

LAND APPLICATION OF BIOSOLIDS  
HARRY SHEPHERD

MA11 (FIELDS 1 – 5)  
MADISON COUNTY, VIRGINIA  
AUGUST 2012





August 14, 2012

Mr. Ed Stuart  
Dept of Environmental Quality  
Northern Virginia Regional Office  
13901 Crown Court  
Woodbridge, VA 22193

Dear Mr. Stuart:

Transmitted herein for your consideration is land application site for Harry Shepherd (designated as MA11, fields 1 - 5), located in Madison County, Virginia. This submission contains strictly site specific information. Please refer to the operations and maintenance manual submitted under separate cover for all non-site specific information.

Do not hesitate to contact me at (804) 443-2170 should you have any questions or require additional information.

Sincerely,

A handwritten signature in black ink, appearing to read "Kelly M. Love".

Kelly M. Love  
Technical Services Director

KML/cmw



## FIELD SUMMARY SHEET

Harry Shepherd

MA11

| <b>SYNAGRO<br/>FIELD<br/>#</b> | <b>GROSS<br/>ACRES</b> | <b>NET<br/>ACRES</b> | <b>FSA<br/>TRACT<br/>#</b> | <b>FSA<br/>FIELD<br/>#</b> | <b>TOPO<br/>QUAD</b> | <b>OWNER</b>     |
|--------------------------------|------------------------|----------------------|----------------------------|----------------------------|----------------------|------------------|
| 11-01                          | 32.0                   | 31.6                 | 1811                       | 2                          | Madison Mills        | Clarence W. Boyd |
| 11-02                          | 36.6                   | 34.9                 | 1811                       | 1, 2                       | Madison Mills        | Clarence W. Boyd |
| 11-03                          | 76.7                   | 76.1                 | 1811                       | 3                          | Madison Mills        | Clarence W. Boyd |
| 11-04                          | 42.7                   | 42.5                 | 1811                       | 4                          | Madison Mills        | Clarence W. Boyd |
| 11-05                          | 20.0                   | 16.2                 | 1811                       | 6 - 9                      | Madison Mills        | Clarence W. Boyd |
| <b>TOTALS:</b>                 | <b>208.0</b>           | <b>201.3</b>         |                            |                            |                      |                  |

**VIRGINIA POLLUTION ABATEMENT PERMIT APPLICATION  
FORM D: MUNICIPAL EFFLUENT AND BIOSOLIDS**

MA-11

**PART D-VI: LAND APPLICATION AGREEMENT - BIOSOLIDS AND INDUSTRIAL RESIDUALS**

A. This land application agreement is made on 8/29/13 between Clarena Boyd referred to here as "Landowner", and Synagro, referred to here as the "Permittee". This agreement remains in effect until it is terminated in writing by either party or, with respect to those parcels that are retained by the Landowner in the event of a sale of one or more parcels, until ownership of all parcels changes. If ownership of individual parcels identified in this agreement changes, those parcels for which ownership has changed will no longer be authorized to receive biosolids or industrial residuals under this agreement.

**Landowner:**

The Landowner is the owner of record of the real property located in Madison, Virginia, which includes the agricultural, silvicultural or reclamation sites identified below in Table 1 and identified on the tax map(s) attached as Exhibit A.

| Table 1.: Parcels authorized to receive biosolids, water treatment residuals or other industrial sludges |               |               |               |
|--|---------------|---------------|---------------|
| Tax Parcel ID  | Tax Parcel ID | Tax Parcel ID | Tax Parcel ID |
| 50-70  |               |               |               |
|  |               |               |               |
|  |               |               |               |
|  |               |               |               |

Additional parcels containing Land Application Sites are identified on Supplement A (check if applicable)

Check one:  The Landowner is the sole owner of the properties identified herein.  
 The Landowner is one of multiple owners of the properties identified herein.

In the event that the Landowner sells or transfers all or part of the property to which biosolids have been applied within 38 months of the latest date of biosolids application, the Landowner shall:

1. Notify the purchaser or transferee of the applicable public access and crop management restrictions no later than the date of the property transfer; and
2. Notify the Permittee of the sale within two weeks following property transfer.

The Landowner has no other agreements for land application on the fields identified herein. The Landowner will notify the Permittee immediately if conditions change such that the fields are no longer available to the Permittee for application or any part of this agreement becomes invalid or the information herein contained becomes incorrect.

The Landowner hereby grants permission to the Permittee to land apply residuals as specified below, on the agricultural sites identified above and in Exhibit A. The Landowner also grants permission for DEQ staff to conduct inspections on the land identified above, before, during or after land application of permitted residuals for the purpose of determining compliance with regulatory requirements applicable to such application.

Class B biosolids    Water treatment residuals    Food processing waste    Other industrial sludges  
 Yes     No     Yes     No     Yes     No     Yes     No

CLARENCE BOYD    Clarena Boyd    221 Mt Zion Church Rd  
 Landowner - Printed Name, Title    Signature    Mailing Address  
Madison VA 22727

**Permittee:**

Synagro, the Permittee, agrees to apply biosolids and/or industrial residuals on the Landowner's land in the manner authorized by the VPA Permit Regulation and in amounts not to exceed the rates identified in the nutrient management plan prepared for each land application field by a person certified in accordance with §10.1-104.2 of the Code of Virginia.

