NASIS TAXONOMIC UNIT DESCRIPTIONS

VIRGINIA USER'S GUIDE

VERSION 1.0

November 2001

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NASIS TAXONOMIC UNIT DESCRIPTIONS
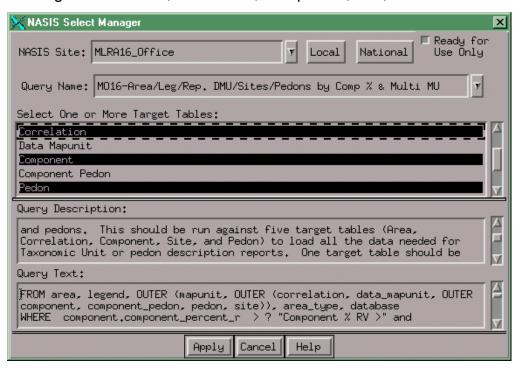## Virginia User's Guide

November 5, 2001

This report generates a narrative Taxonomic Unit Description for a soil survey manuscript. Units of measure are in English units. The report was adapted from the MO16 LA-TUD Ver. 1 report and is formatted for export to Word where Pagemaker type setting codes can be executed. Horizon and location paragraphs will appear to run off the screen in NASIS Report Viewer, but will wrap properly to fit any selected page width in a word processor.

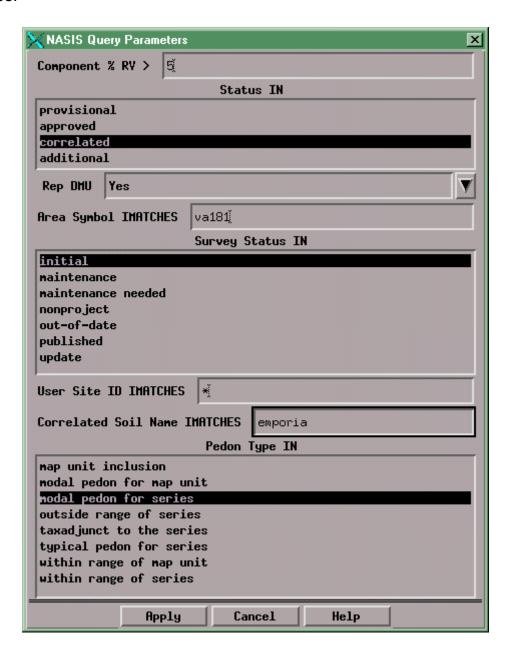Data needed for this report comes from the following major tables:

Area	Site Association
Site	Mapunit Site Overlap
Pedon	Legend
Site Area Overlap	Component

You must have the legend, mapunits, datamap unit components, component pedons, sites, and pedons linked. See the "Virginia User's Guide: Site and Pedon Data" on for detailed instructions on how to achieve these links. Brief instructions for linking are given on following page.

Use a query in MO16 that will load all the necessary tables. The query is: **MO16-Area/Leg/Rep. DMU/Sites/Pedons by Comp% & Multi MU.** Run the query against 5 target tables: Area, Correlation, Component, Site, and Pedon.

When you run the query, a pop-up screen will appear (see below). Enter the information as in the example below. You may use wildcards (*) for *User Site ID* and *Correlated Soil Name* to load all pedons. The query takes some time to load. Be patient. Go have coffee.
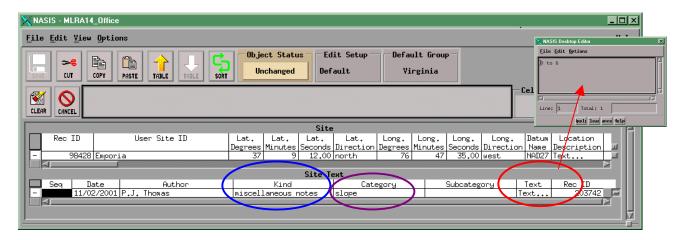
```
NASIS Query Parameters                                            [x]

Component % RV >    5

                         Status IN
 ┌──────────────────────────────────────────────────────────────┐
 │ provisional                                                    │
 │ approved                                                       │
 │ correlated                                                     │
 │ additional                                                     │
 └──────────────────────────────────────────────────────────────┘

 Rep DMU   Yes                                                  ▼

 Area Symbol IMATCHES    va181
                      Survey Status IN
 ┌──────────────────────────────────────────────────────────────┐
 │ initial                                                        │
 │ maintenance                                                    │
 │ maintenance needed                                             │
 │ nonproject                                                     │
 │ out-of-date                                                    │
 │ published                                                      │
 │ update                                                         │
 └──────────────────────────────────────────────────────────────┘

 User Site ID IMATCHES     *

 Correlated Soil Name IMATCHES    emporia
                       Pedon Type IN
 ┌──────────────────────────────────────────────────────────────┐
 │ map unit inclusion                                             │
 │ modal pedon for map unit                                       │
 │ modal pedon for series                                         │
 │ outside range of series                                        │
 │ taxadjunct to the series                                       │
 │ typical pedon for series                                       │
 │ within range of map unit                                       │
 │ within range of series                                         │
 └──────────────────────────────────────────────────────────────┘

        [  Apply  ]    [  Cancel  ]    [  Help  ]
```

