

LAND APPLICATION OF BIOSOLIDS  
GLENBURNIE FARM, LLC

OR 97 (FIELDS 1-5)  
ORANGE COUNTY, VIRGINIA  
NOVEMBER 2015

*Received 12/2/15*



November 27, 2015

Mr. Edward Stuart  
Department 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 Glenburnie Farm, LLC (designated as OR 97, fields 1-5), located in Orange 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 that reads "C. Whiteside".

Carolanne M. Whiteside  
Technical Services Coordinator



# SYNAGRO

## VIRGINIA REQUEST AND CONSENT FOR BIOSOLIDS

FARM OPERATOR: Glenborvie Farm LLC PHONE: (540) 854 4995  
 ADDRESS: 8220 Belmont Rd Spotsylvania VA  
 FARM LOCATION: 8324 Belmont Rd

FSA TRACT #: \_\_\_\_\_  
 TOTAL ACRES: \_\_\_\_\_ COUNTY: Spotsylvania & Orange  
 CROPS: Corn soybeans hay

1. I agree to be responsible for adhering to the following conditions, where applicable:
  - a. The soil pH will be adjusted  $\geq 6.0$  when biosolids are applied. (This may be accomplished through the application of lime-treated biosolids).
  - b. Do not graze animals on the land for 30 days after the application of biosolids. In addition, animals intended for dairy production should not be allowed to graze on the land or be fed chopped foliage for 60 days after the application of biosolids. Meat-producing livestock should not be fed chopped foliage for 30 days after the application of biosolids.
  - c. Food crops for direct human consumption with harvested parts below the surface of the land shall not be harvested for 14 months after the application of biosolids.
  - d. Food crops for direct human consumption 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  $\geq 4$  months prior to incorporation into the soil or 38 months when the biosolids remain on the land surface  $< 4$  months prior to incorporation.
  - e. Food crops, feed crops and fiber crops shall not be harvested for 30 days after application of biosolids.
  - f. Public access to land with a low potential for public exposure (land the public uses infrequently including but not limited to agricultural land and forests) shall be restricted for 30 days after application of biosolids. Public access to land with a high potential for public exposure (land the public uses frequently including but not limited to a public contact site such as parks, playgrounds and golf courses) shall be restricted for 1 year. No biosolids-amended soil shall be excavated or removed from the site for 30 days following the biosolids application unless adequate provisions are made to prevent public exposure to soils, dusts or aerosols.
  - g. 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 the permitting authority.
  - h. Supplemental commercial fertilizer or manure applications should be coordinated with the biosolids applications such that the total crop needs for nutrients are not exceeded as identified on the nutrient balance sheet or the nutrient management plan approved by the Virginia Department of Conservation and Recreation to be supplied to the farm operator by Synagro at the time of application of biosolids to a specific permitted site.
  - i. Tobacco, because it has been shown to accumulate cadmium, should not be grown for three years following the application of biosolids-borne cadmium equal to or exceeding 0.45 lbs/acre.

2. I understand that this transaction is not contemplated by the parties to be a sale of goods, and that Synagro is willing to provide to me without charge the service of land applying biosolids which have been approved by the appropriate regulatory agencies for land application.

3. I understand that successful crop production depends on many variables, such as weather, soil conditions and specific farming practices and that while Synagro has experience with land application of biosolids, the responsibility for properly accommodating agricultural practices to biosolids utilization are solely mine. I have also read and understand the "Important Information About Using Biosolids as a Fertilizer" which is on the reverse side and incorporated by reference in this Request and Consent.

By hand of Eric W. Brown III  
 OPERATOR'S SIGNATURE

10-21-15  
 DATE

## IMPORTANT INFORMATION ABOUT USING BIOSOLIDS AS A FERTILIZER

### Biosolids Generation

Biosolids are the accumulated, treated solids separated from water during the treatment of wastewater by public and private wastewater treatment plants (Generators). The Generator is responsible for supplying biosolids that are suitable for land application under state and federal regulations.

### Benefits of Biosolids

Biosolids provide nitrogen in a form that can be taken up by plants during their growth cycle. Biosolids also add phosphorus to the soil. If lime is added to biosolids, the biosolids will have the added benefit of a liming agent. Biosolids contain primary, secondary and micronutrients that can be used by plants. Biosolids are primarily an organic material; when added to soil, they improve water and nutrient retention, reduce erosion potential and improve soil structure.

### The Permitting Process

Once the farm operator requests biosolids, a Synagro representative initially evaluates the farm for truck access and field conditions. If the farm is found to be suitable and the Request for Biosolids and the Consent for Biosolids forms are signed, Synagro will collect soil samples and have them analyzed by an independent laboratory.

