**APPENDIX H**
**USDA NATURAL RESOURCES CONSERVATION SERVICE**
**SOIL REPORT**

United States Department of Agriculture

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

# Custom Soil Resource Report for Rockingham County, New Hampshire

## Soil Survey Current NFS


March 2, 2010

# Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://soils.usda.gov/sqi/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://soils.usda.gov/contact/state_offices/).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Soil Data Mart Web site or the NRCS Web Soil Survey. The Soil Data Mart is the data storage site for the official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means

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# Contents

# How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

# Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

# Custom Soil Resource Report
## Soil Map

## MAP LEGEND

**Area of Interest (AOI)**
- Area of Interest (AOI)

**Soils**
- Soil Map Units

**Special Point Features**
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

**Special Line Features**
- Gully
- Short Steep Slope
- Other

**Political Features**
- Cities

**Water Features**
- Oceans
- Streams and Canals

**Transportation**
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

## MAP INFORMATION

Map Scale: 1:465 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 19N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Rockingham County, New Hampshire
Survey Area Data: Version 11, Oct 27, 2009

Date(s) aerial images were photographed: 8/28/2003

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

# Map Unit Legend

| Rockingham County, New Hampshire (NH015) | | | |
|---|---|---|---|
| **Map Unit Symbol** | **Map Unit Name** | **Acres in AOI** | **Percent of AOI** |
| 446B | Scituate-Newfields complex, 3 to 8 percent slopes | 0.3 | 100.1% |
| **Totals for Area of Interest** | | **0.3** | **100.0%** |

# Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

# Rockingham County, New Hampshire

## 446B—Scituate-Newfields complex, 3 to 8 percent slopes

**Map Unit Setting**

*Elevation:* 0 to 1,000 feet
*Mean annual precipitation:* 35 to 46 inches
*Mean annual air temperature:* 45 to 55 degrees F
*Frost-free period:* 120 to 200 days

**Map Unit Composition**

*Scituate and similar soils:* 50 percent
*Newfields and similar soils:* 25 percent
*Minor components:* 25 percent

**Description of Scituate**

**Properties and qualities**

*Slope:* 3 to 8 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Moderately well drained
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)
*Depth to water table:* About 18 to 36 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water capacity:* Low (about 4.4 inches)

**Interpretive groups**

*Land capability (nonirrigated):* 2w

**Typical profile**

*0 to 8 inches:* Fine sandy loam
*8 to 32 inches:* Cobbly fine sandy loam
*32 to 60 inches:* Gravelly loamy sand

**Description of Newfields**

**Setting**

*Parent material:* Till

**Properties and qualities**

*Slope:* 3 to 8 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Moderately well drained
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.60 to 2.00 in/hr)
*Depth to water table:* About 24 to 48 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water capacity:* Moderate (about 6.5 inches)

**Interpretive groups**

*Land capability (nonirrigated):* 2e

**Typical profile**

*0 to 9 inches:* Fine sandy loam

*9 to 35 inches:* Fine sandy loam
*35 to 64 inches:* Gravelly loamy sand

**Minor Components**

**Canton**
*Percent of map unit:* 5 percent

**Montauk**
*Percent of map unit:* 5 percent

**Paxton**
*Percent of map unit:* 5 percent

**Ridgebury**
*Percent of map unit:* 5 percent
*Landform:* Depressions

**Walpole**
*Percent of map unit:* 5 percent
*Landform:* Depressions

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# Soil Map

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The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

# Map Unit Legend

| Rockingham County, New Hampshire (NH015) | | | |
|---|---|---|---|
| **Map Unit Symbol** | **Map Unit Name** | **Acres in AOI** | **Percent of AOI** |
| 43C | Canton gravelly fine sandy loam, 8 to 15 percent slopes, very stony | 1.9 | 88.1% |
| 547B | Walpole very fine sandy loam, 3 to 8 percent slopes, very stony | 0.3 | 11.9% |
| **Totals for Area of Interest** | | **2.2** | **100.0%** |

# Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If

intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

# Rockingham County, New Hampshire

## 43C—Canton gravelly fine sandy loam, 8 to 15 percent slopes, very stony

### Map Unit Setting

*Elevation:* 0 to 1,000 feet
*Mean annual precipitation:* 35 to 56 inches
*Mean annual air temperature:* 45 to 52 degrees F
*Frost-free period:* 120 to 200 days

### Map Unit Composition

*Canton and similar soils:* 80 percent
*Minor components:* 20 percent

### Description of Canton

#### Setting

*Parent material:* Till

#### Properties and qualities

*Slope:* 8 to 15 percent
*Surface area covered with cobbles, stones or boulders:* 1.6 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Well drained
*Capacity of the most limiting layer to transmit water (Ksat):* High (2.00 to 6.00 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water capacity:* Low (about 5.3 inches)

#### Interpretive groups

*Land capability (nonirrigated):* 6s

#### Typical profile

*0 to 5 inches:* Gravelly fine sandy loam
*5 to 21 inches:* Gravelly fine sandy loam
*21 to 60 inches:* Loamy sand

### Minor Components

#### Chatfield

*Percent of map unit:* 5 percent

#### Montauk

*Percent of map unit:* 5 percent

#### Newfields

*Percent of map unit:* 5 percent

#### Slope inclusion

*Percent of map unit:* 5 percent

## 547B—Walpole very fine sandy loam, 3 to 8 percent slopes, very stony

### Map Unit Setting

*Elevation:* 0 to 2,100 feet
*Mean annual precipitation:* 28 to 45 inches
*Mean annual air temperature:* 46 to 52 degrees F
*Frost-free period:* 100 to 195 days

### Map Unit Composition

*Walpole and similar soils:* 80 percent
*Minor components:* 20 percent

### Description of Walpole

#### Setting

*Landform:* Depressions

#### Properties and qualities

*Slope:* 3 to 8 percent
*Surface area covered with cobbles, stones or boulders:* 0.1 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Poorly drained
*Capacity of the most limiting layer to transmit water (Ksat):* High (2.00 to 6.00 in/hr)
*Depth to water table:* About 0 to 12 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Available water capacity:* Low (about 4.6 inches)

#### Interpretive groups

*Land capability (nonirrigated):* 6s

#### Typical profile

*0 to 7 inches:* Very fine sandy loam
*7 to 16 inches:* Sandy loam
*16 to 60 inches:* Gravelly loamy sand

### Minor Components

#### Scarboro

*Percent of map unit:* 10 percent
*Landform:* Depressions

#### Newfields

*Percent of map unit:* 5 percent

#### Squamscott

*Percent of map unit:* 5 percent
*Landform:* Marine terraces

# References

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**APPENDIX I**
**AIR QUALITY INDEX REPORT**