The following links must be made:

1. **Link each SITE to its respective MAPUNIT on a LEGEND.**

   a. From the **Site Area Overlap** table, table down to the **Site Mapunit Overlap** table.
   b. Click **F8** to open a new row and position the cursor in the **Legend ID** field.
   c. Click the **Choice** button. Select the **Legend**, click **Apply**. (If multiple legends are linked to the Area listed in the Site Area Overlap table, they will all be displayed in the choice list box.
   d. Position the cursor in the **Mapunit Symbol** column.
   e. Click the **Choice** button. All the map units in your legend are displayed.
   f. Select the appropriate **Map unit symbol** associated with the site and click **Apply**. You've now created the site mapunit overlap, which indicates that this site is located within the map unit.

2. **Link each PEDON to its respective COMPONENT linked to that MAPUNIT.**

   a. On the **View** menu, select **Legends**, then click Correlation.
   b. Highlight **DMU ID** number.
   c. On the **File** menu, select **Load Related**, then click **Data Mapunit**.
   d. On the **View** menu, select **Components**, then click **Component Pedon**.
   e. Click **F8** to insert row.
   f. At the **User Pedon ID** field, click the **Choice** button.
   g. Highlight the **User Pedon Site ID**, then click **Apply**.

3. **Link the AREA to the SITE AREA OVERLAP table.**

   a. On the **View** menu, select **Site**, then **Site Area Overlap**.
   b. Click **F8** to open a new row.
   c. Select **Area Type** cell. Click the **Choice** button. If you are working with your Non-MLRA Soil Survey Area legend, then click the **National** button. Highlight the **Non-MLRA Soil Survey Area**. Click **Apply**. If you are using your working legend, then click the **local** button. Highlight the **Virginia Working** for MLRA13 and **Working Legends** for MLRA14. Click **Apply**.
   d. Skip the Area Symbol field. In the **Area Name** field, click the **Choice** button. For a working legend, scroll until you find your **area**. Select and click **Apply**. For a Non-MLRA legend, in the match on area name field, type in your county or city name with an asterisk and click search. Select your **area** and click **Apply**. Or simply type out your area name in the field. The **Area Symbol** will automatically populate.
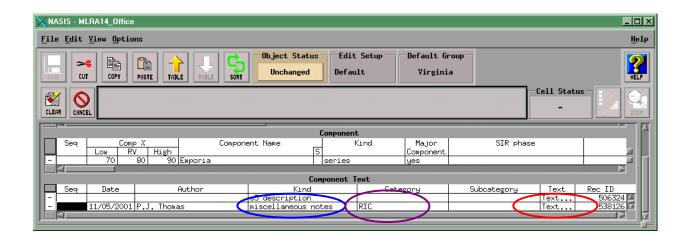
The typifying pedon entered in PEDON should be linked only to the MAPUNIT in which it was described. For example, if your typifying pedon of Frederick is in the Frederick silt loam, 2 to 6 percent slopes phase, link the PEDON to this map unit in the legend, not to other phases of Frederick (other slopes, erosion classes, stoniness,…).

In order to properly run this report, two **text elements** must be populated (in addition to the text element for type location).

1. **SLOPE**. Enter the entire slope range for the series into the SITE TEXT table (text field for each SITE). The Text Kind Element in that table should be populated as *Miscellaneous notes*, and the Text Category should be populated as *slope*.

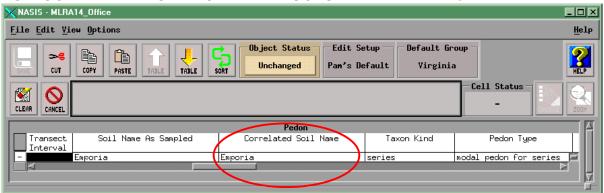2. **RANGE IN CHARACTERISTICS**. Copy the Range in Characteristics section (except for depth to diagnostic features and restrictions) from Word into the text field of the COMPONENT TEXT table (details on next page). The Text Kind element in the table should be populated as miscellaneous notes and the Text Category should be populated as RIC (all caps).