The Permittee agrees to notify the Landowner or the Landowner's designee of the proposed schedule for land application and specifically prior to any particular application to the Landowner's land. Notice shall include the source of residuals to be applied.

I reviewed the document(s) assigning signatory authority to the person signing for landowner above. I will make a copy of this document(s) available to DEQ for review upon request. (Do not check this box if the landowner signs this agreement)

D. Steve McMahon    D. Steve McMahon    10647 Tidewater Trail  
 Permittee - Authorized Representative    Signature    Mailing Address  
 Printed Name    Champlain VA 22438

VIRGINIA POLLUTION ABATEMENT PERMIT APPLICATION: PART D-VI LAND APPLICATION AGREEMENT

Permittee: Synagro County or City: Madison  
Landowner: Clarence W. Boyd

**Landowner Site Management Requirements:**

I, the Landowner, I have received a DEQ Biosolids Fact Sheet that includes information regarding regulations governing the land application of biosolids, the components of biosolids and proper handling and land application of biosolids.

I have also been expressly advised by the Permittee that the site management requirements and site access restrictions identified below must be complied with after biosolids have been applied on my property in order to protect public health, and that I am responsible for the implementation of these practices.

I agree to implement the following site management practices at each site under my ownership following the land application of biosolids at the site:

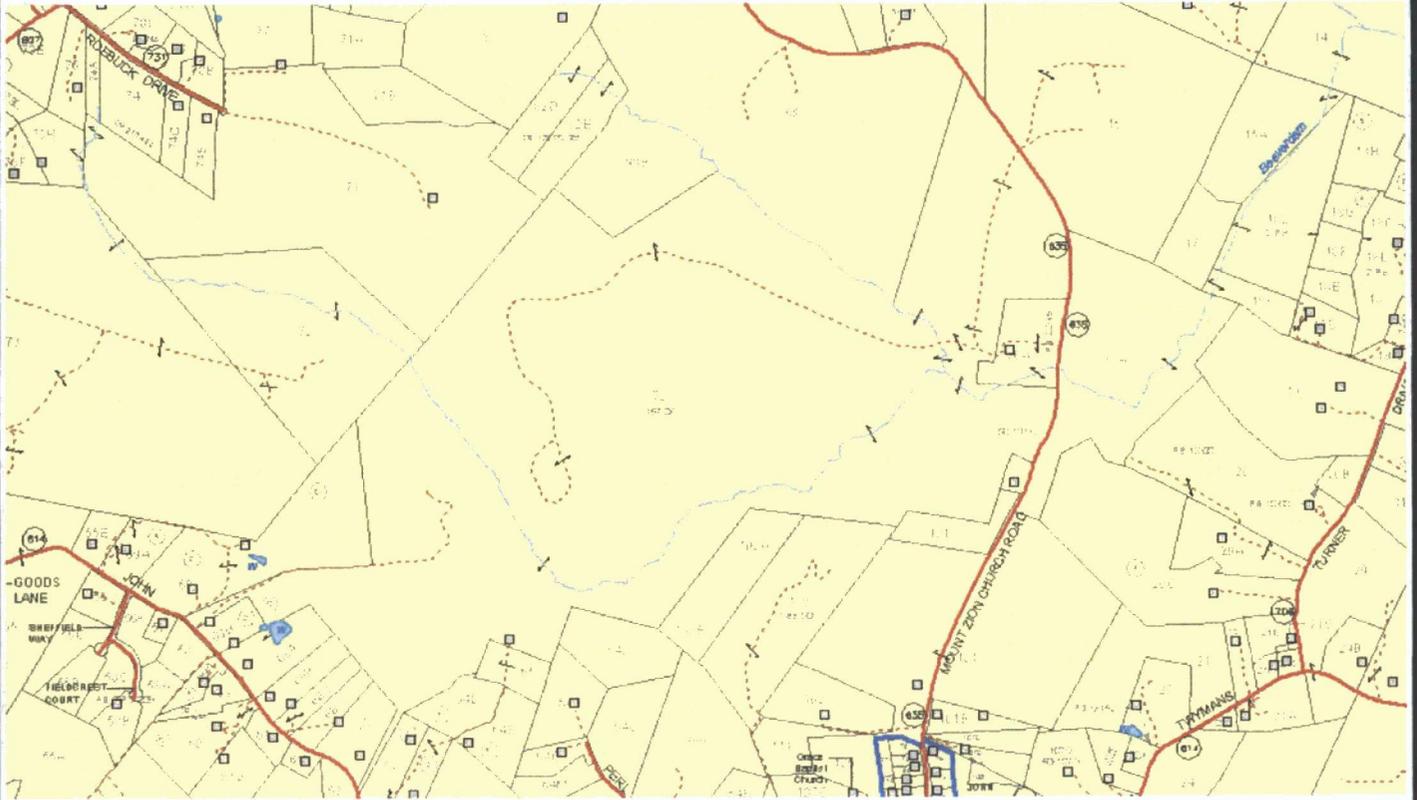
1. Notification Signs: I will not remove any signs posted by the Permittee for the purpose of identifying my field as a biosolids land application site, unless requested by the Permittee, until at least 30 days after land application at that site is completed.
2. Public Access
  - a. Public access to land with a high potential for public exposure shall be restricted for at least one year following any application of biosolids.
  - b. Public access to land with a low potential for public exposure shall be restricted for at least 30 days following any application of biosolids. No biosolids amended soil shall be excavated or removed from the site during this same period of time unless adequate provisions are made to prevent public exposure to soil, dusts or aerosols;
  - c. Turf grown on land where biosolids are applied shall not be harvested for one year after application of biosolids when the harvested turf is placed on either land with a high potential for public exposure or a lawn, unless otherwise specified by DEQ.
3. Crop Restrictions:
  - a. Food crops with harvested parts that touch the biosolids/soil mixture and are totally above the land surface shall not be harvested for 14 months after the application of biosolids.
  - b. Food crops with harvested parts below the surface of the land shall not be harvested for 20 months after the application of biosolids when the biosolids remain on the land surface for a time period of four (4) or more months prior to incorporation into the soil,
  - c. Food crops with harvested parts below the surface of the land shall not be harvested for 38 months when the biosolids remain on the land surface for a time period of less than four (4) months prior to incorporation.
  - d. Other food crops and fiber crops shall not be harvested for 30 days after the application of biosolids;
  - e. Feed crops shall not be harvested for 30 days after the application of biosolids (60 days if fed to lactating dairy animals).
4. Livestock Access Restrictions:

Following biosolids application to pasture or hayland sites:

  - a. Meat producing livestock shall not be grazed for 30 days,
  - b. Lactating dairy animals shall not be grazed for a minimum of 60 days.
  - c. Other animals shall be restricted from grazing for 30 days;
5. Supplemental commercial fertilizer or manure applications will be coordinated with the biosolids and industrial residuals applications such that the total crop needs for nutrients are not exceeded as identified in the nutrient management plan developed by a person certified in accordance with §10.1-104.2 of the Code of Virginia;
6. Tobacco, because it has been shown to accumulate cadmium, should not be grown on the Landowner's land for three years following the application of biosolids or industrial residuals which bear cadmium equal to or exceeding 0.45 pounds/acre (0.5 kilograms/hectare).

Clarence Boyd  
Landowner's Signature

8/29/13  
Date



**TAX MAP**



## Tax ID Landowner Identification Sheet

| <b>Landowner</b> | <b>Field #</b> | <b>Tax ID</b> |
|------------------|----------------|---------------|
| Clarence W. Boyd | 11-01          | 50 - 70       |
| Clarence W. Boyd | 11-02          | 50 - 70       |
| Clarence W. Boyd | 11-03          | 50 - 70       |
| Clarence W. Boyd | 11-04          | 50 - 70       |
| Clarence W. Boyd | 11-05          | 50 - 70       |

| <b>Field #</b> | <b>Latitude (north)</b>    | <b>Longitude (west)</b>    |
|----------------|----------------------------|----------------------------|
| 11-01          | 38 <sup>0</sup> 20' 45.01" | 78 <sup>0</sup> 10' 50.37" |
| 11-02          | 38 <sup>0</sup> 20' 40.33" | 78 <sup>0</sup> 10' 40.61" |
| 11-03          | 38 <sup>0</sup> 20' 50.04" | 78 <sup>0</sup> 10' 24.15" |
| 11-04          | 38 <sup>0</sup> 20' 59.26" | 78 <sup>0</sup> 09' 59.44" |
| 11-05          | 38 <sup>0</sup> 20' 41.31" | 78 <sup>0</sup> 10' 07.77" |

# Farm Summary Report

**Plan:** New Plan Fall, 2010 - Winter, 2013

**Farm Name:** MA11  
Location: Madison  
Specialist: Bill Rogers  
N-based Acres: 201.3  
P-based Acres: 0.0

**Tract Name:** MA11  
FSA Number: 0  
Location: Madison

**Field Name:** 11-01  
Total Acres: 32.00 Usable Acres: 31.60  
FSA Number: 1811/2  
Tract: MA11  
Location: Madison  
Slope Class: B Hydrologic Group: D

Riparian buffer width: 0 ft  
Distance to stream: 0 ft

### *P-Index Summary*

N-based

Phosphorus Limit method: Phosphorus Environmental Threshold (PET) method

### **Field Narrative:**

On portions of the field containing Chewacla silt loam (Cm), the seasonal high water table may be within 18 inches of the soil surface during the months of November - April. During this period, soil borings must be conducted in these areas of the field within 7 days prior to biosolids application, during the above stated period.