# Air Quality Index Report

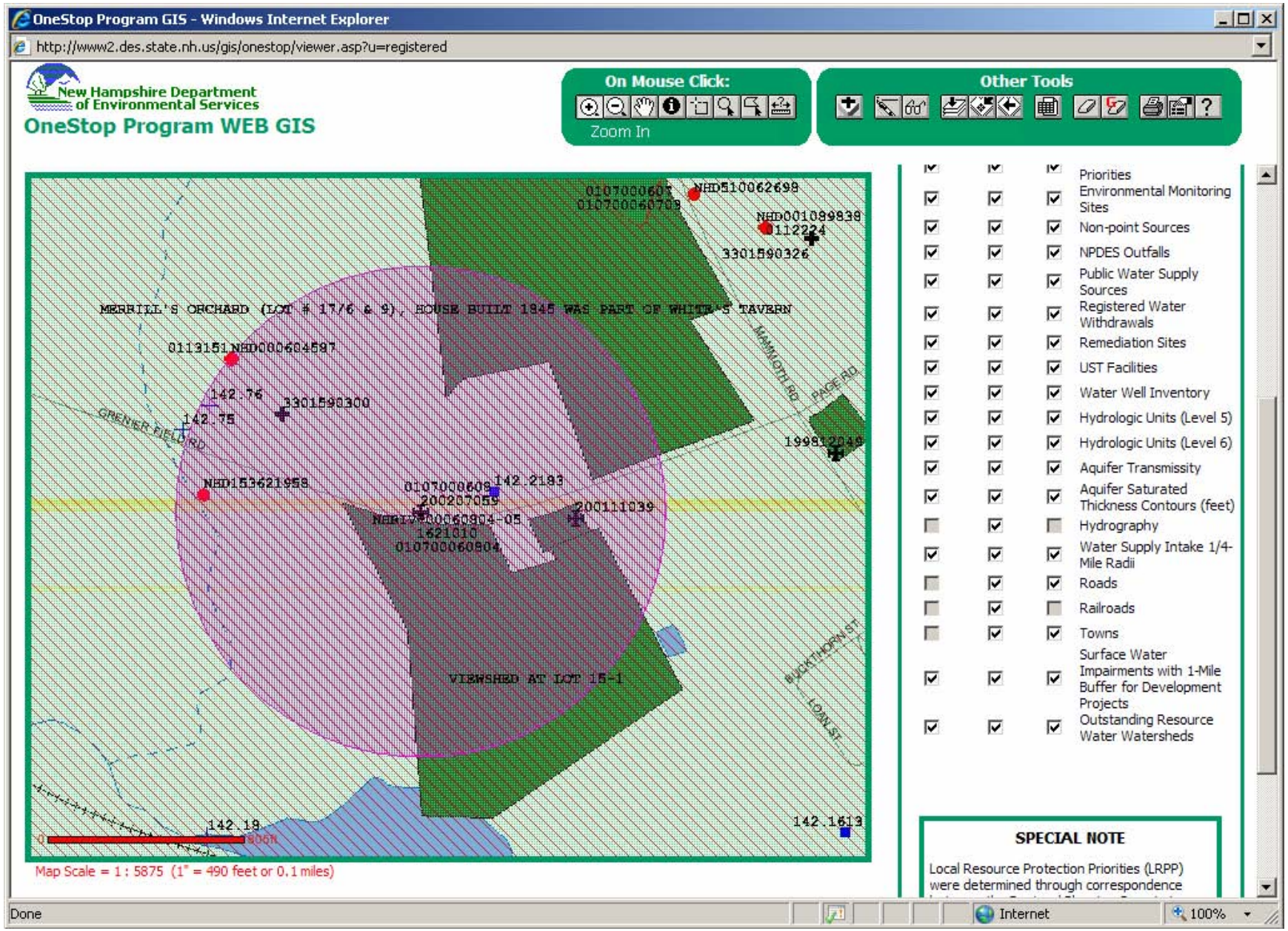
More info about AQI

**Geographic Area:** Rockingham Co, NH
**Summary:** by County
**Year:** 2008

| | | | Number of Days when Air Quality was... | | | | AQI Statistics | | | Number of Days when AQI pollutant was... | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Row # | AQI Daily Values | # Days with AQI | Good | Moderate | Unhealthy for Sensitive Groups | Unhealthy | Maximum | 90th percentile | Median | CO | NO2 | O3 | SO2 | PM2.5 | PM10 | County | County Code | State | EPA Region |
| SORT | | | | | | | | | | | | | | | | | | | |
| 1 | See Chart | 284 | 258 | 23 | 3 | 0 | 119 | 50 | 32 | | 0 | 174 | 61 | 49 | 0 | Rockingham Co | 33015 | NH | 1 |

http://www.epa.gov/myenv/MYENVIEW.results2?pQuery=&minx=-71.417184&miny=42.864037&maxx=-71.357184&maxy=42.894037&mw=750&mh=290&ve=&pText=03053