Virginia TUD Population Instructions

Line by Line Source of Data using Emporia Series as example

Emporia Series
FROM CORRELATED SERIES NAME IN COLUMN IN THE PEDON TABLE

Local Physiographic Area: Southern Coastal Plain
FROM THE LOCAL PHYSIOGRAPHIC NAME COLUMN IN THE SITE TABLE

Geomorphic Setting: On upland on marine terrace
FROM THE SITE GEOMORPHIC DESCRIPTION TABLE – FILL OUT BOTH THE FEATURE TYPE AND FEATURE. SEPARATE ROWS IN THIS TABLE WILL BE JOINED INTO A SENTENCE SEPARATED BY "on" IF NUMBERS ARE USED TO INDICATE WHICH FEATURE IS ON THE OTHER

Parent Material: Loamy marine sediments
FROM THE CALCULATED PARENT MATERIAL GROUP NAME COLUMN IN THE SITE TABLE

Drainage Class: Well drained
FROM THE DRAINAGE CLASS COLUMN IN THE SITE TABLE

Permeability Class: Moderate to moderately rapid
CALCULATED FROM THE KSAT COLUMNS IN THE COMPONENT HORIZON TABLE THAT THE PEDON IS LINKED TO

Soil Depth Class: Very deep

CALCULATED FROM THE PEDON RESTRICTIONS TABLE – FILL OUT BOTH KIND AND TOP DEPTH. NO ENTRY IN THE TABLE DEFAULTS TO VERY DEEP IN THE REPORT.

Slope: 0 to 6 percent

MUST FILL IN A TEXT FIELD IN THE SITE TEXT TABLE – ENTER THE ENTIRE SLOPE RANGE FOR THE SERIES USED IN THE SURVEY AREA. ALSO, FILL IN KIND AS "MISCELLANEOUS NOTES", AND CATEGORY AS "SLOPE".

Associated Soils

Caroline soils that are clayey

Kempsville soils that do not have iron depletions

Slagle soils that are moderately well drained

Uchee soils that have a thick, sandy surface layer

FROM THE SITE ASSOCIATED SOILS TABLE – ASSOCIATED SOIL COLUMN ALLOWS UP TO 60 CHARACTERS TO DESCRIBE HOW THE ASSOCIATED SOIL DIFFERS. ADD SEQUENCE NUMBERS IF YOU WANT THE SOILS TO APPEAR IN A PARTICULAR ORDER.
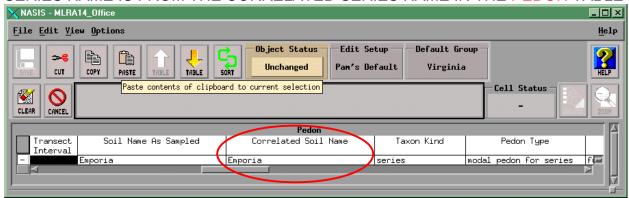

Taxonomic Classification

Fine-loamy, siliceous, subactive, thermic Typic Hapludults

FROM THE CALCULATED TAXONOMIC CLASS COLUMN IN THE COMPONENT TABLE THAT THE PEDON IS LINKED TO.

Typical Pedon
Emporia
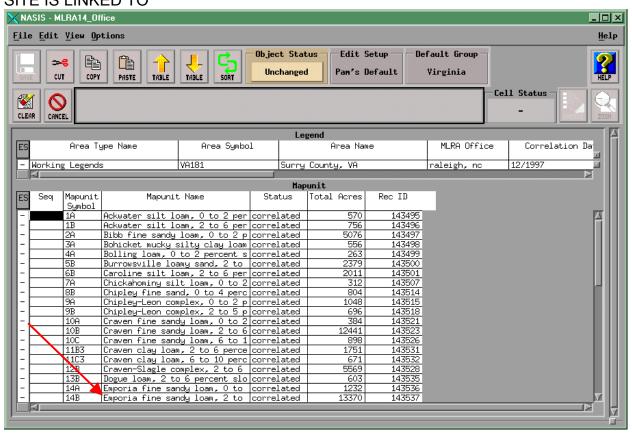SERIES NAME IS FROM THE CORRELATED SERIES NAME IN THE PEDON TABLE