Chewacla silt loam (Cm) is a soil type identified by USDA as being frequently flooded during the months of November - April. All biosolids applied to portions of the field containing this soil type must be incorporated within 48 hours of application, during the above stated period.

### **Soil Test Results:**

| DATE | PH        | P | K | Lab |
|------|-----------|---|---|-----|
|      | [NO TEST] |   |   |     |

### **Soils:**

| PERCENT | SYMBOL | SOIL SERIES   |
|---------|--------|---------------|
| 32      | EmC2   | Elioak        |
| 25      | EIB    | Elioak        |
| 17      | MvB    | Meadowville   |
| 12      | ChC    | Appling Cecil |
| 8       | Cm     | Chewacla      |
| 6       | CfB    | Cecil         |

### **Field Warnings:**

**Crop Rotation:**

PLANTED      YIELD                      CROP NAME

**Field Name:            11-02**

Total Acres:    36.60    Usable Acres:    34.90

FSA Number:    1811/1,2

Tract:            MA11

Location:            Madison

Slope Class:    B            Hydrologic Group:    D

Riparian buffer width: 0 ft

Distance to stream: 0 ft

*P-Index Summary*

N-based

Phosphorus Limit method: Phosphorus Environmental Threshold (PET) method

**Field Narrative:**

On portions of the field containing Colfax fine sandy loam (CoC), the seasonal high water table may be within 18 inches of the soil surface during the months of November - June. During this period, soil borings must be conducted in these areas of the field within 7 days prior to biosolids application, during the above stated period.

**Soil Test Results:**

|      |           |   |   |     |
|------|-----------|---|---|-----|
| DATE | PH        | P | K | Lab |
|      | [NO TEST] |   |   |     |

**Soils:**

| PERCENT | SYMBOL | SOIL SERIES |
|---------|--------|-------------|
| 26      | LIB2   | Lloyd       |
| 17      | MvB    | Meadowville |
| 15      | HaC    | Hazel       |
| 15      | EIB    | Elioak      |
| 9       | LIC2   | Lloyd       |
| 6       | EnC3   | Elioak      |
| 6       | EmC2   | Elioak      |
| 6       | CoC    | Colfax      |

**Field Warnings:**

**Crop Rotation:**

PLANTED      YIELD                      CROP NAME

**Field Name:            11-03**

Total Acres:    76.70    Usable Acres:    76.10

FSA Number:    1811/3

Tract:            MA11

Location:            Madison

Slope Class:    C            Hydrologic Group:    D

Riparian buffer width: 0 ft

Distance to stream: 0 ft

*P-Index Summary*

N-based

Phosphorus Limit method: Phosphorus Environmental Threshold (PET) method

**Soil Test Results:**

|      |           |   |   |     |
|------|-----------|---|---|-----|
| DATE | PH        | P | K | Lab |
|      | [NO TEST] |   |   |     |

**Soils:**

| PERCENT | SYMBOL | SOIL SERIES |
|---------|--------|-------------|
| 49      | EmC2   | Elioak      |
| 30      | EmB2   | Elioak      |
| 11      | EnC3   | Elioak      |
| 10      | EIB    | Elioak      |

**Field Warnings:**

**Crop Rotation:**

|         |       |           |
|---------|-------|-----------|
| PLANTED | YIELD | CROP NAME |
|---------|-------|-----------|

**Field Name:** 11-04

Total Acres: 42.70 Usable Acres: 42.50

FSA Number: 1811/4

Tract: MA11

Location: Madison

Slope Class: C Hydrologic Group: D

Riparian buffer width: 0 ft

Distance to stream: 0 ft

*P-Index Summary*

N-based

Phosphorus Limit method: Phosphorus Environmental Threshold (PET) method

**Soil Test Results:**

|      |           |   |   |     |
|------|-----------|---|---|-----|
| DATE | PH        | P | K | Lab |
|      | [NO TEST] |   |   |     |

**Soils:**

| PERCENT | SYMBOL | SOIL SERIES |
|---------|--------|-------------|
| 21      | EmC2   | Elioak      |
| 21      | EmB    | Elioak      |
| 19      | EnC3   | Elioak      |
| 11      | EIC2   | Elioak      |
| 9       | EIB    | Elioak      |
| 8       | MvB    | Meadowville |
| 6       | MoC    | Manor       |
| 5       | HaC    | Hazel       |

**Field Warnings:**

**Crop Rotation:**

PLANTED      YIELD                      CROP NAME

**Field Name:**            **11-05**

Total Acres:    20.00    Usable Acres:    16.20

FSA Number:    1811/6-9

Tract:            MA11

Location:                      Madison

Slope Class:    C            Hydrologic Group:    D

Riparian buffer width: 0 ft

Distance to stream: 0 ft

*P-Index Summary*

N-based

Phosphorus Limit method: Phosphorus Environmental Threshold (PET) method

**Field Narrative:**

On portions of the field containing Chewacla silt loam (Cm), the seasonal high water table may be within 18 inches of the soil surface during the months of November - April. During this period, soil borings must be conducted in these areas of the field within 7 days prior to biosolids application, during the above stated period.