Synagro will then apply for any federal, state or local permits required for biosolids application. The permits will specifically identify the fields to which biosolids will be applied and will be issued to Synagro or the Generator.

After the permits are obtained (a process that may take several months or more) Synagro will apply biosolids, as they become available, to the fields. Availability of biosolids may vary because of weather conditions, contractual arrangements with biosolids generators and other factors. Although the company cannot guarantee biosolids application because of factors beyond its control, Synagro will use its best efforts to apply biosolids to the permitted fields.

The conditions outlined in the permit will apply to any and all biosolids applications made by Synagro. Synagro will not be responsible for biosolids application made by any other entity.

Periodic visits to the land application site(s) by federal, state and local regulatory staff and Synagro representatives may occur for the purpose of permitting the site, inspecting the site, applying biosolids, obtaining samples at the site and testing. Proper identification will be provided upon request.

### Agronomic Considerations

Tractor-trailer units are used to deliver biosolids to the fields approved for biosolids applications. Soil compaction may occur on the travel areas used by the trucks and in areas where biosolids are unloaded for transfer to the applicator vehicle.

Since some biosolids contain lime, it is important to recognize any increase in soil pH where biosolids have been applied and exercise care in using certain herbicides. If considering the use of a sulfonylurea herbicide, particular attention should be paid to any label restrictions. High soil pH and dry weather may slow decomposition of these chemicals, resulting in carryover. For soils with low manganese levels, increased soil pH from lime addition (alone or in lime treated biosolids) may reduce manganese availability and thereby potentially reduce crop yields.

In planning a herbicide program, it should be noted that seeds may sometimes survive the biosolids treatment process – for example, tomato seeds. Also, the organic matter additions from biosolids application (organic matter tends to tie up certain herbicides) may require increased herbicide application rates. Consult your extension agent or chemical representative for a specific recommendation.

Biosolids contain salts. Biosolids applications alone rarely cause salt problems. However, if combined with other significant salt-increasing factors, such as drought, excessive soil compaction, saline irrigation water and salt-containing fertilizers, salts may reach levels that could negatively affect germination and growth of some crops.

While odors from biosolids applications are not usually significant, and typically less than that from livestock manure, it is possible that an odor from the decomposition of organic matter may be noticed. If this occurs, it generally disappears in a short time.

Since biosolids provide nitrogen that will be released slowly throughout the growing season with diminishing carry-over in subsequent years, it is important to reduce the use of nitrogen and other fertilizers to appropriate levels.



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

Permittee: Synagro County or City: Orange  
Landowner: Biscoe Family LLC

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).

Biscoe Family LLC William B. Biscoe, Pres 10-22-15  
Landowner's Signature Date

TAX ID LANDOWNER IDENTIFICATION SHEET

Landowner	Field Number	Tax ID
Biscoe Family, LLC	97-01	064-000-000-000-30
Biscoe Family, LLC	97-02	064-000-000-000-30
Biscoe Family, LLC	97-03	064-000-000-000-30
Biscoe Family, LLC	97-04	064-000-000-000-30
Biscoe Family, LLC	97-05	064-000-000-000-30