fine sandy loam

SURFACE TEXTURE IS FROM THE CALCULATED COMPONENT HORIZON TEXTURE GROUP TABLE FOR THE COMPONENT HORIZON THAT HAS A DEPTH TO TOP RV OF 0. IF MORE THAN ONE TEXTURE GROUP IS ASSIGNED TO THIS HORIZON IT WILL TAKE THE FIRST. IT IS INTENTIONALLY SET UP TO TAKE THE SURFACE TEXTURE FROM THE CHORIZON TABLE RATHER THAN FROM THE PEDON HORIZON TABLE TO SERVE AS A CHECK BETWEEN THE TWO PARTS OF THE DATABASE TO MAKE SURE THEY AGREE.
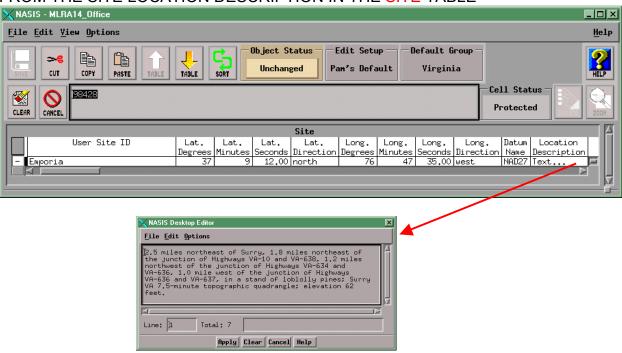
in an area of Emporia fine sandy loam, 2 to 6 percent slopes;
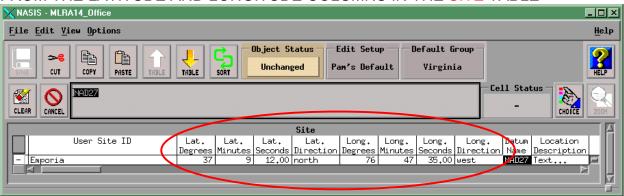FROM THE MAP UNIT NAME IN THE MAP UNIT TABLE FOR THE MAP UNIT THE
SITE IS LINKED TO

located 2.5 miles northeast of Surry, 1.8 miles northeast of the junction of Highways VA-
10 and VA-638,…
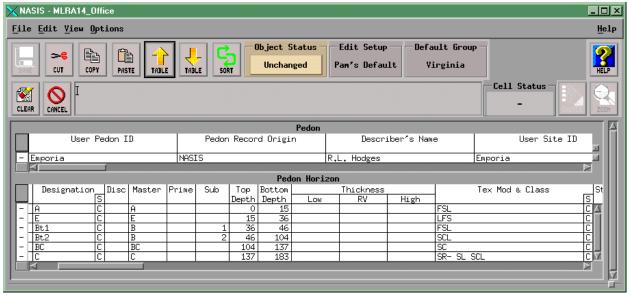FROM THE SITE LOCATION DESCRIPTION IN THE SITE TABLE

Latitude: 37 degrees, 9 minutes, 12.00 seconds N.
Longitude: 76 degrees, 47 minutes, 35.00 seconds W.
FROM THE LATITUDE AND LONGITUDE COLUMNS IN THE SITE TABLE

A—0 to 6 inches; brown (10YR 5/3), fine sandy loam; weak fine granular structure; friable, nonsticky, nonplastic; common fine roots; very strongly acid; abrupt smooth boundary…
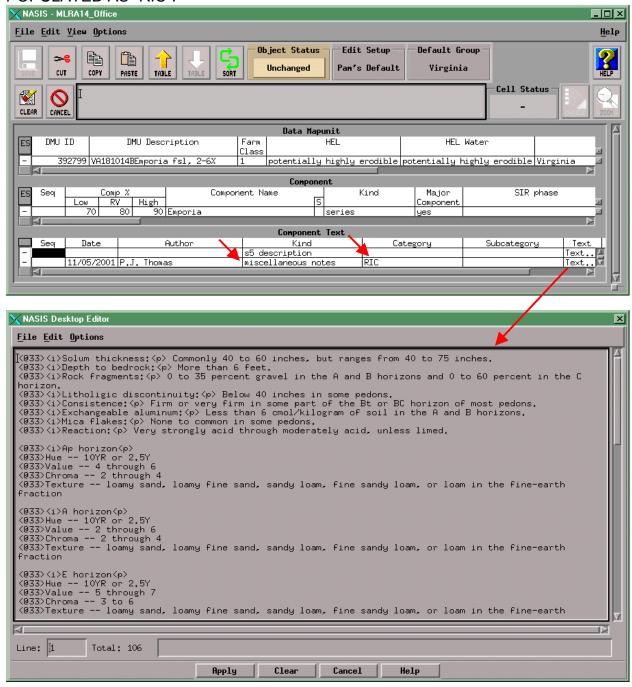FROM NUMEROUS ENTRIES IN THE PEDON TABLES

Range in Characteristics
Solum thickness: Commonly 40 to 60 inches, but ranges from 40 to 75 inches.
Depth to bedrock: More than 6 feet…
ENTIRE RANGE IN CHARACTERISTICS SECTION IS COPIED INTO THE
COMPONENT TEXT TABLE IN THE TEXT COLUMN AND EDITED FOR THE
SURVEY AREA IF NEEDED. THE KIND COLUMN SHOULD BE POPULATED AS
"MISCELLANEOUS NOTES" AND THE CATEGORY COLUMN SHOULD BE
POPULATED AS "RIC".

