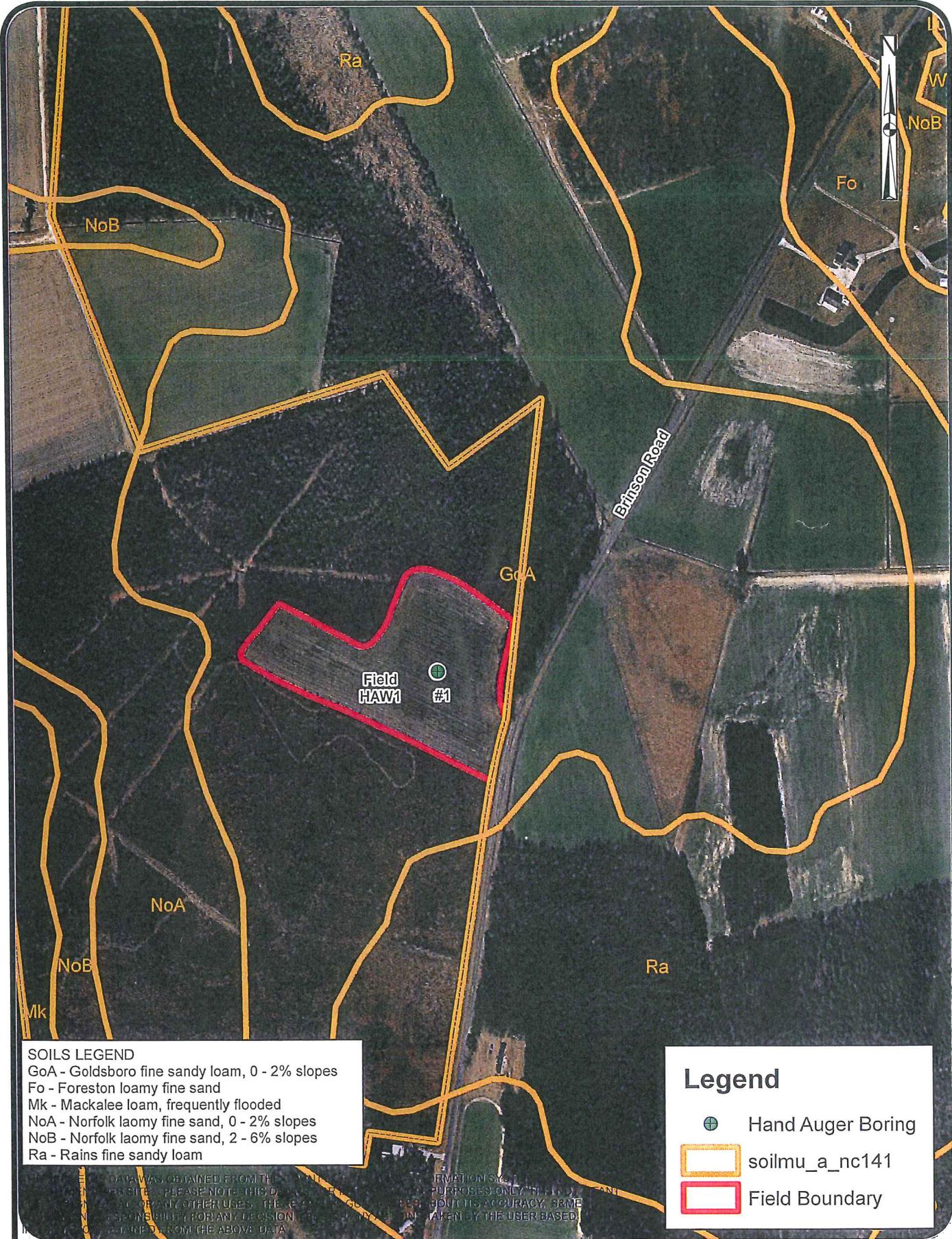
- Field Boundary
- Property Boundary

SCALE: 1" = 2,000'
 DATE: February 2012
 DRAWN BY: MEM
 PROJECT NO: 1588-95-010



LEWIS FARMS & LIQUID WASTE, INC.
H. ALLEN WOOTEN PROPERTY
 NRCS SOIL SURVEY MAP
 PENDER COUNTY, NC

FIGURE NO. **2**



SOILS LEGEND
 GoA - Goldsboro fine sandy loam, 0 - 2% slopes
 Fo - Foreston loamy fine sand
 Mk - Mackalee loam, frequently flooded
 NoA - Norfolk laomy fine sand, 0 - 2% slopes
 NoB - Norfolk laomy fine sand, 2 - 6% slopes
 Ra - Rains fine sandy loam

Legend

- Hand Auger Boring
- soilmu_a_nc141
- Field Boundary

DATA WAS OBTAINED FROM THE NCRS SOIL SURVEY MAP. THIS DATA IS FOR INFORMATIONAL PURPOSES ONLY. IT IS NOT TO BE USED FOR ANY OTHER PURPOSES. THE USER ASSUMES ALL RESPONSIBILITY FOR ANY DECISIONS MADE BASED ON THIS DATA.

SCALE: 1" = 400'
 DATE: February 2012
 DRAWN BY: MEM
 PROJECT NO: 1588-95-010



LEWIS FARMS & LIQUID WASTE, INC.
H. ALLEN WOOTEN PROPERTY
 NRCS SOIL SURVEY MAP
 PENDER COUNTY, NC

FIGURE NO. **3**