Chewacla silt loam (Cm) is a soil type identified by USDA as being frequently flooded during the months of November - April. All biosolids applied to portions of the field containing this soil type must be incorporated within 48 hours of application, during the above stated period.

**Soil Test Results:**

| DATE      | PH | P | K | Lab |
|-----------|----|---|---|-----|
| [NO TEST] |    |   |   |     |

**Soils:**

| PERCENT | SYMBOL | SOIL SERIES |
|---------|--------|-------------|
| 34      | EmC2   | Elioak      |
| 25      | HaC    | Hazel       |
| 23      | EIB    | Elioak      |
| 10      | Cm     | Chewacla    |
| 8       | MvB    | Meadowville |

**Field Warnings:**

**Crop Rotation:**

PLANTED      YIELD                      CROP NAME

# MAP LEGEND



House/Dwelling with a well



Rock Outcrop



Well



Lake/Pond



Slope which exceeds 15%



Intermittent Stream



Stream/River



Agricultural/Drainage Ditch



Field boundary



Property Line

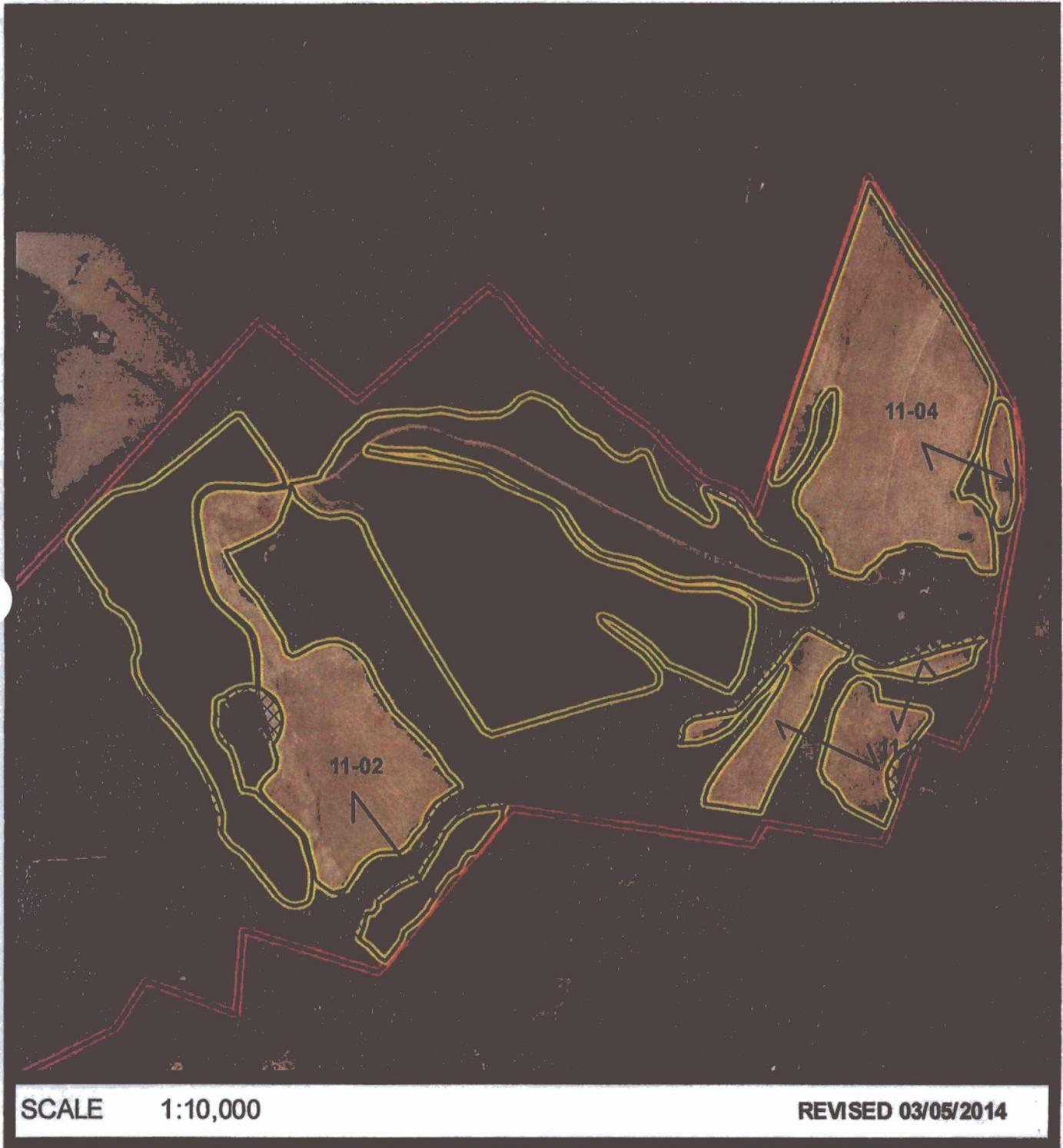
## Environmentally Sensitive Areas

| Field | Reason for Sensitive Area   |
|-------|---|
| 11-01 | High Water Table (Map Unit Cm – 8%)<br>Flooded Soils (Map Unit Cm – 8%)   |
| 11-02 | High Water Table (Map Unit CoC – 6%)<br>Shallow Soils (Map Unit HaC – 15%)                                      |
| 11-03 | None  |
| 11-04 | High Leaching Potential (Map Unit MoC – 6%)<br>Shallow Soils (Map Unit HaC – 5%)                                |
| 11-05 | High Water Table (Map Unit Cm – 10%)<br>Flooded Soils (Map Unit Cm – 10%)<br>Shallow Soils (Map Unit HaC – 25%) |