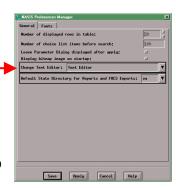<u>Populating the text field for Range in Characteristics</u>

Get your RIC's into Word however you can. Options: 1) copy from Official Series Descriptions on the Internet into Word and edit as needed, 2) use typifying pedons already created in Word (or other word processing software), or 3) copy text field from a pedon already entered into NASIS. Option 3 is probably not available at this time. You will probably be creating the data for others to access.

Enter PageMaker codes as indicated below. This is important if you want the Taxonomic Unit Description to format properly in Word (after running a Macro). Use the following example of Emporia RIC for entering codes. You only need two codes <@33> for new line and <i> and <p> for italics. Include data elements as needed.

<@33><i>Solum thickness:<p> Commonly 40 to 60 inches, but ranges from 40 to 75 inches.
<@33><i>Depth to bedrock:<p> More than 6 feet.
<@33><i>Rock fragments:<p> 0 to 35 percent gravel in the A and B horizons and 0 to 60 percent in the C horizon.
<@33><i>Lithologic discontinuity:<p> Below 40 inches in some pedons.
<@33><i>Consistence:<p> Firm or very firm in some part of the Bt or BC horizon of most pedons.
<@33><i>Exchangeable aluminum:<p> Less than 6 cmol/kilogram of soil in the A and B horizons.
<@33><i>Mica flakes:<p> None to common in some pedons.
<@33><i>Reaction:<p> Very strongly acid through moderately acid, unless limed.

<@33><i>Ap horizon<p>
<@33>Hue -- 10YR or 2.5Y
<@33>Value -- 4 through 6
<@33>Chroma -- 2 through 4
<@33>Texture -- loamy sand, loamy fine sand, sandy loam, fine sandy loam, or loam in the fine-earth fraction

<@33><i>A horizon<p>
<@33>Hue -- 10YR or 2.5Y
<@33>Value -- 2 through 6
<@33>Chroma -- 2 through 4
<@33>Texture -- loamy sand, loamy fine sand, sandy loam, fine sandy loam, or loam in the fine-earth fraction

<@33><i>E horizon<p>
<@33>Hue -- 10YR or 2.5Y
<@33>Value -- 5 through 7
<@33>Chroma -- 3 to 6
<@33>Texture -- loamy sand, loamy fine sand, sandy loam, fine sandy loam, or loam in the fine-earth fraction

<@33><i>BA or BE horizon<p>
<@33>Hue -- 7.5YR through 2.5Y
<@33>Value -- 5 through 7
<@33>Chroma -- 3 through 6
<@33>Texture -- sandy loam, fine sandy loam, or loam in the fine-earth fraction.

<@33><i>Bt horizon<p>
<@33>Hue -- 5YR through 10YR
<@33>Value -- 4 through 7
<@33>Chroma -- 3 through 8
<@33>Texture -- sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam
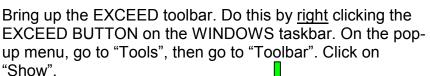
Before copying the RIC into NASIS, you need to set the text editor. In NASIS, select Options-NASIS Preferences. In the Change Text Editor field, Select Text Editor. Click Save and then Apply.

Once you have completed the RIC you need to copy it into NASIS. Unfortunately, this is not a simple copy, paste function. Following are directions from MO13 how to copy Word files into NASIS.
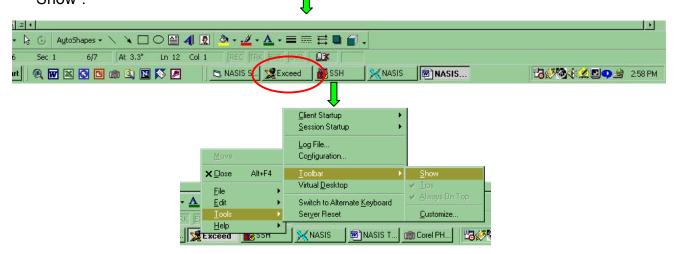
Copying WORD files into NASIS

Start NASIS using Secure Access, as usual. This automatically starts EXCEED.