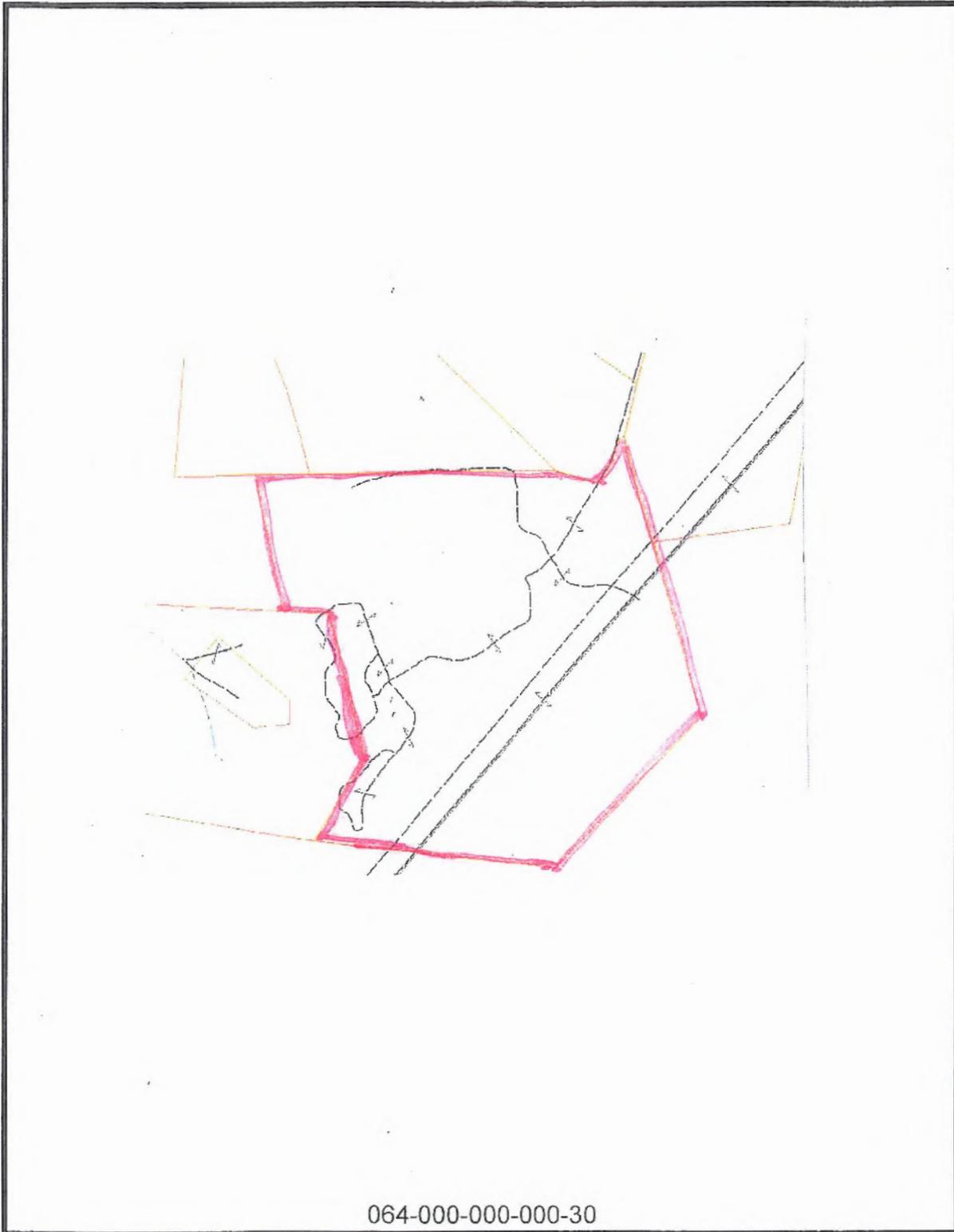
Field Number	Latitude (North)	Longitude (West)
97-01	38.203°	77.863°
97-02	38.203°	77.859°
97-03	38.202°	77.860°
97-04	38.205°	77.863°
97-05	38.206°	77.859°

**Haul Route:**

The Location maps in conjunction with the above latitude and longitude coordinates are a route planning tool meant to be a guide to indicate suggested haul routes for various preferences: to include but not limited to all federal, state, and local granted STAA access routes.

# SYNAGRO

Glenburnie Farm  
OR 97  
Fields 1-5



Tax Map

# Farm Summary Report

**Plan:** New Plan Fall, 2015 - Winter, 2016

**Farm Name:** Glenburnie Farm

Location: Orange

Specialist: Jeffery R Douthit

N-based Acres: 97.9

P-based Acres: 0.0

**Tract Name:** OR97

FSA Number: 0

Location: Orange

**Field Name:** 1

Total Acres: 14.40 Usable Acres: 14.40

FSA Number: 0

Tract: OR97

Location: Orange

Slope Class: B Hydrologic Group: B

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
60	TsB2	Tatum
30	TtC3	Tatum
10	NsC2	Nason

## **Field Warnings:**

**Field Name:** 2  
Total Acres: 15.10 Usable Acres: 15.10  
FSA Number: 0  
Tract: OR97  
Location: Orange  
Slope Class: B Hydrologic Group: B

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
10	NaC2 Nason	
22	TsC2 Tatum	
68	TaB2 Tatum	

**Field Warnings:**

**Field Name:** 3  
Total Acres: 9.90 Usable Acres: 9.90  
FSA Number: 0  
Tract: OR97  
Location: Orange  
Slope Class: B Hydrologic Group: C

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
20	TsB2 Tatum	
80	NaB2 Nason	

**Field Warnings:**

**Field Name:** 4  
Total Acres: 18.50 Usable Acres: 18.50  
FSA Number: 0  
Tract: OR97  
Location: Orange  
Slope Class: C Hydrologic Group: B