### Madison County Soils that are Environmentally Sensitive

| Soil Map Unit      | Series Name | Time of year |             | Environmental |
|--------------------|-------------|--------------|-------------|---------------|
|                    |             | High Water   | Flooded     |               |
| Ab                 | Albano      | Nov – May    |             |               |
| Ac, Ad             | Alluvial    | Nov – May    | Nov – May   |               |
| Au                 | Augusta     | Dec – May    |             |               |
| BaB                | Baile       | Nov – April  |             |               |
| BdC, BdD           | Brandywine  |              |             | Leaching      |
| BeC, BeD, BeF      | Brandywine  |              |             | Leaching      |
| BnD, BnF           | Brandywine  |              |             | Leaching      |
| BrC, BrE           | Bremo       |              |             | Leaching      |
| Bu                 | Buncombe    |              | Feb – June  | Leaching      |
| CbB                | Calverton   | Dec – May    |             |               |
| CcC, CcE           | Catoctin    |              |             | Shallow       |
| Cm                 | Chewacla    | Nov – April  | Nov – April |               |
| Cn                 | Codorus     | Nov – April  | Nov – April |               |
| CoC                | Colfax      | Nov – June   |             |               |
| Cv, Cw             | Congaree    |              | Nov – April |               |
| Eb                 | Elbert      | Nov – May    |             |               |
| HaC, HaD, HaF      | Hazel       |              |             | Shallow       |
| IrB                | Iredell     | Dec – April  |             |               |
| LeD                | Lewisberry  |              |             | Leaching      |
| LoC, LoD, LoF      | Louisburg   |              |             | Leaching      |
| MoC                | Manor       |              |             | Leaching      |
| Rh                 | Riverwash   | Jan – Dec    | Oct – July  |               |
| Rk                 | Roanoke     | Nov – May    |             |               |
| TuB, TuC, TuD, TuE | Tusquitee   |              |             | Leaching      |
| WaC, WaE           | Watt        |              |             | Shallow       |
| We                 | Wehadkee    | Nov – May    | Nov – May   |               |
| WmB                | Worsham     | Nov – April  |             |               |





SCALE 1:10,000

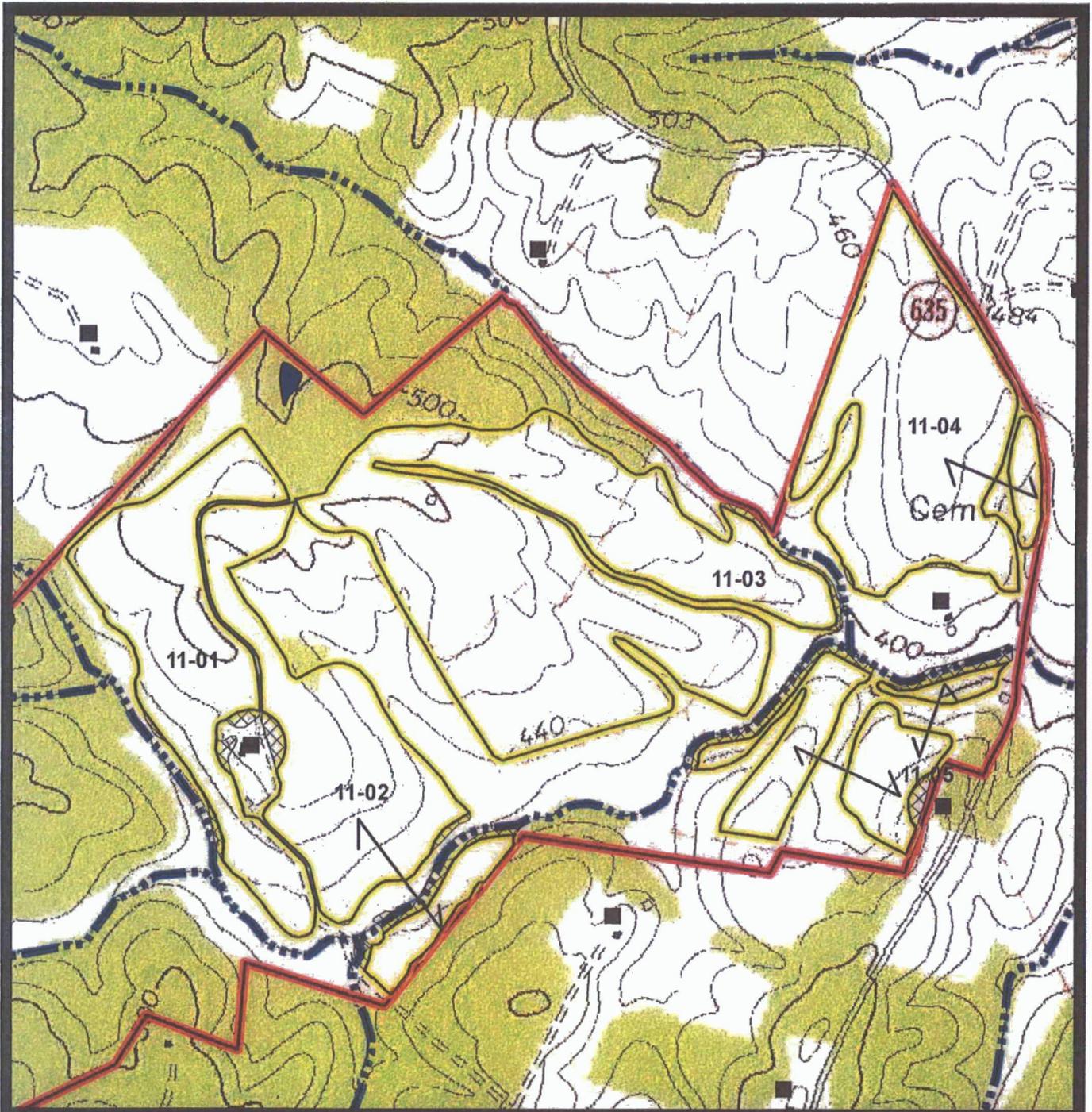
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## AERIAL MAP