Bring up the EXCEED toolbar. Do this by right clicking the EXCEED BUTTON on the WINDOWS taskbar. On the pop-up menu, go to "Tools", then go to "Toolbar". Click on "Show".
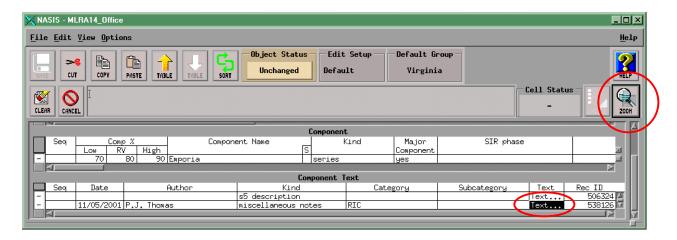
This gives you a toolbar with several objects. Run your cursor over each square and a note will pop-up telling what each button does. The one you need is "Paste Clipboard to X Selection". . It looks like a clipboard with an X and an arrow curving away from the X.
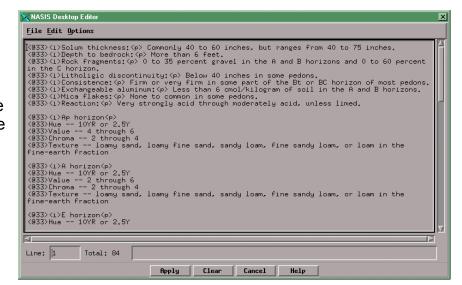
Open the RIC for a pedon in WORD. Select the text you want to copy into NASIS and click Edit-Copy (or right click and select copy). The selected text is now on the Clipboard.

Open the COMPONENT text field for RIC. (Place the cursor in the text field (Text...) and click Zoom to open.)
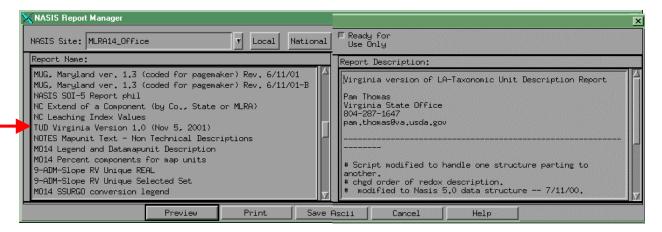

Click on the "Paste Clipboard to X Selection" button.

Put the cursor in the text field and click both the right and the left mouse buttons at the same time. This should insert the text into the field. Click Apply and SAVE. Repeat for additional pedons.

Run the Report in NASIS

Selection Options – Standard Reports to run the TUD. From the MO14 site choose the *TUD Virginia Version 1.0 (Nov. 5, 2001)*. Preview and Save.

Run the Report in Word

Use the following guide from MO14 on running Macros in Word. MO6 macro will be sent via email. Although the instructions are for MUG's, it can also be used for TUD's.

MACRO TO FORMAT MAP UNIT DESCRIPTIONS

Overview

A macro has been developed by MO6 to automatically format map unit descriptions (MUDs) that have been generated from NASIS. The macro is written for Word 97. It only works on files that have the Pagemaker typesetting codes inserted. At this time, all the MO6 MUD reports can be generated with these codes.

The objective of this macro is to enable soil survey project offices to very quickly convert NASIS map unit descriptions to formatted documents that are easy to read and have a professional appearance. The formatted document is nearly identical in appearance to a type-set standard soil survey, and is suitable for distribution to customers.

A brief summary of how this macro is used:
1. Generate a map unit description in NASIS, using a report with codes inserted
2. Transfer the MUD text file to the home computer, and load into Word
3. Run the macro to format the MUD

Installing the Macro

To use this macro it must be added to your normal template in Word 97. The macro is posted on the MO6 HP server as a Word template file named 'MO6macros.dot'. This template file is only used as a "vehicle" to transfer the macro (and other macros written by MO6) to the users' normal template. There is no other use for the MO6macros.dot template in the MUD formatting process.

<u>Steps to Install the Macro:</u>
1. Copy the file ''MO6macros.dot' to your computer.   Place this file in the directory that holds your normal Word template file (normal.dot). For NRCS CCE computers, this is commonly the directory 'C:\Program Files\Microsoft Office\Templates\'.

2. Open Word, click 'File' menu, then click 'New', click on the 'General' tab, and choose MO6macros.dot, then click OK.

3. Next, with a blank document on the screen, click the 'Tools' menu, then 'Macro', then Macros'.   In the Macros box, click 'Organizer'. In the 'Organizer' box, click the 'Macro Project Items' tab. On the left side, under the heading 'Macro Project Items available in choose 'MO6macros.dot (Template)' from the choice list.

