N.C. Nutrient Management Software
Module 1

Introduction & Basics

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Water Quality Non-discharge Rules - 0.0200 Rules (1992)
15A NCAC 2H.0200

- Addresses livestock farms meeting the feedlot definition & threshold:

- Farms must register w/ NC DEM by 12/31/1993
- Must develop and implement an approved waste management plan by 12/31/1997
- Waste plan certification by “technical specialist” and filed w/State and SWCD
Blue Ribbon Study Commission on Agricultural Waste (‘95-’96)

- Government-appointed, 18 members
- Further study and formulate additional recommendations.

Act to Implement Recommendations of the Blue Ribbon Study Commission on Agricultural Waste (1996)

**Senate Bill 1217**

- General permits and fees
- Waste Management Plan required
- Operation review and compliance inspections
- State Agency employee duty to report discharges
- Certification and training of operators
- Setbacks and disclosure to adjoining neighbors of intent to construct new swine farm
- Also, some requirements for poultry dry litter systems.
Permitting of CAFO’s in North Carolina

• January 1, 1997 DWQ began issuing Certificates of Coverage (COC) under General Permits and Individual Permits for facilities above threshold.

• In 2003, DWQ began issuing COC under NPDES General Permits in accordance with federal rules for some farms.

• Currently, any facility above threshold populations is required to obtain either a (State) General or (Federal) NPDES permit.

• Facilities under threshold are deemed permitted as long as they are compliant w/ regulations.
Location of the Latest N.C. Animal Waste Management System Rules:

North Carolina Administrative Code
Title 15A
Department of Environment and Natural Resources
Division of Water Quality

SUBCHAPTER 2T – WASTE NOT DISCHARGED TO SURFACE WATERS

SECTION .1300 – ANIMAL WASTE MANAGEMENT SYSTEMS
15A NCAC 02T .1301 - .1306

Last Amended on September 1, 2006
Environmental Management Commission
Raleigh, North Carolina

Website:

http://h2o.enr.state.nc.us/admin/rules/documents/2Tbook.pdf
The N.C. Nutrient Management Software

Developed as a cooperative effort between the:

• N.C. Division of Soil and Water Conservation
• N.C. Department of Agriculture & Consumer Services
• N.C. Cooperative Extension Service
• USDA Natural Resources Conservation Service.

* Use of this software program is not mandatory.
The N.C. Nutrient Management Software

- USDA-NRCS 590 Nutrient Management Standard.
- NCDA “Crop Fertilization Based on N.C. Soil Tests”.
- 0.0200 Rules / SB1217
# Nutrient Management Program addresses the Waste Utilization Plan

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<tr>
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<tbody>
<tr>
<td>1 List of all fields receiving waste by tract number, field number, and acres; wettable or effective acres as appropriate.</td>
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<td>2 Maps of all fields to be used for waste application.</td>
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<td>3 Amount of manure produced and used annually</td>
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<td>4 Waste application method</td>
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<td>5 All crops to be grown by field</td>
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<td>6 Realistic yield expectations (RYE) for intended crops</td>
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<td>7 Dominant soil series for each waste application field</td>
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<td>8 N application rate by field</td>
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<td>9 <strong>Annual N balance = pounds of N generated minus pounds of N taken up by crops (balance must be ≤ zero)</strong></td>
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<td>10 Waste application windows</td>
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<td>11 Irrigation parameters where irrigation is used</td>
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<td>12 Calibration information</td>
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<td>13 Required specification from NRCS Waste Utilization Standard Code 633</td>
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<td>14 Emergency action plan</td>
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<td>15 Odor checklist</td>
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<td>16 Insect checklist</td>
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<td>17 Mortality checklist</td>
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<td>18 Waste sampling within 60 days of land application</td>
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<td>19 Annual soil sampling</td>
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Initial Setup will automatically generate a folder named C:\Program Files\Nutrient Management and install all necessary files to run the Nutrient Management Program. Unless you choose an alternative installation configuration, all necessary files will be installed in this folder.

N.C. Nutrient Management Software: Download & Set-Up

http://www.soil.ncsu.edu/programs/nmp/ncnmwg/nmp/software.htm
1) Get Started

1) Double-click the **Icon** and the *Plan Data File* box will appear.

2) Select the **File Name** “Plan.mdb” and then click **Open**.
2) Main Nutrient Management Screen

Use the **Toolbars** at the top of the screen, as well as the **System Window**, to develop, edit and print Nutrient Management Plans.
2) Main Nutrient Management Screen

**Toolbars**

In general, use Toolbars from left to right to add plan information:
The System Tree represents the way farm, plan, and rotation data is organized in the program. Each field is associated with a particular tract, and each tract is associated with a single farm. Plans are also associated with individual farms. Rotations are not farm specific and may be used in multiple plans for numerous farms.

Items in the system tree with the + symbol beside them have additional branches of associated data, those with the - symbol do not.

Each data item in the system tree can be manipulated by pointing the arrow at the item and clicking the right mouse button. A pop-up menu will then appear listing the menu of options associated with that item.
3) General: Producer Information

View producer properties: Tab General > Producer
Select existing Producer or add a new one.

Add a new Producer:
Click Add, add information and click OK to save.