# SYNAGRO

Harry Shepherd  
MA11  
Fields 1 – 5



SCALE 1:10,000

REVISED 03/05/2014

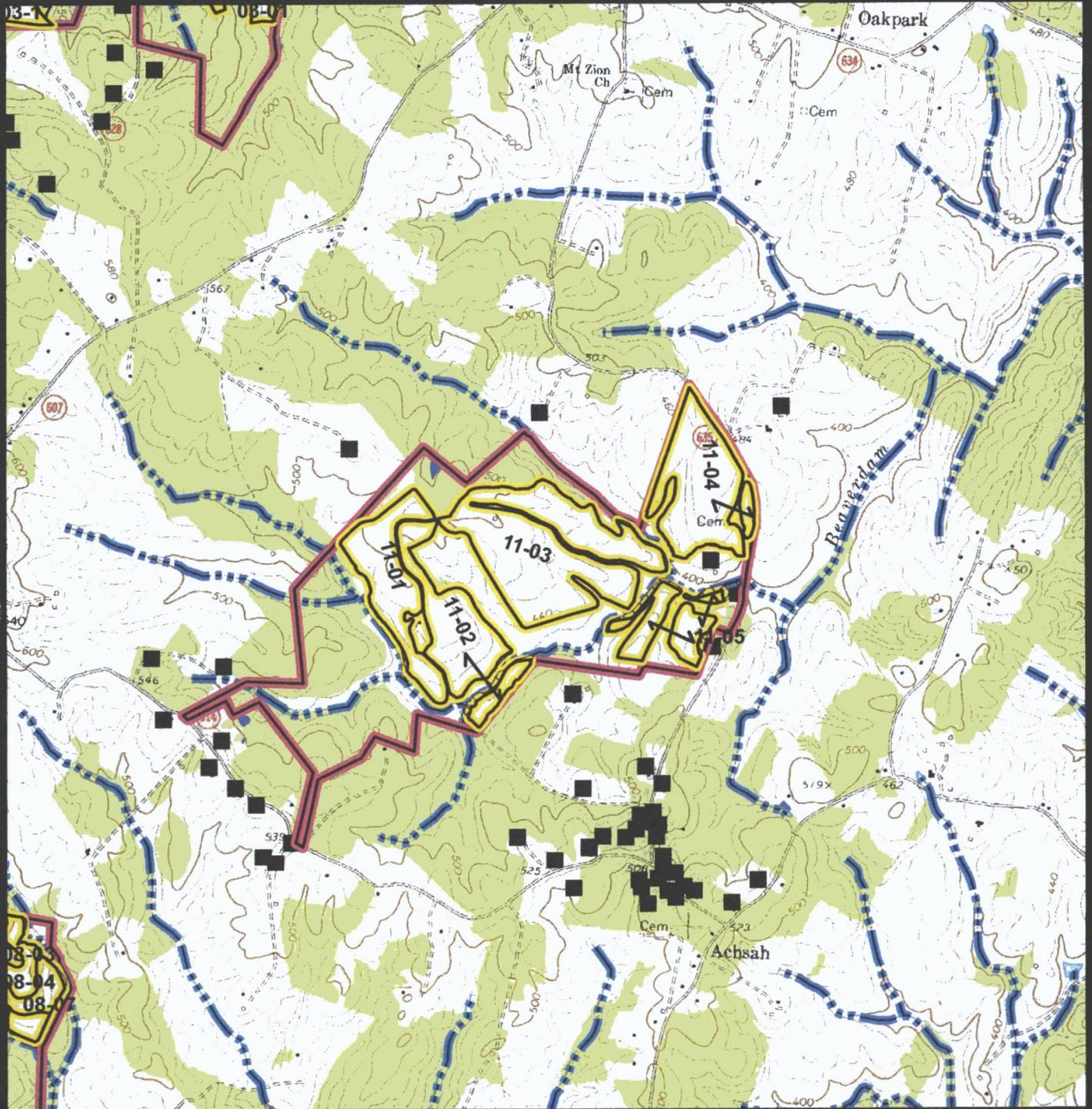
| FIELD | ACRES |
|-------|-------|
| 11-01 | 32.0  |
| 11-02 | 36.6  |
| 11-03 | 76.7  |
| 11-04 | 42.7  |
| 11-05 | 20.0  |