**APPENDIX J**
**NH DES GIS MAP AND TABLE**


OneStop Program GIS - Windows Internet Explorer
http://www2.des.state.nh.us/gis/onestop/viewer.asp?u=registered
New Hampshire Department of Environmental Services
OneStop Program WEB GIS
On Mouse Click:
Zoom In
Other Tools
MERRILL'S ORCHARD (LOT # 17/6 & 9). HOUSE BUILT 1845 WAS PART OF WHITE'S TAVERN
0113151
NHD000604597
142.76
3301590300
142.75
GRENIER FIELD RD
NHD153621958
0107000609
142.2193
200207059
200111039
1621010
010700060904
VIEWSHED AT LOT 15-1
NHD510062698
NHD001099839
112224
3301590326
MAMMOTH RD
PAGE RD
199812049
BUCKTHORN ST
LOAM ST
142.1613
142.18
Priorities
Environmental Monitoring Sites
Non-point Sources
NPDES Outfalls
Public Water Supply Sources
Registered Water Withdrawals
Remediation Sites
UST Facilities
Water Well Inventory
Hydrologic Units (Level 5)
Hydrologic Units (Level 6)
Aquifer Transmissity
Aquifer Saturated Thickness Contours (feet)
Hydrography
Water Supply Intake 1/4-Mile Radii
Roads
Railroads
Towns
Surface Water Impairments with 1-Mile Buffer for Development Projects
Outstanding Resource Water Watersheds
SPECIAL NOTE
Local Resource Protection Priorities (LRPP) were determined through correspondence
Map Scale = 1 : 5875 (1" = 490 feet or 0.1 miles)
Done
Internet
100%


MAP LEGEND
Environmental Monitoring Site
Air Stationary Source
Aboveground Storage Tank Facility
Auto Salvage Yard
Conservation Lands
Outstanding Resource Water Watersheds
Surface Water Impairments with 1-Mile Buffer For Development Projects
Water Supply Intake Protection Areas
GA1 Groundwater Classification Area
GAA Groundwater Classification Area
Dams
Wellhead Protection Area
Drinking Water Source Protection Area
Hazardous Waste Generator
Hazardous Waste Generator (polygon)
Local PCS Inventory Site
Local Resource Priority
Local Resource Priorities (polygons)
Non-point Source
Non-point Source (polygon)
NPDES Outfall
Public Water Supply Source
Registered Water Withdrawal
Asbestos Disposal Site
Remediation Site
Remediation Site (polygon)
Underground Storage Tank Facility
Water Well
River, stream
Intermittent stream
Open water
Wetland
Aquifer Saturated Thickness
Aquifer Transmissivity
Less than 2000
2000 - 4000
Greater than 4000
Hydrologic Units (Level 6)
Hydrologic Units (Level 5)
Railroads
Interstate Highway
Primary Highway
Secondary Highway
Other Road/Street
Town Boundary
County Boundary
State Boundary

**Air Stationary Sources**
Features returned: 1 of 603.

| MASTER ID | SITE ID | SITE NAME | ADDRESS | TOWN |
|---|---|---|---|---|
| 18371 | 3301590300 | NU-CAST, INC. | 29 GRENIER FIELD RD | LONDONDERRY |

**Asbestos Disposal Sites**
(Features returned: **0**)

**AST Facilities**
(Features returned: **0**)

**Automobile Salvage Yards**
(Features returned: **0**)

**Conservation Lands**
(Features returned: **0**)

**Dams**
Features returned: 1 of 5086.

| DAM# | HAZ. CLASS | NAME | TOWN | WATER BODY | STATUS | TYPE | USE | IMPOUNDMENT (acres) | HEIGHT (ft) | DRAINAGE AREA (sq. mi.) | OWNER | OWNER CLASS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 142.76 | NM | FEDEX DETENTION POND DAM | LONDONDERRY | RUNOFF | PENDING | EARTH | D | 0.3 | 28 | 0.01 | ROCKINGHAM BASELINE DEVELOPMENTLLC | P |

**Drinking Water Source Protection Area**
Features returned: 1 of 52.

| MASTER ID | SYSTEM ID | SOURCE ID(S) | SYSTEM NAME | ADDRESS | TOWN |
|---|---|---|---|---|---|
| 53466 | 1621010 | 4 | PENNICHUCK WATER WORKS | 200 CONCORD ST | NASHUA |

**Wellhead Protection Area**
(Features returned: **0**)

**GAA Groundwater Classification Area**
(Features returned: **0**)

**GA1 Groundwater Classification Area**
(Features returned: **0**)

**Hazardous Waste Generators**
Features returned: 1 of 7162.

| MASTER ID | SITE ID | SITE NAME | ADDRESS | TOWN | STATUS | TYPE | SIZE |
|---|---|---|---|---|---|---|---|
| 18371 | NHD153621 | NU-CAST INC | 29 GRENIER FIELD RD | LONDONDERRY | ACTIVE | RCRA REGULATED | NONE |