Edit Producer Information:
Select Producer, click Edit button.
Add/edit information and click OK.

Note: Use Delete to remove a Producer from the list.
4) General: Developer Information

To view/select existing developer:

Click **General > Developer**

The **Developer Properties** dialog box will appear.

Select the desired **Developer** from the **Developer List**.
4) General: Developer Information

To add a new developer:

1) Click New or select New from Developer List
2) enter developer's name
3) select the appropriate agency
4) Click Update and the new developer is displayed in the list

Note: Before you can enter a developer name, you must enter the agency properties for that developer.

Note: Use “...” button to add a New Agency.
5) General: Agency Information

To view agency properties:

1) Click **General > Agency**
2) This opens the **Agency Properties** dialog box.

3) Select the desired **Agency** from the combo box.
5) General: Agency Information

To add a new agency click Add.

Add or edit information and Click OK to save and close.

Note: Use the Delete button to remove an agency and the associated information.

To edit agency information click Edit.
6) Farm: Farm Information

To add a farm:

Click **Add** to open the **New Farm** dialog box. Enter the **Farm Name** and select the **Farm Type*** and **Producer Name**.** Click **OK** to save.

Note: *Farm Type generally refers to animal operations and are described as Existing, Expanding and New. Select one of these three categories to describe the farm.

Note: **A Producer Name must be selected before a farm can be added.

To view farm properties:

Click **Farm > Farm** from the drop down menu. A **Farm Properties** dialog box will appear. View and select the appropriate name under **Farm Name**.

To edit a farm:

Click **Edit** to open the **Edit Farm** dialog box. Make the appropriate changes and click **OK** to save.

Note: *A Producer Name must be selected before a farm can be added.
7) Farm: Tract Information

To view tract properties, click Farm > Tract.

In the Tract Properties dialog box specify County and Tract ID (number). Farm name and ownership will display.

When data entry is complete, click the OK button.

To close this dialog box without saving changes, simply click the Cancel button.

To Add a New Tract:

Click Add.
In the New Tract dialog box, enter the Tract ID and select the Farm Name and Ownership status.

Note: Tract ownership is either leased or owned. One of these two choices must be selected.
9) Farm: Field Information

- Add a Field

To add a new field: select the County and Tract, then click Add.

A New Field dialog box will appear.

Enter the Field ID, Soil Type, Total Acres, Useable Acres, Slope Type (%), and other required information.

Click OK to save.

Waste irrigation properties are based on irrigation group for a particular soil. These values will appear automatically.
8) Farm: View Existing Field Information

To view field properties click Farm > Field.

In the Field Properties dialog box specify County, Tract and Field ID.

Verify field information.

Use Edit to make changes to field properties.

Click OK to save.

Use Delete to remove a field.
10) Farm: Field Information – Leaching Index

- Reference: NRCS FOTG, Section III

- Used for evaluating the potential for contaminating ground water with soluble nutrients (e.g. nitrogen)
- Estimates the degree to which water percolates below the root zone in certain soils
- Based on annual precipitation, hydrologic soil group & rainfall distribution data
- NM policy requires LI be used in selected watersheds to assess potential nitrate leaching

Procedure:

1) Find the soil’s hydrologic group.
2) Locate the Iso-leaching map for that group
3) From the map, based on the soil location, determine the LI

Note: The LI Guidelines for Recommendations will print with the **Crop Nutrients** report from NM software.
10) Farm: Field Information – Leaching Index
11) Farm: Soil Sample Information

Click Farm > Soil Sample to activate the Soil Sampling Properties dialog box.

Manual Entry:

1) Select Farm Name, Tract ID & Field ID
2) Enter Sample No., Date, & Sample Results directly from Soils Report
3) Enter Soil Class
4) Enter liming info. under Applied Lime
5) Use Save to save data.
11) Farm: Soil Sample Information

Use the Import button to import soil samples into the program if the report has previously been downloaded to your computer from the "NCDA&CS Agronomic Reports Online" web site as a CSV report file.

To Import soil sample information:

1) Click Import, 2) select the appropriate file path and .csv file name and then 3) click Open.
11) Farm: Soil Sample Information

6) Double-check sample date
7) Enter the tons/ac., year and month under Applied Lime.
8) Click Save

Continue adding and saving all samples. Use Exit when finished.
13) Rotations: View Existing

View and edit rotations from the System Window

Click the + to view existing rotations.

Double-click a specific rotation to view details under Rotation Properties.
13) Rotations: Create New

To add a new rotation: right-click on **Rotations** in the System Window and select **New Rotation**. The **New Rotation dialog box** will appear.
In the **New Rotation** dialog box:

1) Name the rotation under **Rotation Name**.
2) Specify the **Number of Crops** and the total **Years of Rotation**.
3) Move each crop (in order) to the **Crops in Rotation** box by selecting it from the **Crop List** and clicking on the “»” button. The **Crop**, **Start Month**, **End Month** and **Year** will fill-in automatically.
4) Select the crop name that has just been added, and
5) Click on the **Crop Year** drop down box to identify the year for that crop in the rotation. Repeat this for each crop in order of appearance in the rotation.

**Note:** Use the “«” button to remove a specific crop from the **Crops in Rotation** list.