4. In the large box on the left side, highlight the macro 'MUDformat_0300'. Then click the 'Copy' button to copy this macro to the 'Normal.dot' side.   Close the 'Organizer' box.

You have now copied the macro named 'MUDformat_0300' from the MO6macros.dot template to your normal.dot template. If prompted when you exit, save changes to the 'normal.dot' . The macro will then be saved and available whenever a text file document is opened.

The suffix '_0300' of the macro name indicates the revision date, which at this time is March '00. It is expected that this macro will need to be updated periodically.

<u>Running the Macro</u>
1. Load the map unit description document you want to format. (For example, the text file output from the NASIS map unit description report.)

2. Click 'Tools' menu, then 'Macro', then 'Macros'.   In the 'Macros' box, choose the macro 'MUDformat_0300', then click 'Run". If this macro does not appear under 'Macros in: Normal.dot' then it was not correctly copied over in steps 3 and 4 above.

3. The macro will automatically apply formatting to the document. A message box is displayed when the macro is finished.

This macro will work on one MUD or on an entire legend. It was tested on a legend of 285 map units and it took about 15 minutes to run. No memory problems were encountered.

<u>Important Considerations When Using the Macro</u>
This macro performs 3 main operations:
1. Applies character, paragraph, and document formatting by keying on the Pagemaker codes;
2. Corrects improper wording that is inherent in the current NASIS MUD reports (such as the phrase 'Water and similar soils');
3. Corrects <u>most</u> of the map unit name to the proper upper/lower case.

<u>Formatting</u>
The macro will correctly apply formatting to any line that contains a Pagemaker code. Only those codes that are currently in use in MO6 MUDs are included in the macro. These codes are not visible in the printed document but are retained as hidden text. (To see the codes on the screen, click Tools – Options – View - Hidden text)

<u>Wording</u>
Be aware that the macro may not perform all the needed edits for proper wording. Because of the variety of possible situations, <u>there will always be a need to make some revisions after running the macro</u>. For example, MUG reports create a heading by adding the word 'Soils' following the component name. When the component is a miscellaneous land type, this creates an incorrect heading ("Rock outcrop Soils"). This is corrected by the macro, but only for these commonly used miscellaneous land types: Badland; Gullied land; Miscellaneous water; Pits, gravel; Pits, mine; Riverwash; Rock outcrop; Rubble land; Urban land; and Water. If other miscellaneous land types are used, the author must correct those individually.

The macro does not delete the unnecessary soil properties for miscellaneous land types, such as available water capacity for Rock outcrop. The author must manually delete these lines as appropriate.

<u>Map unit name case</u>
It is strongly recommended that map unit names, component names, and phase names be entered in NASIS <u>with the proper case</u>. This will eliminate the need to edit the map unit name in many NASIS reports. However, if map unit names are in NASIS as all upper case, the macro automatically changes <u>most</u> of the name to the proper lower case. Except for surface texture and slope phases, <u>it does not change phase names to lower case</u>. These must be corrected individually (for example, Alpha, Cool to Alpha, cool).

Emporia Series

Local Physiographic Area: Southern Coastal Plain
Geomorphic Setting: On upland on marine terrace
Parent Material: Loamy marine sediments
Drainage Class: Well drained
Permeability Class: Moderate to moderately rapid
Soil Depth Class: Very deep
Slope: 0 to 6 percent

Associated Soils

Caroline soils that are clayey.
Kempsville soils that do not have iron depletions.
Slagle soils that are moderately well drained.
Uchee soils that have a thick, sandy surface layer.

Taxonomic Classification

Fine-loamy, siliceous, subactive, thermic Typic Hapludults

Typical Pedon

Emporia fine sandy loam in an area of Emporia fine sandy loam, 2 to 6 percent slopes; located 2.5 miles northeast of Surry, 1.8 miles northeast of the junction of Highways VA-10 and VA-638, 1.2 miles northwest of the junction of Highways VA-634 and VA-636, 1.0 mile west of the junction of Highways VA-636 and VA-637, in a stand of loblolly pines; Surry VA 7.5-minute topographic quadrangle; elevation 62 feet.
Latitude: 37 degrees, 9 minutes, 12 seconds N.
Longitude: 76 degrees, 47 minutes, 35 seconds W.

A—0 to 6 inches; brown (10YR 5/3), fine sandy loam; weak fine granular structure; friable, nonsticky, nonplastic; common fine roots; very strongly acid; abrupt smooth boundary.

E—6 to 14 inches; light yellowish brown (10YR 6/4), loamy fine sand; weak fine granular structure; very friable, nonsticky, nonplastic; common fine roots; strongly acid; clear smooth boundary.