**Local PCS Inventory**
(Features returned: **0**)

**Local Resource Protection Priorities**
Features returned: 3 of 5686.

| PARCEL ID | NAME | TOWN |
|---|---|---|
| 5350 | 5B19980142 | MERRILL'S ORCHARD (LOT # 17/6 & 9), HOUSE BUILT 1845 WAS PART OF WHITE'S TAVERN |
| 5221 | 5B19980193 | SCHOOL HOUSE # 7 (LOT # 15/244) |
| 5354 | 5B20040135 | VIEWSHED AT LOT 15-1 |

**Environmental Monitoring Sites**
(Features returned: **0**)

**Non-point Sources**
(Features returned: **0**)

**NPDES Outfalls**
(Features returned: **0**)

**Public Water Supply Sources**
(Features returned: **0**)

**Registered Water Withdrawals**
(Features returned: **0**)

**Remediation Sites**
Features returned: 2 of 9152.

| MASTER ID | SITE ID | SITE NAME | ADDRESS | TOWN | PROJECT TYPE | PROJECT MANAGER | WORKLOAD PRIORITY | RISK | PERMIT# | TAX MAP | TAX LOT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 57283 | 200207059 | FORMER ROBERT SAULNIER PROPERTY | 22 GRENIER FIELD RD | LONDONDERRY | MOST | CLOSED | 2 | 8 | NA | | |
| 55315 | 200111039 | HARVEY ROAD MTBE DETECTION | 13 HARVEY ROAD | LONDONDERRY | ETHER | CLOSED | 1 | 8 | NA | | |

**UST Facilities**
(Features returned: **0**)

**Water Well Inventory**
Features returned: 1 of 58413.

| WRB# | OWNER | ADDRESS | TOWN |
|---|---|---|---|
| 142.2183 | J. PLAZA | 18 GRENIER FIELD RD | LONDONDERRY |

**Hydrologic Units (Level 5)**
Features returned: 1 of 81.

| UNIT CODE | LEVEL-3 NAME | LEVEL-4 NAME | LEVEL-5 NAME | ACRES |
|---|---|---|---|---|
| 107000608 | MERRIMACK I | MERRIMACK RIVER | MANCHESTER TRIBUTARIES | 68547 |

**Hydrologic Units (Level 6)**
Features returned: 1 of 327.

| UNIT CODE | LEVEL-3 NAME | LEVEL-4 NAME | LEVEL-5 NAME | LEVEL-6 NAME | ACRES |
|---|---|---|---|---|---|
| 10700060804 | MERRIMACK I | MERRIMACK RIVER | MANCHESTER TRIBUTARIES | LONDONDERRY TRIBUTARIES | 16176 |

**Aquifer Transmissity**
(Features returned: **0**)

**Aquifer Saturated Thickness Contours (feet)**
(Features returned: **0**)

**Water Supply Intake 1/4-Mile Radii**
(Features returned: **0**)

**Surface Water Impairments with 1-Mile Buffer for Development Projects**
Features returned: 1 of 729.

| ASSESSMENT UNIT ID | BEACH? | ASSESSMENT UNIT NAME | IMPAIRMENTS |
|---|---|---|---|
| NHRIV70006080 | N | LITTLE COHAS BROOK, CWF | BENTHIC MACROINVERTEBRATES;<br>CHLORIDE;<br>DISSOLVED OXYGEN SATURATION;<br>OXYGEN - DISSOLVED (mg/L) |

**Outstanding Resource Water Watersheds**
(Features returned: **0**)

**APPENDIX K**
**NH DES SITE CLOSURE DOCUMENTATION**
**22 GRENIER FIELD ROAD**

The State of New Hampshire
**Department of Environmental Services**

**Michael P. Nolin**
Commissioner

May 24, 2006

David Caron, Town Manager
Town of Londonderry
268B Mammoth Road
Londonderry, NH 03053

***CERTIFICATE OF NO FURTHER ACTION***

**Subject:** **Londonderry – Former Saulnier Property**, 22 Grenier Field Road
DES Site #200207059, Project #, Project Type 14479, Work Load Priority #3

Groundwater Monitoring Report, prepared by Envirosense, Inc., dated May 4, 2006.