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
45	TsB2	Tatum
35	TtC3	Tatum
18	NaC2	Nason
2	LgB	Lignum

**Field Warnings:**

**Field Name:** 5  
Total Acres: 40.00 Usable Acres: 40.00  
FSA Number: 0  
Tract: OR97  
Location: Orange  
Slope Class: C Hydrologic Group: C

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
4	CeB2	Cecil
30	NaB2	Nason
1	TsB2	Tatum
55	NaC2	Nason
10	TsC2	Tatum

**Field Warnings:**

## ENVIRONMENTALLY SENSITIVE AREAS

Field	Reason for Sensitive Area
97-01	None
97-02	None
97-03	None
97-04	High Water Table (Map Unit LgB - 2%)
97-05	None

### Orange County Soils that are Environmentally Sensitive

Soil Map Unit	Series Name	Time of year		Environmental
		High Water	Flooded	
Ab	Albano	Nov – March		
AuA, AuB	Augusta	Dec – May		
Be	Bermudian		Nov – March	
Bo	Bowmansville	Sept – May	Sept – May	Drainage
BrC, BrD	Bremo			Leaching
Bw	Buncombe			Leaching
CaB, CaC	Calverton	Dec – May		
CbB, CcC, CcD	Catoctin			Shallow
Cw	Chewacla	Nov – April	Nov – April	
CxB	Colfax	Nov – June		
Eb, Ee	Elbert	Nov – May		
HaC, HaD	Hazel			Shallow
KlD, KlE	Klinesville			Shallow
LgB	Lignum	Dec – May		
LoC, LoC2, LoD, LoD2	Louisburg			Leaching
MoD	Manor			Leaching
MrB, MrC, MrD, MrE	Manteo			Shallow
OgA, OgB, OgB2, OgC2	Orange	Dec – May		
OrA, OrB, OrB2	Orange	Dec – May		
PkC, PkD	Pinkston			Leaching
Rk	Roanoke	Nov – May		
Rw	Rowland	Nov – May		
WbB, WbC, WbD	Watt			Shallow
We	Wehadkee	Nov – May	Nov – June	
WoB	Worsham	Nov - April		

# Map Legend



House/Dwelling with a well

- 200' buffer-dwelling (with conditions for reduction);