Bt1—14 to 18 inches; yellowish brown (10YR 5/4), fine sandy loam; weak medium subangular blocky structure; friable, slightly sticky, slightly plastic; common fine roots; 10 percent continuous distinct clay bridging between sand grains; 10 percent medium faint light yellowish brown (10YR 6/4) masses of oxidized iron; strongly acid; clear smooth boundary.

Bt2—18 to 41 inches; strong brown (7.5YR 5/6), sandy clay loam; moderate medium subangular blocky structure; friable, moderately sticky, moderately plastic; common fine roots; 15 percent continuous distinct clay films on all faces of peds; 10 percent medium distinct yellowish red (5YR 4/6) masses of oxidized iron; strongly acid; gradual smooth boundary.

BC—41 to 54 inches; strong brown (7.5YR 5/6), sandy clay; weak coarse subangular blocky structure; firm, moderately sticky, moderately plastic; common fine roots; 5 percent discontinuous distinct clay films on all faces of peds; 5 percent medium distinct (5YR 4/8) masses of oxidized iron; 10 percent medium prominent light gray (10YR 7/1) iron depletions; strongly acid; clear smooth boundary.

C—54 to 72 inches; light gray (N 7/0) and yellowish red (5YR 4/6) and brownish yellow (10YR 6/6) and strong brown (7.5YR 4/6), stratified sandy loam to sandy clay loam; structureless massive; firm, slightly sticky, slightly plastic; strongly acid.

Range in Characteristics

Solum thickness: Commonly 40 to 60 inches, but ranges from 40 to 75 inches.
Depth to bedrock: More than 6 feet.
Rock fragments: 0 to 35 percent gravel in the A and B horizons and 0 to 60 percent in the C horizon.
Litholigic discontinuity: Below 40 inches in some pedons.
Consistence: Firm or very firm in some part of the Bt or BC horizon of most pedons.
Exchangeable aluminum: Less than 6 cmol/kilogram of soil in the A and B horizons.
Mica flakes: None to common in some pedons.
Reaction: Very strongly acid through moderately acid, unless limed.

Ap horizon
Hue -- 10YR or 2.5Y
Value -- 4 through 6
Chroma -- 2 through 4
Texture -- loamy sand, loamy fine sand, sandy loam, fine sandy loam, or loam in the fine-earth fraction

A horizon
Hue -- 10YR or 2.5Y
Value -- 2 through 6
Chroma -- 2 through 4
Texture -- loamy sand, loamy fine sand, sandy loam, fine sandy loam, or loam in the fine-earth fraction

E horizon
Hue -- 10YR or 2.5Y
Value -- 5 through 7
Chroma -- 3 to 6
Texture -- loamy sand, loamy fine sand, sandy loam, fine sandy loam, or loam in the fine-earth fraction

BA or BE horizon
Hue -- 7.5YR through 2.5Y
Value -- 5 through 7
Chroma -- 3 through 6
Texture -- sandy loam, fine sandy loam, or loam in the fine-earth fraction.

Bt horizon (upper)
Hue -- 5YR through 10YR
Value -- 4 through 7
Chroma -- 3 through 8
Texture -- sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam

Bt horizon (lower)
Hue -- 5YR through 2.5Y or multicolored without dominant matrix hue
Value -- 4 through 7
Chroma -- 3 through 8
Iron depletions -- commonly are below a depth of 36 inches
Texture -- sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam; sandy clay or clay in some pedons

Btg horizon
Hue -- neutral or 5YR through 2.5Y
Value -- 4 through 6
Chroma -- 0 through 2
Texture -- sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam in the fine-earth fraction; sandy clay or clay in some pedons

BC or CB horizon
Hue -- 2.5YR through 2.5Y or is multicolored without dominant matrix hue
Value -- 4 through 6
Chroma -- 3 through 8
Texture -- coarse sandy loam, sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam in the fine-earth fraction; sandy clay or clay in some pedons

BCg or CBg horizon
Hue -- neutral or 2.5YR through 2.5Y
Value -- 4 through 6
Chroma -- 3 through 8
Texture -- coarse sandy loam, sandy loam, fine sandy loam, loam, sandy clay loam, or clay loam in the fine-earth fraction; sandy clay or clay in some pedons

C horizon
Hue -- 2.5YR through 5Y or is multicolored without dominant matrix hue
Value -- 3 through 8
Chroma -- 3 through 8
Iron depletions -- most pedons are variegated with iron depletions and accumulations
Texture -- sandy loam through clay in the fine-earth fraction

Cg horizon
Hue -- neutral or 5YR through 5Y
Value -- 3 through 8
Chroma -- 0 through 2
Texture -- sandy loam through clay in the fine-earth fraction