## TOPO MAP



# SYNAGRO

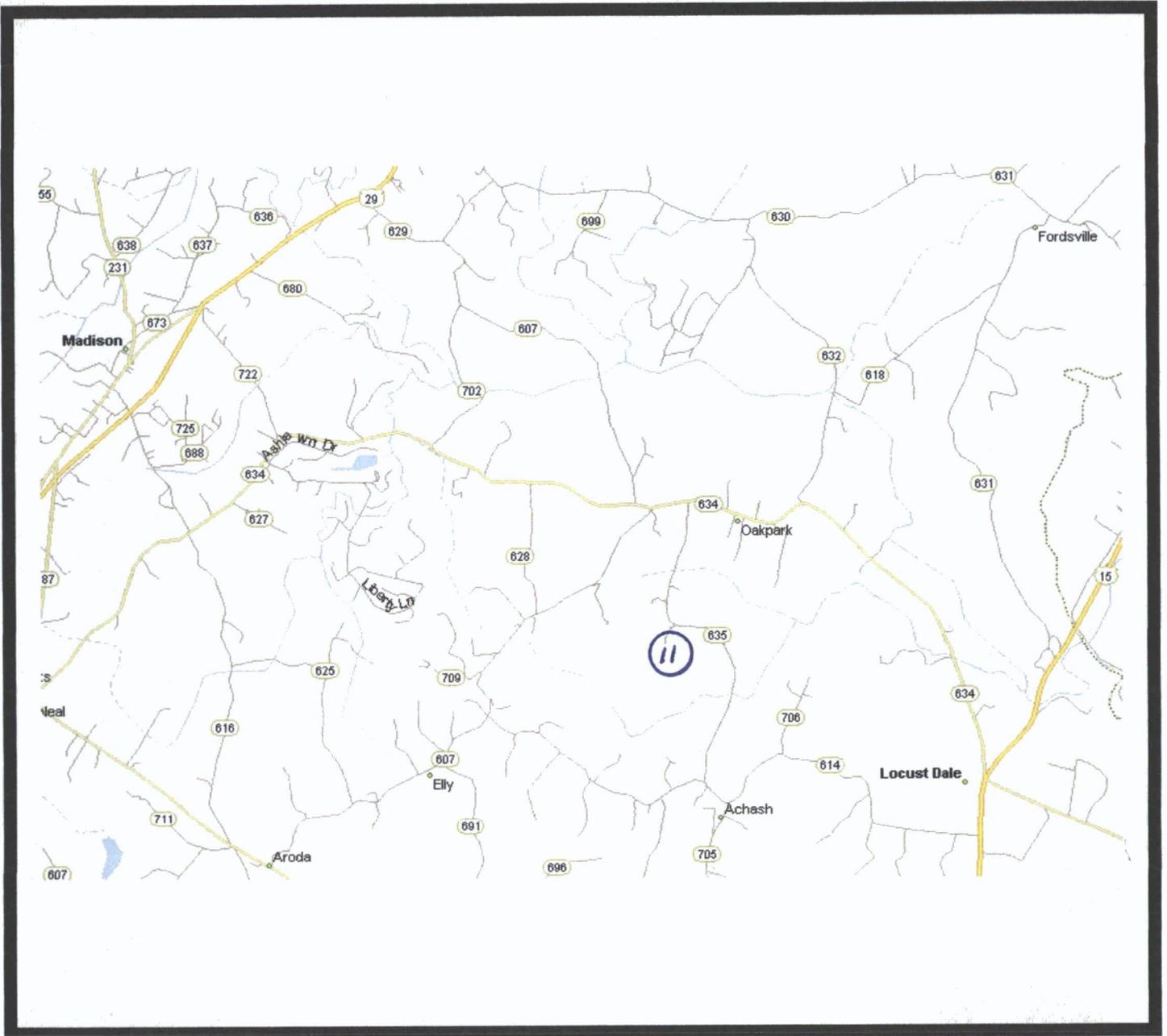
Harry Shepherd  
MA11  
Fields 1 – 5



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TOPO MAP





LOCATION MAP