- 100' buffer-well



Rock Outcrop

- 25' buffer



Limestone Outcrop / Closed Sinkholes

- 50' buffer



Well

- 100' buffer



Lake/Pond

- 35' w/vegetative buffer; 100' without vegetative buffer



Slope which exceeds 15%



"PAS" - Publicly Accessible Site

- 200' buffer



Intermittent Stream

- 35' w/vegetative buffer; 100' without vegetative buffer



Stream/River

- 35' w/vegetative buffer; 100' without vegetative buffer



Agricultural/Drainage Ditch

- 10' buffer

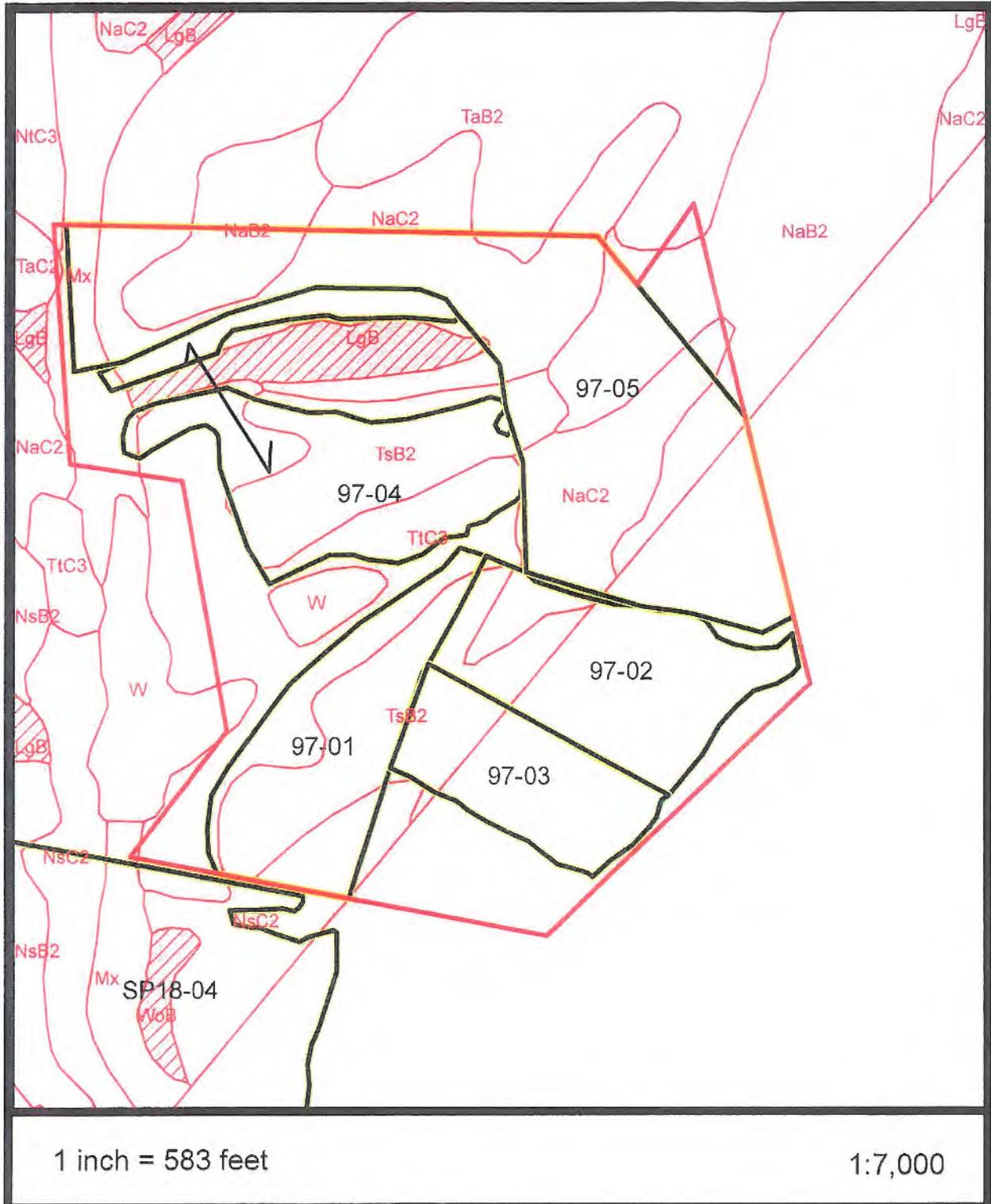


Field Boundary



Property Line