Dear Mr. Caron:

The New Hampshire Department of Environmental Services (DES) has reviewed the report prepared by Envirosense, Inc. dated May 4, 2006 entitled, "Groundwater Monitoring Report". This report, prepared on your behalf, transmits analytical data for the April 10, 2006 sampling event at the subject site. A request for site closure is also included in the report. This information was compared with the criteria for issuance of a *Certificate of No Further Action* as contained in New Hampshire Code of Administrative Rules Env-Wm 1600 *Standards for Reporting and Remediation of Oil Discharges*. These criteria are outlined below:

1. Any human health hazards associated with direct exposure to contaminants have been eliminated;

2. Any necessary activity and use restrictions have been implemented;

3. Any known sources of groundwater contamination have been eliminated;

4. All on-site and off-site dissolved contamination levels in monitoring wells sampled meet groundwater quality criteria as specified in Env-Wm 1403;

5. Any penalties or fines issued under the New Hampshire Statutes for Oil Spillage, Underground Storage Facilities, or Hazardous Waste Management have been paid;

6. Any invoices associated with the department's recoverable costs have been paid, have been waived, or payment can be made by direct transfer from the State's petroleum reimbursement fund(s); and,

7. Any fees or costs due under the Brownfields Program have been paid.

DES has concluded that the conditions at this site meet the above closure criteria. Therefore, in accordance with Env-Wm 1606.03, DES hereby issues this *Certificate of No Further Action* for this site.

Through issuance of this *Certificate of No Further Action*, DES certifies that no additional investigation, remedial measures, or groundwater monitoring shall be required related to the former petroleum contamination at this site. Accordingly, DES will remove this site from our active petroleum-contaminated site list and close the regulatory file regarding petroleum contamination at this site.

Issuance of this Certificate of No Further Action does not waive the requirement, described in DES's September 7, 2005 letter to the Town of Londonderry, for removal of buried solid waste from the site. DES understands that the Town plans to remove the buried solid waste during the construction phase of site redevelopment. Please coordinate solid waste removal activities with George Carrigan of the DES Spill Response and Complaint Investigation Section. Mr. Carrigan can be reached at (603) 271-3746.

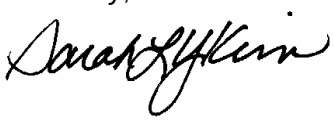
DES reserves the right, under New Hampshire Code of Administrative Rules Env-Wm 1600 *Standards for Reporting and Remediation of Oil Discharges*, to require additional investigations, remedial measures, or groundwater monitoring at this site if further information indicating the need for such work becomes known.

Your consultant should decommission the site's groundwater monitoring wells. To facilitate completion of the monitoring well decommissioning work and for future reimbursement, please use DES' Unit-Based and Project-Based Costs for Monitoring Well Decommissioning as detailed in our *Guidance Manual-Policies, Rules & Procedures for Reimbursement*.

Previously we determined the Town of Londonderry to be strictly liable for payment of DES costs incurred for management of cleanup of this site. Please be advised that DES is authorized by statute to seek recovery of these costs, and we do so immediately prior to termination of regulatory management or at a change in project status. These costs will be paid directly to DES from the Petroleum Reimbursement Fund Program. If you wish to receive a detailed statement of these costs, please e-mail Ms. Joyce Bledsoe, P.G., at jbledsoe@des.state.nh.us or call (603) 271-8740, referencing the Reference line information in this letter.

If you should have any questions, please contact me immediately.

Sincerely,



Sarah Yuhas Kirn
Oil Remediation and Compliance Bureau
Tel: (603) 271-6645
Fax: (603) 271-2181
Email: skirn@des.state.nh.us

cc: Gary Lynn, P.E., Supervisor, ORCB (via email)
George Carrigan, DES SRCIS
Londonderry Health Officer
Don Cederquist, P.G., Envirosense