- 100' buffer unless waiver issued

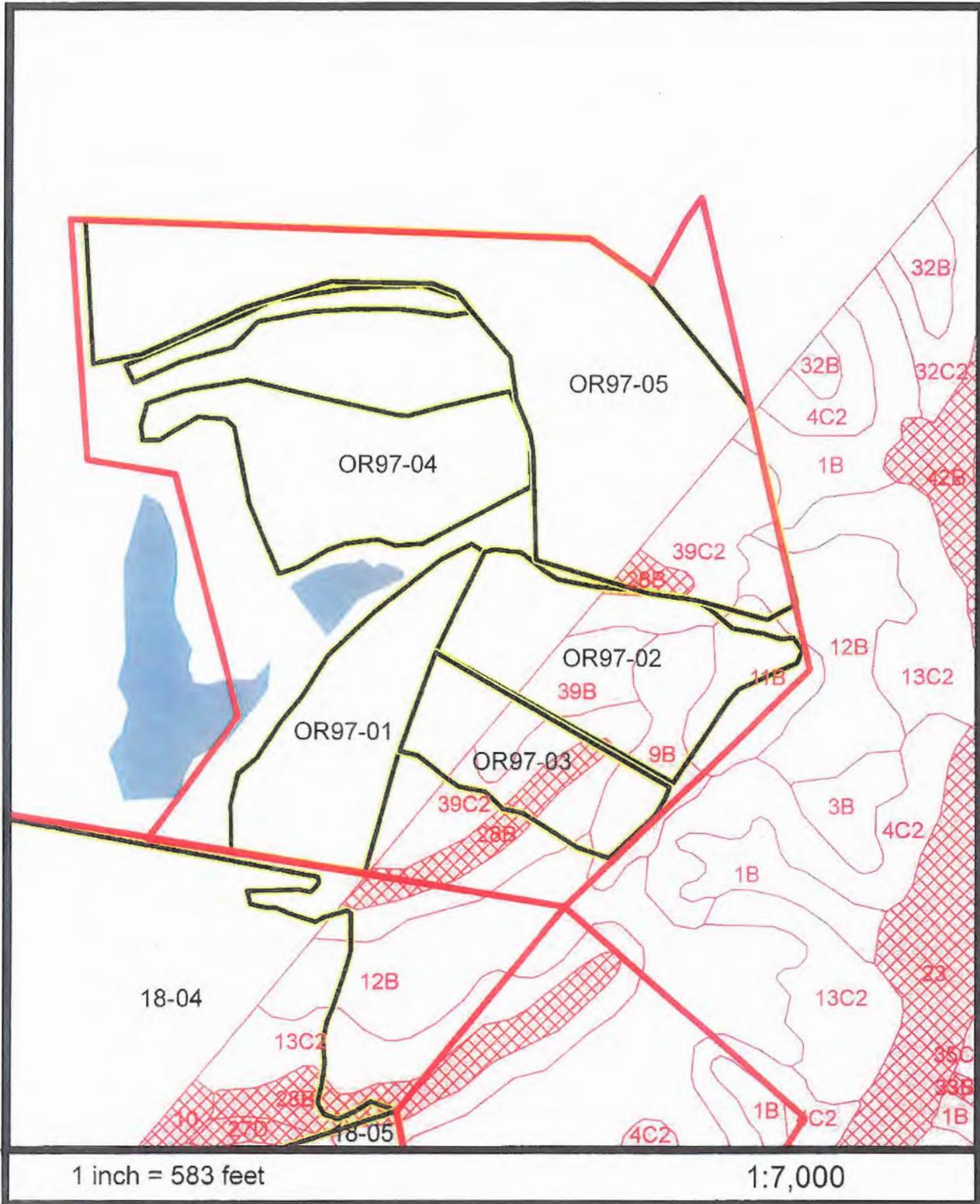


## SOIL MAP

CREATED 11/25/2015

 Environmentally Sensitive Soil





## SOIL MAP

CREATED 11-25-2015



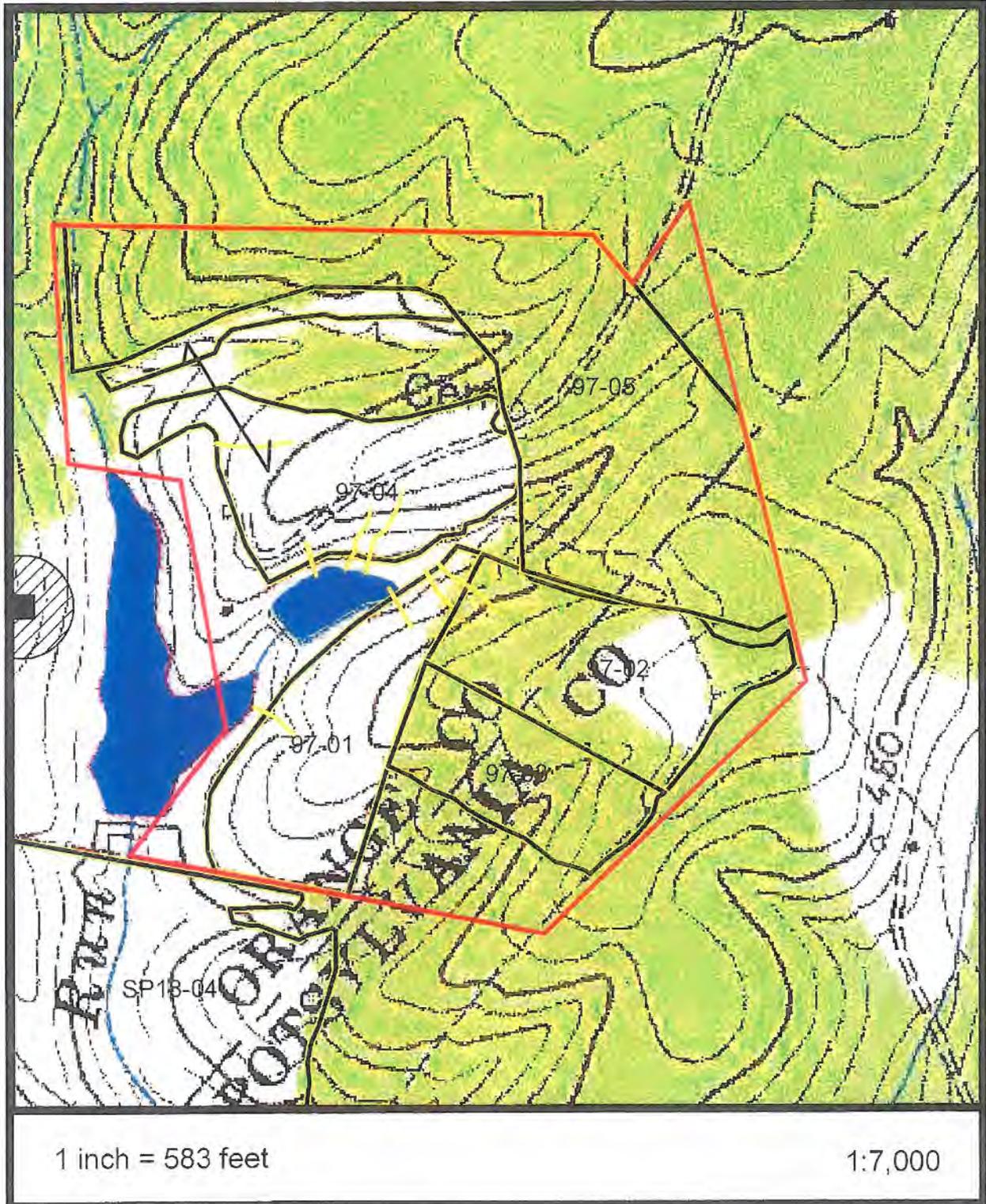
Environmentally Sensitive Areas



## AERIAL MAP

CREATED 11/25/2015





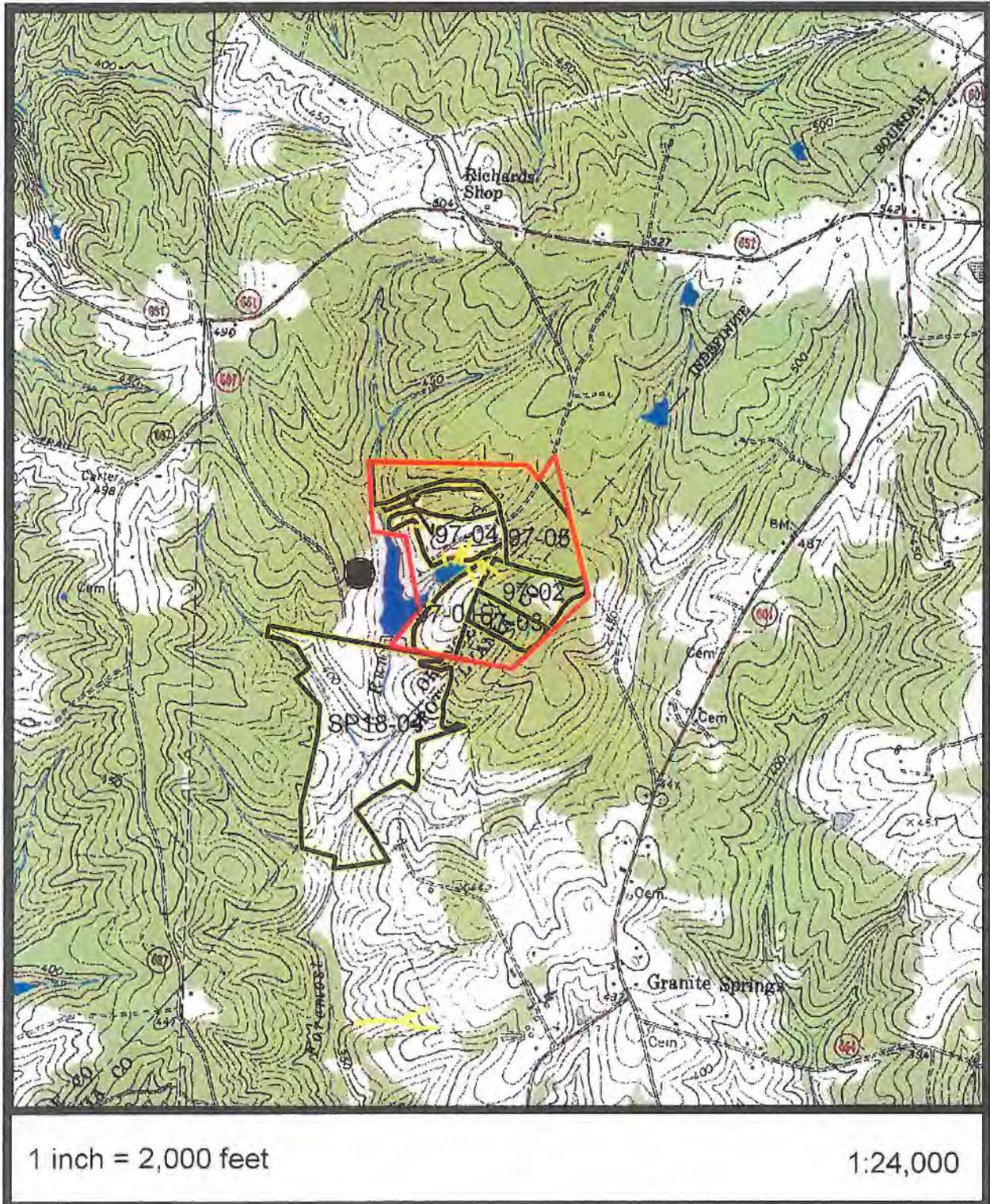
### TOPO MAP

FIELD	ACRES
97-01	14.4
97-02	15.1
97-03	9.9

FIELD	ACRES
97-04	18.5
97-05	40.0

CREATED 11/25/2015

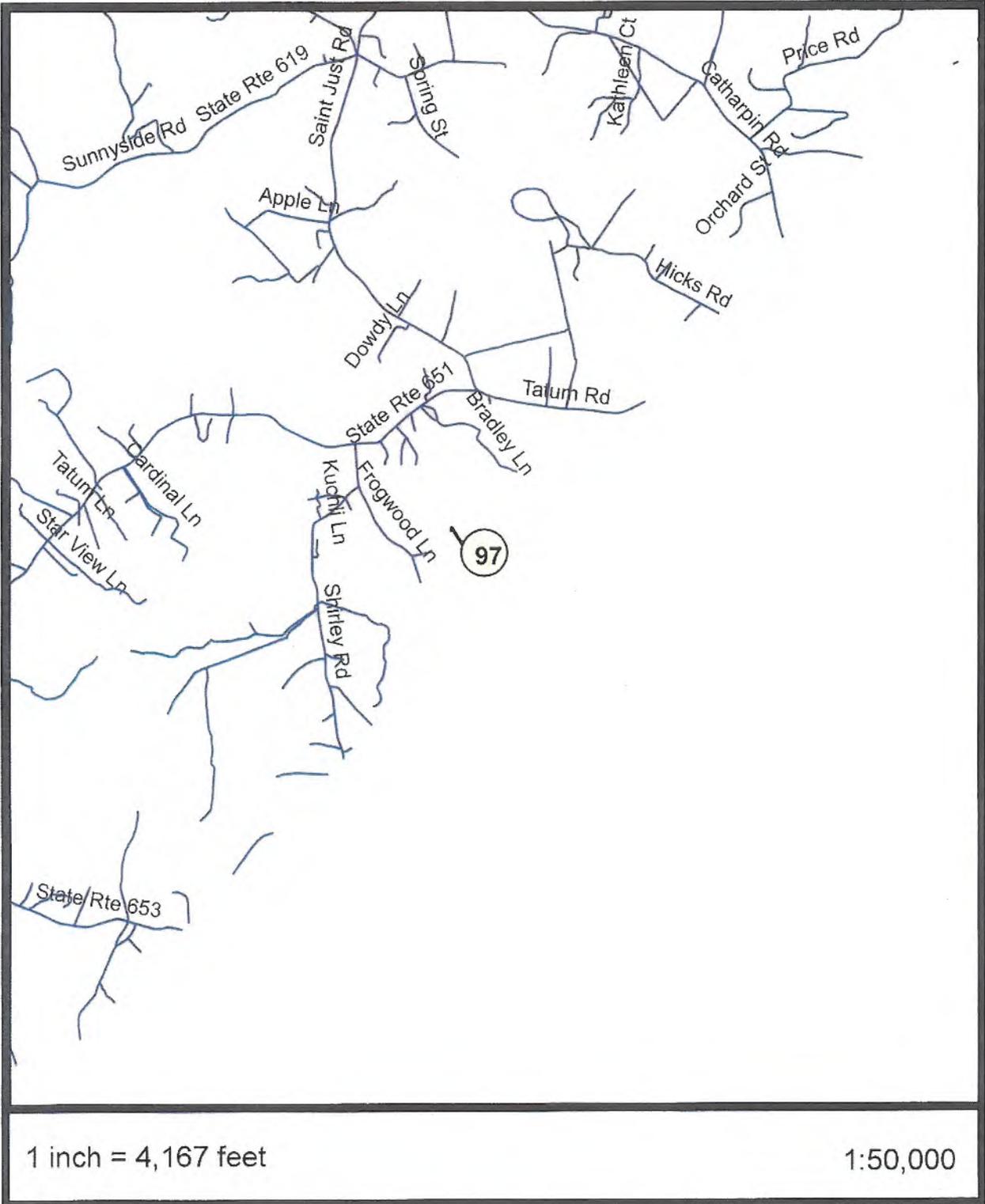




TOPO MAP

CREATED 11/25/2015





## LOCATION MAP

CREATED 11/25/2015

